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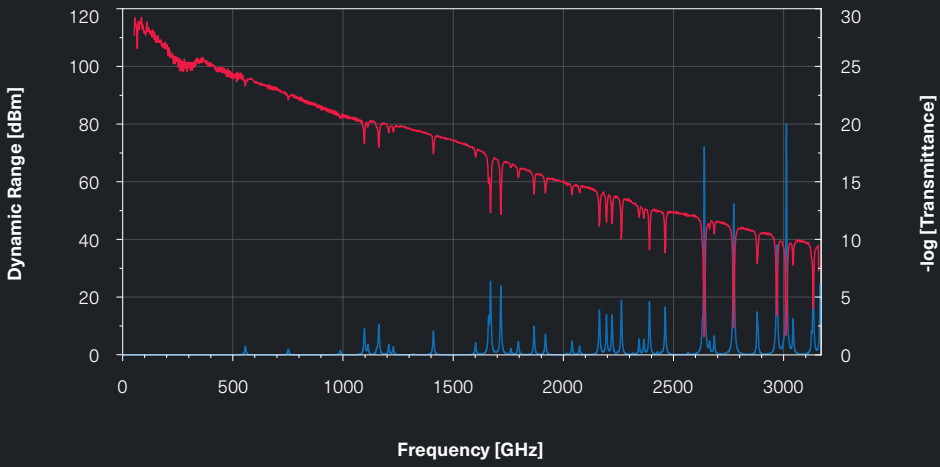
Frequency selection and tuning

TeraScan

Frequency-domain terahertz platform

- Tunable, monochromatic emission up to 3 THz
- Single-MHz frequency resolution
- Rh:InGaAs receivers, > 10 dB signal improvement



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WARNING – VISIBLE AND INVISIBLE LASER RADIATION, AVOID EXPOSURE TO BEAM
CLASS 3B LASER PRODUCT,
EN60825-1:2014
IEC 60825-1:2014

Specifications		
System	**TeraScan 780**	**TeraScan 1550**
Difference frequency tuning	1.8 THz (typ. 2.0 THz)	1.2 THz (up to 2.7 THz with Tuning Range Extension)
Tuning speed	Up to 0.1 THz/s	
Frequency accuracy	< 2 GHz	
Minimum frequency step size	< 10 MHz	
Terahertz emitter	PCA-FD-0780-100-TX-1, GaAs photomixer	PCA-FD-1550-100-TX-1, InGaAs photodiode
Terahertz receiver	PCA-FD-0780-130-RX-1, GaAs photomixer	PCA-FD-1550-130-RX-1, InGaAs photomixer
Receiver option		THz PCA / HF cw: Use of Rh:In-GaAs receiver instead of standard RX, signal improvement > 10 dB
Antenna type	Log-spiral	Bow-tie
Terahertz polarization	Circular	Linear
Emitter and receiver package	Cylindrical, ø 1” Integrated Si lens and SM/PM fiber pigtail	Cylindrical, ø 25 mm Integrated Si lens and SM/PM fiber pigtail
Terahertz power (typ.)	2 µW @ 100 GHz, 0.3 µW @ 500 GHz	100 µW @ 100 GHz, 10 µW @ 500 GHz
Terahertz dynamic range (300 ms integration time)	80 dB @ 100 GHz 70 dB @ 500 GHz	90 dB @ 100 GHz 70 dB @ 500 GHz
Laser size (H x W x D) and weight	Two DFB pro L laser heads, each with dimensions 90 x 90 x 244 mm^3 (H x W x D), weight 2.8 kg	Two DFB pro BFY laser heads, each with dimensions 60 x 120 x 165 mm^3 (H x W x D), weight 1 kg
Control unit	DLC smart	
Controller size (H x W x D) and weight	50 x 480 x 290 mm^3, 4 kg	
Computer interface	Ethernet	
Software	Control software with GUI + Remote command interface	
Key advantages	High bandwidth with one set of lasers	High terahertz power, compact laser units