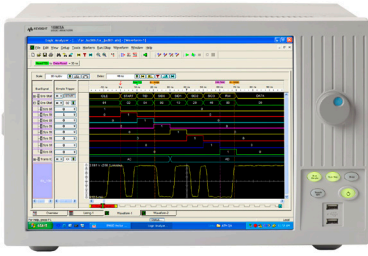# Keysight Technologies
Logic Analyzers

Selection Guide

Fast, Accurate Answers Throughout the Design Validation Cycle

Keysight Technologies, Inc. logic analyzers help you minimize project risk by providing the most reliable, accurate measurements and the most complete view of system behavior. A comprehensive family of products offers the measurement capabilities, probing, application support and analysis tools to meet your toughest digital debug needs.
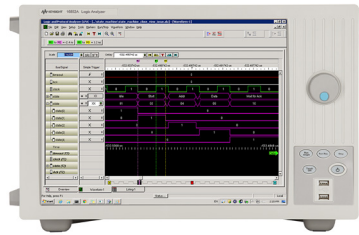
KEYSIGHT
TECHNOLOGIES

16800 Series portable logic analyzers

– Affordable fixed configurations
– Supports a wide range of applications with 34, 68, 102, 136 or 204 channels
– Built-in 48-ch pattern generator available on select models

- 4 GHz high-speed timing zoom
- Up to 1 GHz conventional timing
- Up to 450 MHz state rate, 500 Mb/s data rate
- Up to 204 channels
- Up to 32 M deep memory

16850 Series portable logic analyzers

– Fastest portable timing analyzer with deep memory to distinguish between functional and timing errors
– Supports a wide range of applications with 34, 68, 102 or 136 channels

- 12.5 GHz high-speed timing zoom
- Up to 5 GHz conventional timing
- Up to 1.4 GHz state rate, 1.4 Gb/s data rate
- Up to 136 channels
- Up to 128 deep memory

16901A 2-slot modular logic analysis system

– Flexibility to configure the system for your acquisition and stimulus needs
– Long-term investment protection – upgrade or re-configure as your needs evolve
– Maximize your measurement capability
  – Increase your channel count – up to 204 channels
  – Deepest memory depth available – up to 256 M across all channels
  – Highest timing and state speeds
  – Single-ended and differential signal support

- 4 GHz high-speed timing zoom
- Up to 1.2 GHz conventional timing
- Up to 667 MHz state rate, 1066 Mb/s data rate
- Up to 204 channels
- Up to 256 M deep memory

16902B 6-slot modular logic analysis system

– Maximum configuration flexibility – six slots for multiple logic analyzer and/or pattern generator modules
– Long-term investment protection – upgrade or re-configure as your needs evolve
– Maximize your measurement capability
  – Increase your channel count – up to 204 channels
  – Deepest memory depth available – up to 256 M across all channels
  – Highest timing and state speeds
  – Single-ended and differential signal support

- 4 GHz high-speed timing zoom
- Up to 1.2 GHz conventional timing
- Up to 667 MHz state rate, 1066 Mb/s data rate
- Up to 612 channels
- Up to 256 M deep memory

Logic Analyzer Portfolio

Keysight model number	16800 Series portables	16850 Series portable	16900 Series modular systems		
			16910A/16911A	16950B/16951B	16962A
Channels	34, 68, 102, 136, 204	34, 68, 102, 136	102 / 68	68	68
Max channels on single time base	34, 68, 102, 136, 204	34, 68, 102, 136	510 / 340	340	340
High-speed timing zoom [1]	4 GHz (250 ps) with 64 K depth	12.5 GHz (80 ps) with 256k depth	4 GHz (250 ps) with 64 K depth	4 GHz (250 ps) with 64 K depth	–
Max timing sample range (half / full channels)	1.0 GHz (1.0 ns) / 500 MHz (2.0 ns)	5.0 GHz (200 ps) / 2.5 GHz (400 ps)	1.0 GHz (1.0 ns) / 500 MHz (2.0 ns)	1.2 GHz (833 ps) / 600 MHz (1.67 ns)	8 GHz / 4 GHz / 2 GHz Quarter / half / full channel
Max state clock rate	450 MHz with Option 500, 250 MHz with Option 250	700 MHz with option 700 [2], 350 MHz standard	450 MHz with Option 500, 250 MHz with Option 250	667 MHz	2 GHz
Max state data rate	500 Mb/s with Option 500, 250 Mb/s with Option 250	1.4 Mb/s with option 700, 700 MB/s standard	500 Mb/s with Option 500, 250 Mb/s with Option 250	1066 Mb/s	2 GHz
Memory depth	1 M up to 32 M	1 M up to 128 M	256 K up to 32 M	1 M up to 64 M (16950B), 256 M (16951B)	4 M up to 100 M
Supported signal types	Single-ended	Single-ended and differential	Single-ended	Single-ended and differential	Single-ended and differential
Probe compatibility	40-pin cable connector	Direct connect and 90-pin cable connector	40-pin cable connector	90-pin cable connector	90-pin cable connector

1. All channels, all the time, simultaneous state and timing through the same probe.
2. Single edge clock - double for dual edge clock.

Pattern generator (Available in 16821A, 16822A, 16823A portable logic analyzers and 16720A module)	Half channels	Full channels
Max clock speed	300 MHz	180 MHz
Max memory depth	16 M vectors	8 M vectors
Channels per module	24	48
Max number of channels per time base	120	240
Stimulus commands	Initialize, Block, Repeat, and Break macros	
Logic levels supported	5 V TTL, 3-state TTL, 3-state CMOS, 3-state 3.3 V ECL, 5 V PECL, 3.3 V LVPECL, 3-state 2.5 V, 3-state 1.8 V, LVDS	

Additional Considerations When Configuring Your Logic Analyzer

Accurate measurements start with reliable probing

Your logic analyzer measurement is only as accurate and reliable as your probing. Keysight's general purpose and device specific probes provide a robust, reliable connection between your Keysight logic analyzer and the system under test. They are easy to connect and are electrically and mechanically unobtrusive, giving you unsurpassed measurement accuracy.

Probes are ordered separately. For more information about Keysight's logic analyzer probes and accessories, visit www.keysight.com/find/la_probing
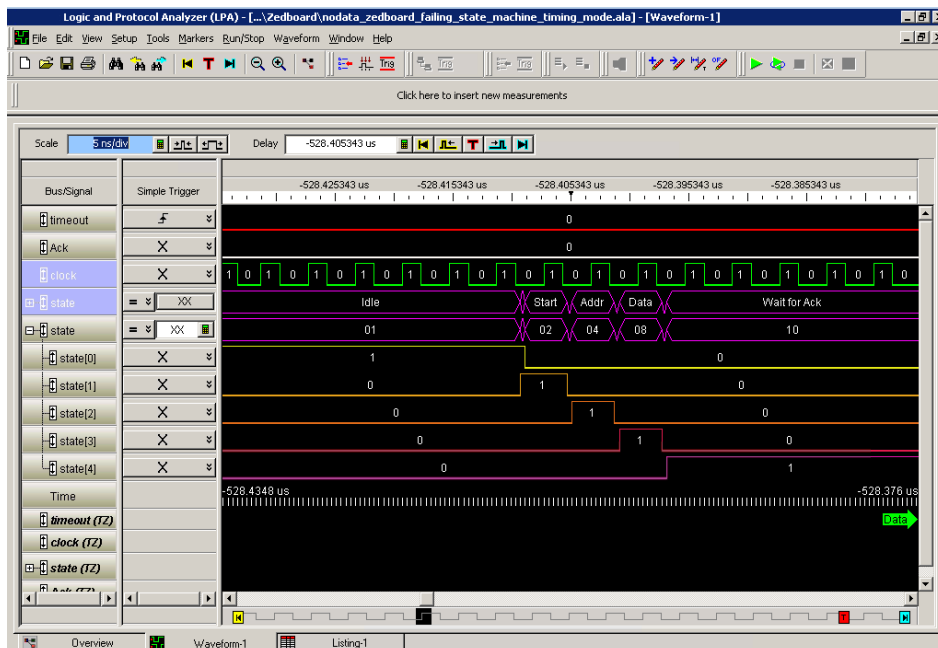
Application software

Turn low-level measurement data into meaningful insight with a suite of application software that can save you up to weeks of development time. A wide range of analysis and viewing tools provide insight into your system's behavior in a format you understand.

For more information, visit www.keysight.com/find/logic-sw-apps

Extend the life of your equipment

Easily upgrade your 16800 or 16900 Series logic analyzer by "turning on" additional memory depth and state speed when you need more. Purchase the capability you need now, then upgrade as your needs evolve.

For the most up-to-date and complete application and product information, please visit our web site at: www.keysight.com/find/logic

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