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AES48-2019



AES standard on interconnections - Grounding and EMC practices - Shields of connectors in audio equipment containing active circuitry

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AES standard on interconnections — Grounding and EMC practices — Shields of connectors in audio equipment containing active circuitry

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Abstract

This standard specifies requirements for the termination, within audio equipment, of the shields of cables supporting interconnections with other equipment, taking into account measures commonly necessary for the preservation of EMC (electromagnetic compatibility) at both audio and radio frequencies.

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Foreword

This foreword is not part of the AES48-2005 *AES standard on interconnections — Grounding and EMC practices — Shields of connectors in audio equipment containing active circuitry*.

This document was developed under project AES-X13 by task group SC-05-05-A headed by J. Brown, and with the following members: J. Dow, S. Macatee, N. Muncy, B. Olson, D. Queen, R. Rayburn, J. Schmidt, B. Whitlock, J. Woodgate, and M. Yonge.

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Foreword to second edition, 2019

This revision includes changes to clarify the grounding of circuitry inside a device when EMI filters are employed.

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AES standard on interconnections — Grounding and EMC practices — Shields of connectors in audio equipment containing active circuitry

0 Introduction

The shielding of audio equipment, cables, and microphones can be critical for electromagnetic compatibility (EMC). The improper connection of these shields can cause common-impedance coupling in equipment. From XL connector usage, where Pin 1 is standardized as the designated shield contact, this has been identified as the “Pin 1 problem” (see Whitlock 1995 and AES14-1992).

1 Scope

This standard specifies requirements for the connections of the designated shield contact of connectors built into audio equipment using active circuitry. These requirements are necessary for the preservation of electromagnetic compatibility (EMC) at both audio and radio frequencies.

2 Normative references

There are no normative references

3 Definitions and abbreviations

3.1 Active (adjective, as applied to electronic circuitry)

Contains one or more circuit elements that are capable of detecting or demodulating an electrical signal. Vacuum tubes (valves) and semiconductor devices are examples of active circuit elements.

3.2 Enclosure

All the walls which surround the live parts of electrical apparatus including doors, covers, cable entries, rods, spindles, and shafts.

3.3 Shielding enclosure

Continuously conductive frame or enclosure housing electronic equipment, and whose potential is taken as a reference.

3.4 Screen

Term sometimes used to mean the same as “shield”.

3.5 Equipment Ground

Also referred to as the Safety Ground.

3.6 “Star” Point

Also referred to as the Single Point reference.