



Comparison of Laptop Computers

The purpose of this comparison is to help prospective laptop purchasers in their decision. In today's mobile climate, the average person can make good use of a reliable portable computer; this report is designed to help in that search. Of the many perspective computers, only several brands have been selected for this comparison. Those that have been selected are Pentium computers that boast the new MMX technology. MMX technology lends itself to portable computers because of the added internal processor cache, graphics acceleration, and lower power usage. The first two features add to the speed of the machine and the last to the travelling lifetime.

This report will compare laptop computers on the basis of the following: (1) features, (2) performance in hardware tests, and (3) price.

Options for Laptop Computers

Of the many laptops available, some equipped with MMX, only four specific computers were chosen. These computers are equipped with MMX processors and stood out among other MMX computers for their performance as well as their value. Those chosen for this comparison are the Compaq Presario 1080, the Dell Latitude LM M166ST, the Gateway 2000 Solo 2200 166MMX, and the Micron Transport XPE P166. These computers all have Pentium 166 processors with a variety of other features that will be discussed in the following.

Points of Comparison

The industry of computers is an ever growing and continually more competitive market. Many computer manufactures are emerging with well made, reliable systems that make a valid argument for themselves. Several of these computers are discussed below.

Features. Many different features are available on today's computer, but only the standard, essential features will be discussed here. These features are grouped into subheadings below for ease of use.

- *Memory:* Each computer has a processor speed of 166 MHz. The Compaq has the least amount of standard memory with 16 MB, with a maximum of 48 MB. Both the Dell and Gateway computers come with 40 MB installed with their maximums being 72 and 80 MB, respectively. The Micron had the most standard memory at 48 MB, having a maximum at 80 MB also. The Micron machine rates best in this area [1:144-145].
- *Weight:* For laptop computers, travel weight, that is the weight of all of the required equipment and carrying case, is very important. The Compaq and Dell come in with the lowest travel weight at 8.5 pounds. The Gateway came in right behind them with 8.6 pounds travelling. Of the four computers, the Micron was the heaviest, weighting in at 9.1 pounds. **The Dell and Compaq are the best in the weight department** [1:144-145].



- *Battery:* Another key factor for laptop computers is the length of time they can operate away from an outlet. The Dell computer had the longest rated battery life with a rating of 4 to 5 hours. Compaq's computer had a rating of 3 hours while Gateway and Micron's laptops were rated with 2.5 and 2.25 hours, respectively. Dell's computer has the best rating for battery life [1:144-145].
- *Storage:* All computers rely on their storage unit to operate for the use of programs and storing information. The Presario had the smallest standard hard drive at 1.4 GB. Both the Dell and the Gateway computers had 2.1 GB hard drives. Micron rates at the top for this category for its 3 GB hard drive [1:144-145].



Overall, the Latitude from Dell gets the best rating for this section. It's light weight and long battery life aid in portability, and while its hard drive and memory are average for this group, they are more than sufficient for good performance.



Performance. The various machines were put through their paces to determine their comparative performance. The several different tests are listed below as well as the various computers' performances. The numbers don't mean much on their own and are best used in comparison.

- *Windows applications:* The various computers were tested and scored on the execution time of eight top-selling Windows applications. The Compaq had the lowest score with a 29.4. The final three scored fairly closely together with the Dell coming in at 36.6, the Gateway having a score of 37.5, and the Micron having a score of 39.5 [1:140-141]. The Micron ranks at the top of this category.
- *Processor:* These tests were run by exercising the processor and memory with test that mirror the processor usage of many Window programs. The Latitude has the lowest rating at 322. Next in order for performance was the Presario at 328. The final two machines are fairly the same in this test with the Gateway testing at 331 and the Micron at 332 [1:140-141]. The Micron comes in at the top of this category also.
- *Battery:* Battery life was tested by performing a combination of down time and heavy activity for the extent of the battery lifetime. The Micron and Gateway computers ranked at the bottom with 2 minutes 20 seconds and 2 minutes 19 seconds, respectively. Dell's Latitude was next with a battery life of 2 minutes 30 seconds. Finally, the Compaq was rated at 2 minutes 32 seconds [1:140-141]. The Compaq was at the top in this category.

In this battery of tests, the Micron appears to be the leader. Although the battery life is lower than two of the machines, the difference is not enough to negate the Transport's superior performance in the other tests.

Cost. The computers were priced by the manufacturers suggested price, but the prices grow considerably when adding options. The Compaq Presario sells for \$4,299 for the average mail order price. The Latitude priced at \$3,999 direct. Gateway's system can be purchased for \$4,724 direct. Finally, and most expensively, the Micron sells for \$5,199 direct.



Table 1. Laptop Computer Comparison				
	Compaq Presario	Dell Latitude	Gateway 2000 Solo	Micron Transport
<i>Cost</i>	\$4,299	\$3,999	\$4,724	\$5,199
<i>Features</i>				
<i>Memory (std./max)</i>	16MB/48MB	40MB/72MB	40MB/80MB	48MB/80MB
<i>Weight (lbs.)</i>	8.5	8.5	8.6	9.1
<i>Battery (hrs.)</i>	3	4-5	2.5	2.25
<i>Storage (GB)</i>	1.4	2.1	2.1	3
<i>Performance:(number is rank compared with the other computers, 1 is best)</i>				
<i>Windows Apps.</i>	4	3	2	1
<i>Processor</i>	3	4	2	1
<i>Battery Life</i>	1	2	3	4

Conclusions

Table 1 illustrates the preceding comparison of features, performance, and cost. From this information, the following conclusions can be stated:



1. The Dell is best in the features in terms of portability and average for the other areas.
2. The Micron Transport covers the other aspects with high end hardware, but is somewhat heavy and the battery life is short.
3. The Transport leads in most of the performance areas and is not far from the front in the area of tested battery life.
4. The Gateway computer performs very well behind the Micron machine.
5. The Micron computer is the most expensive with the Gateway computer being reasonably priced behind it.
6. Although the Micron and Dell laptop computers provide slightly better performance in certain areas, these advantages are not worth their higher price tags.
7. The Gateway laptop provides essentially the same features and performance as the Micron but at a lower price.
8. The Gateway laptop computer is the best choice based on the preceding conclusions.



Recommendation

Based on these comparisons, I would recommend the Gateway computer. It performed well in all of the tests and had good standard features for the price. Also, it was priced lower than the Micron laptop.

Literature Cited

1. "MMX on the Fly." *Computer Shopper* (July 1997), 138-145.