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AES information document for interconnections - Universal jack for IEC 60603-11 and B-gauge 6,35 mm plugs

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Abstract

Users of test equipment and portable audio equipment such as mixers and direct-injection (DI) boxes, may have to handle 'consumer' type equipment that uses the IEC 60603-11 3-contact (tip-ring-sleeve, or TRS) 6,3 mm plug connector and also professional equipment that uses the B-gauge connector. Traditionally, this has required the use of numerous ad-hoc adapters and connecting leads with different plugs at each end. Neither solution is very convenient and may be unreliable.

Jack connectors that can accommodate both types of plug have existed for some time, but are not well known. Some TRS jacks will accommodate both types of plug but are not specified by the manufacturer for such use. Clause 5 recommends jack dimensions that are specified to have the required "universal" capability. This does not imply that there may not be others.

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Foreword

This foreword is not part of the AES-14id-2010, *AES Information document for interconnections - Universal jack for IEC 60603-11 and B-gauge 6,35 mm plugs*.

The subject of compatibility of jacks and plugs from different standards was discussed in the SC-05-02 working group on Audio connectors of the SC-05 subcommittee on Interconnections.

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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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Introduction

There are a number of jack connectors in use that appear to have the same quarter-inch diameter, but which are not reliably compatible in use. It has long been felt that it should be possible to identify a 'universal' jack connector to accept plugs from a range of types in common use.

1 Scope

This AES Information document discusses mechanical compatibility issues between 6,35 mm (quarter-inch) jack connectors with various profiles, including those defined given in IEC60603-11 and 'B-gauge' plugs. It recommends key jack dimensions for optimum compatibility with a range of "quarter-inch", or 6.35 mm, TRS plug types.

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.

IEC/TR 60603-11:1992, *Connectors for frequencies below 3 MHz for use with printed boards, Part 11: Detail specification for concentric connectors (dimensions for free connectors and fixed connectors)*. International Electrotechnical Commission, Geneva, Switzerland.

IEC 61602:1996, *Connectors used in the field of audio, video and audiovisual engineering*. International Electrotechnical Commission, Geneva, Switzerland.

3 Definitions and abbreviations

3.1
Jack
female concentric connector, usually fixed to equipment or connector panel.

3.2
Plug
male concentric connector, usually terminating a free cable.

3.3
TRS plug
3-contact concentric plug where the contacts are identified as Tip, Ring, and Sleeve.

3.4
IEC plug
2-contact or 3-contact concentric plug compliant with IEC 60603-11.

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