smart reader HD OCR

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User Manual

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Before You Start

Smart Reader HD is a fully integrated solution, offering the advantages of a built-in camera, long-lasting battery, and Optical Character Recognition (OCR). Smart Reader HD enables individuals with low vision to read by listening or by viewing the text with an attached monitor in color or enhanced high-contrast positive or negative modes. With easy-to-use buttons and dials, you can enlarge or reduce the text in seconds, and change viewing options for easier visibility.

Your Smart Reader HD is ready to use right out of the box. By reviewing all the Smart Reader HD features and controls before use and following the directions carefully, you'll be able to enjoy all the great benefits of your purchase.

About This Document

Reference the illustrations in this book as you follow the instructions. The next section, "Smart Reader HD Packaging and Accessories," provides an overview of everything included in your package. For information on using the buttons on the Smart Reader HD, see "Buttons on the Device" on page 13, "Advanced Button Combinations" on page 16, and "Long Button Presses" on page 18.

Many features on the Smart Reader HD are accessed by pressing a button or a combination of buttons. Button names are capitalized, such as the Color Mode button. Long presses refer to pressing a single button or combination of buttons for a duration of five seconds.

When an optional display device is attached to the Smart Reader HD, the menus are displayed. See "Menus" on page 34. When steps refer to text displayed on the Smart Reader HD screen, the text is bold. For example, the **Product Settings** menu is in boldface, as well as the **Languages** option on that menu.

Instructions for going to a menu option are given using right angle brackets **>**. When you see **User Settings > Audio > Volume**, for example, you use the Speed wheel to highlight **User Settings** and press the Play/Pause button, then you do the same for **Audio**, then again for **Volume**.

Smart Reader HD Packaging and Accessories

Smart Reader HD Packaging and Accessories

Take a few moments to familiarize yourself with the items included with the Smart Reader HD, which are illustrated on the previous page. Smart Reader HD includes software, a camera, and a mechanical assembly/chassis.

Packaged Items

1. Main unit

2. Transportation strap

    Note: Wrap this strap around your Smart Reader HD for transportation to ensure that the unit remains powered off and that the camera arm doesn't become damaged if opened by accident.

3. Power cord: May vary based on country.

4. 19V power supply

5. HDMI cable: Used to connect device to a TV or monitor via an HDMI port.

6. Lens cloth: Permits cleaning of the LED lights or camera lens.

Optional Accessories (Pictured)

7. Carrying case: Safe place to keep your device when traveling.

8. Control console with cover: Alternate way of controlling functions. Can be used with the cover on for Basic mode or cover off for Advanced mode. To use it, the control console must be plugged into the Smart Reader HD device.

9. USB hub: Allows you to have multiple USB peripherals plugged into Smart Reader HD simultaneously, such as the control console, USB microphone, or USB flash drive for use with the file import/export feature.

Optional Accessories (Not Pictured)

Headphones and a microphone are not included but available to purchase separately. On the left side of Smart Reader HD, a 3.5mm output jack is provided for use of standard headphones. A USB microphone can be added to record custom voice tags while saving files.

Note: Sound from Smart Reader HD speakers will not be available while the headphone jack is in use.

Setting Up Smart Reader HD

To set up Smart Reader HD, follow these steps:

1. Find a steady and level location, such as a table or desk, where you will be comfortable using Smart Reader HD.

2. Carry Smart Reader HD only by the handle on the back of the unit for a secure grip. Gently place it on the table or desk.

Warning: Do not lift Smart Reader HD by the camera arm.

3. Connect the power cord to the power supply.

4. Connect the power cord to an available electrical outlet.

5. Connect the other end of the power supply to Smart Reader HD where it is labeled "+19V DC" on the rear panel.

   Note: To offer additional protection during an electrical storm, a surge protector is recommended.

6. Ensure the rear panel switch is set to **I**.

7. Leave the Smart Reader HD connected to the power adapter for at least four hours prior to first use to fully charge the battery.

Checking the Battery Level

Your Smart Reader HD includes a rechargeable battery that can be continuously charged even while the unit is in operation. It is recommended that the unit remain connected (using the power supply included in the package) when the unit is not in use to maintain a continuous charge on the battery. This way, your Smart Reader HD will always be ready for portable use. When fully charged, the battery should last approximately eight hours.

Note: It is impossible to overcharge the battery included with your Smart Reader HD.

You can check the current battery level by following these steps:

1. Press the Previous Line button while pressing the Save button. The System menu is displayed.

2. Use the Speed wheel to navigate to the **Factory Settings** menu.

3. Press the Play/Pause button.

4. Use the Speed wheel to navigate to the **Product Information** option.

5. Press the Play/Pause button. The device announces system information, including the battery level. (If you attached an optional external display, such as a computer monitor, then the information is also shown.)

Turning On the Device

After setting up Smart Reader HD, follow these steps to turn the device on.

Tip: It is recommended that you allow your Smart Reader HD to fully charge a minimum of four hours before use. It has a built-in eight-hour battery.

1. Depressions are on the Smart Reader body behind each side of the camera arm. Use these depressions as guides for gently gripping both sides of the arm.

2. Pull out to begin opening the camera arm, then pull up until the arm is fully extended.

   A beep indicates that the device is starting up.

3. Wait until the device starts up, which is around 45 seconds.

   A sequence of beeps indicates that the device is starting up, and then "Ready to scan" is announced when the device is ready for use.

   Note: If you are using an attached display, a Smart Reader HD logo is displayed, then the live view is shown.

4. Connect optional accessories, such as the USB hub and control console, to the USB port on the back of your Smart Reader HD where it is labeled "USB."

Shutting Down the Device

When your Smart Reader HD is not in use, you may want to shut it down to save battery power. To shut down Smart Reader HD:

1. Press gently on the top of the camera head.

2. Continue pressing down until the built-in magnet holds the arm in place.

    A beep indicates that the device is shutting down.

If you receive a Critical Low Battery warning, either shut down the device or plug it into DC power to maximize the life of your product. Smart Reader HD will announce that it is powering down.

Transporting Smart Reader HD

Before moving the device, disconnect and secure all power and video cables. If you are moving Smart Reader HD a short distance across a desk or table, be cautious and do not pull on any power cords or connector cables.

Carry the unit only by the carrying handle located on the back of the device as shown in the following photo.

> *Warning: Do not carry Smart Reader HD by the camera arm.*

Before transporting Smart Reader HD, secure the camera arm with the transportation strap as shown in the following graphic.

Caring for Smart Reader HD

Before cleaning, ensure that your Smart Reader HD is completely off by closing the camera arm.

Clean Smart Reader HD with a soft dry cloth or an electrostatic dusting cloth. Do not use liquid cleaners on its plastic surfaces. The protective insert covering the camera and LED lamp can be cleaned as needed with the lens cloth provided with the Smart Reader HD.

Buttons on the Device

The buttons labeled on the previous page are described in the following table.

Label	Control	Description
1	Capture	Press either of these two orange buttons to perform OCR and begin reading. Press again to return to the live view, where you are ready to scan. You can press the Capture button to go to the live view from anywhere in the product, including menus, the library, or OCR readback.
2	Save	While in OCR preview mode, press and hold this button for five seconds to save a picture. While in OCR readback, press and hold this button for five seconds to display a prompt allowing you to save a single page or book, or to append pages to a book.
3	Library	Press and hold for five seconds to enter or exit the Library where saved files are stored. A quick press returns one level in the library carousel.
4	Previous Line	In OCR mode, press this key to navigate back one line of text. In Full Page Picture mode, press it to select the OCR zone where reading will begin.
5	Play/Pause	In OCR mode, press to pause/resume playback. When in the system menu, press to confirm a menu selection.
6	Next Line	While in OCR mode, press this key to navigate forward one line of text. In Full Page Picture mode, press it to select the OCR zone where reading will begin.
7	Volume wheel	Rotate the wheel to increase/decrease system volume. Also pans horizontally when viewing a picture in the Library.
8	Speed wheel	Rotate the wheel to increase/decrease system reading speed. Also, use it to cycle through selections in the system menu or pan vertically when viewing a picture in the Library.

Retractable Camera Arm

Your Smart Reader HD features a retractable camera arm. Review the expected range of motion of the camera arm—do not attempt to forcibly reposition or adjust the camera arm outside of the ranges demonstrated in the above figure.

Never lift the Smart Reader HD by the camera arm. Improper handling may cause damage to the device.

Advanced Button Combinations

Some features on Smart Reader HD are accessed by pressing a combination of buttons. This table describes how you perform functions by pressing two buttons simultaneously.

Function	Combination	Description
Brightness	Previous Line + Volume wheel	While in OCR preview mode, press Previous Line while rotating the Volume wheel to adjust brightness on the Preview screen.
Camera LED	Next Line + Library	While in OCR preview mode, a quick simultaneous press turns the LED light on or off.

Function	Combination	Description
Color modes	Next Line + Speed wheel	While in OCR readback, press Next Line while rotating the Speed wheel in either direction to cycle through the available color modes.
Language swap	Play/Pause + Previous/Next Line	Use this key combination to cycle through the list of available languages.
Menu	Previous Line + Save	Enter and exit the menu, where you can adjust settings, display the help information, watch an introductory video, view your library, and import/export files.
Next word	Play/Pause + Next Line	While in OCR readback, use this key combination to navigate forward one word at a time. The current word is highlighted.
Previous word	Play/Pause + Previous Line	While in OCR readback, use this key combination to navigate backward one word at a time. The current word is highlighted.
Time/date	Save + Library	While in OCR preview mode, use this key combination to invoke the built-in clock and time/date annunciation feature.
Zoom	Previous Line + Volume wheel	While in OCR readback, press Previous Line while rotating the Volume wheel to increase/decrease the size of your text.

Long Button Presses

Long presses refer to pressing a single button or combination of buttons for a duration of five seconds. This table describes functions performed by long key presses.

Function	Long Key Press	Description
Start of a document or previous page	Previous Line	Navigate to the start of a one-page document or to the previous page of a multi-page document.
End of a document or next page	Next Line	Navigate to the end of a one-page document or to the next page of a multi-page document.
Table mode scan	Capture	Reads the contents of a target document from left to right, making it ideal for documents formatted in tables such as receipts or bank statements. "Processing Table Mode" is announced when the feature is activated.
Delete item from the library	Play/Pause	While in the library, deletes the selected document or picture.
Factory reset	Previous Line + Save	Restores the default settings of your device, including color modes, volume, reading speed, and brightness.
Language quick presets	Play/Pause + Color Mode Up/Down (control console only)	Switches the language. If your language group is non-Asian, then pressing Play/Pause and Color Mode Up changes the language to English-American while pressing Play/Pause and Color Mode Down switches it to German. If your language group is Asian, pressing Play/Pause and Color Mode Up changes the language to English-UK, while pressing Play/Pause and Color Mode down switches it to Chinese-Cantonese.

Function	Long Key Press	Description
Reset pan position to center	Previous Line + Next Line (control console only)	Using the control console, you can reset the pan position to the center of an image by simultaneously pressing and holding the Previous Line and Next Line buttons.

Modes of Operation

Smart Reader HD has two operating modes, standalone and display. OCR scanning and readback are available in either mode. You can return to the live view at any time, even during OCR processing, by pressing the Capture button.

Standalone

With standalone, no display device is connected to the base unit. The menu and annunciations are optimized to be fully navigable through sound. After scanning a document, the OCR results are played back as speech through the front speaker in the base of the unit. Some features with strictly visual utility such as color mode adjustments are filtered out for users who do not have a visual display.

Display

With display mode, an external display such as a television or computer monitor is connected to the HDMI port on the back of the device.

Visual menus are available to change the settings and configuration options.

Note: The optional control console shown in the photo is sold separately.

OCR Mode

Scanning a Document

Smart Reader HD provides you with the ability to scan a document placed underneath the camera and read it aloud. The instructions work for both standalone and display modes. To scan a document and have it read aloud (TTS or text to speech), follow these steps:

1. Place the document under the camera and position the text within the guide frame or within the left and right boundaries of Smart Reader HD unit base.

    Note: Smart Reader HD supports multiple orientations for documents when they are scanned assuming they are viewable within the guide frame or aligned with the Smart Reader HD unit base.

2. Press the Capture button on the top of the Smart Reader HD. A camera shutter sound indicates that the system has taken a snapshot of the document, then OCR processing begins.

3. When OCR processing has completed in text modes, the document is immediately read aloud. In Full Page Picture mode, use the Next/Previous Line buttons to highlight the zone where you want reading to begin and press Play/Pause.

4. To exit OCR mode, press the Capture button on top of the unit. You are now ready to scan another document.

5. If desired, adjust readback features such as volume, color mode, and reading speed.

OCR/TTS in Display Mode

After powering on your device with a display, the Smart Reader announces that it is "ready to scan." Place your target document in the guide frame, which shows the viewable area of your camera and what will be read to you.

You can decide whether your scanned text should appear as a full-page picture, a full page of text, or a single line of text. When your document includes many tables, then a Table mode is available through the shortcut provided in this section.

See [OCR Mode](#) on page 43 for instructions on changing the display mode.

Full Page Picture Mode

In this mode, a photo of your target OCR scan is displayed. The current word is highlighted as it is read. Magnification is available for the scanned document like in the preview.

A picture of the image in the guide frame is displayed with zones, or blocks of text, to divide the target material. By default, boxes are used to indicate zones, which you can navigate while at minimum zoom using the Next/Previous Line buttons.

OCR readback will not engage automatically since you are given the option of choosing where to start reading. When you have highlighted the desired area, press the Play/Pause button. At any time, pressing Capture returns you to the OCR guide frame.
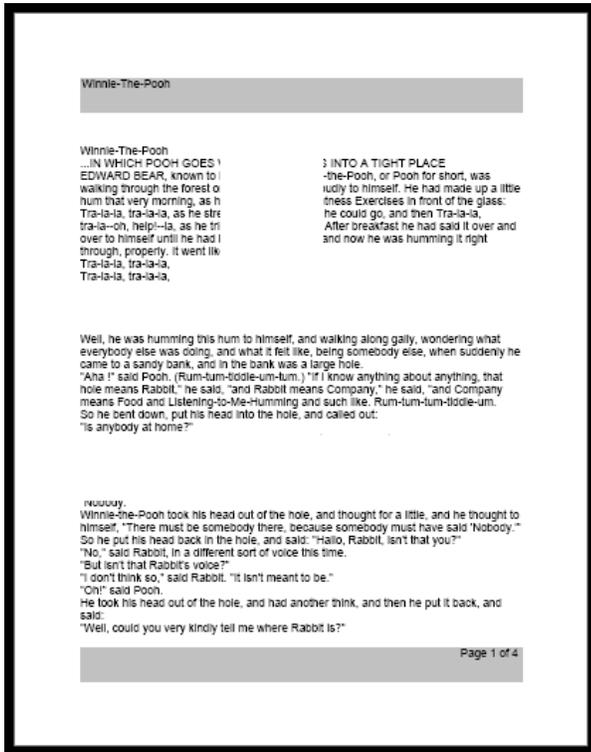
Full Page Picture OCR
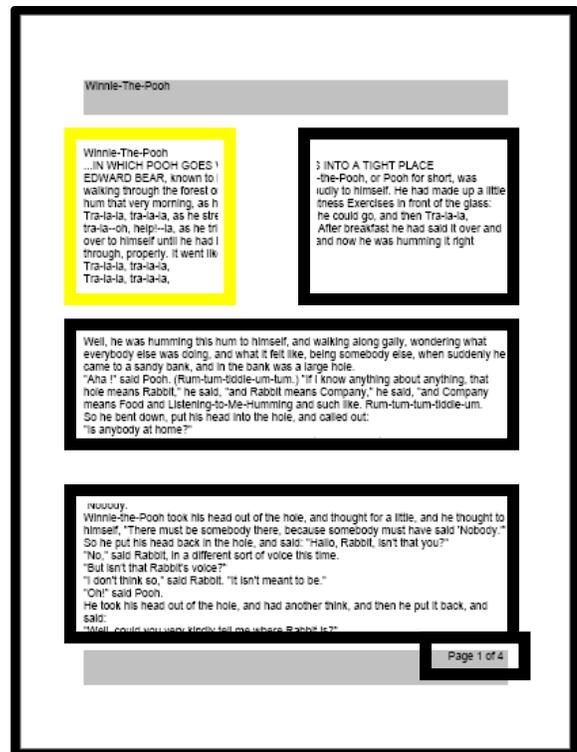
Zones

Full Page Text Mode

This viewing mode gives a crisp and clear representation of the text, which is displayed digitally in a word-wrapped columnar format. Magnification changes will dynamically adjust your material to ensure that it always extends the entire width of the screen.

The page is displayed as a full page of text during OCR readback. Words are highlighted as they are read to show you the current reading position. All navigation features are available. To return to the OCR guide frame, press the Capture button.

The text is organized into lines that can be navigated one word at a time by holding the Play/Pause button while pressing the Next/Previous Line buttons. You can move one line at a time using the Next/Previous Line buttons. To move quickly through the lines, you can hold down the Next/Previous Line buttons. The appearance of the word highlighting is based on your selected color mode.

Specific terminology is used to describe flowers and their parts. Many flower parts are fused together; fused parts originating from the same whorl are connate, while fused parts originating from different whorls are adnate; parts that are not fused are free. When petals are fused into a tube or ring that falls away as a single unit, they are sympetalous (also called gamopetalous). Connate petals may have distinctive regions: the cylindrical base is the tube, the expanding region is the throat, and the flaring outer region is the limb. A sympetalous flower, with

Single Line Text Mode

This mode displays the target text digitally one line at a time in the center of the screen to make the text as large as possible. Each word is highlighted as it is read, and the text scrolls so that the highlighted word is always in the middle of the screen. The highlight color is based on your selected color mode.

The text can be navigated one line at a time using the Next/Previous Line buttons. Also, the text can be navigated one word at a time using the Play/Pause and Next/Previous Line buttons. To return to the OCR guide frame, press the Capture button.

Specific **terminology** is used

Table Mode

This is a special mode designed to accurately read documents with many tables, such as bank statements or receipts. The text is read strictly left to right, top to bottom, regardless of format.

To use this mode, press and hold the Capture button for more than five seconds. When the scan starts, the device announces, "Processing table mode."

Table mode is activated for a single OCR scan and is available only in Full Page Text mode or Single Line Text mode. After the scan is complete and you exit, it returns to the previous mode.

Quick Language Swap

When you are in the OCR preview screen, you can cycle through the available languages one by one. This feature is particularly useful for situations where you are multi-lingual and change between several different languages but do not want to use the Auto-Language option. To cycle through the language list, press and hold the Play/Pause button while pressing the Color Mode button up or down (or Next/Previous Line).
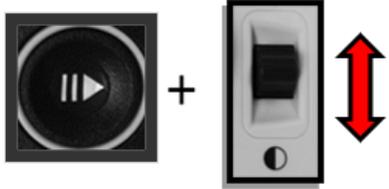
Optional Control Console

The control console is an optional accessory and sold separately. It offers an alternative way to operate the Smart Reader HD. Familiarizing yourself with the console will be helpful because how you configure the console will affect your user experience.

The control console for Smart Reader HD has an intelligent design that allows you to customize features on demand and switch between Basic and Advanced modes.

When the cover is on the control console, you are in Basic mode. When the cover is off, you are in Advanced mode. If you add or remove the cover, Smart Reader HD immediately detects the change and modifies available features.

OCR Basic Control Console
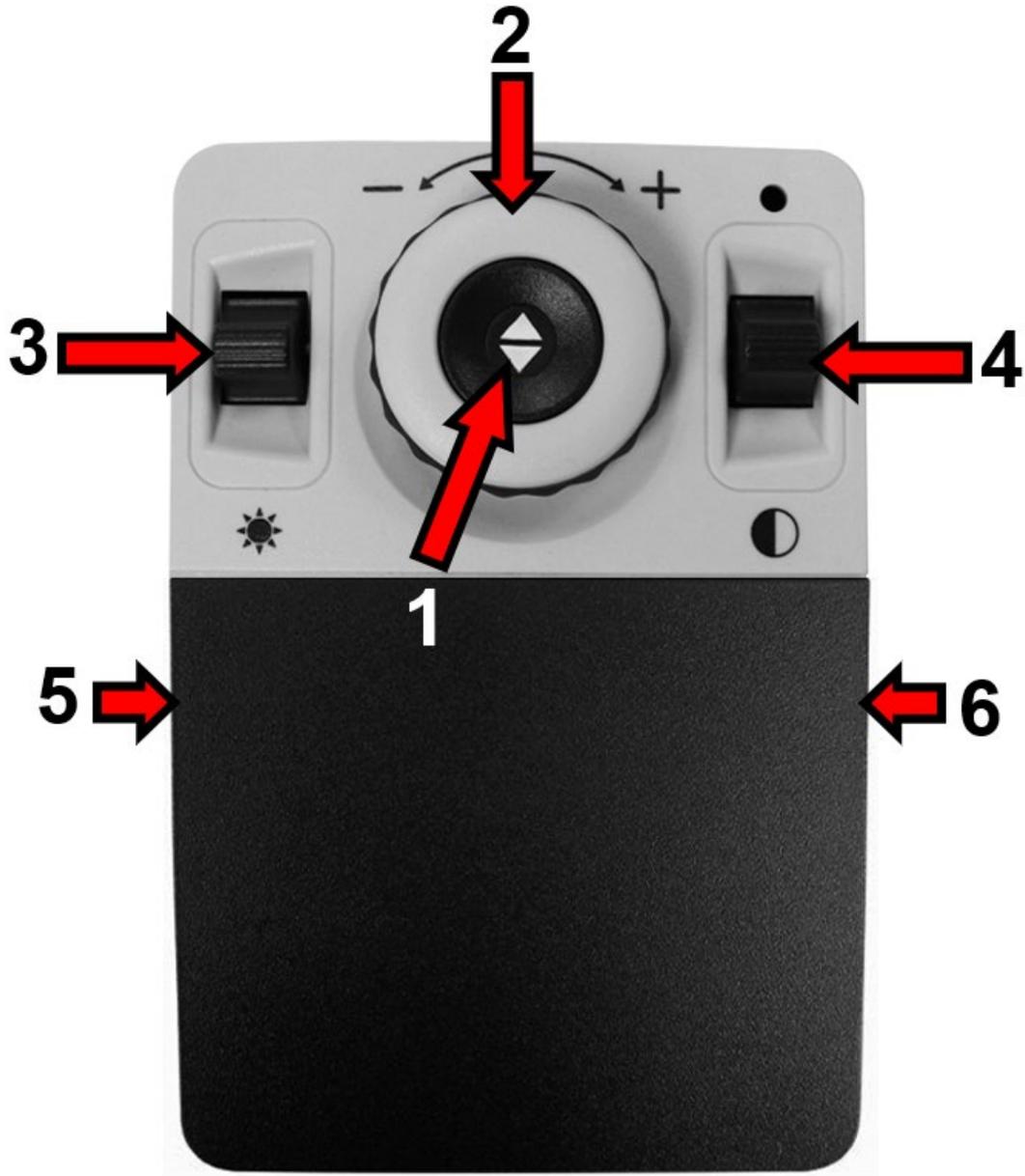
OCR Basic Control Console

Beginners may be more comfortable with the Basic mode. With the cover on the console, fewer features are available, but the product is easier to use. You still have access to the essential features necessary to magnify an object or perform an OCR scan.

To start an OCR scan, press the button in the center of the Zoom Wheel to start and press it again to exit. Reading (text to speech or TTS) begins immediately after a scan is completed.

The following buttons are active while you are in OCR Basic mode.

Label	Name	Description
1	Capture	Press this button to capture an image for OCR. Readback begins immediately. Press again to return to OCR mode.
2	Zoom Wheel	Turn clockwise or counterclockwise to increase or decrease the zoom level.
3	Play/Pause	After performing an OCR capture, press up or down to pause or resume OCR reading.
4	Color Mode	Press up or down to toggle through color viewing modes.
5	Volume	During OCR readback, rotate to increase/decrease system volume.
6	Voice Speed	During OCR readback, rotate to increase/decrease OCR playback speed.

OCR Advanced Control Console
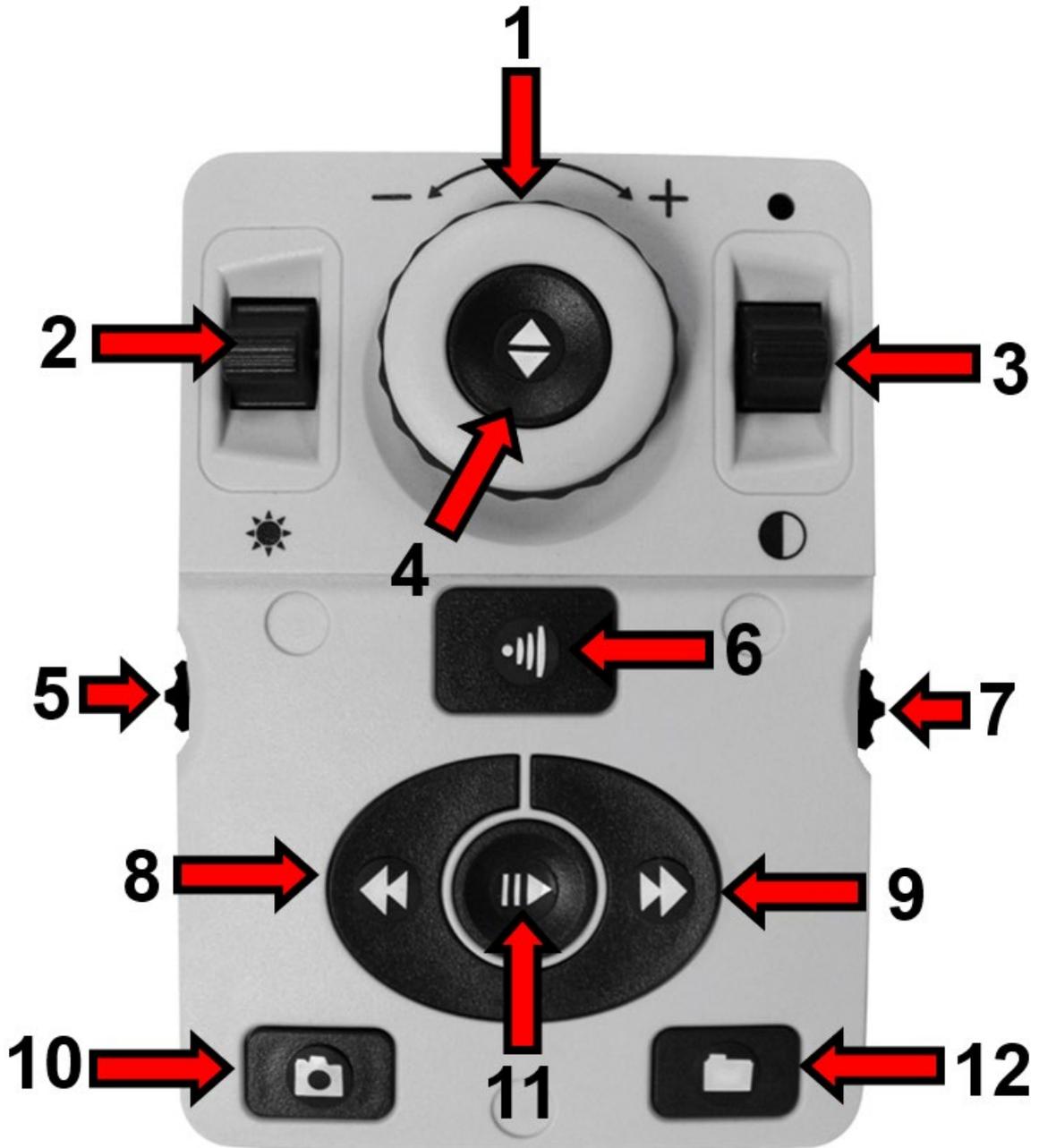
OCR Advanced Control Console

Advanced mode is when the cover is off the control console, giving you access to many additional features during OCR readback, such as saving, zone identifiers, and line navigation.

To capture an image for OCR, place your document in the frame that is displayed, then press the center OCR/Capture button. Reading does not start automatically because you control where reading starts by selecting a zone. When you put the cover back on, you return to live view in Basic mode.

The following buttons are active while you are in OCR Advanced mode.

Label	Name	Description
1	Zoom Wheel	When in OCR readback only, turn clockwise or counterclockwise to increase or decrease the zoom level.
2	Brightness	In live view, press up/down to increase/decrease brightness. While paused in OCR readback, use this button to navigate by word.
3	Color Mode	Press up or down to toggle through color viewing modes.
4	Find/Enter	Press to choose a menu or menu option. For example, you would use this button to select the **Audio** option on the **Settings** menu.
5	Volume	Rotate to increase/decrease the volume during readback.
6	Voice Speed	When in OCR readback, rotate the speed dial clockwise or counterclockwise to increase or decrease the playback speed.
7	OCR/Capture	Press to capture an image for OCR. Press again to exit OCR and go back to the OCR guide frame.
8	Previous Line	In, press to move to the previous line during OCR readback or to move to the previous zone while in Zone Overview.
9	Next Line	In OCR mode, press to move to the next line during OCR readback or to move to the next zone while in Zone Overview.

Label	Name	Description
10	Save	After performing an OCR scan (either during OCR playback or while paused), press and hold for two seconds to save the current OCR file. Perform the same operation while viewing the OCR guide frame to save the image as a picture.
11	Play/Pause	Press to toggle between pause and resume play during OCR playback.
12	Library	Press and hold for two seconds to enter and exit the library. Rotate the Zoom wheel to navigate. Press the Library button briefly to return one level. Press the Find button to select your target.

Adjusting User Settings

You can customize the Smart Reader HD by adjusting user settings. This section provides instructions for making changes that do not require you to go to the menus. You can make these adjustments while in OCR readback or OCR preview mode. For example, you can change the magnification, adjust the volume, and change the brightness of the display.

User settings are also available from the menus. For descriptions of all user settings, see the "Menus" chapter beginning on page 34.

Magnification

While in OCR readback mode, adjust the magnification by pressing the Previous Line button and turning the Volume wheel at the same time. Turning the Volume wheel clockwise will increase magnification, and turning the wheel counterclockwise will decrease the magnification of both images and text in Full Page Picture mode.

While you change the magnification, the zoom level is displayed in the upper corner of the screen and shows you when you reach maximum or minimum magnification. The upper magnification limit is different depending on which OCR mode you use.

On Board Control for Magnification Adjustment

Press and hold the Previous Line button and rotate the Volume wheel clockwise to increase magnification or counterclockwise to decrease magnification.

Volume

On the left side of the base, rotate the Volume wheel clockwise to increase the volume or counterclockwise to decrease it during OCR readback or OCR preview.

You can also adjust the volume while connected to an external monitor by going to **User Settings > Audio > Volume**.

Note: If you are not connected to an external display, then all audio and sounds are automatically enabled.

Colors

Press the Next Line button on the base while rotating the Speed wheel on the right side to cycle between full-color and six color combinations. Smart Reader HD offers a range of choices in both text and background colors to provide optimum viewing for people with certain visual conditions. You can choose from 31 color combinations by changing your preferred color modes. For more information, see "Display" on page 40.

On Board Control for Changing the Viewing Mode

Press and hold the Next Line button and rotate the Speed wheel clockwise to cycle the next color mode or counterclockwise to cycle to previous color mode.

Factory defaults, which provide commonly used color combinations, are described in the following table. Color will always be available, but you can change the other defaults.

Name	Description
Color	Gives a true color representation of the image being magnified.
Black on white	Provides an enhanced positive representation of the image being magnified, providing a white background with black text. It increases the contrast to offer crisp text images for reading.

Name	Description
White on black	Provides an enhanced negative representation of the image being magnified, providing a black background with white text. It increases the contrast to offer crisp text images for reading.
Green on black	Provides a black background with green text.
Yellow on black	Provides a black background with yellow text.
Yellow on blue	Provides a blue background with yellow text.
Black and white	Gives a black and white representation of the image being magnified.

Brightness

In the OCR preview mode, press and hold the Previous Line button and rotate the Volume wheel clockwise to increase brightness or counterclockwise to decrease it.

Changing the Brightness in OCR Preview

Press and hold the Previous Line button and rotate the Volume wheel clockwise to increase brightness or counterclockwise to decrease brightness.

You can also adjust brightness while connected to an external monitor by going to **User Settings > Display > Brightness**.

Menus

This section provides a description of each menu and its options in the order in which they appear on the screen. If you connect the Smart Reader HD to an optional display, such as a monitor or TV, then you can view the menus and options that enable you to personalize your settings.

To access the menus, follow these steps while in OCR preview mode:

1. Press the Save and Previous Line buttons on the base to access your Smart Reader HD system menu.

2. Turn the Speed wheel in single increments to scroll through your available options. Smart Reader announces each option as you turn the wheel. The current option is highlighted.

3. Press the Play/Pause button on the base to select an option. When you select an option, the box next to it turns black to indicate it is active. A white box is displayed next to inactive options.

4. For lengthy menus, select the triangle at the bottom of the menu and press the Play/Pause button on the base to display more options. Select the triangle at the top to return to previous options.

5. To exit a sub-menu, select **Exit** and press Play/Pause. To exit the entire menu, press the Capture button.

Introduction

An introduction video has been included with your Smart Reader HD to provide an overview of its features.

To play the video, select **Introduction** from the main menu and press Play/Pause. Press the same button to pause it.

To skip forward or backward 10 seconds in the video, press the Previous Line or Next Line button.

To exit the video, press the Previous Line and Save buttons.

User Settings

The **User Settings** menu contains configurable options to fine-tune your user experience.

• To navigate through the menus, rotate the Speed wheel.

• To select a menu option, press the Play/Pause button.

EXIT
Audio
Display
Time & Date
OCR Text Recognition

Menu Option	Action
Audio	Set your hardware sounds, mechanical sounds, and voices.
Display	Control all graphical user interfaces, icons, and visuals.
Time & Date	Set the system time and date, which can be displayed as your screen saver.
OCR Text Recognition	Determine optical character recognition (OCR) characteristics, such as colors, zones, and highlighting.

Audio

The Audio menu allows you to set your sounds and voices. Sounds include hardware and mechanical sounds, such as button clicks and chimes.
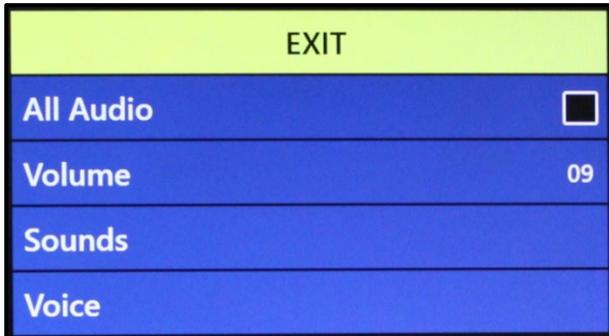
Note: If you are not connected to an external display, then all audio and sounds are automatically enabled.

The **Audio** menu has four options, which are explained in the following table.

Menu Option	Action
All Audio	Enable or disable all audible sounds and voices. • **On** – All the default voices and sounds are available. • **Off** – All sounds are turned off and the other audio options are unavailable.
Volume	Set the default volume level for all audio (1 is lowest and to 10 is highest) by rotating the Speed wheel.

Menu Option	Action
Sounds	Toggle these options on or off: • **All Sounds**– Enables or disables button clicks and chime sounds. • **Button Clicks** – Enables or disables the button click sounds only. • **Chime Sound** – Enables or disables the chime sound and startup beep. <table><tr><td colspan="2">EXIT</td></tr><tr><td>All Sounds</td><td>☐</td></tr><tr><td>Button Clicks</td><td>☐</td></tr><tr><td>Chime Sound</td><td>☐</td></tr></table>
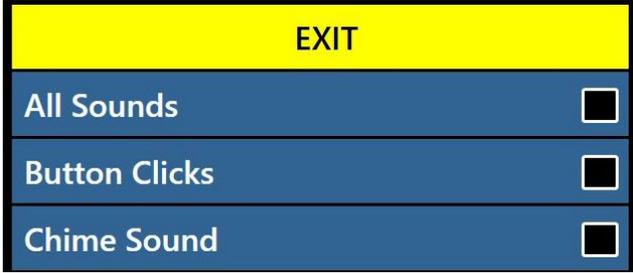
Menu Option	Action
Voice	Select from the following options: • **All Voices** – Enables or disables all voice prompts on the system. • **Menu Voice** – Enables or disables voice prompts for system menus. • **Message Voice** – Enables or disables voice prompts for on-screen messages. • **Alerts and Warnings** – Enables or disables voice prompts for messages that warn of system conditions, such as "No files found," "Document saved," or "Ready to scan." • **Voice Gender** – Specifies the gender of the announcing voice. If only one selection is shown, then the voice is available in only one gender in the selected language. • **Voice Speed** – Specifies the speed that the voice reads.

EXIT

All Voices ■

Menu Voice ■

Message Voice ■

Time & Date Voice □

Alerts & Warnings ■

Voice Gender

Voice Speed 03
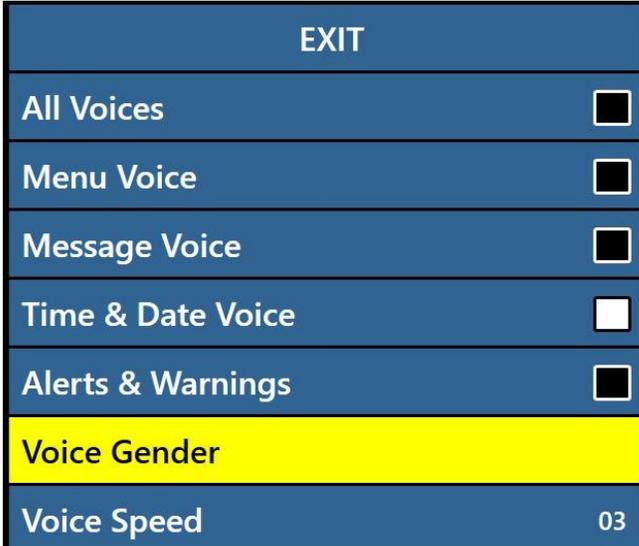
Display

Display settings control all graphical user interfaces, icons, and other visuals on the Smart Reader HD.

EXIT	
Screen Messages	■
Brightness	07
Icons & Visuals	
Preferred Color Modes	
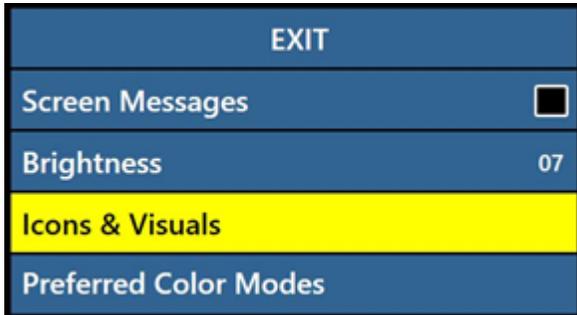
See the following table for a description of each option on the **Display** menu.

Menu Option	Action
Screen Messages	Specify whether you want messages to display, including system and software notifications, warnings, and alert messages. When lights are turned on, for example, a "Lights on" message would display. Other examples are "Saving," "Export complete," and "Factory settings restored."
Brightness	Select the brightness level (1-10) for the LCD display and user interface.
Icons & Visuals	Enable or disable the icons for lights and panning, such as lights on/off or icons indicating preview, live, or freeze mode.
Preferred Color Modes	Select the color combinations included in the rotation of choices when you press the Color Mode button on either the control console or the front panel. The device comes pre-loaded with several color defaults, but these can be changed. Factory defaults provide commonly used color combinations. Color will always be available, but you can change the other defaults.

Time & Date

```
┌─────────────────────┐
│                     │
│   10 : 41  AM       │
│                     │
├─────────────────────┤
│  Sunday             │
│  Sep    11   ,  2016│
└─────────────────────┘
```

Smart Reader HD remembers the current time and date once it is set. To set the date and time, follow these steps:

1. In the **Time & Date** menu, select **Set Time & Date** and press the Play/Pause button.

2. Rotate the Speed wheel until the value you want is displayed, then press the Play/Pause button.

3. Repeat the previous step for each part of the time and date.

4. Press the Next Line button to finish setting the clock and return to the menu.

Note: While in live view, you can display the clock by pressing the Save and Library buttons together.

See the following table for a description of each option on the **Time & Date** menu.

Menu Option	Action
24-Hour Format	Enable this option to use military time, where a 24-hour clock is used rather than AM and PM For example, 2 PM would be 14:00.
Date Format	Enable one of these options to determine how the date is displayed, where D is day, M is month, and Y is year: • **DD.MM.YYYY** • **MM.DD.YYYY** • **YYYY.MM.DD**
Set Time & Date	Set the current time and date. To finish setting the clock and return to the menu, press the Next Line button.

OCR Text Recognition

Specify how you want to capture text using the options in the following table.

Menu Option	Action
Guide Frame	Set the color of the boundary while in OCR mode. The boundary helps you position your text before an OCR scan.
Zone Identifier	Determine whether zones are identified by rectangular boxes or numbers. In Full Page Picture mode, scanned text is broken up into blocks called zones to help you organize the content.
Zone Boundary Color	Specify the color of the zone identifier (box or number) that organizes scanned text into blocks.
Reading Highlight	Specify the color of the box around the word currently being read in OCR readback mode.
OCR Tune	Determine the type of processing sound that occurs after an OCR scan. Choose from three sounds or turn off the sound.

Menu Option	Action
OCR Attributes	Choose between faster processing times or higher OCR accuracy. • **High Performance** uses a processing method designed to provide a good OCR result relatively quickly. If your target document uses common fonts and is not very complex, then this method will suit your needs. • **High Precision** is designed to achieve more accurate results but will do so more slowly when compared with High-Performance mode. If you are concerned with the overall accuracy of your OCR scan results or have a complex document with smaller fonts, it is recommended that you use High Precision.
OCR Modes	Select how OCR text is displayed: • **Full Page Picture** mode displays a picture of your OCR scan and organizes it into zones. • **Full Page Text** mode displays a digital text version of your OCR scan with pictures removed. It fully covers the screen in a columnar format. This is the default setting. • **Single Line Text** mode displays a digital text version of your OCR scan with pictures removed. It covers a single line on the screen and features the largest text magnification level.

Product Settings

This menu allows you to update the default languages and screen saver settings. It's also used to set the auto language feature.

Languages

This menu sets the default primary language. The factory default is English-US. All the text and prompts are displayed in the selected language. You have a choice of 32 languages and dialects across two language groups, Western and Eastern. Your language group depends on your location.

You can change your language either from American English to German (Western or non-Asian language set) or from English-UK to Chinese-Cantonese (in the Eastern or Asian language set) by pressing and holding the Play/Pause button, then press and hold the Color Mode button either up or down for five seconds.

To change your language preference, follow these steps.

1. From the **Product Settings** menu, turn the Speed wheel to select **Languages**.

2. Press the Play/Pause button.

3. Turn the Speed wheel to select the desired language is selected.

   Note: To see more languages, select the triangle at the bottom of the menu and press the Play/Pause button.

4. Press the Play/Pause button. A black box next to that option indicates that the language is enabled. After a moment, the system screen changes to the language you selected.

Auto-Language

With Auto-Language enabled, multiple languages are automatically detected and read during OCR without having to reset the language. Language-specific characters are detected in each portion of text, and once processing is complete, text-to-speech begins reading in the correct language.

The Auto-Language feature is recommended for those who read multi-lingual materials or swap between a variety of languages frequently. If you tend to read in a single language, it is recommended that you leave this feature disabled for the best OCR result.

To enable this feature, select the **Auto-Language** option and press the Play/Pause button. Once this feature is active, a box is displayed next to each language in the list. Turn the Speed wheel and press the Play/Pause button to select each language that you need. A black box is displayed next to each selected language.

See "Quick Language Swap" on page 25 for more information on changing languages during OCR preview.

Screen Saver

You can adjust the overall time it takes for the screen saver to engage and select the screen saver you want to view. The screen saver is activated after a certain time interval where the device is not in use and the camera doesn't detect any motion under the camera. Options are described in the following table:

Menu Option	Action
Set Screen Saver Time	Specifies how long the device must remain idle before it enters screensaver mode. Options are 5, 10, 20, and 30 minutes.
OFF	Enables or disables the screensaver feature. When you make this selection, no other screen saver options are available.
Company Logo	Uses the Enhanced Vision animated logo as a screensaver.
Pictures	Cycles through your saved pictures as a screensaver.
Default	Cycles through a gallery of high-quality images as a screensaver.
Clock	Displays the current time and date like a digital clock as a screensaver.

Help

Only available when connected to an optional display, the Help Menu provides available Smart Reader HD shortcuts and key presses. This information is handy to reference when you are getting to know the device.

When you select the Help menu and press the Play/Pause button, the Quick Start Guide is displayed. Navigate through the guide using the Previous Line and Next Line buttons.

To exit this menu, press and hold the Save button on the base while pressing the Previous Line button.

Exiting from the Help Menu

Press up and hold the Save button while pressing Previous Line on the base.

Library

The Library is used to store your pictures, pages, and books. To enter the library, press and hold the Library button on the base or optional control console. You can also choose **Library** on the system menu.

Note: Some Library features are only available if you are using an optional display device. Other features are available only if you have an optional control console.

Saving Files

You can use the Save button to save an image as a picture, page, or book:

Save Option	Action
Picture	While you are in OCR preview mode, press the Save button.
Page	While in OCR readback mode, press and hold the Save button. When prompted, select **Page**.
Book	While in OCR readback mode, press and hold the Save button. Use the Speed wheel to select the **Book** option, then choose **Append a Book**. You are prompted to choose the book that you want to append. Subsequent pages are added one scan at a time until you indicate that you are done.

Entering the Library

When you enter the library, use the Speed wheel to choose **Pictures** or **Documents**, and then press the Play/Pause button. When you choose **Pictures**, an image of each saved picture file is displayed.

When you choose **Documents**, you must make another choice of **Page** (single-page) or **Book** (multiple pages). A preview of your file is displayed.

## Using the Library Menu

Library menu options are displayed when you choose **Library** from the main menu. You use these options to view, import, and export files that you have saved as pictures or documents.

EXIT
View Pictures
Browse Documents
Import Files
Export Files
Export all Pictures
Export all Documents
Delete All Pictures
Delete All Documents

Viewing Your Saved Files

When you enter your library, a preview of your book, page or picture is displayed. Use the Speed wheel to cycle through your saved documents. Previews of the next and previous items change as you navigate between options. To select a document, press Play/Pause. Proceed to OCR readback for books and documents or to picture viewing mode for pictures.
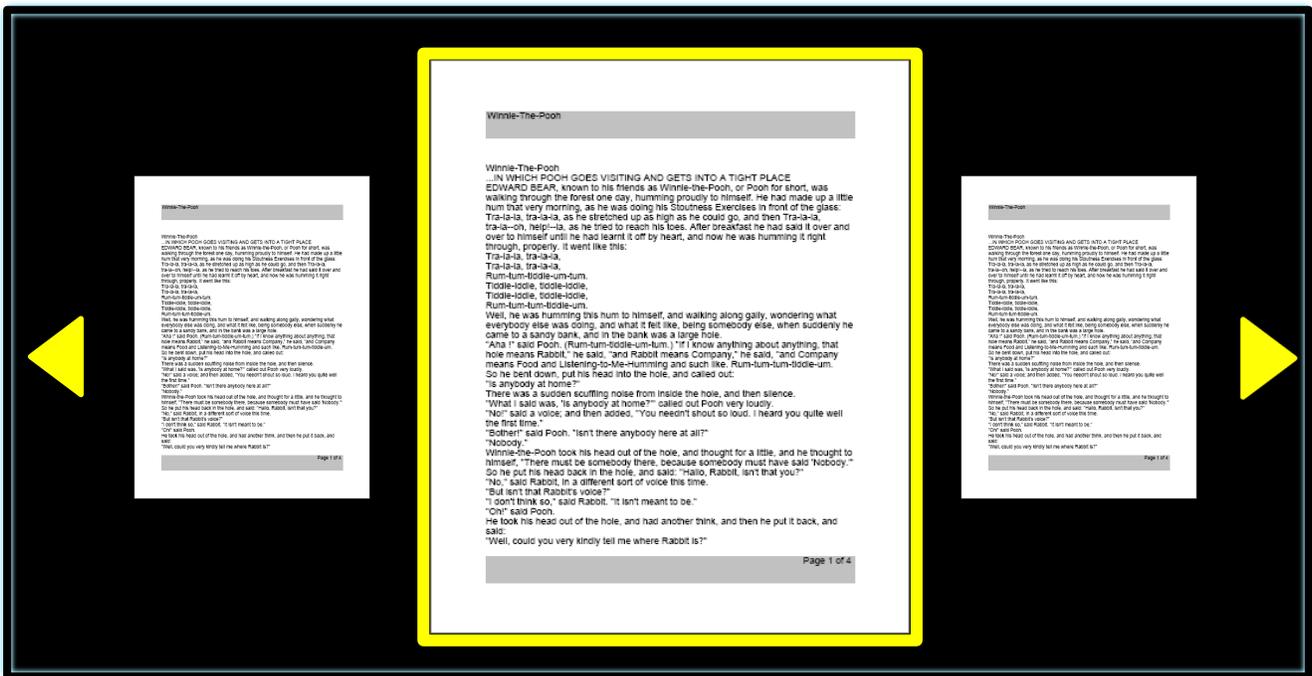
Paging Through a Book

To navigate through a book, you use a shortcut to simulate turning the page. Press and hold the Next Line or Previous Line button for five seconds while in OCR readback.

Viewing Pictures

The same color selections and magnification options are available when you view pictures. In addition, panning allows you to navigate within the image. Use the side wheels on the device or control console. Rotate the left Volume wheel to move left and right. Rotate the right Speed wheel to move up and down.

Note: Using the control console, you can reset the pan position to the center of the image by simultaneously pressing and holding the Previous Line and Next Line buttons for about three seconds.

Exporting Files

To export files, you must insert a USB flash drive into a USB port on the back of your device. Instructions are provided for exporting files three ways: one file at a time (**Export Files** option), all pictures (**Export All Pictures** option), or all documents (**Export All Documents** option).

Export One File

To export one file at a time, follow these steps:

1. Insert a USB flash drive into a USB port on the back of the Smart Reader HD device.

2. Go to **System Menu > Library > Export Files**.

3. Select the format (.txt, .rtf, .jpg, .pdf or .doc) for the file you are exporting.

4. Select **Export**, then select either the **Pictures** icon or the **Documents** icon.

5. Select the file that you want export.

6. Press and hold the Save button for at least two seconds.

7. Once exported, the Save icon is displayed to indicate that the image has been saved to the USB drive.

EXIT
View Pictures
Browse Documents
Import Files
Export Files
Export all Pictures
Export all Documents
Delete All Pictures
Delete All Documents

EXIT	
.TXT	■
.RTF	☐
.JPG	■
.PDF	☐
.DOC	☐
Export	
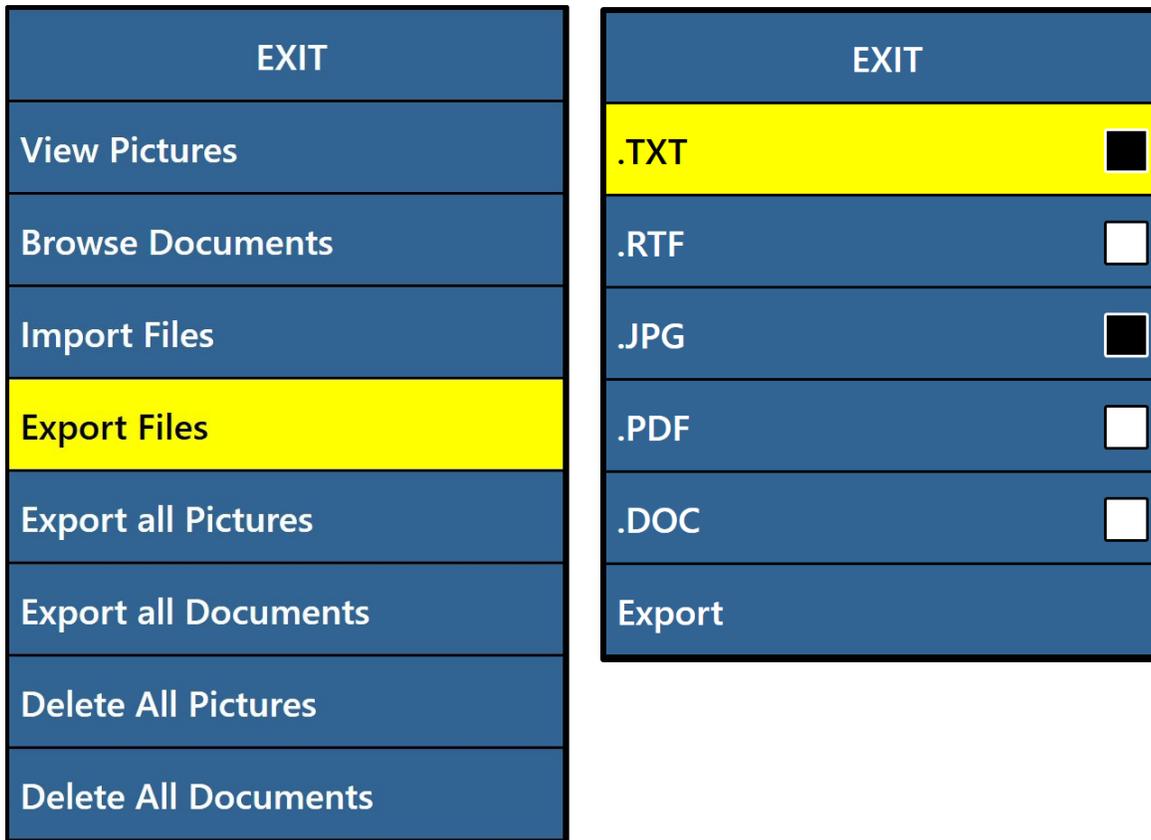
Export All Pictures

To automatically export all your saved images, follow these steps:

1. Insert a USB flash drive into the second USB port in the back of your unit.

2. Go to **Main Menu > Library > Export All Pictures**.

3. Press the Play/Pause button. The **Save** icon is displayed to indicate that you are downloading the images.

4. When the images have downloaded, a chime indicates that it is safe to remove the drive.

Export All Documents

To automatically export all your saved documents (pages and books), follow these steps:

1. Insert a USB flash drive into the second USB port in the back of your unit.

2. Go to **Main Menu > Library > Export All Documents**.

3. When you press the Play/Pause button, the Save icon is displayed to indicate that you are downloading the pages and books.

4. When the documents have downloaded, a chime indicates that it is safe to remove the drive.

Deleting Files

You can delete a single file, all pictures, or all documents. Steps for these procedures are provided in this section.

Delete a Single File

Though not a menu option, a single file can be easily deleted. While viewing a saved file, press and hold the Play/Pause button for five seconds. Or on the control console, simultaneously press and hold the Previous Line and Next Line buttons.

A garbage pail icon is displayed to indicate that the image has been deleted.

Delete All Pictures

To delete all saved images, follow these steps:

1. Go to **System Menu > Library > Delete All Pictures**.

2. Upon activation, the Delete icon is displayed to indicate that you are deleting all the images.

3. When complete, a chime indicates that the images have been deleted.

Delete All Documents

To automatically delete all saved documents (both pages and books), follow these steps:

1. Go to **System Menu > Library > Delete All Documents**.

2. Upon activation, the **Delete** icon is displayed to indicate that you are deleting all the documents.

3. When complete, a chime indicates that the documents have been deleted.

Import Files

Smart Reader HD enables you to import files from a USB drive to read, view, or store on your device. Supported file formats are .TXT, .RTF, .JPG, .PDF, and .DOC. If you have files on your computer that you want to read on Smart Reader HD, for example, then you could

copy the files first from the computer to the USB drive, then from the USB drive to Smart Reader HD.

Note: You must insert a USB flash drive into the available USB port in the back of your Smart Reader HD.

1. Copy the files you want to import onto a USB drive.

2. Insert the USB drive into a USB port in the back of your unit.

3. Go to **System Menu > Library > Import Files**.

4. Select the format(s) of the files you want to include in the display list (.TXT, .RTF, .JPG, .PDF, and .DOC).

5. Cycle through the Carousel Menu and all available files are displayed. Icons represent the format types.

6. Press the Play/Pause button to view a picture or begin OCR readback of a text file.

7. Press and hold the Save button for at least two seconds to save the file to Smart Reader's internal memory.

8. When complete, the **Save** icon is displayed. Single-page documents are stored in the Pages section of the library, while multi-page documents are stored in the Books section. Photos are stored in the Picture Gallery.

Factory Settings

This menu is used to check the status and revision numbers of your device or to return the device to its original configuration.

Product Information

This option contains important system information, such as the software version, language group, product number, and current battery level.

Reset Factory Settings

Selecting this option returns your system to its default condition at the time it left the Enhanced Vision factory. It resets any custom settings or changes you have made as a user. Using this option will not delete your saved images, pages, or books.

Troubleshooting

Device Will Not Power On

If your device will not power on, then try these steps:

1. Ensure the power supply from Smart Reader HD is securely connected to a working outlet.

2. Make sure the arm is in the opened position. A series of tones indicates that the unit is starting up.

3. Make sure the two parts of the power supply cord are securely connected.

4. Ensure the power supply cord is completely plugged into the DC 19V IN jack on the back of the stand base. Pay close attention to the pin orientation.

5. If you are using a power strip or surge protector, be sure it is switched on.

6. If plugged into a circuit breaker, reset it if needed.

7. Ensure that the battery charging switch is set to **1**, which is the on position.

OCR Results Poor

The following tips will help with OCR results:

• Clean the polarizing filter on the underside of the OCR camera with the nonabrasive lens cleaning cloth provided with your Smart Reader HD. Avoid using cleaning solutions.

• Make sure the target material is steady and flat. It might take a few moments for the camera to achieve focus after the motion has stopped.

• Toggle the LED camera lamp on or off to try to achieve even ambient lighting, which helps create a better image free of hot spots.

Slow Document Processing

If it is taking a long time to process a document for text-to-speech, try the following tips:

• Close the camera head to begin the shutdown process.

• Ensure that the material is not glossy.

• Relocate the Smart Reader HD to an area with different lighting conditions.

Replacement LED Lamps

Your Smart Reader HD has an LED lamp designed to provide years of trouble-free service. In the unlikely event that a replacement LED is needed, contact your place of purchase or Enhanced Vision for assistance.

Tips and Tricks

Improving OCR Accuracy

To improve the accuracy of OCR, follow these tips:

- Before you begin a document capture, ensure that the lighting in the room is evenly distributed over your target document. Avoid hotspots.

- Flatten out books, especially ones with a large spine or with an observable curvature.

- For optimal OCR readback, position your material within the guide frame in its entirety. You can rotate target material in any orientation to ensure that it fits completely within these boundaries.

- Turning the LED on or off can improve accuracy on some materials. To toggle the LED, simultaneously press the Next Line button and the Library button.

- Try changing from High Performance to High Precision mode. Go to **Settings > OCR Text Recognition > OCR Attributes**. The High Precision mode is tuned to make the fewest errors during OCR processing so you should notice a big improvement with problematic documents.

- For small OCR targets, such as a business card or letter, place a clean white sheet of paper behind it to eliminate any distracting patterns in the background.

Using Multiple Orientations

Smart Reader HD supports all available viewing angles, both portrait and landscape. If your target document is too large or unusually shaped, you can reposition it at another angle to fit it within the guide frame.

Restarting Your System

If your system exhibits any odd behavior, you can reset the device by closing the camera arm and letting it sit closed for approximately 30 seconds. If the device does not self-correct after you reset it, contact technical support at 800-440-9476 extension 2 (international +001 714-465-3400 extension 2) Monday through Friday, from 8 AM to 5 PM Pacific Standard Time (UTC-8).

Configuring Your System

You can use the **Settings** menu to configure your user interface, system sounds, and system display to suit your preferences. Once you are familiar with the system, try changing these options to develop the perfect user experience customized to fit you.

Smart Reader HD Specifications

Product Measurements

L: 9 1/16 in, W: 4 ½ in (arm closed), H: 9 ½ in (arm closed)

Camera

High definition 13MP sensor

Product Weight

4 lbs (1.8 kg)

Power Supply

Input voltage/current: 120-240 VAC / 0.3-0.5A (nominal)

Output voltage: 19 VDC

Frequency: 50 or 60 Hz

Equipment Classification (IEC 601-1)

Type of Protection: Class 1

Degree of Protection: Type B

Mode of Operation: Continuous

Operating temperature range: 0-40°C / 32-104°F

Storage/transport temperature range: 0-60°C / 32-140°F

OCR Storage Capacity

The file size of an OCR scan varies based on text density. Minimally, 1,000 full page scans can be stored on Smart Reader HD.

Note: Product specifications subject to change without notice.

Safety and Care

To ensure your safety and obtain the most benefit from the Smart Reader HD, review these safety precautions carefully.

Smart Reader HD enlarges and enhances text and objects and reads print aloud to improve the quality of life for people who are visually impaired. The extent to which this product can improve the ability to see images depends on a person's individual condition and level of visual impairment.

Smart Reader HD is not designed to restore vision, correct eye conditions, or halt degenerative vision loss. An eye care professional can determine the usefulness and suitability of Smart Reader HD for a patient's individual condition.

Precautions for Use

Follow all warnings, cautions, and instructions marked on the product. In addition, take these precautions:

- Use Smart Reader HD on a stable, level surface such as a solid desk or table, according to its intended design specifications.

- Avoid placing Smart Reader HD on an unstable table, cart, or stand. It may fall, causing severe damage to the device or bodily injury.

- Use Smart Reader HD indoors only—it should NOT be exposed to extreme or rapid changes in temperature or humidity. Do not place Smart Reader HD near a radiator, heater, or areas exposed to long hours of direct sunlight. These conditions may cause damage to the device's electronics or optics.

- At least once per week, clean Smart Reader HD with a soft dry cloth or an electrostatic dusting cloth. DO NOT use liquid cleaners on its plastic surfaces. No additional methods of sterilization or cleaning are recommended or required.

- Do not use Smart Reader HD near flammable materials or liquids.

Additional Electrical Safety Precautions

Be familiar with these safety precautions:

- The power supply cord is a disconnect device for electrical equipment. The socket outlet should be installed near the equipment and be easily accessible.

- This product is equipped with a 3-wire grounding type plug as a safety feature. This plug has a third (grounding) pin and can only be plugged into a grounding-type power outlet. If necessary, contact an electrician to replace your power outlet with a grounding-type power outlet.

- Do not use Smart Reader HD in, near or around water. Smart Reader HD is not designed to offer protection against contact with liquids of any kind.

- Use only the power supply provided with your Smart Reader HD. Using unauthorized power supplies may cause severe damage to Smart Reader HD's electronic components and will void the warranty.

- Always place the power cord away from traffic areas to avoid damage to the power supply.

- Prevent the risk of electrical shock by NOT attempting to disassemble the unit. Refer all service to an authorized repair facility.

- Ensure that your connections match those shown in the setup instructions.

Additional Mechanical Safety Precautions

Your Smart Reader HD features a retractable camera arm. Review the expected range of motion of the camera arm—do not attempt to forcibly reposition or adjust the camera arm outside of the ranges demonstrated in the figure to the right.

Never lift the Smart Reader HD by the camera arm. Improper handling may cause damage to the device.

Susceptibility to Interference

There may be temporary degradation of the image when Smart Reader HD is subjected to a strong radio frequency field, electrostatic discharge, or transient electrical noise. An electrostatic discharge (caused by static electricity) may cause the screen to go blank. If this happens, disconnect the AC power from the electrical outlet, power down the device, wait 30 seconds, and connect the AC power again.

Power Supply Disconnect Switch

For maximum power savings, you can stop the battery from charging by setting the switch on the rear panel of the Smart Reader HD to **O**. Setting the switch to **O** is like physically disconnecting the plug. The device will not power on if the battery is empty—even when connected to DC power.

When the switch is set to l, the battery charges normally.

Note: This is not an on/off switch, but a power supply disconnect switch.

Service Process

If technical support or repair service is needed, contact your local Enhanced Vision representative or the Enhanced Vision warranty service center.

If warranty service is required, contact Enhanced Vision at 800-440-9476 extension 2 (international +001 714-465-3400 extension 2) Monday through Friday, from 8 AM to 5 PM, Pacific Standard Time to request a return authorization number.

Warranty repairs will not be accepted without a valid return authorization number. You may wish to keep the original product packaging in case warranty service is required. The manufacturer cannot provide packaging for warranty repairs.

Documentation and Product Updates

Product enhancements and revisions are integral to what we do here at Enhanced Vision. The most up-to-date version of this document is at https://www.enhancedvision.com/support/user-manuals.html.

You can download product updates at https://www.enhancedvision.com/support/software.html. A technical bulletin provides instructions for installing the updated firmware and software.

Technical Assistance

If you have any questions or require technical assistance, contact Enhanced Vision at 800-440-9476 extension 2 (international +001 714-465-3400 extension 2) Monday through Friday, from 8 AM to 5 PM Pacific Time.

Worldwide Support

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