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

GB/T 17737.115-2018

**Coaxial communication cables -- Part 1-115: Electrical test
methods -- Test for regularity of impedance (pulse/step function
return loss)**

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Foreword

GB/T 17737 "Coaxial Communication Cable" has or plans to issue the following parts.

- Part 1. General rules, definitions and requirements;
- Part 1-100. General requirements for electrical test methods;
- Part 1-101 . Electrical test methods Conductor direct current resistance test ;
- Part 1-102 . Electrical test methods ; Insulation resistance test of dielectrics for cables ;
- Part 1-103 . Electrical test methods Capacitance test of cables ;
- Part 1-104 . Electrical test methods ; Capacitance stability test of cables ;
- Part 1-105. Electrical test methods for withstand voltage test of cable dielectrics;
- Part 1-101 . Electrical test methods Voltage withstand test of cable sheathing ;
- Part 1-107 . Electrical test methods Vibrating cable charge level (mechanically induced noise) test;
- Part 1-108. Electrical test methods Characteristic impedance, phase delay, group delay, electrical length and propagation speed test;
- Part 1-110 . Electrical test method continuity ;
- Part 1-111 . Electrical test methods Stability test for phase constants ;
- Part 1-112. Electrical test methods Return Loss (Impedance Consistency) test;
- Part 1-113 . Electrical test method attenuation constant test ;
- Part 1-114 . Electrical test methods Inductors ;
- Part 1-115. Electrical test method impedance uniformity (pulse/step function return loss)

test;

--- Part 1-116 . Electrical test methods TDR method measuring characteristic impedance ;

--- Part 1-119 . Electrical test methods RF power rating ;

--- Part 1-122. Electrical test methods - Cross-talk test between coaxial cables;

This part is part 1-115 of GB/T 17737.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to the use of IEC 61196-1-115.2006 "coaxial communication cable Part 1-115. Electrical Test Party

Uniform impedance (pulse/step function return loss) test.

The Chinese documents that have a consistent correspondence with the normatively quoted international documents in this section are as follows.

---GB/T 17737.1-2013 "Coaxial telecommunication cable Part 1. General specification general rules, definitions and requirements" (IEC 61196-1.

2005, IDT);

---GB/T 17737.108-2018 Coaxial communication cables Part 1-108. Electrical test methods Characteristic impedance, phase delay

Delay, group delay, electrical length and propagation speed tests (IEC 61196-1-108.2011, IDT).

This section made the following editorial changes.

--- For the convenience of use, number the formula.

1 Scope

This part of GB/T 17737 applies to coaxial communication cables. It stipulates the use of time-domain methods for the measurement of coaxial cables for communication systems.

Test method for impedance uniformity.

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 version (including all amendments) applies to this document.

IEC 61196-1 Coaxial Communication Cables Part 1. Generic Specification General,

Definitions and Requirements (Coaxial communication ca-

bles-Part 1. Generic specification-General, definitions and requirements)

IEC 61196-1-108 Coaxial communication cables Part 1-108. Electrical test methods

Characteristic impedance, phase delay, group delay, electrical

Length and propagation speed tests (Coaxial communication cables - Part 1-108. Electrical test methods-Test for

Characteristic impedance, phase and group delay, electrical length and propagation velocity)

IEC 61196-1-113 Coaxial communication cables Part 1-113. Electrical test methods

Attenuation constant test (Coaxial commu-

nication cables-Part 1-113. Electrical test methods-Test for attenuation constant)

3 Terms and definitions

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

4.1 Principle

The pulse return loss test uses pulse signals to determine the return loss of a coaxial cable in the time domain.

The pulse return loss shows the time to indicate the local heterogeneity of the characteristic impedance of the cable being tested. Usually, this program should use

For the pulse width is a long cable to test.

Note. This procedure also allows determination of the characteristic impedance of the cable end being tested.

4.2 Definition

The pulse return loss α (in dB) is defined as.

$\alpha = 20 \log$

$\frac{U_s}{U_r}$

(1)

In the formula.

U_s --- The voltage at the cable input sends the pulse;