

Recommendation Report: Purchasing a Palm-Held Personal Digital Assistant

This is a recommendation report for any individual interested in purchasing a palm-held personal digital assistant (PDA). PDAs have recently become a popular organizing and planning tool—they serve the function of cumbersome pen-and-paper day timers, address books, and to do lists in a compact, user-friendly electronic format. This report features palm-held PDAs, which are designed to be battery-operated organizers that generally contain a calendar, address book, memo pad, and calculator. Most palm PDAs use a pen-like stylus to enter data, include handwriting recognition software (usually featuring a type of shorthand called Graffiti) as well as onscreen keyboards, and have buttons that control power, scrolling, and other functions. They can also interface with PCs through a cable and with other PDAs through an infrared link. The purchaser of a palm-sized PDA needs to take into consideration the following criteria:

- Cost
- Display quality
- Dimensions
- Operating system
- Synchronization capability with desktop computers and software

The models tested for this report had all of the standard features listed in the paragraph above. All three have a retail cost of less than \$550, have at least 8 MG of memory, and are among the leading brands and styles in terms of sales.

Comparisons

There are many palm-held PDA's on the market today. The three models selected for comparison in this report are the Palm IIIxe, the Handspring Visor Deluxe, and the Casio Cassiopeia EM-500. The Palm is a classic palm-sized PDA and is a top-seller. The Visor is a Palm clone that comes in a choice of five case colors and is a close competitor with the Palm in sales. The Cassiopeia also comes in a variety of case colors and features an internal rechargeable battery as opposed to Palm and Visor's AAA alkaline batteries.

Cost. The cost of a PDA is primarily determined by the amount of memory it has and the display type. As a general rule, the more features and software a unit has, the higher the price [2]. This holds true in the models studied for this report. The Cassiopeia has 16 MG of memory, a color display, and several deluxe options that consequently give it the highest price, \$500. The more basic Palm and Visor models have the lowest retail price, currently about \$250 [3]. The Cassiopeia costs twice as much as the Palm and Visor, which have the same retail price.

Display quality. Large display screens dominate most of a palm-sized PDA's surface area, which is why they are also called screen-based PDAs [1:28]. This makes display quality a critical point in choosing a PDA. The screen should be clear and readable in low light, normal indoor light, in glare and out, and in bright sunlight. The Visor's monochrome LCD screen is the smallest (3.25-inch diagonal) and has 2-bit resolution with four shades of gray. The Palm's 3.4-inch diagonal monochrome screen is slightly bigger than Visor's and has 4-bit resolution with 16 shades of gray. The Cassiopeia's display is the only color display among the three. Its 3.9-inch diagonal screen is the largest and brightest of all the models [3]. Cassiopeia's larger screen and 65,536 colors give it the best display quality of the models tested, exceeding the Palm and Visor's smaller screens and displays in shades of gray.

Dimensions. A palm-sized PDA should be lightweight and fit comfortably in the palm of your hand or in a pocket. Cassiopeia, though pocket-sized, is bigger and heavier than the other two models tested. Narrower than Palm and Visor at 3.125 inches wide, it is the thickest PDA tested (5.1 inches) and the heaviest, weighing 8 ounces. The Visor is the widest at 4.8 inches, but is only 3 inches thick and weighs 5.4 ounces. The Palm is almost as wide and thick (3.2 and 4.7 inches, respectively) as the Cassiopeia, but at 4 ounces weighs half as much [3]. Though all three models can easily fit into your hand or pocket, the Palm is the lightest and therefore the best choice based on dimensions.

Operating system. There are two operating systems currently available for palm-held PDAs: Palm OS and Windows CE. Both the Palm and the Visor use the Palm OS operating system, whereas the Cassiopeia uses Windows CE [3]. The major advantages to the Palm OS system are quick start-ups and compatibility with a wide variety of e-mail programs and software applications. In contrast, Windows CE, like its desktop counterpart, is slow to start and its format is difficult to use on a PDA's smaller screen. The greatest weakness of Windows CE is that it can interface only with Microsoft software applications [1:29]. The Palm and Visor models use the versatile and fast Palm OS system and are therefore a better option than the Cassiopeia with its limited Windows CE operating system.

Synchronization. One of the most appealing features of palm-held PDAs is that they are capable of synchronization. This feature allows the user to link the PDA with a desktop PC through a cable or with another PDA through an infrared transmitter to quickly transfer information between the two units. While both Visor and Palm are able to interact with most e-mail programs and several types of personal organization software, word processing programs, and spreadsheets, Cassiopeia is limited to synchronizing with Microsoft Office and Microsoft Outlook **only** [1:8-29]. Another of Cassiopeia's limitations is that it is not compatible with Macintosh computers or software [3].

Most PDAs handle synchronization through a cable connected to the PC's serial port. Models using Palm OS (e.g., the Palm and the Visor) monopolize that port when in synchronization mode. Synchronization must be shut down in order to use other hardware such as a digital camera [1:28-29]. However, this problem of serial port monopolization is outweighed by the fact that both the Palm and the Visor are equally

superior to the Cassiopeia in their ability to interface with a wide variety of software applications.

Summary

The following is a summary of the comparison of the Palm IIIxe, the Handspring Visor Deluxe, and the Casio Cassiopeia EM-500:

1. All three models fall under the palm-sized, or screen-based, PDA category.
2. While the Palm and the Visor are the same price, the Cassiopeia retails for twice as much.
3. Of the models tested, the Cassiopeia has the only color display, the brightest and best resolution, and the widest screen.
4. While the difference in width and thickness among the three models varied slightly, all three could fit easily into a palm or pocket.
5. The Cassiopeia was the heaviest model tested, while the Palm was the lightest.
6. The Palm and the Visor run on the fast and easy-to-use Palm OS operating system. They are equally able to synchronize with many different e-mail and software applications.
7. The Cassiopeia's Windows CE operating system is slow to start, difficult to use on a PDA's smaller screen, and limited to interfacing with Microsoft programs only.
8. Though it has superior display quality, Cassiopeia's high cost, heaviness, difficult interface, and limited synchronization abilities make it the least desirable PDA model studied.
9. The Palm is inexpensive, weighs less than the other two models, has better monochrome resolution than the Visor, and uses the versatile Palm OS operating system. It is the best overall choice of the three PDAs studied in this report.

Table 1. Testing results of the Palm IIIxe, Handspring Visor Deluxe, and the Casio Cassiopeia EM-500			
Category	Palm IIIxe	Handspring Visor Deluxe	Casio Cassiopeia EM-500
<i>Cost</i>	3	3	2
<i>Display quality</i>	3	2	4
<i>Weight</i>	3	2	1
<i>Width/Height</i>	3	2	2
<i>Versatility</i>	4	4	1
TOTAL	3.2	2.6	2.0
Note: 1 = Poor, 2 = Good, 3 = Very good, 4 = Excellent			

Recommendations

Based on the testing results discussed in this report and on the ratings from Table 1, I recommend the following:

- The Palm IIIxe is the best choice for most people who want to purchase a palm-held PDA. It is lightweight, compact, inexpensive, has good display quality, and is uses a versatile operating system.

Sources

1. "The Palm in Your Hand." *Consumer Reports* (June 2000), 28-31
2. "Personal Digital Assistants: How to Buy." *What's the Best PDA.com*. 2000. [wysiwyg:/22/http://www.whatsthebest-pda.com/PDA_tutor2.shtml](http://www.whatsthebest-pda.com/PDA_tutor2.shtml) (31 January 2001).
3. "Comparison of Palm IIIxe, Handspring Visor Deluxe (Blue), and Casio Cassiopeia EM-500 (Slate Blue)." *Amazon.com*. 2001. <http://www.amazon.com/exec/obidos/handle-generic-form/102-8809447-9212906> (31 January 2001)