Solve the problem of Niosii downloading FLASH No EPCS layout data --- looking for section [EPCS-xxxxx]

The on-board configuration device is equivalent to a memory chip. Most of our student boards use M25P16, and some use W25Q16 compatible devices. Due to inventory reasons, the two devices will be shipped randomly.

When using the W25Q16 device, it may cause this error when downloading and burning in nios: No EPCS layout data --- looking for section [EPCS-EF4015], so when this prompt, please do not worry, solve it according to the following methods:

Copy the nios2-flash-override.txt we have written to the /bin folder in the nios installation directory. I use quartus11.1sp2 here, just put it under nios2eds/bin.

After copying, re-burn

Note that this is only possible when using nios to burn. You don't need to read it when you program the verilog program.

The following is a reference for those who are interested to read:

Altera devices have EPCS series configuration devices. In fact, these configuration devices are our usual SPIFlash. According to the description of AlteraFAE: "EPCS devices are also selected from a company's SPIFlash, but they have been strictly tested by Altera, so the stability and durability are are more than the general-purpose SPIFlash". In my opinion, most of the stability problems of semiconductors are caused by their own design defects, and mature manufacturing processes will not cause product instability; and, when Altera's devices now read configuration data errors, The data in the SPIFlash can be re-read, so under the double guarantee of the stability of the process and the reliability of the design, the cost pressure of the product can be reduced by choosing the general SPIFlash.

Assuming we are using a normal SPIFlash, open the nios II command shell window

When using the nios2-flash-programmer command to download the ***.flash file, the following error will occur:

No EPCS layout data --- looking for section [EPCS-1C2017]

Thought that the SPIFlash of different companies has different IDs, and the Flash of different sizes

The size and number of sectors are different, so you need to create a new document to describe these data:

1. First create a new nios2-flash-override.txt file under the /bin folder;
2. Enter the following code. The devices described below are all Altera EPCS devices.

sector_size represents the sector size
sector_count represents the number of sectors

[EPCS-202011] # EPCS1N (lead-free)

sector_size = 32768

sector_count = 4

[EPCS-202013] # EPCS4N (lead-free)

sector_size = 65536

sector_count = 8

[EPCS-202015] # EPCS16N (lead-free)

sector_size = 65536

sector_count = 32

[EPCS-202017] # EPCS64N (lead-free)

sector_size = 65536

sector_count = 128

3. Add the general SPIFlash of your choice to the above code, for example: [EPCS-1C2017] # EPCS64N (Eon-lead-free)

sector_size = 65536

sector_count = 128

Then use the nios2-flash-programmer command to download the ***.flash file, you can download SPIFlash.

It should be noted that the size of each sector of the configuration chip used by the

FPGA is fixed. Now some devices have optimized the part of the Boot code, and the initial part of the sector will be smaller than the general sector, so as to improve The purpose of sector utilization, for example, Eon 64M SPIFlash is divided into two types, one is that each sector size is 64K*128 (EN25P64), and the other is (4+4+8+16)K+64K*127 (EN25B64), and we choose the previous type of device, the device ID is 1C2017, and the device ID can be queried through nios2-flash-programmer --debug ....

Above, I chose a device to explain. You can modify the nios2-flash-override.txt file according to your own device. You only need to change the ID number to ensure that the sector_size and sector_count are consistent with the EPCS device.