

Apple Accessibility Conformance Report

Based on Voluntary Product Accessibility Template® (VPAT®)

Name of Product:

MacBook Air (Retina, 13-inch, 2018)

Product Description:

13.3-inch Notebook

(Please refer to the macOS VPAT for operating system information.)

Date:

November 7th, 2018

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Terms

The terms used in the Conformance Level information are defined as follows:

- **Supports:** The functionality of the product has at least one method that meets the criteria without known defects or meets with equivalent facilitation.
- **Supports with Exceptions:** Some functionality of the product does not meet the criteria.
- **Does Not Support:** Majority of functionality of the product does not meet the criteria.
- **Not Applicable:** The criteria are not relevant to the product.
- **Not Evaluated:** The product has not been evaluated against the criteria. This can be used only with WCAG 2.0 Level AAA.

WCAG 2.0 Report -

Table 1: Conformance Criteria, Level A -

Refer to macOS v.10.14 Mojave VPAT

Table 2: Conformance Criteria, Level AA -

Refer to macOS v.10.14 Mojave VPAT

2017 Section 508 Report -

Chapter 3: Functional Performance Criteria -

Criteria	Conformance Level	Remarks and Explanations
302.1 Without Vision. Where a visual mode of operation is provided, ICT shall provide at least one mode of operation that does not require user vision.	Supports	<p>macOS includes a built-in screen reader called VoiceOver for the blind and visually impaired and includes accessible applications and utilities. macOS includes built-in support for over 100 USB and wireless refreshable braille displays that start instantly when connected. There is also support for over 30 braille tables supporting a wide range of languages.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>
302.2 With Limited Vision. Where a visual mode of operation is provided, ICT shall provide at least one mode of operation that enables users to make use of limited vision.	Supports	<p>macOS includes many features to assist users with low vision, including but not limited to: VoiceOver, VoiceOver cursor zoom, a scalable mouse cursor, and Zoom—a built-in screen magnification feature.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>

Criteria	Conformance Level	Remarks and Explanations
<p>302.3 Without Perception of Color. Where a visual mode of operation is provided, ICT shall provide at least one visual mode of operation that does not require user perception of color.</p>	<p>Supports with exceptions</p>	<p>macOS uses color to convey information. In many cases, when color is used, it provides an alternative information display that does not rely on color. For example, color controls are used in the title bar of macOS windows that allow a user to close, minimize or maximize a window. While color indicates each control's function, each control also has a unique symbol and position that indicates its function without relying on color information. But, there are some visual elements that do not include an alternative information display.</p> <p>macOS also provides system-level control of display characteristics that cannot be overridden by applications, including options to:</p> <ul style="list-style-type: none"> • Switch the display from color to grayscale. • Invert light and dark colors displayed on the screen. • Differentiate certain elements without color. • Increase contrast of elements on the screen. • Reduce the transparency of elements on the screen. <p>All of these features are accessed through System Preferences for Accessibility and can be used together in different combinations to suit the user's needs.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>
<p>302.4 Without Hearing. Where an audible mode of operation is provided, ICT shall provide at least one mode of operation that does not require user hearing.</p>	<p>Supports</p>	<p>macOS includes many features to assist users without hearing, including but not limited to: Flash screen, Notifications, Type to Siri, and FaceTime.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>

Criteria	Conformance Level	Remarks and Explanations
<p>302.5 With Limited Hearing. Where an audible mode of operation is provided, ICT shall provide at least one mode of operation that enables users to make use of limited hearing.</p>	<p>Supports</p>	<p>Volume can be controlled at the system level. External speakers can be attached if necessary for further amplification.</p> <p>macOS also supports Mono Audio to combine the left and right stereo channels into a mono signal played through both left and right speakers and headphones so all of the audio program can be heard more easily.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>
<p>302.6 Without Speech. Where speech is used for input, control, or operation, ICT shall provide at least one mode of operation that does not require user speech.</p>	<p>Supports</p>	<p>Siri supports a Type to Siri mode to request web searches, send messages, track down documents, set reminders, or turn on accessibility settings.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>
<p>302.7 With Limited Manipulation. Where a manual mode of operation is provided, ICT shall provide at least one mode of operation that does not require fine motor control or simultaneous manual operations.</p>	<p>Supports</p>	<p>macOS includes many features to assist users with limited manipulation, including but not limited to: Sticky Keys, Slow Keys, Dictation, Switch Control, the Accessibility Keyboard, Adjustable Keyboard repeat delay, and Tracking speed.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>
<p>302.8 With Limited Reach and Strength. Where a manual mode of operation is provided, ICT shall provide at least one mode of operation that is operable with limited reach and limited strength.</p>	<p>Supports</p>	<p>macOS includes many features to assist users with limited manipulation, including but not limited to: Sticky Keys, Slow Keys, Dictation, Switch Control, the Accessibility Keyboard, Adjustable Keyboard repeat delay, and Tracking speed.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>

Criteria	Conformance Level	Remarks and Explanations
302.9 With Limited Language, Cognitive, and Learning Abilities. ICT shall provide features making its use by individuals with limited cognitive, language, and learning abilities simpler and easier.	Supports	<p>macOS includes many features to assist users with limited language, cognitive and learning abilities, including but not limited to: Text to Speech, Simple Finder, Word Completion, Safari Reader, and Dictionary.</p> <p>For more information on the accessibility features of macOS, please see the macOS VPAT at https://support.apple.com/accessibility/vpat</p>

Chapter 4: Hardware -

Criteria	Conformance Level	Remarks and Explanations
402 Closed Functionality		
402.1 General		
402.2 Speech-Output Enabled		
402.2.1 Information Displayed On-Screen. Speech output shall be provided for all information displayed on-screen.	Supports	<p>macOS includes a built-in screen reader called VoiceOver for the blind and visually impaired and includes accessible applications and utilities.</p> <p>macOS includes built-in support for over 100 USB and wireless refreshable braille displays so they start instantly when you connect them. macOS also includes support for over 30 braille tables supporting a wide range of languages.</p> <p>Information about VoiceOver is available from http://www.apple.com/accessibility/osx/voiceover/</p>

Criteria	Conformance Level	Remarks and Explanations
<p>402.2.2 Transactional Outputs. Where transactional outputs are provided, the speech output shall audibly provide all information necessary to verify a transaction.</p>	<p>Supports</p>	<p>macOS includes a built-in screen reader called VoiceOver for the blind and visually impaired and includes accessible applications and utilities.</p> <p>macOS includes built-in support for over 100 USB and wireless refreshable braille displays so they start instantly when you connect them. macOS also includes support for over 30 braille tables supporting a wide range of languages.</p> <p>Information about VoiceOver is available from http://www.apple.com/accessibility/osx/voiceover/</p>
<p>402.2.3 Speech Delivery Type and Coordination. Speech output shall be delivered through a mechanism that is readily available to all users, including, but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized. Speech output shall be coordinated with information displayed on the screen.</p>	<p>Supports</p>	<p>macOS includes a built-in screen reader called VoiceOver for the blind and visually impaired and includes accessible applications and utilities.</p> <p>macOS includes built-in support for over 100 USB and wireless refreshable braille displays so they start instantly when you connect them. macOS also includes support for over 30 braille tables supporting a wide range of languages.</p> <p>Information about VoiceOver is available from http://www.apple.com/accessibility/osx/voiceover/</p>
<p>402.2.4 User Control. Speech output for any single function shall be automatically interrupted when a transaction is selected. Speech output shall be capable of being repeated and paused.</p>	<p>Supports</p>	<p>VoiceOver supports audio ducking to allow screen reader information to interrupt other audio. There are keyboard commands and trackpad gestures available to repeat and pause speech output.</p>
<p>402.2.5 Braille Instructions. Where speech output is required by 402.2, braille instructions for initiating the speech mode of operation shall be provided. Braille shall be contracted and shall conform to 36 CFR part 1191, Appendix D, Section 703.3.1.</p>	<p>Supports</p>	<p>Apple provides information on supported braille displays through the Apple Knowledge base at http://www.apple.com/support.</p>

Criteria	Conformance Level	Remarks and Explanations
402.3 Volume		
402.3.1 Private Listening. Where ICT provides private listening, it shall provide a mode of operation for controlling the volume. Where ICT delivers output by an audio transducer typically held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.	Supports	Volume can be controlled at the system level. External speakers can be attached if necessary for further amplification.
402.3.2 Non-private Listening. Where ICT provides non-private listening, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. A function shall be provided to automatically reset the volume to the default level after every use.	Not applicable	
402.4 Characters on Display Screens. At least one mode of characters displayed on the screen shall be in a sans serif font. Where ICT does not provide a screen enlargement feature, characters shall be 3/16 inch (4.8 mm) high minimum based on the uppercase letter "I". Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.	Supports	<p>Standard font is sans serif. Displays provide screen enlargement feature.</p> <p>Characters contrast with their background with dark characters on a light background.</p> <p>More information is available at https://www.apple.com/accessibility/mac/vision/</p>
402.5 Characters on Variable Message Signs. Characters on variable message signs shall conform to section 703.7 Variable Message Signs of ICC A117.1-2009 (incorporated by reference, see 702.6.1).	Not applicable	
403 Biometrics		

Criteria	Conformance Level	Remarks and Explanations
403.1 General. Where provided, biometrics shall not be the only means for user identification or control.	Supports	Users can authenticate using a password, ie. Touch ID is not required.
404 Preservation of Information Provided for Accessibility		
404.1 General. ICT that transmits or converts information or communication shall not remove non-proprietary information provided for accessibility or shall restore it upon delivery.	Supports	Accessibility structure, markup, and descriptions are preserved when converting documents, spreadsheets, presentations, and images into different formats.
405 Privacy		
405.1 General. The same degree of privacy of input and output shall be provided to all individuals. When speech output required by 402.2 is enabled, the screen shall not blank automatically.	Supports	macOS includes a built-in screen reader called VoiceOver for the blind and visually impaired and includes accessible applications and utilities. VoiceOver has a screen curtain option available to those who would like additional privacy. More information is available at https://www.apple.com/accessibility/mac/vision/
406 Standard Connections		
406.1 General. Where data connections used for input and output are provided, at least one of each type of connection shall conform to industry standard non-proprietary formats.	Supports with exceptions	All ports and connectors are compliant with publicly available industry standards, including but not limited to: Thunderbolt (USB-C) and the headphone jack. More information on product technical specifications at https://www.apple.com/macbook-air/specs/
407 Operable Parts		

Criteria	Conformance Level	Remarks and Explanations
407.2 Contrast. Where provided, keys and controls shall contrast visually from background surfaces. Characters and symbols shall contrast visually from background surfaces with either light characters or symbols on a dark background or dark characters or symbols on a light background.	Supports	<p>Keys and controls have visual contrast with light characters on dark background.</p> <p>More information is available at https://www.apple.com/accessibility/mac/vision/</p>
407.3 Input Controls		
407.3.1 Tactilely Discernible. Input controls shall be operable by touch and tactilely discernible without activation.	Supports	Keyboard keys (F and J) have discernible nubs to assist users in Keyboard orientation.
407.3.2 Alphabetic Keys. Where provided, individual alphabetic keys shall be arranged in a QWERTY-based keyboard layout and the "F" and "J" keys shall be tactilely distinct from the other keys.	Supports	Keyboard keys (F and J) have discernible nubs to assist users in Keyboard orientation.
407.3.3 Numeric Keys. Where provided, numeric keys shall be arranged in a 12-key ascending or descending keypad layout. The number five key shall be tactilely distinct from the other keys. Where the ICT provides an alphabetic overlay on numeric keys, the relationships between letters and digits shall conform to ITU-T Recommendation E.161 (incorporated by reference, see 702.7.1).	Not applicable	
407.4 Key Repeat. Where a keyboard with key repeat is provided, the delay before the key repeat feature is activated shall be fixed at, or adjustable to, 2 seconds minimum.	Supports	Key repeat can be configured at the system level. Go to system preferences, select Keyboard and the Key Repeat speed can be adjusted on a slider.

Criteria	Conformance Level	Remarks and Explanations
407.5 Timed Response. Where a timed response is required, the user shall be alerted visually, as well as by touch or sound, and shall be given the opportunity to indicate that more time is needed.	Supports with exceptions	<p>There are limited controls over time limits throughout macOS.</p> <p>macOS provides settings to turn the display off after a range of time frames including "Never". More information on these settings is available from https://support.apple.com/en-us/HT202824</p> <p>macOS also provides settings on when to start a screen saver and allows for a screen saver which can act as a warning that the computer will go in sleep mode. More information on screen saver settings is available from https://support.apple.com/en-us/HT204379</p>
407.6 Operation. At least one mode of operation shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.	Supports with minor exceptions	<ol style="list-style-type: none"> 1. Sticky Keys, Mouse Keys and Slow Keys can be used for one-hand operation of the MacBook Air. 2. Multi-touch trackpad gestures can all be accomplished in alternate, acceptable ways. <p>More information is available at https://www.apple.com/accessibility/mac/physical-and-motor-skills/</p>
407.7 Tickets, Fare Cards, and Keycards. Where tickets, fare cards, or keycards are provided, they shall have an orientation that is tactilely discernible if orientation is important to further use of the ticket, fare card, or keycard.	Not applicable	
407.8 Reach Height and Depth	Not applicable	Not applicable
408 Display Screens		
408.2 Visibility. Where stationary ICT provides one or more display screens, at least one of each type of display screen shall be visible from a point located 40 inches (1015 mm) above the floor space where the display screen is viewed.	Not applicable	
408.3 Flashing. Where ICT emits lights in flashes, there shall be no more than three flashes in any one-second period.	Supports	<p>Note: Safari and WebKit use web standards such as HTML and CSS to display web pages. Web content authors are responsible for ensuring their own implementations of flashing content.</p>

Criteria	Conformance Level	Remarks and Explanations
409 Status Indicators		
409.1 General. Where provided, status indicators shall be discernible visually and by touch or sound.	Supports	Status indicators are visually discernible and VoiceOver provides spoken output for the status when that key is pressed such as caps lock and screen brightness, MacOS provides a setting to produce sound with increasing/decreasing volume.
410 Color Coding		
410.1 General. Where provided, color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Supports with exceptions	<p>VoiceOver, the built-in screen reader, provides sound and text for conveying the meaning of color.</p> <p>macOS uses color to convey information. In many cases, when color is used, it provides an alternative information display that does not rely on color. For example, color controls are used in the title bar of macOS windows that allow a user to close, minimize or maximize a window. While color indicates each control's function, each control also has a unique symbol and positional placement that indicates its function without relying on color information. But, there are some elements that do not include an alternative visual option.</p> <p>macOS also provides system-level control of display characteristics that cannot be overridden by applications, including options to:</p> <ul style="list-style-type: none"> Switch the display from color to grayscale. Invert light and dark colors displayed on the screen. Differentiate certain elements without color. Increase contrast of elements on the screen. Reduce the transparency of elements on the screen. <p>All of these features are accessed through the Accessibility system preference and can be used together in different combinations to suit the user's needs. More information is available at https://www.apple.com/accessibility/mac/vision/</p>
411 Audible Signals		

Criteria	Conformance Level	Remarks and Explanations
411.1 General. Where provided, audible signals or cues shall not be used as the only means of conveying information, indicating an action, or prompting a response	Supports	<p>macOS includes a variety of Accessibility features to augment audible signals:</p> <p>Flash Screen - macOS provides a visual indication of alert sounds via the Flash Screen feature. When a Mac application attempts to play a system beep alert, macOS instead flashes the screen.</p> <p>Notifications – Applications can notify the user of important information using the notification system built into macOS. Notifications all appear in the upper right of the screen making them easy to notice.</p> <p>Dock Notification – The icons of running applications that need attention visually jump up and down in the Dock, providing visual notification in addition to an audible beep or flash.</p> <p>More information is available at https://www.apple.com/accessibility/mac/hearing/</p>
412 ICT with Two-Way Voice Communication		
412.2 Volume Gain		
412.2.1 Volume Gain for Wireline Telephones. Volume gain conforming to 47 CFR 68.317 shall be provided on analog and digital wireline telephones.	Not applicable	
412.2.2 Volume Gain for Non-Wireline ICT. A method for increasing volume shall be provided for non-wireline ICT.	Not applicable	
412.3 Interference Reduction and Magnetic Coupling		

Criteria	Conformance Level	Remarks and Explanations
412.3.1 Wireless Handsets. ICT in the form of wireless handsets shall conform to ANSI/IEEE C63.19-2011 (incorporated by reference, see 702.5.1).	Not applicable	
412.3.2 Wireline Handsets. ICT in the form of wireline handsets, including cordless handsets, shall conform to TIA-1083-B (incorporated by reference, see 702.9.1).	Not applicable	
412.4 Digital Encoding of Speech. ICT in IP-based networks shall transmit and receive speech that is digitally encoded in the manner specified by ITU-T Recommendation G.722.2 (incorporated by reference, see 702.7.2) or IETF RFC 6716 (incorporated by reference, see 702.8.1).	Not applicable	
412.5 Real-Time Text Functionality	Not applicable	
412.6 Caller ID. Where provided, caller identification and similar telecommunications functions shall be visible and audible.	Not applicable	
412.7 Video Communication. Where ICT provides real-time video functionality, the quality of the video shall be sufficient to support communication using sign language.	Supports	More information on product technical specifications at https://www.apple.com/macbook-air/specs/
413 Closed Caption Processing Technologies		
413.1.1 Decoding and Display of Closed Captions. Players and displays shall decode closed caption data and support display of captions.	Supports	macOS supports display of closed-captioned audio and video text descriptions in industry-standard formats. More information is available at https://www.apple.com/accessibility/mac/hearing/

Criteria	Conformance Level	Remarks and Explanations
413.1.2 Pass-Through of Closed Caption Data. Cabling and ancillary equipment shall pass through caption data.	Supports	macOS supports pass-through of closed-captioned audio and video text descriptions in industry-standard formats. More information is available at https://www.apple.com/accessibility/mac/hearing/
414 Audio Description Processing Technologies		
414.1.1 Digital Television Tuners. Digital television tuners shall provide audio description processing that conforms to ATSC A/53 Digital Television Standard, Part 5 (2014) (incorporated by reference, see 702.2.1). Digital television tuners shall provide processing of audio description when encoded as a Visually Impaired (VI) associated audio service that is provided as a complete program mix containing audio description according to the ATSC A/53 standard.	Not applicable	
414.1.2 Other ICT. ICT other than digital television tuners shall provide audio description processing.	Supports	macOS supports pass-through of closed-captioned audio and video text descriptions in industry-standard formats. More information is available at https://www.apple.com/accessibility/mac/hearing/
415 User Controls for Captions and Audio Descriptions		

Criteria	Conformance Level	Remarks and Explanations
415.1.1 Where ICT provides operable parts for volume control, ICT shall also provide operable parts for caption selection.	Supports	<p>macOS supports pass-through of closed-captioned audio and video text descriptions in industry-standard formats.</p> <p>In the default media player provided by the AV Media Playback API, there are controls for selecting the captions alongside volume adjustment. This is also true of the media players in QuickTime and iTunes, as well as in the default media player provided by WebKit.</p> <p>Third-party developers can implement their own custom media players, where they choose whether or not to support selection of captions.</p> <p>More information is available at https://www.apple.com/accessibility/mac/hearing/</p>
415.1.2 Audio Description Controls. Where ICT provides operable parts for program selection, ICT shall also provide operable parts for the selection of audio description.	Supports	<p>In the default media player provided by the AV Media Playback API, there are controls for selecting the audio descriptions alongside volume adjustment. This is also true of the media players in QuickTime and iTunes, as well as in the default media player provided by WebKit.</p>

Chapter 5: Software -

Refer to macOS v.10.14 Mojave VPAT

Chapter 6: Support Documentation and Services -

Criteria	Conformance Level	Remarks and Explanations
601.1 Scope		
602 Support Documentation		
<p>602.2 Accessibility and Compatibility Features. Documentation shall list and explain how to use the accessibility and compatibility features required by Chapters 4 and 5. Documentation shall include accessibility features that are built-in and accessibility features that provide compatibility with assistive technology.</p>	Supports	<p>Mac product documentation is available online in an accessible format in accessible HTML format through;</p> <ul style="list-style-type: none"> • Apple Support at https://www.apple.com/support • macOS new release page at https://www.apple.com/macOS • MacBook Air product page at https://www.apple.com/macbook-air/ • Accessibility product page at https://www.apple.com/accessibility/mac/ <p>Every Mac includes a built-in, interactive VoiceOver tutorial, interactive keyboard learning utility (called Keyboard Practice), and contextual menu system for VoiceOver. macOS help content is also available through the macOS Help menu as well as online through Apple Support.</p> <p>The Switch Control and Accessibility Keyboard guide and the Voice Over guide are delivered as online manual in accessible HTML from https://support.apple.com/en_US/manuals/macOS. The Voice Over guide is available electronic .brf braille at no charge. Charges may apply for embossed braille.</p> <p>VPATs for Apple products are available at https://support.apple.com/accessibility/vpat.</p>

Criteria	Conformance Level	Remarks and Explanations
602.3 Electronic Support Documentation. Documentation in electronic format, including Web-based self-service support, shall conform to Level A and Level AA Success Criteria and Conformance Requirements in WCAG 2.0 (incorporated by reference, see 702.10.1).	Supports	The electronic web-based product documentation for macOS conforms to both Level A and Level AA Success Criteria and Conformance Requirements in WCAG 2.0.
602.4 Alternate Formats for Non-Electronic Support Documentation. Where support documentation is only provided in non-electronic formats, alternate formats usable by individuals with disabilities shall be provided upon request.	Supports	Product documentation for macOS is available in embossed braille via third party provider.
603 Support Services		
603.2 Information on Accessibility and Compatibility Features. ICT support services shall include information on the accessibility and compatibility features required by 602.2.	Supports	Apple Support provides advisors with information on accessibility and compatibility features for Macs and macOS. This information is also documented in the product documentation.
603.3 Accommodation of Communication Needs. Support services shall be provided directly to the user or through a referral to a point of contact. Such ICT support services shall accommodate the communication needs of individuals with disabilities.	Supports	Support via the Internet is available through the Apple Knowledge base at http://www.apple.com/support . For additional information on the many service and support options offered by Apple visit www.apple.com/support .

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