TI *Bluetooth*® CC256x Solutions

Dual-mode Bluetooth 4.1 controller available in certified modules with integrated audio capabilities



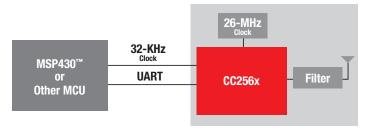


Overview

TI single- and dual-mode CC256x solutions are complete Bluetooth® BR/EDR/LE HCI or Bluetooth + Bluetooth Low Energy solutions that reduce design effort and enable fast time to market.

A royalty-free software Bluetooth stack available from TI is pre-integrated with TI's MSP430™ and ARM® Cortex®-M4 MCUs. The stack is also available for MFi solutions and on other MCUs. Examples of profiles supported today include: serial port profile (SPP), human interface device (HID), A2DP (Advanced Audio Distribution Profile), AVRCP (Audio/Video Remote Control Profile) and several BLE profiles (profiles can vary based on the supported MCU).

In addition to software, reference designs are available with a low BOM cost. For example, Tl's Audio Sink solution uses the Bluetooth device for audio processing, an MSP430 MCU, audio DAC and USB charger. Tl's audio source solution is also available. For more information, visit TI Designs.



CC256x block diagram

Key Features

- Single-chip Bluetooth solution integrating Bluetooth Basic Rate (BR)/Enhanced Data Rate (EDR)/ Low Energy (LE) features fully compliant with the Bluetooth 4.1 specification up to the HCI layer
- BR/EDR features include:
 - CC2560 provides an assisted mode for HFP1.6 wideband speech (WBS) profile or A2DP profile to reduce host processing and power
- LE supports up to 10 CC2564 simultaneous connections
- Flexibility for easy stack integration and validation into various microcontrollers, such as MSP430 and ARM Cortex-M4 MCUs
- · Highly optimized for low-cost designs:
 - Package footprint: 76 pins, 0.6-mm pitch, 8.10-mm × 8.10-mm mrQFN
- Best-in-class Bluetooth (RF) performance (TX power, RX sensitivity, blocking)
 - Class 1.5 TX power up to +12 dBm
 - Provides longer range, including 2× range over ther Bluetooth low energy-only solutions
- Advanced power management for extended battery life and ease of design
- Physical interfaces:
 - Standard HCI over H4 UART (4 wire)
 - Standard HCI over H5 UART (2 wire)
 - Fully programmable digital PCM-l²S codec interface

Benefits

- Best-in-class link budget extends application range
- Simplified hardware and software development
- Reduced development time and costs
- Enables simultaneous operations of Bluetooth with Bluetooth low energy

CC256x products

Devices/		Technology supported			Assisted modes	
Modules	Description	BR/EDR	LE	Ant™	HFP 1.6 (WBS)	A2DP
CC2560	Bluetooth 4.1 (with EDR)	•			•	•
CC2564*	Bluetooth 4.1 + BLE	•	•		•	•
	Bluetooth 4.1 + ANT	•		•	•	•
CC2564MODA*	Bluetooth 4.1 +BLE HCl module with integrated antenna	•	•		•	•
	Bluetooth 4.1 +ANT HCl module with integrated antenna	•		•	•	•
CC2564MODN*	Bluetooth 4.1 +BLE HCl module	•	•		•	•
	Bluetooth 4.1 +ANT HCI module	•		•	•	•

^{*} The device does not support simultaneous operation of LE, ANT or assisted modes. Any of these modes can run simultaneous to Bluetooth BR/EDR.

Applications

- · Cable replacement
- Smart watches, activity trackers
- Mobile device accessories
- Industrial control
- Audio streaming solutions
- Point of sale

Bluetooth CC256x resources

• Learn more at: www.ti.com/bluetooth

• E2E™ Forum: www.ti.com/wiconforum

SWRB033C

• CC256x Wiki: www.ti.com/cc2564wiki

Development tools and software

Product Number	Description	Availability
CC2564MODEM	CC2564 module evaluation board is intended for evaluation purposes of the CC2564 module. Works with processor platforms such as TI's ultra-low-power MSP430 microcontrollers and the performance TM4C ARM® Cortex®-MF microcontrollers.	TI store and authorized distributors
CC2564MODAEM	The CC2564M0DAEM board is used to evaluate the TI CC2564M0DA, which supports Bluetooth and Bluetooth low energy wireless technology. The CC2564M0DAEM works with TI's hardware development kits, such as MSP-EXP430F5529, MSP-EXP430F5438, DK-TM4C123G and DK-TM4C129X.	TI store
Bluetooth and MSP430™ Audio Sink Reference Design	Enables Bluetooth audio (SBC encode/decode) with CC2560 and the ultra-low power MSP430F5229 MCU and digital input speaker amplifier (TAS2505) and USB charge management device (BQ24055). Reference design is a cost-effective audio implementation, with full design files provided for application and end product development. Software supported includes TI Bluetooth stack (certified and royalty free).	Download at TI Designs Boards are orderable through TI store
Bluetooth and MSP430 Audio Source Reference Design	Enables Bluetooth audio (SBC encode/decode) with CC2560 and the ultra-low power MSP430F5229 MCU and digital DAC plus USB charge management device (BQ24055). Reference design is a cost-effective audio implementation, with full design files provided for application and end product development. Software supported includes TI Bluetooth stack (certified and royalty free).	Download at TI Designs Boards are orderable through TI store
CC256x BoosterPack	Bluetooth BoosterPack evaluation kit has flexibility to work with ultra-low power microcontrollers such as the TI MSP430 MCUs and TM4C Series LaunchPad™ development kits	Coming soon: Boards will be orderable through TI store
CC256xQFNEM	CC256x Bluetooth / dual-mode QFN device evaluation module	TI store and authorized distributors

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