

Arbitrary Waveform Generators

multicomp PRO



MP750510



MP750511



MP750512



MP750513

Features

- Advanced DDS technology
- 1 μ Hz frequency resolution
- Vertical Resolution: 14 bits, 10Marb waveform length
- Comprehensive waveform output: 6 basic waveforms and 152 built-in arbitrary waveforms
- Comprehensive modulation functions: AM, FM, PM, FSK, 3FSK, 4FSK, PSK, OSK, ASK, DSB-AM, QPSK, SUM, BPSK, PWM, Sweep and Burst etc
- High-accuracy frequency counter integrated, supported range 100mHz - 200MHz
- SCPI, and LabVIEW supported
- 7 inch (800 x 480 pixels) TFT LCD screen

Part Number	MP750510	MP750511	MP750512	M750513
Channel	2			
Frequency Output	35MHz	60MHz	80MHz	100MHz
Sample Rate	500MSa/s			
Vertical Resolution	14 bits			
Waveform				
Standard Waveform	Sine, square, pulse, ramp, noise, and harmonic			
Arbitrary Waveform	Exponential rise, exponential fall, sin(x)/x, step wave, and others, total 150 built-in waveforms and user-defined arbitrary waveform			
Frequency (resolution 1μHz)				
Sine	1 μ Hz ~ 35MHz	1 μ Hz-60MHz	1 μ Hz ~ 80MHz	1 μ Hz~100MHz
Square	1 μ Hz ~ 15MHz	1 μ Hz ~ 30MHz	1 μ Hz ~ 30MHz	1 μ Hz ~ 30MHz
Pulse	1 μ Hz ~ 15MHz	1 μ Hz ~ 25MHz	1 μ Hz ~ 25MHz	1 μ Hz ~ 25MHz

Newark.com/multicomp-pro
 Farnell.com/multicomp-pro
 Element14.com/multicomp-pro

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Part Number	MP750510	MP750511	MP750512	M750513
Ramp	1µHz ~ 3MHz	1µHz ~ 3MHz	1µHz ~ 3MHz	1µHz ~ 3MHz
Noise	35MHz (-3dB, typical)	60MHz (-3dB, typical)	80MHz (-3dB, typical)	100MHz (-3dB, typical)
Arbitrary Waveform	1µHz ~15MHz	1µHz ~ 15MHz	1µHz ~15MHz	1µHz ~15MHz
Harmonic	1µHz ~17.5MHz	1µHz ~ 30MHz	1µHz ~40MHz	1µHz ~50MHz
Accuracy	±2ppm, 25°C±5°C			
Sine Wave Spectrum Purity				
Harmonic Distortion [typical (0dB)]	DC ~ 1MHz: < -65dBc 1MHz ~ 10MHz: < -60dBc 10MHz ~ 60MHz: < -55dBc 60MHz ~ 120MHz: < -50dBc			
Total Harmonic Distortion	<0.05 %, 10 Hz to 20 kHz, 1 Vpp			
Spurious (non-harmonic) [typical (0dB)]	≤10MHz: <-70dBc >10MHz: <-70dBc + 6dB/ octave band			
Phase Noise [typical (0 dBm, 10kHz deviation)]	Typical (0dBm, 10kHz offset) 1MHz: -110dBc/Hz			
Square				
Rise / Fall Time	<8ns			
Overshoot	< 3%			
Duty Cycle	50.0% (fixed)			
Jitter (rms)	≤5MHz: <300ps + 2ppm; >5MHz 300ps			
Pulse				
Period	66.667ns~1000000s	40ns ~ 1000000s		
Pulse Width	≥18ns	≥12ns		
Rise / Fall Time	≥8ns			
Overshoot	< 3%			
Jitter (rms)	≤5MHz: <300ps + 2ppm; >5MHz 300ps			
Duty cycle	0.1%~99.9%			
Ramp				
Linearity	≤0.5% of peak output (typical, 1kHz, 1 Vpp, 50% symmetry)			
Symmetry	0% ~ 100%			
Arbitrary				
Waveform Length	2 points - 10M points			
Minimum Rise/Fall Time	<8ns			
Jitter (rms) (1MHz, 1Vpp, 50Ω)	≤5MHz: <300ps + 2ppm; >5MHz 300ps			

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Amplitude				
Into 50Ω load	1mVpp ~ 10Vpp (≤ 25MHz) 1mVpp ~ 5Vpp (≤60MHz) 1mVpp ~ 2.5Vpp (≤100MHz)			
Resolution	0.1mVpp or 4digits, (amplitude>1Vpp: 1mVpp)			
DC Offset Range (AD+DC)	±5V (50Ω) ±10V (high resistance)			
DC offset resolution	0.1mV or 4digits			
Load Impedance	50Ω (typical)			
DC offset Accuracy	±(1% of setting + 1mVpp+ amplitude Vpp * 0.5%) (typical 1kHz sine, 0V offset)			
Unit	mVpp, Vpp, Vrms, mVrms, dBm			
Modulation				
Type	AM, DSB-AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, 3FSK, 4FSK, OSK, PWM, SUM			
DSB-AM				
Carrier Waveform	Sine, square, ramp			
Source	Internal / External			
Internal Modulation Waveform	Sine, square, ramp			
AM				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal / external			
Modulating Waveform	Sine, square, ramp, noise, and arbitrary			
Depth	0.0%~120.0%			
Modulating Frequency	2mHz ~1MHz			
FM				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal / external			
Modulating Waveform	Sine, square, ramp, noise, and arbitrary			
Modulating Frequency	2mHz ~1MHz			
PM				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal / external			
Modulating Waveform	Sine, square, ramp, noise, and arbitrary			
Phase Deviation	0° - 180°			
Modulating Frequency	2mHz - 1MHz			
ASK				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal / external			
Modulating Waveform	Square with 50% duty cycle			
Key Frequency	2mHz ~ 1MHz			

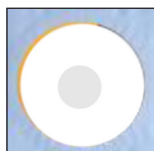
Part Number	MP750510	MP750511	MP750512	M750513
FSK/3FSK/4FSK				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal			
Modulating Waveform	Square with 50% duty cycle			
Key Frequency	2mHz ~ 1MHz			
PSK				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal / external			
Modulating Waveform	Square with 50% duty cycle			
Key Frequency	2mHz ~ 1MHz			
BPSK				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal			
Modulating Waveform	Square with 50% duty cycle			
Key Frequency	2mHz ~ 1MHz			
OSK				
Carrier Waveform	Sine, square, ramp, and arbitrary (except DC)			
Source	Internal			
Oscillation Time	Square with 50% duty cycle			
Key Frequency	2mHz ~ 1MHz			
Concussion time	8ns ~ 249.75s			
SUM (Dual tone)				
Carrier Waveform	Sine, square, ramp			
Source	Internal / external			
Internal Modulation Waveform	Sine, square, ramp, white noise, arbitrary waveform			
Internal am frequency	2mHz ~ 1MHz			
Depth	0.0% ~ 100.0%			
PWM				
Carrier Waveform	pulse			
Source	Internal / external			
Modulating Waveform	Sine, square, ramp, noise, and arbitrary			
Width Deviation	0~99%			
Modulating Frequency	2mHz ~ 1MHz			
Deviation	0~min			
Pulse train responses				
Carrier	Sine, Square, Harmonic, Pulse, Noise and Arbitrary Waveform			
Carrier frequency	2mHz ~ BW/2			
Type	Count (1 to 1,000,000 cycles), unlimited, gated			

Part Number	MP750510	MP750511	MP750512	M750513
Internal cycle	20ns ~ 500s			
Gated Source	External trigger			
Sweep characteristic				
Carrier	Sine, square, ramp, and arbitrary (except DC)			
Minimum / maximum starting frequency	-	1µHz	-	-
Maximum / Termination frequency	Sine: 35MHz Square: 15MHz	Sine: 60MHz Square: 30MHz	Sine: 80MHz Square: 30MHz	Sine: 100MHz Square: 30MHz
	Ramp: 3MHz Arbitrary: 15MHz (Built-in) or 25MHz (User defined)			
Type	Linear, logarithmic, step			
Direction	up / down			
Scanning time	1ms to 500s ± 0.1%			
Trigger source	Internal, external, manual			
Frequency Counter				
Function	Frequency, period, +width, -width, +duty and -duty			
Frequency Range	100mHz ~ 200MHz			
Frequency Resolution	7 digits			
Coupling mode	AC, DC			
Input / Output				
Input Supply Voltage	100V AC to 230V AC, 50Hz/60Hz			
Display	7" 800 × 480 pixels screen LCD			
Input mode	Frequency counter, External modulation input, External trigger input, Internal clock output, External reference clock input / output			
Communication Interface	USB Host, USB Device, LAN			
Standard Warranty	12 Months			
Mechanical specifications				
Size	340mm × 177mm × 90mm			
Weight	2.3kg			

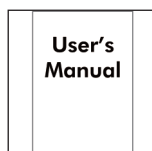
Accessories



EU/UK Power Cord



CD Rom



Manual



USB Cable



Q9 Cable

Part Number Table

Description	Part Number
Arbitrary Waveform Generator, 35MHz	MP750510
Arbitrary Waveform Generator, 60MHz	MP750511
Arbitrary Waveform Generator, 80MHz	MP750512
Arbitrary Waveform Generator, 100MHz	MP750513

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