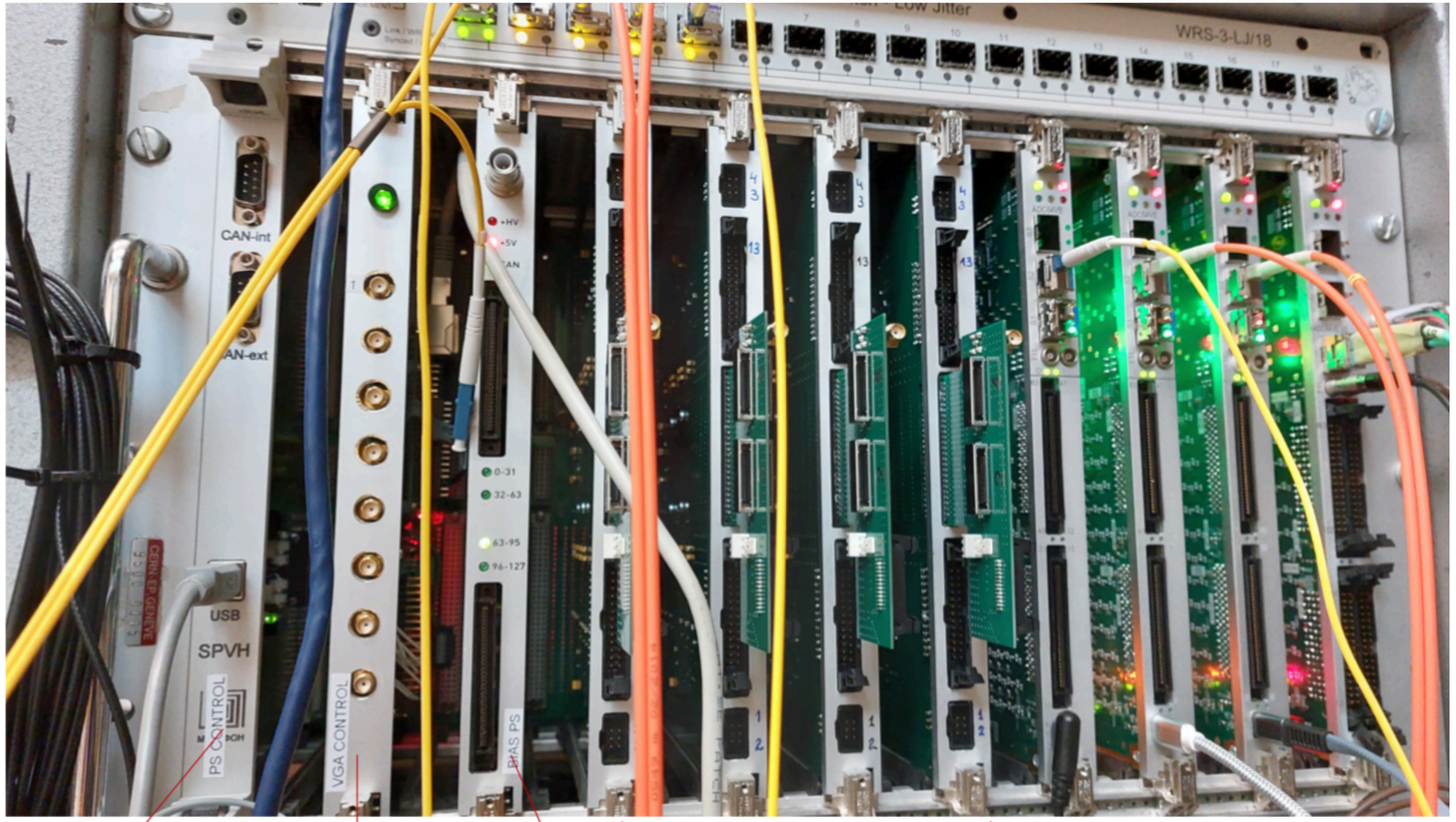
Hardware for Module-1

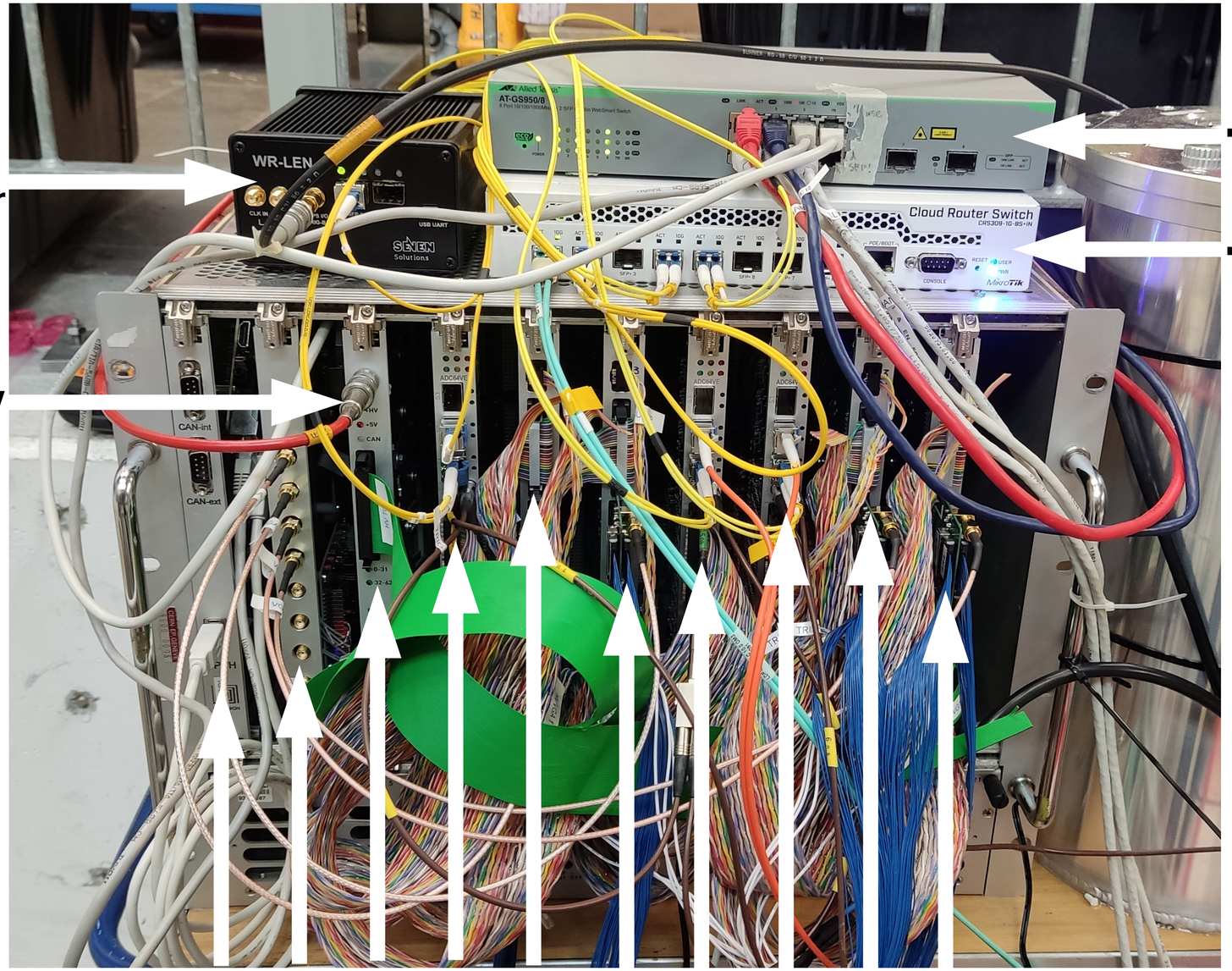
Alexandr Selyunin, on behalf of Dubna team

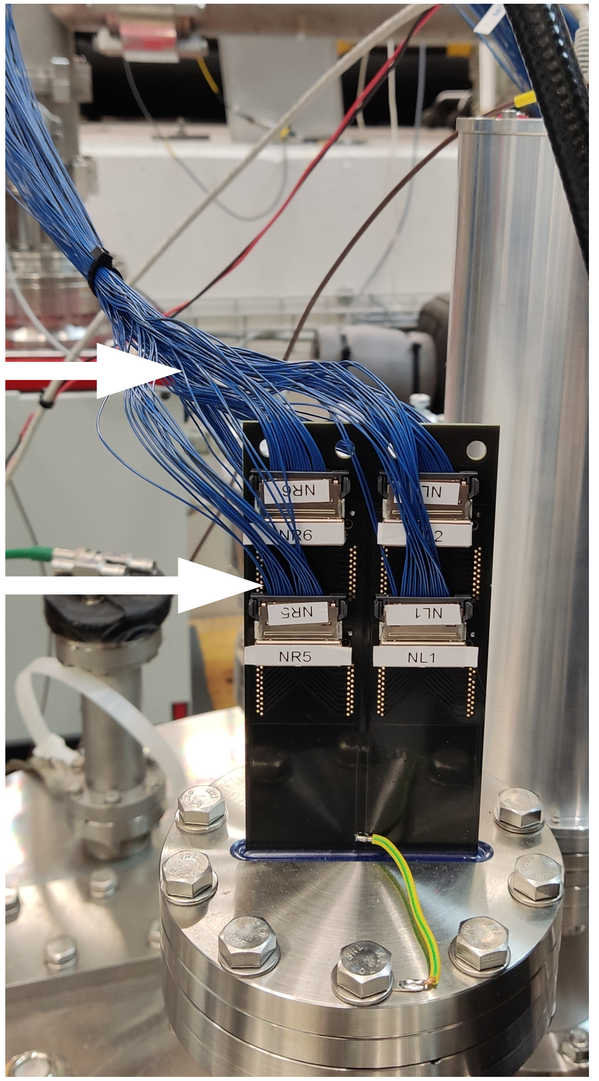
17.02.2022

Crate with electronics without cables



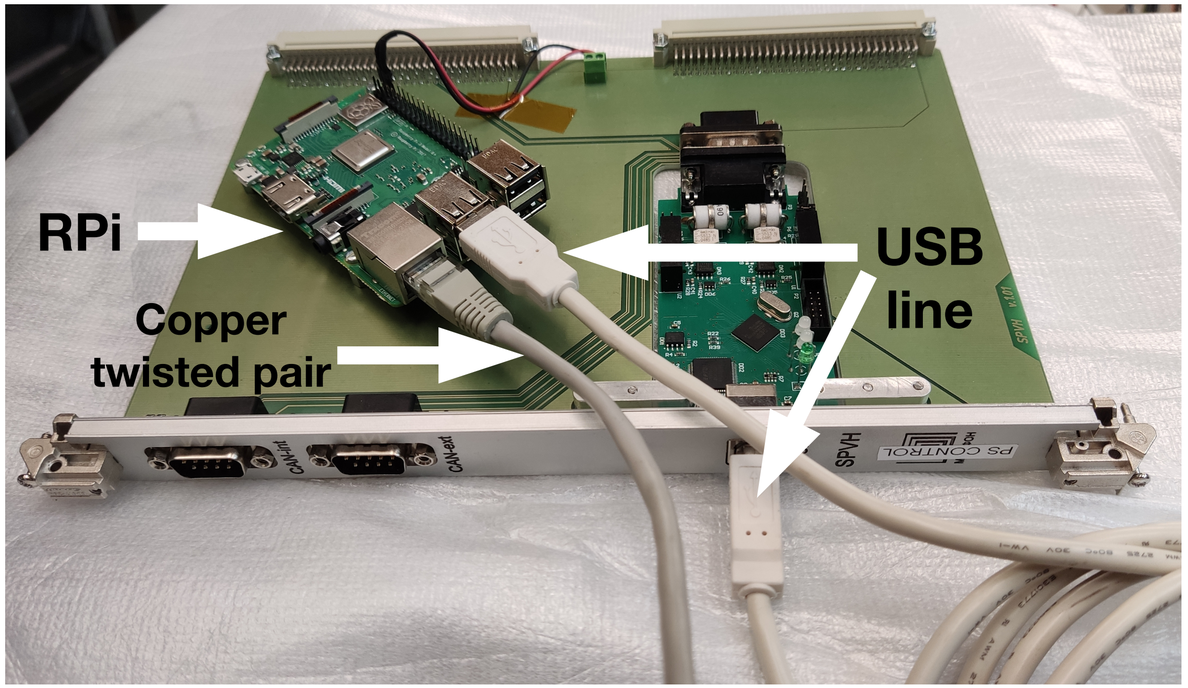
Crate with electronics near the TPC





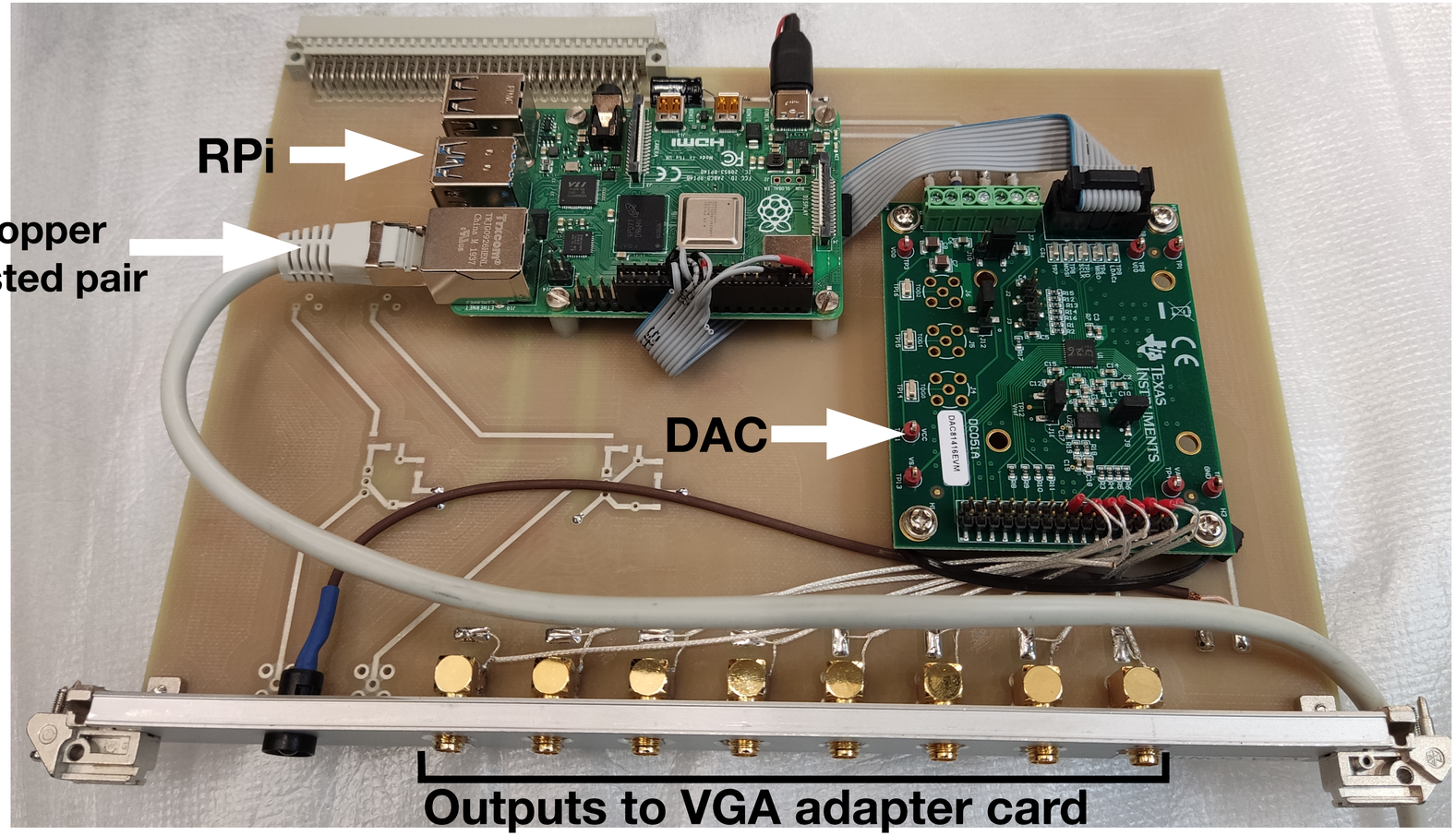
SiPM PS control unit

SiPM PS control unit



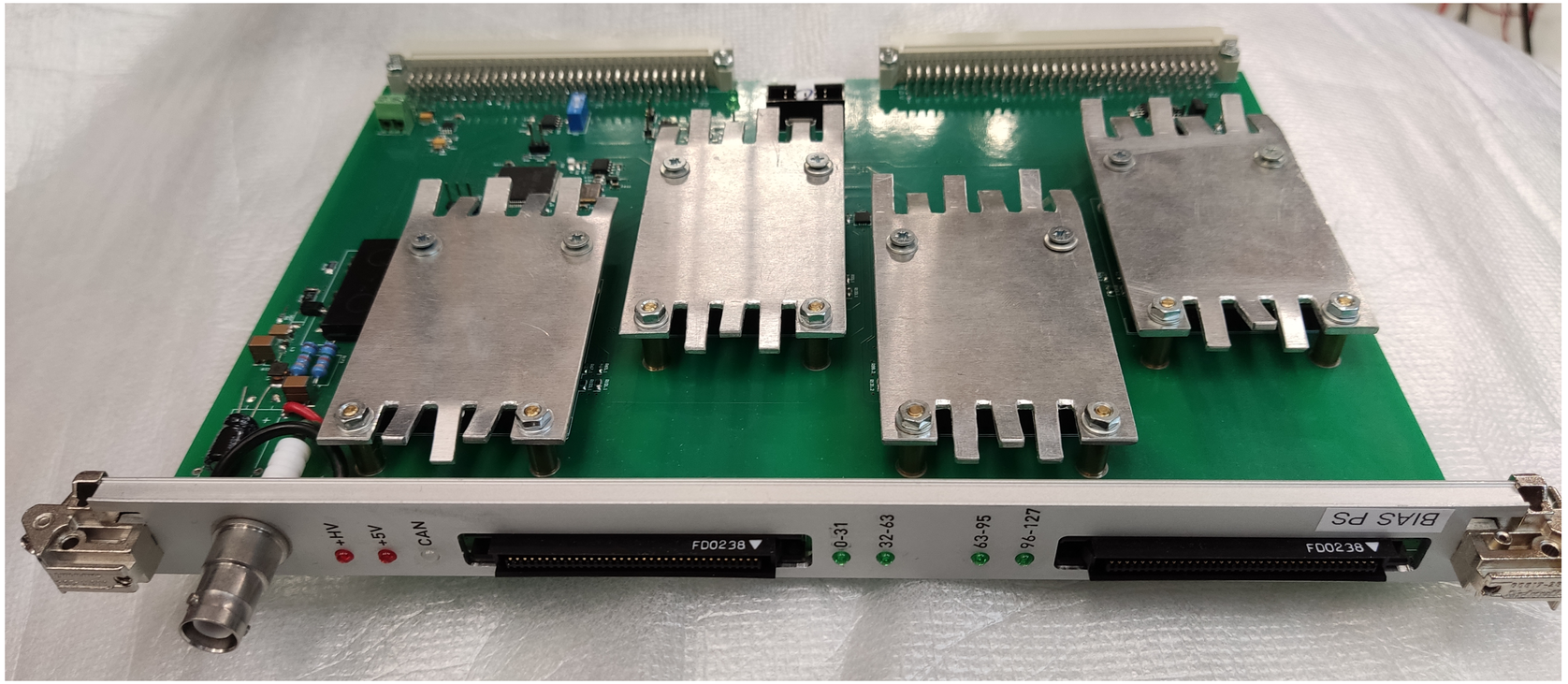
- RPi with built-in software for remote control. Connected to network by copper
- RPi connects to control unit by means of USB cable

Variable Gain Amplifier (VGA) control



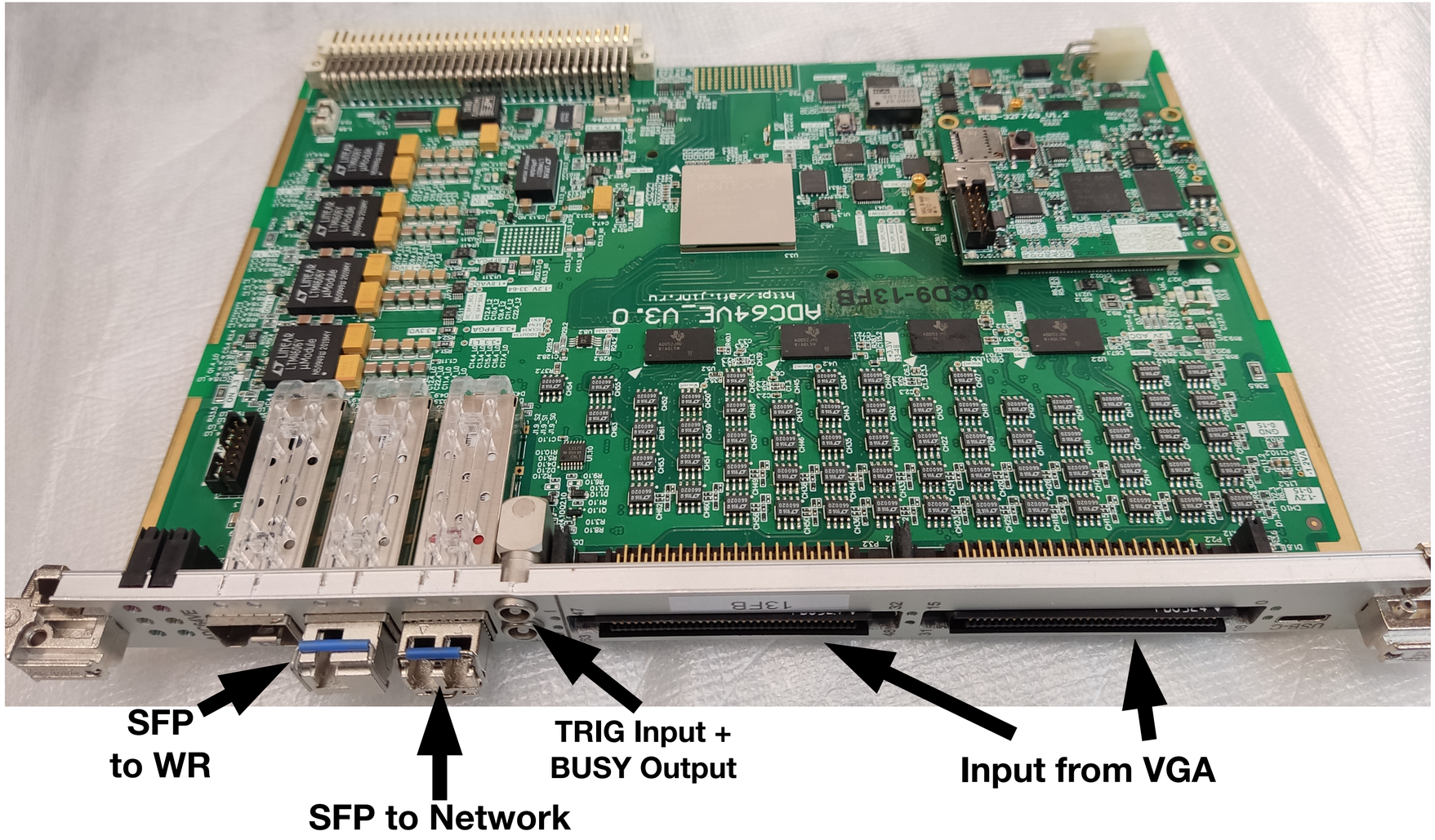
- RPi with built-in software for remote control. Connected to the network by copper
- VGA control is performed by the voltage level from -0.6 to 0.6 V from DAC
- DAC controlled by RPI via SPI

SiPM PS



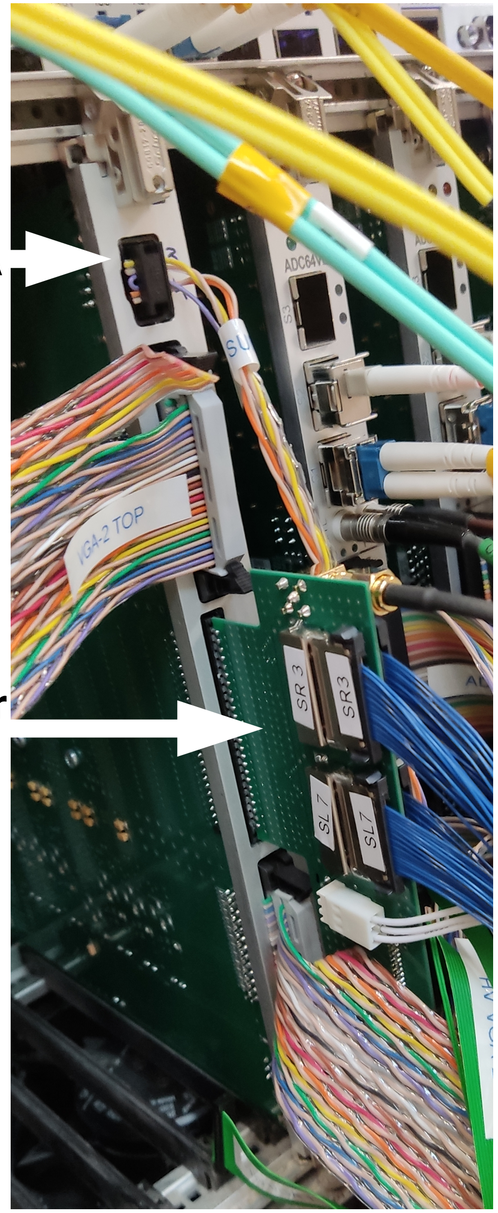
- DAC (AD5535) based power supply up to 200V/ 550µA/ch
- Controled by the SiPM PS control through VME backplane using CAN-open
- Reqiures external HV

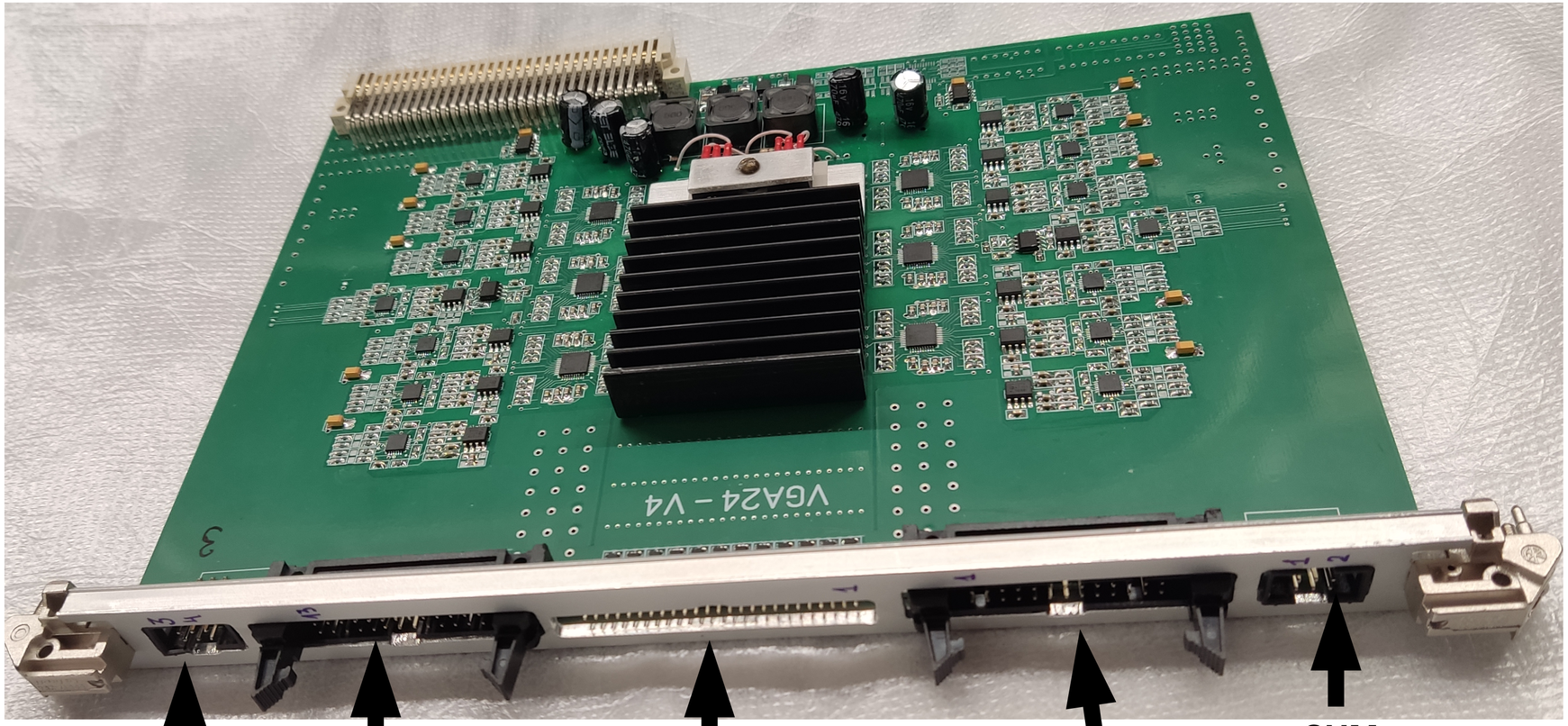
ADC



- 62.5 MHz ADC, 14-bit, White Rabbit-synchronization

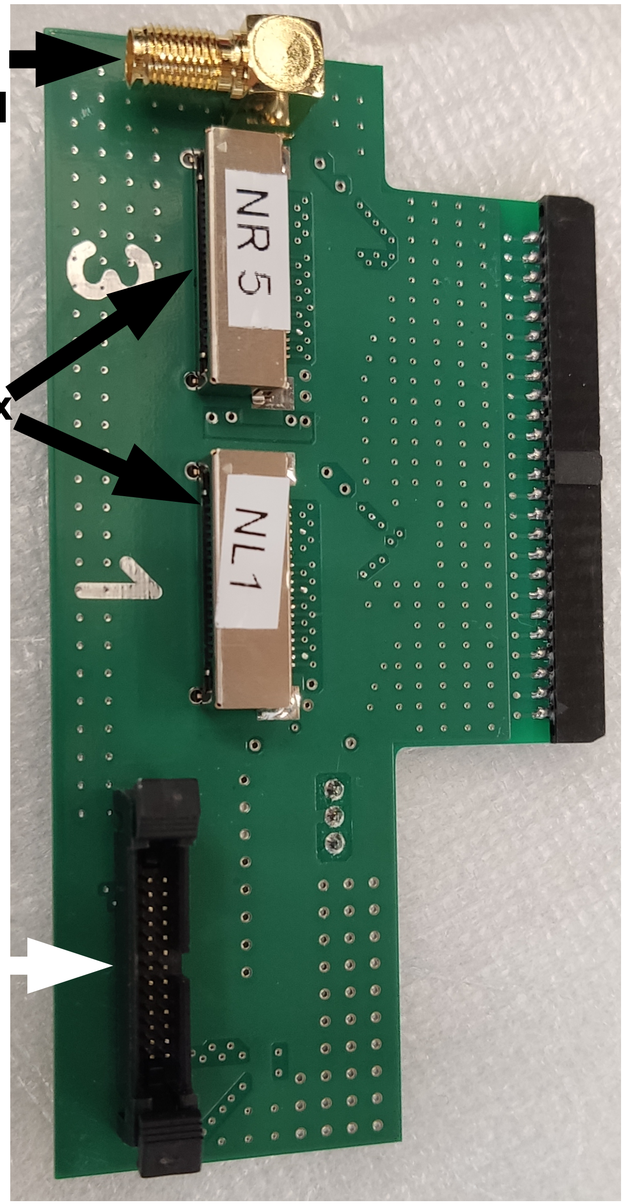
VGA

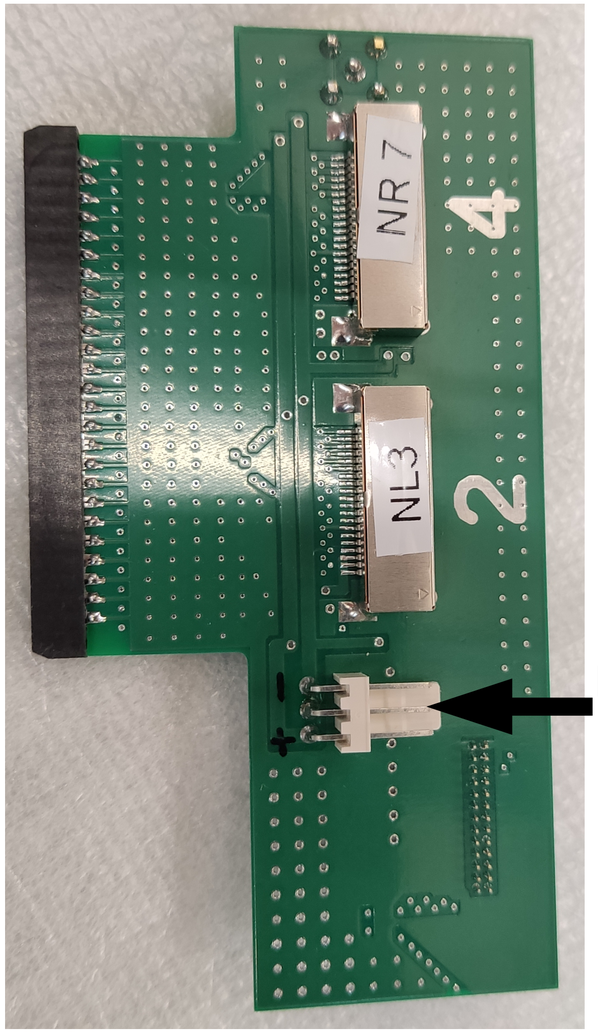




- 24 ch VGA, adjustable gain 0-24 dB + 4 ch of Sum from group of 6 ch

Adapter Card





- Connects to VGA, distributes signal and power lines
- For MOD-1 we used external LV PS to power E-PCBs
- For 2x2, the plan is to use additional board which takes LV from the crate and then distribute it between adapter cards by the cables