

SciFi_652 DAQ @ SFRS

Slides by Christoph Caesar

NEW: TRG and CLK are distribute on optical links



White
Rabbit
Switch

2 connections:

A) (for timestamping of accepted trigger)

Exploder NIMout 7 -> NIM2TTL -> Pexaria TTLin1

B) (for sync/keep-alive trigger3)

Pexaria TTL out3 -> TTL2NIM -> Exploder NIMin3

TTL <-> NIM

MUPPETExploder
QSFP Add-on

MBS PC
KINPEX
TRIXOR
PEXARIA

4 x Fiber
data / gossip

4 x Fiber
clk_trg

Tunnel

Racks room

Patch panel

SciFi_652

Vacuum chamber

POWER_DISTR ?

4 x LV cables

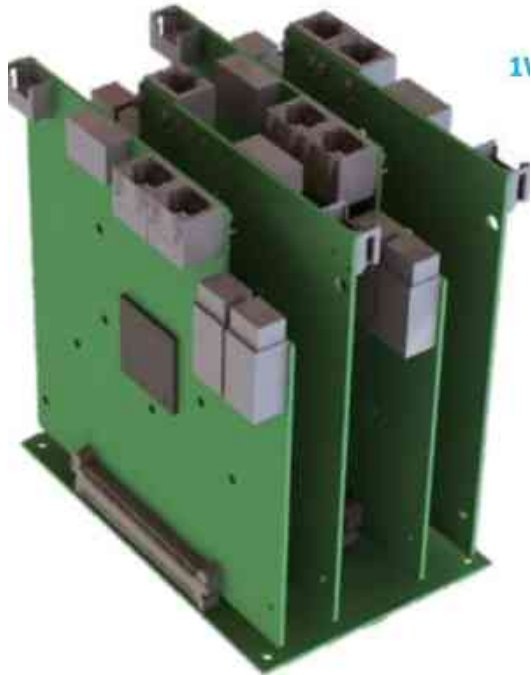
TDK Lambda

LV cables

SciFi_FEB (4 Hamamatsu MPPCs)
+ 4 MPPC_ROB3 (left pic)

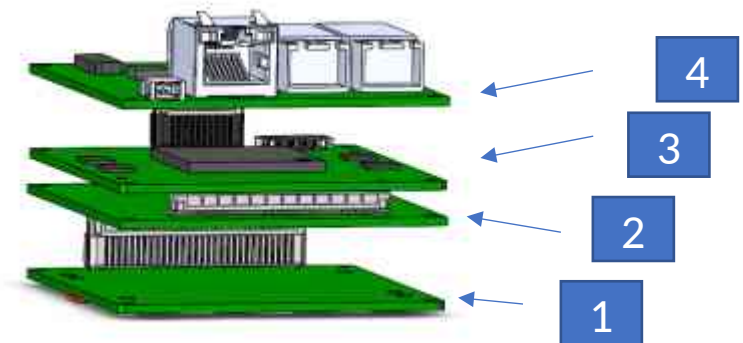
OR + 2 Reducer &
+ 2 MPPC_ROB3(A)
(right pic, like used for SFRS FoS)

Size 85mm * 131mm * ~150 mm

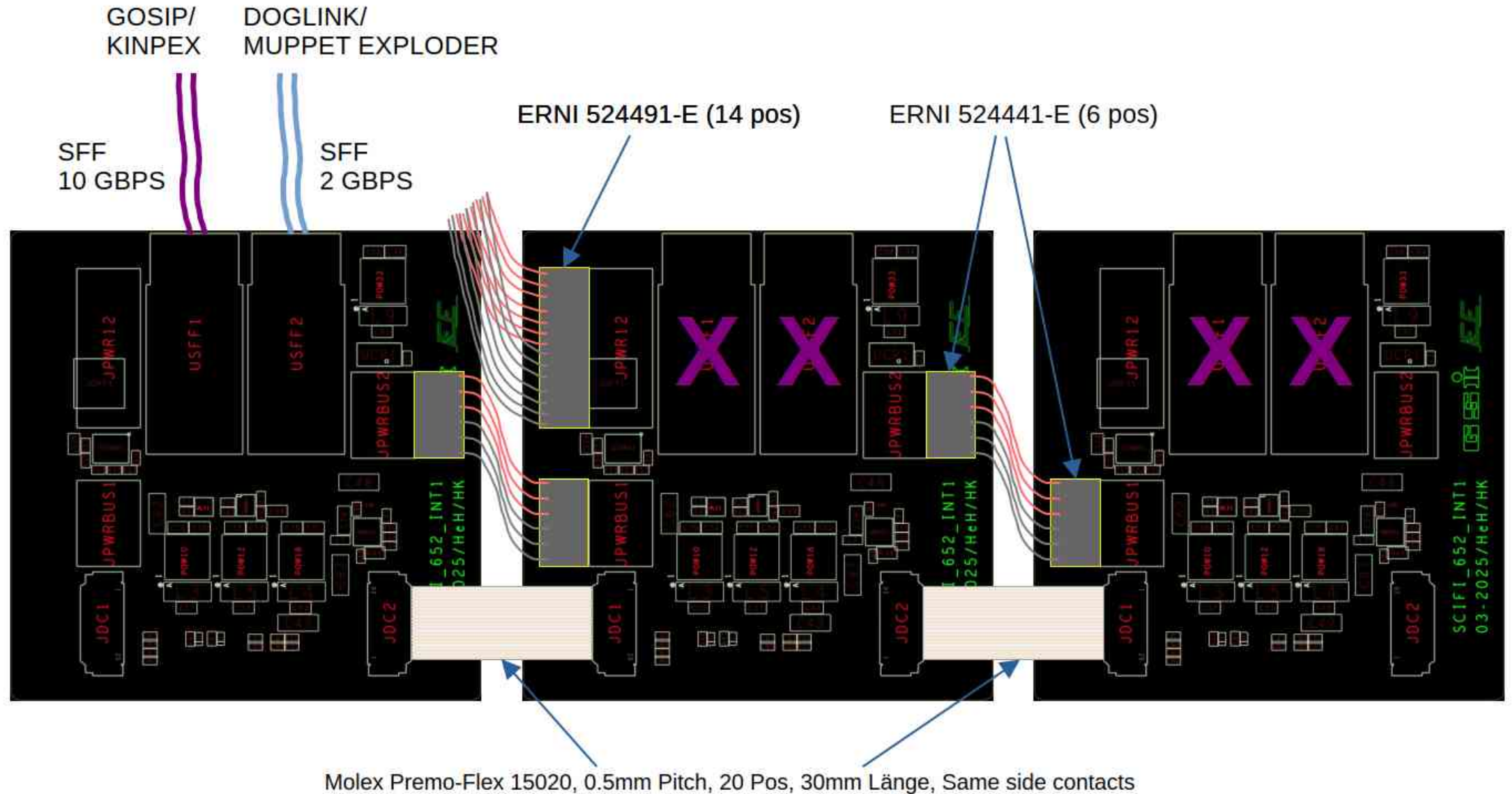


SciFi_652 (Stack)
1) SciFi_652 MPPC (2 Hamamatsu MPPCs)
2) SciFi_652_Amp (128Ch)
3) SciFi_652_TDC (128Ch)
4) SciFi_652_INT (128Ch)

Size 65mm * 65mm * ~65mm

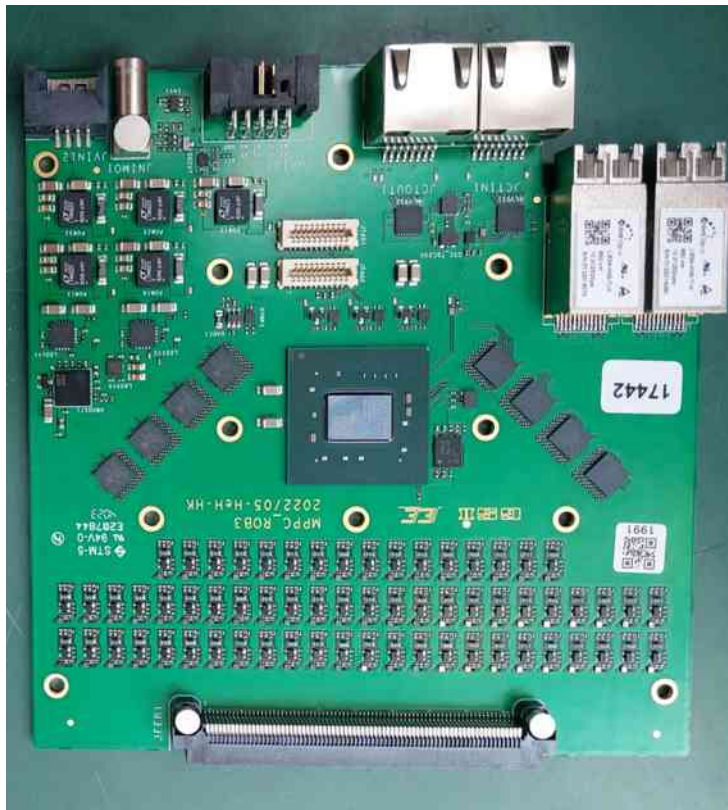


SCIFI_652 system connection overview



Part number: 15020-0205

MPPC_ROB3
developed for R3B
based on WASA development

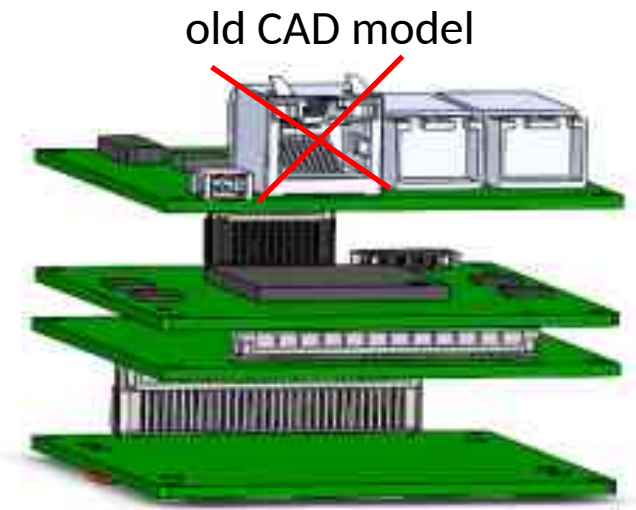


MPPC_ROB3A (done in 2024)
developed for SFRS FoS
same as 3 but connectors ,stand'

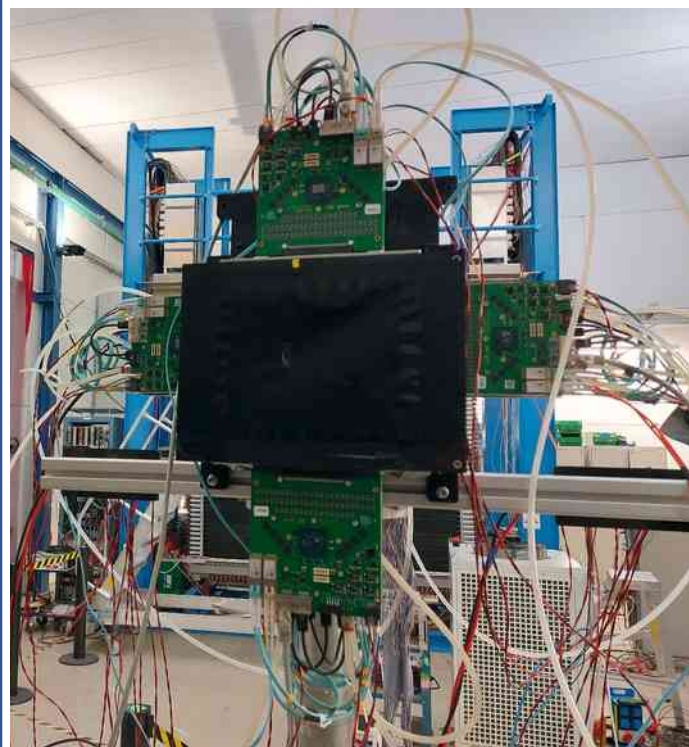


SciFi 652 (done in 2025)
developed for SFRS Series

same functionality, but always read
two SiPMs together and change
form factor
+ fully optical

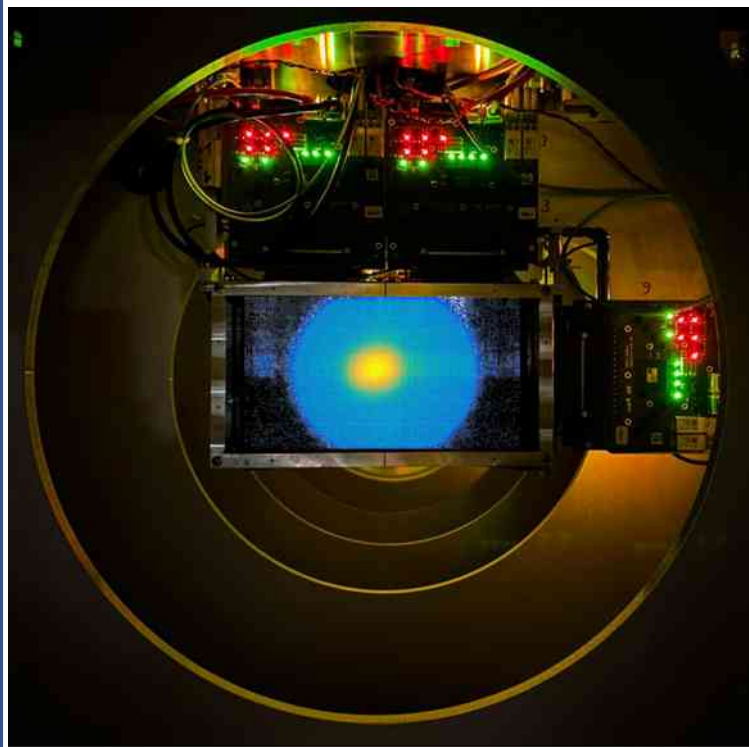


Prototype Dec 2023



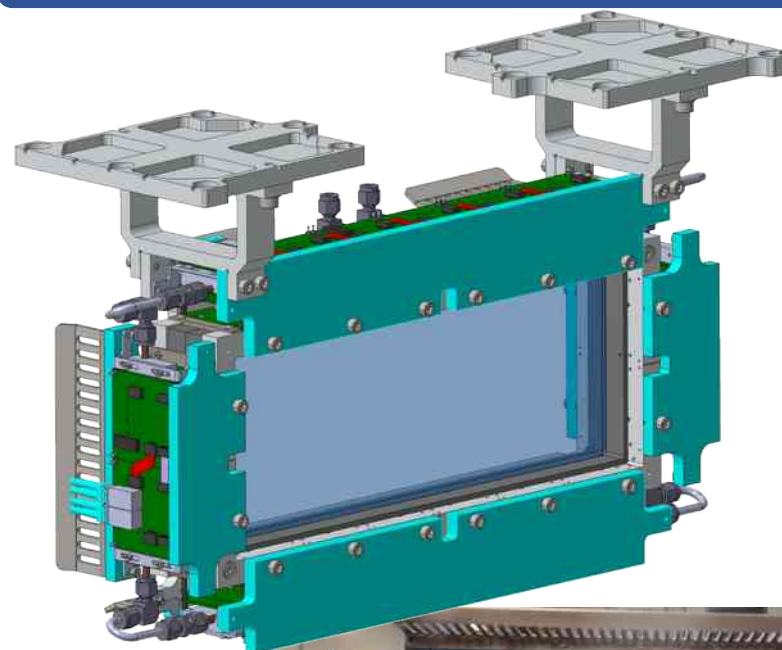
MPPC_ROB3

FoS Feb 2025



MPPC_ROB3A

Series End of 2025



SciFi 652



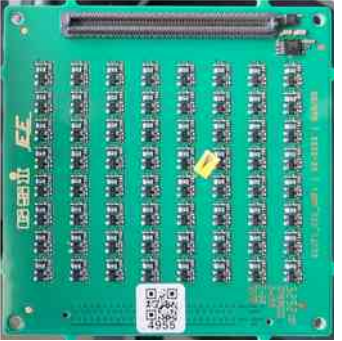
All detectors 390×130 mm²
and use SciFi652 for double
sided readout



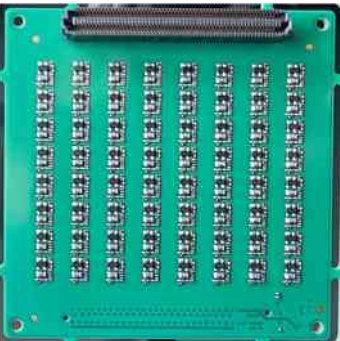
4) SciFi_652_INT



3) SciFi_652_TDC



2) SciFi_652_Amp



1) SciFi_652 MPPC



SciFi_652 (Stack)

- 1) SciFi_652 MPPC (2 Hamamatsu MPPCs)
- 2) SciFi_652_Amp (128Ch)
- 3) SciFi_652_TDC (128Ch)
- 4) SciFi_652_INT (128Ch)

Size

65mm * 65mm * ~65mm

