CC32xx SDHost

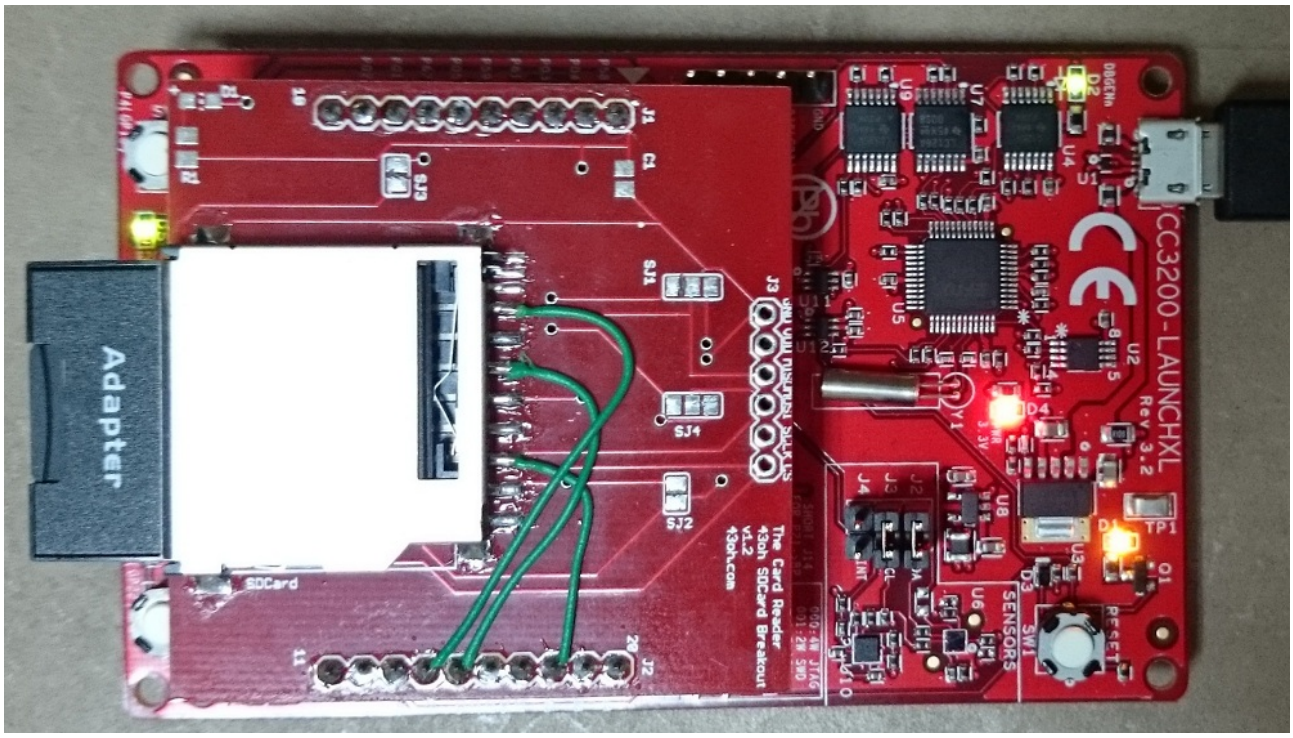
Overview

The Secure Digital Host (SD Host)controller on CC3200 provides an interface to standard SD memory cards in 1-bit transfer mode and handles the SD protocol and data packing at transmission level with minimum CPU intervention.

Application details

This application showcases the basic use case of initializing the controller to communicate with the attached card, reading and writing SD card block using the internal controller buffer via DriverLib API(s). The demo includes extracting the card capacity, capacity class and SD version information and displaying it on the UART terminal. The demo also reads out the first block from the attached card and displays in to the terminal.

Here is the SDCard booster board which can be mounted on CC3200 Launchpad



Warning: Writing to SD card block is disabled by default using a macro defined in the main.c file, this is to avoid accidental corruption of card Filesystem.

Source Files briefly explained

- **main.c** - Includes the main and DriverLib wrapper functions to initialize, read and write the attached card.
- **pinmux.c** - Generated by Pinmux utility to mux out the SD Host controller signal to chip boundary.
- **uart_if.c** - Implements the UART terminal.
- **startup_ewarm.c** - Implements interrupt vector table when using IAR ewarm tool chain
- **startup_css.c** - Implements interrupt vector table when using CC tool chain

Build the board

User can order a SD Card booster pack from 40Oh to work with the CC3200 Launchpad, but the connector definitions do not match. Some board modifications require to make it work with the CC3200 LAUNCHXL Rev 3.2(onwards).

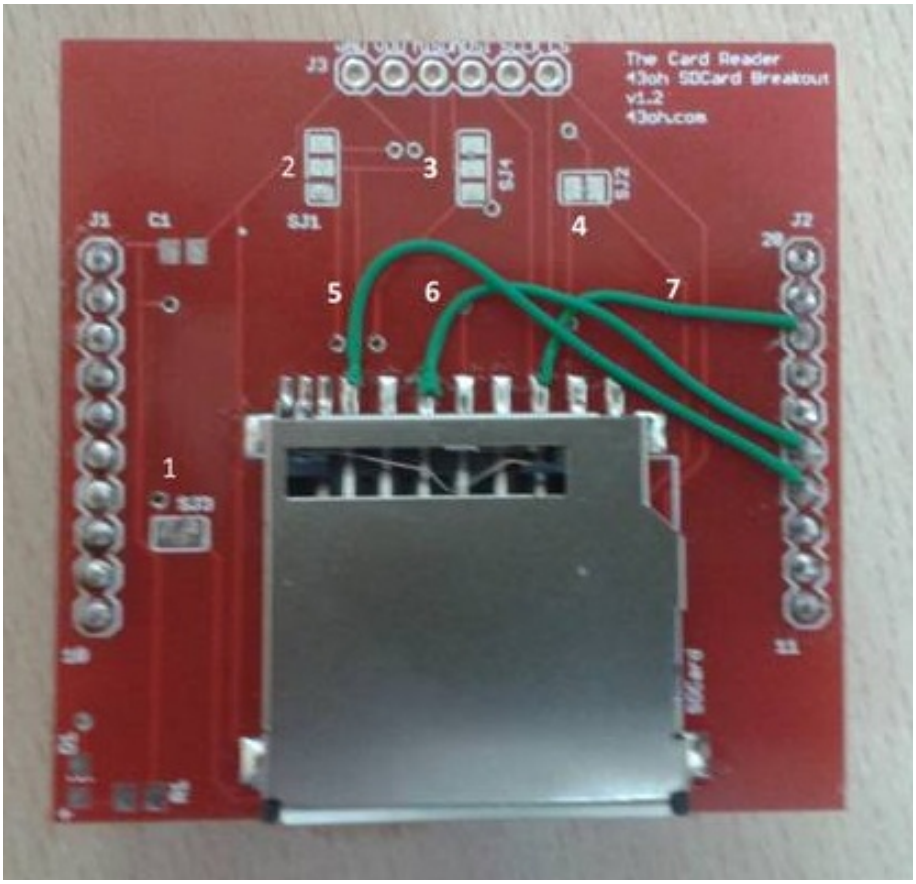
The board is available here
http://doc.43oh.com/The_Card_Reader_SDCard_BoosterPack [1]
http://store.43oh.com/index.php?route=product/product&product_id=66 [2]

Here is the ECO List

1. Scratch out traces at SJ1 , SJ2, SJ3, SJ4
2. Blue wire the following pins

SDCard Pin no.	Header Pin
2	J2.3
5	J2.6
7	J2.7

The board looks as below with the changes



Usage

- Setup a serial communication application (HyperTerminal/TeraTerm) with following settings. For detail info visit Terminal setup

- **Port**: Enumerated COM port
  - **Baud rate**: 115200
  - **Data**: 8 bit
  - **Parity**: None
  - **Stop**: 1 bit
  - **Flow control**: None

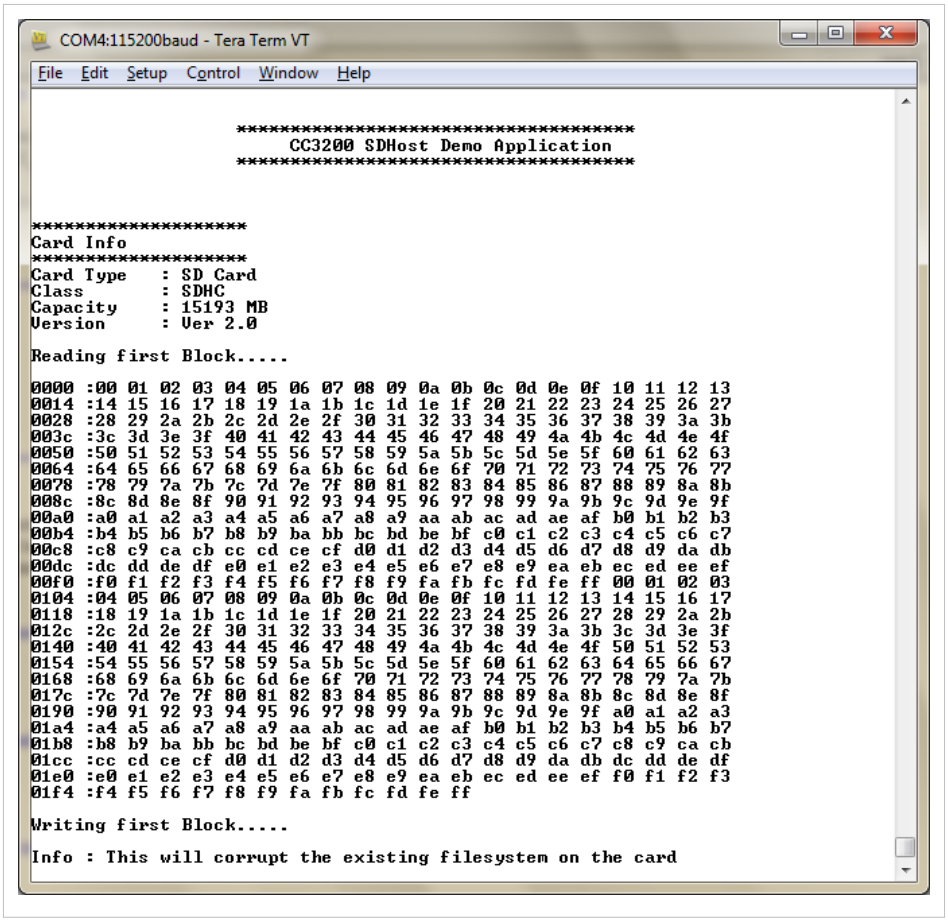
- Connect the SD Card to the LP board as shown below

LP Pin	SD Card Pin	Signal Name
P2.3	2	CMD
P3.2	3	GND/Vss
P1.1	4	Vcc/Vdd
P2.6	5	CLK
P2.1	6	Vss
P2.7	7	DAT0

- Set the macro definition to 1 to remove write protection

```
#define WRITE_TEST_EN   0
```

- Run the reference application (Flashing the bin/IAR/CCS).
- Observe the status messages on the host over serial port to understand the sequence of operations performed by the application.



Limitations/Known Issues

For many SD cards pull up resistors are required on the bidirectional signal lines, DAT0 and CMD.

References

[1] http://doc.43oh.com/The_Card_Reader_SDCard_BoosterPack

[2] http://store.43oh.com/index.php?route=product/product&product_id=66

Article Sources and Contributors

CC32xx SDHost *Source*: http://processors.wiki.ti.com/index.php?oldid=185460 *Contributors*: Chris, Codycooke, Jitgupta, Malokyle

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