



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20140917001
BSL Firmware Change and TSMC-F10 (Fab 10)
as an additional Wafer Fab site option for select devices
Change Notification / Sample Request**

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).

PCN Team
SC Business Services
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

PCN# 20140917001
Attachment: 1

Products Affected:

According to our records, there are the affected device(s) that you have purchased within the past twenty-four (24) months. Technical details of this Product Change follow on the next page(s).

PCN Number:	20140917001		PCN Date:	09/19/2014	
Title:	BSL Firmware change and the addition of TSMC-F10 (Fab 10) as a Wafer Fab site option for select devices				
Customer Contact:	PCN Manager	Phone:	+1(214)480-6037	Dept:	Quality Services
Proposed 1st Ship Date:	12/19/2014	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 change notification is to announce a BSL Firmware change and the addition of TSMC-F10 (Fab 10) as an additional Wafer Fab site option for the products listed in the product affected section of this document.					
Current Wafer Fab Site		Process		Wafer Diameter	
TSMC-WF3 (Fab 3)		0.18 Embedded Flash		200mm	
TSMC-WFT (Fab 11)		0.18 Embedded Flash		200mm	
Additional Fab Site		Process		Wafer Diameter	
TSMC-F10 (Fab 10)		0.18 Embedded Flash		200mm	
BSL Firmware Change:					
Description of Change			Benefit of Change		
Errata BSL 6 Errata BSL 7 Errata USB 11			Reduced errata		
Reason for Change:					
Continuity of Supply					
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):					
None					
Changes to product identification resulting from this PCN:					
Current					
Chip Site	Chip site code (20L)	Chip country code (21L)			
TSMC-WF3 (Fab 3)	TS5	TWN			
TSMC-WFT (Fab 11)	T13	USA			
New					
Chip Site	Chip site code (20L)	Chip country code (21L)			
TSMC-F10 (Fab 10)	TSS	CHN			
Die Rev designator will change as listed in the device grouping and sample label below.					

Sample product shipping label (not actual product label)

**TEXAS
INSTRUMENTS**
MADE IN: Malaysia
2DC: 20:



MSL 2 / 260C / 1 YEAR SEAL DT
MSL 1 / 235C / UNLIM 03/29/04

OPT:
ITEM: 39
LBL: 5A (L)T0:1750

(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) AGO: MYS

Product Affected:

Group 1: Adding TSMC F-10 (Feb 10)

MSP430F5324IRGCR	MSP430F5528IYFFR	MSP430F5637IPZR	MSP430V346SPMR
MSP430F5324IRGCT	MSP430F5528IYFFT	MSP430F5637IZQWR	MSP430F6720IPN
MSP430F5324IZQE	MSP430F5528IZQE	MSP430F5637IZQWT	MSP430F6720IPNR
MSP430F5324IZQER	MSP430F5528IZQER	MSP430F5638IPZ	MSP430F6720IPZ
MSP430F5325IPN	MSP430F5529CY	MSP430F5638IPZR	MSP430F6720IPZR
MSP430F5325IPNR	MSP430F5529CYS	MSP430F5638IZQWR	MSP430F6721IPN
MSP430F5326IRGCR	MSP430F5529IPN	MSP430F5638IZQWT	MSP430F6721IPNR
MSP430F5326IRGCT	MSP430F5529IPNR	MSP430F6433IPZ	MSP430F6721IPZ
MSP430F5326IZQE	MSP430V329IPNR	MSP430F6433IPZR	MSP430F6721IPZR
MSP430F5326IZQER	MSP430V345IZQER	MSP430F6433IZQWR	MSP430F6723IPN
MSP430F5327IPN	MSP430V355IRGCR	MSP430F6433IZQWT	MSP430F6723IPNR
MSP430F5327IPNR	MSP430V356IRGCR	MSP430F6435IPZ	MSP430F6723IPZ
MSP430F5328IRGCR	MSP430V357IRGCR	MSP430F6435IPZR	MSP430F6723IPZR
MSP430F5328IRGCT	MSP430V375IRGCR	MSP430F6435IZQWR	MSP430F6724IPN
MSP430F5328IZQE	MSP430V390IRGCR	MSP430F6435IZQWT	MSP430F6724IPNR
MSP430F5328IZQER	MSP430V397IRGCR	MSP430F6436IPZ	MSP430F6724IPZ
MSP430F5329IPN	MSP430F5333IPZ	MSP430F6436IPZR	MSP430F6724IPZR
MSP430F5329IPNR	MSP430F5333IPZR	MSP430F6436IZQWR	MSP430F6725IPN
MSP430F5340IRGZR	MSP430F5333IZQWR	MSP430F6436IZQWT	MSP430F6725IPNR
MSP430F5340IRGZT	MSP430F5333IZQWT	MSP430F6438IPZ	MSP430F6725IPZ
MSP430F5341IRGZR	MSP430F5335IPZ	MSP430F6438IPZR	MSP430F6725IPZR
MSP430F5341IRGZT	MSP430F5335IPZR	MSP430F6438IZQWR	MSP430F6726IPN
MSP430F5342IRGZR	MSP430F5335IZQWR	MSP430F6438IZQWT	MSP430F6726IPNR
MSP430F5342IRGZT	MSP430F5335IZQWT	MSP430F6630IPZ	MSP430F6726IPZ
MSP430F5513IRGCR	MSP430F5336IPZ	MSP430F6630IPZR	MSP430F6726IPZR
MSP430F5513IRGCT	MSP430F5336IPZR	MSP430F6630IZQWR	MSP430F6730IPN
MSP430F5513IZQE	MSP430F5336IZQWR	MSP430F6630IZQWT	MSP430F6730IPNR
MSP430F5513IZQER	MSP430F5336IZQWT	MSP430F6631IPZ	MSP430F6730IPZ
MSP430F5514IRGCR	MSP430F5338IPZ	MSP430F6631IPZR	MSP430F6730IPZR
MSP430F5514IRGCT	MSP430F5338IPZR	MSP430F6631IZQWR	MSP430F6731IPN
MSP430F5514IZQE	MSP430F5338IZQWR	MSP430F6631IZQWT	MSP430F6731IPNR
MSP430F5514IZQER	MSP430F5338IZQWT	MSP430F6632IPZ	MSP430F6731IPZ
MSP430F5515IPN	MSP430F5630IPZ	MSP430F6632IPZR	MSP430F6731IPZR

MSP430F5515IPNR	MSP430F5630IPZR	MSP430F6632IZQWR	MSP430F6733IPN
MSP430F5517IPN	MSP430F5630IZQWR	MSP430F6632IZQWT	MSP430F6733IPNR
MSP430F5517IPNR	MSP430F5630IZQWT	MSP430F6633IPZ	MSP430F6733IPZ
MSP430F5519IPN	MSP430F5631IPZ	MSP430F6633IPZR	MSP430F6733IPZR
MSP430F5519IPNR	MSP430F5631IPZR	MSP430F6633IZQWR	MSP430F6734IPN
MSP430F5521IPN	MSP430F5631IZQWR	MSP430F6633IZQWT	MSP430F6734IPNR
MSP430F5521IPNR	MSP430F5631IZQWT	MSP430F6634IPZ	MSP430F6734IPZ
MSP430F5522IRGCR	MSP430F5632IPZ	MSP430F6634IPZR	MSP430F6734IPZR
MSP430F5522IRGCT	MSP430F5632IPZR	MSP430F6634IZQWR	MSP430F6735IPN
MSP430F5522IZQE	MSP430F5632IZQWR	MSP430F6634IZQWT	MSP430F6735IPNR
MSP430F5522IZQER	MSP430F5632IZQWT	MSP430F6635IPZ	MSP430F6735IPZ
MSP430F5524IRGCR	MSP430F5633IPZ	MSP430F6635IPZR	MSP430F6735IPZR
MSP430F5524IRGCT	MSP430F5633IPZR	MSP430F6635IZQWR	MSP430F6736CY
MSP430F5524IYFFR	MSP430F5633IZQWR	MSP430F6635IZQWT	MSP430F6736CYS
MSP430F5524IYFFT	MSP430F5633IZQWT	MSP430F6636IPZ	MSP430F6736IPN
MSP430F5524IZQE	MSP430F5634IPZ	MSP430F6636IPZR	MSP430F6736IPNR
MSP430F5524IZQER	MSP430F5634IPZR	MSP430F6636IZQWR	MSP430F6736IPZ
MSP430F5525IPN	MSP430F5634IZQWR	MSP430F6636IZQWT	MSP430F6736IPZR
MSP430F5525IPNR	MSP430F5634IZQWT	MSP430F6637IPZ	MSP430F67621IPN
MSP430F5526IRGCR	MSP430F5635IPZ	MSP430F6637IPZR	MSP430F67621IPNR
MSP430F5526IRGCT	MSP430F5635IPZR	MSP430F6637IZQWR	MSP430F67621IPZ
MSP430F5526IYFFR	MSP430F5635IZQWR	MSP430F6637IZQWT	MSP430F67621IPZR
MSP430F5526IYFFT	MSP430F5635IZQWT	MSP430F6638CY	MSP430F67641IPN
MSP430F5526IZQE	MSP430F5636IPZ	MSP430F6638CYS	MSP430F67641IPNR
MSP430F5526IZQER	MSP430F5636IPZR	MSP430F6638IPZ	MSP430F67641IPZ
MSP430F5527IPN	MSP430F5636IZQWR	MSP430F6638IPZR	MSP430F67641IPZR
MSP430F5527IPNR	MSP430F5636IZQWT	MSP430F6638IZQWR	MSP430V381IPNR
MSP430F5528IRGCR	MSP430F5637IPZ	MSP430F6638IZQWT	MSP430V580IPZR
MSP430F5528IRGCT			
Group 2: BSL Firmware Change (Die Rev K)			
MSP430F5324IRGCR	MSP430F5341IRGZR	MSP430F5522IRGCR	MSP430F5527IPNR
MSP430F5324IRGCT	MSP430F5341IRGZT	MSP430F5522IRGCT	MSP430F5528IRGCR
MSP430F5324IZQE	MSP430F5342IRGZR	MSP430F5522IZQE	MSP430F5528IRGCT
MSP430F5324IZQER	MSP430F5342IRGZT	MSP430F5522IZQER	MSP430F5528IYFFR
MSP430F5325IPN	MSP430F5513IRGCR	MSP430F5524IRGCR	MSP430F5528IYFFT
MSP430F5325IPNR	MSP430F5513IRGCT	MSP430F5524IRGCT	MSP430F5528IZQE
MSP430F5326IRGCR	MSP430F5513IZQE	MSP430F5524IYFFR	MSP430F5528IZQER
MSP430F5326IRGCT	MSP430F5513IZQER	MSP430F5524IYFFT	MSP430F5529CY
MSP430F5326IZQE	MSP430F5514IRGCR	MSP430F5524IZQE	MSP430F5529CYS
MSP430F5326IZQER	MSP430F5514IRGCT	MSP430F5524IZQER	MSP430F5529IPN
MSP430F5327IPN	MSP430F5514IZQE	MSP430F5525IPN	MSP430F5529IPNR
MSP430F5327IPNR	MSP430F5514IZQER	MSP430F5525IPNR	MSP430V329IPNR
MSP430F5328IRGCR	MSP430F5515IPN	MSP430F5526IRGCR	MSP430V345IZQER
MSP430F5328IRGCT	MSP430F5515IPNR	MSP430F5526IRGCT	MSP430V355IRGCR

MSP430F5328IZQE	MSP430F5517IPN	MSP430F5526IYFFR	MSP430V356IRGCR
MSP430F5328IZQER	MSP430F5517IPNR	MSP430F5526IYFFT	MSP430V357IRGCR
MSP430F5329IPN	MSP430F5519IPN	MSP430F5526IZQE	MSP430V375IRGCR
MSP430F5329IPNR	MSP430F5519IPNR	MSP430F5526IZQER	MSP430V390IRGCR
MSP430F5340IRGZR	MSP430F5521IPN	MSP430F5527IPN	MSP430V397IRGCR
MSP430F5340IRGZT	MSP430F5521IPNR		
Group 3: BSL Firmware Change (Die Rev E)			
MSP430F5333IPZ	MSP430F5632IZQWT	MSP430F6433IZQWR	MSP430F6633IPZR
MSP430F5333IPZR	MSP430F5633IPZ	MSP430F6433IZQWT	MSP430F6633IZQWR
MSP430F5333IZQWR	MSP430F5633IPZR	MSP430F6435IPZ	MSP430F6633IZQWT
MSP430F5333IZQWT	MSP430F5633IZQWR	MSP430F6435IPZR	MSP430F6634IPZ
MSP430F5335IPZ	MSP430F5633IZQWT	MSP430F6435IZQWR	MSP430F6634IPZR
MSP430F5335IPZR	MSP430F5634IPZ	MSP430F6435IZQWT	MSP430F6634IZQWR
MSP430F5335IZQWR	MSP430F5634IPZR	MSP430F6436IPZ	MSP430F6634IZQWT
MSP430F5335IZQWT	MSP430F5634IZQWR	MSP430F6436IPZR	MSP430F6635IPZ
MSP430F5336IPZ	MSP430F5634IZQWT	MSP430F6436IZQWR	MSP430F6635IPZR
MSP430F5336IPZR	MSP430F5635IPZ	MSP430F6436IZQWT	MSP430F6635IZQWR
MSP430F5336IZQWR	MSP430F5635IPZR	MSP430F6438IPZ	MSP430F6635IZQWT
MSP430F5336IZQWT	MSP430F5635IZQWR	MSP430F6438IPZR	MSP430F6636IPZ
MSP430F5338IPZ	MSP430F5635IZQWT	MSP430F6438IZQWR	MSP430F6636IPZR
MSP430F5338IPZR	MSP430F5636IPZ	MSP430F6438IZQWT	MSP430F6636IZQWR
MSP430F5338IZQWR	MSP430F5636IPZR	MSP430F6630IPZ	MSP430F6636IZQWT
MSP430F5338IZQWT	MSP430F5636IZQWR	MSP430F6630IPZR	MSP430F6637IPZ
MSP430F5630IPZ	MSP430F5636IZQWT	MSP430F6630IZQWR	MSP430F6637IPZR
MSP430F5630IPZR	MSP430F5637IPZ	MSP430F6630IZQWT	MSP430F6637IZQWR
MSP430F5630IZQWR	MSP430F5637IPZR	MSP430F6631IPZ	MSP430F6637IZQWT
MSP430F5630IZQWT	MSP430F5637IZQWR	MSP430F6631IPZR	MSP430F6638CY
MSP430F5631IPZ	MSP430F5637IZQWT	MSP430F6631IZQWR	MSP430F6638CYS
MSP430F5631IPZR	MSP430F5638IPZ	MSP430F6631IZQWT	MSP430F6638IPZ
MSP430F5631IZQWR	MSP430F5638IPZR	MSP430F6632IPZ	MSP430F6638IPZR
MSP430F5631IZQWT	MSP430F5638IZQWR	MSP430F6632IPZR	MSP430F6638IZQWR
MSP430F5632IPZ	MSP430F5638IZQWT	MSP430F6632IZQWR	MSP430F6638IZQWT
MSP430F5632IPZR	MSP430F6433IPZ	MSP430F6632IZQWT	MSP430V317IZQWR
MSP430F5632IZQWR	MSP430F6433IPZR	MSP430F6633IPZ	MSP430V346SPMR
Group 4: BSL Firmware Change (Die Rev F)			
MSP430A152IRGCR	MSP430F5309IZQER	MSP430F5504IRGZT	MSP430F5509IRGZR
MSP430F5304IPT	MSP430F5310IPT	MSP430F5505IRGZR	MSP430F5509IRGZT
MSP430F5304IPTR	MSP430F5310IPTR	MSP430F5505IRGZT	MSP430F5509IZQE
MSP430F5304IRGZR	MSP430F5310IRGCR	MSP430F5506IRGZR	MSP430F5509IZQER
MSP430F5304IRGZT	MSP430F5310IRGCT	MSP430F5506IRGZT	MSP430F5510CY
MSP430F5308IPT	MSP430F5310IRGZR	MSP430F5507IRGZR	MSP430F5510CYS
MSP430F5308IPTR	MSP430F5310IRGZT	MSP430F5507IRGZT	MSP430F5510IPT
MSP430F5308IRGCR	MSP430F5310IZQE	MSP430F5508IPT	MSP430F5510IPTR
MSP430F5308IRGCT	MSP430F5310IZQER	MSP430F5508IPTR	MSP430F5510IRGCR

MSP430F5308IRGZR	MSP430F5500IRGZR	MSP430F5508IRGCR	MSP430F5510IRGCT
MSP430F5308IRGZT	MSP430F5500IRGZT	MSP430F5508IRGCT	MSP430F5510IRGZR
MSP430F5308IZQE	MSP430F5501IRGZR	MSP430F5508IRGZR	MSP430F5510IRGZT
MSP430F5308IZQER	MSP430F5501IRGZT	MSP430F5508IRGZT	MSP430F5510IZQE
MSP430F5309IPT	MSP430F5502IRGZR	MSP430F5508IZQE	MSP430F5510IZQER
MSP430F5309IPTR	MSP430F5502IRGZT	MSP430F5508IZQER	MSP430V307IZQER
MSP430F5309IRGCR	MSP430F5503IRGZR	MSP430F5509IPT	MSP430V335IRGCR
MSP430F5309IRGCT	MSP430F5503IRGZT	MSP430F5509IPTR	MSP430V337IRGZR
MSP430F5309IRGZR	MSP430F5504IPT	MSP430F5509IRGCR	MSP430V560IRGCR
MSP430F5309IRGZT	MSP430F5504IPTR	MSP430F5509IRGCT	MSP430V574IZQER
MSP430F5309IZQE	MSP430F5504IRGZR		
Group 5: BSL Firmware Change (Die Rev B)			
MSP430F5358IPZ	MSP430F5658IPZR	MSP430F6458IZQWR	MSP430F6658IZQWR
MSP430F5358IPZR	MSP430F5658IZQWR	MSP430F6458IZQWT	MSP430F6658IZQWT
MSP430F5358IZQWR	MSP430F5658IZQWT	MSP430F6459IPZ	MSP430F6659CY
MSP430F5358IZQWT	MSP430F5659IPZ	MSP430F6459IPZR	MSP430F6659CYS
MSP430F5359IPZ	MSP430F5659IPZR	MSP430F6459IZQWR	MSP430F6659IPZ
MSP430F5359IPZR	MSP430F5659IZQWR	MSP430F6459IZQWT	MSP430F6659IPZR
MSP430F5359IZQWR	MSP430F5659IZQWT	MSP430F6658IPZ	MSP430F6659IZQWR
MSP430F5359IZQWT	MSP430F6458IPZ	MSP430F6658IPZR	MSP430F6659IZQWT
MSP430F5658IPZ	MSP430F6458IPZR		

Process Qualification Report
TSMC Fab 10, 0.18 Embedded ULL flash
Approved 07/31/2012

Attributes	Qual Device: MSP430F5510IRGC
Wafer Fab Site	TSMC Fab 10
Wafer Fab Process	0.18 embedded flash ULL, 2P5M
Wafer Diameter	200mm

Reliability Test Results

1. Silicon reliability

TEST	Conditions/ Duration	Sample size	Fail/ Samples	Results	Qualification vehicle
HTOL (p)	150C, 300 hours	3 lots x 77 units	0/240	Passed	MSP430F5510IRGC
HTSL (p) Flash Data Retention	1k W/E at 25C and 170C, 420 hours	3 lots x 77 units	0/240	Passed	MSP430F5510IRGC
Flash Endurance	20k W/E at -40C 20k W/E at 25C 20k W/E at 105C	3 lots x 12 units 3 lots x 12 units 3 lots x 12 units	0/45 0/45 0/45	Passed Passed Passed	MSP430F5510IRGC MSP430F5510IRGC MSP430F5510IRGC
Electrical Characterization	Across temperature and voltage	3 lots x 50 units	0/150	Passed	MSP430F5510IRGC
Manufacturability	Acc. Wafer Fab spec	1 lot		Passed	YUTMY042EIN

Wafer level bake	Acc. Probe spec 250 C, 144 Hrs	3 lots x 500 units	0/1500	Passed	YUTMY042EIN
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(p) = MSL 3, 260C preconditioning before HTOL, T/C, A/C, and HAST.

(a) = discounted due to electrical overstress.

2. Package reliability

Qualification data is supported by following reliability tests:

- Package reliability qualification of the 64 pin QFN (RGC) package.
- Manufacturing qualification and TI family qualification of 48 pin QFN (RGZ) and 48 pin LQFP (PT) and 80 pin BGA (ZQE).

TEST	Conditions/ Duration	Sample size	Fail/ Samples	Results	Qualification vehicle
Temp Cycle (p)	-65/150C x 500 cycles	3 lots x 77 units	0/240	Passed	MSP430F5510IRGC
Autoclave (p)	121C, 2 ATM, 96 hours	3 lots x 77 units	0/240	Passed	MSP430F5510IRGC
Biased HAST (p)	130C, 85%RH, 96 hrs	3 lots x 77 units	0/240	Passed	MSP430F5510IRGC
Moisture sensitivity	MSL 3, 260 deg C	3 lots x 12 units	0/48	Passed	MSP430F5510IRGC
XRAY	Top view only	3 lots x 5 units	0/15	Passed	MSP430F5510IRGC
Assembly Manufacturability	Acc. Assembly specification	1 lot		Passed	MSP430F5510IRGC MSP430F5510IRGZ MSP430F5510IPT MSP430F5510IZQE

(p) = MSL 3, 260C preconditioning before HTOL, T/C, A/C, and HAST.

3. Device Specific Reliability Testing

TEST	Conditions/ Duration	Fail/ Samples	Results	Qualification vehicle
HBM: ESD Human Body model	JESD22-A114, 2000V required to pass	0/3 500V 0/3 1000V 0/3 1500V 0/5 2000V	Passed Passed Passed Passed	MSP430F5510IRGC
CDM : ESD Charged device model	JESD22-C101, 500V required to pass	0/3 250V 0/5 500V	Passed Passed	MSP430F5510IRGC + MSP430F5510IPT
Latch up	JEDEC 78C Class I: +-200mA, 25C / 1.5 x Vcc	0/6	Passed	MSP430F5510IRGC

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	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com