DS INSTRUMENTS

WWW.DSINSTRUMENTS.COM

RF Equipment

AFFORDABLE, SIMPLE, RELIABLE.

Introduction to DS Instruments

Company History

DS Instruments was founded by two engineers with the vision of bringing critical high frequency lab equipment into the financial reach of small business on a modest budget. Our first product was a unique RF tracking generator that brought existing signal analyzers increased functionality and renewed utility. The following two years of full-time research and design lead to an entire line of compact RF Test Equipment built to be simple and reliable. We now have more active products than the founding engineers ever expected, and are reaching customers of all sizes all over the world.

Company Purpose and Vision

We believe that by cutting traditional overhead costs and by using new technologies, simple yet powerful test instruments can be developed and manufactured more cost-effectively and without sacrificing quality or reliability. Our vision is continuous development of new products using the latest semiconductors available to bring unique value to our customers.

By The Numbers

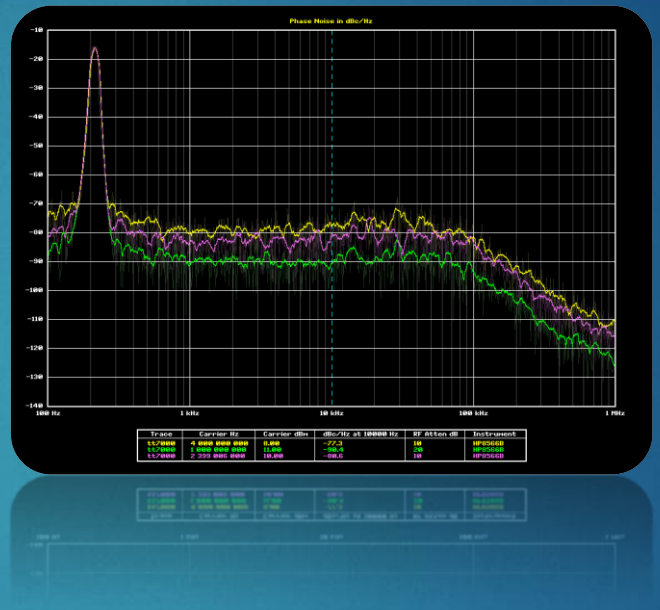
Company Information

- Headquarters: 788 Rubio Way, Gardnerville, NV, United States
- Email: support@dsinstruments.com
- Phone: (805) 242-6685
- Website: www.dsinstruments.com
- LinkedIn: www.linkedin.com/company/ds-instruments
- Annual Sales: $350,000+
- Employees: < 5
- Owner: William H. Samuels
- Line of Business: Microwave & RF Test Equipment Manufacturing
- Founded: 2010-2012
- CAGE Code: 76JK0
- NAICS: 334515 (Microwave Test Equipment Manufacturing)
- D&B D-U-N-S® Number: 079489002
- Products: Signal Generators, Power Meters, Digital Attenuators, RF Switches…

Applications

Our products address a wide range of technical areas including:

- Automated testing environments
- General RF lab use
- LO sourcing
- Antenna design
- EMC testing
- Production verification
- Educational / university lab use
- Aerospace / defense research
- 802.11n development / testing
- LTE engineering
- Satellite communications development
- CATV system design
- Line of sight link testing
- X-band radar applications
- Beam forming research
- Phased-array technology
- MIMO communications
- Electronic warfare
- IOT development
- 5G wireless



International

DS Instruments has distributors and partners in key locations around the globe.

Japan

France

UK

Taiwan

China

Hong Kong

China

Sweden

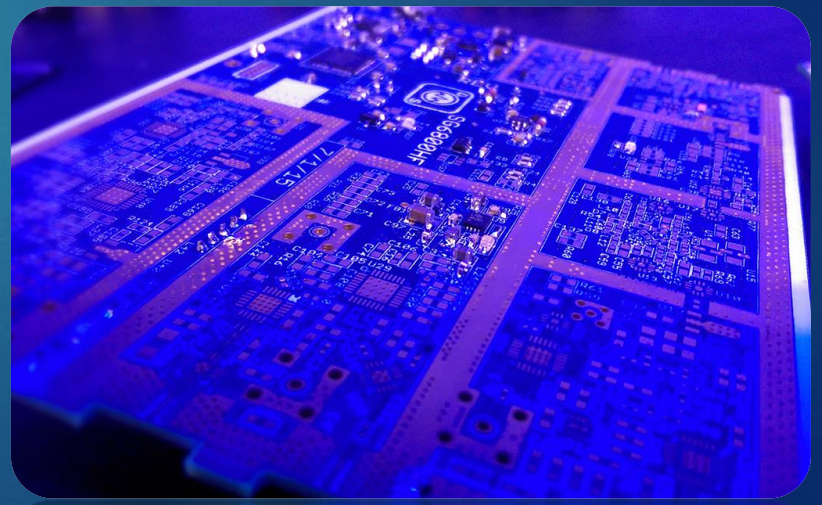
Vietnam

India

Advantages & Value

Our engineers constantly innovate new product features that both set us apart from the competition and continue to grow our space in the industry. Our products consistently offer a unique combination of quality, features, and value.

- Control – Industry standard SCPI commands for automation
- Interface – USB, Ethernet, and manual control – no drivers required
- Display – Crisp video and audio feedback
- Power - No bench power supplies or DC adapters needed
- Software – Simple windows interface for all devices
- Support – Web and phone tech support
- Design – 100% in-house custom product engineering
- Size – Ultra-portable devices fit in your pocket
- Price – Unbeatable prices for American-built equipment

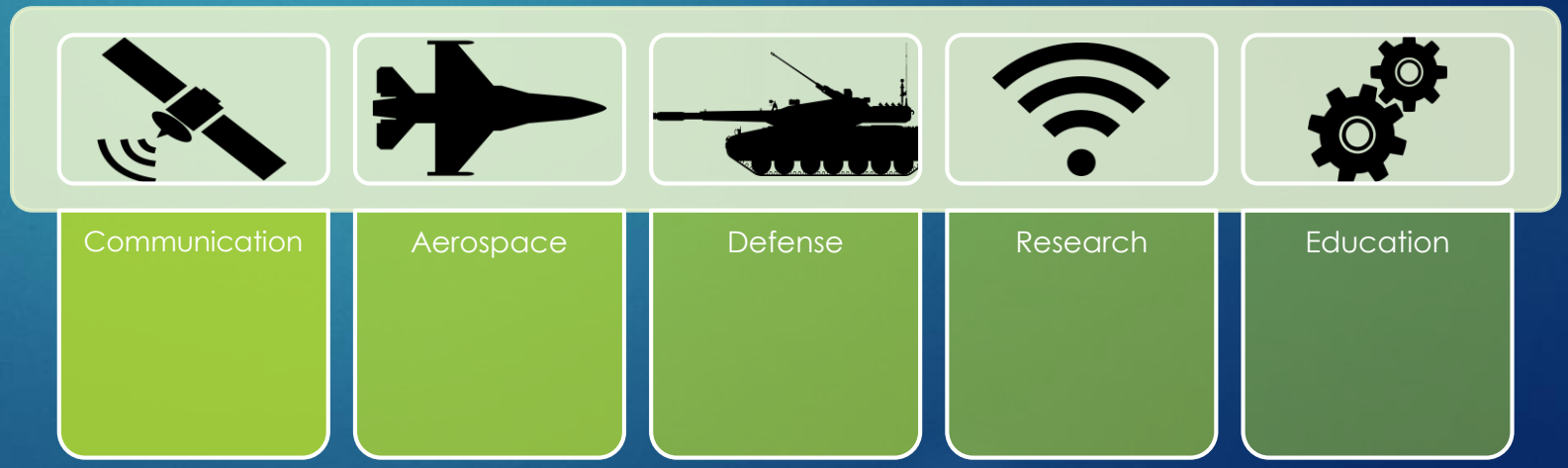


Market Segments

HIGH	• Rohde and Schwarz • Keysight Technologies • Anritsu	$10,000
MID	• DS Instruments • Vaunix • Mini Circuits	$1,000
LOW	• Generic white box • Ebay unbranded • Dev kits / hobbyist	$100

While communication and Aerospace make up over 50% of our sales, our products are also popular in universities, medical research, and government projects.

Our pricing bracket covering the sub-$3000 market places DS Instruments in middle of the RF test & measurement industry. This market is growing due to expanding internet-of-things development, and demand for higher frequency test equipment at lower cost.



Relationships

DS Instruments has established itself as a reliable source of equipment for some of the highest profile innovators in the world.

Thomas Jefferson National Accelerator Facility
United States Navy
Northrop Grumman
Los Alamos National Laboratory
Fermi National Accelerator Laboratory
Lockheed Martin
Google
L3 Technologies
Tesla
Comcast
Hitachi
Alabama A&M University
Booz Allen Hamilton
Space Exploration Technologies Corp
Virginia Tech
UC Santa Barbara
Massachusetts Institute of Technology
Boeing
Orbit FR
Advanced Designs Corporation
Applied Communication Sciences
Ubiquiti Networks
Motorola Solutions
Trimble Inc.
Starry, Inc.

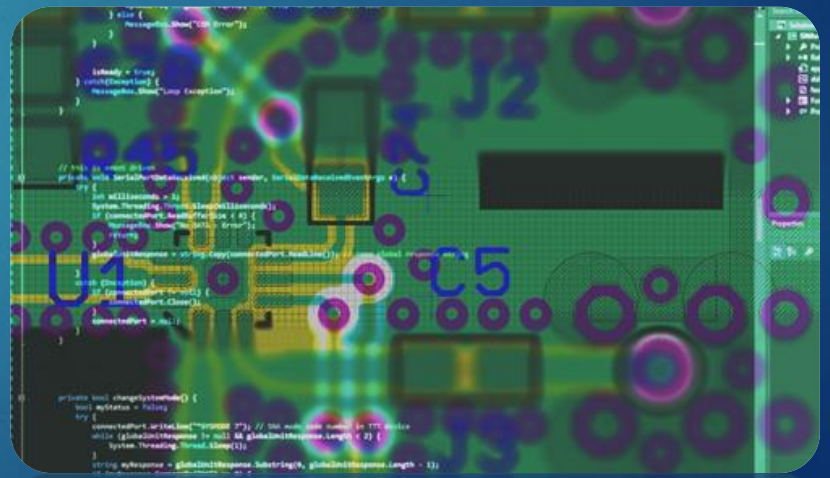
Lawrence Livermore National Laboratory
Georgia Tech
RF Shielding Services
MITRE Corporation
Rockwell Collins
KITECH
Princeton University
LYTX
AT&T
Vencore Inc.
Kitty Hawk Aerospace
Kopis Mobile
Dynetics, Inc.
Energous
R&D Trading Co.
Lincoln Laboratory, MIT
Spectrum Lab at Montana State University
Portland State University
Intel Mobile Communications
Greensight Agronomics
KEYW Corporation
Shielding Integrity Services, Inc.
Bynet
Cubic Defense Applications
Sinclair Broadcast Group, Inc.

Princeton University
Phazr
Maxim Integrated
University of Southern Mississippi
Sensys Networks, Inc.
Planet
Harvard University
Max Plank Institute
LivaNova USA Inc.
Gogo llc
National Research Council Canada
Technology and Communications Systems, Inc.
Physical Optics Corporation
I-Q Analog
Techne Instruments
RADX Technologies Inc.
Extreme Networks
United States Air Force
Hearst

Simple & Free Control Software

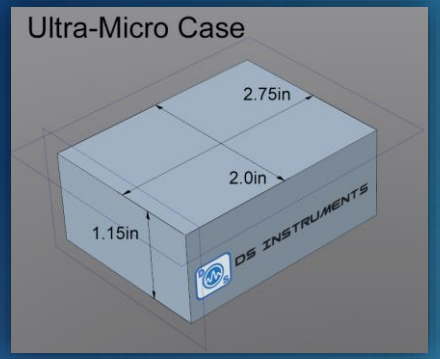
All of our RF products come with free windows control apps that are easy to use with virtually no learning curve.

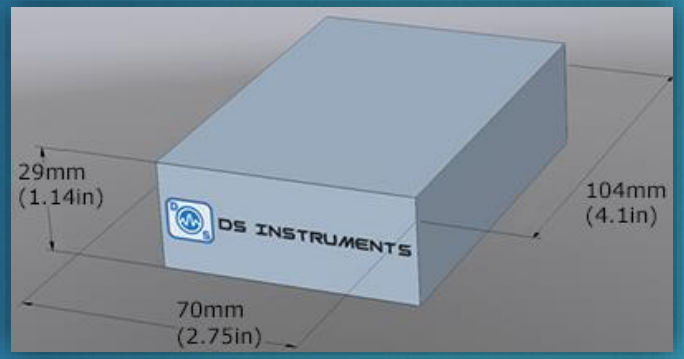
Automated control is a core use-case for our devices. We provide source code and control examples in multiple environments for quick integration into customer projects. Linux, Python, .NET, Matlab, and many embedded systems are simple to interface with and debug.

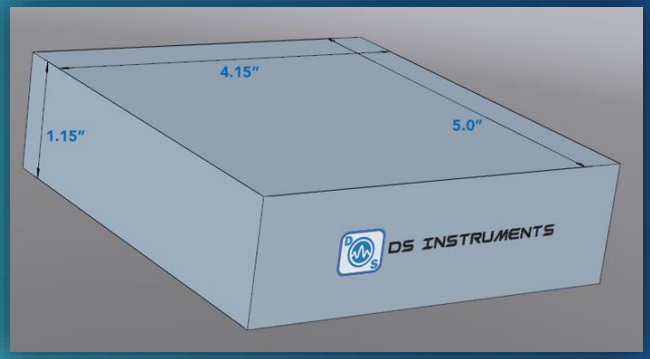


Compact and Reliable

All of our equipment is packaged in sturdy powder-coated aluminum cases just a few inches wide.







Solid-state designs with no moving parts ensure more rugged systems and a longer service life for testing in the field. Shared components between all of our product lines saves design time, and reduces costs to our clients.

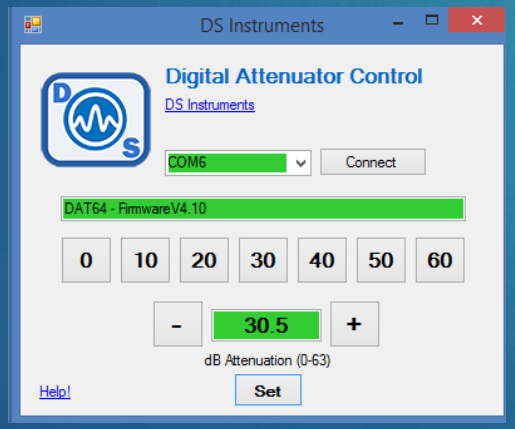
RF Signal Generator Family

Our most popular product line

- Models covering from 24MHz to 24GHz
- Full calibrated power output level control (stepped and fine-tune)
- Active harmonic filtering
- Front OLED display for user feedback
- Frequency step user control buttons
- USB SCPI COM port control for automation
- Low phase-noise & small step size
- External or internal 10MHz reference
- Frequency sweeping support
- Dual channel models available
- Analog trigger inputs
- Ethernet and USB control

Programmable RF Attenuators

Programmable RF attenuators can be controlled for automated environments via USB SCPI commands or manually via front buttons.



- 64dB or 90dB attenuation ranges
- 1MHz to 18GHz frequency coverage
- 0.50dB & 0.25dB step models
- Fast response and switching time (~1mS)
- Extremely low insertion loss
- Automated test environment friendly
- OLED display with audio feedback
- Manual step buttons
- Ethernet port on select models

Integrated-LO Wideband Mixers

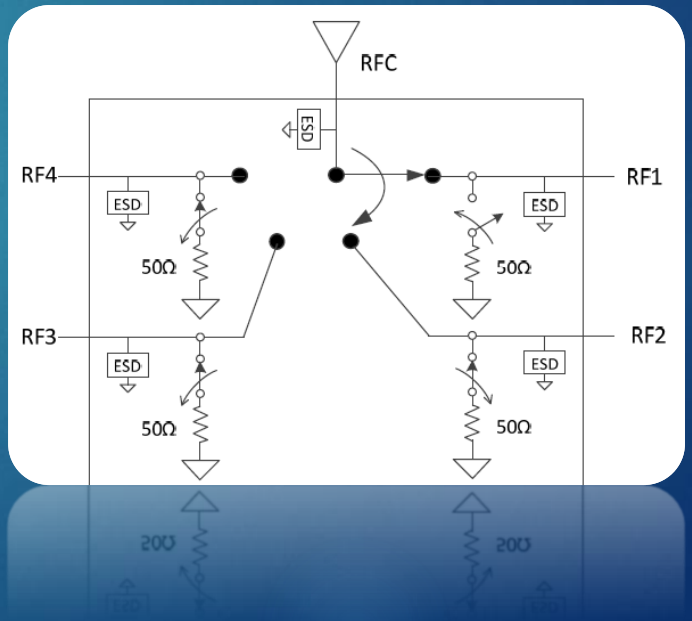
High-performance wideband mixers with internal programmable local oscillators provide a simple, compact and affordable way to up and down convert.

- 10MHz to 20GHz RF frequency range
- Low phase-noise LO covering up to 22GHz
- Wide IF bandwidths up to 4GHz
- Low conversion loss
- Automated test environment friendly
- OLED display with audio feedback
- Manual LO-frequency control buttons
- Internal and external 10MHz reference sources

RF Switch Matrix

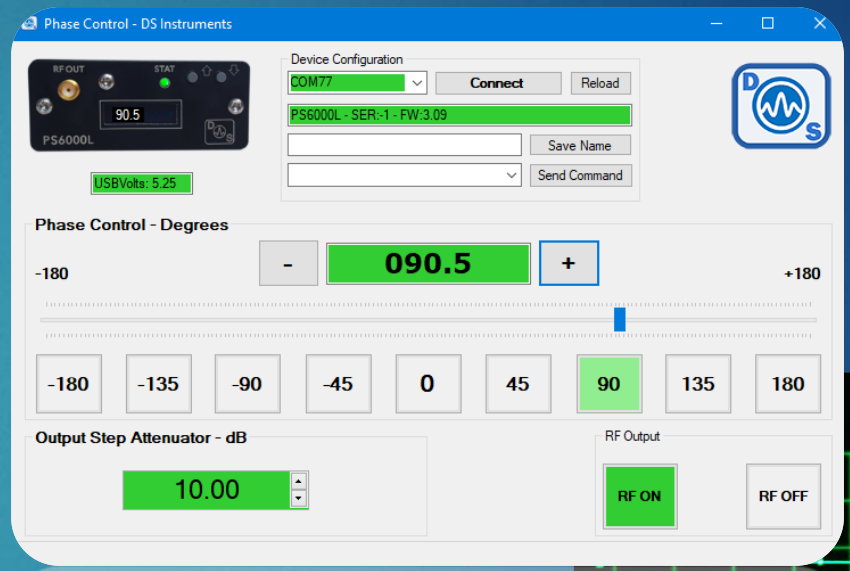
Four-way switches from 10MHz – 20GHz.
Manual and remote controllable.

- 1+ watt power handling
- Solid state for long service life
- Low insertion loss and good isolation
- USB powered
- Status LEDs & audio alerts
- Premium microwave SMA connectors



Wideband Phase Shifters

Both active and traditional passive versions available

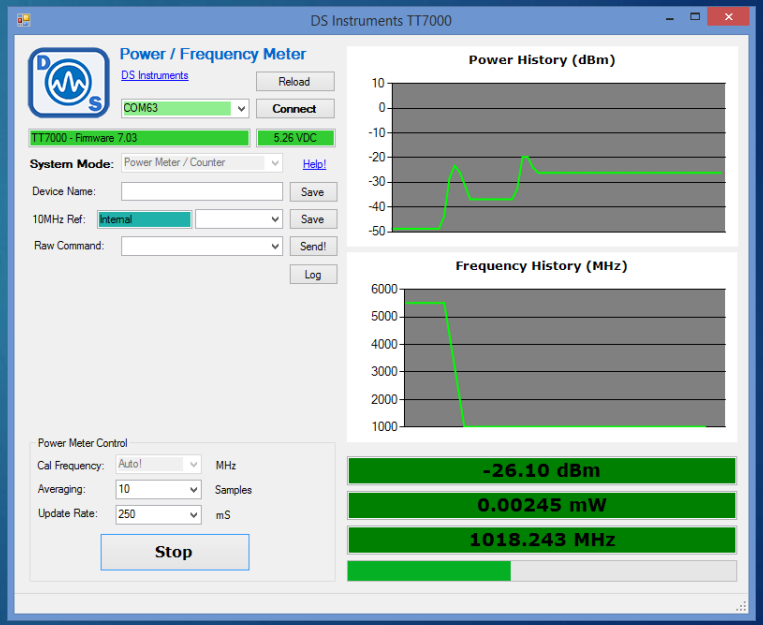


- Frequency Range extending up to 12GHz
- Angle range: 0 – 360 degrees
- Wide power input limits
- Phase resolution down to 0.5 degrees
- Adjustable signal output power (active models)
- Status LEDs & audio alerts
- Premium microwave SMA connectors
- USB control and power
- Tested for reliability and accuracy

RF Power Meter

Stand-alone power metering to 7GHz with no computer required. Built-in frequency counting for automatic power calibration. Also functions as a precision RF signal generator.

- Controllable via SCPI commands
- Additional high-power RF divider mode
- Frequency counting from 50MHz – 7GHz
- Power meter from 50MHz – 7GHz
- Power reading from -50dBm to +5dBm
- Bright OLED display
- Signal generation from 300MHz to 9.6GHz
- Power output level control



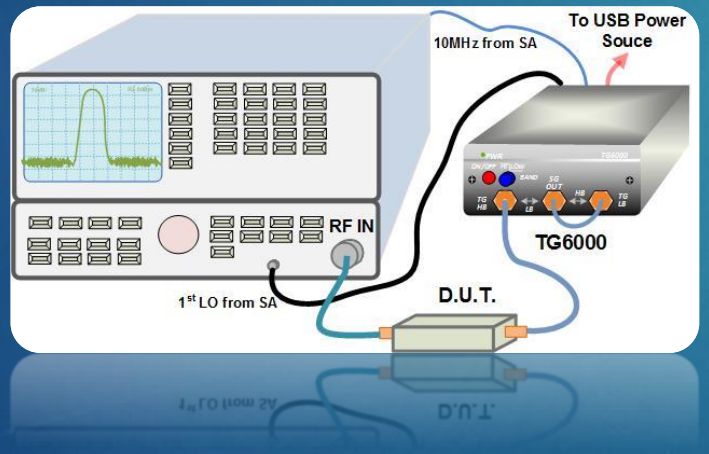
Wide-band Amplifiers

General purpose low-power amplifiers with convenient USB connection.

- 10MHz – 6GHz or 5-20GHz
- 20-30dB of small signal gain
- Over 20dBm output power
- Controllable via SCPI commands
- Variable gain on 6GHz model
- USB powered and monitored

Tracking Generators

Generic RF Tracking Generators that can be used with many existing Spectrum Analyzers.

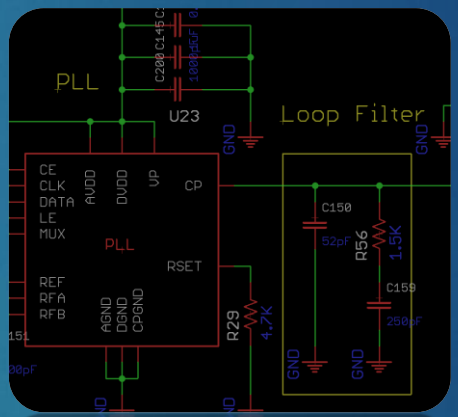


- Three bands covering DC - 12.0GHz
- Better alternatives to the HP 85640A
- Also function as signal generators
- USB powered and controlled

The Near Future

Constant innovation keeps our product line at the cutting-edge of what is possible leveraging the most advanced semiconductors available. At any time we have a handful of new ideas in design and testing.

- USB wideband scalar network analyzer
- 1 watt power amplifier
- Ku-band phase shifter
- Harmonic filtered integrated-LO mixer
- Vector signal Generator
- Direct digital synthesis based signal generator



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support@dsinstruments.com

(805) 242-6685

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