

PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company	 STMicroelectronics International N.V
1.2 PCN No.	MDG/23/13886
1.3 Title of PCN	ST Shenzhen (China) TSSOP20 package copper alloy bonding wire introduction on STM32C01x, STM32C03x, STM32G05x and STM32G06x listed products
1.4 Product Category	STM32C01x STM32C03x STM32G05x STM32G06x
1.5 Issue date	2023-01-22

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Ricardo Antonio DE SA EARP
2.2.2 Marketing Manager	Veronique BARLATIER
2.2.3 Quality Manager	Pascal NARCHE

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Transfer	Line transfer for a full process or process brick (process step, control plan, recipes) from one site to another site: Assembly site (SOP 2617)	ST Shenzhen (China)

4. Description of change

	Old	New
4.1 Description	Wire bonding material: - Amkor ATP (Philippines) gold wire	Wire bonding material: - ST Shenzhen (China) copper alloy wire - Amkor ATP (Philippines) gold 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 Capacity and flexibility to support customer growing demand.
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	2023-03-28
7.2 Intended start of delivery	2023-04-06
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	13886 MDG-GPM-RER2219 PCN13703 PCN13886 STS TSSOP20 Cu alloy wire intro on STM32C0x-G0x - reliability plan.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2023-01-22

9. Attachments (additional documentations)

13886 Public product.pdf
13886 MDG-GPM-RER2219 PCN13703 PCN13886 STS TSSOP20 Cu alloy wire intro on STM32C0x-G0x - reliability plan.pdf
13886 PCN13886_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
	STM32C011F4P6	
	STM32C011F6P6	
	STM32C031F4P6	
	STM32C031F6P6	
	STM32G050F6P6	
	STM32G051F8P6	

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RER2219 for PCN13703 and PCN13886 ST Shenzhen - TSSOP20 Copper alloy wire introduction on STM32C0x/G0x

Reliability Evaluation Plan

30th November 2022

MDG GPM Quality & Reliability

RER2219 – STS - TSSOP20 Cu alloy introduction on TSMC N90 Package Test Vehicles

Package line	Assembly Line	Package	Device (RawLine Code)	Diffusion Process Plant	Number of Reliability Lots
TSSOP	TSSOP20 6.4x6.5	20L	STM32G0 (YA*466)	TSMC n90	2
			STM32C0 (YA*453)		1

RER2219 – STS - TSSOP20 Cu alloy introduction on TSMC N90 Package Reliability Trials

Reliability Trial & Standards		Test Conditions	Pass Criteria	Unit per Lot	Lot qty
PC	Pre Conditioning: Moisture Sensitivity Jedec Level 1 J-STD-020/ JESD22-A113	Bake (125°C / 24 hrs) Soak (85°C / 85% RH / 168 hrs) for level 1 Convection reflow: 3 passes	3 passes MSL1	308	3
uHAST (*)	UnBiased Highly Accelerated Temperature and Humidity Stress JESD22 A118	130°C, 85%RH, 2 atm	96h	77	3
TC(*)	Thermal Cycling JESD22 A104	-65°C +150°C	500cy	77	3
THB (*)	Temperature Humidity Bias JESD22-A101	85°C, 85% RH, bias, 5,6V	1000h	77	3
HTSL (*)	High Temperature Storage Life JESD22 A103	150°C- no bias	1000h	77	3
Construction analysis	Internal specification	Ball shear, pull test, IMC inspection , internal analysis	NA	50	1 full CA by product
ESD	ESD Charge Device Model ANSI / JEDEC JS-002	Aligned with device datasheet	500V	3	3

(*) tests performed after preconditioning

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**PRODUCT/PROCESS
CHANGE NOTIFICATION
PCN13886
– Additional information**

**ST Shenzhen (China) TSSOP20 package copper alloy bonding
wire introduction on STM32C01x, STM32C03x, STM32G05x and
STM32G06x listed products**

MDG – General Purpose Microcontrollers Division (GPM)

What are the changes?

Changes described in table below:

	Existing back-end line	Added back-end line
Assembly site	Amkor ATP (Philippines)	ST Shenzhen (China)
Molding compound	Sumitomo EME-G700LS	Sumitomo EME-G700KC
Leadframe	TSSOP 20L Rough copper - Tin post-plated (e3)	TSSOP 20L Pre-Plated Frame - PPF (e4)
Glue	ABLESTIK 8290	ABLESTIK 8601S-25
Bonding Wire	Gold 0.8mil	Copper Alloy 0.8mil

How can the change be seen?

Traceability ensured by ST internal tool.

Standard marking example:

PP : Assembly Plant code

LLL : BE sequence

WX : Wafer Diffusion Plant code

COO : Country Of Origin code

Y WW : Year Week (manufacturing date)

SS : aSsembly Sub-Lots enhanced traceability code

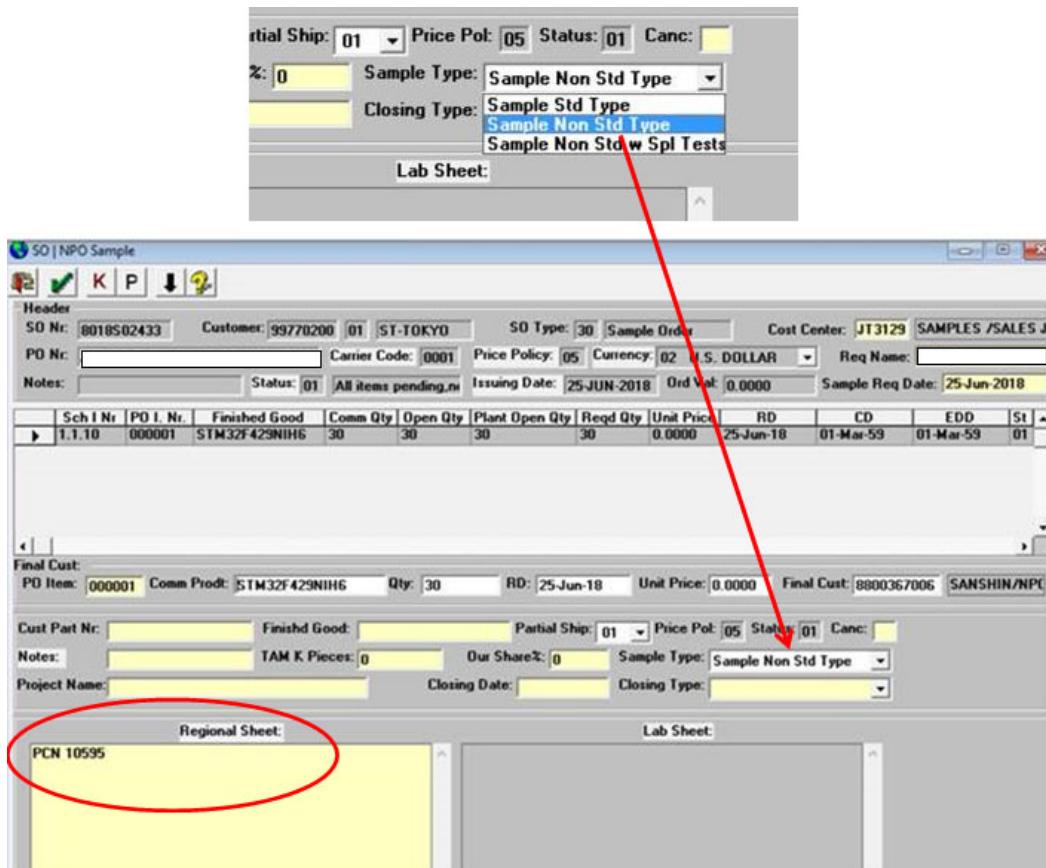
R : Additional Information (Die Version)



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 “**PCN13886**” into the NPO Electronic Sheet/Regional Sheet
- request sample(s) through Notice tool, indicating a single Commercial Product for each request





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Public Products List

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STM32C01x, STM32C03x, STM32G05x and STM32G06x listed products

PCN Reference : MDG/23/13886

Subject : Public Products List

Dear Customer,

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

STM32C031F6P6	STM32G061F8P6	STM32C011F6P6
STM32C011F6P7TR	STM32C031F4P6	STM32C011F6P7
STM32G050F6P6	STM32G061F6P6	STM32C031F4P6TR
STM32C031F6P7	STM32G051F8P6	STM32C011F6P3TR
STM32C031F6P6TR	STM32G051F6P6	STM32C011F6P3
STM32C011F4P6	STM32C011F6P6TR	STM32C031F6P7TR

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