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Data Sheet

August 13, 2026

HP / AGILENT

HP / Agilent 71500A Microwave Transition Analyzer

HP 71500A Microwave Transition Analyzer DC to 40 GHz The HP 71500A Microwave Transition Analyzer is a two-channel, sampler-based time-domain instrument for stimulus-response measurements from DC to 40 GHz. It measures rise/fall times, time delay, peak and average power, group delay, AM-to-PM conversion, and related microwave transition parameters. All functions are programmable; Instrument BASIC can run application interfaces internally. Benchtop characterization of microwave components and systems; pulsed RF transition analysis; group-delay and AM-PM measurements; automated microwave stimulus-response tests. The HP 71500A Microwave Transition Analyzer is a two-channel, sampler-based time-domain instrument for stimulus-response measurements from DC to 40 GHz. It measures rise/fall times, time delay, peak and average power, group delay, AM-to-PM conversion, and related microwave transition parameters. All functions are programmable; Instrument BASIC can run application interfaces internally. Benchtop characterization of microwave components and systems; pulsed RF transition analysis; group-delay and AM-PM measurements; automated microwave stimulus-response tests.



MODEL

**HP / Agilent
71500A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

71500A

LISTING

<https://aumictechlabs.com/products/71500a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 71500A Microwave Transition Analyzer is a two-channel, sampler-based time-domain instrument for stimulus-response measurements spanning DC to 40 GHz. This benchtop analyzer consolidates the functionality of multiple dedicated instruments - oscilloscopes, vector network analyzers, peak power meters, and spectrum analyzers - into a single unit, optimizing space in R&D and ATE environments.

Technical Specifications

- Frequency Range: DC to 40 GHz
- Channels: Two Time-Domain
- Accuracy: Up to 1 ps delta time
- Resolution: 0.1 dB and 1 degree at 8 GHz
- Pulse Measurement Capability: Down to 100 ps pulse width
- Internal Trigger: Up to 40 GHz
- Sampling Technology: Sampler-based architecture with dual DSP chips for signal demodulation and waveform math

Key Features

- Fast Fourier Transform (FFT) analysis with simultaneous frequency, magnitude, and phase display
- Fundamental and harmonic measurement up to 40 GHz in waveform and tabular formats
- RF and video feedthrough separation without external filters
- Direct RF carrier measurement
- Four pulse measurement formats: Real (RF waveform), Magnitude (linear envelope), Log Magnitude (log envelope), and Phase (phase versus time)
- Rise and fall time measurement, including very fast transitions (17 ps fall times on semiconductor devices)
- Time delay and group delay measurements
- Peak and average power analysis
- AM to PM conversion characterization
- Noise filtering that removes noise signals faster than averaging
- Cable loss correction for component measurements
- Full programmability via Agilent Instrument BASIC (IBASIC) for custom applications and internal execution
- CAE simulation comparison capability

Typical Applications

- Microwave component and system characterization
- Semiconductor device testing and validation
- Pulse and transient signal analysis
- RF and microwave subsystem validation
- Time-domain stimulus-response measurements

Compatibility & Integration

The 71500A is configured with the HP 70820A Microwave Transition Analyzer module paired with the HP 70004A Color Display/Mainframe for display and system control.

Features & description

From manufacturer datasheet

Features

- Two-channel sampler-based architecture
- DC to 40 GHz coverage
- Rise/fall, delay, peak/average power, group delay, AM to PM
- Fully programmable; internal IBASIC application support
- MMS-era modular microwave measurement platform member

71500A Characteristics / Specifications

PARAMETER	VALUE
Model	71500A
Manufacturer	Hewlett Packard / Agilent / Keysight
Instrument Type	Microwave transition analyzer
Channel Count	2
Frequency Coverage	DC to 40 GHz
Architecture	sampler based time domain
Measurement Rise Fall Times	yes
Measurement Time Delay	yes
Measurement Peak Power	yes
Measurement Average Power	yes
Measurement Group Delay	yes
Measurement AM To PM Conversion	yes
Programmability	all functions programmable
Internal Controller Language	Instrument BASIC
External Controller Requirement	not required for many IBASIC apps
Alias	HP 71500A; Agilent 71500A; Keysight 71500A
Platform Class	MMS microwave measurement system
Application Environment	benchtop component and system characterization

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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Model	71500A
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Instrument Type	Microwave transition analyzer
Channel Count	2
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Architecture	sampler based time domain
Measurement Rise Fall Times	yes
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Measurement Peak Power	yes
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Measurement Group Delay	yes
Measurement AM To PM Conversion	yes
Programmability	all functions programmable
Internal Controller Language	Instrument BASIC
External Controller Requirement	not required for many IBASIC apps
Option 001: delete adapter and cable accessories	
Option 002: delete external power pack (70310-60016)	
Option 003: add tutorial kit	
Option 810: add rackmount slide kit (5062-786)	
Option 908: rack flange kit without handles	
Option 913: rack flange kit with handles	
Option 910: extra user manuals	
Option 915: service manuals	
Specifications	
PARAMETER	VALUE
Alias	HP 71500A; Agilent 71500A; Keysight 71500A
Platform Class	MMS microwave measurement system
Application Environment	benchtop component and system characterization

Notes

Feature and option rows from Agilent/Keysight 71500A product literature. Detailed sampler timing/uncertainty tables should be taken from the 71500A technical data sheet for the installed configuration when metrology-grade numbers are required.

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.