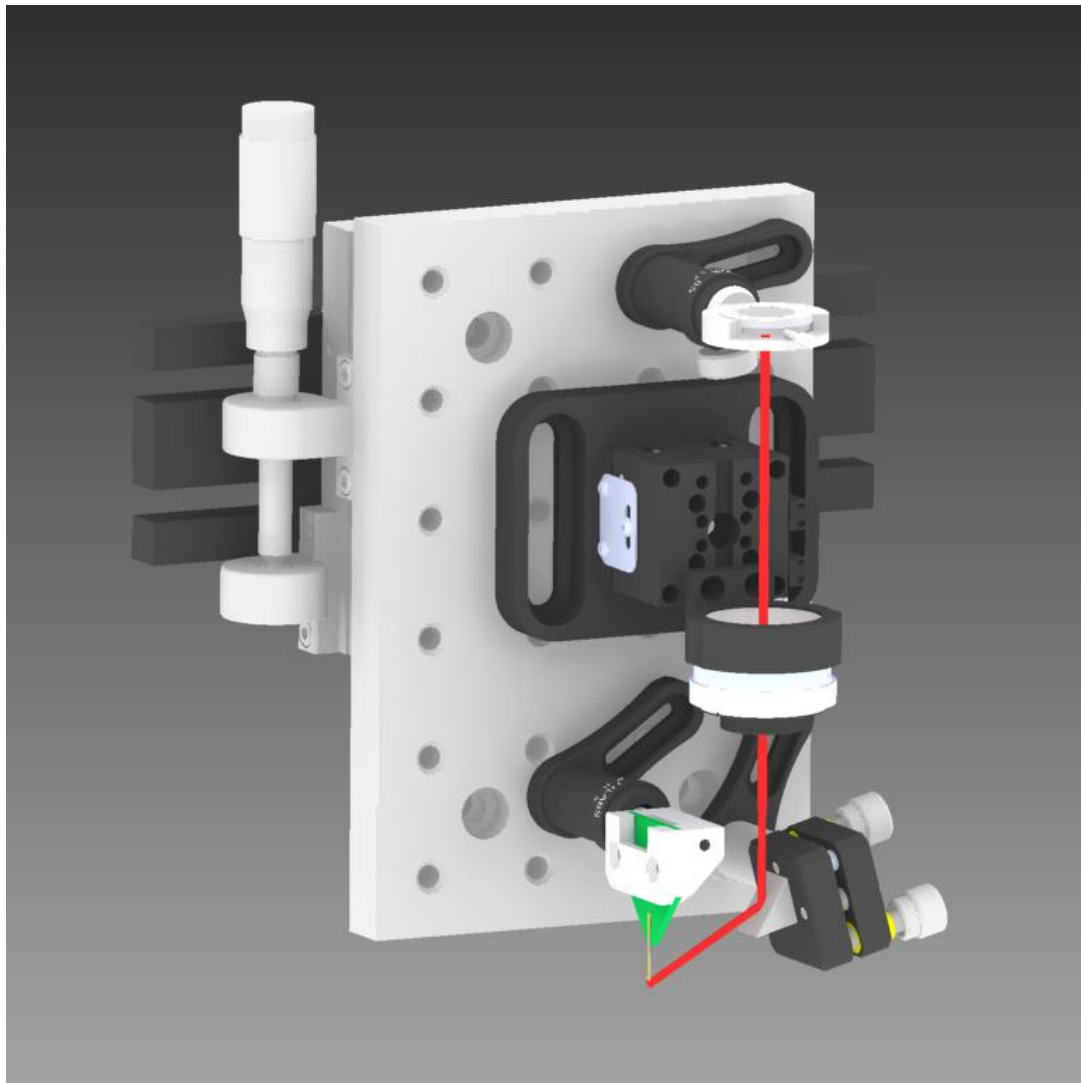


Sub-System

DB1 / DB1-TR / DB1-TR-SHG / DB1-FC-AT

Installation notes

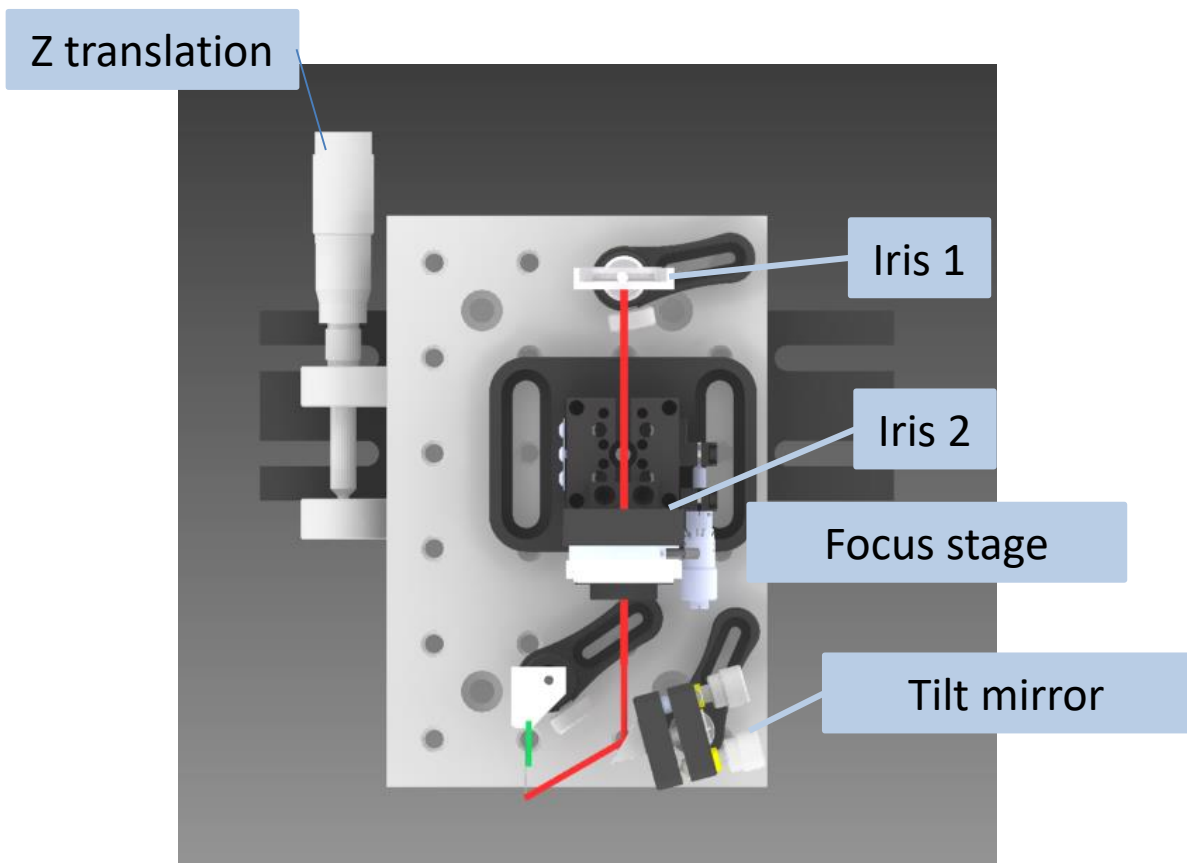


Overview



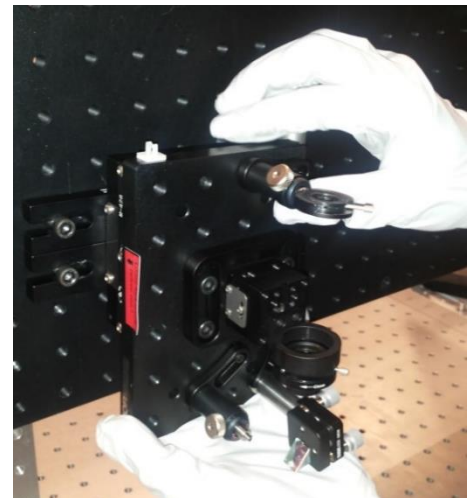
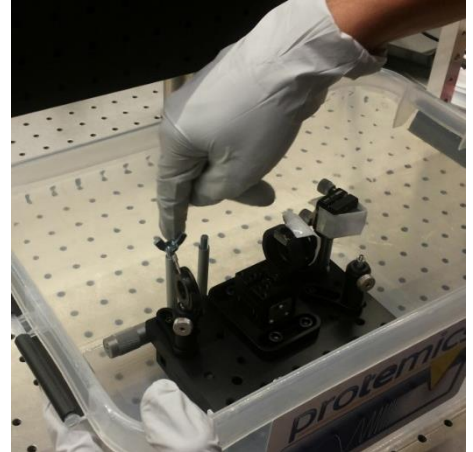
General information:

- The sub-system D-B1 facilitates the integration of the TeraSpike microprobe into an existing setup. It covers the functions of beam-to-tip alignment, focusing and probe-tip height variation.
- D-B1 comes pre-aligned. Hence, only small re-adjustments should be sufficient to compensate slight variations of the probe-tip position after mounting the TeraSpike probe.



Unpacking

- Before opening please check the box for visible transport damage. If the box is damaged please document the defects with pictures to support later insurance claims.
- Open the box and remove the screws that are used for fixation during transport.
- Packaging and transportation boxes might vary.
- Lift out the D-B1 sub-system from the box.
- Next, mount the D-B1 at the desired position in your system using four screws.



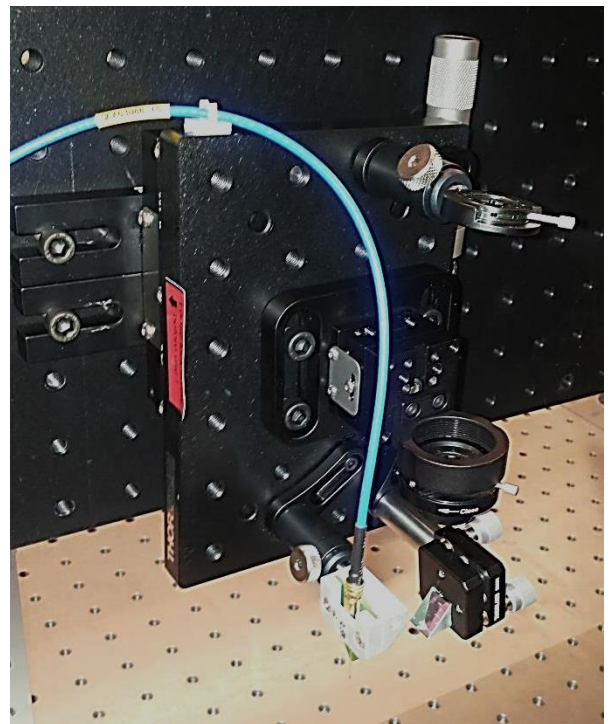
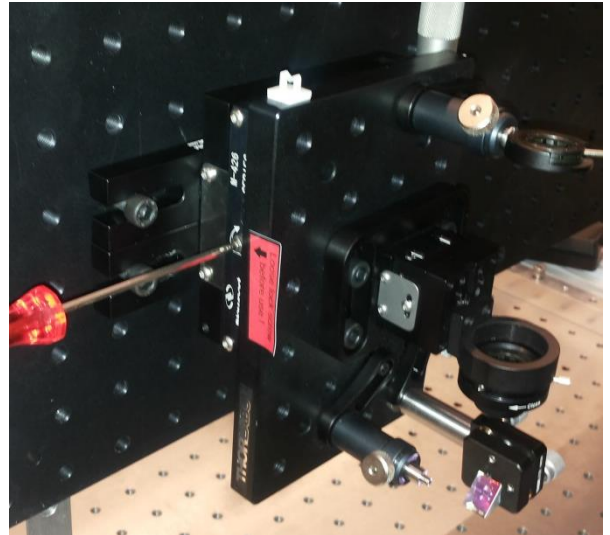
Unpacking and Installation

- Loose all marked lock screws of the translation stage and the focus stage by one turn.

Not losing these screws can cause damage during translation!

- Remove the foam pad and the protective sheets from the optics.
- Use two of your mirrors placed in front of D-B1 to align the incident beam on both irises. Make sure that the beam is well centred on both irises. (Please see also next page for the D-B1-TR)
- Next adapt the optical power to the values recommended in the TeraSpike application notes.
- Now you can build in your microprobe and start the alignment procedure as described in the TeraSpike application notes using the focus stage and the tilt mirror. Small readjustments should be sufficient.

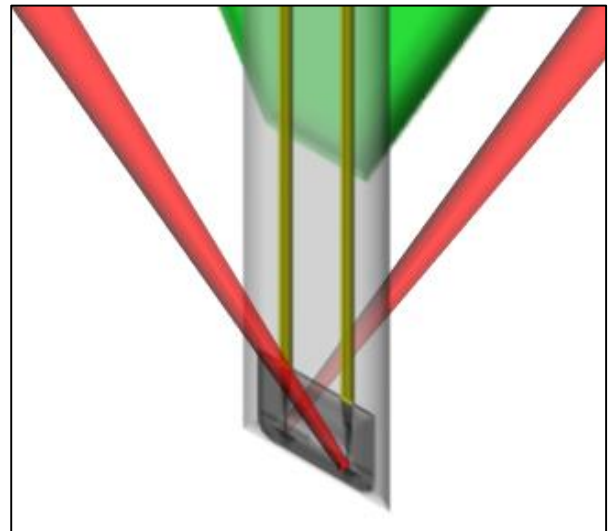
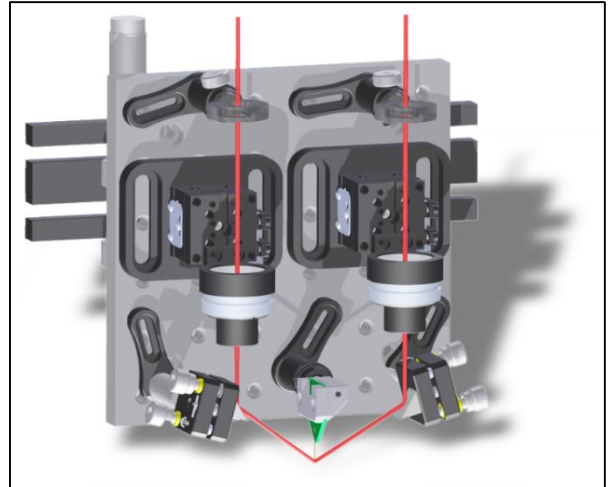
Please read carefully the corresponding application notes before installing the TeraSpike into the setup.



Sub-DB1-TR only

featuring a second beam path

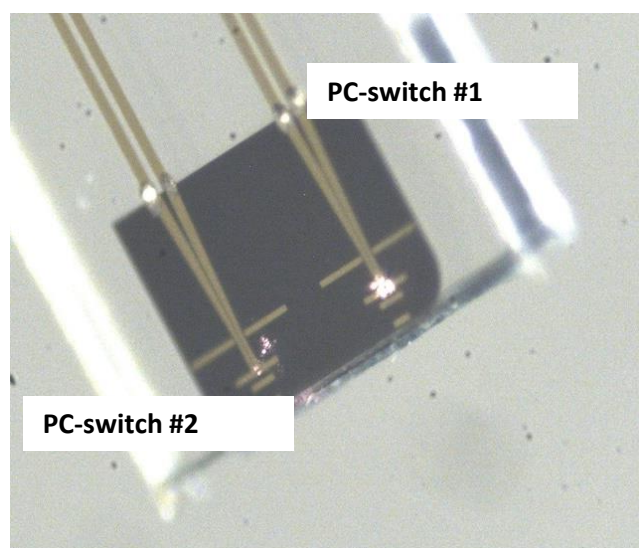
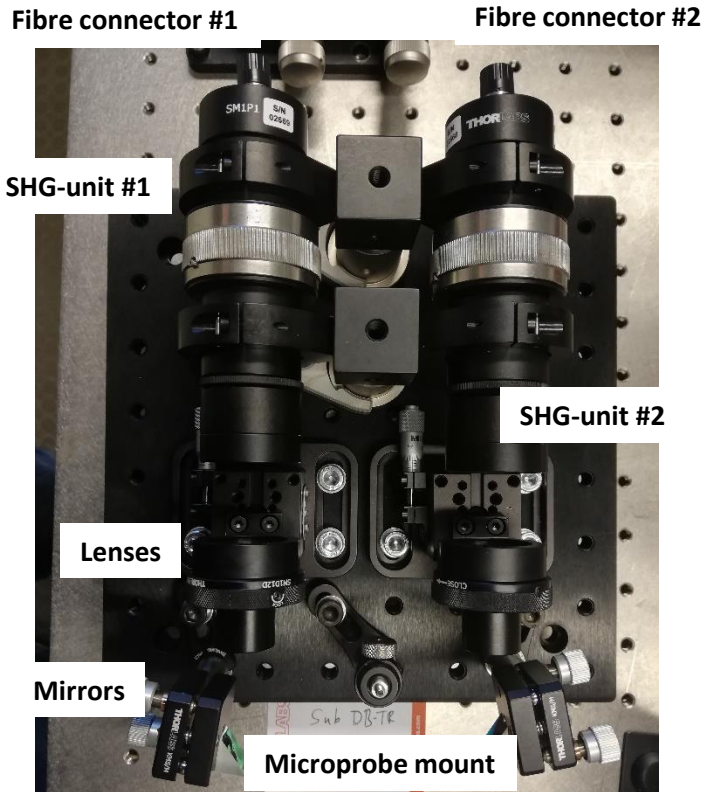
- The Sub-D-B1-TR has a second beam path for the pump beam
- Before putting your TeraSpike-TR into place, repeat the previous alignment procedure for the second beam path.
- Entrance beam diameter should be 2-5 mm
- The pre-alignment is done as follows:
 - Probe beam (right):
Illuminating the PC-switch that is located closer to the Sub-DB1-TR-breadboard from the PET side of the TR.5 tip.
 - Pump beam (left):
Illuminating the PC-switch further away from the Sub-DB1-TR-breadboard from the metallized side of the TR.5 tip.



Sub-DB1-TR-SHG Only

featuring frequency-conversion units

- The Sub-DB1-TR-SGH is a sub-system equipped with two SHG units designed for the operation of TeraSpike reflection mode probetips. (Refer also to SHG-unit application notes)
- In case for fiber-coupled SHG-units, plug the laser output fibers from your fiber based THz time domain system to the SHG input fiber connectors.
- Use appropriate fibers with FC/APC connectors.
- Measure the output power of the SHG-units at 780 nm wavelength. The power conversion efficiency is 10-20 % for typical system input powers of 10-20 mW.
- Align the beam from path #1 to the photo-conductive switch #1 closer to the system front, exiting from the metalized side of the probetip.
- Align the beam from path #2 at the PC-switch #2 that is closer to the sub-system breadboard, exiting the probetip from the substrate-side.

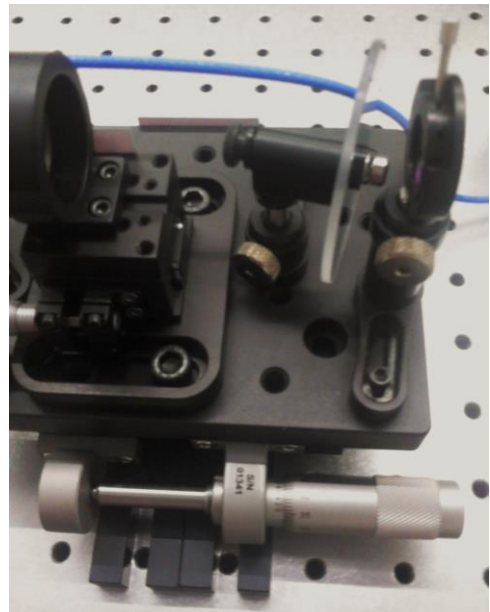
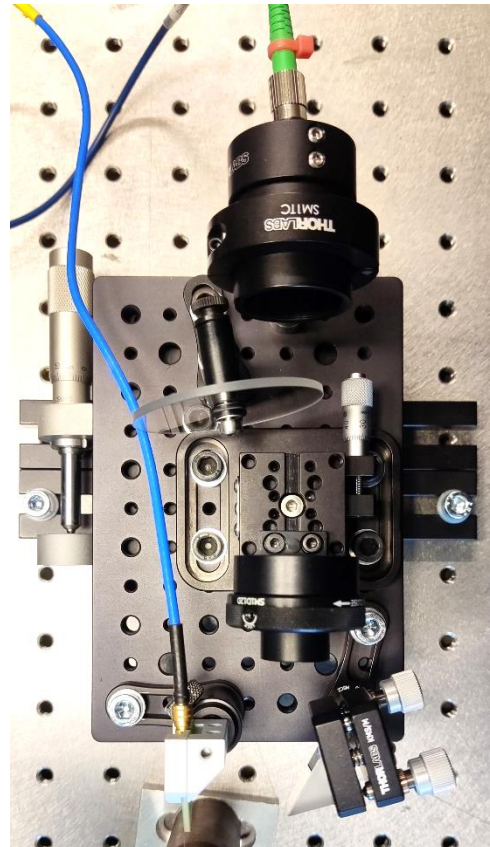


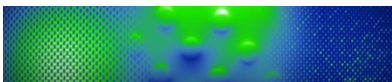
Sub-DB1-FC-AT only

featuring a variable attenuator

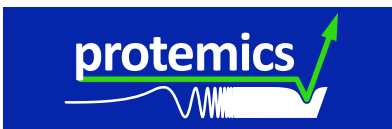
- The Sub-D-B1-FC-AT is equipped with a reflecting variable optical attenuator (NDF) and with a fiber output collimator.
- It is typically operated with microprobes of type TD-1550-...
- Use appropriate fibers with (typically) FC/APC connectors.
- Plug the fiber from the laser output port of your fiber based THz time domain system to the sub-system's fiber connector.
- Measure the output power after the NDF and rotate it to adjust the power to the appropriate level (typically 2-3 mW).
- Now you can build in your microprobe and start the alignment procedure as described in the TeraSpike application notes using the focus stage and the tilt mirror. Small readjustments should be sufficient.

Please read carefully the corresponding application notes before installing the TeraSpike into the setup.





Questions? Please contact us:



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