

Resolution: 0.1% of full range for peak-peak entry
0.3% of full range for rms entry
0.01 dB for dBm or dBV entry

Accuracy: Relative to programmed value after self-calibration

Power Level	0.001 Hz	100 kHz	1 MHz	13 MHz
+23.98 dBm	±0.1 dB		±0.3 dB	±0.6 dB
+3.98 dBm	±0.2 dB		±0.5 dB	±0.8 dB
-36.02 dBm	±0.2 dB		±0.5 dB	+1.0 dB
-56.02 dBm	±0.2 dB		±0.5 dB	+1.0 dB

Squarewave and Pulse Characteristics

Rise/fall time: :515 ns, 10% to 90% at full output
Overshoot: < 5% of peak-to-peak amplitude at full output
Pulse width range: 1% to 99% of period or 20 ns, whichever is greater
Pulse width resolution: 0.01% of period
Pulse width accuracy: <±1% of period ±20 ns
Amplitude accuracy: ±2%, 0.001 Hz to 100 kHz

DC Offset

Range: (See also option 002, high voltage output)
DC only: 0 to ±5 V
DC+AC: DC+AC peak <5V; Max. DC offset is affected by AC range, Maximum is 4.5 V decreasing to 4.5 mV on lowest range
Resolution: 3 digits
Accuracy: (After self-calibration)
DC only: ±75 mV
DC+AC: (Sinewave) 10 Hz to 1 MHz: *2% of range
1 MHz to 13 MHz: ±5% of range

Phase Offset

(Channel A vs B in Two-Phase mode)
Range: ±720 degrees
Resolution: 0.01 degree
Accuracy: After self-calibration, for equal-level sinewaves 1 V to 10 V peak-peak

0.1 Hz to 10 Hz	±0.5 degrees
10 Hz to 100 kHz	±0.2 degrees
100 kHz to 1 MHz	±0.3 degrees
1 MHz to 13 MHz	±2.0 degrees

Amplitude Modulation

Specifications apply to Channel A and Channel B with external modulation or to Channel A internal modulation with Channel B as the modulation source. External modulation is allowed in all modes; internal modulation is allowed only in the two-channel mode.
Waveforms: Sine, square, or (external only) pulse, DC, etc.
Frequency Range: Carrier: DC to 13 MHz
Modulation: DC to 100 kHz
Modulation Depth: 0 to 100%

Phase Modulation

Specifications apply to Channel A and Channel B with external modulation or to Channel A internal modulation with Channel B as the modulation source. External modulation is allowed in all modes; internal modulation is allowed only in the two-channel mode.
Waveforms: Sine, square, or (external only) pulse
Frequency Range: Carrier: DC to 13 MHz
Modulation: DC to 5 kHz
Phase Deviation: 0° to 360°

Frequency Sweep

Sweep Types: Linear, discrete
Sweep Forms: Triangle, ramp
Sweep Time: 5 ms to 1000 s
Sweep Elements (Discrete): 2 to 63 frequency pairs and dwell times, user defined; dwell times = 5 ms to 1000 s/element
Maximum Sweep Width: 13 MHz

Output Combiner

Channel A and B are combined on the Channel A output. B output is off. Combiner may be used in the two-channel, two-phase, and two-tone modes. DC offset is automatically set to 0 V.

Frequency Range: DC to 13 MHz

Return Loss: >20 dB

Auxiliary Outputs (All Connectors are Rear-Panel BNC)

10 MHz reference- +3 dBm output to phase lock other instruments to the HP 3326A

10 MHz oven output: +3 dBm oven-stabilized frequency reference (option 001 only)

X-axis drive: Linear ramp proportional to sweep time

Z-axis blank: TTL low during sweep

Sweep Marker TTL low at selected marker frequency in sweep

20-33 MHz LO: >100 mV square wave output offset 20 MHz from Channel B output

Auxiliary Inputs (All Connectors are Rear-Panel BNC)

Reference Input: For phase-locking to an external frequency reference. Signal of 1,2,5, or 10 MHz, ±10 ppm, 0 to +20 dBm

External Trigger Input: TTL level to initiate linear or discrete sweep on high to low transition

Channel A and B external phase calibration inputs

Channel A and B external amplitude modulation inputs

Channel A and B external phase modulation inputs

HP-IB Remote Control

Compatible with IEEE Standard 488-1978

Interface Functions:

SH I, AH I, T6, L4, SRI, RLI, PPO, DC 1, DTI, CO, EI

Option 001 High Stability Frequency Reference

Stability: ±5X10⁻⁶/week after 72 hours continuous operation
±1X10⁻⁷/month after 15 days continuous operation

Option 002 High Voltage Output

Multiplies the output level by 4 and expands the allowable DC offset range. Specifications apply to both channels in all modes with the internal combiner off.

Frequency range: DC to 1 MHz

Output Impedance: <20, DC to 50 kHz; <100, 50 kHz to 1 MHz

Amplitude range: 4 mV to 40 Vpp into >1 kΩ, <200 pF load without DC offset (must be entered in peak-to-peak units only)

DC offset: ±20 V, independent of amplitude range. DC + AC peak must not exceed 20 V

Option 003 Rear Terminal Outputs

Provides Channel A and B main outputs only on rear panel BNC's. Front panel main outputs are removed. Specifications unchanged.

General

Power. 100/120/220/240 V, +5%, -10%, 48 to 66 Hz; 120 VA, 150 VA with all options, 10 VA standby

Weight: 27 kg (60 lb) net, 37 kg (81 lb) shipping

Dimensions: 177 mm H x 425.5 mm W x 497.8 mm D (7 x 16³/₈ x 19³/₈"

Accessories Available

HP 15507A Isolator. For isolation of signal ground between frequency reference and instrument input/output

HP 9211-2656 transit case for protection in transportation and storage

Ordering Information

	Price
HP 3326A Two-Channel Synthesizer	\$9,760
Option 001 High Stability Frequency Reference	\$665
Option 002 High Voltage Output	\$305
Option 003 Rear Terminal Outputs (Rear only)	N/C
Option 907 Front Handle Kit	\$61
Option 908 Rack Flange Kit	\$36
Option 909 Rack Flange and Handle Combination Kit	\$92
Option 910 Extra Operating Manual	\$102
Option 914 Delete Service Manual	less \$115
Option W30 Ext. Warranty	\$190