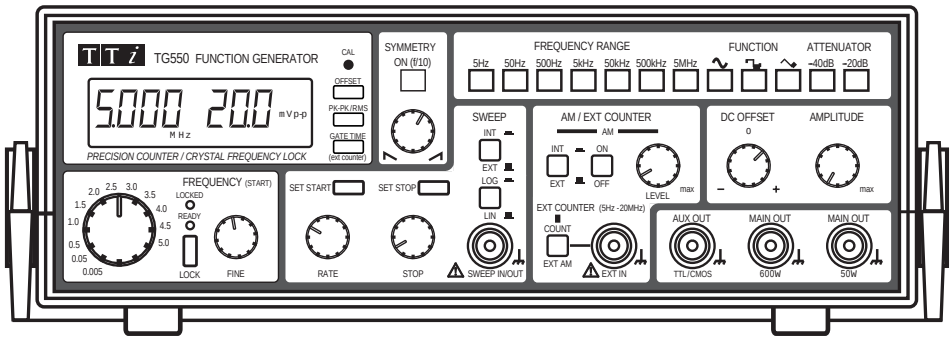
THURLBY THANDAR INSTRUMENTS

TG550 Advanced 5MHz Function Generator with Sweep



- 0.005Hz to 5MHz frequency range
- Simultaneous display of frequency & level
- Frequency locking for increased stability
- Precision internal linear or logarithmic sweep
- External counter with 7 digit resolution
- Very high waveform quality throughout range
- 20V pk-pk from 50/600 Ω, plus TTL/CMOS
- 1000:1 frequency change by vernier or sweep
- Internal or external amplitude modulation

The TG550 represents the state-of-the-art in 5MHz analogue function generators. It provides very high waveform quality at all frequencies and levels.

The large LCD display provides a digital readout of both frequency and level (peak-to-peak amplitude, rms amplitude or dc offset).

Advanced measurement techniques are used to provide high accuracy with fast update even at low frequencies.

The TG550 includes a digital frequency locking system that gives it a level of frequency stability that cannot be matched by conventional analogue function generators.

Once the frequency has been set, pressing the Lock key engages a measure-and-correct circuit which compensates for the small thermal and mechanical drifts that inevitably occur in an analogue generator.

The frequency is compared to a crystal controlled reference and is maintained to within 0.01% of the set frequency.

An external counter mode is available which utilises the full width of the display to provide up to seven digits of resolution. A reciprocal counting measurement system is used which ensures high resolution regardless of input frequency. Thus, for example, mains frequency can be measured to a resolution of better than 1mHz.

FREQUENCY

Frequency Range:
0.005Hz to 5MHz in 7 overlapping decade ranges with fine adjustment by verniers.
Vernier Range: 1000:1 on each range.

FREQUENCY LOCKING

Operating Range: 0.5Hz to 5MHz with vernier setting within 10% to 100% of range maximum.
Locking Accuracy: Better than 0.01% of displayed value.

DISPLAY

LCD, 8 digits (11mm high) plus 14 annunciators

Note: *This is a faxable data sheet, a colour brochure is also available.*

METER FUNCTIONS (generator mode)

Frequency:
Auto-ranging reciprocal measurement giving 4 digit resolution for frequencies down to 1Hz; maximum resolution is 0.001Hz. Accuracy ±1 digit 0.2Hz to 5MHz; accuracy ±1% of range below 0.2Hz
Amplitude:
Display shows peak-to-peak amplitude or rms value. Display corrected for attenuator setting. 3-digit resolution, accuracy typically 5% of range
DC Offset:
3-digit resolution; accuracy typically ±2% of setting ±1 digit. Display corrected for attenuator setting

OUTPUTS

MAIN - 50 Ohm
Amplitide
2mV to 20V peak-peak open circuit (1mV to 10V peak-peak into 50Ω) in four switch-selectable ranges with 20dB vernier control within each range
Attenuator Ranges: 0dB, -20dB, -40dB, -60dB
DC Offset Range:
±10V from 50Ω. DC offset plus signal peak limited to ±10V (±5V into 50Ω). DC offset plus waveform attenuated proportionally by the attenuator.

MAIN - 600 Ohm
Alternative output socket offering the same facilities as the 50Ω socket.

AUX OUT
0 to 5V TTL/CMOS logic levels capable of driving 2 standard TTL loads. Frequency, symmetry and phase as main outputs

SWEEP OUT
3V ramp from 600Ω

EXTERNAL COUNTER

Frequency Range: 5Hz to 20MHz, fully autoranging
Input Sensitivity: 50mV rms (sinewave)
Measurement Time: Selectable 0.5s or 5s
Resolution: 6 digits in 0.5s; 7 digits in 5s
Accuracy: ±1 digit ± timebase accuracy
Timebase Accuracy:
±10ppm initial error; ±5ppm/year ageing rate; typically less then 0.5ppm/°C. Adjustment point for closed-case recalibration

OPERATING MODES

Specifications apply for the top decade of each frequency range and maximum output into 50Ω termination.

SINE
Distortion:
<0.5% on 500, 5k and 50k ranges; <1% on 5, 50 and 500k ranges; all harmonics >25dB below fundamental on 5M range.
Amplitude Flatness:
±0.2dB to 200kHz; ±2dB to 5MHz.

TRIANGLE
Linearity: Better than 99% to 200kHz

SQUARE WAVE
Rise and Fall Times: <45ns
Mark - Space Ratio: 1:1 ± 1% to 100kHz

DC
Range: ±10V unterminated

SYMMETRY
Symmetry Range:
Variable typically 1:9 to 9:1 (on top decade of each range), frequency divided by 10.

SWEEP MODES

INTERNAL
Sweep Range: >1000:1 within each range.
Sweep Rate:
Adjustable, typically 20ms to 20 secs.
Sweep Mode:
Linear or logarithmic. Sweep start and stop frequencies displayed by button press.

EXTERNAL
Input Impedance: 10kΩ
Input Sensitivity: 0 to 3V for 1000:1 sweep
Max. Input Voltage: ±10V
Sweep Linearity: Better than 1%
Max. Voltage Rate: 0.1V/us

AMPLITUDE MODULATION

Depth: Variable 0 to 100%
Frequency:
400Hz (internal). DC to 100kHz (external).
External Sensitivity:
Approx. 2V peak-to-peak for 50% modulation.

GENERAL

POWER REQUIREMENTS
Input Voltage:
230V or 115V nominal 50/60Hz, by internal adjustment; operating range ±14% of nominal. Installation Category II.
Consumption: 25VA max.

ENVIRONMENTAL & MECHANICAL
Operating Range: +5°C to +40°C, 20% to 80% RH.
Storage Range: -10°C to +65°C
Environmental:
Indoor use at <2000m, Pollution degree I
Safety: Complies with EN601010-1
EMC: Complies with EN50081-1 & EN50082-1
Size: 260(W) x 88(H) x 235(D)mm (10.2 x 3.4 x 9.2"), excluding handle and feet.
Weight: 1.9kg (4.2lb) approx.

Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.

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