

LASY board development status

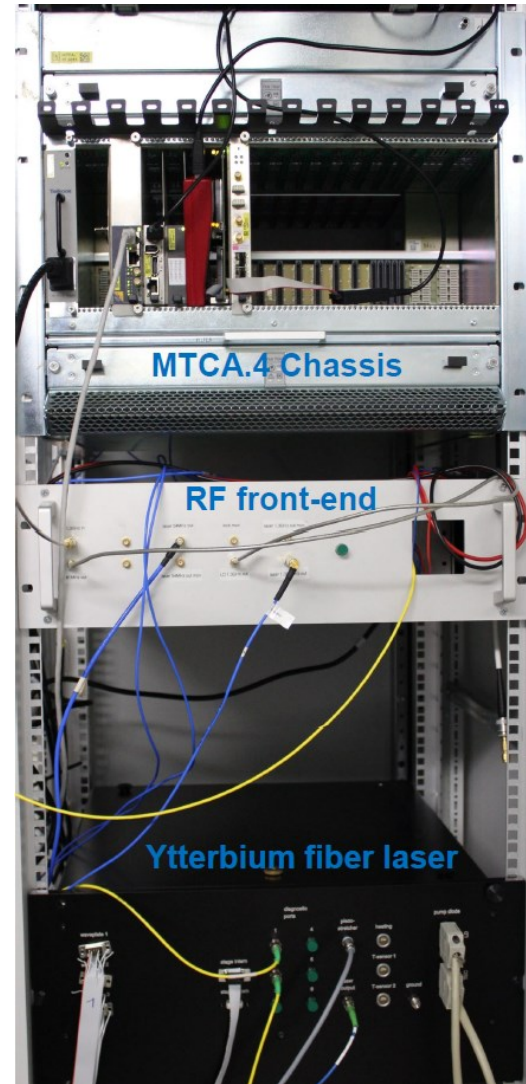
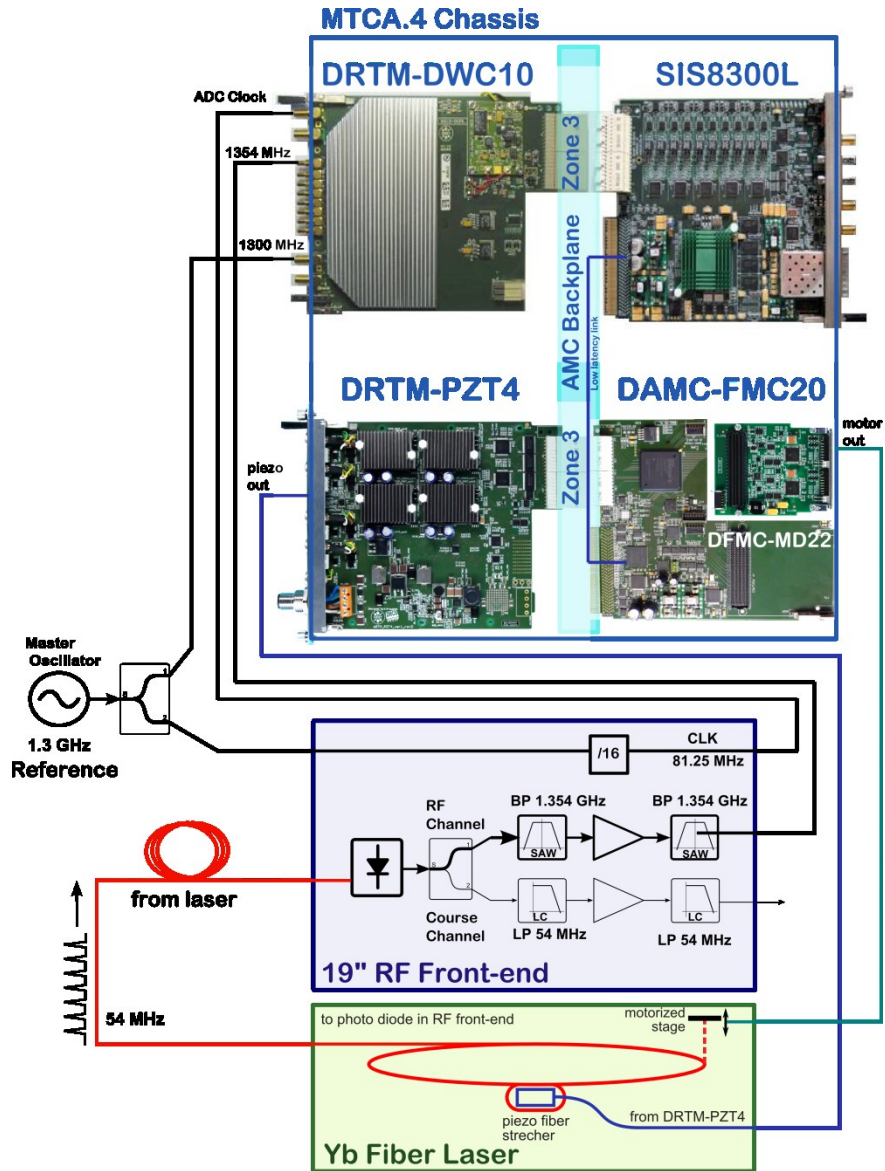
Ewa Janas

MSK Collaboration Workshop

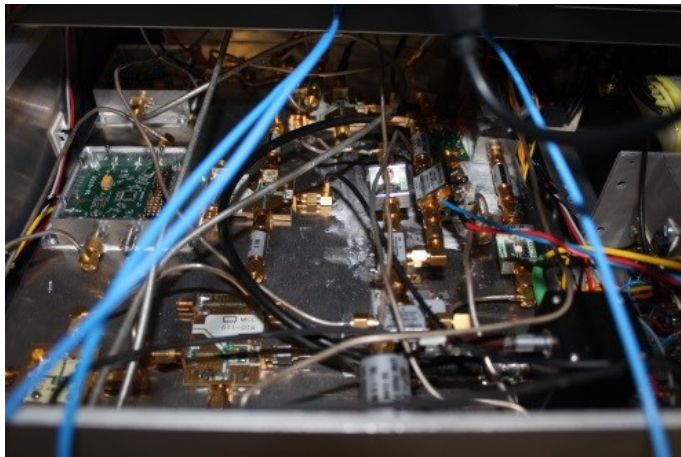
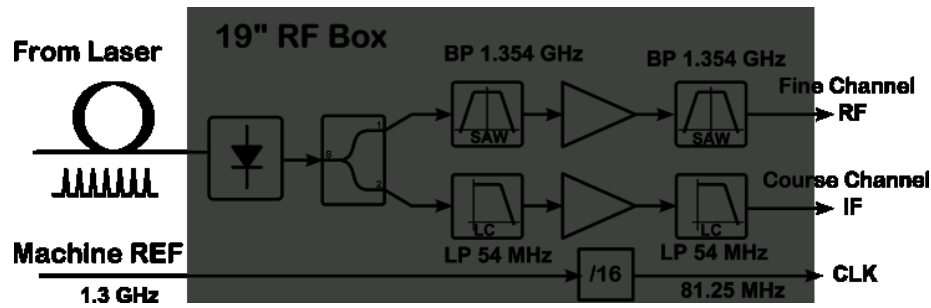
DESY

13th May, 2013

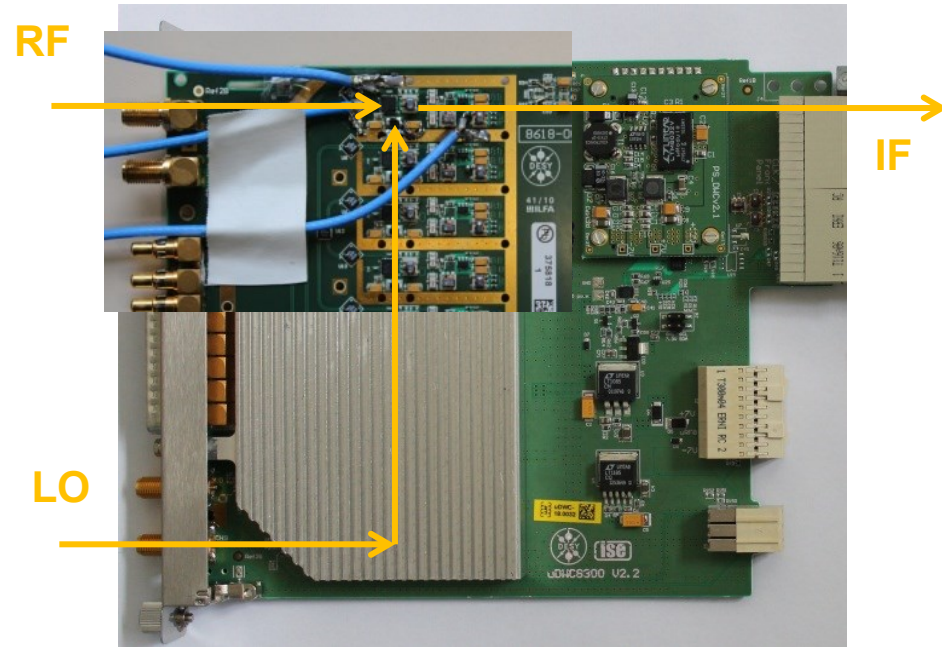
Synchronization of EOD Laser – current solution



RF Generation and Detection – current solution



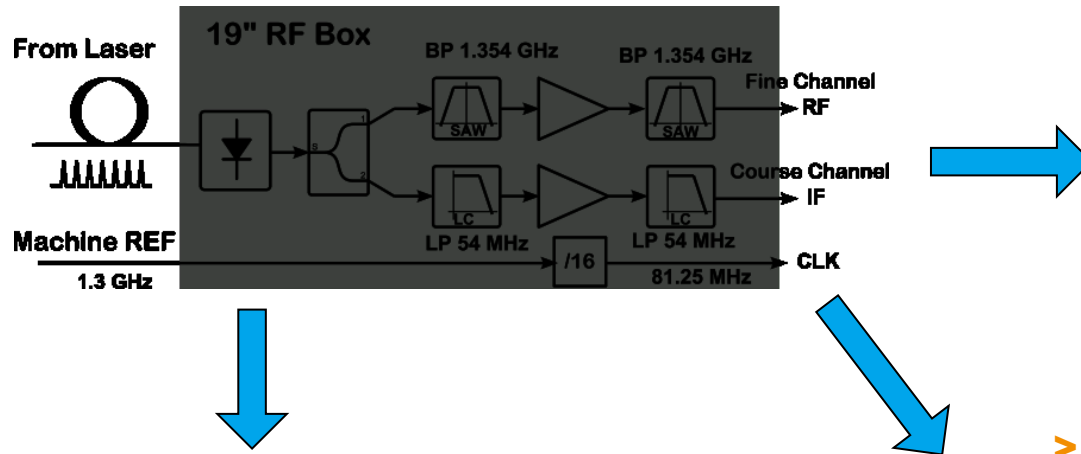
DRTM-DWC10



- RF generation Box (19") to generate sinusoidal RF signals from laser pulses
- 10 channel high-frequency down-conversion from 1GHz – 4GHz
- Provide more compact solution for laser-synch purposes

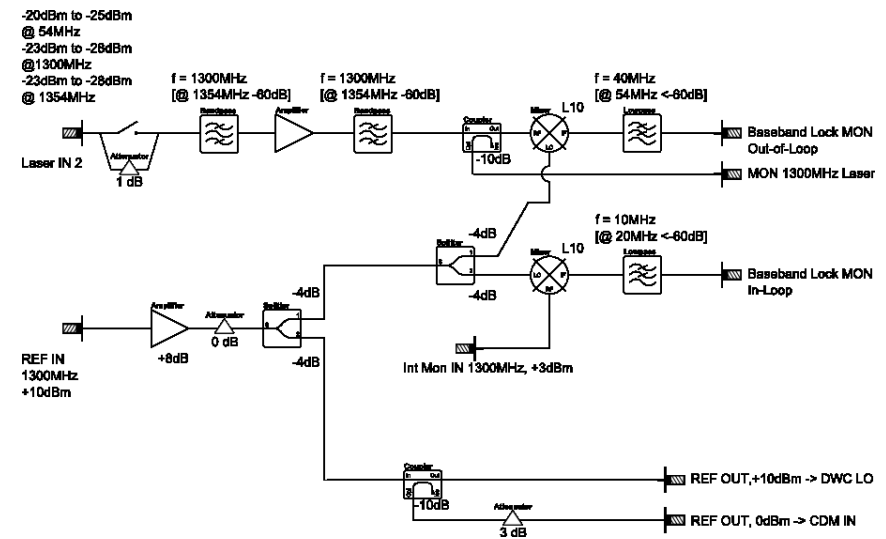
RF Generation – intermediate solution

➤ LDM - CLK generator, 1.3GHz divider

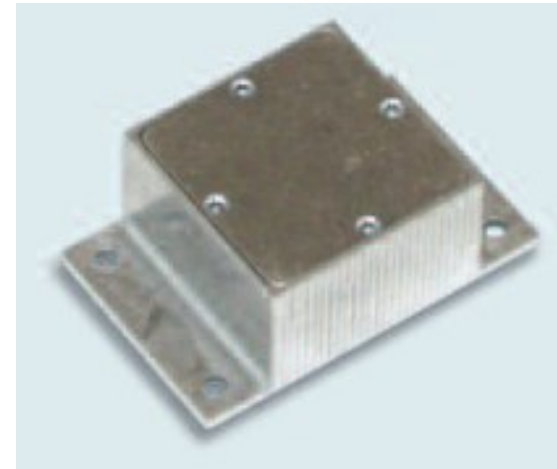
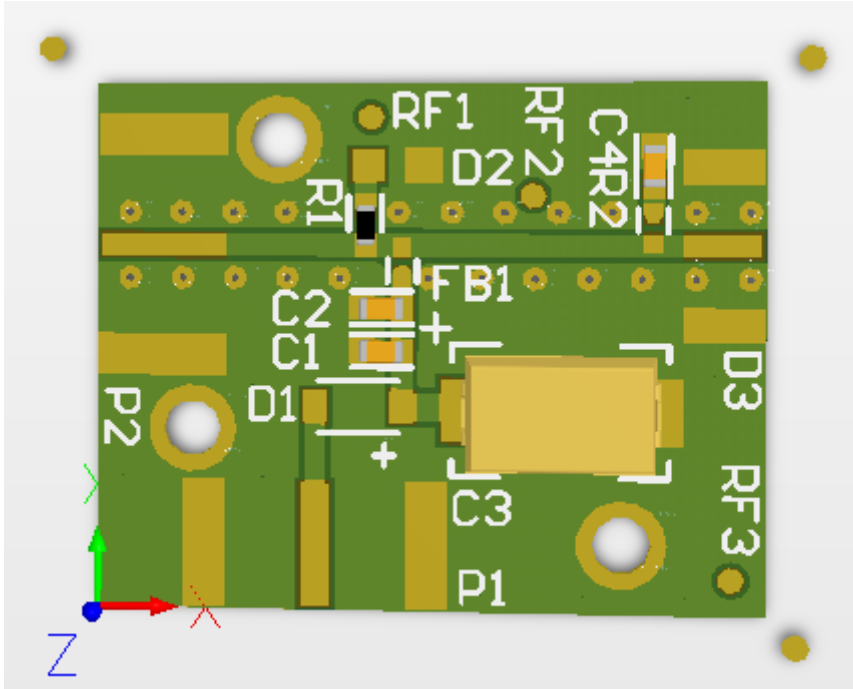


➤ LMM – Lock Monitor + 1.3 LO supplier

➤ LRM – DWC RF supplier, bucket detection

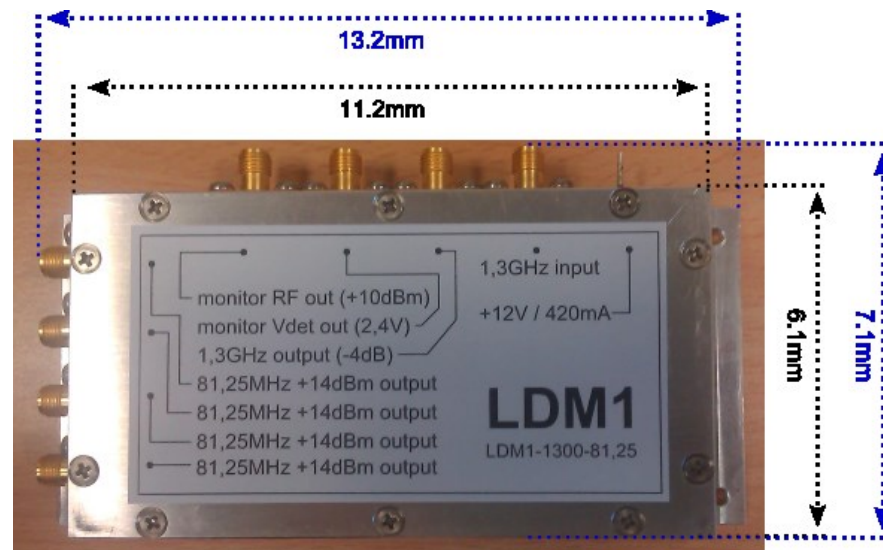
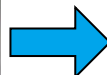


Little PCB for a diode



> Fits to ZG1-2 from Telemeter

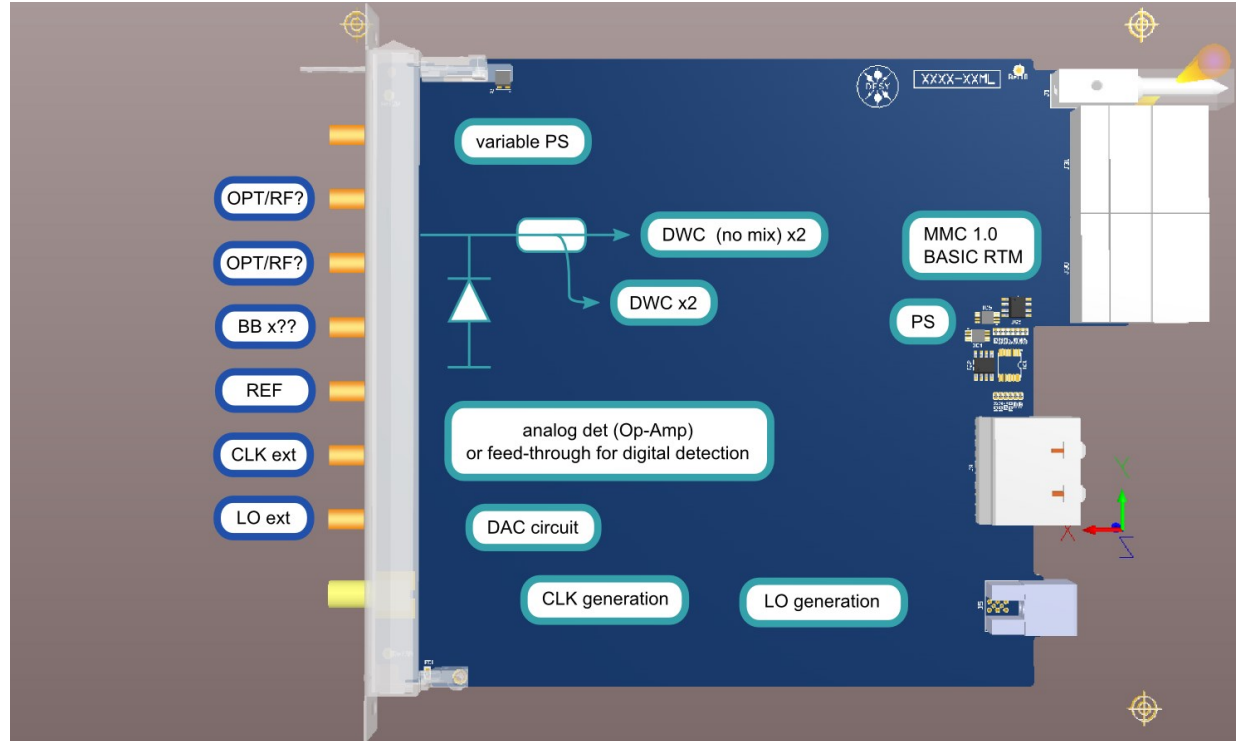
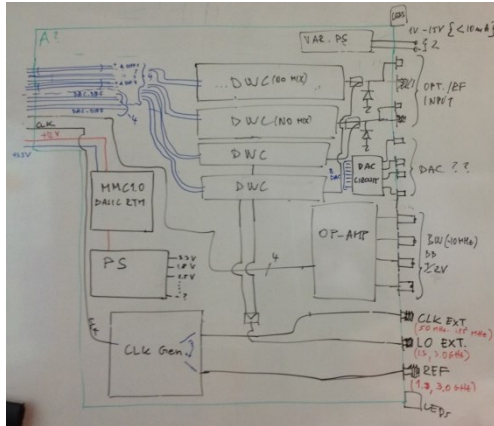
RF Generation and Detection – intermediate solution



Next step: LASY PCB

- merge 19" RF box/ PCB threesome and downconverter board into a single RTM unit
- make the design optimized for different detection schemes and available signals (OXC, LO, CLK)
- Provide an appropriate number of inputs/outputs
- Meet other special requirements, which can fit into the PCB (e.g. PS for ext PD)

LASY – preliminary specification i.e. ideas collection



New RTM specially for laser synchronization

- 4 DWC cells - only two with mixer, others for bucket detection (direct sampling)
- External LO/CLK input or internal generation from accelerator reference
- Baseband inputs for balanced detector
- DAC for external feed of PZT4 or other analog driver
- Laser signal:
 - RF input (ext. diode)
 - Optical input (int. diode)
 - PS for ext. Diode

LASY Altium project

