



## PCI-SIG ENGINEERING CHANGE NOTICE

<b>TITLE:</b>	Power Limit Re-definition
<b>DATE:</b>	May 02, 2006
<b>AFFECTED DOCUMENT:</b>	PCI Express Base Specification 1.0a, 1.1
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### **Part I**

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

To redefine the power value interpretation in Slot Capabilities register and Power Budgeting Data register.

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

The existing power limit definition constrains the power limit to a maximum of 255W. This ECR enables smooth inter-operability with future higher power PCI Express products (e.g. graphics processor), which might consume more than 255W.

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

No impact to existing PCI Express products as cards with bigger than 240W power consumption do not exist today.

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

No impact to existing hardware.

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

No impact to existing software. Future software for higher power PCI Express products will comprehend the new definitions accordingly.

## **Part II**

### **Detailed Description of the change**

Add new texts (in blue below) to “Slot capabilities Register” – “Slot Power Limit Value” field [14:7]:

**Slot Power Limit Value** – In combination with the Slot Power Limit Scale value, specifies the upper limit on power supplied by slot (see Section 6.9).  
Power limit (in Watts) calculated by multiplying the value in this field by the value in the Slot Power Limit Scale field, **except when Slot Power Limit Scale equals to 00b (1.0x) and Slot Power Limit Value exceeds EFh, the following alternative encodings are used:**  
F0h - means 250W slot power limit  
F1h - means 275W slot power limit  
F2h – means 300W slot power limit  
F3h to FFh - Reserved  
This register must be implemented if the Slot Implemented bit is set.  
Writes to this register also cause the Port to send the Set\_Slot\_Power\_Limit Message.  
The default value prior to hardware/firmware initialization is 0000 0000b.

Add new texts (in blue below) to “Power Budgeting Data Register” – “Base Power” field [7:0]:

**Base Power** – Specifies in watts the base power value in the given operating condition. This value must be multiplied by the data scale to produce the actual power consumption value, **except when Data Scale equals to 00b (1.0x) and Base Power exceeds EFh, the following alternative encodings are used:**  
F0h - means 250W slot power limit  
F1h - means 275W slot power limit  
F2h – means 300W slot power limit  
F3h to FFh - Reserved