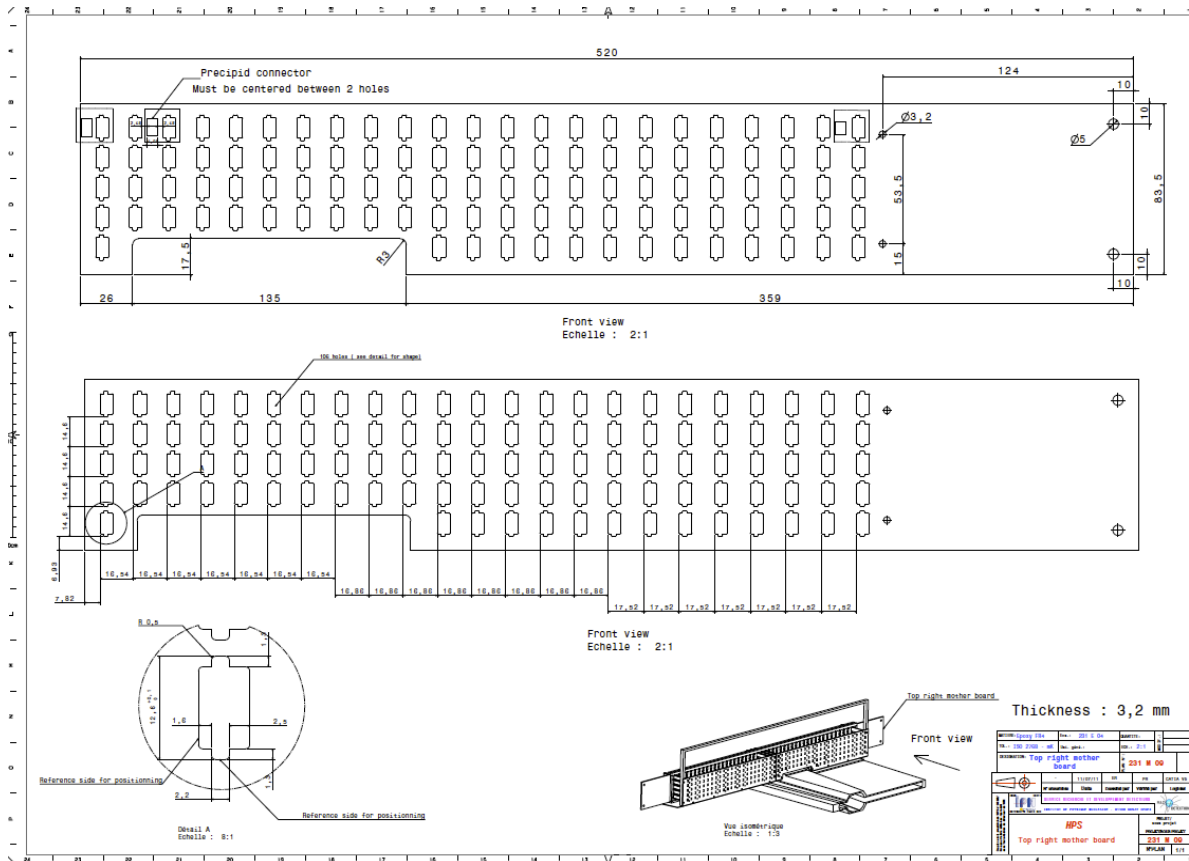


A new HPS motherboard

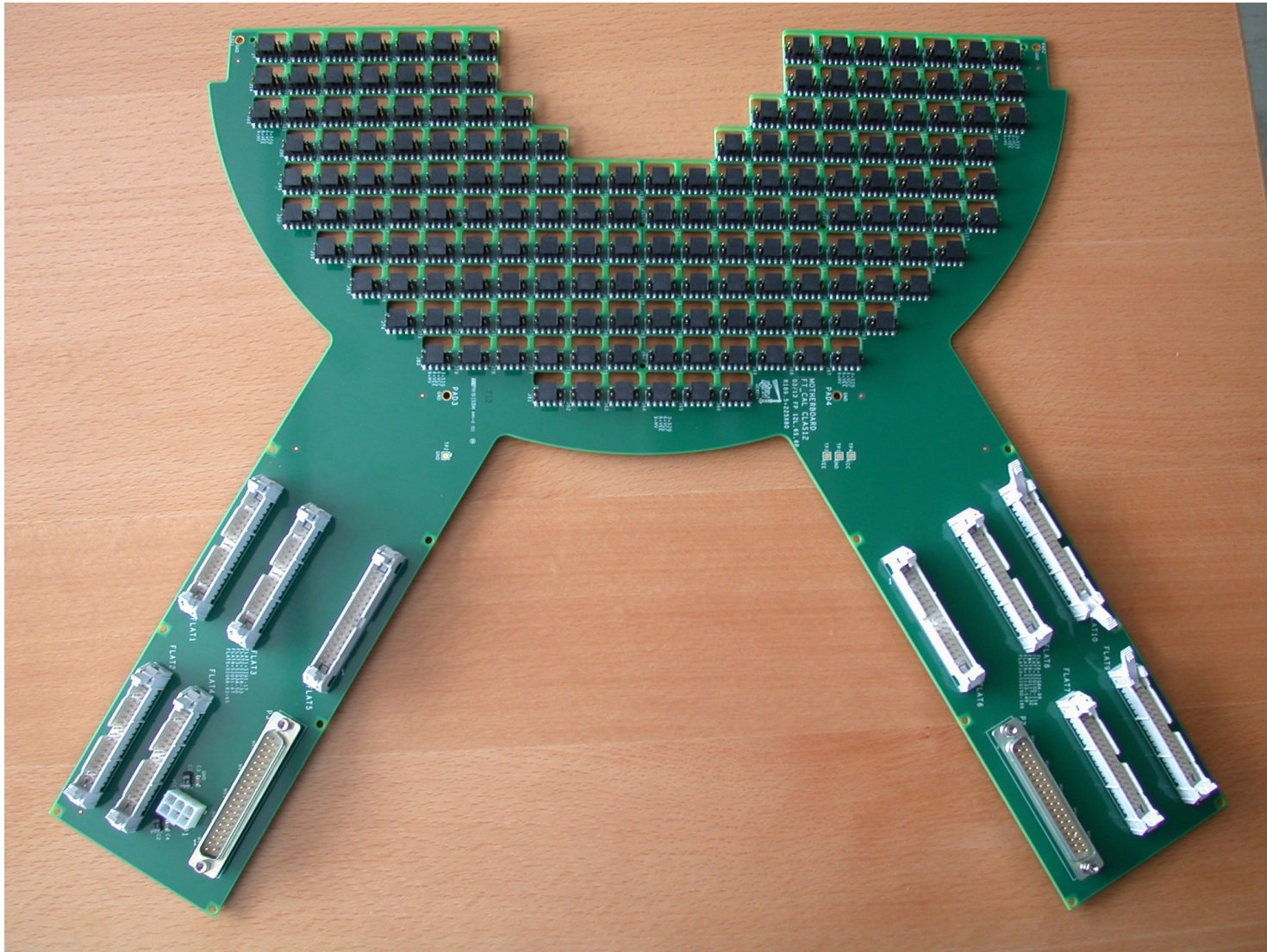
Marco Battaglieri & Giuseppe Minì & Fabio Pratolongo

ECal motherboard (Test Run)

- 4 Boards (2-Identical)
- 16- layers
 - 6 signal layers
 - 2 High Voltage
 - 2 Low Voltage
 - 6 Ground

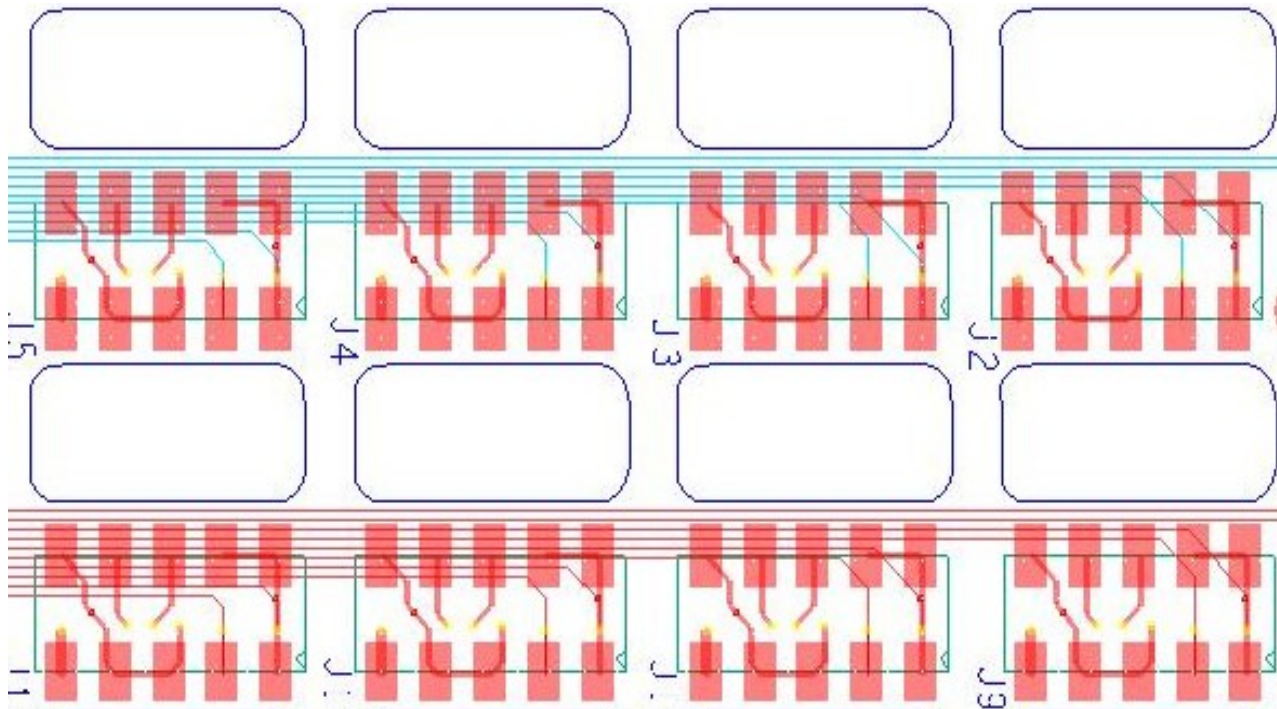


MotherBoard FT Cal



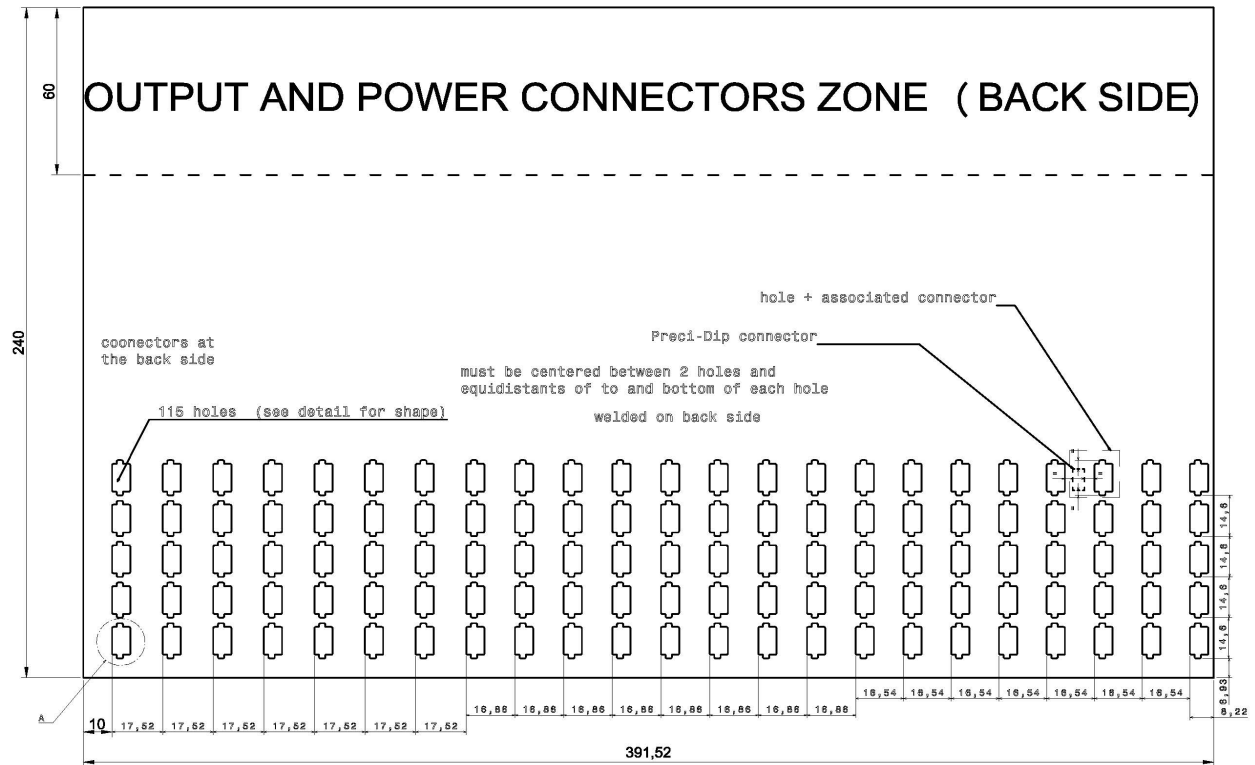
MotherBoard FT Cal Specifications:

- 166 channels, 10 signals connectors (34 pins) + 2 HV connectors (37 pins).
- 12 Layers (4 signals + 1 for High Voltage + 1 fan-out + 6 GND).
- Signal: 0.2 mm line width and 0.2 mm minimum spacing.
- HV: 0.6 mm line width and 0.9 mm min. spacing.
- Ground ring between two signals (see figure) for minimizing the cross talk.

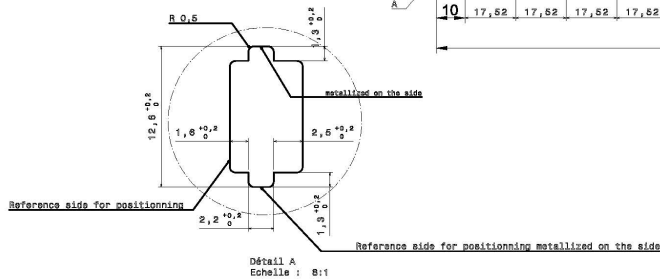


New HPS Motherboard proposal

TOP LEFT



Top left motherboard - Front side



HPS Motherboard Design

- 4 PCB (115, 115, 106, 106 channels each).
- For TOP LEFT board 115 channels we have:
 - 115 smd connectors for preamp very similar to previous version (pin slightly smaller).
 - 15 signal connectors (16 pin) equal to previous version.
 - 2 HV connectors (15 pin) different to previous for placement reasons + 1 LV connectors (6 pin).
 - Same HV grouping.
- We can use the same cable as discussed with Stepan Stepanyan.
- Probably 10 layers.
- Signal: 0.2 mm line width and 0.2 mm min. spacing.
- HV: 0.6 mm line width and 0.9 mm min. spacing.
- Ground ring between two signals as FT-Cal.