2014

CC3200-LAUNCHXL User's Guide, Ver 1.1

ABSTRACT

This document describes the CC3200-LAUNCHXL (CC3200 Launchpad). It details the features of the hardware and also explains the correct usage of the board.

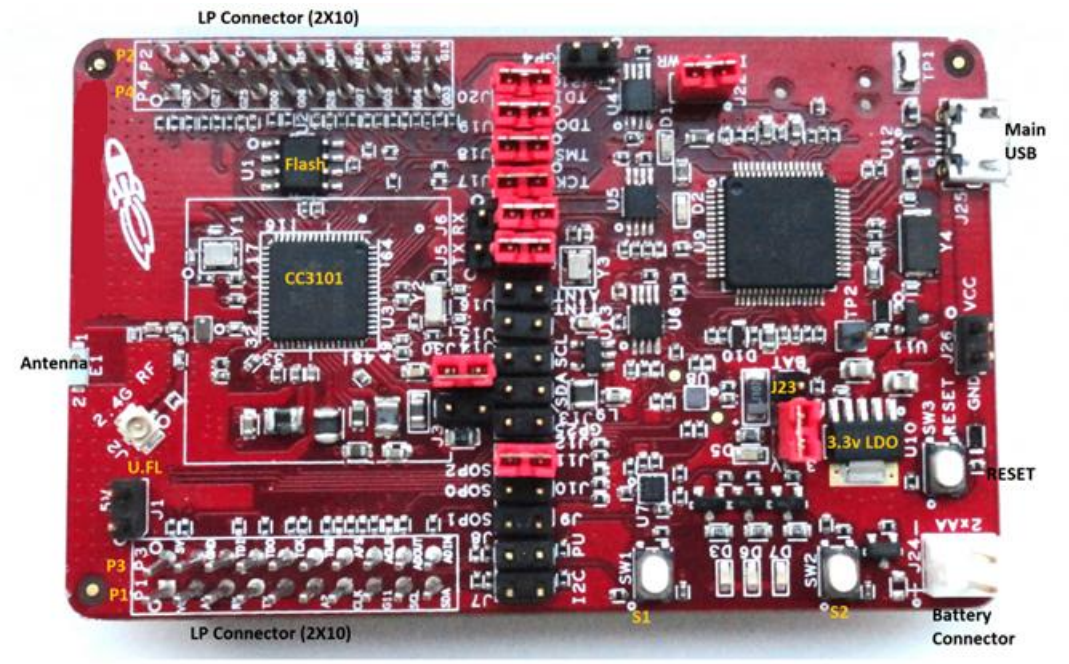
FCC/IC Regulatory Compliance
FCC Part 15 Class A Compliant
IC ICES-003 Class A Compliant

Contents

Introduction

Board overview

This board is designed to be used as a standalone development platform for application development using the CC3200 device. It can be also used in conjunction with compatible booster-packs to enhance the peripherals available in the system. The board features on-board emulation using FTDI device and has an array of sensors for an out of the box experience. This board can be directly connected to the PC using software development platforms including CCS and IAR.



Features

CC3200 WIFI application processor

USB interface to PC for CCS/IAR using XDS ICDI USB drivers

Flash update over the USB using Simple Link Programmer.

2x20 pin Connectors : Compatible to TI MCU Launch Pads with added functions.

Standalone development platform featuring sensors, LEDs and push-buttons

Power from USB for the launchpad as well as external boosterpack

Operates from 2xAA alkaline battery.

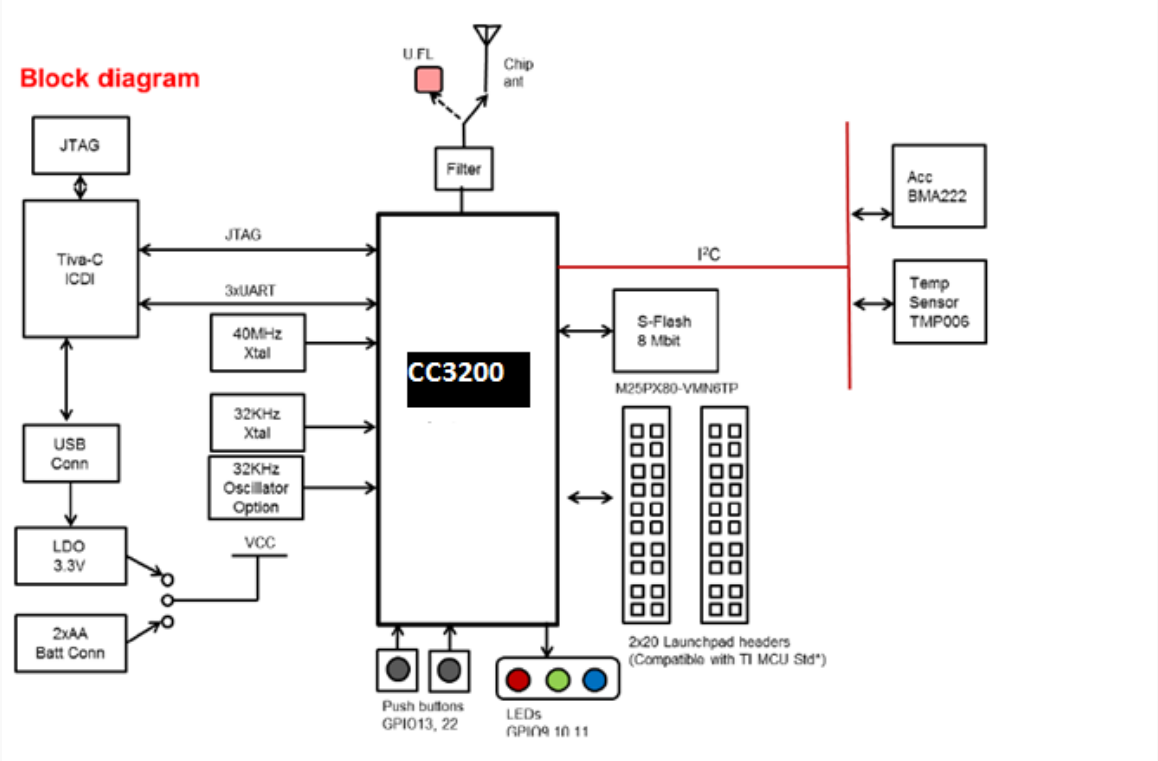
Push buttons for RESET

3 user LEDs

On-board antenna and U.FL connector selectable using a capacitor re-work.

Sensors including temperature, 3-axis accelerometer.

Hardware description



Connector description

1.1.1.1 P1 connector assignment

Pin No	Signal name	Direction w.r.t CC3200	Comments
P1.1	VCC(3.3V)	OUT	Max 100mA for peripherals
P1.2	GPIO03/ADC_CH2	IN	
P1.3	GPIO_02/UART1_RX	IN	
P1.4	GPIO_01/UART1_TX	OUT	
P1.5		OUT	UNUSED
P1.6	GPIO_04/ADC_CH3	IN	
P1.7	GPIO_14/SPI_CLK	OUT	
P1.8	GPIO_11		
P1.9	GPIO_10/GPIO_12/I2C_SCL	BD	2.2K pull-ups on board
P1.10	GPIO_11/GPIO_13/I2C_SDA	BD	2.2K pull-ups on board

1.1.1.2 P2 connector assignment

Pin No	Signal name	Direction w.r.t CC3200	Comments
P2.1	GND	PWR	
P2.2	GPIO_22	OUT	
P2.3	GPIO_17/SPI_CS	OUT	
P2.4	GPIO_28	OUT	
P2.5	RESET	OUT	Reset output from board
P2.6	GPIO_16/SPI_DOUT	OUT	
P2.7	GPIO_15/SPI_DIN	IN	
P2.8	GPIO_10	BD	
P2.9	GPIO_12	BD	
P2.10	GPIO_13	BD	

1.1.1.3 P3 connector assignment

Pin No	Signal name	Direction w.r.t CC3200	Comments
P3.1	5V		
P3.2	GND		
P3.3	GPIO_23/TDI	IN	
P3.4	GPIO_24/TDO	OUT	
P3.5	GPIO_28/TCK	IN	
P3.6	GPIO_29/TMS	IN	
P3.7	GPIO_08/AUD_SYNC	OUT	
P3.8	GPIO_30/AUD_CLK	OUT	
P3.9	GPIO_09/AUD_DOUT	OUT	
P3.10	GPIO_00/AUD_DIN	IN	

1.1.1.4 P4 connector assignment

Pin No	Signal name	Direction w.r.t CC3200	Comments
P4.1	GPIO_26	OUT	
P4.2	GPIO_27	OUT	
P4.3	GPIO_25	OUT	
P4.4	GPIO_00/GPIO_07/UART1_RTS	OUT	

P4.5	GPIO_06/UART1_CTS	IN	
P4.6	GPIO_28	I/O	
P4.7	GPIO_07/NWP_LOGGER	OUT	
P4.8	GPIO_05/WLAN_LOGGER	OUT	
P4.9	GPIO_04/WL_RS232_RX	IN	
P4.10	GPIO_03/WL_RS232_TX	OUT	

1.1.1.5 Jumper settings

1.1.1.5.1 Power

Reference	Function	Value	Comments
J22	ICDI Power	Closed	Supplies 3.3V to the ICDI
J23	Board power	2-3 1-2	Supplies 3.3V to the board from USB Supplies power to the board from battery

1.1.1.5.2 I2C

Reference	Function	Value	Comments
J7	Pull-up on SDA	Closed	Enable 3.3K pull-ups on the SDA
J8	Pull-up on SCL	Closed	Enable 3.3K pull-ups on the SDA
J13	SDA	Closed	Connect on-board sensors to I2C bus
J14	SCL	Closed	Connect on-board sensors to I2C bus

1.1.1.5.3 UART

Reference	Function	Value	Comments
J5	UART TX	1-2 2-3	Routes UART to 2x20 pin for Booster pack Routes UART to ICDI for flash programming.
J6	UART RX	1-2 2-3	Routes UART to 2x20 pin for Booster pack Routes UART to ICDI for flash programming

1.1.1.5.4 Operating modes (Debug)

Mode	SOP2 J11	SOP1 J9	SOP0 J10
Functional mode with 4 Wire JTAG	0	0	0
Functional Mode with 2 Wire SWD	0	0	1
Flash programming mode over UART	1	0	0

Note : '0' indicates jumper is open

1.1.2 Power selection

The board can be powered from the USB connector using the on-board LDO (3.3V) or using an external battery (2xAA). The battery is connected to J24. There is built-in reverse polarity protection for the battery connector.

The selection between the battery and USB power is performed using the jumper J23.

J23(1-2) [Battery powered]

J23(2-3) [USB powered]

1.1.3 USB connections

The Launchpad features an USB connector labelled J25.

J25 is used to power the board and also for the JTAG emulation and UART ports. Currently only one UART port for the flash programming is provided on the board. The board requires the installation of Stellaris ICDI Drivers to be installed for proper operation. This is provided as part of the SDK release.

1.1.4 JTAGsignals

The JTAG lines are brought out on separate headers on the PCB. The jumpers are shorted to connect the CC3200 JTAG to the ICDI device on-board. To use an external emulator, these jumpers have to be un-installed and the JTAG signals to be connected on the jumpers below.

JTAG connector

Pin No	Signal	Direction
J17	TCK	In
J18	TMS	In
J19	TDO	Out

J20	TDI	In

1.1.5 User LEDs and push-buttons

There are 3 user LEDs on the board along with 2 push buttons. The usage can be controlled by the application program.

Signal mapping

Reference	Colour	GPIO maping	comment
D7	GREEN	GPIO_11	Glows when GPIO = 1.
D6	YELLOW	GPIO_10	Glows when GPIO = 1.
D3	RED	GPIO_09	Glows when GPIO = 1
SW1	NA	GPIO_13	High when pressed.
SW2	NA	GPIO_22	High when pressed.

1.1.6 On-board sensors

There are two sensors on the board which are connected to the I2C bus. The sensors can be isolated from the I2C bus using the jumpers J14 and J13. By default the pull-ups on the I2C are not enabled. To enable these install jumpers J7 and J8.

The sensors available on the board are listed below with their address

Reference	Part No	Type	Address
U8	TMP006	Temperature sensor	0x41
U7	BMA222	3-Axis Accelerometer	0X18

Hardware documents

LP V2.0 RevA- PG 1.11

Schematics	Schematics
Assembly diagram	Placement diagram
Bill of materials	Bill of materials
ECO List (Changes made to the sch/bom)	
Gerber Files	pcb (Gerber) files

Software Information

1.1.7 USB driver (For BP/LP)

For Windows (XP, Win7) Link

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Compliance (English)

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This Class A or B digital apparatus complies with Canadian ICES-003.

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This radio transmitter has been approved by Industry Canada to operate with the antenna types listed in the user guide with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

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Cet appareil numérique de la classe A ou B est conforme à la norme NMB-003 du Canada

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3. Use of EVMs only after user obtains the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to EVMs. Also, do not transfer EVMs, unless user gives the same notice above to the transferee. Please note that if user does not follow the instructions above, user will be subject to penalties of Radio Law of Japan.

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東京都新宿区西新宿６丁目２４番１号
西新宿三井ビル
http://www.tij.co.jp

Texas Instruments Japan Limited
(address) 24-1, Nishi-Shinjuku 6 chome, Shinjuku-ku, Tokyo, Japan