

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8131A

The Keysight Technologies (Agilent HP) 8131A is a high-speed, 500 MHz pulse generator designed for testing high-speed digital circuits, including ECL and GaAs devices. Characterized by its extremely fast and linear transition times of under 200 ps, 10 ps timing resolution, and differential outputs delivering up to 5 Vpp into 50 Ohms, the 8131A is ideal for generating clean, precise clock and data signals.

SPECIFICATIONS

General

Interfaces	GPIB (HP-IB)
Display	16-character alphanumeric fluorescent display
Warm-up Time	30 minutes
Recommended Calibration Interval	1 year

Physical

Power Supply	100 / 120 / 220 / 240 V AC (+10% / -15%), 48 - 66 Hz, 190 VA max
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	426 mm × 133 mm × 511 mm mm
Weight	14 kg kg

Timing and Frequency Characteristics

Frequency Range	10 Hz to 500 MHz
Period Range	2.00 ns to 99.9 ms
Period Resolution	3 digits (10 ps minimum)
Period Accuracy	±0.5% of setting ±100 ps
Pulse Width Range	1.00 ns to 99.9 ms
Pulse Width Resolution	3 digits (10 ps minimum)
Pulse Width Accuracy	±5% of setting ±100 ps
Delay Range	0.00 ns to 99.9 ms
Delay Resolution	3 digits (10 ps minimum)
Delay Accuracy	±1% of setting ±100 ps
Double Pulse Delay Range	2.00 ns to 99.9 ms
Duty Cycle Range	10% to 90% (subject to width limits)

Output Channel Characteristics

Number of Channels	1 standard (2 channels with Option 020)
Amplitude Range (into 50 Ohm)	100 mV to 5.00 V (differential outputs)
Amplitude Resolution	3 digits (10 mV minimum)
High Level Limit Range	-1.90 V to +5.00 V
Low Level Limit Range	-2.00 V to +4.90 V
Transition Time (Rise and Fall)	< 200 ps (10% to 90%, fixed)
Overshoot and Ringing	< 10% of amplitude
Preshoot	< 5% of amplitude
Output Connector Type	SMA (female)
Complementary Output Mode	Standard (differential normal/complementary outputs)

Operating and Generation Modes

Continuous Mode	Yes
Triggered Mode	Yes
Gated Mode	Yes
Double Pulse Mode	Yes
External Width Mode	Yes

Trigger and Synchronization Specifications

External Trigger Input Frequency Range	DC to 500 MHz
External Trigger Input Impedance	50 Ohm
External Trigger Input Threshold Level	-3.00 V to +3.00 V
External Trigger Input Minimum Pulse Width	1.0 ns
Sync Output Amplitude	ECL compatible (-0.9 V to -1.7 V into 50 Ohm)
Sync Output Impedance	50 Ohm nominal

Control and Programming Interfaces

Non-volatile Memory	Store and recall up to 9 complete setups
---------------------	--

Power and Physical Characteristics

Line Voltage Range	100 / 120 / 220 / 240 V AC (+10% / -15%)
Line Frequency Range	48 Hz to 66 Hz
Power Consumption	190 VA maximum

Environmental and Compliance

Storage Temperature Range	-40 °C to +70 °C
---------------------------	------------------

Jitter

Period RMS Jitter	< 10 ps + 0.005% of period
Width RMS Jitter	< 10 ps + 0.005% of width
Delay RMS Jitter	< 10 ps + 0.005% of delay

Frequency

Double Pulse Maximum Frequency	250 MHz
--------------------------------	---------

Performance

Channel-to-Channel Skew Compensation Range (Option 020)	± 2 ns
---	------------

External Input to Output Delay	< 15 ns
--------------------------------	-----------

Inputs & Outputs

External Input Coupling	DC
-------------------------	----

External Input Maximum Voltage	± 5 V
--------------------------------	-----------

External Input Maximum Transition Time	< 100 ns
--	------------

Sync Output Pulse Width	1.5 ns (nominal)
-------------------------	------------------

Environmental

Operating Humidity	95% R.H. at 40 °C
--------------------	-------------------

Maximum Operating Altitude	4600 m (15000 ft)
----------------------------	-------------------

Maximum Storage Altitude	15000 m (50000 ft)
--------------------------	--------------------

Interfaces

GPIO Interface Capabilities	SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0
-----------------------------	---

Sync Output

Sync Output Level	ECL compatible (-0.9 V to -1.7 V into 50 Ohm)
-------------------	---

External Input

External Input Sensitivity	≥ 300 mV p-p
----------------------------	-------------------

External Input Trigger Slope	Positive or negative edge, selectable
------------------------------	---------------------------------------

Outputs

Output Protection	± 3 V
-------------------	-----------

Transition Times

Transition Time (20% to 80% levels)	< 200 ps
-------------------------------------	------------

Memory

Store/Recall Registers	9 complete settings (plus 1 power-on state)
------------------------	---

Options

Option 010 Rear Panel Outputs	Moves all input and output connectors to the rear panel
-------------------------------	---

Compliance

Safety Standards Compliance	Designed to comply with IEC 348, UL 1244, CSA 556B
-----------------------------	--

EMC/RFI Standards Compliance	Complies with VDE 0871 Level B, CISPR Class B, FCC Part 15 Class B
------------------------------	--

TECHNOLOGY

Silicon Bipolar

APPLICATIONS

High-speed digital circuit characterization, ECL and GaAs device testing, clock and data signal generation

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.