GP1616H SERIES

MARVIN TEST SOLUTIONS

PROGRAMMABLE SIGNAL SOURCE / FUNCTION GENERATOR - HP 8116A COMPATIBLE

- Fully compatible with the Hewlett Packard 8116A
- Generates sine, square, triangle, and pulse waveforms
- Frequency range from 1 mHz to 50 MHz
- Up to 32 V

DESCRIPTION

The GP1616H function generator is a programmable instrument capable of generating predefined Sine, Square, Triangle, Ramp, Haversine, Haver triangle and Pulse waveforms as well as a programmable DC output. The firmware is customized to be fully compatible with the HP 8116A GPIB command set. Software test procedures using the original HP8116A instrument require no code modification when upgrading to the GP1616H.

FEATURES

The GP1616H offers phase-lock loop (PLL) stability and accuracy for generating signals up to 50 MHz. Full programmability of all waveforms as well as pulse width and duty cycle parameters are supported.

Additionally, the GP1616H supports internal / external logarithmic sweep and counted burst functionality. Frequency, amplitude, and pulse width modulation modes are also supported when used with an external modulation source.

APPLICATIONS

- Automatic Test Equipment (ATE)
- Component Analysis
- Communication Signals
- Process Control
- Sonar

GPIB INSTRUMENTATION REPLACEMENTS

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SPECIFICATIONS

OPERATING MODES

Continuous	Continuous waveform is generated, phase locked to an internal crystal reference
Trigger	Active input edge generates one output cycle. Trigger slope: Positive or negative. Minimum pulse width: 10 ns. Minimum amplitude: 500 mV$_{PP}$. Input impedance: 10 k
Gate	Active level enables output cycles. First and last output cycles are always completed.
Counted Burst	A preprogrammed number of output cycles (1 to 1999) are generated. Minimum time between bursts is 100 ns when triggered by an external trigger.
Logarithmic Sweep	Provides logarithmic up / down sweep between start and stop frequencies. Sweep time per decade is selectable between 10 ms and 500 sec

TIMING PARAMETERS

Frequency	0.001 Hz - 50 MHz, sine, square, triangle, and pulse
Resolution	3 digits
Accuracy	50 ppm
Jitter	<0.1% + 100 ps
Stability	50 ppm
Duty Cycle	10% to 90% in 1% steps, < 1 MHz. 20% to 80% in 1% steps, 1 MHz to 10 MHz. 50% fixed, 10 MHz to 50 MHz

OUTPUT CHARACTERISTICS

Range	10 mV - 16 V$_{PP}$ into 50
Resolution	3 digits
Accuracy	±5% at 1 kHz. sine, triangle and square
Waveforms	Sine, Triangle, Pulse, Square
Output Modes	Complement, disable, output limit

DC OUPUT

Range	0 to ± 7.95 V into 50
Resolution	Up to 6 digits limited to 0.1 ns
Accuracy	±2% of setting ± 2 ns
Jitter	<0.1% of setting + 50 ps, decreasing to 0.005% on slowest range

DUTY CYCLE

Range	1 to 99%
Resolution	3 digits
Accuracy	±0.5% setting, ±40 mV

WAVEFORM PERFORMANCE

Sine THD	<-45 dBc, 10 HZ to 100 kHz. <-40 dBc, to 1 MHz. <-30 dBc for frequencies > 1 MHz
Triangle and Ramp Non-Linearity	<±3% (10% to 90% of amplitude, 100 mHz to 1 MHz)
Square and Pulse Transition Time	<7 ns, 10% to 90%
Pulse Aberrations	<±5% of amplitude

MODULATION

FM	Deviation: > ±5% (max) for ±6 V input. Mod bw: DC to 20 kHz
AM	Modulation: 100%, ±2.5 V input. Mod bw: DC to 20 kHz
Pulse Width	Range: Maximum of one decade with ± 6.5 V input. Pulse width range: 10 ns to 1 s, in eight decade ranges

INPUTS AND OUTPUTS

Trigger Output	> 2 V into 50 50 impedance
External Trigger	Threshold level: TTL levels. Trigger slope: pos or neg. Minimum pulse width: 10 ns. Input impedance: 10 k
Modulation Input	Maximum ±20 V, 10 k impedance
Main Ouput	Range: ±8 V into 50
Marker Output	High level: > 2 V into 50. Low level: 0 V. Edges: Positive at marker frequency. Negative at start of sweep
X-Ouput	Levels: 0 V to 10 V, 1.5 V per sweep decade into Hi Z.

GENERAL

Power Requirements	100 - 240 V selectable, 50 VA (max)
Weight	3.5 kg
Dimensions	89 mm H x 213 mm W x 30 cm L (3.5" x 8.4" x 12")
Operating Temperature	0 °C to +50 °C
Humidity	To 95% RH, 0 °C to +40 °C

Note: Specifications are subject to change without notice

GP1616H SERIES

ORDERING INFORMATION

GP1616H	Programmable Signal Source / Function Generator - HP 8116A Compatible
GP1616HR	Programmable Signal Source / Function Generator with Rack Mount Ear - HP 8116A Compatible
ACCESSORY	
GP1616H-EAR	Rack Mount Adapter for GP1616H
GT90002	GPIB Cable, 1m
GT90003	GPIB cable, 2m
GT-BNC50-2	Cable, BNC to BNC, 50 Ohm, 2 ft
GT-BNC50-5	Cable, BNC to BNC, 50 Ohm, 5 ft

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