



## PCI-SIG ENGINEERING CHANGE NOTICE

<b>TITLE:</b>	PERST# Clarification
<b>DATE:</b>	November 26, 2003
<b>AFFECTED DOCUMENT:</b>	PCI Express Card Electromechanical Specification, Revision 1.0a
<b>SPONSOR:</b>	Chuck Stancil; Hewlett-Packard

### **Part I**

#### **1. Summary of the Functional Changes**

The current definition of PERST# requires it to be asserted when any of the three power rails (12V, 3.3V, 3.3Vaux) fall below their specified voltage tolerance range. This is too strict and could lead to false assertions of PERST# due to tolerances in the voltage monitoring circuitry. It is also inconsistent with the definition of RST# in the PCI Local Bus specification. The change described herein adds a threshold window to each power rail. PERST# must be asserted whenever a power rail falls into its threshold window.

#### **2. Benefits as a Result of the Changes**

PCI Express-based system designs will have a more robust and reasonable implementation of PERST#.

#### **3. Assessment of the Impact**

Minimal impact to existing revision, see details of the ECR below. No shipping systems currently conform to the PCI Express specification.

#### **4. Analysis of the Hardware Implications**

Voltage monitoring circuitry will be able to reliably detect a power rail condition requiring the assertion of PERST#.

#### **5. Analysis of the Software Implications**

None.

## Part II

### Detailed Description of the change

Replace the text of section 2.2.3 with the following:

A power rail (12V, 3.3V or 3.3Vaux) is deemed to be valid or stable if the specified voltage is within the associated voltage tolerances defined in Table 4-1. Once a power rail is deemed stable, an invalid or unstable rail is defined as a rail that has dropped below the specified minimum voltage levels (e.g. below 3.00V for the 3.3V rails). For purposes of detecting an out-of-tolerance power source, the threshold for detection should be established in a window range of no more than 500mV below the specified minimum voltage level for the 3.3V and 3.3Vaux rails (i.e. 2.50V) and 1.34V below for the 12V rail (i.e. 9.70V). Figure 2-4a illustrates these threshold windows.

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Insert the following figure and caption below the new text for section 2.2.3 and before the existing Figure 2-4.

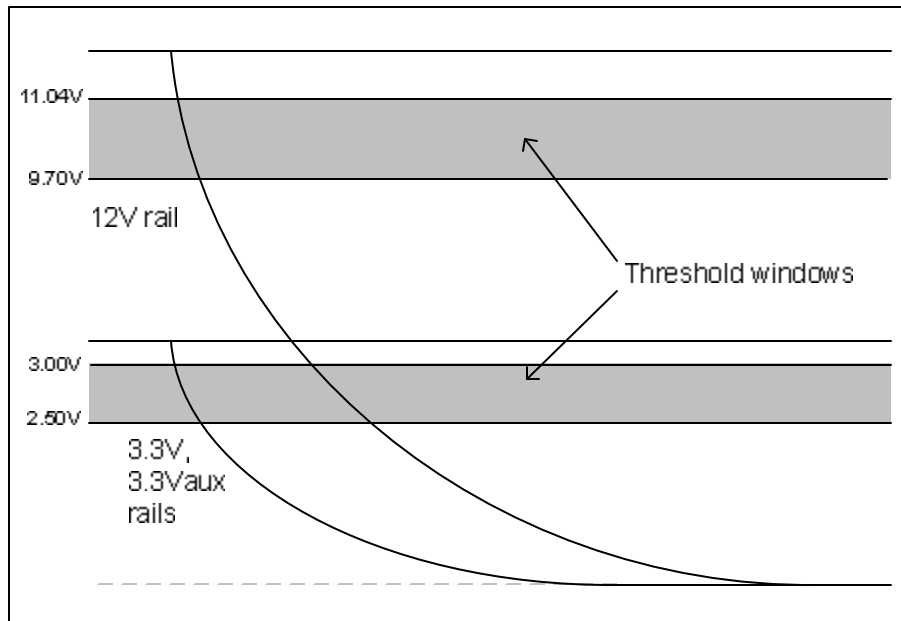


Figure 2-4a: Out-of-tolerance threshold windows

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Rename the existing Figure 2-4 as Figure 2-4b.