MegiQ

VNA-0440 / 0460

4GHz / 6GHz, 2-Port / 2½-port Vector Network Analyzer

VNA-0440 / VNA-0460

The MegiQ VNA-04x0 / VNA-04x0e are compact Vector Network Analyzers that are used for professional antenna and network measurement and optimization.

With a frequency range of 400MHz to 4GHz and 6GHz they are very well suited for characterization and measurement of S-parameters of 1, 2 and 3 port networks such as antennas, matching networks, amplifiers, filters, power splitters etc. They cover all popular communication bands that are used worldwide.

Characterize wireless devices of today, like IOT devices, routers, phones, domotica products, electronic gadgets, tablets, laptops, RF-modules etc.

The MegiQ VNA-0440 is widely used for developing professional and consumer wireless products. Our accessories make it easy to measure the miniature products of today.

### VNA-0440e / VNA-0460e

Features

VNA-0440 / VNA-0460
- ➢ 2-port bidirectional VNA
- ➢ Measure S11, S12, S21, S22
- ➢ Frequency 400MHz to 4GHz (6GHz)
- ➢ Power -30 to +5dBm
- ➢ Sweep up to 20001 points
- ➢ Port calibrated
- ➢ Full 12-term normalization
- ➢ Parametric sweeps
- ➢ Match Circuit Calculator
- ➢ Deembedding functions
- ➢ Calkit manager

VNA-0440e / VNA-0460e
- ➢ 2½-port bidirectional VNA
- ➢ Measure S13, S23
- ➢ Signal Generator output
- ➢ Bias Voltage/Current generator

Software
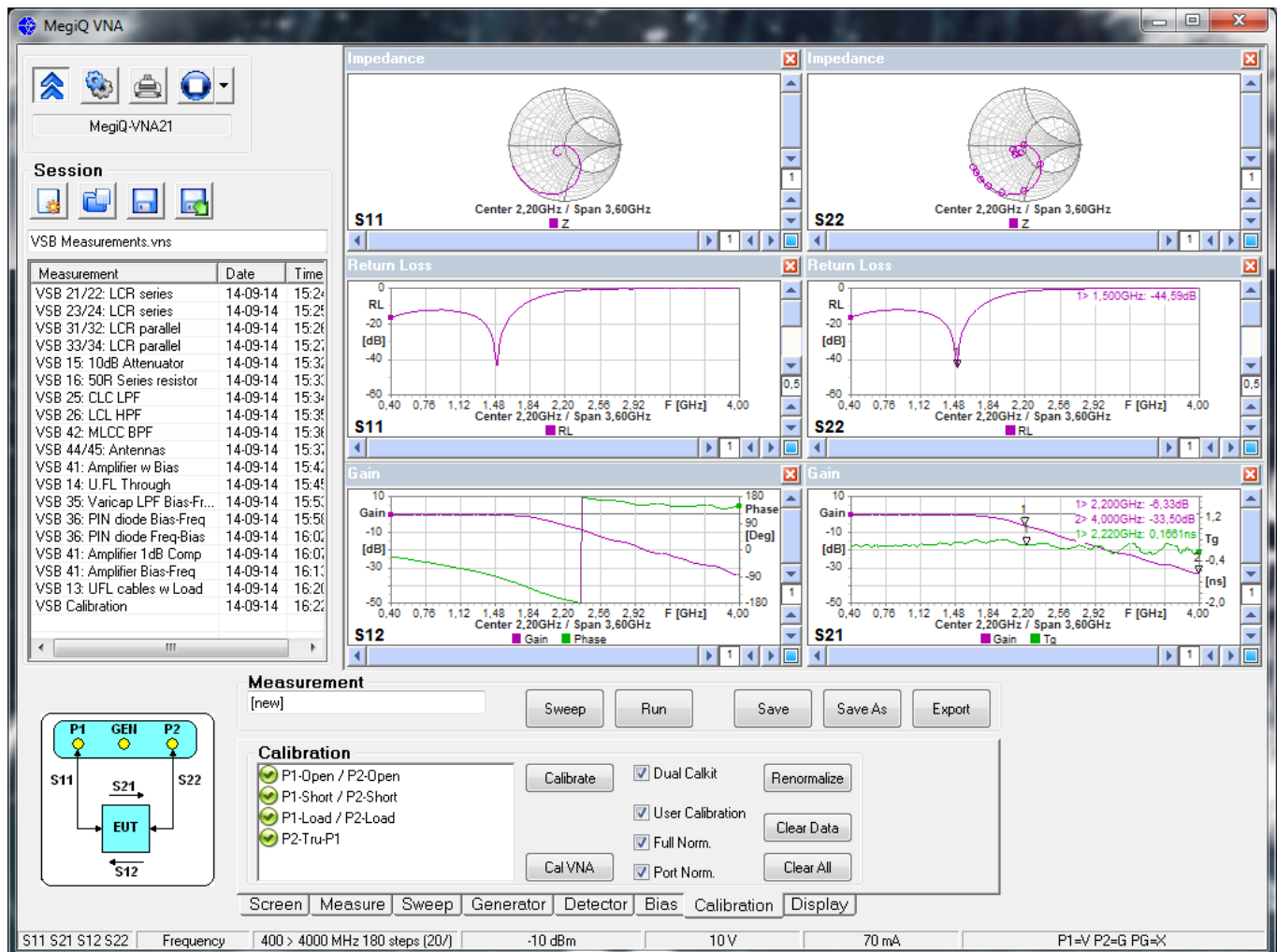
**2 port measurement with impedance, return loss, gain, phase, group delay**

- ➤ **Presets:** With several preset measurements for 1-port and 2-port measurements the VNA software is very easy to use for most common measurements like impedance and gain.

- ➤ **Calibration:** Measurements on SMA devices can be done directly at the VNA ports without any calibration. For measurements through cables and adapters the software guides through the Open-Short-Load-Through calibration process and the VNA front panel will indicate which termination to calibrate next. The Dual Calkit option makes calibration 3 times faster.

- ➤ **Screen:** The screen was layed out for operation with a touch screen. The graphs can be dragged in any way with any of the graph types for the measurement. There are several color schemes.

- ➤ **Sweeps:** The software provides a sweep manager that allows combining multiple paramaters (frequency, power, bias variables) into a parametric sweep. This is useful for characterizing active circuits like amplifiers, switches, varactors, pin diodes etc.

- ➤ **Session Manager:** Measurements can be stored in a session manager that keeps the measurements for a session in a single file. All settings including calibration, screen layout, markers etc are stored in the session.

- ➤ **API:** An Application Programming Interface for VB, C++, C#, Labview, etc is available to allow integration of the VNA-0440 in a lab setup or an automated factory testing system.

Match calculator

A powerful feature is the built-in match circuit calculator. When a circuit (antenna) is measured the user can click at the appropriate frequency in the Smith chart and the match calculator will propose several circuits that matches that frequency to 50 Ohm, or an other impedance. It also shows the resulting bandwidth and allows fine tuning of the components to optimize the result.

When a match is selected the result will show in the measurement and the match is simulated in real-time during further measurements.

With proper calibration of the measurement the results of the matching circuit are well duplicated on the target board.
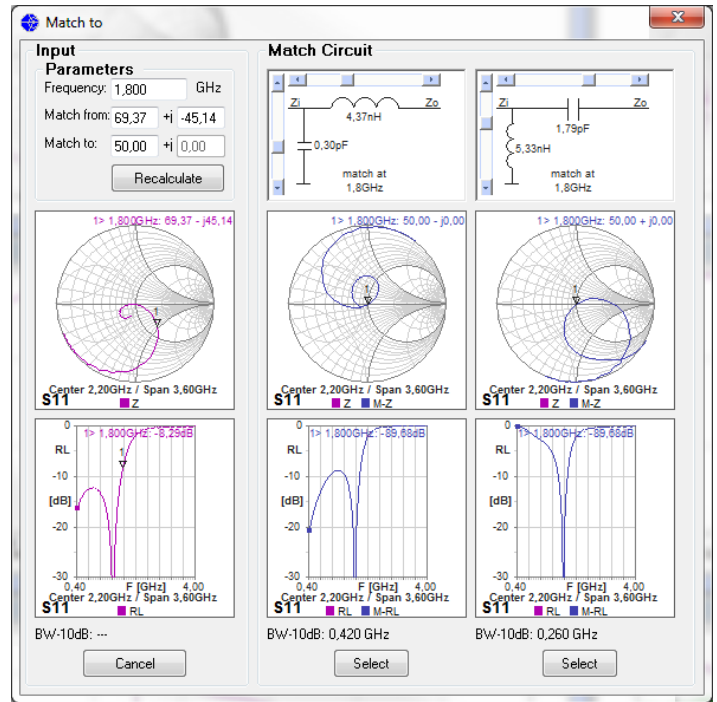
Match calculator proposes several circuits

Reports

As the VNA-0440 is commonly used in development projects, reporting and documentation is an important part of the job. The software produces scalable graphics following the screen layout that can be configured by the user. It can be saved to a file or pasted into a document.
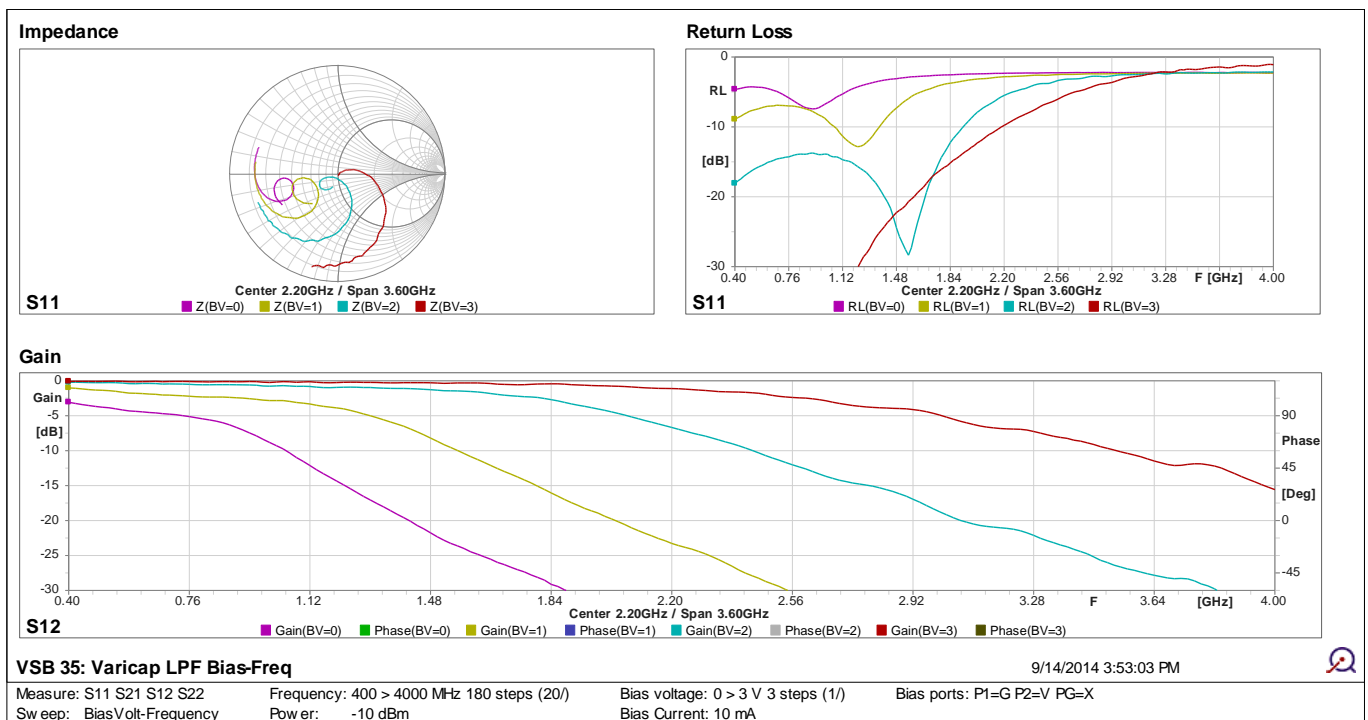
Report output follows the screen layout and can readily be pasted in a document
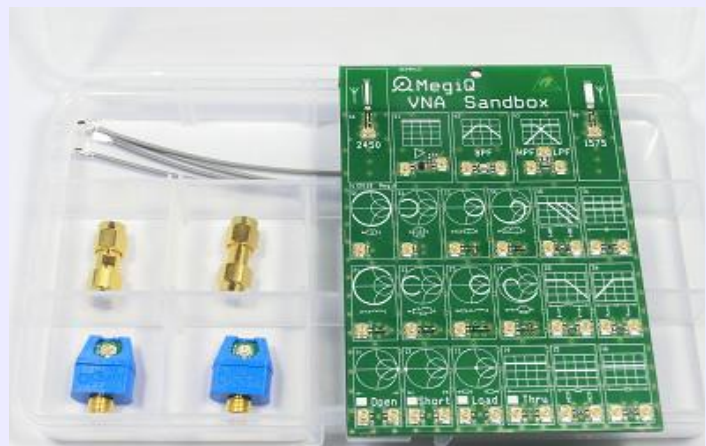
Specifications

		VNA-0440 VNA-0460	VNA-0440e VNA-0460e	
VNA		➤ 2 port full bidirectional	➤ 2 port full bidirectional ➤ Generator port ➤ Bias generator with bias-T on all ports	
Frequency	Range Accuracy Resolution	400-4000 (6000) 2 5		MHz ppm kHz
Return Loss	Port 1, Port 2	>15		dB
Generator	Power Accuracy Resolution Harmonics	-30 to +5 ± 1 0.5 < -35		dBm dB dB dBc
Detectors	Range 400MHz–4GHz Range 4GHz – 6GHz Input attenuator Bandwidth	-75 to +20 -60 to +20 0 – 30 12		dBm dBm dB kHz
Directivity	400MHz – 3GHz 3GHz – 4GHz (6GHz)	55 45		dB dB
Bias generator	Voltage source Current source Port DC control		-12 to +12 0 – 100 Open – Gnd - Bias	V mA
Sweep	Max size Variables	20001 Frequency Power P1, P2 attenuator	20001 Frequency Power P1, P2 attenuator Bias Voltage / Current	Points
Sweep variables can be combined and nested in a parametric sweep				
Software Operating System		Windows XP – Windows 10		
Display formats: Source impedance, Port impedance, Return Loss, Forward Loss, SWR, Impedance (mag/ph), Impedance (Smith), Gain (mag/ph/group delay), Gain Polar.				

VNA Sandbox

For those that are new to RF development we have created the VNA Sandbox. This kit contains a PCB with a dual UFL calibration kit and all kinds of 1-port and 2-port circuits such as resonant circuits, filters, antennas and active circuits.

The Sandbox kit comes with an extensive tutorial how to calibrate and measure circuits and explains the results and the behaviour of real-world components and circuits.

With all adapters and spare connectors included the VNA Sandbox kit provides a quick way to get started and get results.

VNA Sandbox provides an easy learning curve

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