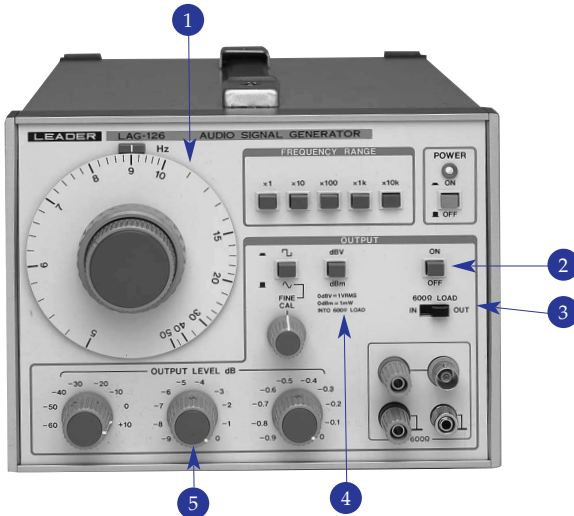


AUDIO SINE/SQUARE WAVE GENERATOR



LAG-126

- Low Distortion < 0.005%
- Wide Band 5 Hz to 500 kHz
- 80 dB Step Attenuator in 10, 1 and 0.1 dB Steps
- Detented ± 0.1 dB Fine Adjust
- Direct Reading dBm and dBV

The LAG-126 precision low distortion audio sine/square wave generator is used for designing, testing and servicing audio equipment. A vernier frequency dial allows for smooth accurate tuning. The 10, 1 and 0.1 dB step attenuators are selectable for audio reference levels of 0 dBm = 1 mW into 600 Ω or 0 dBV = 1 V rms and are a must when fast repeatable absolute level settings are required. A switchable 600 Ω shunt is included to establish proper loading when needed for direct reading output levels. The convenient output on/off switch opens the generator output and shorts the output terminals for S/N measurements.

- 1 Mechanical vernier-action dial permits quick and precise frequency settings. The outer knob is geared to permit fast coarse settings and the inner knob has a vernier action for fine adjustments.
- 2 Output on-off switch turns output on and off, and is useful for S/N or crossover measurements.
- 3 600 Ω LOAD switch terminates output internally for accurate measurements and absolute attenuator settings.
- 4 The output is calibrated in both dBv and dBm with + 10 dB maximum output.
- 5 The output level can be attenuated up to 80 dB in 0.1 dB steps for precise measurement.

KEY SPECIFICATIONS

FREQUENCY

Range

5 Hz - 500 kHz in 5 decade ranges

Accuracy

$\pm (3\% + 1 \text{ Hz})$

SINE WAVE OUTPUT

Level

3 V rms into 600 Ω termination
(+ 10 dBv, + 12 dBm)

Distortion

< 0.005%: 20 Hz - 20 kHz
< 0.01%: 10 Hz - 50 kHz
< 0.1%: 5 Hz - 500 kHz

Output Level Flatness

± 0.2 dB: 5 Hz - 20 kHz
 ± 0.5 dB: 20 kHz - 500 kHz

SQUARE WAVE OUTPUT

Level

Approx. 4 V p-p into 600 Ω
termination with the output set for dBv

Overshoot

< 5% (when output level is set for ≤ 30 dBv)

Sag

< 5%

Rise Time

< 200 ns

GENERAL OUTPUT CHARACTERISTICS

Impedance

Unbalanced: 600 $\Omega \pm 3\%$

Amplitude Control

Output attenuator provides up to 79.9 dB of attenuation in 0.1 dB steps; a ± 0.1 dB continuously variable control is also provided

POWER REQUIREMENTS

100, 120, 220, 240 V ac $\pm 10\%$
50/60 Hz, 13 VA

PHYSICAL

Size (W x H x D)

7 $\frac{7}{8}$ x 6 x 9 $\frac{7}{8}$ in.
200 x 150 x 250 mm

Weight

7.7 lbs., 3.5 kg

SUPPLIED ACCESSORIES

BNC to Alligator Clip Cable
Spare Fuse

dB, dBV, dBm, dBu, VU ?

Audio levels are expressed in rms volts or millivolts but more often in one of the several logarithmic dB (decibel) systems. Decibel units are much easier to work with as system gain and loss factors are simply additive or subtractive. In dB systems, levels are expressed as a ratio with respect to a chosen reference. In the dBV system, for example, the value is the absolute voltage level with respect to 1 volt. The use of dBV has pretty much fallen out of favor in the U.S.

For many years the standard system used in audio work has been the dBm in which the voltage reference is the voltage across a 600 Ω terminating resistance when a power of 1 mW is dissipated. This reference voltage calculates to:

$$E = \sqrt{PR} = \sqrt{1^{-3} \times 600} = 0.775 \text{ V}$$