AES54-2-2008

AES standard on interconnections - Grounding and EMC practices - Shields of balanced audio wiring within fixed and portable passive connector panels, jack fields, and passive microphone splitters

Published by
Audio Engineering Society, Inc.
Copyright ©2008 by the Audio Engineering Society

Abstract

This standard specifies requirements for, and summarizes general considerations relative to, the shielding of balanced audio interconnections within fixed and portable connector panels, jack fields (patch bays), and passive microphone splitters, taking into account measures commonly necessary for the preservation of electromagnetic compatibility (EMC) at both audio and radio frequencies.

An AES standard implies a consensus of those directly and materially affected by its scope and provisions and is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an AES standard does not in any respect preclude anyone, whether or not he or she has approved the document, from manufacturing, marketing, purchasing, or using products, processes, or procedures not in agreement with the standard. Prior to approval, all parties were provided opportunities to comment or object to any provision. Attention is drawn to the possibility that some of the elements of this AES standard or information document may be the subject of patent rights. AES shall not be held responsible for identifying any or all such patents. Approval does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the standards document. This document is subject to periodic review and users are cautioned to obtain the latest edition. Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

2009-01-19 printing

Document preview:
for full document, go to
www.aes.org/publications/standards

Contents

Contents **2**

Foreword **3**

0 Introduction **4**

2 Normative References **4**

3 Definitions and abbreviations **5**

4 Requirements **7**

4.1 General requirements 7
4.3 Passive splitters 9
4.4 Jack fields 14

Annex A (Informative) Informative references **16**

Preview only
www.aes.org/standards

Document preview:
for full document, go to
www.aes.org/publications/standards

Foreword

[This foreword is not part of the AES54-2-2008 *AES standard on interconnections - Grounding and EMC practices - Shields of balanced audio wiring within fixed and portable passive connector panels, jack fields, and passive microphone splitters*.]

This draft standard was developed under project AES-X147B 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.

B. Olson, chair
J. Brown, vice-chair
SC-05-05 Working Group on Grounding and EMC Practices
2008-08

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

Corrigenda 2009-01-19
Editorial corrections and clarifications to figures throughout.

Preview only
www.aes.org/standards

Document preview:
for full document, go to
www.aes.org/publications/standards

AES standard on interconnections - Grounding and EMC practices - Shields of balanced audio wiring within fixed and portable passive connector panels, jack fields, and passive microphone splitters

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 also coupled into signal circuitry by common impedance coupling within the equipment (see AES48 and references A.3, and A.5). This design defect is quite widespread in mixing desks.

1 Scope

This standard specifies requirements for, and summarizes general considerations relative to, the shielding of balanced audio interconnections within fixed and portable connector panels, jack fields (patch bays) and within passive microphone splitters, taking into account measures commonly necessary for the preservation of electromagnetic compatibility (EMC) at both audio and radio frequencies. Active splitters are not covered by this standard. This standard does not address issues of safety.

2 Normative References

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.

Document preview:
for full document, go to
www.aes.org/publications/standards

Preview only
www.aes.org/standards