

## EBU Technical Recommendation R22-1999

### Listening conditions for the assessment of sound programme material

<i>EBU Committee</i>	<i>First Issued</i>	<i>Revised</i>	<i>Re-issued</i>
PMC	1980	1985, 1994, 1998, 1999	

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The amount of sound programme material that is exchanged between EBU Members, and between other production organisations and EBU Members, continues to increase.

The technical quality of the supports for these exchanges (recording media, transmission circuits, etc.) and the technical quality of production equipment have steadily improved following the introduction of digital techniques.

However, the only sufficient method of assessing the balance of features that contribute to the quality of the sound in a programme is still by listening to it \*.

The overall impression of the perceived acoustic quality depends on the sound field created at the listening position in the listening room. To ensure consistent conditions for assessment, this sound field should be specified.

It is possible to achieve the desired sound field for the listener by specifying the parameters of either the listening room (the listening arrangement and the loudspeakers, etc.) or, in some cases, of the headphones.

There are other reasons for critical listening such as the assessment of technical quality of new systems or equipment. It would be helpful if these could be carried out in the same listening conditions and that these conditions are agreed with other organisations on a world-wide basis.

The EBU has therefore reviewed its recommendations on listening conditions, (formerly included in earlier editions of this EBU Recommendation) in close co-operation with other organisations. The listening conditions for two-channel stereophonic and monophonic presentations are given in EBU document Tech 3276 [1] which includes improved measurement methods for early reflections and specifications for the use of separate low-frequency loudspeakers. Supplement 1 to EBU Tech 3276 [2] specifies additional or altered requirements for multichannel audio presentations.

The EBU *recommends*:

- that for critical listening for the assessment of the operational acoustic and technical quality of two-channel stereophonic sound programme material, the listening conditions defined in EBU Tech 3276 (2nd edition) should be used.
- that for critical listening for the assessment of the operational acoustic and technical quality of multichannel sound programme material, the listening conditions defined in Supplement 1 to EBU Tech 3276 [2] should be used together with the main document.
- That for the international listening tests carried out under the auspices of the EBU, listening conditions meeting the requirements specified in EBU Tech 3276 (2nd edition) and, for multichannel audio, its Supplement 1, should always be used.

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\* For methods for the subjective evaluation of the quality of music programme material see EBU R90-1998 [3] and EBU Tech 3286 [4].

## Bibliography

- [1] EBU document Tech. 3276 (2nd edition - 1998): **Listening conditions for the assessment of sound programme material**
  - [2] EBU document Tech 3276 Supplement 1 (1999): **Listening Conditions for the assessment of sound programme material: multichannel sound**
  - [3] EBU Recommendation R90-1998: **The subjective evaluation of the quality of sound programme material**
  - [4] EBU document Tech. 3286 (1997): **Assessment methods for the subjective evaluation of the quality of sound programme material – music**
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