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Network Operations Subcommittee

SCTE INDUSTRY REFERENCE

SCTE 293-1 2024

**What is ...
the Decibel?**

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Document Tags

☐ Specification	☐ Checklist	☐ Facility
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Note: Standards that are released multiple times in the same year use: a, b, c, etc. to indicate normative balloted updates and/or r1, r2, r3, etc. to indicate editorial changes to a released document after the year.

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1. Introduction

1.1. Executive Summary

This document is one in a series of technical monographs providing a high-level overview of a given topic. Here, the decibel is discussed.

1.2. Scope

The foundation of much of the mathematics of cable is the decibel, which is a logarithmic-based expression of the ratio between two values of a physical quantity, typically power or intensity. An understanding of the decibel is important, in large part because of its use as the basis for parameters such as loss (attenuation), gain, signal level, carrier-to-noise ratio, and more.

1.3. Benefits

The material in this document can be used as part of technical training programs, a tutorial for individuals seeking a high-level understanding of the decibel, and/or a refresher for those who may have forgotten some of the fundamentals of the topic.

1.4. Intended Audience

The intended audience for this document includes technical personnel from installers to engineers. The material is also suitable for those new to the cable industry.

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

Given the introductory nature of the content of this document, it is not anticipated that additional material will need to be investigated or added in future versions.

2. Useful References

The following documents might provide valuable information to the reader but are not required when complying with this document.

2.1. SCTE References

- [SCTE 03] ANSI/SCTE 03 2022, Test Method for Coaxial Cable Structural Return Loss
- [SCTE 270] SCTE 270 2021r1, Mathematics of Cable
- [DOCSIS31] Data-Over-Cable Service Interface Specifications DOCSIS® 3.1 Physical Layer Specification, CM-SP-PHYv3.1-I20-230419. Cable Television Laboratories

2.2. Standards from Other Organizations

No informative references are applicable.

2.3. Other Published Materials

- [Hranac] “The Wise and Mighty Decibel,” by Ron Hranac. *Broadband Library*, Summer 2017 (<https://broadbandlibrary.com/wise-and-mighty-decibel/>)