

STN	Digitálne televízne vysielanie (DVB) Štruktúra rámcovania, kanálové kódovanie a modulácia pre systémy druhej generácie určené na vysielanie, interaktívne služby, zber správ a iné širokopásmové družicové aplikácie Časť 2: DVB-S2 rozšírenie (DVB-S2X)	STN EN 302 307-2 V1.3.1 87 2307
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Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications; Part 2: DVB-S2 Extensions (DVB-S2X)

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**Digital Video Broadcasting (DVB);
Second generation framing structure, channel coding and
modulation systems for Broadcasting,
Interactive Services, News Gathering and
other broadband satellite applications;
Part 2: DVB-S2 Extensions (DVB-S2X)**

EBU DVB®

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Contents

Intellectual Property Rights	8
Foreword.....	8
Modal verbs terminology.....	9
Introduction	9
1 Scope	10
2 References	10
2.1 Normative references	10
2.2 Informative references.....	11
3 Definition of terms, symbols and abbreviations.....	11
3.1 Terms.....	11
3.2 Symbols.....	11
3.3 Abbreviations	11
4 Transmission system description.....	12
4.0 General aspects.....	12
4.1 System definition.....	12
4.2 System architecture	12
4.3 System configurations	12
5 Subsystems specifications	16
5.1 Mode adaptation	16
5.1.0 General aspects	16
5.1.1 Input Interfaces	16
5.1.2 Input stream synchronizer (optional, not relevant for single TS - BS)	16
5.1.3 Null-Packet Deletion (ACM and Transport Stream only)	16
5.1.4 CRC-8 encoder (for packetized streams only).....	16
5.1.5 Merger/Slicer	16
5.1.6 Base-Band Header insertion	16
5.1.7 GSE High Efficiency Mode (GSE-HEM).....	17
5.1.8 Channel bonding for multi-tuner (L) receivers	18
5.1.8.1 Introduction to channel bonding	18
5.1.8.2 Channel bonding for TS transmission.....	19
5.1.8.3 Channel bonding for GSE transmission	20
5.1.8.3.0 General aspects.....	20
5.1.8.3.1 Channel bonding for Generic Packetized streams	22
5.1.8.3.2 Channel bonding for Generic Continuous streams	22
5.2 Stream Adaptation.....	22
5.2.0 General aspects	22
5.2.1 Padding	22
5.2.2 BB scrambling	22
5.3 FEC Encoding	22
5.3.0 General aspects	22
5.3.1 Outer encoding (BCH).....	24
5.3.2 Inner encoding (LDPC)	24
5.3.2.0 General aspects	24
5.3.2.1 Inner coding for normal FECFRAME.....	24
5.3.2.2 Inner coding for short and medium FECFRAME	25
5.3.3 Bit interleaver	25
5.4 Constellations and Bit mapping.....	26
5.4.0 General aspects	26
5.4.0a Bit mapping into $\pi/2$ BPSK constellation (VL-SNR modes and VL-SNR Header).....	27
5.4.1 Bit mapping into QPSK constellation.....	27
5.4.2 Bit mapping into 8PSK and 8APSK constellations	27
5.4.3 Bit mapping into 16APSK constellation.....	28
5.4.4 Bit mapping into 32APSK constellations	30

5.4.5	Bit mapping into 64APSK constellations	32
5.4.6	Bit mapping into 128APSK constellations	35
5.4.7	Bit mapping into 256APSK constellations	37
5.5	Physical Layer (PL) framing	43
5.5.0	General aspects	43
5.5.1	Dummy PLFRAME insertion	43
5.5.2	PL signalling	44
5.5.2.0	General aspects	44
5.5.2.1	SOF field	46
5.5.2.2	MODCOD field	46
5.5.2.3	TYPE field	48
5.5.2.4	PLS code, no time slicing	48
5.5.2.5	VL-SNR Header	49
5.5.2.6	Shortening and Puncturing of VL-SNR MODCODs	50
5.5.3	Pilot Insertion	51
5.5.4	Physical layer scrambling	51
5.5.4.0	General aspects	51
5.5.4.1	PL scrambling for VL-SNR frames	52
5.5.4.1.0	General aspects	52
5.5.4.1.1	$\pi/2$ -BPSK modulated frames	52
5.6	Baseband shaping and quadrature modulation	53
6	Error performance	53
Annex A (normative):	Signal spectrum at the modulator output	55
Annex B (normative):	Addresses of parity bit accumulators for $n_{ldpc} = 64\ 800$	57
Annex C (normative):	Addresses of parity bit accumulators for $n_{ldpc} = 16\ 200$ and $n_{ldpc} = 32\ 400$	103
Annex D (normative):	Additional tools	108
D.0	General aspects	108
D.1	Implementation of TS based channel bonding	108
D.1.1	Transmitting side	108
D.1.2	Receiving side (informative)	108
D.2	Void	108
D.3	Void	108
D.4	Void	109
D.5	Signalling of reception quality via return channel (normative for ACM)	109
Annex E (normative):	Super-Framing Structure (optional)	111
E.1	Purpose of Super-Framing Structure	111
E.2	Specification of Super-Frame as a Container	111
E.2.1	Super-Frame Structure	111
E.2.2	Start of Super-Frame (SOSF) Field	112
E.2.3	Super-Frame Format Indicator (SFFI) Field	112
E.2.4	Two-Way Scrambling	113
E.2.4.0	General aspects	113
E.2.4.1	Scrambling Sequence Generation	113
E.2.4.2	Two-Way Scrambling Method	114
E.3	Format Specifications as Super-Frame Content	115
E.3.0	General aspects	115
E.3.1	Super-Frame-aligned Pilots (SF-Pilots)	116
E.3.1.0	General aspects	116
E.3.1.1	Specification of SF-Pilots Type A	117
E.3.2	Format Specification 0: DVB-S2X	117

E.3.2.0	General aspects	117
E.3.2.1	Pilot structure.....	118
E.3.2.2	Modified VL-SNR-frame	118
E.3.3	Format Specification 1: DVB-S2 legacy	119
E.3.4	Format Specification 2: Bundled PLFRAME (64 800 payload Size) with SF-Pilots.....	119
E.3.4.0	General aspects	119
E.3.4.1	Bundled PLFRAME (64 800 payload) Definition	120
E.3.4.2	PLHEADER Specification for Bundled PLFRAMEs (64 800 payload)	121
E.3.4.3	SF-Pilot Structure	123
E.3.5	Format Specification 3: Bundled PLFRAME (16 200 Payload Size) with SF-Pilots.....	124
E.3.5.0	General aspects	124
E.3.5.1	Bundled PLFRAME Definition	125
E.3.5.2	PLHEADER Specification for Short Bundled PLFRAME.....	126
E.3.5.3	SF-Pilot Structure	127
E.3.6	Format Specification 4: Flexible Format with VL-SNR PLH tracking.....	129
E.3.6.0	General aspects	129
E.3.6.1	Super-Frame Header (SFH)	130
E.3.6.2	SFH-Trailer (ST)	131
E.3.6.3	Physical Layer Header (PLH).....	131
E.3.6.3.0	General aspects	131
E.3.6.3.1	PLSCODE Definition.....	131
E.3.6.3.2	PLH Protection Levels	132
E.3.6.3.3	Signalling of MOD/COD/SPREAD/SIZE	133
E.3.6.3.4	Field for TSN	134
E.3.6.3.5	SOF Sequence	134
E.3.6.4	PLFRAME structure	134
E.3.6.5	Pilot structure.....	136
E.3.6.5.1	SF-Pilots.....	136
E.3.6.5.2	Special VL-SNR Pilots	136
E.3.6.6	Spreading and Signalling Rules	136
E.3.6.7	Dummy PL Frame Definition	137
E.3.6.7.0	General aspects	137
E.3.6.7.1	Dummy PL frames with deterministic content.....	137
E.3.6.7.2	Dummy PL frames with arbitrary content.....	138
E.3.7	Format Specification 5: Periodic Beam Hopping Format with VL-SNR and fragmentation Support..	138
E.3.7.0	General aspects	138
E.3.7.1	Super-Frame Header (SFH)	140
E.3.7.2	SFH-Trailer (ST)	141
E.3.7.3	Physical Layer Header (PLH).....	141
E.3.7.3.0	General aspects	141
E.3.7.3.1	PLSCODE Definition.....	141
E.3.7.3.2	PLH Protection Levels	141
E.3.7.3.3	Signalling of MOD/COD/SPREAD/SIZE and TYPE.....	141
E.3.7.3.4	Field for TSN	142
E.3.7.3.5	SOF Sequence	142
E.3.7.4	PLFRAME structure	142
E.3.7.5	Pilot structure.....	143
E.3.7.5.1	SF-Pilots.....	143
E.3.7.5.2	Special VL-SNR Pilots	143
E.3.7.6	Spreading and Signalling Rules	143
E.3.7.7	Dummy PL Frame Definition	143
E.3.7.8	Postamble Definition	143
E.3.8	Format Specification 6: Traffic Driven Beam Hopping Format with VL-SNR Support.....	144
E.3.8.0	General aspects	144
E.3.8.1	Super-Frame Header (SFH)	146
E.3.8.2	Physical Layer Trailer (ST)	146
E.3.8.3	Physical Layer Header (PLH).....	146
E.3.8.4	PLFRAME structure	146
E.3.8.5	Pilot structure.....	146
E.3.8.5.1	SF-Pilots.....	146
E.3.8.5.2	Special VL-SNR Pilots	146
E.3.8.6	Spreading and Signalling Rules	147

E.3.8.7	Dummy PL Frame Definition	147
E.3.8.8	Postamble Definition	147
E.3.9	Format Specification 7: Simplified Traffic Driven Beam Hopping Format without VL-SNR Support	147
E.3.9.0	General aspects	147
E.3.9.1	Superframe Header (SFH)	148
E.3.9.2	SFH-Trailer (ST)	148
E.3.9.3	Physical Layer Header (PLH)	148
E.3.9.3.0	General aspects	148
E.3.9.3.1	PLSCODE Definition	148
E.3.9.3.2	PLH Protection Levels	149
E.3.9.3.3	Signalling of MOD/COD/SPREAD/SIZE and TYPE	149
E.3.9.3.4	Field for TSN	149
E.3.9.3.5	SOF Sequence	149
E.3.9.4	PLFRAME structure	149
E.3.9.5	SF-Pilot structure	149
E.3.9.5.1	SF-Pilots	149
E.3.9.5.2	Special VL-SNR Pilots	149
E.3.9.6	Spreading and Signalling Rules	149
E.3.9.7	Dummy PL Frame Definition	149
E.3.9.8	Postamble Definition	149
E.3.10	Format Specifications 8 - 15: Reserved	149
E.4	Signalling of additional reception quality parameters via return channel (normative for Interference Management at the Gateway)	150
Annex F:	For future use	152
Annex G:	For future use	153
Annex H (informative):	Examples of possible use of the System	154
H.0	General aspects	154
H.1	Void	154
H.2	Void	154
H.3	Void	154
H.4	Void	154
H.5	Void	154
H.6	Void	154
H.7	Satellite transponder models for simulations	154
H.8	Phase noise masks for simulations	156
Annex I (normative):	ACM	158
I.1	ACM Command	158
I.2	Dummy Synchronization Scheme (optional)	159
I.2.0	General aspects	159
I.2.1	Dummy Synchronization Frame structure	159
I.2.1.0	General aspects	159
I.2.1.1	PLH* description	160
I.2.1.2	Known Symbols	160
I.2.1.3	Known correlation structure	160
I.2.2	Scrambling	161
Annex J:	For future use	162
Annex K:	For future use	163
Annex L:	For future use	164

Annex M (normative):	Transmission format for wideband satellite transponders using time-slicing (optional).....	165
History		166

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Foreword

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NOTE: The EBU/ETSI JTC Broadcast was established in 1990 to co-ordinate the drafting of standards in the specific field of broadcasting and related fields. Since 1995 the JTC Broadcast became a tripartite body by including in the Memorandum of Understanding also CENELEC, which is responsible for the standardization of radio and television receivers. The EBU is a professional association of broadcasting organizations whose work includes the co-ordination of its members' activities in the technical, legal, programme-making and programme-exchange domains. The EBU has active members in about 60 countries in the European broadcasting area; its headquarters is in Geneva.

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The Digital Video Broadcasting Project (DVB) is an industry-led consortium of broadcasters, manufacturers, network operators, software developers, regulatory bodies, content owners and others committed to designing global standards for the delivery of digital television and data services. DVB fosters market driven solutions that meet the needs and economic circumstances of broadcast industry stakeholders and consumers. DVB standards cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data. The consortium came together in 1993 to provide global standardisation, interoperability and future proof specifications.

The present document is part 2 of a multi-part deliverable covering the optional extensions of the DVB-S2 system, denoted "DVB-S2X", as identified below:

Part 1: "DVB-S2";

Part 2: "DVB-S2 Extensions (DVB-S2X)".

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Modal verbs terminology

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Introduction

The optional extensions of the S2 system have been approved in 2014 and are identified by the S2X denomination. Such extensions are non-backwards-compatible with ETSI EN 302 307 [4], are optional for the implementation of new receivers under ETSI EN 302 307-1 [3], but are normative for the implementation of receivers under the present document: mapping of specific S2X building blocks to application areas is specified in Table 1. For every S2X application area, as defined in Table 1, the configurations for the corresponding S2 application area, as defined in ETSI EN 302 307-1 [3], Table 1, will be implemented. In case of conflicts the definition of the S2X application area applies.

The present document targets the core application areas of S2 (Digital Video Broadcasting, forward link for interactive services using ACM, Digital Satellite News Gathering and professional digital links such as video point-to-point or Internet trunking links), and new application areas requiring very-low carrier-to-noise and carrier-to-interference operation (VL-SNR).

In particular for DTH, a possible use case is the launch of UHDTV-1 (e.g. 4k) television services in Ku-/Ka-band that will adopt HEVC encoding. In this context it may be desirable to eventually use fragments of smaller blocks of capacity on two or three DTH transponders and bond them into one logical stream. This permits to maximize capacity exploitation by avoiding the presence of spare capacity in individual transponders and/or to take maximum advantage of statistical multiplexing.

The S2X system offers the ability to operate with very-low carrier-to-noise and carrier-to-interference ratios (SNR down to -10 dB), to serve markets such as airborne (business jets), maritime, civil aviation internet access, VSAT terminals at higher frequency ranges or in tropical zones, small portable terminals for journalists and other professionals. Furthermore, the S2X system provides transmission modes offering significantly higher capacity and efficiency to serve professional links characterized by very-high carrier-to-noise and carrier-to-interference ratios conditions.

The present document reuses the S2 system architecture, while adding finer MODCOD steps, sharper roll-off filtering, technical means for bonding of multiple transponders and additional signalling capacity by means of an optional periodic super-frame structure, extended PLHEADER signalling schemes and the support of GSE-Lite signals.

The present document maintains the same clause numbering as ETSI EN 302 307-1 [3], in order to facilitate cross-reference.

1 Scope

The present document specifies the optional extensions of the S2 system, identified by the S2X denomination. The present document also includes amendments to the standard to enable beam hopping operation.

2 References

2.1 Normative references

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The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 101 545-1 (V1.1.1): "Digital Video Broadcasting (DVB); Second Generation DVB Interactive Satellite System (DVB-RCS2); Part 1: Overview and System Level specification".
- [2] ETSI TS 102 606-1 (V1.2.1): "Digital Video Broadcasting (DVB); Generic Stream Encapsulation (GSE); Part 1: Protocol".
- [3] ETSI EN 302 307-1: "Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications; Part 1: DVB-S2".
- [4] ETSI EN 302 307 (V1.1.1): "Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications".
- [5] ETSI EN 300 468: "Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems".
- [6] ETSI TS 102 606-2: "Digital Video Broadcasting (DVB); Generic Stream Encapsulation (GSE); Part 2: Logical Link Control (LLC)".
- [7] ETSI ETS 300 801: "Digital Video Broadcasting (DVB); Interaction channel through Public Switched Telecommunications Network (PSTN)/Integrated Services Digital Networks (ISDN)".
- [8] ETSI EN 301 195: "Digital Video Broadcasting (DVB); Interaction channel through the Global System for Mobile communications (GSM)".
- [9] ETSI ES 200 800: "Digital Video Broadcasting (DVB); DVB interaction channel for Cable TV distribution systems (CATV)".
- [10] ETSI ETS 300 802: "Digital Video Broadcasting (DVB); Network-independent protocols for DVB interactive services".
- [11] ETSI EN 301 790: "Digital Video Broadcasting (DVB); Interaction channel for satellite distribution systems".

2.2 Informative references

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Not applicable.

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