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AES standard on interconnections - Application of RJ45-type connectors and quad twisted pair cable for audio interconnections

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AES standard on interconnections — Application of RJ45-type connectors and quad twisted pair cable for audio interconnections

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Abstract

This standard documents 8P8C (RJ45) pin-outs commonly used in analog and digital professional audio applications to carry four links, including channel/link order, signal polarity and phantom power compatibility. Type numbers are assigned to these variations, allowing manufacturers to easily specify which wiring standard is used in a particular piece of equipment. Users may use these type numbers to assess compatibility of disparate equipment in a given application. This standard also documents practical application details of interest to users of this technology. Conformance with this standard will identify mutually compatible devices, enabling users to avoid problems when employing equipment from multiple manufacturers.

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Foreword

This foreword is not part of the AES72-2019 *AES standard on interconnections — Application of RJ45-type connectors and quad twisted pair cable for audio interconnections.*

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SC-05-02 Working Group on Connectors
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Note on normative language

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".

AES standard on interconnections — Application of RJ45-type connectors and quad twisted pair cable for audio interconnections

0 Introduction

The RJ45 - 8P8C connector and quad twisted pair cable has become ubiquitous throughout the datacom (data communications) industry for Ethernet connections. This high-volume usage has greatly reduced costs, making the hardware attractive for other applications. In typical installations, it is necessary to connect multiple signals from one location to another. Consequently several manufacturers have developed schemes to connect 4 balanced analog audio signals or 4 balanced AES3 connections using this hardware. Unfortunately equipment from different manufacturers is often incompatible. This standard identifies the commercially available variants and specifies a labeling scheme so users may select compatible equipment or takes steps to alleviate the problems.

1 Scope

This standard documents 8P8C (RJ45) pin-outs commonly used in analog and digital professional audio applications, including channel/link order, signal polarity and phantom power compatibility. Conformance with this standard will identify mutually compatible devices, enabling users to avoid problems when employing equipment from multiple manufacturers.

2 Normative references

AES3-2003 *AES recommended practice for Digital Audio Engineering – Serial transmission format for two-channel linearly represented digital audio data* (Revision of AES3-1992), Audio Engineering Society, New York, NY, US, http://ww.aes.org

AES14-1992 (r2014) *AES standard for professional audio equipment -- Application of connectors, part 1, XLR-type polarity and gende*r, Audio Engineering Society, New York, NY, US, http://ww.aes.org

ANSI/TIA-568-C *Generic Telecommunications Cabling for Customer Premises,* Telecommunications Industry Association, Arlington, VA, US, http://ww.tiaonline.org

IEC 60268-12 *Sound system equipment - Pt 12: Application of connectors for broadcast & similar use,* International Electrotechnical Commission, Geneva, Switzerland, http://ww.iec.ch

IEC 60603-7 *Connectors for electronic equipment – Part 7: Detail specification for 8-way, unshielded, free and fixed connectors*, International Electrotechnical Commission, Geneva, Switzerland, http://ww.iec.ch

IEC 60603-7-1 *Connectors for electronic equipment – Part 7-1: Detail specification for 8-way, shielded, free and fixed connectors*, International Electrotechnical Commission, Geneva, Switzerland, http://ww.iec.ch