CC1000
Reliability Report

CONCLUSION
The CC1000 meets the Chipcon 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 CC1000 is based on the Chipcon SmartRF®-02 platform. It is designed in an industry standard 0.35μm mixed signal 3.3V CMOS process with 2 poly layers and 3 metal layers.

Package reliability

Moisture Sensitivity Level	JEDEC Level 3
Temp Cycling	-65/150°C, 1000 cycles
High Temperature Storage	150°C, 1000 hrs.
Autoclave	121°C / 100% RH, 2 atm, 168 hrs

Transfer to production
First Article Inspection (testing at –40/+25/+85°C)
Matrix processed corner lot processed and verified in lab tests.
Production test limits extraction based on statistical methods and matrix corner lot material.
ESD test according to Mil. Std. 883E 3015 Human Body Model.
Minimum immunity level: 200V: all combination of pins, except RF pins to pin 22: 50V.
Latch-up testing according to JESD 78 Class 1 Level B.
Minimum immunity level: ± 200mA at all pins except pin 27: ± 4mA.
Accelerated lifetime test. Minimum expected lifetime (*): 10 years at 58°C,
1.4 years at 85°C, FIT less than 74 (at room temp).
(*) based on test of 10 devices at 125°C in 1060 hours, 0 failures.

Production test
Wafer sort, +85°C
Final test, +25°C
QA sampling (+25°C)

Tape & Reel specification
Package: TSSOP 28 – RoHS Compatible
Tape Width: 16,0mm
Component Pitch: 8,0mm
Hole Pitch: 4,0mm
13inch 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 device CC1000 meets Chipcon qualification standards and has an acceptable level of reliability.

Revision history

0.2 Initial document
1.0 Updated wrt. Pb-free package qualification data