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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 41501B Pulse Generator and Expander Unit for the 4155C/4156C

HP Agilent 41501B SMU and Pulse Generator Expander The HP 41501B is the SMU and pulse generator expander for the 4155B/4156B (and later 4155C/4156C) semiconductor parameter analyzer family. OEM technical data specify an optional High Power SMU (HPSMU) to 200 V / 1 A, optional dual Pulse Generator Units (PGU) to 40 Vpp, optional dual MPSMUs, and a Ground Unit (GNDU) with Kelvin connections for parametric and pulsed device characterization. Expanding 4155/4156 semiconductor parameter analyzers for high-power SMU force/measure, pulsed IV stress, and additional medium-power SMU channels in device characterization and reliability labs. The HP 41501B is the SMU and pulse generator expander for the 4155B/4156B (and later 4155C/4156C) semiconductor parameter analyzer family. OEM technical data specify an optional High Power SMU (HPSMU) to 200 V / 1 A, optional dual Pulse Generator Units (PGU) to 40 Vpp, optional dual MPSMUs, and a Ground Unit (GNDU) with Kelvin connections for parametric and pulsed device characterization. Expanding 4155/4156 semiconductor parameter analyzers for high-power SMU force/measure, pulsed IV stress, and additional medium-power SMU channels in device characterization and reliability labs.



MODEL

**HP / Agilent
41501B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

41501B

LISTING

<https://aumictechlabs.com/products/41501b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 41501B Pulse Generator and Expander Unit extends the measurement capabilities of the 4155C and 4156C Precision Semiconductor Parameter Analyzers. This module provides pulse generation and resource expansion for dynamic device characterization, integrating directly into the analyzer's rear connector with automatic resource recognition at boot-up. Available in five option configurations, the 41501B can be equipped with Pulse Generator Units, High-Power and Medium-Power Source Measure Units, and a Ground Unit to match specific test requirements.

Technical Specifications The 41501B connects directly to the host analyzer and presents all additional resources on the Channels: Channel Definition page, where they are managed identically to native measurement channels.

Pulse Generation: Pulse Width: 1 ns to 1 s Pulse Delay: 1 ns to 1 s Pulse Amplitude: 1 V to 20 V Pulse Repetition Rate: 1 Hz to 1 MHz Rise/Fall Time: < 300 ps Output Impedance: 50 Ω Output Modes: Single pulse, Continuous pulse, Burst pulse, External Trigger, Clock Output Trigger Input: Trigger Delay: 1 ns to 1 s Trigger Level: -5 V to +5 V High-Power Source Measure Unit (HPSMU): Current Sourcing/Sinking: Up to 1 A Voltage Sourcing: ± 200 V Ground Unit (GNDU): Included in all configurations; 1.6 A capacity. Physical: 213 mm $\times$ 133 mm $\times$ 250 mm; 3.6 kg.

Key Features Five configurable option packages (402, 410, 412, 420, 422) Automatic resource detection and integration Compatible with 16440A SMU/PGU selector Flexible pulse generation with nanosecond-level timing control

Typical Applications Flash memory Write/Erase endurance testing Non-volatile memory device characterization Pulsed semiconductor device measurements

Compatibility & Integration Designed exclusively for the Agilent 4155C and 4156C analyzers. Plugs into the rear connector; additional measurement resources appear as native channels within the host software.

41501B Characteristics / Specifications

PARAMETER	VALUE
HPSMU Voltage Ranges	2 V, 20 V, 40 V, 100 V, 200 V
HPSMU 200 V Set Resolution	10 mV
HPSMU 20 V Max Current	1 A
HPSMU 40 V Max Current	500 mA
HPSMU 100 V Max Current	125 mA
HPSMU 200 V Max Current	50 mA
HPSMU Voltage Compliance Span	0 V to 200 V
HPSMU Current Compliance Span	1 pA to 1 A
HPSMU Force Connector	dual triaxial Kelvin
PGU Amplitude Range	0 Vpp to 40 Vpp
PGU Window	-40.0 V to +40.0 V
PGU Maximum Current Pulse	200 mA (1 ms width, average current 100 mA)
PGU Pulse Width	1.0 μ s to 9.99 s, minimum resolution 100 ns
PGU Pulse Period	2.0 μ s to 10.0 s, minimum resolution 100 ns
PGU Transition Time	100 ns to 10 ms, minimum resolution 1 ns
PGU Output Impedance	50 ohm or low impedance less than 1 ohm
PGU Burst Count	1 to 65535
GNDU Output Voltage	0 V $\pm$ 100 μ V
GNDU Maximum Sink Current	1.6 A
GNDU Connector	single triaxial Kelvin
PGU Modes	Pulse or constant
PGU Delay Range	0 s to 10 s, minimum resolution 100 ns
Host Compatibility	4155B/4156B and 4155C/4156C expanders

41501B Specifications

PARAMETER	VALUE
HP Agilent 41501B SMU and Pulse Generator Expander	Overview
GNDU Kelvin ground return rated to 1.6 A sink	Configurable as HPSMU or 2x MPSMU plus 2x PGU options
Technical Specifications	HPSMU Voltage Ranges: 2 V, 20 V, 40 V, 100 V, 200 V

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.

technical data specify an optional High Power SMU (HPSMU) to 200 V / 1 A, optional dual Pulse Generator Units (PGU) to 40 Vpp, optional dual MPSMUs, andaGround Unit (GNDU) with Kelvin connections for parametric and pulsed device characterization.

Applications

Expanding 4155/4156 semiconductor parameter analyzers for high-power SMU force/measure, pulsed IV stress, and additional medium-power SMU channels in device characterization and reliability labs.

Key Features

HPSMU option with dual triaxial Kelvin force/sense

Two optional PGU channels for pulsed or DC base/pulse forcing

GNDU Kelvin ground return rated to 1.6 A sink

Configurable as HPSMU or 2x MPSMU plus 2x PGU options

Works as expander chassis for 4155B/4156B and C-series hosts

Technical Specifications

Technical Specifications

PARAMETER	VALUE
HPSMU Voltage Ranges	2 V, 20 V, 40 V, 100 V, 200 V
HPSMU 200 V Set Resolution	10 mV
HPSMU 20 V Max Current	1 A
HPSMU 40 V Max Current	500 mA
HPSMU 100 V Max Current	125 mA
HPSMU 200 V Max Current	50 mA
HPSMU Voltage Compliance Span	0 V to 200 V
HPSMU Current Compliance Span	1 pA to 1 A
HPSMU Force Connector	dual triaxial Kelvin
PGU Amplitude Range	0 Vpp to 40 Vpp
PGU Window	-40.0 V to +40.0 V
PGU Maximum Current Pulse	200 mA (1 ms width, average current 100 mA)
PGU Pulse Width	1.0 us to 9.99 s, minimum resolution 100 ns
PGU Pulse Period	2.0 us to 10.0 s, minimum resolution 100 ns
PGU Transition Time	100 ns to 10 ms, minimum resolution 1 ns
PGU Output Impedance	50 ohm or low impedance less than 1 ohm
PGU Burst Count	1 to 65535
GNDU Output Voltage	0 V ±100 uV
GNDU Maximum Sink Current	1.6 A

PARAMETER	VALUE
GNDU Connector	single triaxial Kelvin
PGU Modes	Pulse or constant
PGU Delay Range	0 s to 10 s, minimum resolution 100 ns
PGU Period Accuracy	(2% + 2 ns)
PGU Width Accuracy	(3% + 2 ns)
Host Compatibility	4155B/4156B and 4155C/4156C expanders

Notes

Specs from HP 4155B/4156B Technical Data (July 1997) including 41501B expander pages. Exact installed modules (HPSMU vs dual MPSMU, PGU presence) vary by order configuration.

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

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

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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.