



MFG-1000 Series DDS Function Generator

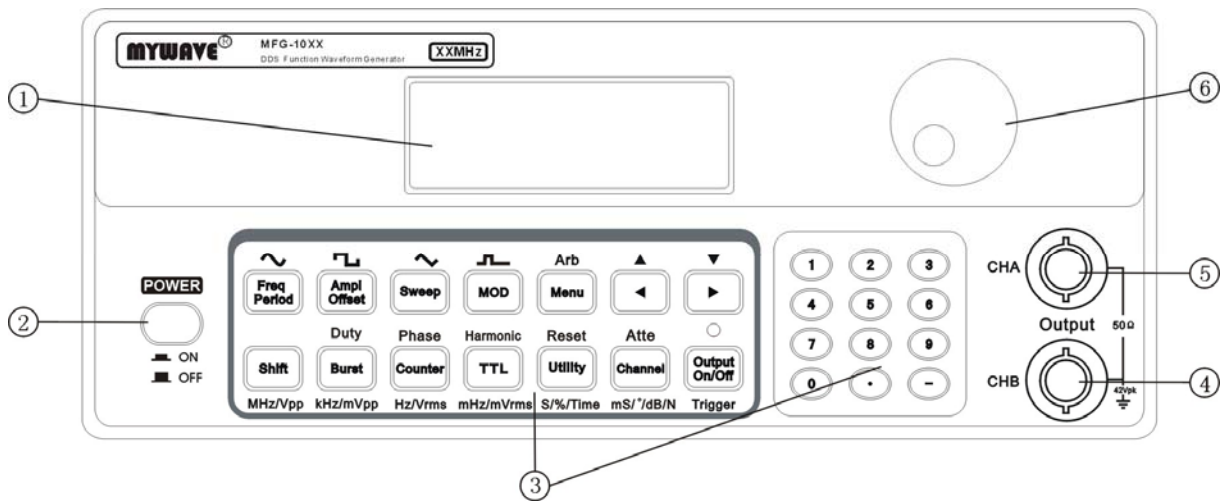


◆ Main Features

- Direct Digital Synthesis (DDS) technology, 2 independent output channels
- LCD display, English/Chinese menu
- 32 kinds of built-in pre-stored waveforms
- Minimum stable output waveform: 1mV(50Ω)
- Multiple modulation functions: FM, FSK, ASK, PSK
- Frequency sweep, amplitude sweep and burst functions
- Over voltage, over current, output short-circuit and reverse voltage protections
- Optional parts: RS232 interface, 200MHz frequency counter, 7W(8Ω) power amplifier

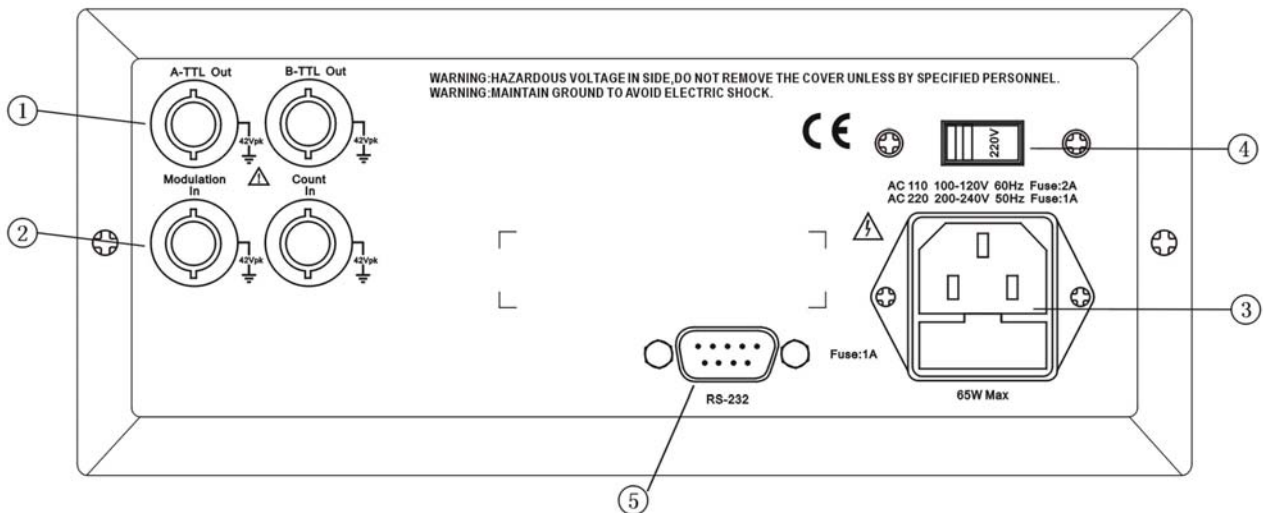
◆ Front Panel and Real Panel

Front Panel



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|---------------------|---------------------|----------------|
| 1. LCD display | 2. Power switch | 3. Keypad |
| 4. Channel B output | 5. Channel A output | 6. Rotary knob |

Real Panel



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|------------------------------|---|
| 1. A-TTL/B-TTL output (BNC) | 2. Modulation/External signal input (BNC) |
| 3. Power connector with fuse | 4. AC110V/220V power selection switch |
| 5. RS232 connector | |

◆ Technical Specifications

Model	MFG-1005	MFG-1010	MFG-1015	MFG-1020
Frequency range(sine)	1 μ Hz~5MHz	1 μ Hz~10MHz	1 μ Hz~15MHz	1 μ Hz~20MHz
Output Characteristics of Channel A				
Waveform Characteristics				
Waveform type	32 waveforms including: Sine, Square, Triangle, Ramp, Pulse etc.			
Waveform length	1024 points			
Sample rate	100MSa/s			
Waveform amplitude resolution	8bits			
Sinusoidal harmonic rejection	≥ 40 dBc (<1MHz), ≥ 35 dBc (1MHz~20MHz)			
Sine wave total distortion	$\leq 1\%$ (20Hz~200kHz)			
Square rise/fall edge time	≤ 35 ns			
Square overshoot	$\leq 10\%$			
Square wave duty cycle	1%~99%			
Frequency Characteristics				
Frequency range	Sine: 1 μ Hz~Max.frequency (MHz) Square: 1 μ Hz~5MHz Other waveforms: 1 μ Hz~1MHz			
Frequency resolution	1 μ Hz			
Frequency accuracy	$\pm(5 \times 10^{-5})$			
Frequency stability	$\pm 5 \times 10^{-6}$ /3 hours			
Amplitude Characteristics				
Amplitude range	2mVpp~20Vpp 1 μ Hz~10MHz (high impedance) 2mVpp~15Vpp 10MHz~15MHz (high impedance) 2mVpp~8Vpp 15MHz~20MHz (high impedance)			
Amplitude resolution	20mVpp (amplitude>2Vpp), 2mVpp (amplitude<2Vpp)			
Amplitude accuracy	$\pm(1\%+2mV_{rms})$ (high impedance, true RMS, frequency at 1kHz)			
Amplitude stability	$\pm 0.5\%$ /3 hours			
Amplitude flatness	$\pm 5\%$ (frequency<10MHz), $\pm 10\%$ (frequency >10MHz)			
Output impedance	50 Ω			
DC Offset Characteristics				
Offset range	± 10 V (high impedance, attenuation 0dB)			
Resolution	20mVdc			
Offset accuracy	$\pm(1\%+20mVdc)$			
Sweep Characteristics				
Sweep type	frequency sweep, amplitude sweep			
Sweep range	free to set the start and stop points			
Sweep time	100ms~900s			
Sweep direction	Up, Down, Up-Down			
Sweep mode	linear, logarithmic			
Control mode	auto sweep or manual sweep			
Frequency Modulation Characteristics				
Carrier signal	channel A signal			

Modulation signal	internal signal of channel B or external signal
FM deviation	0%~20%
Shift Keying Characteristics	
FSK	free to set carrier frequency and hop frequency
ASK	free to set carrier amplitude and hop amplitude
PSK	hop phase 0~360°, max. resolution 1°
Alternative rate	10ms~60s
Burst Characteristics	
Carrier signal	channel A signal
Trigger signal	TTL_A signal
Burst count	1~65000 cycles
Burst mode	Internal TTL, External, Single
Output Characteristics of Channel B	
Waveform Characteristics	
Waveform type	32 waveforms including: Sine, Square, Triangle, Ramp, Pulse etc.
Waveform length	1024 points
Sample rate	12.5MSa/s
Waveform amplitude resolution	8bits
Square duty cycle:	1%~99%
Frequency Characteristics	
Frequency range	Sine: 1μHz~1MHz Other waveforms: 1μHz~100kHz
Frequency resolution	1μHz
Frequency accuracy	±(1×10 ⁻⁵)
Amplitude Characteristics	
Amplitude range	50mVpp~20Vpp (high impedance)
Amplitude resolution	20mVpp
Output impedance	50Ω
Burst Characteristics	
Carrier single	channel B signal
Trigger signal	TTL_B signal
Burst count	1~65000 cycles
Burst mode	Internal TTL, External, Single
TTL Output Characteristics	
Waveform characteristics	Square, rise/fall time<20ns
Frequency characteristics	10mHz~1MHz
Amplitude characteristics	TTL, CMOS compatible, low level<0.3V, high level>4V
Common Characteristics	
Power source	Voltage: AC220V±10%, AC110V±10% (Pay attention to the position of voltage selection switch) Frequency: 50Hz ±5% Power: <45VA
Environment	Temperature: 0~40°C Humidity: <80%
Operation characteristics	Keypad operation and rotary knob operation
Display	LCD display, English, Chinese (simplified), Chinese (traditional)
Manufacturing technology	Surface Mount Technology, Integrated Circuit. High reliability and stability.

Accessories	Power cord, Q9 test lead, Q9 BNC-clip test lead, Operation manual RS232 cable (optional), RS232 interface software CD (optional)
Dimension	Machine dimension: 385(D)×260(W)×110(H)mm Chassis dimension: 415(D)×295(W)×195(H)mm
Weight	3.5kg
Optional Parts Characteristics	
Remote interface	RS232 serial interface
Frequency counter	Testing frequency range: 1Hz~200MHz Input signal amplitude: 100mVpp~20Vpp
Power amplifier	Max. output power: 7W (8Ω), 1W (50Ω) Max. output voltage: 22Vpp Frequency bandwidth: 1Hz~200kHz

Shenzhen Mywave Instrument Co., Ltd.

Address: 3F North, 36 Building, Yangmen Industrial Zone, Dakan, Xili,
Nanshan District, Shenzhen, P.R. China

Post code: 518055

Tel: 0755-86114586/86114587

Fax: 0755-86164270

[Http://www.szmywave.com](http://www.szmywave.com)

E-mail: mw@szmywave.com