xx May 2012

Ms. Brenda Edwards, EE-41
Office of Energy Efficiency and Renewable Energy
Energy Conservation Program for Consumer Products
U.S. Department of Energy
1000 Independence Avenue, SW.
Washington, DC 20585-0121

Docket Number:	EERE-2008-BT-STD-0005
Regulatory Information Number (RIN):	1904-AB57

Dear Ms. Edwards:

This correspondence conveys the comment of the IEEE P1823 "Universal Power Adapter for Mobile Products" working group with respect to the Battery Charger and External Power Supply Rulemaking (Docket Number EERE-2008BT-STD-0005, RIN# 1904-AB57).

The following statement solely represent the views of the IEEE Project 1823 "Universal Power Adapter for Mobile Products" working group and does not necessarily represent a position of either the IEEE or the IEEE Standards Association.

Background of IEEE Project 1823:

This standard focuses on a generic, reusable, durable, power adapter designed for reuse across brands, models, and years. A compliant adapter will supply a nominal 21 V at up to 130 W and may negotiate voltages up to 60 V at power levels up to but less than 240 W. Each power adapter will have one or more power ports to service load devices with control of each port via a serial communications link, CAN bus. Input power may be AC or DC depending on the market being served.

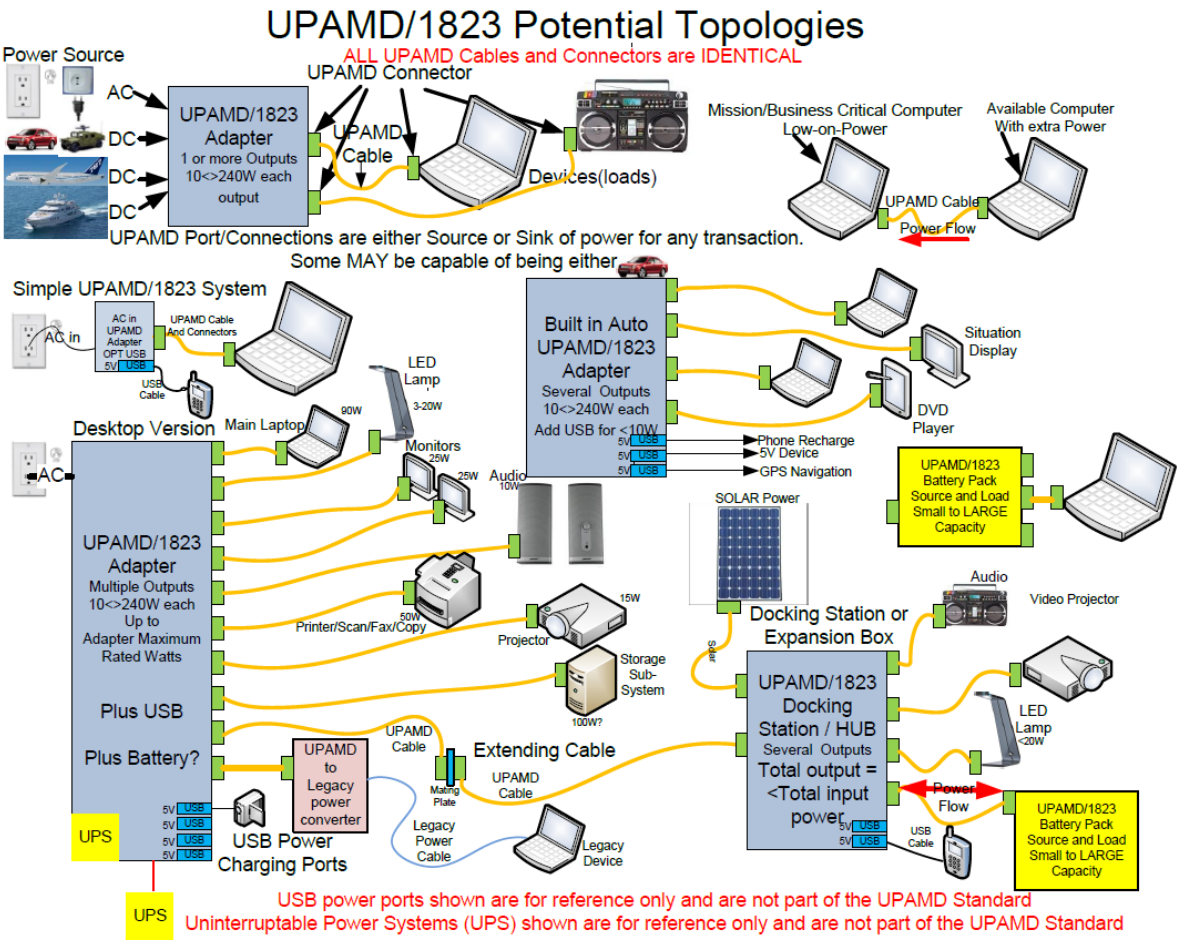
A group of laptop, netbook, and notebook computers, entertainment and gaming system manufacturers approached the Microprocessor Standards Committee, a Standards Committee of the IEEE Computer Society, in January 2010, to define a common connector configuration, a power specification and a communications protocol for a reusable durable power adapter system. This broad original group included Acer, AMD, Asus, Compal, Dell, Fujitsu, HP, Inventec, Lenovo, NEC, Pegatron, Quanta, Samsung, Sony, Toshiba, and Wistron. This standard is the result of that foresight.

The Universal Power Adapter for Mobile Devices (UPAMD^{TM}) defines a power delivery and communication connection between a power adapter and a power using device using greater than 10 Watt up to, but less than, 240 Watt range. The communications are used to coordinate the power delivery and provide identification between the power adapter and the power using device. While primarily intended for portable computing and entertainment devices, this Standard applies to adapters serving other mobile, and portable, devices in use around the office, home or vehicle.

The current plan of the working group is to have the project completed by the end of calendar year 2012. Following IEEE adoption, the standard will be submitted through the established path for fast tracking into ISO/IEC.

Expected usage of the UPAMD/IEEE1823 should reach 100 million in 2 years with a total available market based on power levels of greater than 2 billion devices worldwide in 5 years.

Overview of the UPAMD/1823 devices:



Current Overview and Status presentation is available at
http://grouper.ieee.org/groups/msc/upamd/pub_docs/UPAMD_P1823_13May2012.pdf .

Features of UPAMD devices:

- Same power connector for all UPAMD compliant devices, this connection is brand, model, and year agnostic.
- Life expectance greater than 10 years for UPAMD devices, a durable product. First adapter to work with last device.
- UPAMD port power range is from greater than 10W up to, but less than, 240W. Expectations are most UPAMD source ports to be in the 40 to 120W range. All ports must support low power non-communicating, UPAMD cable attached, devices.
- Low Energy connect and disconnect with maximum stored connection energy < 15uJ.
- Maximum exposed power on power source connector, probe power, is <100 uW on communications pins, 0 power on power pins.
- No power, other than probe power, delivered until a device is detected through UPAMD cable.
- Non-communicating device may be supplied up to 21V at 1 Amp once connection is detected with proper termination.
- Power delivery above ~20W is negotiated between Source and Sink, using the CAN communication link, based on the capabilities and requirements of each. Sink device must adapt to available power.
- Powered Sink may or may not have any internal power storage. UPAMD is a basic power deliver mechanism.

- Bidirectional power ports, where available, allow the sharing of power for mission critical or business critical applications.
- UPAMD enables, through its communications capabilities, optimization of power distribution and consumption. Power distribution strategies can be matched to power availability and relative costs.
- The flexibility of UPAMD supports other conservation and standards activities and those still being developed.

DOE Comments:

We strongly urge DOE to consider adding a new Class of product that would be available to products that comply with the IEEE P1823/UPAMD Standard when completed. It is expected that this Class would have multiple ports of varying capacity, communications for power control and overall power management.
Such a device may also have internal power storage to facilitate the smooth delivery of power. This type of device would cross many of the DOE product classes in addition to being a multi-output, multi-voltage EPS device that is not considered in any of the available classifications.

Efficiency would be measured on a per port basis using the maximum power rating of that port. The no load power rating of 0.3 Watts per port will allow for the communication electronics needed for the port, in use or idle. The additional power used by these smart controllers will also support managed load control and shifting of peak power usage to more suitable times. This could help reduce energy usage.

For DOE consideration, we would like to note that expected useful life of an UPAMD EPS will be multigenerational for devices being powered and hopefully multigenerational for the users as well. This exceeds any current DOE estimates for life expectancy.

For DOE consideration, we would like to note that all UPAMD EPS sources are in constant communication with all smart loads. Mute, non-communicating loads, limited to less than 20W, are made available to supply devices such as desk lamps and other passive devices and indicated by the termination of the communications signal lines in the load device.

We request the DOE to provide guidance on the power rating for the multi-port, or multi-voltage devices. How is a single UPAMD EPS capable of supplying a 230W port, 4 each 120W ports and 3 each 5W ports to be classified. Are the class ratings based on the total power capacity of all ports in the adapter?

We request the DOE to provide guidance on the direct device and indirect device classification issue. If a UPAMD EPS can supply power to both direct and indirect power user, how should it be classified?

We request the DOE to provide guidance with respect to the classification of UPS devices. If the EPS maintains some internal power storage, possible in super capacitors, sufficient to sustain and output power through a 1 or 2 cycle AC power dropout, would this be considered a UPS?

We request the DOE to provide guidance on the classification of a UPAMD EPS that may, or may not, be attached to a battery charger. If a battery charger is connected to a UPAMD EPS, how that battery charger should be tested.

We urge DOE to consider UPAMD Adapter to be EPS under all conditions.

Respectfully Submitted,

James R. (Bob) Davis
Chairman, IEEE P1823/UPAMD Committee