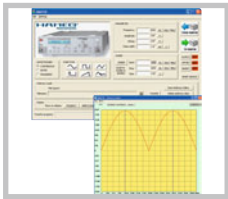


12.5MHz Arbitrary Function Generator HM8150

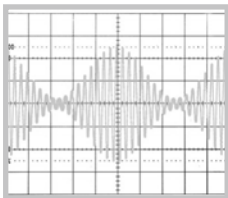
HM8150



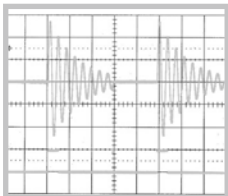
Gated sine wave,
PC-Software included



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:	± 30V
Modulation Input:	BNC connector
Impedance:	10 kΩ
Max. input voltage:	± 30V

Outputs

Signal output:	BNC connector, short circuit proof, ext. voltage up to ± 15V
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:	5V/TTL
Impedance:	50 Ω
Sawtooth output:	BNC connector
Output voltage:	0...5V, 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) V _{AC} Range + 2 X V _{offset} Range ≤ V _{Range} max.
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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 (HO820), 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...230V ± 10%; 50/60Hz, CAT II
Power consumption:	approx. 20 Watt
Operating temperature:	+5...+40°C
Storage temperature:	-20...+70°C
Rel. humidity:	5...80% (non condensing)
Dimensions (W x H x D):	285 x 75 x 365 mm
Weight:	approx. 5 kg

Accessories supplied: Line cord, Operating manual, USB/RS-232 Interface (HO820), software

Optionales Zubehör:

HO880	IEEE-488 (GPIB) Interface (galvanically isolated)
HZ13	Interface cable (USB) 1,8m
HZ14	Interface cable (serial) 1:1
HZ20	Adapter, BNC to 4mm banana
HZ24	Attenuator Set 50Ω (3/6/10/20dB)
HZ33	Test Cable 50Ω (BNC-BNC) 0,5m
HZ34	Test Cable 50Ω (BNC-BNC) 1,0m
HZ42	19" Rackmount kit 2RU
HZ72	GPIB-Cable 2m