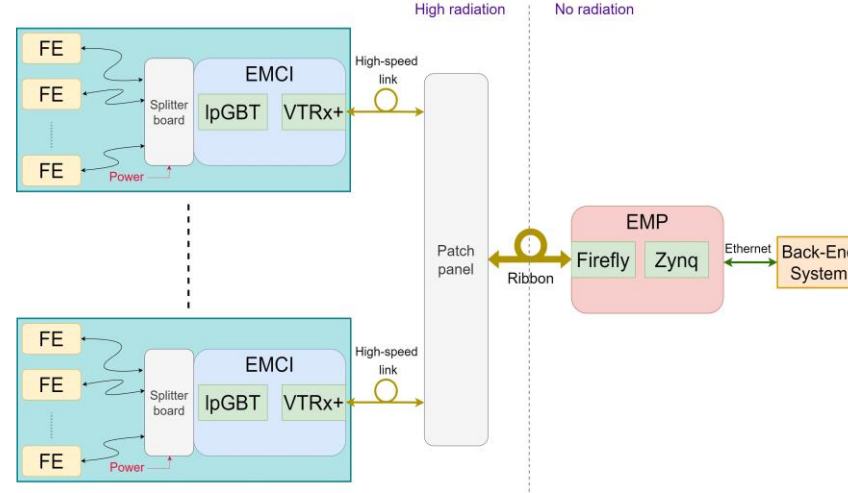


EMCI update

Daniel Blasco Serrano

EMCI update

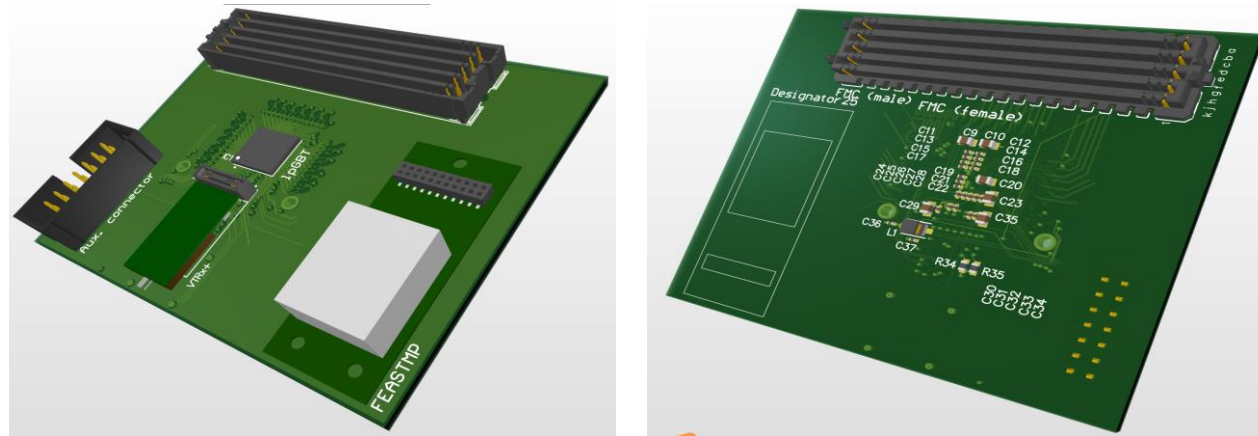


Interfaces

- EMCI uses an FMC to interface with the front-end electronics
 - eLinks, phase-shifter clocks
 - I2C master interfaces
 - GPIO
 - ADC, DAC
 - 1.2V and 2.5V voltages for reference only
 - 2x NTC thermistors for external interlock
- VTRx+ connector for high-speed link for interfacing with EMP (Back-End)
- IpGBT can be configured through FMC, VTRx+ and auxiliary connector

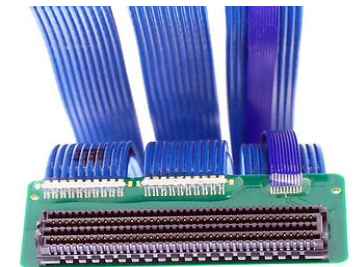
FMC Connector

- There will be two FMC connector available sharing the same nets (only one of them must be used), one on each side (female on the FEASTMP side, male on the other side)

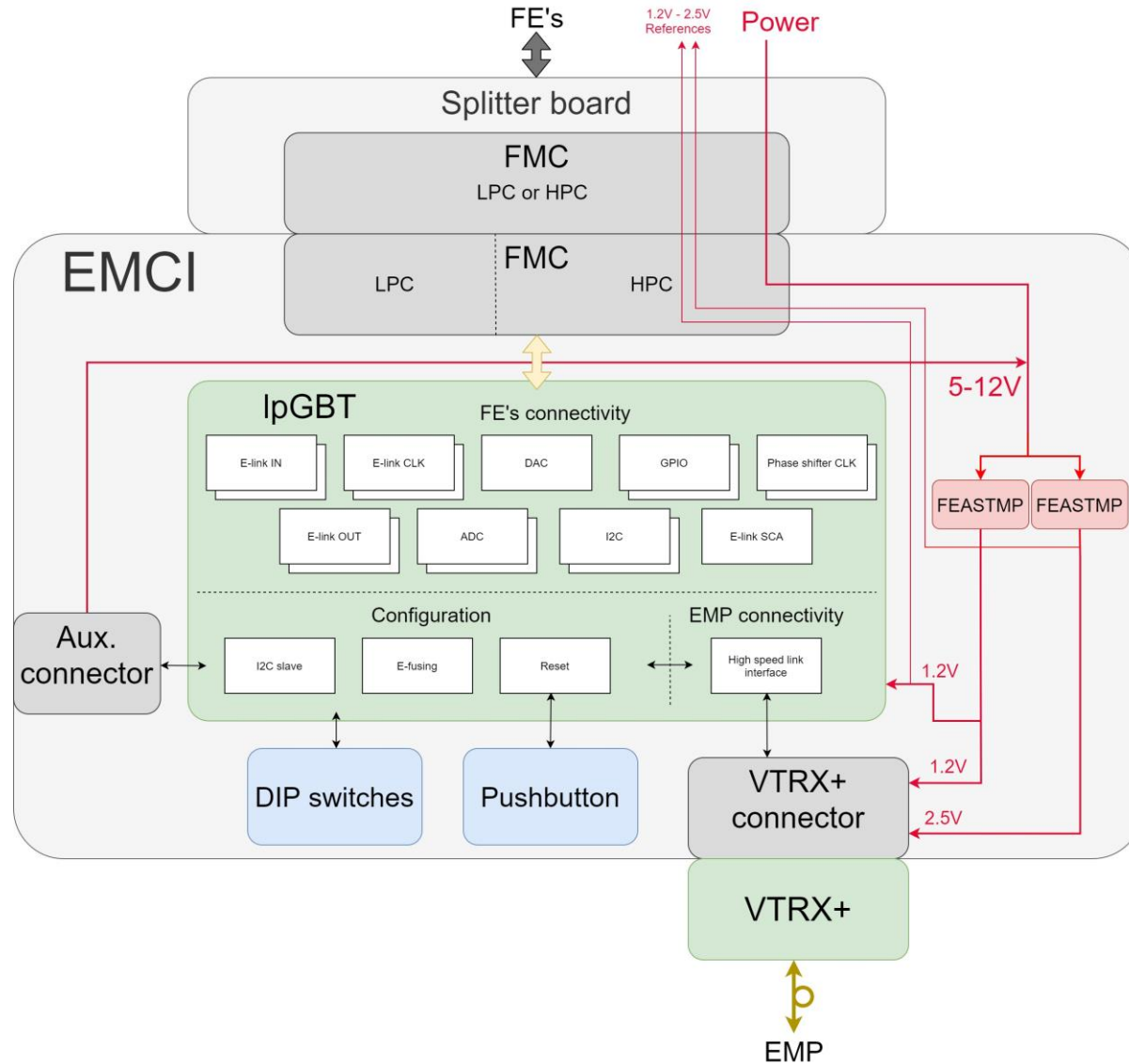


- Gap between PCB with FMC plugged: 10mm
- FEASTMP height (tallest component): 8.4mm

- EMCI may be connected to the FE by means of a splitter board or directly onto a compatible carrier (FMC Low Pin Count may be used, but losing some features)
- FMC VITA standard not followed (but partially compatible not to burn other VITA boards)



EMCI schematic



Internal use of peripherals

ADC channel	Primary use	Secondary use (with jumper)
0	VTRX+ NTC	-
1	VTRX+ RSSI	-
2	External (FMC)	PT1000 FEASTMP 2.5V
3	External (FMC)	PT1000 FEASTMP 1.2V
4	External (FMC)	2.5V
5	External (FMC)	12V
6	External (FMC)	-
7	External (FMC)	-

GPIO 0-13 → FMC external

GPIO 14 → FEASTMP 2.5V PGOOD

GPIO 15 → FEASTMP 1.2V PGOOD

I2C master 0-1 → FMC external

I2C master 2 → VTRx+ configuration

Power

Input voltage: 5-12V through FMC connector (local power)

1. FEASTMP 12V → 2.5V
2. FEASTMP 12V → 1.2V

Expected consumption: <1W