Enable KV260 PWM fan speed control HOW-TO

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Vivado 2022.1 under Windows 10 Pro, Ubuntu 2022.04.2 on KV260

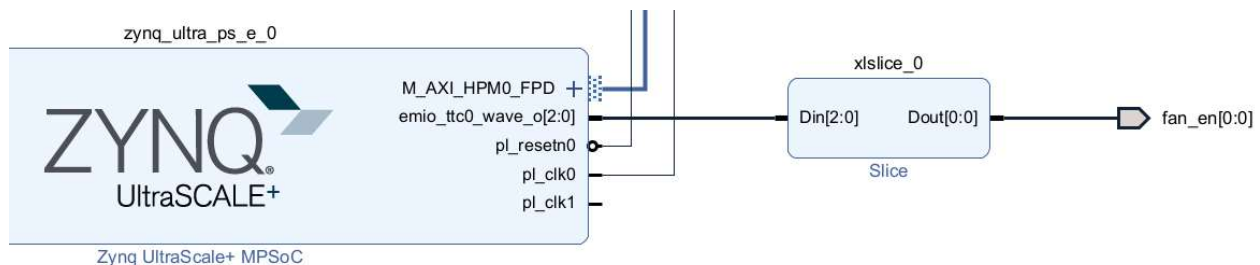From: https://xilinx-wiki.atlassian.net/wiki/spaces/A/pages/1641152513/Kria+K26+SOM

Fan Control

Starting with the 2022.1 images, Kria Starter Kit pre-built software includes active fan control using the Linux fancontrol library which uses ZU+ PS TTC0 subsystem. The K26 Starter Kit fan pin is connected to PL pin HDA20 (physical pin A12) and thus in order to access it users need to ensure to provide an EMIO pin mapping between TTC0-Clk2 and HDA20. This is accounted for in the Xilinx generated platforms and reference bitstreams.
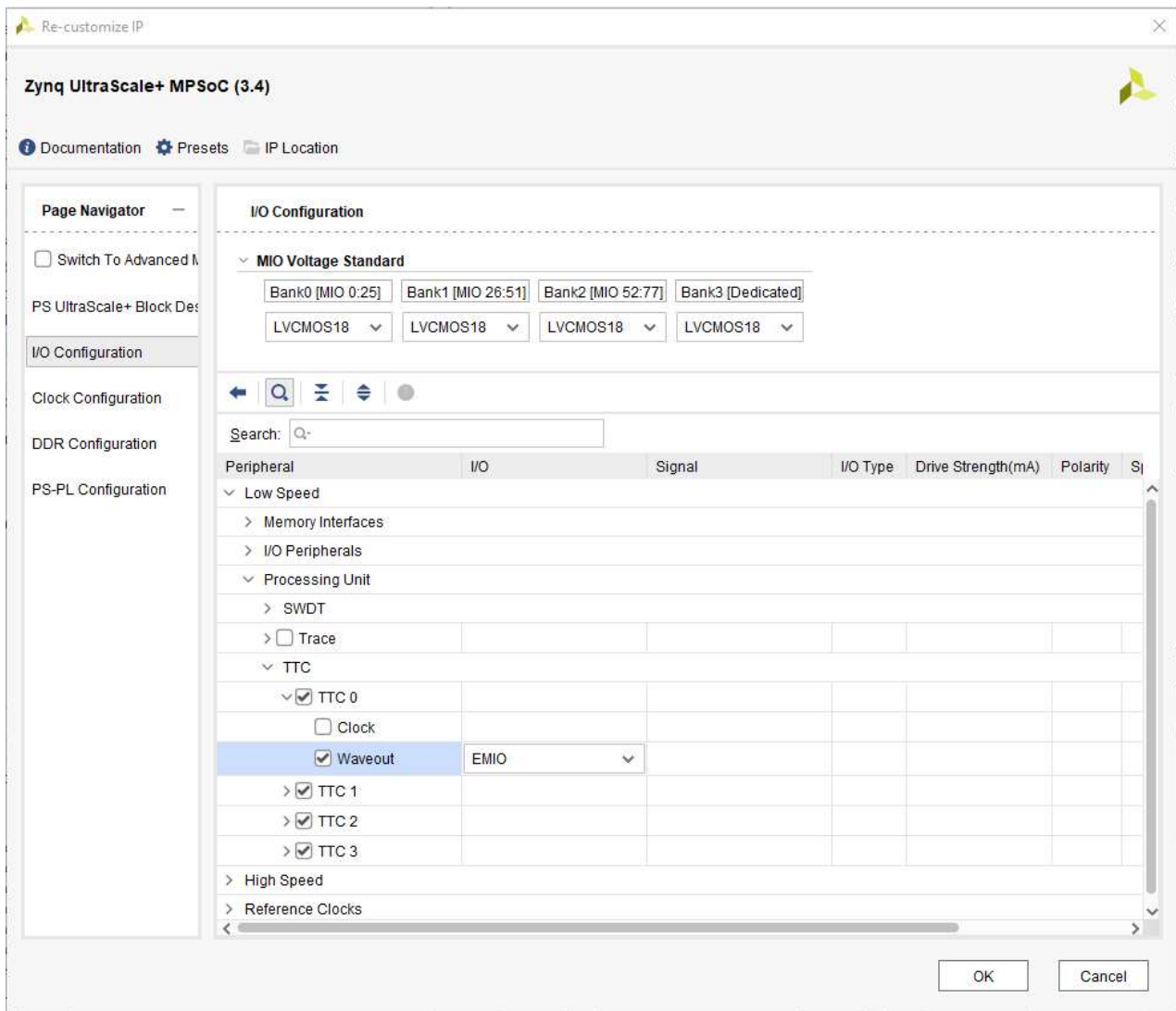
If user wants to use the same fan control mechanism then they need to account for this EMIO mapping when generating their custom bitstream designs.

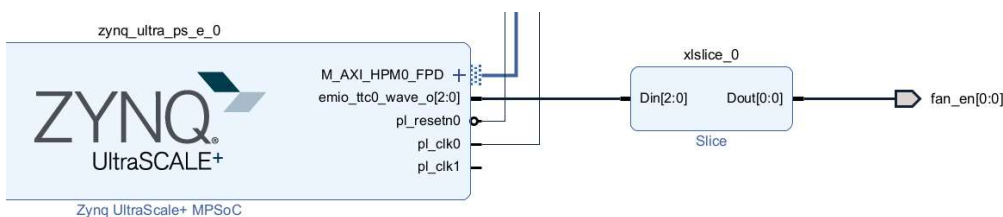From: https://zenn.dev/ryuz88/articles/kria_fan_control

Open Block Design of your overlay design and double click on zynq_ultra_ps_e_0 component to open Re-customize IP window:
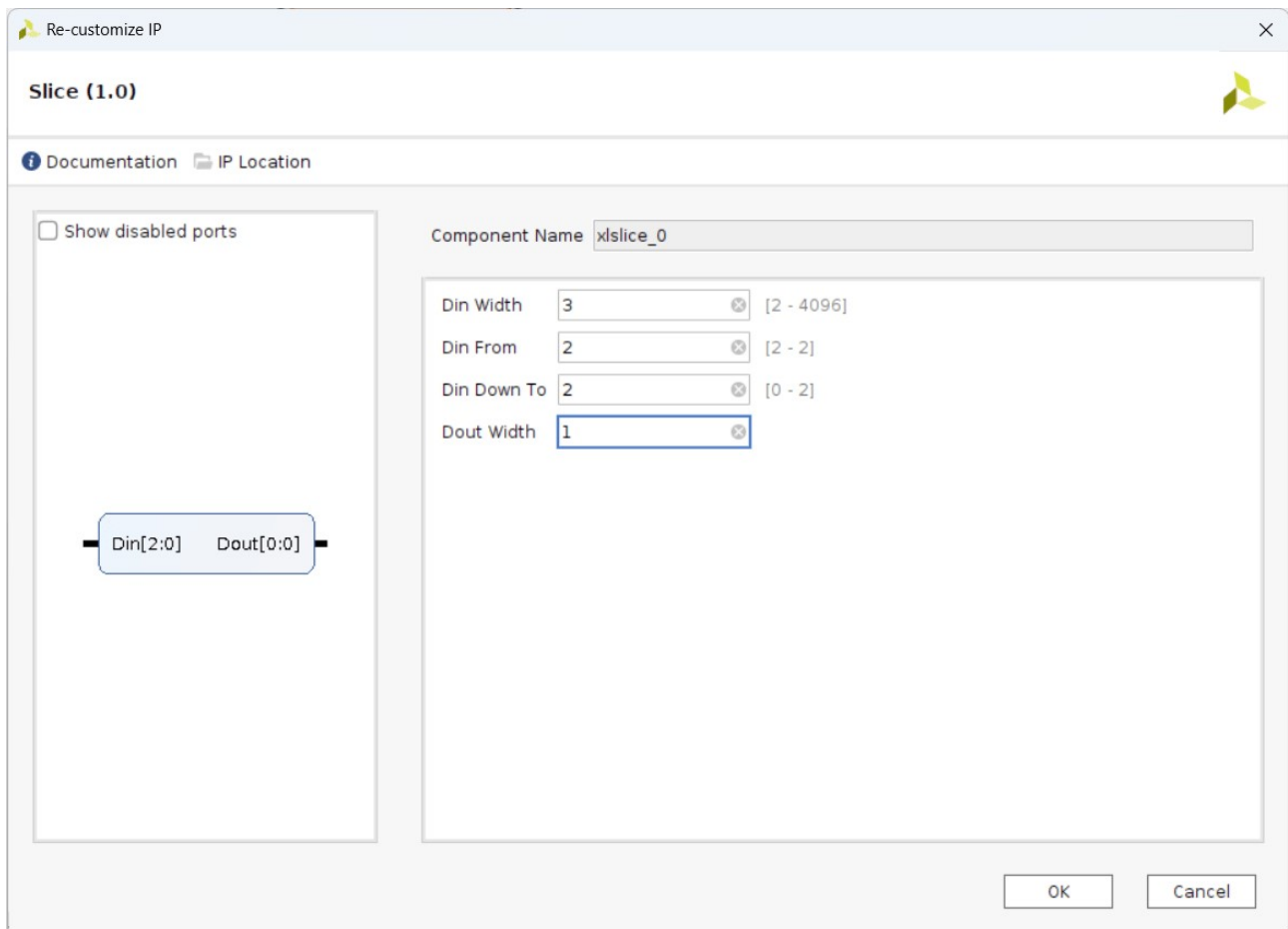
Select: I/O Configuration → Low Speed → TTC → Check Waveout and select EMIO:

Add a Slice IP block (xslice_0 in the below example), and connect it as follows (right click on Dout pin to create and connect the output interface port. Call it "fan_en"):
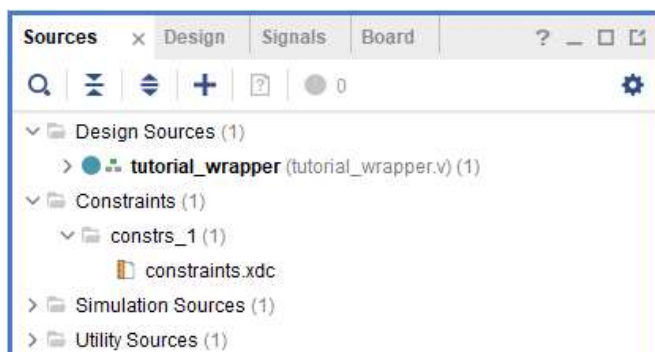

Double click on xslice_0 to open Re-customize IP window and customize it as follows:

Create a new constraints.xdc file or add in existing one the following two rows:

```
set_property PACKAGE_PIN A12 [get_ports fan_en]
set_property IOSTANDARD LVCMOS33 [get_ports fan_en]
```


Save the design, build and export .bit, .hwh and .tcl files and move them to KV260 board using WinSCP.

After loading the bitstream file, the fan will be automatically controlled by Ubuntu OS in the same way of the base.bit bitstream.

No more continuous noise from the fan!

More details on a 3-part blog from: https://qiita.com/ikwzm/items/345184df3a7abd6b4a26

Enjoy!