



## Product Change Notification / CAAN-27VKXJ630

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### Date:

25-Jun-2024

### Product Category:

8-Bit Microcontrollers, Capacitive Touch Sensors

### PCN Type:

Manufacturing Change

### Notification Subject:

CCB 6849 Initial Notice: Qualification of STA as an additional assembly site for selected AT42QT1x, AT42QT21, AT42QT41, ATmega16, ATmega32, ATmega48, ATmega8x, ATtiny26, ATtiny46, ATtiny8x, QT60160 and QT60240 device families available in 32L VQFN (5x5x1mm) package.

### Affected CPNs:

[CAAN-27VKXJ630\\_Affected\\_CPN\\_06252024.pdf](#)

[CAAN-27VKXJ630\\_Affected\\_CPN\\_06252024.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 STA as an additional assembly site for selected AT42QT1x, AT42QT21, AT42QT41, ATmega16, ATmega32, ATmega48, ATmega8x, ATtiny26, ATtiny46, ATtiny8x, QT60160 and QT60240 device families available in 32L VQFN (5x5x1mm) package.

### Pre and Post Change Summary:



**Method to Identify Change:**Traceability code

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

**Revision History:**March 4, 2024: Issued initial notification.

June 25, 2024: Re-issued initial notification. Updated Die attach material from 8290 to EN4900GC. Updated affected part list to remove catalog part number ATTINY861A-MU based on the updated scope. Updated qual plan to reflect the die attach material change and include wire sweep test.

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

### **Attachments:**

[PCN\\_CAAN-27VKXJ630\\_Pre and Post Change Summary.pdf](#)  
[PCN CAAN-27VKXJ630\\_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.

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Affected Catalog Part Numbers (CPN)

AT42QT2100-MUR  
ATMEGA328-MU  
ATMEGA328P-MUA2  
ATMEGA328P-MN  
ATMEGA328P-MNR  
ATMEGA328-MUR  
ATMEGA48PA-MN  
ATMEGA48PA-MNR  
ATMEGA8A-MN  
ATMEGA8A-MNR  
ATMEGA168PA-MN  
ATMEGA168PA-MNR  
ATTINY26-16MQR  
ATMEGA168PV-10MU  
ATMEGA168P-20MU  
ATMEGA168PV-10MUR  
ATMEGA88P-20MU  
AT42QT1244-MU  
ATMEGA88P-20MUR  
ATMEGA48PV-10MU  
ATMEGA48P-20MU  
ATMEGA48P-20MUR  
ATMEGA48PV-10MUR  
ATMEGA168P-20MQ  
ATMEGA168P-20MQR  
ATMEGA88PV-10MU  
ATMEGA88PV-10MUR  
QT60240-ISG  
ATMEGA168-20MQ  
ATMEGA168-20MQR  
AT42QT4160-MUR  
ATMEGA48-20MU  
ATMEGA48V-10MU  
ATMEGA48V-10MUR  
ATMEGA48-20MUR  
AT42QT1110-MUR  
ATTINY26L-8MU  
ATTINY26L-8MUR  
ATMEGA88V-10MU  
ATMEGA88-20MU  
ATMEGA88V-10MUR  
ATMEGA88-20MUR  
ATMEGA168V-10MU  
ATMEGA168-20MU  
ATMEGA168V-10MUR  
ATMEGA168V-10MUR598

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ATMEGAT168-20MUR

ATMEGA168A-MU

ATMEGA168A-MUR

ATMEGA168PA-MURA2

ATMEGA48A-MU

ATMEGA48A-MUR

QT60160-ISG

ATMEGA168V-10MQR

ATMEGA168V-10MQR610

ATTINY26-16MU

ATTINY26-16MUR

ATMEGA8A-MU

ATMEGA8-16MU

ATMEGA8L-8MU

ATMEGA8-16MUR

ATMEGA8L-8MUR

ATMEGA8A-MURA7

ATMEGA8A-MUR

ATTINY461-20MU

ATTINY461V-10MU

ATTINY461-20MUR

ATTINY461V-10MUR

ATTINY828-MU

ATTINY828-MUR

ATMEGA48V-10MURA3

ATMEGA168P-20MUR

AT42QT1245-MU

AT42QT1244-MUR

AT42QT1245-MUR

ATMEGA88PA-MN

ATMEGA88PA-MNR

ATMEGA88A-MU

ATMEGA88A-MUR

ATMEGA88PA-MURA6

ATTINY261A-MF

ATTINY261A-MFR

ATMEGA168V-10MQ

ATMEGA88V-10MURA1

ATMEGA8L-8MUA4

ATTINY861V-10MU

ATTINY861-20MU

ATTINY861V-10MUR

ATTINY861-20MUR



## **QUALIFICATION PLAN SUMMARY**

**PCN#: CAAN-27VKXJ630**

**Date:  
February 01, 2024**

**Qualification of STA as an additional assembly site for selected  
AT42QT1x, AT42QT21, AT42QT41, ATmega16, ATmega32,  
ATmega48, ATmega8x, ATtiny26, ATtiny46, ATtiny8x, QT60160 and  
QT60240 device families available in 32L VQFN (5x5x1mm)  
package.**

Purpose: Qualification of STA as an additional assembly site for selected AT42QT1x, AT42QT21, AT42QT41, ATmega16, ATmega32, ATmega48, ATmega8x, ATtiny26, ATtiny46, ATtiny8x, QT60160 and QT60240 device families available in 32L VQFN (5x5x1mm) package.

CCB No.: 6849

<u>Misc.</u>	Assembly site	STA
	BD Number	BD-002159-01
	MP Code (MPC)	355E77S4BC04
	Part Number (CPN)	ATMEGA168-20MU
	MSL information	MSL1
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	490
	Reliability Site	MPHIL
<u>Lead-Frame</u>	Paddle size	3.5X3.5mm (138X138mils)
	Exposed Pad size	3.1X3.1mm (122X122 mils)
	Material	C194
	DAP Surface Prep	Ring
	Treatment	Roughened
	Process	Etched
	Lead-lock	Yes
	Part Number	R002-A232X
	Lead Plating	Matte Sn
	Strip Size	250*70mm
	Strip Density	216 units/strip
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	EN4900GC
	Conductive	Yes
<u>MC</u>	Part Number	G700E
<u>PKG</u>	Package Type	VQFN
	Pin/Ball Count	32L
	PKG width/size	5X5X1mm

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	ATE Test Site	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			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			30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5			30 bonds from a min. 5 devices.
Wire Sweep										Required for any reduction in wire bond thickness.
Physical Dimmensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5			
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5			
Preconditioning - Required for surface mount devices	JESD22-A113. +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.  MSL1/260	231	15	3	738	0	15	ANAC	MPHIL	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A110. +130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours.  Electrical test pre and post stress at +25°C and hot temp (85°C).	77	5	3	246	0	10	ANAC	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	JESD22-A118. +130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs.  Electrical test pre and post stress at +25°C	77	5	3	246	0	10	ANAC	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.  Post-stress Electrical Test Window Time: Within 48 hours.
Temp Cycle	JESD22-A104. -65°C to +150°C for 500 cycles.  Electrical test pre and post stress at hot temp (85°C); 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	ANAC	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.



# CCB 6849

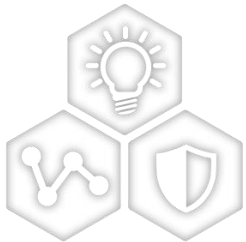
## Pre and Post Change Summary

### PCN #: CAAN-27VKXJ630



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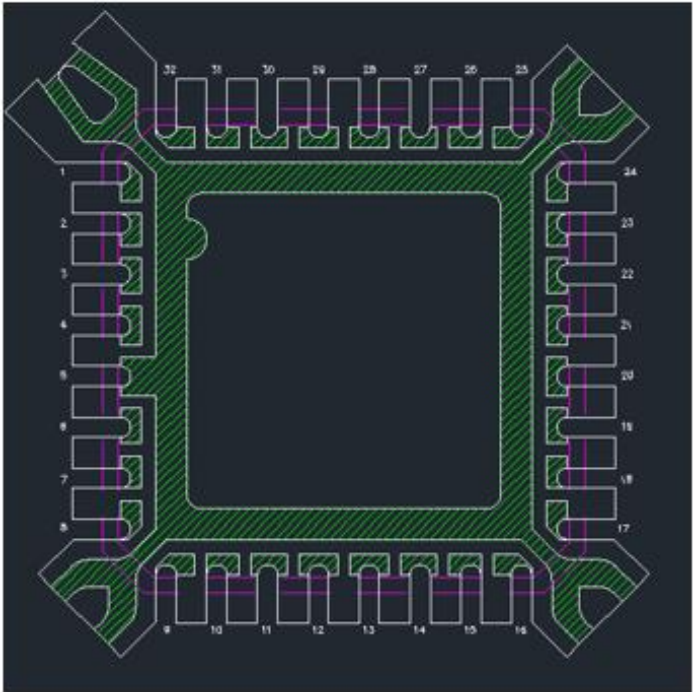
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# LEAD FRAME COMPARISON

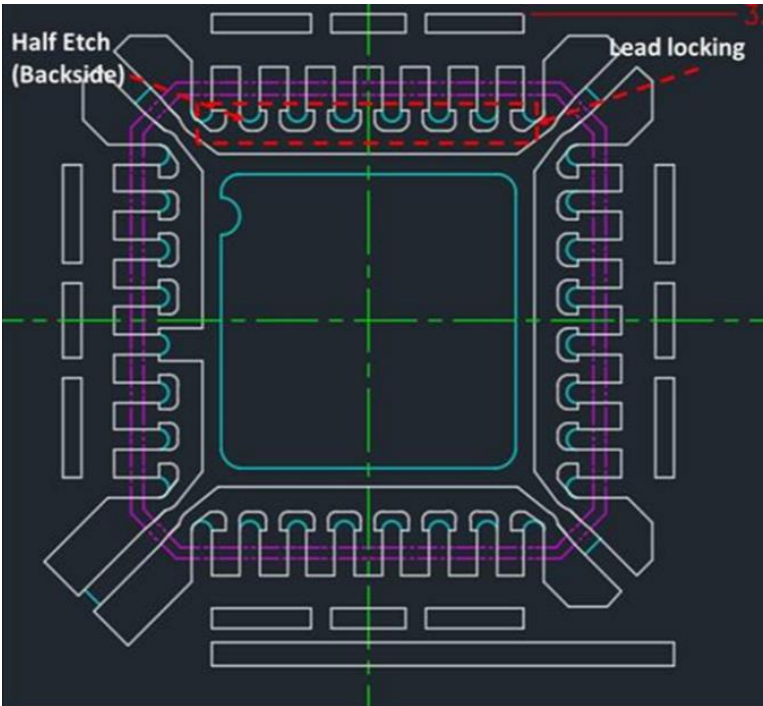
## ANAC



Note: Not to scale

Wire Material	Au	CuPd
Lead-Frame Paddle Size	146X146mils	
Lead-Frame Material	C194	
Lead-Frame Lead Lock	No	

## STA



Note: Not to scale

Wire Material	Au	CuPdAu
Lead-Frame Paddle Size	138X138mils	
Lead-Frame Material	C194	
Lead-Frame Lead Lock	Yes	