



Information Technology Industry Council

June 8, 2015

Ms. Katharine Kaplan
ENERGY STAR Product Development
U.S. Environmental Protection Agency
ENERGY STAR for Office Equipment
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: ENERGY STAR Large Network Equipment Specification Version 1.0 Specification and Test Method

Dear Ms. Kaplan:

The Information Technology Industry Council (ITI) is pleased to submit additional input regarding the development of the ENERGY STAR Large Network Equipment Specification and Test Method. ITI provides the following recommendations in support of recommendations made by the Green Grid:

1. SEPARATION OF Large Network Equipment (LNE) AND Small Network Equipment (SNE)

EPA is seeking to improve the definition distinguishing products that fall under the SNE and LNE specifications.

The Large Network Equipment Draft 1 Version definition of LNE is:

Network Equipment that is rack-mounted, intended for use in standard equipment racks, or contains more than eleven (11) wired Physical Network Ports.¹

The Small Network Equipment Version 1.0 definition of SNE is:

Small Network Equipment (SNE): Network Equipment that is intended to serve users in either small networks or a subset of a large network. SNE includes a) all Network Equipment with integral wireless capability and b) other Network Equipment meeting **all** of the following criteria:

- a) Designed for stationary operation;
- b) Contains no more than eleven (11) wired Physical Network Ports;
- c) Primary configuration for operation outside of standard equipment racks;

¹ See ENERGY STAR Product Specification for Large Network Equipment, Eligibility Criteria Draft 1 Version 1.0, Page 1, available at www.energystar.gov/sites/default/files/specs//Draft%201%20V1.0%20LNE%20Specification.pdf.

d) Meets the definition of one or more of the Product Types defined below.²

In an effort to improve this definition, EPA has proposed a new definition based on Total Link Capacity.³

LNE products would include:

1. Covered product types with a combined total link capacity of all physical network ports in the product which is greater than or equal to 14 Gb/s; and/or
2. Covered product types which are rack mountable as shipped

Conversely, products types currently covered in the SNE program, which do not meet the criteria above, would remain in scope of SNE as applicable.

EPA has developed a supporting definition for this proposal:

Total Link Capacity: The theoretical maximum amount of data transfer that a port can support measured at the physical layer and not the network IP layer (e.g. the total link capacity for a port whose highest data rate is 1000BASE-T would be 1Gb/s).

ITI supports the recommendation provided by the Green Grid that LNE be defined as follows with one addition that rail and DIN mountable products be added to rack mountable products in defining LNE:

LNE contains one of the following features:

- Contains more than 11 physical ports
- Total aggregate port throughput is greater than 12 Gb/s

And all of the following features:

- Rack, *Rail*, or *DIN* mountable
- Supports Network Management Protocols such as SNMP (...)

2. MODULAR LNE PRODUCT DEFINITION

ITI supports the definition proposed by the Green Grid for modular products:

1. Modular product is a product which can accept modules.
 - a. Module Definition: A plug in device, not used alone, which can add/change the type of network connections, increase/decrease the number of ports, and add/remove additional functionality for a product. Modules include but are not limited to:
 - i. Line cards
 - ii. Port adapters
 - iii. Network adapters

² See ENERGY STAR Program Requirements for Small Network Equipment, Page 1, available at www.energystar.gov/sites/default/files/specs//SmallNetworkEquipment_V1_ENERGYSTAR_ProgramRequirements_Nov2013_0.pdf

³ See EPA LNE Working Sessions Schedule and Outline for Scope – Product Family Discussions, Feb. 20, 2015, available at www.energystar.gov/sites/default/files/LNE%20Working%20Sessions%20Schedule%20and%20Outline%20for%20Scope%20-%20Product%20Family%20Discussion.pdf

- b. The following devices are not modules:
- i. Pluggable transceivers, such as SFP, SFP+, or XFP and similar
 - ii. Modular power supplies

3. INCLUSION OF FIBER OPTIC PORTS IN THE LNE SPEC

The current proposal would exclude all fiber optic ports from the LNE specification. Draft 1 defines a Physical Network Port as follows:

Physical Network Port: An integrated physical connection point primarily intended to accept IP or similar traffic via a cable. Fiber-optic connections are **not** considered Physical Network Ports for the purposes of this specification.⁴

ITI supports the proposal by the Green Grid that fiber optic ports should not be entirely excluded from the specification. Industry is currently working on a recommendation on how some products with fiber optic ports could be included.

TEST PROCEDURE ISSUES

4. SNAKED TRAFFIC TOPOLOGY

In order to reduce test burden, DOE is considering allowing the snaked traffic topology to be used for products with many data ports, such as large modular equipment. DOE made the following proposal:

DOE proposes the following requirements regarding snaked traffic:

Snaked traffic can only be used if the UUT has **more than 200 data ports, each of which has a line rate of at least 10Gbps.**

Manufacturers must report the **estimated maximum non-drop rate throughput for the UUT**, if it were tested in a full-mesh configuration.⁵

ITI supports the conclusion provided by the Green Grid that if optical ports are out of scope of the specification, there is no need for snaked traffic testing. If optical ports are in the scope of the specification, snaked traffic must be considered in the test specification due to the complexity and expense of testing large optical network systems in full mesh topology. ITI agrees with the Green Grid that for these systems, snaked traffic should be allowed with some additional documentation requirements:

- Manufacturers should follow ATIS guidelines on full mesh and multi-mesh traffic generation.
- Manufacturers and or test labs should document the mesh topology used for the qualification testing.

⁴ See ENERGY STAR Product Specification for Large Network Equipment, Eligibility Criteria Draft 1 Version 1.0, Page 1, available at www.energystar.gov/sites/default/files/specs//Draft%201%20V1.0%20LNE%20Specification.pdf

⁵ See DOE Request for Additional Feedback on LNE Test Method, Feb 20, 2015, available at www.energystar.gov/sites/default/files/Request%20for%20Additional%20Feedback%20on%20LNE%20Test%20Method.pdf

- TEER calculations based upon data collected in test configurations not using full mesh traffic generation topology shall indicate this in all reported TEER results as follows:
 - TEER results are “Engineering estimates based upon measured data.”

5. AMBIENT TEMPERATURE REQUIREMENT

EPA reviewed options from ATIS-0600015.2013 for meeting the ambient temperature requirement and proposed the following:

Ambient temperature shall be between 27C and 30C.⁶

ITI agrees with the conclusion of the Green Grid that the ATIS-0600015.03.2013 methodology is correct and does not see value in the development of a new and different test procedure with different methodologies for addressing families, ambient temperature and fan speed control during the test. ITI recommends that the ATIS methodology should be fully adopted including TEER calculations for family configurability methods.

CONCLUSION

ITI appreciates the opportunity to provide input and looks forward to working with EPA, DOE and other stakeholders to improve the specification.

Sincerely,

Joseph Andersen
Director, Environment & Sustainability
Information Technology Industry Council
Office: 202-626-5729 / Mobile: 703-966-0685
jandersen@itic.org

About ITI. The Information Technology Industry Council (ITI) is the global voice of the tech sector. As the premier advocacy and policy organization for the world’s leading innovation [companies](#), ITI navigates the relationships between policymakers, companies, and non-governmental organizations, providing creative solutions that advance the development and use of technology around the world. Visit www.itic.org to learn more. Follow us on Twitter for the latest ITI news [@ITI TechTweets](#).

⁶ See ENERGY STAR Large Network Equipment Fiber Optic Ports and Test Method Working Session, April 3, 2015, Page 11, available at <http://www.energystar.gov/sites/default/files/LNE%20Stakeholder%20Webinar%20-%20Fiber%20Optic%20Ports%20and%20Test%20Method.pdf>