


PRODUCT / PROCESS CHANGE INFORMATION

1. PCI basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCI No.	CRP/23/14155	
1.3 Title of PCI	New laser marking equipment	
1.4 Product Category	all products delivered from Rennes plant (refer to impacted products list)	
1.5 Issue date	2023-06-05	

2. PCI 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 Process Owner	Chiara ZACCHERINI
2.1.2 Corporate Quality Manager	Gerard PETIT

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Machines	New equipment of same brand different model New equipment with no change in process technique or technology (newer models, extension of existing toolset...), and with no risk for supply chain	RN1T---ST RENNES - FRANCE

4. Description of change

	Old	New
4.1 Description	Laser ROFIN with No OCR (Optical Character Recognition) , using ARIAL font	Laser COHERENT with higher resolution, with OCR (Optical Character Recognition), using OCRA font (ST Std)
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	Form: impact on visual appearance of the marking Fit: no impact Function: no impact reliability : no impact processability : no impact	

5. Reason / motivation for change

5.1 Motivation	New laser marking equipment for improved marking quality, wrong or defective marking detection and capacity robustness.
5.2 Customer Benefit	CAPACITY INCREASE

6. Marking of parts / traceability of change

6.1 Description	The change can only be seen by visual control. However, STMicroelectronics can fully trace the marking equipment of each part using the assembly lot ID provided in the certificate of conformance.
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7. Timing / schedule

7.1 Date of qualification results	2023-05-26
7.2 Intended start of delivery	2023-06-15
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description			
8.2 Qualification report and qualification results	In progress	Issue Date	

9. Attachments (additional documentations)
14155 Public product.pdf 14155 PCI - New laser marking equipment.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
	LEOAC00PT-D	
	LEOAC08PT-D	
	LEOAC14PT-D	
	LEOAC244PT-D	
	LEOAC74PT-D	
	LEOAD128PT-D	
	LEOLVDSRDPT-D	

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PRODUCT/PROCESS CHANGE INFORMATION

PCI SUMMARY	
Sales type / Product Family	<i>All</i>
Customer (s)	<i>All</i>
Type of change	<i>New laser marking machine introduction</i>
Reason of change	<i>Capacity increase Single equipment bottleneck suppression</i>
Description of the change	<i>Qualification of a new marking equipment</i>
Forecasted date of change	<i>May 2023</i>
Availability date of samples for Customer	<i>Upon request</i>
Forecasted date for internal STMicroelectronics change qualification report availability	<i>May 2023</i>
Marking to identify changed product (ex: Date Code change)	<i>Refer to "How the change can be seen"</i>
Description of the evaluation and qualification program	<i>Refer to "What is the impact of the change"</i>
Product Line(s) and/or Part Number(s)	<i>All</i>
Manufacturing location(s)	<i>Rennes (FR)</i>
Estimated date of first shipment	<i>June 2023</i>

Rennes Internal Validation	
Rennes Product engineering Manager	André UGUEN
Rennes Product Marketing Manager	Thibault BRUNET
Rennes quality Manager	Sylvie PERON

1. WHICH PRODUCTS ARE CONCERNED BY THE CHANGE?

All products may be affected by this change.

The change actually applies only to the parts marked with the new equipment (see section 9).

2. WHAT IS THE CHANGE?

A new laser marking machine has been added and qualified to increase the capacity of the line and suppress a single equipment bottleneck. The new machine allows a higher making definition and the use of ST standard marking font, ØCRA, optimized for machine recognition instead of the **ARIAL** used with the legacy machine.

The markings made with the new machine change from white to black on golden lids, with variation depending on the lighting setting. The new equipment allows shallower marking (marking depth of 100nm max.).



Marking example (SMD1)

3. HOW THE CHANGE HAS BEEN QUALIFIED?

The change has been classified as minor as per ST procedure. However, it generates a modification of the visual appearance of the products and therefore required a formal Product Change Information. (this document)

The change is qualified following ST's standard procedure with a risk analysis and dedicated tests to assess them.

The risk analysis did not evidence any major risks for the products. However, the parts were submitted to different stresses to guarantee the permanence and depth of the marking, including:

- Salt atmosphere,
- Thermal cycles,
- Moisture resistance.

The visual inspections and FIB cross-sections did not evidence any issue neither with the marking legibility, the marking depth nor the package corrosion. The packages also passed leakage tests.

4. WHY IS THERE A CHANGE?

The primary goal of this change is to increase the overall marking capacity and suppress a single equipment bottleneck.

5. WHO IS IMPACTED BY THE CHANGE?

All customers may be affected by this change. The customers actually impacted are those receiving parts marked with the new machine.

6. WHAT IS THE IMPACT OF THE CHANGE?

The change is limited to the marking. Its impact is therefore limited to legibility for visual inspections, whether human or automatic, and at incoming or inline.

7. WHAT IS THE SCHEDULE OF THE CHANGE?

The commissioning of this new equipment is scheduled for May 2023.

From this date onward, products will be marked with either laser marking machines.

8. HOW CAN THE CHANGE BE SEEN AND TRACED?

The change can only be seen by visual control.

However, STMicroelectronics can fully trace the marking equipment of each part using the assembly lot ID provided in the certificate of conformance.

9. HOW WILL THE CHANGE BE HANDLED?

All assembled parts from the date of the change onwards may be marked with either machine.

The lot homogeneity is fully guaranteed by ensuring that all parts from the same assembly batch are marked on the same equipment.



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

PCI Title : New laser marking equipment

PCI Reference : CRP/23/14155

Subject : Public Products List

Dear Customer,

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

RHFLVDS2281K1	RHF1009AK01V	RHFAC32K1
HCC4027BK1	RHFAC541K02V	RHRAC164245K03V
RHFAC74K1	RHFAC161K1	RHFAC541K1
RHFLVDS325K1	M54HC11KG	SOC3700HRT
2N5401RUBT	2N2222AUBG	SOC2222AHRT
HCC40109BK1	M54HC273KG	HCC4046BKG
RHFAC14K03V	RHFACT16244K02V	HCC4070BKG
2N2222AUBT	HCC4081BKT	RHFACT541K03V
HCC4014BDG	RHFL4913S33-04V	RHFXH163245K03V
RHFL4913KP151	HCC4046BKT	RHFAC541K04V
SOC3700HRG	M54HC04KG	M54HC04K1
HCC4051BK1	JANS2N5401UBT	RHFACT240K04V
STRH8N10S1	STRH100N10HY1	RHFAC139K04V
HCC4013BKT	HCC4002BKG	M54HC273KT
HCC4520BKG	SOC2920AHRG	HCC4021BDG
2N5153RSRHRG	RHF310AK01V	HCC4053BKG
M54HC109KG	HCC4063BDG	2N5401RUBG
HCC4011BKG	STRH40N6SG	STTH60400SAG
RHFL4913ESY151	RHFLVDSR2D2K01V	HCC4093BK1
HCC40103BKT	HCC4070BKT	STRH100N10HYG
LEOAD128PT	HCC4073BDG	RHFXHR162245K03V
HCC4069UBK1	STRH40N6S1	M54HC123DG
RHFAC161K04V	1N5819U01B	M54HC157DG
RHR61K02V	M54HC86KG	SOC54011
M54HC4053KG	M54HC02KG	RHFAC138K1
RHFL7913KPA-01V	HCC40109BKT	HCC4020BKT
RH-PM4424LK1	RHFL4913ESY2505V	2N5153S1
M54HC595KG	M54HC595DG	M54HC00DG
M54HC373DG	RHFL4913SCA07V	RHFACT541K1
RHFL4913ESY3305V	M54HC4051DG	HCC4029BKT
RHFL4913KP25-02V	HCC4011BKT	HCC4520BDG
RHFAC191K1	RHFAC00K04V	RHFAC240K01V
RHFAC574K01V	SOC5551HRG	M54HC109KT
RHFACT00K03V	M54HC259K1	STRH100N6HYG
HCC4071BKG	M54HC27KG	M54HC574DG
M54HC123KT	RHFAC04D03V	2N5153RESYHRG



Public Products List

RHFAC138K01V	M54HCT74KG	RHFACT161K01V
RH-AD128KX	RHFACT245K02V	HCC4019BDG
RHFAC86K02V	HCC4073BKT	RHFACT240K1
RHFAC11K02V	RHFL4913S50-04V	RHFAC74K04V
RHFAC00K02V	JANS2N5551UBG	RHF1401KSO-01V
HCC4015BDG	RHFAC74D03V	RHFAC32K04V
HCC4077BK1	SOC5551RHRT	RHRPM4423LK02V
HCC4077BKT	1N5822U02B	HCC4047BKG
M54HC03KG	STRH100N6HYT	RHFAC08K04V
HCC4094BKT	M54HC595KT	RHFAC245K04V
RHFACT16244K1	RHR64K01V	HCC4001BKG
M54HC11KT	M54HC14K1	M54HC14KT
M54HC4020KT	M54HC373KT	SOC2484HRT
M54HC151KT	SOC2222AHRTW	RHFL4913S50-03V
2N5154SHRG	2ST15300SR1	M54HC193DG
RHFACT139D03V	STPS40A45CHY1	RHFACT240K02V
RHRAC164245K1	SOC2920AHRT	RH-PMICL1AKX
RHFACT74K02V	RHF350AK1	HCC4020BDG
HCC4013BKG	RHFAC174K1	M54HC245KT
RHFAC08K02V	M54HC688KG	SOC5401RHRG
2N3700RUBG	ST1843K1	RHFACT151K1
RHFL4913KP33-01V	LEOAC244PT-D	M54HC193KT
RHFAC245K01V	RHFAC373D03V	2N5154SRHRG
M54HC85KG	RHFACT138K02V	2N5551UBT
HCC4072BDG	M54HC132K1	HCC4081BDG
SOC3810HRT	RHFAC139K1	HCC4021BKT
M54HCT244KG	RHFAC16244K01V	RHFAC14K01V
RHRPM4424LK01V	HCC4555BKT	STTH60200CSA1
HCC4041UBKG	RHF43BK1	RHFAC2525K03V
RHFACT16245K02V	RHFACT04K04V	RHFACT14K01V
RHFACT08K02V	M54HC4066K1	1N5822UB1
M54HC85DG	2N5153RSHRG	JANS2N3700UBT
M54HC541K1	JANSR2N5401UBG	M54HC175KG
STPS40A150CHY1	RHFAC151K04V	HCC4028BKT
HCC4512BDG	HCC4017BKG	RHFAC32K01V
HCC4030BKG	STTH60400SA1	1N5819U02B
RHFAC16373K01V	M54HC4040K1	HCC4538BDG
2N5153SRHRG	RHFLVDS31AK02V	M54HC166KG
M54HC32K1	RHFACT574K1	RHFXH162245K05V
RH-AD128K1	M54HC541KT	RHFL4913KP331
JANSR2N3700UBG	M54HC245DG	RHFAC11K04V
HCC4072BKG	M54HCT244KT	M54HC4050KT
HCC4014BKG	STRH40P10HYG	RHFAC08K1
RHF484K-01V	J2ST3360K1	JANSR2N5401UBT
RHFACT574K01V	RHFAC240K1	RHRPM4423LK01V
RHFACT244K01V	2N2907ARUBT	1N5822U01B
HCC4514BK1	RHFAHC00K01V	2N5153ESYHRG
HCC4015BKT	M54HC4053KT	HCC4049UBKG
M54HC4514KG	RHFACT174K02V	HCC4017BKT
SOC3700RHRT	HCC4072BKT	1N5811U02B



Public Products List

HCC4070BDG	M54HC259KT	RHR801K1
RHRPMICL1AK01V	1N6640UD1	RHFAC16245K1
RHFAD128K02V	RHFAC00K1	RHFAC540K02V
M54HC14KG	M54HC04KT	HCC4011BDG
RHFL4913S15-04V	HCC4094BKG	HCC4041UBKT
JANSR2ST3360KT	RHFAC2525K04V	M54HC04DG
M54HC245K1	HCC4021BKG	HCC40109BKG
HCC4014BKT	RHFXH162373K05V	M54HC237DG
M54HC165KT	RHFACT32K02V	STRH12P10GY1
M54HC123KG	HCC4050BDG	RHRPM4423K01V
RHFAC14AK01V	HCC4013BK1	LEOAC00PT-D
HCC4050BKT	HCC4068BDG	LEOLVDSRDPT-D
M54HC32KT	HCC4556BDG	JANSR2N3700UBT
M54HC32DG	RHFAC86K04V	M54HC191KT
M54HC273K1	RHFL4913KP15-02V	M54HC373KG
STRH100N10HYT	RHFACT86K01V	RHFACT14K04V
RHFL7913SCA1	M54HC74K1	RHFLVDS32AK01V
SOC2920A1	RHFL4913S33-03V	M54HC08K1
RHFL7913KPA-02V	RHFACT04K02V	RHFAC244K01V
HCC40106BDG	RHFAC02K02V	RHFACT04K1
2N5551RUBG	JANSR2ST3360KG	HCC4081BKG
2N5153SHRG	HCC4022BDG	M54HC193KG
HCC4017BDG	STTH40200CHYG	RHFAC02D03V
1N6642U02D	HCC4075BK1	2N2907AUB1
RHFAC157K04V	HCC4075BKT	RHFAC244K04V
SOC5551HRGW	SOC2222AHRG	RHFAC74K03V
RHFL4913ESY1506V	RHFACT08K1	RHFXH163245K1
2ST3360K1	RHFACT244K03V	HCC4013BDG
RHFACT32K1	RHF43BK-01V	RHFL4913S331
M54HC374DG	RHFAC139K03V	RHFXH162244K1
RHFAC86K01V	2N5551UB1	SOC5551HRT
M54HC138KT	RHFACT138K1	M54HC14DG
1N6640U01D	HCC4024BKG	RHFACT02K03V
RHF330AK1	M54HC4051KT	HCC40106BK1
RHFL4913KP50-02V	RHFAC14AK04V	HCC40106BKG
HCC4020BKG	RHFAC245K02V	M54HC4060KG
M54HC4049K1	HCC4001BKT	RHF330AK01V
RHFACT541K01V	JANSR2N5551UBG	RHFACT74K1
2N2907AUBG	HCC4555BKG	HCC4053BDG
RHFAC574D03V	RHFLVDS315K01V	RHFL4913S25-03V
BYW81-200SG	RHFL4913KPA-02V	LEOAD128PT-D
RHFLVDS325K02V	M54HC164KG	RHFACT245K04V
RHFAC08K03V	SOC3810HRG	HCC4063BKG
M54HC166K1	RHFAC161K02V	RHFL4913KP50-01V
RHFAC00K01V	M54HC166KT	RHRDAC1612K01V
RHFL4913KP15-01V	HCC4514BDG	RHFL7913KPA1
2N5154ESY1	RHFACT00K02V	HCC4514BKT
M54HC74KT	RHFAC32K03V	HCC4019BKG
M54HC138K1	2N2907ARUBG	2N5153SR1
RHFACT14K02V	M54HC237K1	RHFLVDS315K1



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M54HC688KT	M54HC259KG	RHFACT161K1
HCC4015BKG	STPS60A150CS1	M54HC4514KT
RHFAC161K01V	HCC4029BK1	M54HC74KG
RHFAC244K02V	RHFACT14K1	M54HC32KG
2N5401UB1	HCC4041UBK1	RHFAC138K02V
RHFAC244K1	STRH12P10GYG	HCC4081BK1
M54HC157K1	2N5154ESYHRT	JANSR2N5551UBT
2N5154ESYHRG	RHFL4913ESY1505V	M54HC138DG
M54HC174KG	RHFAC244K03V	M54HC125KT
HCC4067BKT	RHFACT16245K1	RHFAC14K04V
RHFL4913SCA1	SOC24841	M54HCT245KG
2N5153ESY1	M54HC154K1	RHFAC16244K03V
M54HC125KG	RH-PM4424K1	LEOAC08PT-D
1N5819UB1	RHFAC10K1	HCC4002BDG
RHRPM4424LK02V	HCC4049UBKT	M54HC244K1
RHFACT16373K02V	HCC4093BKG	RHFACT240K01V
M54HC237KT	HCC4051BKG	RH-DAC1612K1
RHFAC14D03V	RHFAC157K01V	RHR801K01V
RHFAD128K01V	M54HC573KG	SOC2907AHRG
RHFAC245D03V	RHF43BK-02V	HCC4027BDG
RHFAC273K01V	HCC4556BKG	HCC4052BDG
RHF350AK01V	HCC4060BKG	RHFLVDS32AK1
RHF1401KSO1	RHFAC02K1	M54HC541DG
RHFAC14K02V	RHFACT138K01V	RHFAC86K1
RHFACT08K03V	RHFXH162374K03V	HCC4098BKG
RHFL4913ESY501	M54HC240KT	STPS40100C2FY1
RHFACT245K01V	RHFAC138D03V	RHFAC08K01V
SOC2907AHRT	HCC4093BDG	M54HC00KT
M54HC4051K1	HCC4093BKT	RHFAC14AK1
1N6640U02D	HCC4556BKT	RHFAC373K02V
M54HC237KG	M54HC175K1	ST1845K1
RHFAC574K1	RHFAC2525K1	M54HC138KG
M54HC165DG	RHFLVDSR2D2K1	HCC4066BKG
M54HC573KT	HCC4043BKT	J2N5401UB1
HCC4538BKG	RHFACT00K04V	RHFAC541K01V
M54HC148DG	SOC2907ARHRT	RHFAC273K04V
RHFXH162244K05V	RHFAC04K04V	M54HC123K1
RH-PM4423LK1	M54HC10K1	M54HC4060KT
2N2907AUBT	HCC4098BK1	SOC3700RHRG
RHFLVDSR2D2K02V	RHF1201KSO-01V	HCC4098BKT
RHFL4913S501	RHFACT157K01V	RHFAC11K01V
2N5154RSHRG	HCC4047BK1	M54HC4050KG
M54HC164KT	M54HC573DG	M54HC153DG
RHFAC138K04V	RHR61K1	RHFL4913ESY2506V
SOC2907ARHRG	RHFAC02K01V	HCC4052BKG
STRH40P10HY1	HCC4043BKG	2N5551RUBT
M54HC4066KG	M54HC132DG	RHFAC04K02V
HCC4538BKT	RHFL4913KP25-01V	RHF1201KSO1
M54HC257KT	2N5154RESYHRG	M54HC160DG
M54HC08KT	2N2222AUB1	HCC4514BKG



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2N2222ARUBTW	HCC4040BKG	M54HC193K1
RHFAC151K1	JANS2N5401UBG	HCC40109BDG
STRH100N6HY1	M54HC244KG	1N6642UD1
RHFAC374K01V	M54HC02K1	M54HC132KT
RHFAC2525K01V	2N5551UBG	HCC4049UBK1
SOC55511	RHFAC245K1	RHR64K1
STPS80A150CSG	RHFAC16244K1	RHFL7913SCA-03V
HCC4051BDG	M54HC165K1	M54HC139KT
M54HC595K1	M54HC4051KG	M54HC08DG
M54HC08KG	M54HC174KT	M54HC161KG
RHFACT00K1	HCC4051BKT	RHFAC2525K02V
RHFAC74K02V	SOC3810RHRT	2N2484UBT
RHFAC157K02V	RHFACT374K02V	M54HC4094KG
RHFAC273K02V	RHFAC16245K01V	HCC4073BK1
RHFAC16244K02V	M54HC154KG	RHRPM4424K02V
M54HC245KG	RHFXH162245K03V	M54HCT244K1
M54HC244KT	RHFACT02K04V	M54HC157KT
RHFACT273K02V	RHFACT244K02V	HCC4027BKT
ST1845RKT	1N5811UB1	RHFAC273K1
M54HC02KT	M54HC125K1	M54HC4040KT
HCC4046BK1	RHFLVDS2281K01V	M54HC4050K1
RHFAC139K01V	M54HC573K1	RHFAC10K01V
HCC4027BKG	RHFXH162373K03V	RHFACT32K03V
RHFACT16245K01V	M54HC11DG	RHFACT16244K01V
RHFACT74K01V	RHF484K1	M54HC109K1
M54HC174K1	RHFACT02K02V	SOC3810RHRG
SOC37001	HCC4053BKT	M54HC4049KT
M54HC4053K1	RHFAC04K1	RHFACT08D03V
RHFLVDS325K01V	M54HC02DG	RHFL4913KP33-02V
RHFL4913S251	M54HC00KG	2N3700UB1
STRH8N10SG	LEOAC74PT-D	RHFACT86K1
RHFACT74K03V	RHFL4913KPA1	RHFACT32K01V
M54HC541KG	M54HC157KG	M54HC86DG
RHFAC14AK02V	HCC4071BDG	RHR64K02V
M54HC574KT	M54HC86KT	RH-PMICL1AK1
SOC5551RHRG	1N5811U01B	RHFAC02K04V
RHRPM4424K01V	HCC4040BK1	M54HC164DG
M54HC00K1	M54HC165KG	HCC4047BKT
RHFACT139K1	HCC40106BKT	RHRPMICL1AK02V
RH-AHC00K1	HCC4002BKT	RHFAC16374K01V
2N5154S1	BYW81-200S1	RHFXHR162245K05V
RHFAC240K02V	HCC4516BKG	2N5154RESYHRT
RHFAC32K02V	STPS1045C2SG	M54HC27KT
RHFACT04K01V	RHFACT14K03V	RHFL6000AKP1
M54HC4066KT	M54HC4049KG	SOC5401HRT
STPS80A150CS1	1N6642U01D	M54HC393DG
RHR61K01V	RHFAC74K01V	2N5154SR1
STTH40200CHY1	RHFAC374D03V	RHF100K1
RHF1009AK02V	RHF200K1	HCC4052BKT
RHFXH162244K03V	SOC2907A1	RHFACT244D03V



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M54HC132KG	RHF1009AK1	RHFACT244K04V
HCC4043BDG	HCC4040BKT	RHFAC151K02V
SOC38101	RHFL4913ESY5005V	SOC5401RHRT
2N5153RESYHRT	M54HC540KG	M54HC10KG
RHFLVDS32AK02V	HCC4066BDG	2N3700RUBT
M54HC4060K1	M54HC4050DG	RHFAC14K1
HCC4047BDG	ST1845RKG	HCC4071BKT
M54HC4094KT	RHFAC139K02V	RHFLVDS31AK01V
RHFXH163245K01V	M54HC164K1	STRH40P10HYT
SOC2222A1	SOC5401HRG	RHFACT244K1
ST1843FKG	2N3810K1	RHFAC04K01V
SOC2222ARHRT	RHFL4913S25-04V	RHF310AK1
RHFL4913KPA-01V	M54HC153KG	HCC4066BKT
RHFLVDS31AK1	RH-OSC04K1	RHFL4913S15-03V
RHFAC244D03V	LEOAC14PT-D	RHFL4913S151
JANS2N3700UBG	2N3810RKT	RHFACT245K1
RHFAC86K03V	M54HC4040KG	M54HC10KT
RHFAC191D03V	M54HC244DG	M54HC161KT
HCC4512BKG	M54HC4060DG	2ST15300RSRHRG
M54HC86K1	RHFAC521K02V	RHFACT574K02V
M54HC251KT	2N5154RSRHRG	SOC2222ARHRG
RHFACT04K03V	M54HC175DG	2N3700UBG
RHFLVDS315K02V	RHRAC164245K01V	HCC4071BK1
HCC4066BK1	HCC4503BKG	HCC4069UBKG
RHFAC00D03V	RH-PM4423K1	

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