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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Coaxial communication cables – Part 1-116: Electrical test methods – Test for impedance with time domain reflectometry (TDR)

Câbles coaxiaux de communication – Partie 1-116: Méthodes d'essais électriques – Essai d'impédance par réflectométrie dans le domaine temporel (TDR)

IEC 61196-1-116:2015-11(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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The International Standard IEC 61196-1-116 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
46A/1270/FDIS	46A/1283/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard is intended to be read in conjunction with IEC 61196-1. It is based on the second edition (2005) of that standard.

A list of all parts of the IEC 61196 series, published under the general title: *Coaxial communication cables*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

COAXIAL COMMUNICATION CABLES –

Part 1-116: Electrical test methods – Test for impedance with time domain reflectometry (TDR)

1 Scope

This part of IEC 61196 applies to coaxial communications cables. It specifies test methods for determining the impedance of coaxial communications cables with time domain reflectometry (TDR).

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.

IEC 61196-1:2005, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

IEC 62153-1-1, *Metallic communication cables test methods – Part 1-1: Electrical – Measurement of the pulse/step return loss in the frequency domain using the Inverse Discrete Fourier Transformation (IDFT)*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC 61196-1 apply.

4 Principles

When a step function signal is sent to cable under test and the signal pass through the test point of cable, part of the energy is reflected. The distance (L) from the input end to the test point can be calculated by measuring the total signal traveling time (t) as Figure 1. The change of impedance can be also calculated by measuring the amplitude of the input and reflected signal, as shown in Figure 1.