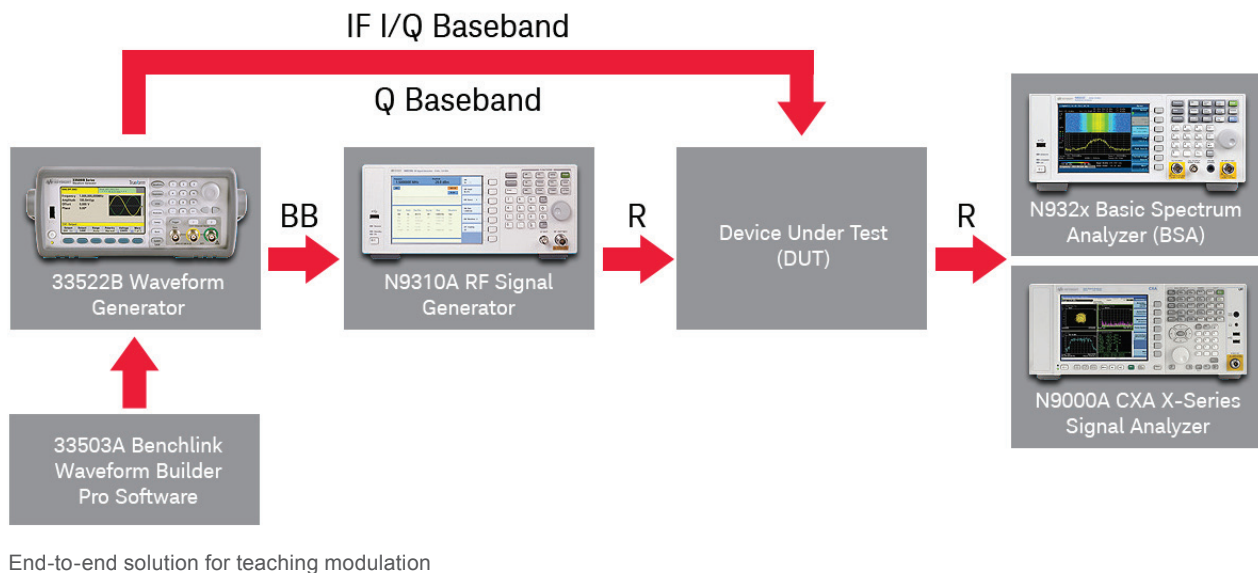


# Keysight Technologies

## Top 3 Reasons Why Keysight Low-Cost RF Instruments Are Ideal Modulation Teaching Tools

### Product Fact Sheet

Rapidly evolving wireless communication technologies mean an ever-changing lab curriculum for communication educators. Yet you must work within increasingly tighter budgets to build labs with equipment for hands-on learning. When compromising education quality isn't an option, there are three great reasons to build your RF labs with the Keysight Technologies, Inc. line of low-cost instruments.



### 1. Low-cost

Using a combination of multiple Keysight low-cost instruments can significantly reduce the cost. For example:

#### Do-it-yourself (DIY) vector signal generation

Connect a 2-channel 33522B waveform generator to the N9310A and you'll get a vector signal generation tool for less than a third of the cost of a typical integrated vector signal generator.

#### Low priced and rich standard features

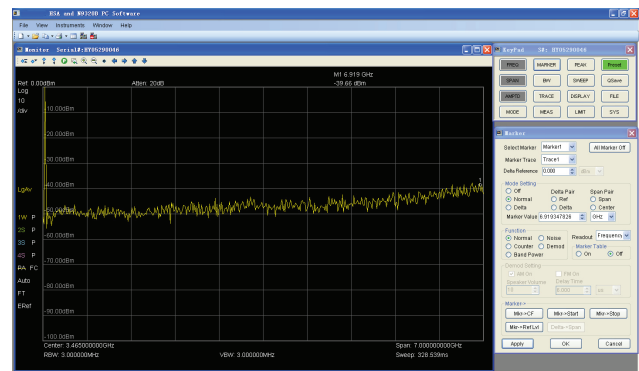
The N9320B, N9322C, and N9000A have list prices of \$8,452, \$11,699, \$13,259 respectively, and all of them offer many useful measurement features with the standard configuration.

1. All prices of products are subject to change.



### 2. Easy-to-share

The N9320B and N9322C BSAs come with free PC software to let multiple students share the same hardware and make their own measurements in turn. The N9000A CXA runs on Microsoft Windows, making it even easier to share using the remote desktop function.



Remotely control the N9320B/N9322C BSAs hardware using the FREE PC software

### 3. Versatile

The Keysight low-cost RF education solution can address the various needs for educators.

#### Analog modulation signal generation

Start with a N9310A RF signal generator for analog signal generation like AM, FM, PM, and pulse modulation.

#### Digital modulation signal generation

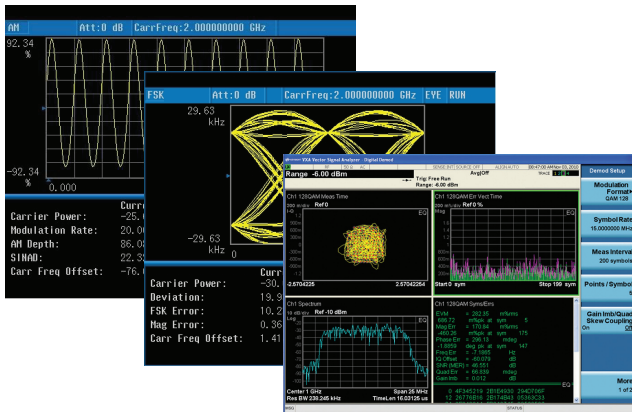
Add a 2-channel 33522B waveform generator to create baseband signals and use the N9310A signal generator to up convert to RF frequencies up to 3 GHz.

#### AM/FM/ASK/FSK modulation analysis

The BSA N9320B and N9322C offer essential spectrum measurements and optional modulation analysis capability for AM/FM and ASK/FSK signals.

#### Advanced digital modulation analysis

Step up to the CXA N9000A and the W9064A VXA software for the most comprehensive signal analysis experience.



#### N9310A RF signal generator



- 9 kHz to 3 GHz CW output
- 20 Hz to 80 kHz low frequency (LF) output
- Extensive analog modulation: AM, FM, phase, and pulse modulation
- IQ modulator, 40 MHz bandwidth

#### 33500B Series waveform generators



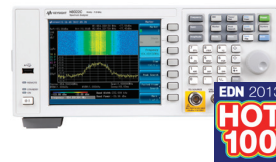
- 30 MHz, 2-channel with Arb
- Trueform waveform technology generates signals with the low jitter (< 40 ps) and harmonic distortion (< 0.04% THD)

#### N9320B basic spectrum analyzer (BSA)



- 9 kHz to 3 GHz
- 3 GHz tracking generator
- PowerSuite: Channel power, occupied bandwidth, and more
- AM/FM and ASK/FSK demodulation analysis

#### N9322C basic spectrum analyzer (BSA)



- 5-in-1 instrument
- 9 kHz to 7 GHz
- Spectrum analyzer
- Stimulus and response tester
- Spur and interference analyzer
- AM/FM and ASK/FSK modulation analyzer
- Peak and average power meter

#### N9000A CXA signal analyzer



- 9 kHz to 3, 7.5, 13.6, or 26.5 GHz
- 10 MHz (standard), 25 MHz (optional) analysis bandwidth
- W9064A VXA vector signal analysis measurement application

#### 33503A BenchLink Waveform Builder Pro Software

Full-featured waveform creation software for Keysight 33200, 33500, 81100 Series waveform generators making custom waveform creation fast and simple

#### W9064A VXA Vector Signal Analysis Measurement Application for CXA

General-purpose digital modulation analysis: 2-16 FSK, BPSK, QPSK, 16-1024 QAM and many more