Quick Start Guide

SWRU436–August 2015

Dual-Mode *Bluetooth*® CC2564 Module Evaluation Board

1 Introduction

TI intends the CC2564MODNEM board to evaluate of the dual-mode *Bluetooth*® CC2564 module which supports classic *Bluetooth* and *Bluetooth* low energy wireless technology. The CC2564MODNEM board works with TI's Hardware Development Kit (HDKs), such as the following:

- MSP-EXP430F5529
- MSP-EXP430F5438
- DK-TM4C123G
- DK-TM4C129X

The TI CC256x *Bluetooth* device is a complete basic rate (BR), enhanced data rate (EDR), and LE host controller interface (HCI) solution that reduces the effort of the designer and time to market for your solution. Based on TI's seventh-generation core, the device is a product-proven solution that supports *Bluetooth* 4.1 dual-mode protocols.

This document is an overview of the CC2564MODNEM board and describes the hardware and software tools for the board. This quick start guide shows basic settings for the CC2564MODNEM board. For further details, see the *Dual-Mode Bluetooth CC2564 Module Evaluation Board User's Guide* (SWRU390). See Figure 1 to view the CC2564MODNEM board.

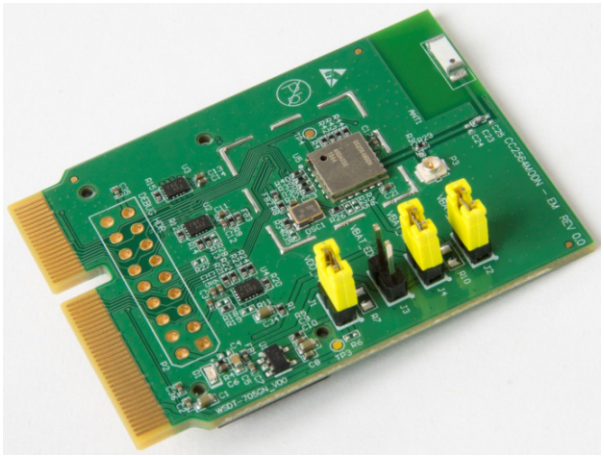

Figure 1. CC2564MODNEM Board

2 CC2564MODN Kit Contents

The contents of the kit are as follows:

- One CC2564MODNEM board with the TI dual-mode *Bluetooth* CC2564 module
- One block jumper for the MSP-EXP430F5438 board
- Four Jumpers for the MSP-EXP430F5529 Board

3 Hardware and Software Requirements

For a complete evaluation, the CC2564MODNEM board requires the hardware (see Figure 2) and software tools from the following list:

- Hardware

  An MSP430™ experimenter board (sold separately) or a TM4C development kit (sold separately):

  – MSP430 experimenter board options:
    - MSP-EXP430F5529
    - MSP-EXP430F5438
  – TM4C development kit options
    - DK-TM4C123G
    - DK-TM4C129X
- Software
  – TI dual-mode *Bluetooth* stack
    - On MSP430™ MCUs: CC256XMSPBTBLESW
    - On TM4C MCUs: CC256XM4BTBLESW
  – Other MCUs
    - On STM32F4 MCUs: CC256XSTBTBLESW

Figure 2 shows example hardware setups for the CC2564MODNEM board using MSP-EXP430F5529 and MSP-EXP430F5438.

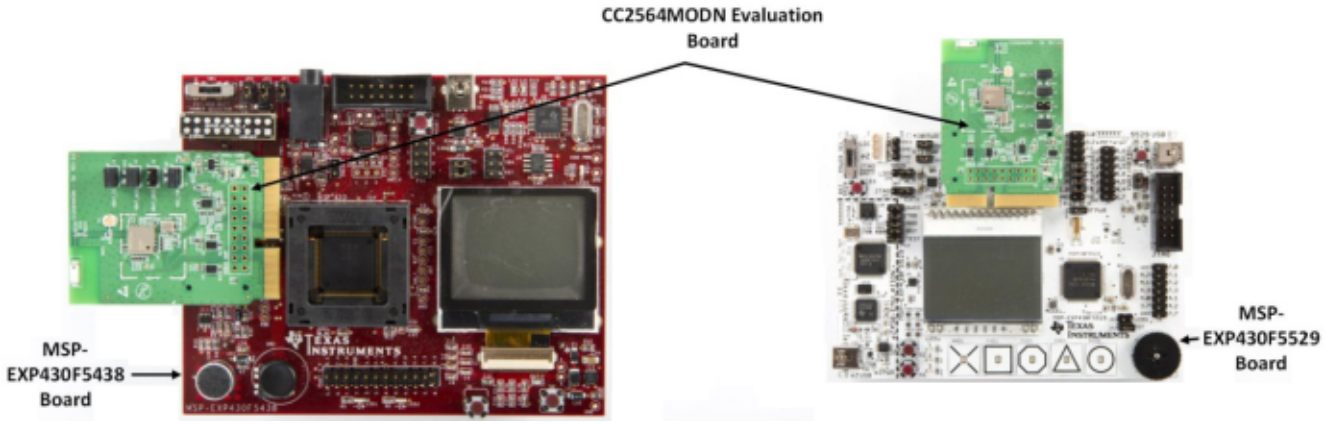

Figure 2. Hardware Setup

4 CC2564MODNEM Overview

The CC2564MODNEM board has the following connectors:

- EM (default): I/Os are at 3.3 V.
- COM: I/Os are at 1.8 V.

Figure 3 and Figure 4 show an overview of the front and back of the CC2564MODNEM board.

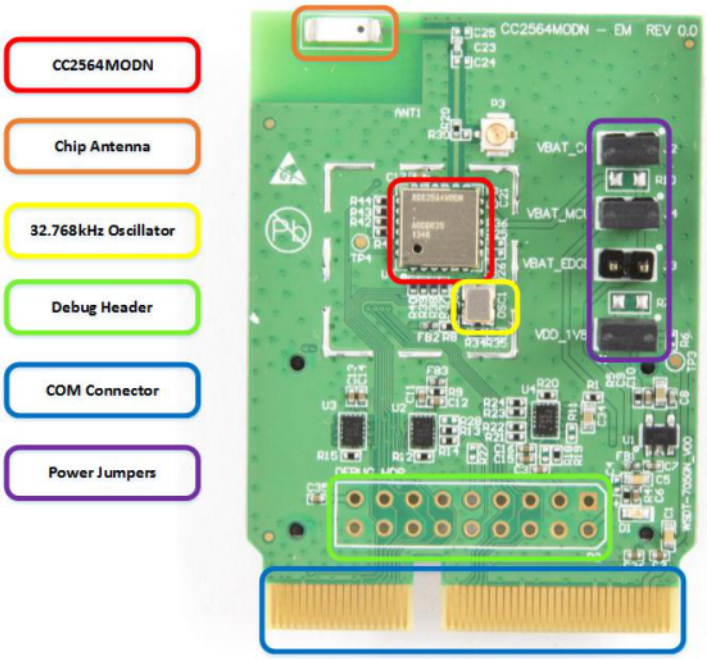

Figure 3. CC2564MODNEM Board Front Overview

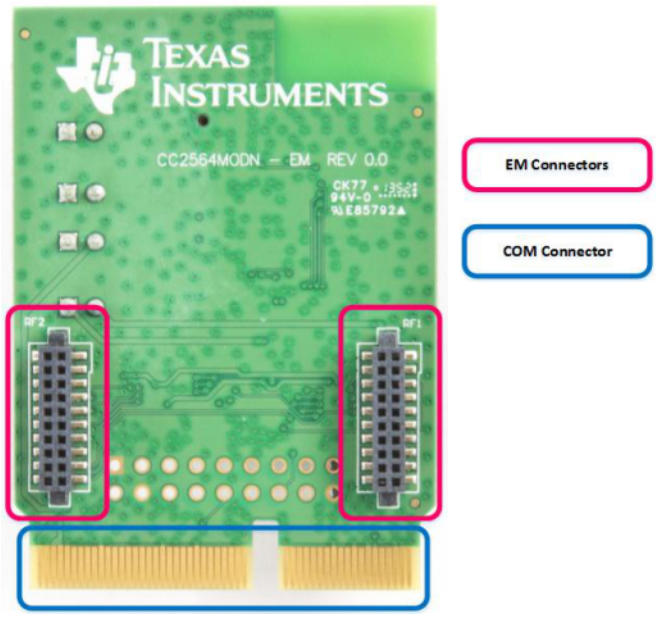

Figure 4. CC2564MODNEM Board Back Connectors

5 CC2564MODNEM Board Settings

5.1 EM Connector

The EM connectors can be mounted on a wide variety of TI MCU platforms, such as the MSP430 (MSP-EXP430F5529 and MSP-EXP430F5438) and TM4C (DK-TM4C123G and DK-TM4C129X). All EM inputs and outputs are at 3.3 V. The pin assignments refer to the front side (CC2564MODN). For example, MODULE_UART_RX refers to the receiving UART RX pin on the CC2564MODN device that connects to the UART_TX pin on the MCU. For the standard pinouts for EM1 and EM2, see Table 1 and Table 2, respectively.

Table 1. EM1 Standard Pinout

Pin	EM Adapter Assignment[1]	Pin	EM Adaptor Assignments[1]
1	GND	2	SWRU4369603
2	MODULE_UART_CTS	4	N/C
5	SLOW_CLK	6	N/C
7	MODULE_UART_RX	8	N/C
9	MODULE_UART_TX	10	N/C
11	N/C	12	N/C
13	N/C	14	N/C
15	N/C	16	N/C
17	N/C	18	N/C
19	GND	20	N/C

(1) NC = not connected

Table 2. EM2 Standard Pinout

Pin	EM Adapter Assignment[1]	Pin	EM Adaptor Assignments[1]
1	N/C	2	N/C
2	N/C	4	N/C
5	N/C	6	N/C
7	3.3 V	8	MODULE_AUDIO_DATA_OUT
9	3.3 V	10	MODULE_AUDIO_DATA_IN
11	MODULE_AUDIO_FSINK	12	N/C
13	N/C	14	N/C
15	N/C	16	N/C
17	MODULE_AUDIO_CLK	18	MODULE_UART_RTS
19	nSHUTD	20	N/C

(1) NC = not connected

5.2 COM Connector Settings

The COM connector interfaces with TI's MPU platforms, such as the AM335x evaluation module (TMDXEVM3358). For the pinout, see Table 3.

NOTE: All inputs and outputs for the COM connector are 1.8 V.

Some components must be DNI (do not install) to use the COM connector. For further details, refer to the *Dual-Mode Bluetooth CC2564 Module Evaluation Board User's Guide* (SWRU390).

Table 3. COM Connector Pinout

Pin(1)	Relevant COM Connector Pin Assignment
1	SLOW_CLK_EDGE
8	1V8_IN
52	AUD_CLK_1V8
54	AUD_FSYNC_1V8
56	AUD_IN_1V8
58	AUD_OUT_1V8
66	HCI_TX_1V8
68	HCI_RX_1V8
70	HCI_CTS_1V8
72	HCI_RTS_1V8
76	TX_DEBUG_1V8
89	nSHUTDOWN_1V8
3, 9, 19, 37, 47, 63, 77, 83, 87, 95, 97	GND
2, 6, 18, 22, 42, 60, 64, 92	GND

(1) Pins not listed are N/C.

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