



## Product Change Notification / ALAN-190QMD341

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### Date:

03-Mar-2023

### Product Category:

32-bit Microcontrollers

### PCN Type:

Manufacturing Change

### Notification Subject:

CCB 6148 Initial Notice: Qualification of MP3A as an additional assembly site for ATSAMD21G1xx, ATSAMC21G1xx, ATSAMD20G1xx, ATSAML21G1xx, ATSAML22G1xx, ATSAMC20G1xx device families available in 48L VQFN (7x7x0.9mm) package.

### Affected CPNs:

[ALAN-190QMD341\\_Affected\\_CPN\\_03032023.pdf](#)

[ALAN-190QMD341\\_Affected\\_CPN\\_03032023.csv](#)

### Notification Text:

**PCN Status:**Initial Notification

**PCN Type:**Manufacturing Change

**Microchip Parts Affected:**Please open one of the files found in the Affected CPNs section.

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

**Description of Change:**Qualification of MP3A as an additional assembly site for ATSAMD21G1xx, ATSAMC21G1xx, ATSAMD20G1xx, ATSAML21G1xx, ATSAML22G1xx, ATSAMC20G1xx device families available in 48L VQFN (7x7x0.9mm) package.

### Pre and Post Change Summary:

	Pre Change		Post Change		
Assembly Site	Microchip Technology Thailand  (HQ) (MTAI)	Microchip Technology Thailand  (Branch) (MMT)	Microchip Technology Thailand  (HQ) (MTAI)	Microchip Technology Thailand  (Branch) (MMT)	Microchip Technology Inc. (MPHIL-3) (MP3A)
Wire Material	Au	Au	Au	Au	Au
Die Attach Material	3280	3280	3280	3280	3280
Molding Compound Material	G700LTD	G700LTD	G700LTD	G700LTD	G700LTD
Lead-Frame Material	C194	C194	C194	C194	C194
Lead-Frame Paddle Size	217x217 mils	217x217 mils	217x217 mils	217x217 mils	217x217 mils
DAP Surface Prep	Bare Cu	Bare Cu	Bare Cu	Bare Cu	Bare Cu

**Impacts to Data Sheet:**None

**Change Impact:**None

**Reason for Change:**To improve productivity by qualifying MP3A as an additional assembly site.

**Change Implementation Status:**In Progress

**Estimated Qualification Completion Date:**July 2023

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:**

	<b>February 2023</b>	>	<b>July 2023</b>
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Workweek	5	6	7	8	9		27	28	29	30	31
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:**February 22, 2023: Issued initial notice.

March 3, 2023: Re-issuance of initial notice to update affected CPN list and notification subject correspondingly.

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

## Attachments:

[PCN\\_ALAN-190QMD341\\_Qualification\\_Plan.pdf](#)

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

## Terms and Conditions:

If you wish to [receive Microchip PCNs via email](#) please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

If you wish to [change your PCN profile, including opt out](#), please go to the [PCN home page](#) select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.



**MICROCHIP**

## **QUALIFICATION PLAN SUMMARY**

**PCN# ALAN-190QMD341**

**Date:  
February 1, 2023**

**Qualification of MP3A as an additional assembly site for  
ATSAMD21G1xx, ATSAMC21G1xx, ATSAMD20G1xx,  
ATSAML21G1xx, ATSAML22G1xx, ATSAMC20G1xx  
device families available in 48L VQFN (7x7x0.9mm)  
package.**

Purpose: Qualification of MP3A as an additional assembly site for ATSAMD21G1xx, ATSAMC21G1xx, ATSAMD20G1xx, ATSAML21G1xx, ATSAML22G1xx, ATSAMC20G1xx device families available in 48L VQFN (7x7x0.9mm) package.

Misc.	Assembly site	MP3A (MPHIL3)
	BD Number	BD-001280 /A
	MP Code (MPC)	661P27T3BC01
	Part Number (CPN)	ATSAMC21G17A-MU
	MSL information	MSL-1/260
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	416
	Reliability Site	MPHIL
	CCB	6148
Lead-Frame	Paddle size	217x217 mils
	Material	C194
	DAP Surface Prep	Bare Cu
	Treatment	BOT
	Process	Etched
	Lead-lock	Yes
	Part Number	10104803
	Lead Plating	Matte Tin
	Strip Size	250x70 mm
	Strip Density	240 units/strip
Bond Wire	Material	Au
Die Attach	Part Number	3280
	Conductive	Yes
MC	Part Number	G700LTD
PKG	PKG Type	VQFN
	Pin/Ball Count	48
	PKG width/size	7x7x0.9mm

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
<b>Standard Pb-free Solderability</b>	J-STD-002 ; Perform 8 hour 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.	22	5	1	27	> 95% lead coverage	5	MPHIL	Standard Pb-free solderability is the requirement.
<b>Wire Bond Pull - WBP</b>	Mil. Std. 883-2011	5	0	3	15	0	5	MPHIL	30 bonds from a minimum of 5 devices.
<b>Wire Bond Shear - WBS</b>	CDF-AEC-Q100-001	5	0	3	15	0	5	MPHIL	30 bonds from a minimum of 5 devices.
<b>Wire Sweep</b>		5	0	3	15	0		MPHIL	Required for any reduction in wire bond thickness.
<b>Physical Dimensions</b>	Measure per JESD22 B100 and B108	10	0	3	30	0	5	MPHIL	
<b>External Visual</b>	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	MPHIL	
<b>Preconditioning - Required for surface mount devices</b>	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at +25°C. MSL-1/260C	231 +15	15 +5	3	738 +45	0	15	MPHIL	Spares should be properly identified.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
<b>HAST</b>	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp 85C.	77	5	3	246	0	10	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
<b>Unbiased HAST</b>	+130°C/85% RH for 96 hrs. Electrical test pre and post stress at +25°C.	77	5	3	246	0	10	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
<b>Temp Cycle</b>	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp 85C; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Affected Catalog Part Numbers (CPN)

ATSAMD21G16L-MUTN01  
ATSAMD21G18A-MUTN01  
ATSAMC21G16A-MNTS2  
ATSAMC21G17A-MUTS2  
ATSAMD21G16L-MNTP01  
ATSAMD21G17A-MUA1  
ATSAMD21G18A-MUA1  
ATSAMD21G17A-MUTA1  
ATSAMD21G18A-MUTA1  
ATSAMD21G17A-MUTA0  
ATSAMD20G18A-MUA2  
ATSAMD20G14A-MUA2  
ATSAMD20G15A-MUA2  
ATSAMD20G16A-MUA2  
ATSAMD20G17A-MUA2  
ATSAMD20G14A-MUTA2  
ATSAMD20G15A-MUTA2  
ATSAMD20G16A-MUTA2  
ATSAMD20G17A-MUTA2  
ATSAMD20G18A-MUTA2  
ATSAMD21G17L-MF  
ATSAMD21G17L-MU  
ATSAMD21G17L-MN  
ATSAMD21G17L-MNT  
ATSAMD21G17L-MUT  
ATSAMD21G17L-MFT  
ATSAMD21G15B-MF  
ATSAMD21G16B-MF  
ATSAMD21G16B-MU  
ATSAMD21G15B-MU  
ATSAMD21G16L-MNT  
ATSAMD21G16B-MUT  
ATSAMD21G15B-MUT  
ATSAMD21G16L-MUT  
ATSAMD21G15B-MFT  
ATSAMD21G16B-MFT  
ATSAML21G16B-MNT  
ATSAML21G17B-MNT  
ATSAML21G18B-MNT  
ATSAML21G18B-MNT-SLL  
ATSAML21G17B-MNT-SLL  
ATSAML21G16B-MUT  
ATSAML21G17B-MUT  
ATSAML21G18B-MUT  
ATSAML21G18B-MUT-SLL  
ATSAML22G16A-MUT



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ALAN-19OQMD341 - CCB 6148 Initial Notice: Qualification of MP3A as an additional assembly site for ATSAMD21G1xx, ATSAMC21G1xx, ATSAMD20G1xx, ATSAML21G1xx, ATSAML22G1xx, ATSAMC20G1xx device families available in 48L VQFN (7x7x0.9mm) package.

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ATSAML22G17A-MUT

ATSAML22G18A-MUT

ATSAMD21G16L-MNTA7

ATSAMD20G16B-MU

ATSAMD20G15B-MU

ATSAMD20G14B-MU

ATSAMD20G16B-MN

ATSAMD20G14B-MN

ATSAMD20G15B-MN

ATSAMD20G16B-MNT

ATSAMD20G14B-MNT

ATSAMD20G15B-MNT

ATSAMD20G16B-MUT

ATSAMD20G14B-MUT

ATSAMD20G15B-MUT

ATSAMC21G17A-MU

ATSAMC20G15A-MNT

ATSAMC20G16A-MNT

ATSAMC20G17A-MNT

ATSAMC20G18A-MNT

ATSAMC21G15A-MNT

ATSAMC21G16A-MNT

ATSAMC21G17A-MNT

ATSAMC21G18A-MNT

ATSAMC21G18A-MUT

ATSAMC20G15A-MUT

ATSAMC20G16A-MUT

ATSAMC20G17A-MUT

ATSAMC20G18A-MUT

ATSAMC21G15A-MUT

ATSAMC21G16A-MUT

ATSAMC21G17A-MUT

ATSAMC20G17A-MUTS2

ATSAMC21G18A-MUT64

ATSAMD21G17A-MF

ATSAMD21G18A-MF

ATSAMD21G18A-MU

ATSAMD21G17A-MU

ATSAMD21G18A-MU-SLL

ATSAMD21G17A-MUT

ATSAMD21G18A-MUT

ATSAMD21G17A-MFT

ATSAMD21G18A-MFT

ATSAMD20G14A-MU

ATSAMD20G15A-MU

ATSAMD20G16A-MU

ATSAMD20G17A-MU

ATSAMD20G18A-MU

ATSAMD20G14A-MN

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ATSAMD20G15A-MN

ATSAMD20G16A-MN

ATSAMD20G17A-MN

ATSAMD20G18A-MN

ATSAMD20G14A-MNT

ATSAMD20G15A-MNT

ATSAMD20G16A-MNT

ATSAMD20G17A-MNT

ATSAMD20G18A-MNT

ATSAMD20G14A-MUT

ATSAMD20G15A-MUT

ATSAMD20G16A-MUT

ATSAMD20G17A-MUT

ATSAMD20G18A-MUT