June 29, 2009

Si4030 Errata (Rev. A0)

Errata Status Summary

Errata #	Title	Impact	Status
1	TX Current Consumption.	Major	Increased current consumption at +13 dBm, other power levels unaffected.
2	Some non-standard frequencies are not supported.	Major	Will be fixed in the next revision.
3	Radio does not return to the low power state when in Auto TX mode.	Minor	Will be fixed in the next revision.
4	Potential modem failure with default settings.	Minor	Will be fixed in the next revision.
5	Default register settings for optimal current consumption.	Minor	Will be fixed in the next revision.
6	Register modification required for TX data-rates greater than 100 kbps.	Informational	Will update data sheet to reflect operation.
7	Wake Up Timer and Low Duty Cycle mode not functional.	Minor	Use the micro or 32 kHz option for these functions. Will be fixed in the next revision.

Impact Definition: Each erratum is marked with an impact, as defined below:

- Minor: Workaround exists.
- Major: Errata that do not conform to the data sheet or standard.
- Information: The device behavior is acceptable the data sheet will be changed to match the device behavior.

Errata Details

1. **Description**: The TX current consumption at +13 dBm does not meet specification; lower power settings are within specification.

   Impact: May impact battery life. The +13 dBm current consumption is at 34 mA versus the data sheet specification of 28 mA.

   Workaround: No workaround exists in the current silicon for +13 dBm; lower power levels are unaffected.

   Resolution: Will be fixed in the next revision.

2. **Description**: Some non-standard frequencies are not supported.

   Impacts: Operation in frequencies between 240-280 MHz and 480-560 MHz should be avoided.

   Workaround: These are non-standard bands and should result in no customer impact; no workaround at this time .

   Resolution: Will be fixed in the next revision.

3. **Description**: Radio does not return to the low power state when in Auto TX mode.

   Impacts: When using Auto TX mode, the radio will not return to the low power state when the TX FIFO reaches the empty state.

   Workaround: The FIFO underflow interrupt can be enabled allowing the external MCU to wake up when the TX FIFO is empty and put the radio into the low power state: *Program register 05h bit 7(enfferr = 1).*

   Resolution: Will be fixed in the next revision.

4. **Description**: Potential modem failure in receive mode with default settings.

   Impacts: Under strong blocker conditions, the modem can fail unless the listed workaround is followed.

   Workaround: Operate the radio with AFC enabled: *Program register 56h to C1h.*

   Resolution: Will be fixed in the next revision.

5. **Description**: Default register settings for optimal current consumption.

   Impacts: Current consumption.

   Workaround: Program register 57h bits 2:0 (cdcurr[2:0] = 001), register 59 bit 6 (fbdivhc = 0), register 5Ah bits 1:0 (vcocur[1:0] = 01)**.**

   Resolution: Will be fixed in the next revision.

6. **Description**: Register modification required for TX data-rates greater than 100 kbps.

   Impacts: Eye closure and phase noise.

   Workaround: Program register 58h bits 7:6 (cpcurr[1:0] = 11).

   Resolution: Will update data sheet to reflect operation.

7. **Description**: Wake-up Timer and Low Duty Cycle Modes not functional.

   Impacts: These features are not supported.

   Workaround: Use the external microcontroller or the 32 kHz XTAL option on the Si4432 to implement these functions.

   Resolution: Will be fixed in the next revision.

8. **Description**: When using the wake-up-timer (WUT) the 32K RC or 32KXTAL must be enabled prior to the wake up timer.

   Impacts: The initial wake-up-timer period will be wrong without doing this.

   Workaround: Enable the 32k RC 3 ms before the WUT or if the 32K XTAL is being used it needs to be enabled 6 sec before WUT to ensure it is started up correctly.

   Resolution: Will be fixed in the next revision.