PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data	
1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	ADG/20/12360
1.3 Title of PCN	SPC584Cx, SPC58ECx (FC80) : Design Improvement and New Manufacturing Plants Activation (Diffusion, EWS, Assembly, Testing)
1.4 Product Category	see list
1.5 Issue date	2020-09-29

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	Luca RODESCHINI
2.1.2 Marketing Manager	Matteo MOIOLI
2.1.3 Quality Manager	Alberto MERVIC

3. Change		
3.1 Category	3.2 Type of change	3.3 Manufacturing Location
General Product & Design	(Not Defined)	see enclosed details

4. Description of change		
	Old	New
4.1 Description	see enclosed details	see enclosed details
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impacts	

5. Reason / motivation for change	
5.1 Motivation	Improvement of silicon design (bug fix) and implementation of new manufacturing roadmap (current one retained as back-up)
5.2 Customer Benefit	QUALITY IMPROVEMENT

6. Marking of parts / traceability of change	
6.1 Description	Dedicated Finished Good Codes

7. Timing / schedule	
7.1 Date of qualification results	2021-12-17
7.2 Intended start of delivery	2022-01-31
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)
12360 Public product.pdf 12360 Details.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
	SPC58EC80C3QMC0Y	
	SPC58EC80E1Q0C0Y	
	SPC58EC80E3QMC0Y	
	SPC58EC80E5QMC0Y	
	SPC58EC80E7QMC0Y	

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PRODUCT/PROCESS CHANGE NOTIFICATION

SUBJECT

SPC584Cx, SPC58ECx (FC80) : Design Improvement and New Manufacturing Plants Activation (Diffusion, EWS, Assembly, Testing)

IMPACTED PRODUCTS

ST silicon line FC80 (Chorus-4M) assembled in the following different packages:

- FPBGA 17X17X1.8 292
- LQFP 176L 24X24X1.4 Expad
- TQFP 144 20x20x1.0 1.0 Expad
- TQFP 100 14x14x1.0 1.0 Expad
- TQFP 64 10x10x1.0 1.0 ExPad

Identified by part numbers starting with SPC584Cx and SPC58ECx.

MANUFACT. STEP

Silicon design improvement (bug fix), diffusion plant, electrical wafer probing plant (EWS), assembly plant and electrical final test, depending on package type, as per the following table:

Package Description	Design	Diffusion	EWS	Assembly	Final Test
FPBGA 17X17X1.8 292	•	•	•	-	-
LQFP 176L 24X24X1.4 Expad	•	•	•	•	•
TQFP 144 20x20x1.0 1.0 Expad	•	•	•	•	•
TQFP 100 14x14x1.0 1.0 Expad	•	•	•	•	•
TQFP 64 10x10x1.0 1.0 ExPad	•	•	•	•	•

INVOLVED PLANT

Different sites are involved:

- Design: not applicable
- Diffusion: Subcontractor Samsung (recipient site)
- EWS: Subcontractor KYEC (recipient site)
- Assembly: ST Muar and Subcontractor ASE (recipient sites)
- Final Test: ST Muar and Subcontractor under definition (recipient sites)

depending on the different package type.

CHANGE REASON

Improvement of silicon design (bug fix) and implementation of new manufacturing roadmap (current one retained as back-up).

CHANGE DESCRIPTION

Different changes are collected in this notification:

1. Design improvement: from silicon release Cut 1.1 to Cut 2.0 to remove existing bugs, maintaining full SW compatibility (list of changes available). Cut 2.0 will be directly implemented in the new diffusion site (Samsung) but, to mitigate the risk, solution has been already validated and qualified in ST Crolles plant. List of errata fixes is attached as Annex 1 to this notification.
2. Diffusion transfer: from current ST Crolles to Subcontractor Samsung.
3. EWS transfer: from ST Rousset to Subcontractor KYEC. Both sites will remain active.
4. Assembly transfer: from ST Malta and Subcontractor Amkor to ST Muar and Subcontractor ASE (except for BGA package). Both sites will remain active in case of Malta to Muar.
5. Final Test transfer: from ST Malta to ST Muar and Subcontractor under definition (except for BGA package). Both sites will remain active.

Different combinations are summarized in the following table:

	Silicon Revision		Diffusion		EWS		Assembly		Final Test	
Package Description	Current	New	Current	New	Current	New	Current	New	Current	New
FPBGA 17X17X1.8 292	Cut 1.1	Cut 2.0	ST Crolles	Samsung	ST Rousset	KYEC ST Rousset	ST Malta	ST Malta	ST Malta	ST Malta
LQFP 176L 24X24X1.4 Expad	Cut 1.1	Cut 2.0	ST Crolles	Samsung	ST Rousset	KYEC ST Rousset	ST Malta	ASE ST Malta	ST Malta	ST Malta Subco
TQFP 144 20x20x1.0 1.0 Expad	Cut 1.1	Cut 2.0	ST Crolles	Samsung	ST Rousset	KYEC ST Rousset	ST Malta	ST Malta Subco	ST Malta	ST Malta Subco
TQFP 100 14x14x1.0 1.0 Expad	Cut 1.1	Cut 2.0	ST Crolles	Samsung	ST Rousset	KYEC ST Rousset	ST Malta	ST Malta ST Muar	ST Malta	ST Muar ST Malta
TQFP 64 10x10x1.0 1.0 ExPad	Cut 1.1	Cut 2.0	ST Crolles	Samsung	ST Rousset	KYEC ST Rousset	Amkor	ST Muar	ST Malta	ST Muar

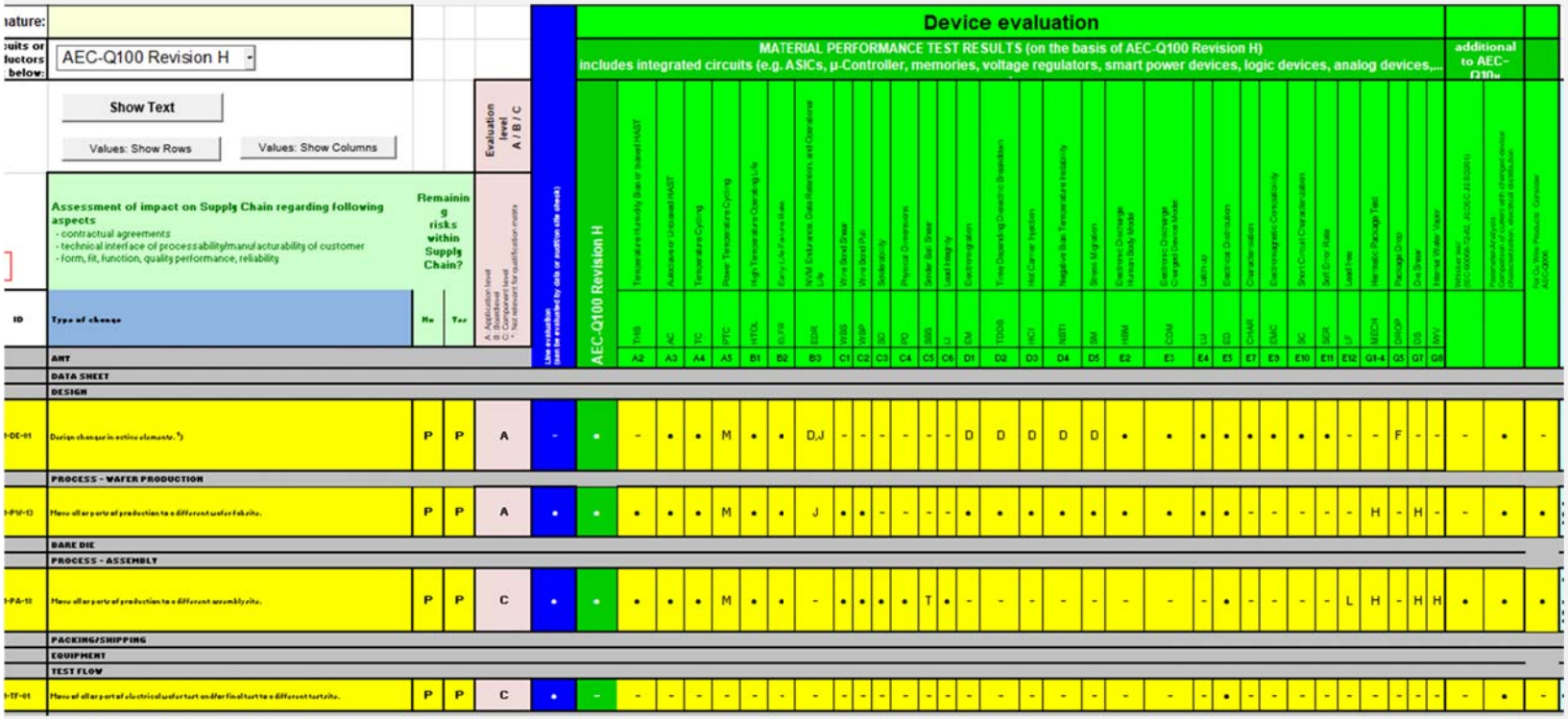
TRACEAB.

New dedicated Commercial Product code (silicon revision) and dedicated Finished Good code (Internal Part Number).

VALIDATION

Presently in progress, according to AEC-Q100 / Q006 qualification plan for Integrated Circuits and ZVEI Guidelines:

life.augmented



CURRENT PRODUCTS	Current products will be progressively replaced by the new device versions, with following approach: - Silicon design: Cut 2.0 only will remain active - Diffusion: Samsung only will remain active - EWS: new site will be the main site for mass production, old site will remain active as a backup - Assembly: new site will be the main site for mass production, old site will remain active as a backup, except for 64L package that will be active in ST Muar only - Final test: new site will be the main site for mass production, old site will remain active as a backup
REPORTS	Qualification of notified changes is presently in progress; relevant availability is indicatively expected in the following timeframe: - samples: 2021Q2 - reports: 2021Q3

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ANNEX 1 – LIST OF ERRATA FIXES

ID	Module	Title	Cut 1.1	Cut 2.0
PS3022	STANDBY	STANDBY: Pad-Keeper functionality not immediately enabled on Low Power pads when entering in STANDBY Mode	X	Substituted by DAN-0051761 due to PAD Keeper Fix (*)
DAN-0051763	STANDBY	[DOC] WKPU: Wakeup/Interrupt Pullup Enable Register (WIPUER) description	-	Added due to PAD Keeper Fix (*)
DAN-0043003	CMU	CMU: False upper frequency threshold alarm signaled to FCCU	X	Fixed
DAN-0043294	MCAN	MCAN: Tx FIFO message sequence inversion	X	Fixed
DAN-0043334	MCAN	MCAN: Retransmission in DAR mode due to lost arbitration at the first two identifier bits.	X	Fixed
DAN-0047977	MCAN	Unexpected High Priority Message (HPM) interrupt.	X	Fixed
DAN-0047979	MCAN	Message transmitted with wrong arbitration and control fields	X	Fixed
PS1891	MCAN	Edge filtering causes mis-synchronization	X	Fixed
PS2206	MCAN	Configuration NBTP.NTSEG2 = '0' not allowed	X	Fixed
DAN-0042615	XOSC	XOSC: Oscillator4-40MHz Internal Capacitances	X	Fixed
DAN-0048760	PMC_Dig	PMC_Dig: HVD134_C (VD6) fake fault exiting STANDBY mode	X	Fixed

(*) for more details on PAD Keeper features, please, refer to AN5484

Note: all the fixes do not generate any incompatibility with the workaround sw if maintained

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 : SPC584Cx, SPC58ECx (FC80) : Design Improvement and New Manufacturing Plants Activation (Diffusion, EWS, Assembly, Testing)
PCN Reference : ADG/20/12360

Subject : Public Products List

Dear Customer,

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

SPC584C70E3F000X	SPC58EC80E1Q0C0X	SPC58EC70E3F000X
SPC58EC80C3QMC0Y	SPC58EC74E3FMC0X	SPC58EC80E7QMC0Y
SPC58EC80C3Q0C0X	SPC58EC80C3QMC0X	SPC584C80E3G0C0X
SPC58EC80C3NEC0X	SPC58EC80E5FMC0X	SPC58EC80E3FMC0X
SPC584C70E7QMC0X	SPC58EC80E3QMC0X	SPC584C70E3FMC0X
SPC58EC70E1F0C0X	SPC58EC80E5QMC0X	SPC58EC74E7E0C0X
SPC58EC80E7G0C0X	SPC58EC80E5QMC0Y	SPC58EC80E3QMC0Y
SPC58EC74E3E0C0X	SPC58EC80E7QMC0X	SPC584C70E3GMC0X
SPC58EC80E5EMC0X	SPC58EC80E1Q0C0Y	SPC58EC74E7P000X
SPC58EC70E1F000X	SPC58EC80E7FMC0X	

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