KEYSIGHT TECHNOLOGIES (AGILENT HP)

M9375A

The Keysight M9375A is a high-performance, single-slot PXIe vector network analyzer (VNA) covering the 300 kHz to 26.5 GHz frequency range. It delivers full two-port VNA capabilities with excellent speed and dynamic range, enabling high-throughput manufacturing and depot-level maintenance testing for aerospace, defense, and wireless communications. Multiple modules can be easily configured to create multi-port systems up to 34 ports within a single chassis.

SPECIFICATIONS

General

Interfaces	PXI Express (PXIe) Gen 2 x4
Display	None (requires external display via host controller/PC)
Warm-up Time	45 minutes

Physical

Power Supply	Power supplied by PXIe backplane (+12 V at 1.8 A, +3.3 V at 2.5 A)
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	22 mm × 130 mm × 181 mm mm
Weight	0.58 kg
Test Port Connector Recommended Torque	0.9 Nm (8 in-lb)

RF Performance

Frequency Range	300 kHz to 26.5 GHz
Number of Ports	2
Test Port Connector Type	3.5 mm female
Impedance	50 Ω
Dynamic Range (300 kHz to 1 MHz)	95 dB (typical 113 dB)
Dynamic Range (1 MHz to 50 MHz)	115 dB (typical 121 dB)
Dynamic Range (50 MHz to 6.5 GHz)	115 dB (typical 124 dB)
Dynamic Range (6.5 GHz to 20 GHz)	110 dB (typical 121 dB)
Dynamic Range (20 GHz to 26.5 GHz)	105 dB (typical 115 dB)
Receiver Noise Floor (300 kHz to 1 MHz)	-110 dBm (typical -118 dBm)
Receiver Noise Floor (1 MHz to 50 MHz)	-115 dBm (typical -122 dBm)
Receiver Noise Floor (20 GHz to 26.5 GHz)	-111 dBm (typical -118 dBm)
Maximum Input Level	+10 dBm
Damage Level (RF)	+20 dBm
Damage Level (DC)	16 V
Output Power Range (300 kHz to 6.5 GHz)	-40 dBm to +7 dBm
Output Power Range (6.5 GHz to 20 GHz)	-40 dBm to +5 dBm
Output Power Range (20 GHz to 26.5 GHz)	-40 dBm to +3 dBm
Output Power Resolution	0.01 dB
Frequency Resolution	1 Hz
Frequency Accuracy	Dependent on chassis reference clock
Harmonics (at 0 dBm output)	<-25 dBc (typical)
Non-Harmonic Spurious (at 0 dBm output)	<-50 dBc (typical)

Measurement Accuracy & Speed

Magnitude Trace Noise (10 MHz to 20 GHz)	< 0.005 dB rms (10 kHz IFBW)
Magnitude Trace Noise (20 GHz to 26.5 GHz)	< 0.008 dB rms (10 kHz IFBW)
Phase Trace Noise (10 MHz to 20 GHz)	< 0.05 deg rms (10 kHz IFBW)
Phase Trace Noise (20 GHz to 26.5 GHz)	< 0.08 deg rms (10 kHz IFBW)
Temperature Stability (Magnitude)	< 0.02 dB/°C
Temperature Stability (Phase)	< 0.2 deg/°C
IF Bandwidth Range	1 Hz to 15 MHz
Maximum Measurement Points	Up to 32,001 points (software dependent)
Measurement Speed (per point)	5 µs (at 15 MHz IFBW, correction off)

Measurement Capabilities & Software

S-Parameter Measurements	S11, S21, S12, S22
Sweep Types	Linear frequency, Log frequency, Power sweep, Segment sweep
Calibration Types Supported	SOLT, SOLR, TRL, Unknown Thru, ECal
Time Domain Analysis (Option 010)	Supported (optional)
Frequency Offset Measurements (Option 009)	Supported (optional)
Multi-module Configuration (N-Port)	Up to 16 modules (32 ports) in a single chassis
Fixture Simulator	Embedding/De-embedding support

Hardware Interfaces & Synchronization

Form Factor	3U PXI Express (PXIe)
Slot Compatibility	PXIe slot or PXI-H (hybrid) slot
System Bus Link Width	x4 Gen 2
Data Transfer Rate	Up to 2 GB/s
External Trigger Connectors	2x SMB female (Trig 1, Trig 2)
Reference Clock Input	10 MHz (SMB female or PXIe backplane)
Reference Clock Output	10 MHz (SMB female)
Test Ports	2x 3.5 mm female

Power Requirements

PXIe Slot +12 V Current	1.8 A
PXIe Slot +3.3 V Current	2.5 A
Total Power Dissipation	30 W (typical)

Physical & Environmental

Number of PXI Slots Required	1 slot
Storage Temperature Range	-40 °C to +70 °C
Altitude Limit	3,000 meters (operating)

Regulatory & Compliance

Calibration Interval	1 year

Performance

Number of Receivers	4

Software

Operating Systems Supported	Windows 10 (32-bit and 64-bit), Windows 8.1 (32-bit and 64-bit), Windows 7 (32-bit and 64-bit)
Instrument Drivers	IVI-COM, IVI-C, LabVIEW (G-based)
Programmatic Interfaces	SCPI, .NET, ActiveX/COM

System Capability

Multi-module Configuration Limit	Up to 16 modules (32 ports) in a single chassis

Compliance

EMC Standards	IEC/EN 61326-1, CISPR 11 Group 1 Class A, AS/NZS CISPR 11, ICES/NMB-001, KN 11
Safety Standards	IEC/EN 61010-1, UL 61010-1, CSA C22.2 No. 61010-1

Environmental

Operating Vibration	0.21 g RMS, 5 Hz to 500 Hz
Non-operating Vibration	2.09 g RMS, 5 Hz to 500 Hz
Functional Shock	30 g, half-sine, 11 ms duration

Source Performance

Source Phase Noise (10 MHz to 6.5 GHz)	-100 dBc/Hz (typical, 10 kHz offset)
Source Phase Noise (6.5 GHz to 20 GHz)	-90 dBc/Hz (typical, 10 kHz offset)
Source Phase Noise (20 GHz to 26.5 GHz)	-86 dBc/Hz (typical, 10 kHz offset)
Source Power Accuracy (300 kHz to 50 MHz)	±1.5 dB (at -15 dBm output power)
Source Power Accuracy (50 MHz to 26.5 GHz)	±1.5 dB (at -15 dBm output power)

Receiver Performance

System Dynamic Range (Typical, 50 MHz to 6.5 GHz)	117 dB (10 Hz IFBW)
System Dynamic Range (Typical, 6.5 GHz to 20 GHz)	115 dB (10 Hz IFBW)
System Dynamic Range (Typical, 20 GHz to 26.5 GHz)	111 dB (10 Hz IFBW)
Trace Noise Magnitude (Typical, 10 MHz to 10 GHz)	0.0005 dB rms (10 kHz IFBW)
Trace Noise Phase (Typical, 10 MHz to 10 GHz)	0.005 deg rms (10 kHz IFBW)

Options

Option 551	N-Port Capability (allows multi-module configuration)

TECHNOLOGY

PXIe Vector Network Analyzer

APPLICATIONS

RF and microwave component testing, aerospace & defense manufacturing, wireless transceiver evaluation

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