



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 17737.103-2018

**Coaxial communication cables -- Part 1-103: Electrical test
methods -- Test for capacitance of cable**

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Foreword

GB/T 17737 "Coax Cable" has been or is planned to release the following parts.

- Part 1. General rules, definitions and requirements;
- Part 1-100. General requirements for electrical test methods;
- Part 1-101. Electrical test method Conductor DC resistance test;
- Part 1-102. Electrical test method cable dielectric insulation resistance test;
- Part 1-1-3. Electrical test method for cable capacitance test;
- Part 1-1-4. Electrical test method for the capacitance stability test of cables;
- Part 1-105. Electrical test method for withstand voltage test of cable media;
- Parts 1-106. Electrical test method - Withstand voltage test for cable sheathing;
- Part 1-107. Electrical test method cable trembling charge level (mechanical induction noise) test;
- Part 1-108. Electrical test methods for characteristic impedance, phase delay, group delay, electrical length and propagation speed test;
- Part 1-110. Electrical test method continuity;
- Part 1-111. Stability test of phase constants of electrical test methods;

- Part 1-112. Electrical test method return loss (impedance consistency) test;
- Part 1-113. Electrical test method attenuation constant test;
- Part 1-114. Electrical test method inductance;
- Part 1-115. Electrical test method impedance uniformity (pulse/step function return loss) test;
- Part 1-161. Electrical test method TDR method to measure characteristic impedance;
- Part 1-119. Electrical test methods - RF rated power;
- Part 1-122. Electrical test method Crosstalk test between coaxial cables;

This part is part 1-103 of GB/T 17737.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the translation method equivalent to IEC 61196-1-103.2015 "Coaxial Communication Cables Part 1-103. Electrical Test Side

Capacitance test of cable.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

Coaxial communication cables - Part 1 . General rules, definitions and requirements (IEC 61196-1.

2005, IDT).

1 Scope

This part of GB/T 17737 applies to coaxial communication cables. It specifies the test method for determining the capacitance.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

IEC 60050 (all parts) International Electrotechnical Vocabulary

IEC 61196-1 coaxial communication cables - Part 1. General specification, definitions and requirements (Coaxialcommunicationca-

bles-Part 1. Genericspecification-General, definitionsandrequirements)

3 Terms and definitions

The terms and definitions defined in IEC 60050 and IEC 61196-1 apply to this document.

4.1 Equipment

The capacitor should be measured using a device that accurately measures less than 1% of the cable's estimated value. The frequency range is 500 Hz to 2 kHz.

4.2 Sample

Test cable (CUT) except for the length of the test cable (CUT) with a solid outer conductor cable of approximately 3 m (accurate to $\leq 1\%$)

The length should be approximately 15m.

Both ends of the cable under test should be treated to avoid stray capacitance.

4.3 Procedure

Capacitance measurements should be made between the inner and outer conductors and the outer conductors grounded. The test shall be performed on the test power that has passed the continuity test.

On the cable.

The ambient temperature should be recorded.

5.1 Expression

The test results shall be normalized to a value of 1 m of the reference length.

$C =$

C_m

In the formula.

C --- the capacitance of the reference length at the measured temperature, in pico-farm per meter (pF/m);

C_m --- capacitance measurement of the cable under test (CUT), the unit is picofarad (pF);

L --- sample length in meters (m).

6 test report

The test report should give the following.

---Test temperature;

---sample length;

---Test frequency;

--- Capacitance measurement.

And record the value normalized to the reference length of 1 m.

7 requirements

The capacitance of the cable under test shall comply with the requirements of the relevant detailed specifications.

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