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Forums

What is the address range of CC1310 memory ?

Resolved

Gilbert
Expert 1070 points
Community Member

Replies: 13

Views: 7533

Hello, everyone!

Where can I find the details of CC1310 memory? I want to know the address range of CC1310 info page, ROM and flash.

Hello

CC1310 memory info page | CC1310

Jun 6, 2016 3:08 AM
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Gilbert
Expert 1070 points
Community Member

All Responses | Suggested Answers

Jun 9, 2016 3:42 PM

Richard W.
Genius 14860 points
Texas Instruments e2e

Hi,

please find a memory map in the CC13XXWare documentation.

Best regards

Richard

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Jun 23, 2016 2:34 AM

Gilbert
Expert 1070 points
Community Member

In reply to Richard W.:

Hi, Richard W.

I find that the info page is FCFG1, and there are some byte used by RTOS. Every byte in FCFG2 is 0xFF, so I think that I can save my config info into FCFG2. It is right?

Best Regards,
Gilbert

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Jun 23, 2016 7:16 AM

Richard W.
Genius 14860 points
Texas Instruments e2e

In reply to Gilbert:

Hi Gilbert,

the FCFG1/2 sections contain factory settings are not writeable. The CCFG section contains the application configuration and maps to the last page in flash. You can use this section to store additional configuration settings, but you need to use the flash address. I recommend using the flash section before CCFG in order to not delete the CCFG by accident. Here is a more application centric memory map:

Segment	Begin	End	Size	Description
Flash (32/128 KiB)	0x0000 0000	0x0000 0FFF	4 KiB	Free for application. 0x0000 is used as v
	0x0000 1000	0x0000 14FF	1280 B	When using TI-RTOS in ROM, this section at fixed addresses.
	0x0000 1500	0x0001 FFA7	128D B	Free for application
	0x0001 FFA8	0x0001 FFFF	88 B	Customer configuration (CCFG) area. It c parameters for the ROM bootcode, device Please refer to the Device Configuration Technical Reference Manual _
ROM (128 KiB)	0x1000 0000	0x1001 FFFF	128 KiB	Pre-built functions from TI-RTOS kernel size of applications. See `Rom Functions :ref:`using_internal_rom`.
GPRAM	0x1100 0000	0x1100 1FFF	8 KiB	Used as internal instruction cache by de application purpose. Please refer to the Technical Reference Manual _
SRAM	0x2000 0000	0x2004 FFFF	20 KiB	Free for application data.
RFC_RAM	0x2100 0000	0x2100 FFFF	4 KiB	Internal RF Core RAM. Not accessible fro
Peripheral and internal registers	0x4000 0000	0xFFFF FFFF		Internal registers of peripheral units. application. Please refer to CPU Domain

Best regards

Richard

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Jun 24, 2016 3:45 AM

Gilbert
Expert 1070 points
Community Member

In reply to Richard W.:

Hi, Richard W.

I have some questions about CCFG:

1. The size of CCFG is 4KB. Why is the size of the Customer configuration (CCFG) area in flash B8B7 Should I use other 4KB-B8B7

2. In "SmartRF Flash Programmer2 ver.1.7.2 --> Edit --> CCFG", I change the value in address 0x0001ffb8 from 0xFF to 0x01. After reload new code in CCS, the value in address 0x0001ffb8 has been 0xFF. I hope to know how to do in order to make sure that the value in CCFG won't be changed.

Best Regards,

Gilbert

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Jun 24, 2016 8:47 AM

Richard W.
Genius 14860 points
Texas Instruments e2e

In reply to Gilbert:

Hi Gilbert,

1. The flash section size (also referred to as page size/ segment size) on the CC1310 is 4KiB. This is only important when erasing, because only whole sections can be deleted on a flash. The CCFG is located at the end of the last section and uses 88 bytes that are memory-mapped to internal registers.
2. When you perform a chip erase, then the whole flash is wiped out, including the CCFG. The default value after erase is 1 for a cell, hence 0xFF for every byte. If you don't erase that section, the content remains. In order to keep the content of this section:
   a. Uncheck the "Erase" action in Flash programmer
   b. Do not build the ccfg.c file with your TI-RTOS application, but build it separately and only flash it once. be warned that you can only flip bits from 1 to 0 without erasing. When you erase the section where the CCFG remains, you must immediately restore the content. If something bad happens during that procedure, then your application won't boot after the next reset.

Best regards

Richard

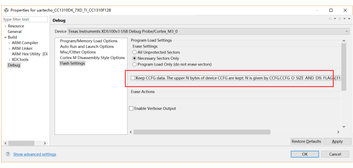
Locked

Jun 26, 2016 1:09 PM

Gilbert
Expert 1070 points
Community Member

In reply to Richard W.:

Hi Richard W.



Selecting this can help me make sure the content in CCFG won't be changed?

Best Regards,

Gilbert

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Jun 27, 2016 6:52 AM

Richard W.
Genius 14860 points
Texas Instruments e2e

In reply to Gilbert:

This makes sure that the debugger won't overwrite the .ccfg section when it uploads an application even though it is included in the application image. If you don't build the ccfg.c file in your project, then this option is not necessary because a ccfg section is not included. However, TI-RTOS requires this section to be present when it starts. So you must flash it at least once. After that you can reflash your device as many times as you want as long as the .ccfg section is not deleted.

I don't know about the internal ROM bootloader, maybe it requires some of the bytes in the .ccfg, too.

In my previous post, I talked about FlashProgrammer2 which is a separate programming tool.

Best regards

Richard

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Jun 29, 2016 8:09 AM

Gilbert
Expert 1070 points
Community Member

In reply to Richard W.:

Hi, Richard.

Another question.
In my CC1310 project, executing malloc(n) must failed when n is more than 1000. And I find that malloc is defined in cfg_pem3.c file. I guess that it will execute successfully if calling malloc declarated in stdlib.h. file. But I don't know how to call the malloc declarated in stdlib.h file.

Best Regards,
Gilbert

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Jul 22, 2017 9:00 AM

Omkar Inamdar
Intellectual 870 points
Community Member

In reply to Richard W.:

Hello Richard,

I am trying to write my data into the flash using following code :

```
if( FlashProtectionGet( FLASHMEM_BASE_ADDR ) == FLASH_NO_PROTECT)
    {
        if(FlashSectorErase(FLASHMEM_BASE_ADDR ) != FAPI_STATUS_SUCCESS)
        {
            while(1);
        }
        FlashProgram( (uint8_t *)dbuffer, FLASHMEM_BASE_ADDR, 16);
    }
```

FLASHMEM_BASE_ADDR = 0xF00.

However I am not able to erase the flash and FlashSectorErase function is returning FAPI_STATUS_INCORRECT_DATABUFFER_LENGTH.
Am I using wrong flash address to write the user data ?

Locked

Jul 24, 2017 7:13 AM

Richard W.
Genius 14860 points
Texas Instruments e2e

In reply to Omkar Inamdar:

Hi,

> Omkar Inamdar
> However I am not able to erase the flash and FlashSectorErase function is returning
> FAPI_STATUS_INCORRECT_DATABUFFER_LENGTH.
> Am I using wrong flash address to write the user data ?

The flash sector/page size is 4 KiB. Hence the address provided to FlashSectorErase() must be a multiple of 4 KiB (4 * 1024 bytes), e.g. 0x0000, 0x1000, 0x2000, ...

Best regards

Richard

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