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Data Sheet

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KEYSIGHT / AGILENT

Keysight (Agilent) 81142A Serial Pulse Data Generator, 13.5 GHz

Keysight (Agilent) 81142A Serial Pulse Data Generator, 13.5 GHz The Keysight/Agilent 81142A is a 13.5 GHz serial pulse data generator for physical-layer characterization of high-speed serial links. Bit rates 150 Mbit/s to 13.5 Gbit/s; formats NRZ, RZ, R1; differential data/clock/trigger; transition times <20 ps (typical class) / <25 ps (10/90 published); jitter <1 ps rms typical (clock mode), ~9 ps pp typical (data). 32 Mbit pattern memory; PRBS; linear delay modulation to 1 GHz for jitter tolerance. Companion 81141A covers to 7 Gbit/s. The Keysight/Agilent 81142A is a 13.5 GHz serial pulse data generator for physical-layer characterization of high-speed serial links. Bit rates 150 Mbit/s to 13.5 Gbit/s; formats NRZ, RZ, R1; differential data/clock/trigger; transition times <20 ps (typical class) / <25 ps (10/90 published); jitter <1 ps rms typical (clock mode), ~9 ps pp typical (data). 32 Mbit pattern memory; PRBS; linear delay modulation to 1 GHz for jitter tolerance. Companion 81141A covers to 7 Gbit/s. High-speed serial PHY stress and eye testing; jitter tolerance/transfer; lab research stimulus to 13.5 GHz.



MODEL

**Keysight / Agilent
81142A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

81142A

LISTING

<https://aumictechlabs.com/products/81142a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight 81142A Serial Pulse Data Generator is a precision instrument for characterizing high-speed digital systems and components up to 13.5 GHz. It generates low-jitter signals with full

control over data streams, supporting pulse, PRBS, and custom pattern generation across NRZ, R1, and RZ formats. The unit delivers sub-20 ps transition times and operates from 150 MHz to 13.5 GHz, making it essential for physical layer testing of serial buses, stress testing applications, and jitter tolerance measurements in R&D and manufacturing environments.

Technical Specifications

Signal Generation Frequency range: 150 MHz to 13.5 GHz Data formats: NRZ, R1, RZ PRBS generation: 2^5-1 to $2^{31}-1$ Transition times: <20 ps Pattern memory: 32 Mbit Sequencing, looping, and event triggering supported Jitter and Timing Performance Clock mode jitter: <1 ps RMS Data mode jitter: 9 ps pp typical Jitter modulation bandwidth: DC to 1 GHz Clock/data delay range: ± 0.75 ns with 100 fs resolution Delay modulation range: -100 ps to 100 ps

Output Specifications Single channel data and clock output (differential or single-ended) Data amplitude: 0.1 V to 1.8 V (5 mV resolution) Output voltage window: -2 V to 3 V Connectors: 2.4 mm female SMA 50 Ω termination supported External Interfacing External clock input supported Trigger and delay control inputs Error add input for bit error insertion Subrate clock output

Key Features Linear delay modulation for jitter tolerance and transfer measurements Touchscreen front panel interface 32 Mbit memory for extended real-world pattern sequences Low-jitter clock mode (<1 ps RMS) and flexible data mode (9 ps pp)

Connectivity & Integration Rear panel interfaces include GPIB, LAN, VGA, 4 $\times$ USB 2.0, and 1 $\times$ USB 1.1. Power requirement: 100–240 V AC $\pm 10\%$, 47–63 Hz. Operating temperature: 5 $^{\circ}\text{C}$ to 40 $^{\circ}\text{C}$. Dimensions: 424.5 mm W $\times$ 221.5 mm H $\times$ 580.0 mm D. Weight: 24.5 kg.

Features & description

From manufacturer datasheet

Features

- Bit rate: 150 Mbit/s to 13.5 Gbit/s
- Formats: NRZ, RZ, R1; pulse mode (81142A)
- Transition times: <20 ps typical; <25 ps (10/90)
- Jitter: ~1 ps rms typ (clock); ~9 ps pp typ (data)
- Delay modulation: –100 to +100 ps; bandwidth DC–1 GHz
- Clock/data delay: ± 0.75 ns, 100 fs resolution
- Amplitude: 0.10–1.8 V, 5 mV steps; window –2 to +3 V
- Memory: 32 Mbit; sequencing up to 4 blocks
- Connectors: 2.4 mm
- Interfaces: GPIB, LAN, USB, VGA, printer

81142A Characteristics / Specifications

PARAMETER	VALUE
Model	81142A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	Serial Pulse Data Generator
Family	81140A Series
Alias	81142A; Agilent 81142A Data Rate / Timing 150 Mbit/s–13.5 Gbit/s; edges <25 ps (10/90) Output 0.1–1.8 V; –2 to +3 V window; 2.4 mm differential Operational Notes Prefer Agilent 81141A/81142A datasheet 5989–3052. Optional N4916A de-emphasis converter.
Bit rate	150 Mbit/s to 13.5 Gbit/s
Formats	NRZ, RZ, R1; pulse mode (81142A)
Transition times	<20 ps typical; <25 ps (10/90)
Jitter	~1 ps rms typ (clock); ~9 ps pp typ (data)
Delay modulation	–100 to +100 ps; bandwidth DC–1 GHz
Clock/data delay	±0.75 ns, 100 fs resolution
Amplitude	0.10–1.8 V, 5 mV steps; window –2 to +3 V
Memory	32 Mbit; sequencing up to 4 blocks
Connectors	2.4 mm
Interfaces	GPIB, LAN, USB, VGA, printer
Bandwidth	DC–1 GHz - Clock/data delay: ±0.75 ns, 100 fs resolution - Amplitude: 0.10–1.8 V, 5 mV steps; window –2 to +3 V - Memory: 32 Mbit; sequencing up to 4 blocks - Connectors: 2.4 mm - Interfaces: GPIB, LAN, USB, VGA, printer
Data Rate	/ Timing

81142A Specifications

PARAMETER	VALUE
Applications	High-speed serial PHY stress and eye testing; jitter tolerance/transfer; lab research stimulus to 13.5 GHz.
Key Features	- Bit rate: 150 Mbit/s to 13.5 Gbit/s
Technical Specifications	Model: 81142A
Data Rate / Timing	150 Mbit/s–13.5 Gbit/s; edges <25 ps (10/90)
Output	0.1–1.8 V; –2 to +3 V window; 2.4 mm differential
Operational Notes	Prefer Agilent 81141A/81142A datasheet 5989-3052. Optional N4916A de-emphasis converter.

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

Specifications

PARAMETER	VALUE
Model	81142A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	Serial Pulse Data Generator
Family	81140A Series
Alias	81142A; Agilent 81142A

Data Rate / Timing

150 Mbit/s-13.5 Gbit/s; edges <25 ps (10/90)

Output

0.1-1.8 V; -2 to +3 V window; 2.4 mm differential

Operational Notes

Prefer Agilent 81141A/81142A datasheet 5989-3052. Optional N4916A de-emphasis converter.

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 ·
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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.