



Recommendation ITU-R BT.1877-1
(08/2012)

**Error-correction, data framing, modulation
and emission methods for second
generation of digital terrestrial
television broadcasting systems**

BT Series
Broadcasting service
(television)



International
Telecommunication
Union
Documents
Document Sharing Hub

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.

Electronic Publication
Geneva, 2012

© ITU 2012

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without written permission of ITU.

RECOMMENDATION ITU-R BT.1877-1

**Error-correction, data framing, modulation and emission methods for
second generation of digital terrestrial
television broadcasting systems**

(Question ITU-R 132-2/6)

(2010-2012)

Scope

This Recommendation defines error-correction, data framing, modulation and emission methods for the second generation of digital terrestrial television broadcasting transmission systems¹ (referred to, outside ITU-R, as a DVB-T2 system). These systems have been developed such that they are compatible with the provisions of the GE06 Agreement. This Recommendation is intended for the digital terrestrial broadcasting transmission system, when high flexibility in the system configuration and broadcasting interactivity is of importance allowing for a wide-ranging trade-off between operation under minimal C/N levels or maximum transmission capacity².

The ITU Radiocommunication Assembly,

considering

- a) that the digital terrestrial television systems for use in broadcasting systems have been developed in Recommendation ITU-R BT.1306, which are referred to as the current systems;
- b) that digital terrestrial television broadcasting (DTTB) is being introduced in the VHF/UHF bands by some administrations from 1997;
- c) that it may be desirable to support the simultaneous transmission of a hierarchy of nested quality levels (including low definition television (LDTV), high definition television (HDTV) and standard definition TV (SDTV) within a single channel;
- d) that many types of interference, including co-channel and adjacent channel, ignition noise, multipath and other signal distortions exist in the VHF/UHF bands;
- e) that it is necessary that the frame synchronization be capable of robustness in channels subject to transmission errors;
- f) that it is desirable that the frame structure be adapted to different bit rate channels;
- g) that recent developments in the field of channel coding and modulation have produced new techniques with performances approaching the Shannon limit;

¹ The second generation of digital terrestrial television broadcasting transmission systems in this Recommendation is meant as systems offering higher bit rate capacity per Hz and better power efficiency in comparison to the systems described in Recommendation ITU-R BT.1306, and there is no general requirement for backward compatibility with first-generation systems.

² For the first-generation systems information on planning parameters, protection ratios, etc. is already contained in relevant ITU-R Recommendations. For the second-generation systems, there is a need to study and include such information in the relevant ITU-R Recommendations.