GP1650

PROGRAMMABLE ARBITRARY WAVEFORM GENERATOR

- 50 MHz Sampling Frequency
- 12 Bit Resolution
- 256K deep waveform memory
- IEEE-488.2 and SCPI compatible
- 15 $V_{pk\text{-}pk}$ output into 50 ohms

DESCRIPTION

The GP1650 arbitrary waveform generator (AWG) is a single channel programmable instrument capable of generating user defined waveforms or predefined sine, square, triangle, ramp up, ramp down and noise waveforms.

FEATURES

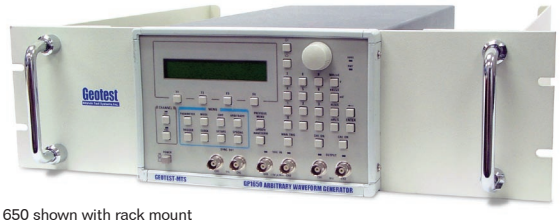
The GP1650 arbitrary waveform generator suppports simulation of complex waveform events. The waveforms can be executed using an internal clock with a programmable period from 20 ns to 150 s or via an external clock. The GP1650 Series offers an output voltage range of up to 15 Vpk-pk into 50 ohms with a separate offset generator. Very low amplitude signals can be generated with offsets of up to ±7.49 V. The output can be attenuated and filtered to obtain low level spurious and noise. The output waveform can be continuous, triggered, gated or burst using an internal, external or manual trigger.

The GP1650 offers 256K points of waveform memory and 4,096 possible levels for each address (12 bit vertical resolution), providing an array of over 1,048 million points for specifying virtually any waveform which could be mathematically generated, copied from a file, or captured by a digital oscilloscope. Waveforms can be defined point-by-point or predefined, such as sine, square, triangle, and ramp up/down. For specialized applications, waveforms can be loaded into memory and then edited as needed.

The GP1650 incorporates a menu driven front panel operation. An autoline feature makes waveform editing and generation simple. For each operational mistake, an error recognition and display sequence guides the user to the correct panel selection. The parameter values may be entered or changed using the numerical keypad or the rotary knob.

APPLICATIONS

- Video
- Navigation
- Radar
- Sonar
- Electronic Warfare Simulation
- Converter Testing
- Filter Design
- Computer Peripherals
- Data Storage



GP1650 shown with rack mount

STIMULI & OBSOLESCENCE

Geotest
Marvin Test Systems,Inc.
Toll Free: 888-TEST-BY-PXI • Phone: 949.263.2222 • Fax: 949.263.1203 • email: sales@geotestinc.com • www.geotestinc.com

GP1650 SERIES

SPECIFICATIONS

OPERATING MODES	
CONTINUOUS	Output a continuous waveform with a programmed amplitude and offset
TRIGGERED	Output quiescent until triggered by an internal, external, GPIB or manual trigger, then one waveform period is generated at the programmed point rate, amplitude and offset.
GATED	Same as triggered mode except waveform is executed for the duration of the gated signal. Once gate deactivates, the last waveform's period continues to completion.
BURST	Same as triggered mode, but will generate a predefined number of waveform periods from 2 to 999,999
AM	Generator can be amplitude modulated by an external signal.
ARBITRARY CHARACTERISTICS	
HORIZONTAL RESOLUTION	262,144 points (maximum)
VERTICAL RESOLUTION	12 bits (4,095 points, -2047 to +2047)
POINT EXECUTION RATE	50 MHz to 0.0066 Hz with 4 digits of resolution and 0.01%accuracy in continuous mode. ±3% accuracy in triggered mode
STORAGE MEMORY	256K points, non-volatile
AMPLITUDE CHARACTERISTICS	
RANGE	15mV - 15.00 V_{pk-pk} into 50 Ω
RESOLUTION	1 mV from 15 mV to 1.499 V 10m V from 1.50 V to 15.0 V
ACCURACY	±2%, ±20 mV of programmed value from 1.50V to 15.00 V. ±2% ±5 mV of programmed value from 15 mV to 1499 mV.
RISETIME	<15 ns for -2047 to +2047 data change at max 15 V_{pk-pk} amplitude, into 50 Ω.
SINE DISTORTION	<0.5% from 10 Hz- 100 KHz for a predefined sinewave with a minimum of 512 points
OFFSET CHARACTERISTICS	
RANGE	-7.49 V to +7.49 V into 50 Ω. The offset range is independent from the amplitude range.
RESOLUTION	10 mV
ACCURACY	±0.5%, ±50 mV into 50 Ω
OUTPUT CHARACTERISITICS	
IMPEDANCE	50 Ω
PROTECTION	The instrument is protected against short circuit or accidental voltages of up to ±100 V (DC plus ACpk) applied to the main output connector
FILTERS	Four (4) single pole lowpass filters with 3dB cutoff frequency at 1.5 MHz, 150 KHz, 15 KHz and 1.5 KHz
INPUTS AND OUTPUTS	
SYNC OUTPUT	Positive TTL pulse at selected clock rate. Programmable at any point between selected Start and Stop values. Output impedance is 50 Ω nominal.
MARKER OUTPUT	Positive TTL pulse with a min. width of one programmed clock rate. Up to four (4) markers available at user selected addresses. Output impedance is 50 Ω nominal.

INPUTS AND OUTPUTS (CONT'D)	
CLOCK OUTPUT	TTL levels square wave at the point rate of the individual channel. Output impedance is 50 Ω nominal
TRIGGER INPUT	Range is + 10 V to -10 V, with 10 mv resolution, 5% accuracy and with selectable slope. Max. trigger frequency is 15 MHz and with a min. of 25 ns pulse width. The sensitivity is 250 mV_{pk-pk}, with a 1K Ω nominal input impedance.
HOLD INPUT	TTL compatible. A Hi-level holds arbitrary execution
AM INPUT	5 V_{pk-pk} range for 100% modulation. Bandwidth is from DC to 20 KHz min. Input impedance is 10 KΩ nominal
CLOCK INPUTS	TTL compatible. Maximum 50MHz frequency with a minimum of 10 ns pulse width
EXTERNAL SUMMING INPUT	1V for full scale output with a 1 KΩ nominal input impedance and ±5% accuracy
INTERNAL TRIGGER	
REPETITION	1ms to 999.9 S
RESOLUTION	4 digits
ACCURACY	±0.01%
GENERAL	
POWER REQUIREMENTS	92 V-128 V; 185 V-256 V AC switch selectable, 48-66 Hz.180 VA max.
WEIGHT	8Kg net
DIMENSIONS	13.0 cm (5.25") H x 21.2 m (8.3") W x 46 cm (18")L
OPERATING TEMPERATURE	0° C to 50° C
HUMIDITY	95% RH, 0° C to 30° C, 75% RH to 40° C, 45% RH to 50° C
CE LABELED	Yes

Note: Specifications are Subject to Change without notice

GPIB INTERFACE

COMPATIBILITY	Conforms to IEEE488.2 and is compatible with SCPI (Standard Commands for Programmable Instruments).
SUBSETS	SH1, AH1, T6, L4, SR1, RL1 PPO, DC1, DT1, CO, E2.

ORDERING INFORMATION

GP1650	Single channel AWG with standard firmware
GP165X-EAR	Rack mount adapters
GT90002	GPIB Cable, 1 m
GT90003	GPIB Cable, 2m