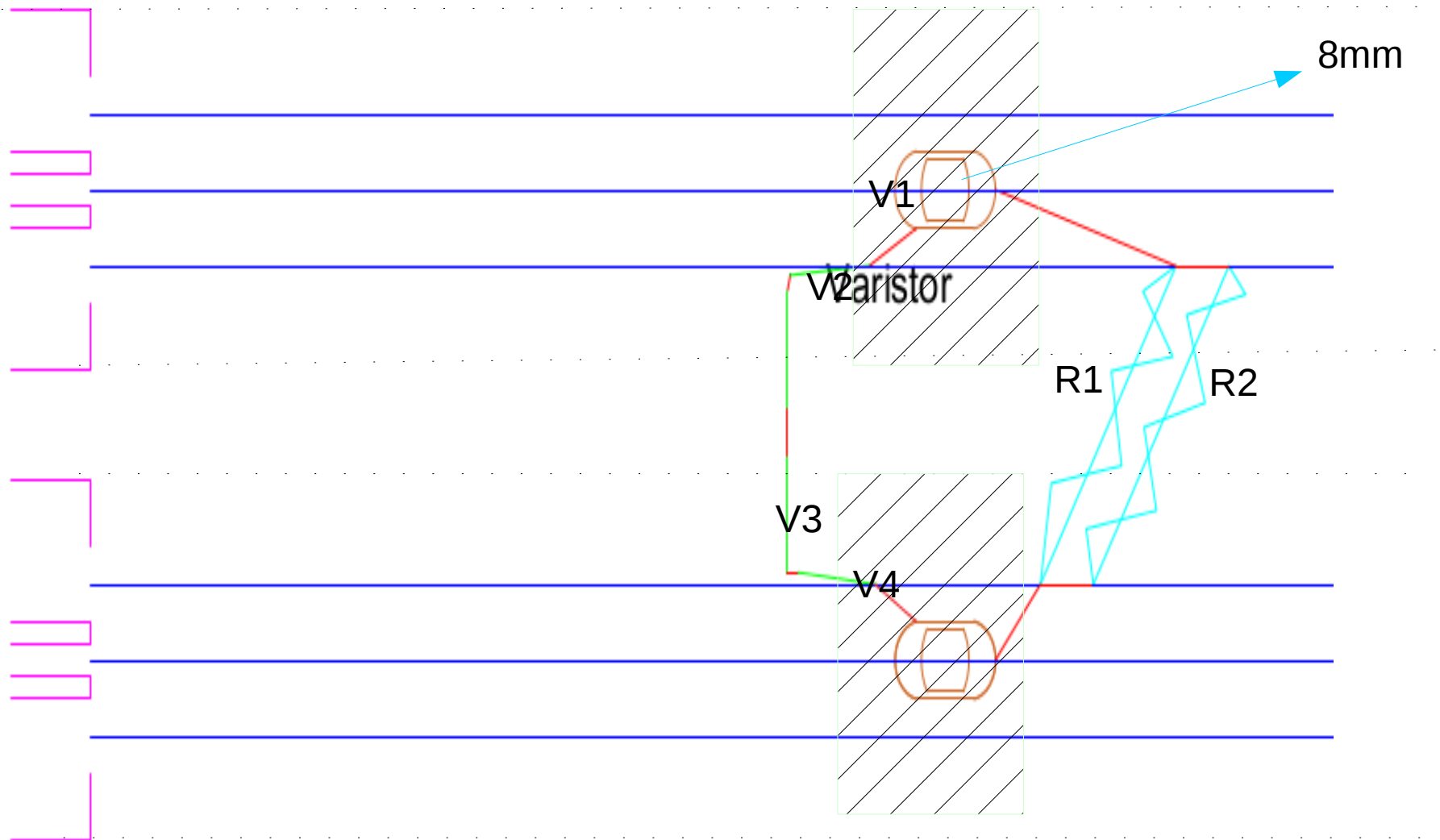


Update on the HV Divider Boards

Animesh Chatterjee
UTA, HEP Group
TB Meeting
May 31, 2017

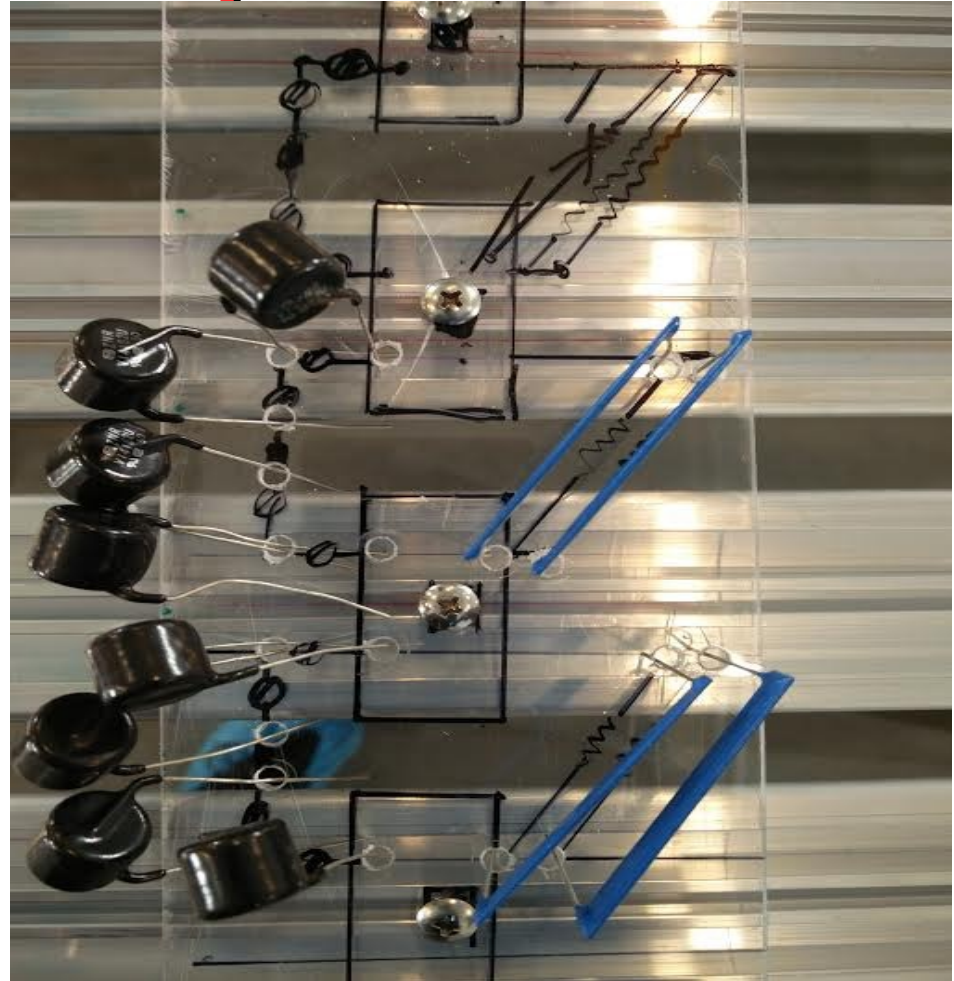
CAD design of a single stage of the HV Divider Board

- Comments and suggestions made on the review have been implemented (through hole (solder bump) locations on the resistive divider boards are



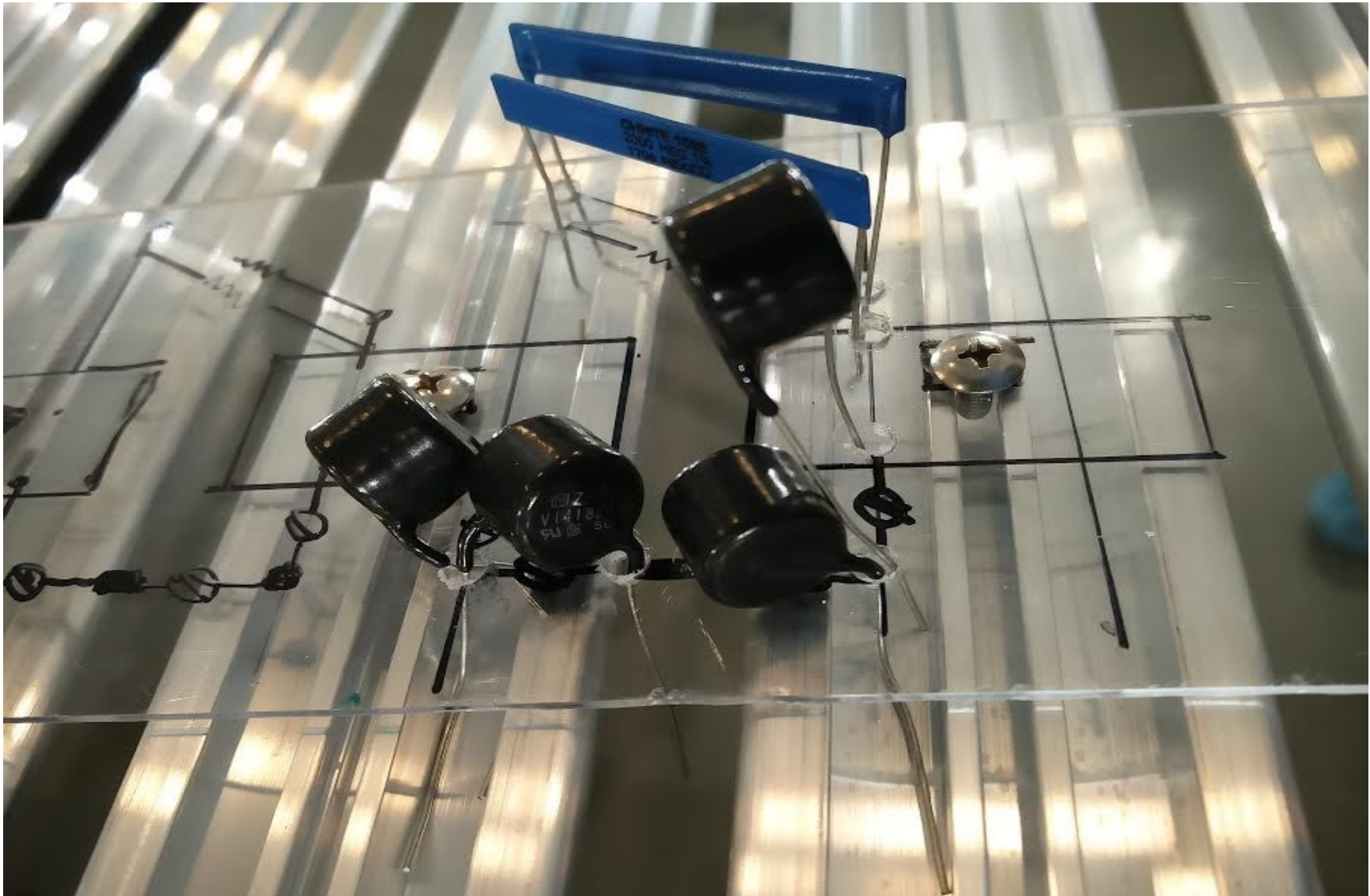
V1, V2, V3, V4 are the varistors, R1, R2 are the resistors

Divider board layout (mounted on the profile)



No Shorting between two profiles

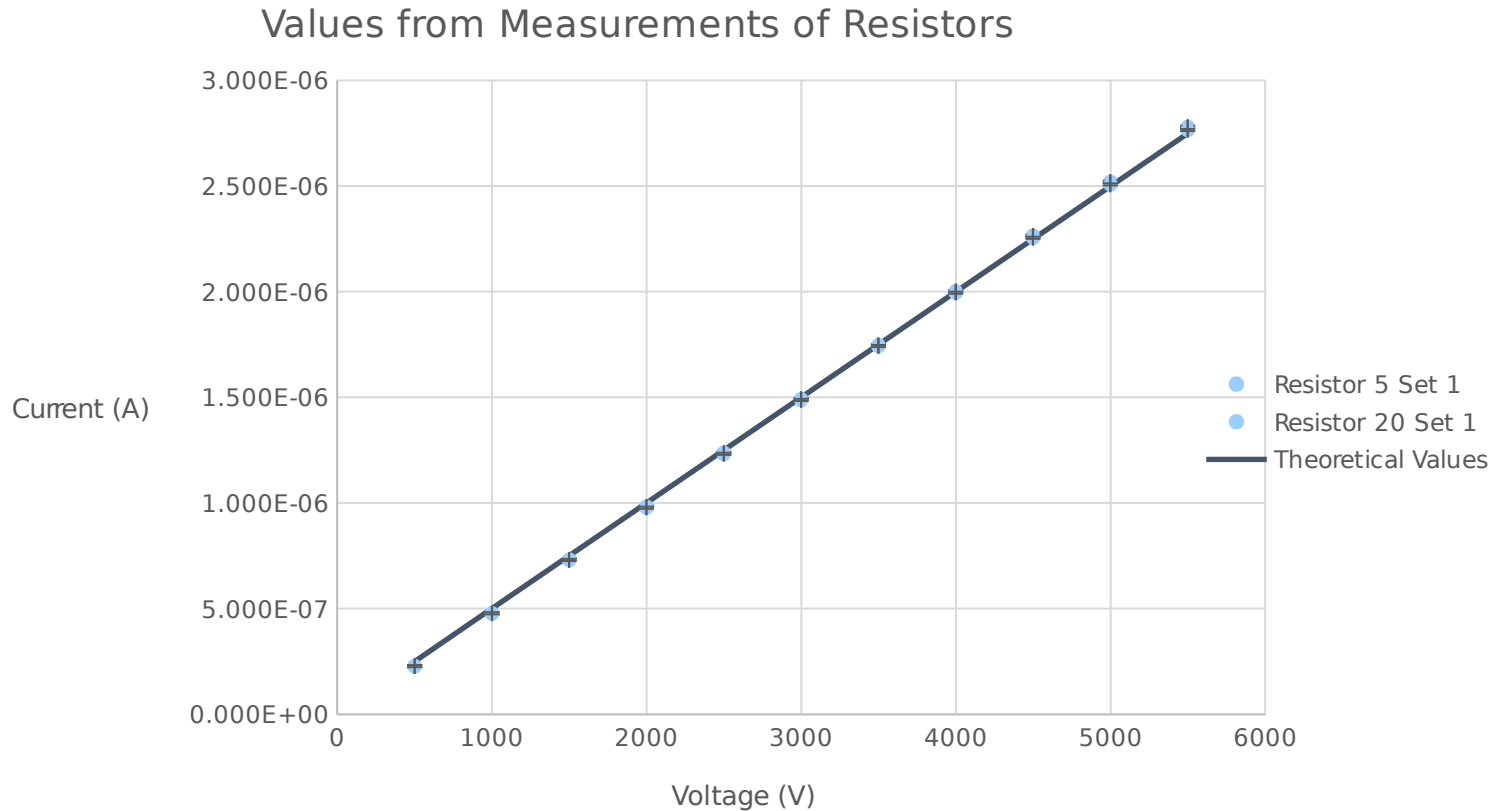
Components mounted



**Solder bump not touching the profiles
Modifications on the 3D design in progress**

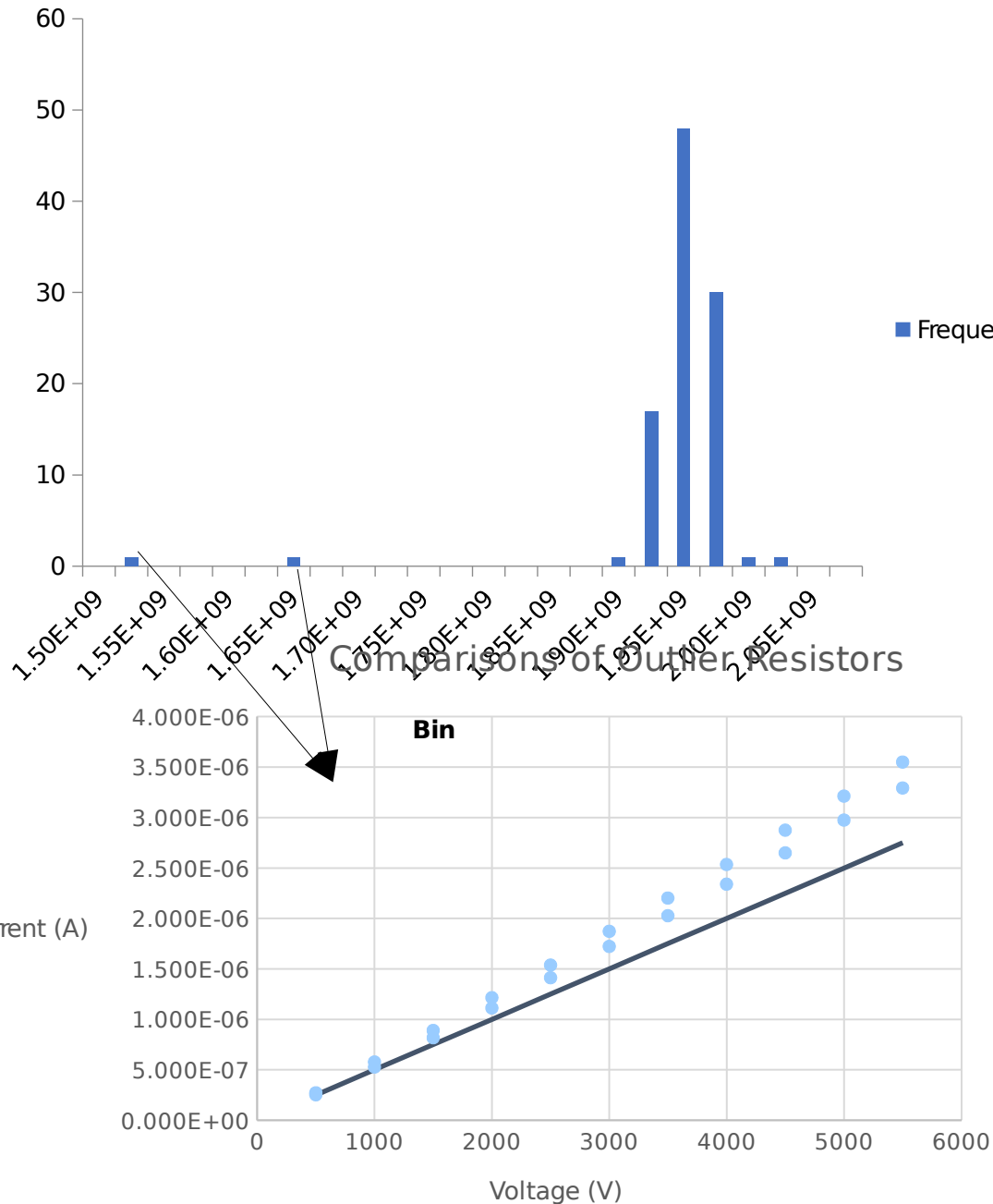
Component test

- Resistors test in warm :
 - test the resistors up-to 5.5 kV in 0.5 kV steps
 - measure the resistance from I-V plot (repeat the process while ramping up and down)



Resistance in warm

Histogram



- More than 100 resistors have been tested in warm
- 2 of them are off by more than 50% (will be rejected)
- 80% of them within 2% tolerance.

Conclusions & Future work

- Cold test :
 - Setup ready for the cold test
 - Using Liquid Nitrogen for the test
 - Voltage upto 8 kV in 0.5 kV steps
- Test rest of the resistors (700) in warm
- Modified HV Divider board design will be ready within this week
- Send the latest design to the Manufacturer
- Warm and cold test of varistors.