

Inside the W5A, ASUS' Sonoma-class Combatant

Foreword

On January 18th Intel officially released the Gen 2 Centrino platform (codename: Sonoma), which had been followed very quickly by the Sonoma platform notebooks. The ASUS W5A was one of them.



Black W5A



White W5A

The W5A is 100% consistent with Intel's definition of the 2nd Gen Centrino platform, i.e. Intel's latest Pentium M (533 FSB, 2MB L2 Cache) processor, 915GM, and Intel Pro/Wireless 2200BG WLAN card. The standout specifications include DDR II memory, a 12 inch widescreen TFT LCD, and an integrated 1.3 megapixel camera.

W5A specifications:

Model #	ASUS W5A
CPU	Intel Pentium M 745 (1.86GHz,533 FSB,2MB L2 CACHA)
Northbridge	Intel 915GM
Southbridge	Intel ICH6-M
Memory	512MB DDR II 400 (256MB onboard +256MB)
HDD	60GB
Graphics	Intel GMA900 (integrated on 915GM)
Optical drive	8X DVD/CDRW COMBO
Display	12 inch WXGA widescreen
Camera	1.3 megapixel digital camera
USB port	USB 2.0 X 3
1394 port	IEEE 1394 X 1
Card reader	SD MMC XD MS MSPRO
WLAN card	Intel PRO/Wireless 2200BG
Bluetooth	Built-in
LAN	100M
Modem	56K V92
Dimensions	12.01in x 8.66 in x 1.18 in

Note: Some items of the specifications, such as CPU and memory, might be slightly different from the actual product from different retailers.

Design

There is a lot that has been kept from the 12.1 inch widescreen S5 and M5 design philosophies. The successful black and white strategy used by both the S5 and M5 is also used here, as it has proved to successfully attract both male and female users alike. We have tried a black one.



What separate the W5A from its S5 and M5 predecessors is the new Sonoma platform and the mighty performance that comes from it. More on this in testing below.

The 12 inch widescreen TFT LCD is the first of its kind to come out of ASUS. The 1.3 megapixel camera is also very rare in notebooks of this type.

Although the W5A has integrates a camera module, most people still consider it an entertainment notebook. The truth is that the 12 inch widescreen display provides room for a wider keyboard, so keyboard feel is superior to many other entertainment notebooks. This is due not only to the design of the keys, but the size of the keyboard itself.



The same touchpad pointing device adorning the S5 and M5 is also applied here and integrated into the wrist rest. For added aesthetic appeal, the metal buttons use a brushed effect.

Worry not, however, if you've never gotten used to the ideas of touchpads, because the W5A comes with its very own wireless Logitech Cordless Optical Mouse for notebooks (resolution 800dpi), which is manufactured under OEM agreement for ASUS. Although Logitech has developed compact wireless USB receivers, that is not in use here. But that doesn't mean that there is an annoying wireless receiver somewhere – just the opposite: the wireless receiver for the mouse is hidden well inside the notebook's compact body, which makes things a lot easier on the user, because he/she can't forget to bring, connect, or lose it ever again.



Located at the upper left hand corner of the keyboard are the Power4Gear quick keys and a WLAN card power button.



Lighting up in cool blue after power-on is the notebook power button (also taken from the S5/M5) located on the upper right hand corner of the keyboard. The outer ring bearing the text "WWW.ASUS.COM".



At the left lower edge of the wrist rest are a set of status indicators that also illuminate in cool blue after power-on. They indicate the power, battery, HDD, WLAN, and CAPS status.



On the cover ASUS engineers have added two indicator lights for the power status and the battery. The power indicator light is illuminated constantly when the system is fully active, and flashes during system standby. The battery indicator, on the other hand, illuminates when the battery is charging, and is dark when the battery is fully charged.



Sound for the notebook comes from the speakers located directly beneath the screen. Unfortunately, there isn't a lot of space to work with there, so the speakers are limited in size. Be that as it may, the sound effects coming from them are quite good. Part of the reason for that is the Realtek ALC861-VS HD Audio chip installed inside the notebook.



Noise and Heat

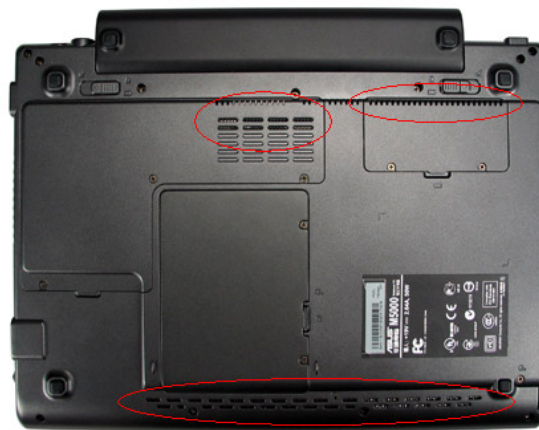
Most of the noise coming from the notebook can be narrowed down to the cooling fan inside, which starts to hum fairly loudly once the computer has been run at full speed for a certain period of time. Fortunately, the fan noise falls within what most will describe as the acceptable range. Once the system detects that things have cooled down sufficiently, the fan will cease to spin and the noise cuts out right there and then as there is basically no other significant source of noise from within the notebook other than the HDD, whose own noises are extremely insignificant.

Heat issues are never close to the user's mind as the major components are "hung" below the motherboard, which means their distances to the user's hands are maximized. The image below is the notebook's bottom cover sheltering the CPU area removed.



In the image there is a very thick heatpipe running across the 915GM Northbridge chip, the Pentium M processor, and the cooling system. The 533FSB Pentium M processor has a TDP higher than its predecessors of the two previous generations; reaching a total of 27W, which made cooling a high-priority design. The very thick heatpipe is therefore quite necessary.

Vents are strategically located to help with cooling neat the major heat-generating components, such as the memory.



Ports

This is the front end view of the W5A with nothing excessive here.



On the left are the 56K modem port, 100M Ethernet port, a 4-pin IEEE 1394 port, a USB 2.0 port, a 9.5mm DVD/CDRW combo drive, and a flash card reader supporting SD, MMC, MS, MSPRO, and XD formats.



On the right are the PCMCIA slot, volume adjustor, earphone & microphone jacks, a USB 2.0 port, cooling vent, and VGA-out port.



At the back we see the power adapter jack, an S-Video out connector, the battery, one USB 2.0 port, and the notebook lock.



Display

Two words describe the most important aspects of the 12 inch display: widescreen, mirror surface.



The 12 inch display provides a resolution of 1280 x 800, and should therefore show more onscreen content than 4:3 XGA monitors, which is excellent for business-use productivity. When it comes to entertainment, especially movies, the benefits of a widescreen are already well documented.

Every manufacturer has its own name for the mirror surface, but what is important is its make-up, which is a basic LCD panel, plus a light filtering layer and a reflective layer, for reduced glare, clearer contrast, and a brighter-looking screen.



The W5A provides 15 brightness level adjustments for the display.

The only gripe we have with the screen lie with the bezels. When most 17 and 19 inch LCD monitors are sporting bezels only 1.5cm/0.59in thick, what in the world is a 12 inch display doing with bezels 2cm/0.79in and 3cm/1.18in thick? It's a bit out of the ordinary, to say the least. It certainly isn't ugly, don't get us wrong. In fact, it is a very attractive design. Thanks to the bezels, the notebook has room for 4 quick keys and a full-size keyboard.



The W5A also uses the popular latchless design that allows the notebook to be opened with a minimum of effort.

Camera

ASUS wasn't the first to fit a camera onto a notebook, but it is one of the very few manufacturers to offer notebooks that do. The others though, most incorporate 350K pixel digital cameras, which aren't known to produce very impressive images. Here's where the ASUS W5A rocks.



The W5A camera has 1.3 megapixels for the maximum image resolution of 1280*960, or 4 times the size of 0.35 megapixel camera's 640x480 images. The W5A also incorporates a flipping mechanism similar to the Sony TR's to allow the camera a full 180 degrees of rotation. Worth mentioning here is that the W5A's camera is protected by a metal beam, allowing the user to peel open the screen from the center without having to worry about damaging the camera.



These are the actual pictures taken using the W5A's integrated camera:



640 x 480 standard image



1280 x 960 standard image



640 x 480 image of color palette

On the software side, the W5A comes with a very easy to operate image/video shooting title called LifeFrame, and the ASUS Video Security application, which operates as a monitoring and warning system. Any movement that is detected immediately triggers a warning.

LifeFrame



ASUS Video Security



Battery

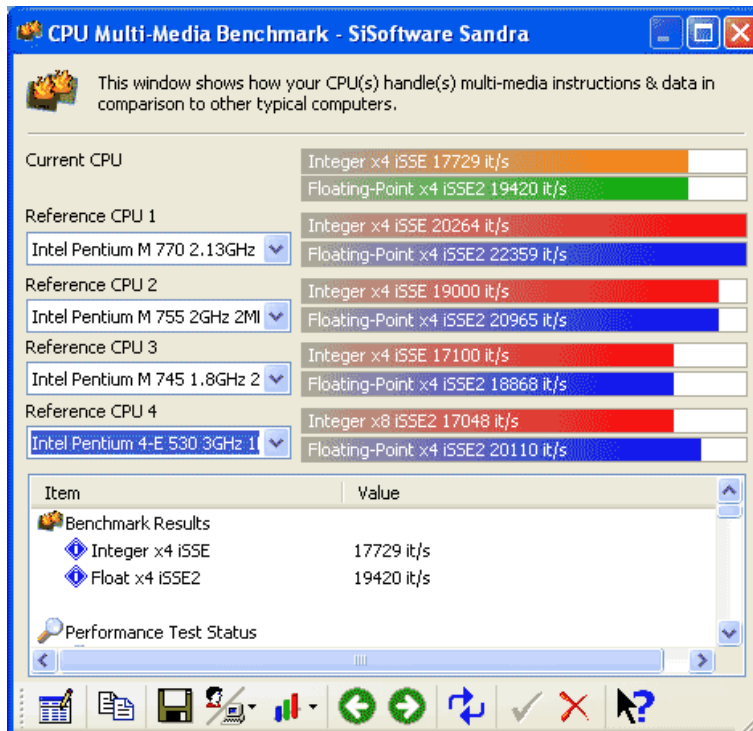
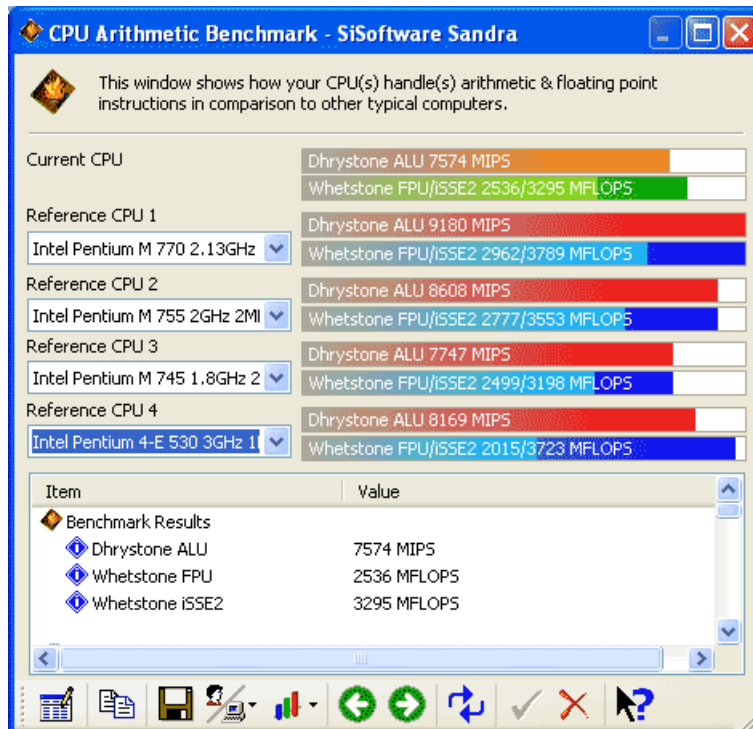
ASUS W5A is powered by a 6 cell, 4400mAH battery. Using MobileMark 2002, we established the 6-cell battery's running time to be 229 minutes (3 hours 49 minutes) using screen brightness of 50%.

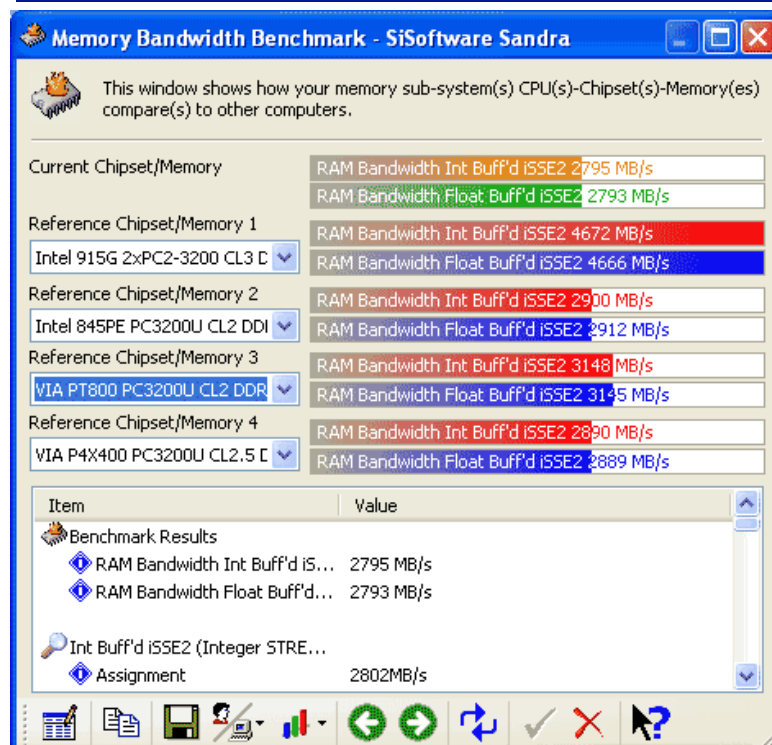
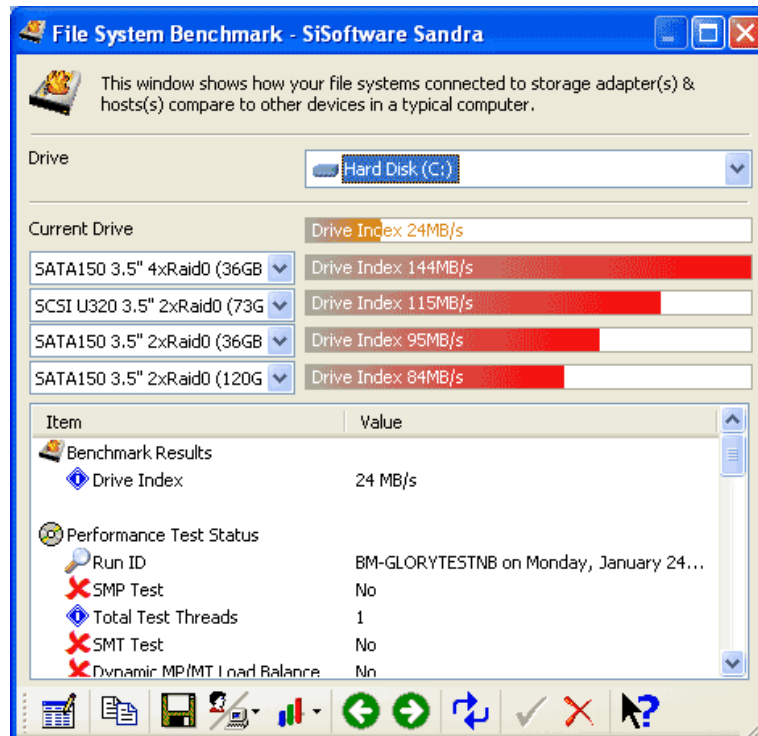
Performance Tests

We went into testing expecting a whole lot from the 533 FSB Pentium M processor, and we are happy to announce that we were not let down. Business and multimedia computations alike were handled with finesse, but the business side was slightly more outstanding. The bulk of the very impressive scores can be put down to the 2MB L2 Cache, and 533MHz FSB.

Sysmark 2002 score Overall	241
Sysmark 2002 score Internet Content Creation	290
Sysmark 2002 score Office Productivity	197
Mobilemark 2002 Performance Rating	221
Business Winstone 2004	20.7
MCC Winstone 2004	22.7
PCMARK 2004	3316

For the performance of subsystems we use Sisoft Sandra 2005:





The notebook's graphics performance was tested using 3DMark01 and 3DMark03 (1024x768, 32bit). The W5A scored 5046 3DMarks in 01 and 849 in 03. Intel's previous 855GME chipset achieved only 2300 3DMarks in 3DMark01, so the improvement is obvious. The GMA900 graphics processor's ability to break through the 5000 point level places it on equal footing with the ATI Mobility Radeon 9200.

Summary

The ASUS W5A's weight and size are both marginally above average as far as 12 inch widescreen notebooks go, but don't forget for one second that that body contains an integrated optical drive when most 12 inch widescreen notebooks do not; and the full-size keyboard that goes a long way towards guaranteeing a pleasurable typing experience.

A lot of performance is tucked away under those surfaces too, as the Sonoma platform's very impressive performance helps the ASUS W5A to achieve outstanding business and multimedia computation abilities. Add the stylish black/white (choose one according to your own taste) exterior, and the W5A is an extremely competent notebook that is worth recommending.