

12.5MHz Arbitrary Function Generator HM8150

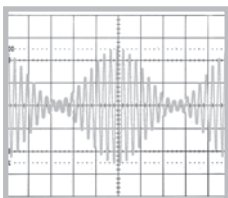
HM8150



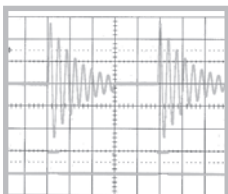
Gated sine wave,
PC-Software included



Amplitude-modulated
sine wave



Triggered arbitrary signal



- Frequency range 10mHz...12.5MHz
- Output voltage 10mV_{pp}...10V_{pp} (into 50Ω)
- Waveforms: Sine wave, square wave, triangle, pulse, sawtooth, arbitrary
- Rise and fall time < 10ns
- Pulse width adjustment: 100ns...80s
- Arbitrary waveform generator 40MSa/s
- Burst, gating, external triggering, sweep
- Software for remote control and for creation of Arbitrary waveforms
- External amplitude modulation (bandwidth 20kHz)
- Intuitive operation with one touch of a button – quick change of signals
- Galvanically isolated USB/RS-232 Interface, optional IEEE-488

12.5 MHz Arbitrary Function Generator HM8150

All data valid at 23 °C after 30 minute warm-up

Frequency

Range:	10 mHz...12.5 MHz
Resolution:	5 digit, max. 10 mHz
Accuracy:	± [1 digit + 5 mHz]
Temperature coefficient:	0.5 ppm/°C
Aging:	2 ppm/year

Waveforms Sine wave

Frequency range:	10 mHz...12.5 MHz
Amplitude:	20 mV _{pp} ...20 V _{pp} (open circuit)
Harmonic Distortion @ 1 V _{pp} :	
f < 500 kHz:	-65 dBc
500 kHz ≤ f < 5 MHz:	-50 dBc
5 MHz ≤ f ≤ 12.5 MHz:	-40 dBc
Total Harmonic Distortion @ 1 V _{pp} :	
f < 100 kHz:	typ. 0.05%
Spurious (Non-Harmonic) @ 1 V _{pp} :	
f < 500 kHz:	-65 dBc
500 kHz ≤ f ≤ 12.5 MHz:	-65 dBc + 6 dBc/octave

Square wave

Frequency range:	10 mHz...12.5 MHz
Amplitude:	20 mV _{pp} ...20 V _{pp} (open circuit)
Rise / fall time:	< 10 ns
Overshoot:	< 5 % (V _{out} ≤ 200 mV)
Symmetry:	50 % ± (5 % +10 ns)

Pulse

Frequency range:	10 mHz...5 MHz
Amplitude:	10 mV _{pp} ...+10 V _{pp} or -10 mV _{pp} ...-10 V _{pp}
Rise / fall time:	< 10 ns
Pulse width:	100 ns...80 s
Duty cycle:	max. 90 %

Sawtooth

Frequency range:	10 mHz...25 kHz
Amplitude:	20 mV _{pp} ...20 V _{pp} (open circuit)
Linearity:	better than 1 %

Triangle

Frequency range:	10 mHz...250 kHz
Amplitude:	20 mV _{pp} ...20 V _{pp} (open circuit)
Linearity:	better than 1 %

Arbitrary generator

Frequency range:	10 mHz...250 kHz
Amplitude:	20 mV _{pp} ...20 V _{pp} (open circuit)
Output rate:	40 MSa/s
Resolution:	X: 1024 (10 bit), Y: 1024 (10 bit) or X: 4096 (12 bit), Y: 4096 (12 bit)

Inputs

Gate/Trigger:	BNC connector
Impedance:	5 kΩ 100 pF
Max. input voltage:	± 30 V
Modulation Input:	BNC connector
Impedance:	10 kΩ
Max. input voltage:	± 30 V

Outputs

Signal output:	BNC connector, short circuit proof, ext. voltage up to ± 15 V
Impedance:	50 Ω
Output voltage:	Range 1: 2.1...20 V _{pp} (open circuit) Range 2: 0.21...2.0 V _{pp} (open circuit) Range 3: 20...200 mV _{pp} (open circuit)

Resolution:

Range 1:	100 mV
Range 2:	10 mV
Range 3:	1 mV

Setting accuracy (1 kHz):

Range 1:	± 2 %
Range 2:	± 3 %
Range 3:	± 4 %
3 % additional for pulse and square wave	

Frequency response:

< 100 kHz	± 0.2 dB
-----------	----------

0.1...12.5 MHz:	± 0.5 dB
-----------------	----------

Offset error:

Range 3:	± 50 mV
----------	---------

Display:

2½ digits (LCD)

Trigger output:

BNC connector

Level:

5 V / TTL

Impedance:

50 Ω

Sawtooth output:

BNC connector

Output voltage:

0...5 V, synchronous to sweep

Impedance:

1 kΩ

DC offset

Output voltage:

Range 1: -7.5...+7.5 V (open circuit)

Range 2: -0.75...+0.75 V (open circuit)

Range 3: -75...+75 mV (open circuit)

Sweep (internal)

Setting of start and stop frequency

Internal sweep: all waveforms

Sweep time:

linear, 20 ms...100 s
continuous or triggered
(ext. signal, interface)

Amplitude Modulation:

Modulation via external signal

Modulations depth: 0...100 %

Bandwidth: DC...20 kHz (-3 dB)

Gate (asynchronous)

Modulation on/off via external TTL signal

Delay time: < 150 ns

Input signal:

TTL

Trigger Function (synchronous)

Burst mode via ext. trigger input or interface

Frequency range: < 500 kHz

Miscellaneous

Interface: USB/RS-232 (standard),
IEEE-488 (optional)

Display: 16 characters, LCD with backlight

Memory: for the last device settings and for
1 arbitrary signal

Safety Class: Safety Class I (EN61010-1)

Power supply: 115/230 V ± 10 %; 50/60 Hz, CAT II

Power consumption: approx. 20 Watt

Operating temperature: +5°C...+40°C

Storage temperature: -20°C...+70°C

Max. rel. humidity: 5%...80% (non condensing)

Dimensions (W x H x D): 285 x 75 x 365 mm

Weight: approx. 5 kg

Accessories supplied: Operator's Manual and power cable, Software

Optional accessories:

HZ33/HZ34 Test Cable 50 Ω (BNC-BNC)

HZ24 Attenuators 3/6/10 and 20 dB

HZ42 19" Rackmount kit 2RU

HZ20 Adapter plug

HO880 IEEE-488 (GPIB) Interface

www.hameg.com