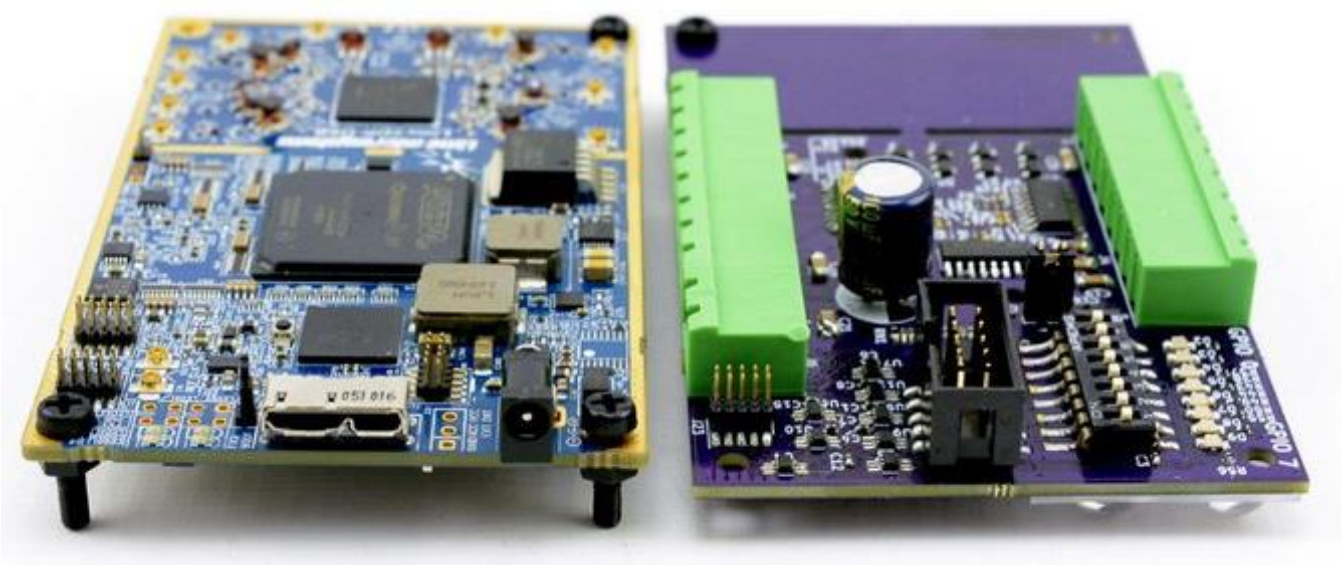
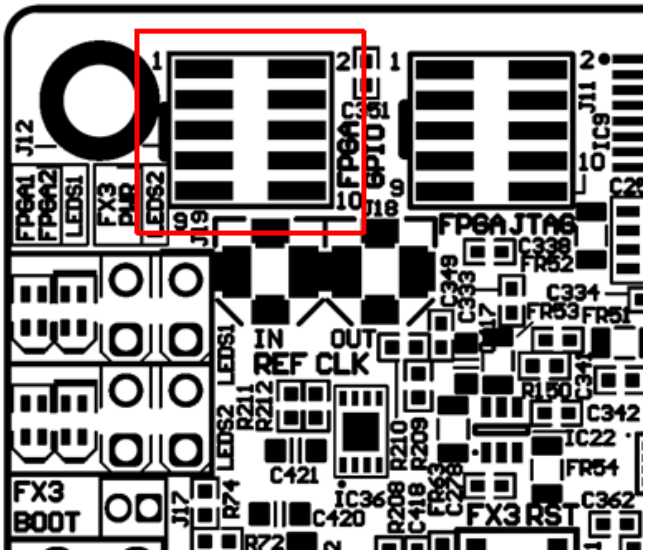
How to connect the LimeSDR-USB with the GPIO-Board

Matthias, DD1US, April 8th 2019

Recently I got some questions on how to connect the GPIO-Board for the LimeSDR to the LimeSDR-USB board itself. The original documentation from Lime is indeed a bit sparse. As the software SDR-Radio now supports the control of the GPIO-board, this information might be of interest for other people and thus I wrote the little description below. The description is based on inputs kindly provided by Mike Seguin N1JEZ.



LimeSDR-USB board (left) and GPIO-Board (right)



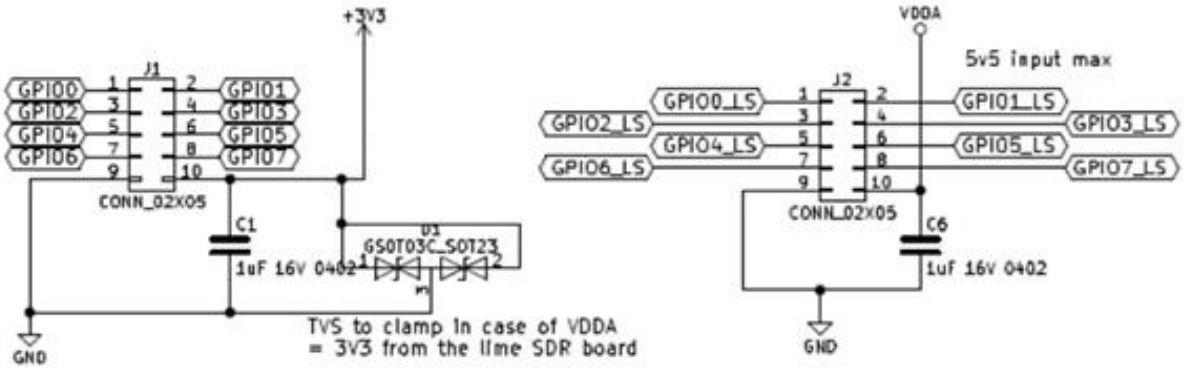
On the LimeSDR-USB board the GPIO connector J1 is located in the upper left corner

pin1=GPIO0 upper left corner of the connector,

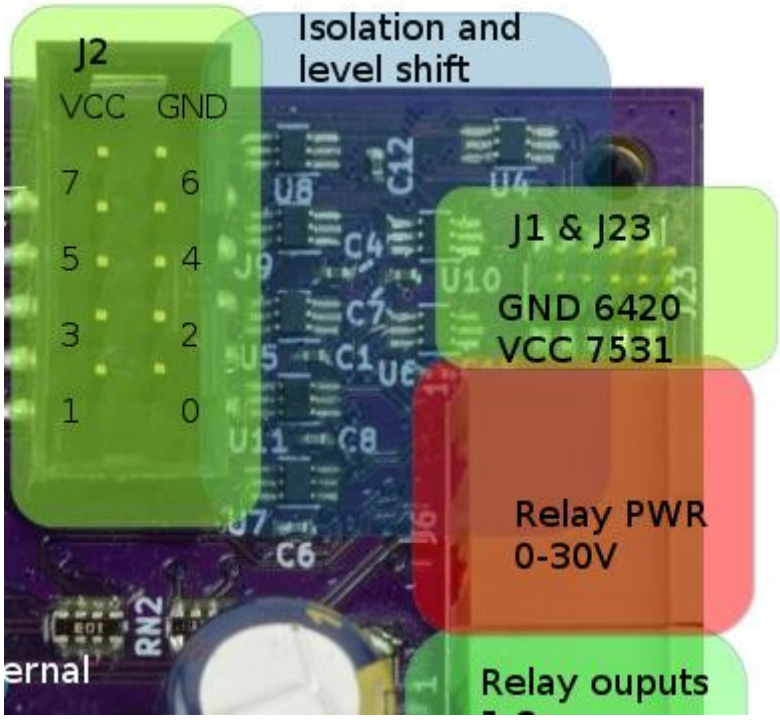
pin2=GPIO1 upper right corner of the connector,

pin9 = GND lower left corner of the connector,

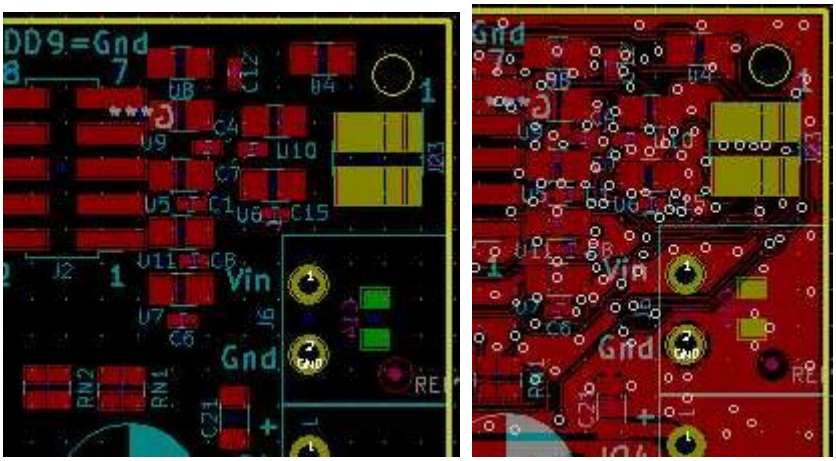
pin10=VDD lower right corner of the connector



Schematic of the GPIO Connector J1 (left)

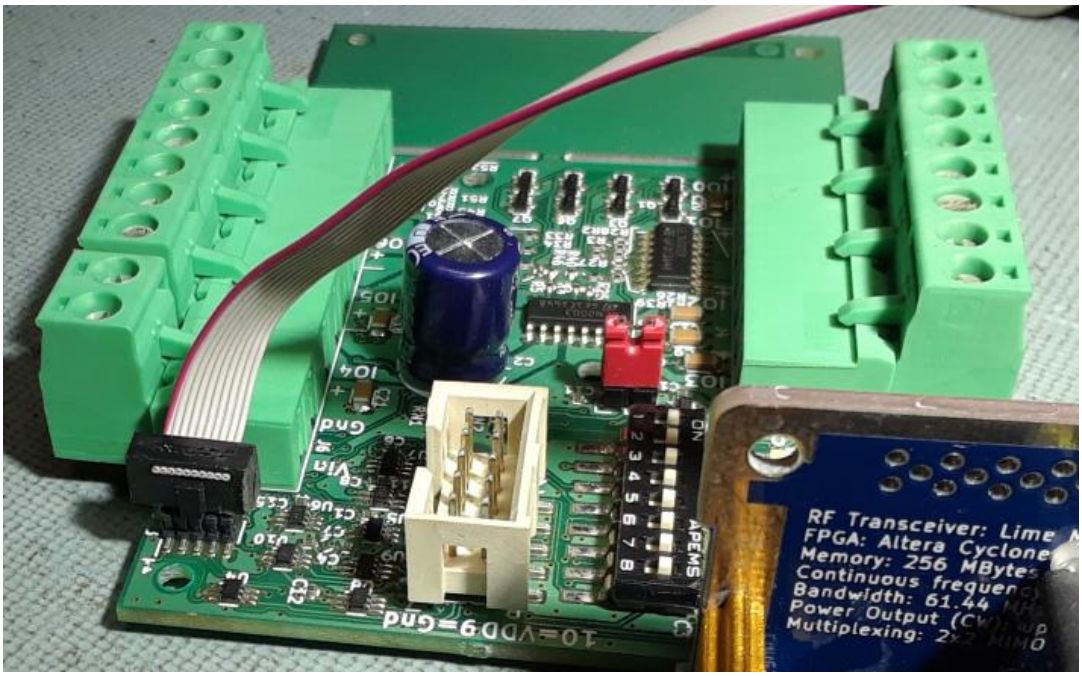


GPIO-Board connectors: the connector to the LimeSDR-USB is the upper right connector (J23)



GPIO-Board layout: the connector to the LimeSDR-USB is the upper right connector (J23)

On the LimeSDR-USB board use the 10 pin header (J1).
Pin 1 (red stripe) is towards the outside of the board.



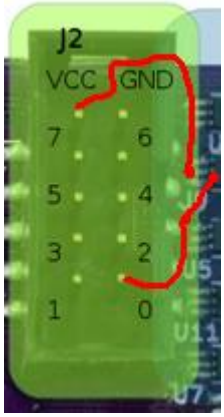
On the GPIO-Board use the 10 pin header J23.
Pin 1 (red stripe) is also towards the outside of the board.

Both headers are marked on the PCB but you will have to look very carefully / it is a bit hard to see.

<u>Additional notes:</u>

Power supply:
If you want to use +VDD from the Lime, put a jumper on J3.
Before supplying +VDD from an external power source make sure to remove the jumper from J3!

Setting the DIP-Switches on the GPIO-Board:
On = GPI (general purpose input)
Off = GPO (general purpose output)



Using an GPI port:
To trigger GPI, make sure the respective DIP-switch is in the right position (on).
On J2, feed +VCC (pin 9) to an input pin.
For example (see picture to the right):
to trigger GPI 0, you would connect pin 9 (VCC) to pin 0 (GPI 0) on J2.

I appreciate any feedback and comments. In addition, if you have any questions I will be happy to answer them by Email.

Best regards

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