


# 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
2.1.2 Marketing Manager	Veronique BARLATIER
2.1.3 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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life.augmented

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

## **Reliability Evaluation Plan**

30<sup>th</sup> 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**

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

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**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

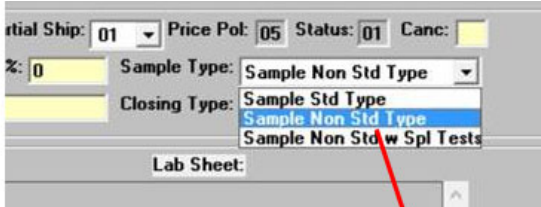
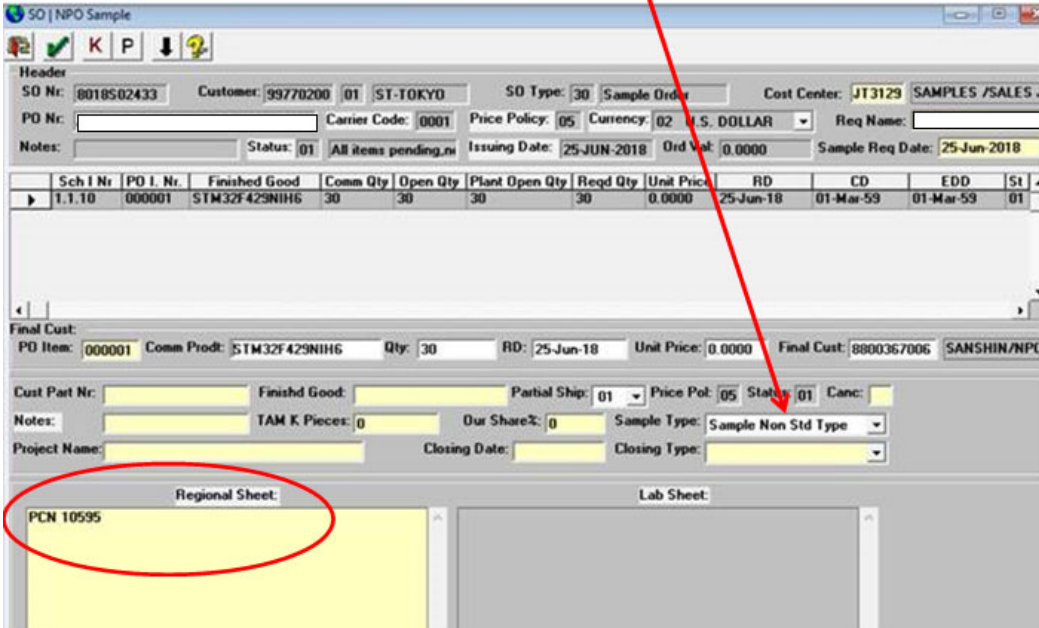
**R** : Additional Information (Die Version)



## 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

SO | NPO Sample

Header

SO Nr: 0018502433 Customer: 99770200 01 ST-TOKYO SO Type: 30 Sample Order Cost Center: JT3129 SAMPLES /SALES J

PO Nr: Carrier Code: 0001 Price Policy: 05 Currency: 02 U.S. DOLLAR Req Name:

Notes: Status: 01 All items pending,ni Issuing Date: 25-JUN-2018 Ord Val: 0.0000 Sample Req Date: 25-Jun-2018

Sch I Nr	PO I. Nr	Finished Good	Comm Qty	Open Qty	Plant Open Qty	Reqd Qty	Unit Price	RD	CD	EDD	St
1.1.10	000001	STM32F429NIH6	30	30	30	30	0.0000	25-Jun-18	01-Mar-59	01-Mar-59	01

Final Cust: PO Item: 000001 Comm Prod: STM32F429NIH6 Qty: 30 RD: 25-Jun-18 Unit Price: 0.0000 Final Cust: 0800367006 SANSHIN/NPC

Cust Part Nr: Finished Good: Partial Ship: 01 Price Pol: 05 Status: 01 Canc:

Notes: TAM K Pieces: 0 Our Share: 0 Sample Type: Sample Non Std Type

Project Name: Closing Date: Closing Type:

Regional Sheet: PCN 10595

Lab Sheet:

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**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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