CC32xx ADC

Overview

The ADC peripheral converts a continuous analog voltage to a discrete digital number. The CC3200R device includes ADC modules with four input channels. Each ADC module features 12-bit conversion resolution for the four input channels. It supports Sampling rate of 16 µs per channel.

Application details

The application is a reference to usage of ADC DriverLib functions on CC3200. Developer/User can refer to this simple application and re-use the functions in their applications.

adcdemo: This command allows the user to excercise the ADC funcitonality on CC3200. The command needs one parameter adc_inputpin. - adc_inputpin is the pin to which analog signal is connected, the value can be 58 or 59 or 60.

Setup of signal genearator for generating analog signal:

- **Waveform** - Select any suitable waveform - Sine,square,Ramp
- **Input Frequency** - As ADC reaches nyquist rate at 31250 Hz, Input frequency should be between 50 Hz-30 KHz.
- **Input Amplitude** - Low Level should be greater than 5 mV and high level should be less than 1.45 V.
- **Note** - If there is a setting in the signal/function generator the change the output termination impedance of signal/Function generator to Infinite/High Z

Source Files briefly explained

- **main.c** - The main file that contains the core-logic for analog to digital conversion. The functions in the file uses DriverLib calls to perform analog to digital conversion.

Supporting files

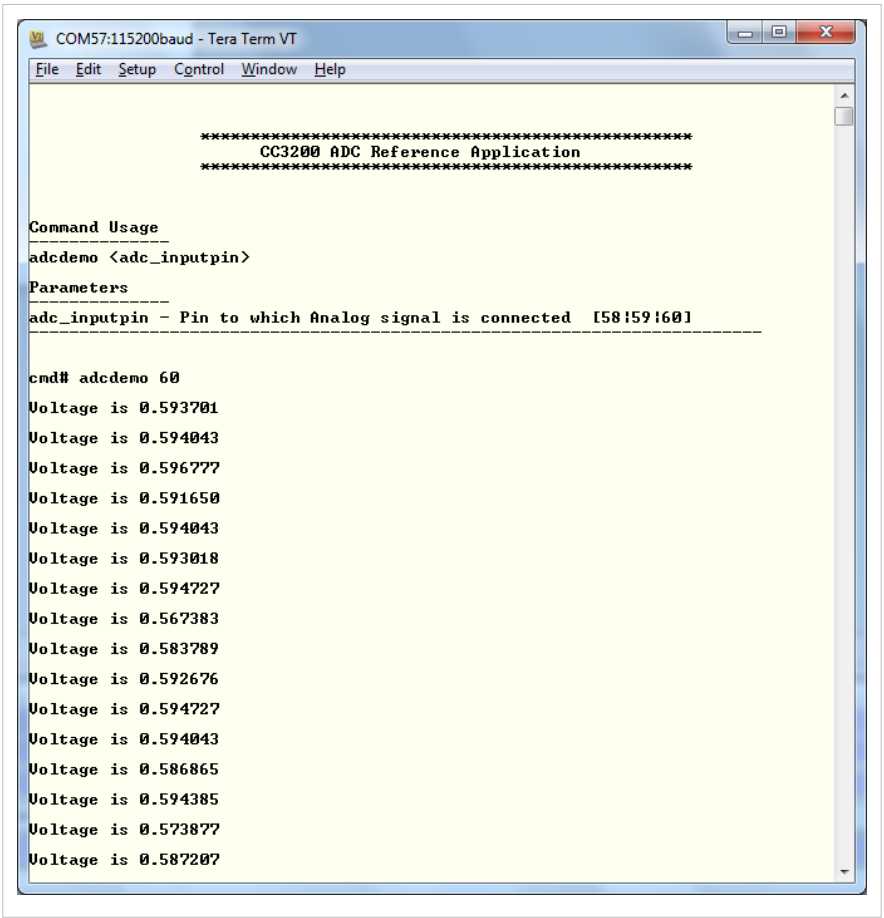
- **adc_userinput.c** - The function in the file reads the input from the user, parses the input string and feed the core-logic functions in the main.c
- **pinmux.c** - Generated by the PinMUX utility. UART0 pins are brought out in this file.
- **startup_ccs.c** - CCS related functions
- **startup_ewarm.c -** IAR related functions
- **uart_if.c -** Functions to display information on UART

Usage

1. Setup a serial communication application (HyperTerminal/TeraTerm). For detail info visit Terminal setup
   On the host PC, open a hyperterminal, with the following settings
   - **Port:** Enumerated COM port
   - **Baud rate:** 115200
   - **Data:** 8 bit
   - **Parity:** None
   - **Stop:** 1 bit
   - **Flow control:** None
2. Run the reference application (/IAR/CCS).
   - Flash the bin

- Open the project in IAR/CCS. Build and download the application to the board

3. On the Hyperterminal, a prompt appears
   - The ADC commands need to be issued and the results can be seen



Limitations/Known Issues

None.

Article Sources and Contributors

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