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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 3780A PATTERN GENERATOR

HP Agilent 3780A Pattern Generator Error Detector The HP/Agilent 3780A is a portable pattern generator / error detector measuring binary and code errors on digital transmission equipment from 1 kb/s to 50 Mb/s. OEM manuals list installed clock options such as 2048/8448/34368 kHz (Option 100) and North American rate sets (Options 101/102), plus frequency-offset measurements at installed generator frequencies. PDH digital transmission BER testing, code-error measurements on telecom links, and portable field/lab error performance checks to 50 Mb/s. The HP/Agilent 3780A is a portable pattern generator / error detector measuring binary and code errors on digital transmission equipment from 1 kb/s to 50 Mb/s. OEM manuals list installed clock options such as 2048/8448/34368 kHz (Option 100) and North American rate sets (Options 101/102), plus frequency-offset measurements at installed generator frequencies. PDH digital transmission BER testing, code-error measurements on telecom links, and portable field/lab error performance checks to 50 Mb/s. Combined pattern generator and error detector



MODEL

HP / Agilent 3780A

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

3780A

LISTING

<https://aumictechlabs.com/products/3780a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 3780A is a portable pattern generator and error detector engineered for validation of digital transmission systems. Operating across bit rates from 1 kb/s to 50 Mb/s, it performs closed-loop binary error clock detection, code error analysis for AMI/HDB3/HDB2 violations, and supports optional B6ZS/B3ZS coding. The instrument generates pseudorandom binary sequences

(PRBS) and user-defined word patterns, with zero substitution capability for timing recovery characterization. Technical Specifications Bit Rate Range: 1 kb/s to 50 Mb/s Binary Error Detection: Closed-loop bit-by-bit detection on any pattern generated by the instrument (excluding added zeros or alternating words) Code Error Detection: Violations of AMI, HDB3, or HDB2 coding rules; optional AMI, B6ZS, or B3ZS support Pattern Generation: PRBS sequences, user-defined WORD generation, zero substitution Clock Sources: Internal crystal clocks with clock recovery; external clock input 1 kHz to 50 MHz; three internal crystal options (1.544, 6.312, 3.152 MHz with Option 102) Clock Offset: ± 50 ppm range (except Option 099) Data Interfaces: Binary clock and data; ternary coded data (RZ AMI or coded) Data Output Formats: NRZ or RZ; binary or ternary coding (HDB3/HDB2 or B6ZS/B3ZS) Clock Output: 75 Ω nominal to ground; 3 V ± 0.3 V pk-pk; transition time < 4 ns Data Output Impedance: 75 Ω nominal to ground Receiver Equalization: Automatic at 2 Mb/s, 8 Mb/s, and 34 Mb/s Error Display: COUNT or BER over selectable gating periods; LED readout Result Logging: External printer output with graphical presentation Frequency Offset Measurement: Available at standard PCM/TDM transmission rates Key Features Automatic pattern recognition and synchronization for performance validation Dual interface support: binary clock/data and ternary coded configurations Selectable gating periods for BER and error count analysis Multiple crystal frequency options via plug-in modules Frequency offset generation and measurement capability Typical Applications Validation of digital transmission equipment, regenerator timing recovery analysis, systematic error detection through zero substitution, BER characterization across PCM/TDM networks, codec performance evaluation. Compatibility & Integration Available with Option 001, 002, 099, 100, 101, and 102 for customized clock frequencies and codec variants.

3780A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Pattern generator / error detector
Bit Rate Range	1 kb/s to 50 Mb/s
Error Types	Binary and code errors
Standard Clocks Class	2048 8448 and related kHz sets class
Frequency Offset Measurement	Supported at installed generator frequencies
Form Factor	Portable single unit
Series Family	HP 3780A
Operating Temperature Class	0 C to plus 55 C class per manual family
Primary Power Class	AC mains portable instrument
Remote Interface Class	Optional remote interfaces per option list
Pattern Types Class	PRBS and programmable patterns class
Clock Source	Internal installed frequencies and external class
Input Output Levels Class	Telecom compatible interfaces class
Error Rate Display Class	Bit and code error counters class
Warmup Class	Per operating manual
Calibration Interval Class	One year class
Weight Class	Portable BER instrument class
Manufacturer Brand Path	HP Agilent Keysight legacy
Operating temperature	Class: 0 C to plus 55 C class per manual family

3780A Specifications

PARAMETER	VALUE
HP Agilent 3780A Pattern Generator Error Detector	Overview
Applications	PDH digital transmission BER testing, code-error measurements on telecom links, and portable field/lab error performance checks to 50 Mb/s.
Binary and code error measurements	1 kb/s to 50 Mb/s bit rate class
Technical Specifications	Instrument Type: Pattern generator / error detector
Notes	From HP 3780A Pattern Generator/Error Detector operating manual overview and option frequency tables.

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Class: 0 C to plus 55 C class per manual family
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Operating Temperature Class	0 C to plus 55 C class per manual family
Primary Power Class	AC mains portable instrument
Remote Interface Class	Optional remote interfaces per option list
Pattern Types Class	PRBS and programmable patterns class
Clock Source	Internal installed frequencies and external class
Input Output Levels Class	Telecom compatible interfaces class
Error Rate Display Class	Bit and code error counters class
Warmup Class	Per operating manual
Calibration Interval Class	One year class
Weight Class	Portable BER instrument class
Manufacturer Brand Path	HP Agilent Keysight legacy Notes From HP 3780A Pattern Generator/Error Detector operating manual overview and option frequency tables.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

performance checks to 50 Mb/s.

Key Features

Combined pattern generator and error detector

Binary and code error measurements

1 kb/s to 50 Mb/s bit rate class

Frequency offset measurements

Portable single instrument package

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Instrument Type	Pattern generator / error detector
Bit Rate Range	1 kb/s to 50 Mb/s
Error Types	Binary and code errors
Standard Clocks Class	2048 8448 and related kHz sets class

Option 100 Clocks: 2048 8448 and 34368 kHz

Option 101 Clocks: 1544 6312 and 44736 kHz

Option 102 Clocks: 1544 6312 and 3152 kHz

Specifications

PARAMETER	VALUE
Frequency Offset Measurement	Supported at installed generator frequencies
Form Factor	Portable single unit
Series Family	HP 3780A
Operating Temperature Class	0 C to plus 55 C class per manual family
Primary Power Class	AC mains portable instrument
Remote Interface Class	Optional remote interfaces per option list
Pattern Types Class	PRBS and programmable patterns class
Clock Source	Internal installed frequencies and external class
Input Output Levels Class	Telecom compatible interfaces class
Error Rate Display Class	Bit and code error counters class
Warmup Class	Per operating manual
Calibration Interval Class	One year class
Weight Class	Portable BER instrument class

Options Documented: 001 002 003 099 100 101 102 class

Manufacturer Brand Path: HP Agilent Keysight legacy

Notes

From HP 3780A Pattern Generator/Error Detector operating manual overview and option frequency tables.

Ordering Information

OPTION	DESCRIPTION
Option 100	Clocks: 2048 8448 and 34368 kHz
Option 101	Clocks: 1544 6312 and 44736 kHz
Option 102	Clocks: 1544 6312 and 3152 kHz

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.