

Ultra-stable local oscillator (H-Beast)

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Setup

Resonator

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- **Finesse measurement**
 - **Finesse measurement outside vacuum**
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 - **Finesse measurement inside vacuum**
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- **Calculations**
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 - [Calculation of reflectiondip / Impedance of the cavity](#)
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Mounting

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Vacuum

- **Vacuum tests**
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- **Vacuum Components**
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 - [CF-components: Pump, Sensor, Valves, etc.](#)
 - [Attaching of the vacuum feedthroughs](#)
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- **Heat shield's**
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 - [Electrolytic polishing](#)
 - [Mass spectrometry](#)
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Optics

- **Incoupling breadboard**
 - [Incoupling breadboard](#)
 - [Components](#)
 - [Mode Matching](#)
- **Outcoupling breadboard**
 - [Outcoupling breadboard](#)

Electronics

- **Electronics inside the vacuum**
 - [Components for the electronics inside the vacuum and accessories](#)
 - [Instructions for attaching the electronic and labelling of the NTC's](#)
 - [Characterization of the NTC's](#)
- **Electronics outside the vacuum**

- [PTB electronic assignment](#)
- [Components for the electronics outside the vacuum](#)
- [Labelling of the cables](#)

Laser at PTB

- Company: NKT Photonics
- Fiber laser Koheras Basik Module
- Product type: K122-102-665
 - Wavelength: 1542.14 nm
 - Power setpoint: 40 mW
 - Power Range: 12-40 mW
 - Wavelength tuning: -499.9 ... +570 pm
 - Power stability 0.01 dB

Laser at IQ

- [Todo List](#)
- Wavelength: 1560.47 nm
- ITU channel number 21, 192.10 THz, 1560.61 nm
- [Laserdiode](#)
- [Laserdiode Mount](#)
- [Laser driver](#)
- [Pin assignment/Cables](#)
- [Temperature Controller](#)
- [Laser Housing](#)

Fiber setup

- [Fiber-components](#)
 - [Fiber-Photodiode \(IQ Version\)](#)
 - [EOM and AOM Box](#)
- [Electronic-Components](#)
- [Fiber-connections](#)
- **[Vibration isolation](#)**

Performance / Measurements

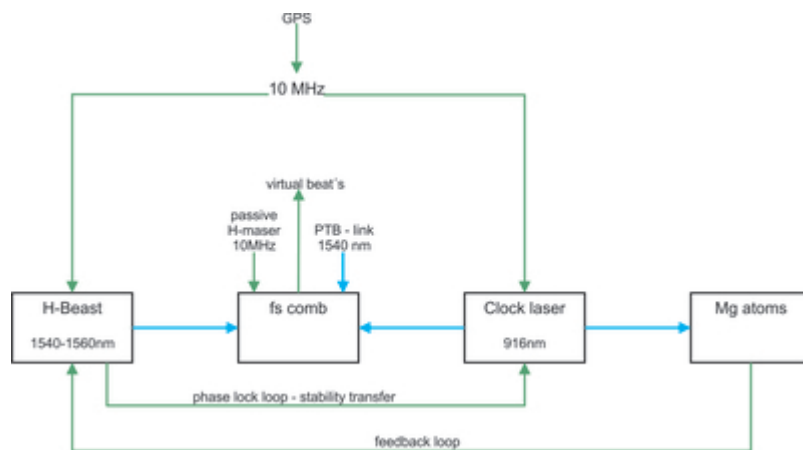
- [Thermal noise limit](#)

- [Pound-Drever-Hall](#)

Future Setup @ IQ

- **Transfer of stability:**

- Providing 10–16 Short-Term Stability of a 1.5- μm Laser to Optical Clocks
, C. Hagemann et. al., IEEE Transactions on instrumentation and measurement, VOL. 62, NO. 6 (2013)



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