

# TELECOMMUNICATIONS & DATA COMMUNICATIONS TEST

## Gigabit Error Performance Analyzers and Pattern Generators

### HP 71603B, 71604B, 71612A Series

- User-programmable patterns with screen-based editor
- Hitless switching between two programmed patterns
- Trigger anywhere in pattern
- Automatic setting of clock/data phase and data decision threshold
- High-resolution setting of decision threshold and phase alignment

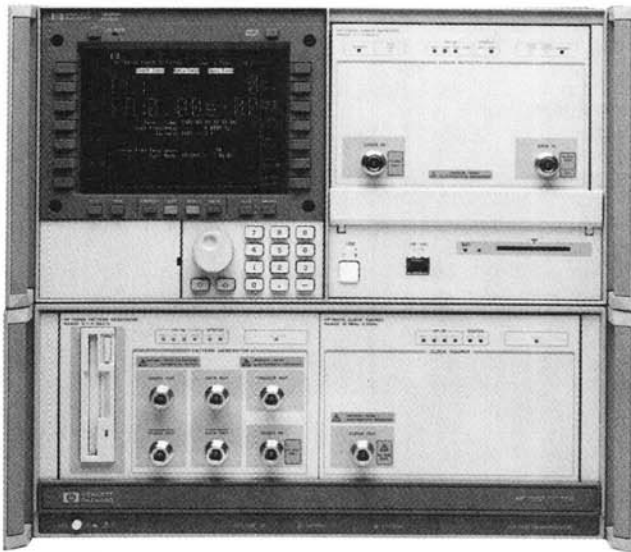
- 8 Mb programmable patterns
- Fast transition times, low jitter
- Burst mode capability for fiber-loop testing
- 4 sub-rate outputs
- Location of specific errored bits

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Melrose, MA 02176-6024

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781-665-0780 FAX



HP 71603B



### HP 71603B 3 Gb/s 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 100 Mb/s to 3 Gb/s and features automatic clock/data alignment for rapid setup of the error detector. The HP 71603B makes measurements on waveforms badly distorted by noise, jitter, inter-symbol interference through the high-resolution setting of decision threshold, and phase adjustment.

### HP 71604B 3 Gb/s Pattern Generator

The HP 71604B covers the range 100 Mb/s to 3 Gb/s and features 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 Mb long on MS-DOS compatible disks.

#### Applications

- **Component test:** GaAs and high-speed silicon; optical components
- **Module/system test:** SONET and SDH; broadband video and ATM; submarine cable; high-speed LAN and computer peripheral communication

#### Specifications

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

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

**Patterns:**  $2^7 - 1$  to  $2^{31} - 1$ , user patterns to 4 Mb

**Data and Data Outputs:** 0.25 V to 2 V p-p amplitude; high level +1 V to -3.75 V

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

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

**Clock/Data Delay:**  $\pm 1$  ns; resolution 1 ps

**Measurements:** Error count, ratio, errored-intervals, G.821 analysis

#### Ordering Information

**HP 71603B** Error Performance Analyzer

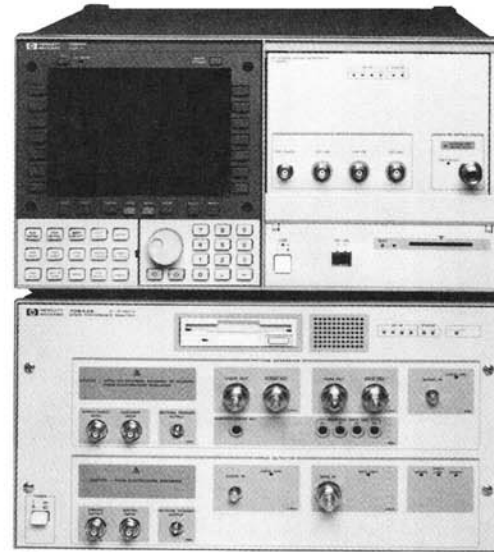
**HP 71604B** Pattern Generator  
Individual modules can be ordered separately

**Price**

\$110,000

\$76,000

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 654.



HP 71612A



### HP 71612A Series 12 Gb/s Testers

The HP 71612A Series of 12 Gb/s products includes an error performance analyzer, pattern generator and error detector, which have similar functionality to the 3 Gb/s series of analyzers. User pattern length has been extended from 4 Mb to 8 Mb, and the HP 71612A Series offers optional Error Location Analysis. The HP 71612A Option UHF error performance analyzer and HP 71612A Option UHG pattern generator have four subrate pattern outputs at one quarter of the main data output rate.

#### Applications

Similar to the HP 71600B Series of products but with increased speed (12 Gb/s) and pattern size (8 Mb). These new features enable simulation of SONET and SDH frames at the STM-64/STS-192 (9.953 Gb/s) transmission rate and margin testing up to 12 Gb/s. The burst mode feature gives the capability to do fiber-optic loop tests. Error Location Analysis allows the identification of pattern-dependent errors for user-defined patterns.

#### Specifications

**Bit Rate:** 1 Gb/s to 12 Gb/s (optional 100 Mb/s to 12 Gb/s)

**Patterns:** Same as the HP 71603B with user patterns extended to 8 Mb

**Transition Times:** (10% to 90%) < 35 ps

**Jitter:** < 20 ps p-p

**Data and Data Outputs:** 0.5 V to 2 V p-p amplitude; high level +1.5 V to -3.5 V

**Data Input:** 0.5 V to 1 V p-p amplitude (< 100 mV @ 10 Gb/s typ)

**Decision Threshold Voltage:** +1 V to -3 V

**Termination Voltage:** Selectable 0 V or -2 V into 50  $\Omega$

**Clock/Data Delay:**  $\pm 1$  ns up to 3 Gb/s,  $\pm 1$  clock period 3 Gb/s to 12 Gb/s

**Measurements:** Same as HP 71603B with the addition of optional Error Location Analysis

#### Ordering Information

**HP 71612A Opt UHF** Error Performance Analyzer

**HP 71612A Opt UHG** Pattern Generator

**HP 71612A Opt UHH** Error Detector

**Price**

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