

Model FG3B

2MHz Sweep/Function Generator

- ◆ Sine, Square, Triangle Waves, TTL, and CMOS Pulse Outputs
- ◆ 0.2Hz to 2MHz
- ◆ Linear or Logarithmic Sweep
- ◆ Amplitude or Frequency Modulation
- ◆ Built-in, 100MHz Frequency Counter with 5 Digit Display
- ◆ Voltage Controlled Frequency (VCF)
- ◆ Switchable 20dB Attenuator
- ◆ Variable Duty Cycle
- ◆ Variable DCV Offset

The FG3B Sweep/Function Generator features outstanding versatility and performance with five signals available: sine wave, triangle wave, square wave, TTL, and adjustable CMOS pulse outputs. The FG3B provides linear or logarithmic sweep of any of the selected signal outputs, and performs either amplitude or frequency modulation with internal or external modulating frequencies. Duty cycle control allows the 50% duty cycle of output signals to be changed to any desired value. This produces short duration pulses or sawtooth (ramp) signals. The invert button allows you to change the polarity of the signal.

A built-in frequency counter eliminates the need to connect an external counter for you to verify frequency settings. In addition, it can be used as a stand-alone counter for measuring external signals up to 100MHz with excellent accuracy and low sensitivity. A Voltage Controlled Frequency (VCF) option allows the user to vary frequency as a function of the VCF input. A switchable 20dB output attenuator is available where low signal levels are needed.

The FG3B is housed in a stylish case, featuring a cushion grip carrying handle/tilt stand, rear cord wrap, and recessed areas in the top cover for easy stacking of multiple units.

FG3B Specifications (at 23°C ±5°C; <70% R.H.)

Frequency Ranges		Frequency Counter	
1Hz	0.2Hz to 2.0Hz	Input Source:	Internal or external (INT/EXT switch)
10Hz	2Hz to 20Hz	Frequency Range	0.2Hz–2MHz: Internal Signal 5Hz–100MHz: External Signal
100Hz	20Hz to 200Hz	Accuracy	±1 time base accuracy ±1 count
1kHz	0.2kHz to 2.0kHz	Time Base	Oscillation frequency 10MHz, temperature stability ±10ppm (23°±5°C)
10kHz	2kHz to 20kHz	Resolution	0.1Hz, 1Hz, 10Hz, 100Hz
100kHz	20kHz to 200kHz	Sensitivity	≤25mVRMS (5Hz–10MHz) ≤35mVRMS (10Hz–100MHz)
1MHz	0.2MHz to 2.0MHz	Sweep Operation	
Main Output		Sweep/Manual	Switch selector
Output Amplitude	>20Vp-p (open circuit) >10Vp-p (into 50Ω load)	Sweep Width	1000:1 ratio max., adjustable
Impedance	50Ω ±6%	Sweep Time	0.5 to 30sec (±2sec) adjustable
Attenuator	-20dB ±1dB (at 1kHz)	Sweep Mode	Linear or logarithmic
DC Offset Control	-10V to +10V (open circuit) 5V to +5V (into 50Ω load)	Amplitude Modulation	
Duty Cycle Control	1:1 to 10:1 continuously variable Note: Frequency divides down by 10 when not at a 50% duty cycle.	Depth	0-100% (±3% at high end)
Sine Wave		Modulating Frequency	400Hz (INT), DC to approx. 1MHz (EXT)
Distortion	<1%, 0.2Hz to 200kHz	Carrier Bandwidth	100Hz to 2MHz (-3dB)
Flatness	<0.2dB, 0.2Hz to 100kHz <1dB, 100kHz to 2MHz	EXT Sensitivity	<10Vp-p for ±100% modulation
Triangle Wave Section		Frequency Modulation	
Linearity	>98%, 0.2Hz to 100kHz >95%, 100kHz to 2MHz	Deviation	0 to ±5%
Square Wave Section		Modulation Frequency	400Hz (INT); DC to approx. 20kHz (EXT)
Symmetry	<2%, 0.2Hz to 100kHz	EXT Sensitivity	<10Vp-p for ±5% modulation
Rise and Fall Time	<120ns	GENERAL	
CMOS Output		Display: 5 digit, 8mm (0.3") high LED display; Accessories: AC power cord; two coaxial test cables; two spare fuses; Operator's Manual;	
Level Adjust	4V (±1V) to 14.5V (±0.5V)	Frequency Range: 0.2Hz to 2MHz in 7 ranges; Operating Temperature: 0°C to 50°C (32°F to 122°F), 80% R.H.; Storage Temperature: -40°C to 70°C (-40°F to 158°F), 70% R.H.; Power: 117VAC or 234VAC, 50 or 60Hz ≤ 20VA; Inputs: VCF/Modulation and external counter; Outputs: Sine wave, square wave, triangle wave, TTL pulse and CMOS pulse (with sweep, amplitude and frequency modulation, and duty cycle controls); Dimensions (H x W x D): 7.9cm x 23cm x 33cm (3.1" x 9" x 13") (exclusive of handle); Weight: 2kg (4.4 lb); Warranty: One year	
Rise and Fall time	<120ns		
TTL Output			
High Level	>3V		
Rise and Fall Time	<25ns		
Voltage Controlled Frequency (VCF)			
Input Voltage Range	0V to 10V: (±1V) input for 1000:1 Frequency Ratio		
Input Impedance	10kΩ ±10%		

