Industries and applications
- Power amplifier and front-end-module design validation and manufacturing
- Radio transceiver design validation and production test
- MIMO & multi-channel device test

Product description
The Keysight Technologies M9381A PXIe vector signal generator (PXI VSG) is a compact modular instrument that provides frequency coverage from 1 MHz to 6 GHz and works seamlessly with the M9391A PXIe vector signal analyzer (PXI VSA). The PXI VSG reduces test time with fast amplitude and frequency switching and versatile list mode optimized for manufacturing test.

Based on a flexible, multi-channel ready platform, the M9381A quickly generates modulated test signals to validate receiver and component performance under a variety of conditions. Keysight's Signal Studio and Waveform Creator software simplify and streamline signal creation and generation, covering you from basic analog and digital modulation to the latest wireless standards, including LTE-Advanced and 802.11ac.

Main features and benefits

<table>
<thead>
<tr>
<th>Product features</th>
<th>Your benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast amplitude and frequency switching speed</td>
<td>Accelerate test throughput</td>
</tr>
<tr>
<td>Accurate power linearity</td>
<td>Improve ability for servo loop to converge in fewer steps</td>
</tr>
<tr>
<td>Multi-channel ready</td>
<td>Scale solution to fit your test needs with support for up to 8x8 MIMO</td>
</tr>
<tr>
<td>License-key based upgrades without returning modules</td>
<td>Purchase what you need today and upgrade later</td>
</tr>
<tr>
<td>Multiple programmatic interfaces</td>
<td>Quickly integrate into test environments, reducing development time</td>
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<tr>
<td>Calibrated Core Exchange Strategy</td>
<td>Minimize downtime with fast repair and turnaround time</td>
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</tbody>
</table>

Specifications and characteristics

**Hardware**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Frequency range</td>
<td>1 MHz to 3.0 GHz or 6.0 GHz</td>
</tr>
<tr>
<td>RF modulation bandwidth</td>
<td>40 MHz, 100 MHz or 160 MHz</td>
</tr>
<tr>
<td>RF switching speed</td>
<td>240 μs, nominal (frequency and amplitude changes)</td>
</tr>
<tr>
<td></td>
<td>105 μs, nominal (amplitude-only changes)</td>
</tr>
<tr>
<td>Phase noise</td>
<td>-122 dBc/Hz, typical (1 GHz, 20 kHz offset)</td>
</tr>
<tr>
<td>Output power</td>
<td>+19 dBm (at 1 GHz)</td>
</tr>
<tr>
<td>Amplitude accuracy</td>
<td>± 0.15 dB, typical</td>
</tr>
<tr>
<td>Modulation</td>
<td>AM, FM, PM, pulse, multitone</td>
</tr>
<tr>
<td>EVM</td>
<td>-4.78 dB, nominal (WLAN 802.11ac, 160 MHz)</td>
</tr>
<tr>
<td>ACLR</td>
<td>-70 dBc, typical (W-CDMA, 64 DPCH)</td>
</tr>
<tr>
<td>Channel-to-channel synchronization</td>
<td>Timing alignment: ≤ 1 ns, nominal</td>
</tr>
<tr>
<td></td>
<td>Phase alignment: ≤ 1°, nominal</td>
</tr>
<tr>
<td>Size</td>
<td>5-slot</td>
</tr>
</tbody>
</table>

Chassis slot compatibility: PXIe Hybrid, PXIe
Software information

The M9381A PXIe vector signal generator includes instrument drivers, documentation, example programs and software tools to help you quickly develop test systems in your application development environment of choice.

Operating systems
Microsoft Windows 7 (32/64-bit)

Standard compliant drivers
IVI-CDM, IVI-C, LabVIEW, MATLAB

Application development environments (ADE)
Visual Studio (C/C++, C#, VB.NET), LabVIEW, LabWindows/CVI, MATLAB, VEE

Keysight IO Libraries
Includes: VISA Libraries, Keysight Connection Expert, IO Monitor

Keysight Command Expert
Instrument control for SCPI or IVI-COM drivers

Signal Studio Software
N7600B W-CDMA/HSPA+
N7601B cdma2000/1xEV-DO
N7602B GSM/EDGE/Evo
N7606B Bluetooth®
N7609B Global Navigation Satellite System
N7610B 802.15 4q / Wi-SUN
N7611B Broadcast Radio
N7612B TD-SCDMA/HSDPA
N7615B Mobile WiMAX™
N7617B WLAN 802.11a/b/g/n/ac
N7623B Digital Video
N7624B LTE/LTE-Advanced FDD
N7625B LTE/LTE-Advanced TDD
M9950A Extension from 4 to 8 channels

SystemVue Software Connectivity
Electronic design environment for electronic system level (ESL) design

Waveform Creator Software (version 2.0)
M9099T options:
AYA: Digital modulation
DCS: DOCSIS 3.1
SVM: SystemVue
DFW: File-based write and more...

Ordering information

Model | Description
M9381A | PXIe vector signal generator
Comprised of:
– M9301A PXIe synthesizer
– M9310A PXIe source output
– M9311A PXIe modulator
Includes, one day startup assistance, module interconnect cables, software, example programs and product information on CD.

M9381A-300 | Adds:
– M9300A PXIe frequency reference: 10 MHz and 100 MHz
Required for warranted specifications
A single M9300A can support multiple M9381A instruments.

Options description

Frequency
✓ M9381A-F03 | 1 MHz to 3 GHz
+ M9381A-F06 | 1 MHz to 6 GHz

RF modulation bandwidth
✓ M9381A-B04 | 40 MHz
M9381A-B10 | 100 MHz
+ M9381A-B16 | 160 MHz

Memory
✓ M9381A-M01 | 32 MSa
M9381A-M05 | 512 MSa
+ M9381A-M10 | 1024 MSa

Other
+ M9381A-1EA | High output power
+ M9381A-UNZ | Fast switching
+ M9381A-UNT | Analog modulation
M9381A-012 | Phase coherency

✓ Included as standard option
+ Recommended configuration

www.keysight.com/find/modular
www.keysight.com/find/M9381A
USA: (800) 829-4444

For more information on Keysight Technologies’ products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus.

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