vck190\_6channel\_mipi\_demo\_instruction - V0.4

**Preparing**

* Hardware
  + 1 x VCK190 Production board
  + 2 x 16/32/64GB SD card
  + 1 x Leopard IMX274 MIPI FMC
  + 1 x laptop
  + 1 x Ethernet cable
* Software
  + ZU4 SC image
  + VCK190 image: xilinx-vck190-dpu-v2021.1-mipi-6resize-prod.img.gz
  + Demo test package: 4k-demo.tar.gz
  + Etcher software

**Mipi Camera Setup**

1.     Download ZU4 SC image

<https://www.xilinx.com/member/vck190_headstart/Board_Framework_Phase1Beta_V1.02_wVadj.img.zip>

Instructions :

<https://www.xilinx.com/member/vck190_headstart/Update_System_Controller_uSD_Card_Instructions.pdf>

2.     Download BoardUI tools

<https://www.xilinx.com/member/forms/download/design-license.html?cid=b83eede2-f9d2-4e81-a393-67a1a8ba609e&filename=rdf0574-vck190-bit-c-2020-2.zip>

Please setting PC in English environments to avoid the possible BoardUI launching exceptions,

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3.     Make sure you have accounts to download the above resources, you can use your Xilinx account or create new one

4.     Prepare one multimeter

5.     Board setups : <https://xilinx.github.io/vck190-base-trd/2021.1/html/run/run-setup.html#:~:text=Board%20jumper%20and%20switch%20settings>

6.     Vadj settings : <https://xilinx.github.io/vck190-base-trd/2021.1/html/run/run-setup.html#:~:text=Flow%20Control%3A%20None-,Vadj%20settings,-Perform%20the%20following>

7.     Make sure the Vadj 1.2V setting is success using multimeter to test J51H H40 after power on reset

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**Demo Setup**

1. Use Etcher software to flash VCK190 image (xilinx-vck190-dpu-v2021.1-mipi-6resize-prod.img.gz) to SD card.
2. Insert the SD card and plug in the ethernet cable.
3. Boot the board.
4. Set up the IP information of the board using the serial port.
5. Copy the demo test package (4k-demo.tar.gz) to the board via scp

scp 4k-demo.tar.gz root@IP\_OF\_BOARD:~/

1. Untar the package on the board

tar -xzvf 4k-demo.tar.gz

1. Run init.sh to stop xserver and set the mipi camera ISP

cd 4k-demo

bash init.sh

1. [Optional] You can also set the mipi camera ISP by the following command(color, adapt to indoor lighting environment, about 4000K)

v4l2-ctl -d /dev/v4l-subdev0 -c exposure=1000

v4l2-ctl -d /dev/v4l-subdev0 -c gain=1000

Note that when you reboot the board, you have to run the step 7 again.

**Demo Test**

1. Run the demo

//If you want to run 6 channel demo, run the following script

cd 4k-demo

sh run6way-4k.sh

//If you want to run 8 channel demo, run the following script

cd 4k-demo

sh run8way-4k.sh

1. To exit the demo, press Ctrl+c

**Demo Performance**

For 6 channels demo, the performances are:

Multi-task channel x 4, each channel is about 24.5 fps

Roadline detection x 1, 25 fps

Facedetection + Posedetection x1, 45 fps