Desarrollo de la Electrónica y el Sistema de Control del Experimento NEXT

V. Álvarez, M. Querol, J. Rodríguez

Jornadas Técnicas IFIC (12/03/2018)

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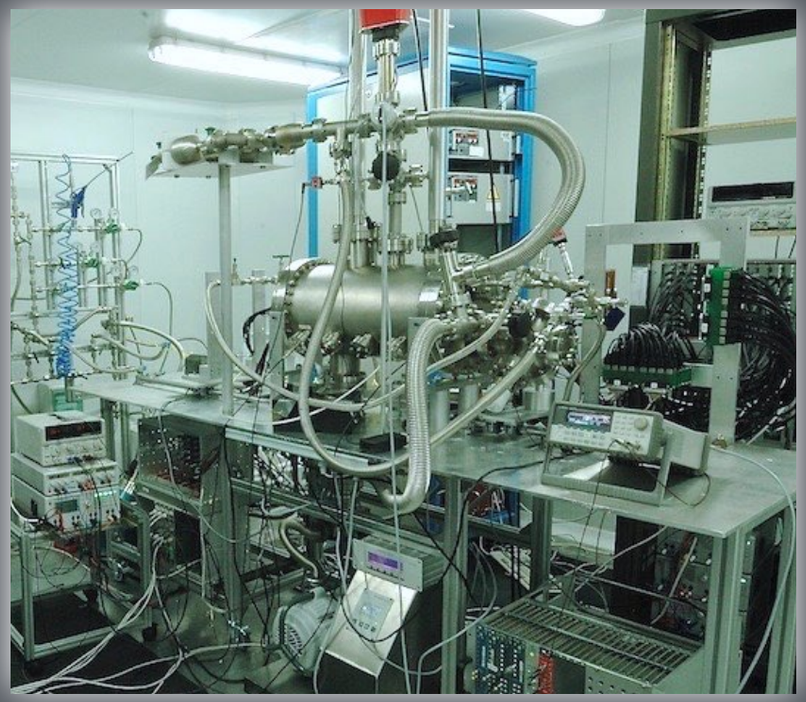
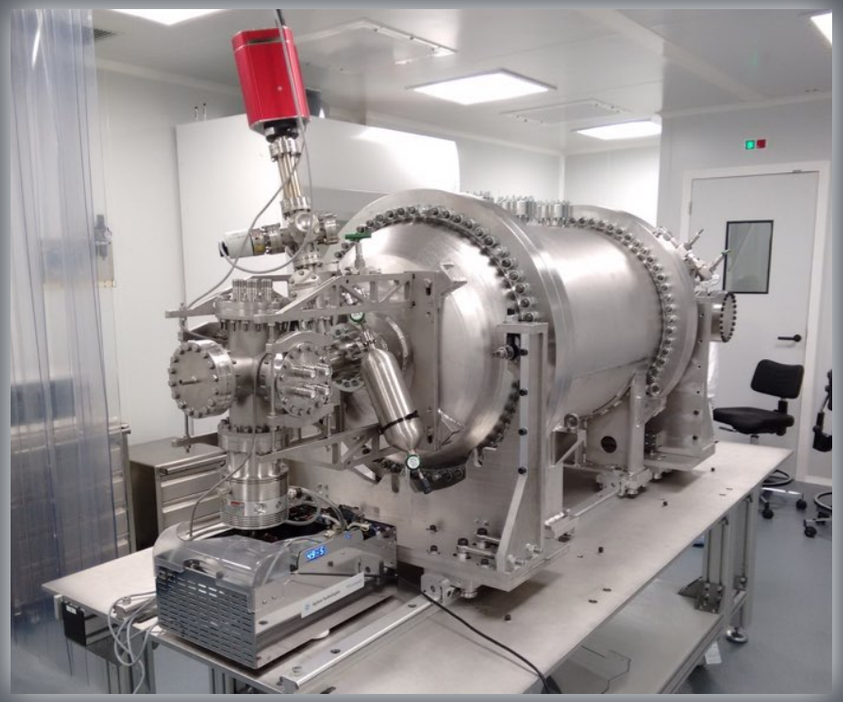
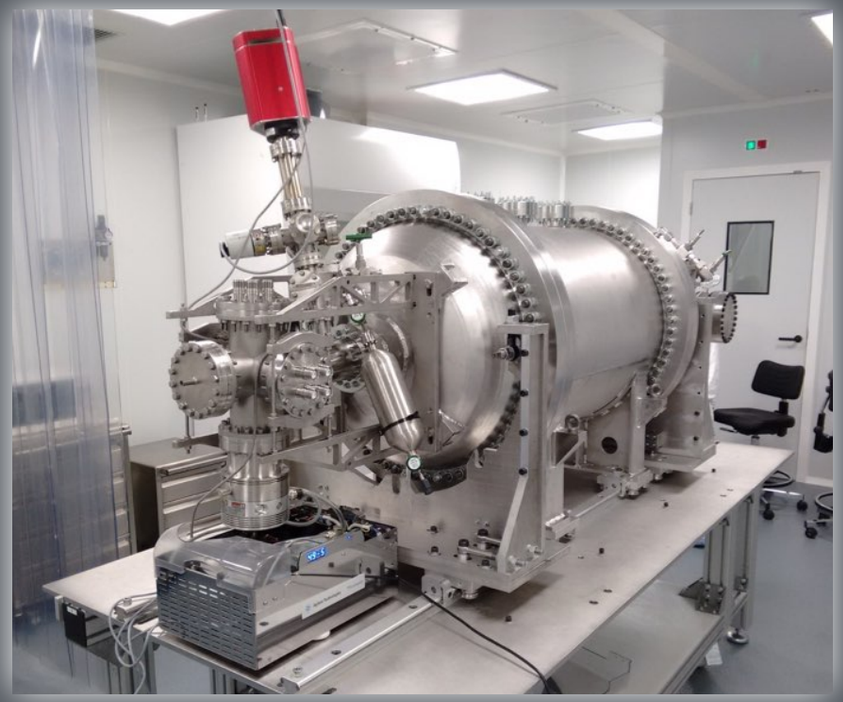
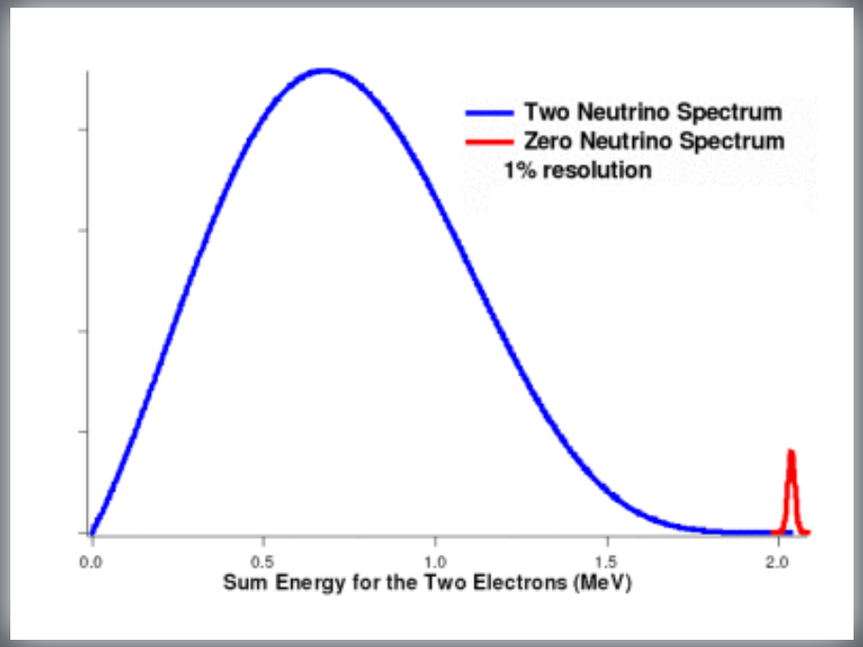
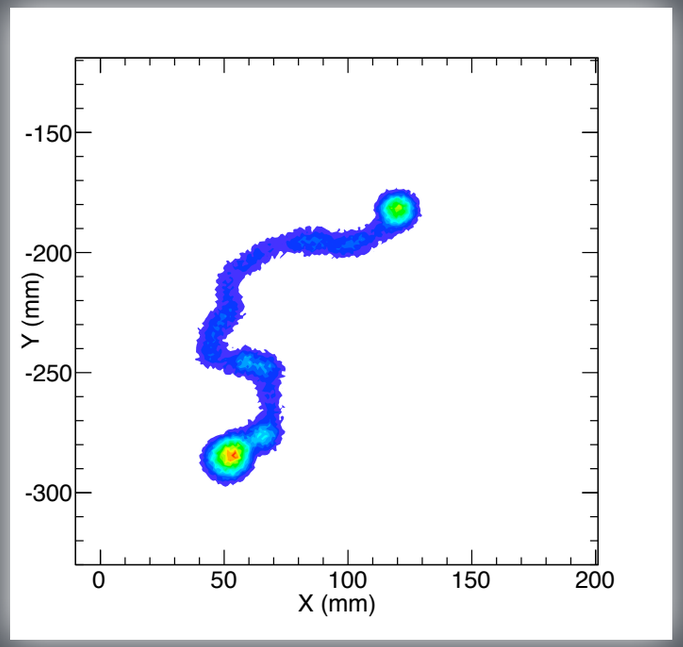
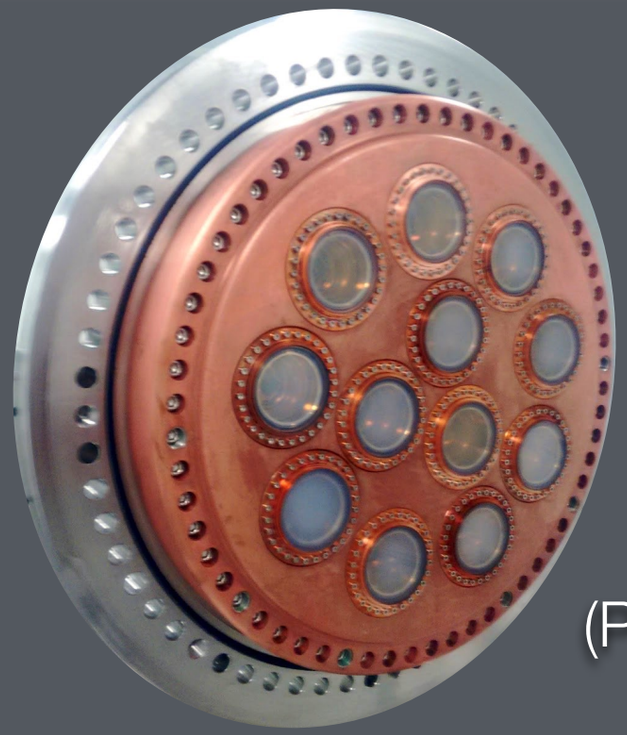
NEXT-DEMO	NEW	NEXT-100
		
1 kg	10 kg	100 kg
2011 - 2015	2016 - 2018	2018 - 2020
Proof of concept IFIC	Search ββ2ν LSC	Search ββ0ν LSC

SOFT Concept (Separated, Optimized Functions TPC)

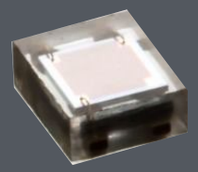




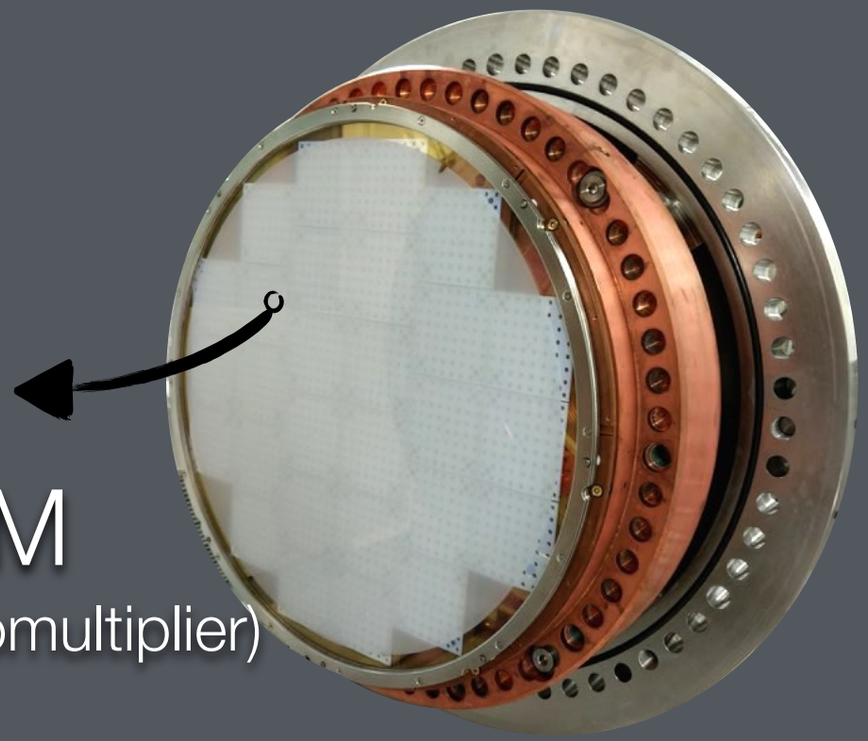




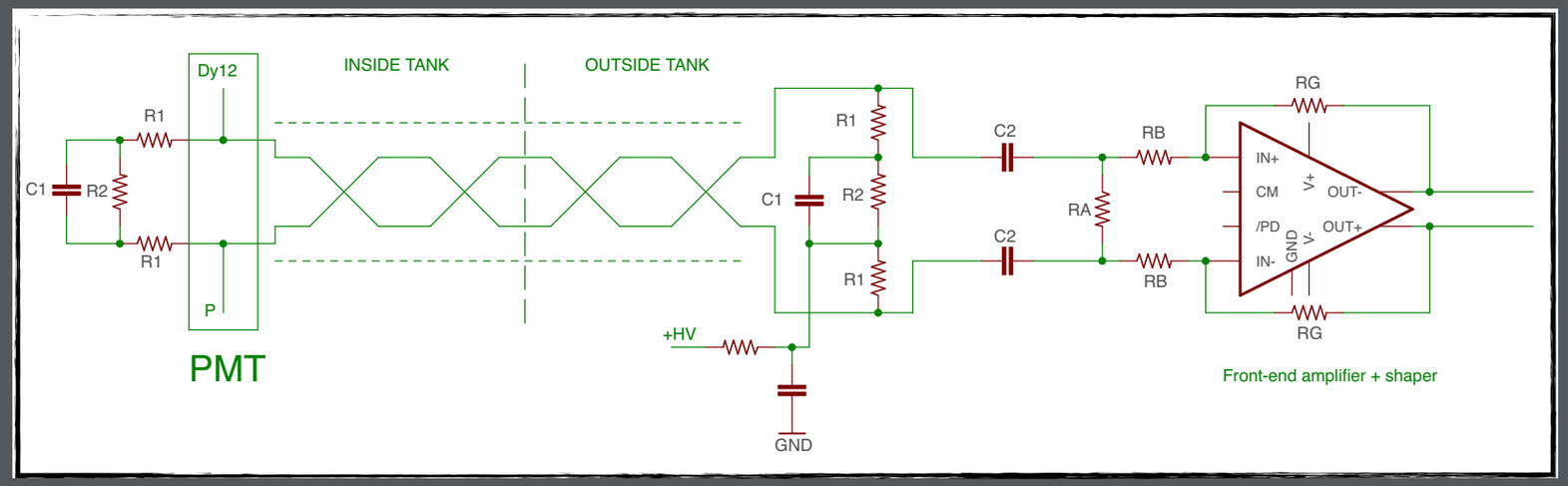
PMT
(Photomultiplier Tube)

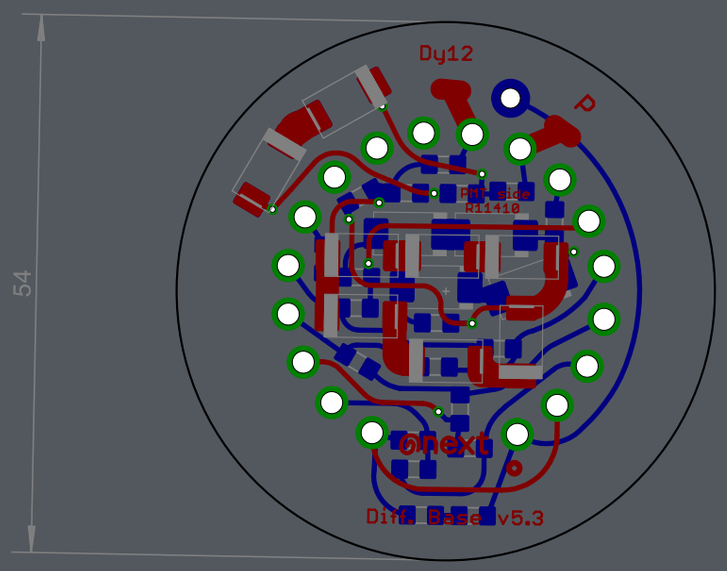


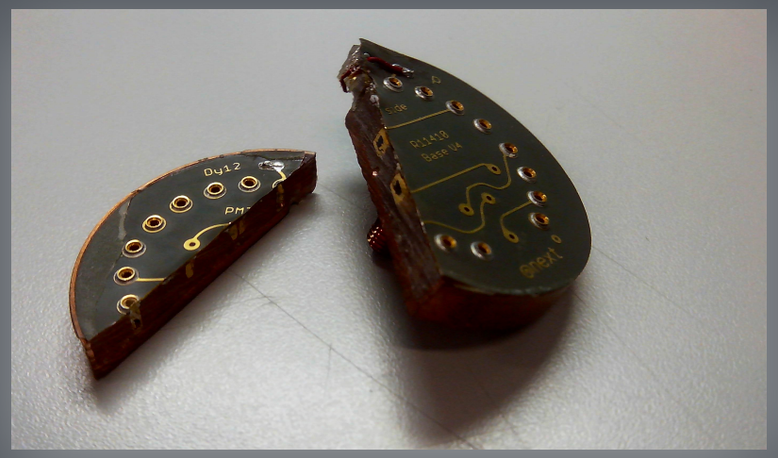
SiPM
(Silicon Photomultiplier)

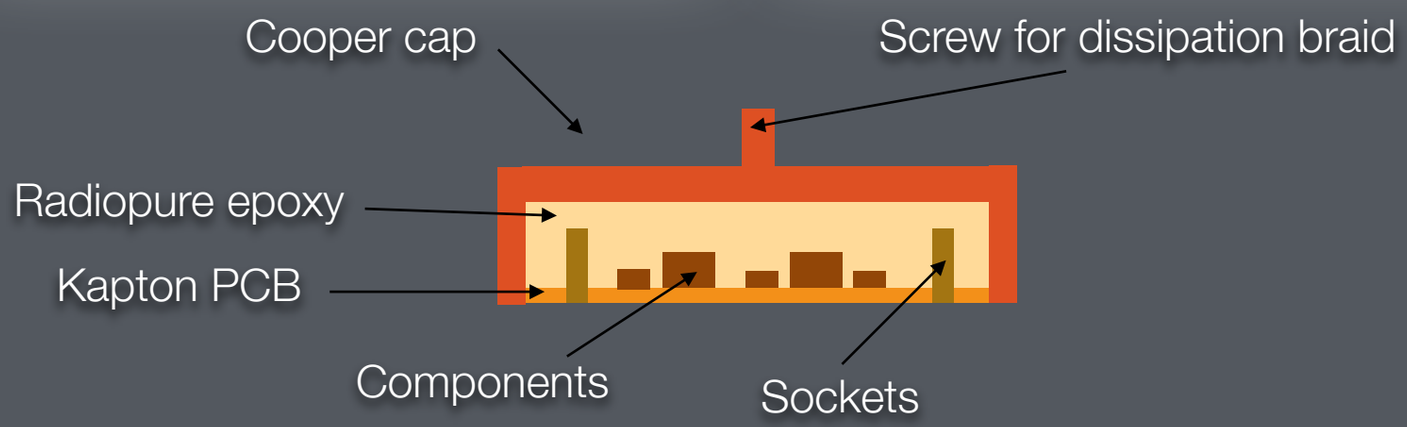


PMT base

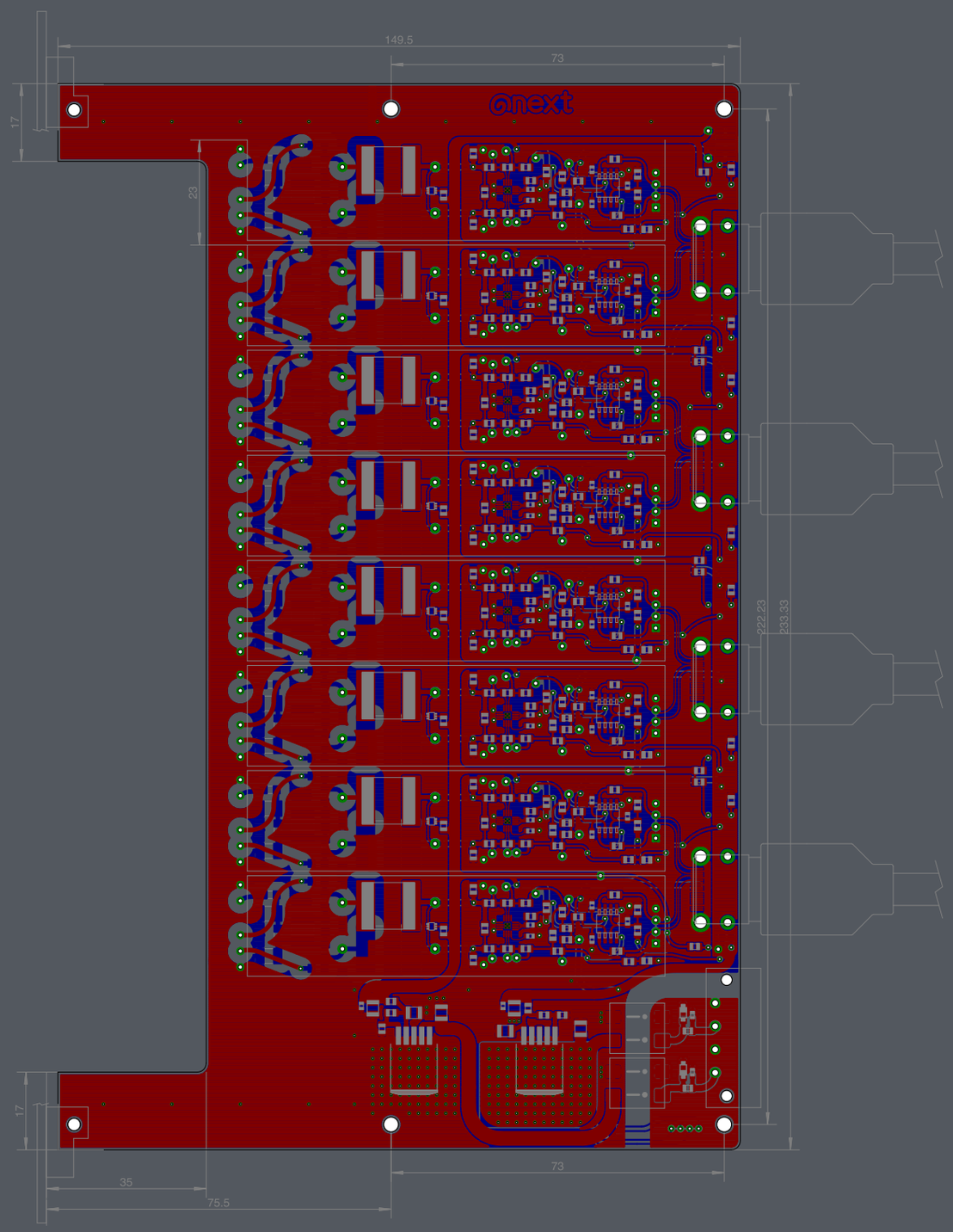

Dy12
INSIDE TANK
OUTSIDE TANK
R1
C1
R2
R1
P
PMT
+HV
GND
C2
RA
RB
RG
IN+
CM
/PD
IN-
V+
GND
V-
OUT-
OUT+
Front-end amplifier + shaper

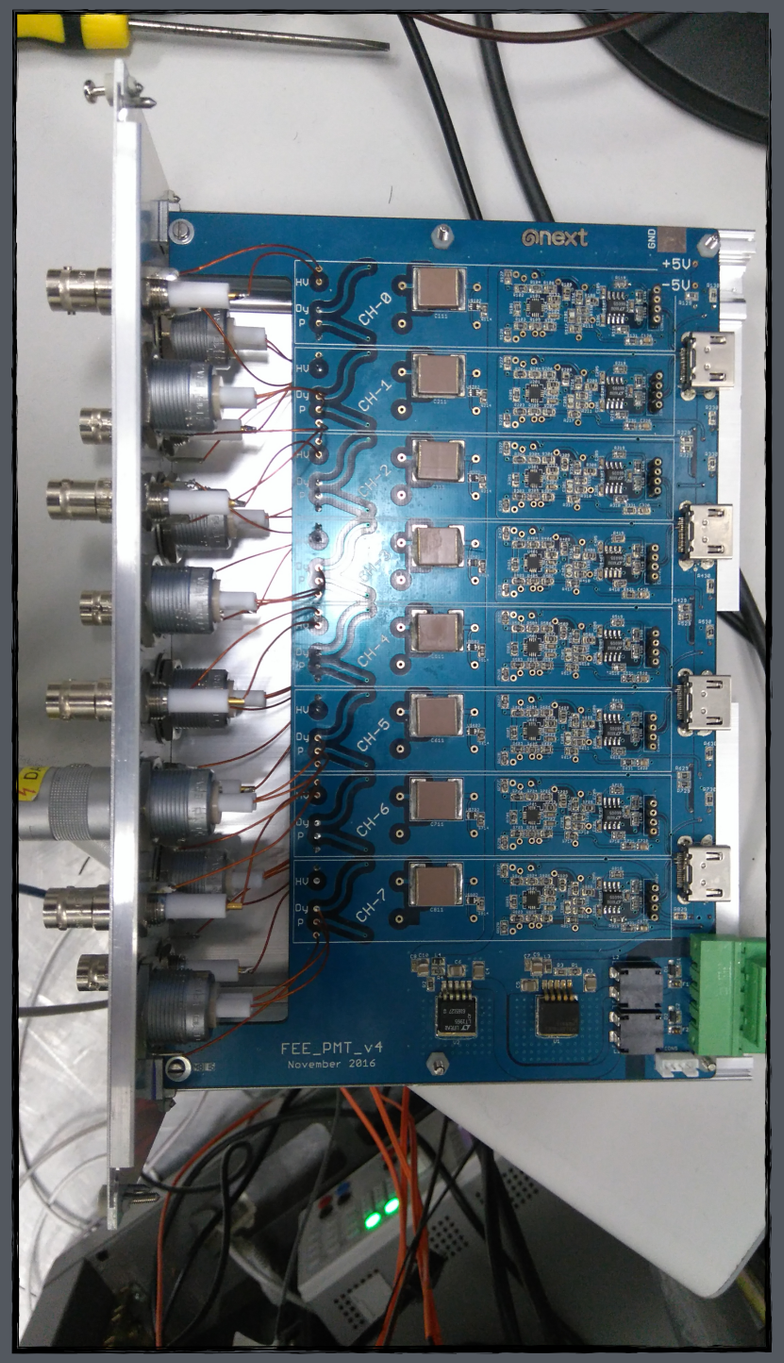

Dy12
P
PMT Side
R11410
54
Diff Base v5.3



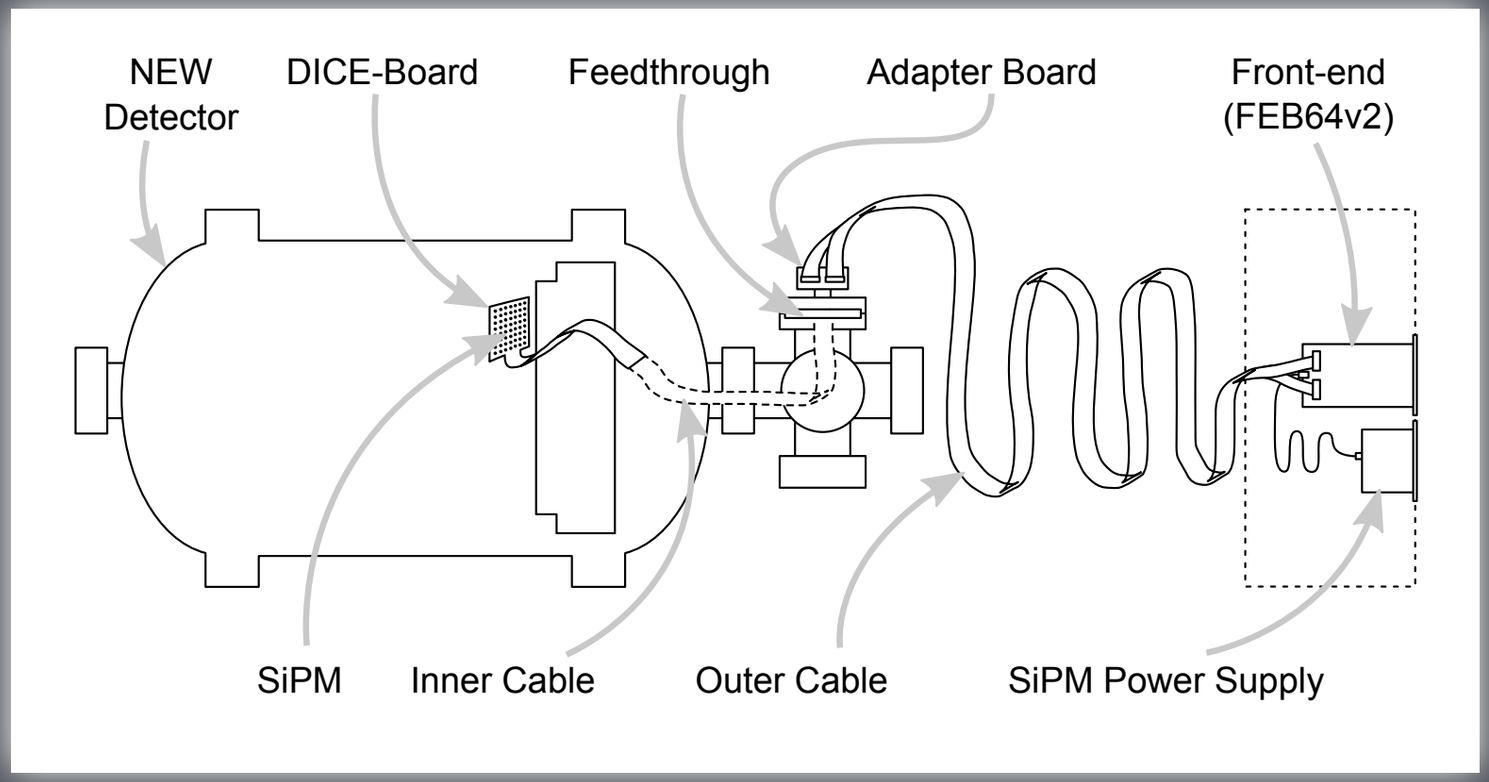

Cooper cap
Screw for dissipation braid
Radiopure epoxy
Kapton PCB
Components
Sockets

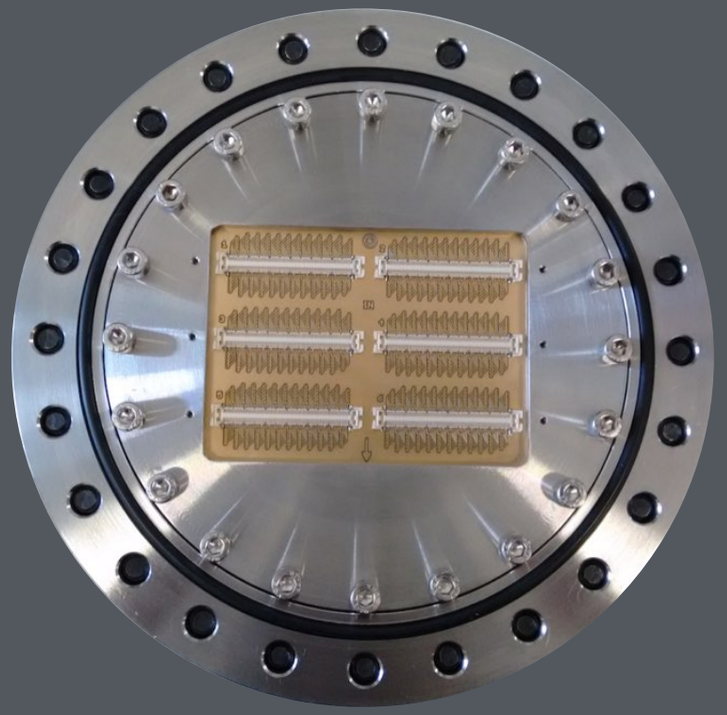
Front-end electronics

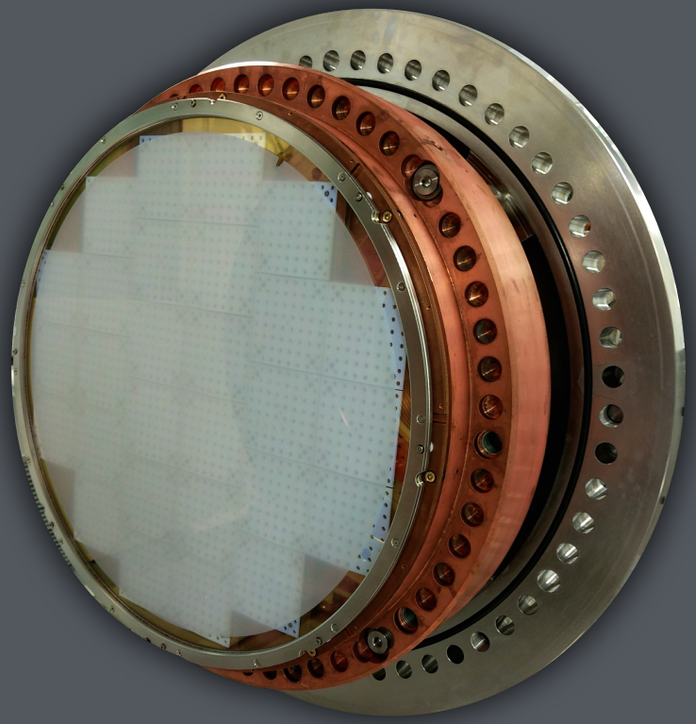


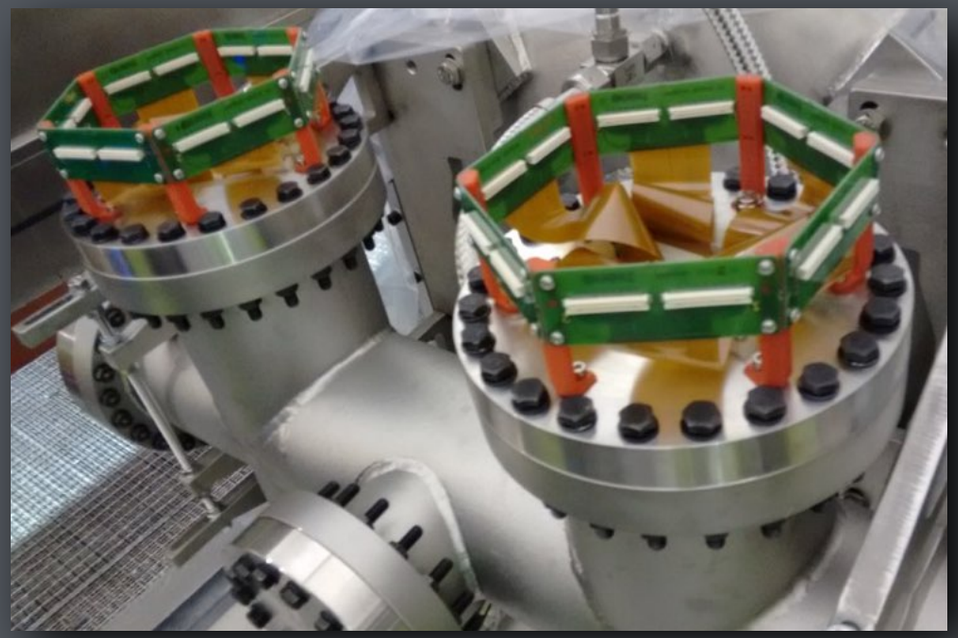


TRACKING PLANE ELECTRONICS

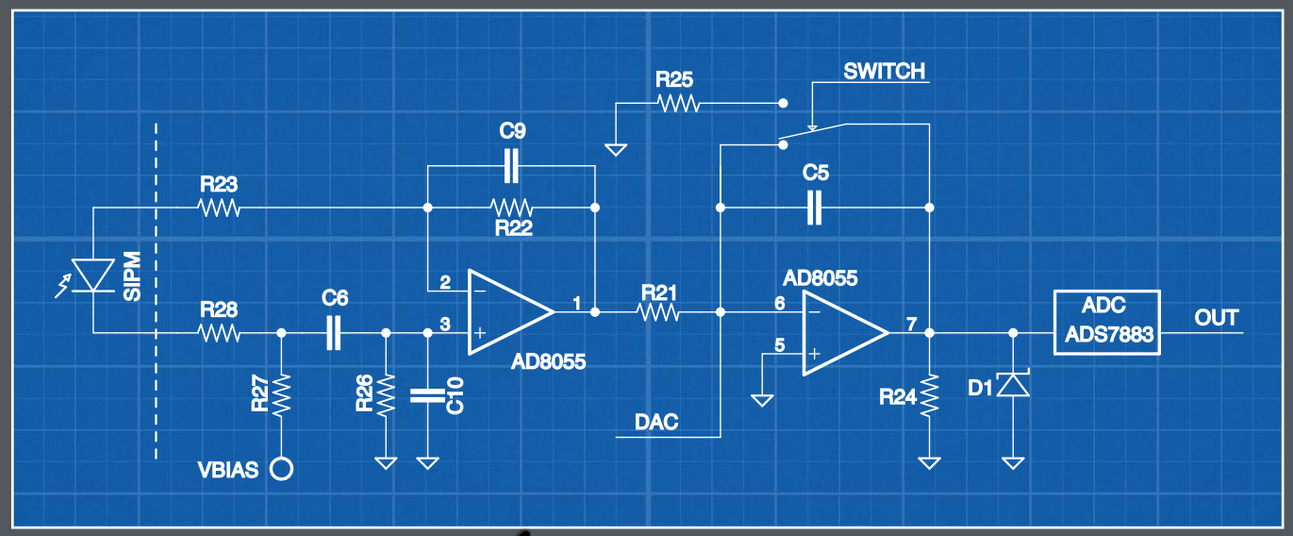


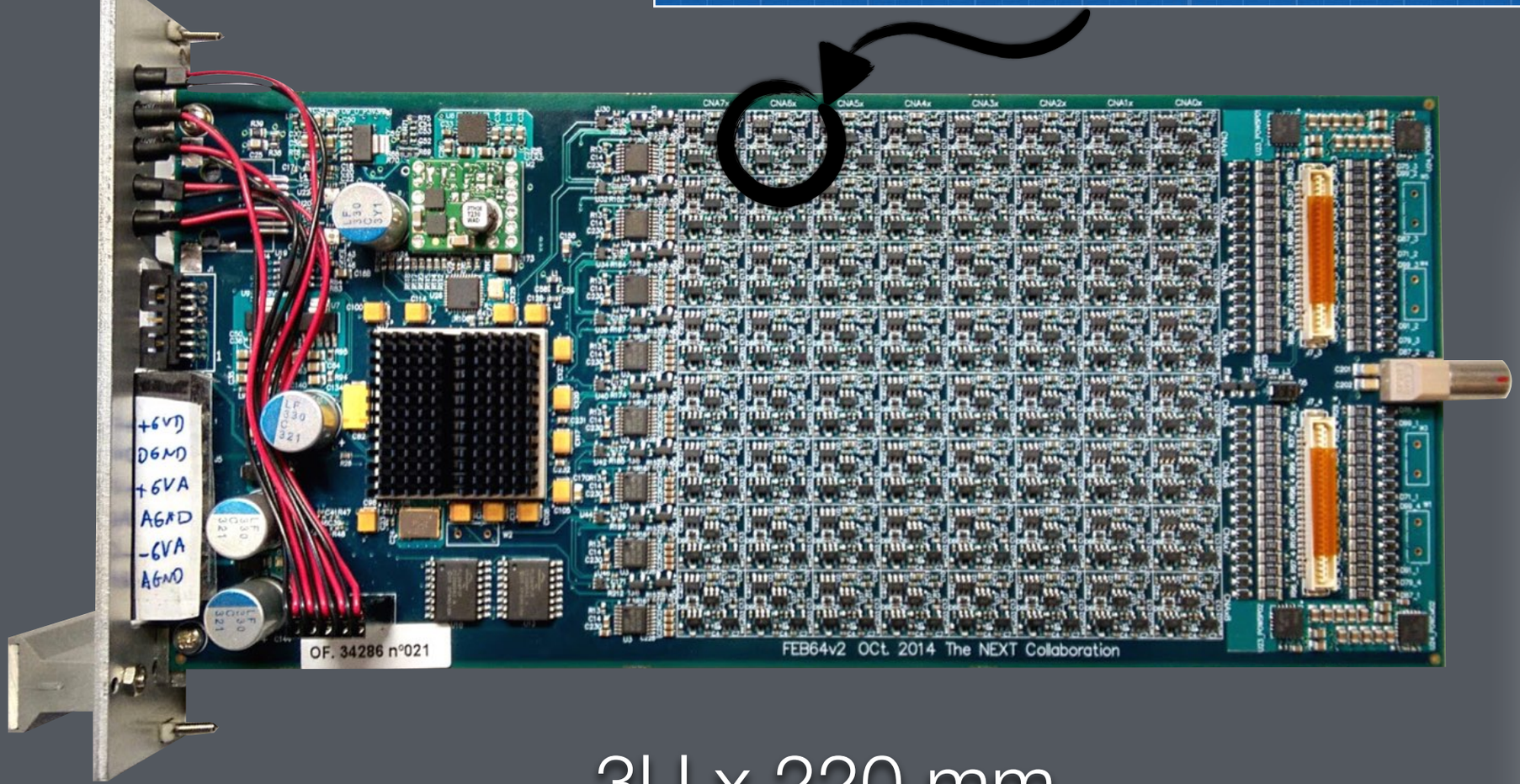






The FEB64

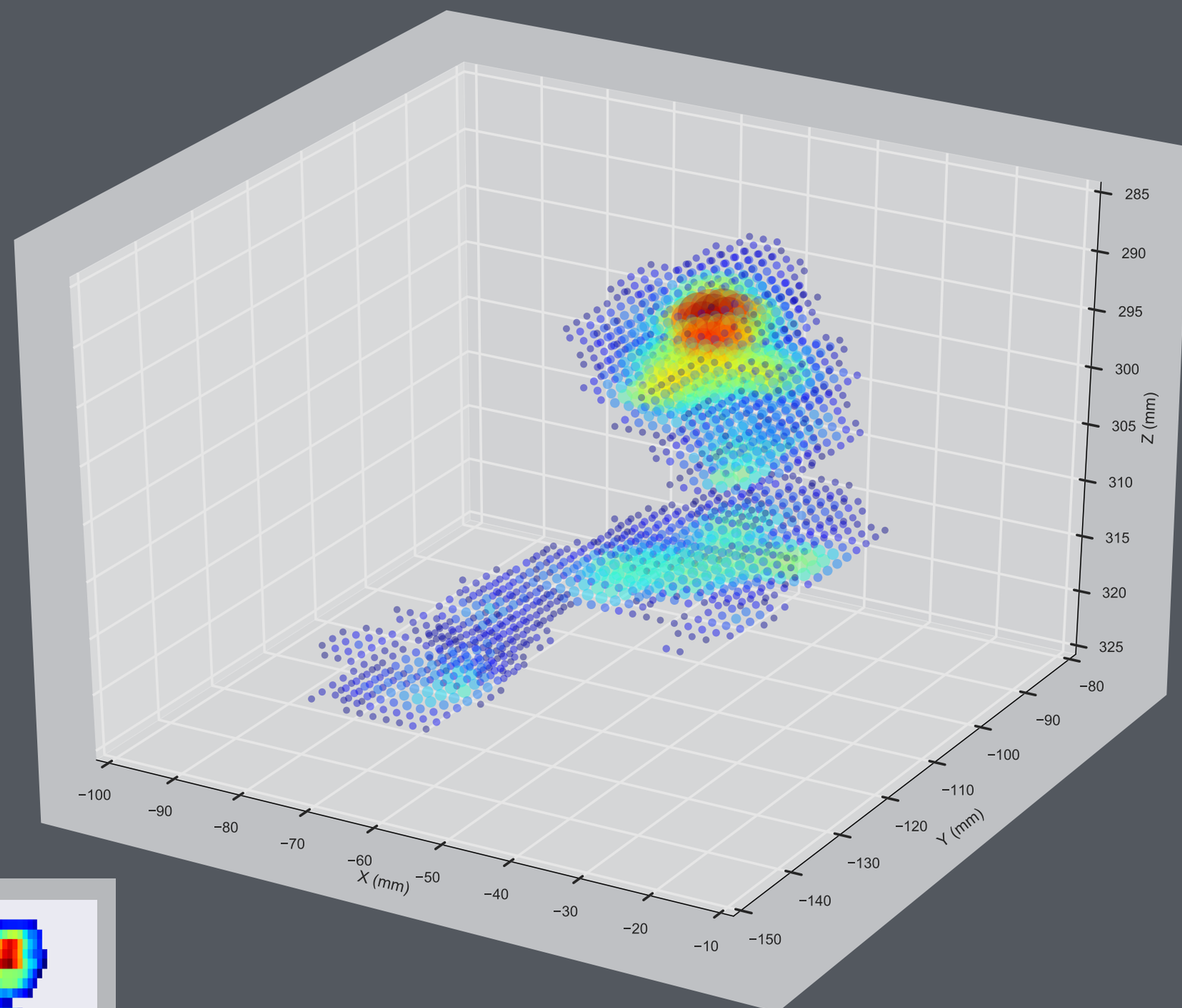


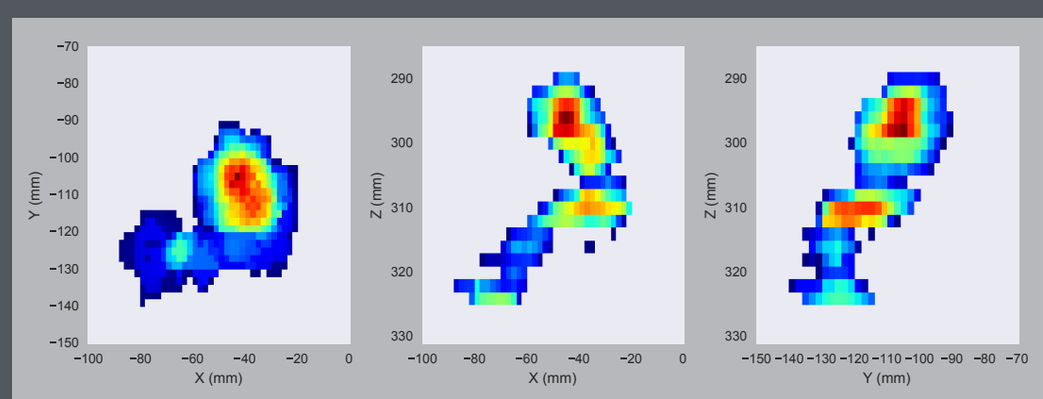


3U x 220 mm

64 11x11 mm analog cells

3D Reconstructed ^{22}Na Electron

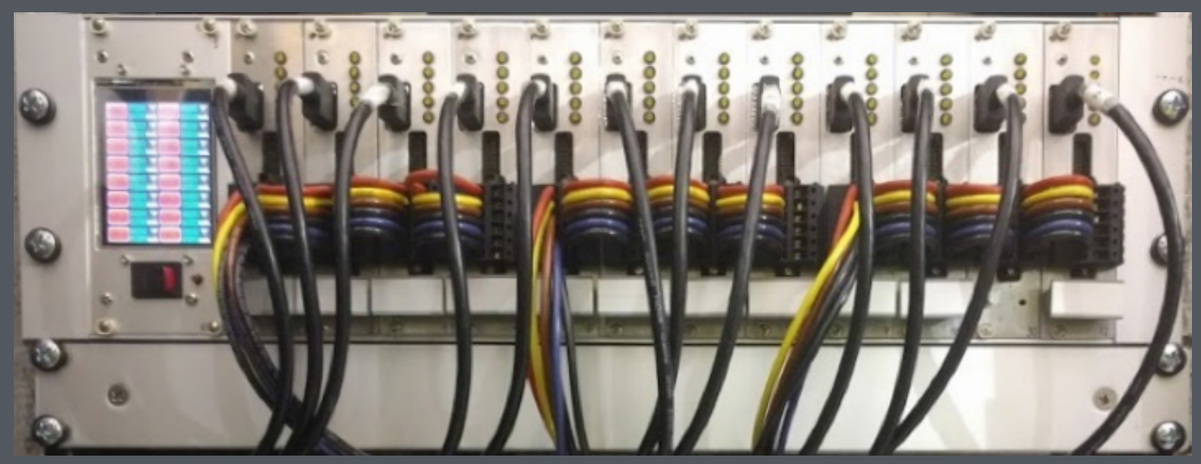


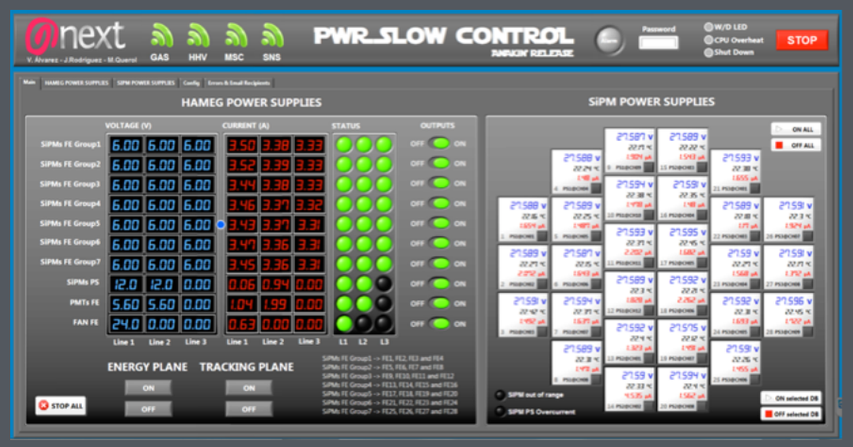


Programmable Power Supply with Temperature Compensation

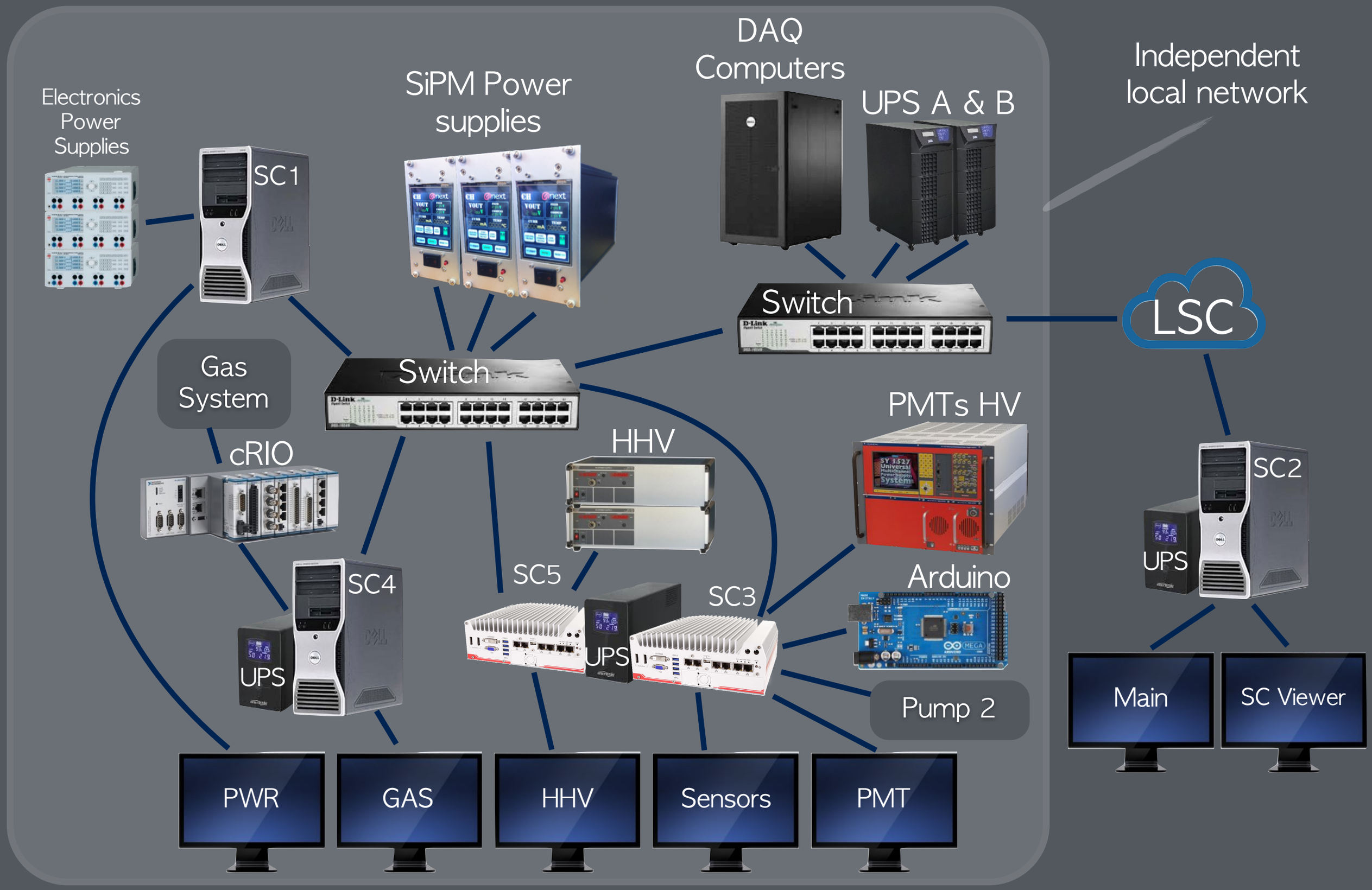
PPSTC for NEW & NEXT-100

- 16 Channels (1 PS for 12 FEB64)
- 0 - 85 V
- Gain stabilization error <0.5%
- ON/OFF ramp
- Noise <4 mVpp
- 1 mV setting precision
- Self calibration algorithm
- Autonomous
- Remote control
- LabVIEW app (log, warning email, plots, parameter setting…)





NEXT SLOW CONTROL

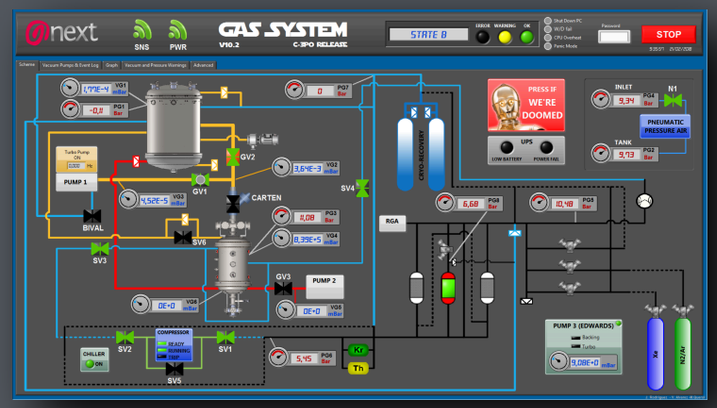


NEXT SLOW CONTROL

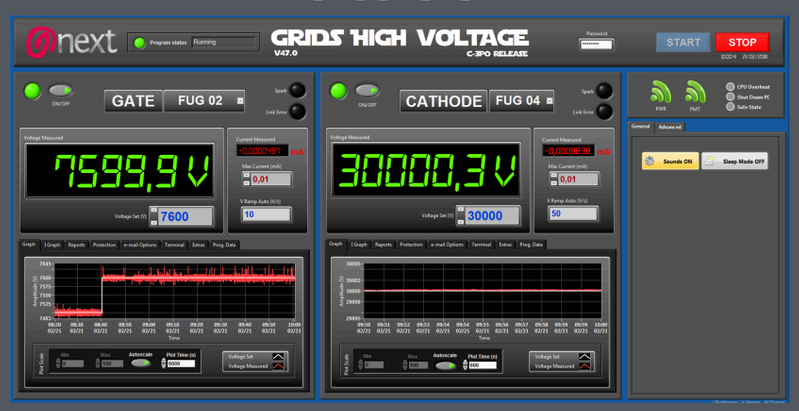
c-3Po RELEASE

SNS

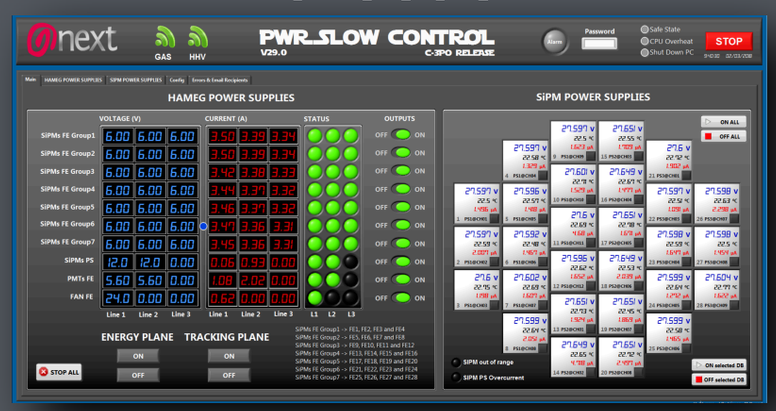
GAS



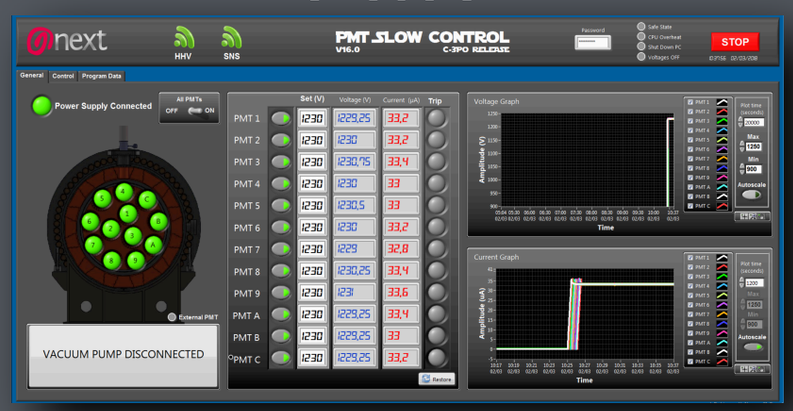
HHV



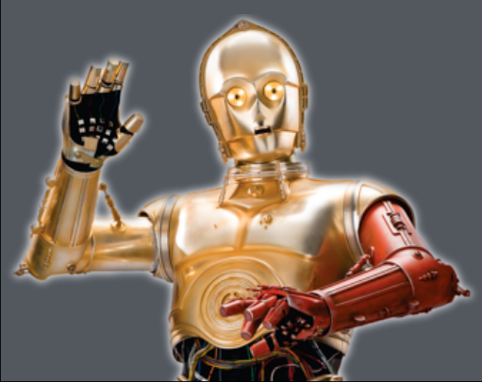
PWR



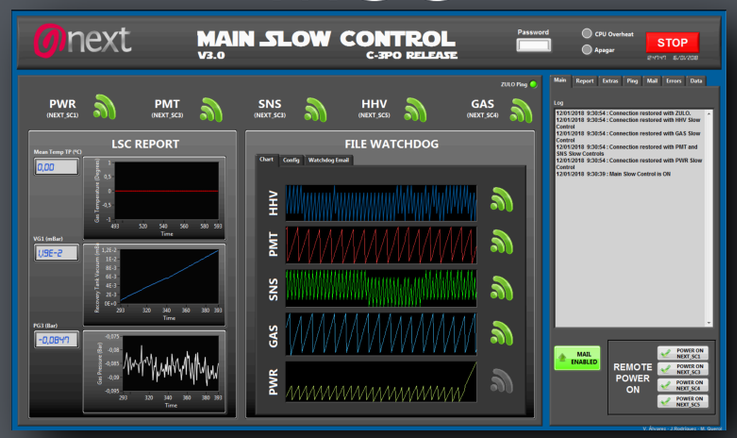
PMT



SC Viewer



MSC



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