

CONTINUOUS WAVE TERAHERTZ EMITTER AND DETECTOR MODULES



AT A GLANCE

Photomixers for 1.5 μm optical wavelength, emitted THz power confirmed by PTB (Physikalisch Technische Bundesanstalt)

Features

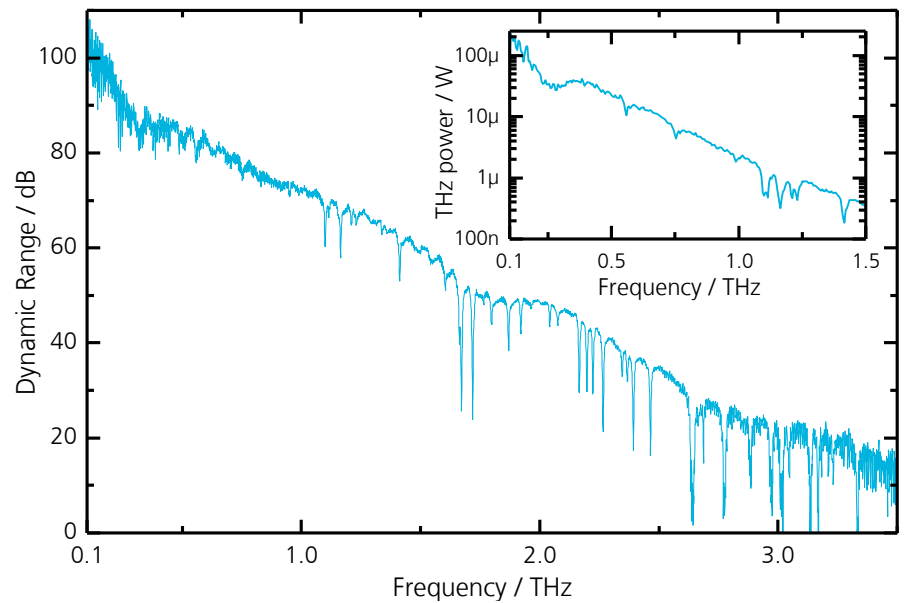
- Up to 200 μW THz power
- Photodiode based emitter
- Photoconductive receiver
- Robust housing and fiber coupling

Applications

- High-bandwidth terahertz spectroscopy
- Industrial process control
- Non-contact coating film thickness measurement
- High-speed measurements

Technical background

The photoconductive generation of continuous wave (cw) terahertz radiation converts the beat frequency of two lasers into an electrical THz signal. The frequency resolution of cw THz systems is only limited by the linewidth of the lasers. Preferred applications for continuous wave THz radiation are high resolution spectroscopy and imaging as well as precise monitoring of particular spectral lines. HHI's THz modules utilize mature telecom technology and thus allow benefiting from THz technologies within industrial applications and environments.



Performance of HHI's cw THz modules for operation conditions as given in the specifications.

Specifications

- Optical wavelength 1.5 μm
- Optical power 30 mW
- Bias voltage -1.5 V
- Spectral range 0.1 - 3.5 THz
- Dynamic range
 - > 90 dB @ 100 GHz (typ. 100 dB)
 - > 60 dB @ 1 THz (typ. 65 dB)
 - > 40 dB @ 2 THz (typ. 45 dB)
- Measuring head diameter 25 mm

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