

# NEWS RELEASE

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December 21, 1998

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## **GIGA-TRONICS I2000A MICROWAVE SYNTHESIZER NAMED ONE OF 1998's TOP NEW PRODUCTS**

**The New Synthesizer Features Under 500  $\mu$ s Frequency Switching Speed and a  
Unique Frequency Ramp Sweep for Analog Speed and Digital Accuracy**

**San Ramon, California** – The Giga-tronics I2000A Series Microwave Synthesizer has been honored as a Top Product of 1998 by the editors of Microwaves & RF, according to James R. Koehn, President of the Instrument Division of Giga-tronics Incorporated.

Mr. Koehn echoed the sentiments of the Microwaves & RF editors who say in an article in the December issue that the Top Products of 1998, "represent significant achievements," and, "dedicated efforts on the part of research and development staffs, engineering teams, and production-line workers."

Mr. Koehn added that, "The Giga-tronics I2000A Microwave Synthesizer's under 500  $\mu$ s frequency switching speed and frequency ramp sweep that combines analog speed with digital accuracy are major performance breakthroughs previously unavailable in an affordable, production-line test instrument. We at Giga-tronics believe these performance features were major factors in the I2000A being selected as a product of the year, and we thank the editors at Microwaves & RF for that distinction."

The I2000A uses an advanced digital processing architecture driving a high-speed, ferrite-based YIG oscillator. The YIG oscillator is designed specifically for fast-tuning applications, and produces fast switching speeds while exhibiting low phase noise, high output power, and excellent frequency linearity.

The I2000A takes full advantage of complementary circuit design to further optimize the synthesizer's switching speed. Field programmable gate arrays (FPGA) perform logic operations quickly, while a digital signal processor (DSP) is employed as a secondary processor for dynamic control and fast frequency settings without burdening the primary processor. The result is a switching time under 500  $\mu$ s across the complete frequency range.

The analog ramp sweep feature of the I2000A is continuously controlled by the phase locked loop for optimum sweep accuracy. Linearity errors are virtually eliminated because the frequency is stepped at a rate much faster than the phase locked loop bandwidth, essentially producing a swept phase locked loop. 12 bit DAC resolution provides accuracy within a few Hertz, producing sweep linearity with unmeasurable error. The result is a sweep mode with analog speed and digital accuracy.

In addition to a fast frequency speed and frequency ramp sweep, the I2000A incorporates all of the performance features one expects including frequency modulation (FM), high-speed pulse/square wave modulation (PM) with on/off ratios greater than 80 dB, rise/fall times less than 10 ns, and obtainable pulse widths as narrow as 25 ns. Amplitude modulation (AM) and scan modulation (log AM) are standard features. Scan modulation can be operated simultaneously with FM and/or PM over a range of 0 to 60 dB from 10 MHz to 20 GHz.

The I2000A is the only microwave synthesizer that uses no potentiometers. The PLL is digitally controlled and will automatically self center to adjust for temperature drift. Calibration is recommended every two years, twice that of most microwave synthesizers.

The I2000A incorporates a 3" high by 4" wide Liquid Crystal Display (LCD) with 320 x 240 line resolution, 0.30 mm dot pitch, and Cold Cathode Fluorescent Lamp (CCFL) back light for maximum detail and optimum viewing.

Program up to nine stored setups from the front panel, and custom setups such as list mode and level correction tables are stored in user-programmable non-volatile RAM. In addition to frequency, the list function allows the user to preprogram power, dwell time, and modulation modes (AM, FM, and pulse). The number of list points available is determined by available memory. A typical instrument setup will provide up to 5,000 points for configuration of list mode.

The Giga-tronics I2000A is available in four frequency ranges — 10 MHz to 8 GHz, 10 MHz to 20 GHz, 2 to 8 GHz, and 2 to 20 GHz. U.S. list price starts at under \$25,000 with customer shipments to begin in several months. For more information, call Giga-tronics at **1-800-726-4442** or visit the company's web site at **[www.gigatronics.com](http://www.gigatronics.com)**.

Giga-tronics designs, manufactures and markets RF and microwave synthesizers, synthesized sweepers and power meters. Since 1980, Giga-tronics has designed and produced test and measurement gear for the most demanding requirements, and the company has shipped thousands of test instruments to commercial and military customers for use in radar testing, electronic warfare, satellite and telecommunications systems. Giga-tronics is ISO-9001 qualified.