MICROTECH® instruments, inc.

COMPACT THZ GENERATORS

Product description:

These generators are based on a QS2-180 Backward Wave Oscillator (BWO) combined with frequency multipliers. While QS2-180 is only tunable in range 100-180 GHz, combination of QS2-180 with frequency multipliers extends the operating spectral range to 1.5 THz.

The frequency multipliers are very compact (1"x0.5"x0.5") solid-state electronic devices that are attached directly on the QS2-180 output waveguide. Power conversion efficiency of the multipliers varies from 0.1 to 20 percent, depending on the frequency range. Starting with 100 mW of power generated by QS2-180, output power of the multiplied source ranges from a few µW to 20 mW.

Product specifications:

MODEL	TUNING RANGE	OUTPUT POWER
QS2-180	100 - 180 GHz	10 - 100 mW
QS2-350	200 - 350 GHz	1 - 20 mW
QS2-500	300 - 500 GHz	0.5 - 2 mW
QS2-1000	600 - 1000 GHz	20 - 100 µW
QS2-1500	1100 - 1500 GHz	1 - 5 µW

Application notes:

The **QS2-350** is comparable in power and tuning range to the QS1-260, QS1-370. The **QS2-500** is the only source operating in the 370 - 500 GHz range. The **QS2-1000** is covering the spectral range of QS1-1000, QS1-900 and QS1-710 combined at the expense of lower power. **QS2-1500** exceeds the tuning range of QS1-1420 and QS1-1250 combined, extending operation of BWO-based sources to 1.5 THz. However, the output power falls significantly at higher frequencies.

Apart from the wide tuning range, advantages of frequency multiplied BWO sources include compact size, light weight, lower operating voltages, no water cooling, and extended operating lifetime.

Computer Control of THz Sources:

Digital to Analog Converter (DAC-16) enables computer control of the high voltage power supply VR-3M via RS-232, GPIB or USB interfaces THz Generator software package provides for a windows based interface to control THz sources via DAC-16 and high voltage power supplies.

Pricing information is available on request at sales@mtinstruments.com
132 East Broadway, Suite 810, Eugene, OR 97401, USA
Phone: 541-683-6505
Fax: 541-610-1825
www.mtinstruments.com