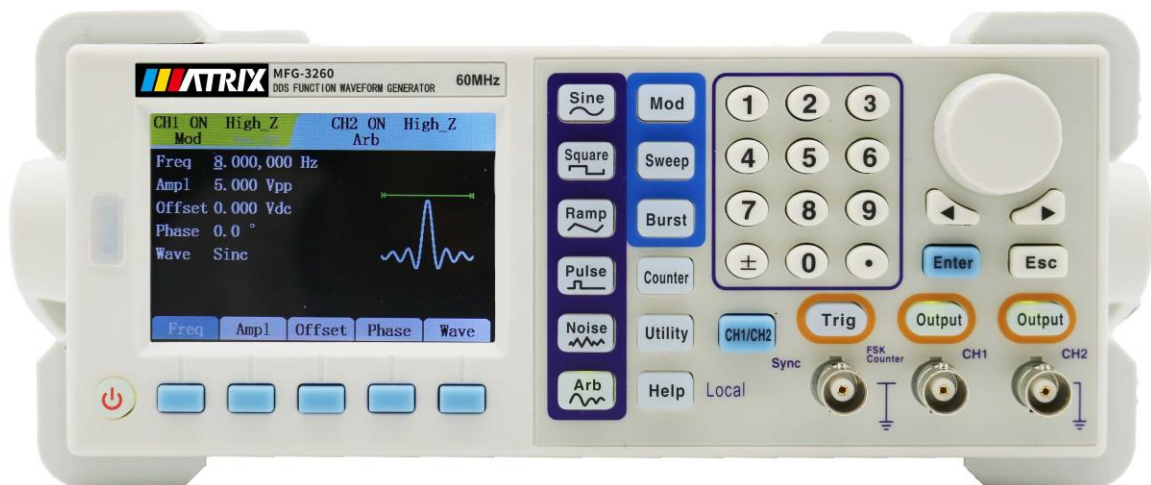




MFG-3000 Series Function Generator

- 3.5-inch 480×320TFT LCD with clear graphic interface
- 15M/25M/40M/60M
- Chinese / English menu available

- Press key for help and information
- File management supporting USB flash disk and local storage
- Two-channel output with the highest output frequency is “15M type” Model is MFG-3215, “25M type” Model is MFG-3225, “40M type” Model is MFG-3240, “60M type” Model is MFG-3260.
- Sampling rate: 200MSa/S, vertical resolution: 13 bit and storage depth: 8k
- 5 basic waveforms and 32 arbitrary waveforms in-built
- Pulsewave output set in edge time
- Internal/external AM, FM, PM, ASK, FSK and PSK modulation function
- Output of linear/logarithmic frequency sweep and burst waveform
- Frequency meter of high precision of 100MHz and 32-bit counter
- With RS232 interface, USB Device, USB Host interface supporting USB flash disk storage (USB Host Optional)
- Multi-functional arbitrary waveform editing software equipped

Frequency Characteristics

MODEL	15M type	25M type	40M type	60M type
Sine	1 μ Hz ~ 15MHz	1 μ Hz ~ 25MHz	1 μ Hz ~ 40MHz	1 μ Hz ~ 60MHz
Square	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz
Triangle	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz
Pulse	100 μ Hz ~ 6MHz	100 μ Hz ~ 6MHz	100 μ Hz ~ 6MHz	100 μ Hz ~ 6MHz
Arbitrary	1 μ Hz ~ 6MHz	1 μ Hz ~ 6MHz	1 μ Hz ~ 6MHz	1 μ Hz ~ 6MHz
Noise (3dB)	7MHz Bandwidth			
Frequency Resolution	1 μ Hz			
Frequency Accuracy	± 5 ppm			

Frequency Stability	$\pm 1\text{ppm}/3\text{hour}$	
Frequency Characteristics		
Waveform Types	Sine, square, triangle, pulse, noise and arbitrary waves (including DC).	
	There are 32 kinds of arbitrary waves and 50 kinds of user-defined waves.	
Waveform Length	8192 points	
Waveform Sampling Rate	200 MSa/s	
Waveform Vertical Resolution	13 bits	
Sine Wave Characteristics		
Sine Wave	Harmonic Distortion	$\geq 45\text{dBc}$ ($<1\text{MHz}$) ;
		$\geq 40\text{dBc}$ ($1\text{MHz}\sim 20\text{MHz}$)
	Total Harmonic Distortion	$<0.8\%$ ($20\text{Hz} \sim 20\text{kHz}$, 0dBm)
Square Wave Signal Characteristics		
Square Wave	Rise/Fall	$<20\text{ns}$
	Overshoot	$<5\%$
	Duty Cycle	$\text{freq}<100\text{kHz}$: $1\%\sim 99\%$;
		$100\text{kHz}\leq \text{freq}<5\text{MHz}$: $20\% \sim 80\%$;
		$5\text{MHz}\leq \text{freq}$: $40\% \sim 60\%$ (0.1% resolution)
Pulse Wave Characteristics		
Pulse Wave	Pulse Width	Min 20ns ; 1ns resolution
	Edge Transition Time	Min 20ns ;
	Overshoot	$<5\%$

	Jitter	6ns+0.1% Period	
Ramp Wave Characteristics			
Ramp Wave	Linearity Degree	≥98%(0.01Hz~10kHz)	
	Symmetry	0.0 ~ 100.0%(resolution 0.1%)	
Output Characteristics			
Amplitude			
Amplitude Range	freq<10MHz	10MHz≤freq<30MHz	30MHz≤freq
	2mVpp ~ 20Vpp	2mVpp ~10Vpp	2mVpp ~5Vpp
Amplitude Resolution	1mV		
Amplitude Stability	±1% set value±1mVpp (1kHz Sine, 0 offset, >10mVpp)		
Amplitude Flatness (relative to 1K Sine, 1 Vpp)	±0.4dB <10MHz ;		
	±1.0dB ≥10MHz。		
Output Impedance	50Ω ±10% (Typical)		
Protection	All the signal output terminal can be shorted within 60s		
DC Offset			
	Output Amplitude>0.1V	2mV<Output Amplitude≤0.1V	
Offset Adjusting Range	±10Vpk, ac + dc	±0.250Vpk, ac + dc	
Offset Resolution	1mV		
Phase characteristics			

Phase Adjusting Range	0~359.9°	
Phase Resolution	0.1°	
External Measurement Function		
Frequency Meter	Frequency measurement	1Hz ~ 100MHz
	range	
	Measurement accuracy	Gate time continuously adjusted between0.01s~10s
Counter Function	Counting region	0 ~ 4294967295
	Control mode	Manual operation
Input Signal Voltage Range	2Vpp~20Vpp	
Coupled Mode	AC or DC	
Pulse Width Measurement	1ns (resolution), 20s (MAX measuring time)	
Period Measurement	1ns (resolution), 20s (MAX measuring time)	
SYNC Output		
Output Channel	CH1 or CH2, default CH1	
Level	TTL	
Impedance	50 Ω	

Rise/Fall Time	< 25ns
Maximum Frequency	25MHz
AM Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Sine, square, triangle and ramp
Modulation Frequency	2mHz~20kHz
Modulation Depth	0%~120%
FM Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Sine, square, triangle and ramp
Modulation Frequency	2mHz~20kHz
Frequency Offset	0~Maximum carrier frequency
PM Modulation	

Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Sine, square, triangle and ramp
Modulation Frequency	2mHz~20kHz
Phase Offset	0° ~ 360°
ASK Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Square wave of 50% duty ratio
Keying Frequency	2mHz~1MHz
Modulation Amplitude	0~Carrier Amplitude
FSK Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External

Modulation Wave	Square wave of 50% duty ratio
Keying Frequency	2mHz~1MHz
Hop Frequency	Carrier frequency range
PSK Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Square wave of 50% duty ratio
Keying Frequency	2mHz~1MHz
Modulation Phase	0° ~ 360°
Frequency Sweep	
Output Channel	CH1 or CH2, default CH1
Types	Linearity/Logarithm
Sweep Frequency Time	1ms ~ 500.000s
Start/Stop Frequency	1μHz~Maximum carrier frequency
Sweep Direction	Forward, Backward
Trigger Source	Manual operating, internal, external

Burst Characteristics	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Pulse Count	1~65535 or infinite, gated
Start/Stop Phase	0~360°
Internal Period	1 μ s~500s
Gating Source	External
Trigger Source	Internal, external, manual operating
Trigger Input	
Signal Range	2V _{pp} ~20V _{pp}
Coupling	AC or DC
Pulse Width	>100ns
Reaction Time	<500ns (Burst)
	<10 μ s (Sweep)
Modulation Input	
Impedance	1M Ω
Signal range	± 2.5 V ac+dc

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