

Annex 62B

(normative)

Performance guidelines for 10PASS-T PMD profiles

Editors' Notes: *To be removed prior to final publication.*

Normative References:

Informative References:

Definitions (to be added to 1.4):

Abbreviations (to be added to 1.5):

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62B.1 Introduction and rationale

Annex 62B defines performance guidelines for 10PASS-TS PMD profiles. The definition of these guidelines is challenging due to the varying nature of the access network. The access network has large variations in cable characteristics from region to region. In addition, the make-up of a cable can encompass multiple cable gauges and/or different configuration of bridged taps. Finally, services may vary from region to region creating different noise scenarios. Typically, deployment guidelines are a function of the telecommunications operator, which is operating a loop and the regional spectrum management policies, which govern deployment on that loop.

Given that one cannot test every possible combination of loop make-up and noise conditions, the performance guidelines are covered from two perspectives. Firstly, 62B.3 lists a suite of artificial tests crafted to test the 10PASS-TS PHYs under representative worst-case noise and loop conditions. Secondly, 62B.4 defines a deployment guideline rule which allows a service provider to determine whether a given loop will support a given profile.

62B.2 Relationship to other clauses

Annex 62A lists a set of PMD profiles for 10PASS-TS.

Clause 30 [see Clause 30] describes how the selection of Annex 62A profiles is exported to a management entity.

Clause 45 registers describe an optional mechanism for configuring a 10PASS-TS PHY to use a particular profile. The register settings for each profile are contained in 62A.x.y.z

62B.3 Performance Test Cases.

The performance test cases are derived from the standard definition of test loops in T1.424, part 1, section 13.2, the noise models are defined in T1.424, part 1, section 13.3 and the profiles are defined in Annex 62A, subclause 62A.3.1. In all cases the PHYs shall attain link in the specified profile in the presence of noise and impairments and maintain link with a Bit Error Rate less than 10^{-7} with the noise raised by 6dB.

During the test the PHY shall meet the requirements of the bandplan, PSD and Upstream Power Back Off (where appropriate) specified. The control of the profile shall be through the Clause 30 MIB if supported.

If a PHY is capable of operating as both CO-subtype and CPE-subtype then both modes of operation shall be tested. If the PHY is capable of supporting PMI aggregation then each PMI shall be capable of passing the performance tests independently.

Table 62B-1 lists the performance test cases. The test loops are described in T1.424, part 1, section 13.2. For tests using test loop "VDSL1" the table specifies which of the two cable types (TP1 or TP2) is used. The length value refers to the dimension "x", "y", "z", "u" or "v" depending on the test loop. If "notch" is specified to be "on" then the RF notches specified in T1.424, part 1, Annex 1 are applied as described in section 13.3.3. If "UPBO" is specified to be "on" then the Power Back Off specified in T1.424, part 1, section 7.1.3.1 is applied to profiles 1 through 6 and the Power Back Off specified in TS 101 270, part 1, section 8.1.6. Where the Power Back Off levels are defined to vary according to noise model then appropriate version will be chosen according to the specified noise model. The noise model applied will be noise model "A" or "F" as described in T1.424, part 1, section 13.3.1.1 (also 13.3.1.4.2). The definition of self crosstalk is in section 13.3.1.4.1).

Table 62B-1—Test cases for 10PASS-TS

Test	Test loop	L (km)	Profile	Payload data rate down/up (Mb/s)	Notch	UPBO	Noise model	Notes
1	VDSL1, TP1	TBD	8	10/10	off	on	F	Objective
2	VDSL1, TP2	0.75	7	10/10	off	on	A	Objective
3	VDSL1, TP1	TBD	2	10/10	off	on	F	Objective
4	VDSL1, TP2	TBD	1	10/10	off	on	A	Objective
5	VDSL1, TP1	TBD	7	50/50	off	off	Self	Max symmetric
6	VDSL1, TP1	TBD	1	50/35	off	off	Self	Max 998
7	VDSL1, TP1	TBD	3	35/10	off	on	Self	extra d/s b/w
8	VDSL1, TP1	TBD	9	35/10	on	on	Self	extra d/s b/w
9	VDSL1, TP1	TBD	1	25/25	on	on	Self	
10	VDSL3	TBD	3	25/7.5	off	on	Self	extra d/s b/w
11	VDSL1, TP1	TBD	1	15/15	off	on	A	
12	VDSL4	TBD	4	15/5	off	on	F	extra d/s b/w
13	VDSL1, TP1	TBD	1	15/5	off	on	A	
14	VDSL2	TBD	5	12.5/12.5	on	on	A	extra u/s b/w
15	VDSL1, TP1	TBD	2	12.5/7.5	off	on	F	
16	VDSL1, TP1	TBD	10	10/2.5	off	on	F	extra d/s b/w
17	VDSL4	TBD	6	7.5/7.5	off	on	F	extra u/s b/w
18	VDSL1, TP1	TBD	4	7.5/2.5	off	on	F	extra d/s b/w
19	VDSL1, TP1	TBD	8	5/5	off	on	F	
20	VDSL1, TP1	TBD	2	5/5	off	on	F	
21	VDSL1, TP1	TBD	12	2.5/2.5	off	on	F	max reach
22	VDSL1, TP1	TBD	11	2.5/2.5	off	on	A	max reach
23	VDSL1, TP1	TBD	6	2.5/2.5	off	on	F	max reach
24	VDSL1, TP1	TBD	5	2.5/2.5	off	on	A	max reach

62B.3.1 Additional Tests

Additional testing to prove the requirements for link establishment, UPBO, burst noise immunity, link state and error reporting, etc. may be performed using any test scenarios from Table 62B-1.

62B.4 Deployment Guidelines

The relationship between specific cable parameters and performance is complex and cannot be guaranteed. The performance tests described in section 62B.3 are designed to ensure that compliant PHYs will achieve a

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similar level of performance when applied in similar environments. The tests are designed to represent realistic worst case conditions but real world installations may sometimes experience worse performance for apparently similar conditions.

Reference specification TS 101 270, part 1, Annex A contains some additional information regarding performance expectations related to cable parameters.

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