CC2500
Reliability Report

CONCLUSION
The CC2500 meets the Texas Instruments Norway's product reliability qualification standards based on the procedures and tests documented in the following.

Design phase
Design is made for robustness using extensive corner simulations for:
- Process variations
- Minimum/maximum operating temperature
- Minimum/maximum operating voltage
- Minimum/maximum process limitations

Process
The CC2500 is based on the Texas Instruments Norway SmartRF®-04 platform. It is designed in an industry standard 0.18μm mixed signal CMOS process with 1 poly layer and 4 metal layers.

Package reliability (20lead QLP - Pb free)

Moisture Sensitivity Level	JEDEC Level 3
Temp Cycling	-65/150°C, 1000 cycles
High Temp Storage Test	150°C, 500 hrs.
PCT	121°C / 100% RH, 15psig, 168 hrs

ESD and Latch-Up
Latch-up testing according to EIA/JESD-78, class I.
Minimum immunity level: ± 100mA at all pins. VDD abs. max. rating x1.5 at all supply pins.

ESD test according to JEDEC STD 22, method A114, Human Body Model.
ESD level < 500V.

Transfer to Production
First Article Inspection (testing at –40/+25/+85°C)
Production test limits extraction based on statistical methods.
Accelerated lifetime test. Minimum expected lifetime (*): 10 years at 58°C,
1.4 years at 85°C, FIT of approx. 60 (at room temp) with 60% confidence level.
(*) based on test of 9 devices at 125°C and 1 device at 25°C for 1070 hours, 0 failures. Devices from lot DH4265.00.

Production test
Final test +25 °C
QA sampling +85 °C

Tape & Reel specification
Package: QLP 20 - Pb free
Tape Width: 12,0mm
Component Pitch: 8,0mm
Hole Pitch: 4,0mm
13 inch tape with 2500 pcs.
Carrier tape and reel is in accordance with EIA specification 481.

Solderability

Recommended soldering profile is according to IPC/JEDEC J-STD-020C July 2004

Summary

The above data show that CC2500 meets the Texas Instruments Norway's product reliability qualification standards and has an acceptable level of reliability.

Revision history

1.0 Initial version

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