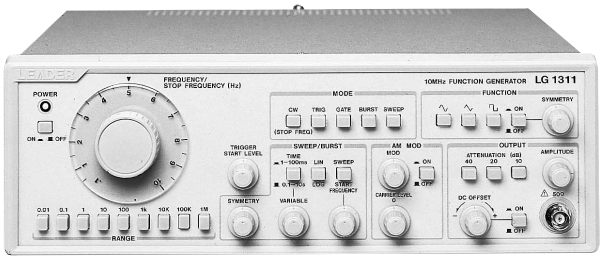
10-MHz Sweep/Function Generator

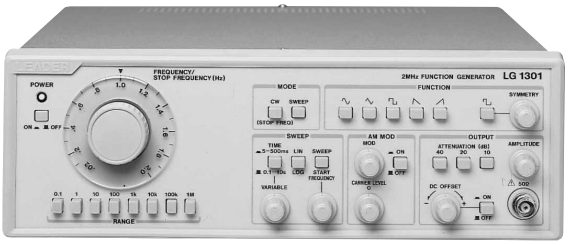


LG 1311

- *Wide Frequency Range, 0.01 Hz to 10 MHz*
- *Sine, Square, Triangle, Ramp and Pulse Output*
- *Linear and Log Sweep, 100 to 1 Range*
- *AM Modulation Including Suppressed Carrier*
- *Extended Low Frequency Operation*
- *External Control of Frequency, Sweep and FM*
- *Sync output*
- *Wide Range Output Attenuator + DC Offset*
- *Triggered Output, One Cycle per Trigger*
- *Gated Output*
- *Signal Burst Output*

An extremely versatile wide-ranging function generator, the LG 1311 offers extensive control of waveshape, symmetry, FM and AM modulation capabilities and log and linear sweep functions over frequency ranges that extend from sub-sonics at 0.01 Hz to 10 MHz. And flexibility in internal and external frequency control fits the unit into custom test setups, unique design evaluations and educational demonstrations. Waveforms include sine, square and triangle with control over symmetry to tailor pulse and ramp signals. Sweep operations include linear and log sweeps with 100:1 sweep range and both internal and external control of sweep frequency and range. Modulation capabilities include externally controlled FM and AM modulation from an external source with applications extending into communication systems. Additional features include trigger, gate and burst functions that enable single cycle and multi-cycle or bursts of signal for specialized tests of recovery time in servo, electro-mechanical and speaker applications. Output level is controlled by step attenuators to 70 dB with a 10:1 vernier. Rear panel outputs include sweep (scope H deflection), sync and GVC (generator voltage control). Inputs accept AM input and voltage control (VCG) for external control of frequency, FM and sweep. A front panel control facilitates carrier nulling for suppressed carrier AM.

2-MHz Sweep/Function Generator

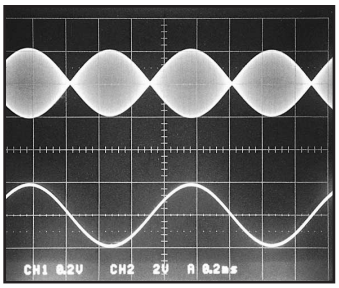


LG 1301

- *Extended Low-Frequency Operation to 0.002 Hz*
- *External Control of Frequency, Sweep and FM*
- *Sync output*
- *Wide Range Output Attenuator + DC Offset*
- *Sine, Square, Triangle, Ramp and Pulse Output*
- *Adjustable Pulse Width*
- *Linear and Log Sweep, 100 to 1 Range*

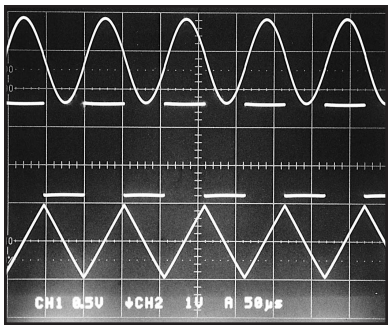
A multi-purpose signal source, the LG 1301 finds many applications in design/development and education uses. Wide frequency range from 0.002 Hz to 2 MHz coupled with extensive internal and external control of frequency, waveshape and sweep characteristics make the unit ideal for custom test setups and design evaluations. Waveforms include sine, square, triangle, ramp and pulse with 9:1 and 1:9 symmetry range. Both linear and log sweeps are available with 100:1 frequency ranges. Output level is controlled by step attenuators to 70 dB with 10:1 continuous control and dc offset is variable to ± 10 V.

Rear panel outputs include sweep, sync and GVC (generator voltage control.) Input BNCs accept external AM input and voltage control generator (VCG) for external control of frequency, FM and external sweep control. AM includes a level control for adjustable suppressed-carrier operation.

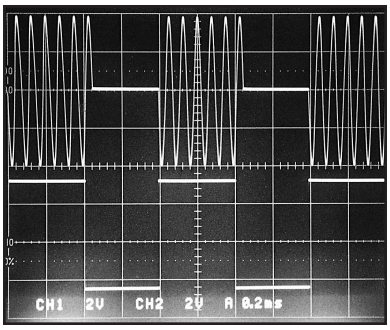


AM Suppressed Carrier

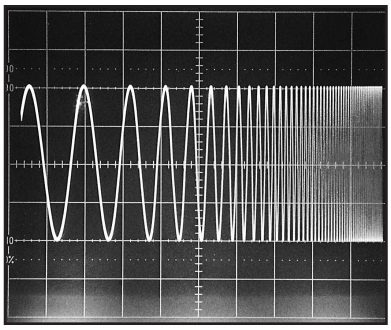
10-MHz and 2-MHz Sweep/Function Generators



Sine, Square and Triangle Waves



Burst (LG 1311)



Logarithmic Sweep

KEY SPECIFICATIONS (LG 1301/LG 1311)

Frequency Range
LG 1301
0.002 - 2 MHz, 8 ranges
LG 1311
0.01 - 10 MHz, 9 ranges
Accuracy
Within ± 5% f.s. below X1 MHz range

WAVEFORMS
Sinewave
Flatness
Within ± 3% below X100 kHz range
Distortion
LG 1301
<0.5%, 10 Hz - 20 kHz
<1%, 20 kHz - 100 kHz
LG 1311
<0.5%, 10 Hz - 50 kHz
<1%, 50 kHz - 100 kHz
Triangle
Symmetry
50:50 <1% (10 Hz - 100 kHz)
Squarewave
Rise Time
LG 1301
<100 ns into 50 Ω
LG 1311
<25 ns into 50 Ω
Symmetry
50:50 <1% (10 Hz - 100 kHz)
Sawtooth
Symmetry
LG 1301
15:85 or 85:15 <5% (10 Hz - 100 kHz)
LG 1311
1:9 or 9:1 <100 kHz range

PULSE
Rise Time
LG 1301
<100 ns into 50 Ω
LG 1311
<25 ns into 50 Ω
Symmetry
9:1 - 1:9 continuously variable
(10 Hz - 100 kHz)

OUTPUT LEVEL CONTROL
Output Voltage
10 V p-p ± 10% into 50 Ω
20 V p-p ± 10% open circuit
Attenuator Fixed
10, 20, 40 dB (0- 70 dB 10 dB steps)
Attenuator Variable
10:1 continuously variable
Output Impedance
50 Ω ± 5%
DC Offset
Open circuit ±10V continuously adjustable
AM Modulation
Signal Source
External Input
Input Voltage
0.5 V rms
Input Impedance
LG 1301
10 kΩ ± 20%
LG 1311
10 kΩ ± 10%
Modulation Depth
0 - 95%
Frequency Response
Within ± 3 dB (10 Hz - 100 kHz)
Maximum Input Voltage
LG 1301
± 10 V
LG 1311
± 15 V
Sweep Capabilities
Type
Linear, logarithmic
Type
10 s - 0.1 s, 500 ms - 5 ms, 2 ranges
Ratio
10:1 to 100:1 max or greater, continuously variable

SWEEP OUTPUT
Output Voltage
-1 V to 0 V within ± 10%
Output Impedance
1 kΩ ± 10%

VCG INPUT
Input Impedance
10 kΩ ± 10%
Frequency Response
Within ± 3 dB (DC - 100 kHz)

SYNC OUTPUT
Output Voltage
0 - 5 V squarewave
Output Current
>10 mA
Rise Time
< 25 ns

GVC OUTPUT
Output Voltage
0 to 5 V ± 10%

TRIGGER/GATE/BURST (LG 1311 only)
Trigger Level
Trigger level control sets trigger start phase
Output Signal
Outputs 1 period of gen signal synched to trigger

GATE FUNCTION
Signal Source
External input
Trigger Level
Set by trigger start level control
Output Signal
Completed waveforms output are controlled by period of external gate signal

BURST FUNCTION
Signal Source
Internal 5 ms to 10 ms
Burst Setting
Symmetry control knob sets ON time

POWER REQUIREMENTS
100, 115, 230 V ac ± 10% (max 250 V)
50/60 Hz user switchable
20 VA (LG 1301); 28 VA (LG 1311)

PHYSICAL
Size (W x H x D)
12 x 4 x 12 in.
300 x 100 x 300 mm
Weight
9 lbs., 4 kg (LG 1301)
9.2 lbs., 4.2 kg (LG 1311)
Operating Temperature
0-40°C, 10 to 85% RH

SUPPLIED ACCESSORY
BNC Alligator Clip Cable X1

OPTIONAL ACCESSORY
LT-2049 (50 Ω Terminator)