PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data	
1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	EMBEDDED PROCESSING/26/16534
1.3 Title of PCN	ST MUAR (Malaysia) additional source for STM32F030x and STM32F031x listed products in LQFP7x7 32L package
1.4 Product Category	STM32F030K6Tx and STM32F031K6Tx
1.5 Issue date	2026-09-09

2. PCN Team	
2.1 Contact supplier	
2.1.1 Name	KRISZTINA NEMETH
2.1.2 Phone	+49 8946006
2.1.3 Email	krisztina.nemeth@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Patrick AIDOUNE
2.1.2 Marketing Manager	Marie TOURNUT
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 Muar (Malaysia)

4. Description of change		
	Old	New
4.1 Description	STM32F030x and STM32F031x in LQFP7x7 32L Current assembly sites: - ASE Kaohsiung (Taiwan) Gold wire - JSCC (China) Silver wire	STM32F030x and STM32F031x in LQFP7x7 32L Current assembly site: - ASE Kaohsiung (Taiwan) Gold wire - JSCC (China) Silver wire Additional assembly site for extended capacity: - ST Muar (Malaysia) Silver wire
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact on Form, Fit or Function	

5. Reason / motivation for change	
5.1 Motivation	Due to the success on the market of STM32 devices, ST General Purpose Microcontrollers sub-group 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	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change	
6.1 Description	Change is visible on the marking with Production Plant (PP code) - AA: ASE KaoHsiung (Taiwan) - GQ: JSCC (China) - 99: ST MUAR (Malaysia) additional plant Please refer to PCN 16534 – Additional information attached document.

7. Timing / schedule	
7.1 Date of qualification results	2026-09-04
7.2 Intended start of delivery	2026-11-30
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation			
8.1 Description	16534 MDG-MCD RER1514- V3- PCN9484 PCN13956 PCN16534 LQFP7x7 Muar - RER.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	**Issue Date**	2026-09-09

9. Attachments (additional documentations)
16534 Public product.pdf 16534 MDG-MCD RER1514- V3- PCN9484 PCN13956 PCN16534 LQFP7x7 Muar - RER.pdf 16534 _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**
	STM32F030K6T6	
	STM32F030K6T6TR	
	STM32F031K6T6	
	STM32F031K6T7	

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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 MUAR (Malaysia) additional source for STM32F030x and STM32F031x listed products in LQFP7x7 32L package

PCN Reference : EMBEDDED PROCESSING/26/16534

Subject : Public Products List

Dear Customer,

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

STM32F031K6T6	STM32F031K6T7	STM32F031K6T7TR
STM32F030K6T6TR	STM32F030K6T6	STM32F031K6T6TR

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PRODUCT/PROCESS CHANGE NOTIFICATION PCN16534 – Additional information

ST MUAR (Malaysia) additional source for STM32F030x and STM32F031x listed products in LQFP 7x7 32L package.

MRDF - General Purpose and Automotive Microcontroller Division (GPAM)

What are the changes?

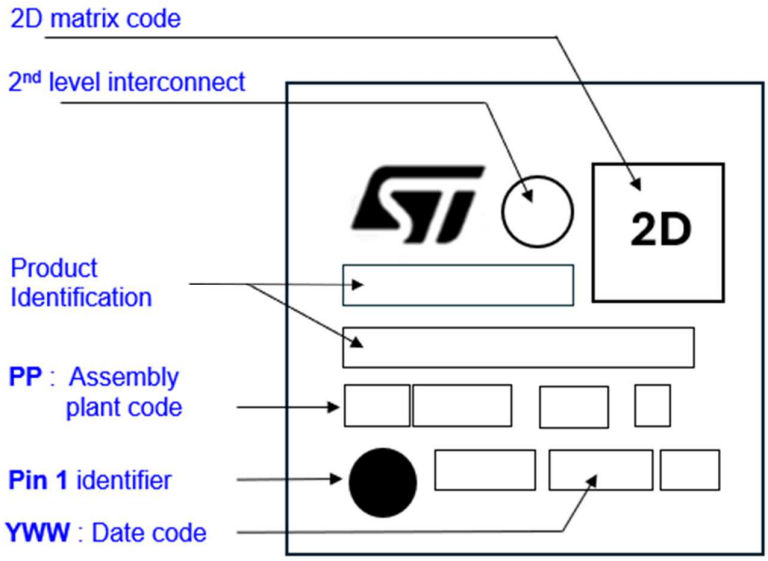
- ST General Purpose Microcontrollers Division decided to qualify an additional back-end assembly site. The full process transfer to ST MUAR Assembly site is done maintaining state of the art service level to our customers thanks to extra capacity. This PCN is limited to STM32F030x and STM32F031x listed products in LQFP 7x7 32L package.
- Changes are described in table below:

	Existing back-end lines		Added back-end line
Assembly site	ASE Kaohsiung (Taiwan)	JSCC (China)	ST Muar (Malaysia)
LeadFrame	Copper, post-plated		Copper, pre-plated
Lead finishing (1)	Pure tin (e3)		NiPdAu (e4)
Molding Compound (2)	Sumitomo G631SH	Sumitomo G631SHQ	Sumitomo G700LS
Bonding Wire	Au 0.8mil	Ag 96.5 0.8mil	
Die Attach Glue	Sumitomo CRM 1076WA	Ablestik 3230	Hitachi EN4900
Marking Composition	2D marking		

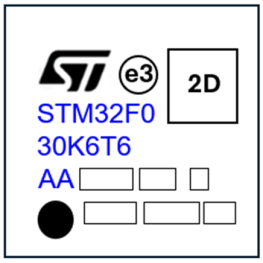
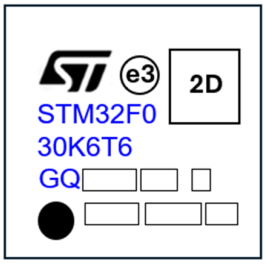
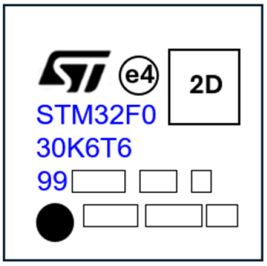
(1) Lead color and surface finishing may slightly vary depending on lead finishing.
(2) Package darkness or chromaticity may change depending on molding compound.

Pin1 identifier may change in terms of size and positioning however remaining near pin1's edge.
Marking position and size may be different upon assembly site, without any loss of information.

How can the change be seen?



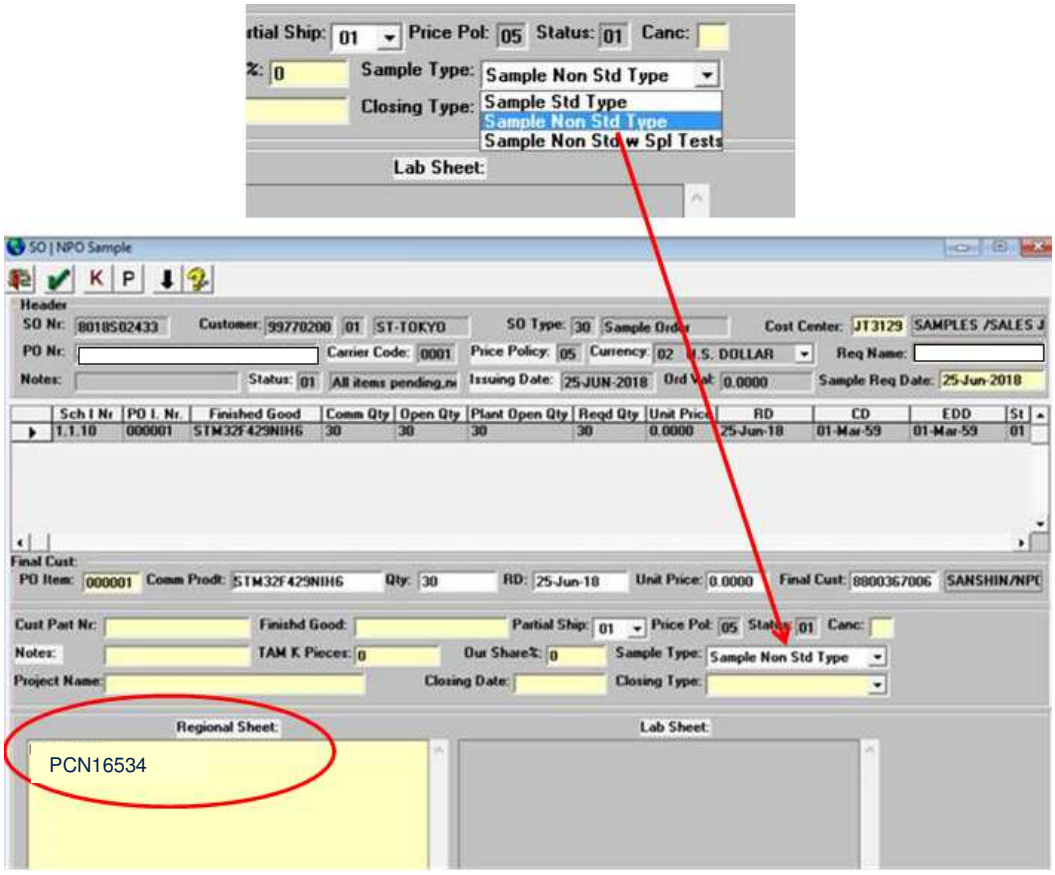
Changes are described in table below:

Marking	Existing	(Example STM32L486VGT6)	Added Back-End Site
LQFP 7x7 32L (eg STM32F030K6T6)			
PP code	**AA:** ASE KaoHsiung (Taiwan)	**GQ**: JSCC (China)	**99:** ST MUAR (Malaysia)

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 "**PCN16534**" 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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MMS- MCD RER1514
Reliability Report

Qualification Type : ASSEMBLY LINE QUALIFICATION, NEW BILL OF MATERIALS

LQFP 7x7 - ST Muar Qualification
Extended listed products

(PCN9484)
(PCN13956)
(PCN16534)

Product / Process & Package Information	Die 410	Die 427	Die 765
Commercial Product:	STM32F103CBT6	STM32L152CCT6	STM8S207C8T6
Product Line:	STM32F die 410	STM32L die 427	STM8S die 765
Product Description:	Micro 32Bits		Micro 8Bits
Finish Good Code:	ES32F103CBT6$J8	ES32L152CCT6$B6	ES8S207C8T6$9C
Mask Set Revision:	X410XXXX	X427XXXV	X765XXXV
Silicon Process Technology:	0.18 M8 EMBEDDED FLASH	8X - CMOSF9S	2V - CMOSF9
Wafer Fabrication Location:	TSMC Fab 3 Taiwan	ST Rousset 8 France	ST Rousset 8 France
Electrical Wafer Sort Test Plant Location:	ST MICROELECTRONICS Ang Mo Kio EWS SINGAPORE		ARDENTEC Hsinchu EWS Taiwan
Package:	LQFP 48 7x7x1.4		
Assembly Plant location:	ST Muar (Malaysia)		
Final Test plant location:	ST Muar (Malaysia)		

Approval List rev 1			
Function	**Location**	**Name**	**Date**
Division Q&R Responsible	ST Rousset	Gisèle SEUBE	May31st, 2016
Division Quality Manager	ST Rousset	Pascal NARCHE	May31st, 2016

Approval List rev 2			
Function	**Location**	**Name**	**Date**
Subgroup Quality Manager	ST Rousset	Pascal NARCHE	March 13th, 2023

Approval List rev 3			
Function	**Location**	**Name**	**Date**
Division Q&R Responsible	ST Rousset	Bérengère ROUTIER-SCAPPUCCI	September 04th, 2026

Contents

1 RELIABILITY RESULTS OVERVIEW 4
1.1 Objectives 4
1.2 Context 4
1.3 Conclusion 5
2 RELIABILITY TEST VEHICLES Characteristics 6
2.1 Reliability Test vehicles description 6
2.2 Reliability Information 6
2.3 Front-End information 7
2.4 Back-End information 8
3 RELIABILITY RESULTS SUMMARY 9
3.1 Die oriented test 9
3.2 Package Oriented Test 9
4 APPLICABLE AND REFERENCE DOCUMENTS 11
5 GLOSSARY AND TESTS DESCIPTION 11
6 REVISION HISTORY 11

1 RELIABILITY RESULTS OVERVIEW

1.1 Objectives

This report summarizes the reliability results for LQFP7x7 48L package manufactured at ST Muar (Malaysia).

Test vehicles are described here below:

Product	Package
STM32F103CBT6	LQFP 48 7x7x1.4
STM32L152CCT6	LQFP 48 7x7x1.4
STM8S207C8T6	LQFP 48 7x7x1.4

1.2 Context

In order to increase assembly capacity, ST Microcontrollers Division has decided to add a High Density line in ST Muar (Malaysia) assembly site, for LQFP7x7 products.

PCN9484 - Changes are described here below:

	Existing Bill Of Materials			Added Bill Of Materials
Assembly site	STATS ChipPAC Shanghai (China)	Amkor ATP (Philippines)	ST Muar (Malaysia)	ST Muar (Malaysia)
Wire	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil	Silver 0.8mil
Leadframe	Copper Frame Spot Ag	Copper Frame Spot Ag	Pre Plated Frame	Pre Plated Frame
Leadfinishing (*1)	Pure Tin (e3)	Pure Tin (e3)	Rough Ni Pd AgAu (e4)	Rough Ni Pd AgAu (e4)
Resin	Sumitomo G700E	Sumitomo G631HQ	Sumitomo G700LS	Sumitomo G700LS
Glue	Ablestik 3230	Evertech AP4200	Hitachi EN4900	Hitachi EN4900

(*1) Lead color and surface finished change depending on leadfinishing

PCN13956 – Changes are described here below, for additional listed products (0.18µm TSMC) in PCN:

	Existing back-end site	Added back-end site
Assembly site	Stats ChipPAC JSCC Jiangyin (China)	ST Muar (Malaysia)
Wire	Gold 0.8mil	Silver 96.5% 0.8mil
Leadframe	Copper Frame Spot Ag	Pre Plated Frame
Leadfinishing (1)	Pure Tin (e3)	Rough Ni Pd AgAu (e4)
Resin (2)	Sumitomo G631SHQ	Sumitomo G700LS
Glue	Ablestik 3230	Hitachi EN4900
Marking composition	Without 2D	With 2D Marking

(1) Lead color and surface finish change depending on lead finishing

(2) Package darkness changes depending on molding compound

PCN16534 - Changes are described here below:

	Existing back-end lines		Added back-end line
Assembly site	ASE Kaohsiung (Taiwan)	JSCC (China)	ST Muar (Malaysia)
LeadFrame	Copper, post-plated		Copper, pre-plated
Lead finishing (1)	Pure tin (e3)		NiPdAu (e4)
Molding Compound (2)	Sumitomo G631SH	Sumitomo G631SHQ	Sumitomo G700LS
Bonding Wire	Au 0.8mil	Ag 96.5 0.8mil	
Die Attach Glue	Sumitomo CRM 1076WA	Ablestik 3230	Hitachi EN4900
Marking Composition	2D marking		

(1) Lead color and surface finishing may slightly vary depending on lead finishing.
(2) Package darkness or chromaticity may change depending on molding compound.

Changes are qualified using the standard STMicroelectronics Corporate Procedures for Quality and Reliability, in full compliancy with the JESD-47 international standard.

1.3 Conclusion

All reliability tests have been completed with positive results. Neither functional nor parametric rejects were detected at final electrical testing.

According to the positive reliability results, the qualification is granted for High Density assembly line in ST Muar (Malaysia) for CMOSF9S Rousset and CMOSF9 Rousset and TSMC0.18 (all diffusion plants TSMC are qualified by similarity with TSMC Fab3).

Refer to Section 3.0 for reliability test results.

2 RELIABILITY TEST VEHICLES Characteristics

2.1 Reliability Test vehicles description

Package line	Assembly Line	Package	Device (Partial RawLine Code)	Diffusion Process	Number of Lots
HD LQFP	LQFP7*7	48L	STM8S (5B*765) STM32F (5B*410) STM32L (5B*427)	F9GO1 TSMC 0.18µm F9GO2S	1 1 1

Package HD LQFP7x7 32L uses same assembly line than HD LQFP7x7 48L and is qualified/covered by MDG-MCD-RERMCD2102.

2.2 Reliability Information

Lot ID	Lot 1	Lot 2	Lot 3
Die Name /cut:	410	427	765
Diffusion Lot Number:	93537129	VG536347	VG540309
Trace Code:	995510CH	995510CQ	995510CR
Assy lot number	995510CH01	995510CQ01	995510CR01
Raw Line Code Package:	J55B*410ESXX	U05B*427ESXV	J15B*765ESXV
Reliability Lab location :	ST Muar (Malaysia)		

2.3 Front-End information

Front-End	Lot 1 (410)	Lot 2 (427)	Lot 3 (765)
Wafer Diameter:	8 inches		
Wafer Thickness:	375 +/-25 µm		
Die Size:	3.3908 X 3.328 mm	3.263 X 4.199 mm	3.010 X 2.458 mm
Scribe Line size x/y:	80 x 80 µm		
Pad Die Size /Pad type:	59 x 123 µm	53 x 108 µm	65 x 108 µm
Metal Layers Number /Materials /Thickness:	Metal 1 Tin/AlCu/Tin 0.450 µm Metal 2 Tin/AlCu/Tin 0.450 µm Metal 3 Tin/AlCu/Tin 0.450 µm Metal 4 Tin/AlCu/Tin 0.450 µm Metal 5 Tin/AlCu/Tin 0.875 µm	Metal 1 TaN/Ta/Cu 0.280 µm Metal 2 Ti/AlCu/TxTN 0.310 µm Metal 3 Ti/AlCu/TxTN 0.310 µm Metal 4 Ti/AlCu/TxTN 0.310 µm Metal 5 Ti/AlCu/TxTN 1.200 µm	Metal 1 TaN/Ta/Cu 0.280 µm Metal 2 TaN/Ta/Cu 0.350 µm Metal 3 TaN/Ta/Cu 0.350 µm Metal 4 Ti/AlCu/TxTN 0.900 µm
Passivation Layers Thickness:	HDPox 10kA+SRO 1.5kA+PESIN 6kA	USG + NitUV (HFP USG+UV Nitride)	
Back Metal Finishing	RAW SILICON - BACK GRINDING		

2.4 Back-End information

Back-End	Lot 1 (410)	Lot 2 (427)	Lot 3 (765)
Assembly Plant Location/ Address:	ST MICROELECTRONICS TANJONG AGAS IND ESTATE PO BOX 28 84007 MUAR / JOHOR MALAYSIA		
Die Thickness after Back grinding:	NA	NA	NA
Die sawing method:	Step cut		
Die attach material: **Type:** **Supplier:**	Glue EN4900 ST16 Hitachi		
Lead frame material: **L/F Finishing Type:** **Die paddle size:** **Supplier:**	Copper LF-HD LQFP 48L 7x7 Rough µPPF (e4) Ni Pd AuAg 5 x 5 HDS		Copper LF-HD LQFP 48L 7x7 Rough µPPF (e4) Ni Pd AuAg 3.6 x 3.6 HDS
Wire bonding: **Type /Diameter:** **Supplier:**	AG 96,5% WIRE 0.8MIL MKE		
Pitch:	80µm	70µm	80,36µm
POA:	0110596		
Molding Compound Supplier:	EME-G700LS SUMITOMO		
Package Moisture Sensitivity Level (JEDEC J-STD020D):	2		

3 RELIABILITY RESULTS SUMMARY

3.1 Die oriented test

	Die Related Tests					Results LQFP 7x7		
Description	***Test/Method***	***Conditions***	***Sample Size***	***Criteria***	***Readout / Duration***	***410***	***427***	***765***
Electrostatic discharge – Charge Device Model								
ESD CDM	ANSI/ESD STM5.3.1	500V 1KV	3 units	500V for dice 410/427 1KV for 765	NA	0/3	0/3	0/3

3.2 Package Oriented Test

	Package Related Tests					Results LQFP 7x7		
Description	***Test/Method***	***Conditions***	***Sample Size***	***Criteria***	***Readout / Duration***	***410***	***427***	***765***
Preconditioning: moisture sensitivity level 1								
PC	J-STD-020 JESD22-A113	MSL1 For MSL2 Qual	308 units	Electrical test: A0/R1 (Accepted 0 reject/ Rejected 1 reject)	NA	0/308		
High Temperature Storage Life								
HTSL	JESD 22-A103	150°C	77 units	Elect test A0/R1	1000h	0/77	0/77	0/77
Thermal Cycling after Preconditioning								
TC	JESD 22-A104	-65c/+150°c	77 units	Elect test A0/R1	100cy	0/77	0/77	0/77
					500cy	0/77	0/77	0/77
					1000cy	0/77	0/77	0/77
Wire Bond Shear after Thermal Cycling								
Wire Bond Shear	AEC Q100-001	Min bond shear 15g after TC	30 x 3	A0/R1	After TC 500cy TC 1000cy	0/30	0/30	0/30
Wire Bond Pull after Thermal Cycling								
Wire Bond Pull	Mil Std 883 Method 2011	Minimum pull strength after TC=3 grams after TC	30 x 3	A0/R1	After TC 500cy TC 1000cy	0/30	0/30	0/30

Autoclave after Preconditioning								
AC	JESD 22A102	121°C ,100% 2Atm RH	77 units	Elect test A0/R1	96h	0/77	0/77	0/77
Temperature Humidity Bias after Preconditioning								
THB	JESD 22A101	85°C/85%RH Bias	77 units	Elect test A0/R1	1000h	0/77	0/77	0/77
Construction Analysis								
CA	Construction Analysis including : -Wire bond shear -Wire bond pull -Solderability -Physical Dimension	JESD 22B102 JESDB100/B108	50		No major concern	No major concern		

4 APPLICABLE AND REFERENCE DOCUMENTS

ADCS/DMS 0061692 :	Reliability Tests And Criteria For Qualifications
SOP 2.6.2:	Process qualification and transfer management
SOP 2.6.7:	Product Maturity Level
SOP 2.6.9:	Package and process maturity management in Back End
SOP 2.6.11:	Program management from product qualification
SOP 2.6.19:	Process maturity level
ANSI-ESD STM5.3.1:	Electrostatic discharge (ESD) sensitivity testing charge device model (CDM)
JESD 22-A103	High Temperature Storage Life
J-STD-020D:	Moisture/reflow sensitivity classification for non-hermetic solid state surface mount devices
JESD22-A113:	Preconditioning of non-hermetic surface mount devices prior to reliability testing
JESD22-A102:	Autoclave test (pressure pot)
JESD22-A104:	Temperature cycling
JESD22-A101:	Temperature Humidity Bias
JESD 22B102:	Solderability test
JESD22B100/B108:	Physical dimension

5 GLOSSARY AND TESTS DESCIPTION

PC	Preconditioning (solder simulation)
THB	Temperature Humidity Bias
TC	Temperature cycling
AC	Autoclave test (pressure pot)
HTSL	High temperature storage life
ADCS/DMS	ST Advanced Documentation Controlled system/ Documentation Management system
ESD CDM	Electrostatic discharge (charge device model)
CA	Construction Analysis

6 REVISION HISTORY

Version	Date	Author	Comment
1.0	May 31st, 2016	Olivier GIRAUD	Initial release for qualification
2.0	March 13th, 2023	Berengere ROUTIER-SCAPPUCCI	Added new PCN13956 for additional products
3.0	September 04th, 2026	Lionel Nevoret	Added new PCN16534 for repatriation at ST Muar

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