ETSI EN 303 215 V1.3.1 (2015-04)

Environmental Engineering (EE);
Measurement methods and limits for power consumption in broadband telecommunication networks equipment

Reference
REN/EE-EEPS008

Keywords
broadband, energy efficiency, power supply

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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Environmental Engineering (EE).

National transposition dates	
Date of adoption of this EN:	6 April 2015
Date of latest announcement of this EN (doa):	31 July 2015
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2016
Date of withdrawal of any conflicting National Standard (dow):	31 January 2016

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Introduction

The present document defines the energy consumption metrics and measurement methods for fixed broadband telecommunication network equipment.

1 Scope

The present document defines the power consumption metrics, the methodology and the test conditions to measure the power consumption of broadband fixed telecommunication networks equipment. The present document does not cover all possible configuration of equipment but only homogenous configurations.

The types of broadband access technologies covered by the present document are the ones widely deployed at the date of publication. Currently, the present document considers DSLAM DSL, MSAN, GPON OLT and Point to Point OLT equipment. Other access technologies may be included in further versions of the present document.

The present document also considers measurement methodology for VDSL2 equipment with vectoring functionality.

In addition to the full power state, power-saving states as defined in DSL standards [i.1] and [i.2] are also covered.

The present document focuses on Network Equipment. The end-user equipment will be handled in another document.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

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

[1] ETSI TS 101 388: "Access Terminals Transmission and Multiplexing (ATTM); Access transmission systems on metallic access cables; Asymmetric Digital Subscriber Line (ADSL) - European specific requirements [ITU-T Recommendation G.992.1 modified]".

[2] ETSI EN 300 132-2: "Environmental Engineering (EE); Power supply interface at the input to telecommunications and datacom (ICT) equipment; Part 2: Operated by -48 V direct current (dc)".

[3] ETSI TS 101 271 (V1.1.1): "Access Terminals Transmission and Multiplexing (ATTM); Access transmission system on metallic pairs; Very High Speed digital subscriber line system (VDSL2); [ITU-T Recommendation G.993.2 modified]".

[4] Void.

[5] ETSI ES 201 970: "Access and Terminals (AT); Public Switched Telephone Network (PSTN); Harmonized specification of physical and electrical characteristics at a 2-wire analogue presented Network Termination Point (NTP)".

[6] Recommendation ITU-T G.984: "Gigabit-capable passive optical networks (GPON)".

[7] Recommendation ITU-T G.984.2: "Gigabit-capable Passive Optical Networks (G-PON): Physical Media Dependent (PMD) layer specification".

[8] IEEE 802.3: "IEEE Standard for Information technology -- Telecommunications and information exchange between systems --Local and metropolitan area networks -- Specific requirements -- Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications".

[9] Broadband Forum TR-100: "ADSL2/ADSL2plus; Performance Test Plan".

[10] Broadband Forum TR-114: "VDSL2 Performance Test Plan".