

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.997.1
Amendment 3
(08/2013)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Metallic access
networks

Physical layer management for digital subscriber
line transceivers

Amendment 3

Recommendation ITU-T G.997.1 (2012) –
Amendment 3



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For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T G.997.1

Physical layer management for digital subscriber line transceivers

Amendment 3

Summary

Amendment 3 to Recommendation ITU-T G.997.1 (2012) covers the following functionality:

- support for European limit PSD mask B8-18 for band plan 998E17 (new functionality).

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T G.997.1	1999-07-02	15
2.0	ITU-T G.997.1	2003-05-22	15
2.1	ITU-T G.997.1 (2003) Amd. 1	2003-12-14	15
2.2	ITU-T G.997.1 (2003) Amd. 2	2005-01-13	15
3.0	ITU-T G.997.1	2005-09-06	15
4.0	ITU-T G.997.1	2006-06-06	15
4.1	ITU-T G.997.1 (2006) Cor. 1	2006-12-14	15
4.2	ITU-T G.997.1 (2006) Amd. 1	2006-12-14	15
4.3	ITU-T G.997.1 (2006) Amd. 2	2007-11-22	15
4.4	ITU-T G.997.1 (2006) Amd. 3	2008-08-22	15
5.0	ITU-T G.997.1	2009-04-22	15
5.1	ITU-T G.997.1 (2009) Cor. 1	2009-11-13	15
5.2	ITU-T G.997.1 (2009) Amd. 1	2010-06-11	15
5.3	ITU-T G.997.1 (2009) Amd. 2	2010-11-29	15
5.4	ITU-T G.997.1 (2009) Amd. 3	2011-06-22	15
5.5	ITU-T G.997.1 (2009) Cor. 2	2011-10-29	15
5.6	ITU-T G.997.1 (2009) Amd. 4	2011-12-16	15
5.7	ITU-T G.997.1 (2009) Amd. 5	2012-02-13	15
6.0	ITU-T G.997.1	2012-06-13	15
6.1	ITU-T G.997.1 (2012) Amd. 1	2012-12-07	15
6.2	ITU-T G.997.1 (2012) Amd. 2	2013-04-22	15
6.3	ITU-T G.997.1 (2012) Amd. 3	2013-08-29	15

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Recommendation ITU-T G.997.1

Physical layer management for digital subscriber line transceivers

Amendment 3

1) Support for European limit PSD mask B8-18

Modify clause 7.3.1.2.15 as follows:

7.3.1.2.15 VDSL2 PSD mask class selection (CLASSMASK)

In order to reduce the number of configuration possibilities, the limit power spectral density masks (limit PSD masks) are grouped in the following PSD mask classes:

- Class 998 Annex A of [ITU-T G.993.2]: D-32, D-48, D-64, D-128.
- Class 997-M1c Annex B of [ITU-T G.993.2]: 997-M1c-A-7.
- Class 997-M1x Annex B of [ITU-T G.993.2]: 997-M1x-M.
- Class 997-M2x Annex B of [ITU-T G.993.2]: 997E17-M2x-NUS0, 997E30-M2x-NUS0.
- Class 998-M2x Annex B of [ITU-T G.993.2]: 998-M2x-A, 998-M2x-M, 998-M2x-B, 998-M2x-NUS0, 998E17-M2x-NUS0, 998E17-M2x-NUS0-M, 998E30-M2x-NUS0, 998E30-M2x-NUS0-M, 998E17-M2x-A.
- Class 998ADE-M2x Annex B of [ITU-T G.993.2]: 998-M2x-A, 998-M2x-M, 998-M2x-B, 998-M2x-NUS0, 998ADE17-M2x-A, 998ADE17-M2x-B, 998ADE17-M2x-M, 998ADE17-M2x-NUS0-M, 998ADE30-M2x-NUS0-A, 998ADE30-M2x-NUS0-M, HPEADE1230, HPEADE1730.
- Class 998-B Annex C: POTS-138b, POTS-276b (clause C.2.1.1 of [ITU-T G.993.2]), TCM-ISDN (C.2.1.2 of [ITU-T G.993.2]).
- Class 998-CO Annex C of [ITU-T G.993.2]: POTS-138co, POTS-276co (clause C.2.1.1 of [ITU-T G.993.2]).
- Class HPE-M1 Annex B of [ITU-T G.993.2]: HPE17-M1-NUS0, HPE30-M1-NUS0, HPE1230-M1-NUS0, HPE1730-M1-NUS0.

Each class is designed such that the PSD levels of each limit PSD mask of a specific class are equal in their respective passband above 552 kHz.

One CLASSMASK parameter is defined per the ITU-T G.993.2 Annex enabled in the XTSE. It selects a single PSD mask class per the ITU-T G.993.2 Annex that is activated at the VTU-O. The coding is as indicated in Table 7-6.

Table 7-6 – Definition of values of CLASSMASK per ITU-T G.993.2 Annex

Parameter value	ITU-T G.993.2 Annex A	ITU-T G.993.2 Annex B	ITU-T G.993.2 Annex C
1	998	997-M1c	998-B
2		997-M1x	998-CO
3		997-M2x	
4			
5		998-M2x	
6		998ADE-M2x	
7		HPE	
NOTE – A single PSD mask class shall be selected per ITU-T G.993.2 Annex.			

Modify clause 7.3.1.2.16 as follows:

7.3.1.2.16 VDSL2 limit PSD masks and band plans enabling (LIMITMASK)

This configuration parameter contains the ITU-T G.993.2 limit PSD masks of the selected PSD mask class, enabled by the near-end xTU on this line for each class of profiles. One LIMITMASK parameter is defined per the ITU-T G.993.2 Annex enabled in the XTSE.

The profiles are grouped in the following profile classes:

- Class 8: Profiles 8a, 8b, 8c, 8d
- Class 12: Profiles 12a, 12b
- Class 17: Profile 17a
- Class 30: Profile 30a

For each profile class, several limit PSD masks of the selected PSD mask class (CLASSMASK) may be enabled. The enabling parameter is coded in a bit-map representation (0 if the associated mask is not allowed, 1 if it is allowed).

The parameter has the bit definitions for each PSD mask class as indicated in Table 7-7.

Table 7-7 – Definition of bits of LIMITMASK for each CLASSMASK

Bit number	Profile class	PSD mask classes								
		Annex A	Annex B						Annex C	
		998 Annex A	998-M2x Annex B	998ADE-M2x Annex B	997-M1x Annex B	997-M1c Annex B	997-M2x Annex B	HPE-M1 Annex B	998-B Annex C	998-CO Annex C
<i>Octet 1</i>										
1	8	D-32	M2x-A	M2x-A		M1c-A-7			POTS-138b	POTS_138co
2	8	D-48	M2x-B	M2x-B					TCM-ISDN	POTS_276co
3	8		M2x-M	M2x-M	M1x-M				POTS_276b	
4	8		M2x-NUS0	M2x-NUS0						
5	8									
6	8									
7	8									
8	8									
<i>Octet 2</i>										
1	8	D-64								
2	8	D-128								
3	8									
4	8									
5	8									
6	8									
7	8									
8	8									

Table 7-7 – Definition of bits of LIMITMASK for each CLASSMASK

Bit number	Profile class	PSD mask classes								
		Annex A	Annex B						Annex C	
		998 Annex A	998-M2x Annex B	998ADE-M2x Annex B	997-M1x Annex B	997-M1c Annex B	997-M2x Annex B	HPE-M1 Annex B	998-B Annex C	998-CO Annex C
<i>Octet 3</i>										
1	12	D-32	M2x-A	M2x-A					POTS-138b	POTS_138co
2	12	D-48	M2x-B	M2x-B					TCM-ISDN	POTS_276co
3	12		M2x-M	M2x-M	M1x-M				POTS_276b	
4	12		M2x-NUS0	M2x-NUS0						
5	12									
6	12									
7	12									
8	12									
<i>Octet 4</i>										
1	12	D-64								
2	12	D-128								
3	12									
4	12									
5	12									
6	12									
7	12									
8	12									

Table 7-7 – Definition of bits of LIMITMASK for each CLASSMASK

Bit number	Profile class	PSD mask classes								
		Annex A	Annex B						Annex C	
		998 Annex A	998-M2x Annex B	998ADE-M2x Annex B	997-M1x Annex B	997-M1c Annex B	997-M2x Annex B	HPE-M1 Annex B	998-B Annex C	998-CO Annex C
<i>Octet 5</i>										
1	17	D-32	E17-M2x-NUS0	ADE17-M2x-A			E17-M2x-NUS0	17-M1-NUS0	POTS-138b	
2	17	D-48	E17-M2x-NUS0-M	ADE17-M2x-B					TCM-ISDN	
3	17		<u>E17-M2x-A</u>	ADE17-M2x-NUS0-M					POTS_276b	
4	17			ADE17-M2x-M						
5	17									
6	17									
7	17									
8	17									
<i>Octet 6</i>										
1	17	D-64								
2	17	D-128								
3	17									
4	17									
5	17									
6	17									
7	17									
8	17									

Table 7-7 – Definition of bits of LIMITMASK for each CLASSMASK

Bit number	Profile class	PSD mask classes								
		Annex A	Annex B						Annex C	
		998 Annex A	998-M2x Annex B	998ADE-M2x Annex B	997-M1x Annex B	997-M1c Annex B	997-M2x Annex B	HPE-M1 Annex B	998-B Annex C	998-CO Annex C
<i>Octet 7</i>										
1	30	D-32	E30-M2x-NUS0	ADE30-M2x-NUS0-A			E30-M2x-NUS0	30-M1-NUS0	POTS-138b	
2	30	D-48	E30-M2x-NUS0-M	ADE30-M2x-NUS0-M				1230-M1-NUS0	TCM-ISDN	
3	30			HPEADE1230-NUS0				1730-M1-NUS0	POTS_276b	
4	30			HPEADE1730-NUS0						
5	30									
6	30									
7	30									
8	30									
<i>Octet 8</i>										
1	30	D-64								
2	30	D-128								
3	30									
4	30									
5	30									
6	30									
7	30									
8	30									
NOTE – All unassigned bits are reserved by ITU.										

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