ATIS-0600015.03.2023

Energy Efficiency for Telecommunication Equipment: Methodology for Measurement and Reporting for Router and Ethernet Switch Products

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ATIS-0600015.03.2023, Energy Efficiency for Telecommunication Equipment: Methodology for Measurement and Reporting for Router and Ethernet Switch Products

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Energy Efficiency for Telecommunication Equipment: Methodology for Measurement and Reporting for Router and Ethernet Switch Products

Alliance for Telecommunications Industry Solutions

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Abstract

This document specifies the definition of router and Ethernet switch products based on their position in a network, as well as a methodology to calculate the Telecommunication Energy Efficiency Ratio (TEER). The standard will also provide requirements for how equipment vendors shall respond to a TEER request based on a specific application description by making use of relevant data from internal and independent test reports.

Foreword

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between providers, customers, and manufacturers. The Sustainability in Telecom: Energy and Protection (STEP) Committee – formerly the Network Interface, Power, and Protection Committee (NIPP) – engages industry expertise to develop standards and technical reports for telecommunications equipment and environments in the areas of energy efficiency, environmental impacts, power, and protection. The work products of STEP enable vendors, operators and their customers to deploy and operate reliable, environmentally sustainable, energy efficient communications technologies. STEP is committed to proactive engagement with national, regional, and international standards development organizations and forums that share its scope of work.

ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcomed. They should be sent to the Alliance for Telecommunications Industry Solutions, STEP, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time it approved this document, STEP, which was responsible for its development, had the following roster:

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E. Gallo, STEP Vice Chair (Ericsson)
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S. Martin, STEP TEE Vice Chair (AT&T)
L. Rabinovich, Technical Editor (Cisco)

The Telecommunications Energy Efficiency (TEE) Subcommittee was responsible for the development of this document.

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1 Scope, Purpose, & Application

1.1 Scope

The requirements and definitions in this document are for router and Ethernet switch products. This document represents one part of the larger ATIS suite of standards concerning Telecommunications Energy Efficiency.

1.2 Purpose

This document provides a set of definitions, requirements, and guidelines for calculating the Telecommunications Energy Efficiency Ratio (TEER) of a system. The document also provides standardized definitions of operational data rates and conditions to be used when calculating the TEER of any given configuration. The test methodology used to independently verify the Energy Consumption used as part the TEER calculation is addressed in ATIS-0600015 [Ref 2].

1.3 Application

This document (and supporting documentation) is intended to be used by network operators, equipment manufacturers, and re-sellers as a standard method for determining the energy efficiency of Router and Ethernet Switch products. By comparing the TEER reports of multiple platforms that meet a common set of requirements, a communications network operator can select the equipment that best meets their energy efficiency targets.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this ATIS Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this ATIS Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

[Ref 1] ISO 17025, *General requirements for the competence of testing and calibration laboratories*.[1]

[Ref 2] ATIS-0600015, *Methodology for Measurement and Reporting: General Requirements*.[2]

[1] This document is available from the International Organization for Standardization at: < http://www.iso.ch/iso/en/prods-services/ISOstore/store.html >.

[2] This document is available from the Alliance for Telecommunications Industry Solutions (ATIS), 1200 G Street N.W., Suite 500, Washington, DC 20005 at: < https://www.atis.org >.