

Analog Generator

TSG170A



TSG170A NTSC Television
Generator.

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This product is discontinued.

Characteristics

Test Signal Generator

Luminance Amplitude Accuracy - $\pm 1\%$.

Chrominance-to-luminance Gain - $\pm 1\%$.

Output Impedance - 75 Ohm.

Return Loss - 36 dB to 4.2 MHz.

Test Signals

SMPTE Color Bars

Convergence - 14 lines per field, 17 lines per horizontal.

Pulse & Bar with Window -

2T Pulse HAD: 250 ns ± 25 ns.

White Bar Amplitude: 100 IRE.

Field Tilt: 0.5%.

Line Tilt: 0.5%.

Multiburst -

White Reference Bar Amplitude: 428.6 mV (60 IRE).

Packet Amplitude: 428.6 mV (60 IRE) p-p.

Burst Frequencies: 0.5, 1.0, 2.0, 3.0, 3.58 and 4.2 MHz.

5-Step Staircase - 714.3 mV (100 IRE).

Luminance Ramp - 0 to 714.3 mV (100 IRE).

Modulated Ramp -

Chrominance Amplitude: 285.7 mV (40 IRE).

Diff Gain: 0.6%.

Diff Phase: 0.3.

APL - 10% and 90%.

AC Bounce - Bounce Rate: 1 second high, 1 second low.

Flat Fields - 10 IRE, 100 IRE.

Red Field - Luminance Pedestal: 153.6 mV (21.5 IRE).

Multibars - Color bars and multiburst.

NTC 7 Composite - 80 IRE, 5-step modulated staircase and pulse & bar.

Line Sweep - 714.3 mV_{p-p}. Linear sweep from 500 kHz to 5 MHz.

Multipulse -

Amplitude: 714.3 mV.

Frequencies: 0.5, 1.0, 2.0, 3.0, 3.58 and 4.2 MHz.

System Test Matrix - Multibars and NTC7.

Monitor Setup Matrix - Convergence, IWQB, convergence, color bars, reverse bars and convergence.

DAC Test - 500 kHz and 3.58 MHz.

Opt. 01 Color Bars - SMPTE color bars.

Identification - 12 characters, 7 x 9 matrix.

Audio Tone - 449.55 Hz (locked to vertical), distortion less than 0.01%, 0 to 8 dBu into 150 Ohm, 600 Ohm or high impedance. Click ID adjustable 0.2 to 4 Hz.

Sync Generator

Subcarrier Stability - 3.579545 MHz \pm 1 Hz over temperature; typically less than 1 ppm per year drift after initial aging.

Black Burst Output -

Setup: 7.5 IRE.

Blanking: Less than 10.6 μ s.

Pulse Outputs (General Characteristics) -

Amplitude: 4.0 \pm 0.1 V.

Impedance: 75 Ohm.

Return Loss: 30 dB to 4.2 MHz.

Rise Time: 140 ns \pm 20 ns.

Pulse Outputs (Signals) -

Composite Sync -

Blanking:

Horizontal Blanking Duration: 10.7 μ s \pm 0.1 μ s,
jumper selectable for 10.5 μ s or 10.9 μ s.

Vertical Blanking Duration: 20 lines, jumper selectable for 19 or 20 lines.

Burst Flag.

Horizontal Drive.

Vertical Drive.

Color Frame Pulse: Field 1, line 11.

Subcarrier Output - Amplitude: $2 V_{p-p} \pm 0.2 V$.

Pulse and Subcarrier Outputs - Timing Range: 4 μs advance, 4 μs delay relative to the test signal and black burst outputs.

Genlock

Genlock Source (Comp Video) -

Input Configuration: 75 Ohm loop-through.

Return Loss: At least 40 dB to 4.2 MHz.

Burst Amplitude: 286 mV +1 dB to -6 dB.

Sync Amplitude: 286 mV +3 dB to -6 dB.

Genlock Performance -

Horizontal Timing Range: 8 μs advance, 8 μs delay.

Vertical Timing Range: 0, 1 or 2 lines advance or line delay, jumper selectable.

Burst Lock Range: 3.579545 MHz ± 20 Hz.

Jitter: 0.5°.

Power Source

Mains -

Voltage Range: 90 to 132 VAC or 180 to 250 VAC.

Frequency Range: 48 to 62 Hz.

Power Consumption - 40 W typical, 60 W maximum.

Environmental

Temperature -

Operating: 0° to 50°C.

Nonoperating: -40 to 65°C.

Certifications

EMC - Certified to the EMC Directive 89/336/EEC.

Safety -

Approved to: UL1244, CSA231.

Complies with: EN61010-1, IEC61010-1.

Physical Characteristics

Dimensions	mm	in.
Height	44	1.734
Width	483	19
Depth	561	22.1
Weight	kg	lb.
Net	6.14	13.5
Shipping	10.4	22.9



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