Product Change Notification / GBNG-16BGIH897

Date:

07-Dec-2021

Product Category:

Ethernet Bridges, USB Hubs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4628 and 4628.001 Final Notice: Qualification of STA as an additional assembly site for selected LAN9500A, USB2512B, USB2513B, USB2514B and USX2064 device families available in 56L VQFN (8x8x0.9mm) and 36L VQFN (6x6x1.0mm) packages.

Affected CPNs:

GBNG-16BGIH897_Affected_CPN_12072021.pdf
GBNG-16BGIH897_Affected_CPN_12072021.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 STA as an additional assembly site for selected LAN9500A, USB2512B, USB2513B, USB2514B and USX2064 device families available in 56L VQFN (8x8x0.9mm) and 36L VQFN (6x6x1.0mm) packages.

Pre and Post Change Summary:

		Pre Change		**Post Change**		
Assembly Site		ASE Inc. (ASE)		ASE Inc. (ASE)		STATS Chippac Ltd. (STA)
Wire material	56L VQFN	PdCu	CuPdAu	PdCu	CuPdAu	CuPdAu
	36L VQFN	PdCu	Au	PdCu	Au	
Die attach material		EN-4900F		EN-4900F		8290
Molding compound material		G631B		G631B		G700E
Lead frame	**Material**	C194		C194		C194
	Paddle size	240 x 240 mils Note 1 154 x 154 mils Note 2		240 x 240 mils Note 1 154 x 154 mils Note 2		236 x 236 mils Note 1 169 x 169 mils Note 2
	Design	See attached Pre and Post Change comparison.				

Note 1: Applicable for 56L VQFN package.

Note 2: Applicable for 36L VQFN package.

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying STA as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: October 31, 2021 (date code: 2145)

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

Time Table Summary:

	May 2021					**>**	**October 2021**					**>**	**December 2021**				
Workweek	19	20	21	22	23		41	42	43	44	45		49	50	51	52	53
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: May 12, 2021: Issued initial notification.

October 8, 2021: Issued final notification. Provided estimated first ship date to be on October 31, 2021. Updated the estimated qualification completion date from August 2021 to December 2021..
December 7, 2021: Reissued final notification. Attached the Qualification Report.

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

Attachments:

PCN_GBNG-16BGIH897_Qual Report.pdf
PCN_GBNG-16BGIH897-Pre and Post Change Summary.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.

CCB 4628 and 4628.001
Pre and Post Change Summary
PCN #: GBNG-16BGIH897

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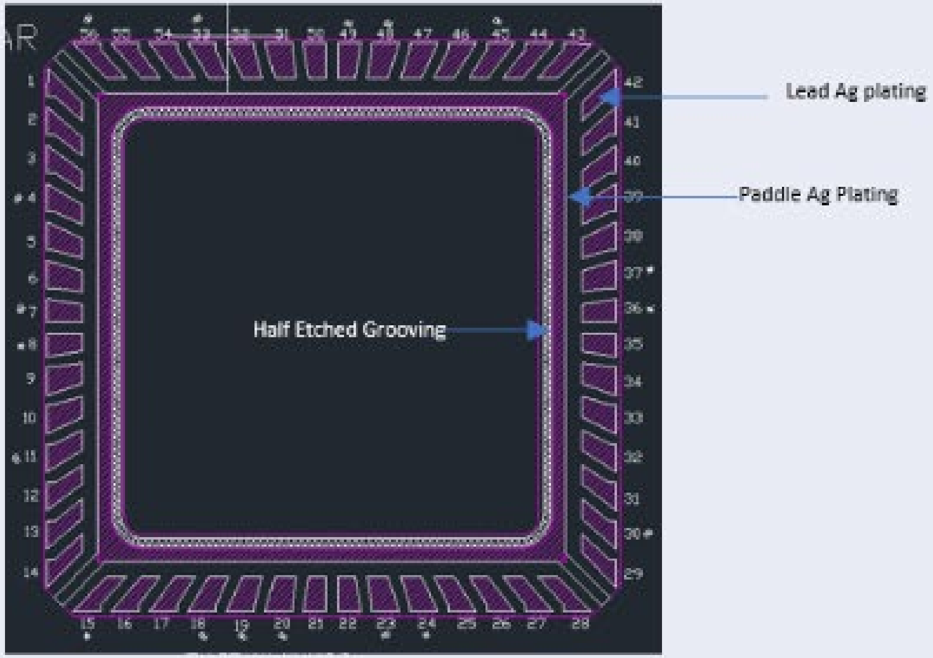
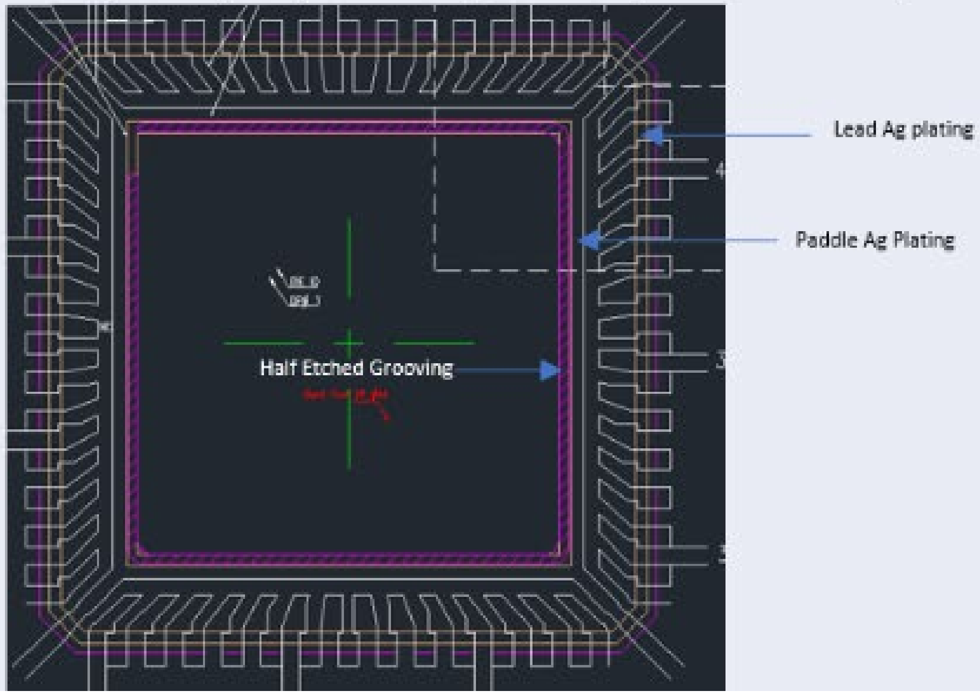
SMART | CONNECTED | SECURE

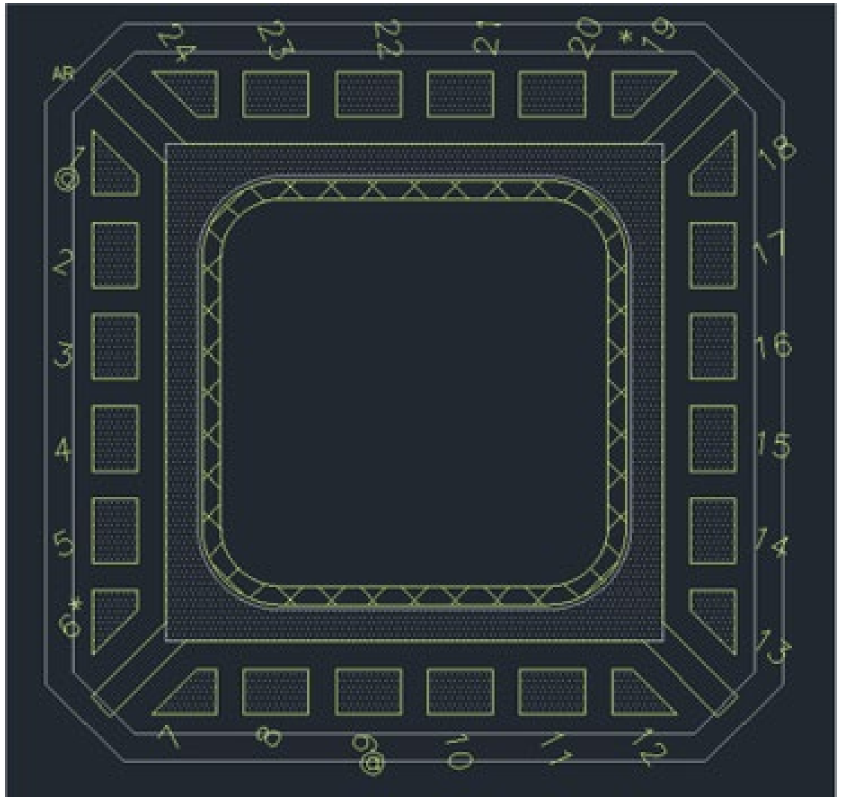
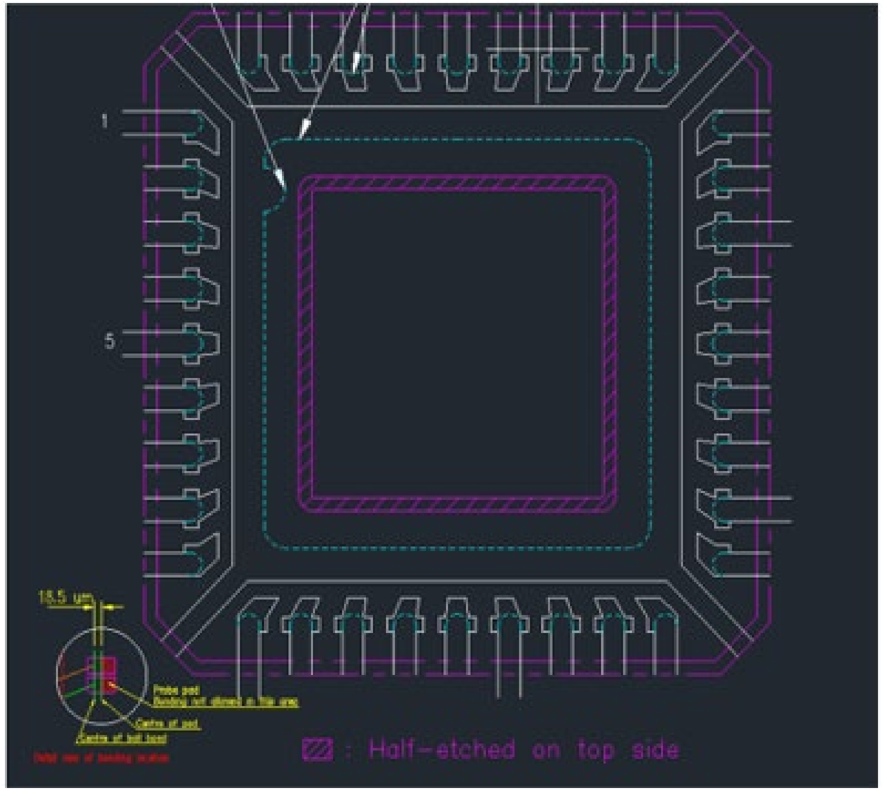
Lead frame Comparison
56L VQFN

ASE	STA
LF Definition – Double Ring Plating	LF Definition – Double Ring Plating
*Plating on Lead finger and plating surrounding LF Paddle (Purple shaded area)	*Plating on Lead finger and plating surrounding LF Paddle (Yellow outline area)





Lead frame Comparison
36L VQFN

ASE	STA
	

-IDT Part No-
F1455NKGK
F1455NKGK8

Affected Catalog Part Numbers (CPN)

USB2512B-AEZG
USB2513B-AEZG
USB2513B-AEZC
USB2514B-AEZG
USB2514B-AEZC
USB2512BI-AEZG
USB2513BI-AEZG
USB2514BI-AEZG
USB2512B-AEZG-TR
USB2513B-AEZG-TR-CD0
USB2513B-AEZG-TR
USB2513B-AEZC-TR
USB2514B-AEZG-TR
USB2514B-AEZC-TR
USX2064-AEZG-TR
USB2512BI-AEZG-TR
USB2513BI-AEZG-TR
USB2514BI-AEZG-TR
USX2064I-AEZG-TR
LAN9500A-ABZJ
LAN9500AI-ABZJ
LAN9500A-ABZJ-TR
LAN9500AI-ABZJ-TR
LAN9500AI-ABZJ-TR-SEU

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: GBNG-16BGIH897

Date:
November 15, 2021

Qualification of STA as an additional assembly site for selected LAN9500A, USB2512B, USB2513B, USB2514B and USX2064 device families available in 56L VQFN (8x8x0.9mm) and 36L VQFN (6x6x1.0mm) packages.

MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of STA as an additional assembly site for selected LAN9500A, USB2512B, USB2513B, USB2514B and USX2064 device families available in 56L VQFN (8x8x0.9mm) and 36L VQFN (6x6x1.0mm) packages.
CCB	4628 and 4628.001
CN	ES361343
QUAL ID	R2100819 Rev. A
MP CODE	XG571SRTXB0C
Part No.	LAN9500A-ABZJ-TR
Bonding No.	BDM-002967 Rev. A
Package	
Type	56L VQFN
Package size	8x8x0.9 mm
Lead Frame	
Paddle size	236 x 236 mils
Material	C194
Surface	Double Ring
Process	Etched
Lead Lock	No
Part Number	R002-3646X
Material	
Epoxy	8290
Wire	CuPdAu wire
Mold Compound	G700E
Plating Composition	Matte Sn

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
STA-221300020.000	GF07922071569.100	21256RJ
STA-221300022.000	GF07922071569.100	21266RQ
STA-221300021.000	GF07922071569.100	21256RK

Result ☒ Pass ☐ Fail ☐ ____________________

56L VQFN (8x8x0.9 mm) assembled by STA pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 3)	**Electrical Test:** +25°C and 100°C System: EX_ANALOG	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test: +25°C and 100°C System: EX_ANALOG			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +100°C System: EX_ANALOG		231(0)	0/231	Pass	77 units / lot
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +100°C System: EX_ANALOG		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 3.00 grams)		15 (0)	0/15	Pass	
	Bond Shear (> 8.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: EX_ANALOG		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: EX_ANALOG		231(0)	0/231	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test: +25°C and 100°C System: EX_ANALOG		45(0)	0/45	Pass	
Solderability **Temp 245°C**	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 3.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (> 8.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	