# About MICRONETICS

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## About Micronetics:

Micronetics manufactures microwave and radio frequency (RF) components and integrated sub-assemblies used in a variety of wireless, aerospace and defense applications (satellite communications, electronic warfare and counter-measures). We also design and manufacture test equipment and components that test the strength, durability and integrity of communication signals in communications and internet infrastructure equipment.

**Our Goal:** Our goal is to provide high frequency Microwave RF components and subsystems; enabling communication, control and intelligence gathering with speed, accuracy, reliability and security.

**Our Customers:** Our customers include some of the world's leading technology companies, such as Adtran, Alcatel, BAE Systems, Boeing, Cisco, EADS, Ericsson, General Dynamics, L-3 Communications, Lockheed Martin, Netwave, ITT, Lucent Technologies, Motorola, NEC, Nokia, Northrop Grumman, Raytheon, Tektronix, Teradyne, Thales, and the U.S. Govt.

**Our Facilities:** We operate five design and manufacturing facilities located throughout Northeastern and Northwestern corridor.

In June 2007, we acquired MICA Microwave, adding a comprehensive line of high performance mixers and ferrite devices. MICA is located in Manteca CA.

In June 2005, we acquired Stealth Microwave, Inc. This acquisition will provide our customers with a broader range of Microwave RF products, including world class amplifiers. This facility is located in Trenton, NJ.

In 2003, we acquired Microwave Concepts, Inc., located in Fairfield NJ. This acquisition is consistent with our goal of continuing to expand our RF Microwave capabilities by building up our resources to manufacture and design complex integrated subassemblies.

In 2002, we acquired Enon Microwave, Inc., adding expertise in high power microwave control components. This facility is now co-located in Hudson NH

In 1999, we acquired Microwave & Video Systems (MVS) which became our Switch Filter Products Group. This manufacturing facility is located in Danbury, CT.

**Public Company:**
Micronetics is traded on NASDAQ: "NOIZ".

**Quality:** ISO9001

## Divisions & Subsidiaries:

**Converging Technology, Intellect and Skills:** Growing through strategic acquisitions, alliances and internal expertise, has enabled Micronetics to offer an extensive range of products across the entire microwave spectrum. From single function components and subassemblies to complete integrated systems; Micronetics has the intellect and experience to solve your most challenging requirements.

**Noise Products:** products ranging from noise modules used to monitor receiver performance to calibrated noise sources used to measure noise figure in both benchtop and automated test equipment (ATE) applications. We also specialize in amplified noise modules for bit error rate (BER) testing and for dithering circuits.

**Test Solutions:** manufactures a wide variety of precision noise generators . These products are designed to simulate real-world signal distortions from AWGN and multipath effects that are highly accurate and repeatable.

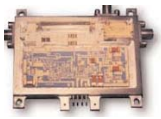
**Voltage Controlled Oscillators:** VCOs are available in wide and narrow bands, in miniature and subminiature sizes, surface mount and tape and reel packaging. Coaxial Resonator Oscillators (CRO) and PLLs are also designed and manufactured by this group.

**Receiver Components:** Our Receiver Components Group designs and manufactures high performance control components, switches, attenuators, phase shifters, detectors and multi-function modules.

**High Power Products:** Enon specializes in the design and manufacture of high power PIN diode switches and limiters in frequencies ranging from 20 MHz to 18 GHz and power levels up to 10kw Peak and 1200 W CW.

**Switch Filter Products:** Microwave & Video Systems manufactures microwave PIN diode double and multi-throw switches, switch/filter banks and integrated assemblies.

**Converter Subsystem Products:** Microwave Concepts (Micro-Con) designs and manufactures RFIC/ MMIC chips to complete broadband, Microwave RF integrated subsystem assemblies.



**Linear Power Amplifiers:** Stealth Microwave, manufactures a broad selection of high-end multi-carrier power amplifiers; specializing in a proprietary linearization capability that allows for smaller size amplifier solutions with a fraction of the power consumption.

**Mixer & Ferrite Components:** MICA Microwave, manufactures a comprehensive line of high performance mixers and ferrite devices, offering exceptional performance for systems where spectral purity is important.

# Overview of Product Offerings

## Voltage Controlled Oscillators

### VCOs
- QUALCOMM licenced 100 MHz to 3.5 GHz
- 1/2" pkg 50 MHz to 7.5 GHz Over 350 designs
- Coaxial Resonator Oscillators (CRO)
- Octave bandwidths up to 5.5 GHz

### Packaging
-Industry Standard
-Hermetic

## Noise Products

### Noise Sources
- Noise Diodes
- Amplified Noise Modules
- Calibrated Noise Sources
- Dithering Modules
- Coaxial, Surface Mount and Waveguide

### Integrated Noise Subassemblies for ATE

### Custom Components

## Switch Filter Products

### Integrated Assemblies
- Switch/Filter Banks in 7 or 10 Channels with frequency ranges from .05 GHz to 26.5 GHz

### PIN Diode Switches
- SPDT, SP4T, SP8T Switches frequency ranges from 2.0 GHz-26.5 GHz

## Ferrites & Mixer Products

### Ferrite Products
- Isolators/Circulators - to 40 GHz
- Drop-In Packages - 0.8 to 20 GHz
- MICA-PAC Series - 4 to 30 GHz
- Custom Isodapters - 30 GHz

### Mixer & Doubler Products
- Double Balanced Mixers 2-26.5 GHz
- Frequency Doublers 1.5 to 13 GHz
- Triple Balanced Mixers 2 to 26.5 GHz
- Iso Mixers
- Hermetic Pin & Coaxial Packages
- Surface Mount & Drop-In Open Carrier
- IQ Mixers 2 to 18 GHz

## Converter Subsystems

### Multi-function Modules
- Operating frequencies of the devices range from 100 MHz to 40 GHz for both broadband and narrowband applications

### Our Modules and RFIC/MMIC devices include
- Switches
- Phase Shifters (broadband, both analog and digital)
- Amplifiers
- Passive Couplers and Filters
- Variable Attenuators
- Mixers and Modulators
- Frequency Multipliers

## Power Amplifier Products

### Power Amplifiers for
- GSM 800-1000 MHz
- PCS 1700-2000 MHz
- UMTS 1900-2500 MHz
- ISM, WCS, WLL applications from 2300 to 5900 MHz
- MMDS applications 2500 to 2700 MHz

### Laboratory and Wide-band Amplifiers

### Military Amplifiers

### Rack Mount Amplifiers

### Custom Power Amplifiers

## Receiver Components

### Digital Switches
- Single and multi-throw modules .01 to 18 GHz

### Digital Attenuators
- 4, 5 and 6 Bit from .01 to 18 GHz

### Phase Shifters
- 5 bit, 6 bit and variable, 1.2 to 18 GHz

### Detectors

### Custom Component Subassemblies

## Test Solutions

### Precision Instruments
- Carrier to Noise Generators

- Automated & Manual Noise Generators
- Handheld Power Meters

## High Power Products

### High Power Limiters
- EL Series features PIN diode architecture in frequency ranges from 0.1-18 GHz

### High & Medium Power Switching
- ES Series of SPDT Switches in frequency ranges from .02 to 18 GHz, also available in Hot Switching

### Custom High Power Products

Information contained within this document is subject to change based on technological advances.

Product names mentioned are the trademarks of their respective owners. REV H 5.2008

## Product Groups

**Hudson NH**

**Voltage Controlled Oscillator Products**
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**Noise & Test Products**
Tel: 603-883-2900
Fax: 603-882-8987
noisesales@micronetics.com

**Receiver Components Group**
Tel: 603-883-2900
Fax: 603-882-8987
controlsales@micronetics.com

**Enon, High Power Products**
Tel: 603-546-4132
Fax: 603-882-8987
sales@enonmicrowave.com

**Monroe CT**

**MVS, Switch Filter Products**
Tel: 203-445-1970
Fax: 203-445-1564
microwavevideo@sbcglolbal.net

**Manteca CA**

**MICA, Ferrites & Mixer Products**
Tel: 209-825-3977
Fax: 209-825-3991
sales@mica-mw.com

**Fairfield NJ**

**Micro-Con, Subsystem Products**
Tel: 973-244-1040
Fax: 973-244-1188
sales@micro-con.com

**Trenton NJ**

**Stealth, Amplifier Products**
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For more information contact our sales and engineering teams listed above, or visit our website for additional information at www.micronetics.com

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