

## PRODUCT / PROCESS CHANGE NOTIFICATION

### 1. PCN basic data

1.1 Company	 STMicroelectronics International N.V
1.2 PCN No.	MDG/24/14653
1.3 Title of PCN	ST MUAR (Malaysia) Conversion from Matrix to Super High Density (SHD) leadframe for STM8Lx and STM8Sx listed products in LQFP 14x14 80L/64L package.
1.4 Product Category	STM8S207x, STM8S208x, STM8L151x, STM8L152x, STM8L162x.
1.5 Issue date	2024-07-15

### 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
Materials	New direct material part number (same supplier, different supplier or new supplier), Lead frame finishing material / area (internal)	ST MUAR - MALAYSIA

### 4. Description of change

	Old	New
4.1 Description	64L Matrix and 80L Matrix Leadframe - with PPF Lead Finishing.	LQFP 64L and 80L SHD Leadframe - LF Finishing: RingAg  The Bill of Materials in ST Muar (Malaysia) assembly plant is described in PCN14653_Additional_information document.
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	Form: Yes - marking change Fit: No change, Function: No change, No impact for customer	

### 5. Reason / motivation for change

5.1 Motivation	The strategy of ST GPM Group is to increase the robustness and improve performances, quality and functionality of our products. This is achieved by introducing new Bill Of Material for STM8Ax products.
5.2 Customer Benefit	SERVICE CONTINUITY

### 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	2025-04-04
7.2 Intended start of delivery	2025-05-02
7.3 Qualification sample available?	Upon Request

#### 8. Qualification / Validation

<b>8.1 Description</b>	14653 MDRF-GPM-RER2408 PCN14653 - ST Muar LQFP14x14 FP Mtx to SHD - reliability plan.pdf		
<b>8.2 Qualification report and qualification results</b>	Available (see attachment)	<b>Issue Date</b>	2024-07-15

#### 9. Attachments (additional documentations)

14653 Public product.pdf  
 14653 MDRF-GPM-RER2408 PCN14653 - ST Muar LQFP14x14 FP Mtx to SHD - reliability plan.pdf  
 14653 PCN14653 \_Additional information.pdf

#### 10. Affected parts

<b>10. 1 Current</b>		<b>10.2 New (if applicable)</b>
<b>10.1.1 Customer Part No</b>	<b>10.1.2 Supplier Part No</b>	<b>10.1.2 Supplier Part No</b>
	STM8L151M8T6	
	STM8L151M8T6TR	
	STM8L152M8T6	
	STM8L152M8T6TR	
	STM8L152M8T7	
	STM8L162M8T6	
	STM8L162M8T6TR	
	STM8S207M8T3B	
	STM8S207M8T6B	
	STM8S207M8T6BTR	
	STM8S207MBT6B	
	STM8S207MBT6BTR	
	STM8S207R8T6C	
	STM8S207R8T6CTR	
	STM8S207RBT6C	
	STM8S207RBT6CTR	
	STM8S208MBT6B	

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# **MDRF-GPM-RER2408 PCN14653 - ST Muar LQFP14x14 FP Mtx to SHD Non-Auto**

## **Reliability Evaluation Plan**

**July 04<sup>th</sup>, 2024**

**MDRF GPM Quality & Reliability Department**



# MDRF-GPM-RER2408 PCN14653 ST MUAR – MTX to SHD conversion LQFP 14x14 64L and 80L non-Auto Package Test Vehicles

Package line	Assembly Line	Package	Device (RawLine Code)	Diffusion Process Plant	Number of Reliability Lots
LQFP	LQFP 14x14	64L	765	CMOS F9 G01	NA (T0 data only: ESD CDM & CA)
LQFP	LQFP 14x14	80L	765	CMOS F9 G01	1
LQFP	LQFP 14x14	80L	768	CMOS F9 G02	2

# MDRF-GPM-RER2408 PCN14653 ST MUAR – MTX to SHD conversion LQFP 14x14 64L and 80L non-Auto Package Reliability Trials

Reliability Trial & Standard		Test Conditions	Pass Criteria	Unit per Lot	Lot qty
PC	Pre Conditioning: Moisture Sensitivity Jedec Level 3  J-STD-020/ JESD22-A113	Bake (125°C / 24 hrs) Soak (30°C / 60% RH / 192 hrs) for level 3 Convection reflow: 3 passes	3 passes MSL3	169	3
Uhast(*)	UnBiased Highly Accelerated Temperature and Humidity Stress JESD22 A118	130°C, 85%RH, 2.3 atm	96h	77	3
TC(*)	Thermal Cycling JESD22 A104	-65°C +150°C	500Cy	77	3
THB(*)	Biased temperature & humidity stress JESD22 A101	85°C, 85% RH bias	1000h	25	3
HTSL	High Temperature Storage Life JESD22 A103	150°C- no bias	1000h	77	3
Construction analysis	JESD 22B102 JESDB100/B108	including Solderability, Physical dimensions	NA	50	3 (765/768 LQ80L) (765 LQ64L)
ESD	ESD Charge Device Model JEDEC JS-002	Aligned with device datasheet	Aligned with device datasheet	3	3 (765/768 LQ80L) (765 LQ64L)

(\*) tests performed after preconditioning

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**PRODUCT/PROCESS  
CHANGE NOTIFICATION  
PCN14653 – Additional information**

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**ST MUAR (Malaysia) Conversion from Matrix to Super High Density (SHD) leadframe for STM8Lx and STM8Sx listed products in LQFP 14x14 80L/64L package.**

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**MDRF – General Purpose Microcontrollers Division (GPM)**

**What are the changes?**

Changes described in table below:

	Current back-end lines	New back-end line
Assembly site	ST Muar (Malaysia)	
wire	Gold 1.0 mil	Silver 0.8 mil
Leadframe	Matrix	Super High Density
Leadfinishing	NiPdAu, preplated (e4)	Ring Ag, postplated (e3)
Resin (1)	Sumitomo G700L	Sumitomo G700LS
Glue	LOCTITE ABLESTIK 3280T	Hitachi EN4900GC
Enhanced Traceability in marking	No digit	2 digits SS marking 2D marking

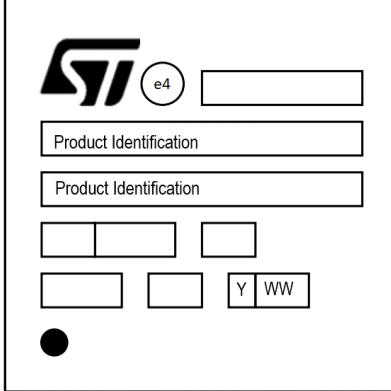
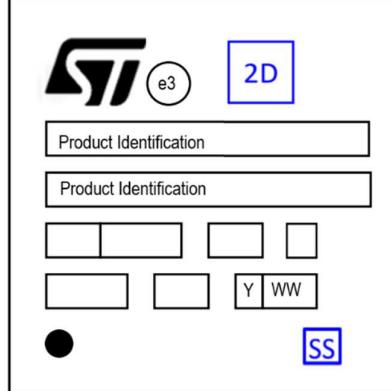
**(1)** Package darkness changes depending on molding compound.

Pin1 identifier can change in terms of form and positioning.

Marking position and size could be different depending on the assembly line, without any loss of information.

### How can the change be seen?

Top view example marking for BGA package.

Impacted Package	Current marking composition Example	New marking composition Example
LQFP64 14x14	 No Digit	 With Enhanced Tracability (2D & SS) marking
LQFP80 14x14		

**Y WW code:** Year Week (manufacturing date)

**PP** code indicates the Assembly traceability plant code.

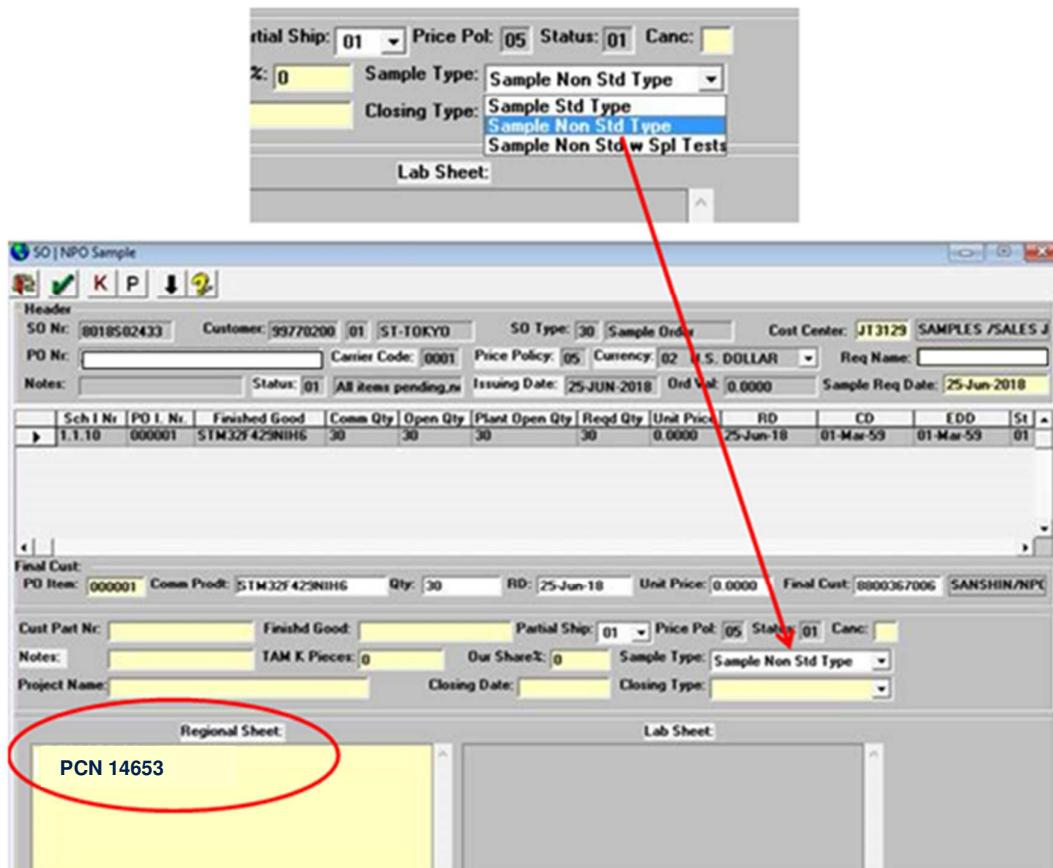
PP code	Assembly Line - Fab
99	ST Muar (Malaysia)

Please refer to Technical Note **TN1433** for package marking details.

## 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 “**PCN14653**” 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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**PCN Reference :** MDG/24/14653

**Subject :** Public Products List

Dear Customer,

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

STM8S207RBT6CTR	STM8S207M8T6BTR	STM8L152M8T6TR
STM8L151M8T6TR	STM8L152M8T3	STM8S207R8T6C
STM8S208MBT6B	STM8S207MBT6B	STM8L152M8T7
STM8S207RBT6C	STM8S207M8T6B	STM8S207M8T3BTR
STM8L152M8T6	STM8L151M8T6	STM8S207R8T6CTR
STM8L162M8T6	STM8S207M8T3B	STM8S207MBT6BTR
STM8L162M8T6TR		

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