CC32xx Sleep-DeepSleep Application

Overview

Sleep and DeepSleep are two of the low power modes supported by the CC3200 device. There are various options available to select the module to be active during a low power mode by appropriately configuring the designated registers of the PRCM module and thereby causing an exit from the low power mode based on activity on the chosen active module. The clock to the other modules, that are not chosen to be active, get disabled. The clock is also halved in case of DeepSleep mode.

The various modules that can be clock gated (enabled/disabled) are:

1. Camera
2. McASP
3. MMCHS
4. McSPI
5. uDMA
6. GPIOs
7. WatchDOG
8. UART
9. GPT
10. Crypto
11. I2C

Also activity on the WiFi network triggered by the NWP can also be chosen as a cause for the wakeup.

Application details

The objective of this application is to showcase the sleep and deepsleep power modes supported by the CC3200 device using two of the modules.

The modules chosen in this example are:

1. WatchDog Timer based Sleep and DeepSleep
2. General Purpose Timer (GPT) based Sleep and DeepSleep

The device enters the low power modes (sleep/deepsleep) on executing the wifi instructions. Also there are some pre-requisite settings to be performed before the device enters the low power modes.

Source Files briefly explained

1. **gpt_if** - APIs to configure the GPT as a one shot timer with specified timeout.
2. **pinmux** - Pinmux configurations as required by the application.
3. **main** - Main file that showcases the sleep and deepsleep functionality using the WDT and GPT modules by invoking the corresponding APIs.
4. **uart_if** - To display status information over the UART
5. **wdt_if** - Setup the watchdog timer with the timeout value.

Usage

Note: It is recommended that the application be tested by flashing the .bin file onto the serial flash on LaunchPad only. The IAR and CCS debuggers will disconnect on entering low power modes and cannot be used for subsequent debug.

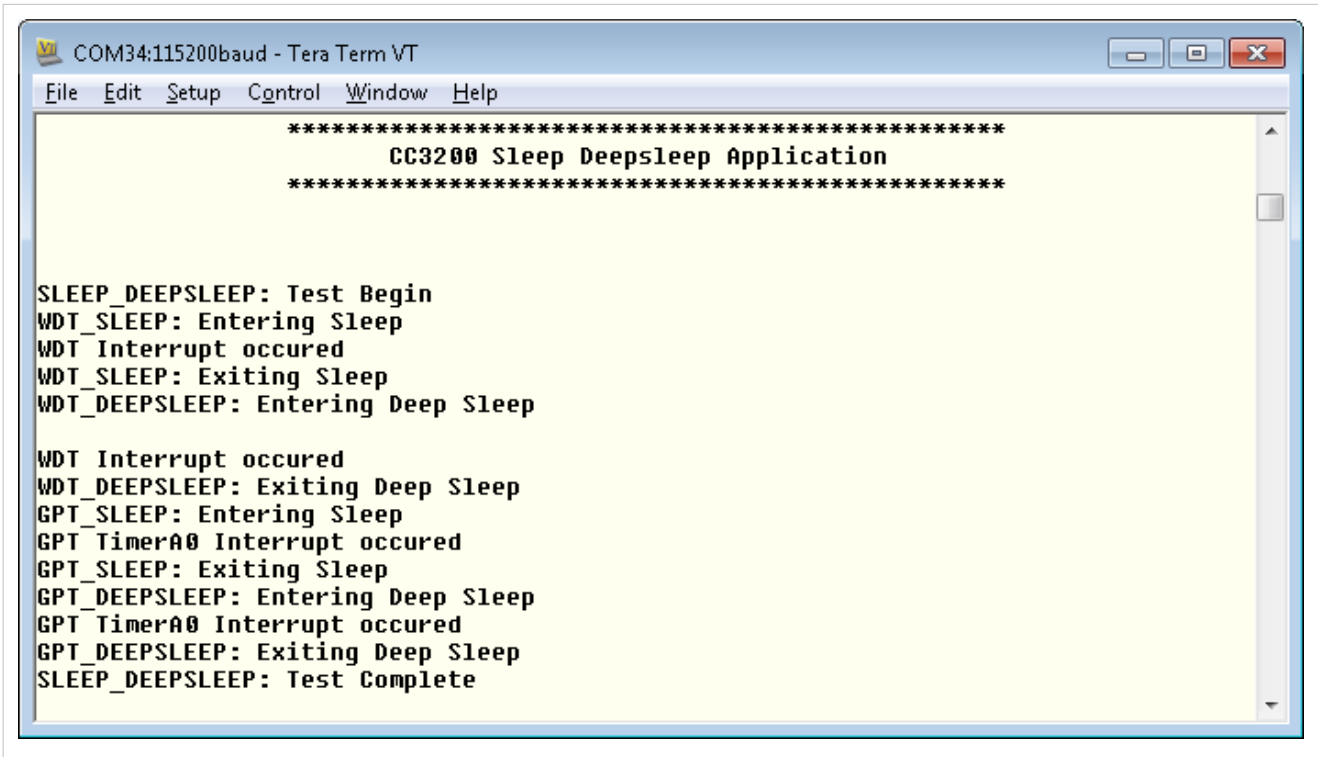
- Setup a serial communication application (HyperTerminal/TeraTerm). For detail info visit Terminal setup

On the host PC. The settings are:

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

- 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.

Terminal snapshot when application runs on device:



Limitations/Known Issues

None.

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