

	TCX0	Option 001	Option 010
Aging Rate	1 × 10 <sup>-7</sup> /month	5 × 10 <sup>-10</sup> /day	2 × 10 <sup>-9</sup> /year
Short Term	1 × 10 <sup>-9</sup> /s	1 × 10 <sup>-10</sup> /s	1 × 10 <sup>-10</sup> /s
Temperature 0° to 50° C	1 × 10 <sup>-9</sup>	1 × 10 <sup>-9</sup>	1 × 10 <sup>-9</sup>
Line 10% change	1 × 10 <sup>-7</sup>	1 × 10 <sup>-10</sup>	1 × 10 <sup>-10</sup>
Warmup to <5 × 10 <sup>-9</sup> @ 25° C		10 min	10 min

Table 1. Time Base (10 MHz).

**Input 2**

**Frequency range:** 10 Hz to 525 MHz

**50 Ω:** 10 MHz to 525 MHz

**1 MΩ:** 10 Hz to 80 MHz

**Sensitivity:** Full operating environment:

**50 Ω:** 10 MHz to 525 MHz, 25 mV rms; 15 mV typical @ 25° C

**1 MΩ:** 10 Hz to 80 MHz, 25 mV rms; 15 mV typical @ 25° C

Gate Time = 1/resolution: 1 ms min

**Maximum input:** 50 Ω: +10 dBm; 1 MΩ: 1V rms

**Damage level:** 50 Ω or 1 MΩ dc to 5 kHz: 250 V (dc + ac peak);

> 5 kHz: 5.5 V rms (+ 28 dBm) + 1.25 × 10<sup>6</sup> V rms/freq

**Coupling:** ac

**Connector:** Replaceable fuse, type BNC (female)

**Accuracy:**

$$\pm 1 \text{ LSD} \pm \left( \frac{1.4 \times \text{Trigger Error}^1}{\text{Gate Time}} \pm \text{Timebase Error} \right) \times \text{Freq}$$

See Graph 2, page 193, for timebase error;

Gate time = 1/resolution = 1 ms minimum

**Impedance:** 1 MΩ nominal shunted by <70 pF or 50 Ω nominal

**Resolution:** Selectable, 1 Hz to 1 MHz

**High resolution:** 1 MΩ mode: 0.001 Hz for <100 kHz input; 0.01 Hz for <1 MHz input; 0.1 Hz for <10 MHz input; 1 Hz for >10 MHz input; 1-second gate

**Timebase output:** 10 MHz and 1 MHz, 2.4 V square wave ac coupled into 1 kΩ; 1.5V peak-to-peak into 50 Ω; rear panel BNC connectors

**External timebase:** 1, 2, 5, or 10 MHz, 0.7 V min. to 8 V max. peak-to-peak sine wave or square wave into > 1 kΩ shunted by <30 pF, via rear-panel BNC connector

**General**

**Display:** Segmented 24-character alphanumeric LCD (backlighted)  
**Built-in features:** Self-check, diagnostics, display and keyboard lock-out, overload indicator, HP-IB teach-learn mode

**Data output:** Over HP-IB bus; varies with frequency and resolution  
**Auto mode:** >100 readings/s, 10 kHz resolution, no math functions, "DUMP" mode

**Manual mode:** >120 readings/s, 10 kHz resolution, no math functions, "DUMP" mode

**Math functions:** Scale, offset, smooth (exponential averaging)

**Sample rate:** Variable from less than 50 ms between measurements to HOLD, which holds the display indefinitely or until trigger occurs.

**Display rate:** 5/s, variable over HP-IB

**Sleep mode:** Input 1 emissions reduced to < -70 dBm typical when sleep mode or Input 2 is selected.

**IF output:** Rear-panel BNC provides 30-110 MHz down-converted microwave signal at > -20 dBm into 50 Ω, ac-coupled.

**HP-IB interface functions:** SH1, AH1, T5, L4, SR1, R11, PP0, DC1, DT1, C0, E1 (see page 114)

**Operation temperature:** 0° C to 50° C

**Power requirements:** 100 VA max

**Line select:** 100 V (90 to 105 Vac rms; 47.5 to 440 Hz)

115/120 V (104/126 Vac rms; 47.5 to 440 Hz)

220 V (198 to 231 Vac rms; 47.5 to 66 Hz)

230/240 V (207 to 252 Vac rms; 47.5 to 66 Hz)

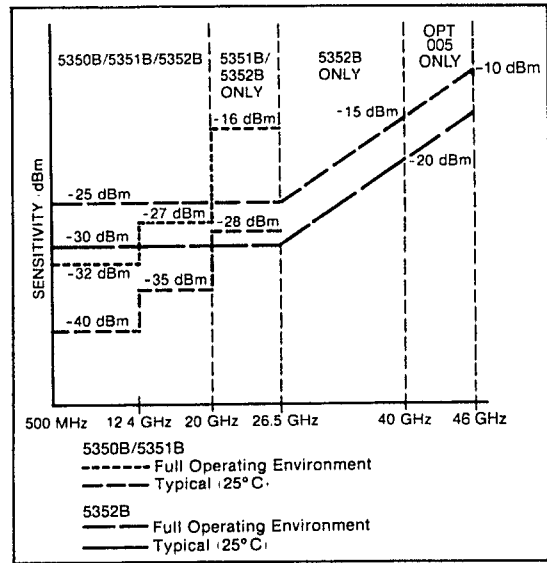
**Accessories furnished:** Power cord, manual

**Size:** 133 mm H × 425 mm W × 358 mm D (5 1/4 in × 16 1/2 in × 14 in)

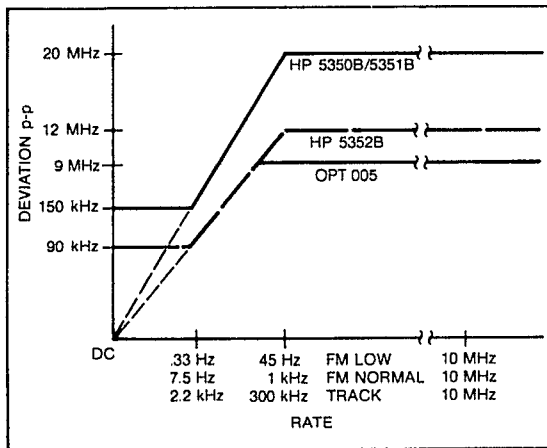
**Weight:** 11 kg (24 lb)

$$^1 \text{Trigger error} = \frac{\sqrt{(e_e^2 + e_s^2)}}{\text{Input slew rate in V/S at trigger point}} \text{ s rms}$$

Where e<sub>e</sub> = effective rms noise of counter's input channel (100 μV typical)  
 e<sub>s</sub> = rms noise of the input signal for a 500 MHz bandwidth.



Graph 1. Sensitivity.



Graph 2. FM rate tolerance.

**Ordering Information**

**HP 5350B** 20 GHz Microwave Frequency Counter \$5,700

**HP 5351B** 26.5 GHz Microwave Frequency Counter \$6,850

**HP 5352B** 40 GHz Microwave Frequency Counter \$4,000

**Options for HP 5350B/5351B/5352B:**

**Opt 001** Oven Timebase + \$780

**Opt 002** Rear-Panel Inputs (HP 5350B/51B only) + \$315

**Opt 005** Frequency Extension to 46 GHz (HP 5352B only) + \$4,050

**Opt 006** Microwave Level Limiter (HP 5350B/51B only) + \$730

**Opt 010** High-Stability Oven Timebase + \$1,560

**Opt 700** MATE Programming + \$520

**Opt 910** Additional Operating and Service Manual + \$78

**Opt 908** Rack Mount Kit for Use with Front Handles removed + \$35

**Opt 913** Rack Mount Kit for Use with Supplied Front Handles + \$37

**Opt IA3** Bellcore CLEI Barcode Sticker + \$30

**Opt W30** Extended Repair Service (see page 671) Call HP

**Opt W32** Calibration Service (see page 671) + \$865

**Additional Equipment Available:**

Transit Case (HP 9211-2643) \$430

Waveguide (3 in. straight) Adapter WR28-APC3.5 (HP 05356-20217) \$1,800

Waveguide (3 in. straight) to Coaxial Adapter

WR42-APC3.5 (HP 05356-20216) \$1,900

Adapter: In series APC 3.5 male-to-male (HP 1250-1748) \$170

Adapter: In series APC 3.5 female-to-female (HP 1250-1749) \$185

For off-the-shelf shipment, call 800-452-4844.