Preparations for zcu111

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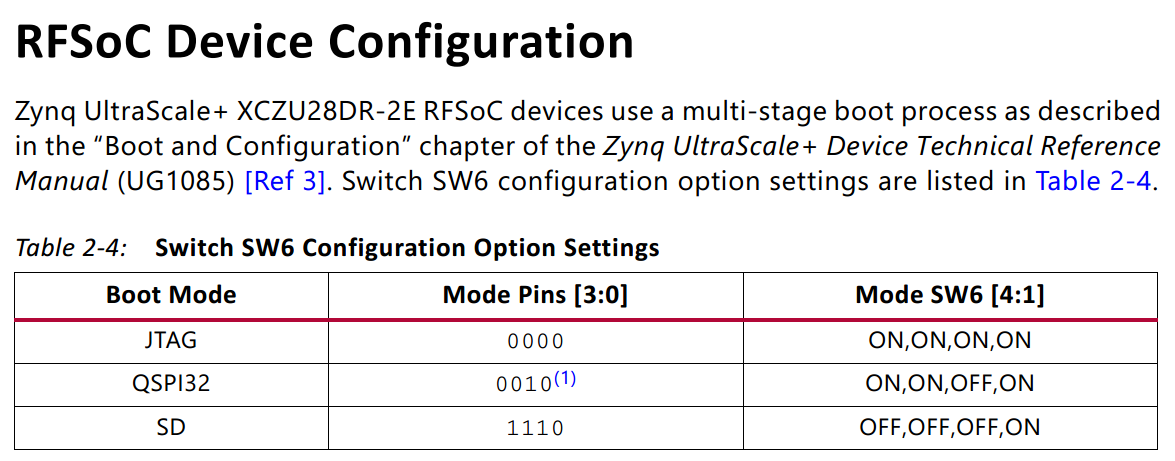
03-24-2021

To get casper toolflow working on zcu111, some preparations are needed for zcu111.

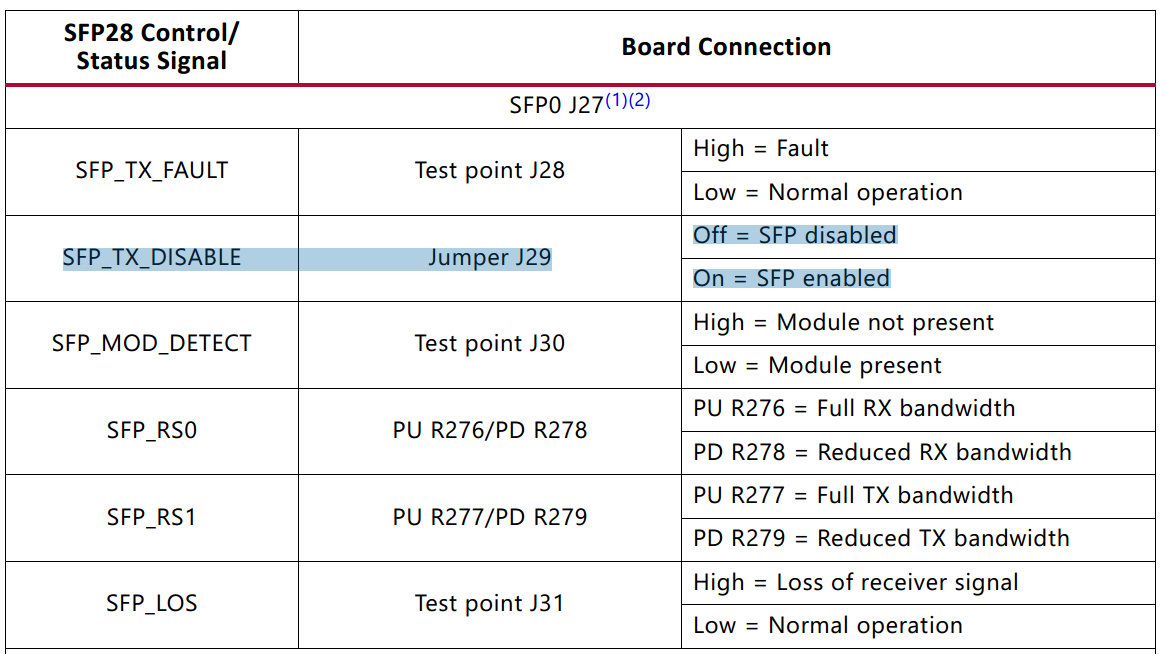
Here are some necessary hardware and software configurations.

**Hardware configurations:**

1. Set the mode pins to “1110”(make sure it’s OFF,OFF,OFF,ON), so that the board can boot from SD card.



1. Set Jumper J29/J35/J40/J44 to enable the SFP transceivers, which is necessary for 10GbE.



**Software configurations:**

1. Write PYNQ image to zcu111

The design is based on PYNQ, especially tcpborphserver and clock configuration, so we need to Install PYNQ on zcu111 first.

You can get the PYNQ image for zcu111 from the pynq website(http://www.pynq.io/board.html), or you can use the image(zcu111\_v2.5.zip) in the repository directly.

Here is the link about how to write the image to SD card on zcu111.

<https://pynq.readthedocs.io/en/latest/appendix.html#writing-the-sd-card>

1. Install tcpborphsever

It is the same as we did for Red Pitaya, so you can refer the steps here.

<https://casper-tutorials.readthedocs.io/en/latest/tutorials/redpitaya/red_pitaya_setup.html>

Just remember that you have to install PYNQ first, or you can’t use “git” and “make” command.

1. Replace a python file

You need to copy the \_\_init\_\_.py in the repository to zcu111 first with “scp” command, and then replace the old \_\_init\_\_.py on zcu111. The path is:

/usr/local/lib/python3.6/dist-packages/xrfclk/\_\_init\_\_.py

1. Cpoy clkconfig.py to your zcu111

You need to copy the clkconfig.py to your zuc111, and remember to run the python script every time, when the zuc111 powers up.

This python script is for setting up the clock for PL source, so it’s very important.

We will create a startup service for it later.

1. Copy ./si5382\_programming/ to ZCU111

You need to copy ./si5382\_programming/ to ZCU111, then compile the source code.

Then run “sudo ./si5382\_programming 156.25” every time you power on your board.

We will create a startup service for it later.

1. Get casperfpga and make some changes on the source code

You can get the source code of casperfpga here:

Python2 version:

<https://github.com/casper-astro/casperfpga/tree/casperfpga-soak-test>

Python3 version:

<https://github.com/casper-astro/casperfpga/tree/py3-merge>

Before you install the casperfpga, you need to change the implementation of blindwrite() at ./src/casperfpga.py.

It should be changed like this:

