



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-MIC/14/8608
Dated 05 Aug 2014

**Features improvement for STM32F42x & STM32F43x products
LQFP 14x14, 20x20 & 28x28 Transfer back-end site from
Amkor ATK Korea to Amkor ATP Philippines**

Table 1. Change Implementation Schedule

Forecasted implementation date for change	29-Oct-2014
Forecasted availability date of samples for customer	29-Sep-2014
Forecasted date for STMicroelectronics change Qualification Plan results availability	29-Sep-2014
Estimated date of changed product first shipment	29-Oct-2014

Table 2. Change Identification

Product Identification (Product Family/Commercial Product)	STM32F42x & STM32F43x products listed below
Type of change	Product design change
Reason for change	see indicated below
Description of the change	ST MCD 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. In addition, back-end change will be done concurrently with the introduction of the new die revision, due to LQFP 14x14, LQFP 20x20 & LQFP 28x28 packages Amkor ATK1 (Korea) assembly line closure. Consequently, ST MCD Division is transferring manufacturing sites of LQFP 14x14, LQFP 20x20 & LQFP 28x28 packages from Amkor ATK1 (Korea) to Amkor ATP1 (Philippines).
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	



Customer Acknowledgement of Receipt		PCN MMS-MIC/14/8608
Please sign and return to STMicroelectronics Sales Office		Dated 05 Aug 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

Features improvement for STM32F42x & STM32F43x products LQFP 14x14, 20x20 & 28x28 Transfer back-end site from Amkor ATK Korea to Amkor ATP Philippines

MMS - Microcontrollers Division (MCD)

Dear Customer,

ST MCD 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.

In addition, back-end change will be done concurrently with the introduction of the new die revision, due to LQFP 14x14, LQFP 20x20 & LQFP 28x28 packages Amkor ATK1 (Korea) assembly line closure. Consequently, ST MCD Division is transferring manufacturing sites of LQFP 14x14, LQFP 20x20 & LQFP 28x28 packages from Amkor ATK1 (Korea) to Amkor ATP1 (Philippines).

What are the changes?

Change 1 – design: Introduction of a new die revision on all packages of STM32F42x & STM32F43x products, listed below.

Packages		<u>Actual</u>	<u>New</u>
LQFP 14x14 LQFP 20x20 LQFP 28x28 TFBGA 13x13 WLCSP 143	Revision code	Revision 1	Revision 3, described in STM23F42xx and STM32F43xx Errata sheet

Notice: PCN 8385 issued on 10th July 2014, already notified the introduction of this new die revision for UFBGA package products .

Change 2 – back-end: For LQFP 14x14, LQFP 20x20 & LQFP 28x28 products listed below, transfer of manufacturing sites from Amkor ATK1 (Korea) to Amkor ATP1 (Philippines).

Notice: no back-end change on packages below:

- TFBGA 13x13
- WLCSP 143

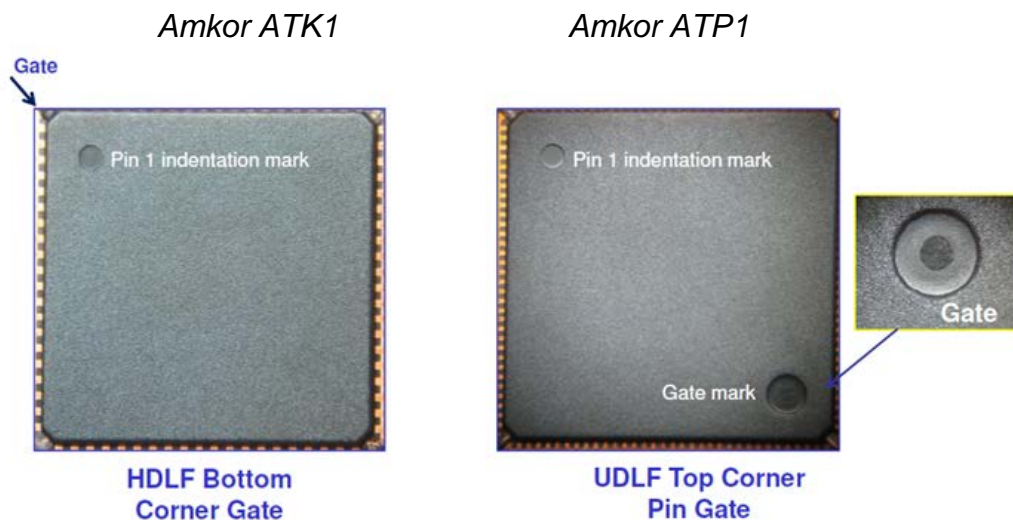
New Bill Of Materials are described below:

Packages	Bill Of Material	Previous	New
	Assembly site	Amkor ATK1 (Korea)	Amkor ATP1 (Philippines)
LQFP 14x14	Mold compound	Nitto GE7470LQ	Sumitomo G631HQ
	Glue	Ablestik 8200C	Sumitomo CRM1076YB
LQFP 20x20	Leadframe	High Density Lead Frame (HDLF)	Ultra high Density Lead Frame (UDLF)
	Gate mark	Pin 1	Pin 1 + additional gate mark (*1)
LQFP 28x28	Mold compound	Samsung SG-8300GL	Sumitomo G631HQ

Chosen Bill Of Materials are standard Bill Of Materials, already running in high volumes for LQFP at Amkor ATP (Philippines).

(*1) Gate mark on Ultra high Density Lead Frame of LQFP 14x14 & LQFP 20x20 packages:

An additional gate mark is visible on top of the package, in addition to pin 1 identification mark.



Why ?

Change 1 – design:

The strategy of ST MCD Division is to continuously improve performances, quality and functionality of our products. This is achieved by introducing a new die revision for these new STM32F42x & STM32F43x products.

Change 2 – back-end:

Due to Amkor ATK1 (Korea) assembly line closure for LQFP 14x14, LQFP 20x20 & LQFP 28x28 packages, ST MCD division will transfer those packages production from Amkor ATK1 (Korea) to Amkor ATP1 (Philippines).

When ?

The production will start from:

Changes	Package products	Samples availability / Qual results date	Implementation / First shipment date
change 1 & change 2 concurrently	LQFP 14x14 LQFP 20x20	week 42 2014	week 46 2014
	LQFP 28x28	week 10 2015	week 14 2015
change 1	TFBGA 13x13 WLCSP 143	week 40 2014	week 44 2014

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 change 1 and change 2.

What is the impact of the change?

- **Form:** gate mark added only on LQFP 14x14 & LQFP 20x20 packages
- **Fit:** no change
- **Function:** see STM23F42xx and STM32F43xx Errata sheet, on all products listed below.

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:

Commercial Product	Package	Change 1	Change 2
STM32F427VGT6	LQFP 14x14	x	x
STM32F427VIT6	LQFP 14x14	x	x
STM32F427VIT6TR	LQFP 14x14	x	x
STM32F427VIT7TR	LQFP 14x14	x	x
STM32F427ZGT6	LQFP 20X20	x	x
STM32F427ZIT6	LQFP 20X20	x	x
STM32F429BET6	LQFP28x28	x	x
STM32F429BGT6	LQFP28x28	x	x
STM32F429BIT6	LQFP28x28	x	x
STM32F429NEH6	TFBGA 13X13	x	
STM32F429NIH6	TFBGA 13X13	x	
STM32F429NIH6U	TFBGA 13X13	x	
STM32F429VET6	LQFP 14x14	x	x
STM32F429VGT6	LQFP 14x14	x	x
STM32F429VIT6	LQFP 14x14	x	x
STM32F429VIT6U	LQFP 14x14	x	x
STM32F429ZET6	LQFP 20X20	x	x
STM32F429ZGT6	LQFP 20X20	x	x
STM32F429ZGY6TR	WLCSP 143	x	
STM32F429ZIT6	LQFP 20X20	x	x
STM32F429ZIT6U	LQFP 20X20	x	x
STM32F429ZIY6TR	WLCSP 143	x	
STM32F437VGT6	LQFP 14x14	x	x
STM32F437VIT6	LQFP 14x14	x	x
STM32F437VIT6TR	LQFP 14x14	x	x
STM32F437VIT6WTR	LQFP 14x14	x	x
STM32F437VIT7TR	LQFP 14x14	x	x
STM32F437ZGT6	LQFP 20X20	x	x
STM32F437ZIT6	LQFP 20X20	x	x
STM32F437ZIT7	LQFP 20X20	x	x
STM32F439BIT6	LQFP28x28	x	x
STM32F439NGH6	TFBGA 13X13	x	
STM32F439NIH6	TFBGA 13X13	x	
STM32F439NIH6U	TFBGA 13X13	x	
STM32F439VGT6	LQFP 14x14	x	x
STM32F439VIT6	LQFP 14x14	x	x
STM32F439VIT6U	LQFP 14x14	x	x
STM32F439ZGT6	LQFP 20X20	x	x
STM32F439ZIT6	LQFP 20X20	x	x
STM32F439ZIT6U	LQFP 20X20	x	x
STM32F439ZIY6GTR	WLCSP 143	x	
STM32F439ZIY6STR	WLCSP 143	x	
STM32F439ZIY6TR	WLCSP 143	x	
STM32F439ZIY6UTR	WLCSP 143	x	



STM32F4xx - BIG MANTA – 2M

New design revision introduction

Reliability Evaluation Plan

July, 17th 2014

MMS MCD Quality & Reliability Department

STM32F4xx - Big Manta - 2M - M10 - CR300

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- Context :

Introduction of new design revision to improve product features.

Reliability Evaluation Plan

- 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



STM32F4xx - BIG MANTA – 2M

LQFP 14*14, 20*20 & 28*28

Assembly line Transfer from ATK to ATP

Reliability Evaluation Plan

July, 17th 2014

MMS MCD Quality & Reliability Department

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

- Context :

Due to Amkor ATK1 (Korea) assembly line closure, LQFP packages assembly is transferred from AMKOR Korea (ATK) to AMKOR Philippines (ATP).

- Impacted packages :

- LQFP 14*14 100L
- LQFP 20*20 144L
- LQFP 28*28 208L

Reliability Evaluation Plan

- Package oriented trials

Package	Test1	Method	Criteria	Test2	Method	Conditions	Criteria	Sample x lot
STM32F4xx - BIG MANTA – 2M - M10HS – CR300 – LQFP ATP1								
LQFP 14*14 100L	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	1000hrs	77 x 1
LQFP 20*20 144L	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 2
				THB	JESD 22-A101	85°C/85% RH, with Bias	1000hrs	77 x 2
				UHASt	JESD 22-A118	130°C/85% RH 2 Atm	96hrs	77 x 2
				HTSL	JESD 22-A103	150°C	1000hrs	77 x 2
LQFP 28*28 208L	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	1000hrs	77 x 1

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