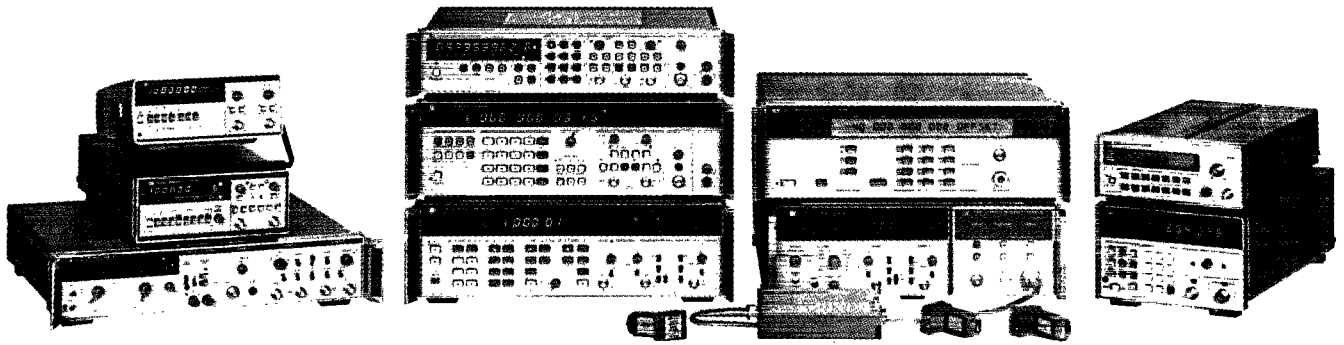


ELECTRONIC COUNTERS

General Information



The Hewlett-Packard counter family includes a broad selection of frequency and time-interval measurement options and a selection of modulation domain analyzers for advanced measurement and analysis requirements.

Electronic Counters

Hewlett-Packard offers the industry's broadest line of electronic counters and counter/timers: 31 models. Starting with the first frequency-measurement projects in the 1940s, Hewlett-Packard has pioneered the major technologies enabling today's electronic counters and modulation domain analyzers.

Electronic counter/timers are used throughout most technical industries for measuring and analyzing frequency, phase, and time-interval signal characteristics. The breadth of the HP offering allows the best product to be selected for each application. An ideal functional and performance fit delivers the greatest value: the best and most cost-effective solution.

HP counter/timers offer:

- High measurement accuracy
- Fast system throughput/HP-IB capability
- Low cost of ownership
- Ease of use
- Data reduction on many models
- Triggering simplicity

New Measurement Technology

Modulation domain products feature "continuous count" technology. Unlike traditional counters, these products do not stop between measurements to process data. Rather, they measure continuously and process results on-the-fly. As a result, new kinds of measurements are made possible.

Modulation domain products include those listed below.

- **HP 53310A:** Combines affordability and ease of use.
- **HP 5372A:** Provides increased functionality and higher performance.
- **HP 5373A:** Is tuned for complex signal modulations on pulsed and non-repetitive signals.
- **HP E1725A** Time Interval Analyzer: designed specifically for measuring and analyzing mass storage devices.
- **HP E1740A** 150 MHz Time Interval Analyzer: high-performance analysis for VXI systems.

For more information on modulation domain products, see the section starting on page 182.

Counter Products Basic and High-Performance Universal Counters

Universal counters, also called counter/timers, offer the ability to measure frequency and time intervals. Many models measure period, ratio, statistics, voltage, and totalize. Higher-performance products provide complete, automatic characterization of rise time, pulse width, and other signal parameters. Many options, such as frequency extension, voltage measurement, portable battery operation, higher performance timebases, and systems capability (HP-IB), are also available to customize the product to your specific needs.

Two new high-performance universal counters have been added to the counter product line: the HP 53131A and the HP 53132A.

The HP 53131A is designed for manufacturing test, troubleshooting, and service. This counter allows you to easily make highly reliable frequency and timing measurements. Featured are extensive in-box analysis, automatic limit testing, analog display mode, single button recall, and more. The HP 53131A's half-rack size and light weight make it well suited for both benchtop and rackmounting.

The HP 53132A is designed for high-performance ATE systems. It combines the functionality of the HP 53131A with up to 12 digit/s measurement resolution and data transfer rates up to 1000 fully-formatted measurements per second over the HP-IB.

- **HP 53131A:** New addition to product line, increased functionality.
- **HP 53132A:** New addition to product line, high resolution and data rates.
- **HP 5314A:** An affordable portable.
- **HP 5315A:** The high-performance portable.
- **HP 5316B:** The low-cost systems counter.
- **HP 5334B:** High performance at a moderate price.
- **HP 5335A:** Top performance in universal counters.

Precision Time Interval Counter

The HP 5370B universal time interval counter is optimized for precision time-interval measurements and offers time-interval resolution of 100 ps rms. It measures frequency and period (with increased accuracy per unit time compared to other counters) from dc to 100 MHz. Statistics, external trigger, systems interface (HP-IB), and other features are all standard.

- **HP 5370B:** The standard for precision time-interval measurements.

Basic RF Frequency Counters

These low-cost products provide frequency measurements dc to 3 GHz for bench and systems. HP-IB is standard. The reciprocal (high-accuracy) measurement technique is used; battery and extended-accuracy timebase are available.

- **HP 5384A:** The economical counter for systems and field service.
- **HP 5385A:** The medium-frequency, affordable, systems and field service counter.
- **HP 5386A:** The high-end (3 GHz) compact RF counter.

Microwave and Millimeter-Wave Frequency Counters

These products provide fundamental high-performance frequency measurements, dc to 110 GHz. Many enhancements—power measurement, battery operation, systems interface (HP-IB), and high-accuracy time bases—are available standard or as options.

Pulse counters add the capability to automatically measure and profile burst or pulsed microwave or millimeter-wave signals.

- **HP 5361B:** Profiles pulsed/CW microwave frequencies.
- **HP 5347A/5348A:** Portable CW microwave counter plus power meter for telecommunications service.
- **HP 5350B/5351B/5352B:** CW microwave, 10 Hz to 46 GHz.

Mature Products

For information on the mature HP counter products see pages 208 and 209.