PCN Number:	20160811001	**PCN Date:**	08/15/2016
Title:	Die Revision Change on Select MSP430FRxxxx MCU Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	11/15/2016	**Estimated Sample Availability:**	Date provided at sample request.

Change Type:

☐	Assembly Site	☐	Assembly Process	☐	Assembly Materials
☒	Design	☐	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☐	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Process
		☐	Part number change		

PCN Details

Description of Change:

This notification is to inform of a die revision change to select MSP430FRxxxx MCU devices. A routing change was performed in order to increase TEST pin noise robustness and correct PMM27 Errata. The design change does not affect the form, fit or function of the device and therefore it represents an application drop-in replacement. There will be no accompanying changes to the device specifications.

For the GANG programmer, it is recommended to use the latest programmer SW version available under
http://software-dl.ti.com/msp430/msp430_public_sw/mcu/msp430/MSP_GANG/latest/index_FDS.html

Affected devices are listed in the product affected section of this document.

Reason for Change:

Improved Test pin noise robustness

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

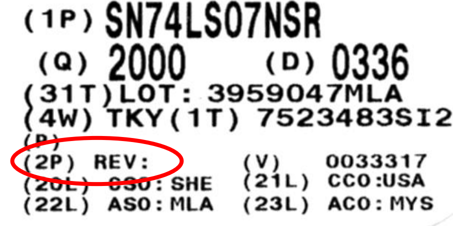
None

Changes to product identification resulting from this PCN:

Die Rev designator for the affected devices will change as shown in the table and sample label below:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
D	**E**

Sample product shipping label (not actual product label)



Topside Symbolization for the affected devices will be as shown below:

PN80 *LQFP (PN), 80 Pin*

YMLLLLSG4
MSP430™
FRxxxx
REV #
○

YM	=	Year and Month Date Code
LLLL	=	Assembly Lot Code
S	=	Assembly Site Code
#	=	Die Revision
○	=	Pin 1

PZ100 *LQFP (PZ) 100 Pin*

YMLLLLSG4
MSP430™
FRxxxx
REV #
○

YM	=	Year and Month Date Code
LLLL	=	Assembly Lot Code
S	=	Assembly Site Code
#	=	Die Revision
○	=	Pin 1

PM64 *LQFP (PM), 64 Pin*

YMLLLLSG4
MSP430™
FRxxxx
REV #
○

YM	=	Year and Month Date Code
LLLL	=	Assembly Lot Code
S	=	Assembly Site Code
#	=	Die Revision
○	=	Pin 1

RGC64 *QFN (RGC), 64 pin*

MSP430™
FRxxxx
TI YMS #
LLLL G4

YM	=	Year and Month Date Code
LLLL	=	Assembly Lot Code
S	=	Assembly Site Code
#	=	Die Revision
○	=	Pin 1

Product Affected

MSP430FR5887IPM	MSP430FR5988IRGCT	MSP430FR6888IPN	MSP430FR6977IPZR
MSP430FR5887IPMR	MSP430FR59891IPM	MSP430FR6888IPNR	MSP430FR69791IPN
MSP430FR5887IRGCR	MSP430FR59891IPMR	MSP430FR6888IPZ	MSP430FR69791IPNR
MSP430FR5887IRGCT	MSP430FR59891IRGCR	MSP430FR6888IPZR	MSP430FR69791IPZ
MSP430FR5888IPM	MSP430FR59891IRGCT	MSP430FR68891IPN	MSP430FR69791IPZR
MSP430FR5888IPMR	MSP430FR5989IPM	MSP430FR68891IPNR	MSP430FR6979IPN
MSP430FR5888IRGCR	MSP430FR5989IPMR	MSP430FR68891IPZ	MSP430FR6979IPNR
MSP430FR5888IRGCT	MSP430FR5989IRGCR	MSP430FR68891IPZR	MSP430FR6979IPZ
MSP430FR58891IPM	MSP430FR5989IRGCT	MSP430FR6889IPN	MSP430FR6979IPZR
MSP430FR58891IPMR	MSP430FR6877IPN	MSP430FR6889IPNR	MSP430FR6987IPN
MSP430FR58891IRGCR	MSP430FR6877IPNR	MSP430FR6889IPZ	MSP430FR6987IPNR
MSP430FR58891IRGCT	MSP430FR6877IPZ	MSP430FR6889IPZR	MSP430FR6987IPZ
MSP430FR5889IPM	MSP430FR6877IPZR	MSP430FR69271IPM	MSP430FR6987IPZR
MSP430FR5889IPMR	MSP430FR68791IPN	MSP430FR69271IPMR	MSP430FR6988IPN
MSP430FR5889IRGCR	MSP430FR68791IPNR	MSP430FR69271IRGCR	MSP430FR6988IPNR
MSP430FR5889IRGCT	MSP430FR68791IPZ	MSP430FR69271IRGCT	MSP430FR6988IPZ
MSP430FR5986IPM	MSP430FR68791IPZR	MSP430FR6927IPM	MSP430FR6988IPZR
MSP430FR5986IPMR	MSP430FR6879IPN	MSP430FR6927IPMR	MSP430FR69891IPN
MSP430FR5987IPM	MSP430FR6879IPNR	MSP430FR6927IRGCR	MSP430FR69891IPNR
MSP430FR5987IPMR	MSP430FR6879IPZ	MSP430FR6927IRGCT	MSP430FR69891IPZ
MSP430FR5987IRGCR	MSP430FR6879IPZR	MSP430FR6928IPM	MSP430FR69891IPZR
MSP430FR5987IRGCT	MSP430FR6887IPN	MSP430FR6928IPMR	MSP430FR6989IPN
MSP430FR5988IPM	MSP430FR6887IPNR	MSP430FR6977IPN	MSP430FR6989IPNR
MSP430FR5988IPMR	MSP430FR6887IPZ	MSP430FR6977IPNR	MSP430FR6989IPZ
MSP430FR5988IRGCR	MSP430FR6887IPZR	MSP430FR6977IPZ	MSP430FR6989IPZR

Die Revision Change on Select MSP430FRxxxx MCU Devices Release Qual Approved 7/11/2016

Product Attributes

Attributes	Qual Device: MSP430FR6989IPZ Rev. E	QBS Device #1: MSP430FR5969IRGZ Rev. H	QBS Device #2: MSP430FR5969IRGZ Rev. F
Assembly Site	TI-TAIWAN	TI-CLARK	TI-CLARK
Package Family	LQFP	VQFN	VQFN
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	TI-DMOS6	TI-DMOS6	TI-DMOS6
Wafer Fab Process	HPE035	HPE035	HPE035

- QBS: Qualification By Similarity
- MSP430FR6989IPZ, MSP430FR5969IRGZ, MSP430FR5969IRGZ qualified at LEVEL3-260CG

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: MSP430FR6989IPZ Rev. E	QBS Device #1: MSP430FR5969IRGZ Rev. H	QBS Device #2: MSP430FR5969IRGZ Rev. F
HTOL*	High Temperature Operating Life 125C	1000 Hours	QBS Device #1, 2	1 / 77 / 0	3 / 231 / 0
FRAM*	Intrinsic Endurance -40C	1E13 Cycles	QBS Device #2	N / A	3 / 36 / 0
FRAM*	Intrinsic Endurance 125C	1E13 Cycles	QBS Device #2	N / A	3 / 36 / 0
FRAM*	Intrinsic Endurance 25C	1E13 Cycles	QBS Device #2	N / A	3 / 36 / 0
FRAM*	Intrinsic Endurance 85C	1E13 Cycles	QBS Device #2	N / A	3 / 36 / 0
FRAM*	Data retention / imprint	1000 Hours	QBS Device #2	N / A	3 / 231 / 0
HBM	ESD - HBM	500V, 1000V	1 / 3 / 0	N / A	N / A
CDM	ESD - CDM	250V	1 / 3 / 0	N / A	N / A
LU	Latchup 1.5*Vmax 25C	200mA	1 / 3 / 0	N / A	N / A
LU	Latchup 1.5*Vmax 85C	100mA	1 / 3 / 0	N / A	N / A

- *Preconditioning was performed for HTOL and FRAM tests to MSL level 3 (260CG)
- Quality and Environmental data is available at TI's external Web site: http://www.ti.com/
- Green/Pb-free Status: Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the regional contacts shown below, or you can contact your local Field Sales Representative.

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