The LG 3236(S1 version) Synthesized Standard Signal Generator covers a wide frequency range of 100 kHz to 170 MHz and provides FM/AM modulation capability. The high-accuracy crystal-controlled reference oscillator ensures highly stable RF frequency of ±5 x 10^{-6} (5 ppm).

The solid-state step attenuator is used for the RF output system to extend service life (because there is no mechanical contact), and is suited to frequent changes in output level such as in automatic production and inspection applications.

For modulation functions, the LG 3236(S1 version) is equipped with a high-quality stereo FM modulator. The AM modulator supports up to 100 %. In addition, the LG 3236(S1 version) is equipped with a simultaneous AM/FM modulation function (2 Audio Frequency systems) and a DDS AF oscillator that covers a frequency range of 20 Hz to 20 kHz.

FM stereo modulator and simultaneous FM/AM modulation capability is equipped.

**FEATURES**

- Oscillation frequency is locked to a high-accuracy reference oscillator to ensure accuracy of ±5 x 10^{-6} (5 ppm).
- The solid-state step attenuator is used for the RF output system to extend service life (because there is no mechanical contact), and is suited to frequent changes in output level such as in automatic production and inspection applications.
- The RF frequency covers a wide range of 100 kHz to 170 MHz.
- The output level can be set in the range of -20 dBμ to 126 dBμ (0 dBμ = 1 μV, 50 Ω into open circuit) in 0.1 dB steps.
- Equipped with a simultaneous AM/FM modulation function.
- Two systems of low-distortion, fixed oscillators are provided as AF oscillators, and the AM/FM and the L and R of FM stereo can be set to different frequencies.
- The variable DDS oscillator is provided allowing arbitrary AF frequencies to be specified in 1-Hz resolution.
- The FM modulation supports up to 200 kHz and AM modulation up to 100 %.
- In addition, a wide bandwidth of external modulation up to 100 kHz is supported for both FM and AM.
- FM stereo modulator is equipped.
- Since the GPIB interface is provided as standard, this instrument can be incorporated into a GPIB measurement system.
- The numeric keys are used for setting the frequency, output level, and modulation factor.
- Up to 100 preset conditions consisting of frequency, output level, and modulation can be stored to internal memory.
- All front panel switches (except power switch) can be remotely controlled via the 24-pin connector on the rear panel.
- An SCA input connector and a PILOT output connector are provided for connecting instruments such as an external FM multiple signal generator. (S1 version)
## SPECIFICATIONS

### LG 3236 (S1 version)

#### Frequency
- **Range:** 100 kHz to 170 MHz
- **Resolution:**
  - 100 Hz (100 kHz to 39.9999 MHz)
  - 1 kHz (40 MHz to 170 MHz)
- **Setting:** Ten-key pad, digit-select key and rotary knob
- **Accuracy:**
  - $\pm 5 \times 10^{-6}$ ($\geq 500$ kHz)
  - $\pm (5 \times 10^{-6} + 1$ digit) ($< 500$ kHz)
- **Display:** 6 digits

#### Output Level
- **Range:** -20 dBμ to 126 dBμ
  - (0 dBμ = 1 μV, 50 Ω into open circuit)
- **Resolution:** 0.1 dB
- **Setting:** Ten-key pad, digit-select key and rotary knob
- **Accuracy:**
  - $\pm 1$ dB (output ≥ 0 dBμ)
  - $\pm 1.5$ dB (output < 0 dBμ)
- **Impedance:** 50 Ω VSWR ≤ 1.4
- **Spurious Output:** ≤ -25 dBc
- **Display:** 4 digits

### Modulation

#### Frequency Modulation (FM)
- **Deviation:**
  - 0 to 200 kHz ($\pm 2$ MHz)
  - 0 to 1/10 of carrier frequency ($\pm 2$ MHz)
- **Display:** 3 digits
- **Resolution:** 0.1 kHz ($< 100$ kHz), 1 kHz ($\geq 100$ kHz)
- **Modulation Accuracy:**
  - $\pm 0.05$ % (10.7 ± 1 MHz, 76 to 108 MHz)
  - $\pm 0.1$ % (other frequencies)
- **Distortion:**
  - (1 kHz modulation frequency, 75 kHz deviation, 50 Hz to 15 kHz demodulation bandwidth, 50 μs de-emphasis/AM OFF)
  - $\geq 78$ dB S/N at 75 kHz deviation (10.7 MHz, 76 to 108 MHz)
  - $\geq 78$ dB S/N at 75 kHz deviation (50 Hz to 15 kHz demodulation bandwidth, 50 μs de-emphasis/AM OFF)
- **Pre-emphasis:** The deviation at AF = 1 kHz is reduced by approximately 20 dB when pre-emphasis is turned ON. The deviation increases according to the pre-emphasis characteristics as the AF frequency increases

#### AM Stereo
- **Separation:** $\geq 55$ dB (AF 1 kHz, 75 kHz deviation, 76 to 108 MHz)
- **Mode:** MAIN, SUB, L, R

#### Pilot Signal
- **Frequency:** 19 kHz ± 1 Hz
- **Deviation:** 0 to 10 kHz
- **Display:** 3 digits
- **Resolution:** 0.1 kHz
- **Accuracy:** $\pm$ (preset value X 0.1 + 0.5) kHz

#### Residual FM
- **Depth:** 0 to 100 % (%<123 dBμ)
- **Display:** 3 digits
- **Resolution:** 0.1 %
- **Accuracy:** $\pm$ (preset value X 0.05 + 1) % (%99 %)
- **Distortion:**
  - $\geq 0.3$ % (30 %AM, 123 dBμ 200 kHz to 2 MHz)
  - $\leq 0.5$ % (50 %AM, 126 dBμ 200 kHz to 2 MHz)
  - $\leq 1.0$ % (90 %AM, 123 dBμ)
  - (AF 1 kHz, 50 Hz to 15 kHz demodulation bandwidth, excluding the range 26. 67 MHz±10 kHz, FM OFF)

### Internal Modulation Frequency

#### (1) Fixed Oscillators (2 System)
- **Frequency:** 400 Hz, 1 kHz
- **Accuracy:** $\pm 5$ %

#### (2) DDS Oscillators
- **Frequency:** 20 Hz to 20 kHz
- **Resolution:** 1 Hz
- **Frequency Accuracy:** $\pm 0.01$ % ± 1 digit

### External Modulation
- **Input Impedance:** 10 kΩ
- **Reference Input Voltage:** 1.0 Vrms
- **Frequency Range:** FM : 20 Hz to 100 kHz (MONO)
  - AM : 20 Hz to 12 kHz (<2.5 MHz)
  - 20 Hz to 20 kHz (<10 MHz)
  - 20 Hz to 100 kHz (<10 MHz)
- **Flatness:** Within ± 1 dB (1 kHz reference)

### Simultaneous Modulation Function

#### (1) Combination with the Monaural FM Modulator

<table>
<thead>
<tr>
<th>INT FM</th>
<th>INT AM</th>
<th>EXT FM</th>
<th>EXT AM</th>
</tr>
</thead>
</table>

#### (2) Combination with the Stereo FM Modulation

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>INT AM + or EXT AM</td>
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<table>
<thead>
<tr>
<th>Residual AM:</th>
<th>$\geq 55$ dB (S/N at 30 % depth, 200 kHz to 2 MHz)</th>
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<tbody>
<tr>
<td>(50 Hz to 15 kHz demodulation bandwidth, FM OFF)</td>
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</tbody>
</table>

### Environmental Conditions

#### Operating Temperature:
- 0 to 40 °C

#### Operating Humidity:
- $\leq 85$ % RH (without condensation)

#### Spec-Guaranteed Temperature:
- 10 to 35 °C

#### Spec-Guaranteed Humidity:
- $\leq 85$ % RH (without condensation)

#### Operating Environment:
- Indoor use

#### Operating Altitude:
- Up to 2,000 m

#### Overvoltage Category:
- II

#### Pollution Degree:
- 2

#### Power Requirements
- AC 100, 120, 220, 240 V ±10 %, 250 V max. 50/60 Hz

### Dimensions and Weight
- 426 (W) x 99 (H) x 300 (D) mm, 8 kg

### Accessories
- Power cord: 1
- Instruction manual: 1