PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	MDG/23/13703
1.3 Title of PCN	ST Shenzhen (China) TSSOP20 package copper alloy bonding wire introduction on STM32G03x and STM32G04x listed products
1.4 Product Category	STM32G03x STM32G04x
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**
Materials	New direct material part number (same supplier, different supplier or new supplier), Bond wire material, diameter	ST Shenzhen (China)

4. Description of change

	Old	**New**
4.1 Description	Wire bonding material: - ST Shenzhen (China) Silver alloy wire - 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 service
5.2 Customer Benefit	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change

6.1 Description	Traceability ensured by ST internal tools

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	13703 MDG-GPM-RER2219 PCN13703 PCN13886 STS TSSOP20 Cu alloy wire intro on STM32C0 - reliability plan.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	**Issue Date**	2023-01-22

9. Attachments (additional documentations)
13703 Public product.pdf 13703 MDG-GPM-RER2219 PCN13703 PCN13886 STS TSSOP20 Cu alloy wire intro on STM32C0 - reliability plan.pdf 13703 PCN13703_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
	STM32G030F6P6	
	STM32G030F6P6TR	
	STM32G031F4P3	
	STM32G031F4P6	
	STM32G031F4P6TR	
	STM32G031F6P6	
	STM32G031F8P6	
	STM32G041F8P6	

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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

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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
PCN13703 – Additional information

ST Shenzhen (China) TSSOP20 package copper alloy bonding wire introduction on STM32G03x and STM32G04x listed products

MDG – General Purpose Microcontrollers Division (GPM)

What are the changes?

Changes described in table below:

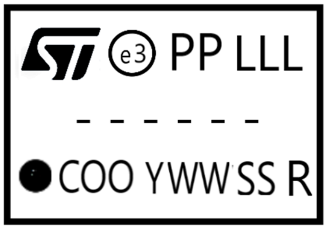
	Existing back-end line		Added back-end line
Assembly site	ST Shenzhen (China)	Amkor ATP (Philippines)	ST Shenzhen (China)
Bonding Wire	Silver 0.8mil	Gold 0.8mil	Copper Alloy 0.8mil

How can the change be seen?

Traceability ensured by ST internal tool.

Standard marking example:

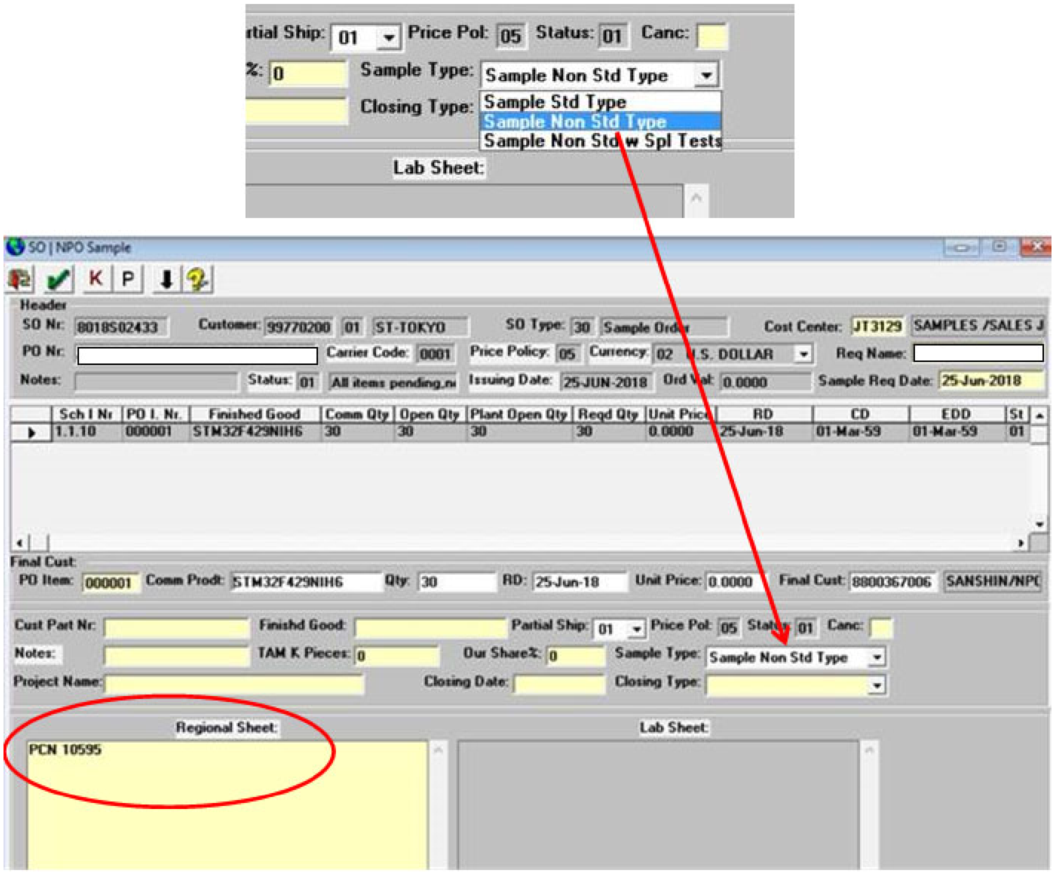
PP : Assembly Plant code
LLL : BE sequence
WX : Wafer Diffusion Plant code
COO : Country Of Origin code
Y WW : Year Week (manufacturing date)
SS : a**S**sembly **S**ub-Lots enhanced traceability code
R : Additional Information (Die Version)



How to order samples?

For all samples request linked to this PCN, please:

- place a **<u>Non-standard</u>** sample order (choose Sample Non Std Type from pull down menu)
- insert the PCN number “**PCN13703**” into the NPO Electronic Sheet/**Regional Sheet**
- request sample(s) through Notice tool, indicating a single Commercial Product for each request



rtial Ship: 01 Price Pol: 05 Status: 01 Canc:
%: 0 Sample Type: Sample Non Std Type
Closing Type:

SO Nr: 8018S02433 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_n 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 Prodt: STM32F429NIH6 Qty: 30 RD: 25-Jun-18 Unit Price: 0.0000 Final Cust: 8800367006 SANSHIN/NPC
Cust Part Nr: Finishd 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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Public Products List

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PCN Title : ST Shenzhen (China) TSSOP20 package copper alloy bonding wire introduction on STM32G03x and STM32G04x listed products

PCN Reference : MDG/23/13703

Subject : Public Products List

Dear Customer,

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

STM32G041F8P6	STM32G031F4P6	STM32G031F6P6
STM32G030F6P6	STM32G031F8P6	STM32G041F6P6
STM32G030F6P6TR	STM32G031F4P3	STM32G031F8P6TR
STM32G041F6P6TR	STM32G031F6P7TR	

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