

KEYSIGHT TECHNOLOGIES (AGILENT HP)

16950A

The Keysight 16950A is a high-performance state and timing logic analyzer module designed for the 16900 Series mainframe chassis. It provides 68 channels of high-speed acquisition, featuring 4 GHz timing zoom, up to 1.2 GHz timing speed, and 600 MHz state analysis clock rate. The module offers selectable memory depth options from 256K to 64M, along with advanced signal integrity features like Eyefinder and Eye Scan to handle complex digital debugging tasks.

SPECIFICATIONS

General

Interfaces	2x 90-pin probe cable connectors, mainframe backplane interface
Display	None (uses mainframe display)

Physical

Power Supply	Draws power from mainframe slot
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	28 mm x 343 mm x 406 mm mm
Weight	1.4 kg

Acquisition Performance

Number of Channels	68 channels
Maximum State Clock Rate	600 MHz
Maximum State Data Rate	800 Mb/s
Maximum Timing Acquisition Speed (Full Channel)	600 MHz
Maximum Timing Acquisition Speed (Half Channel)	1.2 GHz
Maximum Transitional Timing Speed	600 MHz
Timing Zoom Resolution	4 GHz (250 ps)
Timing Zoom Memory Depth	64K sample depth
Base Configuration Memory Depth (Option 256)	256K samples
Upgrade Option 001 Memory Depth	1M samples
Upgrade Option 004 Memory Depth	4M samples
Upgrade Option 016 Memory Depth	16M samples
Upgrade Option 032 Memory Depth	32M samples
Upgrade Option 064 Memory Depth	64M samples

Input & Probing Characteristics

Threshold Voltage Range	-3V to +5V (single-ended)
Threshold Settings Resolution	10 mV steps

Analysis & Measurement Modes

Eye Finder Support	Yes (automatically adjusts setup and hold)
Eye Scan Mode Support	Yes (rapid multi-channel signal integrity characterization)

System Compatibility & Integration

Compatible Mainframes	Keysight / Agilent 16900 Series
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State Analysis

Minimum State Eye Width	600 ps
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Input Characteristics

Maximum Input Voltage	±40 V peak max
Minimum Input Voltage Swing	250 mV p-p
Threshold Accuracy	±(30 mV + 1% of setting)
Setup and Hold Time Range	-3 ns to +15 ns
Setup and Hold Resolution	10 ps
Setup and Hold Window	300 ps
Number of Probing Connectors	2
Channels per Connector	34

Connectivity

Compatible Probes	Keysight 90-pin logic analyzer probes (including E5381A, E5382A, E5390A, E5394A)
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Physical Characteristics

Mainframe Slot Requirements	Requires 1 slot in 16900 series mainframe
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Environmental

Operating Humidity	Up to 80% relative humidity at 40 °C (non-condensing)
Non-Operating Temperature Range	-40 °C to +75 °C

Triggering

Trigger Sequence Levels	16
Pattern Terms	16
Range Terms	4
Edge and Glitch Terms	12
Timer Terms	2
Counter Terms	2
Filter Terms	0

Performance Options

State Clock Rate Option 400	400 MHz
State Data Rate Option 400	400 Mb/s

Environmental & Standards

Operating Altitude	3,000 m
Non-operating Altitude	15,300 m

TECHNOLOGY

Logic Analyzer

APPLICATIONS

High-Speed Digital System Debug, State and Timing Analysis, Bus Characterization

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