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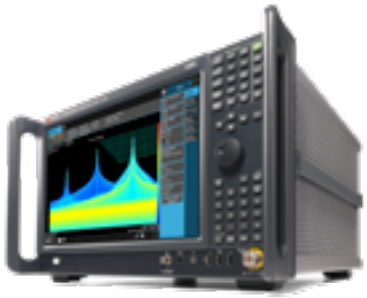
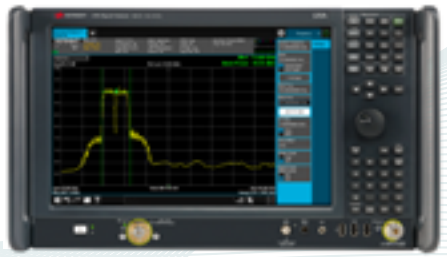
RF and Microwave Rental Products Catalog








Keysight & Our Rental Network

RIGHT *Instrument.* FLEXIBLE *Terms.*
FAST *Delivery.*

Also available via Keysight Premier Rental Partners Worldwide

KEYSIGHT TECHNOLOGIES

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Designing and Testing RF Devices That Connect the World

Wireless technology connects everyone and everything, everywhere. New innovations continue to emerge — from smart cities to smart wearables — generating billions of new connections and exabytes of new data. Our world is becoming more connected, and that makes meeting consumer expectations more challenging. Technology is evolving across multiple dimensions at once.

- Faster data communication speeds require higher precision signals, broader frequency ranges, wider bandwidths, and higher data rates.
- More devices mean more semiconductor integration, more features, more ports, and longer-lasting battery life.
- Newly connected innovations — from billions of Internet of Things (IoT) devices to connected cars and connected power grids.

These connections require less power, more speed and accuracy of each signal and data communication. Keysight will be there with the test solutions you need to deliver breakthrough technologies faster.

Keysight is helping innovators to connect the world, anywhere, anytime with any information

— voice, data, video, and whatever they can imagine next. We are leading the innovation processes in the industries that drive this revolution — automotive, aerospace and defense, energy, wireless communications, and IoT.

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The RF and Microwave Toolbox: Testing Today's Communications Systems

Today's wireless communication systems incorporate complex digitally modulated waveforms to maximize data and minimize bandwidth. The systems and underlying components which transmit and receive signals have become more complex, resulting in more complex test requirements.

A basic RF and Microwave toolbox includes the following:

- Signal generators provide a variety of digital modulation formats to test modern wireless communication systems.
- Spectrum analyzers search and detect low-level signals across wide frequency spans in desired bandwidths.
- Network analyzers provide enough dynamic range and accuracy to characterize the filters and amplifiers needed to support these systems.
- Portable, durable handheld analyzers bring lab-quality test instrumentation to the field.

Key instrument features to fit your needs now and in the future

Sensitivity — the minimum received power required for minimum errors

Transmitter output power — sets the range and antenna size to meet your requirements

Adjacent channel selectivity — the ability of a receiver to demodulate within the desired band while an interference signal exists in an adjacent band

Operating frequency — the transmit / receive frequency ranges or bands to meet your requirements

Environment/interference — factors such as humidity, obstacles in the transmit / receive path, and delays that can impact performance

Noise — sets the low signal performance from random sources, interference, and jamming signals

Dynamic range — the difference between the highest level and lowest level signal detectable

Rent from Keysight Premier Rental Partners

STRETCH YOUR BUDGET WHILE MEETING YOUR DELIVERABLES

When cash is scarce, but deadlines persist, stay on track with affordable rentals of Keysight latest RF and microwave test instruments.

Test equipment rentals help you meet your deadlines at a fraction of the purchase price!

Why rent?

- Flexible financial terms: use your operating budget, finance, or purchase over time
- Overnight delivery
- Excellent service and support
- Equipment calibrated and maintained by Keysight authorized Rental Partners

Acquire high performance instruments quickly, affordably, and flexibly.

Keysight Premier Rental Partners can help you acquire high performance instruments quickly, affordably, and flexibly. Many factors contribute to purchasing high end instrumentation. Is your budget limited? Keysight Premier Rental Partners can work with you to give you the terms and value you need to stretch your budget to the max. Are you struggling to find the right equipment to fit your needs? Keysight Premier Rental Partners will work with you to find the right instrument for your test situation and get it to you quickly. Are you running up against a deadline for your testing needs? Leasing with Keysight Premier Rental Partners is simple; start testing now with the latest RF and microwave equipment and leave your worries behind. All equipment is calibrated and maintained by the Keysight Premier Rental Partners so your team can focus on what is important.

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Signal Generators

TEST YOUR BEST DESIGNS WITH A GOLDEN REFERENCE IN RESEARCH AND DEVELOPMENT (R&D) AND ESSENTIAL SIGNALS IN MANUFACTURING

- Take your devices to the limit with purity and precision fine-tuned for the highest performance.
- Achieve faster throughput and higher uptime with cost-effective essential signal generation.
- Reduce the time you spend on signal creation with Keysight's PathWave signal generation software.
- Lower your cost of ownership with a three-year calibration cycle and the most comprehensive solutions for self-maintenance.

View Keysight's signal generators

M9383/4B VXG Microwave Signal Generators, accelerating 5G innovation and test

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Signal Generators

Product Family	Type	Model number	Maximum frequency	Phase noise at 1 GHz, 20 kHz offset	Max output power at 20 GHz	Frequency switching	Max RF bandwidth (internal / external)
VXG	Vector	M9384B	44 GHz	-137 dBc / Hz	+22 dBm	N/A	2 GHz / 4 GHz
VXG-m	Vector	M9383B	44 GHz	-137 dBc / Hz	+22 dBm	N/A	2 GHz / 4 GHz
PSG	Vector	E8267D	44 GHz	-138 dBc / Hz	+22 dBm	9 ms	80 MHz / 2 GHz
	Analog	E8257D	67 GHz	-143 dBc / Hz	+27 dBm	9 ms	N/A
		E8663D	9 GHz	-143 dBc / Hz	+23 dBm **	9 ms	N/A
MXG	Vector	N5182B	6 GHz (7.2 GHz*)	-146 dBc / Hz	+26 dBm **	800 µs	160 MHz / 200 MHz
	Analog	N5183B	40 GHz	-146 dBc / Hz	+19 dBm	600 µs	N/A
		N5181B	6 GHz	-146 dBc / Hz	+26 dBm **	800 µs	N/A
EXG	Vector	N5172B	6 GHz (7.2 GHz*)	-122 dBc / Hz	+26 dBm **	800 µs	160 MHz / 200 MHz
	Analog	N5173B	40 GHz	-122 dBc / Hz	+19 dBm	600 µs	N/A
		N5171B	6 GHz	-122 dBc/Hz	+26 dBm **	800 µs	N/A

* Frequency extension to 7.2 GHz available for the EXG and MXG ** Max output power measured at 1 GHz for instruments that do not support up to 20 GHz

SIMPLIFY SIGNAL CREATION WITH PATHWAVE SOFTWARE

PathWave signal generation software helps you generate application specific test signals at baseband, RF, and microwave frequencies for use with Keysight signal generators. Reduce the time you spend on signal simulation by using performance optimized signals, validated by Keysight.

Learn more

High Performance UXG N5193A and N5194A
for Radar and Electronic Warfare

X-Series Signal Analyzers

DESIGN, TEST, AND DELIVER YOUR NEXT BREAKTHROUGH WITH OUR MOST ADVANCED SIGNAL ANALYZERS UP TO 110 GHz

- Choose from a range of models at different performance and price points — from low-cost essential measurements to advanced wide-open, real-time analysis.
- Analyze signals with our broad set of application software ranging from custom analysis to quick standards compliance verification.
- Evolve as technology changes with post-purchase upgrades such as frequency, bandwidth, real-time, and central processing unit (CPU)
- Drive consistent measurements across your organization with 100% code-compatibility from R&D to manufacturing.

View Keysight's spectrum and signal analyzers

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X-Series Signal Analyzers

Product	Maximum frequency	Bandwidth options	DANL @ 1 GHz	Phase noise at 1 GHz (10 kHz offset)	Maximum real-time bandwidth
N9041B UXA	110 GHz Mixers to 1.1 THz	Standard: 25 MHz Optional: 40, 255 MHz, 1 GHz	-174 dBm	-135 dBc / Hz	255 MHz
N9040B UXA	50 GHz Mixers to 1.1 THz	Standard: 25 MHz Optional: 40, 255, 510 MHz, 1 GHz	-174 dBm	-136 dBc / Hz	510 MHz
N9030B PXA	50 GHz Mixers to 1.1 THz	Standard: 25 MHz Optional: 40, 85, 160, 255, 510 MHz	-174 dBm	-136 dBc / Hz	510 MHz
N9021B MXA	50 GHz Mixers to 1.1 THz	Optional: 255, 510 MHz	-172 dBm	-129 dBc / Hz	510 MHz
N9020B MXA	50 GHz Mixers to 1.1 THz	Standard: 25 MHz Optional: 40, 85, 125, 160 MHz	-172 dBm	-114 dBc / Hz	160 MHz
N9010B EXA	44 GHz Mixers to 1.1 THz	Standard: 25 MHz Optional: 40 MHz	-172 dBm	-109 dBc / Hz	N/A

TRANSFORM YOUR SIGNAL ANALYZER WITH PATHWAVE X-SERIES MEASUREMENT APPLICATIONS

PathWave X-Series applications are proven, ready-to-use measurements for signal analysis. Capturing measurement expertise and delivering repeatable results, the applications let you see and understand the performance of your devices and designs.

Learn more

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N9021B MXA Signal Analyzer with PathWave 5G NR Measurement Application

Network Analyzers

OVER 70% OF ENGINEERING TEAMS AROUND THE WORLD SELECT KEYSIGHT NETWORK ANALYZERS

- **Attain unrivaled excellence** with the PNA series benchtop network analyzers — up to 120 GHz, extensible to 1.5 THz.
- **Drive down the cost of test** with ENA network analyzers — up to 53 GHz.
- **Accelerate the test of multiport devices** with the PXI VNA — up to 53 GHz, 50-ports.
- **Get a compact USB form with zero compromise** in functionality — up to 53 GHz.

View Keysight's network analyzers

PNA-X with unrivaled DDS (Direct Digital Synthesizer) source, high-performance analog-signal-generator-grade ultra-low phase noise, -131 dBc/Hz offset at 10 GHz carrier (with option UNY, typical)

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Network Analyzers

Form factor	Product	Maximum frequency	Dynamic range *	Output power *	Source harmonics (typ.)	Number of ports	Multiport test set availability
Benchtop	N524xB PNA-X	67 GHz **	130 dB	10 dBm	-60 dBc	2, 4	Yes
	N522xB PNA	67 GHz **	130 dB	11dBm	-60 dBc	2, 4	Yes
	E5080B ENA	53 GHz	140 dB	10 dBm	-25 dBc	2, 4	No
PXI	M980xA PXI	53 GHz	140 dB	10 dBm	-25 dBc	2, 4, 6 (per module): up to 66 ports (~ 20 GHz), 34 ports (~ 53 GHz)	N/A
USB	P50xxA USB	53 GHz	140 dB	10 dBm	-25 dBc	2, 4, 6	N/A

* Dynamic range and output power specifications apply to whole family. Differences can be found at specific frequencies. **Extensible to 1.5 THz with ffrequency converters

Please consult the instrument datasheet for more information.

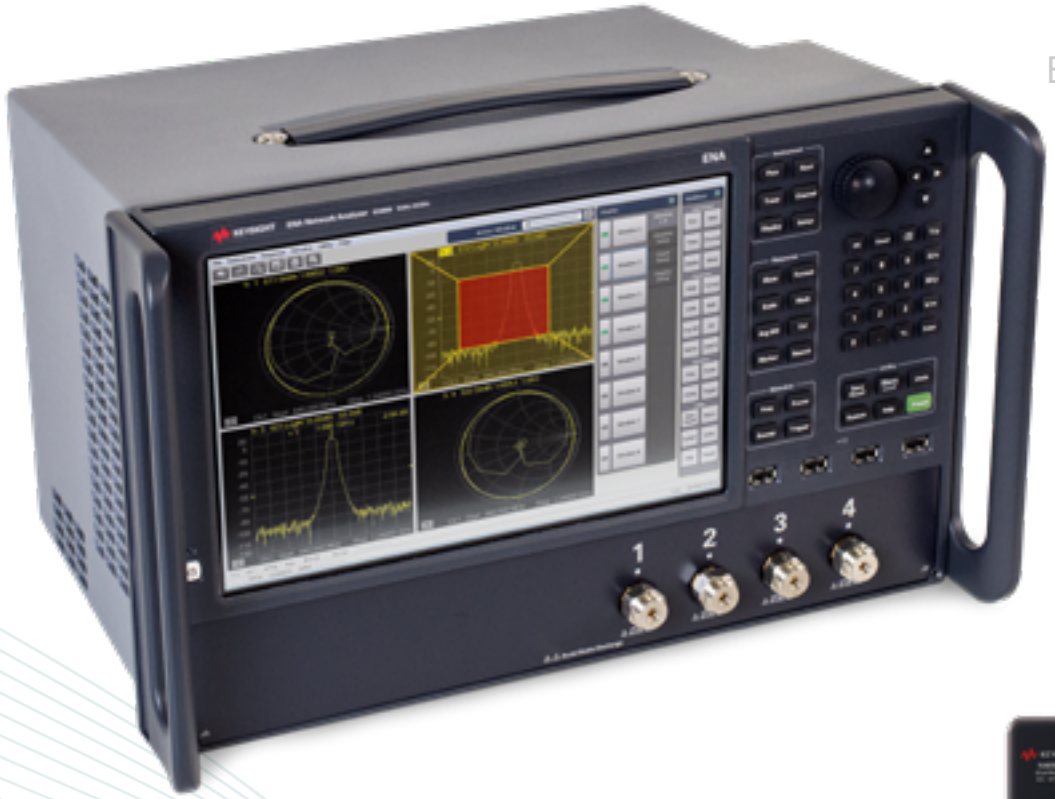
NETWORK ANALYSIS MEASUREMENT EXPERTISE

Investigate, characterize, and troubleshoot your designs using our wide range of network analyzer measurement applications.

- Amplifier, filter, mixer, material, high-speed serial interconnect analysis capabilities, and more
- Time domain, gain compression, pulse, noise figure, permittivity, permeability, TDR/TDT, and more

P50xxA USB VNA, get a compact from of USB VNA with zero compromise

Learn more



E5080B ENA Vector Network Analyzer

M9818AS PXI Vector Component Analyzer, 100 kHz to 53 GHz

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FieldFox Handheld RF and Microwave Analyzers

CARRY PRECISION WITH YOU

- Make 5G test a reality with over-the-air, phased array measurements, and bandwidth up to 100 MHz.
- Capture the smallest interfering signals with a wide-band, real-time analysis bandwidth.
- Get precision results up to 50 GHz that are comparable to benchtop devices.
- Withstand your harshest working environments with an instrument that meets military specifications (MIL-SPEC).
- Use an all-in-one combination analyzer that performs cable and antenna testing, vector network analysis, spectrum analysis, and more.

View Keysight's FieldFox handheld analyzers

Products	Maximum frequency	Maximum real-time analysis bandwidth	DANL @ 1 GHz	VNA system dynamic range	Overall spectrum analyzer amplitude accuracy
N9918B FieldFox handheld microwave analyzer	26.5 GHz	100 MHz	-163 dBm	>115 dB	±0.3 dB
N9950A FieldFox handheld microwave analyzer	32 GHz	10 MHz	-159 dBm	>110 dB	±0.5 dB
N9951A FieldFox handheld microwave analyzer	44 GHz	10 MHz	-159 dBm	>110 dB	±0.5 dB
N9952A FieldFox handheld microwave analyzer	50 GHz	10 MHz	-159 dBm	>110 dB	±0.5 dB

N9913B FieldFox
Handheld Microwave Analyzer

Do you know that Digital Instruments are also used in mmWave analysis?

Introducing Keysight Infiniium UXR-Series Oscilloscopes

UP TO 110 GHz OF REAL-TIME HIGH-DEFINITION BANDWIDTH

The Infiniium UXR is the first series of real-time oscilloscopes to offer ultra-high performance acquisition with 10 bits of high-definition resolution. With four channels of simultaneous 110 GHz of bandwidth, each concurrently sampling at a staggering 256 GSa/s, Infiniium UXR delivers the world-leading performance, ultra-low noise and high signal fidelity necessary for engineers and scientists to truly see and understand even the fastest phenomena — enabling you to more quickly develop the next generation of technology and research.

KEY FEATURES

- Models from 13 to 110 GHz of Industry best real-time analog bandwidth
- Up to 256 GSa/s sampling rate
- 2-channel and 4-channel models
  - Unrestricted full bandwidth per channel
  - Unrestricted full sampling per channel
- 10-bit Analog to Digital Converter (ADC)
- Industry-leading deep memory
  - Up to 2 Gpts per channel

Learn more

For more information about Keysight's oscilloscope portfolio, refer to Keysight's high performance digital catalog.

KEYSIGHT TECHNOLOGIES

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