



PRODUCT INFORMATION LETTER

PIL MMS-MIC/13/7751

Dated 26 Mar 2013

**STM32F40x and STM32F41x products LQFP176 package -
Pinout modification**

Sales Type/product family label	STM32F40x, STM32F41x products on LQFP176 package
Type of change	Package assembly process change
Reason for change	Add the regulator bypass feature to the LQFP176 package
Description	The pinout of the STM32F40x, STM32F41x products devices for LQFP176 package will be modified: Pin 48 will be used for "REGOFF" and will replace an external VSS pin which will be bonded internally to VSS. Bypass features is controlled through "REGOFF" pin: - If "REGOFF" is connected to VSS, internal regulator will be ON, - If "REGOFF" is connected to VDD, internal regulator will be bypassed (OFF).
Forecasted date of implementation	19-Apr-2013
Forecasted date of samples for customer	19-Mar-2013
Forecasted date for STMicroelectronics change Qualification Plan results availability	19-Mar-2013
Involved ST facilities	Assembly plant (ASE TAIWAN)

DOCUMENT APPROVAL

Name	Function
Colonna, Daniel	Marketing Manager
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PRODUCT INFORMATION LETTER

STM32F40x and STM32F41x products LQFP176 package - Pinout modification

MMS - Microcontrollers Division (MCD)

Dear Customer,

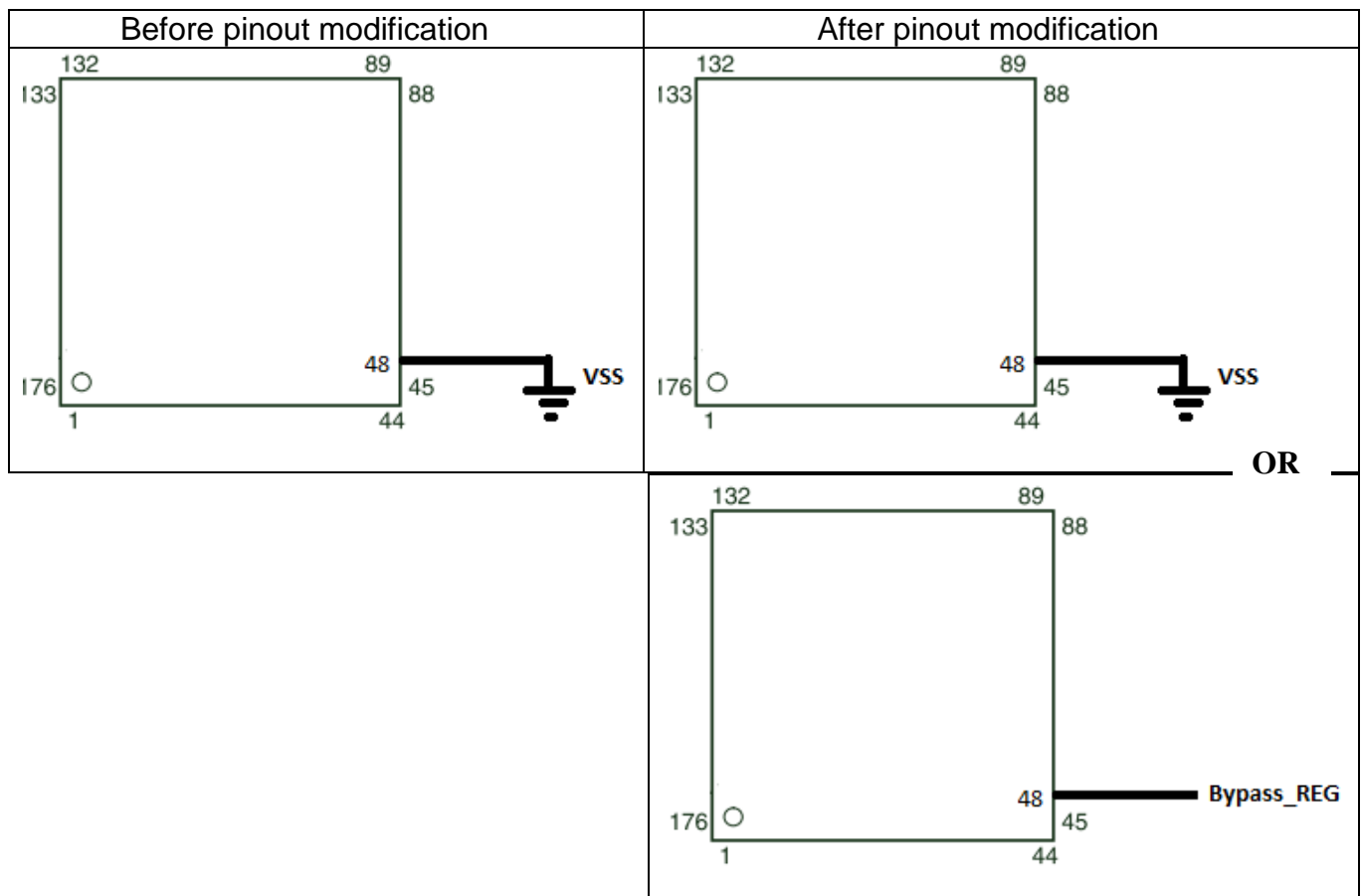
We wish to inform you about an improvement related to the regulator bypass feature on STM32F40x and STM32F41x products devices assembled in LQFP 176 package.

What is the change?

The pinout of the STM32F40x and STM32F41x products devices for LQFP176 package will be modified:

- Pin 48 will be used for "REGOFF" and will replace an external VSS pin which will be bonded internally to VSS.
- Bypass features is controlled through "REGOFF" pin:
 - o If "REGOFF" is connected to VSS, internal regulator will be ON,
 - o If "REGOFF" is connected to VDD, internal regulator will be bypassed (OFF).

For more details about voltage regulator bypass configuration, please refer to STM32F40x and STM32F41x products datasheets.



Why?

By enabling the regulator bypass feature, STMicroelectronics provides the flexibility to our customer to take advantage of a high efficiency 1.2 V external voltage regulator (when available in the application) to supply the 1.2 V power domain of the STM32F40x and STM32F41x products in LQFP176 package.

When?

Implementation of the design improvement will start from **W16 2013**.

How will the change be qualified?

This change is already qualified using the standard STMicroelectronics Corporate Procedures for Quality and Reliability. See Qualification report at the end of this document.

What is the impact of the change?

- **Form:** no change
- **Fit:** no change
- **Function:** no change on previous applications as pin 48 to Vss (see datasheet) - addition of the internal regulator bypass feature to all STM32F40x and STM32F41x products in LQFP176 products.

How can the change be seen?

Traceability of the change is ensured by ST internal tools.

2 Datasheets of these devices will be updated in March 2013:

Doc ID 022152 Rev 4 (STM32F405x and STM32F407x)

Doc ID 022063 Rev 4 (STM32F415x and STM32F417x)

We remain available to discuss any concern that you may have regarding this change.

With our sincere regards.

Michel Buffa

Microcontroller Division General Manager

Reliability results: STM32F4x REG_OFF option

- Results extracted from Reliability report RERMCD1030
 - Positive results on reliability trials:

Test	Method	Conditions	Package	Sample x Lot	Results (Failed parts)
LU	0018695 JESD78	125°C	LQFP176 REG_OFF	6 x 1	0/6
ESD HBM	0060102 JESD22-A114	25°C 2kV (class 2) 1KV on VBAT domain	LQFP176 REG_OFF	3 x 1	0/3
ESD CDM	0060102 (ANSI/ESD STM5.3.1)	25°C 500V (class 2)	LQFP176 REG_OFF	3 x 1	0/3

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