

EVK-CC2541, BLE LaunchPad/ Development Kit, is an entire development kit for user to design Bluetooth Low Energy (BLE) application. It contains a Digimore Bluetooth module BT01-2 using TI Bluetooth low energy controller CC2541. TI CC2541 is a world-leading chip in Bluetooth Low Energy 4.0 and offers variety of peripherals such as UART, SPI, I2C and Timer.

EVK-CC2541 also embeds a famous FTDI FT232R USB-UART interface chip, a High-PSRR 300mA LDO, Buttons and LEDs. The LaunchPad can let user focus on their project development and verify the project easily and rapidly.

FEATURES:

. BT01-2 Bluetooth Module with TI CC2541

- Bluetooth version 4.0 low energy (LE, single mode) compliant
- High-performance and low-power 8051 Microcontroller core with code prefetch
- In-system-programmable flash, 256KB
- 12-Bit ADC with eight channels and configurable resolution
- 21 general purpose I/O
- I2C interface
- Power USARTs with support for several serial protocols
- Module dimension: 14.8 x 10mm

. FTDI FT232R

- USB 2.0 Full Speed compatible
- Entire USB protocol handled on the chip. No USB specific firmware programming required
- FTDI's royalty-free Virtual Com Port (VCP) and Direct (D2XX) drivers eliminate the requirement for USB driver development in most cases
- Data transfer rates from 300 baud to 3M baud (RS422, RS485 and RS232) at TTL levels
- Transmit and receive LED drive signals
- UART interface support for 7 or 8 data bits, 1 or 2 stop bits and odd / even / mark / space / no parity
- Alternative Jumper Design to use the function of FT232R independently

. LDO

- Fast Ultra High-PSRR, Low-Noise 300mA CMOS LDO
- 3.3V Output Voltage

. Mini USB Type B Connector

- To PC communication
- Supply Main Power

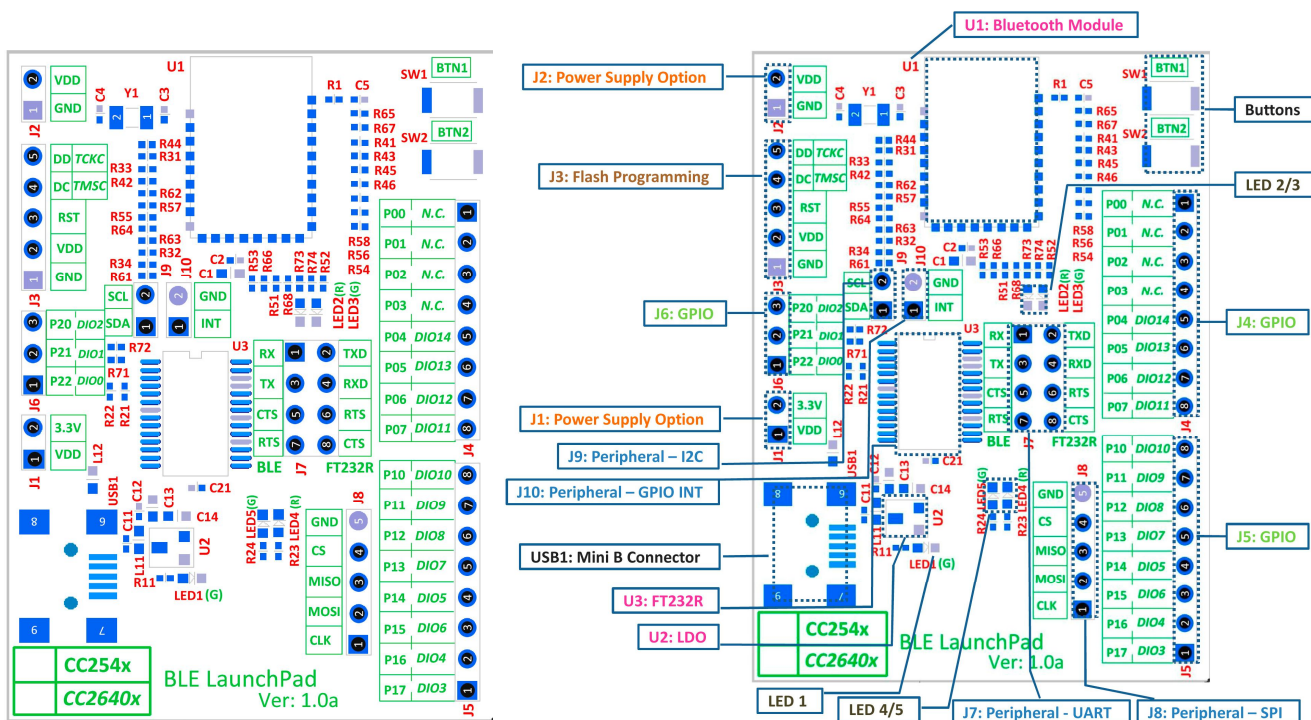
. Variety of Individual Pin Header Sections

- Power Source Option
- General Purpose I/O (GPIO)
- Peripherals
- Flash programming and debugging

. Buttons and LEDs

- Input / output function control

. LaunchPad Dimension: 55mm x 40mm



Note:

- The LaunchPad designs for variety of TI Bluetooth Low Energy chips.
e.g., Digimore Bluetooth Module LE 4.0, BT01-2 embeds TI CC2541
Digimore Bluetooth Module LE 4.2&5.0, BT03-1 embeds TI CC2640R2F
Please see the marked point on left-down corner of the LaunchPad to distinguish CC254x or CC2640x you are using.
- The Pin Name of GPIO and Flash Programming (J3/ J4/ J5/ J6):
 - In normal font: definition for CC254x
 - In *Italics font*: definition for CC2640x

Power Supply Option		
Marking Name	Description	Note
J1	Select the Power Source from LDO (3.3V). Marking Pins are 3.3V and VDD. ** 3.3V: Output Voltage from LDO. ** VDD: Power Supply Pin for CC2541	Ship with Jumper
J2	Select the Power Source from external equipment, e.g., batteries. Marking Pins are VDD and GND. ** VDD: Power Supply Pin for CC2541. The voltage range is 2 – 3.6V. ** GND: Ground Pin for CC2541. ** If user chooses J2 operation, please remove the jumper on J1.	-

Flash Programming and Debugging		
Marking Name	Description	Note
J3	Contain 5 pins for Flash Programming and Debugging of CC2541. Marking Pins are DD, DC RST, VDD and GND. ** DD: Debug Data (Port 2.1) Pin of CC2541 ** DC: Debug Clock (Port 2.2) Pin of CC2541 ** RST: RESET_N pin of CC2541 ** VDD: Power Supply Pin for CC2541. ** GND: Ground Pin for CC2541.	1. Operate With TI CC Debugger 2. Refer to user's manual of Chapter 6.3 for details

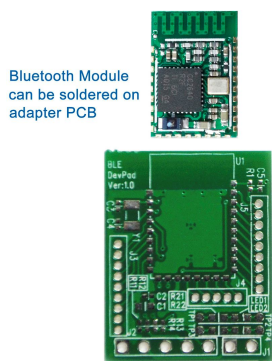
GPIO		
Marking Name	Description	Note
J4	Contain I/O Port 0.0 to Port 0.7 of CC2541. Marking Pins are P00 to P07.	-
J5	Contain I/O Port 1.0 to Port 1.7 of CC2541. Marking Pins are P10 to P17.	-
J6	Contain I/O Port 2.0 to Port 2.2 of CC2541. Marking Pins are P20 to P22. ** For I/O Port 2.3 and Port 2.4, they are used for Crystal 32.768K Hz.	-

Peripherals		
Marking Name	Description	Note
J7	UART Function Pins and contains BLE side and FT232R side. BLE side (Left): ** Marking Pins are RX, TX, CTS and RTS. ** USART UART Mode Pins of CC2541. - RX connects to Port 0.2 of CC2541. - TX connects to Port 0.3 of CC2541. - CTS connects to Port 0.4 of CC2541. - RTS connects to Port 0.5 of CC2541. ** These pins needs to configure by USART0 ALT.1 FT232R side (Right): ** Marking Pins are TXD, RXD, RTS and CTS. ** UART function pins of FT232R.	1. Ship With two Jumpers on RX <-> TXD TX <-> RXD 2. Refer to user's manual of Appendix A-2 for details 3. To operate FT232R independently, please remove the two jumpers.
J8	USART SPI Mode Pins of CC2541. Marking Pins are GND, CS, MISO, MOSI and CLK. - CS connects to Port 1.4 of CC2541. - CLK connects to Port 1.5 of CC2541. - MOSI connects to Port 1.6 of CC2541. - MISO connects to Port 1.7 of CC2541. - GND: Ground Pin for CC2541. ** These pins need to configure by USART1 ALT.2	Refer to user's manual of Appendix A-2 for details
J9	I2C Pins of CC2541. Marking Pins are SCL and SDA.	-
J10	Marking Pins are GND and INT. ** GND: Ground Pin for CC2541 ** INT connects to Port 2.0 of CC2541 ** Users can program this pin to be an INT function by their FW development	-

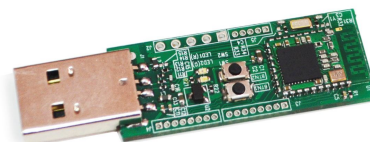
Buttons		
Marking Name	Description	Note
BTN1 (SW1)	Button Input for User Application. ** BTN1 connects to Port 0.0 of CC2541 ** Active Low	-
BTN2 (SW2)	Button Input for User Application. ** BTN2 connects to Port 0.1 of CC2541 ** Active Low	-

LEDs		
Marking Name	Description	Note
LED 1 (G)	LED1 indicates the USB Power Supply 5V supplies. ** In color Green.	-
LED 2 (R)	LED Operation for User Application. ** LED2 connects to Port 1.3 of CC2541. ** Active High. ** In color Red.	1. In demonstrated FW, LED2 (R) configures for Brightness by PWM. 2. Refer to user's manual of Appendix A-2 for details
LED 3 (G)	LED Operation for User Application. ** LED3 connects to Port 1.2 of CC2541. ** Active High. ** In color Green.	In demonstrated FW, LED3 (G) configures for Advertising or Connecting.
LED 4 (R)	LED4 indicates the UART function RX <-> TXD is working. ** LED4 activates by FT232R and default configuration is TXLED#. ** In color Red.	-
LED 5 (G)	LED5 indicates the UART function TX <-> RXD is working. ** LED5 activates by FT232R and default configuration is RXLED#. ** In color Green.	-

Auxiliary Units		
Marking Name	Description	Note
U1	Bluetooth Module BT01-2 with TI CC2541. ** Dimension: 14.8mm x 10mm.	-
U2	Fast Ultra High-PSRR, Low-Noise 300mA CMOS LDO 3.3V Output Voltage.	-
U3	FTDI FT232R USB-UART Interface Chip	-
USB1	USB Mini-B Connector.	-



Option: Adapter PCB for Bluetooth module



UDK-CC2540, Bluetooth 4.0 USB Dongle Module Kit also available

* Features and specification are subject to change without notice.