

Graphic Applications in the View of Energy Star 2007

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Energy Star Program Requirements for Computers

- Draft 2 spec has classified several Groups
 - Desktop computer
 - Notebook
 - Workstation

Differentiating Desktops from Workstations Based on PCI-e, high end graphic card in slots can be 225W. So using 2 Note: cards in a system, the graphic can station Cat. B Before a manufacturer markets a product as a "workstation", the consumed 450W!!! computer must meet the High performance workstation which has the following attributes: manufacturer's marketing specs Marketed as a "workstation" and the customer's expectations of Power supply rated ≥600W a workstation class computer: 3 or more hard drive bays Performance 6 or more memory sockets (including use of riser cards) Expansion 4 or more PCI/PCI-X/PCIe expansion sockets Network availability Reliability Workstation Cat. A The workstation designation will not be used to "game the system" Entry level workstation which has the following attributes: without the offending manufacturer Marketed as a "workstation" loosing credibility and customers. Power supply rated ≥400W 2 or more hard drive bays 4 or more memory sockets (including use of riser cards) 3 or more PCI/PCI-X/PCIe expansion sockets Desktop Cat A* High performance computer with more features and expansion Desktop Cat B* Basic computer with respect to performance and expansion 100W 200W 300W 500W 700W 400W 600W 800W 900W 1000W+ Power Supply Rating

* Category designations should be reversed for desktops

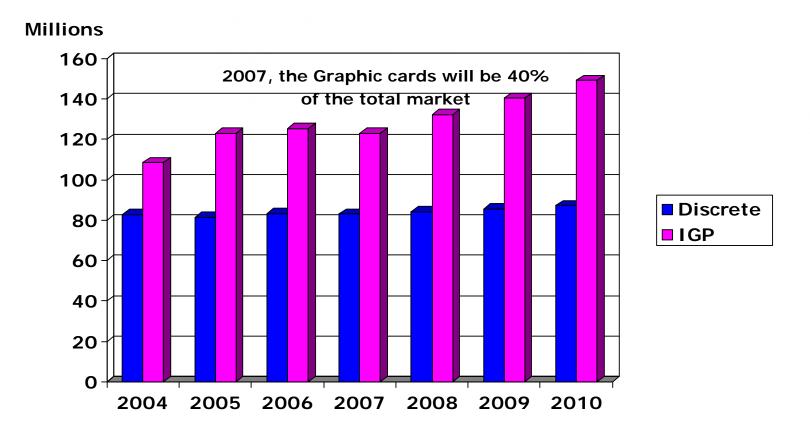
Idle Power for desktop with Graphic Feature 120.0 ATI-9800 is a main stream product in 2004 with a power less than 100.0 50W New main product should be used X1300 for low end, main stream 80.0 X1600 and high-end X1900XTX which was released in 2005/2006) 60.0 Series1 40.0 20.0 0.0 NUTUR GEFORCE 660 PCI EXPRESS VIDEO CAND UNESGIN CHORENE ADVICE UNES ERADVICE INC Mobile Intel 915GM/GMS, 910GM EXPress Crip Intel 829-15 CEXP 1855 Chipset Family VIAIS3G UNICHONE PROLEP ATI AHIM Worde 980 0 Series ATI Radeon tores 200 Intel CMAP 50 June 5, 2006 4

Concerns on Desktop Group

- The EPA proposal does not differentiated the Desktop computers based on the graphic performance which is becoming a key factor on the computer marketing features.
- May 18 meeting of EPA the committee informed with different classifications of the graphic card based on PCI-e
 - Integrated graphic with the Chipset (INTEL INFORM the EPA that the market of that is 80% and the 15% to 20% is rest of the add-in graphic card....ATI- need to endorse or propose other number)
 - Low profile single slot PCI-e Add-in Card which has ≤ 25W. In general this level has 128 MB Ram
 - Single slot PCI-e Add-in Card which has ≤ 75W. In general this level has 128 MB Ram or 256 MB Ram
 - Dual slot PCI-e Add-in Card which has ≤ 225W. In general this level has more than 256 MB Ram (new proposal)
 - Triple slot PCI-e Add-in Card which has ≤ 300W. In general this level has more than 256 MB Ram (new proposal)
 - Multi Graphic cards which are already in progress for single and dual slot PCI-e cards

Concerns on Desktop Group It is Important to indicate the market share of the ADD-in Graphic

cards vs. integrated graphic based on External reference house Worldwide Desktop Graphics Chip Market 2004 - 2010



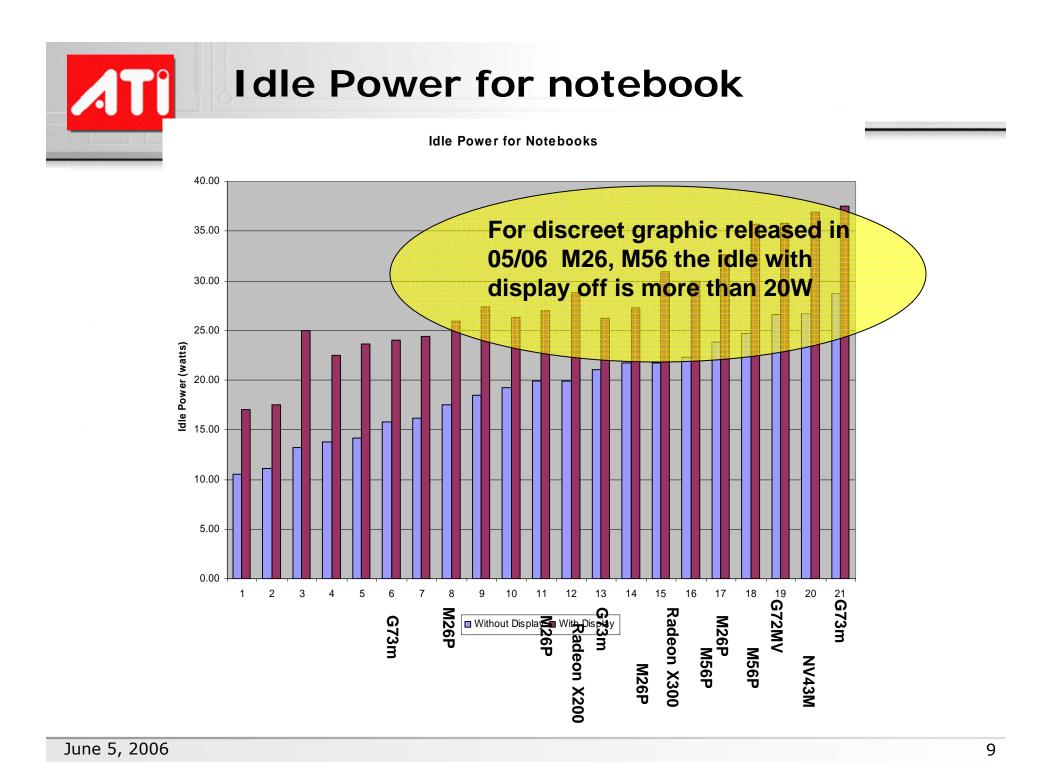
Source: Mercury Research, 2006

What Can be Proposed for Desktop

- Desktop will have 3 categories
- Category A-consumer product desktop, low end and low cost product which has integrated graphic or graphic card with maximum power less than 30W: Idle power will be as is (<50W)
- Category B- Enterprise desktop for business and government use, : idle power will be based on more realistic date which has a graphic cards such as ATI X1600 and X1900 pro, i.e. which has a main stream graphic card with maximum power less than 100W
- Category C- High end consumer product desktop/ Enthuse /Gaming/special need of graphic applications. A system with graphic card with higher than 100W and/or multi graphic cards. idle power will be based on the active power of the system
- ATI can help on producing data or supply cards to OEMs to conduct their independent test. Other approach (if the time is short), ATI supply the idle number for its products which will be added to the current measurement which was sent in the XL-sheet, see slide #4 and/or by total sum of the idle powers of the GPU's card, CPU, system Air movers, HD, OD..)



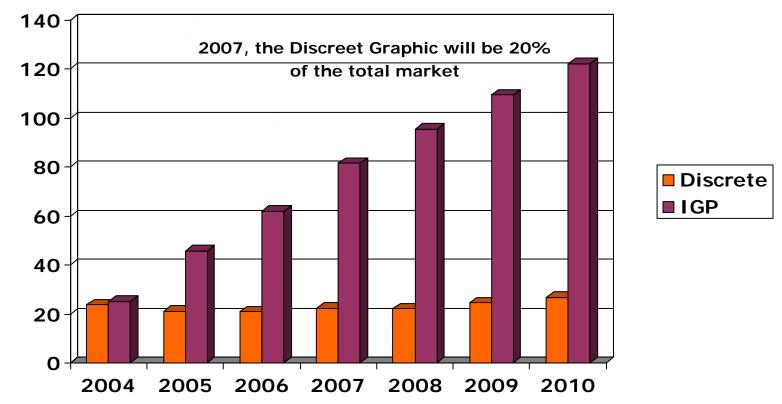
• The EPA proposal also does not differentiated the notebook computers based on the graphic performance which is becoming a key factor on the computer marketing features.



Concerns on Mobile Group

• It is Important to indicate the market share of the integrated graphic vs. discrete graphic based on External reference house

Worldwide Notebook Graphics Chip Market 2004 – 2010 Millions



Source: Mercury Research, 2006

What Can be Proposed for Mobile

- Notebook will have 2 categories
- Category A: consumer product Notebook-low cost product with an integrated graphic (idle is 20W)
- Category B: Enterprise Notebook with a discrete graphic processor for business use (Idle should be determine based on data for systems which has devices such M56, N68 and M58)

ATI can help on producing data or supply GPUs to OEMs to conduct their independent test. Other approach (if the time is short), ATI supply the idle number for its products which will be added to the current measurement on the top of the 20W propose # after removing the idle effect of the integrated graphic and/or by total sum of the idle powers of the GPU, CPU, Air mover, HD, OD..)