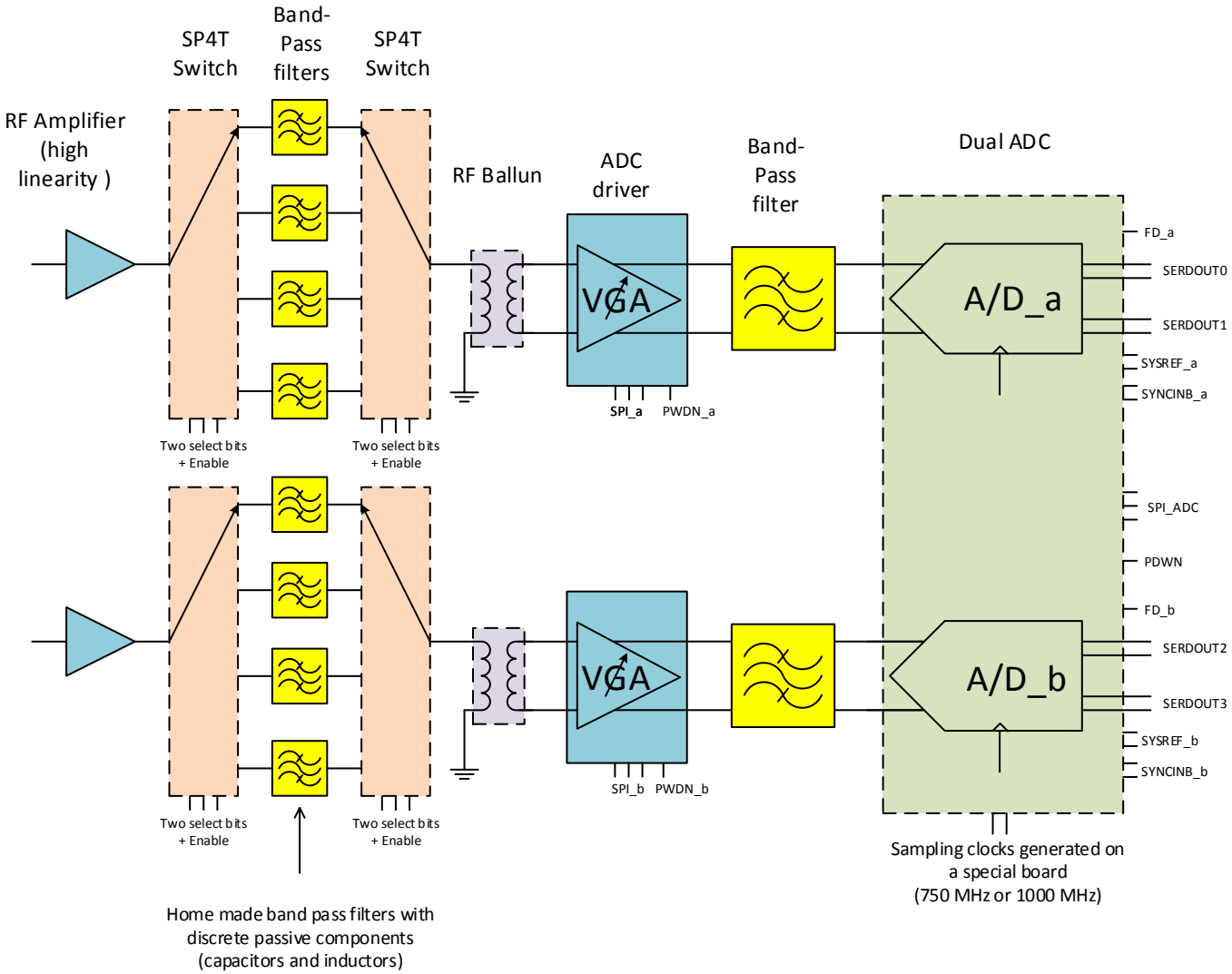
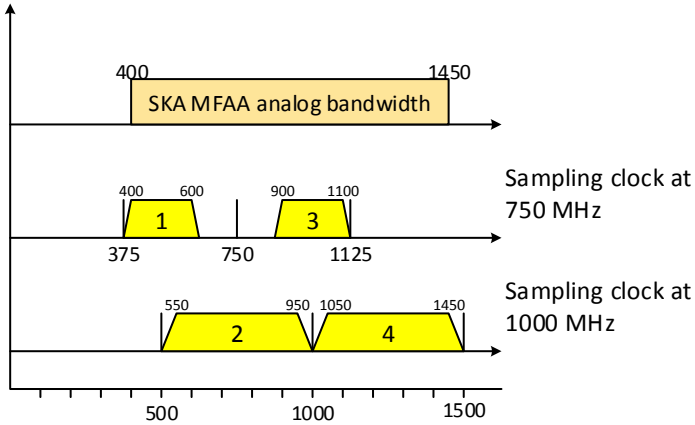
Author: Stéphane Gauffre
Insitute: U. de Bordeaux
Version: Draft v1.0
Date: 12/05/2014

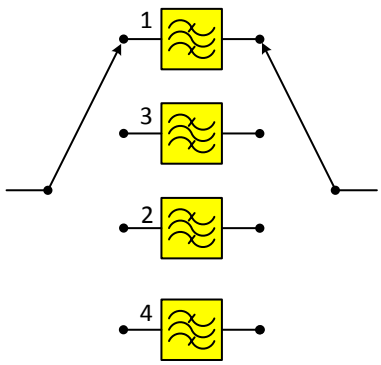
Dual Channel ADC with analog front-ends for SKA MFAA



Frequency sub-bands selection



Four switched anti-aliasing filters for frequency sub-bands selection



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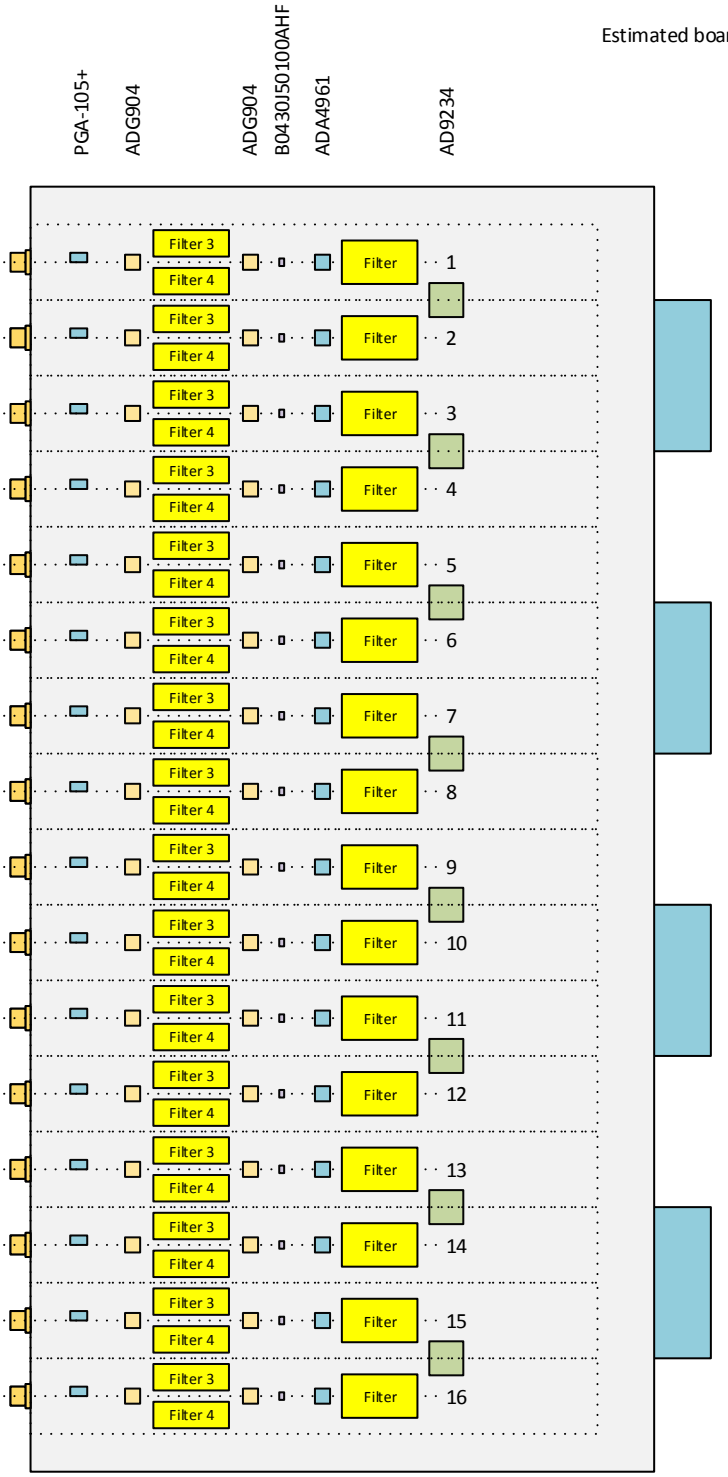
ADU² board with 8 dual channels Printed Circuit Board (TOP side)

Estimated board size : 340 mm x 165 mm

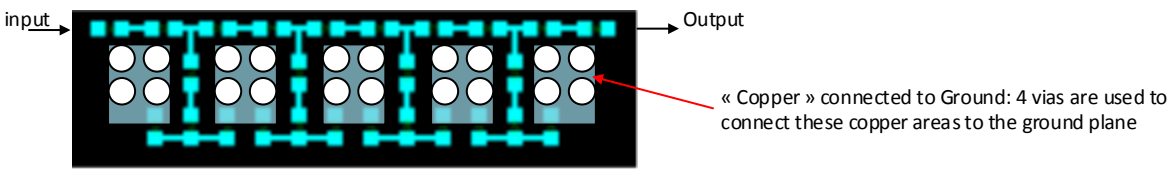
MCX End Launch Connector



Filters: 1, 2, 3 and 4

9th order elliptic Band-Pass filter (60 dB rejection)

Area: 20 mm x 7 mm



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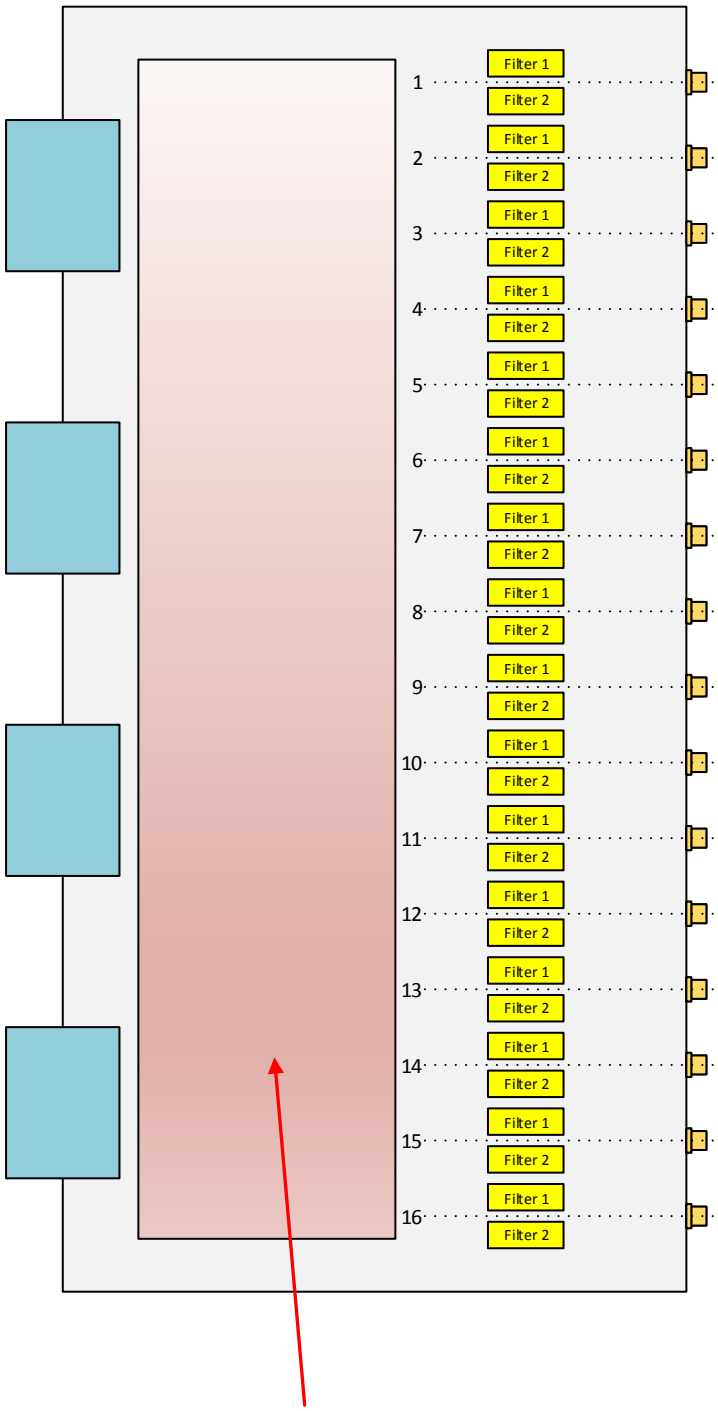
ADU² board with 8 dual channels Printed Circuit Board (BOTTOM side)



Area dedicated to DC/DC converters, LDO regulators, logic circuits (MUX, decoders), Clock distribution

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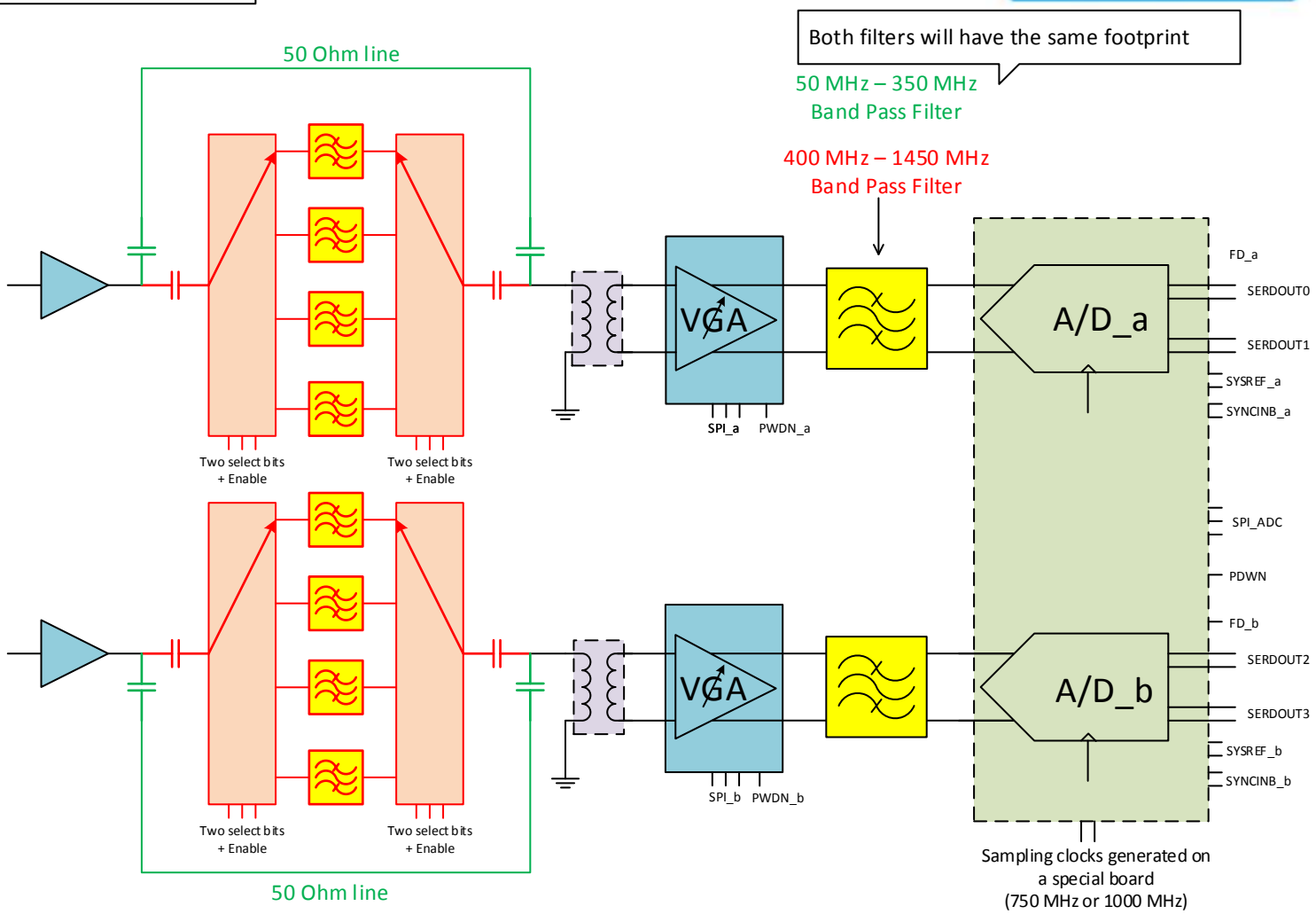
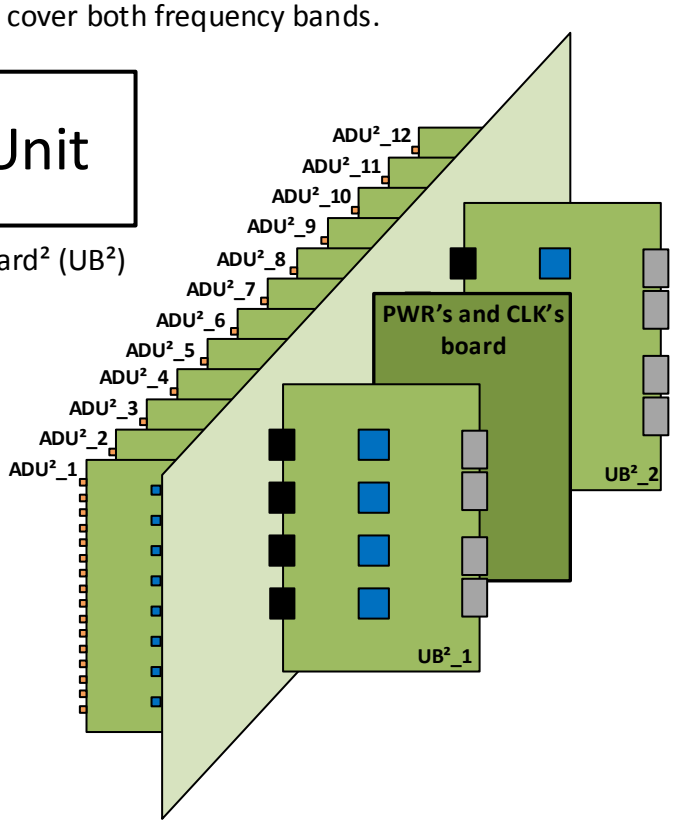
Dual Channel ADC with analog front-ends for both AA



For LFAA: the components in red will not be assembled on the board. The anti-aliasing filter will have a bandwidth of 300 MHz between 50 MHz and 350 MHz.
For MFAA: the components in green will not be assembled on the board. The anti-aliasing filter will have a bandwidth of 1050 MHz between 400 MHz and 1450 MHz.
The RF Ballun will be TCM2-33WX+ from MiniCircuits to cover both frequency bands.

MFAA Signal Processing Unit

6 multi-ADC boards (ADU²) are connected to one Uniboard² (UB²) via a backplane board.