



VFE info



CMS ECAL VFE phase II upgrade workshop

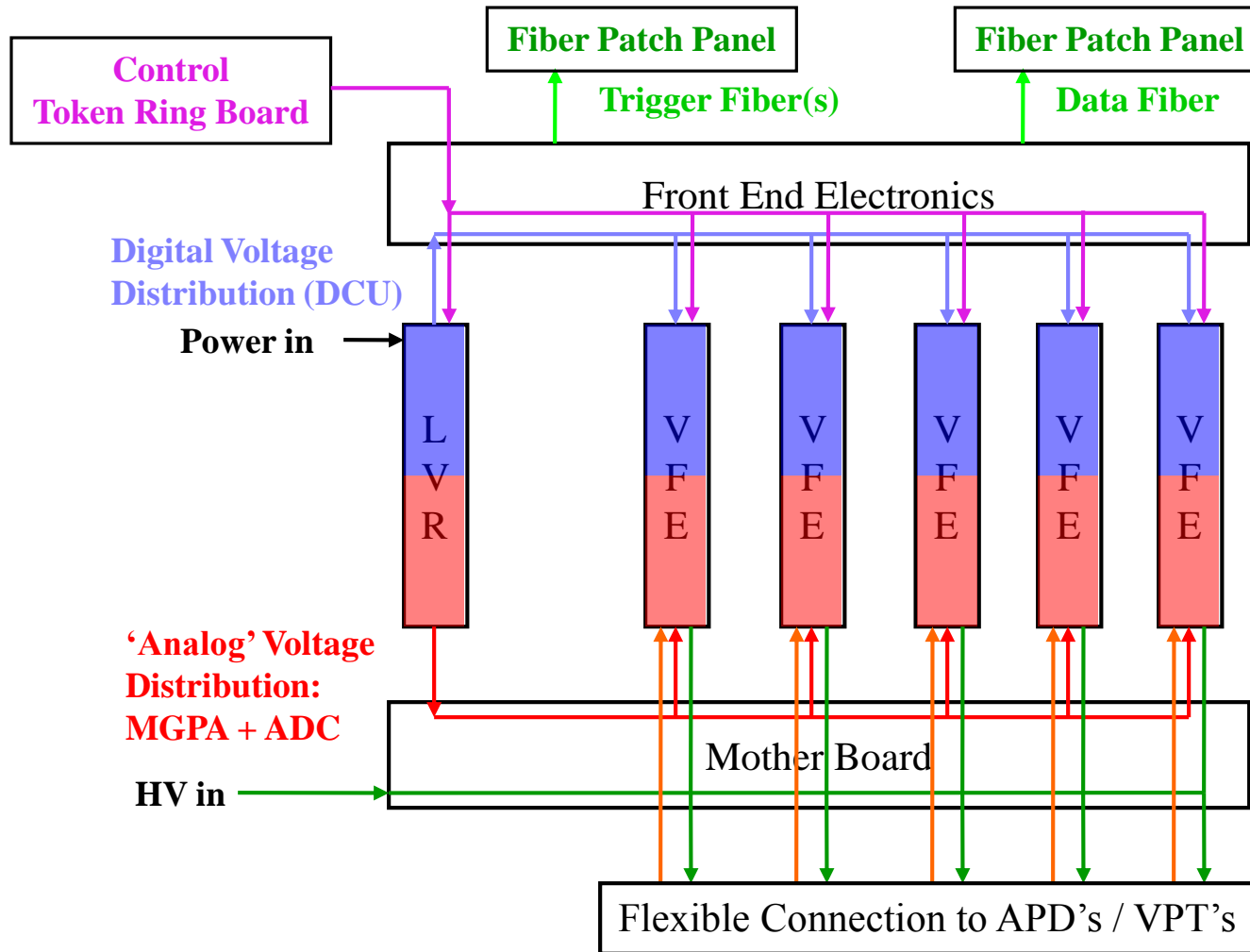
CEA-Saclay INSTN

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Present front electronics

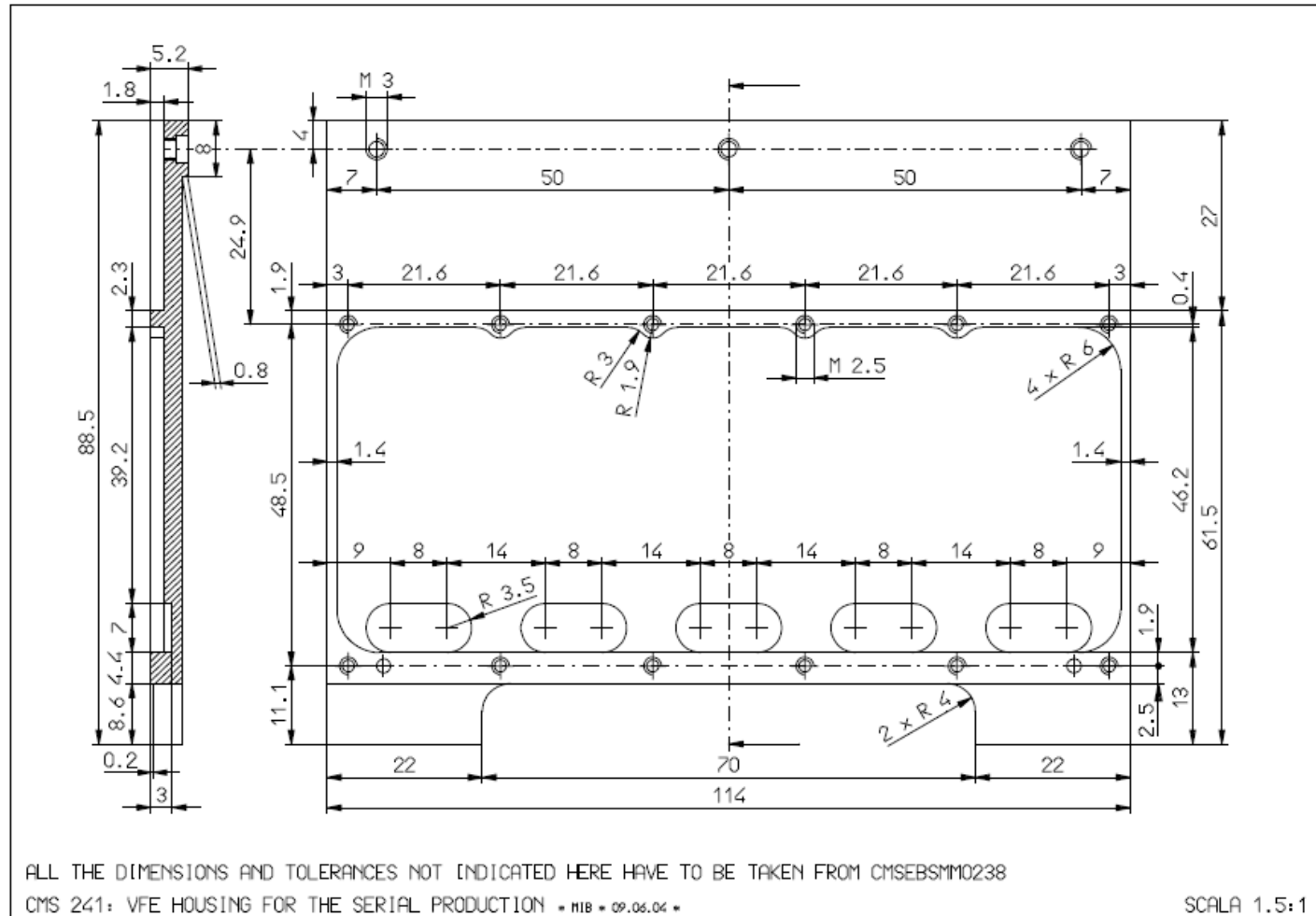




VFE housing



Housing installation is labor intensive: gap-filler, gap-pad, 12 fixation screws





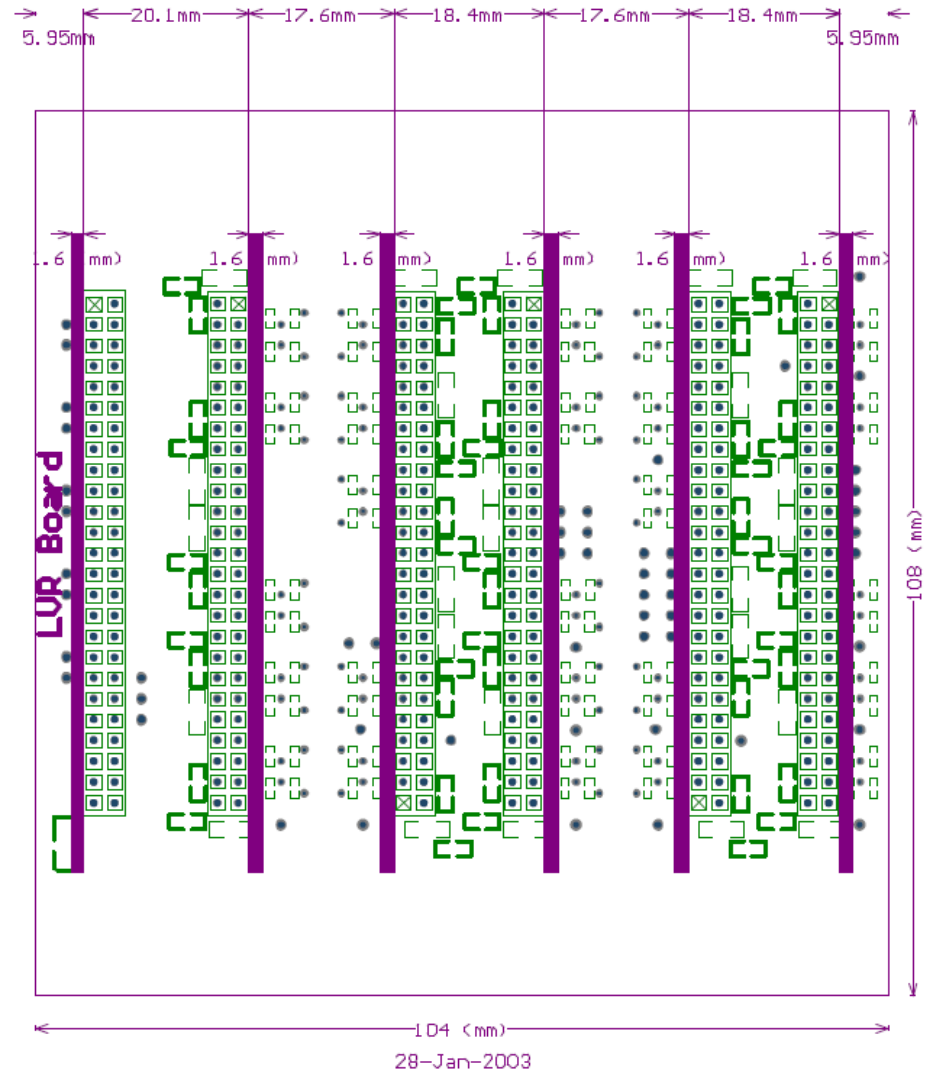
Motherboard and FE



Housing thickness on VFE: 5.2 mm
Cooling bar 8 mm → 18.8 mm

FE card: 114 mm x 104 mm
Area = 118 mm²

FE card cooling is not very efficient
FE card should not be very high

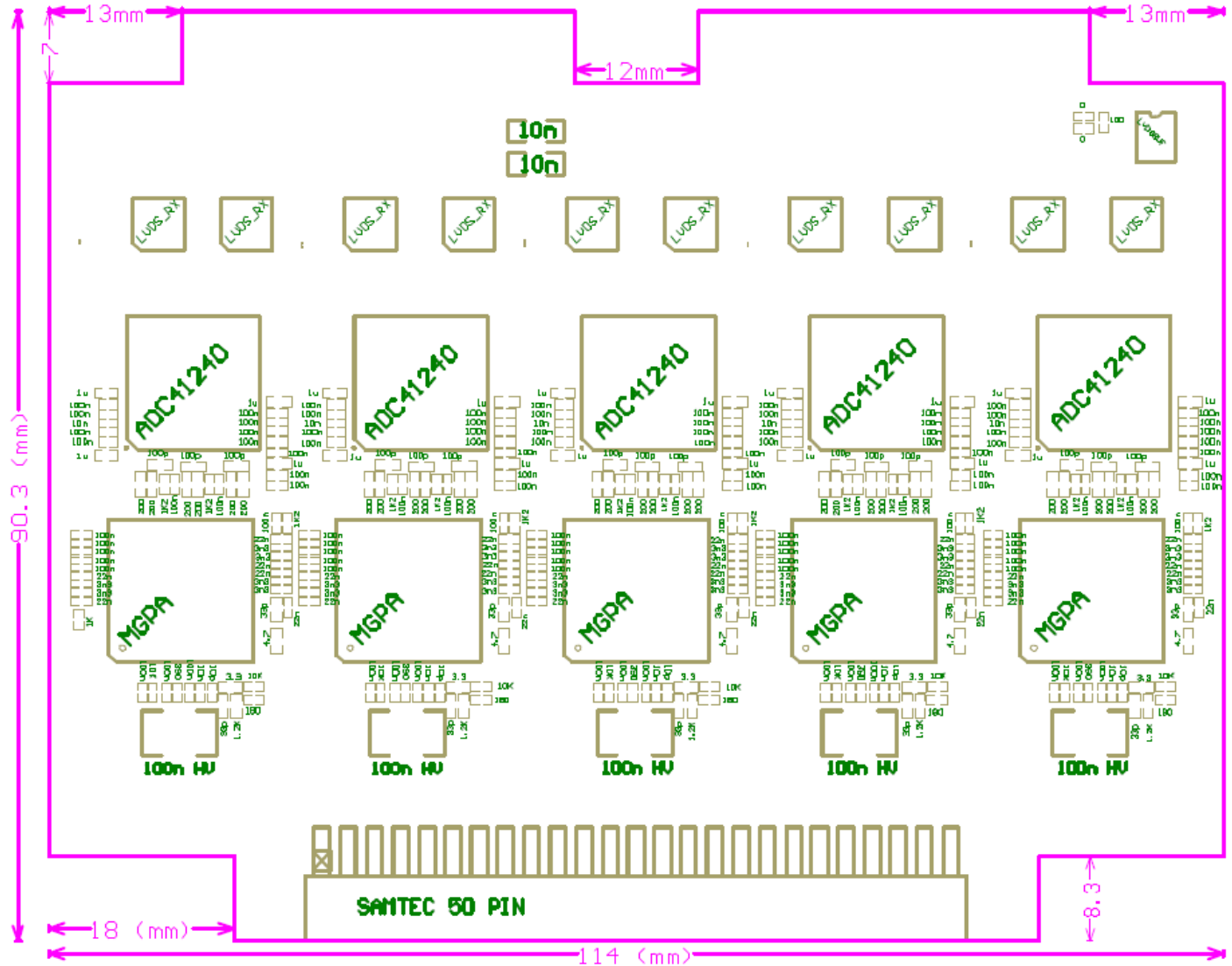




VFE dimensions (==LVR)



Area = 92.3 mm²





VFE constraints



- Samtec connector has to stay
- Connector to FE can be re-considered (if there is a good reason)
 - → must not be higher than the present ERNI type
- Components height 1.8 mm

The VFE must host:

- Analog electronics (PA++)

The VFE can host:

- control electronics
- power conversion
- optical link(s)

Space available is $\sim 92 \text{ mm}^2$, $\sim 2 \text{ mm}$ height (but a cutout is thinkable)

Having multi channel components with 2 ch ADC? ...makes layout easier

- Integration of the step down converter into the VFE? Bring 12 V via motherboard or from the back → removes the need of an extra LVR card
- Data link on VFE → no FE?

Placement of components on VFE / FE / LVR can only be considered if components are known