PRODUCT/PROCESS CHANGE NOTIFICATION
PCN11575 – Additional information

STM32L0 listed products
Crolles CRL300

MDG - Microcontrollers Division (MCD)

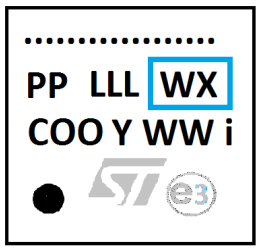
How can the change be seen?

- WX code indicates the diffusion traceability plant code.
- In case WX code is absent on marking (ie: TSSOP20 package), you can refer to the one digit i additional Information.

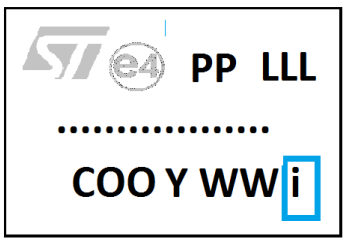
	Existing		Additional	
	Code	Fab	**C**ode	Fab
WX plant	VG	ST Rousset (France)	VQ	ST Crolles CR300 (France)
i Additional information	X		1	

- **Examples of marking with WX and without WX:**

TSSOP 14



TSSOP 20

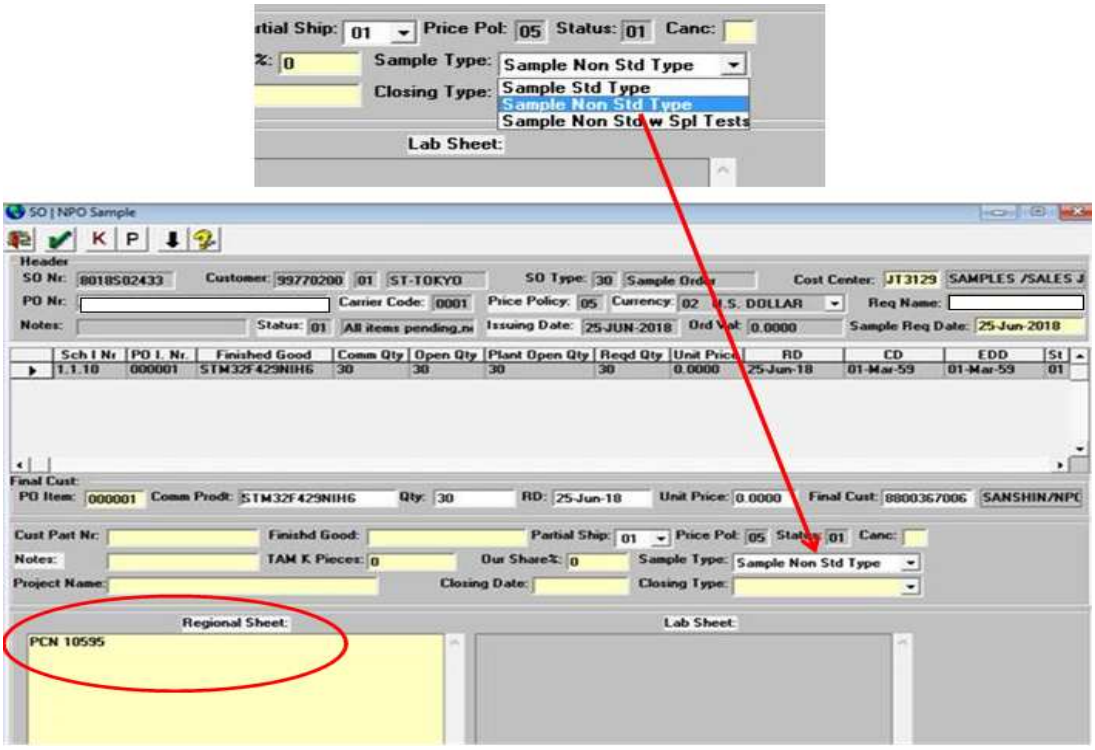


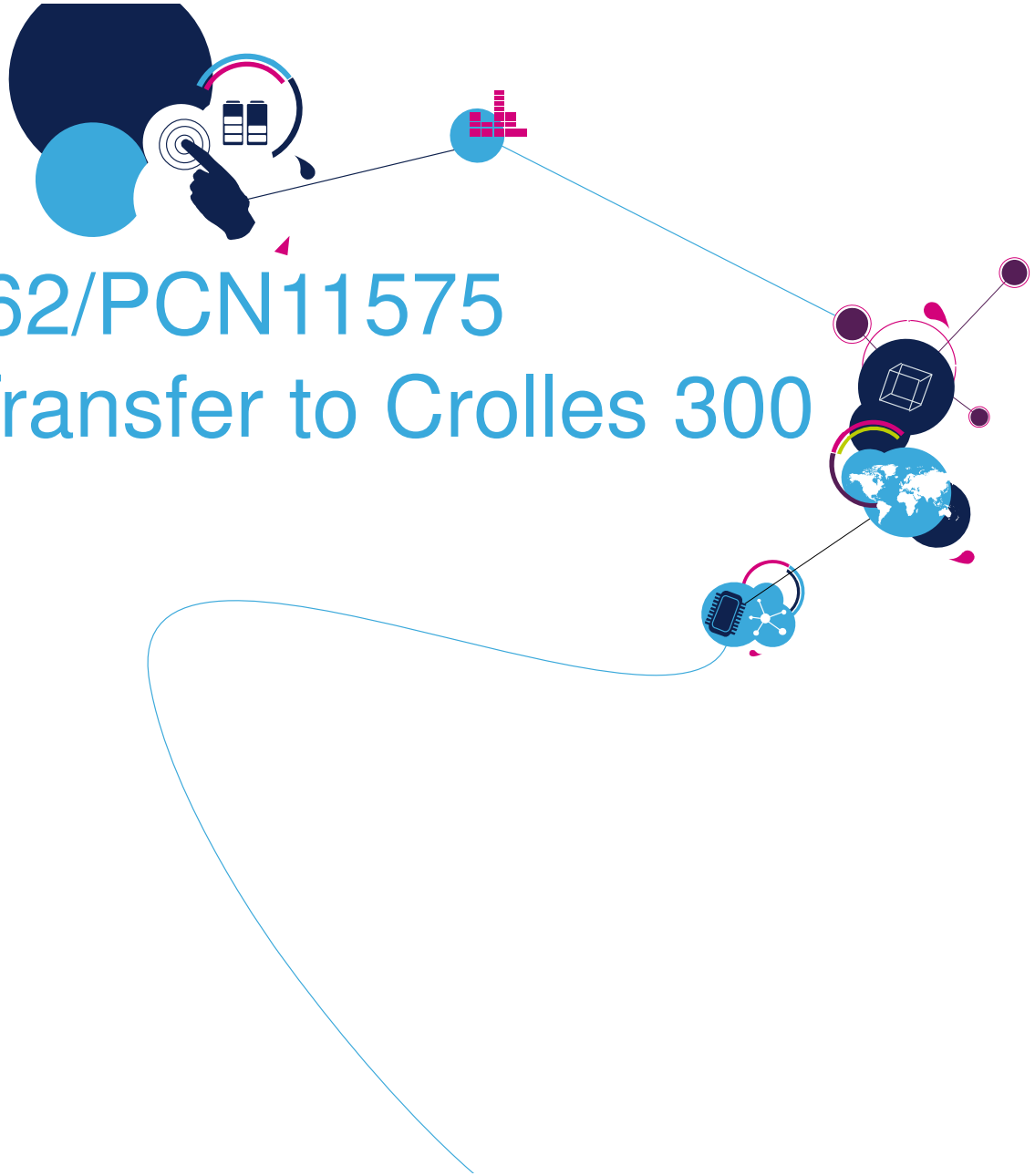
- Please refer to product DataSheet for marking details.

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 "**PCN11575**" into the NPO Electronic Sheet/**Regional Sheet**
- request sample(s) through Notice tool, indicating a single Commercial Product for each request





RER1809 for PCN10962/PCN11575
F9GO2S Technology Transfer to Crolles 300

Reliability Evaluation Plan

June 12th, 2019

MDG MCD Quality & Reliability Department

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RER1809 – F9GO2S Technology Transfer to Crolles 300
STM32 Die Test Vehicles

Die Vehicle	Process Perimeter	Assembly Line	Package	Number of Reliability Lots
447	F9GO2S	MUAR / ATP	LQFP14*14 100L	3 lots to qualify Process Perimeter Then 1 lot for each additional Die
417		JSCC / MUAR	LQFP10*10 64L	
437		ATP	LQFP20*20 144L	
427		MUAR / ATP	LQFP14*14 100L	
429		MUAR / ATP	LQFP14*14 100L	
457		JSCC / MUAR / ATP	LQFP7*7 32L	
425		JSCC / MUAR / ATTP	LQFP7*7 48L	

RER1809 – F9GO2S Technology Transfer to Crolles 300
STM32 Die Reliability Trials

Reliability Trial & Standard		Test Conditions	Pass Criteria	Lot Strategy	Units per Lot
ESD HBM	0060102 JESD22-A114ANSI/ESDA JEDEC JS-001	25°C	2kV (class 2)	1 to 3 lots	3
ESD CDM	ESD Charged Device Model ANSI/ESD STM5.3.1	Aligned with device datasheet	250V to 500V	1 lot	3
LU	0018695 JESD78	105°C/125°C REG-ON/REG-OFF Configuration Aligned with device datasheet	No concern	1 to 3 lots	3 3
EDR + Bake	JESD22-A117 JESD22-A103	105°C & 3.6V Cycling 150°C Bake	10K + 100k cycles 1500h 1000h	1 to 3 lots For process perimeter (*) For die perimeter (**)	77
EDR + Bake	JESD22-A117 JESD22-A103	25°C & 3.6V Cycling 150°C Bake	10K + 100k cycles 168h	1 to 3 lots	77
EDR + Bake	JESD22-A117 JESD22-A103	-40°C & 3.6V Cycling 150°C Bake	10K + 100k cycles 168h	1 to 3 lots	77
ELFR	MIL-STD-883 Method 1005 JESD22-A108 JESD74	125°C & 3.6V	48h	3 lots for process perimeter 1 lot for Die perimeter	2000 units min in total
HTOL	MIL-STD-883 Method 1005 JESD22-A108	125°C & 3.6V 100MHz	1200h 600h	1 to 3 lots For process perimeter (*) For die perimeter (**)	77

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(*) on 1st lot of process perimeter
(**) on 2nd & 3rd of process perimeter or 1 lot of die perimeter

RER1809 – F9GO2S Technology Transfer to Crolles 300
STM32 Package Test Vehicles

Package Line	Assembly Line	Package	Die Vehicle / Partial Rawline code	Number of Reliability Lots
LQFP	MUAR	LQFP14*14 100L	447 / 1L*447	3 lots to qualify Process Perimeter Then 1 lot by Package Assembly Line
	JSCC	LQFP10*10 64L	417 / 5W*417	
	JSCC	LQFP7*7 48L	447 / 5B*447	
QFN	ATP1	UFQFPN3*3 20L	457 / E4*457	
	JSCC	UFQFPN4*4 28L	457 / MB*457	
	JSCC	UFQFPN5*5 32L	447 / MG*447	
WLCSP	ATT1	WLCSP 49L	447 / 51*447	
TSSOP20	ATP1	TSSOP 20	457 / YA*457	

RER1809 – F9GO2S Technology Transfer to Crolles 300
STM32 Package Test Vehicles

Package Line	Assembly Line	Package	Die Vehicle / Partial Rawline code	Number of Reliability Lots
LQFP	ASEKH	LQFP20*20 144L	437 / 1A*437	3 lots to qualify Process Perimeter Then 1 lot by Package Assembly Line
	ASEKH	LQFP14*14 100L	447 / 1L*447	
	ASEKH	LQFP10*10 64L	447 / 5W*447	
	ASEKH	LQFP7*7 32L	457 / 5V*457	
QFN	CALAMBA	UFQFPN5*5 32L	457 / MG*457	
WLCSP	ASEKH	WLCSP 49L	447 / 51*447	
UFBGA	ASEKH	UFBGA 5X5	447 / 2I*447	
TSSOP14	ATP1	TSSOP 14	457 / 6R*457	
TFBGA	MUAR	TFBGA 5X5	417 / R8*417	

RER1809 – F9GO2S Technology Transfer to Crolles 300
STM32 Package Reliability Trials

Reliability Trial & Standard		Test Conditions	Pass Criteria	Units per Lot	Lot Strategy
PC	Pre Conditioning: Moisture Sensitivity Jedec Level 1 J-STD-020/ JESD22-A113 Pre Conditioning: Moisture Sensitivity Jedec Level 3 J-STD-020/ JESD22-A113	Bake (125°C / 24h) Soak (85°C / 85% RH / 168h) for level 1 Convection reflow: 3 passes with Jedec level 1 Bake (125°C / 24h) Soak (30°C / 60% RH / 192h) for level 3 Convection reflow: 3 passes with Jedec level 3	3 Passes MSL1/3	231 to 308 (**)	1 to 3 lots
UHAST (*) (**)	Unbiased Highly Accelerated Temperature & Humidity Stress JESD22-A118	130°C, 85%RH, 2 Atm	96h	77	1 to 3 lots
TC (*)	Thermal Cycling JESD22-A104	-65°C +150°C	500Cy	77	1 to 3 lots
THB (*)	Temperature Humidity Bias JESD22-A101	85°C, 85% RH, bias	1000h	77	1 to 3 lots
HTSL (*)	High Temperature Storage Life JESD22-A103	150°C - no bias	1000h	77	1 to 3 lots
Construction Analysis	Upon In Process Control ST Specifications	Aligned with ST specifications	No concern	15 10	1 by package assembly line
ESD CDM	ESD Charged Device Model ANSI/ESD STM5.3.1	Aligned with device datasheet	250V to 500V	3	1 by package assembly line

(*) Tests performed after preconditioning
(**) UHAST not done for BGA

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