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AM51C

AUDIO ANALYZER



General

The AM51C is designed to measure various audio characteristics with a single unit. This unit includes both a audio analyzer and a highly accurate audio oscillator.
Eleven fundamental measuring functions include level, level ratio, S/N ratio, relative level, DC voltage, harmonic distortion, IMD, SINAD, frequency, phase difference and PCM dynamic range. The measuring unit also includes such functions as noise reduction and harmonic analyzer, and is equipped with 10 built-in filters. Together with a low-distortion oscillator with two independent output units, the AM51C can measure distortion down to as low as -120 dB and level to as low as 1 μV.
The AM51C is easy to operate through the combination of a LCD and soft key setting of parameters. In addition to manual setting, automatic measuring using a memory card and remote control via GP-IB are also possible. A panel setting memory for 100 sets of parameters is also available.

Features

- Audio characteristics measurement conforms with EIAJ CP-307 "CD player measurement" standards.
- 2 channel (A,B) oscillator outputs and measuring inputs, and balanced/ unbalanced selection.
- Low-distortion, high-level output oscillator with 2 independent level setting capability.
- High-sensitivity level measurement with maximum resolution of 0.1 μV.
- Level ratio measurement convenient for cross-talk and channel balance measurement.
- Automatic measurement of S/N with a built-in noise evaluation filter.
- Relative level measurement convenient for frequency response measurement.
- DC voltage measurement with a full scale range of ±200 mV to ±200 V.
- Distortion measurement using noise reduction and harmonics analysis function.
- IMD measurement according to SMPTE method.
- SINAD measurement for the evaluation of portable radio receivers.
- Frequency measurement with 5-digit display.
- Phase difference measurement for ±180。 with resolution of 0.1°.
- Detects effective value, mean value, and peak value response.
- Panel setting memory for 100 ways of parameters and last memory function.
- GP-IB interface is standard.

Specifications

- Measuring section
  - Measurement items
    - Level
    - Level difference
    - S/N
    - Relative level
    - Harmonic distortion
    - IM distortion
    - SINAD
    - Frequency
    - Phase difference
    - DC voltage
    - PCM dynamic range
  - Additional functions
    - Noise reduction: Available for harmonic distortion and level measurement
    - Harmonic analysis: For harmonic distortion measurement; 2fo, 3fo, 4fo, or 5fo selectable
  - Number of inputs: 2
  - Input impedance
    - Balanced: 200 kΩ, 600 Ω
    - Unbalanced: 100 kΩ, 600 Ω
  - Connector type
    - Balanced: XLR-3
    - Unbalanced: BNC-R
  - Monitor output: BNC-R
  - Trigger output for oscilloscope: BNC-R

Specifications

- Measuring filters
  - 400 Hz HPF: 18 dB/oct
  - 30 kHz LPF: 18 dB/oct
  - 80 kHz LPF: 18 dB/oct
  - A filter: JIS-C1502A, JIS-C5551A, NAB-ASA-A
  - CCIR-468: CCIR-468-4 1986
  - CCIR/ARM: Dolby
  - DIN AUDIO: DIN45405 (AUDIO) 1978, CCIR-468-4 1986
  - 15 kHz LPF: 0.5 dB ripple, 9th degree simultaneous chebyshev characteristics
  - 20 kHz LPF: "
  - 22 kHz LPF: "
  - Option 1: Added with optional board
  - Option 2: Added with optional board
  - External filter: Via input & output BNC connectors on rear panel
- Level measurement
  - Frequency range: 10 Hz to 500 kHz
  - Detection system: Effective value detection; RMS
Mean value detection and converted to effective value; AVG
Peak value detection and converted to effective value in sine wave; PEAK
  - Measuring range: 10.0 μV to 100.0 V with selection for level A or level B.
Each measuring filter can be used 10 mVrms to 100 Vrms for simultaneous measuring.
  - Measurement units: μV, mV, V, dB, dBm-50/75/600Ω
- Level difference measurement
  - Level ratio: {B (A) level} − { A (B) level}
  - Frequency range: 10 Hz to 500 kHz
  - Measuring range: (-100 to +40 dB)−(-40 to +40 dB); each measuring filter can be used.
  - Measurement unit: dB
- S/N measurement
  - Frequency range: 10 Hz to 500 kHz
  - Measuring range
    - S level: -40 to +40 dB (10 mV to 100 V)
    - N level: -100 to +40 dB (10 μV to 100 V)
  - Measurin unit: dB
- Relative level measurement
  - Frequency range: 10 Hz to 500 kHz
  - Measuring range: -100 to +40 dB
  - Measuring unit: dB
- Harmonic distortion measurement
  - Fundamental frequency range: 10 Hz to 100 kHz
  - Input level range: 36 mV to 100 V (-28.9 to +40 dB)
  - Measuring range: 0.0003% to 100% (-110 to 0 dB)
(0.0001% to 100% with noise reduction)
  - Detection: Effective value detection; RMS
Mean value detection and converted to effective value; AVG
  - Fundamental frequency tuning
    - a. Automatic tuning to measured frequency(AUTO)
    - b. Coupled to oscillator frequency (GANGED)
    - c. Frequency setting with 10-key (PRESET)
  - Others: Noise reduction available
Harmonic analysis possible
- IM distortion measurement
  - Frequency: Low: 70 Hz
High: 7 kHz
  - Level ratio: 70 Hz: 7 kHz = 4:1
  - Input level range: 100 mVp-p to 282.8 Vp-p
  - Measuring range: 0.001% to 100%
- SINAD measurement
  - Fundamental frequency range: 10 Hz to 100 kHz
  - Input level range: 36 mV to 100 V
  - Measuring range: 0 to 100 dB
  - Detection: Effective value detection; RMS
  - Fundamental frequency tuning
    - a. Coupled to oscillator frequency (GANGED)
    - b. Frequency setting with 10-key (PRESET)
- Frequency measurement
  - Frequency rangeange: 10 Hz to 500 kHz
  - Input level range: 36 mV to 100 V
  - Display: 5 digits
  - Accuracy: 0.001%
- Phase difference measurement
  - Frequency range: 10 Hz to 100 kHz
  - Input level range: 36 mV to 100 V
  - Measuring range: ±180 degrees, resolution; 0.1 degrees
  - Accuracy: 0.5 degrees
- DC voltage measurement
  - Measuring range: ±200 mV to ±200 V full scale and auto ranging
  - Input impedance: 10 MΩ
- PCM dynamic range measurement
  - Input level range: 1.0 to 4.2 mV, 1kHz
  - Filters: 15, 20, 22 kHz LPF and A filter
  - Measuring result: - (measured distortion) +60 dB

● Oscillator section

- Sine wave output
  - Frequency range: 10.00 Hz to 100.00 kHz, last digit being 0 or 5
  - Frequency accuracy: ±0.5% of set frequency
  - Frequency setting resolution: 10.00 to 99.95 Hz: in 0.05 Hz increments
100.0 to 999.5 Hz: in 0.5 Hz increments
1.000 to 9.995 kHz: in 5 Hz increments
10.00 to 100.00 kHz: in 50 Hz increments
- Output amplitude range
  - Balanced: -82.39 to +26.02 dBm (600Ω/0Ω)
  - Unbalanced: -88.41 to +20.00 dBm (600Ω/0Ω)
  - Flatness
    - Balanced: ±0.1 dB
    - Unbalanced: ±0.05 dB

Specifications

Output impedance
Balanced ≤+20 dBm; 600Ω ±2%
≥+20.01 dBm; Max. 3 Ω
Unbalanced ≤+14 dBm; 600Ω ±2%
≥+14.01 dBm; Max. 1.5 Ω

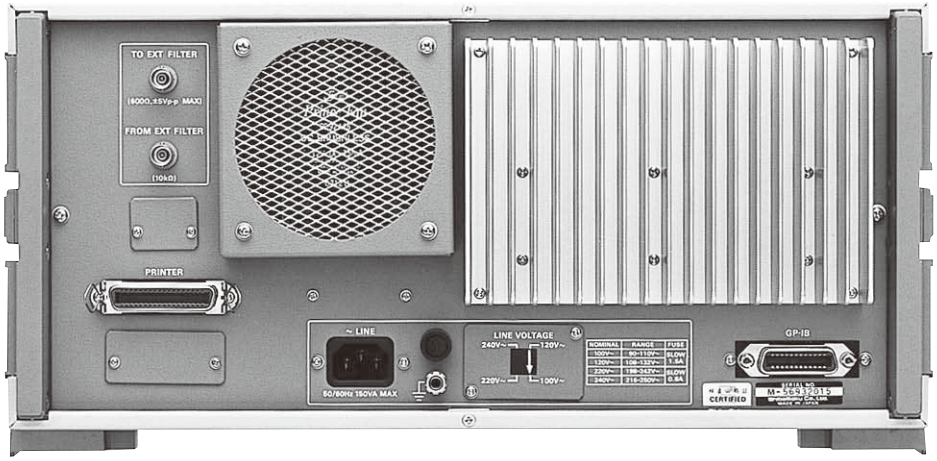
- Distortion: Balanced and unbalanced
  10 Hz to 3 kHz; 0.0001% (-120 dB)
  3 to 10 kHz; 0.00032% (-110 dB)
  10 to 50 kHz; 0.001% (-100 dB)
  50 to 100 kHz; 0.003% (-90 dB)
- IMD measurement output
  Frequency: Low: 70 Hz ±0.5%
  High: 7 kHz ±2%
  Mixing ratio: 70 Hz: 7 kHz = 4:1
  Output level
  Balanced: -82.39 to +26.02 dB
  Unbalanced: -88.41 to +20.00 dBm
  (0 dBm = 2.1909 Vp-p)

●Other function

- Operation: Push buttons and rotary knob setting guided by display and soft key menu
- Display: LCD
- Memory function: 100 memory for panel settings; Last memory function to hold last panel settings when power turned off;
- Interface: GP-IB

●General Specifications

Power supply: AC 100, 120, 220, 240 V ±10%, 50/60 Hz
Power consumption: Approx. 150 VA
Operating temperature range: 0℃ to 40℃
Relative humidity: 25% to 90%RH (non-dewing)
Dimensions: 426 (W) x 199 (H) x 460 (D) mm
Weight: Approx. 25 kg



ShibaSoku Co., Ltd.
●Sales Department 848 Wakamatsu-cho, Tokorozawa-shi, Saitama 359-0032, Japan
info@shibasoku.co.jp
Telephone +81-4-2996-3414

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