KEYSIGHT TECHNOLOGIES (AGILENT HP)

E5071C-485

The Keysight (Agilent) E5071C-485 is a 4-port vector network analyzer from the ENA Series, offering frequency coverage from 100 kHz to 8.5 GHz with built-in bias tees. Known for its high-speed performance, extensive dynamic range, and exceptional trace noise performance, the E5071C-485 is optimized for comprehensive testing of RF components and circuits in both manufacturing and R&D environments.

SPECIFICATIONS

General

Interfaces	GPIB, LAN (10/100/1000 Base-T), USB 2.0 (4 front ports, 4 rear ports, 1 Type-B device port), VGA video output, Handler port
Display	10.4-inch active matrix color TFT LCD with touch screen, 1024 x 768 (XGA) resolution

Physical

Power Supply	90 V to 264 V AC, 47 Hz to 63 Hz, 350 VA max
Operating Temperature	5 to 40 °C °C
Dimensions (W×H×D)	426 mm × 235 mm × 445 mm mm
Weight	19.8 kg kg

RF Performance

Frequency Range	100 kHz to 8.5 GHz
Number of Built-in Ports	4
Port Impedance	50 ohms (nominal)
Test Port Connector Type	Type-N, female
Frequency Resolution	1 Hz
Frequency Accuracy	±5 ppm
System Dynamic Range (300 kHz to 10 MHz)	113 dB (spec), 123 dB (typical) at 10 Hz IFBW
System Dynamic Range (10 MHz to 6 GHz)	123 dB (spec), 130 dB (typical) at 10 Hz IFBW
System Dynamic Range (6 GHz to 8.5 GHz)	118 dB (spec), 125 dB (typical) at 10 Hz IFBW
Port-to-Port Crosstalk (10 MHz to 6 GHz)	123 dB (spec)

Source Specifications

Output Power Range	-85 dBm to +10 dBm
Maximum Output Power (10 MHz to 6 GHz)	+10 dBm
Minimum Output Power	-85 dBm
Power Resolution	0.05 dB
Power Level Accuracy	±0.65 dB (at -15 dBm, 10 MHz to 8.5 GHz)
Power Linearity	±0.75 dB (from -15 dBm to maximum power)
Harmonics (at +5 dBm)	<-25 dBc (typically)
Non-harmonic Spurious (at +5 dBm)	<-30 dBc (typically)

Measurement & Sweep

Sweep Types	Linear frequency, Logarithmic frequency, Segment, Power
Measurement Points per Trace	1 to 20,001
Number of Channels	Up to 160 channels
Number of Traces per Channel	Up to 16 traces
Sweep Time (1601 points, full 2-port cal)	39 ms (typical)
Trigger Modes	Continuous, Single, Hold, Number of Groups
Trigger Sources	Internal, External, Manual, Bus

Measurement Capabilities

Measured S-Parameters	S11, S12, S13, S14, S21, S22, S23, S24, S31, S32, S33, S34, S41, S42, S43, S44
Electronic Calibration (ECal) Support	Yes
Time Domain Analysis	Supported (Option 010)
Frequency Offset Mode	Supported (Option 008)
Mixer Measurements	Supported with Frequency Offset Mode

Connectivity & Interfaces

LAN Port Speed	10/100/1000 Base-T (Gigabit Ethernet)
LXI Compliance	Class C compliant
Front USB Ports	4 x USB 2.0 Type-A
Rear USB Ports	4 x USB 2.0 Type-A, 1 x USB 2.0 Type-B (device)
External Video Output	15-pin VGA female D-Sub
Handler Port	36-pin centronics female
External Trigger Input	BNC female
External Trigger Output	BNC female
10 MHz Reference Input	BNC female
10 MHz Reference Output	BNC female
Bias Tees	Built-in (Option 485 standard)
Bias Tee Maximum Current	100 mA
Bias Tee Maximum Voltage	±40 V

System & Software

Programming Language	SCPI
Built-in Programming	Visual Basic for Applications (VBA)
Internal OS	Windows-based
USB Power Sensor Support	Yes

Environmental & Safety

Storage Temperature Range	-20 °C to +60 °C
Operating Humidity	20% to 80% RH (non-condensing)
EMC Standards	Complies with EN 61326-1, CISPR 11 Class A
Safety Standards	Complies with EN 61010-1, UL 61010-1

Physical Characteristics

Width	426 mm
Height	235 mm
Depth	445 mm
Calibration Interval	1 year

Power

AC Input Voltage Range	90 to 264 VAC (automatic selection)
AC Line Frequency	47 to 63 Hz
Maximum Power Consumption	350 VA

Bias Tees

Bias Tee Input Connectors	4 x BNC, female (rear panel)

Receiver

Test Port Damage Level	+26 dBm, ±35 VDC

Environmental

Operating Altitude	0 to 3,000 m (9,842 ft)
Storage Altitude	0 to 4,572 m (15,000 ft)

Receiver Performance

System Dynamic Range (100 kHz to 300 kHz)	80 dB (spec) / 92 dB (typical) @ 10 Hz IFBW
Receiver Noise Floor (100 kHz to 300 kHz)	-82 dBm (spec) / -90 dBm (typical) @ 10 Hz IFBW
Receiver Noise Floor (300 kHz to 10 MHz)	-90 dBm (spec) / -98 dBm (typical) @ 10 Hz IFBW
Receiver Noise Floor (6 GHz to 8.5 GHz)	-104 dBm (spec) / -113 dBm (typical) @ 10 Hz IFBW
Port-to-Port Crosstalk (100 kHz to 300 kHz)	90 dB (spec) @ 10 Hz IFBW
Port-to-Port Crosstalk (300 kHz to 10 MHz)	100 dB (spec) @ 10 Hz IFBW
Port-to-Port Crosstalk (6 GHz to 8.5 GHz)	100 dB (spec) @ 10 Hz IFBW

Source Performance

Maximum Output Power (100 kHz to 300 kHz)	-2 dBm (spec) / +2 dBm (typical)
Maximum Output Power (300 kHz to 10 MHz)	+1 dBm (spec) / +5 dBm (typical)
Maximum Output Power (6 GHz to 8.5 GHz)	+7 dBm (spec) / +10 dBm (typical)

Display & User Interface

Display Resolution	1024 x 768 pixels (XGA)
Touch Screen Type	Resistive

Reference Signals

External Reference Input Level	-3 dBm to +20 dBm (typical)
External Reference Output Level	0 dBm ± 3 dB (typical) into 50 Ω

Environmental & Reliability

Operating Shock	30 g, 11 ms half-sine (MIL-PRF-28800F Class 3)
Operating Vibration	0.21 g rms, 5 Hz to 500 Hz (MIL-PRF-28800F Class 3)
Warm-up Time	30 minutes

Physical Interfaces

Test Port Connector Gender	Female

TECHNOLOGY

Vector Network Analysis (VNA)

APPLICATIONS

RF Component & Circuit Test