

## **CC400**

# **Reliability Report**

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### **CONCLUSION**

The CC400 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 corner simulations for:

- Process variations
- Minimum/maximum operating temperature
- Minimum/maximum operating voltage
- Minimum/maximum process limitations

### **Process**

The CC400 based on the SmartRF<sup>®</sup>-01 platform are designed in a 5V process de-rated to 3V+/-10%. Dielectric breakdown and hot carrier injection failure mechanisms will therefore be substantially reduced compared to operation at 5V.

### **Package reliability**

The package reliability is tested according to these test levels:

Moisture Sensitivity Level:	JEDEC Level 3
Temp Cycling:	-65/150°C, 500 cycles
HAST:	130°C/85% r.h. 168hrs
Autoclave:	121°C / Sat. stream, 15 PSI, 168 hrs

### **Transfer to production**

First Article Inspection (testing at -40/+25/+85°C)

Production test limits extraction based on statistical methods

ESD testing according to Mil. Std. 883E 3015 Human Body Model.

Minimum immunity level: 350V: all combinations of pins, except RF pins: 150V.

Latch-up testing according to JEDEC 17

Minimum immunity level: ±200mA at all pins. VDD abs. Max. rating +20% at all pins.

### **Production test**

Wafer sort, +85°C

Final test, +25°C

QA sampling (-10 / +25 / +85°C)

### **Tape & Reel specification**

Package: SSOP 28 -RoHS

Tape Width: 24,0mm

Component Pitch: 12,0mm

Hole Pitch: 4,0mm

13inch tape with 2000 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 CC400 meets Chipcon qualification standards and has an acceptable level of reliability.

### **Revision history**

- 1.0 Initial documentation
- 2.0 Added information about the process
- 3.0 Updated wrt. Pb-free package qualification data

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