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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 54754A Differential & Single-ended TDR/TDT Module

HP Agilent 54754A Differential TDR TDT Plug In Module The Agilent 54754A is a differential two-channel TDR/TDT plug-in for 83480A and 54750A mainframes. OEM user-guide specifications provide user-selectable 12.4 or 18 GHz bandwidth on both channels, dual step generators for differential TDR, 50 ohm 3.5 mm inputs, and 2.5 GHz trigger bandwidth class. Differential and common-mode TDR impedance characterization, TDT transmission measurements, and high-bandwidth electrical oscilloscope channels to 18 GHz in an 83480A/54750A mainframe. The Agilent 54754A is a differential two-channel TDR/TDT plug-in for 83480A and 54750A mainframes. OEM user-guide specifications provide user-selectable 12.4 or 18 GHz bandwidth on both channels, dual step generators for differential TDR, 50 ohm 3.5 mm inputs, and 2.5 GHz trigger bandwidth class. Differential and common-mode TDR impedance characterization, TDT transmission measurements, and high-bandwidth electrical oscilloscope channels to 18 GHz in an 83480A/54750A mainframe. Two TDR step generators for differential TDR/TDT



MODEL

**HP / Agilent
54754A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54754A

LISTING

<https://aumictechlabs.com/products/54754a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 54754A is a differential and single-ended TDR/TDT module for high-speed signal integrity characterization. It performs Time Domain Reflectometry and Time Domain Transmission measurements across both differential and single-ended configurations, enabling precise analysis of impedance discontinuities, propagation delay, and interconnect performance. The module integrates with compatible mainframe oscilloscopes to deliver comprehensive impulse and transmission testing for high-speed digital design and advanced material evaluation.

Technical Specifications

Measurement Modes: Differential TDR, single-ended TDR, differential TDT, single-ended TDT

Channels: Two 18 GHz electrical channels with 3.5 mm male connectors

Bandwidth: 12.4 GHz or 18 GHz selectable per channel; 2.5 GHz trigger channel

Vertical Resolution: 12 bits (15 bits with averaging)

Vertical Accuracy: 0.4%

Characteristic RMS Noise: 0.25 mV at 12.4 GHz; 0.5 mV at 18 GHz

Maximum Input Signal: ± 2 Vdc

Step Generators: Two built-in generators supporting 1-port, 2-port common mode, and 2-port differential configurations

Edge Speed: User-selectable

S-Parameter Measurement: Supported with mainframe firmware revision A.06.01 or later and Option 202

Calibration: Built-in TDR/TDT calibration

Distance Resolution: Approximately 1.5 mm in air with 40 GHz probes and normalization (rise time limited)

Key Features

- Dual-channel 18 GHz architecture for simultaneous differential and single-ended measurements
- Automatic and manual TDR/TDT measurement modes
- Advanced waveform processing: FFT, histogram, waveform math, eye pattern, and statistical analysis
- Limit testing capability for production validation
- 12-bit vertical digitization with optional 15-bit averaging mode

Typical Applications

- Signal integrity analysis in high-speed interconnects
- Impedance discontinuity detection and characterization
- Differential pair measurements and validation
- PCB material and transmission line characterization
- Propagation delay measurement and analysis

Compatibility & Integration

The 54754A integrates with the following mainframe oscilloscopes: Agilent/Keysight 54750A, Agilent/HP 83480A, Agilent/HP 86100A/B/C, and Agilent/HP 86100D.

54754A Characteristics / Specifications

PARAMETER	VALUE
Electrical Channels	2
TDR Step Generators	2
Bandwidth High Mode	dc to 18.0 GHz user selectable
Bandwidth Low Mode	dc to 12.4 GHz user selectable
Transition Time 12.4 GHz Mode Characteristic	28.2 ps
Transition Time 18 GHz Mode Characteristic	19.4 ps
RMS Noise Typical 12.4 GHz	0.25 mV
RMS Noise Typical 18 GHz	0.5 mV
DC Accuracy 12.4 GHz Single Marker Class	plus or minus 0.4% of full scale plus or minus 2 mV plus reading terms
DC Accuracy 18 GHz Single Marker Class	plus or minus 0.4% of full scale plus or minus 2 mV plus reading terms
Nominal Impedance	50 ohm
Input Connector	3.5 mm male
Trigger Level Range	plus or minus 1 V
Maximum Safe Input Voltage	plus or minus 2 Vdc + ac peak (+16 dBm)
Percent Reflection Characteristic	less than or equal to 10% for 200 ps rise time
Trigger Bandwidth Class	2.5 GHz
Operating Temperature	15 C to 35 C
Nonoperating Temperature	minus 40 C to +70 C
Humidity Operating	up to 90% RH at 35 C
Net Weight	approximately 1.1 kg (2.4 lb)
Shipping Weight	approximately 2.0 kg (4.4 lb)
Power	supplied by mainframe
Warmup For Specs	60 minutes
Bandwidth	High Mode: dc to 18.0 GHz user selectable

PARAMETER	VALUE
Rise Time	Trigger Bandwidth Class: 2.5 GHz
Humidity	Operating: up to 90% RH at 35 C

54754A Specifications

PARAMETER	VALUE
HP Agilent 54754A Differential TDR TDT Plug In Module	Overview
Two TDR step generators for differential TDR/TDT	User selectable 12.4 or 18 GHz bandwidth
Technical Specifications	Electrical Channels: 2

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	15 C to 35 C
Operating Temperature	15 C to 35 C
Humidity	Operating: up to 90% RH at 35 C
Nonoperating Temperature	minus 40 C to +70 C
Humidity Operating	up to 90% RH at 35 C
Net Weight	approximately 1.1 kg (2.4 lb)
Shipping Weight	approximately 2.0 kg (4.4 lb)
Power	supplied by mainframe
Warmup For Specs	60 minutes Notes Specs from Agilent 54753A/54754A Users Guide Chapter 12 Specifications and Characteristics for the 54754A differential TDR plug-in. Channel 2 on 54753A-only 20 GHz mode does not apply to 54754A.

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 provide user-selectable 12.4 or 18 GHz bandwidth on both channels, dual step generators for differential TDR, 50 ohm 3.5 mm inputs, and 2.5 GHz trigger bandwidth class.	
Applications	
Differential and common-mode TDR impedance characterization, TDT transmission measurements, and high-bandwidth electrical oscilloscope channels to 18 GHz in an 83480A/54750A mainframe.	
Key Features	
Two TDR step generators for differential TDR/TDT	
User selectable 12.4 or 18 GHz bandwidth	
2.5 GHz trigger channel	
Normalization and reference-plane calibration	
Percent reflection and impedance readouts	
Technical Specifications	
Technical Specifications	
PARAMETER	VALUE
Electrical Channels	2
TDR Step Generators	2
Bandwidth High Mode	dc to 18.0 GHz user selectable
Bandwidth Low Mode	dc to 12.4 GHz user selectable
Transition Time 12.4 GHz Mode Characteristic	28.2 ps
Transition Time 18 GHz Mode Characteristic	19.4 ps
RMS Noise Typical 12.4 GHz	0.25 mV
RMS Noise Typical 18 GHz	0.5 mV
DC Accuracy 12.4 GHz Single Marker Class	plus or minus 0.4% of full scale plus or minus 2 mV plus reading terms
DC Accuracy 18 GHz Single Marker Class	plus or minus 0.4% of full scale plus or minus 2 mV plus reading terms
Nominal Impedance	50 ohm
Input Connector	3.5 mm male
Trigger Level Range	plus or minus 1 V
Maximum Safe Input Voltage	plus or minus 2 Vdc + ac peak (+16 dBm)
Percent Reflection Characteristic	less than or equal to 10% for 200 ps rise time
Trigger Bandwidth Class	2.5 GHz
Operating Temperature	15 C to 35 C
Nonoperating Temperature	minus 40 C to +70 C

PARAMETER	VALUE
Humidity Operating	up to 90% RH at 35 C
Net Weight	approximately 1.1 kg (2.4 lb)
Shipping Weight	approximately 2.0 kg (4.4 lb)
Power	supplied by mainframe
Warmup For Specs	60 minutes

Notes
Specs from Agilent 54753A/54754A Users Guide Chapter 12 Specifications and Characteristics for the 54754A differential TDR plug-in. Channel 2 on 54753A-only 20 GHz mode does not apply to 54754A.

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 ·
30-day returns
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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.