

PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	EMBEDDED PROCESSING/26/16069	
1.3 Title of PCN	Amkor ATP (Philippines) LQFP 14x14 package Copper Palladium bonding wire introduction on STM32G47x and STM32G48x listed products.	
1.4 Product Category	STM32G471x, STM32G473x, STM32G474x, STM32G483x and STM32G484x.	
1.5 Issue date	2026-06-30	

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	SCHAEFER MARC
2.1.2 Phone	+49 89460062136
2.1.3 Email	marc.schaefer@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Patrick AIDOUNE
2.1.2 Marketing Manager	Marie TOURNUT
2.1.3 Quality Manager	Pascal NARCHE

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Materials	Direct Material: Bond Wire - Metallurgy (metallic composition/ raw material)	Amkor ATP (Philippines)

4. Description of change

	Old	New
4.1 Description	Current Wire bonding material: - ASE KaoHsiung (Taiwan) gold wire - Amkor ATP (Philippines) gold wire	Current Wire bonding material: - ASE KaoHsiung (Taiwan) gold wire - Amkor ATP (Philippines) gold wire New Wire bonding material : - Amkor ATP (Philippines) copper palladium wire
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	no impact on form, Fit, Function	

5. Reason / motivation for change

5.1 Motivation	To improve service
5.2 Customer Benefit	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change

6.1 Description	Traceability ensured by ST Internal tools
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7. Timing / schedule

7.1 Date of qualification results	2026-06-26
7.2 Intended start of delivery	2026-09-28
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	16069 MDRF-GPM-RER2312 V4.0 PCN14039_16069_ ATP LQFP14 LQFP20 - CuPd RER.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2026-06-30

9. Attachments (additional documentations)
16069 Public product.pdf 16069 MDRF-GPM-RER2312 V4.0 PCN14039_16069_ATP LQFP14 LQFP20 - CuPd RER.pdf 16069 _Additional information.pdf

10. Affected parts		
10. 1 Current		10.2 New (if applicable)
10.1.1 Customer Part No	10.1.2 Supplier Part No	10.1.2 Supplier Part No
	STM32G473QCT6	
	STM32G473QET3	
	STM32G473QET6	
	STM32G473QET6TR	
	STM32G474QBT6	
	STM32G474QCT6	
	STM32G474QET3	
	STM32G474QET3TR	
	STM32G474QET6	
	STM32G474QET6TR	
	STM32G483QET6	
	STM32G484QET6	

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Public Products List

Public Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

PCN Title : Amkor ATP (Philippines) LQFP 14x14 package Copper Palladium bonding wire introduction on STM32G47x and STM32G48x listed products.

PCN Reference : EMBEDDED PROCESSING/26/16069

Subject : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

STM32G473QCT3TR	STM32G484QET3	STM32G474QBT6
STM32G473QCT3	STM32G473QET6TR	STM32G473QET6
STM32G473QCT6	STM32G483QET6	STM32G484QET6
STM32G474QCT6	STM32G474QET6TR	STM32G473QBT6
STM32G474QET6	STM32G484QET6TR	

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**PRODUCT/PROCESS
CHANGE NOTIFICATION
PCN16069
– Additional information**

Amkor ATP (Philippines) LQFP 14x14 package Copper Palladium bonding wire introduction on STM32G47x and STM32G48x listed products.

MRDF – General Purpose and Automotive Microcontrollers (GPAM)

What are the changes?

Introduction of an additional assembly line to continue our path through the deployment of our Low-cost wire strategy to secure our supply chain.

Table_1: Bill of material change description for LQFP 128L 14x14 package

LQFP 128L 14x14	Existing back-End assembly lines		New Added line
	ASE Kaohsiung (Taiwan)	Amkor ATP (Philippines)	
Molding Compound ⁽²⁾	Sumitomo G631SH	Sumitomo G631HQ	
Die attach Glue	Sumitomo CRM 1076WA	Evertch AP4200	Ablestick 3230
Bonding Wire	Gold 0.8 Mils		CuPd 0.8 Mils
Leadframe	Copper, post-plated		
Leadfinishing ⁽¹⁾	Pure Tin (e3)		
Marking composition	2D Marking		

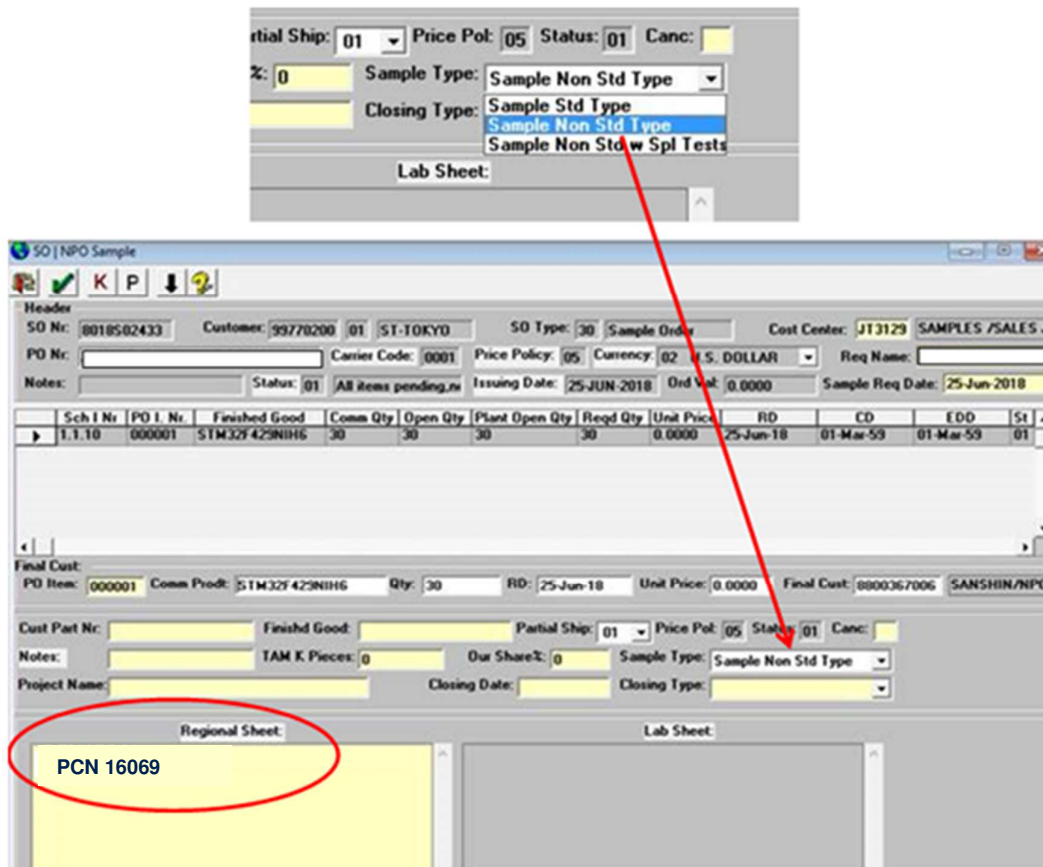
⁽¹⁾ Lead color and surface finishing may slightly vary depending on lead finishing.

⁽²⁾ Package darkness or chromaticity may change depending on molding compound.
Pin1 identifier may change in terms of size and positioning however remaining near pin1's edge.
Marking position and size may be different upon assembly site, without any loss of information.

How to order samples?

For all samples request linked to this PCN, please:

- place a **Non-standard** sample order (choose Sample Non Std Type from pull down menu).
- insert the PCN number "**PCN16069**" into the NPO Electronic Sheet/**Regional Sheet**.
- request sample(s) through Notice tool, indicating a single Commercial Product for each request.



The screenshot displays the 'NPO Sample' software interface. At the top, a dropdown menu for 'Sample Type' is open, showing options: 'Sample Std Type', 'Sample Non Std Type' (highlighted), and 'Sample Non Std w Spl Tests'. A red arrow points from this menu to the 'Sample Type' field in the 'Regional Sheet' section below. In the 'Regional Sheet' section, the text 'PCN 16069' is circled in red. The interface also shows various fields for 'SO No.', 'Customer', 'Carrier Code', 'Price Policy', 'Currency', 'Issuing Date', 'Ord Val', 'Sample Req Date', 'Final Cust', 'Cust Part No.', 'Finished Good', 'Partial Ship', 'Price Pol', 'Status', 'Canc', 'Notes', 'TAM K Pieces', 'Our Share%', 'Closing Date', and 'Closing Type'.

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Reliability Evaluation Report

MDG-GPM-RER2312

AMKOR ATP1 LQFP14x14 - LQFP20x20 Copper wire introduction and standardization to post plated leadframes on listed products

PCN 14039 – 14886 - 16069

General Information	
Commercial Product	STM32F427VGT6 STM32L4R9VIT6 STM32F402VCT6 STM32F469ZIT6 STM32L496ZGT6 STM32H743ZIT6 STM32G474QET6
Product Line	419X66, 470X66, 423X66, 434X66, 461X66, 450X66, 469X66
Die revision	419 cut 2.2 470 cut 1.5 423 cut 1.1 434 cut 1.0 461 cut 2.0 450 cut 2.2 469 cut 2.3
Product Description	STM32F4, STM32L4 STM32H7, STM32G4
Package	LQFP 100 14x14x1.4 LQFP 144 20x20x1.4 LQFP 128 14x14x1.4
Silicon Technology	CMOSM10, TN090, M40
Division	MDRF-GPAM

Traceability	
Diffusion Plant	Crolles300, TSMC Fab14, AG300
Assembly Plant	SC AMKOR ATP1 - PHILIPPINES

Reliability Assessment	
Pass	X
Fail	

Release	Date	Author	Function
1.0	29 th September 2023	Gabin Bosco	GPM BE Q&R
2.0	7 th Mai 2024	Gabin Bosco	GPM BE Q&R
3.0	26 th July 2024	Gabin Bosco	GPM BE Q&R
4.0	18 th June 2026	Céline Navarro	GPAM BE Q&R

Approved by:

Version	Name	Function	Location	Date
1.0	Berengere ROUTIER-SCAPPUCCI	GPM BE Q&R Manager	ROUSSET	2 nd October 2023
	Pascal NARCHE	Subgroup Quality Manager	ROUSSET	2 nd October 2023
2.0	Pascal NARCHE	Subgroup Quality Manager	ROUSSET	7 th May 2024
3.0	Berengere ROUTIER SCAPPUCCI	GPM BE Q&R Manager	ROUSSET	2 st August 2024
4.0	Berengere ROUTIER SCAPPUCCI	GPAM BE Q&R Manager	ROUSSET	24 th June 2026

This report is a summary of the reliability trials performed in good faith by STMicroelectronics. This report does not imply for STMicroelectronics expressly or implicitly any contractual obligations other than as set forth in STMicroelectronics General Terms and Conditions of Sale.

RELIABILITY EVALUATION OVERVIEW

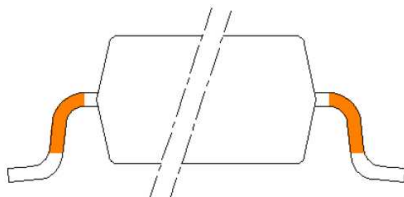
• OBJECTIVE

The aim of this report is to present the reliability evaluation performed for the qualification of ATP1 (Philippines) LQFP14x14 to 20x20 assembly line with copper wires on techno N90 TSMC/Crolles, M10 Crolles/TSMC, M40 Crolles and E40 Crolles by similarity as BEOL and pad geometry is covered by M40.

PCN14039 changes are described here below:

	Existing back-end line	Added back-end line
Assembly line	AMKOR ATP (Philippines)	
Leadframe	Pre-plated (PPF) Leadfinishing e4 (1)	Post-Plated (DR) Leadfinishing e3
Epoxy ⁽²⁾	CRM-1076YB (Sumitomo)	3230 (Henkel)
Wire	Gold 0.8mil	Copper Palladium (0.8mil)
Marking composition	Without 2D With e4	With 2D Marking With e3

⁽¹⁾ Lead color and surface finish change depending on leadfinishing.



⁽²⁾ Package darkness changes depending on molding compound. Pin1 identifier can change in terms of form and positioning. Marking position and size could be different upon assembly site, without any loss of information.

PCN14886 changes are described here below:

	Existing back-end line		Added back-end line	
Assembly line	ASE Kaohsiung (Taiwan)		AMKOR ATP (Philippines)	
Die attach material	Sumitomo CRM 1076WA	HITACHI EN4900G	Evertech AP4200 Ablestik 3230	Ablestik 3230
Wire	Gold 0.8mil	CuPd 0.8mil	Gold 0.8mil	CuPd 0.8mil
Marking composition	Without 2D	With 2D Marking	Without 2D	With 2D Marking

PCN16069 changes are described here below:

Table_1: Bill of material change description for LQFP 128L 14x14 package

LQFP 128L 14x14	Existing back-End assembly lines		New Added line
	ASE Kaohsiung (Taiwan)	Amkor ATP (Philippines)	
Molding Compound ⁽²⁾	Sumitomo G631SH	Sumitomo G631HQ	
Die attach Glue	Sumitomo CRM 1076WA	Evertch AP4200	Ablestick 3230
Bonding Wire	Gold 0.8 Mils		CuPd 0.8 Mils
Leadframe	Copper, post-plated		
Leadfinishing ⁽¹⁾	Pure Tin (e3)		
Marking composition	2D Marking		

⁽¹⁾ Lead color and surface finishing may slightly vary depending on lead finishing.

⁽²⁾ Package darkness or chromaticity may change depending on molding compound.
Pin1 identifier may change in terms of size and positioning however remaining near pin1's edge.
Marking position and size may be different upon assembly site, without any loss of information.

● CONCLUSION

All reliability tests have been completed with positive results. Neither functional nor parametric rejects were detected at final electrical testing.

Package oriented tests have not put in evidence any criticality. Physical analysis performed on samples submitted to tests has not put in evidence any issue. ESD CDM are in accordance with ST spec.

Based on the overall results obtained, products below have positively passed reliability evaluation:

Line code	Commercial product	Diff plant	Assy plant
419X66	STM32F427VG	TSMC FAB14	SC AMKOR ATP1
470X66	STM32L4R9VI	TSMC FAB14	
423X66	STM32F402VC	Crolles 300	
434X66	STM32F469ZI	Crolles 300	
461X66	STM32L496ZG	TSMC FAB14	
450X66	STM32H743ZIT6	Crolles 300	
469X66	STM32G474QET6	Crolles 300	

According to good reliability tests results in line with validated product mission profile and reliability strategy, the qualification is granted for all products with same silicon technology (TSMC N90/M40, Crolles M10/M40/E40/N90, Agrate N90) as Test vehicles in LQFP100 14x14, LQFP144 20x20 and LQFP128 14x14 at ATP1 (Amkor - Philippines) in copper-palladium wire.

Refer to Section 3.0 for reliability test results.

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1. RELIABILITY STRATEGY

Reliability trials performed as part of this reliability evaluation are in agreement with ST 0061692 specification, in full compliancy with the JESD-47 international standard.

As Crolles 300 and Agrate 300 share same FE manufacturing process and same technology structure N90, Agrate is qualified by similarity.

For details on test conditions, generic data used and specifications references, refer to test results summary in section 3.

2. PRODUCT OR TEST VEHICLE CHARACTERISTICS

2.1. Generalities

Package line	Partial rawline code	Number of lots
LQFP 100 14x14x1.4	1L*419	1
	1L*470	1
	1L*423	1
LQFP144 20x20x1.4	1A*434	1
	1A*461	1
	1A*450	1
LQFP128 14x14x1.4	TC*469	1

2.2. Traceability

2.2.1. Wafer Fab Information

Die 419

Wafer Fab Information		
FAB1		
Wafer fab name / location	TSMC Fab14 DIFF / Taiwan	
Wafer diameter (inches)	12	
Wafer thickness (μm)	775± 25	
Silicon process technology	CMOSM10	
Number of masks	42	
Die finishing front side (passivation) materials / thickness (μm)	USG + NITRIDE/ 1.9μm	
Die finishing back side Materials	RAW SILICON	
Die area (Stepping die size)	25.43 mm ² (5582 μm, 4556 μm)	
Die pad size	Geometry	Open(X,Y)
	Rectangular	59,123 μm
Sawing street width (X,Y) (μm)	80,80	

Reliability Evaluation Report

Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	TaN/Ta/CuSeed/Cu	0.22 μm
	2	TaN/Ta/CuSeed/Cu	0.28 μm
	3	TaN/Ta/CuSeed/Cu	0.28 μm
	4	TaN/Ta/CuSeed/Cu	0.28 μm
	5	TaN/Ta/CuSeed/Cu	0.28 μm
	6	Ta/TaN/AlCu	0.73 μm
	7	AlCu	1.2 μm

Die 470

Wafer Fab Information			
FAB1			
Wafer fab name / location	TSMC Fab14 DIFF / Taiwan		
Wafer diameter (inches)	12		
Wafer thickness (μm)	775 $\pm$ 25		
Silicon process technology	TN090		
Number of masks	46		
Die finishing front side (passivation) materials / thickness	PSG+NITRIDE / 1.9 μm		
Die finishing back side Materials	RAW SILICON		
Die area (Stepping die size)	27.685 mm ² (5259.6 μm , 5263.8 μm)		
Die pad size	Geometry		Open(X,Y)
	Rectangular		123,59 μm
Sawing street width (X,Y) (μm)	80,80		
Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	TaN/Ta/CuSeed/Cu	0.24 μm
	2	TaN/Ta/CuSeed/Cu	0.31 μm
	3	TaN/Ta/CuSeed/Cu	0.31 μm
	4	TaN/Ta/CuSeed/Cu	0.31 μm
	5	TaN/Ta/CuSeed/Cu	0.31 μm
	6	TaN/Ta/CuSeed/Cu	0.85 μm
	7	AlCu	1.45 μm

Die 423

Wafer Fab Information			
FAB1			
Wafer fab name / location	Crolles 300/France		
Wafer diameter (inches)	12		
Wafer thickness (μm)	775±25		
Silicon process technology	CMOSM10ULP		
Number of masks	44		
Die finishing front side (passivation) materials / thickness	PSG + NITRIDE/ 1.1μm		
Die finishing back side Materials	RAW SILICON		
Die area (Stepping die size)	9,000 mm² (3000 μm, 3000 μm)		
Die pad size	Geometry		Open(X,Y)
	Rectangular		59,123 μm
Sawing street width (X,Y) (μm)	80,80		
Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	TaN/CuSeed/Cu	0.24 μm
	2	TaN/CuSeed/Cu	0.33 μm
	3	TaN/CuSeed/Cu	0.33 μm
	4	TaN/CuSeed/Cu	0.33 μm
	5	TaN/CuSeed/Cu	0.33 μm
	6	TaN/CuSeed/Cu	0.85 μm
	7	AlCu/TinArc	1.45 μm

Die 434

Wafer Fab Information			
FAB1			
Wafer fab name / location	Crolles 300/France		
Wafer diameter (inches)	12		
Wafer thickness (µm)	775±25		
Silicon process technology	CMOSM10ULP		
Number of masks	43		
Die finishing front side (passivation) materials	PSG + NITRIDE/ 1.1µm		
Die finishing back side Materials	RAW SILICON		
Die area (Stepping die size)	28,24 mm² (5730 µm, 4928 µm)		
Die pad size	Geometry		Open(X,Y)
	Rectangular		59,123 µm
Sawing street width (X,Y) (µm)	80,80		
Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	TaN/CuSeed/Cu	0.24 µm
	2	TaN/CuSeed/Cu	0.33 µm
	3	TaN/CuSeed/Cu	0.33 µm
	4	TaN/CuSeed/Cu	0.33 µm
	5	TaN/CuSeed/Cu	0.33 µm
	6	TaN/CuSeed/Cu	0.85 µm
	7	AlCu/TinArc	1.45 µm

Reliability Evaluation Report

Die 461

Wafer Fab Information			
FAB1			
Wafer fab name / location	TSMC Fab14 DIFF / Taiwan		
Wafer diameter (inches)	12		
Wafer thickness (µm)	775±25		
Silicon process technology	TN090CE		
Number of masks	45		
Die finishing front side (passivation) materials	PSG + NITRIDE/ 1µm		
Die finishing back side Materials	RAW SILICON		
Die area (Stepping die size)	19,438 mm² (4177,2 µm, 4653,4 µm)		
Die pad size	Geometry	Open(X,Y)	
	Rectangular	123,59 µm	
Sawing street width (X,Y) (µm)	80,80		
Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	TaN/Ta/CuSeed/Cu	0.24 µm
	2	TaN/Ta/CuSeed/Cu	0.31 µm
	3	TaN/Ta/CuSeed/Cu	0.31 µm
	4	TaN/Ta/CuSeed/Cu	0.31 µm
	5	TaN/Ta/CuSeed/Cu	0.31 µm
	6	TaN/Ta/CuSeed/Cu	0.85 µm
	7	AlCu	1.45 µm

Reliability Evaluation Report

Die 450

Wafer Fab Information			
FAB1			
Wafer fab name / location	Crolles 300		
Wafer diameter (inches)	12		
Wafer thickness (μm)	775±25		
Silicon process technology	CMOSM40MI		
Number of masks	51		
Die finishing front side (passivation) materials	PSG NITRIDE		
Die finishing back side Materials	RAW SILICON		
Die area (Stepping die size)	23.23 mm² (4983, 4662)		
Die pad size	Geometry	Open(X,Y)	
	Rectangular	54.9,54.4 μm	
Sawing street width (X,Y) (μm)	72,72		
Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	TaN/Ta/CuSeed/Cu	0.13 μm
	2	TaN/Ta/CuSeed/Cu	0.14 μm
	3	TaN/Ta/CuSeed/Cu	0.14 μm
	4	TaN/Ta/CuSeed/Cu	0.14 μm
	5	TaN/Ta/CuSeed/Cu	0.14 μm
	6	TaN/Ta/CuSeed/Cu	0.85 μm
	7	TaN/Ta/CuSeed/Cu	0.85 μm
	8	Ta/TaN/AlCu	1.525 μm

Reliability Evaluation Report

Die 469

Wafer Fab Information			
FAB1			
Wafer fab name / location	Crolles 300		
Wafer diameter (inches)	12		
Wafer thickness (μm)	775±25		
Silicon process technology	TN090CE		
Number of masks	43		
Die finishing front side (passivation) materials	PSG + NITRIDE/ 1μm		
Die finishing back side Materials	RAW SILICON		
Die area (Stepping die size)	17,389 mm ² (4298.4μm, 4045.6μm)		
Die pad size	Geometry		Open(X,Y)
	Rectangular		123,59 μm
Sawing street width (X,Y) (μm)	80,80		
Metal levels/Materials/Thicknesses	Wire bond pad metal	Composition	Thickness
	1	Ta/Tan/Cu	0.24 μm
	2	TaN/Ta/Cu	0.33 μm
	3	TaN/Ta/Cu	0.33 μm
	4	TaN/Ta/Cu	0.33 μm
	5	Ta/Tan/Cu	0.33 μm
	6	TaN/Ta/Cu	0.90 μm
	7	TaN/Ta/Ti/AlCu	1.45 μm

2.2.2.Assembly Information

Assembly Information	
Package: LQFP 100 14x14x1.4	419 470 423
Assembly plant name / location	SC AMKOR ATP1/ PHILIPPINES
Pitch (mm)	0.5
Die thickness after back-grinding (µm)	375±25
Die sawing method	Laser groove + mechanical sawing
Bill of Material elements	
Lead frame material/reference	LF for LQFP14x14 100L CuAg 5.75sq
Lead frame finishing (material/thickness)	Pure Tin (e3): Tolerance 7 to 20 µm
Die attach material / glue /supplier	D/A Ablestik 3230
Wire bonding material/diameter	Wire CuPd 0.8 mils
Molding compound material/supplier/reference	Resin Sumitomo G631HQ
Package Moisture Sensitivity Level (JEDEC J-STD020D)	3

Assembly Information			
Package: LQFP 144 20x20x1.4	434	461	450
Assembly plant name / location	SC AMKOR ATP1 - PHILIPPINES		
Pitch (mm)	0.5		
Die thickness after back-grinding (µm)	290±25µm	375±25µm	290±25µm
Die sawing method	Laser groove + mechanical sawing		
Bill of Material elements			
Lead frame material/reference	LF for LQFP20x20 144L CuAg 6.2sq		LF LQFP144L Pur Tin 7sq
Lead frame finishing (material/thickness)	Pure Tin (e3): Tolerance 7 to 20 µm		
Die attach material / glue /supplier	D/A Ablestik 3230		
Wire bonding material/diameter/supplier	Wire CuPd 0.8 mils		
Molding compound material/supplier/reference	Resin Sumitomo G631HQ		
Package Moisture Sensitivity Level (JEDEC J-STD020D)	3		

Assembly Information	
Package: LQFP 100 14x14x1.4	469
Assembly plant name / location	SC AMKOR ATP1/ PHILIPPINES
Pitch (mm)	0.4
Die thickness after back-grinding (µm)	375±25
Die sawing method	Laser groove + mechanical sawing
Bill of Material elements	
Lead frame material/reference	LF for LQ 128L PAD 5.0 SID DR post p
Lead frame finishing (material/thickness)	Pure Tin (e3): Tolerance 7 to 20 µm
Die attach material / glue /supplier	D/A Ablestik 3230
Wire bonding material/diameter	Wire CuPd 0.8 mils
Molding compound material/supplier/reference	Resin Sumitomo G631HQ
Package Moisture Sensitivity Level (JEDEC J-STD020D)	3

2.2.3. Reliability testing information

Reliability Testing Information	
Reliability laboratory name / location	ATP Rel Lab, Grenoble Rel Lab, Muar BE Lab

Note: ST is ISO 9001 certified. This induces certification of all internal and subcontractor labs. ST certification document can be downloaded under the following link: http://www.st.com/content/st_com/en/support/quality-and-reliability/certifications.html

3. TEST RESULTS SUMMARY

3.1. Lot information

Lot #	Diffusion Lot	Die Revision (Cut)	Assy Lot / Trace Code	Raw Line	Package	Note
Lot 1	9R301475	Cut 2.2	7B33538A	521L*419XXX5	LQFP 100 14x14x1.4	NA
Lot 2	9R150945	Cut 1.5	7B230593	601L*470QCXV	LQFP 100 14x14x1.4	NA
Lot 3	Q209709	Cut 1.1	7B230534	641L*423QCXZ	LQFP 100 14x14x1.4	NA
Lot 4	Q210616	Cut 1.0	7B230447	611A*434QCXA	LQFP144 20x20x1.4	NA
Lot 5	9R215035	Cut 2.0	7B229576	621A*461QCB	LQFP144 20x20x1.4	NA
Lot 6	VQ319339	Cut 2.2	7B40629G	501A*450QCXV	LQFP144 20x20x1.4	NA
Lot 7	VQ524832	Cut 2.3	7B60927G	50TC*469QCX2	LQFP 128 14x14x1.4	NA

Reliability Evaluation Report

3.2. Test results summary

ACCELERATED ENVIRONMENT STRESS TESTS

Test code	Stress method	Stress Conditions	Lots Qty	S.S.	Total	Results/Lot Fail/S.S.	Comments:(N/A =Not Applicable)
PC	JSTD 020 JESD 22-A113	24h bake@125°C, MSL3 (192h/30°C/60%RH) 3x Reflow simulation Peak Reflow Temp= 260°C	6	308	1848	Lot 1: 0/308 Lot 2: 0/308 Lot 3: 0/308 Lot 4: 0/308 Lot 5: 0/308 Lot 6: 0/308	NA
HTSL	JESD22-A103	Ta= 150°C Duration= 1000hrs ☒ After PC	6	77	462	Lot 1: 0/77 Lot 2: 0/77 Lot 3: 0/77 Lot 4: 0/77 Lot 5: 0/77 Lot 6: 0/77	NA
TC	JESD22-A104	Ta= -65°C/150°C Cyc= 500 ☒ After PC	6	77	462	Lot 1: 0/77 Lot 2: 0/77 Lot 3: 0/77 Lot 4: 0/77 Lot 5: 0/77 Lot 6: 0/77	NA
THB	JESD22-A101	Ta= 85°C / 85%RH Duration= 1000hrs ☒ After PC	6	77	462	Lot 1: 0/77 Lot 2: 0/77 Lot 3: 0/77 Lot 4: 0/77 Lot 5: 0/77 Lot 6: 0/77	NA
UHASt	JESD22-A118	Ta= 130°C/85%RH Duration= 96hrs ☒ After PC	6	77	462	Lot 1: 0/77 Lot 2: 0/77 Lot 3: 0/77 Lot 4: 0/77 Lot 5: 0/77 Lot 6: 0/77	NA

Electrical Verification Tests

Test code	Stress method	Stress Conditions	Lots Qty	S.S.	Total	Results/Lot Fail/S.S.	Comments:(N/A =Not Applicable)
ESD CDM	JEDEC JS-002	Voltage=250V for 419/470/434/461/450/469 Voltage=500V for 423	7	3	21	Lot 1: 0/3 Lot 2: 0/3 Lot 3: 0/3 Lot 4: 0/3 Lot 5: 0/3 Lot 6: 0/3 Lot 7: 0/3	NA

PACKAGE ASSEMBLY INTEGRITY TESTS

Test code	Stress method	Stress Conditions	Lots Qty	S.S.	Total	Results/Lot Fail/S.S.	Comments:(N/A =Not Applicable)
CA	Construction analysis including solderability, physical dimensions, wire bond shear	JESD 22B102 JESD B100/ B108 ST internal specifications	7	50	350	Lot 1: 0/50 Lot 2: 0/50 Lot 3: 0/50 Lot 4: 0/50 Lot 5: 0/50 Lot 6: 0/50 Lot 7: 0/50	NA

Note: Test method revision reference is the one active at the date of reliability trial execution.

4. APPLICABLE AND REFERENCE DOCUMENTS

Reference	Short description
JESD47	Stress-Test-Driven Qualification of Integrated Circuits
SOP2.4.4	Record Management Procedure
SOP2.6.2	Internal Change Management
SOP2.6.7	Finished Good Maturity Management
SOP2.6.9	Package & Process Maturity Management in BE
SOP2.6.11	Program Management for Product Development
SOP2.6.17	Management of Manufacturing Transfers
SOP2.6.19	Front-End Technology Platform Development and Qualification
DMS 0061692	Reliability Tests and Criteria for Product Qualification
JEDEC JS-002	Electrostatic discharge (ESD) sensitivity testing charge device model (CDM)
JESD 22-A103	High Temperature Storage Life
J-STD-020	Moisture/reflow sensitivity classification for non-hermetic solid state surface mount devices
JESD22-A113	Preconditioning of non-hermetic surface mount devices prior to reliability testing
JESD22-A118	Unbiased Highly Accelerated temperature & humidity Stress Test
JESD22-A104	Temperature cycling
JESD22-A101	Temperature Humidity Bias
JESD 22B102	Solderability test
JESD B100/ B108	Physical dimension

5. GLOSSARY

ESD - CDM	Electrostatic Discharge - Charged Device Model
CA	Construction analysis
HTSL	Storage Life High temperature storage life
PC	Preconditioning
TC	Temperature Cycling
THB	Temperature Humidity Bias
UHASt	Unbiased HAST (Highly Accelerated Stress Test)
DMS	ST Advanced Documentation Controlled system/ Documentation Management System
BEOL	Back-End Of Line

6. REVISION HISTORY

Release	Author	Content description	Approval list			
			Function	Location	Name	date
1.0	Gabin BOSCO	Initial release	Div. Quality Manager	ROUSSET	Pascal NARCHE	2 nd October 2023
			BE Quality Manager	ROUSSET	Berengere ROUTIER-SCAPPUCCI	2 nd October 2023
2.0	Gabin BOSCO	M10 final results	Div. Quality Manager	ROUSSET	Pascal NARCHE	7 th May 2024
3.0	Gabin BOSCO	M40/E40 Crolles	BE Quality Manager	ROUSSET	Berengere ROUTIER-SCAPPUCCI	2 st August 2024
4.0	Céline Navarro	Added 469 results	BE Quality Manager	ROUSSET	Berengere ROUTIER-SCAPPUCCI	18 th June 2026

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