KEYSIGHT

RF Insights and Demos: New Compact Solutions

Keysight's Breadth and Depth Supports Customers' Innovations

Key Statistics FY24

#1
Market Position[1]

$5.0B
Revenue[2]

30K+
Total Customers[3]

3,800+
Patents[4]

100+
Countries Served

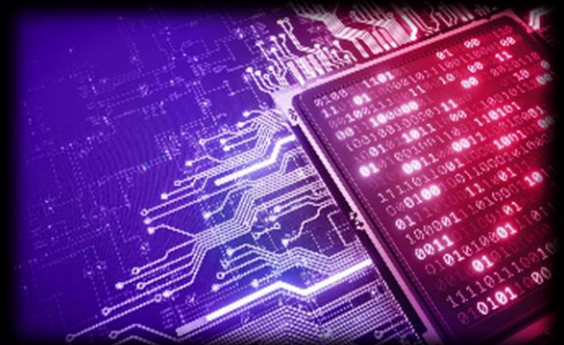
15K+
Employees

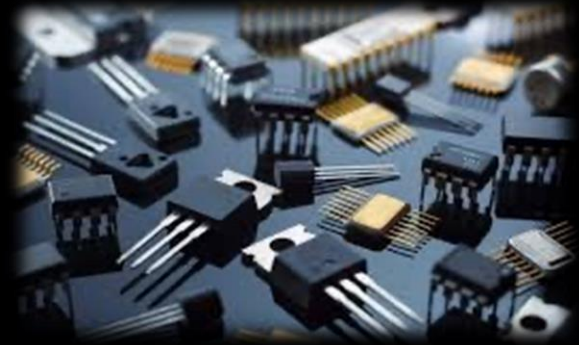
~$26B
Market Cap[2,5]

22
R&D Sites[6]

[1]Per company estimate. [2]As of fiscal year end. [3]Includes indirect channel. [4]Patents awarded to Keysight and Keysight's business under Agilent and HP. [5]Per external sources. [6]Sites with >50 R&D engineers.

Industry Applications and Challenges





Aerospace and Defense

Radar signal generation, fast frequency-hopping (FH) sources for EW, and satellite payload testing.

Wireless Communication

Generation of MIMO signals and 5G FR1, FR2, and FR3 waveforms with test automation software.

Quantum Computing

Multi-channel RF local oscillators (LOs) as pumping sources for parametric amplifiers and qubit signals.

Research and Development

LO substitution, component testing like ADC / DAC and amplifiers / mixers, receiver sensitivity, and blocking tests.

Aerospace and Defense Applications

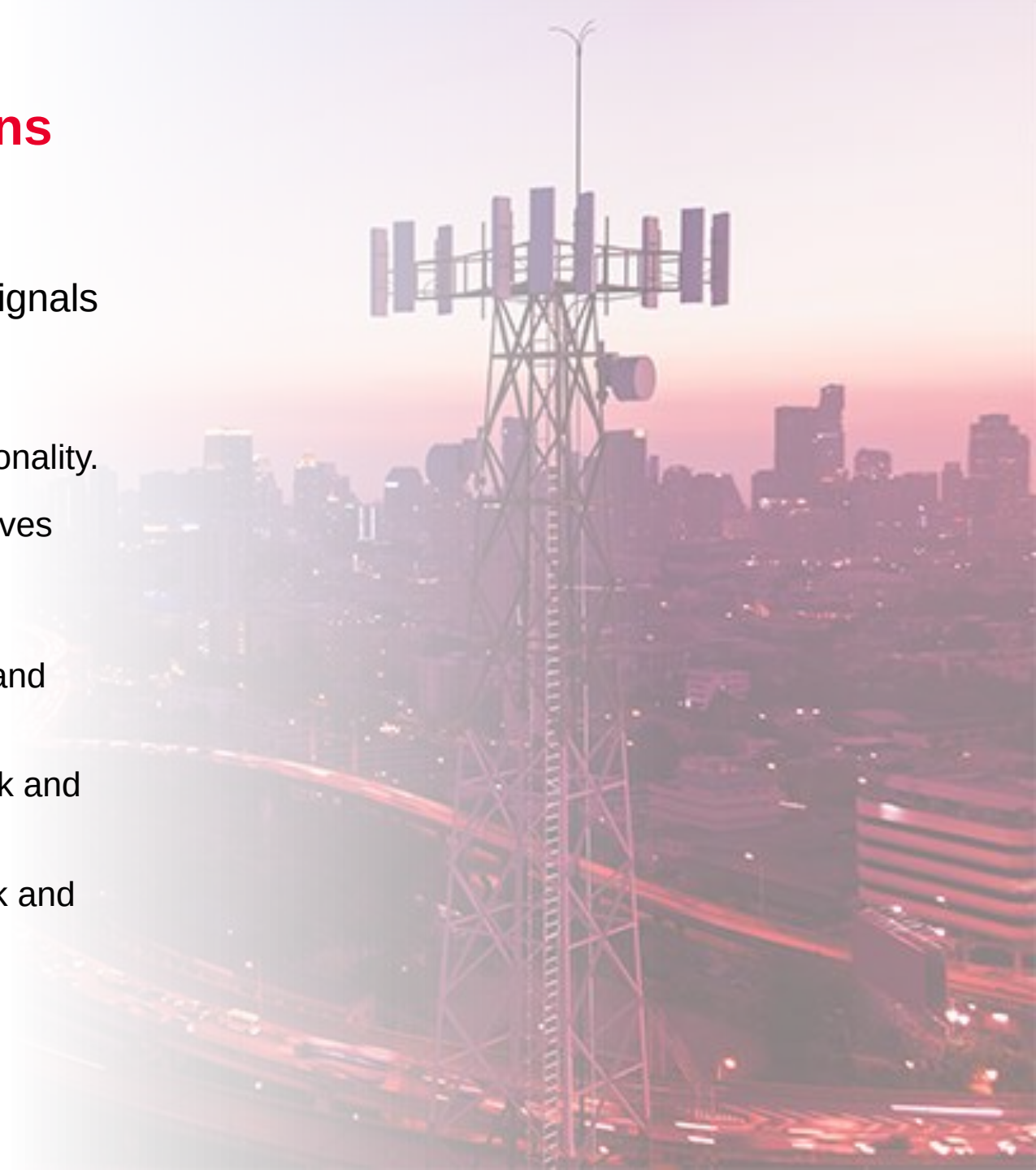
Radar signal generation, fast frequency-hopping (FH) jamming signal generation, and satellite payload testing

- **Multi-channel with phase coherence:** For accurate angle information and beamforming.
- **Ultra-low phase noise and high spectral purity:** Enhances radar resolution and sensitivity.
- **Fast switching:** Allows quick beam direction changes and adaptation to dynamic scenarios. Generates fast FH signals.
- **Phase calibration:** This embedded feature enables quick and easy phase alignments.
- **Pulse descriptor words (PDW):** Supports both playback and streaming modes.

Wireless Communications Applications

Generation of multiple-input multiple-output (MIMO) signals and 5G FR1, FR2, and FR3 waveforms

- **Multi-channel with phase coherence:** Precise angle information and beamforming for enhanced signal directionality.
- **Ultra-low phase noise and high spectral purity:** Improves signal clarity and reduces interference, boosting overall communication quality.
- **Fast switching:** Enables rapid beam direction changes and dynamic network conditions.
- **Phase calibration:** This embedded feature enables quick and easy phase alignments.
- **Pulse descriptor words (PDW):** Supports both playback and streaming modes.



Quantum Computing Applications

RF LOs for mixers, pumping sources for parametric amplifiers, and qubit manipulation signal generation

- **Phase coherence:** Ensures synchronized qubit manipulation.
- **Low phase noise and high spectral purity:** Minimizes decoherence and error rates.
- **Fast switching:** Enables rapid quantum operations and error correction protocols.
- **Pulse shape modulation:** For qubit manipulation.
- **High channel density:** For multi-qubit upscaling.

Research and Development Applications

Local oscillator (LO) substitution, component testing, and receiver sensitivity and blocking tests.

- **Multi-channel with phase coherence:** Precise angle information and beamforming, crucial for developing and testing wireless systems.
- **Ultra-low phase noise and high spectral purity:** Improves signal clarity and reduces interference, essential for prototypes and device testing.
- **Fast switching:** Quick adaptation to varying test conditions, enabling efficient frequency hopping and dynamic scenario simulations.
- **Phase calibration:** This embedded feature enables quick and easy phase alignments.

Introducing New Signal Sources and Signal Source Analyzers

Compact Signal Generators

- **8 analog** and **2 vector** models, up to **54 GHz**
- **Single- and multi-channel,** phase coherent
- **Ultra-low phase noise, microsecond switching**

Compact Frequency Synthesizers

- **6 single- and 2 multi-channel** models, up to **40 GHz**
- **Compact** and easy to integrate into embedded systems
- **Ultra-low phase noise, microsecond switching**

Compact Signal Source Analyzers

- **Three benchtop models** up to 40 GHz
- **Supports external references for accurate testing**
- **Absolute and additive** phase noise measurements

NEW! AP5031 & AP5032 Analog Signal Generator

Launching April 21, 2025

Features

- Ultra-low phase noise & high spectral purity
- Single channel (AP5031A) & multi-channel (AP5032A) form factors
- Phase-coherent/phase stable multi-channel model
- Ultra-fast switching
- Frequency range to 51 GHz
- Low profile (~2U rack height) & AP5031A weighs only 10 kgs (22 lbs)!

AP5031A

AP5032A

Multi-Channel

Description	Performance
Frequency range options	1 kHz to 12.75, 20, 40, or 51 GHz
Output channels	1, 2, 3 or 4
Max output power at 1 / 10 GHz	+18 dBm
Phase noise at 1 GHz, 10 kHz offset At 10 GHz, 10 kHz offset (meas)	-150 dBc/Hz / -135 dBc/Hz
Frequency switching speed (opt UNZ, meas)	3 µs
Modulation capabilities	AM, FM, PM, Pulse (Int/Ext)

Services Are Your Strategic Advantage

Amplify your in-house expertise and empower your engineers with comprehensive services that support your product life cycles

- KeysightCare
- Calibration
- Repair
- Startup assistance
- KeysightAccess

Access service and support where and when you need it

- 30 countries
- 7 regional megahubs with 55+ local centers of expertise
- >1,500 service and technical experts
- 16 ISO/IEC 17,025 accreditation bodies

[1]Such as ANAB, CNAS, JCSS, KOLA, and UKAS, and regional standards like Z540.3. View the full list at keysight.com/find/accreditation

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