



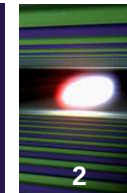
L2RF electronics

Ewa Janas

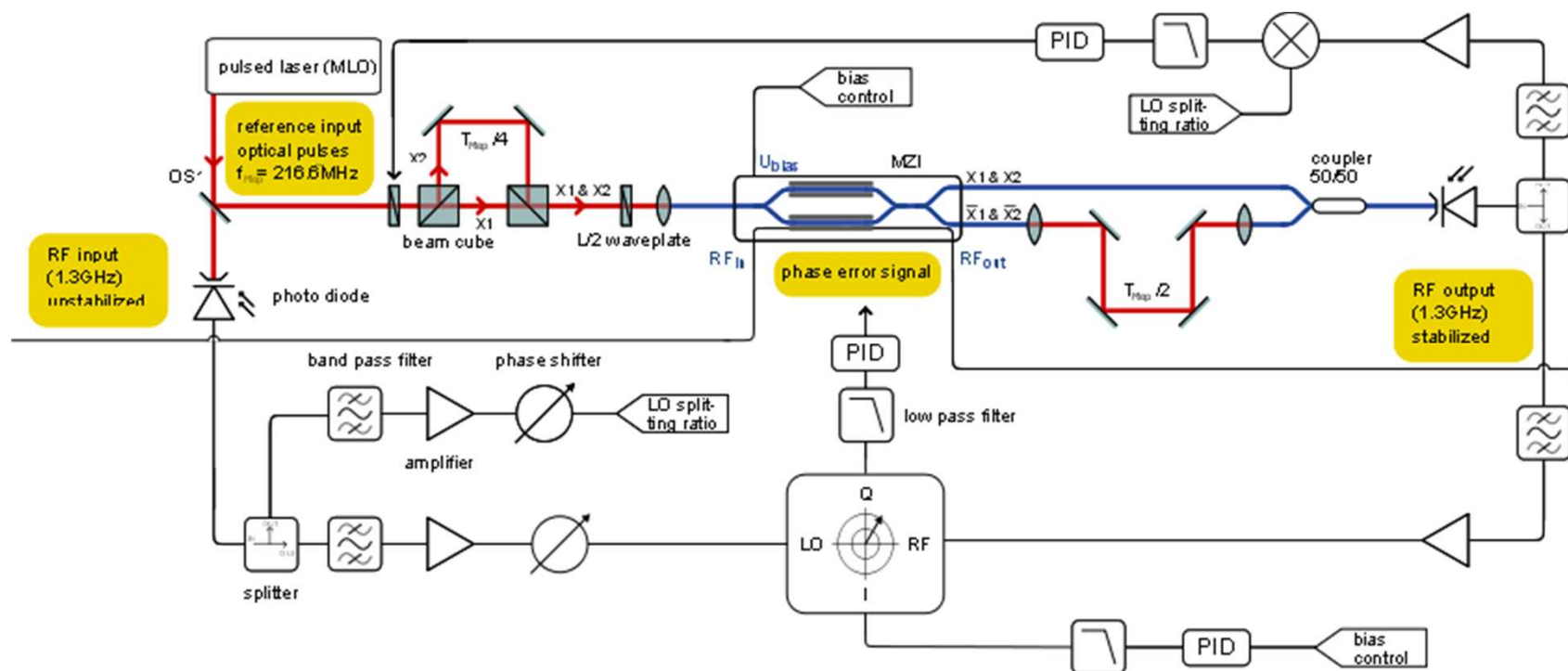
Advanced Techniques in LLRF control for XFEL - Collaboration Meeting
Świerk, 20.02.2013



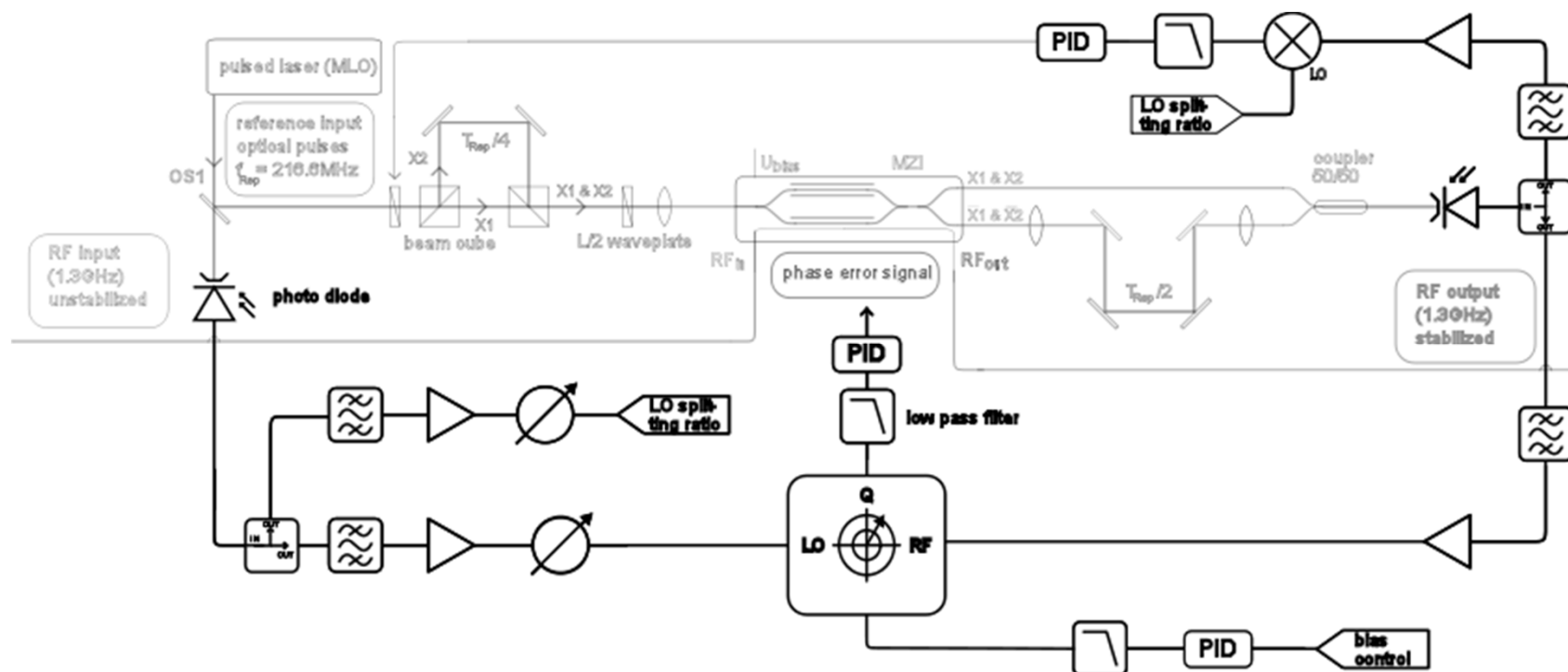
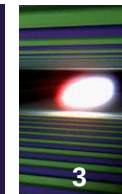
Laser to RF conversion electronics scheme



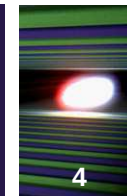
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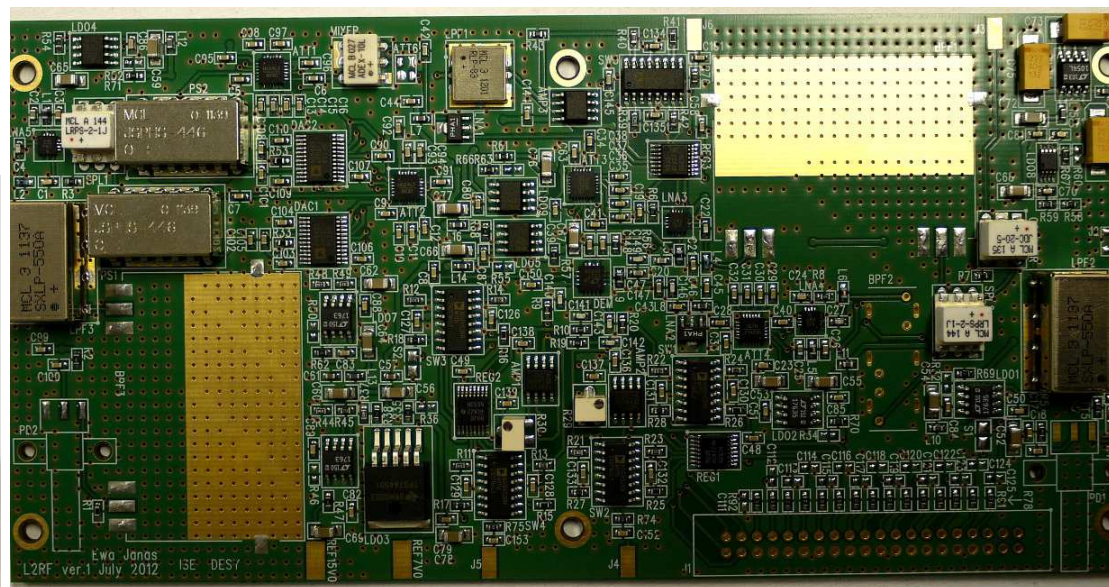
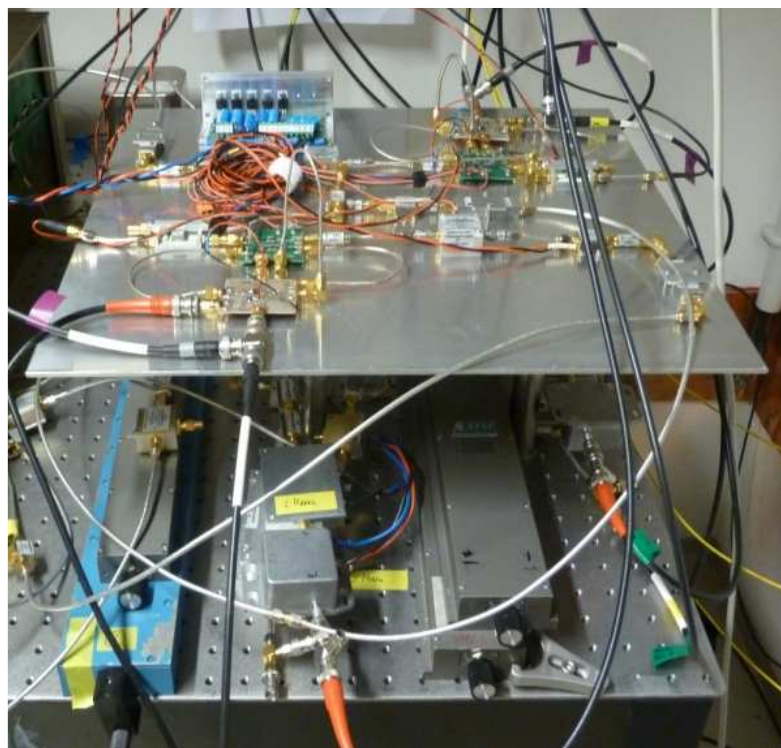
Laser to RF conversion electronics scheme

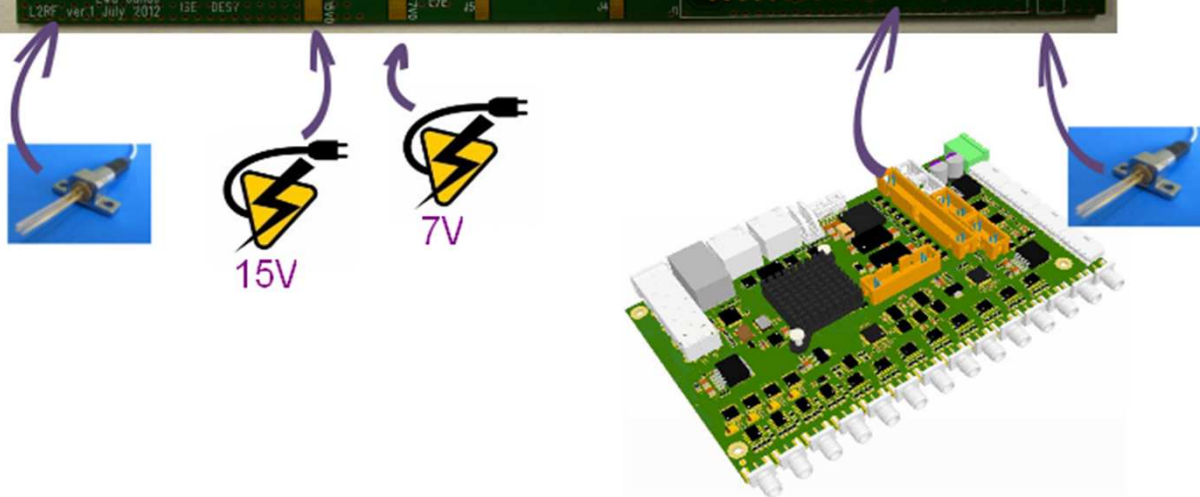
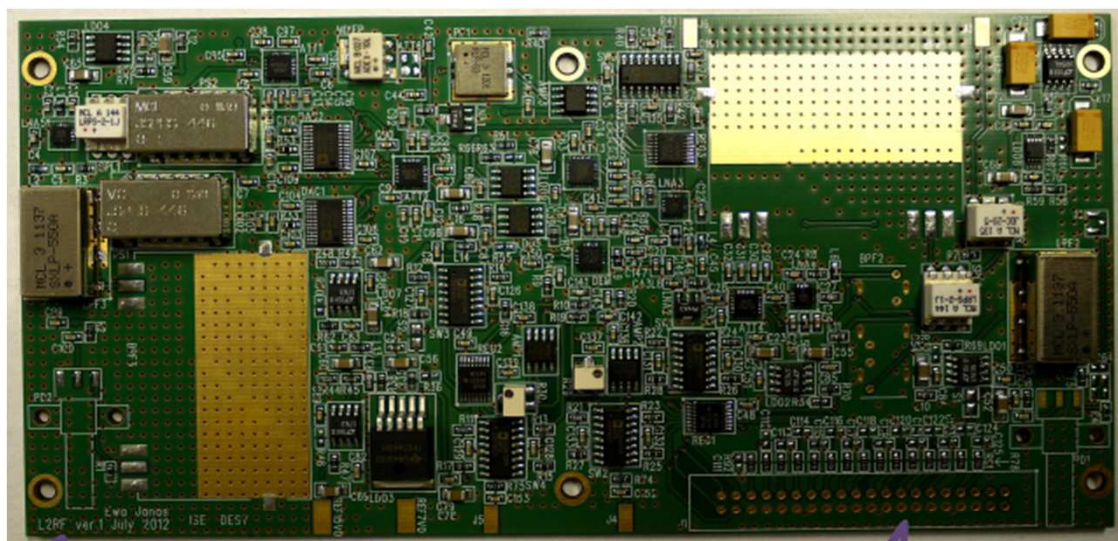
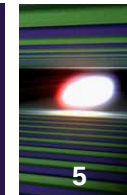


Electronics – 3 stages



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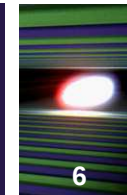




TMCB applications:

- 2 PID control loops
 - 3x DAC
 - 3x ADC
- 4 monitoring ADCs
- Control over devices on the PCB
 - 14 (16) GPIO
- Sensor's data collection
 - 2x PT1000
- Temp control for optics

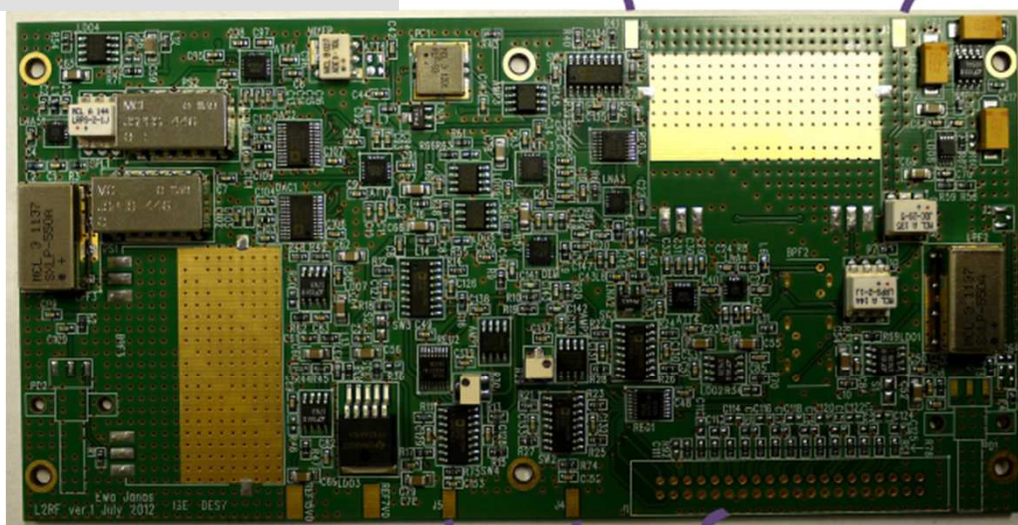
PCB - outputs



3rd output

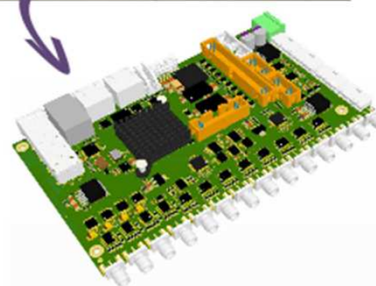
Splitting ratio correction

**RF signal
monitor**

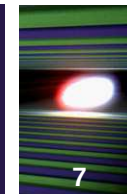


1st & 2nd output

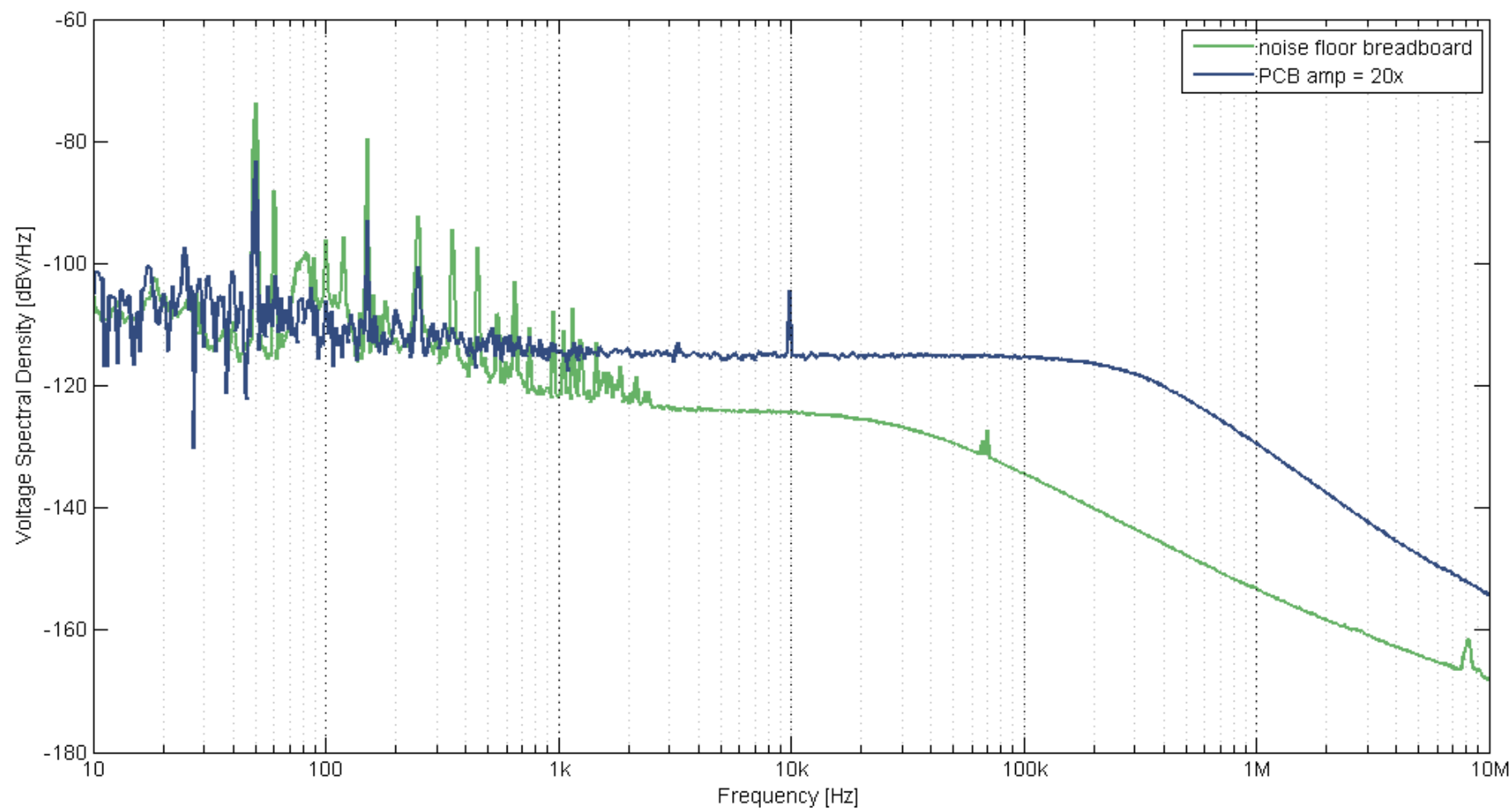
Phase error & Ubias correction

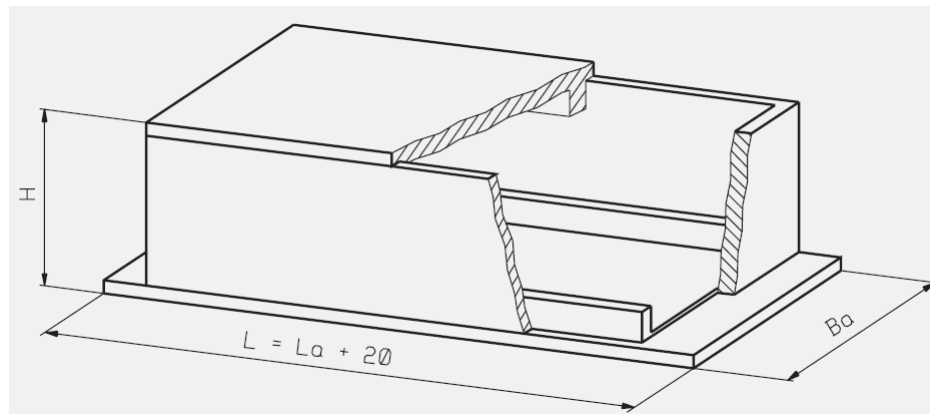
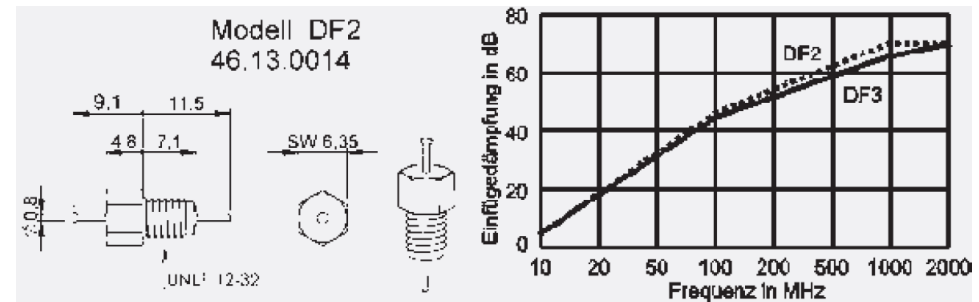


PCB – noise performance



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Problems:

- Will it be possible to stay with PCB in a version within housing (concerning lack of space)?
- Design flexibility issue



Thank you for your attention