ICS 33.120.20 SLOVENSKÁ TECHNICKÁ NORMA Júl 2017

STN	**Komunikačné káble Špecifikácie skúšobných metód Časť 1-9: Elektrické skúšobné metódy Nesymetrické tlmenie (nesymetrické tlmenie na blízkom konci TCL a vzdialenom konci TCTL)**	**STN EN 50289-1-9 34 7011**

Communication cables - Specifications for test methods - Part 1-9: Electrical test methods - Unbalance attenuation (transverse conversion loss TCL transverse conversion transfer loss TCTL)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/17

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English Version

Communication cables - Specifications for test methods - Part 1-9: Electrical test methods - Unbalance attenuation (transverse conversion loss TCL transverse conversion transfer loss TCTL)

Câbles de communication - Spécifications des méthodes d'essai Partie 1-9: Méthodes d'essais électriques - Affaiblissement de disymétrie (perte de conversion longitudinale, perte de transfert de conversion longitudinale)

Kommunikationskabel - Spezifikationen für Prüfverfahren Teil 1-9: Elektrische Prüfverfahren - Unsymmetriedämpfung (Unsymmetriedämpfung am nahen und am fernen Ende)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document [EN 50289-1-9:2017] has been prepared by CLC/TC 46X “Communication cables”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-09-16
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-12-16

This document supersedes EN 50289-1-9:2001.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

EN 50289-1, *Communication cables — Specifications for test methods*, is currently composed with the following parts:

— *Part 1-1: Electrical test methods — General requirements*;

— *Part 1-2: Electrical test methods — DC resistance*;

— *Part 1-3: Electrical test methods — Dielectric strength*;

— *Part 1-4: Electrical test methods — Insulation resistance*;

— *Part 1-5: Electrical test methods — Capacitance*;

— *Part 1-6: Electrical test methods — Electromagnetic performance*;

— *Part 1-7: Electrical test methods — Velocity of propagation*;

— *Part 1-8: Electrical test methods — Attenuation*;

— *Part 1-9: Electrical test methods — Unbalance attenuation (transverse conversion loss TCL transverse conversion transfer loss TCTL)*;

— *Part 1-10: Electrical test methods — Crosstalk*;

— *Part 1-11: Electrical test methods — Characteristic impedance, input impedance, return loss*;

— *Part 1-12: Electrical test methods — Inductance*;

— *Part 1-13: Electrical test methods — Coupling attenuation or screening attenuation of patch cords / coaxial cable assemblies / pre-connectorised cables*;

— *Part 1-14: Electrical test methods — Coupling attenuation or screening attenuation of connecting hardware*;

— *Part 1-15: Electromagnetic performance — Coupling attenuation of links and channels (Laboratory conditions)*;

— *Part 1-16: Electromagnetic performance — Coupling attenuation of cable assemblies (Field conditions)*;

— *Part 1-17: Electrical test methods — Exogenous Crosstalk ExNEXT and ExFEXT*.

1 Scope

This European Standard details the test methods to determine the attenuation of converted differential-mode signals into common-mode signals, and vice versa, due to balance characteristics of cables used in analogue and digital communication systems by using the transmission measurement method. The unbalance attenuation is measured in, respectively converted to, standard operational conditions. If not otherwise specified, e.g. by product specifications, the standard operational conditions are a differential-mode which is matched with its nominal characteristic impedance (e.g. 100 Ω) and a common-mode which is loaded with 50 Ω. The difference between the (image) unbalance attenuation (matched conditions in the differential and common-mode) to the operational (Betriebs) unbalance attenuation (matched conditions in differential-mode and 50 Ω reference load in the common-mode) is small provided the common-mode impedance Z_{com} is in the range of 25 Ω to 75 Ω.

For cables having a nominal impedance of 100 Ω, the value of the common-mode impedance Z_{com} is about 75 Ω for up to 25 pair- count unscreened pair cables, 50 Ω for common screened pair cables and more than 25 pair- count unscreened pair cables, and 25 Ω for individually screened pair cables. The impedance of the common-mode circuit Z_{com} can be measured more precisely either with a time domain reflectometer (TDR) or a network analyser. The two conductors of the pair are connected together at both ends and the impedance is measured between these conductors and the return path.

This European Standard is bound to be read in conjunction with EN 50289-1-1, which contains essential provisions for its application.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50289-1-1:2017, *Communication cables — Specifications for test methods — Part 1-1: Electrical test methods — General requirements*

EN 50289-1-8, *Communication cables - Specifications for test methods - Part 1-8: Electrical test methods - Attenuation*