

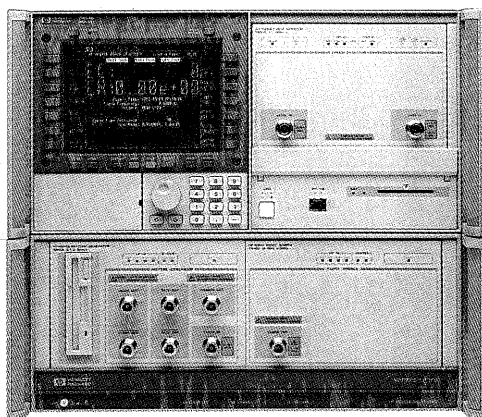
TELECOMMUNICATIONS & DATA COMMUNICATIONS TEST

Gigabit Error Performance Analyzer and Pattern Generator

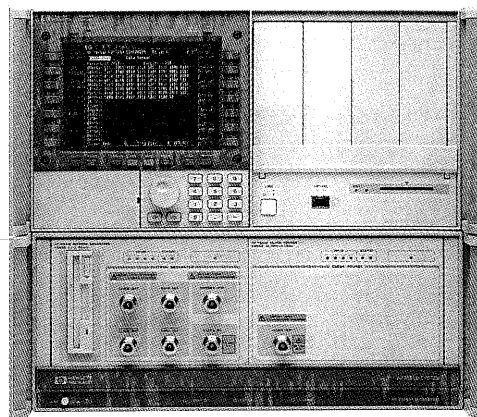
HP 71603B, 71604B

- Low-phase-noise clock source
- User-programmable patterns up to 4 Mbits with screen-based editor
- Seamless switching between two programmed patterns
- Trigger anywhere in pattern
- True complementary outputs

- Automatic setting of clock/data phase and data-decision point
- High-resolution setting of decision threshold and phase alignment
- Simultaneous detection of errored ones and errored zeros
- User-formattable results



HP 71603B



HP 71604B

HP 71603B Error Performance Analyzer

The HP 71603B error performance analyzer consists of pattern generator, synthesized clock source, and error detector modules configured in the HP 70000 modular measurement system (MMS). The HP 71603B covers the range from 100 Mb/s to 3 Gb/s and features automatic clock/data alignment for rapid set-up of the error detector. The HP 71603B makes BER measurements on waveforms badly distorted by noise, jitter, and intersymbol interference through the high resolution setting of decision threshold and phase adjustment. The HP 71603B also features the simultaneous counting of errored ones and errored zeros to locate the source of pattern-dependent errors. Error distribution is analyzed by counting errored and error-free intervals between one second and one millisecond.

Applications

The HP 71603B works with any application that involves serial movement of data at gigabit rates. Some of these applications are listed below.

- Components: Gallium-arsenide and high-speed silicon; optical
- Modules/systems: SONET and SDH; broadband video and ATM; submarine cable; high-speed LAN and computer peripheral communication; general lightwave

Specifications

Bit Rate: 100 Mb/s to 3 Gb/s

Patterns and Data Outputs: As for pattern generators

Data Input: 0.5 V to 2 V p-p amplitude

Decision Threshold Range: +1 to -3 V, resolution 1 mV

Termination Voltage: Selectable 0 V or -2 V nominal

Clock/Data Delay: ± 1 ns; resolution 1 ps

Errors Detected: Errored ones, zeros, and all logic errors

Measurements: Error count, ratio, errored seconds, deci-seconds, centi-seconds, milliseconds and G.821 analysis

Results Logging: Time-stamped events logged to external printer

Ordering Information

HP 71603B 100 Mb/s to 3 Gb/s Error Performance Analyzer

Individual modules can be ordered for configuring custom-designed systems:

HP 70311A 3 GHz Signal Generator Module

HP 70841B 100 Mb/s to 3 Gb/s Pattern Generator Module

HP 70842B 100 Mb/s to 3 Gb/s Error Detector Module

HP 15680A RF Accessory Kit

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 665

HP 71604B Pattern Generator

The HP 71604B pattern generator consists of pattern generator and synthesized clock source modules configured in the HP 70000 modular measurement system (MMS). The HP 71604B covers the range from 100 Mb/s to 3 Gb/s and features standard pseudo-random test patterns up to $2^{31}-1$ bits long. Users can program and run variable length test patterns from 1 bit to 4 Mbits long or create two equal length patterns up to 2 Mbits long and switch seamlessly between them. User-programmable patterns are created using the screen-based editor or are transferred to the pattern generator on an MS-DOS format, 3 $\frac{1}{2}$ -in floppy disk. dc-coupled, closely-matched complementary clock and data outputs simplify connection to high-speed logic devices.

Applications

The same as HP 71603B error performance analyzer shown on this page.

Specifications

Bit Rate: 100 Mb/s to 3 Gb/s; resolution 1 Hz

Rise Time (20% to 80%): <90 ps

Patterns: $2^{31}-1$, $2^{23}-1$, $2^{15}-1$, $2^{10}-1$, 2^7-1 ; zero substitution variable mark density patterns; variable length user patterns from 1 bit to 4 Mbits

Data and Data Outputs: ECL or variable 0.25 V to 2 V p-p amplitude into 50 Ω , high level +1 V to -3.75 V

Clock/Data Delay: ± 1 ns; resolution 1 ps

Ordering Information

HP 71604B 100 Mb/s to 3 Gb/s Pattern Generator
Individual modules can be ordered for configuring custom-designed systems:

HP 70311A 3 GHz Signal Generator Module

HP 70841B 100 Mb/s to 3 Gb/s Pattern Generator Module

HP 15680A RF Accessory Kit