

- 10 kHz to 2.5 GHz frequency range with a reference frequency of 50 kHz
- 4.5 mV to 5.5 V amplitude range
- Amplitude flatness from  $\pm 1.5$  to  $\pm 4\%$  of 50 kHz reference
- Synthesized frequency accuracy
- Excellent VSWR
- 20 stored front-panel settings capability with non-volatile memory
- Self-test on power-up
- Easy integration into GPIB systems
- Companion to CG 5011 Programmable Calibration Generator

The SG 5050 is the only choice for anyone who needs leveled output amplitude to calibrate analog or digital scopes with bandwidth to 2.5 GHz — under either local or programmable control. This is because no other programmable leveled sine wave generator is built specifically to fill scope calibration requirements. The SG 5050's leveled output is variable from 10 kHz to 2.5 GHz with a programmable reference frequency of 10 kHz to 10 MHz. Crystal-controlled frequency accuracy eliminates drift so there's no re-reading results.

Accurately calibrated output voltage is provided from 4.5 mV to 5.5 V peak-to-peak into 50  $\Omega$ . Absolute amplitude accuracy is  $\pm 1.5\%$  from 10 kHz to 50 kHz, with flatness from  $\pm 1.5$  to  $\pm 4\%$  over the remainder of the frequency range to 2.5 GHz.

A remote leveling head is standard and plugs directly into the oscilloscope to ensure that the output signal is level at all times. All other signal generators are specified at the front-panel BNC connector, not at the end of the cable going to the instrument under test.

# SG 5050 Programmable Leveled Sine Wave Generator for Scope Calibration

## Easy test setup — either locally or over the GPIB

The SG 5050's front panel is simple to operate, providing complete status and error information through a bright, 8-digit display. To simplify manual use and reduce bus traffic in ATE applications, you can store up to 20 front-panel settings in non-volatile memory.

Frequency and amplitude along with front-panel store/recall settings are all fully programmable. Automating test procedures makes scope calibration simple four times faster than manual test methods allow — and virtually eliminates the risk of operator error.

## Configure the SG 5050 with a CG 5011 Programmable Calibration Generator

As three-wide TM 5000 Series modules, they conveniently fill a standard slot TM 5006A mainframe to form a complete, cost-effective benchtop or rackmount calibration system.

Finally, count on TEGAM to offer the same support of your purchase, including comprehensive manuals, application assistance, and updates.



YOUR GLOBAL SOURCE FOR TEST AND MEASUREMENT SOLUTIONS

### SG 5050 Specifications

#### Frequency

##### Range/Resolution

10 kHz - 49.999 kHz	1 Hz steps
50 kHz - 549.99 MHz	10 Hz steps
550.00 MHz - 1.4999 GHz	100 Hz steps
1.5000 GHz - 2.5000 GHz	1000 Hz steps

#### Accuracy With Internal Timebase (within 1 year of adjustment)

	ppm of Setting +
Hz	
10 kHz - 49.999 kHz	±(3 + 0.3)
50 kHz - 2.500 GHz	±(3 + 3)

#### Accuracy With External Timebase (10 MHz ± 1.5 ppm)

10 kHz - 49.999 kHz	±(ext. t.b. error + 0.3 Hz)
50 kHz - 2.500 GHz	±(ext. t.b. error + 3 Hz)

#### Amplitude

##### Range/Resolution

4.5 mV - 55 mV	0.02 mV/steps
55.2 mV - 550 mV	0.2 mV/steps
0.552 mV - 5.5 V	2 mV/steps
-42.95 dBm- +18.75 dBm	0.05 dBm/steps

#### Accuracy (within 1 year of adjustment)

10 kHz to 50 kHz	
±1.5%	20-26°C
±3.0%	0-40°C

#### Flatness (within 1 year of adjustment)

	% of 50 kHz Ref.
Freq.	
50 kHz - 250 MHz	±1.5%
250 MHz - 2.500 GHz	±4%

#### Output

Leveling Settling Time	20 ms Typ.
DC Offset	±20 mV

#### VSWR

- Less than 1.2:1 up to 550 MHz
- Less than 1.3:1 550 MHz to 2.5 GHz

#### Harmonic Distortion (typical specifications)

10 kHz - 49.999 kHz at 5.5 V	All Harmonics and Spurs less than -40 dBc
50 kHz - 2.5 GHz at 5.5 V	2nd Harmonic less than -30 dBc 3rd Harmonic less than -35 dBc
	Nonharmonics less than -40 dBc
	Phase noise less than -85 dBc/Hz at 10 kHz offset from 10 kHz to 800 MHz -70 dBc above 800 MHz

#### Internal Timebase Output

Frequency	10 MHz
Accuracy	±3 ppm
Amplitude	400 mV p-p into 50 Ω
Impedance	50 Ω

#### External Timebase Input

Frequency	10 MHz ±1.5 ppm
Amplitude	- 10 dBm to +10 dBm (70 to 700 mV rms)
Impedance	50 Ω ac, 500 Ω dc

#### Environmental

Temperature	
Operating	0°C to 40°C
Non-operating	-40°C to +71°C

#### Humidity

Operating	95% ±5% RH, +10°C to +30°C 75% ±5% RH, +30°C to +40°C RH not controlled below +10°C
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#### General

Weight	6.5 lb. (2.4 kg)
Height	5" (12.7 cm)
Width	8" (20.32 cm)
Length	11" (27.94 cm)

#### Ordering Information

SG 5050	Programmable Leveled Sine Wave Generator
	Includes: Operators Manual Instrument Interfacing Guide Reference Guide, Leveling Head
TM 5003	3 Wide Power Module Mainframe, GPIB
TM 5003/RI	TM 5003 w/Rear Interface
TM 5006A	6 Wide Power Module Mainframe, GPIB
TM 5006A/R	TM 5006A w/Rack Mount
TM 5006A/RI	TM 5006A w/Rear Interface
TM 5006A/R/RI	TM 5006A w/Rack Mt & Rear Interface
TM 5006A/EMC	TM 5006A w/EMC Shielding

#### Mainframe Power Plug Options

Standard	120 V North American
UE220	220 V Universal Euro & Switzerland
UK240	240 V United Kingdom
A240	240 V Australian
NA240	240 V North American
S220	220 V Switzerland

#### Warranty

One year on materials and workmanship.

#### Calibration Documentation

Contact TEGAM for OPTION Z540 NIST Traceable Compliance Certificate and Test Data.

#### Calibration & Technical Services

For warranty and remedial repair, calibration services and spare parts, or for additional information on TEGAM sales and service offices around the world, contact us at 440-466-6100 (ph) or 440-466-6110 (fx).



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