

IEEE P1394b
B-Low Power Task Group
Minutes
7th December 1998
Double Tree In
Monterey, California

Agenda presented:

1) Introductions

2) Accept volunteer to write minutes

3) Approve Previous Meeting Minutes

4) Review

4.1 Characteristics of "Standby"

4.2 Issues

4.3 Others -

5) Discussion

5.1 Self-ID Proxy Register Contents

5.1.1 Node-ID

5.1.2 Power Class

5.1.3 Port present

5.2 Multi-Port "Leaf" Nodes

5.2.1 Only one connected port

5.2.1 Only once active port, 1 or more suspend ports, 1 or more disconnected ports

5.3 Extended Control Code for Standby

6) Review AR's

7) Opens

8) Adjourn

Minutes:

The sub-chair wishes to express his appreciation to Jerry Hauck for volunteering to take minutes for the meeting.

- Previous minutes (October meeting) approved unanimously.
- For the benefit of newcomers, the working group assumptions were reviewed. Nodes that are the target of standby need to understand if they have been commanded to suspend versus going into standby. For example, an SBP2 disk drive reacts differently: suspend may cause a logout while standby doesn't. Since the target node must discern between the two, it is not possible to preserve legacy silicon (PHY and Link) for use in a target by using TX_Suspend to mean either suspend or standby. Furthermore, the Data/Strobe arbitration state codeings are exhausted; consequently, standby

will be a feature only supported across a beta connection.

- Given that new silicon is required both on the target side and the parent side of a “standby” connection, the working group reaffirmed that the command to enter standby will be addressed to the child side (leaf) of the connection rather than to the parent side. This provides the most flexibility in defining what state a node must be in to allow entry into the standby state. The child has the benefit of all of its local state information in making this determination; the parent does not. The additional flexibility of having the child make the determination allowed the working group to consider a looser interpretation of a “leaf” node.
- The working group had a lengthy discussion on the definition of a “leaf” node. When a given device is in standby, another node (i.e. the parent) is responsible for acting as a proxy and synthesizing the self-id packet of the sleeping device. To limit the complexity and buffer requirements in the proxy, only “leaf” nodes can enter standby. (Thus, the parent only needs to synthesize a single self-id sequence for the sleeping child.)

Steve Bard raised the question of whether a multi-port PHY with only one active connection (to the parent) should be considered a “leaf”. Typical applications could be when a product used a 3-port PHY but only added one connector. Additionally, it was argued that there may be some utility in allowing a node with more than one connector to participate in standby as long as the other connections were not active (i.e., disabled, disconnected, or suspended). Since such inactive connections don’t appear in the self-id sequence, the parent still wouldn’t need to proxy anymore than a single nodes self-id sequence.

The working group decided that a node will only enter standby if the parent port is the only active port. If, while in standby, a child port has an event, the sleeping node will come out of standby and will force a bus reset to push the topology change out to the active network.

- The working group also discussed the minimal amount of storage required to properly synthesize the sleeping node’s self-id sequence. By allowing a multi-port PHY to enter standby, the parent may need to proxy as many as three full self-id packets (for example, when the one active port is port 15).
[AR: Jim Skidmore took an action item to publish \(on the reflector\) his idea of simply memorizing the one active port of a child and, when called upon to proxy, mark all other ports as one of the not-active forms.](#)

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ATTENDANCE LIST: 7th December 1998, Monterey, California

✓	V	Name	Company	Email	Phone
✓		Akgul, Jeff	Texas Instruments	jakgul@ti.com	(972) 480-1974
✓		Baker, Richard	Solectron, Texas	rtb@artb.itg.ti.com	512-425-6205
✓	x	Bard, Steve	Intel	steve.bard@intel.com	503-264-2923
✓	x	Chen, Dao-Long	Symbios	dao-long.chen@symbios.com	970-223-5100 x9461
✓		Clee, Jim	Lucent	jclee@lucent.com	(610) 712-2848
✓		Conroy, Keith	Pulse	keithconroy@pulseeng.com	(215) 781-6400
✓		Feller, Scott	Hewlett-Packard	scott_feller@hp.com	(650) 857-7759
✓		Foster, Tony	Hewlett-Packard	tony_foster@hp.com	(916) 785-1092
✓	x	Furuya, Nobuo	NEC	nobuo_furuya@el.nec.com	408-588-5414
✓	x	Hannah, Eric	Intel	ehannah@mipos2.sc.intel.com	408-765-4441
✓	x	Hauck, Jerry	Macro Designs	jerry@macrodesigns.com	510-668-1006
✓	x	Heilmann, Keith	IBM	kheilman@us.ibm.com	914-892-2413
✓	x	Hiraoka, Daisuke	Sony	dai@sm.sony.co.jp	+81 3 5448 4603
✓	x	Killeen, Sean	SSL	sean.killeen@ssl.ie	+353 1 402 5700
✓		Le, Thang	Hewlett-Packard	tl@rose.hp.com	(916) 785-4667
✓		Lin, Cjhang-Chi	Vishali	ccliu@controlnet.com	
✓		Lu, Jinghui	Rocketchips	jlu@rocketchips.com	512-685-4429
✓		Ma, Te Khac	Lucent Technologies	tma@lucent.com	(610) 712-2195
✓		Marazas, Gerald	IBM	marazas@vnet.ibm.com	919-543-6892
✓		Nave, James	Texas Instruments	jim-nave@ti.com	972-480-3468
✓		Nelson, Jim	Northrop Grumman	nelson@laya.srtc.northop.com	562-948-8357
✓	x	Oktay, Ozay	Canon	ozay_oktay@cissc.canon.com	714-856-7180
✓	x	Saito, Kyoza	Alps	kyozo_s@gw3.alps.co.jp	+81 229 23 5111
✓		Saito, Tomoki	NEC	saito@ccm.cl.nec.co.jp	+81 44 856 2082
✓		Sato, Hideaki	Canon, Inc.	hsato@cns.canon.co.jp	+81 3 3757 8985
✓		Sinks, Rod	Omneon Video Networks	rsinks@omneon.com	(408) 558-2107
✓	x	Skidmore, Jim	Texas Instruments	j_skidmore@ti.com	972-480-2094
✓		Smith, David	Texas Instruments	desmith@ti.com	(972) 480-6345
✓	x	Smith, Michael	ControlNet	michael@controlnet.com	(408) 341-1428
✓	x	Teener, Michael Johas	Zayante	mike@zayante.com	831-461-4901
✓		Thatcher, Tom	Hewlett-Packard	thomas@dtc.hp.com	(650) 857-4039
✓	x	Whitby-Stevens, Colin	ST Microelectronics	colin.whitby-stevens@st.com	+44 1454 611500
✓	x	Wooten, David	Compaq	david.wooten@compaq.com	281-518-7231
✓	x	Yu, Patrick	NEC	patrick_yu@el.nec.com	408-588-5436