DATA GENERATORS & DATA ANALYZERS
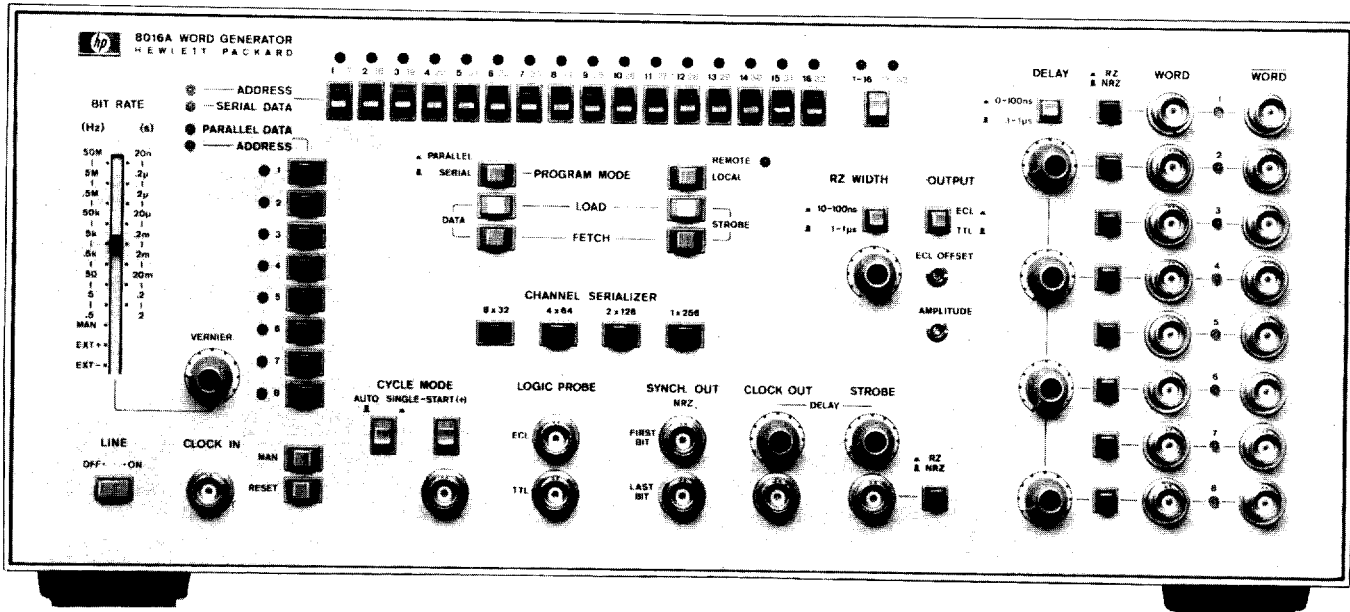## 9-Bit Parallel, 32-Bit Serial, 50 MHz Word Generator
Model 8016A

- 2 complementary outputs per channel, RZ/NRZ formats
- Variable RZ width, 4 delay channels

- Channel serializer
- TTL/ECL output levels selectable

HP 8016A

The HP 8016A is a 9-channel data generator capable of serialization up to 256 bits. For the digital designer the HP 8016A is a natural companion to multichannel data display devices such as logic analyzers. As a bench or systems component, the HP 8016A provides programmable digital patterns plus adjustable timing parameters necessary for testing ICs and circuit boards.

Functional Test

Bit pattern programmability combined with fast cycle time (50 MHz clock) make the HP 8016A especially effective in simulating worst case conditions, e.g. high speed IC testing. The HP 8016A saves time in component evaluation environments because test setups can be rapidly built and reconfigured to meet the demands of testing small quantities of a wide variety of IC types.

Parametric Test

Complete testing of digital circuits and systems requires not only digital patterns for functional test but control of the analog parameters of the pulses as well. Adjustable pulse widths, levels, and interchannel delays contribute to measurements such as setup and hold times, clock pulse width sensitivities, and system sensitivity to propagation delay variations. To meet these testing requirements, the HP 8016A includes 6 independent delay circuits. Output levels of the HP 8016A's 50 Ω output amplifiers are selectable for ECL or TTL test specifications and can be adjusted. In addition, a choice of RZ or NRZ formats with variable RZ pulse width is provided.

Specifications

Data capacity: 8 data channels plus 1 strobe channel, each 32 bits. 8 data channels can be serialized as four 64-bit channels, two 128-bit channels or a single 256-bit channel.
Data loading: address channel, enter 32 serial bits in that channel. Alternatively, address parallel word, enter (max 8) bits in that word. Addressing/entry by pushbuttons/LEDs or via HP-IB (option 001).

Data Outputs: (50 Ω source into 50 Ω load).
  Format: independent RZ/NRZ selection in each channel.
  RZ width: single continuous adjustment in ranges 10-100 ns, 0.1-1 μs.
  Width jitter: ≤02% + 50ps
Complement: simultaneous normal and complement outputs for each channel.
Delay: channels 2, 4, 6, 8 can be delayed independently within the ranges 0-100 ns, 0.1-1 μs with respect to odd channels.
  Jitter: ≤ 0.1% + 5 ps
  Skew (undelayed): ± 1 ns
Levels: ECL/TTL selectable
Transition times: ≤ 3.0 ns (ECL ≤ 2.5 ns)
Bit Rate
Internal: 0.5 Hz to 50 MHz.
External: dc to 50 MHz, or manual.

Data Cycling
Auto: Sequence recycles continuously.
Single cycle: Sequence is triggered/gated by external pulse/level.

General
Operating temperature: 0°C to +50°C.
Power: 100/120/220/240 Vrms; +5%, −10%; 48 Hz to 66 Hz, 200 VA (maximum)
Weight: net, 14.5 kg (32 lb). Shipping 16 kg (35.3 lb).
Size: 177 H x 426 W x 422 mm D (7" x 16.8" x 16.6").

Ordering Information	Price
HP 8016A Word Generator	$8700
Opt 001: HP-IB for data loading*	add $800
Opt 907: Front Handle Kit (Part No. HP 5061-0090)	add $65
Opt 908: Rack Flange (Part No. HP 5061-0078)	add $35
Opt 909: Opt 907, 908 combined (Part No. HP 5061-0084)	add $90
Opt 910: Additional Operating and Service Manual	add $48

*HP-IB cables: Refer to page 121.