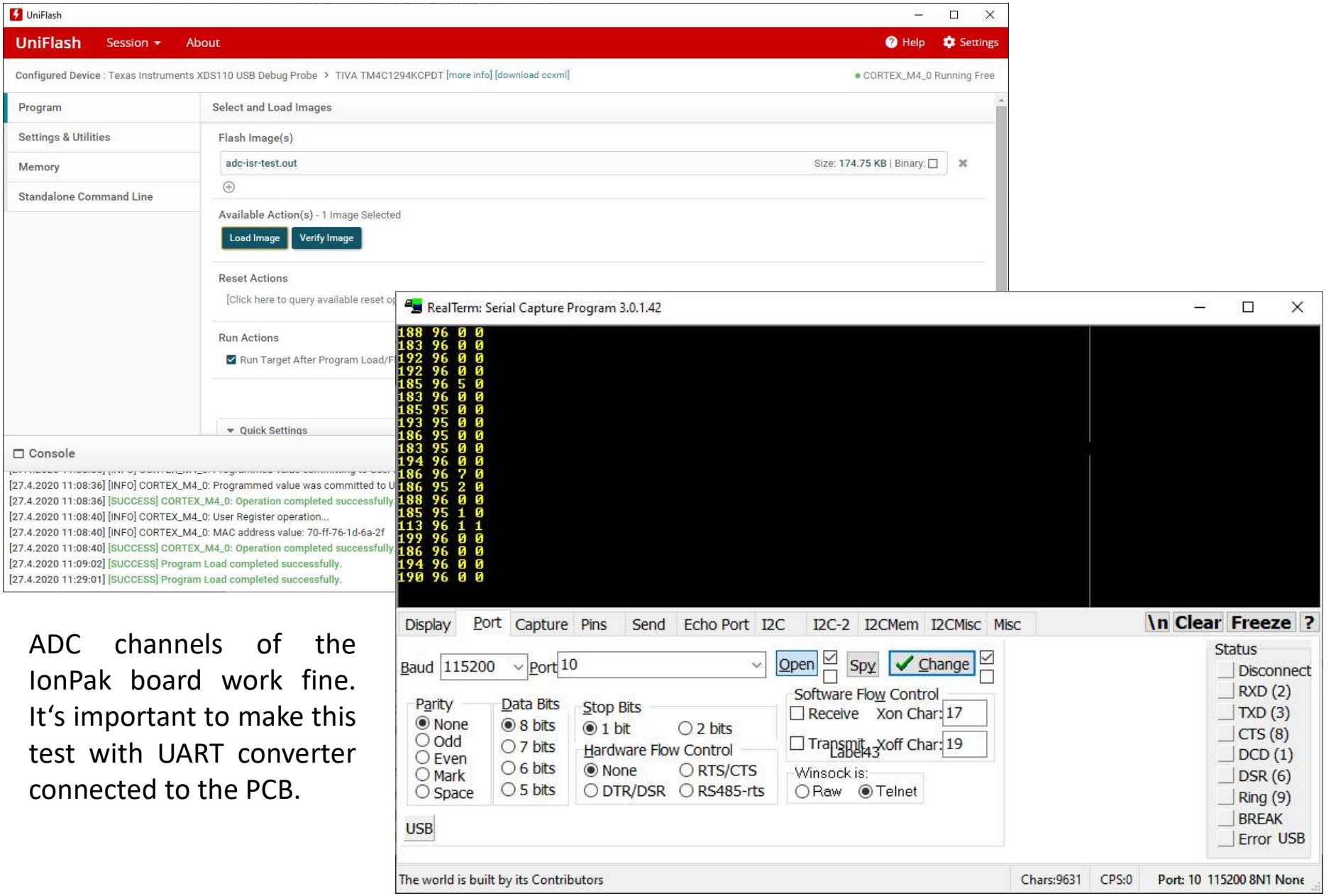
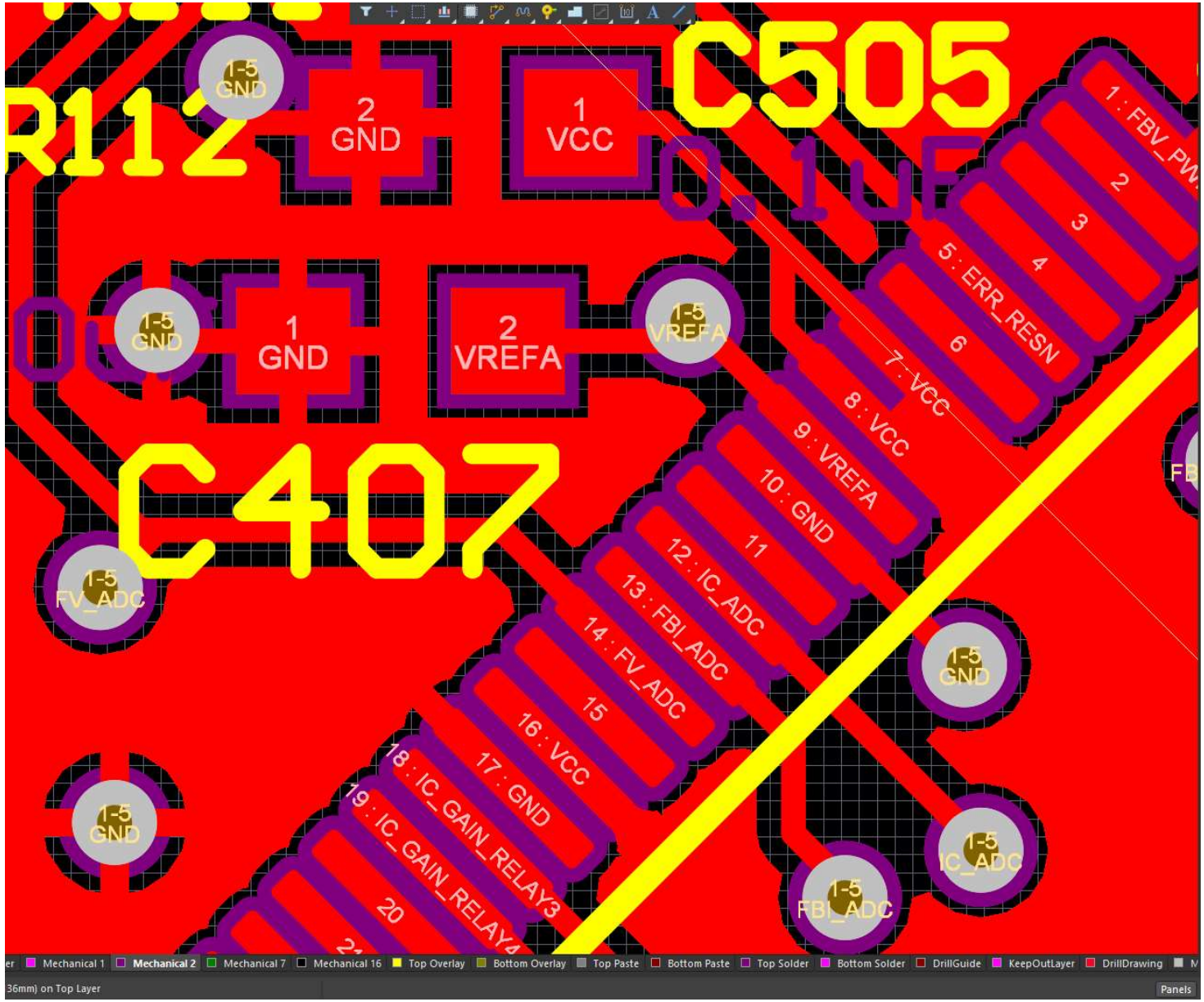
Adc-isr-test



ADC channels of the IonPak board work fine. It‘s important to make this test with UART converter connected to the PCB.

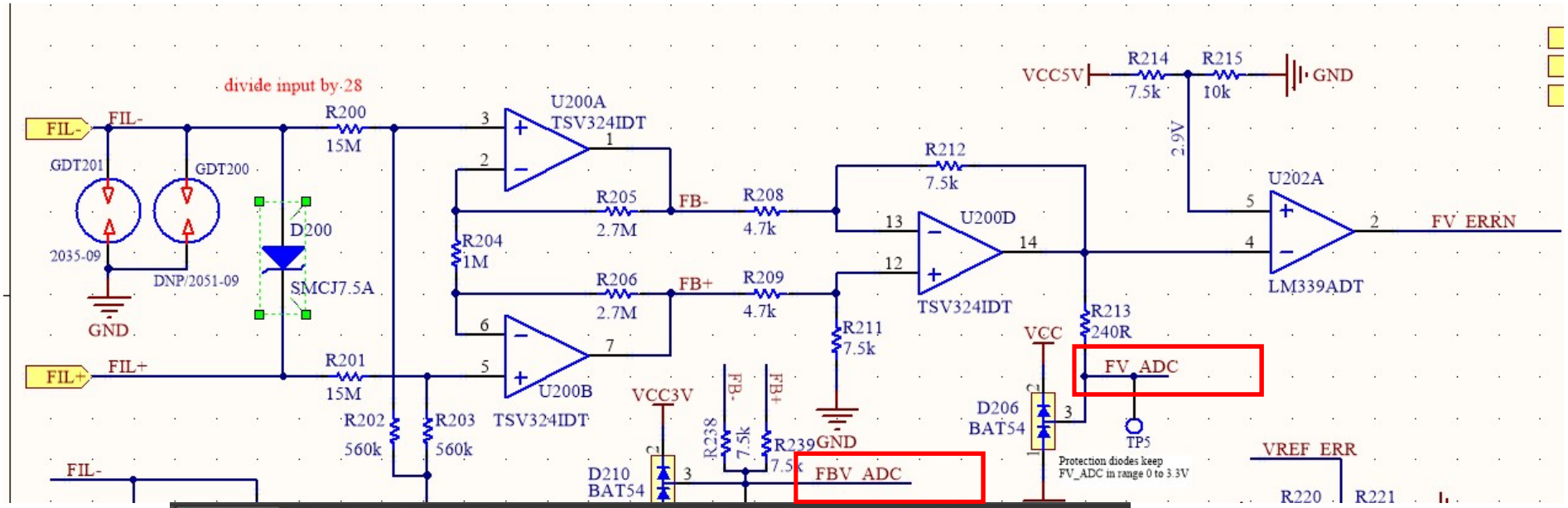
ADC pins, FV_ADC, FBI_ADC, IC_ADC

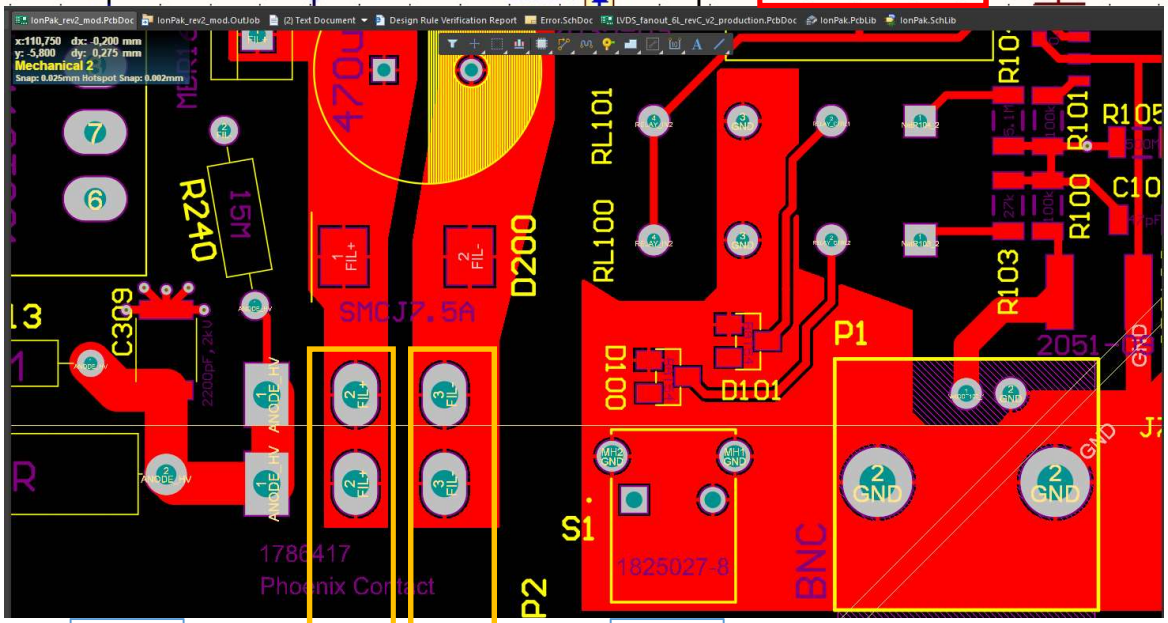


ADC pins, FV_ADC, FBI_ADC, IC_ADC

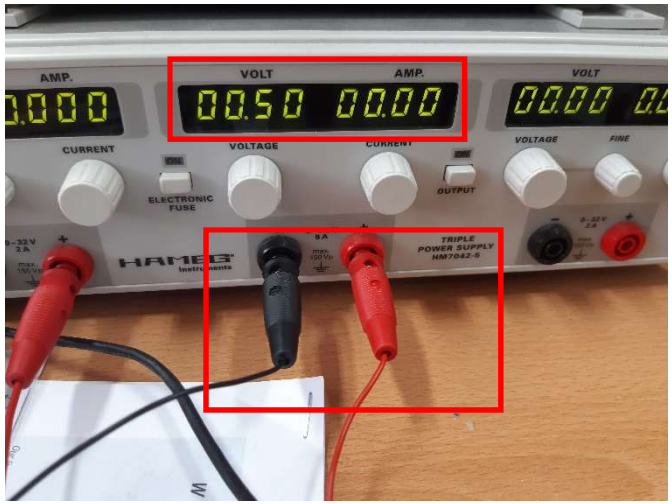
- Optical inspection using a microscope has shown that the pins have solder underneath, i.e., they are connected to the pads via solder (absence of connection was the problem with ethernet)

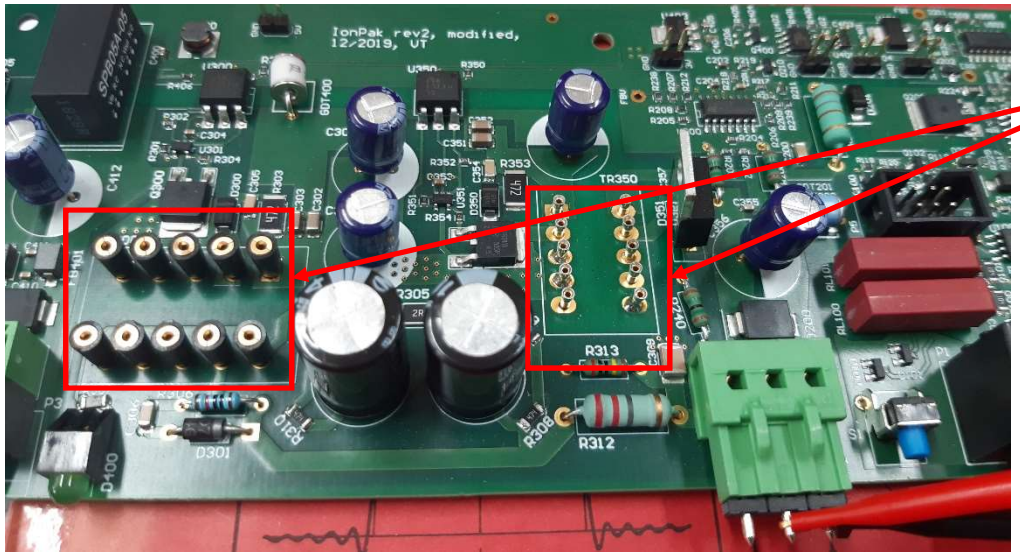
FV_ADC/FBV_ADC



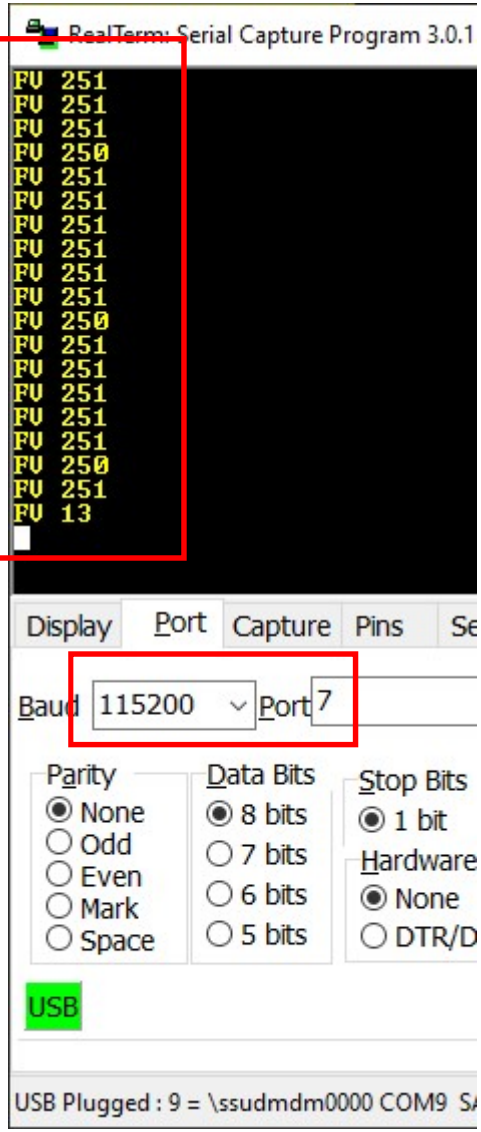


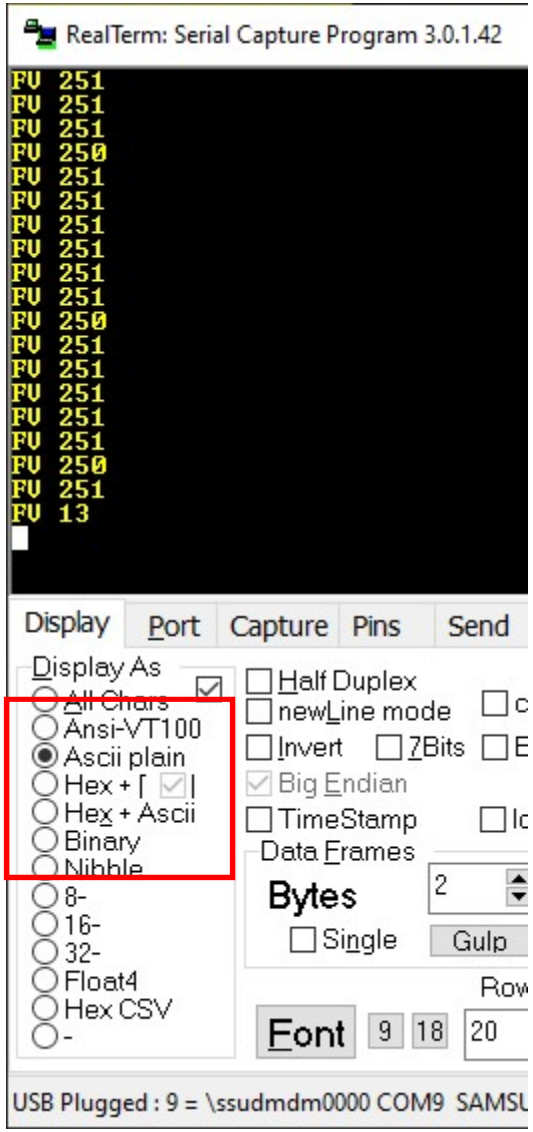
FV_ADC/ connections





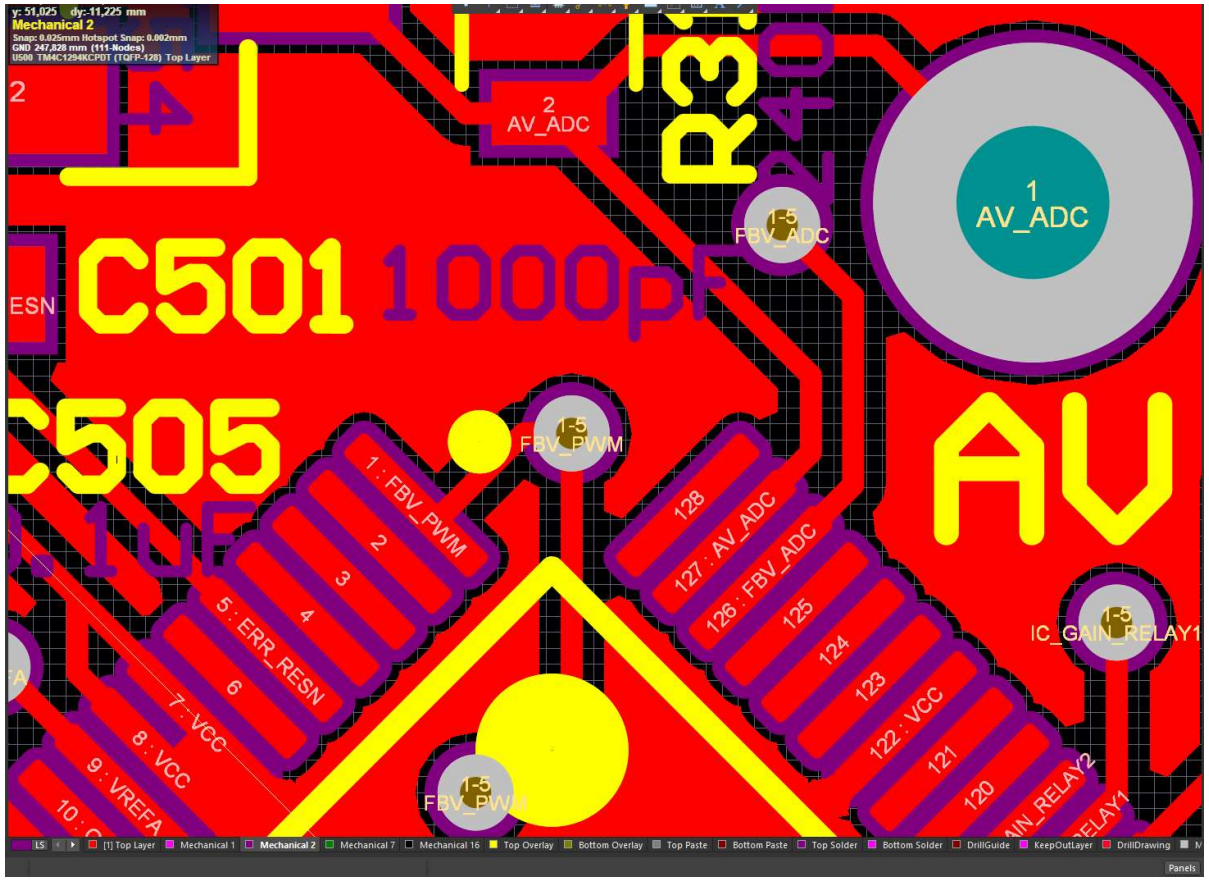
FV_ADC/ results





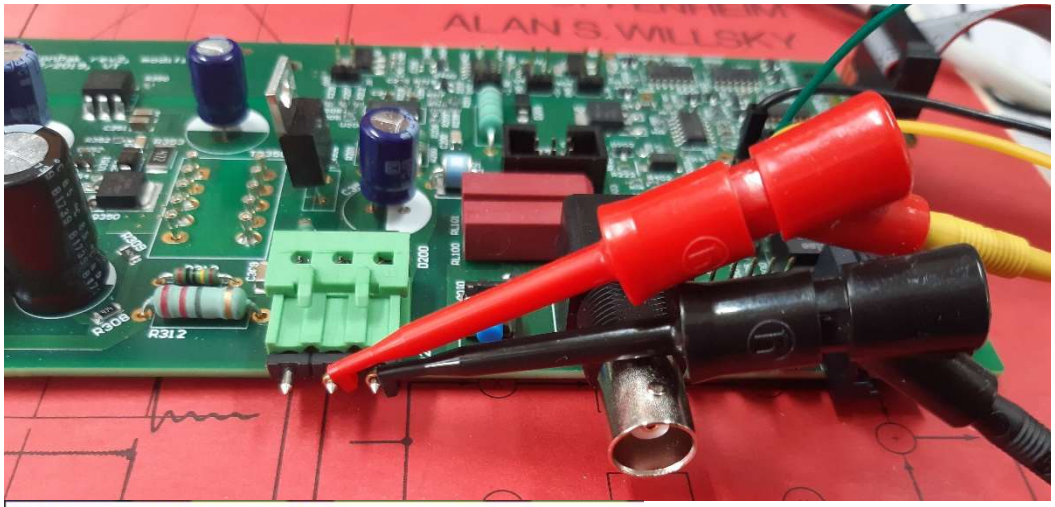
The FV_ADC works fine, even though the ADC channel shows 0 without any connections, the channel works properly with externally applied voltage of 0.5V

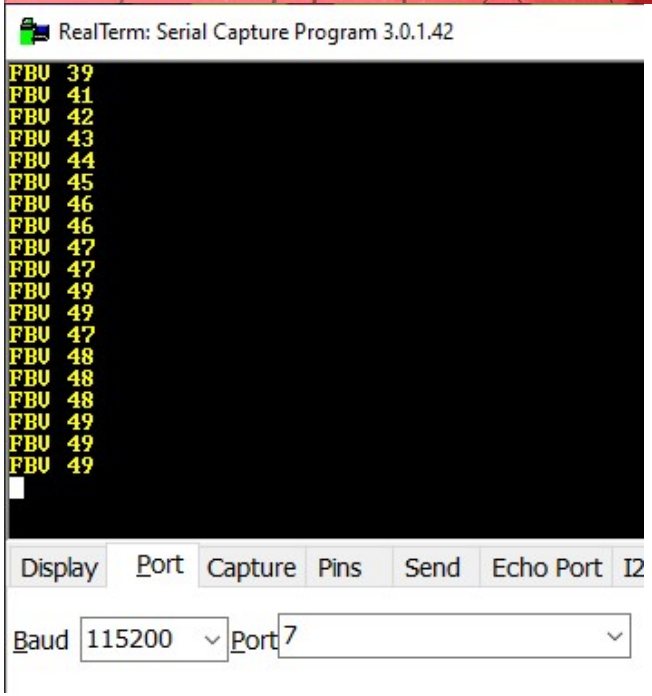
FBV_ADC



Check the mechanical connection of the FBV_ADC. Optical inspection passed!

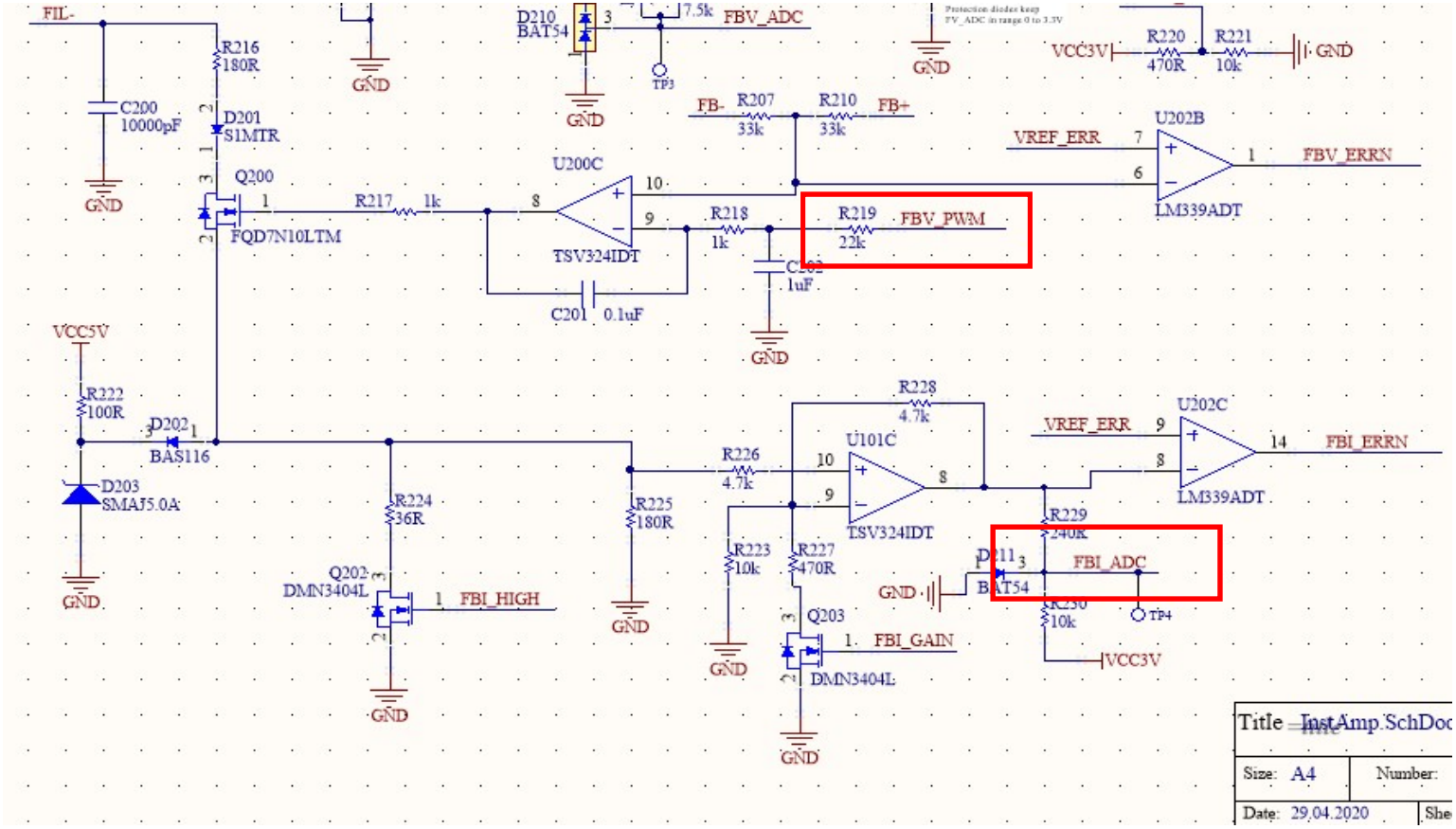
FBV_ADC/ results





The FBV_ADC works fine, however in order to have sufficient differential voltage, one has to apply quite a high test potential

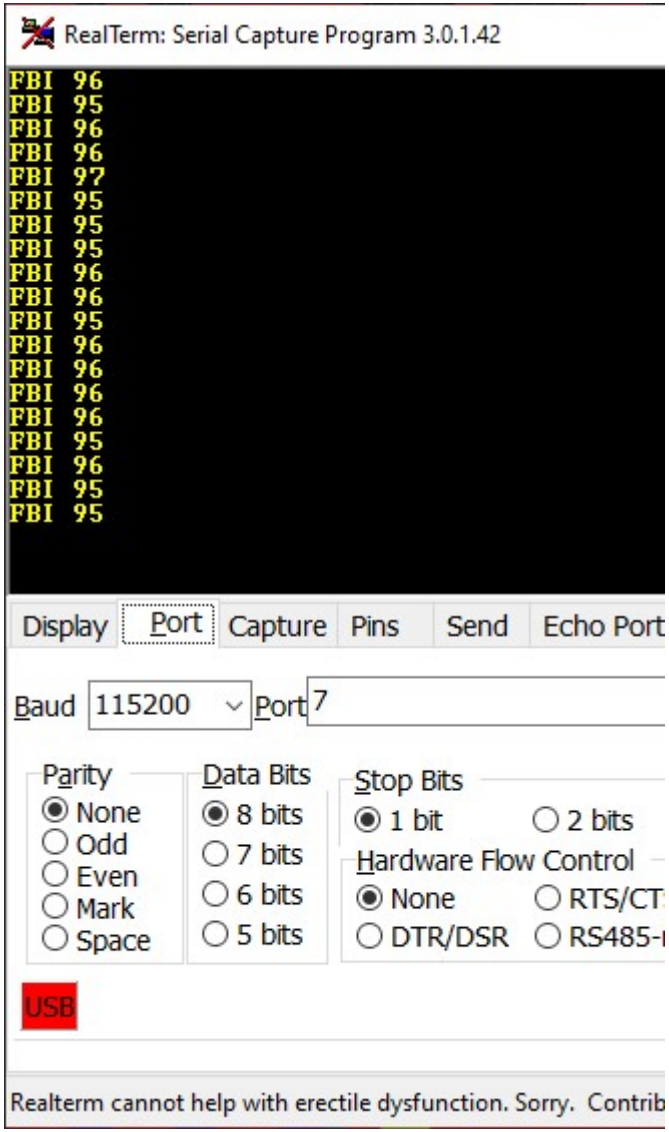
FBI_ADC



In order to test properly FBI_ADC, one needs to program also FBV_PWM that opens BJT and lets current flow in the amplifier.

Optical inspection – fine, there is mechnical connection between pin and pad

FBI_ADC/results

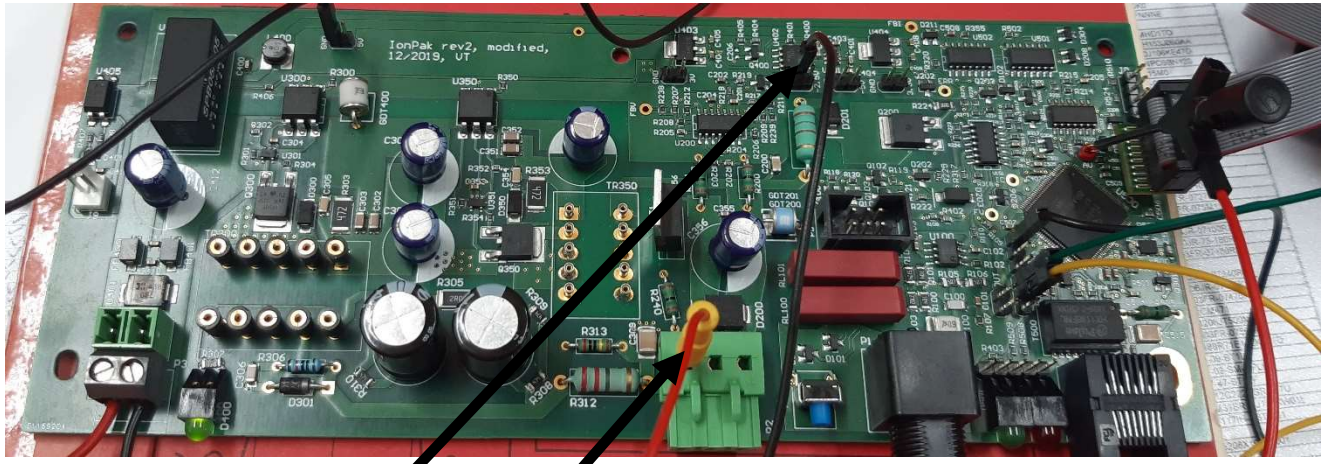


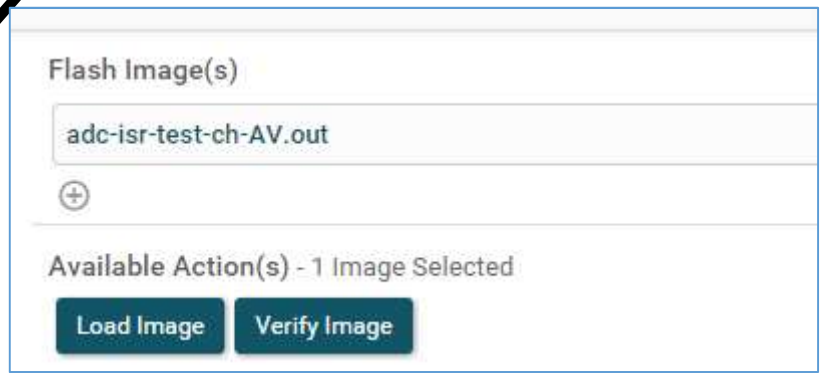
There is some bit value read out by the ADC, so it is assumed that this ADC channel works properly

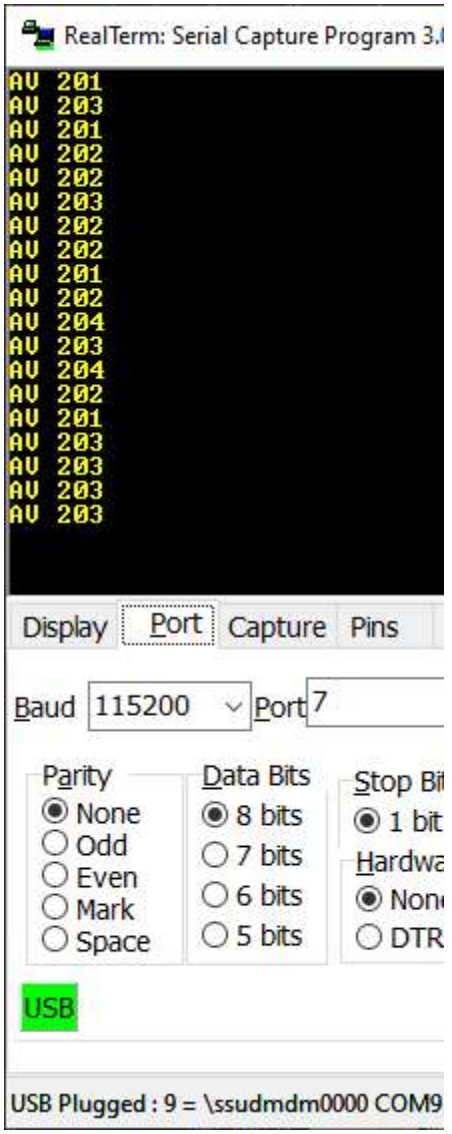
AV_ADC (**without coil**)

We would like to find out the AV_ADC_GAIN value.

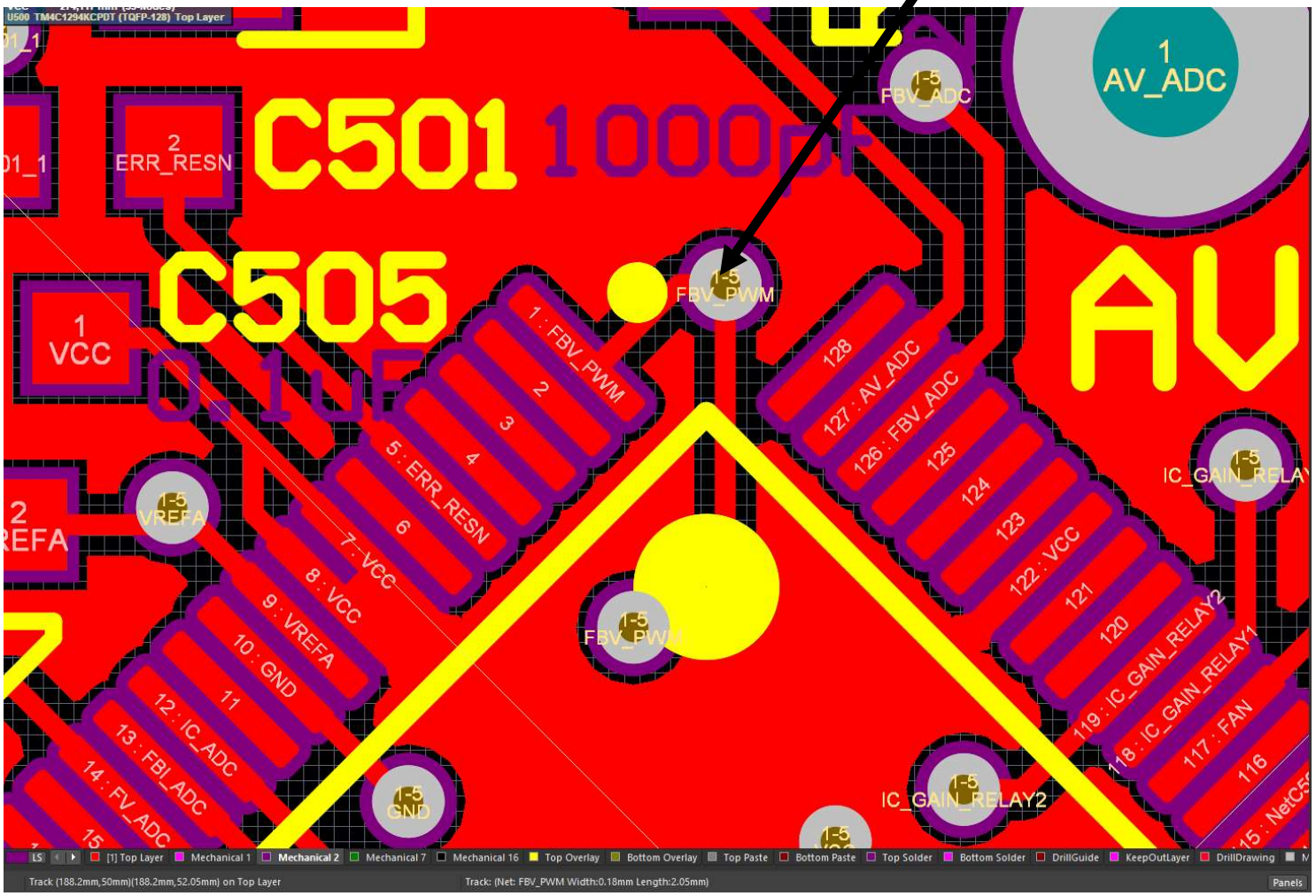
1. Make an assembly like on the picture:
    1. No transformers installed
    2. Connect external voltage to the anode output and board GND
    3. Calculate AV_ADC_GAIN = AV bit value / Vanode = 6.82
    4. See excel file for the details in calculations







FBV_PWM test


FBV_PWM via
U500 TM4C1294KCPDT (TQFP-128) Top Layer
C501 1000pF
C505
0.1uF
AV_ADC
FBV_ADC
FBV_PWM
ERR_RESN
VCC
VREFA
GND
IC_GAIN_RELAY2
1 : FBV_PWM
5 : ERR_RESN
7 : VCC
8 : VCC
9 : VREFA
10 : GND
12 : IC_ADC
13 : FBI_ADC
14 : FV_ADC
128
127 : AV_ADC
126 : FBV_ADC
122 : VCC
119 : IC_GAIN_RELAY2
118 : IC_GAIN_RELAY1
117 : FAN
[1] Top Layer
Mechanical 1
Mechanical 2
Mechanical 7
Mechanical 16
Top Overlay
Bottom Overlay
Top Paste
Bottom Paste
Top Solder
Bottom Solder
DrillGuide
KeepOutLayer
DrillDrawing
Track (188.2mm,50mm)(188.2mm,52.05mm) on Top Layer
Track: (Net: FBV_PWM Width:0.18mm Length:2.05mm)
Panels