



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20121105001A

**Qualification of CLARK-AT as new assembly site for affected device(s) moving from SCSAT, corresponding package change from punched RTK to sawn RGP and change of orderable part number(s)
Change Notification / Sample Request**

Dear Customer:

The purpose of this A version is to correct errors in the 'Product Affected' section of the PCN document originally sent on 11/16/2012. Most of the new part numbers were listed instead of the current part numbers. This A version lists both the current part numbers affected by this PCN change along with the new part numbers that should be used in place of these current part numbers.

Please disregard the original PCN document and use this A version. We apologize for any confusion and inconvenience.

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

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.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. If you require samples to conduct an evaluation, please make any request within the 30 days—samples are not built ahead of the change. Please see the schedule on the following pages for availability dates. You may contact the PCN Manager or your local Field Sales Representative to acknowledge this PCN and request samples.

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. Any negotiated alternative change requirements will be provided via the customer's defined process. Customers with previously negotiated, special requirements will be handled separately. Any inquiries should be directed to your local Field Sales Representative.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

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

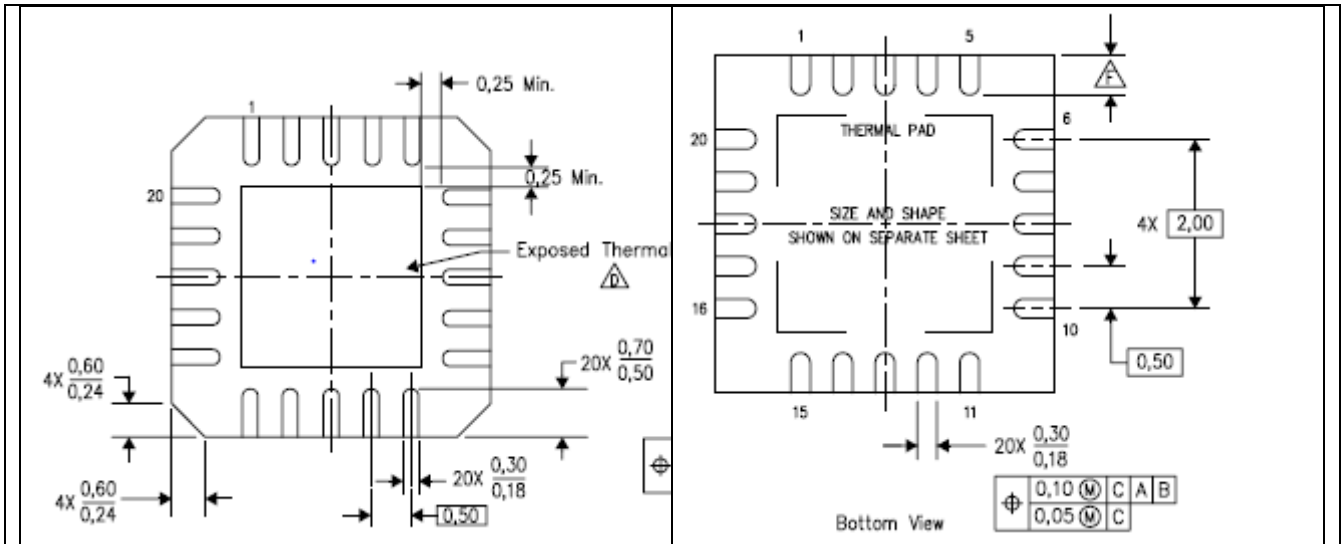
PCN Number:	20121105001A		PCN Date:	11/19/2012	
Title:	Qualification of CLARK-AT as new assembly site for affected device(s) moving from SCSAT and corresponding package change from punched RTK to sawn RGP				
Customer Contact:	PCN_ww_admin_team@list.ti.com	Phone:	+1(214)480-6037	Dept:	Quality Services
Proposed 1st Ship Date:	02/19/2013	Estimated Sample Availability:	01/16/2013		
Change Type:					
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Assembly Materials
<input 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
PCN Details					
Description of Change:					
<p>The purpose of this A version is to correct errors in the 'Product Affected' section of the PCN document originally sent on 11/16/2012. Most of the new part numbers were listed instead of the current part numbers. This A version lists both the current part numbers affected by this PCN change along with the new part numbers that should be used in place of these current part numbers.</p> <p>Please disregard the original PCN document and use this A version. We apologize for any confusion and inconvenience.</p> <p>Texas Instruments is pleased to announce the ongoing qualification of its CLARK-AT facility as a new assembly site for 4x4 mm, 20-pin RTK VQFN packaged device(s) currently being assembled at its SCSAT subcon facility. A package change (see package mechanical drawings) and an order number change will accompany this change. The sawn RGP package is considered backwards compatible with the punched RTK package, i.e. no PCB footprint change is necessary. Please see the tables below for further details on site and associated RoHS compliant and REACH compliant bill of material changes. Packing materials (shipping boxes, tape & reels, trays, etc.) at the additional site will be consistent with materials currently in use at that added site.</p>					
		Current		Qualification	
Assembly Site		SCSAT		CLARK-AT	
Package Designator		RTK		RGP	
Leadframe		SID#R002-2077X (NiPdAu)		4211288-0003 (NiPdAu)	
Mount Compound		SID#R008-0103X		4207123-0002	
Mold Compound		SID#R003-0302X		4208625-0005	
Bond Wire		SID#R005-0077X 25.4 μm (1 mil Au)		4072459-0500 (0.96 mil Au)	
Device Names / Orderables					
<p>The orderable part number will change to reflect the RGP package. Customers must convert their systems over to the new part numbers when this PCN goes into effect. The "Package Option Addendum" section in the updated datasheet as well as product information page on web will reflect these orderable device changes when they go into effect.</p>					

Package marking:

Current (RTK)	Qualification ongoing (RGP)
<p>Topside Symbol : QFN4X4-CC</p> <pre> +-----+ ! O ! Y = YEAR ! CC1101 ! M = MONTH ! YMMLLLG ! M = SECONDARY SITE CODE FOR STATS ! YYWW ! LLL = ASSY LOT CODE ! ! G = PRIMARY SITE CODE FOR STATS +-----+ O - PIN 1 (MARKED) YY = YEAR (LAST TWO DIGITS OF YEAR) WW = WEEK NUMBER 7 CHARACTERS MAX LINE 1 </pre>	<p>Topside Symbol : QFN4X4-CC</p> <pre> +-----+ ! O ! TI = TI LETTERS ! CC1101 ! YM = YEAR MONTH DATE CODE ! ! LLLL = ASSY LOT CODE ! TI YMS ! S = ASSEMBLY SITE CODE FOR QSS 005-120 ! LLLL G4 ! +-----+ O - PIN 1 (MARKED) G4 MUST BE SYMBOLIZED WITH A SOLID LINE UNDERSCORE, IF PRESENT #SYMBOL ECAT : G4 MUST BE SYMBOLIZED WITH AN UNDERSCORE #SYMBOL PIN 1 QUADRANT : 1 #SYMBOL DEVICE NAME1 : CC1101 #SYMBOL DEVICE NAME2 : #SYMBOL LOGO : TI </pre>

Package Drawings (please see datasheets for complete package Mechanical Data):

Current (RTK)	Qualification ongoing (RGP)



Reason for Change:

Continuity of Supply

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

Improved reliability by changing to sawn RGP package with higher package integrity.

Changes to product identification resulting from this PCN:

Shipment Labels:

Current

Assembly Site	Assembly site Origin (22L)	Assembly country Origin (23L)
SCSAT	STS	SGP

New

Assembly Site	Assembly site Origin (22L)	Assembly country Origin (23L)
CLARK-AT	QAB	PHL

Sample product shipping 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) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CS0: SHE (21L) CCO:USA
(22L) AS0: MLA (23L) ACO: MYS

Product Affected:		
Current Part number	New Part Number	
CC1100ERTKR	CC1100ERGPR	
CC1100ERTKT	CC1100ERGPT	
CC1101RTK	CC1101RGP	
CC1101RTKR	CC1101RGPR	
CC110LRTKR	CC110LRGPR	
CC110LRTKT	CC110LRGPT	
CC113LRTKR	CC113LRGPR	
CC113LRTKT	CC113LRGPT	
CC115LRTKR	CC115LRGPR	
CC115LRTKT	CC115LRGPT	
HPA00409RTKR	HPA00409RGPR	
HPA00632RTKR	HPA00632RGPR	
TLMW301RTKR	TLMW301RGPR	

Qualification Data:

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qualification Schedule:	Start:	2012-10-15	End:	2013-02-01
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Qualification Device Construction Details:

Device:	See the Product Affected section of this document for a list of qualified devices	<i>Qual Device1 for QBS</i> CC1101RTK
Wafer Fab:	TSMC Fab4	TSMC Fab4
Wafer Technology:	0.18um CMOS	0.18um CMOS
Assembly Site:	CLARK-AT	SCS-AT
Package Type/Code:	20VQFN / RGP	20VQFN / RTK
Package Pins:	20	20
Mold Compound:	4208625-0005	SID#R003-0302X
Mold Compound Supplier:	Sumitomo	Sumitomo
Lead Frame:	4211288-0003	SID#R002-2077X
Composition:	NiPdAu, Cu base	NiPdAu, Cu base
Die Attach:	4207123-0002	SID#R008-0103X
Die Attach Supplier:	Ablestik	Ablestik
Wire Diameter:	24.3 um (0.96 mils)	24.3 um (0.96 mils)
Moisture Level:	MSL3	MSL3

Qualification: <input checked="" type="checkbox"/> Plan <input type="checkbox"/> Test Results		
Reliability Test	Conditions	Sample Size (PASS/FAIL)
ESD HBM	Human Body Model JEDEC STD 22 A114	3 / 0 3 / 0 3 / - 3 / - PASS (QBS)
ESD CDM	Charged Device Model JEDEC STD 22 C101	3 / 0 3 / 0 3 / - 3 / -
Latch-up	100mA / 1.5xVddmax JEDEC STD 78	18 / 0 PASS (QBS)
Manufacturability	Per assembly site specification	-
Pre-conditioning Level 3	24h bake @ 125°C, 192h soak @ 30°C/60%RH, 3 IR cycles 260°C + 5/-0°C SAM required JEDEC STD 22 A113	693 / -
Temperature Cycles air/air*	-55°C / +125°C JEDEC STD 22 A104	231 / - 231 / -
Storage*	150°C / 600h JEDEC STD 22 A103	231 / - 231 / -
Bias Temperature & Humidity*	130°C / 85%RH, Vmax JEDEC STD 22 A101/A110	77 / 0 PASS (QBS)
Unbiased HAST*	110°C / 85%RH, Vmax JEDEC STD 22 A118	231 / - 231 / -
Operating Life Test	Dynamic 140°C (480 Hrs), Vcc Max JEDEC STD 22 A108	77 / 0 PASS (QBS)
Thermal Integrity Sequence	(level 3 @ 260C +5/-0C)	12 / - 12 / -
Electrical characterization	Low (minimum) and high (maximum) extremes for device bias voltage and temperature.	30 units min
Notes: * Test requires Moisture Preconditioning Qualification tests "pass" on zero fails for each test "QBS" stands for Qualification by Similarity		

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or 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