

<b>PCN Number:</b>	20130520005		<b>PCN Date:</b>	06/19/2013	
<b>Title:</b>	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)				
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Phone:</b>	+1(214)480-6037	<b>Dept:</b> Quality Services	
<b>Proposed 1<sup>st</sup> Ship Date:</b>	09/19/2013	<b>Estimated Sample Availability:</b>	07/15/2013		
<b>Change Type:</b>					
<input checked="" type="checkbox"/>	<a href="#">Assembly Site</a>	<input checked="" type="checkbox"/>	<a href="#">Assembly Process</a>	<input checked="" type="checkbox"/>	<a href="#">Assembly Materials</a>
<input type="checkbox"/>	<a href="#">Design</a>	<input type="checkbox"/>	<a href="#">Electrical Specification</a>	<input type="checkbox"/>	<a href="#">Mechanical Specification</a>
<input type="checkbox"/>	<a href="#">Test Site</a>	<input checked="" type="checkbox"/>	<a href="#">Packing/Shipping/Labeling</a>	<input type="checkbox"/>	<a href="#">Test Process</a>
<input type="checkbox"/>	<a href="#">Wafer Bump Site</a>	<input type="checkbox"/>	<a href="#">Wafer Bump Material</a>	<input type="checkbox"/>	<a href="#">Wafer Bump Process</a>
<input type="checkbox"/>	<a href="#">Wafer Fab Site</a>	<input type="checkbox"/>	<a href="#">Wafer Fab Materials</a>	<input type="checkbox"/>	<a href="#">Wafer Fab Process</a>
<b>PCN Details</b>					
<b>Description of Change:</b>					
<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 &amp; reels, tubes, 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)		
<b>Device Names / Orderables</b>					
<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>					

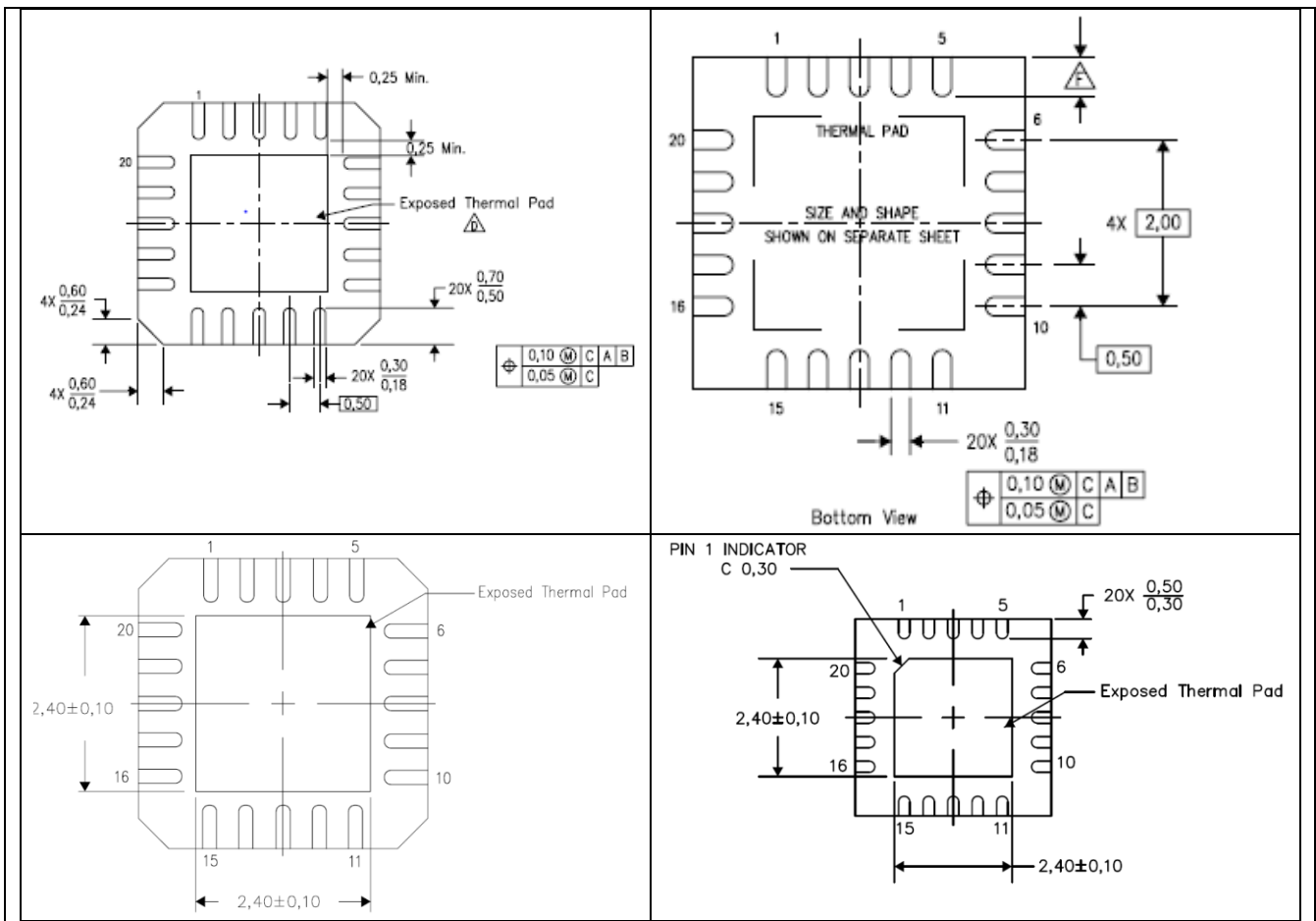
**Package marking:**

CC1101 is used as an example below. The same marking change applies to all affected product.

Current (RTK)	Qualification ongoing (RGP)
<p>Topside Symbol : QFN4X4-CC</p> <pre> +-----+ ! O      !           Y = YEAR ! CC2500 !           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-ECAT</p> <pre> +-----+ ! O      !           TI = TI LETTERS ! CC2500 !           YM = YEAR MONTH CODE !         !           S = ASSEMBLY SITE CODE PER QSS 005-120 ! LLLL G4 !          LLLL = ASSY LOT CODE !         !           7 CHARACTERS MAX LINES 1 &amp; 2 +-----+ 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: CC2500 #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 Form, Fit, 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



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) CSO: SHE (21L) CCO: USA  
(22L) ASO: MLA (23L) ACO: MYS

**Product Affected:**

Current Part Number	New Part Number
CC2500-RTR1	CC2500RGPR
CC2500-RTY1	CC2500RGP
CC2500RTK	CC2500RGP
CC2500RTKG3	CC2500RGP
CC2500RTKR	CC2500RGPR
CC2500RTKRG3	CC2500RGPR
HPA00325RTKR	HPA00325RGPR
HPA00367RTKR	HPA00367RGPR
HPA00711KBM	HPA00711KBM

**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.

<b>Qualification Schedule:</b>	<b>Start:</b>	2012-10-15	<b>End:</b>	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	Qual Device1 for QBS CC1101RTK	Qual Device2 for QBS CC1101RGP
Wafer Fab:	TSMC Fab4	TSMC Fab4	TSMC Fab4
Wafer Technology:	0.18um CMOS	0.18um CMOS	0.18um CMOS
Assembly Site:	CLARK-AT	SCSAT	CLAR-AT
Package Type/Code:	20VQFN / RGP	20VQFN / RTK	20VQFN / RGP
Package Pins:	20	20	20
Mold Compound:	4208625-0005	SID#R003-0302X	4208625-0005
Mold Compound Supplier:	Sumitomo	Sumitomo	Sumitomo
Lead Frame:	4211288-0003	SID#R002-2077X	4211288-0003
Composition:	NiPdAu, Cu base	NiPdAu, Cu base	NiPdAu, Cu base
Die Attach:	4207123-0002	SID#R008-0103X	4207123-0002
Die Attach Supplier:	Sumitomo	Ablestik	Sumitomo
Wire Diameter:	24.3 um (0.96 mils)	25.4 um (1.0 mils)	24.3 um (0.96 mils)
Moisture Level:	MSL3	MSL3	MSL3

Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results		
Reliability Test	Conditions	Sample Size (PASS/FAIL)
<b>ESD HBM</b>	Human Body Model JEDEC STD 22 A114	3 / 0 3 / 0 3 / 0 3 / 0 PASS (QBS with QD1)
<b>ESD CDM</b>	Charged Device Model JEDEC STD 22 C101	3 / 0 3 / 0 3 / 0 3 / 0 PASS (QBS with QD2)
<b>Latch-up</b>	100mA / 1.5xVddmax JEDEC STD 78	18 / 0 PASS (QBS with QD1)
<b>Manufacturability</b>	Per assembly site specification	-
<b>Pre-conditioning Level 3</b>	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 / 0 PASS (QBS with QD2)
<b>Temperature Cycles air/air*</b>	-55°C / +125°C JEDEC STD 22 A104	231 / 0 231 / 0 PASS (QBS with QD2)
<b>Storage*</b>	150°C / 600h JEDEC STD 22 A103	231 / 0 231 / 0 PASS (QBS with QD2)
<b>Bias Temperature &amp; Humidity*</b>	130°C / 85%RH, Vmax JEDEC STD 22 A101/A110	77 / 0 PASS (QBS with QD1)
<b>Unbiased HAST*</b>	110°C / 85%RH, Vmax JEDEC STD 22 A118	231 / 0 231 / 0 PASS (QBS with QD2)
<b>Operating Life Test</b>	Dynamic 140°C (480 Hrs), Vcc Max JEDEC STD 22 A108	77 / 0 PASS (QBS with QD1)
<b>Thermal Integrity Sequence</b>	(level 3 @ 260C +5/-0C)	12 / 0 12 / 0 PASS (QBS with QD2)
<b>Electrical characterization</b>	Low (minimum) and high (maximum) extremes for device bias voltage and temperature.	Pass
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	<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>