MEETING 5 AGENDA:


Call to Order  UPAMD Power Subgroup meeting – Paul Panepinto                      5pm Pacific 02 December 2010

I.  Introductions/Attendance

II. Approval of 11/18/2010 Power Subgroup Meeting Notes
    Ignatius Motion to approve; Edgar Seconded.

III. Approval of 12/02/2010 Power Subgroup Agenda
     Bob Motion to approve; Edgar Seconded.

The call began with a discussion about what is being recommended w.r.t three options that were on the table for voltage: (a) a single, fixed voltage; (b) multiple, fixed voltages; or (c) any voltage in a range. One reason to consider (b) is that high-end notebooks consume more than 130W and may require higher voltage in order not to require more than 8A. We began playing with language that would require every sink to be able to operate on 20V – 22V, but may optionally request a higher voltage (yet to be determined, but under 60V for compliance with 60950-1.) We quickly stopped, because Lee offered to see if we can use a starting point template from an existing EPS power supply spec. All of us agreed that would be preferred over drafting language from scratch.

Then a discussion was held about what 60950-1 really says. Bob is researching its interpretation with UL.

Lee mentioned the need for about 20V at the input – 4-cell lithium ion battery stack would be about 17V and therefore about 20V would be needed for the charging circuit. On the upper end, 25V – 28V CMOS process limits the maximum voltage that can be accepted.

There was a question on interpreting the 100W or 250W limitations in 60950-1. What requires a fuse? What doesn’t require a fuse? Is a current limiter equivalent to a fuse? Is a communication-based control mechanism like UPAMD is contemplating a satisfactory current limiter?

The charts in 60950-1 are confusing. Reviewing the several emails that have come in on this topic, it seems to me the following is our interpretation, still subject to validation:

- UPAMD will be an LPS with over-current protection, subject to the requirements in table 2c, albeit over-current protection may be in the form of programmatic limits
- If UPAMD supports <20V, no more than 5A, 100VA can be supplied in a mode where <20V is supplied
- If UPAMD does not support <20V, it will be subject to 250VA maximum power (the 8A limit we are imposing is less than 60950-1)
- UPAMD could actually support up to 60VDC with a maximum 250VA maximum power and still be compliant under table 2c.

IV. IEEE Call for Patents. See http://standards.ieee.org/board/pat/pat-slideset.ppt

V. State Diagram for UPAMD
   We spent a little time reviewing the state diagram initiated by Bob. Please see notes made during our discussion.

VI. Other Power Goals

VII. New business?

VIII. Adjourn
     Edgar motion to adjourn and meeting adjourned at 6:49pm Pacific.

Criteria Template: (We may need separate adapter and sink requirements)

1. Goal Name Power Range
1.1 Criterion Voltage Requirement

1.1.1 Required

**Criterion Description:** Default voltage is defined at the device with a minimum of 20.0V and a maximum of 22V. Working voltage +/- a percentage; Lee might be able to provide a spec template. Current limit will be specified as a function of the power limits. For example, 60W @ 20V would imply a current limit of 3A.

**Applies to:** Lists any exceptions to applicable devices or power adapters.

**Consideration For and Against:**

a) List of pros for the criterion  
b) List of cons against the criterion

1.1.2 Option

**Criterion Description:** Default voltage is defined at the device with a minimum of 20.0V and a maximum of 22V. Working voltage +/- a percentage; Lee might be able to provide a spec template.

**Applies to:** Lists any exceptions to applicable devices or power adapters.

**Consideration For and Against:**

a) List of pros for the criterion  
b) List of cons against the criterion

d) List of cons against the criterion

c) List of pros for the criterion

1.2 Maximum Power Requirement

1.2.1 Required

**Criterion Description:** No UPAMD power adapter can provide more than xxx Watts.

**Applies to:** Lists any exceptions to applicable devices or power adapters.

**Consideration For and Against:**

a) List of pros for the criterion  
b) List of cons against the criterion

c) List of pros for the criterion

d) List of cons against the criterion

g) List of pros for the criterion

1.3 Criterion Requirement at Sink

1.3.1 Required

**Criterion Description:** Voltage requirements are measured at the connector at the sink.

**Applies to:** Lists any exceptions to applicable devices or power adapters.

**Consideration For and Against:**

a) List of pros for the criterion  
b) List of cons against the criterion

g) List of pros for the criterion

1.4 Criterion Cable Loss Compensation
1.4.1 Optional?

Criterion Description: Describes the criterion, its purpose and why it is important.

Applies to: Lists any exceptions to applicable devices or power adapters.

Consideration For and Against:

i) List of pros for the criterion
j) List of cons against the criterion