

CEPC ITK module meeting – an introduction

Yiming

ITK module meeting, 19 Feb 2025

Introduction

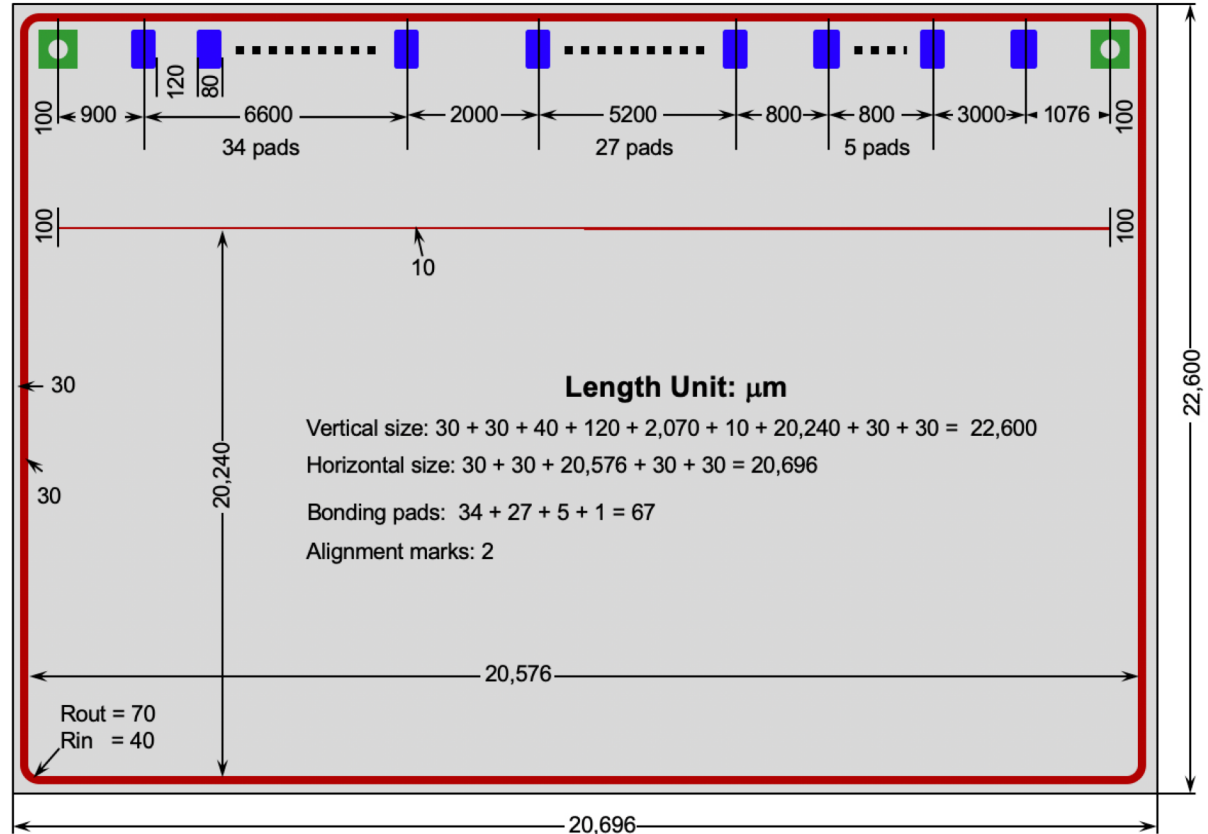
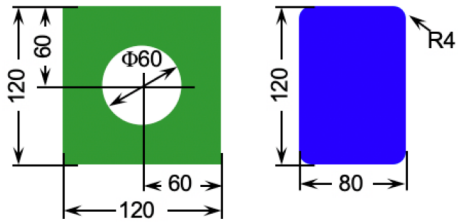
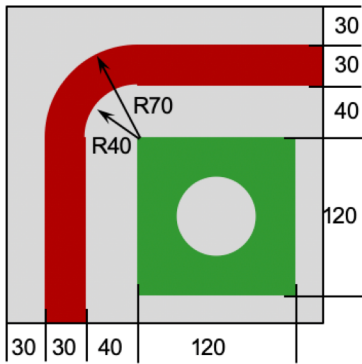
- As main part of rTDR is completed and being reviewed, more efforts will switch to further R&D
- In the past most R&D efforts focused on CMOS sensor
 - Regular meetings (bi-weekly), well-defined goals and deliverables
- We plan to start regular discussion for ITK module prototyping
 - Bi-weekly on Wednesday afternoon to start with, subject to change
- Topics:
 - Expected by rTDR release: ‘dummy’ module (Strongly recommended by management)
 - Module design and optimization: DAQ, power, ...
 - Mechanical design and optimization
 - Production and assembly process
- Synergy with other projects/experiments:
 - Expertise/ personpower/ equipment released from AMS L0 production
 - Shared resources and designs with LHCb upgrade

Thermal mechanical module (dummy)

- First step towards module prototype
 - No full-size chip available yet – dummy sensor of the same size
 - To facilitate development of assembly process
 - To study the thermal-mechanical performance
- Tasks
 - Overall design and assembly procedure
 - Dummy sensor production
 - Electronics components: flex, power line, dummy chips,...
 - Mechanical support (+ cooling?)

Dummy sensor design

Not to scale



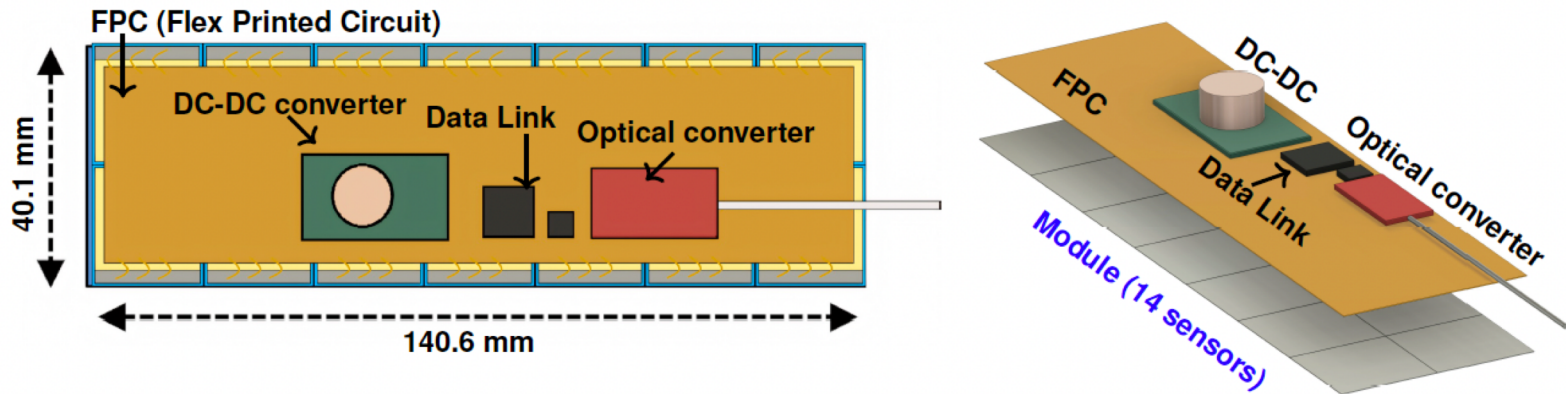


Figure 5.34: ITK Module

Barrel Stave:

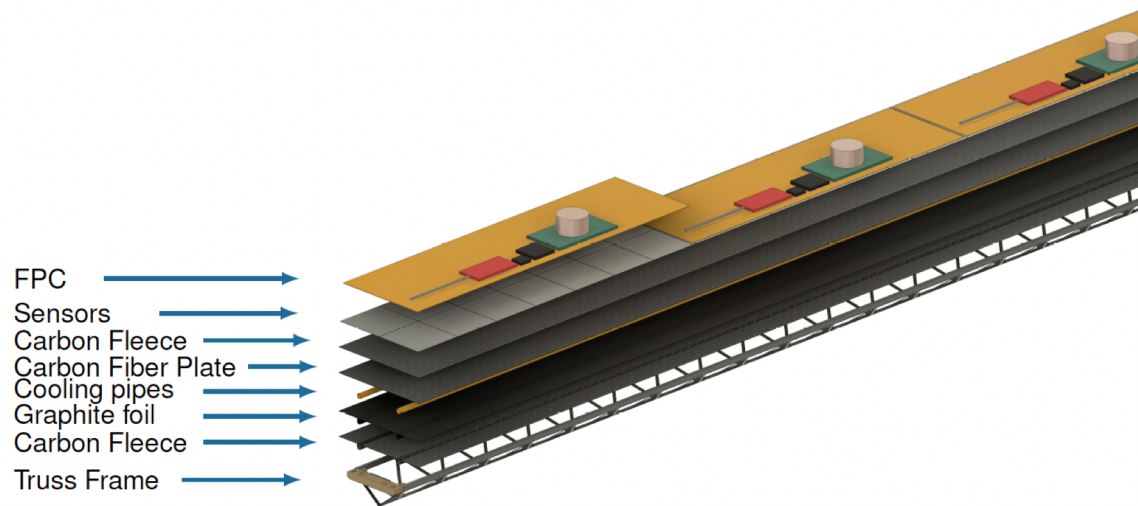


Figure 5.47: ITK barrel mechanics and cooling