

International Telecommunication Union

ITU-R
Radiocommunication Sector of ITU

Recommendation ITU-R BT.1210-4
(01/2012)

**Test materials to be used
in assessment of picture quality**

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 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.

Electronic Publication
Geneva, 2020

RECOMMENDATION ITU-R BT.1210-4*

Test materials to be used in assessment of picture quality

(Question ITU-R 81-1/6)

(1995-1997-2000-2004-2012)

Scope

This Recommendation provides guidelines on test materials to be used in assessment of picture quality of television systems.

The ITU Radiocommunication Assembly,

considering

- a) that the performance of television systems must be expressed by both objective and subjective measures;
- b) that the picture quality of systems is evaluated mainly by subjective assessment and supplementarily by objective assessment;
- c) that in subjective assessment, test procedures, viewing conditions and the test materials used may have a great influence on the assessment result;
- d) that Recommendation ITU-R BT.500 describes subjective assessment methods for television pictures;
- e) that digital bit-rate reduction systems, the picture quality of which is generally dependent on, and sensitive to, the picture contents, are increasingly introduced in the broadcasting chain;
- f) that the use of common test materials worldwide is one of the bases necessary to attain universal assessment results;
- g) that a set of materials that provides characteristics suitable for test purposes must be properly chosen in the assessment;
- h) that the test materials must be up to date in accordance with progress in television technology,

recommends

1 that the test materials listed in Report ITU-R BT.2245 may be used in picture quality evaluation test of television systems;

NOTE 1 – Information about the criteria governing the selection of test materials is given in Annex 1.

2 that the test materials should be accompanied by the information about attributes, statistics, copyright, and condition of usage that assists the selection and use of the materials;

3 that the latest information on test materials should be provided by Report ITU-R BT. 2245 so that organizations wanting such materials can obtain accurate information;

* Radiocommunication Study Group 6 made editorial amendments to this Recommendation in February 2020 in accordance with Resolution ITU-R 1.

4 that Report ITU-R BT.2245 should be periodically reviewed for updating to include newly developed materials;

NOTE 2 – Test materials are available to ITU-R Members via URL (hyperlinks) as indicated in Report ITU-R BT.2245 and are subject to copyright restrictions and providers' consent.

further recommends

that further development should be undertaken to identify test materials, in particular for high definition television (HDTV), ultra high definition television (UHDTV), and three dimensional television (3DTV), which reflect progress in television technology.

Annex 1

Criteria governing choice of test materials

The assessor must have available a variety of scenes that can be considered critical but not unduly so, and which are representative in quality and production values with the best of television broadcasting. The level of difficulty may be checked by objective measurements.

Subjective assessments may also take into consideration a range of possible applications and situations making it necessary to include scenes suitable to evaluate basic quality, processibility (e.g., chroma key, slow-motion, and special effects), error performance and sound/vision synchronization. Tests for consistency of results between different systems would require that near-identical scenes for both systems be included.

A library of test scenes must then be based on the essential following criteria and should include:

- images at a number of levels of difficulty and with different rates and modes of motion including stills;
 - material suitable for contribution and distribution uses;
 - scene pairs suitable for colour matte evaluation;
 - highest quality images with the lowest possible noise levels, but noting the need for some scenes to have known amounts of noise added to evaluate certain facets of codec performance;
 - scenes covering a range of programme types;
 - scenes suitable for testing codec performance under normal conditions and in the presence of errors, both concealed and unconcealed.
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