

MC13202 Errata

2.4 GHz Low Power Transceiver for 802.15.4

1 Introduction

These errata pertains to all MC13202 production devices. The related IC Data Sheet, MC13202, and Reference Manual, MC13202RM apply to these devices. This document is included in shipments for which this errata applies.

2 IEEE 802.15.4 Transceiver Errata

The transceiver on the MC13202 is a separate die. The errata described in [Table 1](#) applies.

Table 1. MC13202 Transceiver Errata

No	Errata	Work Around
1	<p>The Doze current (no CLKO output active) is specified as 35 μA (typical) on the data sheet with the programmed CLKO frequency at a default of 32.786 kHz. <u>This Doze current can be considerably higher for certain combinations of higher CLKO frequencies and event timer prescale options.</u> These combinations consist of:</p> <p>a) CLKO freq = 16 MHZ with prescale select at 5, 6, or 7. b) CLKO freq = 8 MHZ with prescale select at 6, or 7. c) CLKO freq = 4 MHZ with prescale select at 7.</p> <p>All other combinations have no problems. The higher current will not occur every time Doze is enabled. There is no potential harm either to the transceiver or its operation. The Doze current is simply higher.</p>	<p>To work around this issue, there are three choices:</p> <p>a) Accept higher current in Doze mode. b) Do not use any of the described combinations in Doze mode. c) If a higher CLKO frequency is desired when using CLKO as an MCU clock source, and the desired prescale select can cause a problem, just before entering Doze mode, program the CLKO frequency to a lower value. Next, use the desired prescale value while in Doze. Finally, after exiting Doze mode, reprogram CLKO to the desired frequency before releasing the MCU clock to the CLKO source.</p>
2	<p>Timer Comparator 3 can abort an RX sequence - If an RX sequence (Packet Mode or Streaming Mode) is active and Timer Comp 3 matches the value of the Event Timer “current time” counter, the RX sequence will be aborted. No status bit is set and no interrupt can be generated. Exit from RX mode can only be detected by using GPIO1 as an “out-of-idle” indicator.</p> <p>Freescale’s IEEE 802.15.4 MAC and by inference all associated network stacks compensate for this situation.</p> <p>If users are writing their own software (such as using SMAC), this condition should be compensated for.</p>	<p>For users writing their own application:</p> <p>a) Never let the counter reach the compare value in Time Comp 3 register. b) Enable Timer Compare 3 always to generate an interrupt. If the interrupt occurs and the RX state was enabled. Take appropriate action, such as restarting RX. c) Monitor the “out-of_idle” indicator while in RX mode.</p>
3	<p>For proper performance of the radio the following <u>modem registers must be over-programmed</u> as shown below:</p> <ul style="list-style-type: none"> • Write Register 0x31 to 0xA0C0 • Write Register 0x34 to 0xFEC6 <p>Software can confirm the transceiver version that requires the register over-writes by reading the modem SPI Chip-ID Register, Address 0x2C. Register 0x2C reads as 0x6800 for this device.</p>	<ul style="list-style-type: none"> • Write Register 0x31 to 0xA0C0 • Write Register 0x34 to 0xFEC6

NOTES

How to Reach Us:

USA/Europe/Locations Not Listed:

Freescale Semiconductor Literature Distribution Center
P.O. Box 5405
Denver, Colorado 80217
1-800-521-6274 or 480-768-2130

Japan:

Freescale Semiconductor Japan Ltd.
Technical Information Center
3-20-1, Minami-Azabu, Minato-ku
Tokyo 106-8573, Japan
81-3-3440-3569

Asia/Pacific:

Freescale Semiconductor Hong Kong Ltd.
2 Dai King Street
Tai Po Industrial Estate
Tai Po, N.T., Hong Kong
852-26668334

Home Page:

<http://Freescale.com>

Information in this document is provided solely to enable system and software implementers to use Freescale Semiconductor products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Freescale Semiconductor reserves the right to make changes without further notice to any products herein. Freescale Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in Freescale Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. Freescale Semiconductor does not convey any license under its patent rights nor the rights of others. Freescale Semiconductor products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Freescale Semiconductor product could create a situation where personal injury or death may occur. Should Buyer purchase or use Freescale Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold Freescale Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Freescale Semiconductor was negligent regarding the design or manufacture of the part.

Freescale™ and the Freescale logo are trademarks of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners.

© Freescale Semiconductor, Inc. 2004, 2005, 2006, 2007, 2008, 2009, 2010.