Electronic boards
Mechanical assembly procedure

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Notes and recommendations

- ❑ The FE electronics is organized in tiles of three boards: adapter, MAROC and FPGA
- ❑ The boards are assembled on the carbon fiber electronic panel following a well defined sequence.
- ❑ There are 115 tiles servicing 3 MAPMTs (3x) and 23 tiles servicing 2 MAPMTs (2x)
- ❑ The adapter and MAROC boards have two variants (2x and 3x), the FPGA is the same for all the tiles
- ❑ The adapter and the MAPMTs are on the side of the panel toward the inside of the RICH, the MAROC and the FPGA on the side toward the outside of the RICH

- ❑ **Use powder free nitrile gloves during all the phases of the assembly procedure**
- ❑ **Avoid to touch the glass window of the MAPMTs**
- ❑ **Secure the nuts by hand, don't use tools**

- ❑ **The assembly sequence should start from the top row**
- ❑ **Plugging in the MAPMTs should be last operation of the tile assembly**

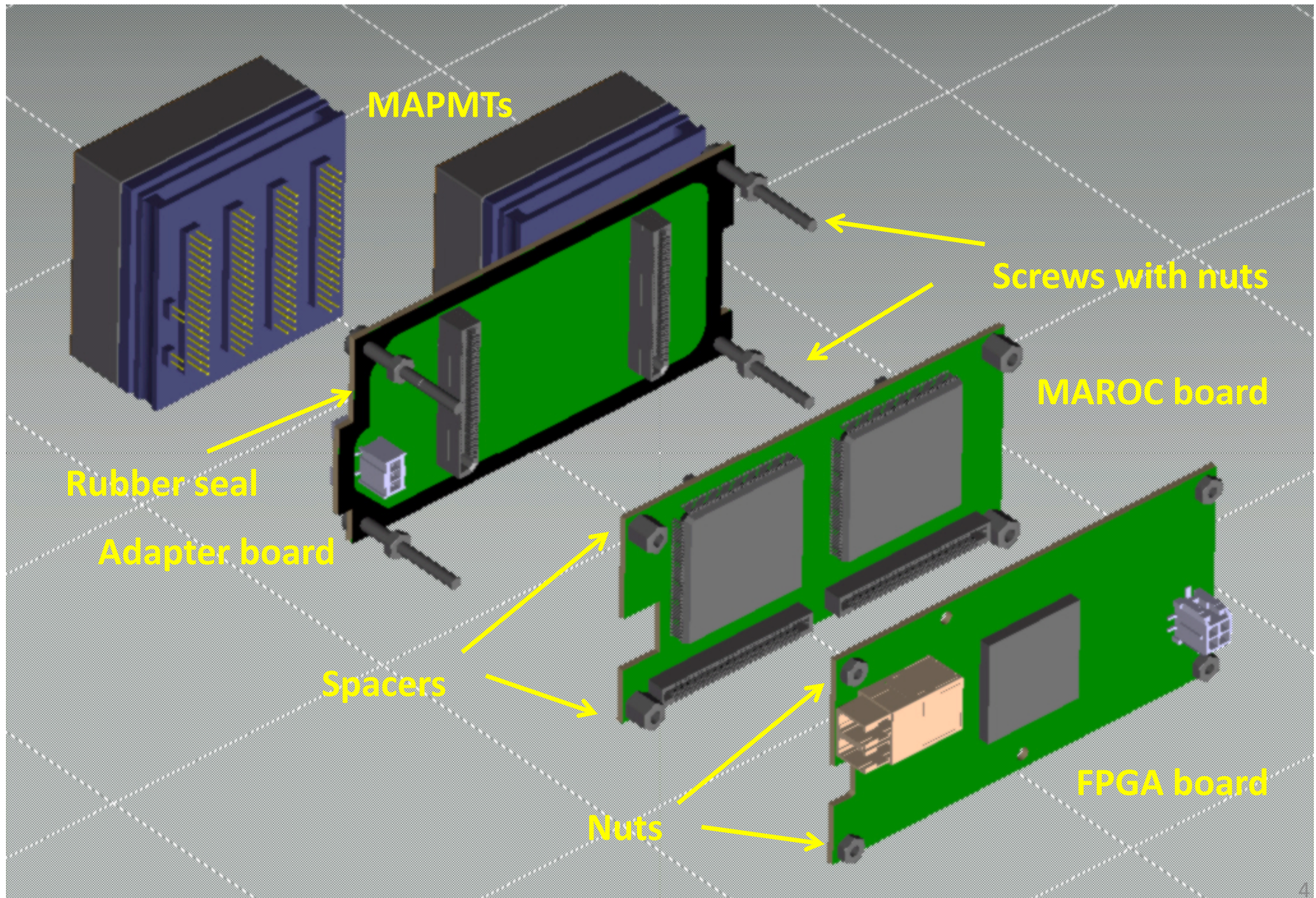**Electronic panel mounted on the assembly support**
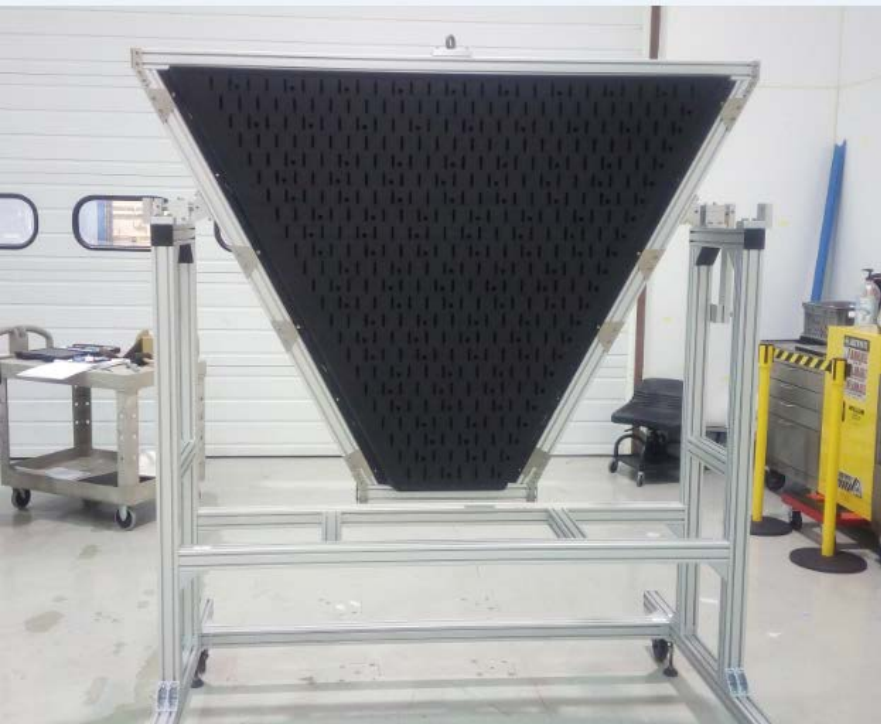
Scheme of the tile assembly on the panel, as seen from the MAPMT side In yellow are indicated the 2x tiles
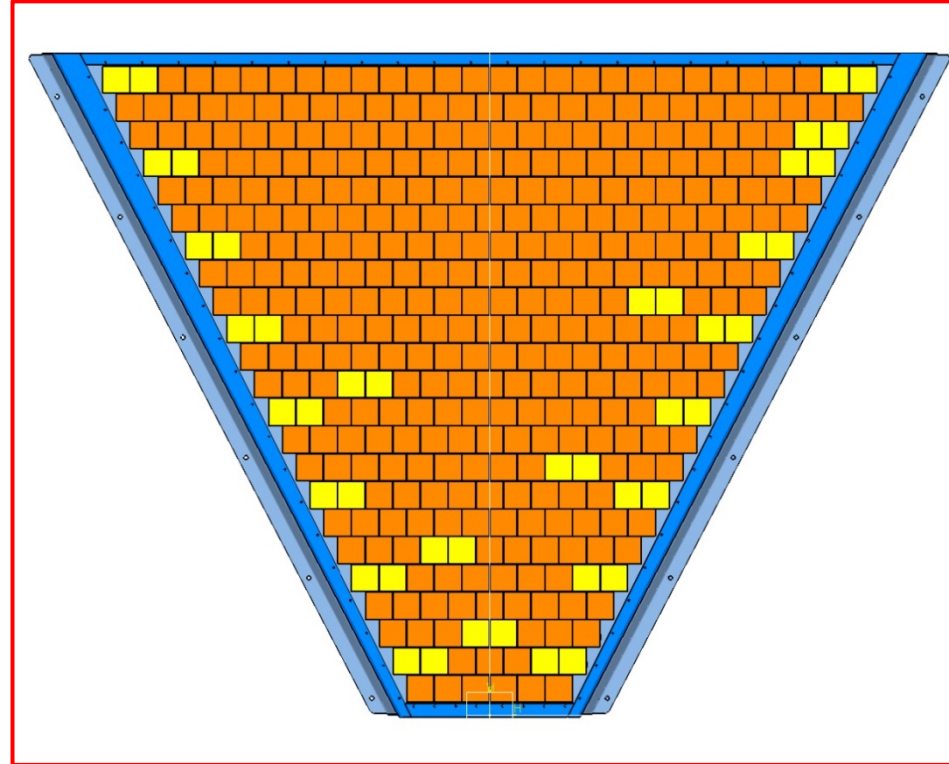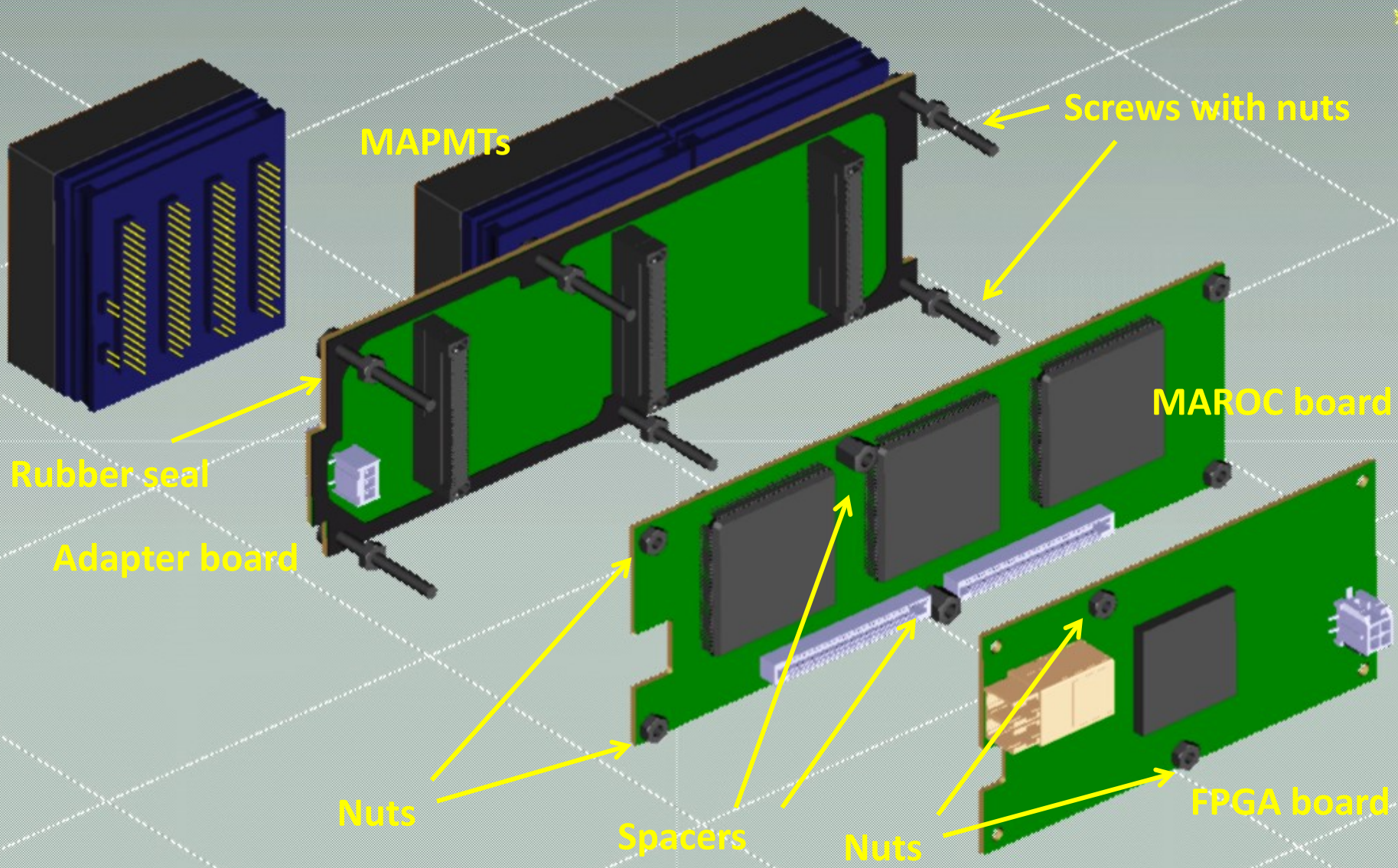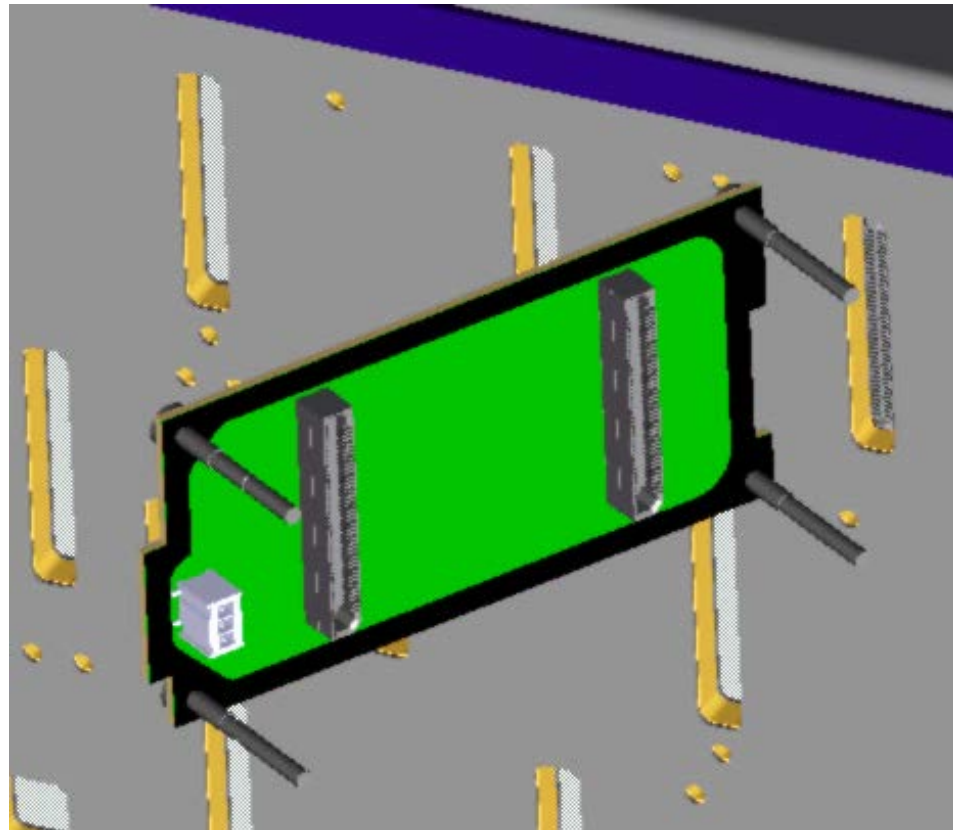

In the following, "inner side" of the electronic panel is the one toward the inside of the RICH, "outer side" is the one toward the outside of the RICH

Elements of the 2x tile

MAPMTs

Screws with nuts

Rubber seal

Adapter board

MAROC board

Spacers

Nuts

FPGA board

Elements of the 3x tile

Screws with nuts

MAPMTs

MAROC board

Rubber seal

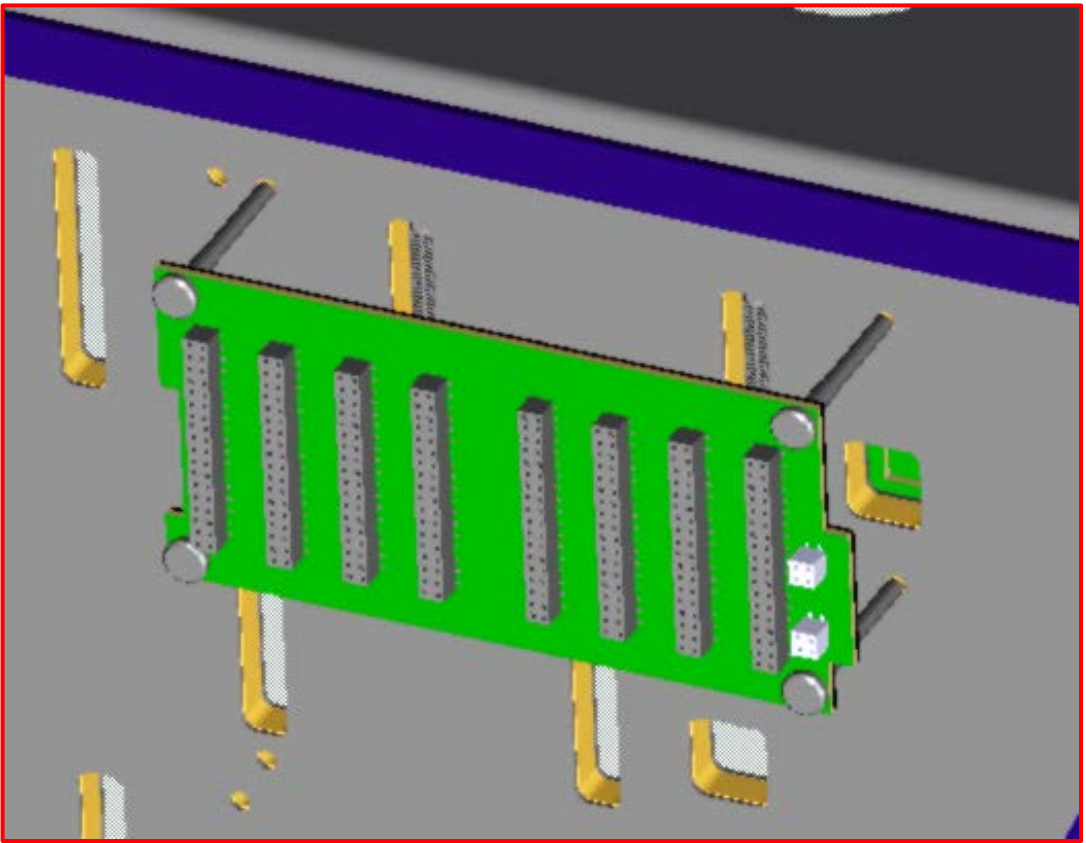Adapter board

Nuts

Spacers

Nuts

FPGA board

Insert the screws in the holes of the adapter board

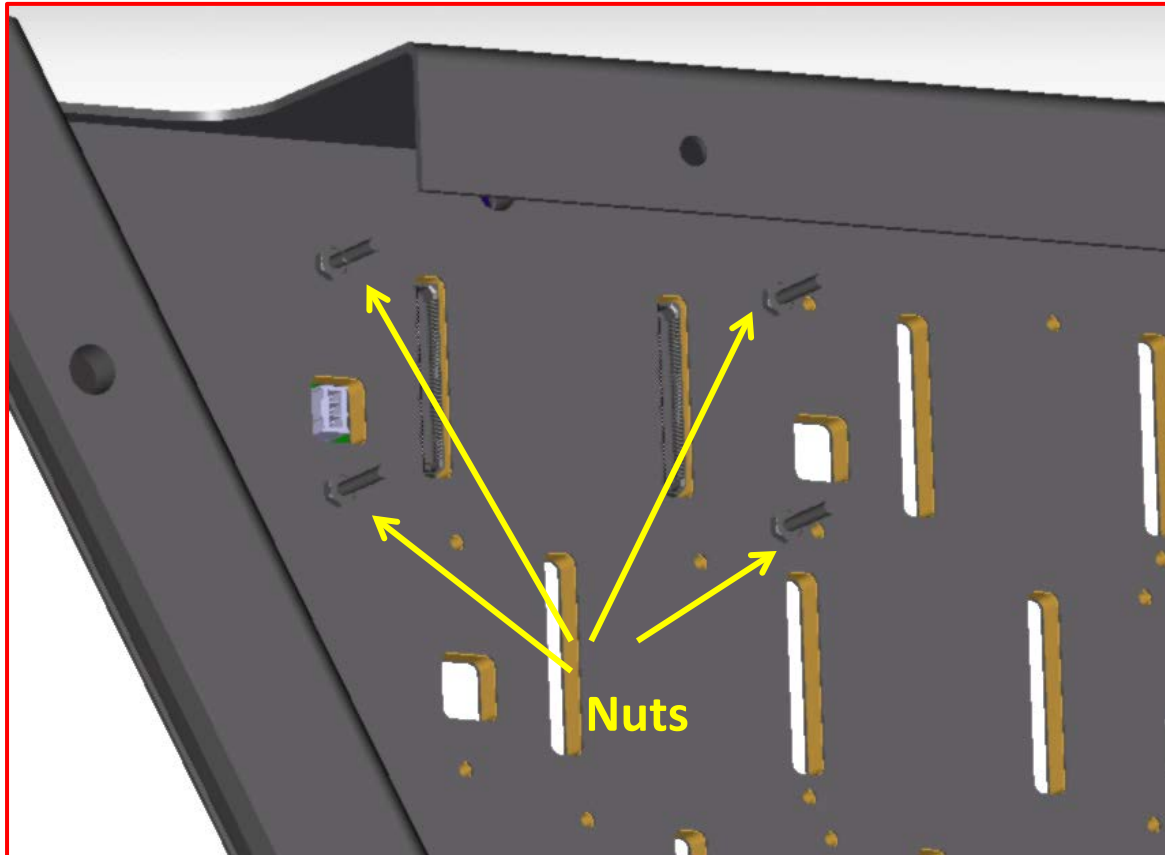**Place the rubber seal on the inner side of the board**

2x tile

2x tile

Insert the adapter board with seal on the inner side of the panel

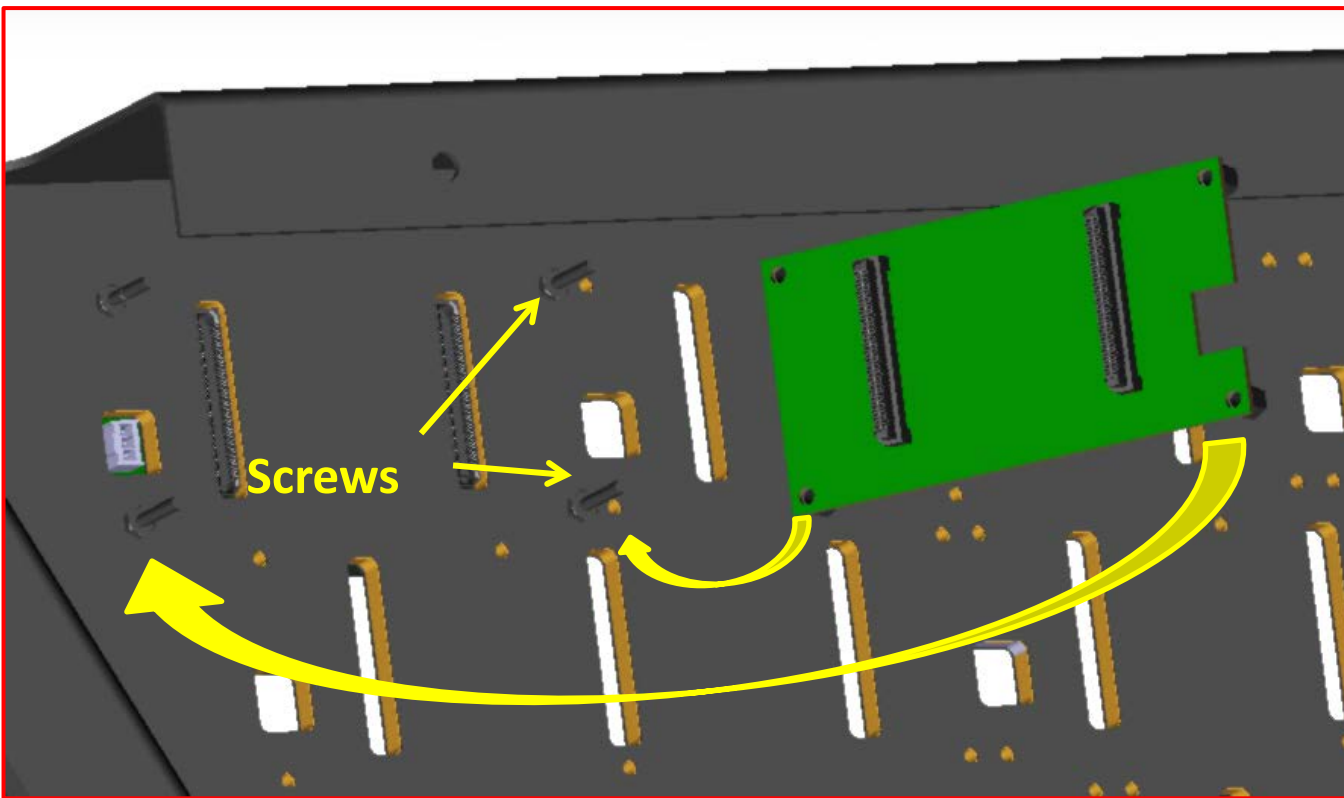Follow the positions of the holes for the screws and for the HV connectors

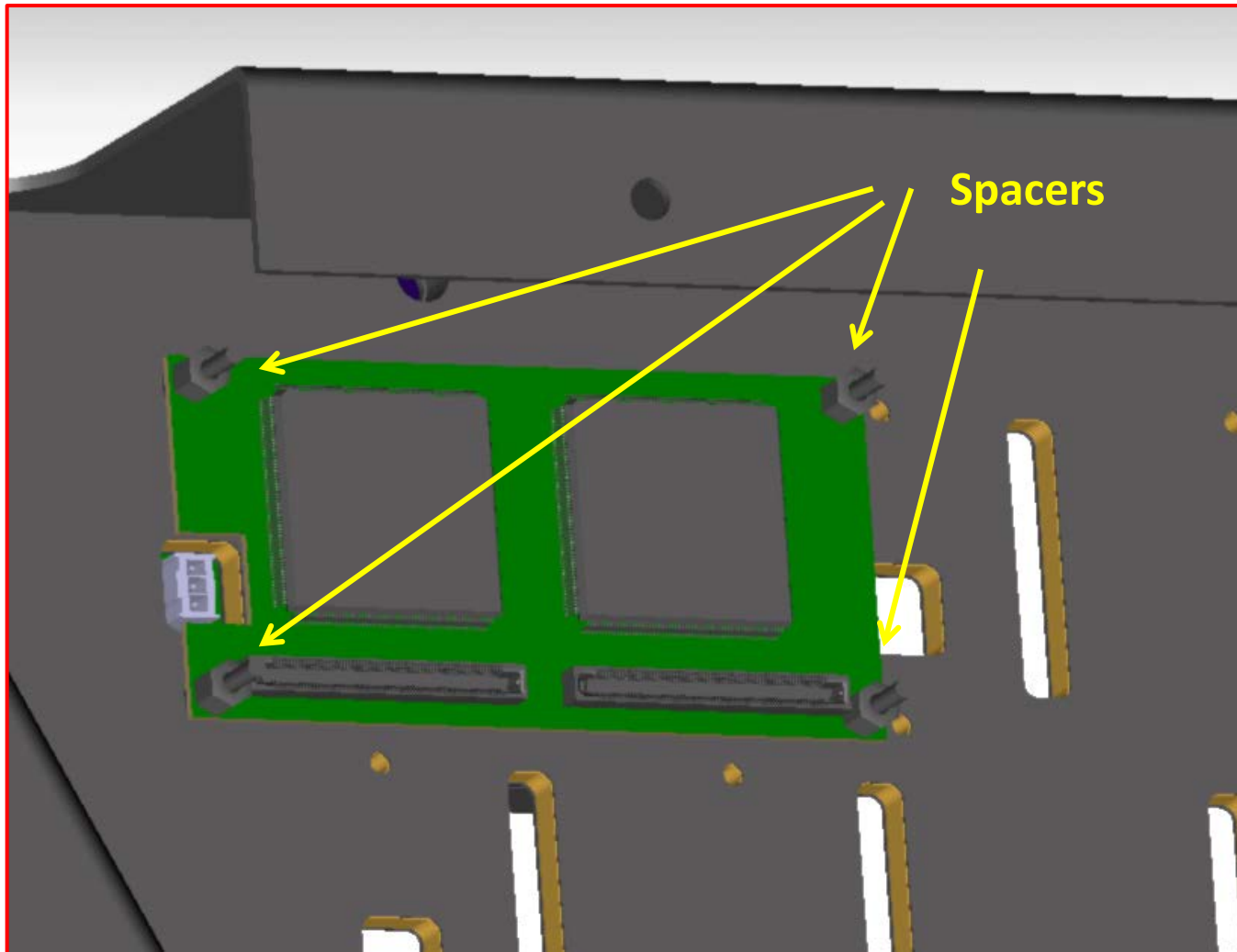**Screw the nuts on the outer side of the outer side of the panel**

Nuts

2x tile

Insert the MAROC board in the four screws on the outer side of the electronic panel

Then plug the connectors to the adapter board

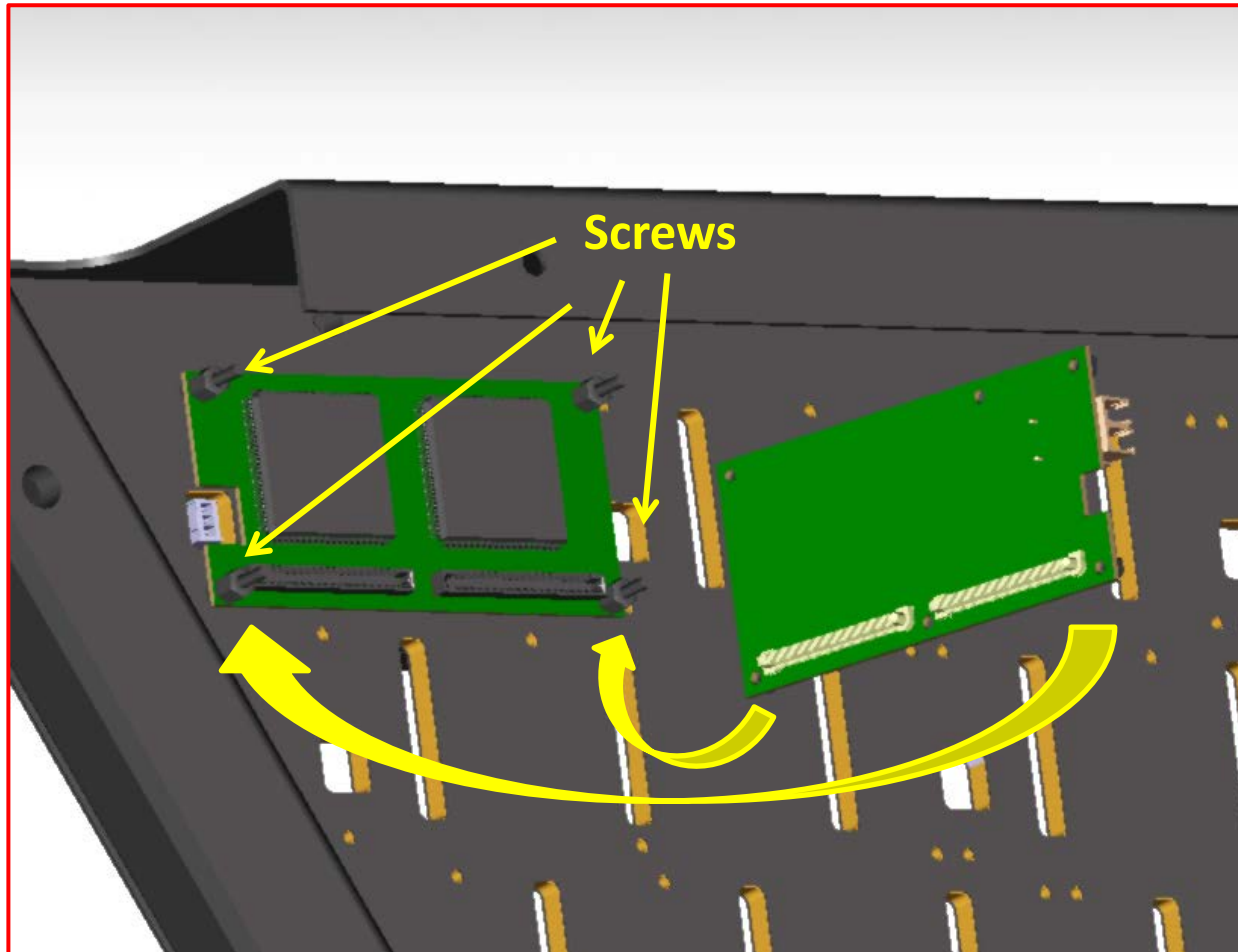

Screws

2x tile

Fix the MAROC by using the spacers

Spacers

2x tile

Insert the FPGA on the screws

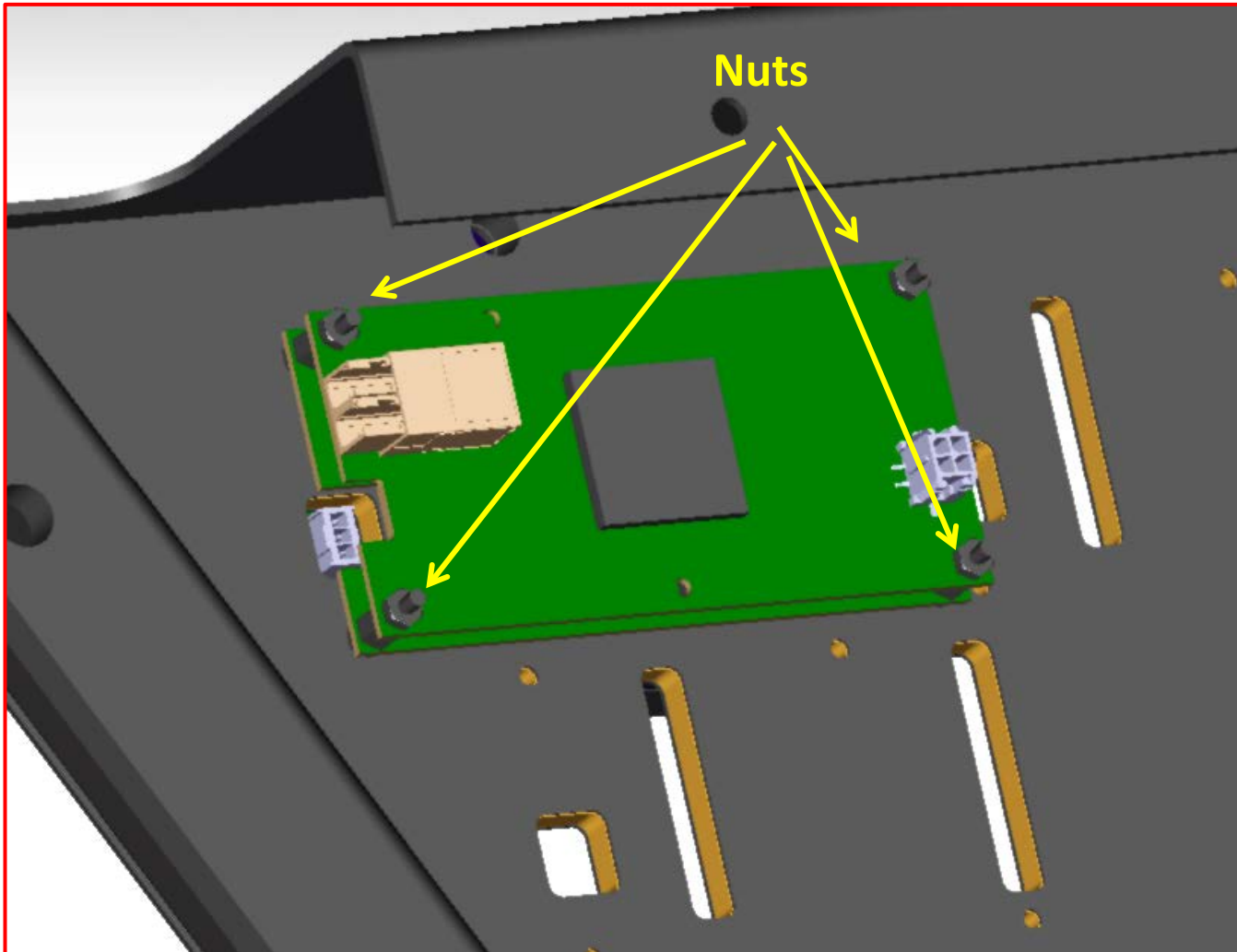**Then plug the connectors to the MAROC board**

Screws

2x tile

Insert the FPGA on the two central screws

Then plug the connectors to the MAROC board
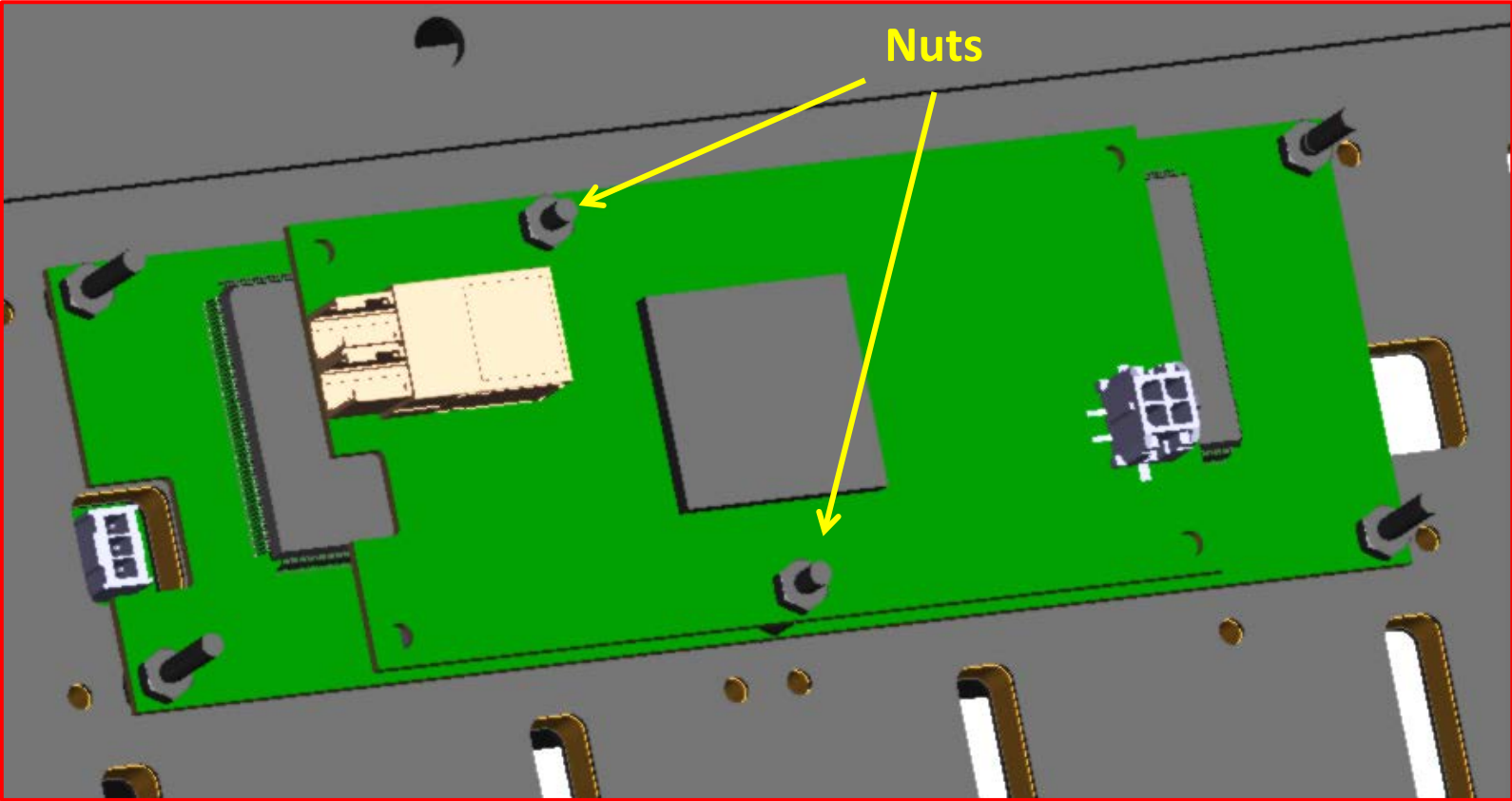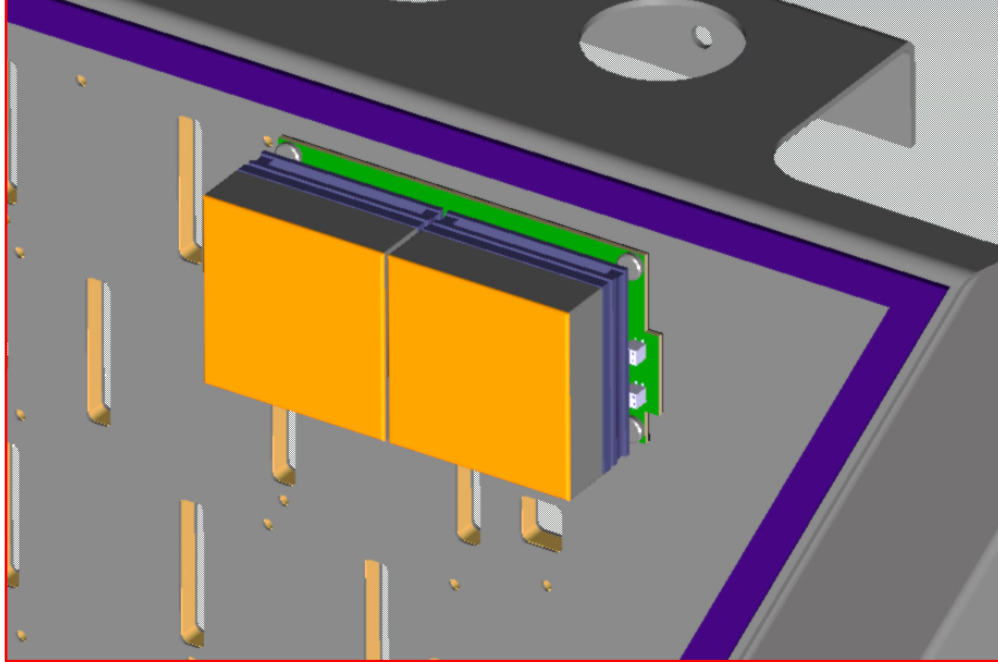

Screws
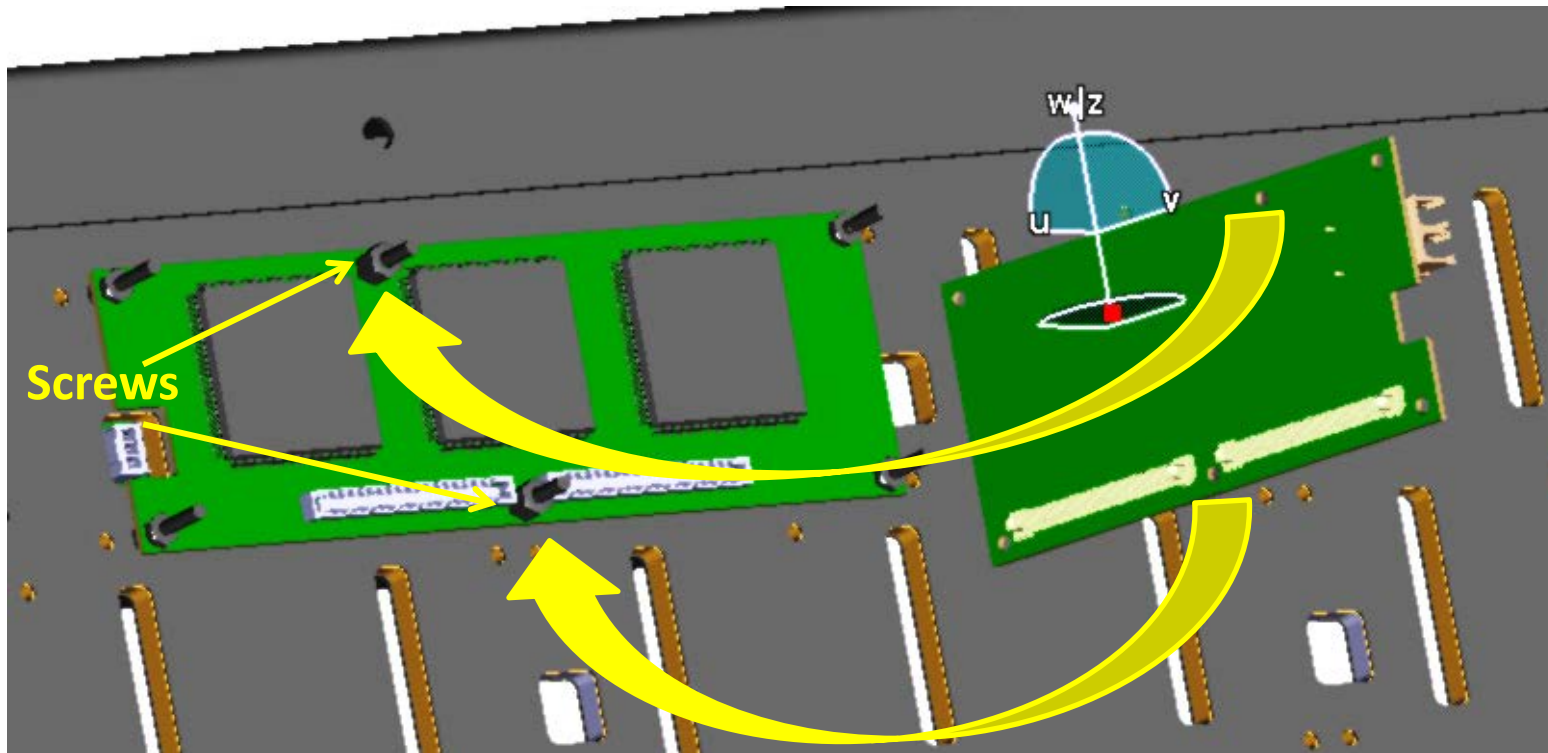
3x tile

Fix the FPGA board with the four nuts

2x tile
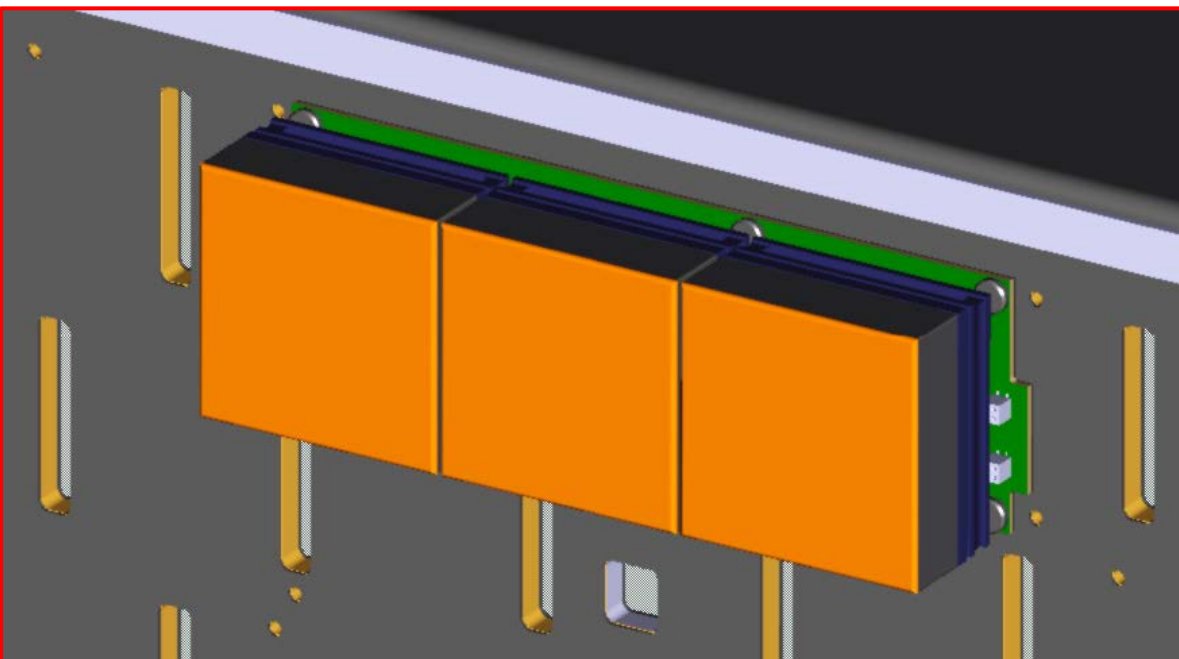
Fix the FPGA board with the two nuts

3x tile

2x tile

Plug the MAPMTs on the adapter board

3x tile