



SLOVENSKI STANDARD

SIST ETS 300 132-2 E1:2006

01-februar-2006

Inženiring opreme (EE) – Napajalni vmesnik na vhodu v telekomunikacijsko opremo – 2. del: Obratovanje z enosmerno napetostjo (dc)

Equipment Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)

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Ta slovenski standard je istoveten z: ETS 300 132-2 Edition 1

ICS:

33.050.01	Telekomunikacijska terminalska oprema na splošno	Telecommunication terminal equipment in general
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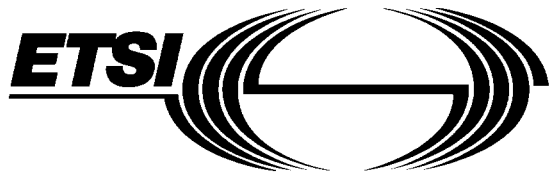
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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 132-2

September 1996

Source: ETSI TC-EE

Reference: DE/EE-02001.2

ICS: 33.020

Key words: Power supply

**Equipment Engineering (EE);
Power supply interface at the input to
telecommunications equipment;
Part 2: Operated by direct current (dc)**

SIST ETS 300 132-2 E1:2006
<http://standards.iteh.ai/en/standards.iteh.ai/SIST-ETS-300-132-2-E1-2006/40463b5f519a/sist-ets-300-132-2-e1-2006>

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Equipment Engineering (EE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS concerns the requirements for the interface between telecommunications equipment and its power supply, and includes requirements relating to its stability and measurement. References are also made to the safety aspects, in various IEC and CENELEC documents which are normative to this ETS. Various other references and detailed measurement and test arrangements are contained in informative annexes.

This ETS consists of 2 parts as follows:

Part 1: "Operated by alternating current (ac) derived from direct current (dc) sources"

Part 2: "Operated by direct current (dc)"

Transposition dates	
Date of adoption of this ETS:	16 August 1996
Date of latest announcement of this ETS (doa):	31 December 1996
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 June 1997
Date of withdrawal of any conflicting National Standard (dow):	30 June 1997

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1 Scope

This European Telecommunication Standard (ETS) contains requirements for:

- the output performance of the direct current (dc) power equipment at the interface "A";
- the input of the telecommunications equipment connected to interface "A" powered by dc.

The dc voltage at interface "A" may be derived from the ac primary supply. The dc supply may incorporate a buffer battery.

This ETS also makes reference to safety and EMC standards which are in accordance with the relevant European standards.

This ETS aims at providing compatibility between the power supply equipment and the power consuming telecommunications equipment, and also between different system blocks connected to the same power supply.

NOTE 1: To ensure satisfactory performance, the connection of telecommunications equipment into installations is subject to the prevailing conditions of that installation and is subject to the agreement of both parties.

NOTE 2: This ETS is applicable only to $-48 V_{dc}$ power supply interfaces. However, during a transitional period, other dc voltages may be used in existing installations. Annex A gives guidance on working in conjunction with existing $-60 V_{dc}$ supply systems.

The power supply interface, interface "A" of figure 1, is a physical point to which all the requirements are related. This point is situated between the power supply system(s) and the power consuming telecommunications equipment.

NOTE 3: Interface "A" is located at the power terminals of the telecommunications equipment. Subject to the installation preconditions this point may be located at any other point between the power supply system and the telecommunications equipment by mutual agreement of the relevant parties.

The requirements at interface "A" apply to:

- the output of the power supply equipment or power supply installation of telecommunications centres;
- the power supply input of telecommunications equipment installed at telecommunication centres;
- telecommunications equipment, installed in customers premises, whose dc interface "A" is also used by equipment requiring a supply to this specification.

NOTE 4: Normally there is more than one load unit connected to interface "A". In these cases, interface "A" will undergo further restrictions with respect to noise limits or other disturbances specified in subclause 4.8.

NOTE 5: Disturbances on the power supply interface "A" relating to the continuous wave phenomena above 20 kHz is not covered within this ETS. ETS 300 386-1 [3] is applicable for this frequency range.

NOTE 6: The transients to which immunity is specified in this ETS are characterized by a high energy content such that electrical stress may be caused. Fast transients, the effects of which appear mainly as interference, are covered by ETS. ETS 300 386-1 [3] which details the electromagnetic compatibility of telecommunications equipment.

NOTE 7: An example of a configuration in which the interface "A" is identified is given in annex E.

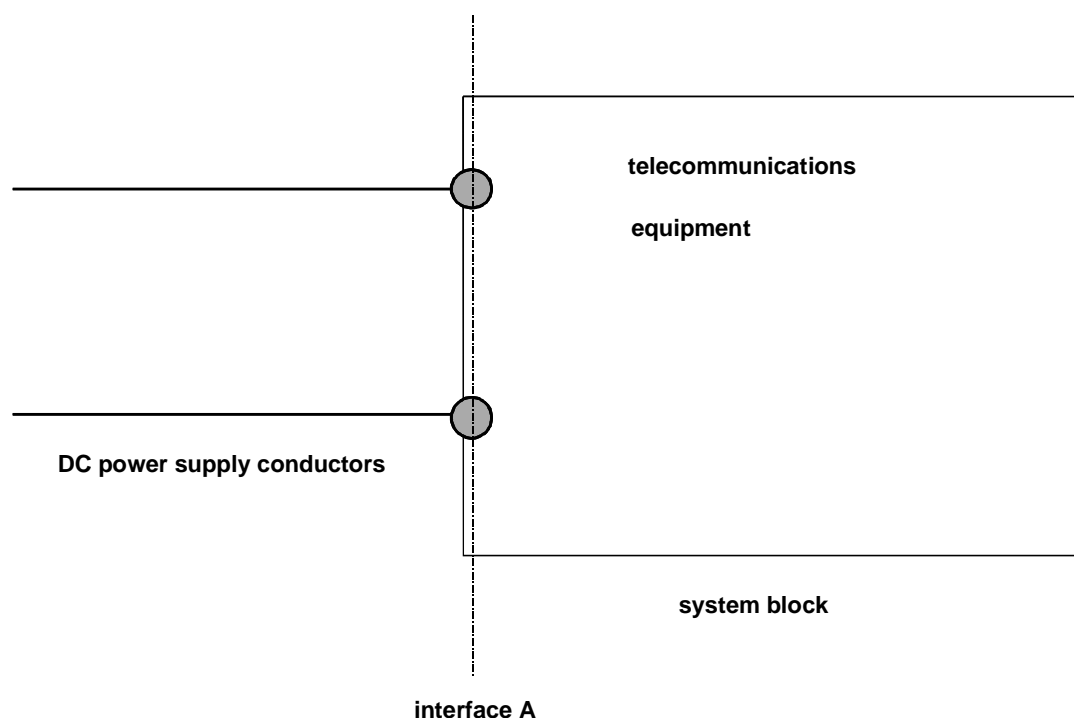


Figure 1: General identification of the power interface "A"

The purpose of this ETS is:

- to use a power supply system with the same characteristics for all telecommunications equipment defined in the area of application;
- to facilitate interworking of different (types of) load units;
- to facilitate the standardization of telecommunications equipment;
- to facilitate the installation, operation and maintenance in the same network of equipment and telecommunications systems from different origins.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- | | |
|-----|--|
| [1] | EN 60950: "Safety of information technology equipment, including electrical business equipment". |
| [2] | ETS 300 253: "Equipment Engineering (EE); Earthing and bonding of telecommunication equipment in telecommunication centres". |
| [3] | ETS 300 386-1 (1994): "Equipment Engineering (EE); Public telecommunication network equipment; Electro-Magnetic Compatibility (EMC) requirements; Part 1: Product family overview, compliance criteria and test levels". |
| [4] | ITU-T Recommendation O.41: "Psophometer for use on telephone-type circuits". |
| [5] | ITU-T Recommendation Q.551: "Transmission characteristics of digital exchanges". |

- [6] ITU-T Recommendation Q.552: "Transmission characteristics at 2-wire analogue interfaces of digital exchange".
- [7] ITU-T Recommendation Q.553: "Transmission characteristics at 4-wire analogue interfaces of a digital exchange".
- [8] ITU-T Recommendation Q.554: "Transmission characteristics at digital interfaces of a digital exchange".
- [9] IEC 364-4-41 (1982): "Electrical installations of buildings - Part 4: Protection for safety - Chapter 41: Protection against electric shock".
- [10] US Department of Defense MIL-STD-462: "Electromagnetic interference characteristics, measurement of".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

abnormal voltage range: The range of steady-state voltage over which the equipment will not be expected to maintain normal service but will survive undamaged.

customer premises: Any location which is the sole responsibility of the customer.

interface "A": The terminals at which the power supply is connected to the system block (see figure 1).

NOTE 1: This is a functional definition and not an exact depiction of the physical location.

load unit: Power consuming equipment, that is part of a system block.

nominal voltage value: The nominal value of the voltage that designates the type of supply.

normal service voltage range: The range of steady-state voltages over which the equipment will maintain normal service.

normal service: The service mode where telecommunications equipment operates within its specification.

power supply: A power source to which telecommunications equipment is intended to be connected.

system block: A functional group of equipment depending for its operation and performance on its connection to the same power supply.

NOTE 2: A system block may consist of equipment or a functional group of equipment. Different examples of configurations at interface "A" are given in annex E.

telecommunication centre: Any location where telecommunications equipment is installed and which is the sole responsibility of the operator.

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

dc	direct current (also when used as a suffix to units of measurement)
EUT	Equipment Under Test
I_m	maximum current (see subclause 4.7.1)
I_{nom}	nominal current
I_t	instantaneous surge current (see subclause 4.7.1)