AES standards project report
on single programme connectors —
Compatibility of
tip-ring-sleeve connectors
conforming to different standards

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Abstract

This report covers the concentric connectors known as phone plugs and jacks that are widely used in the audio industry for the interconnection of sound system components as general-use consumer tip-ring-sleeve (TRS) types, as well as for the interconnection of broadcast and other professional systems such as professional TRS types.

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Foreword

[This foreword is not a part of AES standards project report on single programme connectors — Compatibility of tip-ring-sleeve connectors conforming to different standards, AES-R3-2001.]

This report was produced as proposed at the SC-05-02 meeting, which was held in conjunction with the 107th AES convention in New York and developed by a writing group of SC-05-02 under project AES-X40, TRS Connectors for Patch Panels. The members of the writing group were Markus Natter and John Woodgate.

The working group decided that the current status of international standardization of the dimensions of these connectors does not allow development of an AES consensus standard at this time, but that the results of its survey need to be made public to encourage standardization of the dimensions.

Ray Rayburn, Chair
Werner Bachmann, Vice-Chair
SC-05-02
2000-12-24
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1 Scope
This report covers the concentric connectors known as phone plugs and jacks that are widely used in the audio industry for the interconnection of sound system components as general-use consumer tip-ring-sleeve (TRS) types, as well as for the interconnection of broadcast and other professional systems such as professional TRS types.

Because differing dimensions specified by various standards often result in mechanical and, as a consequence, electrical incompatibilities among the various TRS jacks and plugs, this report surveys the standards, connectors, and possible incompatibility problems.

2 References to international standards

3 Current standardization

3.1 Dimensional, mechanical, and electrical specification

3.1.1 International standards
IEC 60603-11 (1992): Dimensions of 6,3 mm (2 & 3 pole), 3,5 mm (2 & 3 pole) and 2,5 mm (2 pole) phone plugs and jacks

3.1.2 National standards
BPO Specifications D 571 and D 1172 specify _ in jacks and plugs (No.316) of B-gauge type (A, C, D gauges are superseded by B-gauge for new designs) (unpublished).
BPO Specifications D 2705 and D 2707 specify 4,4-mm 3-pole Bantam plugs (No. 322...) and jacks (unpublished).
EIA-453 (1978, reaff. 1982) specifies 0,25-in and 0,21-in (2 and 3 pole) and 0,14-in and 0,1-in (2 pole) phone plugs and jacks (not ANSI approved).
MIL-P-642 defines several types of plugs with the most relevant listed below:
– Type PJ-051 1/4-in 3-pole (similar to B-gauge BPO No.316);
– Type PJ-777 0,174-in 3-pole Bantam (equivalent to BPO No.322);
MIL-J-641 defines corresponding jacks.

3.2 Application and guidance
IEC 60268-11: Application of general use phone plugs and jacks as defined in IEC 60603-11.
IEC 61602: Technical report (guidance and survey) on identification and application of audio and video connectors.