

Engage your students the moment they touch the real RF world

Stretch your dwindling dollars with budget friendly solution

No compromises with Agilent support

Agilent wants to make things simpler and less time consuming when you develop a professional electronics/RF lab for your students. Using the Agilent RF Education suite in your educational program guarantees you spend the minimum amount of time selecting, configuring and managing your labs. Agilent not only provides you with the RF equipment, but more importantly —provides you with a solution.

Agilent's basic RF signal generator and spectrum analyzers have sufficient performance for many research projects, as well.

Help your students
and trainees
gain the edge

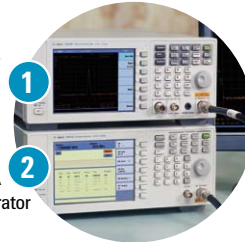
Applicable
labs include:

- Wireless communications
- Communication engineering fundamental
- RF components characterization
- Transmitter/receiver fundamental
- Waves/microwave engineering
- Electronics seminars/open labs



Your choices:

Agilent N9320B
RF Spectrum
Analyzer
(9 kHz – 3 GHz)



Agilent N9310A
RF Signal Generator
(9 kHz – 3 GHz)

Agilent
N9320B-TR1
RF Training kit
(Including Tx
and Rx boards)



Agilent CSA
Spectrum
Analyzer N1996A
(100 kHz – 6 GHz)



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Agilent Open simplifies the process of connecting and programming test systems to help engineers design, validate and manufacture electronic products. Agilent offers open connectivity for a broad range of system-ready instruments, open industry software, PC-standard I/O and global support, which are combined to more easily integrate test system development.

LXI

www.lxistandard.org
LXI is the LAN-based successor to GPIB, providing faster, more efficient connectivity. Agilent is a founding member of the LXI consortium.

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Remove all doubt

Our repair and calibration services will get your equipment back to you, performing like new, when promised. You will get full value out of your Agilent equipment throughout its lifetime. Your equipment will be serviced by Agilent-trained technicians using the latest factory calibration procedures, automated repair diagnostics and genuine parts. You will always have the utmost confidence in your measurements. For information regarding self maintenance of this product, please contact your Agilent office.

Agilent offers a wide range of additional expert test and measurement services for your equipment, including initial start-up assistance, onsite education and training, as well as design, system integration, and project management.

For more information on repair and calibration services, go to:

www.agilent.com/find/removealldoubt

Product specifications and descriptions in this document subject to change without notice.

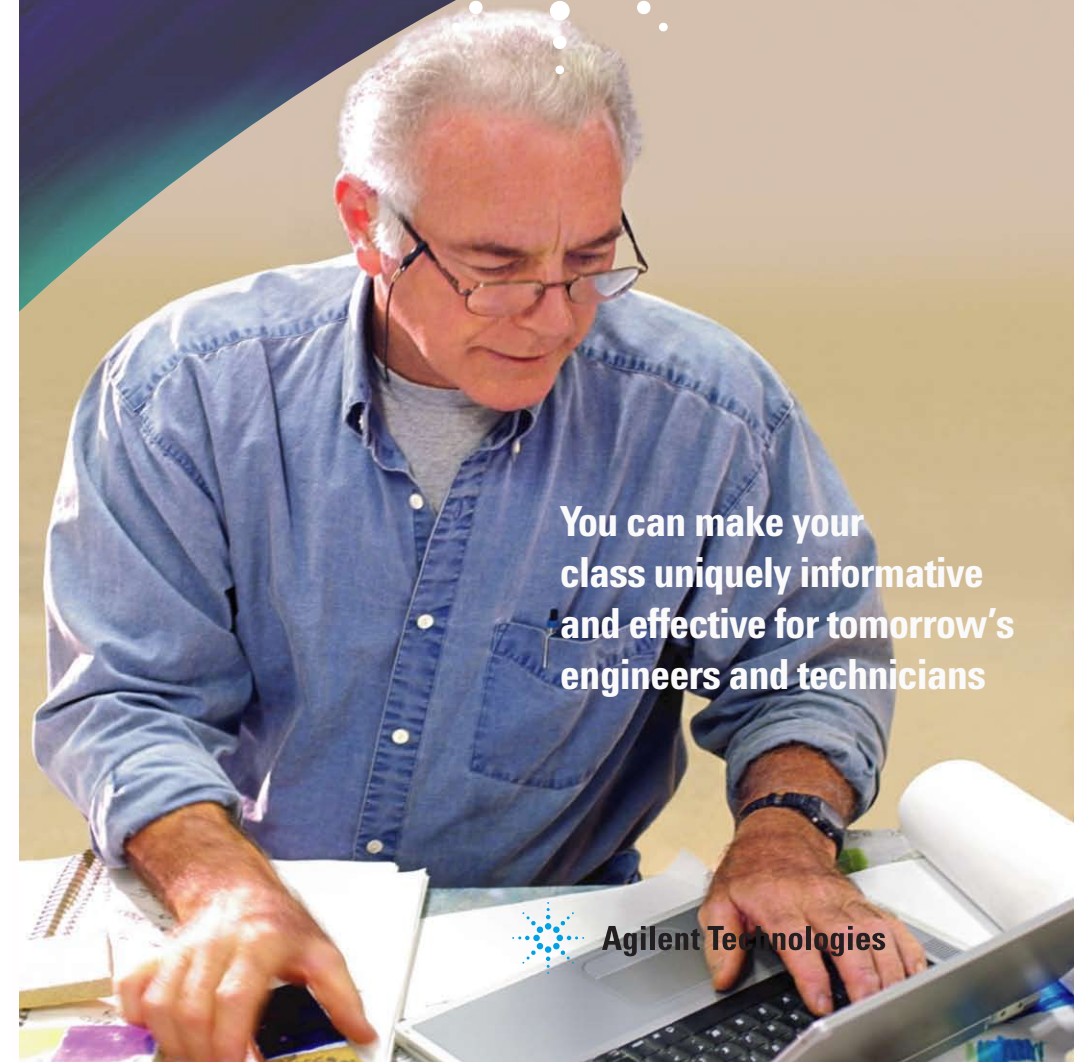
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Agilent RF Education Lab Suite

— Your preferred solution

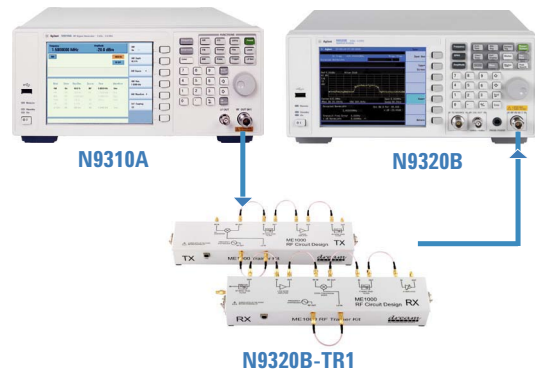


You can make your
class uniquely informative
and effective for tomorrow's
engineers and technicians



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Typical Hardware Configuration



Tip

1. Adding option I/Q modulator (N9310A-001) to the N9310A source enables generation of IQ modulation outputs using external baseband signals.
2. Adding option tracking generator (N9320B-TG3) to the N9320B spectrum analyzer enables it to be used as a scalar network analyzer.

Product Overview

1 N9320B RF Spectrum Analyzer

Frequency range: 9 kHz - 3.0 GHz
RBW: 10 Hz - 1 MHz
VBW: 1 Hz - 1 MHz
DANL: -148 dBm (Preamp on)
TOI: +13 dBm Nominal
Amplitude Uncertainty: $\leq \pm 1.5$ dB
Max damage level: ± 50 VDC or
average continuous
power > 40 dBm

RF input: N type, 50 Ω
Remote control: USB/LAN
1-button Power Suite: Channel
power/TOI / OBW/ACPR/SEM
TG output (opt.): 100 kHz - 3 GHz,
-30 dBm - 0 dBm

Demodulation analysis:
AM/FM tune and listen
AM/FM demodulation
ASK/FSK demodulation
EMI filter: 200 Hz, 9 kHz, 120 kHz, 1 MHz

www.agilent.com/find/n9320b

2 N9310A RF Signal Generator

Frequency range: 9 kHz - 3.0 GHz
Frequency resolution: 0.1 Hz
Aging rate: ± 1 ppm/year
External reference: 2/5/10 MHz
Output power: -127 dBm - +13 dBm
Amplitude accuracy: $\leq \pm 1$ dB
Reverse power protection: ± 30 VDC or
maximum 36 dBm, 1 minute

Phase noise: < 95 dBc/Hz
RF output: N type, 50 Ω
Low Frequency (LF): 20 Hz - 80 kHz
LF level: 0 - 3 V peak (into 50W)
LF output: BNC type, 50 Ω
Sweep output: RF/Amplitude/LF
Analog modulation: AM/FM/ $\emptyset$ M/Pulse
IQ modulator (opt.): 40 MHz bandwidth
Remote control: USB, SCPI command

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3 N9320B-TR1 RF Training Kit

TX Board	Unit
Frequency synthesizer	1
Mixer (up-conversion)	1
Power amplifier	1
RF band-select filter	2
Microcontroller unit	1

RX Board	Unit
RF band-select filter	1
Low noise amplifier	1
Mixer (downconversion)	1
Frequency synthesizer	1
IF Band-pass filter	1
AGC IF amplifier	1
Microcontroller unit	1

4 N1996A Portable Spectrum Analyzer

Frequency range: 100 kHz - 6.0 GHz
Span: 0 Hz, 1 kHz - 6 GHz
RBW: 10 Hz - 5 MHz
VBW: 1 Hz - 8 MHz
DANL: -156 dBm/Hz (preamp on)
TOI: +18 dBm nominal
Amplitude Uncertainty: ± 0.5 dB
Max damage level: average continuous
power > 33 dBm

RF input: N type, 50 Ω
Remote control: LAN, SCPI commands
1-button Power Suite: Channel power/
OBW/ACPR
Analog demod (opt.): AM/FM tune & listen,
demodulation analysis
Stimulus/Response : Return loss,
(opt.) insertion loss and
cable fault location
More options: spectrogram, battery pack

www.agilent.com/find/csa

Your benefits

1 Optimizing your lab's flexibility

The RF training kit offers unique flexibility. Not only can students simulate the typical Tx and Rx paths, but also the main components can be used separately for characterization experiments.

2 Straightforward and engaging for your students

Agilent's industry leading RF instruments and the easy-to-use RF training kit helps you to create a high quality educational lab that enables your students to gain an intuitive understanding of the RF world.

3 Extended value from a single suite

Besides helping you to generate effective labs for your students, Agilent's basic RF signal generator and spectrum analyzers have sufficient performance for many basic research projects.