

Dual-Mode Bluetooth® CC2564 Module With Integrated Antenna Evaluation Board

This quick-start guide offers an overview of the CC2564MODAEM evaluation board for the dual-mode Bluetooth CC2564 module with integrated antenna (CC2564MODA), including required hardware and software tools and basic settings. For more information, see the *Dual-Mode Bluetooth CC2564 Module With Integrated Antenna Evaluation Board User Guide* ([SWRU427](#)).

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1 Introduction

The CC2564MODAEM board is used to evaluate the TI CC2564MODA device, which supports classic *Bluetooth* and *Bluetooth* low energy (LE) wireless technology. The CC2564MODAEM works with TI's hardware development kits (HDKs), such as the following:

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

The CC2564MODA device is a complete basic rate (BR), enhanced data rate (EDR), and LE host controller interface (HCI) solution that reduces design effort and enables fast time to market. Based on TI's seventh-generation core, the module brings a product-proven solution supporting *Bluetooth* 4.1 dual-mode protocols.

Figure 1 shows the CC2564MODAEM board.



Figure 1. CC2564MODAEM Board

2 CC2564MODAEM Kit Contents

The CC2564MODAEM kit contains the following contents:

- One CC2564MODAEM board, including the dual-mode *Bluetooth* CC2564 module with integrated antenna
- One block jumper for the MSP-EXP430F5438 board
- Four jumpers for the MSP-EXP430F5529 board

3 CC2564MODAEM Requirements

For a complete evaluation, the CC2564MODAEM board requires hardware and software tools selected from the following list:

- Hardware
 - MSP430™ experimenter board (sold separately) or 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 CC2564MODAEM board using the MSP-EXP430F5529 and MSP-EXP430F5438 experimenter boards.

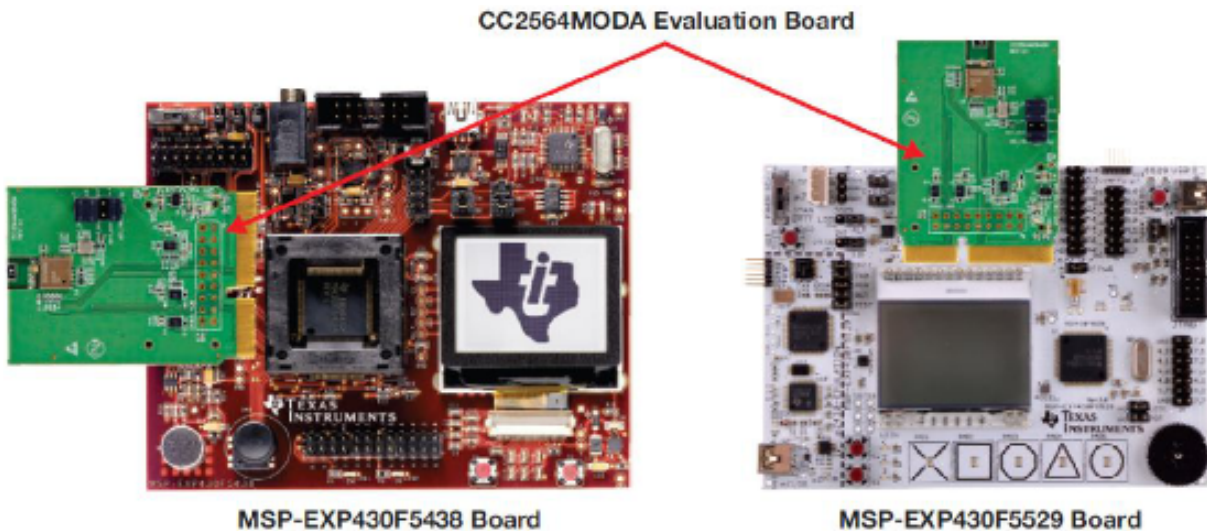


Figure 2. Hardware Setup Examples

4 CC2564MODAEM Board Overview

The CC2564MODAEM board has two different connectors:

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

Figure 3 shows the connectors on the front side of the CC2564MODAEM board.

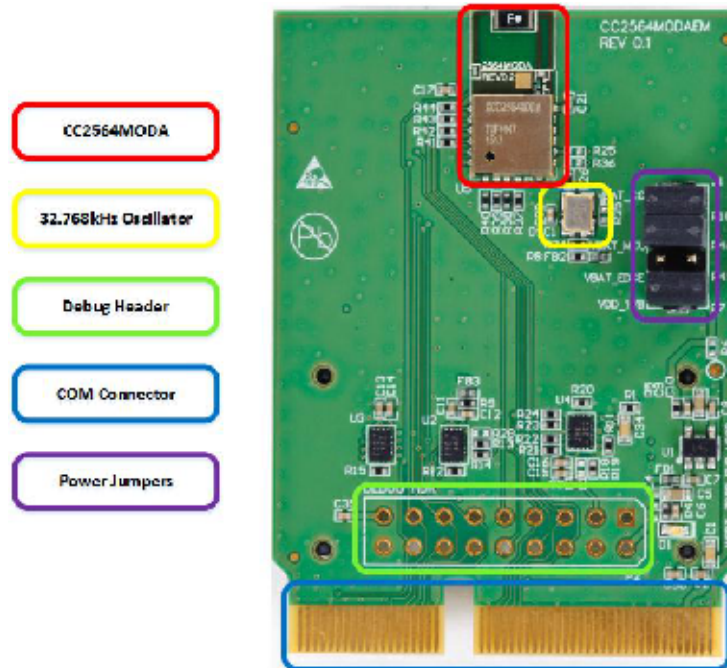


Figure 3. CC2564MODAEM Front View

Figure 4 shows the connectors on the back side of the CC2564MODAEM board.

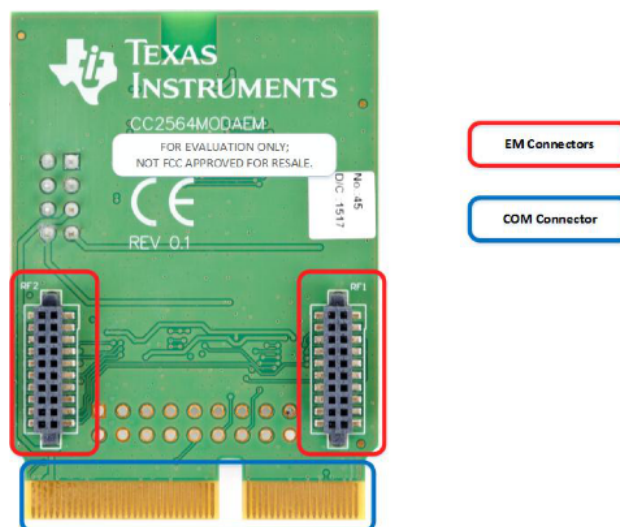


Figure 4. CC2564MODAEM Back View

5 CC2564MODAEM Board Settings

This section describes the settings for the EM connector and the COM connector.

5.1 EM Connector Settings

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 I/Os are at 3.3-V levels. Pin assignments are described with respect to the front (CC2564MODA) side. For example, MODULE_UART_RX refers to the receiving UART RX pin on the CC2564MODA device that connects to the UART_TX pin on the MCU.

[Table 1](#) describes the standard pinout for EM1.

Table 1. EM1 Standard Pinout

Pin	EM Adapter Assignment ⁽¹⁾	Pin	EM Adapter Assignment ⁽¹⁾
1	GND	2	NC
3	MODULE_UART_CTS	4	NC
5	SLOW_CLK	6	NC
7	MODULE_UART_RX	8	NC
9	MODULE_UART_TX	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	NC
19	GND	20	NC

⁽¹⁾ NC = not connected

[Table 2](#) describes the standard pinout for EM2.

Table 2. EM2 Standard Pinout

Pin	EM Adapter Assignment ⁽¹⁾	Pin	EM Adapter Assignment ⁽¹⁾
1	NC	2	GND
3	NC	4	NC
5	NC	6	NC
7	3.3V	8	MODULE_AUDIO_DATA_OUT
9	3.3V	10	MODULE_AUDIO_DATA_IN
11	MODULE_AUDIO_FSINK	12	NC
13	NC	14	NC
15	NC	16	NC
17	MODULE_AUDIO_CLK	18	MODULE_UART_RTS
19	nSHUTD	20	NC

⁽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).

NOTE:

- All I/Os for the COM connector are at 1.8 V.
- Some components must not be installed (DNI) to use the COM connector. For more information, see the *Dual-Mode Bluetooth CC2564 Module With Integrated Antenna Evaluation Board User Guide* ([SWRU427](#)).

Table 3 describes the COM connector pinout.

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 NC.

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