Performance per watt?

WA

Question

What is the performance per watt of the computers in my house?

Hypothesis

Asus is going to have the best performance per watt, because it is the newest.

Experiment Design

These are the materials that I used

1. Multimeter to measure the amount of watts that the computers draw.
2. USB flash drive with the testing software

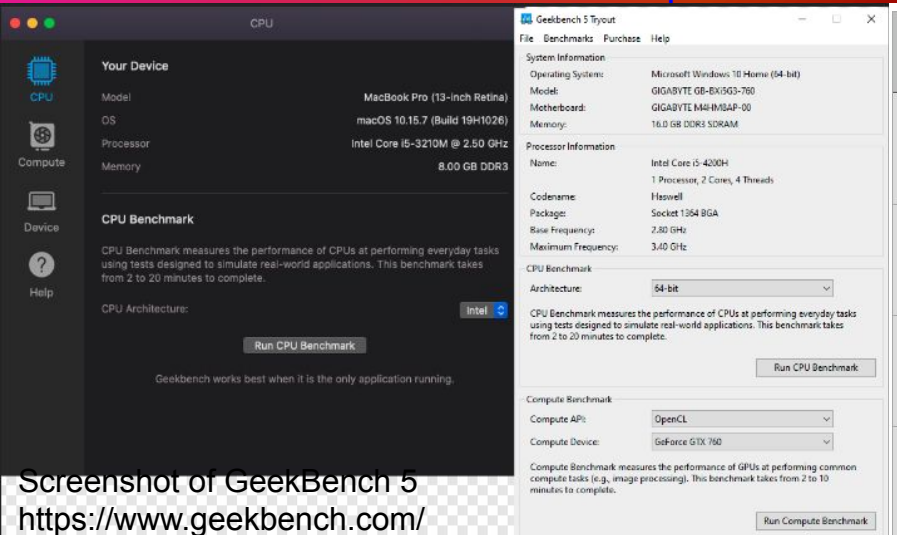
This is the Procedure of my experiment

1. Plug the computer into the multimeter
2. Plug the USB drive into the computer
3. Run GeekBench 5 test
4. Record the max power that the computer draws during the test

This is the multimeter

GeekBench

GeekBench is a free testing program made by Primate labs. It does three main work loads that test the CPU in different ways. The three workloads are cryptography, integer, and floating point calculations. Then, GeekBench assigns a score based on how fast the processor does the three workloads. The way that I calculate the performance per watt is I take the score that the computer gets and divide it by the max power that the computer draws. The reason that I take the max watts that the computers use is to show worst performance per watt.



Screenshot of GeekBench 5
https://www.geekbench.com/

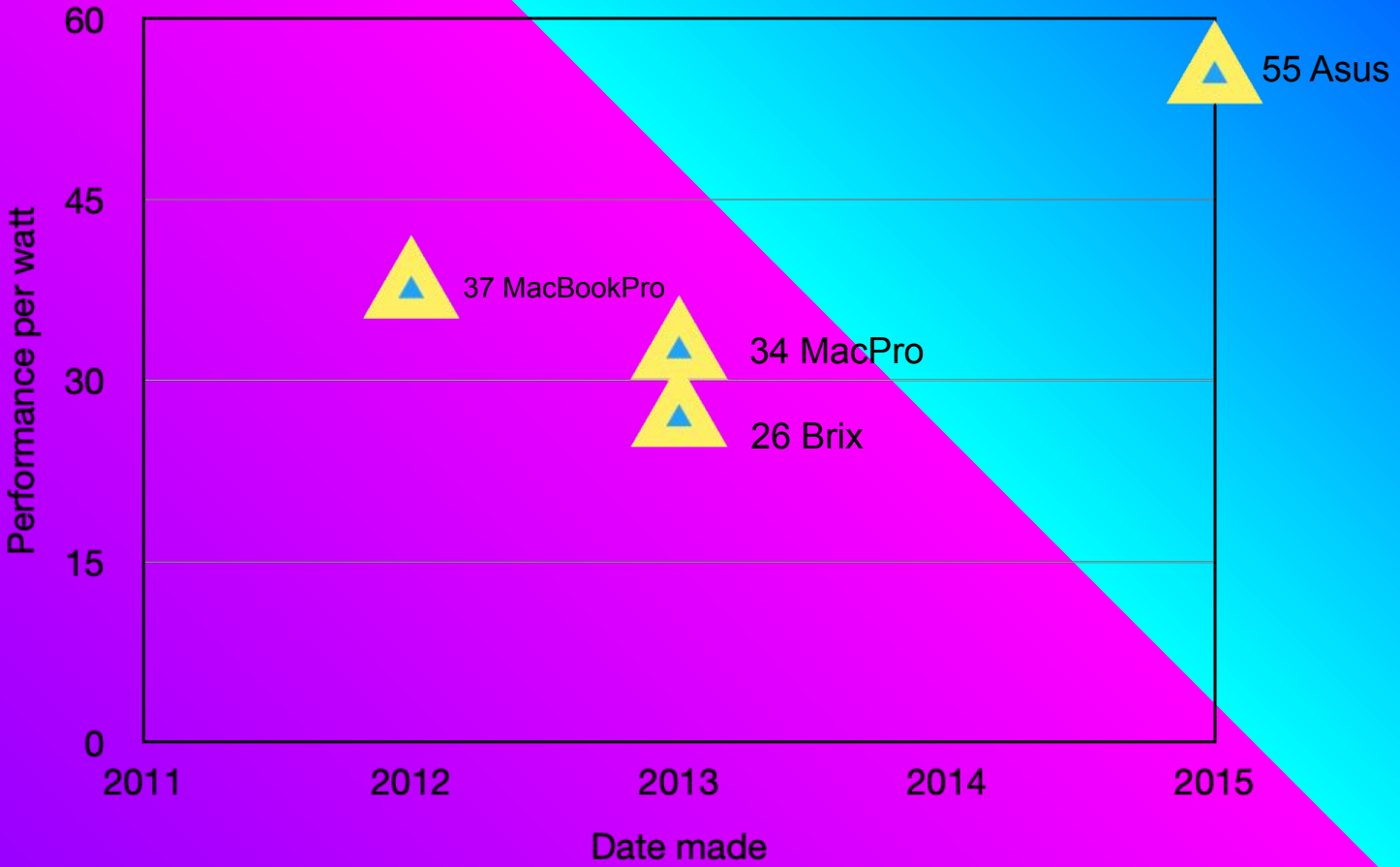
Model	Name in Presentation	CPU	CPU architecture, date made
Asus GR8 II	Asus	Intel core i5 6400 4 cores / 4 threads @ 2.7 GHz	Skylake 14 nm, 2015
MacBookPro10,2	MacBookPro	Intel core i5 3120M 2 cores / 4 threads @ 2.5 GHz	Haswell 22 nm, 2012
MacPro6,1	MacPro	Intel Xeon E5 1650 v2 6 cores / threads @ 3.5 GHz	Ivy Bridge EP 22 nm, 2013
GIgabyte Brix gaming bri5-760	Brix	Intel core i5 4200h 2 cores / 4 threads @ 2.8 GHz	Haswell 22 nm, 2013

Results

Asus had the best performance per watt at 55. It drew 56 watts and had a geekbench score of 3095. Second best is MacBookPro with a performance per watt of 37. It drew 37 watts and its score in geekbench is 1386. Following up closely in third place is MacPro with performance per watt of 34. It drew 154 watts and had a geekbench score of 5001. In last place is Brix with a performance per watt of 26. It drew 66 watts and had a score in geekbench of 1772.

Model	Name in Presentation	Score	Watts drawn	Performance per. Watt
Asus GR8 II	**Asus**	3095	56	55
MacBookPro10,2	MacBookPro	1386	37	37
MacPro6,1	MacPro	5001	154	32
Glgabyte Brix gaming bri5-760	Brix	1772	66	27

CPU Performance vs date made



Conclusions

Did your project confirm your hypothesis?

I confirmed my hypothesis in my tests, Asus is going to have the best performance per watt, because it is the newest.

What did you learn?

That the newer the processor is the more power efficient. Also that the performance is affected by other things like graphic cards and other components.