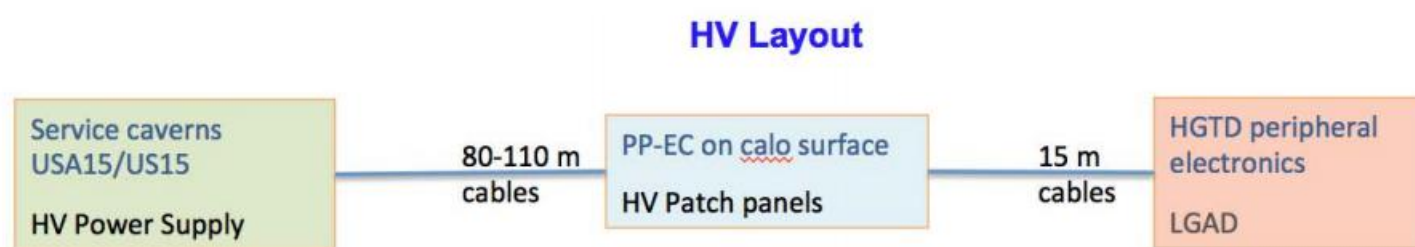
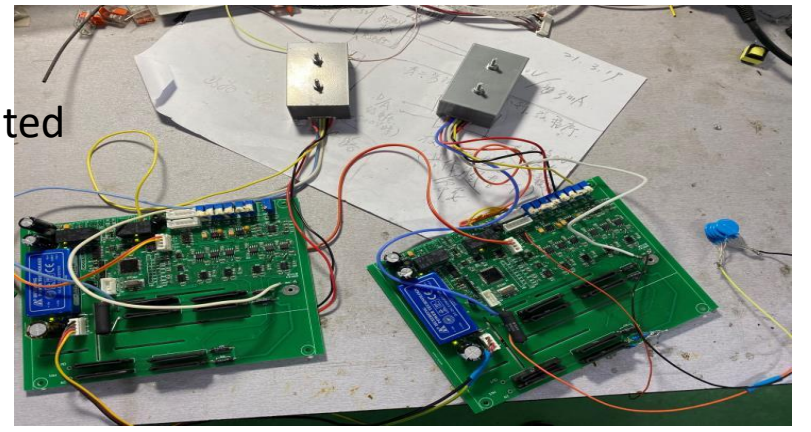


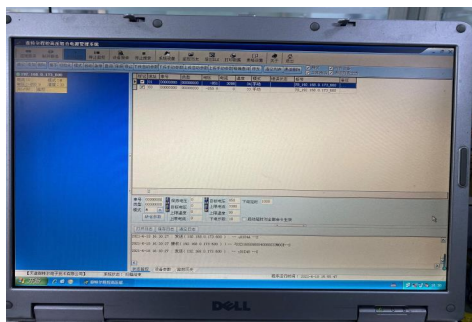
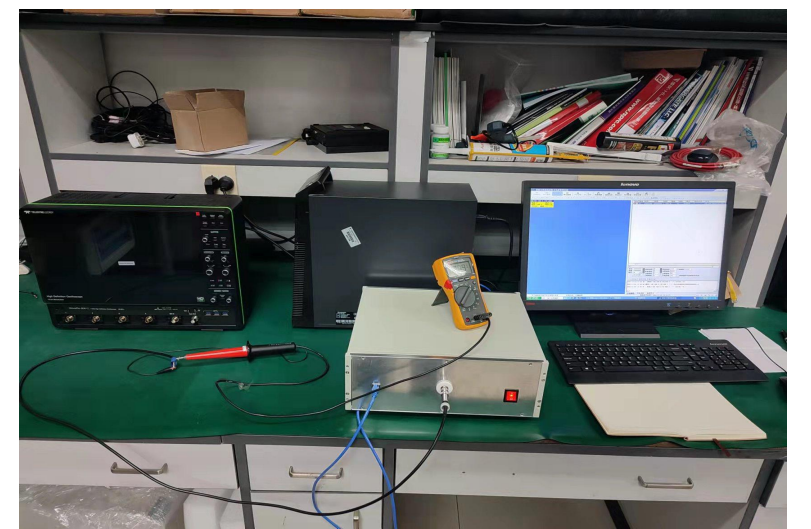
Introduction

- Each of the LGAD sensor modules of the detector require an individual bias voltage in a range up to 800 V.
- This choice, which requires a commercial supply with multi-channel rack-mounted units. A schematic layout of the high voltage system is shown in the bottom Figure.
- A HV power supply prototype from “Tianjin Centre Advanced Tech Magnet Co.,Ltd” is in test now. Most of the parameters are designed based on requirements of HGTD.
- The purpose of this prototype is to evaluate Centre's technology. To judge whether it has the ability to produce HV for HGTD.



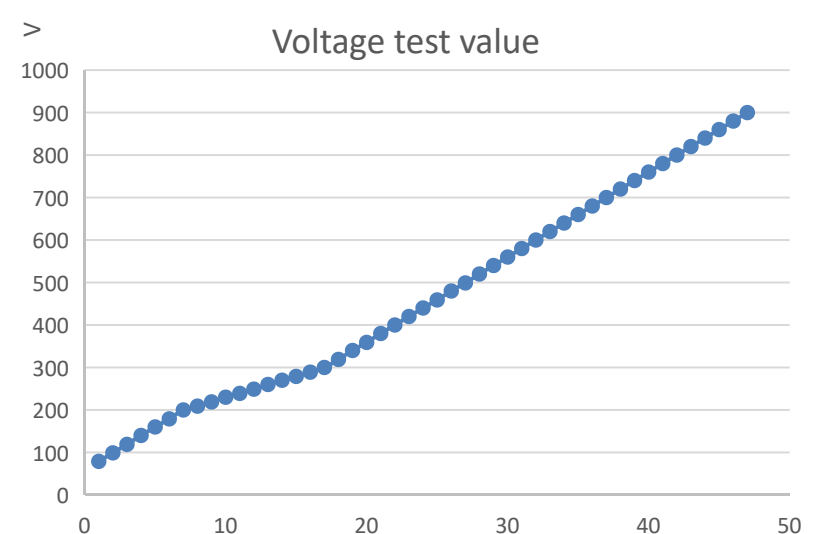
Status of the HV prototype

- The prototype has a proprietary software
- The proprietary software can realize the function of step-by-step test and monitor the real-time temperature, voltage, and current.
- You can also set the ramp up/down speed and generate an e-log to record all the parameters change.



Preliminary Result & Test Schedule

- Here shows the result of the Voltage test. We compared the measured value after tenfold decay and monitored values. This plot shows that after 100V the prototype has good accuracy and stability.



Electrical Performance of test cable:

	Withstanding voltage	Impedance	Attenuation (20°C,200MHz)
SYV-75-3-4	4kV	75Ω	≤0.22dB/m



We have a series of tests to do:

- Voltage stability test
 - The test range is from 0 to -900 V (active range 0 to -800 V with -100 V margin).
- Current test
 - Range from 0 to 6 mA, resolution of current limit setting and monitoring should be 0.1 μA or better.
- Ramp up/down speed test
 - Ramp up/down speed will be tested from 1V/s steps up to 10 V/s & 1V/s steps up to 50 V/s.
- Output ripple voltage analysis
 - Need to check the ripple waveform of the output voltage.

After finishing these preliminary tests, will try to connect the LGAD sensor