Analog HDTV Sync Generator

SPG 1000 HDTV Sync Generator.

Features
Specs

SPG 1000

This product is discontinued.
View alternative products.

Check product support status.

CHARACTERISTICS

Internal References

Frequencies -
Oscillator 1: 72.000000 MHz ± 72 Hz.
Oscillator 3: 74.250000 MHz ± 74 Hz.
Oscillator 4: 74.175824 MHz ± 74 Hz.
Oscillator 5: 75.524475 MHz ± 75 Hz.

External Lock Range - ± 10 ppm.

Clock Outputs

Format - Continuous clock signal with frame information encoded as a missing clock pulse.

Frequency - Oscillator frequency.

Output Levels - Balanced ECL.

Impedance - 78 Ohm.

Connector - Twin-ax BNO.

Return Loss - > 30 dB at the clock frequency.

SPG 1000 rear panel.

Test Signal Generator

Output Formats - GBR and Y, P_B, P_R.

Levels -
GBR: 0 to 700 mV in each channel.
Y, P_B, P_R: Y channel: 700 mV.
P_B, P_R, channels: ± 350 mV.

Amplitude -
Accuracy: ± 1% at 700 mV.
Channel Match: ± 0.5%; measured between any two channels.

Channel to Channel Delay (Between Any Two Channels) -
≤ 1 ns; measured.

Signal-to-noise Ratio (to 300 MHz) - > 50 dB unweighted.

Blanking Level - 0 V DC ± 50 mV.

Output Impedance - 75 Ohm.

Return Loss - ≥35 dB to 30 MHz.

Test Signals

Color Bars -
GBR 100%: 700 mV all channels.
Y, P_B, P_R 100% ± 350 mV Color Difference: 700 mV luminance.

Pluge -
GBR and Y: 0, 175, 350, 525 and 700 mV amplitude;
references; ± 35 mV; black level sets; 840 mV clip indicator.

Convergence Pattern - Vertical and horizontal lines with 5% overscan marks.

Red Field - 100% amplitude red.

Black Field - 0 V all channels.

Grey Field - GBR and Y: 350 mV. P_B, P_R: 0 V.

White Field - GBR and Y: 700 mV. P_B, P_R: 0 V.

5 Step Grey Scale - GBR and Y: 700 mV.

Timing Signal - Coarse and fine timing elements with 1 ns markers.

Sync Generator

Output Format - Trilevel.

Amplitude - -300 mV ± 1%. +300 mV ± 1%.

Time Offset - ≤1 ns; measured between any two sync outputs.
≤7 ns; typical between sync and test signal outputs.

Sync/Test Signal Timing Offset -
Reference Point: Clock output.
Ranges:

Vertical: ± 1/2 frame in one line steps.
Horizontal: ± 1/2 line in clock cycle steps.
Fine: ± 1/2 clock cycle in steps of approximately 50 ps.

Blanking Level - 0 V ± 50 mV.

Output Impedance - 75 Ohm.

Return Loss - > 30 dB to 30 MHz.

GENLOCK

Input Amplitude Range - ± 6 dB relative to nominal.

Genlock Timing Error as a Function of -
Input Amplitude:

Trilevel sync: ≤0.5 ns; ± 3 dB amplitude change.
Bilevel sync: ≤1.0 ns; ± 3 dB amplitude change.

Input APL: ≤0.5 ns; 10% to 90% APL change.
Input Hum: ≤0.5 ns; 0.5 V of hum.
Input Frequency: ≤0.5 ns; ± 10 ppm relative to nominal.
Ambient Temperature: ≤1.0 ns; 0° C to 50° C.

Jitter -
Trilevel and Bilevel Sync Inputs: ≤0.5 ns; ± 3 dB input amplitude change and ≥60 dB input S/N ratio.
Trilevel Sync Input: ≤1.0 ns; ± 3 dB input amplitude change and ≥35 dB S/N ratio.
Bilevel Sync Input: ≤3.0 ns; ± 3 dB input amplitude change and ≥35 dB S/N ratio.

Genlock Timing Offset -
Reference Point: Genlock input signal.
Ranges:

Vertical: ± 1/2 frame in one line steps.
Horizontal: ± 1/2 line in clock cycle steps.
Fine: ± 1/2 clock cycle in steps of approximately 50 ps.

Input Impedance - 75 Ohm.

Return Loss - > 40 dB to 5 MHz; >30 dB to 30 MHz.

Power Requirements

Mains -
Voltage Range: 90 to 132 or 180 to 250 V AC.
Frequency Range: 48 to 66 Hz.

Power Consumption - 85 W typical.

Environmental

Temperature -
Operating: 0° C to 50° C.
Nonoperating: -40° C 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	44.4	1.75
Width	483	19
Depth	533.4	21
Weight	**kg**	**lb.**
Net	5.44	12

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Tektronix Measurement products are manufactured in ISO registered facilities.