

AM70A

2-CH AUDIO ANALYZER



General

The model AM70A audio analyzer is designed to swiftly and accurately measure such audio equipment characteristics as frequency, level, phase difference, level difference and distortion factor, also enabling you to select various measuring items and filters.

The AM70A can measure two channels (Each channel is measured and the result is displayed independently). It assures simultaneous level measurement at high speed, making it ideal for audio-equipment manufacturing lines.

Features

- Measurement is processed in a short time thanks to DSP computation.
- High-speed measurement is possible. (Level measuring time is less than 100ms under the condition that frequency of measuring signal is over 1 kHz and one channel is being measured.)
- All distortion factor measurements and total harmonic distortion (THD) measurement are possible, also enabling to analyze the 2nd to 5th harmonics.
- IMD measurement (frequency 60 Hz: 7 kHz, level 4:1) is possible.
- The memory function that can store 100 ways of panel setting is equipped.
- The judge function that can judge (GO/NG) the measured result by setting any designated allowable range.
- Two types of optional filters can be inserted by customers.

Specifications

- Oscillator section
 - Number of outputs 2
 - Output impedance
 - Balanced/unbalanced
 - 600Ω ON/OFF.(selectable)
 - Independently set for A and B channels.

- Sine wave output
 - Frequency range 10.00 Hz to 100.0 kHz
 - Frequency accuracy
 - ±0.5% of set value
 - Frequency resolution
 - 100.0 to 999.5 Hz: in 0.5 Hz increments
 - 1.000 to 9.995 kHz: in 5 Hz increments
 - 10.00 to 100.0 kHz: in 50 Hz
- Output level range increments
 - Balanced
 - 82.39 (58.82mV) to +26.02dBm (15.49V).
 - Output of 0 Ω for the range of +20.01 to +26.02 dBm.
 - Unbalanced
 - 88.41 (29.41mV) to +20.00dBm (7.745V).
 - Output of 0 Ω for the range of +13.99 to +20.00dBm.
- Frequency response
 - Balanced and unbalanced
 - 10.00Hz to 100.0kHz, ±0.5dB
- Distortion factor for balanced and unbalanced outputs
 - 10Hz to 10kHz: ≤ 0.00032% (-110dB)
 - 10 to 50kHz: ≤ 0.001% (-100dB)
 - 50 to 100kHz: ≤ 0.003% (-90dB)
- IMD measurement output
 - Frequency
 - Low frequency 60 Hz ±0.5%
 - High frequency 7 kHz ±2%
 - Mixing ratio 60 Hz : 7 kHz = 4:1
 - Output level -82.39 to +26.02 dBm
- Measuring section
- Measurement items
 - Level
 - S/N ratio
 - Relative level
 - Distortion (harmonic analysis)
 - IMD
 - Frequency
 - Phase difference

Specifications

- Measuring filters
 - 400 Hz HPF 18 dB/oct
 - 30 kHz LPF 18 dB/oct
 - 80 kHz LPF 18 dB/oct
 - JIS A filter Conformance with JIS-C 1502A
 - DIN Audio Conformance with DIN 45405 (Audio) 1978
 - 20 kHz LPF 0.5dB ripple, 9th degree simultaneous chebyshev characteristics
 - OPTION 1 Added with option board
 - OPTION 2 Added with option board
- Note: Filters except the 20 kHz, LPF and OPTION 1 are usable only in the channel A due to level-related restriction.
- Input impedance
 - Balanced 200 k Ω , 600 Ω , $\pm 5\%$ (selectable)
 - Unbalanced 100 k Ω , 600 Ω , $\pm 5\%$ (selectable)
- Level measurement
 - Frequency range 10Hz to 100kHz, ± 0.5 dB
 - Measuring range
 - Simultaneous measurement for both A and B channels
 - 10 μ V to 100 V (-100 to +40 dB)
 - 100 μ V to 100 V: ± 0.5 dB
 - 30 to 100 μ V: ± 1 dB
 - Response Effective value detection: RMS
Mean value detection converted to effective value: AVG
 - Measurement units
 - mV, mV, V, dB, dBm (600 Ω)
- S/N ratio measurement
 - Frequency range 10 Hz to 100 kHz
 - Measurement range
 - 100 to +40 dB (10.0 μ V to 100 V)
 - (Both of S and N levels)
 - Measurement unit dB
- Relative level measurement
 - Frequency range 10 Hz to 100 kHz
 - Measurement range
 - 100 to +40dB (in the form of input conversion)
 - When the "RELATIVE LEVEL" switch in level measurement, the succeeding measurement will be performed by making the level at that time as "0 dB reference".
 - Measurement unit dB
- Distortion measurement
 - Fundamental frequency range
 - 10 Hz to 100 kHz
 - Input level range 36 mV to 100 V
 - Measurement range
 - 0.001% to 30% (-100 to -10 dB)
 - When analysis is used
 - 0.0003% to 30% (-110 to -10 dB)
 - Response Effective value detection: RMS
 - Fundamental tuning
 - Automatic tuning based on the result of frequency counter
 - Harmonic analysis (ANALYSIS)
 - THD Measures harmonic distortion up to 2f0 to 10f0 harmonic. (This measurement is applied to 50 kHz or less. In case of other frequency range, the range is from 2f0 to 5f0.)
- Measurement unit dB, %
 - IMD measurement
 - Frequency
 - Low frequency 60 Hz
 - High frequency 7 kHz
 - Level ratio Low frequency: high frequency = 4:1
 - Input level range 100 mVp-p to 282.8 Vp-p
 - Measurement range
 - 0.001% to 100% (-100 to -6 dB)
 - 0.01% to 50% (-80 to -6 dB) ± 0.5 dB
 - 0.001% to 0.01% (-100 to -80 dB) ± 1 dB
 - Measurement unit dB, %
 - Phase difference measurement
 - Frequency range 10 Hz to 100 kHz
 - Input level range 36 mV to 100 V
 - Measuring display range
 - 180° with resolution of 0.1°
 - Accuracy $\pm 0.5^\circ$
 - Other functions
 - Memory function Up to 100 ways of panel setting can be stored in the built-in memory. The last memory function that can memorized the panel setting immediately before the power switch is turned OFF.
 - GO/NG judgement function
 - Judgement function for the value obtained in each measurement.
 - UPPER Conforming to the measuring range of each measuring item.
 - LOWER Conforming to the measuring range of each measuring item.
 - Note: Value cannot be input when the UPPER limit is lower than LOWER limit. Value cannot also be input when the LOWER limit is higher than UPPER limit.
- EXT I/O function
 - Panel setup numbers that have been set by the memory function using the external switches are sent in the normal or reverse order. Judged results of OVER NG and UNDER NG are output (Output from transistor arrays for lighting LED's).
- Interface
 - GP-IB conforms with IEEE 488.1-1987.
- General Specifications
 - Power supply AC 100, 120, 220, 240 V $\pm 10\%$, 50/60Hz
 - Power consumption
 - Approx. 100VA
 - Operating temperature range
 - 0°C to 40°C
 - Relative humidity 10% to 90%RH (non-dewing)
 - Relay life 50 million times of relay driving (catalog value)
 - Dimensions 426 (W) x 149 (H) x 460 (D) mm
 - Weight 15 kg
 - Accessories
 - Power cord x1
 - 3P-2P conversion connector x1
 - User's manual x1