IEC 62783-2

Edition 2.0 2025-10

INTERNATIONAL STANDARD

Twinax cables for digital communications -
Part 2: Family specification - Cable for Ethernet-over-twinax physical interfaces

ICS 33.120.20

ISBN 978-2-8327-0757-9

IEC 62783-2:2025-10(en)

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Twinax cables for digital communications - Part 2: Family specification - Cable for Ethernet-over-twinax physical interfaces

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IEC 62783-2 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This second edition cancels and replaces the first edition published in 2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) updating according to the revised generic twinax cable requirements given in IEC 62783-1:2023;
b) updating according to new twinax link segment specifications recently added to ISO/IEC/IEEE 8802-3 Ethernet physical interfaces.

The text of this International Standard is based on the following documents:

Draft	Report on voting
46C/1309/CDV	46C/1318/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This International Standard is to be used in conjunction with IEC 62783-1.

A list of all parts in the IEC 62783 series, published under the general title *Twinax cables for digital communications*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

This document is a family specification. It constitutes Part 2 of the IEC 62783 series, which covers specific characteristics of twinax cables.

This document describes cables that are in compliance with the generic twinax cable requirements given in IEC 62783-1.

The family of twinax cables covered in this document are specifically intended for interconnection of Ethernet links over twinax cables, which are implemented using twinax link segment specifications in accordance with ISO/IEC/IEEE 8802-3 Ethernet physical interfaces, including 10GBASE-CX4, 10GBASE-CX, 25GBASE-CR, 50GBASE-CR1, and 100GBASE-CR1.

1 Scope

This part of IEC 62783 specifies the definitions and requirements of twin-axial (twinax) cables used in digital communication systems.

This document covers twinax cable intended to be used indoors. The specifications are intended to support the twinax link segment specifications of the ISO/IEC/IEEE 8802-3 Ethernet over twinax physical layer (PHY) specifications.

This document gives requirements and transmission characteristics for a single twinax element as well as for multiple twinax elements within the same sheath, i.e. "twinax cable".

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60811-401, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 401: Miscellaneous tests - Thermal ageing methods - Ageing in an air oven*

IEC 60811-501, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds*

IEC 62783-1:2023, *Twinax cables for digital communications - Part 1: Generic specification*