

CFG253
CFG280
CFG250

Function generators with flexible output waveshape selections.

CFG250

- 0.2 Hz to 2 MHz
- Square, Triangle, and Sine Waves; TTL Output
- 20 dB Attenuator
- Internal or External Frequency Sweep
- Variable Duty Cycle
- Variable Symmetry (20 to 80%)

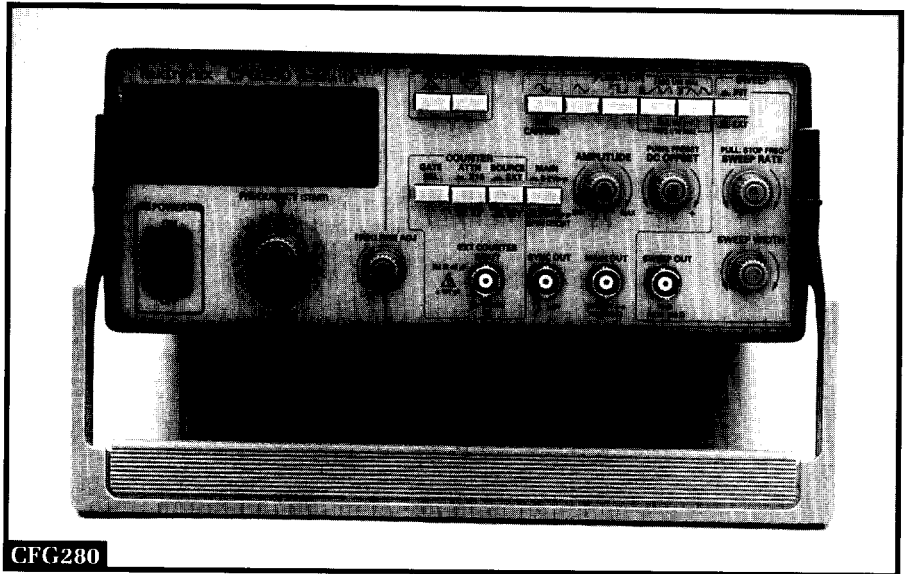
CFG253

- 0.03 Hz to 3 MHz
- Square, Triangle, and Sine Waves; TTL Output
- 20 dB Attenuator
- Internal or External Frequency Sweep
- Variable Duty Cycle
- Variable Symmetry (20 to 80%)

CFG280

- 0.1 Hz to 11 MHz (Calibrated)
- 0.01 Hz to 11 MHz (Uncalibrated)
- 1 Hz to 100 MHz Counter
- Square, Triangle, and Sine Waves; TTL Output
- 20 dB Attenuator
- External Gate Input
- VCF (FM) Input
- AM 0 to 100% Input for External Sine Wave
- Internal or External Frequency Sweep

Function Generators

**CFG280****CFG250 and CFG253**

Function Generators produce sine, square, and triangle waves, and TTL signals for testing amplifiers, filters, and digital circuits. Sweep function can be controlled internally or with an external signal. Duty cycle, DC offset, sweep rate, sweep width, and amplitude are all operator controlled. The CFG253, at 0.03 Hz to 3 MHz, has a wider output bandwidth than the CFG250, at 0.2 Hz to 2 MHz.

CFG280 11 MHz Function Generator with Counter

The CFG280 combines an 11 MHz Function Generator with a 1 Hz to 100 MHz Frequency Counter. The onboard counter allows the operator to set the frequency output of the function generator precisely. This versatile instrument conserves both bench space and budget.

Product(s) available through an Authorized Tektronix Distributor. See pages 590-595.



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APPLICATIONS

- Training
- Manufacturing Production Test
- Field Repair
- Bench Calibration and Repair
- Product Design

Function Generators

CFG253
CFG280
CFG250

FUNCTION GENERATORS

KEY SPECIFICATIONS

	CFG253	CFG250	CFG280
Waveform Outputs	Square wave, sine wave, triangle wave, TTL pulse, sweep functions for all outputs	Square wave, sine wave, triangle wave, TTL pulse, sweep functions for all outputs	Square wave, sine wave, triangle wave, TTL pulse, sweep functions for all outputs
Ranges	1.0 Hz to 1.0 MHz in 7 ranges	1.0 Hz to 1.0 MHz in 7 ranges	0.1 Hz (calibrated) to 11 MHz in 8 ranges
Frequency Multiplier	Variable from 0.3 to 3.0 times the selected frequency range	Variable from 0.2 to 2.0 times the selected frequency range	Variable from 0.1 to 1 (uncalibrated) 1 to 11 (calibrated)
Dial Accuracy	±5% of full scale	±5% of full scale	±5% of full scale from 0.1 Hz to 10 MHz
Sine Wave Distortion	<1% (10 Hz to 100 kHz)	<1% (10 Hz to 100 kHz)	<1% (10 Hz to 100 kHz) -30 dB at all other frequencies
Triangle Wave Linearity	20 Hz to 200 kHz: ≥99%; 200 kHz to 3 MHz: ≥97%	20 Hz to 200 kHz: ≥99%; 200 kHz to 2 MHz: ≥97%	0.1 Hz to 110 kHz: ≥99%; 110 kHz to 1 MHz: ≥97%; 1 MHz to 11 MHz: ≥95%
Square Wave Response	≤100 ns rise/fall time, maximum output into 50 Ω load	≤100 ns rise/fall time, maximum output into 50 Ω load	≤25 ns rise/fall time, maximum output into 50 Ω load
Main Output Amplitude	0 to 20 V p-p	0 to 20 V p-p	0 to 20 V p-p
Attenuator	20 dB	20 dB	20 dB
SYNC/TTL Output	TTL output level, rise <25 ns (20 TTL load) ≥3 V pk	TTL output level, rise <25 ns (20 TTL load) ≥3 V pk	<25 ns rise/fall time, maximum output into 50 Ω load
Main Output Impedance	50 Ω ± 10%	50 Ω ± 10%	50 Ω ± 10%
DC Offset (continuously variable)	±10 V minimum open circuit ; ±5 V minimum into 50 Ω load	±10 V minimum open circuit; ±5 V minimum into 50 Ω load	±10 V minimum open circuit; ±5 V minimum into 50 Ω load
Symmetry/Duty Cycle	5 to 1 minimum symmetry change	5 to 1 minimum symmetry change	95/5 fixed (pulse and ramp)
Internal Variable Sweep Rate	0.5 Hz to 50 Hz	0.5 Hz to 50 Hz	0.5 Hz to 50 Hz
External Voltage-controlled Variable Sweep Range (10 kΩ Input)	100:1 minimum for 0 to +10 V DC input with frequency control set at maximum	100:1 minimum for 0 to +10 V DC input with frequency control set at maximum	100:1 minimum for 0 to ±10 V DC input with frequency control set at 0.1 or 11
VCF (FM) Input	-	-	±10 V input shifts frequency ≥100:1 up or down with dial set at 0.1 or 11 respectively
AM	-	-	0 to 100%, DBSC, external sine wave only
Warranty	One year	One year	One year
Safety	UL, CSA	UL, CSA	ETL, CSA
CFG280 Counter Specifications			
Frequency Range (AC coupled)	-	-	1 Hz to 100 MHz
Sensitivity	-	-	30 mV RMS from 1 Hz to 50 MHz; 50 mV RMS from 50 MHz to 100 MHz;
Period Range/Resolution	-	-	1 ms to 60 s / 1 ms
Crystal Frequency	-	-	10 MHz
Time Base Stability	-	-	±0.001% (±10 ppm) from 0° to 40°C
Frequency Accuracy	-	-	±(time base error + 1 count)
Period Accuracy	-	-	±(time base error + 1 count + trigger error)

ORDERING INFORMATION

CFG250

2 MHz Function Generator

Includes: Operator's Manual, US Power Cord, One Year Warranty.

CFG253

3 MHz Function Generator

Includes: Operator's Manual, US Power Cord, One Year Warranty.

CFG280

11 MHz Function Generator with 100 MHz Counter

Includes: Operator's Manual, US Power Cord, One Year Warranty.

SERVICE ASSURANCE OPTIONS

These products covered by the following service assurance options:

REP4100 – Provides One Year of Post-Warranty Repair Protection

CAL4100 – Provides One Year of Calibration Services

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