



## Product Change Notification / KSRA-20GCJX052

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### Date:

21-Jul-2020

### Product Category:

8-bit Microcontrollers

### PCN Type:

Manufacturing Change

### Notification Subject:

CCB 4311 Initial Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire and G631HQ mold compound material for selected Atmel ATMEGAXXM1, ATMEGAXXU2, AT90USBXX2 and ATXMEGAXXE5 device families available in 32L TQFP (7x7x1.0mm) package at ANAP assembly site.

### Affected CPNs:

[KSRA-20GCJX052\\_Affected\\_CPN\\_07212020.pdf](#)

[KSRA-20GCJX052\\_Affected\\_CPN\\_07212020.csv](#)

### 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 palladium coated copper with gold flash (CuPdAu) bond wire and G631HQ mold compound material for selected Atmel ATMEGAXXM1, ATMEGAXXU2, AT90USBXX2 and ATXMEGAXXE5 device families available in 32L TQFP (7x7x1.0mm) package at ANAP assembly site.

### Pre Change:

Assembled using palladium coated copper (PdCu) bond wire and G700Y molding compound material

### Post Change:

Assembled using palladium coated copper with gold flash (CuPdAu) bond wire and G631HQ molding compound material

**Pre and Post Change Summary:**

	Pre Change	Post Change
<b>Assembly Site</b>	Amkor Technology Philippine (P1/P2), INC. / ANAP	Amkor Technology Philippine (P1/P2), INC. / ANAP
<b>Wire material</b>	PdCu	CuPdAu
<b>Die attach material</b>	3230	3230
<b>Molding compound material</b>	G700Y	G631HQ
<b>Lead frame material</b>	C194 ESH	C194 ESH

**Impacts to Data Sheet:** None

**Change Impact:**None

**Reason for Change:**To improve productivity by qualifying palladium coated copper with gold flash (CuPdAu) bond wire.

**Change Implementation Status:**In Progress

**Estimated Qualification Completion Date:**December 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:**

	July 2020					-->	November 2020				
	27	28	29	30	31		45	46	47	48	49
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:July 21, 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.

## **Attachments:**

[PCN\\_KSRA-20GCJX052\\_Qual\\_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.

Affected Catalog Part Numbers (CPN)

ATMEGA32M1-AU  
ATMEGA16M1-AU  
ATMEGA32M1-AUR  
ATMEGA64M1-AU  
ATMEGA16U2-AU  
ATMEGA8U2-AU  
ATMEGA16U2-AUR  
ATMEGA8U2-AUR  
ATMEGA32U2-AU  
ATMEGA32U2-AUR  
AT90USB162-16AU  
AT90USB162-16AUR  
ATXMEGA8E5-AU  
ATXMEGA16E5-AU  
ATXMEGA32E5-AU  
ATXMEGA8E5-AN  
ATXMEGA16E5-AN  
ATXMEGA32E5-AN  
ATXMEGA16E5-ANR  
ATXMEGA8E5-ANR  
ATXMEGA32E5-ANR  
ATXMEGA8E5-AUR  
ATXMEGA16E5-AUR  
ATXMEGA32E5-AUR



**MICROCHIP**

## **QUALIFICATION PLAN SUMMARY**

**PCN #: KSRA-20GCJX052**

**Date:  
July 9, 2020**

**Qualification of palladium coated copper with gold flash (CuPdAu) bond wire and G631HQ mold compound material for selected Atmel ATMEGAXXM1, ATMEGAXXU2, AT90USBXX2 and ATXMEGAXXE5 device families available in 32L TQFP (7x7x1.0mm) package at ANAP assembly site.**

Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire and G631HQ mold compound material for selected Atmel ATMEGAXXM1, ATMEGAXXU2, AT90USBXX2 and ATXMEGAXXE5 device families available in 32L TQFP (7x7x1.0mm) package at ANAP assembly site.

<b>Misc.</b>	Assembly site	ANAP (ATP)
	BD Number	BDM-002653A
	MP Code (MPC)	355T97T5XC03
	Part Number (CPN)	AT90USB162-16AU
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	ATP ship in Tray MCHP ship in T/R
	Base Quantity Multiple (BQM)	ATP = 250 MCHP = 2,000
	Reliability Site	MPHIL
	CCB No.	4311
<b>Lead-Frame</b>	Paddle size	197x197 mil
	Material	C194 ESH
	DAP Surface Prep	Double Ring
	Treatment	No
	Process	Stamped
	Lead-lock	No
	Part Number	101386770 (VHDLF)
	Lead Plating	Matte Tin
	Strip Size	250x70mm
	Strip Density	VHDLF
<b>Bond Wire</b>	Material	CuPdAu
<b>Die Attach</b>	Part Number	3230
	Conductive	Yes
<b>MC</b>	Part Number	G631HQ
<b>PKG</b>	PKG Type	TQFP
	Pin/Ball Count	32
	PKG width/size	7x7x1mm

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	REL Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; 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. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	ATP	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5		5	ATP	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30		5	ATP	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	ATP/MPHIL	
Preconditioning - Required for surface mount devices	+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-3@ 260C	231	15	3	738	0	15	MPHIL	Spares should be properly identified.77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours Electrical test pre and post stress at +25°C and hot temp.	77	5	3	246	0	10	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+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.
Temp Cycle	-65°C to +150°C for 500 cycles Electrical test pre and post stress at hot temp; 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.