



Lenovo Accessibility Conformance Report

Revised Section 508 Edition

VPAT® Version 2.3 – December 2018

Name of Product/Version: ThinkPad E490, E490s, E590

Product Description: Notebook computer

See OS VPAT for operating system information on appropriate manufacturer’s website. See software VPATs for software application information.

Date: 23 May 2019

Contact information: compliance@Lenovo.com

Evaluation Methods Used:

Manual testing is performed on hardware products using a number of different tools to evaluate access by users with disabilities. Chroma optical test: brightness, contrast, color chromaticity tools are used to ensure contrast, a force gauge is used to evaluate key button force. One handed, and non-biometric operation is evaluated alongside stylus and other tools that are used to evaluate use without tight pinching or grasping. Measurement tools and meters are used to measure operable controls while audio meters are used to measure volume and gain. Connection ports are evaluated from design to ensure standard connection points are available. Any transducers designed to be held to the ear are evaluated by an outside laboratory for conformance to non-interference and coupling standards. Additional tests are performed based on applicable features of the product.

Applicable Standards/Guidelines

This report covers the degree of conformance for the following accessibility standard/guidelines:

Standard/Guideline	Included In Report
Web Content Accessibility Guidelines 2.0, at http://www.w3.org/TR/2008/REC-WCAG20-20081211/	Level A (No) Level AA (No) Level AAA (No)
Revised Section 508 standards as published by the U.S. Access Board in the Federal Register on January 18, 2017 Corrections to the ICT Final Rule as published by the US Access Board in the Federal Register on January 22, 2018	(Yes)

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 criterion without known defects or meets with equivalent facilitation.
- **Partially Supports:** Some functionality of the product does not meet the criterion.
- **Does Not Support:** The majority of product functionality does not meet the criterion.
- **Not Applicable:** The criterion is not relevant to the product.
- **Not Evaluated:** The product has not been evaluated against the criterion. This can be used only in WCAG 2.0 Level AAA.

Revised Section 508 Report

Chapter 3: Functional Performance Criteria (FPC)

Criteria	Conformance Level	Remarks and Explanations
<p>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.</p>	<p>Supports</p>	<p>Touch can be used to identify and distinguish controls and keys without activating them. The capitol lock key and other toggle keys can be discerned both audibly and visually when combined with the operating system.</p> <p>Function keys, such as the Speaker/F1 key, only have a red LED and an icon that appears when activated. However, this information can be determined through other platform level apps and is announced when combined with platform level assistive technology features.</p>
<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.</p>	<p>Supports</p>	<p>All keys have visual symbols or characters with good contrast; usually light symbols on a dark background. Touch can be used to identify and distinguish controls and keys without activating them.</p>
<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</p>	<p>Color alone is not used to communicate meaning</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>When combined with the operating system the product is designed to alert applications of system sounds when needed and a visual cue is also provided.</p>

Criteria	Conformance Level	Remarks and Explanations
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.	Supports	Hardware provides a physical volume control and/or an interface so that volume can be controlled by software.
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.	Supports	User speech is not required.
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.	Supports	Controls, latches, and keys can be reached and operated using one hand and require minimal dexterity for ease of use by mobility impaired users.
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.	Supports	Controls, latches, and keys can be reached and operated using one hand and require minimal dexterity for ease of use by mobility impaired users. Controls and keys can be operated with minimal force.
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	All keys and controls have visual symbols or characters with good contrast; usually light symbols on a dark background. Touch can be used to identify and distinguish controls and keys without activating them.

Chapter 4: Hardware

Criteria	Conformance Level	Remarks and Explanations
402 Closed Functionality	Heading cell – no response required	Heading cell – no response required
402.1 General	Heading cell – no response required	Heading cell – no response required
402.2 Speech-Output Enabled	Heading cell – no response required	Heading cell – no response required
402.2.1 Information Displayed On-Screen	Not Applicable	Not closed functionality
402.2.2 Transactional Outputs	Not Applicable	Not closed functionality
402.2.3 Speech Delivery Type and Coordination	Not Applicable	Not closed functionality
402.2.4 User Control	Not Applicable	Not closed functionality

Criteria	Conformance Level	Remarks and Explanations
402.2.5 Braille Instructions	Not Applicable	Not closed functionality
402.3 Volume	Heading cell – no response required	Heading cell – no response required
402.3.1 Private Listening	Not Applicable	Not closed functionality
402.3.2 Non-private Listening	Not Applicable	Not closed functionality
402.4 Characters on Display Screens	Not Applicable	Not closed functionality
402.5 Characters on Variable Message Signs	Not Applicable	Not closed functionality
403 Biometrics	Heading cell – no response required	Heading cell – no response required
403.1 General. Where provided, biometrics shall not be the only means for user identification or control.	Supports	Where biometrics are used to authenticate, users can alternatively authenticate using a password.
404 Preservation of Information Provided for Accessibility	Heading cell – no response required	Heading cell – no response required
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 and descriptions are preserved.
405 Privacy	Heading cell – no response required	Heading cell – no response required
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	Speech is not required for use. When combined with the operating system, screen reader users can use a headset to ensure privacy.
406 Standard Connections	Heading cell – no response required	Heading cell – no response required
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	The product design uses industry standard ports so that alternative equipment and assistive technologies can be accommodated.
407 Operable Parts	Heading cell – no response required	Heading cell – no response required
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	All keys and controls have visual symbols or characters with good contrast; usually light symbols on a dark background.
407.3 Input Controls	Heading cell – no response required	Heading cell – no response required

Criteria	Conformance Level	Remarks and Explanations
407.3.1 Tactilely Discernible. Input controls shall be operable by touch and tactilely discernible without activation.	Supports	Touch can be used to identify and distinguish controls and keys without activating them.
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. Physical keyboards can be used with products that only have touchscreens.
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).	Supports	Numeric keys are arranged in a 12-key ascending keyboard layout. When numeric keypads are used the number 5 key has a discernible nub to assist users in keyboard orientation.
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	When combined with operating system, an option to change keyboard repeat rate is provided so users can adjust the rate to accommodate their needs.
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	When combined with the operating system, options are provided to turn the display off after a range of time frames including “Never”.
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	Controls, latches, and keys can be reached and operated using one hand and require minimal dexterity for ease of use by mobility impaired users. Controls and keys can be operated with minimal force.
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	Heading cell – no response required	Heading cell – no response required
407.8.1 Vertical Reference Plane	Not applicable	

Criteria	Conformance Level	Remarks and Explanations
407.8.1.1 Vertical Plane for Side Reach	Not applicable	
407.8.1.2 Vertical Plane for Forward Reach	Not applicable	
407.8.2 Side Reach	Not applicable	
407.8.2.1 Unobstructed Side Reach	Not applicable	
407.8.2.2 Obstructed Side Reach	Not applicable	
407.8.3 Forward Reach	Not applicable	
407.8.3.1 Unobstructed Forward Reach	Not applicable	
407.8.3.2 Obstructed Forward Reach	Not applicable	
407.8.3.2.1 Operable Part Height for ICT with Obstructed Forward Reach	Not applicable	
407.8.3.2.2 Knee and Toe Space under ICT with Obstructed Forward Reach	Not applicable	
408 Display Screens	Heading cell – no response required	Heading cell – no response required
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	The use of blinking text, objects or elements has been avoided, reducing risk of seizures for users with photosensitive epilepsy.
409 Status Indicators	Heading cell – no response required	Heading cell – no response required
409.1 General. Where provided, status indicators shall be discernible visually and by touch or sound.	Supports	When combined with the operating system an option is provided to produce sound with increasing/decreasing volume to duplicate visual status indicators. For example, a notification will sound when

Criteria	Conformance Level	Remarks and Explanations
		Toggle keys (CAPS LOCK, NUM LOCK, SCROLL LOCK) are engaged if selected in the Ease of Access Center.
410 Color Coding	Heading cell – no response required	Heading cell – no response required
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	Color alone is not used to communicate meaning.
411 Audible Signals	Heading cell – no response required	Heading cell – no response required
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	When combined with the operating system the product is designed to alert applications of system sounds when needed and a visual cue is also provided.
412 ICT with Two-Way Voice Communication	Heading cell – no response required	Heading cell – no response required
412.2 Volume Gain	Heading cell – no response required	Heading cell – no response required
412.2.1 Volume Gain for Wireline Telephones	Not Applicable	
412.2.2 Volume Gain for Non-Wireline ICT	Supports	When combined with the operating system, an option is provided for volume control.
412.3 Interference Reduction and Magnetic Coupling	Heading cell – no response required	Heading cell – no response required
412.3.1 Wireless Handsets	Not Applicable	
412.3.2 Wireline Handsets	Not Applicable	
412.4 Digital Encoding of Speech	Not Applicable	
412.5 Real-Time Text Functionality	Not Applicable	Reserved for future
412.6 Caller ID	Not Applicable	
412.7 Video Communication	Not Applicable	
412.8 Legacy TTY Support	Heading cell – no response required	Heading cell – no response required
412.8.1 TTY Connectability	Not Applicable	

Criteria	Conformance Level	Remarks and Explanations
412.8.2 Voice and Hearing Carry Over	Not Applicable	
412.8.3 Signal Compatibility	Not Applicable	
412.8.4 Voice Mail and Other Messaging Systems	Not Applicable	
413 Closed Caption Processing Technologies	Heading cell – no response required	Heading cell – no response required
413.1.1 Decoding and Display of Closed Captions. Players and displays shall decode closed caption data and support display of captions.	Not Applicable	
413.1.2 Pass-Through of Closed Caption Data. Cabling and ancillary equipment shall pass through caption data.	Not Applicable	
414 Audio Description Processing Technologies	Heading cell – no response required	Heading cell – no response required
414.1.1 Digital Television Tuners	Not Applicable	
414.1.2 Other ICT	Not Applicable	
415 User Controls for Captions and Audio Descriptions	Heading cell – no response required	Heading cell – no response required
415.1.1 Where ICT provides operable parts for volume control, ICT shall also provide operable parts for caption selection.	Not Applicable	
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.	Not Applicable	

Chapter 5: Software – see Software VPAT

Notes: This is a hardware VPAT, see software VPAT for OS and other software applications.

Chapter 6: Support Documentation and Services

Criteria	Conformance Level	Remarks and Explanations
601.1 Scope	Heading cell – no response required	Heading cell – no response required
602 Support Documentation	Heading cell – no response required	Heading cell – no response required
602.2 Accessibility and Compatibility Features. Documentation shall list and explain how to use the accessibility and compatibility features	Supports	Product documentation is available online in an accessible format at https://www.lenovo.com/support

Criteria	Conformance Level	Remarks and Explanations
required by Chapters 4 and 5. Documentation shall include accessibility features that are builtin and accessibility features that provide compatibility with assistive technology.		VPATs are available at https://www.lenovo.com/us/en/compliance/accessibility-conformance
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 conforms to 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 nonelectronic formats, alternate formats usable by individuals with disabilities shall be provided upon request.	Not Applicable	Documentation is available in electronic format.
603 Support Services	Heading cell – no response required	Heading cell – no response required
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	Lenovo Support provides information on accessibility and compatibility features. This information is also documented in the product documentation. Accessibility Features page https://www.lenovo.com/us/en/lenovo/accessibility/
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	Lenovo Services provides communications in voice, chat, and email. Telecommunications Relay Service (TRS) is supported for customers who are deaf or hard of hearing. For support, contact 1-855-2-LENOVO (1-855-253-6686).

Lenovo Legal Disclaimer

This document is for informational purposes only. THE INFORMATION PROVIDED IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED. Supporting features apply to product families as a whole. The information shall not be construed as product specifications for purposes of any warranty of compliance with product specifications in a given contract or order. For information on third party software and applications please contact the software manufacturer. Lenovo may make changes to the information in this document or to the products described in this document at any time without notice.