

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8990B

The Keysight 8990B is a high-performance peak power analyzer designed to measure the dynamic or time-dependent aspects of RF and microwave power. Featuring two RF channels and two video channels, it provides high-speed sampling up to 100 MSa/s (with a 20 GSa/s effective rate) and a short system rise/fall time of ≤ 5 ns when combined with compatible peak power sensors. Its massive 15-inch XGA touchscreen display allows for comprehensive pulse characterization and simultaneous analysis of time-domain control signals, making it an essential tool for advanced radar, wireless communication, and semiconductor pulse measurements.

SPECIFICATIONS

General

Interfaces	USB 2.0 Host (4 ports), USB 2.0 Device (1 port), LAN (LXI Class C compliant), GPIB (optional)
Display	15-inch color XGA TFT-LCD with touchscreen capability
Recommended Calibration Cycle	1 year

Physical

Power Supply	100 V AC to 240 V AC (50/60 Hz) / 100 V AC to 120 V AC (400 Hz), 250 VA maximum
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	426 mm × 325 mm × 279 mm mm
Weight	11.2 kg kg

Measurement Performance

Frequency Range	50 MHz to 40 GHz (sensor dependent)
Dynamic Range (CW)	-35 dBm to +20 dBm (sensor dependent)
Dynamic Range (Pulse)	-35 dBm to +20 dBm (sensor dependent)
System Rise/Fall Time	≤ 5 ns (for frequencies ≥ 500 MHz, -20 dBm to +20 dBm)
Maximum Real-Time Sampling Rate	100 MSa/s
Equivalent-Time Sampling Rate	20 GSa/s
Maximum Capture Length	1 s
Maximum Memory Depth	2 M points
RF Inputs Bandwidth	150 MHz (Channels 1 & 4)
Video Inputs Bandwidth	150 MHz (Channels 2 & 3)
RF Inputs Minimum Pulse Width	50 ns
RF Inputs Maximum Pulse Repetition Rate	10 MHz
Time Base Range	2 ns/div to 100 ms/div

Channel Configuration

RF Input Channels	2 (Channels 1 & 4)
Video Input Channels	2 (Channels 2 & 3)
Total Analog Channels	4
Power Sensor Compatibility	N1923A, N1924A, U2000 series USB power sensors
Internal Zeroing and Calibration	Yes

Internal Calibrator

Calibrator Frequency	1.05 GHz
Calibrator Power Level (1.05 GHz)	0 dBm $\pm$ 1.2%
Calibrator Signal Type	CW / Pulse modulated (1.05 GHz)
Calibrator Repetition Rate	1 kHz
Calibrator Connector Type	Type N (female)
Calibrator SWR	1.05

Triggering

Trigger Sources	Channel 1, Channel 2, Channel 3, Channel 4, AUX
Trigger Level Range (RF Channels 1 & 4)	-20 dBm to +20 dBm
Trigger Level Range (Video Channels 2 & 3)	$\pm$ 8 divisions from center screen (1 M Ω , edge mode)

Measurement Modes & Analysis

Automated Pulse Characterization	15 parameters with automated pulse delay measurement between channels
Statistical Analysis	CCDF (free run and triggered)

System and User Interface

Display Size	15-inch
Display Resolution	XGA (1024 x 768)
Touchscreen	Yes
Measurement Units	Linear (Watt) or Log (dBm) selectable
Color Coded Channels	Yes
Removable Hard Drive Option	Yes

Timebase

Internal Timebase Temperature Stability	$\pm$ 1 ppm (0 °C to 50 °C)
Internal Timebase Aging Rate	$\pm$ 1 ppm per year
External Reference Input	10 MHz (nominal), -10 dBm to +15 dBm, 50 Ω

Environmental

Storage Temperature	-40 °C to +70 °C
Operating Humidity	Up to 95% RH at 40 °C (non-condensing)
Storage Humidity	Up to 90% RH at 65 °C (non-condensing)
Operating Altitude	Up to 3,000 m (10,000 ft)
Storage Altitude	Up to 15,300 m (50,000 ft)

Connectivity & Control

LXI Compliance	LXI Class C
GPIO Interface Option	Option GPB (adds IEEE-488 interface)
USB Ports (Rear)	4 × USB 2.0 Type-A host, 1 × USB 2.0 Type-B device
USB Ports (Front)	2 × USB 2.0 Type-A host
External Reference Connectors	BNC (Input and Output)
VGA Video Output Port	15-pin D-sub
DVI Video Output Port	DVI-D
LAN Port	RJ-45 (10/100/1000 Base-T)

System Information

Operating System	Windows Embedded Standard 7
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Compliance

EMC Compliance	IEC 61326-1 / EN 61326-1, CISPR 11 / EN 55011 Class A
Safety Compliance	IEC 61010-1 / EN 61010-1, UL 61010-1, CAN/CSA-C22.2 No. 61010-1

Connectivity

USB Device Port	1 × USB 2.0 Type-B (rear panel, USBTMC compliant)
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Measurements

Transmitter Presets	GSM, EDGE, W-CDMA, CDMA, TD-SCDMA, LTE, WiMAX, WLAN, Bluetooth, Radar
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TECHNOLOGY

Diode peak power sensor measurement technology

APPLICATIONS

RF and microwave pulse power analysis, radar system testing, wireless transceiver measurements

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