ATSC Standard: A/325:2018 Corrigendum No. 1

Doc. A/325-2018-Corr-No-1
28 October 2020

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Revision History

Version	Date
Corrigendum approved	28 October 2020

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1. OVERVIEW

1.1 Definition

A Corrigendum is generated to correct an error or ambiguity in an ATSC document introduced either in drafting or publication of the document that could lead to incorrect or unsafe application of the document. Correction of a technical defect shall in no way cause a change in functionality. Corrigenda shall be published as attachments to the original ATSC document. Distribution by ATSC of existing documents shall include any approved Corrigenda.

1.2 Scope

This document describes the necessary update to the A/325:2018.

1.3 Rationale for Changes

In example configuration settings of Annex B (Table B.1.1), the number of Preamble symbols needs be corrected when Preamble Mode 1 and 8K FFT size are used.

2. LIST OF CHANGES

Inserted text, tables, and drawings are shown in blue; deletions of existing text are shown in ~~red strikeout~~.

Annex B: Example Configuration Settings

B.1 DEVICE UNDER TEST CONFIGURATIONS

Table B.1.1 Example DUT Configurations

	Parameter	Configuration 1	Configuration 2	Configuration 3	Configuration 4	Configuration 5	Configuration 6
Tuner	RF Out Center Frequency	Demodulator IF input	Demodulator IF input	Demodulator IF input	Demodulator IF input	Demodulator IF input	569.0 MHz (Channel 30)
Bootstrap Signaling	Channel Bandwidth	6 MHz	6 MHz	6 MHz	6 MHz	6 MHz	6 MHz
	Sample Rate	6.912 MHz	6.912 MHz	6.912 MHz	6.912 MHz	6.912 MHz	6.912 MHz
Input Formatting	ALP Packet Length	1200 byte 2^{23}-1 PRBS +8byte UDP Header +20byte IPv4 Header +2byte ALP Header	1200 byte 2^{23}-1 PRBS +8byte UDP Header +20byte IPv4 Header +2byte ALP Header	1200 byte 2^{23}-1 PRBS +8byte UDP Header +20byte IPv4 Header +2byte ALP Header	1200 byte 2^{23}-1 PRBS +8byte UDP Header +20byte IPv4 Header +2byte ALP Header	1200 byte 2^{23}-1 PRBS +8byte UDP Header +20byte IPv4 Header +2byte ALP Header	1200 byte 2^{23}-1 PRBS +8byte UDP Header +20byte IPv4 Header +2byte ALP Header
	Baseband Packet Length ($K_{payload}$)	47328 bits	PLP 0: 21408 bits PLP 1: 47328 bits	PLP 0: 21408 bits PLP 1: 25728 bits	21408 bits	43008 bits	1992 bits
BICM Parameters	PLP FEC type	BCH + 64800 LDPC	PLP 0: BCH+64800 LDPC PLP 1: BCH+64800 LDPC	PLP 0: BCH+64800 LDPC PLP 1: BCH+64800 LDPC	BCH + 64800 LDPC	BCH + 64800 LDPC	BCH + 16200 LDPC
	PLP FEC Codelength	64800	PLP 0: 64800 PLP 1: 64800	PLP 0: 64800 PLP 1: 64800	PLP 0: 64800	64800	16200
	PLP Code Rate	11/15	PLP 0: 5/15 PLP 1: 11/15	PLP 0: 5/15 PLP 1: 6/15	5/15	10/15	2/15
	PLP Modulation (QAM NUC)	16	PLP 0: QPSK PLP 1: 64	PLP 0: QPSK (core PLP) PLP 1: 16 (Enhanced PLP)	16	256	QPSK
	PLP Size	1440472	PLP 0: 226800 PLP 1: 1198800	PLP 0: 1355209 PLP 1: 1355209	1133237	1440472	1133237

	Parameter	Configuration 1	Configuration 2	Configuration 3	Configuration 4	Configuration 5	Configuration 6
	PLP Time Interleaver mode	Convolutional	Hybrid	Convolutional	Convolutional	Convolutional	Convolutional
	PLP CTI Depth	1024 rows non-extended		1024 rows non-extended	1024 rows non-extended	1024 rows non-extended	1024 rows non-extended
	PLP CTI Memory[1] [cells]	523776		523776	523776	523776	523776
	PLP HTI inter sub-frame		PLP 0: 0 PLP 1: 0				
	PLP HTI # TI Blocks		PLP 0: 1 PLP 1: 6				
	PLP HTI # Max FEC Blocks		PLP 0: 7 PLP 1: 111				
	PLP HTI # FEC Blocks		PLP 0: 7 PLP 1: 111				
	PLP HTI Memory[2] [cells]		PLP 0: 291600 PLP 1: 226800				
	PLP HTI Cell interleaver		PLP 0: On PLP 1: On				
OFDM parameters	Frame Length Mode	Symbol-aligned	Symbol-aligned	Symbol-aligned	Time-aligned	Symbol-aligned	Symbol-aligned
	# Sub Frames	1	1	1	1	1	1
	# PLPs	1	2	2	1	1	1
	LDM	off	off	on	off	Off	Off
	LDM injection level	0	0	-4 dB	0	0	0
	Channel Bonding	Off	Off	Off	Off	Off	Off
	MIMO/MISO/SISO	Subframe 1: SISO	Subframe 1: SISO	Subframe 1: SISO	Subframe 1: SISO	Subframe 1: MISO (N=64, M=2)	Subframe 1: SISO

[1] Convolutional Time Interleaver (CTI) memory = # rows * (# rows – 1)/2[cells]; CTI depth = # rows[2] cells

[2] Hybrid Time Interleaver (HTI) depth = Block interleaver memory + Convolutional interleaver memory

Block Interleaver memory = #rows * #FEC blocks = (LDPC codelength/log2(modulation) * #FEC blocks)

Convolutional Interleaver memory = ((#rows/#TI blocks+1) * #FEC blocks) * (#TI blocks * (# TI blocks -1)/2)

HTI depth = (#rows * #FEC blocks)+(((#rows/#TI blocks+1) * #FEC blocks) * (#TI blocks * (# TI blocks -1)/2))*2+1)[cells]

Time Interleaver depth = (#symbols/sub-frame) * (FFT size / (Baseband Sample Rate(BSR) / #PLPs)) * (1+GI Ratio)

Time Interleaver depth = (Interleaver depth [cells] / NoC) * (FFT size/(BSR / #PLPs)) * (1+GI ratio)

	Parameter	Configuration 1	Configuration 2	Configuration 3	Configuration 4	Configuration 5	Configuration 6
	FFT Size	Subframe 1: 32K	Subframe 1: 32K	Subframe 1: 16K	Subframe 1: 8K	Subframe 1: 32K	Subframe 1: 8K
	Guard Interval	Subframe 1: GI5_1024(148μsec)	Subframe 1: GI5_1024(148μsec)	Subframe 1: GI5_1024(148μsec)	Subframe 1: GI6_1536(222μsec)	Subframe 1: GI5_1024(148μsec)	Subframe 1: GI6_1536(222μsec)
	NoC (# of data carriers)	Subframe 1: 27649 (reduced carriers =0)	Subframe 1: 27649 (reduced carriers =0)	Subframe 1: 13825 (reduced carriers =0)	Subframe 1: 6913 (reduced carriers =0)	Subframe 1: 27649 (reduced carriers =0)	Subframe 1: 6913 (reduced carriers =0)
	Scattered Pilot Pattern	Subframe 1: SP24_2	Subframe 1: SP24_2	Subframe 1: SP6_2	Subframe 1: SP4_2	Subframe 1: SP24_2	Subframe 1: SP4_2
	SP boost	Subframe 1: 2.43	Subframe 1: 2.43	Subframe 1: 1.7	Subframe 1: 1.51	Subframe 1: 2.43	Subframe 1: 1.51
	# Payload Symbols	Subframe 1: 53	Subframe 1: 53	Subframe 1: 108	Subframe 1: 189	Subframe 1: 53	Subframe 1: 189
	Subframe Length	Subframe 1: 264.0 msec	Subframe 1: 264.0 msec	Subframe 1: 272.0 msec	Subframe 1: 275.0 msec	Subframe 1: 264.0 msec	Subframe 1: 266.0 msec
	First Subframe Boundary Symbol	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes
	Last Subframe Boundary Symbol	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes	Subframe 1: Yes
	PLP Multiplexing[3]	Subframe 1: TDM	Subframe 1: TDM	Subframe 1: LDM	Subframe 1: TDM	Subframe 1: TDM	Subframe 1: TDM
	Channel Occupancy (Scheduler regulated)	Subframe 1: 100%	Subframe 1, PLP 0: 18% Subframe 1, PLP 1: 82%	Subframe 1: 100%	Subframe 1: 100%	Subframe 1: 100%	Subframe 1: 100%
	Frequency Interleaver	On	On	On	On	On	On
	PAPR	Off	Off	Off	Off	Off	Off
Preamble Parameters	L1 Basic Mode	Mode 3	Mode 1	Mode 1	Mode 1	Mode 3	Mode 1
	L1 Detail Mode	Mode 3	Mode 1	Mode 1	Mode 1	Mode 3	Mode 1
	FFT	32K	32K	16K	8K	32K	8K
	Reduced Carriers	0	0	0	0	0	0
	Guard Interval	GI5_1024	GI5_1024	GI5_1024	GI6_1536	GI5_1024	GI6_1536
	SP_Dx	12	12	6	4	12	4
	# Preamble Symbols	1	1	1	~~1~~2	1	~~1~~2
Performance	Data Rate (Mbps)	15.815	PLP 0: 0.6322 PLP 1: 19.3932	PLP 0: 3.2384 PLP 1: 7.7837	5.~~5335~~44	28.7612	1.0298
	Required theoretical SNR under AWGN channel (dB)	9.8	PLP 0: -1.3 PLP 1: 14.7	PLP 0: 1.7 PLP 1: 10.3	3.4	17.5	-4.9

[3] PLP_ID, PLP_Size, PLP_Type, PLP_Start, Num_subslices and subslice_Interval settings may vary.

	Parameter	Configuration 1	Configuration 2	Configuration 3	Configuration 4	Configuration 5	Configuration 6
	(considering power boosting)						

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