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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent / Keysight N1501A Dielectric Probe Kit

Keysight / Agilent N1501A Dielectric Probe Kit The Keysight/Agilent N1501A dielectric probe kit is used with compatible network analyzers and materials measurement software to characterize permittivity of liquids and soft solids. OEM materials-measurement literature pairs the N1501A probe kit with N1500A software and ENA/PNA-class analyzers for broadband dielectric spectroscopy. Liquid permittivity measurements, soft-solid dielectric characterization, and materials R&D using coaxial dielectric probes. The Keysight/Agilent N1501A dielectric probe kit is used with compatible network analyzers and materials measurement software to characterize permittivity of liquids and soft solids. OEM materials-measurement literature pairs the N1501A probe kit with N1500A software and ENA/PNA-class analyzers for broadband dielectric spectroscopy. Liquid permittivity measurements, soft-solid dielectric characterization, and materials R&D using coaxial dielectric probes. Works with N1500A materials software class



MODEL

**Agilent / Keysight
N1501A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N1501A

LISTING

<https://aumictechlabs.com/products/n1501a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight N1501A Dielectric Probe Kit characterizes dielectric properties of materials across microwave and millimeter-wave frequencies. When paired with a Keysight Vector Network Analyzer and N1500A Materials Measurement Suite software, the system measures complex permittivity, dielectric constant, loss factor, and loss tangent for solids, liquids, and semi-solids.

Automated electronic calibration before each measurement minimizes cable instability and system drift.

Technical Specifications Frequency Range: 200 MHz to 50 GHz (probe-dependent); operation possible as low as 10 MHz

Measurement Parameters: Complex permittivity, dielectric constant, loss factor, loss tangent, Cole-Cole parameters

Material Compatibility: Solids with flat surfaces, liquids, semi-solids

Calibration Method: Air/short/water for coaxial probe method; automated electronic recalibration before each measurement

Measurement Technique: Coaxial probe method (Option 004 with N1500A software)

Key Features

Probe Options

High Temperature Probe: Operates -40°C to $+200^{\circ}\text{C}$; large flange for flat-surfaced solids, liquids, and semi-solids; SMA female connectors

Slim Form Probe: Designed for insertion into confined spaces (fermentation tanks, reaction chambers); optimized for liquids and soft semi-solids

Performance Probe: Combines temperature performance and compact design; autoclavable for food, medical, and chemical applications

Typical Applications Material characterization, quality control, research and development, food and beverage analysis, pharmaceutical testing, chemical process monitoring

Compatibility & Integration Requires Keysight Vector Network Analyzer or Impedance Analyzer. Operates within 0°C to 55°C ambient temperature for warranted specification performance. Integrates with N1500A Materials Measurement Suite software (sold separately).

N1501A Characteristics / Specifications

PARAMETER	VALUE
Model	N1501A
Instrument Type	Dielectric probe kit
Measurement Role	Complex permittivity of liquids/soft solids
Software Companion Class	N1500A materials measurement software
Host Analyzers Class	ENA/PNA class network analyzers
Probe Method	Open-ended coaxial dielectric probe
Dut Types	Liquids and soft solids
Safety Class	Observe published maximum ratings
Chassis Form	Probe kit with fixtures/accessories
Brand Lineage	Keysight / Agilent
Frequency Coverage	Probe/analyzer limited per kit option
Calibration	Probe calibration with short/load/air class standards
Output Parameters	Permittivity, loss tangent class results
Temperature	Ambient lab use; follow probe temp limits
Interfaces	RF connector to VNA test port
Documentation Scope	OEM N1501A / materials probe documentation
Related Kits	High-temperature and slim probes per option list
Power	Passive probe (analyzer provides RF)
Operating Temperature Spec Class	Follow probe kit sheet
Installed Options	Determine probe style and frequency rating
Warmup Spec Class	Analyzer warm-up per VNA sheet
Manufacturer Documentation	OEM datasheet and user documentation
Configuration Dependency	Final limits follow installed options and faceplate
Operating temperature	Spec Class: Follow probe kit sheet

N1501A Specifications

PARAMETER	VALUE
Keysight / Agilent N1501A Dielectric Probe Kit	Overview
Coaxial dielectric probe kit	Works with N1500A materials software class
Pairs with ENA/PNA class analyzers	Broadband permittivity extraction path
Technical Specifications	Model: N1501A

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Spec Class: Follow probe kit sheet
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Installed Options	Determine probe style and frequency rating
Warmup Spec Class	Analyzer warm-up per VNA sheet
Manufacturer Documentation	OEM datasheet and user documentation
Configuration Dependency	Final limits follow installed options and faceplate Notes From Keysight N1501A dielectric probe kit / materials measurement documentation. Valid frequency range depends on the installed probe option and host analyzer.

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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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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.