

Statement of Conformity of DVB-T receiver to Slovenian technical specifications published by Slovenian Agency for Post and Electronic Communications (APEK)

Name of the DVB-T receiver vendor:	
DVB-T receiver model:	
Type of DVB-T receiver (set-top-box or integrated):	
Software version:	
Distributor(s) in Slovenia	

No.	Requirement	Compliance	Receiver compliance*	Comment
1	Hardware requirements			
1.1	The receiver shall allow reception and demodulation of the DVB-T signal transmitted in accordance with EN 300 744	Shall		
1.2	The receiver shall allow reception of the DVB-T signal in Single Frequency Networks (SFN) or Multi Frequency Networks (MFN).	Shall		
1.3	The receiver shall allow reception of all channels in UHF (Band IV-V with bandwidth 8 MHz) and reception of all channels in VHF (Band III with bandwidth 7 MHz).	Shall		
1.4	The receiver shall allow reception of the DVB-T signal with all combinations of following parameters: <ul style="list-style-type: none"> • Transmission mode: 2k and 8k COFDM • Modulation: QPSK, 16 QAM, 64QAM • Code rate: 1/2, 2/3, 3/4, 5/6, 7/8 • Guard interval: 1/4, 1/8, 1/16, 1/32 	Shall		
1.5	The receiver shall allow reception of the DVB-T signal in environment with echoes according to EN 300 744. The receiver shall support at least -23dBm ($\approx 86\text{dB}\mu\text{V}$ at 75Ohm) of input signal without degradation.	Shall		
1.6	Within the user interface the receiver shall provide the information of signal level and signal quality. The implementation of user interface is responsibility of the producer.	Shall		
1.7	The receiver shall have at least one tuner input connector in accordance with IEC 60169-2, part 2 and shall allow the connection to external antenna with connector type: IEC 169-2 male. The input impedance shall be 75 Ohm.	Shall		
1.8	The receiver input signals should be bypassed independently from the status of receiver (operational or stand-by), so that connected equipment (e.g. TV set) can operate even if the receiver is in standby.	Should		
2	Tuning/Scanning procedures			
2.1	The receiver shall, in case of same Transport stream Id and Service Id on two or more different frequencies save all frequencies, or select the frequency with better signal.	Shall		
2.2	The receiver shall be able to receive and react on tuning parameters in PSI/SI tables (e.g. SDT or NIT information).	Shall		
2.3	In addition to the automatic search, the receiver shall allow a manual search where Channel Id (or frequency) is entered by the end user.	Shall		
2.4	The receiver shall upgrade modulation parameters according to NIT table. The receiver shall upgrade »Services lists« according to SDT table.	Shall		
3	Interfaces			
3.1	The receiver shall have at least one SCART Interface in accordance with EN 50049-1 and EN 50157-2-1.	Shall		
3.2	The receiver should support at least one DVB Common Interface (for CA module) for conditional access. CI-slot should comply with EN50221	Should		
3.3	The receiver shall have a coaxial or optical S/PDIF interface for digital audio to provide PCM signal according to IEC 60958 or non-linear PCM coded audio stream according to IEC 61937	Shall		
3.4	The receiver should have at least one analogue audio interface based on two RCA connectors, female type IEC 60603-14.	Shall		
3.5	The HDTV Level receiver with display (iDTV) shall support requirements specified for high definition video interfaces by EICTA for compliant HD Ready iDTV-sets.	Shall for HDTV		
3.6	The HDTV Level receiver without display (STB) shall have at least one High-Definition Multimedia Interface (HDMI) with type A connector, supporting displays that comply with the EICTA HD-Ready requirements.	Shall for HDTV		

3.7	The HDTV Level STB shall be able to use the EDID information provided by the display to automatically determine the STB output.	Shall for HDTV		
3.8	The HDTV Level STB shall provide "Original Format" option, i.e. to output same format as received if supported by the display, as indicated by the EDID information. If received format is not supported, the STB shall select display mode providing the best possible video quality.	Shall for HDTV		
3.9	The HDMI output shall provide stereo or stereo downmix or multichannel audio, and should be equipped with Auto lip-synch functionality.	Shall for HDTV		
4	Processor			
4.1	The receiver shall have a real time clock/calendar running continuously. The clock shall be updated by incoming TDT and TOT from SI.	Shall		
5	MPEG Demultiplexer			
5.1	The Demultiplexer shall be compliant to the MPEG-2 transport layer defined in ISO/IEC 13818-1 and ETSI TS 101 154 and: - shall be able to decode an ISO/IEC 13818-1 stream with data rates up to 32 Mbit/s, - shall support variable bitrate elementary streams within	Shall		
6	MPEG VIDEO decoder			
6.1	The decoder of receiver shall fully comply with standard ISO IEC 14496-10 for decoding MPEG-4 and ISO/IEC 13818-2 for decoding of MPEG-2 coded signal. The decoder shall also comply with ETSI TS 101 154.	Shall		
6.2	The decoder of the receiver shall support profile "H.264/AVC Main Profile at Level 3" (used for H.264/AVC SDTV) and comply with ETSI TS 101 154 (chapters 5.5 and 5.6: 25 Hz SDTV).	Shall		
6.3	The decoder of SDTV Level receiver shall decode also »MPEG-2 Main Profile@Main Level« and comply with ETSI TS 101 154 (chapter 5.1: 25 Hz SDTV).	Shall		
6.4	The decoder of receiver shall decode pictures in resolution of 720x576 pixels with minimum data rate of 600 kbit/s.	Shall		
6.5	Slikovni dekodirnik mora podpirati spremljivo in konstantno bitno hitrost (VBR in CBR).	Shall		
6.6	The decoder of receiver shall be able to switch between 4:3 and 16:9 picture aspect ratio.	Shall		
6.7	The display format signaling between the STB and the display device are either LINE23 WSS and/or voltage levels on a SCART PIN8 as defined by IEC 62216-1 or in case of HDMI output comply with EICTA extensions to the IEC 62216-1 (6.4.3.7.4 AFD processing for HDMI output).	Shall		
6.8	Video decoder shall support "H.264/AVC High Profile at Level 4" and comply with ETSI TS 101 154 (chapter 5.7 H.264/AVC HDTV).	Shall for HDTV		
6.9	In case of SCART, or if any other analogue video output (Y, Pb, Pr or other) is available, the decoded High Definition video shall be down-converted by SD format converter to standard definition (SD) resolution for output via these interfaces.	Shall for HDTV		
7	AUDIO decoder			
7.1	The receiver shall provide at least one stereo audio decoder that is able to meet minimum decoding requirements based on MPEG 1 Layer II ("Musicam" ISO/IEC 11172-3) and decoder for AC3.	Shall		
7.2	Audio decoder shall support also AAC decoding according to ISO/IEC 14496-3 subpart 4.	Shall after 01.01.2010		
7.3	The HDTV Level receiver shall support reception of multi-channel (up to 5.1) audio.	Shall for HDTV		
7.4	The HDTV Level receiver shall provide analogue audio outputs for stereo/mono, S/PDIF output and an HDMI output for multi-channel audio.	Shall for HDTV		
7.5	An audio output of HDTV level iDTV receiver shall be in sync with the displayed video.	Shall for HDTV		
7.6	The receiver shall be capable of decoding and down-mixing of AC3 audio.	Shall		
7.7	The receiver shall be capable of decoding and down-mixing of E-AC3 audio.	Shall for HDTV after 01.01.2010		
7.8	The receiver shall be capable of decoding and down-mixing of HE AAC audio.	Shall for HDTV after 01.01.2010		
8	RADIO mode			

8.1	In case of an alphanumeric display (optional) on STB the display should be large enough to accommodate the full length of the station name (up to 8 characters).	Should		
8.2	If a DVB stream is labeled as a „Radio Service“, it should always be shown by the STB in the radio channel list, even if there might be an elementary video stream sent along.	Shall		
9	System software upgrade			
9.1	The receiver shall provide at least one mechanism for upgrading system software.	Shall		
9.2	HDTV Level receivers shall support and use OTA System Software Update procedure according to the ETSI TS 102 006. The manufacturer shall provide procedure and functions carrying out upgrade in the receiver.	Shall for HDTV		
10	Middleware			
10.1	The receiver shall have system software for interpretation and handling of the active service information and control of the local hardware/software according to EN 300 468 and ETSI TR 101 211. The receiver shall be able to process the PSI/SI tables for both, the 'Actual' and the 'Other' transport stream.	Shall		
10.2	The following tables are a mandatory set of tables the receiver shall be able to process: NIT_CAT_PAT_PMT_SDT_FIT_TDT_TOT	Shall		
10.3	The receiver shall offer basic functionality of EPG in order to present following: • EIT actual (present/following/scheduled) • EIT other (present/following/scheduled)	Shall		
10.4	The navigator shall be presented in SLOVENE language and shall support characters from code table ISO/IEC 8859-2.	Shall		
10.5	The user shall be able to set storable preferences for default audio language. If an audio stream for the default audio language is available for the service, the receiver shall automatically choose that audio-stream.	Shall		
10.6	The receiver shall provide a basic EPG for display of EIT Present/Following (short event descriptor, extended event descriptor, content descriptor). Also the EIT Scheduling table should be presented within the proprietary receiver navigator	Shall		
10.7	The SDTV Level receiver shall offer at least one of following options for presentation of Teletext: - By insertion of the Teletext data in the VBI of the analogue CVBS video output. Insertion shall conform to ITU-R BT.653-3 and to requirements for level 1.5 defined in ETS 300 706; - By presentation of Teletext within the navigator of the	Shall		
10.8	Stored user preferences shall be available also after unplugging power supply.	Shall		
10.9	The receiver shall provide a function to reset all parameters to factory mode, thus removing all service lists, user preferences, etc. After reset, the receiver shall enter installation state	Shall		
10.10	Receiver shall be able to display (EBU) Teletext (both normal teletext pages and teletext subtitling pages) using the OSD, meeting the requirements for level 1.5 in ETSI EN 300 706 "Enhanced Teletext Specification"	Shall for HDTV		
10.11	The receiver shall be capable of decoding and displaying DVB subtitle services which are transmitted in conformance with ETSI EN 300 743 including characters from code table ISO/IEC 8859-2.	Shall		
10.12	For HDTV Level receivers following pre-settings shall be enabled: • Default language for User interface and subtitling set to "SLOVENE" • Default codepage for Slovene language IEC 8859-2 • Subtitling: ON (enabled) • Analog video output format: 4:3 • "16:9 letterbox" conversion: ON • OTA System Software Upgrade: ON (enabled) • Default digital audio output set to PCM Stereo	Shall for HDTV		
11	Remote control			
11.1	The receiver shall have an easy to use remote control. The receiver manufacturer will determine the functionality of the remote control.	Shall		
* Compliance is determined by: - compliant - partially compliant - not compliant				

Place and date:

Stamp and signature: