

Onsoku ELECTRONIC CORP.

Automatic audio tester Model OAT-706

1 Summary

Model OAT-706 is audio tester which can measure a speaker and the characteristic of the microphone. This model measure a characteristic with a microphone automatically in audio frequency band.

2 Measurement item

【Speaker measurement】

Sensitivity, Impedance, F_0 , Q measurement (Electricity Q, Mechanical Q, Synthesis Q), Frequency response [F_1 (an angle of 0°), F_2 (an angle of 30°), F_3 (an angle of 60°)], Flat characteristic, Distortion characteristic (Second to tenth and total harmonic distortion)

【Microphone measurement】

Sensitivity, $F_1(0^\circ$ in an axis) frequency response, F_2 angle (Example : an angle of 90°) frequency response, F_3 angle (Example : an angle of 180°) frequency response, F_1 - F_2 frequency response, F_1 - F_3 frequency response, F_1 - F_2 five points of frequency sensitivity difference, F_1 - F_3 five points of frequency sensitivity difference

3 Performance

【Speaker measurement】

1) Oscillation part

Oscillation frequency : 20Hz to 40kHz
(Log sweep, resolution 1024step log)
Sweep time : 1 second to 100 seconds 0.1 seconds step setting
Output voltage : 0.1V to 10.00V (0.001V step)
 $\pm(2\%+0.02V)$ 8 Ω load
Max power load condition : More than 2 Ω Less than 12.5W

2) Impedance part

Measurement range : 2 Ω to 300 Ω
Measurement accuracy : $Z = 4$ to 100 Ω
 $F = 100\text{Hz to }10\text{kHz}$ $\pm(5\%+0.1\Omega)$
 $Z = 2\Omega$ to 300 Ω
 $F = 20\text{Hz to }20\text{kHz}$ $\pm(10\%+0.2\Omega)$

3) Sensitivity part

Frequency setting : 20Hz to 20kHz

4) Impedance measurement part

Frequency setting : 20Hz to 20kHz

5) F₀ part

F₀ measurement range : 20Hz to 10kHz
F₀ measurement voltage : 0.1 to 10V
F₀ sweep time : 1 second to 10 seconds
Measurement accuracy : $\pm(2\%+1)\text{Hz}$
F₀ = 133Hz Q = More than 2
Sweep width $\pm 50\%$

6) Distortion meter part

Higher harmonic : Second harmonic wave, Tenth harmonic wave and
Total harmonic distortion
Sweep time : 2 second to 10 seconds 0.1 seconds step setting

Frequency analysis range : 20Hz to 20kHz
Measurement voltage : 0.100V to 10.000V 1mV step
Frequency range : 90dBSPL to 140dBSPL 10dB step

【Microphone measurement】

- 1) Standard speaker drive voltage : 0.1V to 10V 0.1V step
- 2) Sweep frequency range : 20Hz to 40kHz
- 3) Sweep time : 1 second to 100 seconds 0.1 seconds step
- 4) Standard microphone amp range : 90dBSPL to 140dBSPL 10dB step
- 5) Test microphone amp range : +10dBV to -40dBV 10dB step
- 6) F₁, F₃ frequency measurement range setting : 20Hz to 40kHz (Inside of F₁ range)
- 7) Characteristic indication : Absolute value or Relative value

4 System composition



- Main unit
- Personal Computer
(OS: Windows 10 64bit)
- 1/2 inch standard condenser microphone

Main unit dimensions / math : 420(W) x 150(H) x 350(D) mm About 10kg

This model is often modified a part module due to improvement.
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