

RF Bench

RF Bench is an All in one instrument for RF engineers that combines vector signal generator, vector signal analyzer, vector network analyzer, power meter, software-controlled DC power supply and digital I/O. Having all these instruments in one small and portable package allows the users to design, debug and validate their RF circuits and systems right on their benches. The included software allows to access to all these instruments on a single screen and can be further upgraded with additional software plug-ins to add functionality and value.



Features

Hardware:

- Vector signal generator
- Vector signal analyzer
- Vector network analyzer
- Digital I/O
- RF power detector
- Software-controlled DC power supply

Software:

- Signal Generation
- Single Tone
- Multi Tone
- Analog Modulated (AM/FM/PM)
- Signal Measurements
- Time-Domain Measurements
- Frequency-Domain Measurements

- Frequency Response
- S-Parameters, VSWR
- DUT Control via Digital I/O
- Power detection

Key Features

Hardware:

- Six benchtop instruments combined in one system

Software:

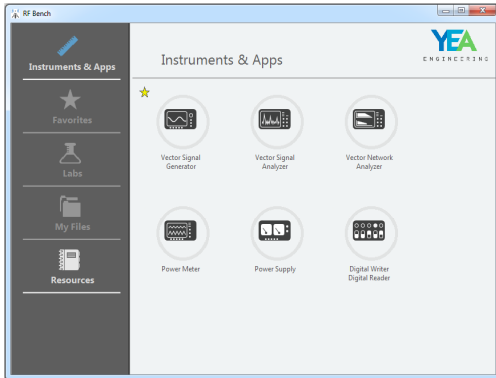
- Intuitive graphical user interface

Technical Specifications

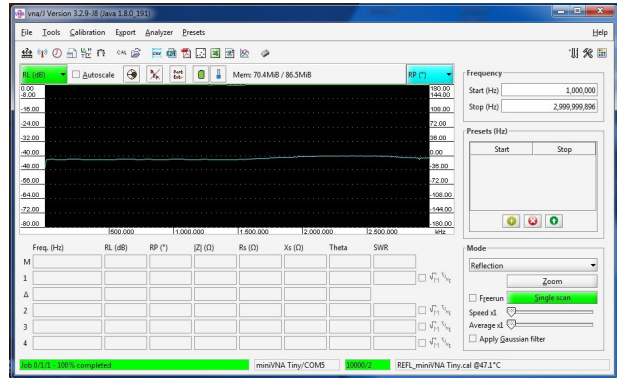
	Parameter	Value
Vector Signal Generator	Frequency Range	from 70 MHz to 6 GHz
	Frequency step	<1 kHz
	Maximum output power	20 dBm
	Gain range	89.75 dB
	Instantaneous real-time bandwidth	56 MHz
	Number of Channels	2
		Maximum 15 MS/s I/Q rate for streaming. Maximum 61.44 MS/s one channel burst I/Q rate. Maximum 30.72 MS/s two channel burst I/Q rate.
Vector Signal Analyzer	Frequency Range	from 70 MHz to 6 GHz
	Frequency step	<1 kHz
	Maximum input power	-15 dBm
	Gain range	76 dB
	Instantaneous real-time bandwidth	56 MHz
	Number of Channels	2
Vector Network Analyzer	Frequency Range	from 500 kHz to 4 GHz
	Number of Channels	2-port fully bidirectional (Measures S11, S12, S21, S22 at the same time)
	Dynamic Range	Up to 80dB in MHz range, up to 40dB in the GHz range
	Frequency setting resolution	1Hz
	Number of steps	1 to 10001
	Output power	-14 dBm at 100MHz
	Scan type	Linear, logarithmic and listed
Power Meter	Frequency Range	from 1 MHz to 6 GHz
	Dynamic Range	from -30 dBm to +20 dBm
	Number of Channels	1
DC Power Supply	Voltage Range	from 0 V to 50 V
	Current Range	from 0 A to 5 A
	Number of Channels	2
Digital Control	Voltage Range	from -0.5 V to 5.8 V
	Number of Channels	12

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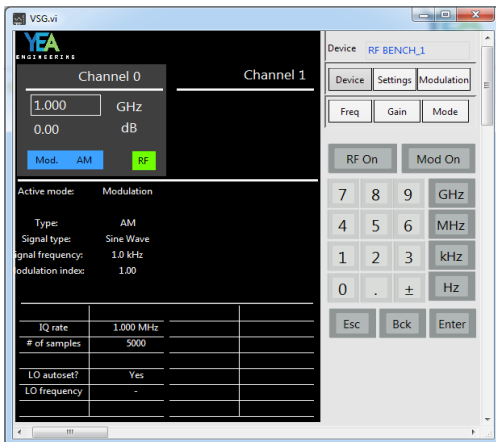
User Interface Appearance Exampmls



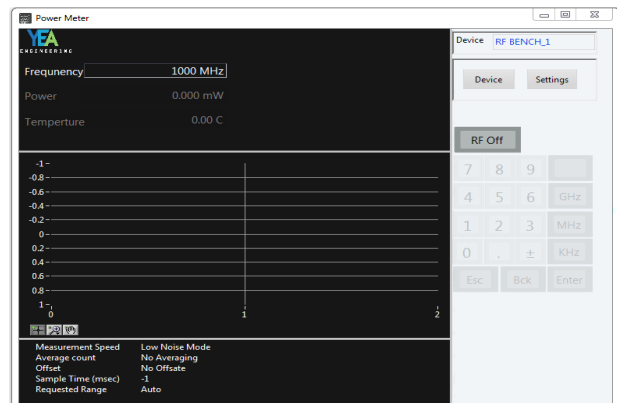
Front panel with tools menu



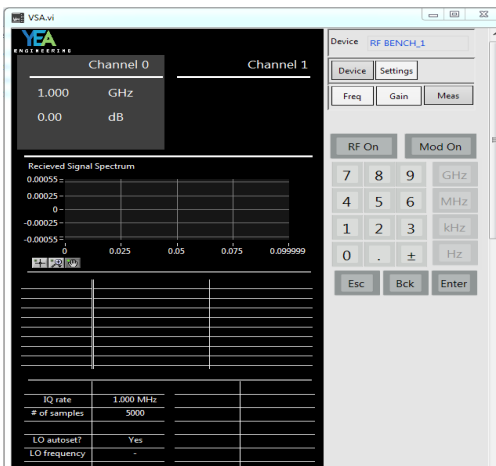
Front panel of the Vector network analyzer



Front panel of the vector signal generator



Front panel of power sensor



Front panel of the vector signal analyzer



Front panel of power supply

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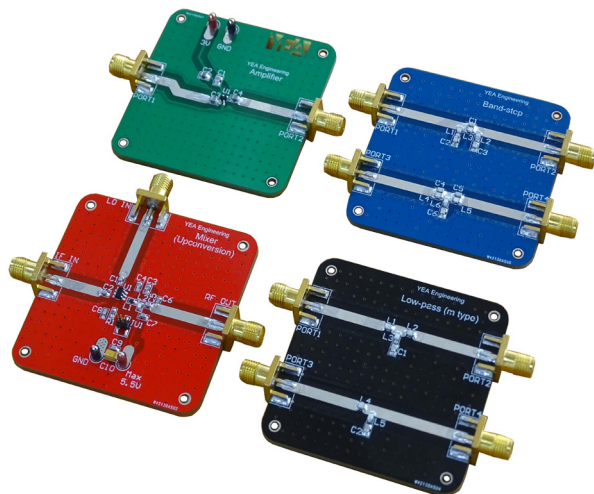
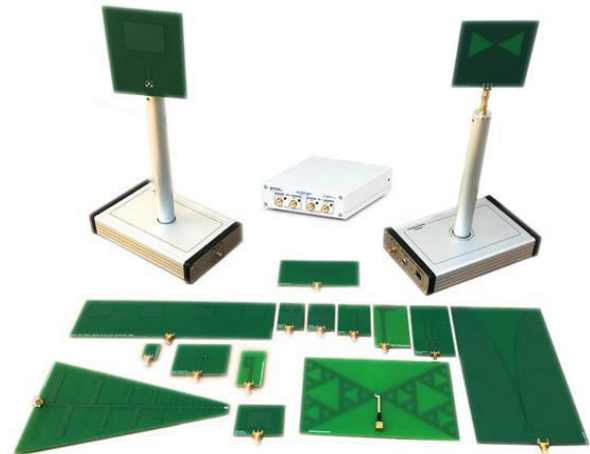
System allows to conduct different types of laboratories:

PCB Antennas Lab

PCB antennas lab is a training program for the study of the basic principles of antennas, their species, features and signal transmission basics. The system is used in the educational process to familiarize the user with the parameters of antennas and practical training for antenna measurements.

Laboratory course is designed to gain knowledge in the following areas:

- Theory fundamentals
- Antenna parameters
- Measurement of antenna parameters



RF circuit development lab

RF circuit development lab is a training program which trains the basic development principles of RF hardware parts.

Lab introduces the basic principles of RF PCB development. It gives the ability to calculate RF components to assemble boards and perform measurements with further visualization of test results.

RF Basics and RF Component Lab

The RF Basics and RF Components Lab is based on the NI USRP or NI PXI platform. The software is developed in the NI LabVIEW graphical programming environment.

This lab is an easy to use educational package to study RF components characterization and RF signal transmission basics.

The lab has been designed for studying the following main directions:

- Operating principles and characterization of various active and passive RF components
- Analog and digital modulations
- Modulated signal harmonic analysis

