



## Product Change Notification / RMES-23FLBS013

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**Date:**

24-Jun-2022

**Product Category:**

8-bit Microcontrollers

**PCN Type:**

Manufacturing Change

**Notification Subject:**

CCB 3296.002 Final Notice: Qualification of MTAI as a new assembly site for selected ATMEGA1284x, ATMEGA16xxx, ATMEGA32xxx, ATMEGA644xx and ATMEGA85x5x device families available in 44L TQFP (10x10x1mm) package.

**Affected CPNs:**

[RMES-23FLBS013\\_Affected\\_CPN\\_06242022.pdf](#)

[RMES-23FLBS013\\_Affected\\_CPN\\_06242022.csv](#)

**Notification Text:**

**PCN Status:**Final 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 MTAI as a new assembly site for selected ATMEGA1284x, ATMEGA16xxx, ATMEGA32xxx, ATMEGA644xx and ATMEGA85x5x device families available in 44L TQFP (10x10x1mm) package.

**Pre and Post Change Summary:**

	Pre Change	Post Change
Assembly Site	Lingsen Precision Industries, LTD. (LPI)	Microchip Technology Thailand (HQ (MTAI))
Wire Material	CuPdAu or Au	Au
Die Attach Material	CRM-1033BF	3280
Molding Compound Material	G700	G700
Lead-Frame Material	C7025	C7025
Lead-Frame Paddle Size	160x160 or 205x205 or 275x275	180x180 or 275x275
DAP Surface Prep	Ag plated	Bare Cu

**Impacts to Data Sheet:**None

**Change Impact:**None

**Reason for Change:**To improve manufacturability and on-time delivery performance by qualifying MTAI as a new assembly site.

**Change Implementation Status:**In progress

**Estimated First Ship Date:**July 15, 2022 (date code: 2229)

Note: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

**Time Table Summary:**

	June 2022					July 2022				
	23	24	25	26	27	28	29	30	31	12
Workweek										
Qual Report Availability				x						
Final PCN Issue Date				x						
Estimated Implementation Date							x			

**Method to Identify Change:**Traceability code

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

**Revision History:**

**June 24, 2022:** Issued final notification. Attached is the qualification report and provided estimated first ship date by July 15, 2022.

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

### **Attachments:**

[PCN\\_RMES-23FLBS013\\_Qual Report.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.

RMES-23FLBS013 - CCB 3296. ATMEGA10 ATMEGA3; ATMEGA644xx and ATMEGA85x5x device families availal

Affected Catalog Part Numbers(CPN)

ATMEGA644PA-AN  
ATMEGA644PA-ANR  
ATMEGA644-20AU  
ATMEGA644V-10AU  
ATMEGA644-20AUR  
ATMEGA644V-10AUR  
ATMEGA324PV-10AU  
ATMEGA324P-20AU  
ATMEGA324P-20AQR  
ATMEGA324P-20AUR  
ATMEGA644PV-10AU  
ATMEGA644P-20AU  
ATMEGA644PV-10AQ  
ATMEGA644PV-10AQR  
ATMEGA644PV-10AUR  
ATMEGA644P-20AUR  
ATMEGA1284-AU  
ATMEGA1284-AUR  
ATMEGA324PA-AN  
ATMEGA324A-AURA3  
ATMEGA16-16AU  
ATMEGA16-16AUA2  
ATMEGA16L-8AU  
ATMEGA16-16AUR  
ATMEGA16L-8AUR  
ATMEGA32-16AU  
ATMEGA32L-8AU  
ATMEGA32A-AURA5  
ATMEGA32L-8AUR  
ATMEGA164A-AUA2  
ATMEGA164PA-AN  
ATMEGA164PA-ANR  
ATMEGA164A-AURA2  
ATMEGA8515-16AUR  
ATMEGA8535-16AU  
ATMEGA8535L-8AU  
ATMEGA8535-16AUR  
ATMEGA8535L-8AUR  
ATMEGA32-16AUA3  
ATMEGA32L-8AUA3  
ATMEGA32-16AQ  
ATMEGA32-16AQR

ATMEGA32L-8AURA0  
ATMEGA32L-8AURA2  
ATMEGA32L-8AURA4  
ATMEGA164P-20AQ  
ATMEGA164PV-10AQ  
ATMEGA164P-20AQRA1



**MICROCHIP**

**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN #: RMES-23FLBS013**

**Date:**  
**June 21, 2022**

**Qualification of MTAI as an additional assembly site for selected Atmel products available in 44L TQFP 10x10x1mm package. The qualification of MTAI as a new assembly site for selected ATMEGA1284x, ATMEGA16xxx, ATMEGA32xxx, ATMEGA644xx and ATMEGA85x5x device families available in 44L TQFP (10x10x1mm) package will be qualify by similarity (QBS).**



# MICROCHIP PACKAGE QUALIFICATION REPORT

**Purpose:** Qualification of MTAI as an additional assembly site for selected Atmel products available in 44L TQFP 10x10x1mm package. The qualification of MTAI as a new assembly site for selected ATMEGA1284x, ATMEGA16xxx, ATMEGA32xxx, ATMEGA644xx and ATMEGA85x5x device families available in 44L TQFP (10x10x1mm) package will be qualify by similarity (QBS).

<b><u>Misc.</u></b>	Assembly site	MTAI
	BD Number	BDM-001705 rev.A
	MP Code (MPC)	354787T4XC01
	Part Number (CPN)	ATMEGA644
	CCB No.	3296, 3296.001, 3296.002 and 3296.003
	QTP No. and Rev	3393 Rev A
<b><u>Lead-Frame</u></b>	Paddle size	180x180 mils
	Material	C7025
	Surface	Bare Cu on paddle
	Treatment	Roughening
	Process	Stamped
	Lead-lock	No
	Part Number	10104412
Lead Plating	Matte Tin	
<b><u>Bond Wire</u></b>	Material	Au
<b><u>Die Attach</u></b>	Part Number	3280
	Conductive	Yes
<b><u>Mold Compound</u></b>	Part Number	G700
<b><u>PKG</u></b>	PKG Type	TQFP
	Pin/Ball Count	44
	PKG width/size	10x10 mm
	MSL	MSL1/260



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MTAI184804027.000	MCSO518476707.100	18089QW
MTAI184804028.000	MCSO518476707.100	18089QY
MTAI184804029.000	MCSO518476707.100	18089R0

## Result

Pass     Fail     \_\_\_\_\_

Atmel 35478 using Au wire in 44L TQFP 10x10 package at MTAI is qualified at Moisture/Reflow Sensitivity Classification Level 1 per IPC/JEDEC J-STD-020D standard. No delamination were observed on all the units.



# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test : +90°C</b>  Bake 150°C, 24 hrs System: HERAEUS	JESD22-A113	958(0)	0/958	Passed	Good Devices
			135(0)	0/135		
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D	958(0)			
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F		958(0)			
	<b>Electrical Test :+90°C</b>		135(0)	0/135	Passed	
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard) 65°C to +150°C, 500 Cycles System : VOTSCH VT 7012 S2	JESD22-A104	252			Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> 90°C, System: MAGNUM05 (Handtest)		252(0)	0/252	Passed	
	<b>Bond Strength:</b> Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)		15(0)	0/15	Passed	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	252			Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +90°C System: MT9510 Handler:2580		252(0)	0/252	Passed	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.5 Volts System: HIRAYAMA HASTEST PC-422R8  <b>Electrical Test:</b> +90°C System: MT9510 Handler:2580	JESD22-A110	250  250(0)	0/250	Passed	Parts had been pre-conditioned at 260°C
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: HERAEUS  <b>Electrical Test</b> :+90°C	JESD22-A103	50  50(0)	0/50	Passed	50 units
<b>Solderability Temp 245°C</b>	<b>Bake:</b> Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C Solder material: SnPb Visual Inspection: External Visual Inspection	JESD22B-102E	15 (0)	0/15	Passed	Performed at MPHIL
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.50 grams)  Bond Shear (>15.00 grams)	M2011.8 MIL-STD-883  M2011.8 MIL-STD-883	30(0) Wires  30(0) Wires		Passed	