

Eye-Pal[®] Ace
Eye-Pal Ace Plus
Eye-Pal ROL

Placement Guide

Freedom Scientific, Inc.

www.FreedomScientific.com

440791-001 Revision C

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To register your product, visit <http://www.freedomscientific.com/forms/ProductRegistration>.

Safety and Maintenance

To keep the unit in good condition and to ensure safe usage, observe the following guidelines:

- Read the instructions in this user's guide before attempting to use the unit.
- Do not attempt to repair the unit or open its case. This product contains no user serviceable parts.
- Keep the unit away from wet areas, rain, and other sources of liquids or high humidity. Do not submerge the unit.
- Always operate the unit in a place where the temperature is between 10° and 40° C (50° and 104° F).
- Always store the unit in a place where the temperature is between -20° and 65° C (-4° and 149° F).
- Always use the unit on a stable, level, hard surface such as a desk or table.
- When cleaning the unit, unplug the power cord and apply a small amount of non-abrasive cleanser, such as the following, to a soft, lint-free cloth and gently wipe:
 - Water
 - Isopropyl alcohol
 - Petroleum benzene
 - Vinegar mixed with water at a concentration of no more than 10 percent vinegar, for example, 1.5 tablespoons of vinegar per cup of water (100 ml per liter)

CAUTION:

Do not apply excessive pressure to the screen. Do not spray cleanser directly on these items. Also, do not use any cleanser that contains the following agents: acetone, ethyl alcohol, ethyl acid, ammonia, or methyl chloride.

When cleaning the rest of the unit, make sure the unit is unplugged. Use a lightly dampened, soft, clean cloth with water or mild detergent.

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The Eye-Pal[®] Ace, Eye-Pal Ace Plus, and Eye-Pal ROL are able to scan and read many types of difficult materials such as food packages and glossy magazines.

While the device typically begins reading within 3-5 seconds for simple documents, it takes longer to process more complicated types of print.

Keep in mind that although the device has a 99% accuracy rate in reading a simply laid out page, no device offers 100% OCR accuracy. For example, you may find that an entire document may be accurate, aside from a website occasionally being read with a character omitted.

The document used to test all devices before shipment is a 1200 word single-column test page with 7.5 font size. The margin of error consistently measures at only 2-3 word errors out of these 1200 words.

Other documents that have graphics intermingled with text, text boxes, and different size columns, may result with some sections that read perfectly and other parts of the document that register a few errors. While many types of documents can be read well, the device will not be able to process every kind of document in the universe with such high accuracy.

But the good news is that by using the device features (such as the ability to switch from “Table Mode” to “Column Mode” by pressing and holding the left and right Daisy arrow buttons at the same time), portions of even the most difficult documents can often be read with very good accuracy.

Learning how to properly place documents will help you get the most out of your device.

Guidelines for Placing a Document to Achieve Optimal Device Functioning

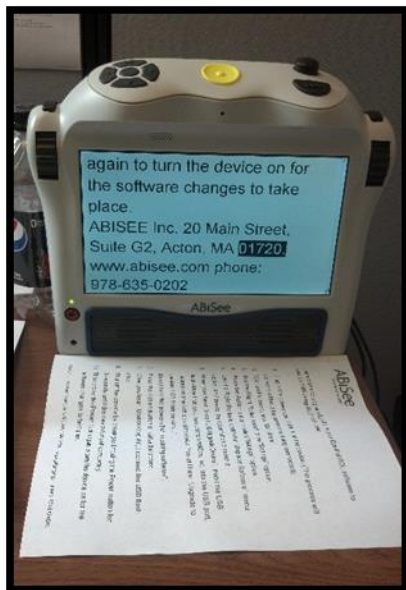
1. Make sure the bottom of your device is placed on a level surface, with a level 8 ½ by 11 inch landscape area available in front of the device for placing documents.
2. Make sure the surface being used, such as a table, is not wobbly and that the surface is not moved or shaken by knees or other means underneath the surface while scanning.
3. If the surface is dark or shiny, or has any pattern, place a blank sheet of white paper in the scanning area under any documents being scanned to minimize glare.
4. Make sure the document being scanned is lying as flat as possible and that your hands are not covering any of the text or interfering with the camera being able to capture the image.
5. If the lighting in the area where you are scanning is casting a variable shadow on the scanning area, it is possible that you will not get the “same read” when re-scanning the same document. It is important to find a location for scanning documents where there is even lighting. For example, make sure that you are not trying to scan near a window where streaks of sunlight may darken one side of a document and keep the camera from getting a clean image. A very bright ceiling light that projects over only part of the document may also impede the best camera results. Adhering to these guidelines will help your device to operate optimally.

The following sections describe the wrong way and the correct way to position and scan various documents and items.

One Column of Black Text on White Paper

This document was on 8 ½ by 11 inch paper and included a numbered list of directions

Average time to start reading after scan button is pressed: 8 seconds.



This simple document was aligned evenly in front of the device in landscape position with one side flush against the device. It scanned and read back with near perfect accuracy. The only error was that one period appeared as a comma on the print screen.

Glossy Gift Card

The card is 2 inches by 3 ¼ inches and made of glossy plastic with 100 words in tiny print appearing on the back.

Average time to start reading after scan button is pressed: 11 seconds.



When scanning a card such as this, it works best to place it on a blank sheet of paper, under the right camera about two inches away from the device.

The following illustrates how to get a better scan.

Incorrect Placement of a Glossy Item

First, the card was read with the device on a shiny dark surface directly underneath a florescent ceiling light that cast a glare. A small corner of paper not intended to be scanned was also accidentally situated in the scanning field area.



Still, some of the card read accurately, but then every word had errors and several sentences did not appear at all.

Correct Placement of a Glossy Item

Next, the device was moved to an area where there was not a florescent light directly over the scanning area, and the card was placed on a blank, flat, 8 ½ by 11 inch white sheet of paper. The card number was read with complete accuracy, as was the rest of the text except for six words out of 100 being one letter off.



Again, although this was not as accurate as the simple page, the device performed with much greater accuracy when the card was placed for optimal performance.

Paperback Novel

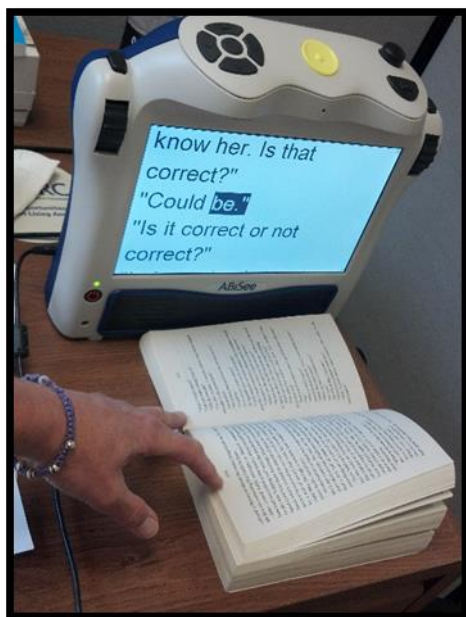
This book is 732 pages, 7 inches long by 4 ½ wide, 1 ¾ inches thick.

Average time to start reading two page spread after scan button is pressed: 6 seconds.

Incorrect Placement of a Paperback

First, the book was placed lengthwise in front of the device on a dark, veneer surface, and then held open to the pages needing scanned. The person scanning the book was standing next to the surface, pressing the pages from above.

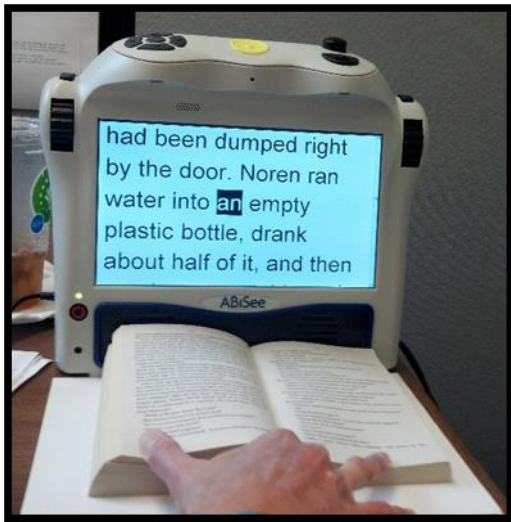
Since it's a thick book, the goal was to scan both pages so the process of scanning the whole chapter could be shortened. However, due to the dark surface along with the angle created by the book not laying entirely flat, it turned out that the camera was only able to capture the right-hand page. The portion scanned had great accuracy, with only one punctuation mark variance, and all words on the page completely spelled out correctly. Still, it ended up being frustrating because the content didn't make sense, given that the previous page was left off the image completely.



Correct Placement of a Paperback

Next, a sheet of blank, white 8 ½ by 11 inch paper was placed in front of the device in the targeted scan area. This helped avoid having the dark, shiny surface contrast with the dull finish of the book pages so that the camera could capture a uniform image.

Additionally, the book was turned so that both pages were flush against the device. The person scanning the book was now seated and by resting her hand on the surface while holding the book instead of pressing from above, she was able to flatten the book to a greater degree. The result was top-notch. Both pages read with every word spelled correctly. The only variance was errors with two punctuation marks.



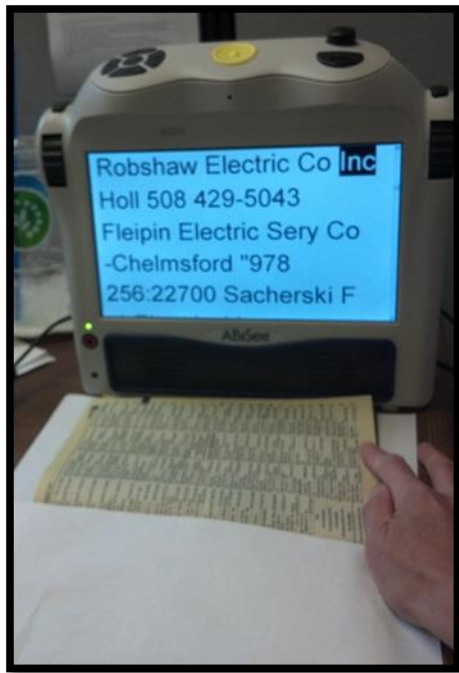
Phone Book

This sample is 8 ½ inches long by 6 ½ inches wide by ½ inch thick. Pages are laid out in four tight columns with only ¼ centimeter between them. The type size is only 2 millimeters.

Average time to start reading an individual column after scan button is pressed: 18 seconds.

A Good First Attempt

First, even with keeping the guidelines in mind, scanning under even lighting, keeping fingers away from the print, using a white background, and trying to place the book in different ways, the result was poor. Switching to column mode did not help. The information was jumbled and there were too many errors to make sense of it.

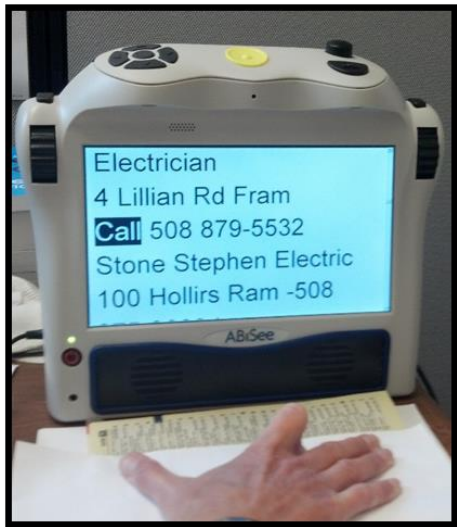


This is an example of the type of document in the category of “The device will not be able to process every kind of document in the universe with such high accuracy.”

A Better Scan

However, that being said, there is a way to access the phone numbers, albeit a process that takes much perseverance. Here’s what worked: When covering up all but one column with a blank, white paper, all of the telephone numbers in that column were able to be read with complete accuracy. There were six letter errors within the 68 lines of text.

The part that takes perseverance involves not being able to see where the columns start and end, so it could take several tries of starting from the right side and covering up an inch; scanning to see if it is readable, and then slowly moving the white paper to the left at small increments, stopping to scan and check if it’s in the right spot until accuracy is achieved.



At last, the phone number needed is read!

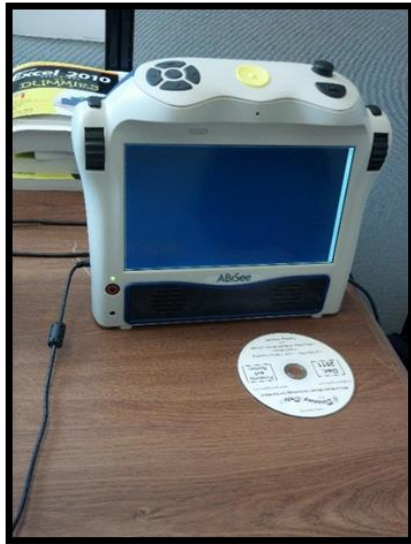
Compact Disc (CD)

This CD has black writing on a white background with a matt finish. The design includes a graphic with a cursive style font on top of a music staff, along with text that appears both the entire way across the disc as well as divided into columns, each having a text box and web/email addresses, followed by text that continues across the bottom portion of the disc.

Average time to start reading after scan button is pressed: 6 seconds plus a 3 second pause after the initial phone number is announce before the rest of the text continues to be read.

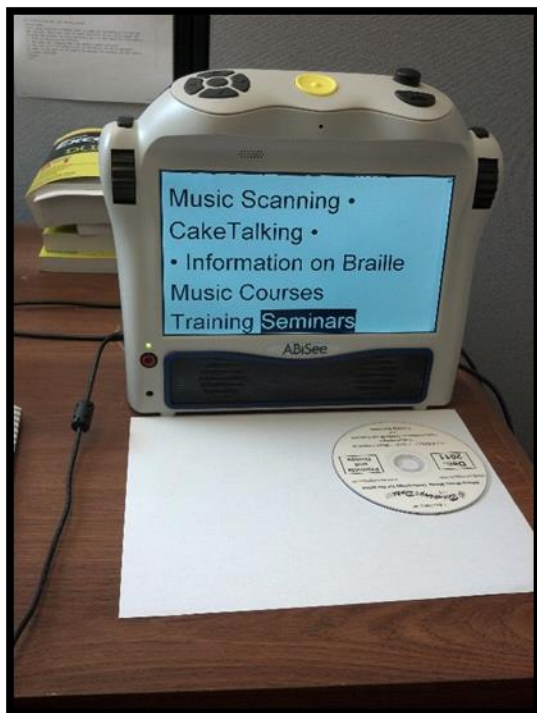
Incorrect Placement of a CD

When attempting to scan the disc by placing it on the dark brown, wood-patterned desk top in front of the device, the device took 59 seconds after the scan button was pressed to announce "Text Not Found."



Placement for Best Possible Outcome

Next, the disc was placed on top of a blank white page in front of the device. There were zero errors in the text that was read, but on multiple attempts, including switching from table mode to column mode and vice versa, the column with date and an email address on the cd was left off. As expected, the cursive style writing on top of the music staff was not read either. All of the other 25 words on the label were read. With this type of complicated layout, this method of placing the disc resulted in the best possible outcome.



Restaurant Menu

First, here are some comments about scanning restaurant menus in general. Given the countless variety of menu styles from laminated sheets with odd fonts to ones that come folded with a large hardback outer case that is larger than the 8/12 x 11 inch ACE/ROL scanning field, there are dozens of variables about how well the device will be able to read a menu. Certainly a one-column menu on a flat sheet in typical font with a good contrast for the print will be something that typically reads with great accuracy. Variables like symbols, menus that have multiple columns with text that changes from paragraph form to a table with prices on same page make reading more difficult. While many menus are laminated and can cast a glare, and many come in book form and don't lay flat, it is helpful that a great number of restaurants post their menus online. For those who use computers or who have access to having someone print a menu from the Internet, using the printed flat, non-glare page for scanning can solve many of those problems.

Although the example below is one out of an exponential amount of menu styles, it gives a general idea of a couple of minor barriers, how to get the best read in that context, and what to expect from your device.

Here's a description menu sample we used:

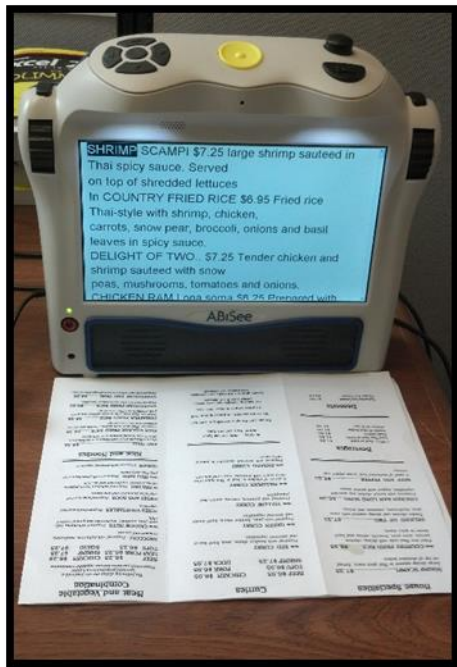
An 8 ½ X 11 inch tri-folded restaurant menu printed in black ink on white paper. The menu is laid out in three columns. Categories of food appear underlined in a bold, slightly non-traditional font. Food choices are listed in bold type in the same font, but are all capital letters. The description of each food choice dish is in italics in a more traditional regular-face type. Next to several of the dishes, there is a graphic design indicating the spice level. The menu has a total of 438 words on one side.

Average time to start reading unfolded three-column menu after scan button is pressed: 13 seconds.

Average time to start reading menu folded with one column under the camera: 8 seconds.

A Good First Attempt

The first attempt was to scan then menu unfolded in landscape position. As expected, the device was not able to process the non-traditional font on the underlined headings, such as House Specialties, Appetizers, etc. and it omitted all but one of these headings when reading. The symbols next to food choices that indicate spice level caused 9 spelling errors, where letters were inserted instead of the graphic, making the word next to it incorrect.



Ten other words out of the 438 had spelling errors. Some of these ten errors were the result of the menu being for a Chinese restaurant where the names of dishes are not in an English dictionary.

Another issue that occurred was that the top half of the first column included a format where descriptions of the dishes were listed in sentence form, but then mid-way down that page the format switched to a two column listing of beverages and desserts with the prices across the column from the choice. The device read all of the choices and then all of the prices. Then it moved to the middle column of the menu. Since the rest of the menu maintained a uniform format, there were no other issues.

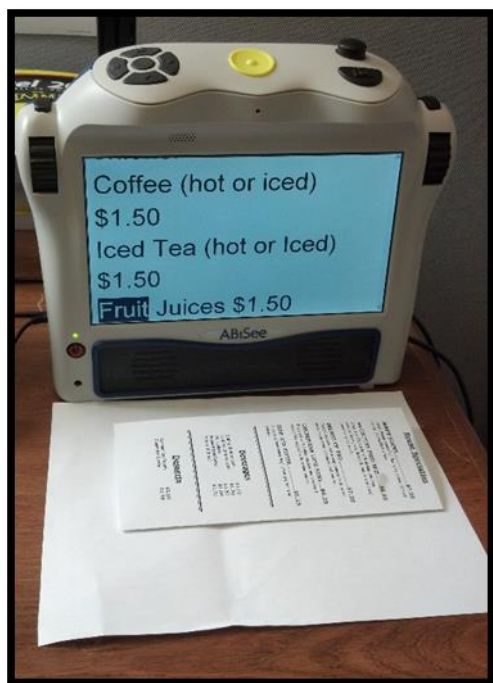
A Better Scan

Since the device was reading all the beverage and desert choices and then one price after another, it was easy to tell that the table mode function on the device needed to be enacted for the device to read that portion correctly. However, by having the menu open to the full page with all three columns placed under the camera, if the device was switched to table mode, it would continue to read over the next sections of the menu instead of just sticking with reading each beverage and then the price next to it.

This discovery was a clue that the menu needed to be folded to allow only one column at a time to be read by the device. Then, it can be set to read in table mode and all portions of that column will be read properly.

This method can be generalized to other types of documents where there is a mix of table format and column format on the same page.

Placement that enables use of both table mode and column mode according to what text is being read.



You can contact Freedom Scientific Technical Support to receive technical assistance.

Note: This device has no user-serviceable components. Any unauthorized attempt to service or replace internal components will void the product warranty.

To contact Technical Support by Web, visit **www.FreedomScientific.com**, choose Support, and complete the form to submit questions.

To contact by e-mail, send questions to **Support@FreedomScientific.com**.

To contact by telephone, U.S. customers can call **(727) 803-8600**, Monday through Friday, from 8:30 AM to 7:00 PM (Eastern Time).

When you call, please have your questions ready and be prepared to provide the following information:

- Product name
- Product serial number
- What you were doing when the problem occurred
- How you tried to solve the problem

To register your product, visit **www.freedomscientific.com/forms/ProductRegistration**.

Notes
