

# amCharts 5 Accessibility Conformance Report

## Revised Section 508 Edition

VPAT® Version 2.4 (February 2020)

## Name of Product/Version

amCharts 5

## Product Description

amCharts 5 is a collection of client-side JavaScript-based libraries for data visualization.

Technical documentation for accessibility:

<https://www.amcharts.com/docs/v5/concepts/accessibility/>

## Report Date

Original publication date: October 26, 2021.

Revision: 1.

## Contact Information

For all questions regarding information included in this report please email

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## Notes

amCharts 5 is tested for compliance with WCAG 2.0 Success Criteria, Levels A and AA. Therefore, "Table 3: Success Criteria, Level AAA" is not included in the report.

For Revised Section 508 Report, only "Chapter 5: Software" table is included because amCharts 4 is a software-only solution, and other sections are not applicable.

Furthermore, amCharts 5 is a programming library, not directly used by end-user as a standalone software and/or web page. It therefore does not include any end-user-oriented documentation, so “Chapter 6: Support Documentation and Services” is no applicable, either.

JavaScript – a platform used to produce amCharts 5 – is a web technology. While technically it can be used in development of desktop and mobile applications, it would still be used web browser-like environment to run it. Based on this, amCharts 5 is evaluated in context of web only. All the conformance level indicated in the tables should be understood as “Web”, unless stated otherwise.

## Evaluation Methods Used

For evaluation while developing this product two assistive software technologies were used:

- [Microsoft Windows Narrator](#)
- [NVDA screen reader software](#)

Additionally, used diagnostic software:

- [Accessibility Insights](#)

## Applicable Standards/Guidelines

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

Standard/Guideline	Included In Report
<a href="#">Web Content Accessibility Guidelines 2.0</a>	Level A (Yes)
	Level AA (Yes)
	Level AAA (No)

## 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.

## WCAG 2.0 Report

Tables 1 and 2 also document conformance with:

- Chapter 5 – 501.1 Scope, 504.2 Content Creation or Editing
- Chapter 6 – 602.3 Electronic Support Documentation

Note: When reporting on conformance with the WCAG 2.0 Success Criteria, they are scoped for full pages, complete processes, and accessibility-supported ways of using technology as documented in the [WCAG 2.0 Conformance Requirements](#).

**Table 1: Success Criteria, Level A**

Criteria	Conformance Level	Remarks and Explanations
<a href="#">1.1.1 Non-text Content</a> (Level A)	Supports	All visual elements that convey relevant some information, e.g. chart columns, bullets, automatically include related identifying and quantitative information via ARIA attributes, like

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`aria-label`, `aria-description`, and `aria-labelledby`.

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1.2.1 Audio-only and Video-only (Prerecorded) (Level A)

Supports

There is no pre-recorded audio or video content displayed in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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1.2.2 Captions (Prerecorded) (Level A)

Supports

There is no pre-recorded audio or video content that would require captioning in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)

Supports

There is no pre-recorded audio or video content that would require description or alternative media in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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1.3.1 Info and Relationships (Level A)

Supports

All elements that relate to other elements (logical or visual) have a relative textual information (e.g. a bullet on a chart refers to series it belongs to by name), or via ARIA attributes such as `aria-controls` (e.g. legend markers that toggle series)

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1.3.2 Meaningful Sequence (Level A)

Supports

Elements are presented in meaningful sequence, e.g. individual columns in series highlight/read in the order of data, series are arranged by order they were added in the chart. Furthermore, the

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sequence can be controlled programmatically by providing proper `tabindex` values.

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1.3.3 Sensory Characteristics (Level A)

Supports

All elements that can be user-manipulated also contain proper textual indicators via ARIA attributes.

E.g. highlighting a horizontal scrollbar grip provides information that it can be moved left or right to change scope of the chart, or highlighting legend item indicates that pressing enter/space on it will toggle related series on/off.

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1.4.1 Use of Color (Level A)

Supports

While not enabled by default, amCharts 5 comes pre-loaded with a number pattern fill options that can be used to remove reliance on colors.

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1.4.2 Audio Control (Level A)

Supports

There is no pre-recorded audio or video content that should be controlled in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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2.1.1 Keyboard (Level A)

Supports

All functionality that can be performed via mouse or touchscreen pointers can also alternatively performed using keyboard.

E.g. each interactable element can be selected using TAB key. If it’s a movable element (e.g. grip on a scrollbar) it can be moved using arrow keys; if it’s a togglable element (e.g. legend item) it can be toggled using space/enter key.

Furthermore, “hover on select” option is available, which allows implementers of amCharts 5 treat selection of the element as

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“hover”, which then would trigger associated action, like changing appearance and/or displaying a tooltip, which in turn enabled trigger assistive technology.

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2.1.2 No Keyboard Trap (Level A)

Supports

amCharts 5 uses standard TAB key selection of its elements and does not require any specific/non-standard key sequences to move away from it completely.

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2.2.1 Timing Adjustable (Level A)

Supports

There is no time-limited content displayed by amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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2.2.2 Pause, Stop, Hide (Level A)

Supports

There are no built-in moving, blinking, scrolling, or auto-updating functionality in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

Auto-updating or programmatic scrolling functionality can technically be introduced by implementers of amCharts 5, however it would be non-standard custom functionality. In such case the implementer is responsible to implement appropriate means to stop or pause such operations.

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2.3.1 Three Flashes or Below Threshold (Level A)

Supports

There are no flashing or blinking content or elements in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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<a href="#">2.4.1 Bypass Blocks</a> (Level A)	Supports	amCharts 5 provides property <code>focusable</code> which can be used to selectively exclude otherwise focusable elements (whole chart block or its specific elements) from the TAB selection.
<a href="#">2.4.2 Page Titled</a> (Level A)	Supports	amCharts 5 is used to produce individual page elements, not whole web pages. While it can't be used to set title to the whole page, it does set default titles for its instances and most common elements automatically.  Implementer of amCharts 5, can further tune titles programmatically.
<a href="#">2.4.3 Focus Order</a> (Level A)	Supports	Focusable elements are presented in meaningful sequence, e.g. individual columns in series highlight/read in the order of data, series are arranged by order they were added in the chart.  Furthermore, the sequence can be controlled programmatically by providing proper <code>tabindex</code> values.
<a href="#">2.4.4 Link Purpose (In Context)</a> (Level A)	Supports	amCharts 5 does not display any links by default, therefore this criterion is classified as "Supports" as per VPAT recommendations.  Implementer of amCharts 5 can choose to augment it with additional links, in which case amCharts 5 provides properties to supplement additional assistive text next to a linked element if the link text itself does not provide enough context.

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<a href="#">3.1.1 Language of Page (Level A)</a>	Supports	amCharts 5 comes with translations to several human languages which can be enabled programmatically.
<a href="#">3.2.1 On Focus (Level A)</a>	Supports	Focusing of elements do not change anything except for highlighting focused element, and (optionally) displaying related tooltip.
<a href="#">3.2.2 On Input (Level A)</a>	Supports	There are no user inputs in amCharts 5 that can trigger change of context of the whole page it is displayed in.
<a href="#">3.3.1 Error Identification (Level A)</a>	Supports	There are no input controls in amCharts 5 that could result in error, therefore this criterion is classified as "Supports" as per VPAT recommendations.
<a href="#">3.3.2 Labels or Instructions (Level A)</a>	Supports	While there are no built-in inputs to enter information into, some elements (e.g. scrollbar grips; legend items) in amCharts 5 provide additional instructions about their functionality via ARIA attributes.
<a href="#">4.1.1 Parsing (Level A)</a>	Supports	<p>amCharts 5 output is produced using JavaScript which creates elements directly in DOM tree, and does not use text-based markup, that could pose parsing errors. therefore this criterion is classified as "Supports" as per VPAT recommendations.</p> <p>Furthermore, amCharts 5 contains built-in validation mechanisms ensuring that using</p>

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non-unique IDs would result in errors during development stage, where they can be remedied by implementer.

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**4.1.2 Name, Role, Value (Level A)**

Supports

Where relevant, elements comprising amCharts 5 instances are labelled by proper role and value attributes.

E.g. togglable legend item has a role of “switch”; scrollbar grips have role “slider”, etc.

Elements, that require value/position data have also ARIA attributes for those, e.g. `aria-valuemin`, `aria-valuemax`, `aria-valuenow`, and `aria-valuetext` for scrollbar.

Furthermore, each of the roles can be programmatically changed by implementer.

**Table 2: Success Criteria, Level AA**

Criteria	Conformance Level	Remarks and Explanations
<b>1.2.4 Captions (Live) (Level AA)</b>	Supports	There is no audio or video content displayed in amCharts 5 that would require captioning, therefore this criterion is classified as “Supports” as per VPAT recommendations.
<b>1.2.5 Audio Description (Prerecorded) (Level AA)</b>	Supports	There is no pre-recorded audio content displayed in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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**1.4.3 Contrast (Minimum) (Level AA)**

Supports

By default, all textual content in amCharts 5 has color applied to it that would provide maximum contrast to the background it is displayed on.

E.g. text displayed in a tooltip colored to match element it is displayed for, will be automatically colors either black or white based on the proprietary calculated “lightness” of the background color.

Implementer is also in full control on programmatically (including using dynamic functions) setting colors for each and every element, including textual.

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**1.4.4 Resize text (Level AA)**

Supports

amCharts 5 can dynamically accommodate changing of text elements without sacrificing visual implementation, layout, or meaning of the displayed content.

Text size can be controlled either by means of internet browser, assistive technologies, or programmatically.

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**1.4.5 Images of Text (Level AA)**

Supports

There are no images as text content displayed in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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**2.4.5 Multiple Ways (Level AA)**

Supports

amCharts 5 does not produce whole pages, just individual page elements, therefore this criterion is classified as “Supports” as per VPAT recommendations.

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2.4.6 Headings and Labels (Level AA)

Supports

amCharts 5 is used to produce individual page elements, not whole web pages. While it can't be used to set title or heading to the whole page, it does set default titles for its instances and most common elements automatically.

Implementer of amCharts 5, can further tune titles programmatically as well as augment amCharts 5-produced content with additional HTML elements, like headings or labels.

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2.4.7 Focus Visible (Level AA)

Supports

Focused elements on amCharts 5 will be highlighted by a high-contrast outline.

The outline color, thickness, opacity can be changed programmatically.

Implementer can also choose to apply additional visual identifiers for the highlighted elements, e.g. increase opacity, change color, enlarge, etc.

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3.1.2 Language of Parts (Level AA)

Supports

amCharts 5 comes with translations to several human languages which can be enabled programmatically.

Furthermore, each individual bit of text (visible labels and attribute descriptors) can be modified, added, or disabled programmatically by implementer.

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3.2.3 Consistent Navigation (Level AA)

Supports

Elements in similar implementations of amCharts 5 instances will maintain the same order/layout of its elements.

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Furthermore, such order can be modified programmatically by implementer.

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3.2.4 Consistent Identification (Level AA)

Supports

Elements in similar implementations of amCharts 5 instances will maintain the consistent naming/identification.

E.g. a legend will always be identified as "Legend", or a scrollbar as "Scrollbar".

Furthermore, such names/identifications can be modified programmatically by implementer.

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3.3.3 Error Suggestion (Level AA)

Supports

There are no input controls in amCharts 5 that could result in error, therefore this criterion is classified as "Supports" as per VPAT recommendations.

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3.3.4 Error Prevention (Legal, Financial, Data) (Level AA)

Supports

There are no controls or other tools in amCharts 5 that could be used to trigger legal commitments, alter any stored data, or submit user-entered data in any way, therefore this criterion is classified as "Supports" as per VPAT recommendations.

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## Revised Section 508 Report

### Chapter 3: Functional Performance Criteria (FPC)

Criteria

Conformance Level

Remarks and Explanations

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302.1 Without Vision	Supports	All visual elements that convey relevant some information, e.g. chart columns, bullets, automatically include related identifying and quantitative information via ARIA attributes, like <code>aria-label</code> , <code>aria-description</code> , and <code>aria-labelledby</code> .
302.2 With Limited Vision	Supports	Besides full support for screen reader assistive technologies, amCharts 5 provides additional ways to enhance visual clarity, e.g. high-contrast themes, support for enlarged text, pattern fill options, high-contrast outlines for focused elements.
302.3 Without Perception of Color	Supports	While not enabled by default, amCharts 5 comes pre-loaded with a number pattern fill options that can be used to remove reliance on colors.
302.4 Without Hearing	Supports	There are is no audio output produced by amCharts 5, therefore this criterion is classified as "Supports" as per VPAT recommendations.
302.5 With Limited Hearing	Supports	There are is no audio output produced by amCharts 5, therefore this criterion is classified as "Supports" as per VPAT recommendations.
302.6 Without Speech	Supports	There are is voice-controlled functionality in amCharts 5, therefore this criterion is classified as "Supports" as per VPAT recommendations.

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302.7 With Limited Manipulation	Supports	<p>All functionality that can be performed via mouse or touchscreen pointers can also alternatively performed using keyboard.</p> <p>E.g. each interactable element can be selected using TAB key. If it's a movable element (e.g. grip on a scrollbar) it can be moved using arrow keys; if it's a togglable element (e.g. legend item) it can be toggled using space/enter key.</p> <p>Furthermore, "hover on select" option is available, which allows implementers of amCharts 5 treat selection of the element as "hover", which then would trigger associated action, like changing appearance and/or displaying a tooltip, which in turn enabled trigger assistive technology.</p>
302.8 With Limited Reach and Strength	Supports	<p>There are no special requirements to reach, strength, or speed of the control actions for amCharts 5. Users able to control at either mouse, touchscreen, keyboard or simulate keyboard input with mind/voice controlled technology, can control amCharts 5.</p>
302.9 With Limited Language, Cognitive, and Learning Abilities	Supports	<p>The information displayed in amCharts 5 is controlled by implementer, therefore it's up to him/her to tailor information and/or its representation tailored for target audience.</p>

## Chapter 5: Software

Criteria	Conformance Level	Remarks and Explanations
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501.1 Scope – Incorporation of WCAG 2.0 AA	See <a href="#">WCAG 2.0</a> section	See information in WCAG 2.0 section
<a href="#">502</a> <i>Interoperability with Assistive Technology</i>	<i>Heading cell – no response required</i>	<i>Heading cell – no response required</i>
502.2 Documented Accessibility Features	<i>Heading cell – no response required</i>	<i>Heading cell – no response required</i>
502.2.1 User Control of Accessibility Features	Supports	amCharts 5 is designed to work with and complement built-in accessibility features and assistive technologies.
502.2.2 No Disruption of Accessibility Features	Supports	amCharts 5 is designed to work with and complement built-in accessibility features and assistive technologies.
502.3 Accessibility Services	<i>Heading cell – no response required</i>	<i>Heading cell – no response required</i>

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502.3.1 Object Information	Supports	All relevant elements and controls contain ARIA attributes to identify role, state(s), properties, boundary, name, and description where applicable.
502.3.2 Modification of Object Information	Supports	All attributes, including ones that relate to accessibility can be changed programmatically, including dynamically on a live instance.
502.3.3 Row, Column, and Headers	Supports	There is no information displayed in tables in amCharts 5, therefore this criterion is classified as "Supports" as per VPAT recommendations.
502.3.4 Values	Supports	Where applicable, any value-bound element will also contain relevant text-based assistive information via ARIA attributes.  Those are modifiable programmatically.
502.3.5 Modification of Values	Supports	Any setting, parameter, property, or attribute in amCharts 5 can be set programmatically, including those that can be set by user input.
502.3.6 Label Relationships	Supports	All elements that relate to other elements (logical or visual) have a relative textual information (e.g. a bullet on a chart refers to series it belongs to by name), or via ARIA attributes such as <b>aria-controls</b> (e.g. legend markers that toggle series)

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502.3.7 Hierarchical Relationships	Supports	Where applicable, amCharts 5 identifies hierarchical relationships via relevant ARIA <code>aria-controls</code> and <code>role</code> attributes, e.g. element with a role of <code>menuitem</code> maintains clear parent relation to an element with role <code>menu</code> based on the underlying DOM structure and hierarchy.
502.3.8 Text	Supports	While accessible out-of-the-box, implementer of amCharts 5 or assistive technology has full control on visual appearance of text elements.
502.3.9 Modification of Text	Supports	Any text content can be changed programmatically, including by assistive technology.
502.3.10 List of Actions	Supports	Each element which performs as an UI controller, has also an associated ARIA label describing what it does, and how to use it, as well as its current value if applicable.
502.3.11 Actions on Objects	Supports	amCharts 5 does not prevent changing of values or performing actions on any of its elements, including actions invoked programmatically.
502.3.12 Focus Cursor	Supports	Focused elements on amCharts 5 will be highlighted by a high-contrast outline.

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502.3.13 Modification of Focus Cursor	Supports	<p>The outline color, thickness, opacity can be changed programmatically.</p> <p>Implementer can also choose to apply additional visual identifiers for the highlighted elements, e.g. increase opacity, change color, enlarge, etc.</p>
502.3.14 Event Notification	Supports	<p>amCharts 5 will trigger a voice notification when relevant action is triggered on its instance, e.g. a series is triggered on or off; map chart zoomed in or out, etc.</p>
502.4 Platform Accessibility Features	Supports	<p>There are no built-in input controls available in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.</p>
<i>503 Applications</i>	<i>Heading cell – no response required</i>	<i>Heading cell – no response required</i>
503.2 User Preferences	Supports	<p>amCharts 5 is fully customizable, including colors, sizes, contrasts, etc. However, being client-side library, it does not provide any means to save user preferences, which should be implemented by implementer.</p>
503.3 Alternative User Interfaces	Supports	<p>amCharts 5 fully supports assistive technologies, and no alternative UI is provided, therefore this criterion is classified as “Supports” as per VPAT recommendations.</p>

503.4 User Controls for Captions and Audio Description	<i>Heading cell – no response required</i>	<i>Heading cell – no response required</i>
503.4.1 Caption Controls	Supports	There is no pre-recorded audio or video content that would require captions in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.
503.4.2 Audio Description Controls	Supports	There is no pre-recorded audio or video content that would require captioning in amCharts 5, therefore this criterion is classified as “Supports” as per VPAT recommendations.
<i>504 Authoring Tools</i>	<i>Heading cell – no response required</i>	<i>Heading cell – no response required</i>
504.2 Content Creation or Editing (if not authoring tool, enter “not applicable”)	Not applicable	amCharts 5 is not an authoring tool.
504.2.1 Preservation of Information Provided for	Not applicable	amCharts 5 is not an authoring tool.

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Accessibility in  
Format  
Conversion

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504.2.2 PDF  
Export

Not  
applicable

amCharts 5 is not an authoring tool.

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504.3 Prompts

Not  
applicable

amCharts 5 is not an authoring tool.

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504.4 Templates

Not  
applicable

amCharts 5 is not an authoring tool.

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