

Model 1410A

ULTRA-HIGH PERFORMANCE AUDIO SIGNAL GENERATOR



FEATURES

- **Supplies both sine wave and SMPTE IM signals**
 - Delivers -90 to $+27$ dBm into 600Ω
 - Balanced and floating 150 or 600Ω output
 - Pushbutton tuned 10 Hz to 110 kHz
 - Ultra low $.001\%$ distortion
 - Precision attenuator controls level in 0.1 dB steps
 - Designed for use in strong rf fields
 - 2 year parts and labor warranty



SOUND TECHNOLOGY

1400 DELL AVENUE
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GENERAL

The Sound Technology 1410A is unquestionably the finest audio generator available.

Not only does the instrument provide both sine and intermodulation test signals, but it provides these signals from an output system that is **both fully isolated and balanced**. At the same time there is **no output transformer**. The absence of such a transformer helps maintain distortion in the output signal at remarkably low levels.

The practical significance of the special Sound Technology output circuit is that you can use the generator to drive virtually any kind of circuit—balanced, unbalanced, floating, or grounded. For example, it is unnecessary for the user to know the ground side or ground point of a line or load being driven. Since the generator output is fully isolated, the ground point of the load is immaterial.

The output system does, however, have a "centertap" which can be grounded if desired.

ULTRA-LOW DISTORTION

The instrument is classified as an ultra-low distortion generator since its sine-wave output typically has less than 0.001% (–100 dB) distortion over the greater portion of the audio range.

For intermodulation distortion measurements the instrument provides an SMPTE IM output. In addition, the LF/HF signal ratios are adjustable over a 100:1 range as desired.

The above and its other features combine to make the 1410A an easy-to-use instrument but one suited to the most demanding audio-measurement situations.

PRECISION OUTPUT ATTENUATOR

The Model 1410A also gives precise control of a wide output power range (–89.9 to +26 dBm) in 0.1 dB steps by means of a precision output attenuator.

SPECIFICATIONS

Model 1410A

ULTRA-HIGH PERFORMANCE AUDIO SIGNAL GENERATOR

OUTPUT

Output attenuator and vernier control the single tone sine-wave oscillator output as well as the intermodulation distortion generator output.

Output level: Calibrated +26 dBm to –89.9 dBm (referred to 600Ω) into 150Ω or 600Ω loads.

Output vernier: >10 dB range, continuously adjustable.

Output impedance: 150 or 600Ω, ±0.1% (<2.0Ω on +26 dBm step); balanced and floating.

Full scale output accuracy: ±0.1 dB at +20 dBm into 600Ω.

Meter linearity: ±1%.

Attenuator accuracy: ±0.15 dB (1.5%), any setting.

Balance: >70 dB to 20 kHz, >50 dB above 20 kHz.

Hum and noise: 120 dB below 0 dBm, 600Ω, balanced load (100 dB for unbalanced loads) or 100 dB below signal level, whichever is greater.

SINE WAVE GENERATOR

Frequency range: 10.0 Hz to 110 kHz in 4 overlapping ranges.

ΔF control: ±¼ of least significant digit. (Permits continuous frequency coverage.)

Frequency accuracy: ±2% of setting, ΔF control centered.

Frequency response (referred to 1 kHz):

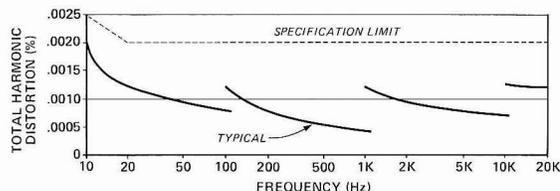
Balanced loads: ±0.1 dB, 10 Hz to 20 kHz, ±0.25 dB above 20 kHz, all ranges.

Unbalanced loads: ±0.2 dB, 10 Hz to 20 kHz, ±0.6 dB above 20 kHz, +26 dBm to –80 dBm.

Distortion (low distortion mode):

Output level to +26 dBm with 600Ω load, +20 dBm with 150Ω load:

Above 20 kHz, distortion is <.007% to 30 kHz, .02% to 50 kHz, .15% to 80 kHz <.35% to 100 kHz. At +26 dBm, 150Ω load, distortion increases by a factor of approximately 2 above 5 kHz.



INTERMODULATION DISTORTION GENERATOR

Low frequency generator: 50 or 60 Hz synchronized with power line. Total harmonic distortion <0.1%.

High frequency generator: 7 kHz ±1%.

LF/HF ratio: Switch selectable 4:1 ±1% or 1:1 ±2%.

Continuously variable from 1:1 to >100:1 with HF amplitude control.

GENERAL

Dimensions: 17.2" (44 cm) wide, 8.7" (22 cm) high, 12" (30.5 cm) deep.

Power: 90 to 130V or 180 or 260V, 50 to 60 Hz, 22 watts.

Weight: 23 lbs. (10.5 kg).

Shipping weight: 31 lbs. (14.1 kg).

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