KEYSIGHT TECHNOLOGIES (AGILENT HP)

5343A

The Keysight (HP / Agilent) 5343A is an automatic continuous-wave (CW) microwave frequency counter designed for highly accurate frequency measurements up to 26.5 GHz. Known for its excellent sensitivity, high resolution 11-digit LED display, and robust design, the 5343A is a standard in RF and microwave labs. With options for HP-IB (GPIB) interfacing, digital-to-analog conversion, and high-stability oven timebases, it offers excellent performance and flexibility for legacy and modern test environments.

SPECIFICATIONS

General

Interfaces	HP-IB (Option 011)
Display	Eleven-digit LED display

Physical

Power Supply	100 / 120 / 220 / 240 V AC (+5%, -10%), 48 to 66 Hz
Operating Temperature	0 to 50 °C °C
Dimensions (W×H×D)	425.5 mm × 132.6 mm × 498 mm mm
Weight	8.2 kg kg

Frequency Measurement Specifications

Frequency Range Channel 1	500 MHz to 26.5 GHz
Frequency Range Channel 2	10 Hz to 520 MHz
Sensitivity Channel 1	-33 dBm (500 MHz to 12.4 GHz), -28 dBm (12.4 GHz to 18 GHz), -23 dBm (18 GHz to 26.5 GHz)
Sensitivity Channel 2	10 mV RMS (10 Hz to 520 MHz)
Maximum Input Level Channel 1	+7 dBm
Maximum Input Level Channel 2	1 V RMS (50 Ω), 125 V RMS (1 MΩ, <= 1 kHz)
Damage Level Channel 1	+25 dBm
Input Impedance Channel 1	50 Ω nominal
Input Impedance Channel 2	50 Ω or 1 MΩ nominal (selectable)
Input Coupling Channel 1	AC coupled
Input Coupling Channel 2	AC or DC (switch selectable)
Acquisition Time	< 200 ms
Input Connector Channel 1	APC-3.5 (male)
Input Connector Channel 2	BNC (female)

Timebase & Reference Oscillator

Standard Reference Oscillator Frequency	10 MHz
Aging Rate Monthly	< 1 x 10^-7 / month
Temperature Stability	< 1 x 10^-6 over 0 °C to 50 °C
External Reference Input Frequency	1, 2, 5, or 10 MHz
External Reference Input Coupling & Termination	AC coupled, 1 kΩ nominal input impedance
Internal Reference Output Frequency	10 MHz

System Interfaces & Connectivity

GPIB Interface Support	Optional (Option 011)

Options & Accessories

Digital-to-Analog Converter Option	Option 004
High Stability Oven Timebase Option	Option 001
Rear Panel Connector Conversion Option	Option 002

Power Requirements

Power Consumption	100 VA max

Environmental & Compliance

Storage Temperature Range	-40 °C to 75 °C

Performance

Frequency Resolution	1 Hz to 1 MHz (selectable in decade steps)
Gate Time	1 ms to 1 s (resolution dependent)
Tracking Speed	1 MHz/s (normal mode), 800 MHz/s (fast tracking mode)

Inputs & Outputs

Internal Reference Output Level	> 2.4 V p-p into 50 Ω

Standards & Interface

GPIB Interface Capabilities	SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT1, C0

Input Characteristics

Maximum Damage Level Channel 2	+30 dBm (1 W) continuous
Channel 1 Low Pass Filter	10 kHz nominal (switch-selectable)

Reference Oscillator Options

Oven Timebase Aging Rate (Option 001)	< 5 × 10^-10 per day (after 24-hour warm-up)
Oven Timebase Temperature Stability (Option 001)	< 7 × 10^-9 over 0 °C to 50 °C
Oven Timebase Line Voltage Stability (Option 001)	< 1 × 10^-10 for ±10% line voltage change

Analog Output Options

DAC Output Voltage Range (Option 004)	0 to 0.999 V in 1 mV steps (corresponding to selected 3 digits of the display)

Options

Precision Input Connector Option (Option 006)	Replaces standard APC-3.5 male connector with Type N connector (decreases upper frequency limit to 18 GHz)
30 GHz Frequency Range Extension Option (Option 005)	Extends Channel 2 upper limit to 30 GHz

Electrical & Power

Line Voltage Requirements	100 V / 120 V / 220 V / 240 V AC (+5%, -10%; switch-selectable)
Line Frequency Range	48 Hz to 66 Hz

TECHNOLOGY

Heterodyne Converter

APPLICATIONS

RF & Microwave Frequency Measurement