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ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.993.2
Amendment 5
(01/2014)

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DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Metallic access
networks

Very high speed digital subscriber line
transceivers 2 (VDSL2)

**Amendment 5: Short reach VDSL2 with reduced
power and enhanced data rate**

Recommendation ITU-T G.993.2 (2011) –
Amendment 5



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Recommendation ITU-T G.993.2

Very high speed digital subscriber line transceivers 2 (VDSL2)

Amendment 5

Short reach VDSL2 with reduced power and enhanced data rate

Summary

Amendment 5 to Recommendation ITU-T G.993.2 (2011) updates the currently blank Annex P with "Short reach VDSL2 with reduced power and enhanced data rate" (new functionality).

History

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1.11	ITU-T G.993.2 (2006) Cor. 4	2011-04-13	15	11.1002/1000/11149
1.12	ITU-T G.993.2 (2006) Amd. 7	2011-06-22	15	11.1002/1000/11148
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2.2	ITU-T G.993.2 (2011) Cor. 1	2012-06-13	15	11.1002/1000/11642
2.3	ITU-T G.993.2 (2011) Amd. 2	2012-12-07	15	11.1002/1000/11795
2.4	ITU-T G.993.2 (2011) Amd. 3	2013-04-22	15	11.1002/1000/11888
2.5	ITU-T G.993.2 (2011) Amd. 4	2013-08-29	15	11.1002/1000/11992
2.6	ITU-T G.993.2 (2011) Amd.5	2014-01-13	15	11.1002/1000/12096

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

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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.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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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.993.2

Very high speed digital subscriber line transceivers 2 (VDSL2)

Amendment 5

Short reach VDSL2 with reduced power and enhanced data rate

- 1) Updated Annex P on "Short reach VDSL2 with reduced power and enhanced data rate" (new functionality)**

Replace Annex P as follows:

Annex P

Short reach VDSL2 with reduced power and enhanced data rate

(This annex forms an integral part of this Recommendation.)

P.1 Scope

This annex defines functional requirements for implementations of ITU-T G.993.2 with reduced power and enhanced data rates over short reach (e.g., for deployment from the distribution point (DP)). The defined functionalities concern the transmit power, support of enhanced net data rates in [ITU-T G.998.4], SRA and TPS-TC. Other functionalities are for further study.

P.2 Reduced ATP

A VTU-O compliant with this annex may indicate in the ITU-T G.993.2 discovery phase a MAXNOMATPds parameter value that is lower than the maximum aggregate downstream transmit power in the VDSL2 profile (see Tables 12-21 and 6-1), and lower than the MAXNOMATPds value configured in the CO-MIB (see clause 7.3.1.2.3 of [ITU-T G.997.1]).

NOTE – The VTU-O MAXNOMATPds parameter value may be lowered due to a specific deployment scenario.

P.3 Minimum bidirectional net data rate capability

A VTU compliant with this annex shall comply with the following minimum bidirectional net data rate capability for the profiles listed in Table P.1. These values supersede the values specified in Table 6-1.

Table P.1 – Annex P profiles

Frequency plan	Parameter	Parameter value for profile	
		17a	30a
All	Minimum bidirectional net data rate capability (MBDC)	150 Mbit/s	250 Mbit/s

NOTE – For the profile 30a in operation according to Annex B, it is recommended that the Limit Mask PSD B8-16 (long name 998ADE30-M2x-NUS0-A) is configured in the CO-MIB.

Support of profile 30a is mandatory for compliance with this annex. Support of profile 17a is optional.

P.4 ITU-T G.998.4 Annex D support for enhanced net data rates with ITU-T G.998.4

Support for ITU-T G.998.4 downstream retransmission is mandatory for a VTU compliant with this annex.

Support for ITU-T G.998.4 upstream retransmission is optional for a VTU compliant with this annex.

A VTU compliant with this annex shall support Annex D of ITU-T G.998.4 without requiring bit "ITU-T G.993.5" (see Table 11.68.0.1 of ITU-T G.994.1) to be set to ONE in the Spar(2) octet 2 of ITU-T G.993.2 at the VTU-O.

A VTU-O compliant with this annex shall set the bit "G.998.4 Annex D support" (see Table 11.68.11 of [ITU-T G.994.1]) to ONE in the "ITU-T G.998.4 extensions" NPar(3) field of the CL message.

A VTU-R compliant with this annex shall set the bit "G.998.4 Annex D support" (see Table 11.68.11 of [ITU-T G.994.1]) to ONE in the "ITU-T G.998.4 extensions" NPar(3) field of the CLR message.

A VTU-O compliant with this annex shall support an AggAchievableNDR_O equal to the MaxAggAchievableNDR as defined in Annex D of [ITU-T G.998.4] for the respective VDSL2 profile.

If a VTU-R compliant with this annex supports ITU-T G.998.4 upstream retransmission, it shall support an AggAchievableNDR_R equal to the MaxAggAchievableNDR, as defined in Annex D of [ITU-T G.998.4] for the respective VDSL2 profile.

P.5 SRA support

A VTU-O compliant with this annex shall support OLR type 3

- in downstream (i.e., bit s=1 in the field "Downstream OLR capabilities" (see Table 12-52) of the "PMS-TC capabilities of the VTU-O" field in O-MSG1), and
- in upstream (i.e., bit s=1 in the field "Upstream OLR capabilities" (see Table 12-52) of the "PMS-TC capabilities of the VTU-O" field in O-MSG1).

A VTU-O compliant with this annex shall support OLR type 5

- in downstream (i.e., bit s=1 in field #7 "Downstream OLR capabilities with ITU-T G.998.4" (see Table C.4 of [ITU-T G.998.4]) of the "ITU-T G.998.4 parameter field for O-PMS"), and
- in upstream (i.e., bit s=1 in field #8 "Upstream OLR capabilities with ITU-T G.998.4" (see Table C.4 of [ITU-T G.998.4]) of the "ITU-T G.998.4 parameter field for O-PMS").

A VTU-R compliant with this annex shall support OLR type 3

- in downstream (i.e., bit s=1 in the field "Downstream OLR capabilities" (see Table 12-62) of the "PMS-TC capabilities of VTU-R" field in R-MSG2), and
- in upstream (i.e., bit s=1 in the field "Upstream OLR capabilities" (see Table 12-62) of the "PMS-TC capabilities of VTU-R" field in R-MSG2).

A VTU-R compliant with this annex shall support OLR type 5 in downstream (i.e., bit s=1 in field #7 "Downstream OLR capabilities with ITU-T G.998.4" (see Table C.6 of [ITU-T G.998.4]) of the "ITU-T G.998.4 parameter field for R-PMS").

If a VTU-R compliant with this annex supports ITU-T G.998.4 upstream retransmission, it shall support OLR type 5 in upstream (i.e., bit s=1 in field #8 "Upstream OLR capabilities with ITU-T G.998.4" (see Table C.6 of [ITU-T G.998.4]) of the "ITU-T G.998.4 parameter field for R-PMS").

P.6 TPS-TC

Support of PTM-TC is mandatory for a VTU compliant with this annex.

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