



FCAL2 Readout Layout - Preliminary

F.J. Barbosa, C. Stanislav, JLab

- 1. Layout**
- 2. Cables**

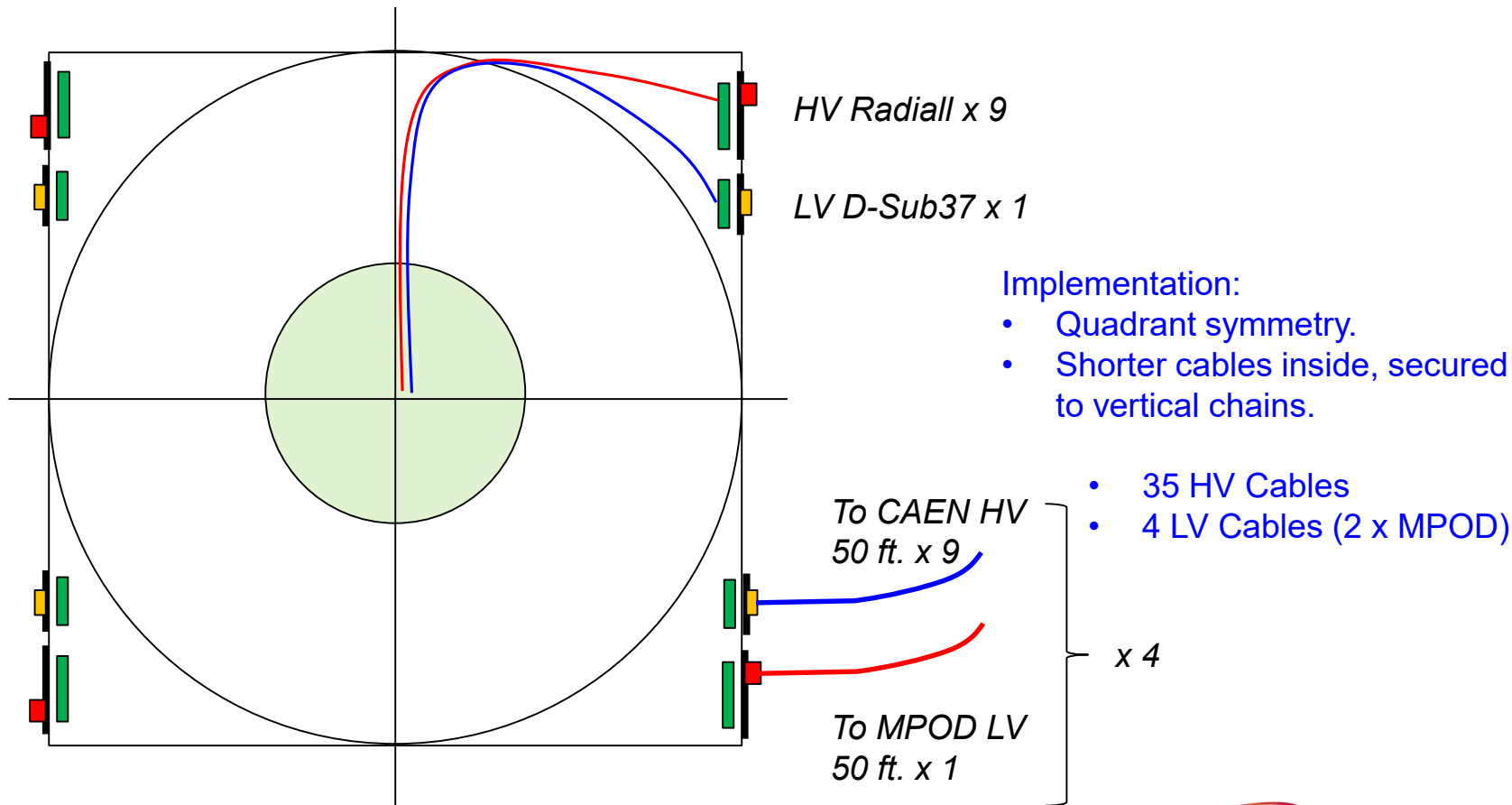
22 March 2022

1. Layout

Minimum Requirements:

- 1680 channels
- 35 HV cables (35 cables x 48 ch)
- 2 LV cables

Note: dimensions of HV, LV distribution PCBs and panels to be determined by connector placement (432 HV, 420 LV) on each PCB.



Implementation:

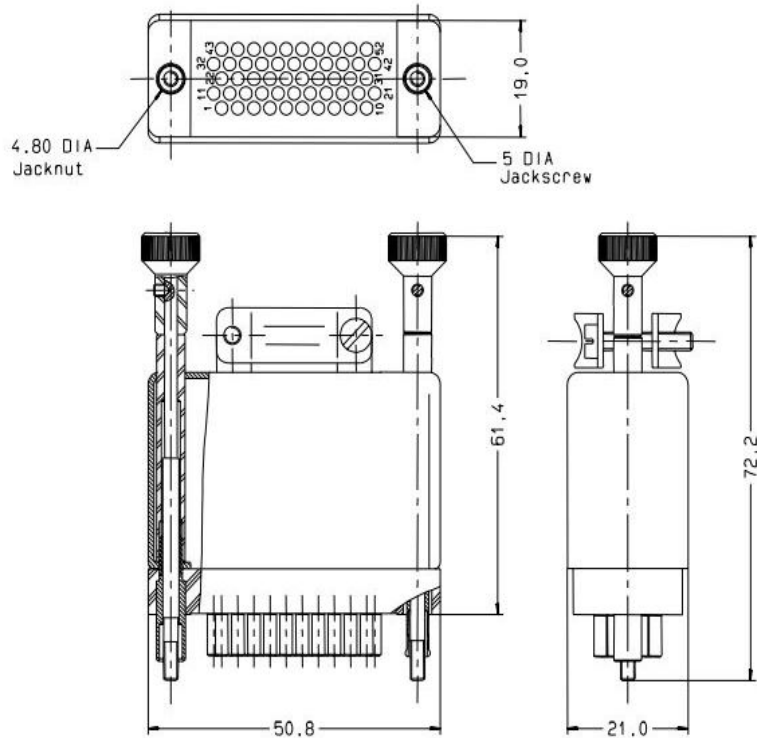
- Quadrant symmetry.
- Shorter cables inside, secured to vertical chains.

- 35 HV Cables
- 4 LV Cables (2 x MPOD)

2. HV Cables

Multi-conductor high voltage cable, 52 conductors, Tefzel insulation, round, shield, PVC insulation, 0.420 inch diameter maximum, 5kV rated. Tefzel insulated conductors, shielded, NEC CL2 fire rated.

Radiall 691802002

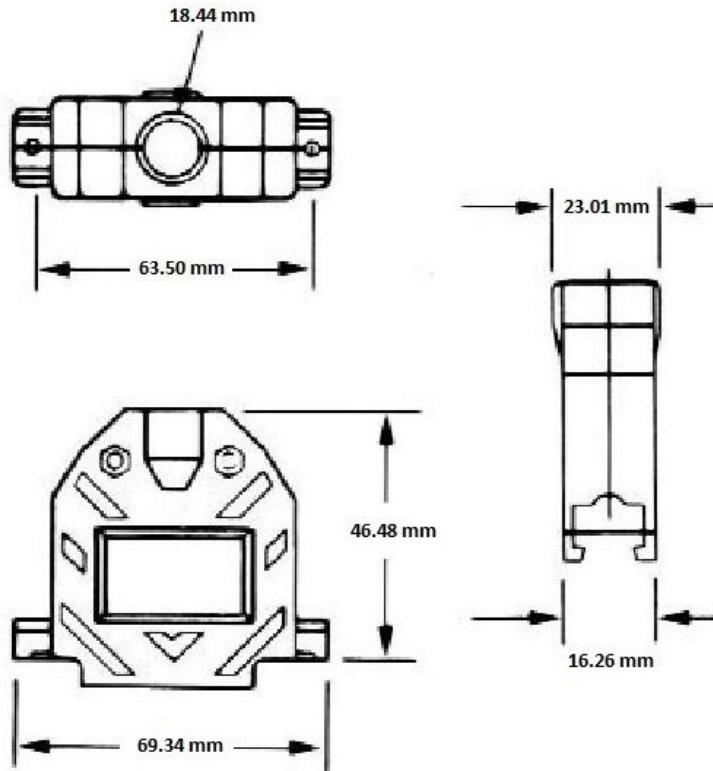


22 March 2022

2. LV Cables

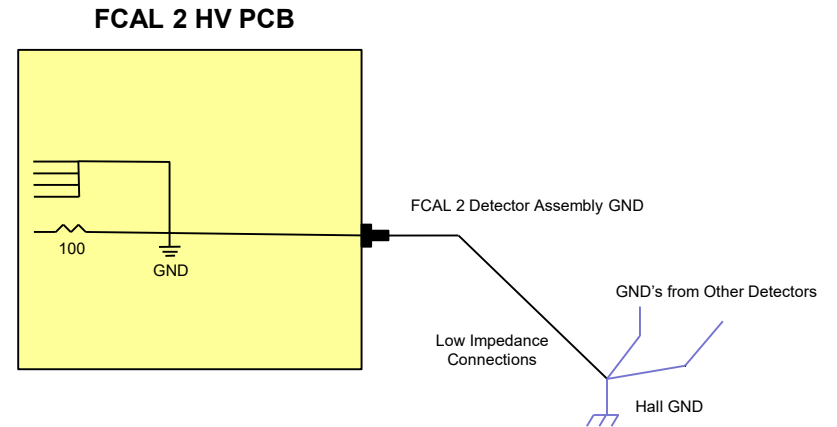
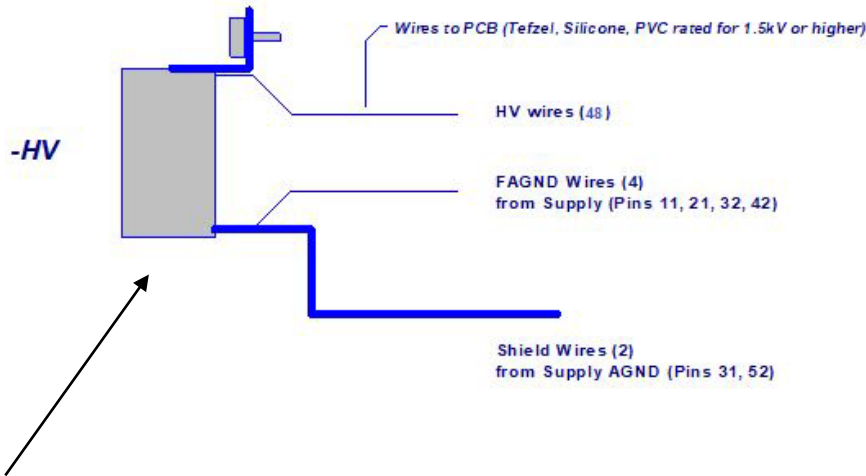
Multi-conductor low voltage cable, 37 conductors, 22 AWG, foil shield, PVC insulation, 0.418 inch diameter, 300V rated

Amphenol 17E-1727-2 Backshell
Amphenol DC37S064HTLF Female
Amphenol DC37P064TXLF Male



22 March 2022

2. HV Distribution Chassis

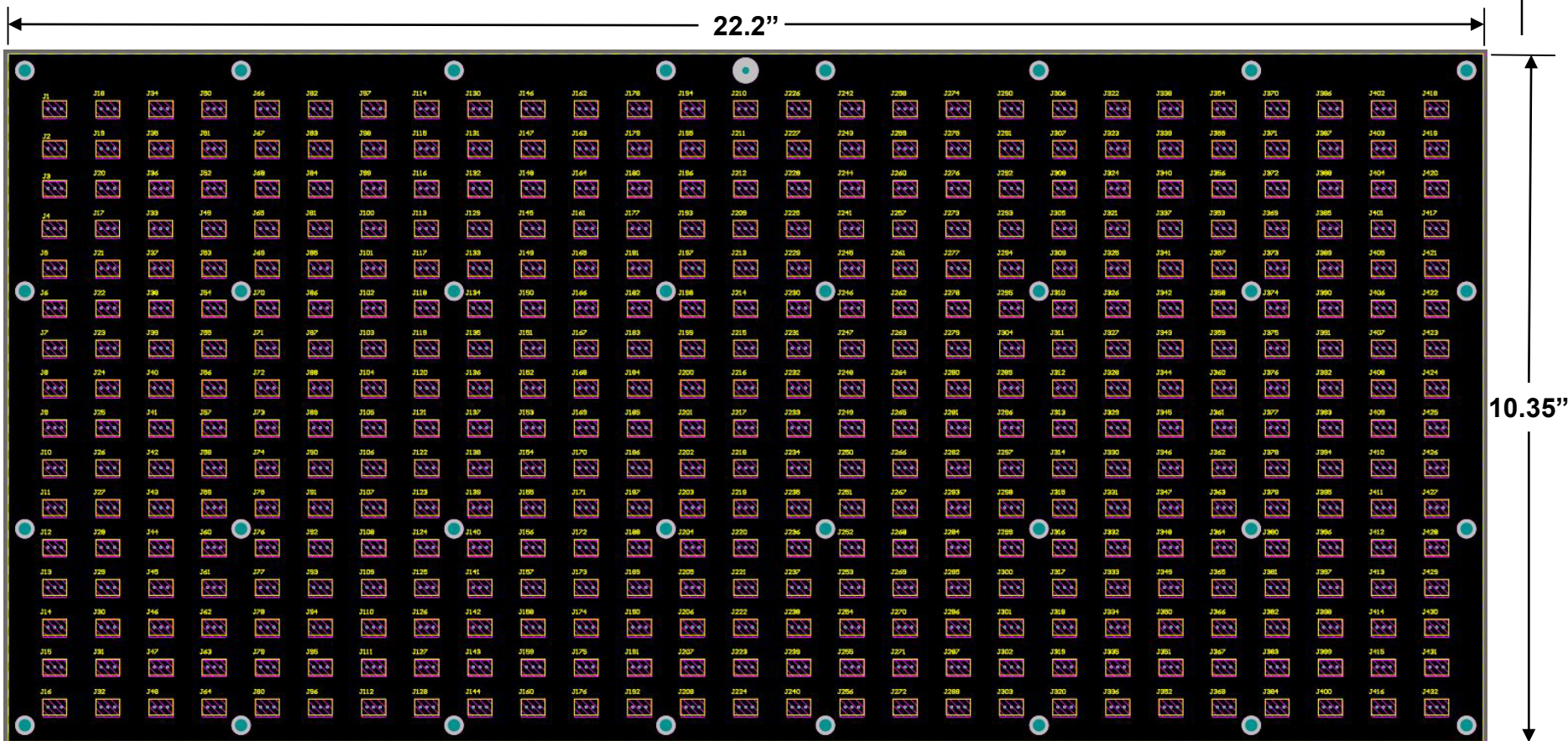


Cable Connectors:
691 803 004 Receptacle with 691 804 200 Pins- RADIALL

Notes:

1. Connector from RADIALL is rated for up to 12.5KV DC.
2. 48 CH CAEN -HV (A7030N) -3 KV 1 mA (1.5 W) - Multipin Conn. common floating.
3. Connector Pins 9 and 10 are connected together at detector for safety interlock.

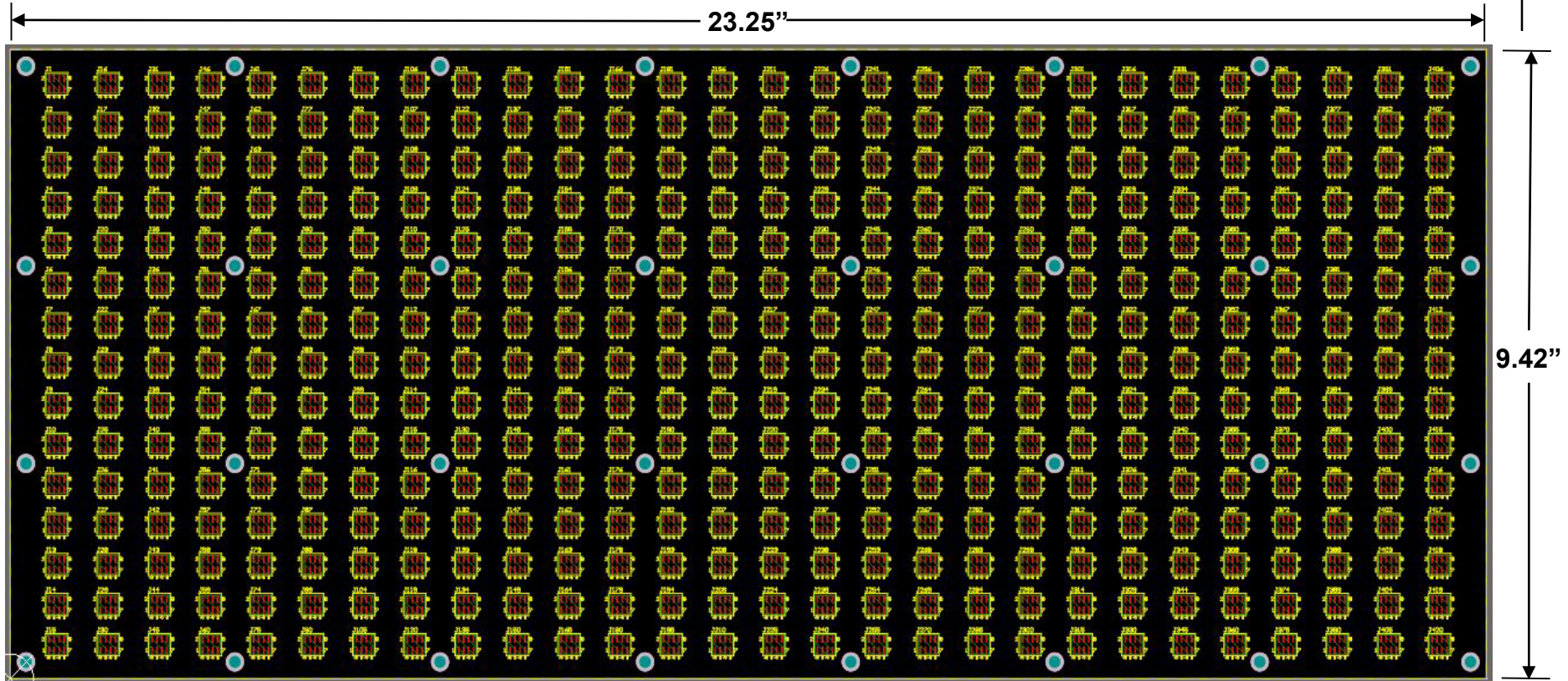
2. HV Distribution PCB



Notes:

1. Each HV Distribution.PCB is fed from 9 RADIALL Connectors
2. Each RADIALL Connector has 48 Channels.
3. $48 \times 9=432$ HV Channels per PCB.

2. LV Distribution PCB



Notes:

1. Each LV Distribution PCB is fed from 1 Amphenol Connector.
2. Each Amphenol Connector has 4 Channels.
3. 420 LV Channels per PCB.

22 March 2022