SOFTWARE FEATURES

- *Bluetooth* v4.0 Compliant Protocol Stack for Single-Mode BLE Solution
  - Complete Power-Optimized Stack, Including Controller and Host
    - GAP – Central, Peripheral, Observer, or Broadcaster (Including Combination Roles)
    - ATT / GATT – Client and Server
    - SMP – AES-128 Encryption and Decryption
    - L2CAP
  - Sample Applications and Profiles
    - Generic Applications for GAP Central and Peripheral Roles
    - Proximity, Accelerometer, Simple Keys, and Battery GATT Services
    - More Applications Supported in BLE Software Stack
  - Multiple Configuration Options
    - Single-Chip Configuration, Allowing Applications to Run on CC2541
    - Network Processor Interface for Applications Running on an External Microcontroller
  - BTool – Windows PC Application for Evaluation, Development, and Test

APPLICATIONS

- **2.4-GHz *Bluetooth* low energy Systems**
- **Proprietary 2.4-GHz Systems**
- **Human-Interface Devices (Keyboard, Mouse, Remote Control)**
- **Sports and Leisure Equipment**
- **Mobile Phone Accessories**
- **Consumer Electronics**

CC2541 WITH TPS62730

- **TPS62730 is a 2-MHz Step-Down Converter With Bypass Mode**
- **Extends Battery Lifetime by up to 20%**
- **Reduced Current in All Active Modes**
- **30-nA Bypass Mode Current to Support Low-Power Modes**
- **RF Performance Unchanged**
- **Small Package Allows for Small Solution Size**
- **CC2541 Controllable**

DESCRIPTION

The CC2541 is a power-optimized true system-on-chip (SoC) solution for both *Bluetooth* low energy and proprietary 2.4-GHz applications. It enables robust network nodes to be built with low total bill-of-material costs. The CC2541 combines the excellent performance of a leading RF transceiver with an industry-standard enhanced 8051 MCU, in-system programmable flash memory, 8-KB RAM, and many other powerful supporting features and peripherals. The CC2541 is highly suited for systems where ultralow power consumption is required. This is specified by various operating modes. Short transition times between operating modes further enable low power consumption.

The CC2541 is pin-compatible with the CC2540 in the 6-mm × 6-mm QFN40 package, if the USB is not used on the CC2540 and the I^2C/extra I/O is not used on the CC2541. Compared to the CC2540, the CC2541 provides lower RF current consumption. The CC2541 does not have the USB interface of the CC2540, and provides lower maximum output power in TX mode. The CC2541 also adds a HW I^2C interface.

The CC2541 is pin-compatible with the CC2533 RF4CE-optimized IEEE 802.15.4 SoC.

The CC2541 comes in two different versions: CC2541F128/F256, with 128 KB and 256 KB of flash memory, respectively.

For the CC2541 block diagram, see Figure 1.

Product Folder Links: *CC2541*