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Data Sheet
August 15, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 34950A 64-bit Digital I/O with Memory and Counter for 34980A

Keysight Agilent 34950A 64-Bit Digital I/O with Memory and Counter for 34980A The Keysight 34950A is a 34980A plug-in providing 64 bits of bidirectional digital I/O with pattern memory and counters. OEM 34980A datasheet rates eight 8-bit channels, programmable thresholds, two 10 MHz counters, andaprogrammable clock output to 20 MHz. Pattern simulation and capture, handshake digital control, and event totalizing inside 34980A switch/measure systems. Eight 8-bit banks with handshaking protocols The Keysight 34950A is a 34980A plug-in providing 64 bits of bidirectional digital I/O with pattern memory and counters. OEM 34980A datasheet rates eight 8-bit channels, programmable thresholds, two 10 MHz counters, andaprogrammable clock output to 20 MHz. Pattern simulation and capture, handshake digital control, and event totalizing inside 34980A switch/measure systems. Eight 8-bit banks with handshaking protocols Pattern memory for simulation and capture

MODEL **Agilent / Keysight 34950A**	CALIBRATION **Available on request**
CONDITION **Used**	STATUS **In stock**
RFQ / SKU **34950A**	LISTING **https://aumictechlabs.com/products/34950a-2/**

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NAICS 423690 · 811210 · 541380

This unit

The Keysight 34950A is a 64-bit Digital I/O module for the 34980A Multifunction Switch/Measure Unit, delivering bidirectional digital control, pattern generation and capture, and frequency

measurement in a single slot card. Organized into two independent banks of four 8-bit channels each, the module supports programmable polarity, variable input thresholds from 0 V to 5 V, and source/sink drive current up to 24 mA per channel. Each bank includes 64 KB of volatile memory for buffered pattern operations at digital speeds up to 10 MHz, with synchronous handshake control across three dedicated lines per 32-bit bank.The integrated counter/totalizer provides two independent 10 MHz measurement channels for frequency, period, duty cycle, and pulse width analysis, plus a programmable 20 MHz divide-by-n clock output for test synchronization. Grouped I/O operations support 16- and 32-bit data widths. Standard 78-pin D-sub connectors interface directly to the 34980A mainframe, enabling seamless integration into automated test and data acquisition systems with LAN, USB, and GPIB connectivity.Technical Specifications Digital I/O: 64 bidirectional bits organized as two banks; Bank 1 (channels 101–104) and Bank 2 (channels 201–204), each containing four 8-bit channels I/O Configuration: Programmable polarity per channel; input thresholds 0 V to 5 V; output level programming; 24 mA source/sink current per channel Data Grouping: 16-bit and 32-bit channel operations supported Memory: 64 KB volatile per bank; pattern capture and generation to 10 MHz Handshaking: Synchronous (strobe) mode; three handshake lines (H0, H1, H2) per 32-bit bank Counter/Totalizer: Two channels (301, 302) at 10 MHz maximum; totalizer and initiated measurement modes for frequency, period, duty cycle, and pulse width Clock Output: Programmable 20 MHz divide-by-n clock Connectors: 78-pin D-subKey Features Dual independent memory banks enable simultaneous pattern generation and capture Configurable handshake protocols support buffered I/O with hardware strobing Flexible threshold and polarity settings adapt to mixed-signal test requirements Counter channels integrate directly into 34980A scan lists for continuous monitoringTypical Applications Automated test equipment (ATE) digital stimulus and response capture Pattern-based device functional testing Real-time event counting and frequency measurement Multi-channel synchronous control in data acquisition systemsCompatibility & Integration The 34950A slots into the 34980A mainframe, inheriting its LAN, USB, and GPIB connectivity. Digital input and counter channels integrate into 34980A scan lists for automated measurement sequencing.

34950A Characteristics / Specifications

PARAMETER	VALUE
Model	34950A
Instrument Type	64-bit digital I/O module with memory and counter
Host Mainframe	34980A
Digital Bits Total	64
Channel Organization	eight 8-bit channels
Channel Direction	bidirectional input or output non-isolated
Vin Maximum Class	5 V
Vout Range	1.65 V to 5 V
Iout Maximum Per Line	24 mA
Module Iload Maximum	400 mA
Frequency Maximum Digital	10 MHz
Rise Fall Time Typical	6 ns
Counter Channels	2
Counter Frequency Maximum	10 MHz
Clock Output Maximum	20 MHz
Programmable Threshold Class	0 V to 5 V family / 0 V to 3 V cited for counters
Handshake Protocols	synchronous and strobe
Pattern Memory	supported
Pattern Match Alarming	maskable
Hardware Pattern Interrupt	per bank
Connector Class	78-pin Dsub cables or detachable terminal block
Source Sink Capability Class	24 mA with Imax 400 mA per module
Totalizer Functions	frequency period duty cycle totalize
Form Factor	34980A plug-in module

34950A Specifications

PARAMETER	VALUE
Applications	Pattern simulation and capture, handshake digital control, and event totalizing inside 34980A switch/measure systems.
Key Features	Eight 8-bit banks with handshaking protocols
Pattern memory for simulation and capture	Two gated 10 MHz counter/totalizer channels
Programmable clock output to 20 MHz	Maskable pattern-match alarming
Technical Specifications	Model: 34950A
Notes	From Keysight 34980A Multifunction Switch/Measure Unit data sheet 34950A system-control module section.

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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Notes
From Keysight 34980A Multifunction Switch/Measure Unit data sheet 34950A system-control module section.

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

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