



**Recommendation ITU-R BT.1199-1**  
**(03/2010)**

**Use of bit-rate reduction in the HDTV  
studio environment**

**BT Series**  
**Broadcasting service**  
**(television)**

## 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
<b>BO</b>	Satellite delivery
<b>BR</b>	Recording for production, archival and play-out; film for television
<b>BS</b>	Broadcasting service (sound)
<b>BT</b>	<b>Broadcasting service (television)</b>
<b>F</b>	Fixed service
<b>M</b>	Mobile, radiodetermination, amateur and related satellite services
<b>P</b>	Radiowave propagation
<b>RA</b>	Radio astronomy
<b>RS</b>	Remote sensing systems
<b>S</b>	Fixed-satellite service
<b>SA</b>	Space applications and meteorology
<b>SF</b>	Frequency sharing and coordination between fixed-satellite and fixed service systems
<b>SM</b>	Spectrum management
<b>SNG</b>	Satellite news gathering
<b>TF</b>	Time signals and frequency standards emissions
<b>V</b>	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 BT.1199-1

**Use of bit-rate reduction in the HDTV studio environment**

(1995-2010)

The ITU Radiocommunication Assembly,

*considering*

- a) that signal processing in the HDTV studio environment is in a digital form;
- b) that the source bit rate of a HDTV digital studio signal is in excess of 1 Gbit/s;
- c) that equipment interconnections in a serial digital format are used within HDTV studio complexes;
- d) that bit-rate reduction is commonly used in the production chain of HDTV programmes;
- e) that bit-rate reduction will be applied to video signals at several places along the HDTV chain that extends from the production of programmes to their final delivery;
- f) that it is essential that any video artefacts due to the combined effect of such bit-rate reduction processes be statistically kept below the level of perceptibility up to the end of the HDTV chain,

*recommends*

- 1** that when bit-rate reduction is used in HDTV studios, the bit-rate reduction factor used should be sufficiently small to provide virtually transparent (quasi-lossless) coding both in terms of the subjective quality of stationary and moving pictures, and in terms of picture post-processability in the studio;
  - 2** that the picture treatment should remain virtually transparent to picture quality and picture post-processability when the bit-rate reduction algorithm used in HDTV studios is repeatedly cascaded with the bit-rate reduction algorithm used for digital recording in studios. The same algorithm, or algorithms belonging in the same family, should preferably be used for all applications in the studio;
  - 3** that the bit-rate reduction algorithms used in HDTV studios should not give rise to additional perceptible picture artefacts when they are cascaded with the algorithms used in contribution and distribution circuits and for programme delivery to the home.
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