Transversal field microprobes

TeraSpike TD-800-X

Technical data

TeraSpike TD-800-X-	HR	HRS
Max. spatial resolution	3 µm	20 µm
PC gap size	1.5 µm	2 µm
Dark current @ 1 V Bias	< 0.5 nA	< 0.5 nA
Photocurrent (*)	> 0.2 µA	> 0.2 µA
Excitation wavelength	700 .. 860 nm	
Avg. excitation power	0.1 .. 4 mW	
Connection type	SMP	

(*) For a focus diameter of circa 20 µm, bias voltage 1 V, average optical excitation power 4 mW.

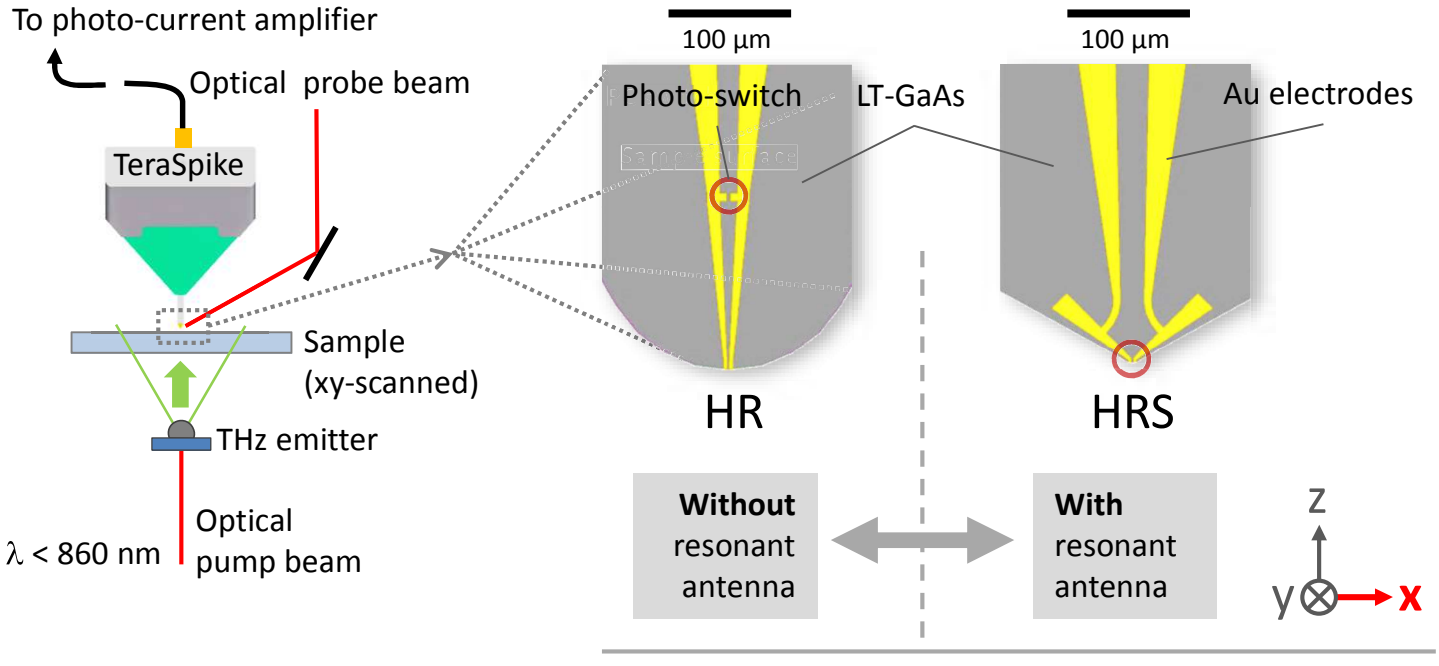
Product details

- Photoconductive probe-tip with integrated overvoltage protection optimized for pulsed excitation
- Mount for variable probe orientation
- Simple & safe probe removal from the set-up
- Robust probe storage box
- Test certificate & manual

Accessories

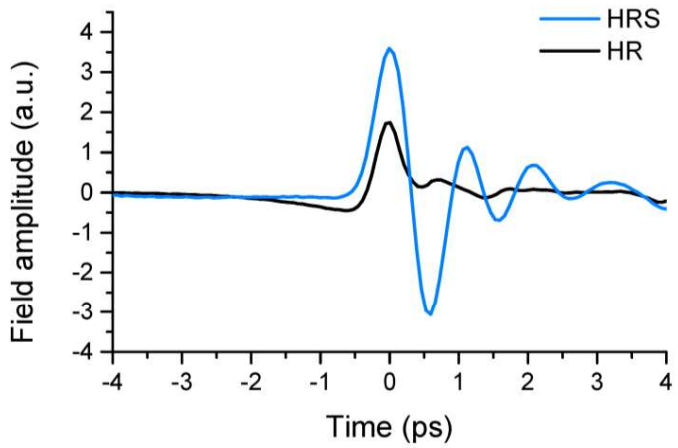
- SMP to SMA/BNC cable connection
- Photo-current amplifier
- Probe-tip dummy structure
- Mounting & focusing units
- Starter Kit

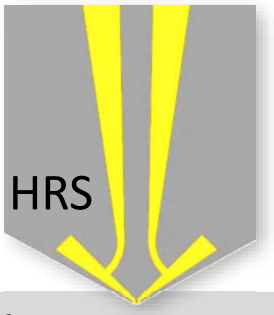
Set-up (exemplary for near-field transmission measurements)



All TD-800-X probes are sensitive to **x-oriented** field components

Time-domain measurement data

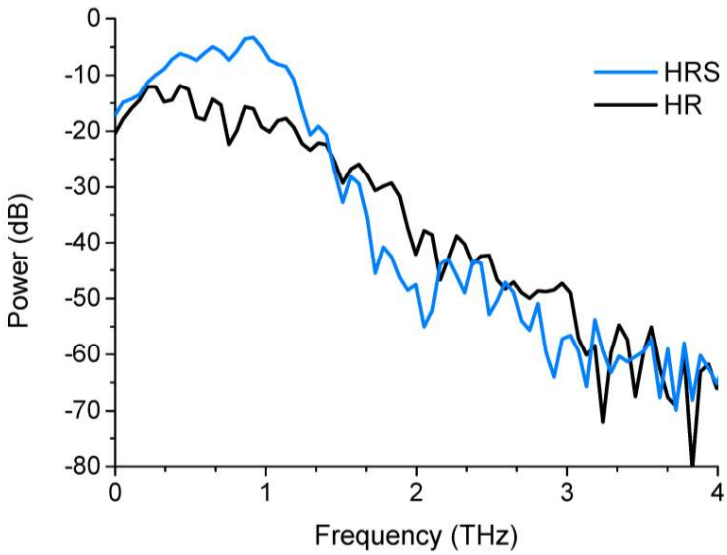


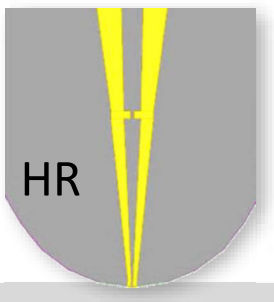


Key feature:

- Highest sensitivity for 0.5 THz < f < 1.3 THz

Frequency-domain measurement data





Key feature:

- Highest spatial resolution
- Highest bandwidth

Longitudinal field microprobes

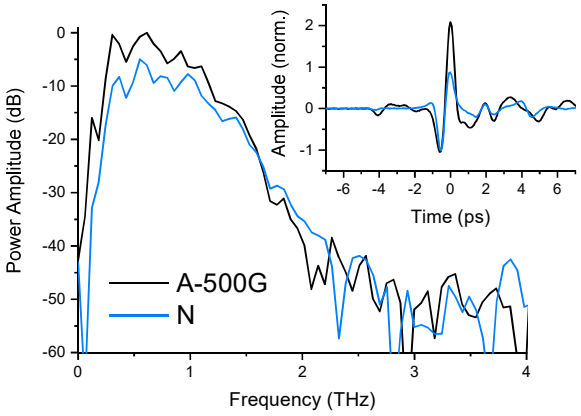
TeraSpike TD-800-Z

Technical data

TeraSpike TD-800-	A-500G	N
Max. spatial resolution	8 µm	8 µm
PC gap size	5 µm	2 µm
Dark current @ 1 V Bias	< 0.4 nA	< 0.4 nA
Photocurrent (*)	> 0.5 µA	> 0.1 µA
Excitation wavelength	700 .. 860 nm	700 .. 860 nm
Avg. excitation power	0.1 .. 4 mW	0.1 .. 4 mW
Connection type	SMP	SMP

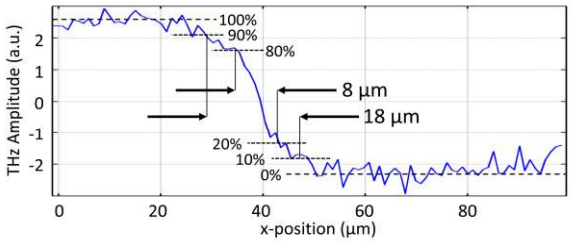
(*) For a focus diameter of circa 20 µm, bias voltage 1 V , average optical excitation power 4 mW.

Time-domain (FFT) data

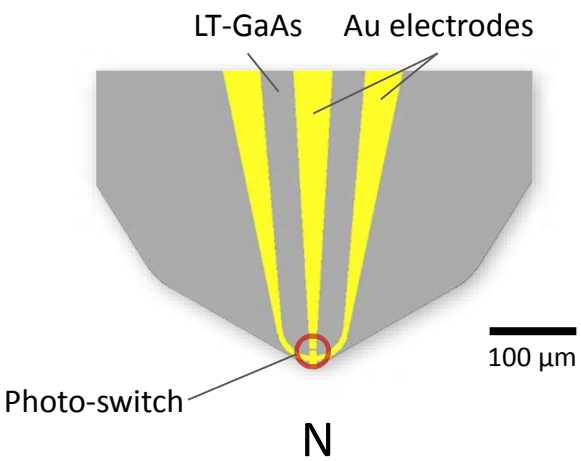


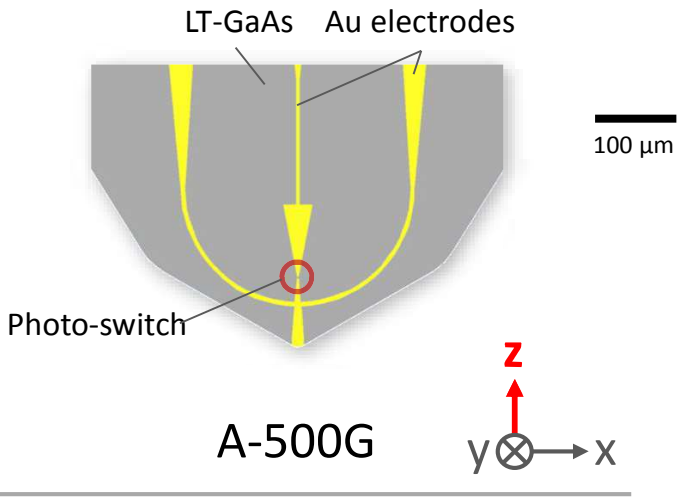
Spatial resolution

THz z-field scan across test structure



Tip design options



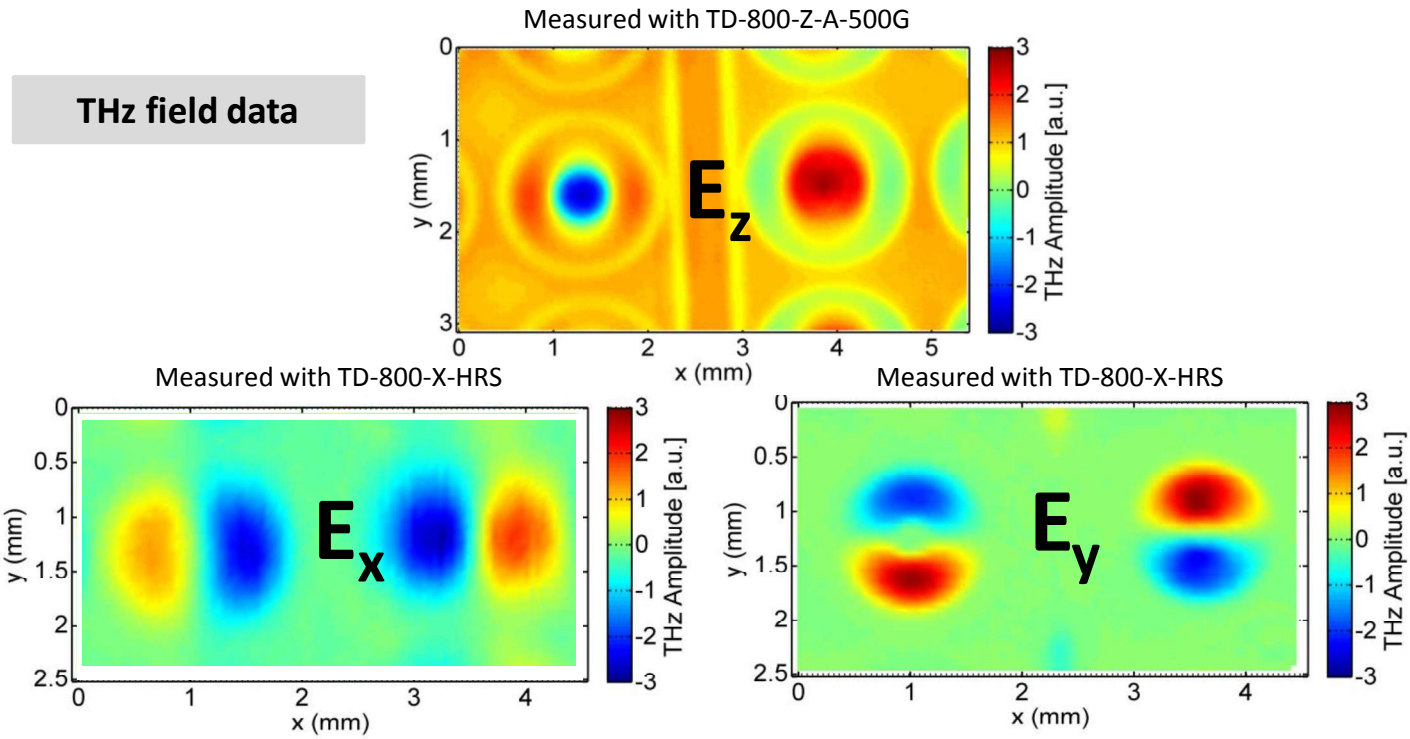


All TD-800-Z probes are sensitive to **z-oriented** field components

Measurement example:

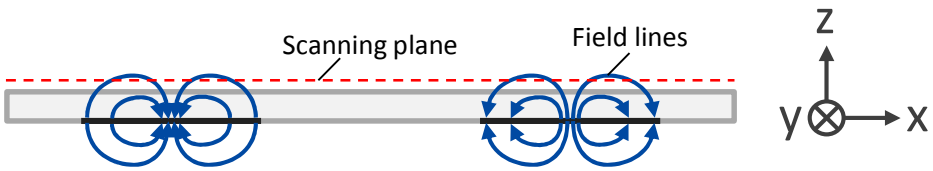
3D vector field mapping

THz field data

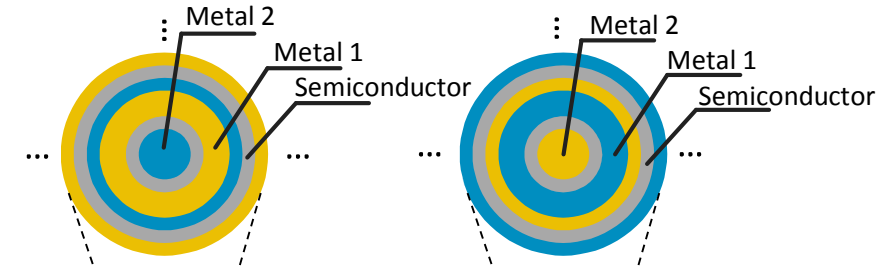


Device under test: Radial-mode emitter pair

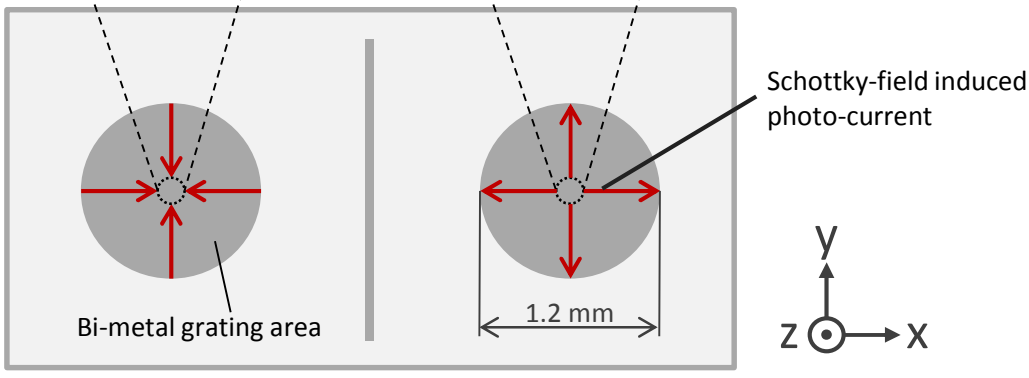
Device cross-section:



Zoom to center regions:



Device top-view:



Pair of radial-mode THz emitters based on planar bi-metal gratings

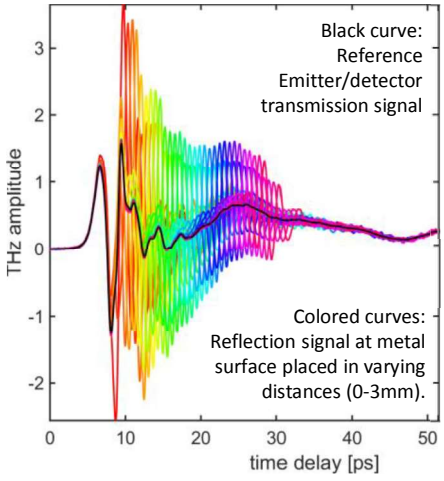
Reflexion-mode near-field transceiver

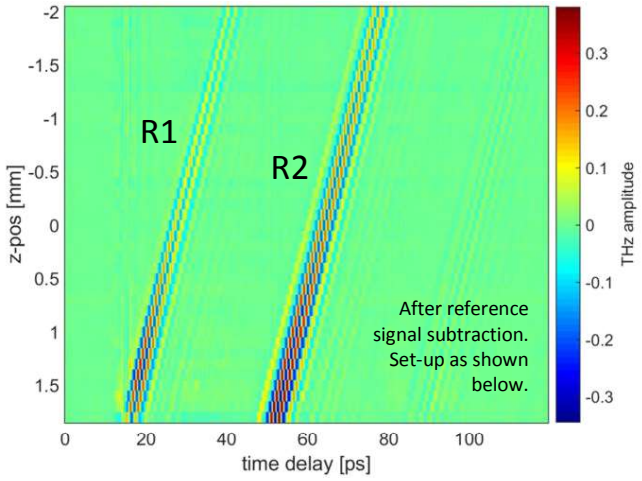
TeraSpike TD-800-TR.5

new

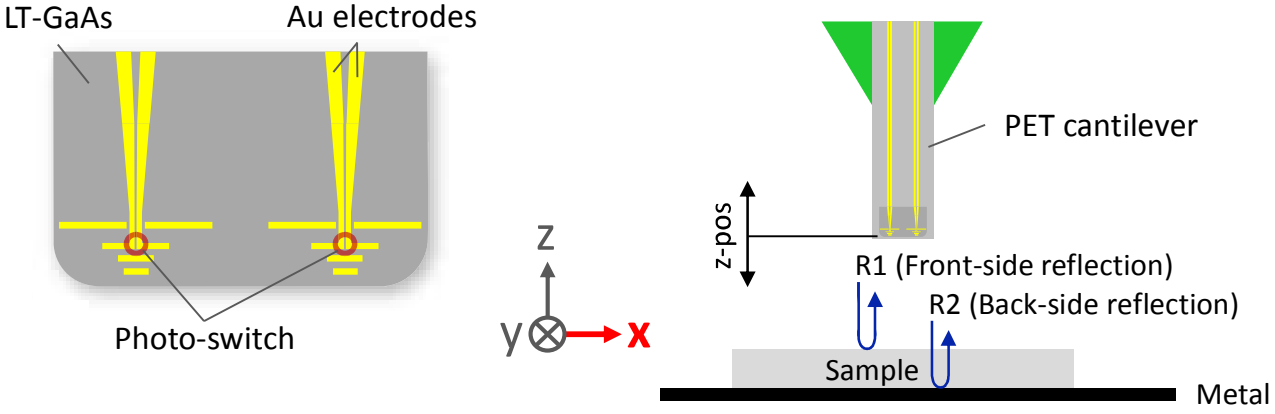
THE new TeraSpike model TR.5 comes with a pair of closely spaced photoconductive THz antennas offering new means for high-performance near-field measurements in reflection-mode. While one antenna is used as a THz pulse generator, the other antenna is used as the detector. The slim transceiver probe is taking advantage of Protemics´ proprietary **"wave-trap"** design for the suppression of probe-internal reflection signals as well as the **XR-type** flexible PET cantilever design for increased mechanical robustness. In contrast to standard reflection-mode approaches based on far-field emitter/detector components the new near-field transceiver probe provides access to sub-wavelength-resolution and shortest THz transmissions paths.

Time-domain measurement examples



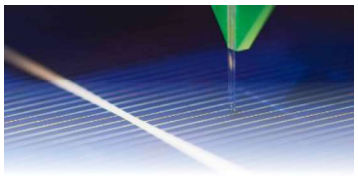


Tip design and set-up



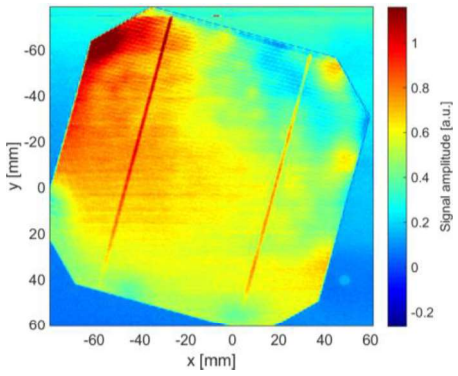
Terahertz sensor head solution for

Non-destructive Testing

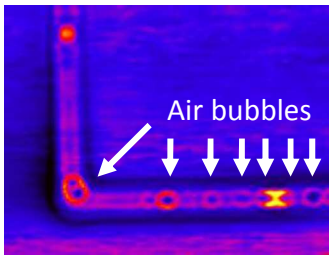


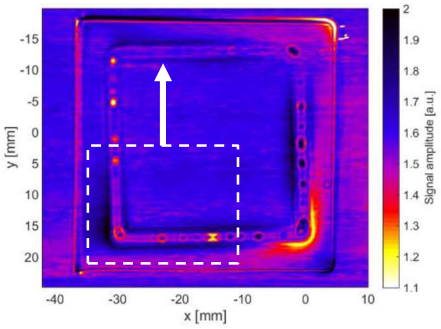
Reflection imaging examples

Conduction layers: Solar cells



Buried plastic welds





Technical data

TeraSpike TD-800-	TR.5
Dark current @ 1 V Bias	< 1.5 nA
Photocurrent (*)	> 0.5 µA
Excitation wavelength	700 .. 860 nm
Avg. excitation power	0.1 .. 4 mW
Connection type	2x SMP

(*) For a focus diameter of circa 20 µm, bias voltage 1 V, average optical excitation power 4 mW.

Key benefits

- Includes THz emitter and detector
- Reflection-mode measurements
- Ideal **for opaque or bulky samples** not measurable in transmission-mode
- Ideal for large scanning areas using moving probe instead of moving sample set-ups

Product details

- Photoconductive probe-tip with integrated overvoltage protections optimized for pulsed excitation
- Mount for variable probe orientation
- Simple & safe probe removal from the set-up
- Robust probe storage box
- Test certificate & manual

Accessories

- SMP to SMA/BNC cable connection
- Photo-current amplifier
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