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Responsible committee: EPL/46 Cables, wires and waveguides, radio frequency connectors and accessories for communication and signalling

Interested committees:

Title: BS IEC 62783-1-2 Twinax cables for digital communications

Time-domain impedance test method for twinax cables for digital communications

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

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- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



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2024-08-02

SUPERSEDES DOCUMENTS:

46C/1268/NP, 46C/1287A/RVN

IEC SC 46C : WIRES AND SYMMETRIC CABLES

SECRETARIAT:

France

SECRETARY:

Mr Ladji Diakite

OF INTEREST TO THE FOLLOWING COMMITTEES:

SC 18A, TC 20, TC 23, SC 48B, SC 65C, ISO/IEC JTC 1/SC 25

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☐ SAFETY

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Twinax cables for digital communications - Part 1-2: Time-domain impedance test method for twinax cables for digital communications

NOTE FROM TC/SC OFFICERS:

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INTRODUCTION

This document gives the introductions of differential-mode impedance and common-mode impedance, as well as odd-mode impedance and even-mode impedance, these four types of impedance are used in the design and measurements of differential device. This document also specifies the test methods of time domain impedance for twinax cables using in high-performance information technology systems and data interface interconnection systems.

Although frequency domain analysis has powerful functions, time domain analysis is still an effective tool, especially in the short-reach and high frequency data transmission applications, e.g. fault localization, identifying impedance variations in connectors, PCBs, and transmission lines, selectively eliminating redundant responses (e.g. gate function in VNA-based time domain analysis), etc.

Time domain analysis includes time domain transmission and time domain reflection. This document concerns the latter. Impedance measurement is the most typical application of time domain reflectometry. This measurement technology is based on the transmission line theory, works similar on the principle of radar. When the signal travels along the transmission line or DUT, there is no reflections if the transmission line is homogeneous and continuous, but if impedance varies, a part of or all incident signal is reflected back, while the rest keeps travelling forward.

Time domain analysis can be achieved either by traditional time domain reflectometer or modern vector analyzer equipped with IFFT function.

When measuring the reflection signals, reflection coefficient ρ at a given point along a transmission line or device under test depends on the deviation between the impedance of this point and its nominal impedance, the position of reflection (i.e. the distance to the source) can be determined according to the travelling delay of the reflected signal and propagation velocity in the transmission line or DUT. Traditional TDR instrument display these information directly.