KYLIA mint:
DLI // DPSK demodulator

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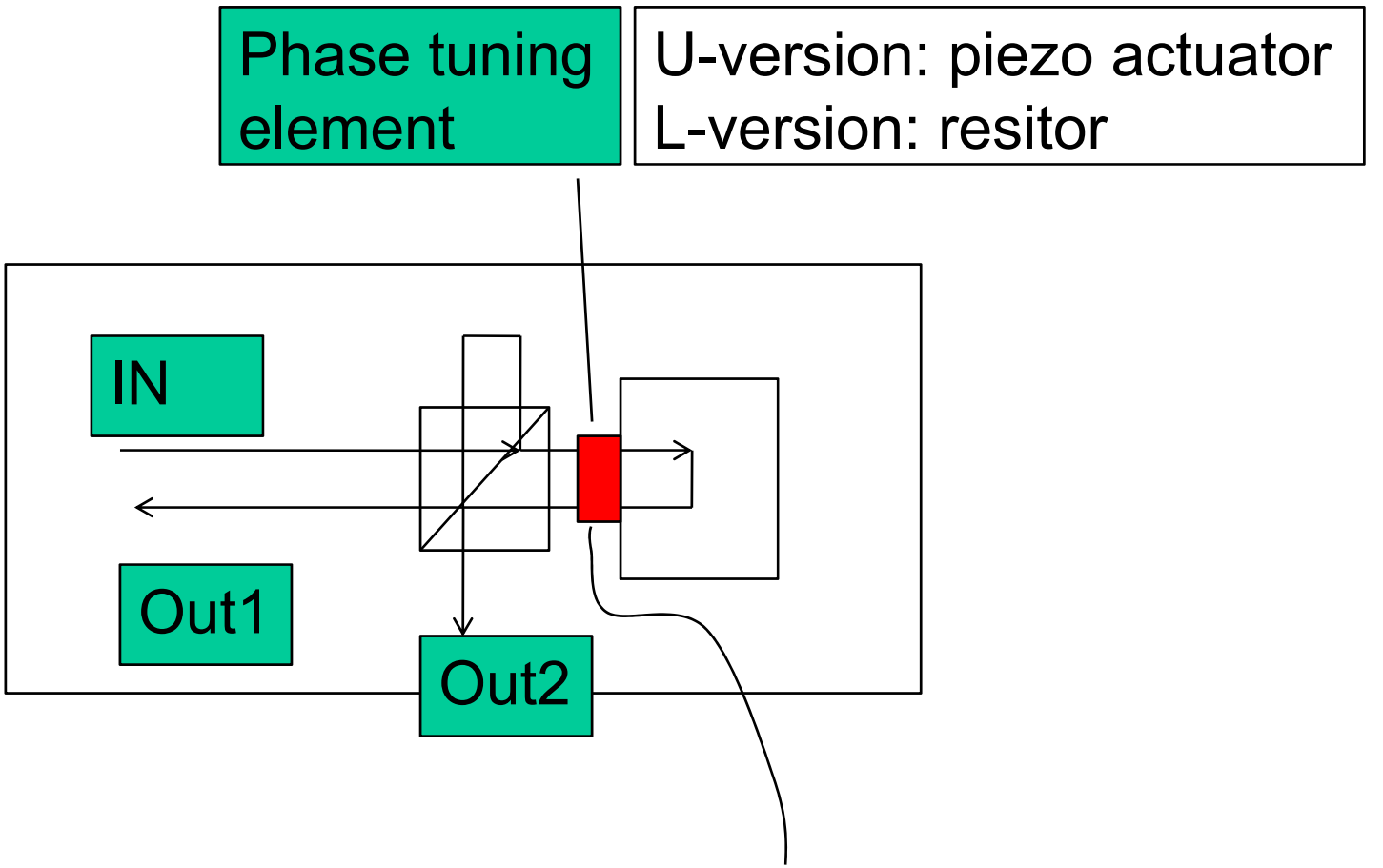
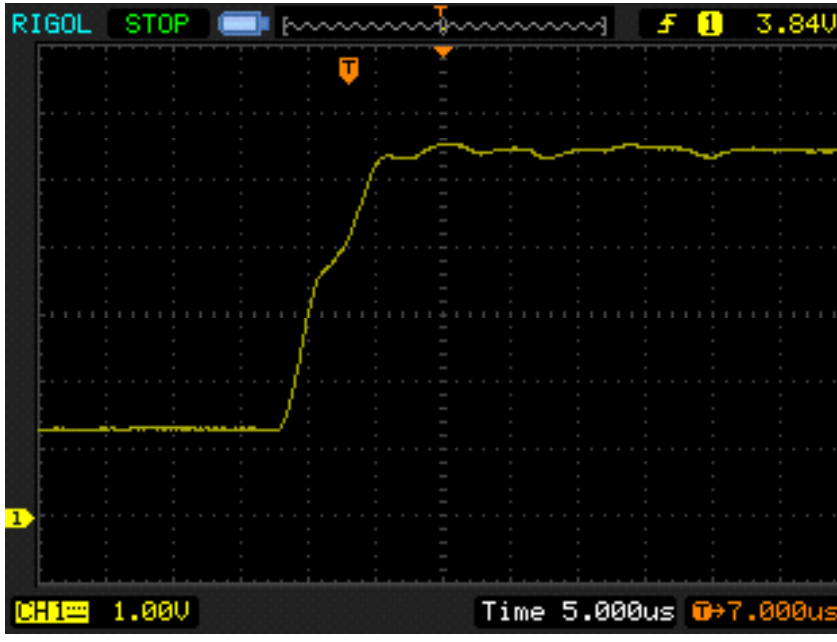
Optical layout



Phase tuning: U-version piezo electric element

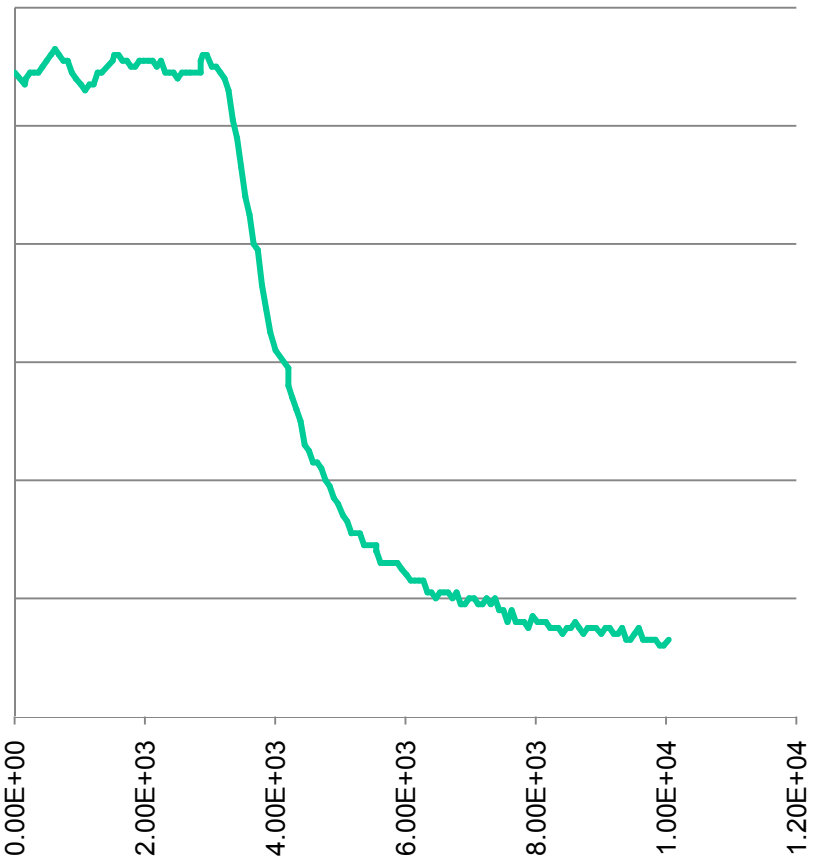
- U :ultrafast response, piezo based.
  - » Helpful for fast shifting systems (instability of the laser for instance).
    - The dli can adapt itself instantaneously to the environment, if a closed loop between BER and phase shifting (for instance) is set up. This solution is mainly used in labs.
  - » Tuning 0.03µm/V ; 1FSR for 52 V
  - » Tuning speed 0->100% 20µs



Example of tuning speed of U-version

Phase tuning:L-versions (thermoelectrical)

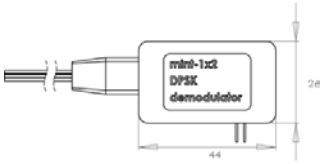
- Phase shift is obtained with a resistive heater placed on an optical piece. Changing the voltage changes the local temperature and thus changes the index, which changes the delay, that gives a shift.
  - SHIFT(degrees)= 50.V^2
    - Where V is applied voltage
  - Stability :Dshift=100.V.dV
    - Example :
      - 5V over 8 bits= precision of 5/256 = 20mV
      - Pour un shift de 180°=2V
      - Precision of 4°
  - Power consumption
    - P(mW)=30.V^2.
    - Pmax=0.5W (V=4Volts)
  - Speed
    - Tuning time (for 0 to 50% of the aimed shift)= 1s



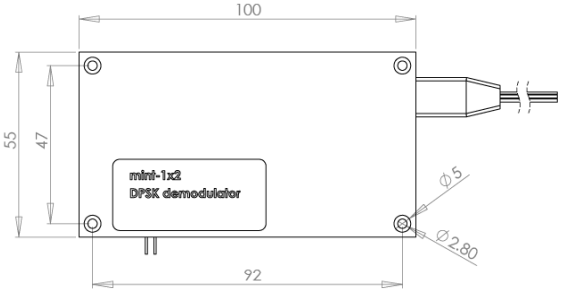
Shift (a.u.) vs time (ms)

Packaging

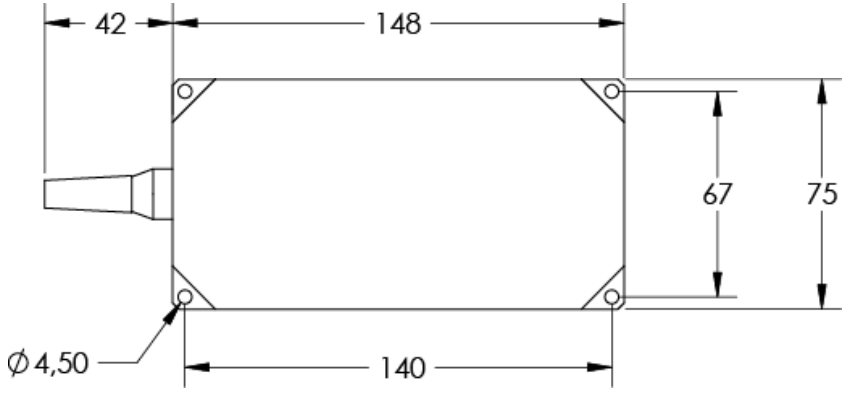
- FSR > 20 GHz



- 10 GHz < FSR< 20 Ghz



- 2.5 GHz < FSR



Available options

- PM option
- Variable attenuator
  - » Minimum step available: 1.0 dB@-20 dB ER
    0.5 dB@-10 dB ER
  - » Readable precision: 2.0 dB@-20 dB ER
    1.0 dB@-10 dB ER
- Non balanced outputs for monitoring