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Subject: Redefinition of *pwr* in self-ID packet

From: Peter Johansson/Steve Bard (Power Distribution Sub-Task Group)

To: IEEE P1394a Working Group, Peter Johansson - Chair

This proposal is a modification to P1394a/97-03r2 - submitted by Steve Bard (on behalf of the Power Distribution Sub-Task Group reference) on the P1394a reflector and ftp repository. This formal proposal is the result of a collaboration between Peter Johansson and Steve Bard during review of proposals 97-03r0, 97-03r1, and 97-03r2 (all available from the P1394as ftp repository).

In clause 7.1 of Draft 1.0 of the P1394a Specification, the power consumption requirement for cable powered devices is changed as shown below:

→ It shall consume no more than 3 W of power (as measured at the cable connector) after a power_reset or after being initially connected to the bus (transition from all ports unconnected to any port connected). The receipt of a PHY link-on packet shall enable the node to consume additional power up to the limit specified by the node's self-ID packet(s);

In addition, the definition of *power_class* 101₂ is changed as shown in the excerpt from Table 7-2 below:

Table 7-2 — Self-ID packet fields (Continued)

Field	Derived from	Comment
pwr	POWER_CLASS	Power consumption and source characteristics:
		000 ₂ Node does not need power and does not repeat power.
		001 ₂ Node is self-powered and provides a minimum of 15 W to the bus.
		010 ₂ Node is self-powered and provides a minimum of 30 W to the bus.
		011 ₂ Node is self-powered and provides a minimum of 45 W to the bus.
		100 ₂ Node may be powered from the bus and is using up to 3 W.
		101 ₂ Node is powered from the bus and is using up to 3 Watts. No additional power is needed to enable the Link. ^a
		110 ₂ Node is powered from the bus and is using up to 3 W. An additional 3 W is needed to enable the Link. ^a
111 ₂ Node is powered from the bus and is using up to 3 W. An additional 7 W is needed to enable the Link. ^a		

^a. The link is enabled by the link on packet (see clause 6.2.2 of IEEE Std 1394-1995). This packet may also enable high layers.

The redefinition of POWER_CLASS 100₂, 101₂, 111₂, and, 111₂ enables an implementation of a node which makes use of a high speed, multiple port PHY to have its PHY (only) bus powered - thus supporting an ability of a system to power off without powering off its PHY (preventing fragmentation of the bus as the its PHY functions as a transaction repeater”).