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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight E4727B

Input Referred Current Noise: 100 fA/√Hz at 10 kHz Source Load Resistors: 0 to 100 MΩ, 23 selections, ±0.5 % part accuracy Rtn Sampling Frequency: 500 MHz maximum, 2 ns minimum interval, 8.59 s maximum interval Pxie Interface Module: E4727B-100, 3U / 3 slots Source Load Resistors: 0 to 100 MΩ, 23 selections, ±0.5 % part accuracy Rtn Sampling Frequency: 500 MHz maximum, 2 ns minimum interval, 8.59 s maximum interval Pxie Interface Module: E4727B-100, 3U / 3 slots Smu Add On: M9601A PXIe SMU, 1.25 MSa/s, 10 fA resolution, ±210 V / ±315 mA class limited to ±200 V / ±100 mA in this system



MODEL Agilent / Keysight E4727B	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU E4727B	LISTING https://aumictechlabs.com/products/e4727b-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight E4727B Advanced Low-Frequency Noise Analyzer (A-LFNA) characterizes semiconductor device noise performance from 30 mHz to 100 MHz. This instrument measures DC characteristics, 1/f noise (flicker noise), and random telegraph noise (RTN) across FETs, BJTs, diodes, and resistors with noise sensitivity of -185 dBV²/Hz. The E4727B operates at voltages up to 200 V and currents up to 100 mA, with 23 selectable impedance values from 0 ohms to 100 MΩ. Integration with PathWave WaferPro Express enables automated measurement routines and wafer mapping without manual programming. Auto-prober control and compatibility with Keysight device modeling tools PathWave Model Builder and PathWave IC-CAP - support rapid process design kit development, IC noise specification, and manufacturing statistical process

control. Technical Specifications Frequency range: 30 mHz to 100 MHz Voltage: up to 200 V Current: up to 100 mA Noise sensitivity: $-185 \text{ dBV}^2/\text{Hz}$ Impedance: 23 values, 0 ohms to $100 \text{ M}\Omega$ RTN sampling interval: $1/(500 \text{ MHz}/2^n)$, $n = 0-32$ RTN sampling number: 2^n , $n = 10-24$ Operating temperature: 10 to 40 °C Storage temperature: -30 to 70 °C Dimensions: 298 × 192 × 104.3 mm Weight: 8.9 kg Power: 100–240 V, 50/60 Hz

Key Features Measures DC characteristics, 1/f noise, and random telegraph noise on discrete devices Supports capacitance and RF S-parameter measurements Hardware averaging for throughput-accuracy optimization Built-in automated measurement routines for DC, 1/f noise, RTN, and data analysis

Typical Applications Process design kit development Integrated circuit noise specification Manufacturing SPC and reliability assessment Device characterization across FETs, BJTs, diodes, and resistors

Compatibility & Integration Pairs with PXIe computer, digitizer, and DC source measurement unit (B1500A) Upgradeable from existing Keysight B1500A systems Integrates with PathWave WaferPro Express, PathWave Model Builder, and PathWave IC-CAP Automated control of major wafer probing systems Supplied with MDR 40-pin cable (2 m), SMA(m)–SMA(m) coaxial cables (1 m and 0.2 m)

E4727B Characteristics / Specifications

PARAMETER	VALUE
Model	E4727B
Instrument Type	Advanced low frequency noise analyzer
Analog Bandwidth	30 mHz to 100 MHz
Drain Bias Limit	± 200 V, ± 0.1 A, 10 W maximum in DC measurement
Gate Substrate Bias	± 50 V, ± 0.1 A
Minimum Bias Current	30 pA typical
Noise Current Density	1E-28 A ² /Hz typical
Flicker Noise Accuracy	± 1.5 dB
Flicker Noise Repeatability	± 2.0 dB
Lna Count	3 voltage amplifiers (ULF 30 mHz to 1 MHz, LF 1 Hz to 1 MHz, HF 1 Hz to 100 MHz)
Lna Voltage Gain	59 dB at 10 kHz (ULF/LF), 47 dB at 1 MHz (HF)
Input Referred Voltage Noise	-185 dBV ² /Hz (0.56 nV/ $\sqrt{\text{Hz}}$) at 10 kHz on ULF/LF; -178 dBV ² /Hz (1.3 nV/ $\sqrt{\text{Hz}}$) at 1 MHz on HF
Input Referred Current Noise	100 fA/ $\sqrt{\text{Hz}}$ at 10 kHz
Maximum Lna Input	± 200 Vdc
Lna Output Impedance	220 Ω
Source Load Resistors	0 to 100 M Ω , 23 selections, ± 0.5 % part accuracy
Rtn Sampling Frequency	500 MHz maximum, 2 ns minimum interval, 8.59 s maximum interval
Rtn Sample Count	1024 to 16,777,216
Pxie Interface Module	E4727B-100, 3U / 3 slots
Main Unit	E4727B-200
Smu Add On	M9601A PXIe SMU, 1.25 MSa/s, 10 fA resolution, ± 210 V / ± 315 mA class limited to ± 200 V / ± 100 mA in this system
Manufacturer	HP Agilent Keysight
Literature	Keysight E4727B/W7802B data sheet 3120-1435
Family	A-LFNA PXIe noise analyzers

PARAMETER	VALUE
Brand Lineage	Hewlett Packard Agilent Keysight
Form Factor	PXIe chassis system with main unit and interface module
System Role	wafer and package 1/f and RTN analyzer
Bandwidth	30 mHz to 100 MHz

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Notes
From Keysight E4727B/W7802B data sheet 3120-1435 (30 MHz to 100 MHz, ± 200 V / ± 0.1 A, $1\text{E-}28$ A²/Hz typical, LNA gains, RTN 2 ns to 16,777,216 samples, M9601A add-on). Environmental dimensions and full LNA tables are on the same data sheet pages 21 to 22.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.