Terahertz Photoconductive Antennas

For Scientific Applications

Key Features

- High signal-to-noise-ratio
- More than 70 dB spectrum dynamic range
- More than 5 THz bandwidth
- Selection of different antenna designs.
- Hyper-hemispherical silicon lens standard, collimating lens available
- Modular antenna package, allowing simple repair, rework or customization.

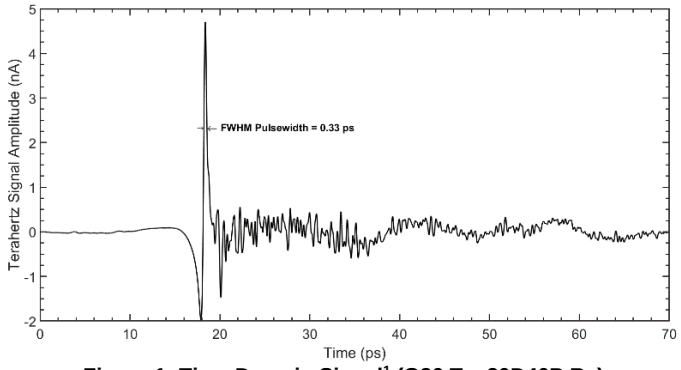


Figure 1: Time Domain Signal[1] (G20 Tx, 20D40P Rx)

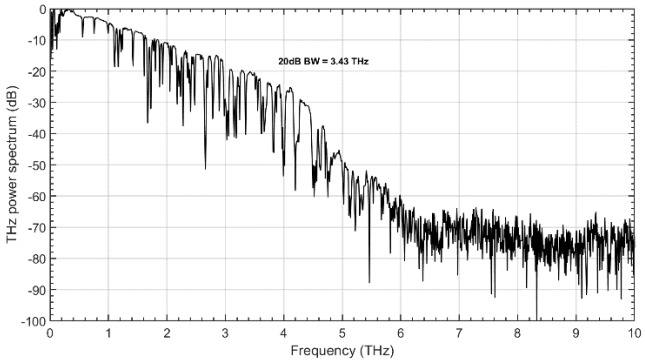
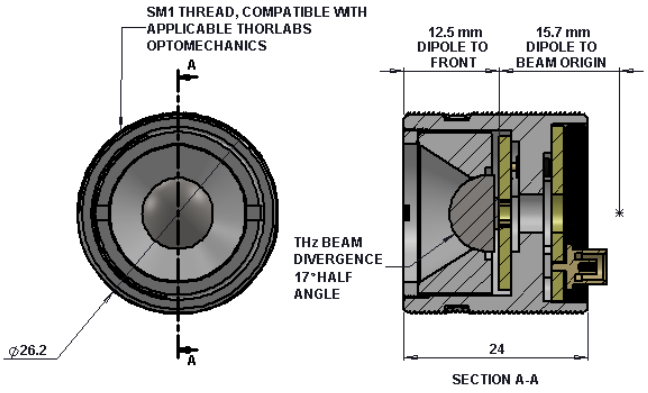


Figure 2: THz Power Spectrum (G20 Tx, 20D40P Rx)



MCX to BNC coaxial adapter cable is provided. Usage of a focusing lens of 30 mm focal distance or greater is recommended.

Typical Test Conditions & Results[2]

Transmitter Lithography	G20 or G100 typ.
Receiver Lithography	20D40P
Optical Power @ 780nm	18 mW (Tx), 12 mW (Rx)
Tx Square Wave Bias	±30V @ 10kHz
Lock-in Time Constant	100 ms with 24dB/Oct Filter
Scan Parameters	550s @ (0.02 mm/s)
Tx Dark Resistance	>40 MΩ
Rx Dark Resistance	30 MΩ typ.
Peak THz Photocurrent	4.7 nA (Reflection Mode)
THz Pulse Width	0.33 ps
-20 dB Bandwidth	3.43 THz
Noise Floor	-70 to -80 dB

[1] Signal measured with a double pass reflection mode measurement setup. Transmission mode setups will see a signal amplitude increase of 3 to 4 times the amplitude shown.

[2] Offerings for scientific customers typically focus on broad spectral power. High signal amplitude options are available depending on application needs.

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