PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-MIC/14/8737
Dated 24 Oct 2014

TSMC Taiwan Wafer Fab 8 additional source - STM32F0x & STM32F1x & STM32F373x selected products

Table 1. Change Implementation Schedule

Forecasted implementation date for change	30-Jan-2015
Forecasted availability date of samples for customer	02-Jan-2015
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	02-Jan-2015
Estimated date of changed product first shipment	30-Jan-2015

Table 2. Change Identification

Product Identification (Product Family/Commercial Product)	STM32F0x & STM32F1x & STM32F373x selected products
Type of change	Waferfab additional location
Reason for change	Increase capacity & additional sourcing
Description of the change	Qualification of TSMC Taiwan Wafer Fab 8 for STM32F0x & STM32F1x & STM32F373x products listed below, as an additional plant for wafer diffusion. Products currently produced in TSMC Taiwan Wafer Fab 11 or TSMC USA Wafer Fab 3 will also be produced in TSMC Taiwan Wafer Fab 8. Datasheet parameters remain unchanged. There is no hardware or software change for customers.
Change Product Identification	See indicated below
Manufacturing Location(s)	

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	

- ✂

Customer Acknowledgement of Receipt	**PCN MMS-MIC/14/8737**
Please sign and return to STMicroelectronics Sales Office	**Dated 24 Oct 2014**

☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

....

....

....

....

....

....

....

....

DOCUMENT APPROVAL

Name	Function
Colonna, Daniel	Marketing Manager
Buffa, Michel	Product Manager
Narche, Pascal	Q.A. Manager

TSMC Taiwan Wafer Fab 8 additional source - STM32F0x & STM32F1x & STM32F373x selected products

MMS - Microcontrollers Division (MCD)

Dear Customer,

Committed to serving our customers, our teams operate with the constant objective to improve customer service through increased capacity and additional sourcing.

What is the change?

Qualification of TSMC Taiwan Wafer Fab 8 for STM32F0x & STM32F1x & STM32F373x products listed below, as an additional plant for wafer diffusion. Products currently produced in TSMC Taiwan Wafer Fab 11 or TSMC USA Wafer Fab 3 will also be produced in TSMC Taiwan Wafer Fab 8. Datasheet parameters remain unchanged. There is no hardware or software change for customers.

Why?

The change will improve and secure service through capacity increase & additional sourcing.

When ?

On commercial products listed at the end of the document, the production on the new location will start from :

Package products	Samples availability / Qual results date	Implementation / First shipment date
STM32F03x, STM32F05x	Week 10 2015	Week 14 2015
STM32F10xx8x, STM32F10xxBx	Week 07 2015	Week 11 2015
STM32F10xxCx, STM32F10xxDx, STM32F10xxEx	Week 01 2015	Week 05 2015
STM32F10xxFx, STM32F10xxGx	Week 17 2015	Week 21 2015
STM32F373x	Week 04 2015	Week 08 2015

How will the change be qualified?

This change will be qualified using the standard STMicroelectronics Corporate Procedures for Quality and Reliability, in full compliancy with the JESD-47 international standard.

See Qualification plan attached at the end of this document.

What is the impact of the change?

- **Form:** no change

- **Fit:** no change

- **Function:** no change

How can the change be seen?

Traceability of the change is ensured by ST internal tools.

The product revision identification is shown on the package marking as below:

Products	From	To
STM32F03x, STM32F05x	"A","B'	"1"
STM32F100x	"1", "2", "X", "Y"	"3"
STM32F101x8x, STM32F101xBx , STM32F101xCx, STM32F101xDx, STM32F101xEx	"1", "2", "X", "Y"	"3"
STM32F101xFx, STM32F101xGx	"A"	"1"
STM32F102x	"1", "2", "X", "Y"	"3"
STM32F103x8x, STM32F103xBx, STM32F103xCx, STM32F103xDx, STM32F103xEx	"1", "2", "X", "Y"	"3"
STM32F103xFx, STM32F103xGx	"A"	"1"
STM32F373x	"B	"1"

We remain available to discuss any concern that you may have regarding this Product Change Notification.

With our sincere regards.

Michel Buffa

Microcontroller Division General Manager

List of commercial products impacted :

2AP00038TCUSTOM	STM32F051C8T6TR	STM32F101CBU6
2AP00100TCUSTOM	STM32F051C8T7	STM32F101CBU6TR
2AP00179TCUSTOM	STM32F051C8T7TR	STM32F101R8T6
STM32F030C6T6	STM32F051C8U6	STM32F101R8T6TR
STM32F030C6T6TR	STM32F051C8U6TR	STM32F101RBH6
STM32F030C8T6	STM32F051C8U7	STM32F101RBT6
STM32F030C8T6TR	STM32F051C8U7S	STM32F101RBT6TR
STM32F030F4P6	STM32F051C8U7STR	STM32F101RCT6
STM32F030F4P6TR	STM32F051K4T6	STM32F101RCT6TR
STM32F030K6T6	STM32F051K4T6TR	STM32F101RDT6
STM32F030K6T6TR	STM32F051K4U6	STM32F101RDT6TR
STM32F030R8T6	STM32F051K4U6TR	STM32F101RET6
STM32F030R8T6TR	STM32F051K4U7	STM32F101RFT6
STM32F0316DIE0	STM32F051K4U7TR	STM32F101RFT6TR
STM32F0316DIE1	STM32F051K6T6	STM32F101RGT6
STM32F031C4T6	STM32F051K6T6TR	STM32F101RGT6TR
STM32F031C4T6TR	STM32F051K6T7	STM32F101T8U6
STM32F031C6T6	STM32F051K6T7TR	STM32F101T8U6TR
STM32F031C6T6BOO	STM32F051K6U6	STM32F101TBU6
STM32F031C6T6TR	STM32F051K6U6TR	STM32F101TBU6TR
STM32F031C6T7	STM32F051K6U7	STM32F101V8T6
STM32F031F4P6	STM32F051K6U7STR	STM32F101V8T6TR
STM32F031F4P7	STM32F051K6U7TR	STM32F101VBT6
STM32F031F6P6	STM32F051K8T6	STM32F101VBT6TR
STM32F031F6P7	STM32F051K8T6TR	STM32F101VCT6
STM32F031F6P7TR	STM32F051K8T7	STM32F101VCT6TR
STM32F031G4U6	STM32F051K8U6	STM32F101VDT6
STM32F031G6U6	STM32F051K8U6TR	STM32F101VDT6TR
STM32F031G6U6TR	STM32F051K8U7	STM32F101VET6
STM32F031G6U7	STM32F051K8U7TR	STM32F101VFT6
STM32F031K4U6	STM32F051R4T6	STM32F101VFT6TR
STM32F031K4U6MCP	STM32F051R4T6TR	STM32F101VGT6
STM32F031K6T6	STM32F051R6T6	STM32F101ZCT6
STM32F031K6T7	STM32F051R6T6TR	STM32F101ZDT6
STM32F031K6U6	STM32F051R6T7TR	STM32F101ZET6
STM32F031K6U7	STM32F051R8T6	STM32F101ZFT6
STM32F038C4T6	STM32F051R8T6TR	STM32F101ZGT6
STM32F038C6T6	STM32F051R8T7	STM32F102C8T6
STM32F038C6T7	STM32F051R8T7TR	STM32F102C8T6TR
STM32F038F4P6	STM32F058C8U6	STM32F102CBT6
STM32F038F6P6	STM32F058R8T6	STM32F102CBT6TR
STM32F038G4U6	STM32F100RCT6	STM32F102R8T6
STM32F038G6U6	STM32F100RCT6TR	STM32F102RBT6
STM32F038K4U6	STM32F100VCT6	STM32F102RBT6TR
STM32F038K6U6	STM32F100VDT6	STM32F102RCT6
STM32F050F6CIRTR	STM32F100VET6	STM32F102T8U6TR
STM32F0518DIE0	STM32F101C8GAL	STM32F103BDIE1
STM32F0518DIE1	STM32F101C8T6	STM32F103C8T6
STM32F051C4T6	STM32F101C8T6TR	STM32F103C8T6TR
STM32F051C6T6	STM32F101C8U6	STM32F103C8T7
STM32F051C6T6TR	STM32F101C8U6TR	STM32F103C8T7TR
STM32F051C6T7	STM32F101CBT6	STM32F103CBT6
STM32F051C6U6	STM32F101CBT6TR	STM32F051C8T6

STM32F101CBT6TR	STM32F103VBI6	STM32FBCXRBT6
STM32F103CBT6TR	STM32F103VBT6	STM32FBCXVBT6
STM32F103CBT7	STM32F103VBT6TR	STM32FBCXVCT6
STM32F103CBT7TR	STM32F103VBT7	STM32P051C8JAETR
STM32F103CBU6	STM32F103VBT7TR	STM32P051K8MBOTR
STM32F103CBU6TR	STM32F103VCH6	STM32P101C8MBHTR
STM32F103EDIE1	STM32F103VCT6	STM32P101C8MBKTR
STM32F103GDIE1	STM32F103VCT6TR	STM32P101CBMBD
STM32F103GDIE6	STM32F103VDH6	STM32P101RCMBR
STM32F103R8H6	STM32F103VDH6TR	STM32P101RFMBP
STM32F103R8H6TR	STM32F103VDT6	STM32P101T8MBX
STM32F103R8H7	STM32F103VDT6TR	STM32P101T8MBXTR
STM32F103R8T6	STM32F103VDT7	STM32P101VFMBT
STM32F103R8T6TR	STM32F103VEH6	STM32P102C8MAPTR
STM32F103R8T7	STM32F103VEH6TR	STM32P103C8MBCTR
STM32F103RBH6	STM32F103VEH7	STM32P103CBMAZTR
STM32F103RBH6TR	STM32F103VET6	STM32P103RFMBB
STM32F103RBH7	STM32F103VET6TR	STM32P103T8ABC
STM32F103RBT6	STM32F103VET7	STM32P103ZCMBN
STM32F103RBT6TR	STM32F103VET7TR	STM32P103ZEMBU
STM32F103RBT7	STM32F103VFT6	
STM32F103RBT7TR	STM32F103VFT6TR	
STM32F103RCT6	STM32F103VFT7	
STM32F103RCT6TR	STM32F103VGT6	
STM32F103RCT7	STM32F103VGT6J	
STM32F103RCUVWTR	STM32F103VGT6TR	
STM32F103RCY6CTR	STM32F103VGT7	
STM32F103RCY6TR	STM32F103ZCCINTR	
STM32F103RDT6	STM32F103ZCH6	
STM32F103RDT6TR	STM32F103ZCT6	
STM32F103RDY6TR	STM32F103ZCT6TR	
STM32F103RET6	STM32F103ZCT7	
STM32F103RET6TR	STM32F103ZDH6	
STM32F103RET7	STM32F103ZDH6TR	
STM32F103REY6TR	STM32F103ZDT6	
STM32F103RFT6	STM32F103ZEH6	
STM32F103RFT6JTR	STM32F103ZEH6TR	
STM32F103RFT6TR	STM32F103ZEH7	
STM32F103RGT6	STM32F103ZET6	
STM32F103RGT6TR	STM32F103ZET6TR	
STM32F103RGT7	STM32F103ZET7	
STM32F103T8U6	STM32F103ZFH6	
STM32F103T8U6BCD	STM32F103ZFH6TR	
STM32F103T8U6TR	STM32F103ZFT6	
STM32F103T8U7	STM32F103ZGH6	
STM32F103T8U7TR	STM32F103ZGH6TR	
STM32F103TBU6	STM32F103ZGT6	
STM32F103TBU7	STM32F103ZGT6J	
STM32F103V8H6	STM32F103ZGT6TR	
STM32F103V8T6	STM32F373V8H6	
STM32F103V8T6TR	STM32F373VBH6	
STM32F103VBH6	STM32F373VCH6	
STM32F103VBH7	STM32FBCX8T6	

STM32F0x & STM32F1x & STM32F373x selected products
PCN 8737 addendum

Reliability Evaluation Plan

Oct 16th 2014

MMS MCD Quality & Reliability Department

life.augmented

STM32F0x & STM32F1x & STM32F373x selected products
Reliability plan for move to TSMC Fab8

- <u>Context</u> :
  - Addendum to PCN 8737 "TSMC Taiwan Wafer Fab 8 additional source - STM32F0x & STM32F1x & STM32F373x selected products "
  - STM32F37x was the first product to be transferred and therefore was the test vehicle for fab8 qualification

- ## Die oriented trials

Trial	Test1	Method	Conditions	Test2	Method	Conditions	Die 414 Sample x lot	Other Products Die 410 Die 430 Die 440 Die 444 Sample x lot
D I E	LU	JESD78	125°C				6 x 1	6 x 1
	ESD HBM	ANSI/ESDA/ JEDEC JS-001					3 x 1	3 x 1
	HTOL	MIL-STD-883 Method 1005 JESD22-A108	125°C , 3.6V, 600h or equivalent				77 x 1	77 x 1
	EDR Cycling	JESD22-A117	125°C, 3.6V,10kcyc Prog	Bake	JESD22 A103	150°C, 500h or equivalent	77 x 3	77 x 1
	EDR Cycling	JESD22-A117	25°C, 3.6V, 10kcyc Prog	Bake	JESD22 A103	150°C,168h or equivalent	77 x 3	77 x 1
	EDR Cycling	JESD22-A117	-40°C, 3.6V, 10kcyc Prog	Bake	JESD22 A103	150°C,168h or equivalent	77 x 3	77 x 1

Notes
- (1) : Die qualification for STM32F373x is already covered by PCN 8537
- LU Latch up
- HBM Human Body Model
- HTOL High Temperature Operating Life
- EDR NVM Endurance & data retention

Reliability plan for move to TSMC Fab8

- ## Package oriented trials

	Test1	Method	Conditions	Test2	Method	Conditions	Sample x lot
P a c k a g e	ESD CDM	ANSI/ESD STM5.3.1	25°C Min 250V				3 x 1
	PC, MSL3 or MSL1 [2]	J-STD-020D JESD22-A113	Peak T at 260°C 3 IR-reflows	THB or THS [3]	JESD 22-A101	85°C, 85% RH, 3.6V, 500h	77 x 1
	PC, MSL3 or MSL1 [2]	J-STD-020D JESD22-A113	Peak T at 260°C 3 IR-reflows	UHAST	JESD 22-A118	130°C, 85% RH, 2 Atm, 96h	77 x 1
	PC, MSL3 or MSL1 [2]	J-STD-020D JESD22-A113	Peak T at 260°C 3 IR-reflows	TC	JESD 22-A104	-50°C/+150°C, 500cyc	77 x 1
	PC, MSL3 or MSL1 [2]	J-STD-020D JESD22-A113	Peak T at 260°C 3 IR-reflows	HTS	JESD 22-A103	150°C, 500h	77 x 1

Notes

- (2): MSL1 or MSL3 depending on each package
- (3) THB or THS depending on each package
- MSL1 Moisture sensitivity level 1
- MSL3 Moisture sensitivity level 3
- CDM Charge Device Model
- PC Preconditioning
- THB Temperature Humidity Bias
- THS Temperature Humidity Storage
- UHAST Unbiased humidity accelerated stress test
- TC Thermal Cycling
- HTS High Temperature Storage Life

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND / OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

ST PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE   IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS   OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER'S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR "AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL" INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

RESTRICTIONS OF USE AND CONFIDENTIALITY OBLIGATIONS:

THIS DOCUMENT AND ITS ANNEXES CONTAIN ST PROPRIETARY AND CONFIDENTIAL INFORMATION. THE DISCLOSURE, DISTRIBUTION, PUBLICATION OF WHATSOEVER NATURE OR USE FOR ANY OTHER PURPOSE THAN PROVIDED IN THIS DOCUMENT OF ANY INFORMATION CONTAINED IN THIS DOCUMENT AND ITS ANNEXES IS SUBMITTED TO ST PRIOR EXPRESS AUTHORIZATION. ANY UNAUTHORIZED REVIEW, USE, DISCLOSURE OR DISTRIBUTION OF SUCH INFORMATION IS EXPRESSLY PROHIBITED.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners

© 2014 STMicroelectronics - All rights reserved.

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com