

AES standard on interconnections - Grounding and EMC practices - Shields of balanced microphone-level outputs of active equipment other than microphones

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Abstract

This standard specifies requirements for, and summarizes general considerations relative to, the shielding of balanced microphone-level outputs of audio equipment, taking into account measures commonly necessary for the preservation of electromagnetic compatibility (EMC) at both audio and radio frequencies.

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Foreword

[This forward is not part of the AES54-3-2008 *AES standard on interconnections - Grounding and EMC practices - Shields of microphone-level outputs of active equipment other than microphones*]

This standard was developed in draft under project AES-X147C by task group SC-05-05-C headed by J. Brown, and with the following members: R. Chinn, K. Fause, N. Muncy, B. Olson, R. Rayburn, J. Schmidt, T. Waldron, B. Whitlock, and J. Woodgate.

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2008-08

Note on normative language

In AES standards documents, sentences containing the word “shall” are requirements for compliance with the document. Sentences containing the verb “should” are strong suggestions (recommendations). Sentences giving permission use the verb “may”. Sentences expressing a possibility use the verb “can”.

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0 Introduction

The shielding of cables connecting audio equipment, including those connecting microphones to audio equipment, can be critical for electromagnetic compatibility (EMC). The improper connection of these shields can allow noise current to flow on the cable shield, coupling that noise onto the signal pair by the mechanism commonly known as shield-current-induced noise (SCIN) (see references A.3 and A.6). When that shield is connected to equipment exhibiting a common design defect identified as “the pin 1 problem,” the noise is coupled into signal circuitry by common impedance coupling within the equipment (see references A.3 and A.5).

1 Scope

This standard specifies requirements for, and summarizes general considerations relative to, the shielding of balanced microphone-level outputs of audio equipment, taking into account measures commonly necessary for the preservation of electromagnetic compatibility (EMC) at both audio and radio frequencies. Wired microphones, including capacitor microphones, are not covered by this standard, and shall conform to AES48. This standard does not address issues of safety.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AES48-2005 *AES standard on interconnections - Grounding and EMC practices - Shields of connectors in audio equipment containing active circuitry*, Audio Engineering Society, New York, NY., US.

IEC 61938 Ed.1, *Audio, video and audiovisual systems - interconnections and matching values - preferred matching values of analogue signals*, International Electrotechnical Commission, Geneva, Switzerland.