

Universal Power Adapter for Mobile Devices (UPAMD) Communications Subcommittee

Start Time: 21 September 7:00 a.m. PDT UTC-7 (1400GMT/Zulu)

Phone & online attendance

Meeting minutes (to be approved and perhaps modified at upcoming meeting)

UPAMD Communications Subcommittee meeting - Edgar Brown 1400GMT 21 September 2010

In attendance: Bob Davis, Paul Penepinto, Tom Hildner, Anand Mohandas, Stephen Colclough, Bob Mann, Ignatius Lee, Edgar Brown (Chair).

I. Introductions/Attendance

A. Discussion of subcommittee voting requirements

*Requirements will be the same as the UPAMD Work Group. Voting member status is granted to anyone that attends two previous meetings in a row (or participates through e-mail regarding meeting topics). Missing two meetings (or e-mail calls) in a row removes voting privileges. As a special case, anyone attending this specific meeting (or participating through e-mail) is a voting member. **Current Voting members are: Bob Davis, Paul Penepinto, Tom Hildner, Anand Mohandas, Stephen Colclough, Bob Mann, Ignatius Lee, Piotr Karocki.***

B. Committee activity to date

Edgar Brown (via e-mail of 2010/19/21, 8:31 AM EDT).

II. Approval of Agenda

No objections

III. Final approval of communications Subcommittee Goals and requirements (abbreviated version, annotated version on Sept. 19 notes).

These subcommittee goals have undergone several rounds of e-mail and phone discussion, and have been edited accordingly. Here is the abridged version, with more detail to be added as the subcommittee progresses.

Several members requested additional discussion of these goals.

1 Guiding device restrictions and requirements

- 1.1 Adapter is battery-agnostic
- 1.2 Adapter is power-source agnostic
- 1.3 No shock hazard, no overload hazard, power source protects self and device
- 1.4 Consider costs of UPAMD-mandated communication components

2 Define communications requirements

3 Define physical layer

- 3.1 Robust system with respect to EMI, EMC, ESD
- 3.2 KISS: Keep costs under control, without sacrificing safety
- 3.3 Reuse existing standards if possible.
- 3.4 Define number of wires required for power and communications.

4 Define Communications Protocol

5 Define host-level (application layer) interfaces

6 Define communications for optional external indicators

Although no objections were made regarding these goals, the following clarifications were introduced:

- The standard cannot be limiting, i.e., it defines the minimum set of requirements to be UPAMD compliant, extensions to the minimum set of requirements, should be allowed.
- The standard additional features should not preclude other implementations.
- Should consider a Vendor message class for additional vendor features.
- Should consider a 'standards' and 'identification' classes for specific application areas (e.g.,

medical, marine, airplanes). Messages in this class **could** cause rejection of a device/supply, but the classes have to be defined by UPAMD **not** left to vendors.

- The standard should provide a solid expandable base for future needs.
- Communications should support efficiency considerations.

IV. Discussion of a common set of _editable_ document formats

- A. Word processing: .doc (Word and others)
- B. Diagrams and drawings: .vdx (Visio, OmniGraffle)
- C. Drawings: .ppt (Powerpoint and others)
- 1. Documents will be placed on the site,

*We need to be able to exchange files in a way that others can edit and modify. Final format for the standard will be the .doc Microsoft Word format (**Note:** not the more recent .docx), so it makes sense to use it as the intermediate format for document contributions. There should be one 'owner' for each file that should be the one making sure that these remain current and that the changes/modifications are in the 'official' files. The official UPAMD IEEE group page (<http://grouper.ieee.org/groups/msc/upamd/>) can be used to store working files (so that others can retrieve them).*

To allow those that don't have specific graphic software, figures and the like can be sent in non-modifiable formats (e.g., .pdf, .jpg, .png), but modifiable formats (i.e., .txt, .doc, .vdx, .ppt) should be made available for those who want to contribute. There was discussion on the use of Google Docs to facilitate collaboration, but the feeling was that it might not serve our purposes.

V. Discussion of UPAMD topologies

- A. Always point-to-point (with one exception)

The intention is to restrict the UPAMD standard to: (1) the connectors, (2) the cable, (3) the adapter output, (3) the device input, (4) specific message classes that can be relayed from the power source on the adapter side (e.g., imminent loss of power), and (5) specific message classes that can be relayed from the device side (e.g., what is the adapter's efficiency profile?). As long as any adapter satisfies these requirements, it should not matter how many UPAMD or non-UPAMD power ports it has or what power source it uses.

*As has been discussed in the main group, and through e-mail, the communications protocol (and overall topology) should be point-to-point, making the need of addressing unnecessary. To **enable** the use of devices on the cable or connectors (e.g., LEDs), one modification to a point to point architecture should be allowed, in which more than one listener can be present, but not more than two device/adapter nodes should be present in one connection. (Note that, as a device could optionally serve as a power source adapter, the device/adapter role could be reversed.)*

A broadcast-based point to point architecture (e.g., CAN-style) could satisfy these requirements, and simplify required protocol negotiations, with very few restrictions. CAN-style communications require the use of dominant and recessive symbols for communications, although this might be the simpler option, it is not the only alternative.

VI. Discussion of physical wiring requirements.

- A. AC coupled over power, vs. 1-wire DC, vs. 2-wire.

This topic was postponed for a subsequent meeting.

VII. New Business

VIII. Next meeting

5 October 2010 at the 0000Z time slot.

IX. Other concerns of the group

X. Adjournment.

Meeting adjourned at 1516Z

Please send any changes or additions to Edgar Brown ebrown@axionbio.com.