

# SWEEP OSCILLATORS

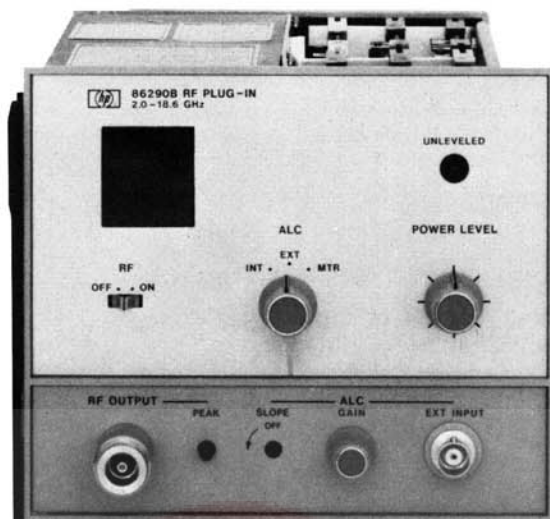
## Model 8620 Series: Broadband RF Plug-Ins

### Models 86290B and 86290C

515



- +13 dBm 2 to 18.6 GHz with HP 86290C
- $\pm 30$  MHz frequency accuracy at 18.6 GHz



HP 86290B

The HP 86290B/C broadband plug-ins offer a continuous sweep from 2 to 18.6 GHz for broadband swept testing. 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. The HP 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 in the AC detection mode, the 27.8 kHz square wave modulation from the HP 8756 or the HP 8757 Scalar Network Analyzers is accepted directly through the EXTERNAL AM input. When performing phase/amplitude network analysis the interfacing between the sweeper and the HP 8410C Network Analyzer permits the HP 8410C 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 HP 8620C Mainframe

### Frequency Characteristics

	Band 1	Band 2	Band 3	Band 4
<b>Range:</b> (GHz) HP 86290B/C	2-6.2	6-12.4	12-18.6	2-18.6
<b>Accuracy</b> (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.:	$\pm 8$	$\pm 8$	$\pm 8$	$\pm 30$
<b>Frequency Stability</b>				
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 (20 Hz – 15 kHz bandwidth CW mode: (kHz peak)	<10	<20	<30	<30

- Compatible with HP 8350 mainframe via HP 11869A adapter

### Output Characteristics

#### Maximum Levelled Power (25°C)

HP 86290B: +10 dBm, (Opt. 004: +9.5 dBm)

HP 86290C: +13 dBm, (Opt. 004: +12.5 dBm)

Power level control range: >10 dB

	Band 1	Band 2	Band 3	Band 4
<b>Power Variation</b> (Max Rated Pwr)				
Internally levelled: (dB)	$\pm 0.7$	$\pm 0.7$	$\pm 0.8$	$\pm 0.9$
Externally levelled (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 levelled.

**RF output connector:** type N female.

### Modulation Characteristics

#### External AM

**Input impedance:** approximately 10k $\Omega$ .

**Frequency response:** typically 100 kHz levelled.

#### 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

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

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

Opt 004: rear panel RF output

### Price

\$15,300

\$19,810

add \$200