PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	MDG/24/14537
1.3 Title of PCN	ST CALAMBA(Philippines) additional assembly plant for STM32MP13x products in TFBGA 9X9, TFBGA 11X11 and LFBGA 14X14 packages - on listed products.
1.4 Product Category	STM32MP13x products in TFBGA 9X9, TFBGA 11X11 and LFBGA 14X14 packages
1.5 Issue date	2024-06-26

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)	- ASE KAOHSIUNG (Taiwan) - ST CALAMBA (Philippines)

4. Description of change

	Old	**New**
4.1 Description	Existing Back-end source: - ASE Kaohsiung Taiwan	Back-end sources: - ASE Kaohsiung Taiwan - ST Calamba Philippines - Additional source For detailed information, please refer to PCN14537 – Additional information attached document.
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	Additional Assembly site Package darkness changes depending on molding compound. Marking position and size could be different upon assembly site, without any loss of information.	

5. Reason / motivation for change

5.1 Motivation	Due to the success on the market of STM32 devices, ST Microcontrollers Division decided to qualify an additional back-end site to maintain state of the art service level to our customers thanks to extra capacity.
5.2 Customer Benefit	CAPACITY INCREASE

6. Marking of parts / traceability of change

6.1 Description	Change is visible through assembly traceability plant, in the marking: - "AA" for ASE Kaohsiung Taiwan - “78” for ST Calamba Philippines Please refer to PCN 14291– Additional information attached document.

7. Timing / schedule

7.1 Date of qualification results	2024-08-30
7.2 Intended start of delivery	2024-09-15
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	14537 MDG-GPM-RER2324 PCN14537 ST CLB add assy plant for STM32MP13x BGA.pdf

8.2 Qualification report and qualification results	Available (see attachment)	**Issue Date**	2024-06-26

9. Attachments (additional documentations)

14537 Public product.pdf
14537 MDG-GPM-RER2324 PCN14537 ST CLB add assy plant for STM32MP13x BGA.pdf
14537 PCN14537_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**
	STM32MP131AAE3	
	STM32MP133FAF7	
	STM32MP135AAE3	
	STM32MP135AAF3	
	STM32MP135AAG3	
	STM32MP135CAE3	
	STM32MP135CAF3	
	STM32MP135CAG3	
	STM32MP135DAE7	
	STM32MP135DAF7	
	STM32MP135DAG7	
	STM32MP135FAE7	
	STM32MP135FAF7	
	STM32MP135FAG7	

IMPORTANT NOTICE – PLEASE READ CAREFULLY

Subject to any contractual arrangement in force with you or to any industry standard implemented by us, STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2022 STMicroelectronics – All rights reserved

MDRF-GPM-RER2324 for PCN14537
ST Calamba (Philippines) additional assembly plant for STM32MP13x product in BGA 9x9, BGA11x11 and BGA 14x14 packages

Reliability Evaluation Plan

June 4th, 2024

MDRF GPM Quality & Reliability

MDRF-GPM-RER2324 for PCN14537
ST Calamba additional assembly plant for STM32MP13x product in BGA 9x9, BGA11x11 and BGA 14x14 packages

Package Test Vehicles

Package line	Assembly Line	Package	Wire type	Device (RawLine Code)	Diffusion Process plant	Number of Reliability Lots
TFBGA	TFBGA 9x9	289L	Cu Alloy	STM32MP13x (4M*501)	CMOS040 Cr300	1
TFBGA	TFBGA 11x11	320L	Cu Alloy	STM32MP13x (4O*501)	CMOS040 Cr300	2
LFBGA	LFBGA 14x14	289L	Cu Alloy	STM32MP13x (4R*501)	CMOS040 Cr300	1

Reliability strategy:

- Reliability will be performed on test vehicle STM32MP13x in CMOS40 diffusion process.

life.augmented

MDRF-GPM-RER2324 for PCN14537
ST Calamba additional assembly plant for STM32MP13x product in BGA 9x9, BGA11x11 and BGA 14x14 packages

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) Convection reflow: 3 passes	3 passes MSL3	308	4
uHAST(*)	UnBiased Highly Accelerated Temperature and Humidity Stress JESD22 A118	130°C, 85%RH, 2.3 atm	96h	77	4
TC(*)	Thermal Cycling JESD22 A104	-65°C +150°C	500Cy and 1000Cy for monitoring	77	4
THB(*)	Biased temperature & humidity stress JESD22 A101	85°C, 85% RH bias	500h, 1000h	77	4
HTSL(*)	High Temperature Storage Life JESD22 A103	150°C- no bias	500h, 1000h	77	4
Construction analysis	ST internal specifications	Ball shear, pull test, IMC inspection , internal analysis	NA	50	4
ESD	ESD Charge Device Model JEDEC JS-002	Aligned with device datasheet	Aligned with device datasheet	3	4

(*) tests performed after preconditioning

life.augmented

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics International NV and its affiliates (“ST”) reserve the right to make changes corrections, enhancements, modifications, and improvements to ST products and/or to this document any time without notice.

This document is provided solely for the purpose of obtaining general information relating to an ST product. Accordingly, you hereby agree to make use of this document solely for the purpose of obtaining general information relating to the ST product. You further acknowledge and agree that this document may not be used in or in connection with any legal or administrative proceeding in any court, arbitration, agency, commission or other tribunal or in connection with any action, cause of action, litigation, claim, allegation, demand or dispute of any kind. You further acknowledge and agree that this document shall not be construed as an admission, acknowledgement or evidence of any kind, including, without limitation, as to the liability, fault or responsibility whatsoever of ST or any of its affiliates, or as to the accuracy or validity of the information contained herein, or concerning any alleged product issue, failure, or defect. ST does not promise that this document is accurate or error free and specifically disclaims all warranties, express or implied, as to the accuracy of the information contained herein. Accordingly, you agree that in no event will ST or its affiliates be liable to you for any direct, indirect, consequential, exemplary, incidental, punitive, or other damages, including lost profits, arising from or relating to your reliance upon or use of this document.

Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement, including, without limitation, the warranty provisions thereunder.

In that respect please note that ST products are not designed for use in some specific applications or environments described in above mentioned terms and conditions.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

Information furnished is believed to be accurate and reliable. However, ST assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously in any prior version of this document.

© 2024 STMicroelectronics - All rights reserved

PRODUCT/PROCESS CHANGE NOTIFICATION PCN14537 – Additional information

ST CALAMBA(Philippines) additional source for STM32MP13x products in TFBGA 9X9, TFBGA 11X11 and LFBGA 14X14 packages - on listed products.

MDRF - General Purpose Microcontroller Division (GPM)

What are the changes?

ST General Purpose Microcontrollers Division decided to qualify an additional back-end assembly site. The full process transfer to ST CALAMBA Assembly site is done maintaining state of the art service level to our customers thanks to extra capacity. This PCN is limited to STM32MP13x listed products in TFBGA 9X9, TFBGA 11X11 and LFBGA 14X14 packages.

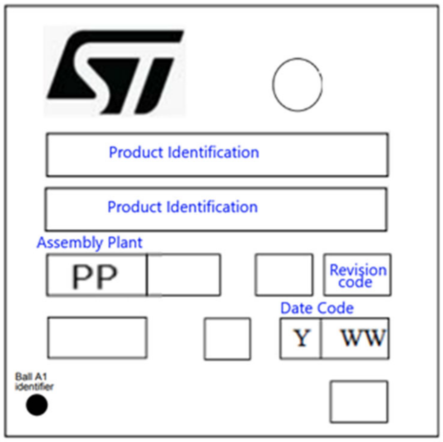
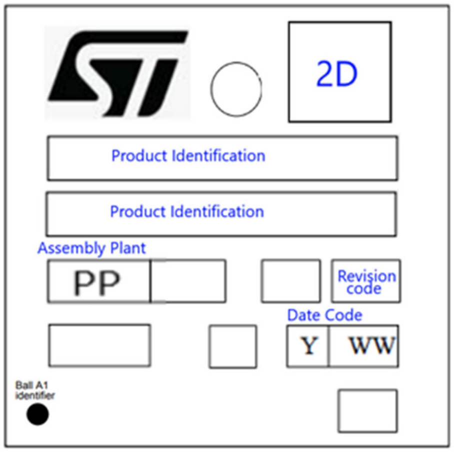
Changes are described in table below:

	Existing back-end lines	Added back-end line
Assembly site	ASE KaoHsiung (Taiwan)	ST Calamba (Philippines)
Substrate core	CCL-HL832NX ASE	**Showa Denko MCL-E-679FGB (SM)**
Die Attach Glue	Ablestik 2100AC	**Ablestik 2025D**
Bonding Wire	CuPdAu 0.8 MIL	**Cu Alloy** 0.8 MIL
Molding Compound (1)	Kyocera KE-G1250AAS	**Hitachi** **GE-100LF1-2**
Solder Balls	SACN305	SACN306
Marking Composition	No 2D marking	2D Marking

(1) Package darkness or chromaticity may change depending on molding compound.

Ball1 identifier may change in terms of size and positioning however remaining near Ball1's edge.
Marking position and size may be different upon assembly site, without any loss of information.

How can the change be seen?

Marking	Existing	Added Back-End Site
Assembly site	ASE KaoHsiung (Taiwan)	ST Calamba (Philippines)
TFBGA 9X9, TFBGA 11X11 and LFBGA 14X14		
PP code	**AA**	**78**

Y WW code indicates Year Week (manufacturing date)

PP code indicates assembly traceability plant code:

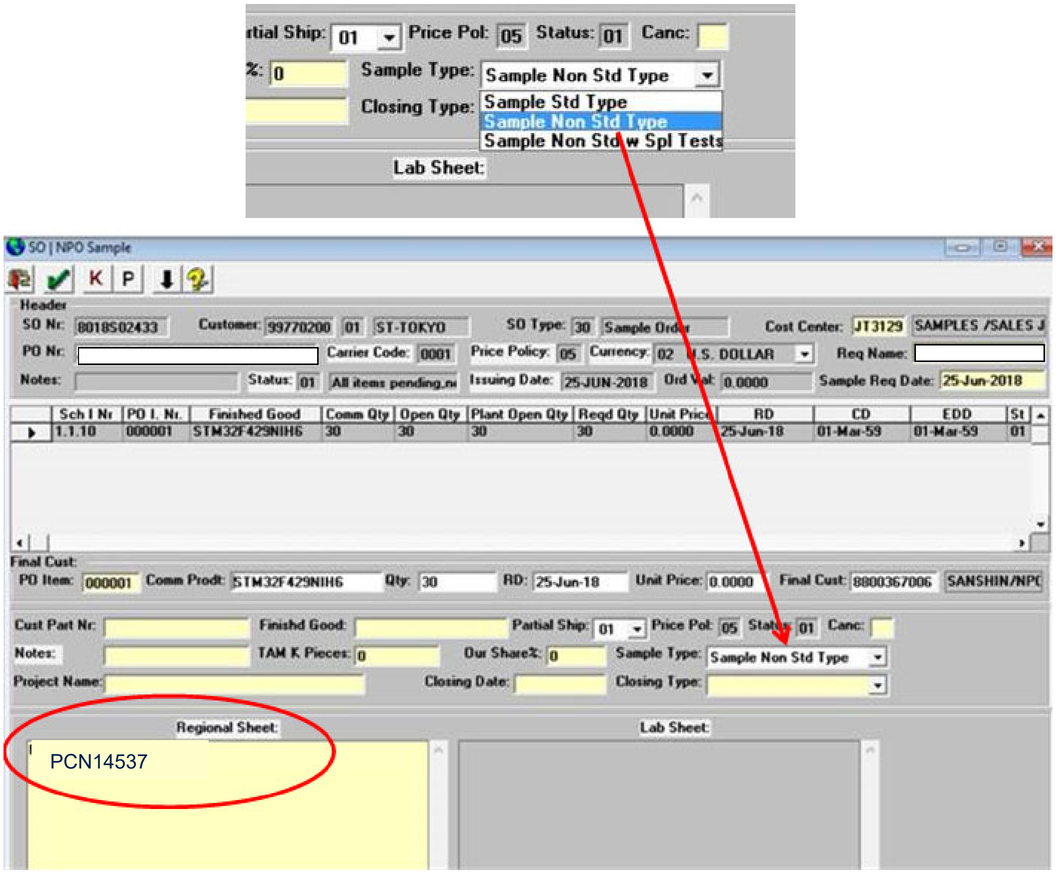
- **AA** for ASE KaoHsiung (Philippines)
- **78** for ST CALAMBA (Philippines)

Please refer to product DataSheet or 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 “**PCN14537**” 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:
PCN14537

Lab Sheet:

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics International NV and its affiliates (“ST”) reserve the right to make changes corrections, enhancements, modifications, and improvements to ST products and/or to this document any time without notice. This document is provided solely for the purpose of obtaining general information relating to an ST product. Accordingly, you hereby agree to make use of this document solely for the purpose of obtaining general information relating to the ST product. You further acknowledge and agree that this document may not be used in or in connection with any legal or administrative proceeding in any court, arbitration, agency, commission or other tribunal or in connection with any action, cause of action, litigation, claim, allegation, demand or dispute of any kind. You further acknowledge and agree that this document shall not be construed as an admission, acknowledgement or evidence of any kind, including, without limitation, as to the liability, fault or responsibility whatsoever of ST or any of its affiliates, or as to the accuracy or validity of the information contained herein, or concerning any alleged product issue, failure, or defect. ST does not promise that this document is accurate or error free and specifically disclaims all warranties, express or implied, as to the accuracy of the information contained herein. Accordingly, you agree that in no event will ST or its affiliates be liable to you for any direct, indirect, consequential, exemplary, incidental, punitive, or other damages, including lost profits, arising from or relating to your reliance upon or use of this document.

Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement, including, without limitation, the warranty provisions thereunder.

In that respect please note that ST products are not designed for use in some specific applications or environments described in above mentioned terms and conditions.
Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.
Information furnished is believed to be accurate and reliable. However, ST assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license, express or implied, to any intellectual property right is granted by ST herein.
Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.
ST and ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously in any prior version of this document.

© 2024 STMicroelectronics - All rights reserved

Public Products List

Publict 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 : ST CALAMBA(Philippines) additional assembly plant for STM32MP13x products in TFBGA 9X9, TFBGA 11X11 and LFBGA 14X14 packages - on listed products.
PCN Reference : MDG/24/14537

Subject : Public Products List

Dear Customer,

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

STM32MP135CAF3T	STM32MP133CAF3T	STM32MP135DAE3
STM32MP135FAF7T	STM32MP135CAE3	STM32MP133CAE3
STM32MP131CAE3	STM32MP133FAE7	STM32MP131FAF7T
STM32MP135FAE7	STM32MP131FAF7	STM32MP135DAF7T
STM32MP135FAF7	STM32MP133CAF3	STM32MP133FAF7
STM32MP131CAF3	STM32MP133AAF3	STM32MP135AAF3
STM32MP131AAF3	STM32MP131DAF7	STM32MP135FAF7U
STM32MP135DAF7	STM32MP133DAF7	STM32MP135FAE7T
STM32MP133DAG7	STM32MP131AAG3	STM32MP131DAG7
STM32MP131CAE3T	STM32MP135DAF7U	STM32MP135FAG7T
STM32MP131CAG3T	STM32MP135CAF3	STM32MP133DAE7T
STM32MP133FAG7	STM32MP131FAG7	STM32MP131CAG3
STM32MP131FAE7	STM32MP135AAE3	STM32MP133DAG7T
STM32MP135CAG3	STM32MP133CAG3	STM32MP135FAG7
STM32MP133DAE7	STM32MP135DAE7	STM32MP133AAG3
STM32MP133AAE3	STM32MP135DAG7	STM32MP131AAE3
STM32MP135AAG3	STM32MP131DAE7	

IMPORTANT NOTICE – PLEASE READ CAREFULLY

Subject to any contractual arrangement in force with you or to any industry standard implemented by us, STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2022 STMicroelectronics – All rights reserved