

Recommendation ITU-R BS.1423-1

(05/2023)

BS Series: Broadcasting service (sound)

Guidelines for producing multichannel soundtracks using surround matrix techniques



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 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 <https://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.1423-1

**Guidelines for producing multichannel soundtracks
using surround matrix techniques**

(1999-2023)

Scope

This Recommendation describes a method for producing 3/2-based multichannel soundtracks using surround matrix techniques.

Keywords

3/2 multichannel sound system, surround matrix techniques

The ITU Radiocommunication Assembly,

considering

- a) that a large and growing number of 35 mm feature films are produced in multichannel sound;
- b) that the Dolby Surround format was launched to allow the multichannel sound accompaniment from the cinema environment to be conveyed over two-channel delivery media;
- c) that the Dolby Surround format has spread widely and today is available in many households;
- d) that a large number of broadcasters are transmitting or planning to transmit these films employing the Dolby Surround system to television viewers;
- e) that a large number of home television viewers are equipped to reproduce matrix surround encoded soundtracks in their homes;
- f) that a large majority of those television viewers use the Dolby Pro Logic surround decoder;
- g) that broadcasters may produce and deliver multichannel programmes employing the same Dolby Surround format that is used with feature films;
- h) that a larger existing base of viewers are still equipped with mono and stereo reproduction equipment, which will be receiving multichannel sound;
- i) that new multichannel sound transmissions must be compatible with existing mono and stereo equipment;
- j) that production of multichannel sound requires correct technological procedures before transmission in order to assure compatibility with monophonic, stereophonic, and surround sound reproduction,

recommends

- 1 that during matrix surround programme mixing, the resulting sound image should be checked by monitoring the signal after it has undergone the matrix surround encoding/decoding process;
- 2 that during mixing, the stereo and mono compatibility of the resulting signal be checked;
- 3 that an active matrix surround sound decoder with characteristics of those used in the majority of consumer homes should be used for monitoring;
- 4 that the programme material produced in this manner should be clearly labelled as being matrix surround encoded so that operational personnel will be aware of the signal format (see Note);

5 that the primary multi-track source material (8 to 48 tracks, if available) used before the matrix encoding should be preserved. This will allow a discrete 5-channel down-mix to be produced for use with a future multichannel sound broadcast system.

NOTE – Programme providers may wish to label the programme as being matrix surround encoded within the programme content so that the audience can be aware of the signal format. With prior arrangement (see <http://www.dolby.com>), programmes may be labelled with the Dolby Surround logo.
