

PULSE GENERATORS & DATA GENERATORS

High-Speed Pulse Generators

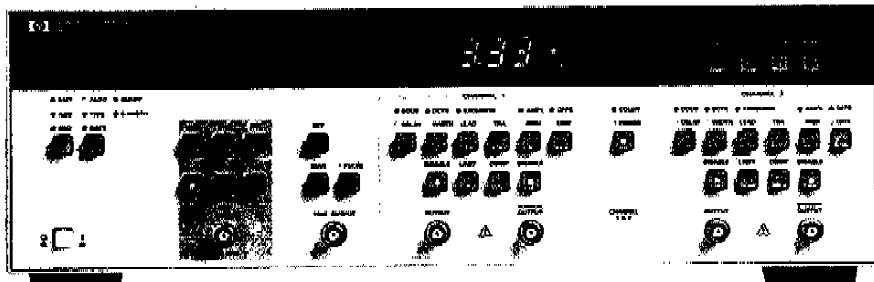
HP 8130A, HP 8131A

HP 8130A

- 300 MHz
- 1 ns variable transitions

HP 8131A

- 500 MHz
- 1 GHz transducer mode
- < 200 ps transitions



HP 8130A with Option 020 second channel (HP 8131A has similar appearance, but with SMA connectors)

HP 8130A, HP 8131A High-Speed Pulse Generators

200 ps Transitions (HP 8131A)

The fast and linear transitions of the HP 8131A are specified from 10 percent to 90 percent of amplitude and therefore match advanced ECL and many GaAs devices. With a 50-Ω termination, the pulse shape is excellent. However, in practice the real load may be reactive or mismatched, causing ringing or reflections. Transition time converters are available to reduce these effects.

1 GHz Transducer Mode (HP 8131A)

This mode generates a fast-edge square wave up to 1 GHz for toggle rate testing. A sine wave from a signal generator is needed.

Variable Transitions (HP 8130A)

Clean variable edges down to less than 1 ns address a wide range of technologies such as BiCMOS, ECL, and ECLips*, as well as opening to analog applications such as rapid bandwidth assessment or amplifier slew-rate measurements.

10 ps Timing Resolution

This is an order of magnitude higher than typical gate delays and hence eliminates window uncertainties.

5 Vp-p Amplitude, 10 mV Resolution

Pulses can be set up from 100 mV to 5 Vp-p in a ±5 V window. This means that levels for all fast transistor technologies can be set up simply, even if a power splitter is required in the setup. 10 mV resolution allows limiting levels to be established very accurately.

Data and Clock Simulation

Cell characterization often requires two signals, clock and data, in order to test proper handling of logical zeroes and ones. Dual-channel HP 8130, 8131A generators provide these signals when one channel is set to double-pulse to simulate the clock. The other channel then represents 0101 . . . data.

Glitch Testing

Crosstalk or interference spikes can be simulated by adding different pulses together, such as a 150 Mb/s signal from an HP 8130A with a 500 ps spike from an HP 8131A. Adder accessories HP 15104A, HP 15115A, and HP 15116A make these connections quickly and easily.

*Registered trademark of Motorola Inc.

Brief Specifications (Please request data sheets 5953-6321 and 5953-6320 for more details.)

- Timing**
Period: 3.33 ns to 99.9 ms (HP 8131A: 2.00 ns to 99.9 ms)
Delay: 0.00 ns to 99.9 ms, not available with double pulse
Double pulse: 3.33 ns to 99.9 ms (HP 8131A: 2.00 ns to 99.9 ms)
Width: 1.50 ns to 99.9 ms (HP 8131A: 0.50 ns to 99.9 ms)
Duty cycle (alternative to width parameter): 1% to 90%
Max delay, width, duty cycle: Refer to data sheets.
Transition times: 1 ns to 100 μs (8131A: < 200 ps)
Accuracy: Typically 5%
Jitter: Typically < 0.025%
- Differential Outputs into 50 Ω**
High level: -4.90 V to +5.00 V
Low level: -5.00 V to +4.90 V
Amplitude: 100 mV to 5 Vp-p
Accuracy: Typically 5%
- Operating Modes:** Auto, Trigger, Manual, Gate, External Width, External Burst, and (HP 8131A only) Transducer

Ordering Information

- HP 8130A, HP 8131A Pulse Generator**
 Opt 001 Rear Panel Connectors
 Opt 020 Second Channel (not retrofittable)
 Opt 908 Rack Flange Kit (p/n 5062-3977)
 Opt 910 Operating and Service Manual
 Opt 915 Service Manual Only
 Opt 916 Additional Operating Manual
 Opt H01 Preparation for Rack Slides
 Extended warranty options (see page 588) available on request
 Opt 1BP Mil Std 45622A Calibration

Accessories

- HP 15104A Pulse Adder/Splitter, DC to 2 GHz, BNC
 HP 15116A Pulse Inverter, 3 MHz to 2 GHz, BNC
 HP 15115A Pulse Splitter/Invert, 3 MHz to 2 GHz, BNC
 HP 15432B 250 ps Transition Time Converter, SMA
 HP 15433B 500 ps Transition Time Converter, SMA
 HP 15434B 1 ns Transition Time Converter, SMA
 HP 15438A 2 ns Transition Time Converter, SMA