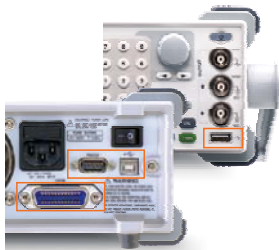


## PANEL INTRODUCTION



1. TFT LCD Panel
2. Number Panel
3. Scroll Knob & Selection Key
4. Power Switch
5. Output Terminals
6. Main Output Switch
7. Function keys
8. Operation keys
9. USB Host
10. Trigger & Modulation Input
11. Mark & Trigger Output
12. Fan
13. GPIB
14. RS-232
15. USB Device

### STANDARD COMMUNICATION INTERFACE



The AFG-3001 provides GPIB, RS-232, and USB as standard communication interfaces. AFG-3001 supports IEEE 488.2 protocol and command for users to integrate system or remotely control the instrument.

### 4.3" HIGH RESOLUTION LCD DISPLAY



The AFG-3001 is equipped with a 4.3" LCD screen of 480 x 272 resolution. In addition to displaying all of the settings on the screen, the large graphic display also allows users to observe complete waveforms at a glance.

### SPECIFICATIONS

		AFG-3081		AFG-3051		
WAVEFORMS	Standard Waveform	Sine, Square, Ramp, Pulse, Noise, DC, Sin(x)/x, Exponential Rise, Exponential Fall, Negative Ramp				
ARBITRARY WAVEFORMS	ARB Function	Built in				
	Sample Rate	200 MSa/s				
	Repetition Rate	100MHz				
	Waveform Length	1M points				
	Amplitude Resolution	16 bits				
	Non-Volatile Memory	Ten 1M waveforms *1				
	User define Output Section	Any section from 2 to 1M points				
	User define Mark Output	Any section from 2 to 1M points				
FREQUENCY CHARACTERISTICS	Range	Sine, Square	80MHz	50MHz		
		Triangle, Ramp	1MHz			
	Resolution	1 μHz				
	Accuracy	Stability	±1 ppm 0 – 50°C			
	Aging	±1 ppm, per 1 year				
	Tolerance	≤1μHz				
OUTPUT CHARACTERISTICS *2	Amplitude	Range	10 mVpp to 10 Vpp (into 50 Ω); 20 mVpp to 20 Vpp (open-circuit)			
		Accuracy	±1% of setting ±1 mVpp (at 1 kHz, >10 mVpp)			
		Resolution	0.1 mV or 4 digits			
	Offset	Flatness	±1%(0.1dB)<10MHz;±2%(0.2dB)10MHz–50MHz;±10%(0.9 dB)50MHz–70MHz;±20%(1.9dB)70MHz–80MHz (sinewave relative to 1kHz)			
		Units	Vpp, Vrms, dBm			
		Range	±5 Vpk ac +dc (into 50 Ω); ±10Vpk ac +dc (Open circuit)			
Waveform Output	Accuracy	1% of setting + 2 mV+ 0.5% of amplitude				
	Impedance	50 Ω typical (fixed); >10MΩ (output disabled)				
SYNC Output	Protection	Short-circuit protected; overload relay auto-matically disables main output				
	Level	TTL-compatible into >1kΩ				
	Impedance	50 Ω nominal				
SINEWAVE CHARACTERISTICS	Harmonic Distortion *5	-60dBc DC–1MHz, Ampl<3Vpp; -55dBc DC–1MHz, Ampl>3Vpp; -45dBc 1MHz–5MHz, Ampl>3Vpp; -30dBc 5MHz–80MHz, Ampl>3Vpp				
	Total Harmonic Distortion	<0.2%+0.1mVrms DC ~ 20 kHz				
	Spurious (non-harmonic)*5	-60dBc DC–1MHz; -50dBc 1MHz–20MHz; -50dBc + 6dBc/octave 1MHz–80MHz				
	Phase Noise	< -65dBc typical 10MHz, 30kHz band; < -47dBc typical 80MHz, 30kHz band				

SPECIFICATIONS			
		AFG-3081	AFG-3051
<b>SQUARE WAVE CHARACTERISTICS</b>	Rise/Fall Time Duty Cycle Overshoot Asymmetry Variable Duty Cycle Jitter	<8ns *3 20%~80% < 5% 1% of period+1ns 20.0%~80.0% ≤ 25MHz; 40.0%~60.0%, 25~50MHz; 50.0%(Fixed), 50~80MHz 0.01% + 525ps < 2MHz; 0.1% + 75ps > 2MHz	
<b>RAMP CHARACTERISTICS</b>	Linearity Variable Symmetry	< 0.1% of peak output 0%~100%	
<b>PULSE CHARACTERISTICS</b>	Period Pulse Width Overshoot Jitter	20ns ~ 2000s 8ns ~ 1999.9s; Minimum Pulse Width: 8ns when FREQ≤50MHz; 5% of setting period when FREQ≤6.5MHz ; Resolution: 1ns when FREQ≤50MHz; 1% of setting period when FREQ≤6.5MHz <5% 100 ppm +50 ps	
<b>AM MODULATION</b>	Carrier Waveforms Modulating Waveforms Modulating Frequency Depth Source	Sine, Square, Triangle, Ramp, Pulse, Arb Sine, Square, Triangle, Up/Dn Ramp 2mHz ~ 20kHz 0% ~ 120.0% Internal/External	
<b>FM MODULATION</b>	Carrier Waveforms Modulating Waveforms Modulating Frequency Peak Deviation Source	Sine, Square, Triangle, Ramp Sine, Square, Triangle, Up/Dn Ramp 2mHz ~ 20kHz DC ~ 80MHz DC ~ 50MHz Internal/External	
<b>PWM</b>	Carrier Waveforms Modulating Waveforms Modulating Frequency Deviation Source	Square Sine, Square, Triangle, Up/Dn Ramp 2mHz ~ 20kHz 0% ~ 100.0% of pulse width Internal/External	
<b>FSK</b>	Carrier Waveforms Modulating Waveforms Internal Rate Frequency Range Source	Sine, Square, Triangle, Ramp, Pulse 50% duty cycle square 2 mHz ~ 100 kHz DC ~ 80MHz DC ~ 50MHz Internal/External	
<b>SWEEP</b>	Waveforms Type Source Start/Stop FREQ Sweep Time Trigger Marker Source	Sine, Square, Triangle Linear or Logarithmic Internal/External 100μHz ~ 80 MHz 100μHz ~ 50MHz 1ms ~ 500s Single, External, Internal Falling edge of Mark signal (Programmable frequency) Internal/External	
<b>BURST</b>	Waveforms Frequency Burst Count Start/Stop Phase Internal Period Gate Source Trigger Source Trigger Delay	Sine, Square, Triangle, Ramp 1μHz ~ 80MHz *4 1μHz ~ 50 MHz *4 1 ~ 1000000 cycles or Infinite -360.0 ~ +360.0° 1ms ~ 500s External Trigger Single, External or Internal Rate N-Cycle, Infinite : 0s ~ 85s	
<b>EXTERNAL MODULATION INPUT</b>	Type Voltage Range Input Impedance Frequency	for AM, FM, Sweep, PWM ± 5V full scale 10kΩ DC ~ 20 kHz	
<b>EXTERNAL TRIGGER INPUT</b>	Type Input Level Slope Pulse Width Input Impedance Latency Jitter	for FSK, Burst, Sweep TTL Compatible Rising or falling(selectable) > 100 ns 10kΩ, DC coupled Sweep: <10us (typical); Burst: <100ns (typical) Sweep: 2.5us; Burst: 1ns; except pulse, 300ps	
<b>MODULATION OUTPUT</b>	Type Amplitude	for AM, FM, Sweep, PWM Range: ≥1Vpp; Impedance: >10kΩ typical (fixed)	
<b>TRIGGER OUTPUT</b>	Type Level Pulse Width Maximum Rate Fan-out Impedance	for Burst, Sweep TTL Compatible into 50Ω > 450 ns 1 MHz ≥4 TTL load 50Ω typical	
<b>MARKER OUTPUT</b>	Type Level Fan-out Impedance	for ARB, Sweep TTL Compatible into 50Ω ≥4 TTL load 50Ω typical	
<b>Store/Recall</b>		10 Groups of Setting Memories	
<b>Interface</b>		GPIB, RS-232C, USB Host/Device	
<b>Display</b>		4.3 inch TFT LCD; 480 × 3 (RGB) × 272	
<b>SYSTEM CHARACTERISTICS</b>	Configuration Times(typical) Arb Download Times(typical)	Function Change: Standard>102ms, Pulse>660ms, Built-In Arb>240ms Frequency Change: 24ms; Amplitude Change: 50ms; Offset Change: 50ms Select User Arb: < 2s for 1M points; Modulation Change: < 200ms Binary Code: GPIB/RS-232C (115 Kbps), USB(Device); ASCII Code: USB(Host)*6	
<b>GENERAL SPECIFICATIONS</b>	Power Consumption Operating Environment Operating Altitude Pollution Degree Storage Temperature	65VA Temperature to satisfy the specification: 18 ~ 28° C; Operating temperature: 0 ~ 40° C Relative Humidity: ≤80%, 0 ~ 40° C, ≤70%, 35 ~ 40° C; Installation category: CAT II 2000 meters IEC 61010 Degree 2, Indoor Use -10 ~ 70° C, Humidity: ≤70%	
<b>POWER SOURCE</b>		AC100 ~ 240V , 50 ~ 60Hz	
<b>POWER CONSUMPTION</b>		65VA	
<b>DIMENSIONS &amp; WEIGHT</b>		265 (W) x 107 (H) x 374 (D)mm, Approx. 4kg	

Specifications subject to change without notice. FG-308151GD4BH

### ORDERING INFORMATION

**AFG-3081** 80MHz Arbitrary Function Generator  
**AFG-3051** 50MHz Arbitrary Function Generator

### ACCESSORIES

CD(User manual+Software)×1, Quick Start Guide×1,  
Power Cord×1, GTL-110 Test Lead×1

### OPTIONAL ASSESSORIES

**GTL-232** RS-232C Cable  
**GTL-248** GPIB Cable (2.0m)  
**GRA-432** Rack Adapter Kit  
**GTL-250** GPIB Cable, Double Shielded, 600mm  
**GTL-246** USB Cable, USB 2.0 A-B Type Cable, 4P

### FREE DOWNLOAD

**PC Software** Arbitrary Waveform Editing Software

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