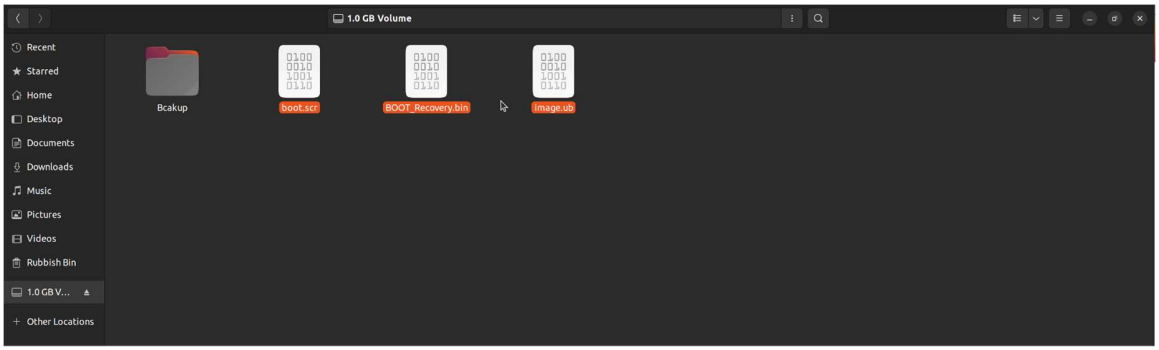
QSPI Flash Guide

To flash ODK3 QSPI includes two folders; One of QSPI JTAG uboot software tools (QSpi flash tools), another one of the Boot image files to be flashed into ODK3 by USB device.

The method uses JTAG to load the Ultrascale+ processor upto an including the uboot bootloader. This then can enumerate a USB mass storage device and perform the steps to erase and program the QSpi on board.

Setup

Step 1: Copy Boot image files into USB, which including three files: boot.scr, Boot_Recovery.bin and image.ub



For each device to be programmed:

1. Setting Boot Switches into JTAG mode (SW1,2 both ON), and then connect JTAG and UART cables between ODK3 and Host. Finally, plug in the USB device/hub with USB drive into ODK3. Boot Switcher for JTAG mode show as following Figure 1, and all cable connection show on the following Figure 2:

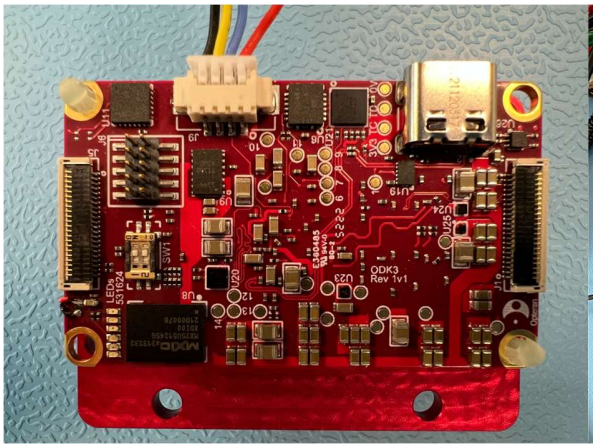


Figure 1

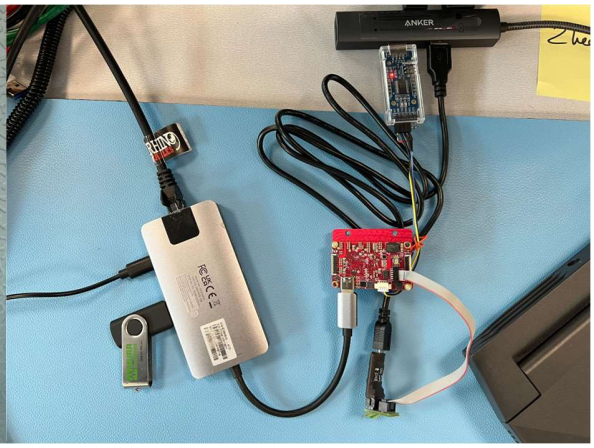
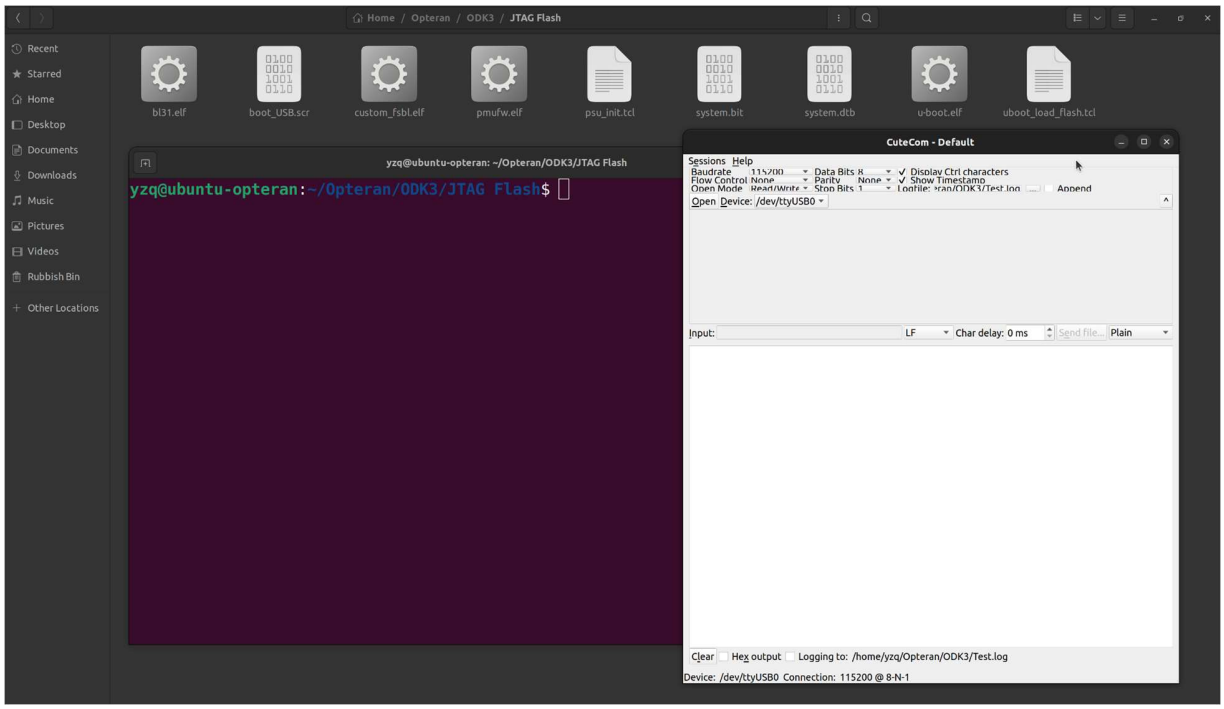


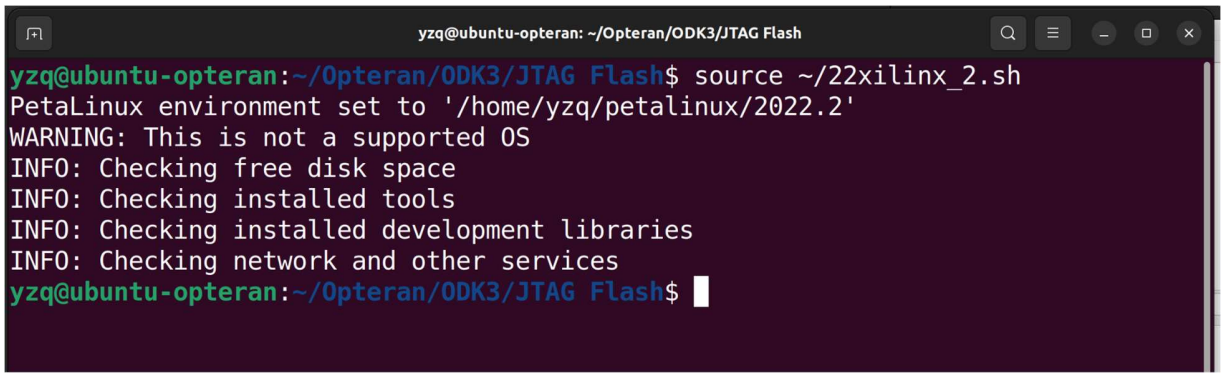
Figure 2

2. Download all flash files, and open a terminal in the fold, and open UART terminal to monitor boot log as well. (For example, UART can be loaded by cutecom on /dev/ttyUSB0)



3. Source petalinux tools by command:

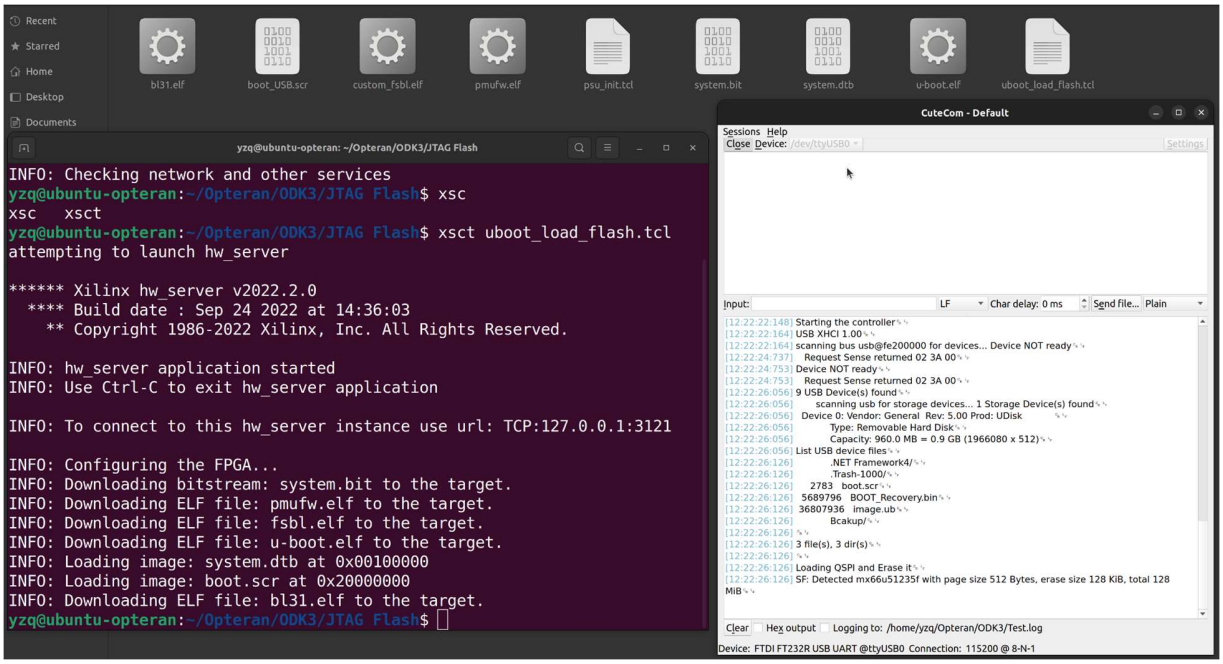
```
source /path/to/petalinux/settings.sh
```

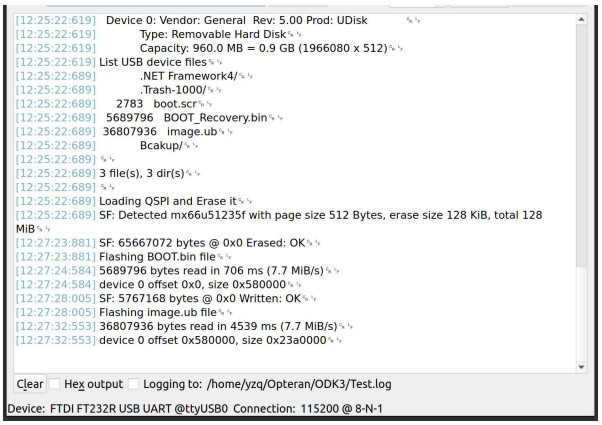


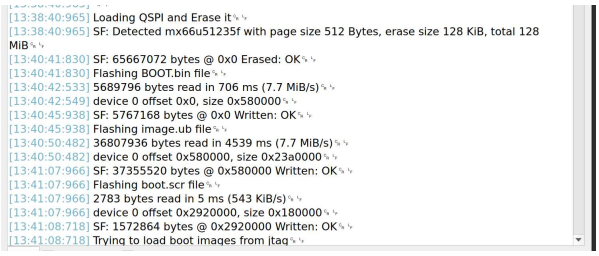
4. Power on the ODK3, and running uboot_load_flash.tcl script to automatically flash the boot image from USB to ODK3.
   Command:

```
xsct uboot_load_flash.tcl
```

5. UART will show logs about the ODK3 boot steps, it will be totally using 3 mins to flash all USB's three boot images. If there is all right, you will automatically load into petalinux after flash files successfully. You can login and test petalinux with account: petalinux, and password by your setting, root password is "root". (If the flashing processing take long time that more than 5 minis without any UART log response, please do power off and power on ODK3, and do Step 5 again)







6. Power off and change the Boot Switcher into QSPI mode, and power on ODK3 to enjoy petalinux on the UART terminal (Due to QSPI petalinux is a RAM root file system now, so it is can't saving any change and even if you password). Boot Switcher for QSPI mode (SW1-OFF, SW2-ON) show as following Figure 1, and petalinux running show on the following Figure 2:

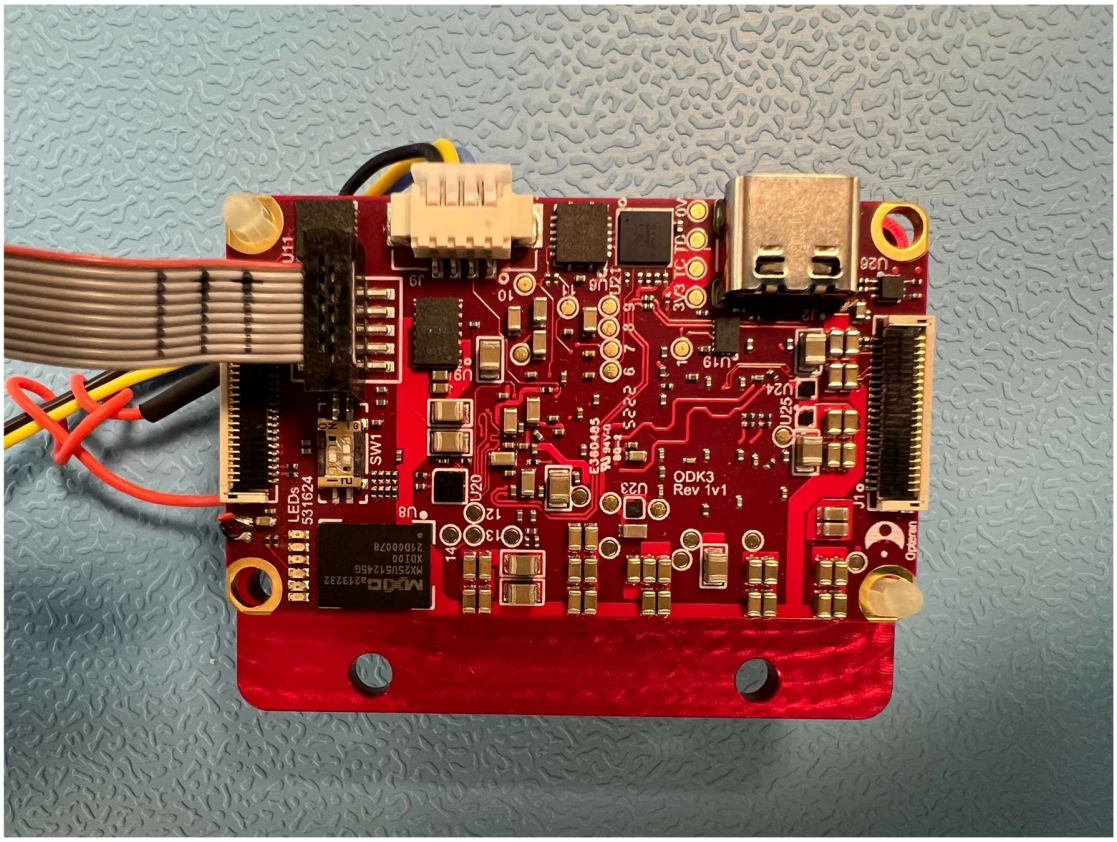


Figure 1

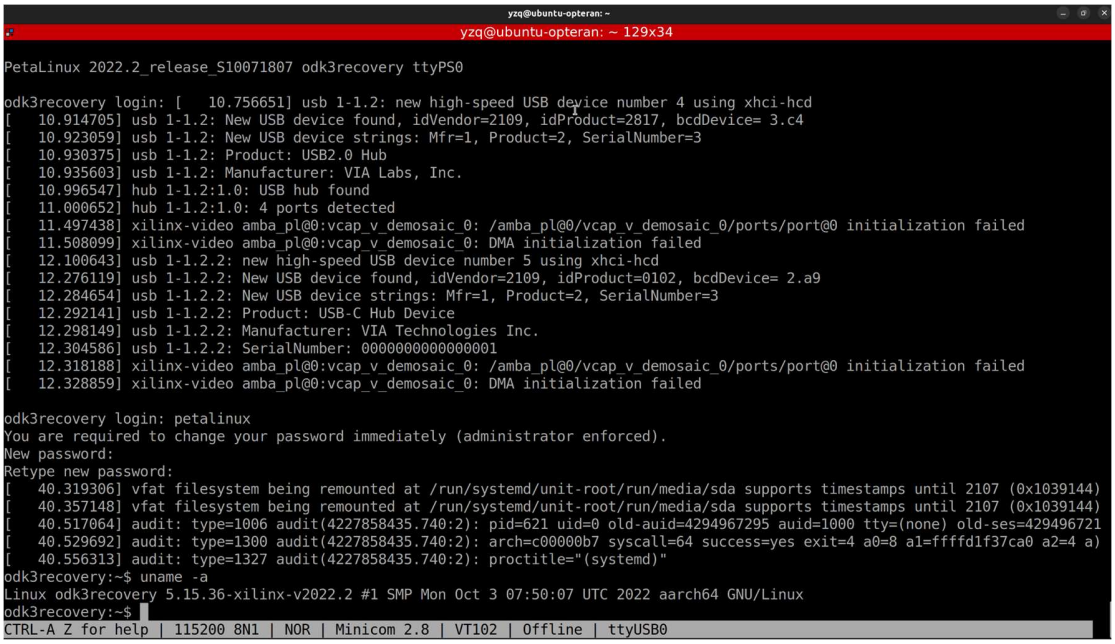


Figure 2

ALL STEPS COMPLETE