



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20160811001**  
**Die Revision Change on select MSP430FRxxxx MCU Devices**  
**Change Notification / Sample Request**

**Date:** 8/15/2016  
**To:** AVNET PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If you require samples or additional data to support your evaluation, please request within 30 days.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager ([PCN\\_ww\\_admin\\_team@list.ti.com](mailto:PCN_ww_admin_team@list.ti.com)).

PCN Team  
SC Business Services

**20160811001**  
**Attachment: 1**

**Products Affected:**

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

<b>DEVICE</b>	<b>CUSTOMER PART NUMBER</b>
MSP430FR6989IPZ	null
MSP430FR6889IPZ	null
MSP430FR6979IPZR	null

Technical details of this Product Change follow on the next page(s).

<b>PCN Number:</b>	20160811001	<b>PCN Date:</b>	08/15/2016
<b>Title:</b>	Die Revision Change on Select MSP430FRxxxx MCU Devices		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	11/15/2016	<b>Estimated Sample Availability:</b>	Date provided at sample request.
<b>Change Type:</b>			
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Assembly Materials	
<input checked="" type="checkbox"/> Design	<input type="checkbox"/> Electrical Specification	<input type="checkbox"/> Mechanical Specification	
<input type="checkbox"/> Test Site	<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	
<input type="checkbox"/> Wafer Bump Site	<input type="checkbox"/> Wafer Bump Material	<input type="checkbox"/> Wafer Bump Process	
<input type="checkbox"/> Wafer Fab Site	<input type="checkbox"/> Wafer Fab Materials	<input type="checkbox"/> Wafer Fab Process	
	<input type="checkbox"/> 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](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]	<b>Die Rev [2P]</b>
D	<b>E</b>

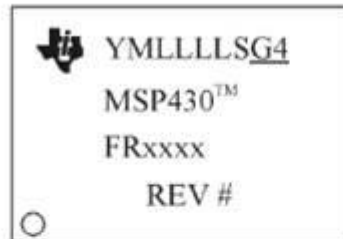
Sample product shipping label (not actual product label)

 MADE IN: Malaysia 2DC: 20: MSL '2 / 260C / 1 YEAR SEAL DT MSL 1 / 235C / UNLIM 03/29/04 OPT: ITEM: 39 <b>LBL: 5A (L)T0:1750</b>			(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483S12 (P) (2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO:USA (22L) ASO: MLA (23L) ACO: MYS
--	---	---	---

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

**PN80**

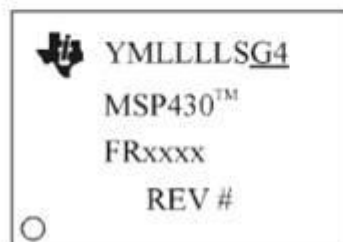
**LQFP (PN), 80 Pin**



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

**PZ100**

**LQFP (PZ) 100 Pin**



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

**PM64**

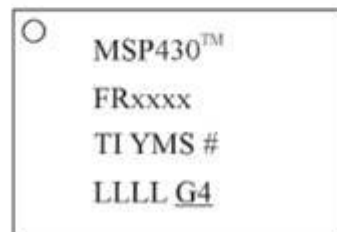
**LQFP (PM), 64 Pin**



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

**RGC64**

**QFN (RGC), 64 pin**



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

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

## Qualification Report

**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.

Location	E-Mail
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>