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PAKISTAN STANDARD

COAXIAL COMMUNICATION CABLES – PART 1-100: ELECTRICAL TEST METHODS – GENERAL REQUIREMENTS.

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PS: IEC 61196-1-100/2014

PAKISTAN STANDARD SPECIFICATION

FOR

COAXIAL COMMUNICATION CABLES –PART 1-100: ELECTRICAL TEST METHODS– GENERAL REQUIREMENTS

0 FOREWORD

0.1 This Pakistan Standard was adopted by Standards Development Centre, Pakistan Standards and Quality Control Authority (PSQCA), after the draft prepared by the Technical Committee for **"Cables, wires and waveguides (ESTC-9)"** had been approved and endorsed by the National Standards Committee for Electronics on 11-11-2014.

0.2 This Pakistan Standard is an adoption of IEC Publication IEC 61196-1-100-2005: Coaxial communication cables – Part 1-100: Electrical test methods – General requirements.

0.3 This Standard has been prepared and finalized after taking into consideration the views and suggestions put forwarded by the representative section of technologists, manufacturers and utilizing agencies.

0.4 This Standard is subject to periodical review in order to keep pace with the changing requirements and latest development in the industry. Any suggestion for improvement will be recorded and placed before the revising committee in due course.

0.5 This Standard covers the technical provisions and it does not purport to include all the necessary provisions of a contract.

CONTENTS

COAXIAL COMMUNICATION CABLES –

Part 1-100: Electrical test methods – General requirements

1 Scope

This part of IEC 61196 gives the general requirements and conditions for electrical tests to be performed on coaxial communication cables and applies to the IEC 61196-1-1XX series which specifies electrical test methods for coaxial communication cables.

For information, IEC 61196-1-1XX consists of the following documents:

IEC 61196-1-100	Electrical test methods – General requirements
IEC 61196-1-101	Test for conductor resistance of cable
IEC 61196-1-102	Test for insulation resistance of cable dielectric
IEC 61196-1-103	Test for capacitance
IEC 61196-1-104	Test for capacitance stability
IEC 61196-1-105	Test for withstand voltage of cable dielectric
IEC 61196-1-106	Test for withstand voltage of sheath
IEC 61196-1-107	Test for cable microphony charge level (mechanically induced noise)
IEC 61196-1-108	Test for characteristic impedance, phase and group delay, electrical length and propagation velocity
IEC 61196-1-109	Spark test
IEC 61196-1-110	*future use*
IEC 61196-1-111	Test for stability of phase constant
IEC 61196-1-112	Test for return loss (uniformity of impedance)
IEC 61196-1-113	Test for attenuation constant/attenuation stability
IEC 61196-1-114	*future use*
IEC 61196-1-115	Pulse return loss/Step function return loss
IEC 61196-1-116	*future use*
IEC 61196-1-119	Test for r.f. power rating
IEC 61196-1-122	Cross talk between coaxial cables

Further test details (for example, temperature, duration) and/or test requirements are given in the relevant cable standard.

2 Normative references

The following referenced documents are indispensable for the application 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 61196-1, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

3 Terms and definitions

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

4 Sample

4.1 Cable Under Test (CUT)

Unless otherwise specified in the relevant test method, the length of the CUT shall be selected to take into account the dynamic range of the measuring equipment and the frequency range specified to yield the required level of accuracy. The length should be measured with an accuracy better than 1 % unless otherwise stated in the relevant cable specification.

4.2 Pre-conditioning

The CUT shall be pre-conditioned at a constant ambient temperature for such a time as to allow the specimen temperature to stabilize according to 6.1.

5 Tests

The tests required and performance characteristics applicable to each type of cable are given in the relevant cable standard.

6 Test conditions

6.1 Ambient temperature

Tests shall be made at an ambient temperature within the range 15 °C to 35 °C unless otherwise specified.

6.2 Tolerance on temperature values

Unless otherwise specified in the relevant specification, the tolerance on temperature shall be ±2 °C.

6.3 Frequency range and stability for frequency-related measurements

The required frequency range is specified in the relevant sectional specification.

The sweep shall be linear or logarithmic such that:

$$f_{step} = f_{stop} - f_{start} / (n - 1) \quad \text{for the linear sweep} \tag{1}$$

and

$$K = \left(\frac{f_{stop}}{f_{start}} \right)^{\frac{1}{n-1}} \quad \text{for the logarithmic sweep} \tag{2}$$

where

f_{start} is the lowest specified frequency;

f_{stop} is the highest specified frequency;

f_{step} is the linear frequency increment, constant over the whole specified frequency range;

n is the number of frequency points;

K is the logarithmic frequency increment.

Unless otherwise specified, the minimum number of frequency points shall be 200 per decade.

7 Test report

The test report shall show the relevant measuring conditions including their tolerances together with the measurement results and their accuracy.

Bibliography

IEC 60050 (all parts), *International Electrotechnical Vocabulary (IEV)*