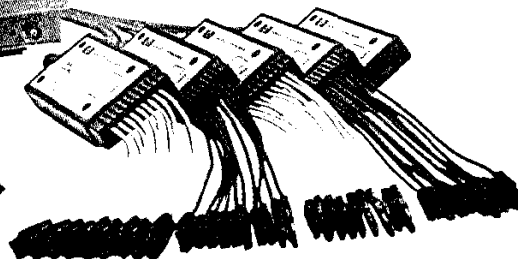
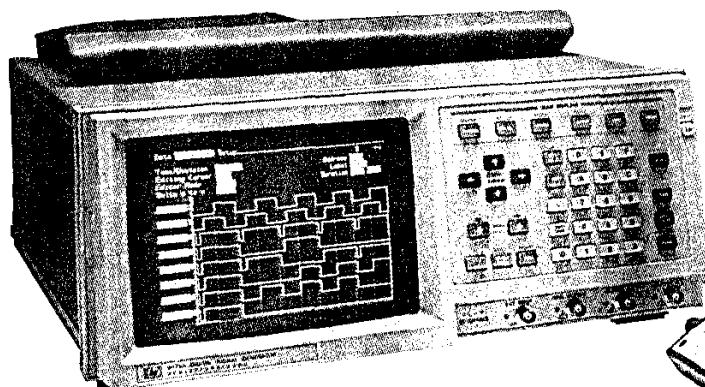


PULSE GENERATORS & DATA GENERATORS

Digital Signal Generator

HP 8175A

- 24 data channels
- 2 arbitrary channels
- Agile memory
- Interactive



HP 8175A with Option 005, TTL/CMOS pods.

HP 8175A Interactive Digital and Analog Stimulus

Whether your device needs analog or digital signals or—like programmable filters—both, the HP 8175A helps you emulate the real environment. This is because programmable data patterns and arbitrary waveforms can be made available at the same time. Repeatable timing and voltage settings let you test the device's limits with confidence.

Signal Quality at the Device

The HP 8175A's 24 data outputs are connected to your device or test head by active pods. This reduces distortion because the connections between pod and device can be kept very short.

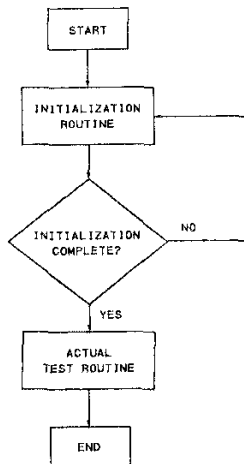
Each pod supports eight channels so, if you are working with mixed logic, you can use any combination of the available ECL, TTL, or variable-level TTL/CMOS pods.

The two analog channels of the Option 002 arbitrary waveform generator have 50-Ω outputs.

Interactive Test

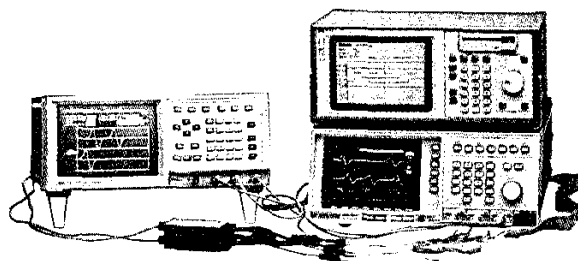
An agile, segmentable memory makes it possible for the HP 8175A to jump to different routines as needed by a test procedure. In the example on the left, an initial data pattern or waveform is output until the DUT changes state. This change is sensed by the HP 8175A's 8-line trigger pod, which then implements a user-defined jump.

Start, stop, continue, and tri-state can also be implemented from the DUT in this way.



Designed for Stimulus-Response Test

In addition to the 24 data outputs, there are also eight flag outputs. These depend directly on DUT status, and so can make sure that a measuring device captures the right information.



HP 8175A starts HP 1650A logic analyzer and HP 54110D oscilloscope signal capture.

Capture/Playback Applications

Data patterns or analog signals captured by your Hewlett-Packard logic analyzer can be read into the HP 8175A's memory. Thus critical once-in-a-while occurrences that cause device problems are available for detailed evaluation.

Convenient Bench and System Implementation

Internal storage plus support of external disk drive and printer make manual setups very convenient. For automation, binary learn strings speed updates over HP-IB from the computer. In racked systems, temperatures can get fairly high; to ensure reliable results under these conditions, the HP 8175A is fully specified up to 55° C.

PULSE GENERATORS & DATA GENERATORS

Digital Signal Generator

HP 8175A

Built-in Editor

The HP 8175A's internal processor lets you set up counter and random patterns in a few keystrokes. It offers copy, insert, and cursor editing on tables and graphics plus special features for arbitrary waveforms.*

Memory Segments Sequenced in Real Time

For long data sequences with repeating elements, the memory can be segmented so that only unique data need be entered. The menu below shows how the segments are set up: The first four lines produce a continuous data stream, reusing areas of memory with common data. A command from the device can cause a real-time jump to the line TEST 2.

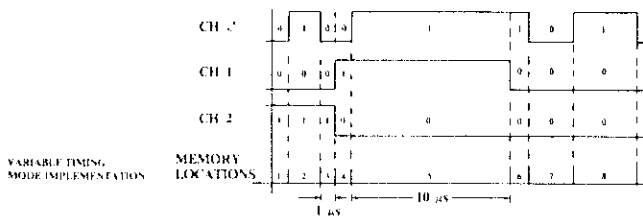
Step	Segment Name	Label or Address	Label or Address	Repeating Lines
000	CLEAR	from 21	to 120	014
015	TEST1	from 200	to 270	002
017	TEST1	from 250	to 270	001
018	TEST2	from 981	to 120	001
019	TEST2	from 300	to 380	001

User-defined memory segments.

Flexibility Through Bit-by-Bit Timing

Long wait periods in a data stream or constant levels in an arbitrary waveform can use many kof memory. This is seldom a problem for the HP 8175A because each data pattern or sampling point can be given its own unique duration, from 0.02 μ s up to 9.99 s.

Variable Pattern timing gives the user flexibility when programming long, asynchronous data systems. Note that the long, unchanging pattern in this example is implemented by a single 10 μ s duration, thus saving 9 addresses.



Each memory location has its own individual duration.

Extra Clock Output for Dynamic Devices

Devices that need a continuous clock do not force you to abandon the HP 8175A's variable timing feature because a clock with independent frequency is available. It is locked to the HP 8175A master crystal so that clock and data remain synchronized.

High-Resolution Edge Placement

All edges can be placed with 20 ns resolution. For critical clock/data or data/data adjustment, Option 001 provides 100 ps resolution delay on four channels.

*More information about the Option 002 arbitrary waveform generator is available on page 181.

Specifications

(Please request data sheet 5953-6327 for complete specifications.)

Outputs

Data channels: 24, each 1024 bits

Max data rate: 50 Mb/s, NRZ format

(If Serial Mode is selected, two 8-Kb channels are available, max data rate 100 Mb/s, NRZ format.)

Levels: ECL, TTL, or variable-level TTL/CMOS pods. Different pods can be installed for mixed logic applications (each pod handles 8 channels). Variable level from 2.4 V to 9.9 V, programmable from HP 8175A or external pod input. Fanout: 5 ECL/ 15 LSTTL/ 10/ LSTTL loads, depending on pod. Transitions: 3/ 6/ 9 ns into 22 pF, depending on pod. Tristate: Implemented from HP 8175A or by external signal to each pod.

Analog channels (Opt 002): 2 arbitrary waveform channels, each 10-bit vertical resolution with 1024 sample points. Max sample rate: 50 MHz. See page 181.

Level ranges: 7. From 0.2 V p-p max (0.2 mV resolution) to 16 V p-p max (20 mV resolution), into 50 Ω

Source resistance: 50 Ω

Flag and clock channels: 8 flags, or 7 flags and 1 clock. Flags are set by external status (see trigger pod). Clock period can be set from 20 ns to 99 μ s, independent of bit duration. Levels: Depends on pods (see Data channels).

Timing

Bit duration: 0.02 μ s to 9.99 s, individual or global

Resolution: 3 digits. (Opt 001: 100 ps independent edge positioning on 4 channels in a 20.0 to 40.0 ns window)

Memory: 24 \times 1024 bits, up to 255 segments

Capabilities: Start, stop, continue, restart, 2 jumps, and looping

Inputs

Trigger pod: 8 lines to set flags and/or implement start, jump, output disable, stop and continue

BNC inputs: For external clock, external 1 MHz reference and start/stop

Ordering Information

HP 8175A Data/Waveform Generator

Price
\$14,900

Note: To work as a data stimulus, HP 8175A MUST be ordered with one of the following options: 003, 004, or 005, or with individual pods. To work as a waveform generator, Opt 002 must be ordered.

Opt 001 Fine Timing on 4 Channels

\$1,630

Opt 002 Dual Arbitrary Waveform Generator

\$4,745

Opt 003 Trigger Pod 15463A and 4 ECL Pods 15461A

\$5,360

Opt 004 Trigger Pod 15463A and 4 TTL Pods 15464A

\$3,725

Opt 005 Trigger Pod 15463A and 4 CMOS Pods 15462A

\$8,210

Opts 003, 004, and 005 include solder-in receptacles for the output pods and grabbers for the trigger pod. Following accessories are available for the output pods:

HP 15408A Set of 5 Grabbers

\$102

HP 15409A Set of 5 BNC Adapters

\$102

HP 15410A Set of 5 SMB Adapters

\$102

HP 15411A Set of 5 Open Coax Adapters

\$66

HP 15415A Set of 5 Mini-probes

\$102

HP 15430A Cable Master/Slave

\$87

Opt 908 Rack Flange Kit, p/n 5062-3978

\$37

Opt 910 Operating and Service Manual

\$295

Opt 916 Additional Operating Manual

\$73

Extended warranty options (see page 663) available on request