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Interface Practices Subcommittee

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**Test Method for
Dielectric Withstand of Coaxial Cable**

ANSI/SCTE 108 2018

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1. Introduction

1.1. Executive Summary

This test method is intended for to the performance of Dielectric Strength Tests upon coaxial cables, in a laboratory setting. This is not a test intended for field application.

1.2. Scope

The purpose of this document is to provide a test standard for detecting flaws in the insulation (sometimes referred to as the dielectric) of a completed coaxial cable. This test, usually referred to as a Hipot or Dielectric Withstand Test, verifies that the insulation can withstand a specified voltage applied between the center conductor and outer conductor for a specified time interval, without resulting in a dielectric breakdown. Upon successful completion of this Hipot test, it can be concluded that the inner and outer conductors are properly insulated from each other.

Under normal operating conditions there will be a small amount of leakage current within the dielectric of any product (in this case the insulation between the center and outer conductors of a coaxial cable). However, if 2 conductors are not properly insulated from each other, the application of high voltage can cause dielectric breakdown. Dielectric breakdown results in excessive current flow that is substantially larger than the nominal leakage current for the dielectric material being tested.

Traditionally, either an AC or DC voltage may be used for the test. The DC voltage used should be the peak of the equivalent AC (RMS) voltage, or 1.414 times the AC (RMS) voltage.

1.3. Benefits

The Test Procedure for Dielectric Withstand of Coaxial Cables, when executed per this procedure, will yield confidence and assurance of the insulation properties of the dielectric medium used to separate the inner conductor and outer conductor components. Use of this test method provides user a means to verify design acceptance and reliability.

1.4. Intended Audience

The intended audience for this test method, are cable manufactures and end-users with proper laboratories and safety measures in place to safely perform test.

1.5. Areas for Further Investigation or to be Added in Future Versions

No further areas of investigation or versions are foreseen at this time.

2. Normative References

2.1. SCTE References

- No normative references are applicable.

2.2. Standards from Other Organizations

- No normative references are applicable.