



# PRODUCT/PROCESS CHANGE NOTIFICATION

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PCN MMS-MIC/14/8649

Dated 03 Oct 2014

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**STM32F42x - F43x Features improvement & Leadframe  
change for LQFP 24x24 package**

**Table 1. Change Implementation Schedule**

Forecasted implementation date for change	10-Feb-2015
Forecasted availability date of samples for customer	10-Feb-2015
Forecasted date for <b>STMicroelectronics</b> change Qualification Plan results availability	10-Jan-2015
Estimated date of changed product first shipment	10-Feb-2015

**Table 2. Change Identification**

Product Identification (Product Family/Commercial Product)	STM32F42x & STM32F43x products in LQFP 24x24
Type of change	Product design change
Reason for change	see indicated below
Description of the change	ST Microcontrollers Division is pleased to announce that the features of the STM32F42x & STM32F43x products listed below will be enhanced through the introduction of a new die revision. Concurrently the leadframe used in in the LQFP 24x24 package will be upgraded in order to further improve package robustness and resolve supplier discontinuity.
Change Product Identification	The die revision is changing from "1" to "3"
Manufacturing Location(s)	

**Table 3. List of Attachments**

Customer Part numbers list	
Qualification Plan results	

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Customer Acknowledgement of Receipt		PCN MMS-MIC/14/8649
Please sign and return to STMicroelectronics Sales Office		Dated 03 Oct 2014
<input type="checkbox"/> Qualification Plan Denied <input type="checkbox"/> Qualification Plan Approved  <input type="checkbox"/> Change Denied <input type="checkbox"/> Change Approved	Name:	
	Title:	
	Company:	
	Date:	
	Signature:	
Remark ..... ..... ..... ..... ..... ..... ..... ..... .....		

## DOCUMENT APPROVAL

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



## PRODUCT/PROCESS CHANGE NOTIFICATION

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### STM32F42x - F43x Features improvement & Leadframe change for LQFP 24x24 package

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#### MMS - Microcontrollers Division (MCD)

Dear Customer,

ST Microcontrollers Division is pleased to announce that the features of the STM32F42x & STM32F43x products listed below will be enhanced through the introduction of a new die revision.

Concurrently the leadframe used in the LQFP 24x24 package will be upgraded in order to further improve package robustness and resolve supplier discontinuity.

#### What are the changes?

**Product die revision:** Introduction of a new die on STM32F42x & STM32F43x products in LQFP 24x24 package:

	<u>Actual</u>	<u>New</u>
Revision code	Revision 1	Revision 3, described in STM32F42xx and STM32F43xx Errata sheet

#### Note:

- PCN 8385 issued on July 10<sup>th</sup> 2014, already notified the introduction of this new die for UFBGA package products.
- PCN 8608 issued on August 5<sup>th</sup> 2014, already notified the introduction of this new die for LQFP 14x14, LQFP 20x20 , LQFP 28x28, TFBGA 13x13 & WLCSP 143 package products .

**Package leadframe** : Change of leadframe for listed products in LQFP 24x24 package, due to discontinuation by the materials supplier. ST Microcontrollers Division takes this opportunity to improve package robustness by inserting slots on lead frame die pad to better anchor the molding compound into the frame.

New leadframe is described below:

Bill Of Material	Previous	New
Leadframe supplier	LGM	Fusheng
Leadframe design	Without slot	With slots

### **Why ?**

The strategy of ST Microcontrollers Division is to continuously improve the performance, quality and functionality of our products. This is achieved by introducing a new die for STM32F42x & STM32F43x products.

Due to the discontinuation of the leadframe by the materials supplier for LQFP 24x24 package, ST Microcontrollers division will change the leadframe on this package.

### **When ?**

Both changes will start concurrently from week 07 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. You can find below Qualification Plans for both changes.

### **What is the impact of the change?**

- **Form:** no change
- **Fit:** no change
- **Function:** see STM32F42xx and STM32F43xx Errata sheet.

**How can the change be seen?**

Traceability of the change is ensured by ST internal tools.

The die revision is changing from "1" to "3". It is marked onto the package of the part.

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:**

<b>Commercial Product</b>	<b>Product die revision</b>	<b>Package leadframe</b>
STM32F429IIT6U	x	x
STM32F439IIT6U	x	x
STM32F427IGT6	x	x
STM32F427IIT6	x	x
STM32F427IIT6TR	x	x
STM32F429IET6	x	x
STM32F429IGT6	x	x
STM32F429IIT6	x	x
STM32F437IGT6	x	x
STM32F437IIT6	x	x
STM32F439IGT6	x	x
STM32F439IIT6	x	x
STM32F439IIT6TR	x	x



# STM32F4xx - BIG MANTA – 2M

## New design revision introduction

### Reliability Evaluation Plan

July, 17<sup>th</sup> 2014

MMS MCD Quality & Reliability Department



# STM32F4xx - Big Manta - 2M - M10 - CR300

2

- Context :

Introduction of new design revision to improve product features.

# Reliability Evaluation Plan

3

- Die oriented trials

Trial	Test	Method	Criteria	Conditions	Package	Sample x lot
STM32F4xx - BIG MANTA – 2M - M10HS – CR300 - TFBGA216 MU1T						
DIE	LU	0018695 JESD78	N.A	125°C	TFBGA216	6 x 1
	ESD HBM	ANSI/ESDA/JEDEC JS-001	1500Ω , 100pF	25°C 2kV (class 2)	TFBGA216	3 x 1
	ESD CDM	ANSI/ESDSTM5.3.1	25°C Min 250V (Class C3)	N.A.	TFBGA216	3 x 1
	HTOL	MIL-STD-883 Method 1005 JESD22-A108	125°C, 3.6V 1176h	125°C	TFBGA216	77 x 1
	EDR	JESD-22A117	10 kcyc Prog + 500h/150°C	Cycling @ 125°C Bake @ 150°C	TFBGA216	77 x 1
	EDR	JESD-22A117	10 kcyc Prog + 168h/150°C	Cycling @ 25°C Bake @ 150°C	TFBGA216	77 x 1
	EDR	JESD-22A117	10 kcyc Prog + 168h/150°C	Cycling @ -40°C Bake @ 150°C	TFBGA216	77 x 1
STM32F4xx - BIG MANTA – 2M - M10HS – CR300 – WLCSP143 ATT						
DIE	ESD CDM	ANSI/ESDSTM5.3.1	25°C Min 250V (Class C3)	N.A.	WLCSP143	3 x 1



# STM32F42xx – STM32F43xx

## New frame LQFP24\*24 176L at ASE

### Reliability Evaluation Plan

September, 5<sup>th</sup> 2014

MMS MCD Quality & Reliability Department

# STM32F42xx – STM32F43xx

## LQFP24\*24 176L

2

- Context :

Current lead frame being discontinued by the supplier and in order to improve package robustness, introduction of a new Lead Frame for LQFP24\*24 176L package assembled in ASE Korea with insertion of slots on lead frame die pads to better anchor molding compound into the frame.

Bill Of Material	Previous	New
Leadframe supplier	LGM	Fusheng
Leadframe design	Without slot	With slots

# Reliability Evaluation Plan

3

- Package oriented trials

Package	Test1	Method	Criteria	Test2	Method	Conditions	Criteria	Sample x lot
STM32F4xx – New Lead Frame for LQFP 24*24 176L at ASE Korea								
LQFP 24*24 176L	ESD CDM	ANSI/ESDSTM5.3.1	25° C Min 250V (Class 3)	N.A.	N.A.	N.A.	N.A	3 x 1
	PC	Pre-Conditioning MSL3 JSTD 020D  24h bake @ 125°C 192h (JL3) @ 30°C / 60% RH Reflow simulation (3 times) @ 260°C peak temperature	MSL3	TC	JESD 22-A104	-65°C/+150°C	500cyc	77 x 1
				THB	JESD 22-A101	85°C/85% RH, with Bias	1000hrs	77 x 1
				UHAST	JESD 22-A118	130°C/85% RH 2 Atm	96hrs	77 x 1
	HTSL	JESD 22-A103 150°C, no bias	1000hrs	N.A	N.A	N.A	N.A	77 x 1
	Physical dimension	JESD 22B100/B108	CPK >1.33 PPK >1.67	N.A	N.A	N.A	N.A	10 x 1
	Solderability	JESD 22B102	>95% lead coverage	N.A	N.A	N.A	N.A	45 leads x 1

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