



Recommendation ITU-R BS.1909
(01/2012)

**Performance requirements for an advanced
multichannel stereophonic sound system
for use with or without accompanying
picture**

BS Series
Broadcasting service (sound)



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Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

Policy on Intellectual Property Right (IPR)

ITU-R policy on IPR is described in the Common Patent Policy for ITU-T/ITU-R/ISO/IEC referenced in Annex 1 of Resolution ITU-R 1. Forms to be used for the submission of patent statements and licensing declarations by patent holders are available from <http://www.itu.int/ITU-R/go/patents/en> where the Guidelines for Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC and the ITU-R patent information database can also be found.

Series of ITU-R Recommendations

(Also available online at <http://www.itu.int/publ/R-REC/en>)

Series	Title
BO	Satellite delivery
BR	Recording for production, archival and play-out; film for television
BS	Broadcasting service (sound)
BT	Broadcasting service (television)
F	Fixed service
M	Mobile, radiodetermination, amateur and related satellite services
P	Radiowave propagation
RA	Radio astronomy
RS	Remote sensing systems
S	Fixed-satellite service
SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

Note: This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.

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RECOMMENDATION ITU-R BS.1909

Performance requirements for an advanced multichannel stereophonic sound system for use with or without accompanying picture

(Questions ITU-R 15/6 and ITU-R 135/6)

(2012)

Scope

This Recommendation specifies the requirements for an advanced multichannel sound system with or without accompanying picture. Such a system, or a system derived from it, may find application as the sound components of expanded-LSDI and UHDTV programmes.

The ITU Radiocommunication Assembly,

considering

- a) that Recommendation ITU-R BS.1734 – Basic performance requirements for the sound components of large-screen digital imagery applications for presentation in a theatrical environment, specifies the requirements relevant to the presentation of the sound components of the large screen digital imagery (LSDI) applications intended for presentation in a theatrical environment, which are mostly based on Recommendation ITU-R BS.775 that specifies the 5.1 channel sound system;
- b) that Recommendation ITU-R BS.1688 – Baseband sound system and audio source-coding at delivery interfaces of large screen digital imagery applications, recommends that, for such LSDI applications, the reference digital baseband sound system at the interfaces should be based on the hierarchical reference sound system specified in Recommendation ITU-R BS.775 – Multichannel stereophonic sound system with and without accompanying picture, namely a hierarchy ranging from monophonic, 2-channel stereophonic and up to 5.1 channels of sound;
- c) that Recommendation ITU-R BT.1769 – Parameter values for an expanded hierarchy of LSDI image formats for production and international programme exchange, specifies an expanded hierarchy of LSDI image formats for production and international programme exchange, in which the two image formats of $3\,840 \times 2\,160$ and $7\,680 \times 4\,320$ are specified;
- d) that ITU-R has been studying UHDTV, which is a television application that is intended to provide viewers with an enhanced visual experience primarily by offering a wide field of view that covers virtually all of the human visual field with appropriate screen sizes relevant to usage at home and in public places;
- e) that Recommendation ITU-R BS.646 – Source encoding for digital sound signals in broadcasting studios, specifies the sampling frequency and sample resolution for the digital encoding of sound;
- f) that Recommendation ITU-R BT.1359 – Relative timing of sound and vision for broadcasting, recommends the timing tolerance between sound and vision signals in broadcasting systems;
- g) that the wide field of view video of expanded-LSDI and UHDTV programmes requires spatially enhanced sound beyond the 5.1 channel sound;
- h) that the advancements in video formats should be met with a sufficiently advanced sound formats for broadcasting sound system, for use both with and without accompanying picture,