KEYSIGHT TECHNOLOGIES (AGILENT HP)

E5071C

The Keysight (formerly Agilent) E5071C ENA Series Vector Network Analyzer is an industry-standard RF instrument delivering industry-leading performance and measurement speed. Available with wide and flexible frequency range options from 9 kHz up to 20 GHz, it can be configured with 2 or 4 test ports. With its >123 dB dynamic range, ultra-low trace noise, and fast sweep rates, the E5071C is optimized for rigorous component and circuit evaluation in R&D and high-volume manufacturing environments.

SPECIFICATIONS

General

Interfaces	USB, LAN (10/100/1000 BaseT), GPIB (IEEE 488.2), VGA, Handler I/O
Display	10.4-inch TFT color LCD touch screen (1024 × 768)
Warm-up Time	90 minutes

Physical

Power Supply	100 to 240 VAC, 50/60 Hz, 350 VA max
Operating Temperature	5 to 40 °C

Frequency Characteristics

Frequency Range (Options)	9 kHz to 4.5 / 6.5 / 8.5 GHz; 100 kHz to 4.5 / 6.5 / 8.5 GHz (with bias tees); 300 kHz to 14 / 20 GHz (with bias tees)
Frequency Resolution	1 Hz

Test Port Output Characteristics

Number of Test Ports	2 or 4 (configuration dependent)
Test Port Connector Type	Type-N female (≤ 8.5 GHz models); 3.5 mm male (14/20 GHz models)
Nominal Impedance	50 Ω
Power Level Resolution	0.05 dB

Test Port Input Characteristics

Trace Noise	0.004 dB rms @ 70 kHz IFBW
Damage Level	+26 dBm, ±35 VDC

Sweep and Measurement Speed

Sweep Types	Linear frequency, log frequency, segment sweep, power sweep
IF Bandwidth Range	10 Hz to 500 kHz

Measurement Capabilities

Measured Parameters	S-parameters (S11 to S22 for 2-port; S11 to S44 for 4-port), absolute power
Display Formats	Log magnitude, linear magnitude, phase, group delay, Smith chart, polar, SWR
Time Domain Analysis	Supported (Option 010)
Internal Programming	Built-in Visual Basic for Applications (VBA)

Calibration and Error Correction

Supported Calibration Methods	Response, Response & Isolation, Enhanced Response, 1-Port OSL, Full 2-Port, Full 3-Port, Full 4-Port, TRL
Electronic Calibration (ECal)	Supported
Fixture Simulator Capabilities	Port extension, impedance conversion, matching circuit embedding, de-embedding

Interfaces and Connectivity

External Reference Input	10 MHz (BNC)
External Reference Output	10 MHz (BNC)
External Trigger Input	BNC

Computing Platform and Storage

Operating System	Windows (version dependent on manufacturing date)

Power and Environmental

Storage Temperature Range	-10 °C to +60 °C

Measurement Configuration

Maximum Number of Channels	16 channels
Maximum Number of Traces	16 data traces and 16 memory traces per channel
Maximum Points per Trace	100,001
Averaging Factor	1 to 999
Smoothing	0% to 25% of sweep span

Power

Maximum Power Consumption	350 VA

Environmental

Operating Altitude	Up to 2,000 meters (6,561 feet)

Compliance

Safety Compliance	IEC 61010-1, EN 61010-1, CAN/CSA-C22.2 No. 61010-1
EMC Compliance	EN 61326-1, CISPR 11 Group 1 Class A

Data & Storage

Mass Storage	Removable Hard Disk Drive (HDD) or Solid State Drive (SSD)

Standards & Compliance

LXI Compliance	LXI Class C

Inputs & Outputs

LAN Interface	10/100/1000 Base-T Ethernet (RJ-45)
USB Interface	USB 2.0 (Front/Rear Host, Rear Device)
Handler Interface	36-pin parallel (Centronics)
Video Output	15-pin mini D-Sub (VGA)

Analysis Features

Limit Testing	Upper/lower limits, ripple limits, bandwidth limits (with pass/fail indicators)
Marker Search Functions	Maximum, Minimum, Peak, Target, Bandwidth

System Capabilities

Multiport Expansion	Supported via external Keysight E5092A Configurable Multiport Test Set

TECHNOLOGY

Vector Network Analyzer (VNA)

APPLICATIONS

RF component evaluation, manufacturing, wireless design, aerospace and defense test