CC2420 Errata Note 003, rev. 0.3

March 18, 2005

For CC2420 devices marked with lot codes ranging from WA8402.00 to WB8341.00 operation using VDD supply voltages below 1.8 V can lead to packet loss. This problem, which occurs mainly at low temperatures, is now fixed and operation down to 1.6 V is ensured for devices with lot codes succeeding WB8341.00.

Description and reason for the problem

When supplying the 1.8 V VDD supply pins (pins no. 1, 2, 3, 4, 10, 14, 15, 17, 18, 20, 26, 35, 37, 44, 48) with voltages below 1.8 V, oscillations in the receive filter has been observed for some devices. This phenomenon has mainly been observed at low operating temperatures, and will lead to degraded or non-functional signal reception. Applications using the internal regulator at room temperature or above are unlikely to encounter this issue.

Suggested workaround

This issue is corrected in CC2420 with lot codes succeeding WB8341.00. In order for the fix to work properly, the following register setting must be used during receive mode:

[RXCTRL1.RXBPF_LOCUR] = 1

This setting will reduce the RX current consumption by approximately 1.2 mA, and is compatible with previous versions of the CC2420.

Chipcon's IEEE 802.15.4 MAC will support this setting from version 0.71.

No workaround exists for CC2420 versions with lot codes between WA8402.00 and WB8341.00.

Fix

Using CC2420 with lot codes succeeding WB8341.00, in conjunction with the suggested register setting, fixes the issue.

Batches affected

CC2420 devices marked with lot codes WA8402.00 through WB8341.00 are affected by this problem. For devices with lot codes succeeding WB8341.00 this problem is resolved.

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Document History

Revision	Date	Description/Changes
1.0	2005-03-18	Initial release