Chinastandards.org

ICS 33.120.10
CCS L 26

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 17737.116-2026

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

同轴通信电缆 第1-116部分：电气试验方法 用时域反射（TDR）法测量阻抗

(English Translation)

Issued on: April 30, 2026 **Implemented on: November 1, 2026**

Issued by: State Administration for Market Regulation

Preview: page 1 of 5 shown, 9 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-17737-116-2026

Chinastandards.org

Table of Contents

Foreword
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Principles

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1-116 of GB/T 17737 "Coaxial Communication Cables". GB/T 17737 has the following parts published.

---Part 1: General Specifications, Definitions, and Requirements.

- Part 1-100.General requirements for electrical test methods;

- Part 1-101.Electrical Test Methods - DC Resistance Test of Conductors;

- Part 1-102.Electrical Test Methods - Cable Dielectric Insulation Resistance Test;

- Part 1-103.Electrical Test Methods - Capacitance Test of Cables;

- Part 1-104.Electrical Test Methods - Capacitive Stability Test of Cables;

- Part 1-105.Electrical Test Methods - Withstand Voltage Test of Cable Dielectric;

- Part 1-106.Electrical Test Methods - Withstand Voltage Test of Cable Sheath;

- Part 1-107.Electrical Test Methods. Cable Flicker Charge Level (Mechanical Induced Noise) Test;

- Part 1-108.Electrical test methods for characteristic impedance, phase delay, group delay, electrical length, and propagation velocity tests;

- Parts 1-110.Continuity testing of electrical test methods;

- Part 1-112.Electrical Test Methods - Return Loss (Impedance Compliance) Test;

- Part 1-113.Electrical test methods - attenuation constant test;

Preview: page 2 of 5 shown, 9 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-17737-116-2026

- Part 1-115.Electrical Test Methods - Impedance Uniformity (Pulse/Step Function Return Loss) Test;

- Part 1-116.Electrical test methods for measuring impedance using time-domain reflectometry (TDR);

- Part 1-119.Electrical test methods for radio frequency power of coaxial cables and cable assemblies;

- Part 1-122.Electrical Test Methods - Crosstalk Test Between Coaxial Cables;

- Part 1-126.Electrical test methods - corona suppression voltage;

- Part 1-200.General requirements for environmental testing methods;

- Part 1-201.Environmental testing methods for cold bending performance of cables;

- Part 1-203.Environmental Testing Methods - Water Leakage Test for Cables;

- Part 1-205.Environmental testing methods for resistance to solvents and contaminated liquids;

- Part 1-209.Environmental testing methods - thermal cycling;

- Part 1-215.Environmental testing methods for high-temperature aging of cables;

- Part 1-301.Mechanical testing methods for ellipticity testing;

- Part 1-302.Mechanical testing methods for eccentricity testing;

- Part 1-308.Mechanical testing methods for testing the tensile strength and elongation of copper-clad metals;

- Part 1-310.Mechanical testing methods - Torsional properties test of copper-clad metals;

- Part 1-313.Mechanical testing methods for adhesion of media and sheaths;

- Part 1-314.Mechanical Test Methods - Bending Test of Cables;

- Part 1-316.Mechanical Test Methods - Maximum Tensile Strength Test of Cables;

- Part 1-317.Mechanical Test Methods - Cable Compression Test;

- Part 1-318.Mechanical testing methods for thermal performance testing;

- Part 1-324.Mechanical Test Methods - Cable Abrasion Resistance Test;

- Part 1-325.Mechanical testing methods. wind-induced vibration test;

---Part 3: Specifications for Coaxial Cables for Local Area Networks;

---Part 4: Specifications for Leaky Cables;

---Part 5: Specifications for CATV Trunk and Distribution Cables;

Preview: page 3 of 5 shown, 9 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-17737-116-2026

---Part 8: Specifications for Polytetrafluoroethylene Insulated Semi-Flexible Cables;

- Part 8-1.Blank Detailed Specification for Polytetrafluoroethylene Insulated Semi-Flexible Cables;

---Part 9: Specifications for Flexible Radio Frequency Coaxial Cables;

---Part 10: Specifications for Fluoropolymer Insulated Semi-rigid Cables;

---Part 11: Specifications for Polyethylene Insulated Semi-rigid Cables this document is equivalent to IEC 61196-1-116:2015 "Coaxial communication cables - Part 1-116.Electrical test methods using time-domain inversion".

Impedance measurement using transducer resonator (TDR) method.

The following minimal editorial changes have been made to this document.

---Correction. The normative reference IEC 61196-1:2005 has been changed to undated reference IEC 61196-1, consistent with Chapter 3.

Maintain consistency;

---Change the uniform variable description in formulas (1) to (3) to separate descriptions;

---Added informative Appendix NA "Test Modes of Test Instruments".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Technical Committee on Standardization of High-Frequency Cables and Connectors for Electronic Equipment (SAC/TC190).

Introduction

Coaxial communication cables have advantages such as low transmission loss and good electromagnetic interference resistance, and are widely used in various communication and electronic equipment.

External information transmission lines are used in fields such as communications, broadcasting, radar, electronic warfare, and data buses.

GB/T 17737 "Coaxial Communication Cables" covers the terminology, design, materials, test methods, and various types of coaxial communication cables.

The requirements for the structure and materials of the communication cable, technical requirements, quality assurance regulations, packaging, transportation, storage and

Preview: page 4 of 5 shown, 9 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-17737-116-2026

engineering usage data, etc.

The standards are divided into various mechanical testing methods (GB/T 17737.3~GB/T 17737.x) and various product specifications (GB/T 17737.x). Product specifications are referenced during their development.

Use the general requirements of the general specification, as well as the relevant test method standards.

GB/T 17737 is proposed to consist of the following parts.

---Part 1: General Specifications, Definitions, and Requirements. This section aims to specify the general principles and definitions for the design and testing methods of coaxial cables.

and requirements.

- Part 1-100.General requirements for electrical test methods;

- Part 1-101.Electrical Test Methods - DC Resistance Test of Conductors;

- Part 1-102.Electrical Test Methods - Cable Dielectric Insulation Resistance Test;

- Part 1-103.Electrical Test Methods - Capacitance Test of Cables;

- Part 1-104.Electrical Test Methods - Capacitive Stability Test of Cables;

- Part 1-105.Electrical Test Methods - Withstand Voltage Test of Cable Dielectric;

- Part 1-106.Electrical Test Methods - Withstand Voltage Test of Cable Sheath;

- Part 1-107.Electrical Test Methods. Cable Flicker Charge Level (Mechanical Induced Noise) Test;

- Part 1-108.Electrical test methods for characteristic impedance, phase delay, group delay, electrical length, and propagation velocity tests;

- Parts 1-110.Continuity testing of electrical test methods;

- Part 1-111.Electrical Test Methods - Phase Stability Test Methods;

- Part 1-112.Electrical test methods for return loss and voltage standing wave ratio (VSWR) testing;

- Part 1-113.Electrical test methods for attenuation constant testing;

- Part 1-114.Electrical Test Methods - Inductance Test;

- Part 1-115.Electrical Test Methods - Impedance Uniformity (Pulse/Step Function Return Loss) Test;

- Part 1-116.Electrical test methods for measuring impedance using time-domain reflectometry (TDR);

Preview: page 5 of 5 shown, 9 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-17737-116-2026