

## Function and Arbitrary Waveform Generators

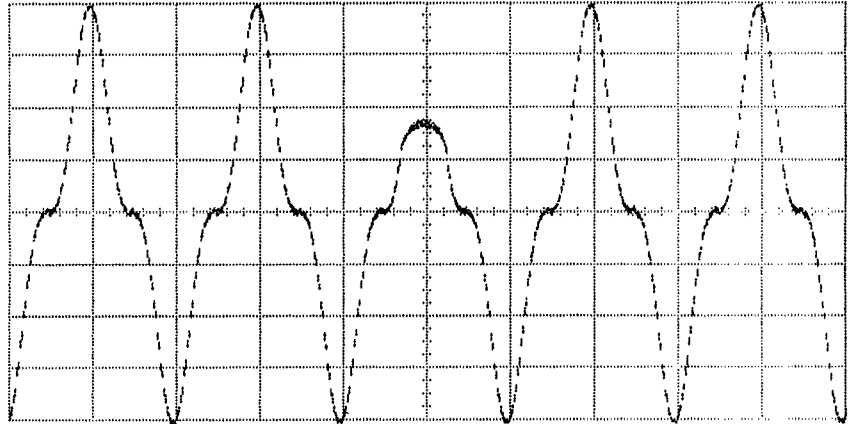
## Functionality

Hewlett-Packard's range of function generators covers applications from 1  $\mu$ Hz to 50 MHz. The range starts with the HP 8116A— which offers standard functions plus triggerability—and goes on to models that address needs such as multichannel signals, arbitrary waveforms, or even a mix of arbitrary and digital signals.

These products are summarized in the table below. For quick reference, representative instruments are described briefly on the next page. More detailed information is available on the page referenced in the table.

## Accuracy

For tests needing higher frequency stability and more accurate signal amplitudes, please refer to the table of synthesized function generators on the next page. In addition to performance, these products also offer functionality and (see HP 3324A) multiphase capability through master-slaving.



## Function and Arbitrary Waveform Generator Specifications

	HP 8904A	HP 3245A	HP 33120A	HP 8175A	HP 8770A	HP 8116A
<b>Sine wave</b>						
Min. frequency	dc	dc	dc	dc	dc	1 mHz
Max. frequency	600 kHz	1 MHz	15 MHz	25 MHz	50 MHz	50 MHz
<b>Waveforms</b>						
Square	0.1 Hz to 50 kHz	0 Hz to 1 MHz	100 $\mu$ Hz to 15 MHz	Full Arbitrary Waveform	Full Arbitrary Waveform	1 mHz to 50 MHz
Triangle	0.1 Hz to 50 kHz		100 $\mu$ Hz to 100 kHz			1 mHz to 50 MHz
Ramp	0.1 Hz to 50 kHz	0 Hz to 1 MHz	100 $\mu$ Hz to 100 kHz			1 mHz to 50 MHz
Pulse			100 $\mu$ Hz to 100 kHz			1 mHz to 50 MHz
Arbitrary		2048 points	16,000 points			
<b>Modes</b>						
Trigger	Creates signals from six basic waveforms	int/ext	int/ext	Full Arbitrary Waveform	Full Arbitrary Waveform	ext
Gate		int/ext	int/ext			ext
Counted burst		int subroutine	1 to 50,000			1 to 1999
<b>Modulation</b>						
AM	int	int subroutine	int/ext, and Arb	Full Arbitrary Waveform	Full Arbitrary	ext
FM	int	Arbitrary	int, including Arb			ext
PM	int					
PWM						ext
<b>Sweep</b>						
Lin.	int	int	int	Full Arbitrary Waveform	Full int/ext Waveform	
Log.	none	int	int			int/ext
VCO	int	int subroutine				ext
<b>Output (into 50 <math>\Omega</math>)</b>						
Amplitude (p-p)	10 V	10 V	10 V	16 V	2 V	16 V
DC offset ( $\pm$ )	5 V	5 V	5 V	8 V		8 V
Output impedance $\Omega$	50	0/50	50	50	50	50
<b>Programmability</b>	HP-IB	HP-IB	HP-IB and RS-232	HP-IB	HP-IB	HP-IB
<b>Notes</b>	4 internal channels; one is modulated or sequenced	2 independent channels, also ac current and 6-digit precision dc voltage or current	12-bit, 40 MSa/s ARB, also has FSK, SCPI commands, 3 year warranty	2 analog outputs dig./analog signals simultaneously	WGL Toolbox Software included free	
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