


PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	MDG/24/14095	
1.3 Title of PCN	ST CALAMBA (Philippines) assembly plant transfer for BLUENRG-3x products in VQFN32 5x5 and VQFN48 6x6 packages from UTAC (Thailand)	
1.4 Product Category	BLUENRG-332x, BLUENRG-345x, BLUENRG-355x,	
1.5 Issue date	2024-01-29	

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	NEMETH KRISZTINA
2.1.2 Phone	+49 89460062210
2.1.3 Email	krisztina.nemeth@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 CALAMBA (Philippines)

4. Description of change

	Old	New
4.1 Description	UTAC UTL1 copper palladium wire - VFQFN32 5X5 F161, FL06 - VFQFN48 6X6 F161	ST CALAMBA - copper alloy - VFQFN32 5X5 F161, FL06 - VFQFN48 6X6 F161
4.2 Anticipated Impact on form, fit, function, quality, reliability or processability?	No Datasheet change. Bill of material has been rationalized.	

5. Reason / motivation for change

5.1 Motivation	Assembly line of the product line is moving from UTAC(Thailand) to ST Calamba (Philippines). Bill Of Material (BOM) has been rationalized.
5.2 Customer Benefit	LOGISTICS IMPROVEMENT

6. Marking of parts / traceability of change

6.1 Description	Traceability ensured by ST internal tools Marking will change as described in Additional Info
------------------------	--

7. Timing / schedule

7.1 Date of qualification results	2023-04-26
7.2 Intended start of delivery	2024-01-17
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	14095 MDG-GPM-RER2325 PCN14095 UTAC_2_ST_Cal transfer-BLUENRG-3x VQFN Reliability plan.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2024-01-29

9. Attachments (additional documentations)

14095 Public product.pdf
14095 MDG-GPM-RER2325 PCN14095 UTAC_2_ST_Cal transfer-BLUENRG-3x VQFN Reliability plan.pdf
14095 PCN14095_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
	BLUENRG-332AT	
	BLUENRG-345AC	
	BLUENRG-345MC	
	BLUENRG-345MT	
	BLUENRG-355AC	
	BLUENRG-355MC	
	BLUENRG-355MT	

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



**PRODUCT/PROCESS
CHANGE NOTIFICATION**

PCN14095 – Additional information

**ST CALAMBA (Philippines) assembly plant transfer for
BLUENRG-3x products in VQFN32 5x5 and VQFN48 6x6
packages from UTAC (Thailand)**

MDG – General Purpose Microcontrollers Division (GPM)

What are the changes?

Assembly line of the product line is moving from UTAC(Thailand) to ST Calamba (Philippines).

Bill Of Material (BOM) has been rationalized.

package	Product Line	Flash (KB)	SRAM (KB)	[°C] Range	Current Commercial CP UTAC (Thailand)
VQFN32 5x5	FL06	192	24	-40 to +85°C	BlueNRG-332AC
				-40 to +105°C	BlueNRG-332AT
VQFN48 6x6	F161	256	32	-40 to +85°C	BlueNRG-345MC
VQFN32 5x5				-40 to +105°C	BlueNRG-345MT
				-40 to +85°C	BlueNRG-345AC
				-40 to +105°C	BlueNRG-345AT
VQFN48 6x6	F161	256	64	-40 to +85°C	BlueNRG-355MC
VQFN32 5x5				-40 to +105°C	BlueNRG-355MT
				-40 to +85°C	BlueNRG-355AC
				-40 to +105°C	BlueNRG-355AT



life.augmented

Changes described in table below:

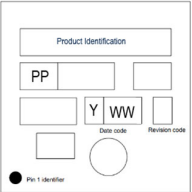
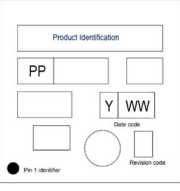
Current condition	New condition
UTAC (Thailand)	ST Calamba (Philippines)

Bill Of Material				
VQFN32 5X5	Commercial Product	BlueNRG-332Ax		
		Die Attach Glue	Glue Henkel 8600	Glue QMI519
			BlueNRG-345Ax BlueNRG-355Ax	
		Die Attach / Glue	DAF CDF515	DAF CDF 625
VQFN48 6X6	Commercial Product	BlueNRG-345Mx BlueNRG-355Mx		
		Die Attach / Glue	Glue Henkel 8600	Glue QMI519
		Bonding Wire	AuPdCu 0.8mil	Cu alloy 0.8mil
		Molding Compound	G700LTD	CEL 9240ZHF10W
		LeadFinishing	PPF (e4)	

How can the change be seen?

PP code indicates assembly traceability plant code on the package marking and will change from FN to 78.

Y WW code indicates Year Week (manufacturing date)

		Current condition UTAC (Thailand)	New condition ST Calamba (Philippines)
VQFN32 5X5	BlueNRG-332Ax		
	BlueNRG-345Ax BlueNRG-355Ax		
VQFN48 6X6	BlueNRG-345Mx BlueNRG-355Mx		
PP Code		FN	78

Marking Composition consolidation same as above

Please refer to product **DataSheet** or Technical Note **TN1433** for package marking details.
On the package top marking **PP code** will change

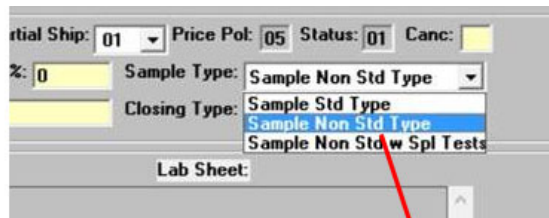


life.augmented

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 "**PCN14095**" into the NPO Electronic Sheet/**Regional Sheet**
- request sample(s) through Notice tool, indicating a single Commercial Product for each request

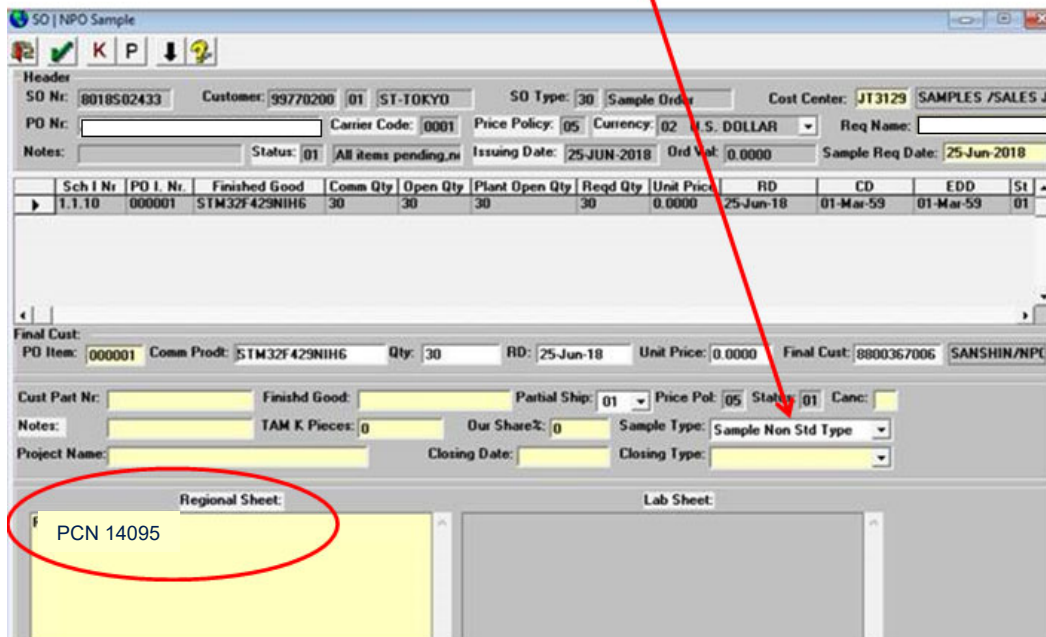


Partial Ship: 01 Price Pol: 05 Status: 01 Canc:

%: 0 Sample Type: Sample Non Std Type

Closing Type: Sample Std Type
Sample Non Std Type
Sample Non Std w Spl Tests

Lab Sheet:



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: 8800367006 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: Lab Sheet:

PCN 14095



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.



Public Products List

Public 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) assembly plant transfer for BLUENRG-3x products in VQFN32 5x5 and VQFN48 6x6 packages from UTAC (Thailand)

PCN Reference : MDG/24/14095

Subject : Public Products List

Dear Customer,

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

BLUENRG-332AC	BLUENRG-345MC	BLUENRG-332AT
BLUENRG-345AT	BLUENRG-355AT	BLUENRG-355MC
BLUENRG-355MT	BLUENRG-355AC	BLUENRG-345AC
BLUENRG-345MT		

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.



life.augmented

**MDG-GPM-RER2325 for PCN14095
ST CALAMBA(Philippines) assembly plant
transfer for BLUENRG-3xx products in VQFN5x5
and VQFN6x6 packages from UTAC (Thailand)**

Reliability Evaluation Plan

September 20th, 2023

MDG MCD Quality & Reliability

ST CALAMBA(Philippines) assembly plant transfer for BLUENRG-3xx products in VQFN5x5 and VQFN6x6 packages from UTAC (Thailand)

Package Test Vehicles

Package line	Assembly Line	Package	Wire type	Device (RawLine Code)	Diffusion Process Plant	Number of Reliability Lots
VFQFPN	VFQFPN 5x5	32L	Cu Alloy	BLUENRG-3x5Ay (42*F161)	TSMC N90	1
VFQFPN	VFQFPN 6x6	48L	Cu Alloy	BLUENRG-LP35M (M2*F161)	TSMC N90	1
VFQFPN	VFQFPN 5x5	32L	Cu Alloy	BLUENRG-332AC (42*FL06)	TSMC N90	1

Reliability strategy:

- Reliability will be performed on 3 lots from representative test vehicles of BLUENRG-3x5 Ay, BLUENRG-LP35M and BLUENRG-332AC products lines. Refer to details in above and next tables.

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	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 and 1000Cy for monitoring	77	3
THB(*)	Biased temperature & humidity stress JESD22 A101	85°C, 85% RH bias	500h, 1000h	77	3
HTSL(*)	High Temperature Storage Life JESD22 A103	150°C- no bias	500h, 1000h	77	3
Construction analysis	ST internal specifications	Ball shear, pull test, IMC inspection , internal analysis	NA	50	3
ESD	ESD Charge Device Model JEDEC JS-002	Aligned with device datasheet	Aligned with device datasheet	3	3

(*) tests performed after preconditioning

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.