

# DAISY Petalinux Porting Guide

Revision 1.3

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CRZ Technology

<http://www.crz-tech.com/>

# Document History

Revision	Date	Change note
1.0	2019.08.19	Initial Version
1.1	2019.11.26	Upgraded to 2019.1 version
1.2	2021.01.26	Updated
1.3	2022.11.08	Included hw design

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# 1. Overview

This document explains how to build Petalinux for DAISY board which is based on Xilinx ZYNQ UltraScale+ XCZU17EG-FFVC1760-2-E on Ubuntu 16.04.4 LTS PC and how to operate DAISY board.

## 2. Installation of Petalinux 2019.1

Download Petalinux installer, version 2019.1, through the link below.

<https://www.xilinx.com/member/forms/download/xef.html?filename=petalinux-v2019.1-final-installer.run>

Install Petalinux Tool.

```
$ sudo -u <user_name> mkdir -p /opt/pkg/petalinux-v2019.1  
$ ./petalinux-v2019.1-final-installer.run /opt/pkg/petalinux-v2019.1
```

Configure environment variables by running below command to use Petalinux Tool.

```
$ source /opt/pkg/petalinux-v2019.1/settings.sh
```

### 3. Creation and build of Petalinux project

Copy petalinux BSP for DAISY board.

```
daisy\_20191\_20210419.bsp
```

Create new project based on DAISY BSP.

```
$ petalinux-create -t project -s daisy_20191_20210419.bsp -n daisy
```

Move to the project folder.

```
$ cd daisy
```

Configure the path of hardware description file(HDF).

```
$ petalinux-config --get-hw-description=./hardware/M.2_PCl_e_MIG_201901_20210413/ps.sdk
```

Vivado design is under hardware/M.2\_PCl\_e\_MIG\_201901\_20210413 folder.

Build bootable images for microSD and QSPI flash.

```
$ cd project-spec/build  
$ ./build.sh
```

Pass "sd" as a parameter if microSD bootable image is needed.

```
$ ./build.sh sd
```

To build QSPI bootable image only, pass "qspi" as a parameter.

```
$ ./build.sh qspi
```

Build artifacts are created under the folders below respectively.

```
$ project-spec/image/SD_Image  
$ project-spec/image/QSPI_Image
```

## 4. SD Boot

Connect microSD card(8GB) to Ubuntu host through microSD card adaptor.

Run "sudo ./create-sdcard.sh" under "project-spec/image" folder to make bootable microSD card.

```
$ cd project-spec/images  
$ sudo ./create-sdcard.sh
```

Set SW1 to OFF-OFF-OFF-ON(4-3-2-1) for SD boot mode on DAISY board.

Insert microSD card to microSD card slot on DAISY board and power on the board.

Check if the logs are displayed on serial terminal.

## 5. QSPI Boot

Check if SD boot is working with microSD card created in 4.

Power off the board.

Connect microSD card to Ubuntu host through microSD card adaptor again.

Make microSD card for QSPI Boot by running the command below.

```
$ sudo ./make_auto_QSPI_fuse_SD.sh
```

Set SW1 to OFF-OFF-OFF-ON(4-3-2-1).

Insert microSD card to microSD card slot of DAISY board.

Power on the board and then QSPI flash will be configured.

Power off the board after configuring QSPI flash and remove microSD card from the slot.

Set SW1 to ON-ON-OFF-ON(4-3-2-1).

Power on the board and check if the board boots from QSPI flash.



## 6. U-Boot & Kernel

With the support of NFS on Ubuntu host, u-boot and kernel image can be replaced on the console easily.

Run the commands below to replace u-boot and kernel in case of SD boot.

```
$ ./tmp_uboot_update_SD.sh  
$ ./tmp_kernel_update_SD.sh
```

Run the commands below to replace u-boot and kernel in case of QSPI boot.

```
$ ./tmp_uboot_update_QSPI.sh  
$ ./tmp_kernel_update_QSPI.sh
```