

(UNOFFICIAL TRANSLATION)

Notification of the National Broadcasting and Telecommunications Commission
Re: Technical Standard for Transmission of Digital Terrestrial Television Broadcasting

Whereas it is deemed appropriate to set out technical standard for transmission of digital terrestrial television broadcasting in order to ensure that the public are able to access standardized, quality and diverse television broadcasting with advanced technology and efficient spectrum utilization;

Pursuant to Section 27 (10) and (24) and Section 37 of the Act on Organization to Assign Radio Frequency and to Regulate the Broadcasting and Telecommunications Services B.E. 2553 (2010), which contains certain provisions regarding the restriction of the rights and freedom of an individual as permitted to be done under the law by Article 29, together with Articles 35, 36, 41, 43, 45, 46, 47, 61 and 64 of the Constitution of the Kingdom of Thailand; the National Broadcasting and Telecommunications Commission hereby prescribes the technical standard for transmission of digital terrestrial television broadcasting, as detailed in the Technical Standard No. NBTC BS 4001-2555 appended hereto.

This Notification shall come into force as from the day following the date of its publication in the Government Gazette.

Announced on the 2nd day of November B.E. 2555 (2012)

Colonel

(Natee Sukonrat)

Chairman of the Broadcasting Committee
Officiating for Chairman of the National Broadcasting
and Telecommunications Commission



NBTC BS 4001-2555 (2012)

Technical Standard
for Transmission of Digital Terrestrial
Television Broadcasting

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1. Scope

This Technical Standard specifies the minimum technical characteristics of the equipment for free-to-air transmission of digital terrestrial television broadcasting based on the Second Generation Digital Terrestrial Television Broadcasting System (DVB-T2).

2. Frequency

The digital terrestrial television broadcasting shall be operated in the 510-790 MHz frequency band with a bandwidth of 8 MHz.

3. Broadcasting System Requirement

The television broadcast transmitter and antenna system for the DVB-T2 service shall have effective radiated power (ERP) and all other requirements as specified in the Radio Frequency Plan for Digital Terrestrial Television Broadcasting.

4. Technical Standards

The technical standards for the digital terrestrial television broadcasting shall conform to the following requirements:

4.1 Baseband Signal and Compression

4.1.1 The use of video coding shall be in accordance with ISO/IEC 14496-10:2012: Information technology -- Coding of audio-visual objects -- Part 10: Advanced Video Coding (MPEG 4 AVC/H.264).

There shall be two video signal formats:

4.1.1.1 Standard Definition (SD) : 720x576 interlaced (576i) with frame rate of 25 frames/sec and aspect ratio of 16:9 and 4:3.

4.1.1.2 High Definition (HD) : 1920x1080 interlaced (1080i) with frame rate of 25 frames/sec and aspect ratio of 16:9 or 1280x720 progressive (720p) with frame rate of 50 frames/sec and aspect ratio of 16:9.

4.1.2 The use of stereo audio coding shall be in accordance with ISO/IEC 14496-3:2009: Information technology -- Coding of audio-visual objects -- Part 3: Audio (MPEG 4 HE AACv2).

4.2 Transmission

- 4.2.1 The use of framing structure, channel coding and modulation shall be in accordance with ETSI EN 302 755 V1.3.1 (2012-04): Digital Video Broadcasting (DVB); Frame structure, channel coding and modulation for a second generation digital terrestrial television broadcasting system (DVB-T2).
- 4.2.2 The use of mega-frame for Single Frequency Network (SFN) synchronization shall be in accordance with ETSI TS 101 191 V1.4.1 (2004-06): Digital Video Broadcasting (DVB); DVB mega-frame for Single Frequency Network (SFN) synchronization.
- 4.2.3 The implementation of digital terrestrial broadcasting system according to the standards set forth in Clauses 4.2.1 and 4.2.2 shall be in reference to ETSI TS 102 831 V1.2.1 (2012-08): Digital Video Broadcasting (DVB); Implementation guidelines for a second generation digital terrestrial television broadcasting system (DVB-T2).

4.3 Multiplexing

- 4.3.1 The specification for Service Information (SI) shall be in accordance with ETSI EN 300 468 V1.13.1 (2012-08): Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems.
- 4.3.2 The implementation and usage of Service Information (SI) under Clause 4.3.1 shall be in reference to ETSI TS 101 211 V1.11.1 (2012-04): Digital Video Broadcasting (DVB); Guidelines on implementation and usage of Service Information (SI).
- 4.3.3 The specification for data broadcasting shall be in accordance with ETSI EN 301 192 V1.4.2 (2008-04): Digital Video Broadcasting (DVB); DVB specification for data broadcasting.
- 4.3.4 The implementation of data broadcasting under Clause 4.3.3 shall be in reference to ETSI TR 101 202 V1.2.1 (2003-01): Digital Video Broadcasting (DVB); Implementation guidelines for data broadcasting.
- 4.3.5 The signal coding for MPEG-2 transport stream shall be in accordance with ETSI TS 101 154 V1.10.1 (2011-06): Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream, and shall be in reference to ISO/IEC 13818-1:2007: Information technology - Generic coding of moving pictures and associated audio information: Systems.

4.3.6 For the digital terrestrial television broadcasting through the Single Frequency Network (SFN) and/or the Multiple Physical Layer Pipe (Multiple PLP), the modulator interface (T2-MI) shall be in accordance with ETSI TS 102 773 V1.3.1 (2012-01): Digital Video Broadcasting (DVB); Modulator Interface (T2-MI) for a second generation digital terrestrial television broadcasting system (DVB-T2).

4.4 System Software Update (SSU)

The specification for System Software Update shall be in accordance with ETSI TS 102 006 V1.3.2 (2008-07): Digital Video Broadcasting (DVB); Specification for System Software Update in DVB Systems.

4.5 Subtitling

The specification for subtitling system shall be in accordance with ETSI EN 300 743 V1.4.1 (2011-10): Digital Video Broadcasting (DVB); Subtitling systems.

4.6 Measurement

The measurement or testing of signals or other parameters for digital terrestrial television broadcasting shall be in reference to ETSI TR 101 290 V1.2.1 (2001-05): Digital Video Broadcasting (DVB); Measurement guidelines for DVB systems, and DVB Document A14-2 (July 2012): Digital Video Broadcasting (DVB); Measurement guidelines for DVB systems; Amendment for DVB-T2 System.

This English Translation is prepared with the sole purpose of facilitating the comprehension of foreign participants in the broadcasting rules and regulations and shall not in any event be construed or interpreted as having effect in substitution for or supplementary to the Thai version thereof.

Please note that the translation has not been subjected to an official review by the Office of the National Broadcasting and Telecommunications Commission (The Office of NBTC). The Office of NBTC, accordingly, cannot undertake any responsibility for its accuracy, nor be held liable for any loss or damages arising out of or in connection with its use.

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