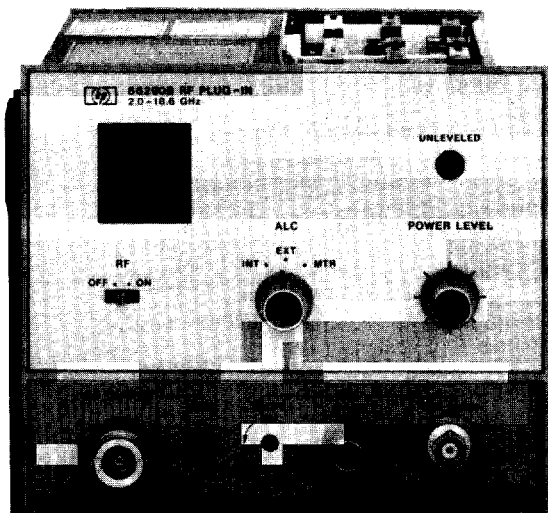


# SWEEP OSCILLATORS

## 8620 Family: Broadband Plug-Ins

Models 86290A, 86290B and 86290C

- +13 dBm 2 to 18.6 GHz with 86290C
- $\pm 30$  MHz Frequency Accuracy at 18.6 GHz



86290B

The 86290A/B/C broadband plug-ins set new standards in sweeper performance and versatility. For broadband testing, a continuous sweep from 2 to 18.6 GHz (18 GHz with the 86290A) is provided. In addition, higher frequency resolution is achieved by covering the 2 to 18.6 GHz range in three individual bands of 2 to 6.2, 6 to 12.4, 12 to 18.6 (or 18 GHz). The 86290C offers outstanding electrical performance producing  $>20$  mW swept output over the 2 to 18.6 GHz range along with excellent linearity and low spurious and harmonic content. For scalar measurements the 27.8 kHz square wave modulation from the HP 8755 Frequency Response Test Set is accepted directly through the EXTERNAL AM input. When performing phase/amplitude network analysis the interfacing between the sweeper and the HP 8410B/C Network Analyzer permits the 8410B/C to automatically phase lock over multi-octave sweeps for continuous swept 2 to 18.6 GHz phase and amplitude measurements.

### Specifications with Plug-in Installed in an 8620C Mainframe

#### Frequency Characteristics

	Band 1	Band 2	Band 3	Band 4
Range: (GHz) 86290A	2-6.2	6-12.4	12-18	2-18
86290B/C	2-6.2	6-12.4	12-18.6	2-18.6
Accuracy (25°C)				
CW mode (or $>100$ ms sweep time): (MHz)	$\pm 20$	$\pm 30$	$\pm 30$	$\pm 100$
Remote programming: (typ.)	$\pm 2.5$	$\pm 2.5$	$\pm 3.5$	—
All sweep modes: (MHz)	$\pm 30$	$\pm 40$	$\pm 40$	$\pm 80$
Marker: (MHz)	$\pm 30$	$\pm 30$	$\pm 30$	$\pm 80$
Linearity (MHz) typ.:	$\pm 8$	$\pm 8$	$\pm 8$	$\pm 30$
Frequency Stability				
With temperature: (MHz/°C)	$\pm 0.5$	$\pm 1.0$	$\pm 1.5$	$\pm 2.0$
With 10% line voltage change: (kHz)	$\pm 100$	$\pm 100$	$\pm 100$	$\pm 100$
With 10 dB power level change: (MHz)	$\pm 0.6$	$\pm 1.2$	$\pm 1.8$	$\pm 1.8$
With 3:1 load VSWR, all phases: (kHz)	$\pm 100$	$\pm 200$	$\pm 300$	$\pm 300$
With time (in 10 minute period after 30 minute warmup): typically (kHz)	$\pm 300$	$\pm 600$	$\pm 900$	$\pm 900$
Residual FM (10 kHz bandwidth CW mode): (kHz peak)	$<10$	$<20$	$<30$	$<30$

- Compatible with 8350A Mainframe via 11869A Adapter

#### Output Characteristics

##### Maximum leveled power (25°C):

86290A: +7 dBm, 2 to 18 GHz. (Opt. 004: +6.5 dBm)

86290B: +10 dBm, 2 to 18.6 GHz. (Opt. 004: +9.5 dBm)

86290C: +13 dBm, 2 to 18.6 GHz. (Opt. 004: +12.5 dBm)

Power level control range:  $>10$  dBm

	Band 1	Band 2	Band 3	Band 4
Power Variation (Max Rated Pwr)				
Internally leveled: (dB)	$\pm 0.7$	$\pm 0.7$	$\pm 0.8$	$\pm 0.9$
Externally leveled (excluding coupler and detector variation)				
Crystal detector: $-20$ to $-250$ mV for specified leveling at rated output: (dB)	$\pm 0.15$	$\pm 0.15$	$\pm 0.15$	$\pm 0.15$
Power meter: internal leveling amplifier with compensation for HP models 432A/B/C provided: (dB)	$\pm 0.15$	$\pm 0.15$	$\pm 0.15$	$\pm 0.15$
With temperature, typically (dB/°C)	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$

Residual AM in 100 kHz BW:  $>55$  dBc.

#### Spurious signals

Harmonically related signals:  $>25$  dBc.

Non-harmonics:  $>50$  dBc.

Impedance: 50 $\Omega$  nominal.

SWR:  $<1.9$  internally leveled.

RF output connector: type N female (standard) and APC-7 (Option 005).

#### Modulation Characteristics

##### External AM

Input impedance: approximately 1000 $\Omega$ .

Frequency response: typically 300 kHz leveled.

##### Square wave response

On/Off ratio:  $>30$  dB.

Symmetry: 40/60.

Attenuation for +5V input:  $>30$  dB.

##### Internal AM (1000 Hz):

Square-wave On/Off ratio:  $>25$  dB.

RF blanking On/Off ratio:  $>30$  dB.

##### External FM:

Maximum deviations for modulation frequencies

DC to 100 Hz:  $\pm 75$  MHz.

100 Hz to 2 MHz:  $\pm 5$  MHz.

##### Sensitivity (typically)

FM mode:  $-20$  MHz/V.

Phase-lock mode:  $-6$  MHz/V.

#### General

Sweep time (min): 10 ms single bands. 60 ms on 2 to 18.6 GHz band.

Auxiliary output: rear panel 2 to 6.2 GHz fundamental oscillator output, nominally  $-10$  dBm.

Slope control: front panel control allowing compensation for frequency dependent test setup losses.

Peak control: front panel control for peaking power over desired frequency range.

Frequency reference output: nom. 1 V/GHz (2–18.6 volts)  $\pm 35$  mV rear panel BNC output.

Weight: net, 4.4 kg (9.6 lb). Shipping, 5.9 kg (13 lb).

#### Ordering Information

86290A 2 to 18 GHz +7 dBm (5mW) plug-in (internal leveling standard)

86290B 2 to 18.6 GHz +10 dBm (10 mW) plug-in (internal leveling standard)

86290C 2 to 18.6 GHz +13 dBm (20 mW) plug-in (internal leveling standard)

Opt 004: rear panel RF output:

Opt 005: APC-7 RF output connector:

#### Price

\$15,250

\$16,250

\$18,750

add \$200

add \$75