



TELECOMMUNICATIONS
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July 24, 2015

Katherine Kaplan
Manager, ENERGY STAR Product Development and Program Admin
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Draft 2 Version 1.0 ENERGY STAR Large Network Equipment (LNE) specification and Final Draft LNE Test Method

Dear Ms. Kaplan:

The Telecommunications Industry Association (TIA) and its members applauds the Environmental Protection Agency's (EPA) willingness to engage and work with stakeholders to better understand the operations in this environment and the real-world implications for certain specification definitions. TIA believes the Draft 2 specification is a much improved approach that incorporates definitions and explanations that will further the agency's goals by making the specification more effective and useful for customers seeking to assess large network equipment (LNE). There are, however, some areas of the updated specification and draft test method that need further revision. TIA and its members share with EPA the goal to develop an LNE specification and testing methodology that can properly educate customers and reward energy efficiency leaders in network equipment products. Therefore, TIA offers the following input regarding the revised specification and test method.

First, TIA and its members support the refined definition's effort to more accurately depict the distinction between small network equipment (SNE) and LNE for the purposes of the ENERGY STAR designation. TIA believes that the class of network equipment is generally too diverse to be easily placed in neatly organized categories. However, updating the LNE definition to reflect the following features is critical to ensuring that most enterprise-level equipment is included in the appropriate category:

- Limiting SNE to products with a maximum of 11 physical network ports; or total port throughput of less than 12 Gb/s
- Supports network management protocols

Additionally, we agree with the revision of the modular definition to "an LNE product that accepts modules." Finally, the inclusion of fiber optic connections in what are considered "physical ports" is important so that relevant devices are not removed from scope.

Despite the improvements to the specification, there are few areas of concern that TIA and its members have about the updated approach.



Product Family Characterization for Modular Products

In the Draft 2 specification, it states common product family attributes for modular products are:

“A set of features common to all models/configurations within a modular product family. All models/configurations within a modular product family share the following: a) be from the same model line or machine type; and b) share the same mechanical and electrical designs in the chassis with only superficial mechanical differences to enable a design to support a variety of module options.”

In the category of networking, modular products do not tend to be purchased in standard configurations. Instead, customers usually choose the components to get the configuration that meets their specific needs. The current definition does not appropriately reflect the realities of how customers use these products and does not contain an approach that would provide them the most useful information. Instead, we recommend that EPA use a modular approach wherein the energy use of each module is tested and this information is made available to allow the customer to add up the overall energy use of a particular configuration. Otherwise, “family”, as defined today, would likely double the amount of testing and the resources needed to meet the specification.

Scope

The updated specification proposes to exclude products that contain high speed network ports, specifically those with 40 GB/s or higher link rate capability. While we understand EPA’s intention to exclude these items since currently this is a small component of the LNE product category, there are concerns with this approach and its impact on the long term viability of the specification. The growing use of data will make it such that this type of equipment moves from one use area to another (from the core to the edge). Within the next few years, more and more products are expected to have greater than 40 GB/s link rates and thus, setting such an arbitrary limit will likely make the specification outdated in the near future.

Power Supply Requirements

The power supply requirements as stated in Section 3.2 are extremely broad and include almost all power supplies. This is problematic from the viewpoint of TIA and its members because such an approach will make it difficult to achieve these energy efficiency levels. Instead, we recommend that EPA have separate efficiency requirements for any power supply with rated power less than 300W.



Power Supply Type	Rated Output Power	10% Load	20% Load	50% Load	100% Load
Multi-output	All Output Levels	NA	80%	82%	82%
Single-output	All Output Levels	NA	82%	85%	82%

10% for those power supplies is not a typically-utilized load level, since they usually are a part of non-redundant power systems in devices with partial modularity, meaning only a relatively small number of modules within the device configuration can be changed or removed.

Standard Performance Data Measurement and Output Requirements

TIA and its members have some concerns regarding EPA's expectations outlined in Section 5 regarding the type of data that should be measured and reported on for the LNE specification. We question the usefulness of many of the performance data and output requirements, particularly because of the type of products and customers that exist in the LNE environment. This section is clearly adapted from specifications for products such as computer servers where it makes more sense. First, for data elements, the specification states that LNE products should be capable of reporting on inlet air temperature. It is not clear why this information is needed since LNEs are usually used in enterprise/data center environments where temperature is regulated, the inlet Air temperature will be the building temperature. Further clarity is needed on how EPA anticipates this information will be used.

Draft 2 also states that "[d]ata shall be made available to end-users...." In the case of LNEs, however, the end-users of data, consumers or enterprise end-users, in most cases are unaware of the network topology and of the equipment that is present in the network. Therefore, it is not clear what value this information will provide to these users.

Finally, as we have stated real-time power/temperature data from a LNE without the ability to correlate with traffic or other key performance indicators (KPI) is not very useful and may present majority security concerns. LNEs have interfaces and capabilities used for management of the equipment and to obtain performance data from the equipment. These interfaces grant highly secure access to operators/enterprise users of the equipment. Delivering power information over the same interfaces will have the benefit of security and will also enable these users to correlate the power data with other KPIs such as traffic and availability, thus making the power data more useful and valuable. However, major security implications may arise when allowing third-party interfaces to LNEs. Any security breach on an LNE can have network wide implications due to the central function of LNEs in a network.

TIA appreciates the opportunity to provide additional feedback and looks forward to continuing to work with the EPA and other stakeholders on this important issue.



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Respectfully submitted,

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