

CC2420 Errata Note 001, rev. 1.0

Active and passive scans as defined in IEEE 802.15.4 are affected by a bug in the CC2420 hardware address recognition causing beacon frames to be rejected. The bug can be avoided in software and is also fixed in the latest hardware revision.

Description and reason for the problem

Early revisions of the CC2420 hardware address recognition contains a bug, which causes beacon frames to be rejected even if the PAN ID programmed into CC2420 RAM is equal to 0xFFFF. This affects active and passive scans as defined by IEEE 802.15.4.

Suggested workaround

When performing active and passive scans on batches affected by this bug, the CC2420 hardware address recognition must be disabled in order to pass the incoming beacon frames. During active scan, a beacon request frame is transmitted before listening for beacons. During passive scan, CC2420 only listens for beacons without performing any active transmission. For both types of scan, all incoming non-beacon frames shall be rejected (section 7.5.2.1 in IEEE 802.15.4). This rejection must be implemented in MAC software.

When performing active and passive scans on production samples of CC2420 (batches not listed below), make sure that the `IOCFG0.BCN_ACCEPT` control bit is set while doing active and passive scan. This control bit is not available in chips from the batches listed in the "Batches affected" section below.

Fix

Implementing a software workaround in the MAC SW solves this problem.

Batches affected

This errata note applies to prototype chip batches marked W61135.00 and W61135.01. These batches also have the `MANFIDH.VERSION` register bits set to 0 and 1 respectively. Batches not affected have the `MANFIDH.VERSION` register bits set to 2 or higher.

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Document History

Revision	Date	Description/Changes
1.0	2004-03-19	First edition.