

# Product Change Notification - JAON-08RMMS268

**Date:** 25 Nov 2016

**Product Category:** Touch Sensing Technologies; 16-bit Microcontrollers and Digital Signal Controllers; Analog (Linear & Mixed Signal) AND Interface; 8-bit Microcontrollers

**Notification subject:** CCB 2697.001/.002/.003/.004 Final Notice: Qualification of CuPdAu wire in selected products of the 150K and 160K wafer technologies available in 28L QFN-S, 28L, 20L, and 16L QFN packages at MTAI site.

**Notification text:** **PCN Status:**  
Final notification

**Microchip Parts Affected:**

Please open the attachments found in the attachments field below labeled as PCN\_#\_Affected\_CPN.

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 in selected products of the 150K and 160K wafer technologies available in 28L QFN-S (6x6mm), 28L QFN (6x6mm), 20L QFN (4x4mm), 16L QFN (4x4mm) and 16L QFN (3x3mm) packages at MTAI assembly site.

**Pre Change:**

Using gold (Au) bond wire

**Post Change:**

Using gold (Au) bond wire or palladium coated copper with gold flash (CuPdAu) bond wire

**Pre and Post Change Summary:**

	Pre Change	Post Change
<b>Assembly Site</b>	MTAI assembly site	MTAI assembly site
<b>Wire material</b>	Au wire	Au wire or CuPdAu wire
<b>Die attach material</b>	3280	3280
<b>Molding compound material</b>	G700LTD	G700LTD
<b>Lead frame material</b>	C194	C194

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve manufacturability and qualify Palladium coated copper with gold flash (CuPdAu) bond wire

**Change Implementation Status:**

In Progress

**Estimated First Ship Date:**

January 25, 2017 (Date code: 1704)

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

**Time Table Summary:**

	July 2016				->	November 2016				->	January 2017			
	27	28	29	30		44	45	46	47		1	2	3	4
Initial PCN Issue Date			X											
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:**

**November 25, 2016:** Issued final 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\\_JAON-08RMMS268\\_Qual Report.pdf](#)

[PCN\\_JAON-08RMMS268\\_Affected CPN.pdf](#)

[PCN\\_JAON-08RMMS268\\_Affected CPN.xls](#)

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

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JAON-08RMMS268 - CCB 2697.001-.004 Final Notice: Qualification of CuPdAu wire in selected products of the 150K and 160K wafer technologies available in 28L QFN-S, 28L, 20L, and 16L QFN packages at MTAI site.

Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
AR1010-I/ML
AR1010T-I/ML
AR1011-I/ML
AR1011T-I/ML
AR1020-I/ML
AR1020T-I/ML
AR1021-I/ML
AR1021T-I/ML
DSPIC30F1010-20E/MM
DSPIC30F1010-30I/MM
DSPIC30F2010-20E/MM
DSPIC30F2010-20I/MM
DSPIC30F2010-30I/MM
DSPIC30F2010T-20E/MM
DSPIC30F2010T-20I/MM
DSPIC30F2010T-30I/MM
DSPIC30F2010T-30V/MMA31
DSPIC30F2011-20E/ML
DSPIC30F2011-20I/ML
DSPIC30F2011-30I/ML
DSPIC30F2012-20E/ML
DSPIC30F2012-20I/ML
DSPIC30F2012-30I/ML
DSPIC30F2012T-30I/ML
DSPIC30F2020-20E/MM
DSPIC30F2020-30I/MM
DSPIC30F2020T-30I/MM
MCP23016-I/ML
MCP23016T-I/ML
MCP23017-E/ML
MCP23017T-E/ML
MCP23S17-E/ML
MCP23S17T-E/ML
MCP4231-103E/ML
MCP4231-104E/ML
MCP4231-502E/ML
MCP4231-503E/ML
MCP4231T-103E/ML
MCP4231T-104E/ML
MCP4231T-502E/ML
MCP4231T-503E/ML
MCP4241-103E/ML
MCP4241-104E/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
MCP4241-502E/ML
MCP4241-503E/ML
MCP4241T-103E/ML
MCP4241T-104E/ML
MCP4241T-502E/ML
MCP4241T-503E/ML
MCP4251-103E/ML
MCP4251-104E/ML
MCP4251-502E/ML
MCP4251-503E/ML
MCP4251T-103E/ML
MCP4251T-104E/ML
MCP4251T-502E/ML
MCP4251T-503E/ML
MCP4261-103E/ML
MCP4261-104E/ML
MCP4261-502E/ML
MCP4261-503E/ML
MCP4261T-103E/ML
MCP4261T-104E/ML
MCP4261T-502E/ML
MCP4261T-503E/ML
MCP4331-103E/ML
MCP4331-104E/ML
MCP4331-502E/ML
MCP4331-503E/ML
MCP4331T-103E/ML
MCP4331T-104E/ML
MCP4331T-502E/ML
MCP4331T-503E/ML
MCP4341-103E/ML
MCP4341-104E/ML
MCP4341-502E/ML
MCP4341-503E/ML
MCP4341T-103E/ML
MCP4341T-104E/ML
MCP4341T-502E/ML
MCP4341T-503E/ML
MCP4351-103E/ML
MCP4351-104E/ML
MCP4351-502E/ML
MCP4351-503E/ML
MCP4351T-103E/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
MCP4351T-104E/ML
MCP4351T-502E/ML
MCP4351T-503E/ML
MCP4361-103E/ML
MCP4361-104E/ML
MCP4361-502E/ML
MCP4361-503E/ML
MCP4361T-103E/ML
MCP4361T-104E/ML
MCP4361T-502E/ML
MCP4361T-503E/ML
MCP4431-103E/ML
MCP4431-104E/ML
MCP4431-502E/ML
MCP4431-503E/ML
MCP4431T-103E/ML
MCP4431T-104E/ML
MCP4431T-502E/ML
MCP4431T-503E/ML
MCP4441-103E/ML
MCP4441-104E/ML
MCP4441-502E/ML
MCP4441-503E/ML
MCP4441T-103E/ML
MCP4441T-104E/ML
MCP4441T-502E/ML
MCP4441T-503E/ML
MCP4451-103E/ML
MCP4451-104E/ML
MCP4451-502E/ML
MCP4451-503E/ML
MCP4451T-103E/ML
MCP4451T-104E/ML
MCP4451T-502E/ML
MCP4451T-503E/ML
MCP4461-103E/ML
MCP4461-104E/ML
MCP4461-502E/ML
MCP4461-503E/ML
MCP4461T-103E/ML
MCP4461T-104E/ML
MCP4461T-502E/ML
MCP4461T-503E/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
MCP4631T-103E/ML
MCP4631T-104E/ML
MCP4631T-502E/ML
MCP4631T-503E/ML
MCP4641T-103E/ML
MCP4641T-104E/ML
MCP4641T-502E/ML
MCP4641T-503E/ML
MCP4651T-103E/ML
MCP4651T-104E/ML
MCP4651T-502E/ML
MCP4651T-503E/ML
MCP4661T-103E/ML
MCP4661T-104E/ML
MCP4661T-104QE/ML
MCP4661T-502E/ML
MCP4661T-503E/ML
MCP4661T-503QE/ML
PIC16F505-E/MG
PIC16F505-I/MG
PIC16F505T-E/MG
PIC16F505T-I/MG
PIC16F506-E/MG
PIC16F506-I/MG
PIC16F506T-E/MG
PIC16F506T-I/MG
PIC16F526-E/MG
PIC16F526-I/MG
PIC16F526T-I/MG
PIC16F527-E/ML
PIC16F527-I/ML
PIC16F527T-I/ML
PIC16F570-E/ML
PIC16F570-I/ML
PIC16F570T-I/ML
PIC16F610-E/ML
PIC16F610-I/ML
PIC16F610T-E/ML
PIC16F610T-I/ML
PIC16F616-E/ML
PIC16F616-H/ML
PIC16F616-I/ML
PIC16F616T-E/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
PIC16F616T-E/MLC07
PIC16F616T-I/ML
PIC16F616T-I/ML034
PIC16F616T-I/ML042
PIC16F616T-I/ML066
PIC16F627A-E/ML
PIC16F627A-I/ML
PIC16F627AT-I/ML
PIC16F628A-E/ML
PIC16F628A-I/ML
PIC16F628AT-E/ML
PIC16F628AT-I/ML
PIC16F630-E/ML
PIC16F630-I/ML
PIC16F630T-I/ML
PIC16F630T-I/ML079
PIC16F631-E/ML
PIC16F631-I/ML
PIC16F631T-I/ML
PIC16F636-I/ML
PIC16F636T-I/ML
PIC16F636T-I/ML037
PIC16F648A-E/ML
PIC16F648A-I/ML
PIC16F648AT-E/ML
PIC16F648AT-I/ML
PIC16F676-E/ML
PIC16F676-I/ML
PIC16F676T-I/ML
PIC16F677-E/ML
PIC16F677-I/ML
PIC16F677T-I/ML
PIC16F677T-I/ML035
PIC16F677T-I/ML037
PIC16F684-E/ML
PIC16F684-I/ML
PIC16F684T-I/ML
PIC16F684T-I/ML065
PIC16F684T-I/ML070
PIC16F685-E/ML
PIC16F685-I/ML
PIC16F685T-E/ML
PIC16F685T-I/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
PIC16F687-E/ML
PIC16F687-E/ML034
PIC16F687-I/ML
PIC16F687T-E/ML
PIC16F687T-I/ML
PIC16F688-E/ML
PIC16F688-I/ML
PIC16F688T-I/ML
PIC16F688T-I/MLAPL
PIC16F689-E/ML
PIC16F689-I/ML
PIC16F689T-E/ML
PIC16F689T-I/ML
PIC16F690-E/ML
PIC16F690-I/ML
PIC16F690T-E/ML
PIC16F690T-I/ML
PIC16F690T-I/MLC12
PIC16F72-E/ML
PIC16F72-I/ML
PIC16F72T-I/ML
PIC16F737-E/ML
PIC16F737-I/ML
PIC16F737T-I/ML
PIC16F73-E/ML
PIC16F73-I/ML
PIC16F73T-I/ML
PIC16F753-E/ML
PIC16F753-I/ML
PIC16F753T-I/ML
PIC16F767-E/ML
PIC16F767-I/ML
PIC16F767T-E/ML
PIC16F767T-I/ML
PIC16F76-I/ML
PIC16F76T-I/ML
PIC16F785-E/ML
PIC16F785-I/ML
PIC16F785-I/MLC15
PIC16F785T-E/ML
PIC16F785T-I/ML
PIC16F785T-I/ML045
PIC16F785T-I/ML047



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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
PIC16F785T-I/MLC15
PIC16F818-E/ML
PIC16F818-I/ML
PIC16F818T-I/ML
PIC16F819-E/ML
PIC16F819-I/ML
PIC16F819T-E/ML
PIC16F819T-I/ML
PIC16F873A-E/ML
PIC16F873A-I/ML
PIC16F873AT-I/ML
PIC16F876A-E/ML
PIC16F876A-I/ML
PIC16F876AT-E/ML
PIC16F876AT-I/ML
PIC16F87-I/ML
PIC16F882-E/ML
PIC16F882-I/ML
PIC16F882T-I/ML
PIC16F883-E/ML
PIC16F883-I/ML
PIC16F883T-E/ML
PIC16F883T-I/ML
PIC16F883T-I/ML031
PIC16F886-E/ML
PIC16F886-I/ML
PIC16F886T-E/ML
PIC16F886T-I/ML
PIC16F886T-I/MLC06
PIC16F88-E/ML
PIC16F88-I/ML
PIC16F88T-I/ML
PIC16F913-E/ML
PIC16F913-I/ML
PIC16F913T-I/ML
PIC16F916-E/ML
PIC16F916-I/ML
PIC16F916T-I/ML
PIC16F916T-I/MLC02
PIC16HV610-E/ML
PIC16HV610-I/ML
PIC16HV610T-I/ML
PIC16HV616-E/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
PIC16HV616-I/ML
PIC16HV616T-E/ML
PIC16HV616T-I/ML
PIC16HV753-E/ML
PIC16HV753-I/ML
PIC16HV753T-I/ML
PIC16HV785-E/ML
PIC16HV785-I/ML
PIC16HV785T-E/ML
PIC16HV785T-I/ML
PIC16LF627A-I/ML
PIC16LF627AT-I/ML
PIC16LF628A-I/ML
PIC16LF628AT-I/ML
PIC16LF648A-I/ML
PIC16LF648AT-I/ML
PIC16LF72-I/ML
PIC16LF72-I/ML026
PIC16LF72T-I/ML
PIC16LF737-I/ML
PIC16LF73-I/ML
PIC16LF73T-I/ML
PIC16LF767-I/ML
PIC16LF767T-I/ML
PIC16LF76-I/ML
PIC16LF76T-I/ML057
PIC16LF818-I/ML
PIC16LF818T-I/ML
PIC16LF819-I/ML
PIC16LF819T-I/ML
PIC16LF873A-I/ML
PIC16LF873AT-I/ML
PIC16LF876A-I/ML
PIC16LF876AT-I/ML
PIC16LF87-I/ML
PIC16LF88-I/ML
PIC16LF88T-I/ML
PIC18F1220-E/ML
PIC18F1220-H/ML
PIC18F1220-I/ML
PIC18F1220T-I/ML
PIC18F1230-E/ML
PIC18F1230-I/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
PIC18F1230-I/MLXXX
PIC18F1320-E/ML
PIC18F1320-H/ML
PIC18F1320-I/ML
PIC18F1320T-I/ML
PIC18F1330-E/ML
PIC18F1330-I/ML
PIC18F1330-I/MLXXX
PIC18F1330-ICD/ML
PIC18F2221-E/ML
PIC18F2221-I/ML
PIC18F2221T-I/ML
PIC18F2321-E/ML
PIC18F2321-I/ML
PIC18F2331-E/MM
PIC18F2331-I/MM
PIC18F2331T-I/MM
PIC18F2410-E/ML
PIC18F2410-I/ML
PIC18F2420-E/ML
PIC18F2420-I/ML
PIC18F2420T-E/ML
PIC18F2420T-I/ML
PIC18F2423-E/ML
PIC18F2423-I/ML
PIC18F2423T-I/ML
PIC18F2431-E/MM
PIC18F2431-I/MM
PIC18F2431T-E/MM
PIC18F2431T-I/MM
PIC18F2450-I/ML
PIC18F2450T-I/ML
PIC18F2480-E/ML
PIC18F2480-I/ML
PIC18F2480-I/MLC01
PIC18F2480T-E/ML
PIC18F2480T-I/ML
PIC18F2510-E/ML
PIC18F2510-I/ML
PIC18F2510T-E/ML
PIC18F2510T-I/ML
PIC18F2520-E/ML
PIC18F2520-I/ML

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Affected Catalog Part Numbers (CPN)

PCN_JAON-08RMMS268
CATALOG_PART_NBR
PIC18F2520T-I/ML
PIC18F2523-E/ML
PIC18F2523-I/ML
PIC18F2523T-I/ML
PIC18F2580-E/ML
PIC18F2580-I/ML
PIC18F2580T-E/ML
PIC18F2580T-I/ML
PIC18LF1220-I/ML
PIC18LF1230-I/ML
PIC18LF1320-I/ML
PIC18LF1320T-I/ML
PIC18LF1330-I/ML
PIC18LF2221-I/ML
PIC18LF2321-I/ML
PIC18LF2321T-I/ML
PIC18LF2331-I/MM
PIC18LF2331T-I/MM
PIC18LF2410-I/ML
PIC18LF2410T-I/ML
PIC18LF2420-I/ML
PIC18LF2420T-I/ML
PIC18LF2420T-I/ML025
PIC18LF2423-I/ML
PIC18LF2423T-I/ML
PIC18LF2431-I/MM
PIC18LF2431T-I/MM
PIC18LF2450-I/ML
PIC18LF2450T-I/ML206
PIC18LF2480-I/ML
PIC18LF2480T-I/ML
PIC18LF2510-I/ML
PIC18LF2510T-I/ML
PIC18LF2520-I/ML
PIC18LF2520T-I/ML
PIC18LF2523-I/ML
PIC18LF2523T-I/ML
PIC18LF2580-I/ML



**MICROCHIP**

**QUALIFICATION REPORT  
RELIABILITY LABORATORY**

**PCN #: JAON-08RMMS268**

**Date**

**September 13, 2016**

**Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 150K and 160K wafer technologies available in 44L QFN (8x8x0.9mm) package at MTAI assembly site. The selected products of the 150K and 160K wafer technologies available in 28L QFN-S (6x6mm), 28L QFN (6x6mm), 20L QFN (4x4mm), 16L QFN (4x4mm) and 16L QFN (3x3mm) packages will qualify by similarity at MTAI assembly site.**

Distribution

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J. Fernandez

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Fax (+66 38) 857149-50



## MICROCHIP PACKAGE QUALIFICATION REPORT

**Purpose** Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 150K and 160K wafer technologies available in 44L QFN (8x8x0.9mm) package at MTAI assembly site. The selected products of the 150K and 160K wafer technologies available in 28L QFN-S (6x6mm), 28L QFN (6x6mm), 20L QFN (4x4mm), 16L QFN (4x4mm) and 16L QFN (3x3mm) packages will qualify by similarity at MTAI assembly site.

**CN** BC161118  
**QUAL ID** Q16131  
**MP CODE** DECH1YT3XAXF  
**Part No.** PIC18F4520T-E/ML  
**Bonding No.** BDM-001126 Rev. A  
**CCB No.** 2697

### Package

**Type** 44L QFN  
**Package size** 8x8x0.9 mm  
**Die thickness** 11 mils  
**Die size** 145.70 x 146.90 mils

### Lead Frame

**Paddle size** 272 x 272 mils  
**Material** C194  
**Surface** Bare Cu on paddle  
**Process** Etched  
**Lead Lock** No  
**Part Number** 10104411  
**Treatment** Brown Oxide Treatment

### Die attach material

**Epoxy** 3280  
**Wire** CuPdAu wire  
**Mold Compound** G700LTD  
**Plating Composition** Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI171501785.000	TMPE216358668.600	1627R74
MTAI171602651.000	TMPE216358668.600	16285RB
MTAI171602713.000	TMPE216358668.600	1628659

### Result

Pass  Fail  \_\_\_\_\_

44L QFN (8x8x0.9) assembled by MTAI pass reliability test per QCI-39000.  
This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard.

Prepared By: *Thinnapol* Date: September 13, 2016 (Sr.Reliability Engineer)

(Mr.Thinnapol Nakkasun)

Approved By: *Somnuek* Date: September 13, 2016 (Reliability Manager)

(Mr. Somnuek Thongprasert)

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b>Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)</b>	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243  ( IPC/JEDEC J-STD-020D)	IPC/JEDEC C J-STD- 020D	135	0/135	Pass	

<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test</b> :+25°C and 125°C System: J750	JESD22- A113	693(0)	693	Pass	Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	<b>Electrical Test</b> :+25°C and 125°C System: J750			0/693		



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Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard) 65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H  <b>Electrical Test:</b> + 125°C System: J750  <b>Bond Strength:</b> Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	JESD22-A104		231		Parts had been pre-conditioned at 260°C  77 units / lot
			231(0)	0/231	Pass	
			15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. System: HAST 6000X  <b>Electrical Test:</b> +25°C System: J750	JESD22-A118		231		Parts had been pre-conditioned at 260°C  77 units / lot
			231(0)	0/231	Pass	

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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: HAST 6000X	JESD22- A118		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22- A103		45		45 units
	<b>Electrical Test</b> :+25°C and 125°C System: J750		45(0)	0/45	Pass	
<b>Bond Strength</b>	Wire Pull (>2.5 grams)	M2011	30 (0) Wires	0/30	Pass	
	<b>Data Assembly</b> Bond Shear (>15.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass	