

8.0 Accessibility

- 8.1 Captions
 - 8.1.0 Captions Requirements
 - 8.1.1 Closed Captions
 - 8.1.2 Analog Closed Captions
 - 8.1.3 Digital Closed Captions
 - 8.1.4 Digital Style
 - 8.1.4.1 Text Style
 - 8.1.4.2 Text Size
 - 8.1.4.3 Text Color
 - 8.1.4.4 Text Opacity
 - 8.1.4.5 Text Edges
 - 8.1.4.6 Text Edges Color
 - 8.1.4.7 Background Color
 - 8.1.4.8 Background Opacity
 - 8.1.4.9 Window Color
 - 8.1.4.10 Window Opacity
- 8.2 Video Description
 - 8.2.1 Video Description Requirements
- 8.3 Talk Back
 - 8.3.1 Talk Back Requirements
 - 8.3.2 Talk Back Events Read in Full
- 8.4 Speech Rate
 - 8.4.1 Speech Rate Requirements
- 8.5 Zoom Mode
 - 8.5.1 Zoom Mode Requirements
 - 8.5.2 Zoom Mode applies as follows
 - 8.5.3 Zoom Mode Image
 - 8.5.4 Zoom Mode Sector Selection
 - 8.5.5 Zoom Mode Sector Selection 2020 V/M ONLY (not 2020 P or 2021 & beyond)
 - 8.5.6 Zoom mode sector

	Network Settings	Notes
1	Captions	
2	Video Description	
3	Talk Back	
4	Speech Rate	Speed of Talk back
5	Zoom Mode	

8.1 Captions

	Captions Settings	Notes
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1	Closed Captions	On/Off setting
2	Analog Closed Captions	CC1/CC2/CC3/CC4
3	Digital Closed Captions	CS1/CS2/CS3/CS4/CS8/CS6
4	Digital Style	submenu

8.1.0 Captions Requirements

	Captions Requirements	Notes
1	Closed Captions is a global setting.	
2	Captions applies to Tuner	
3	Captions applies to Composite	<p>If composite detected.</p> <p>Does not apply if COMP with no sync or component since detected.</p> <p>For component and HDMI, closed captions must be enabled on the device.</p>
4	Applications must follow the TV system state for the closed captions setting.	Some applications align internally and do not align with the system state until CC key is pressed.
5	Captions applies to cast streaming content in the event closed caption support is required by the SmartCast app.	
6	Closed captions is supported for Cast streaming content using the SMPTE standard.	For apps without internal CC support.
7	<p>For streaming content launched from partner buttons or SmartCast TV, closed caption support is required if supported or required for the content. Closed Captions support from</p> <ul style="list-style-type: none"> • CC key • a key press while streaming content (typically the UP key) • If SMPTE standard supported from TV settings 	
8	If content includes closed captions support then the app must respond to CC key to enable and disable captioning.	
9	When a closed captions setting is changed on the SmartCast app, the setting change is annunciated on the TV.	
10	When the Digital Style settings are changed, an example of the appearance of the captions is displayed on the TV.	Long time requirement missed when moved to confluence.
11	Analog content that is broadcast digitally may still have analog captions broadcast as per 608 over	Analog closed captions defined per CEA-608 required from 1990 going forward.

	708 requirement for captions.	<p>Digital closed captions defined per CEA-708 required from 2014 going forward.</p> <p>608 over 708 refers to inclusion of CEA-608 analog captions in a digital broadcast if analog content unconverted for digital transmission.</p>
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8.1.1 Closed Captions

	Setting	Requirements
1	On	<p>Digital captions display unless not available.</p> <p>Digital captions display if both digital and analog captions available.</p>
2		If no Digital caption then display analog captions.
3		<p>Automatically enables captions to current setting typically</p> <ul style="list-style-type: none"> • CS1 (digital captions) • CC1 (analog captions)
4	Off (default)	

8.1.2 Analog Closed Captions

	Analog Closed Caption Settings	Notes
1	CC1	<p>default</p> <p>In practice only CC1 is used.</p>
2	CC2	
3	CC3	
4	CC4	

8.1.3 Digital Closed Captions

	Digital Closed Caption Settings	Notes
1	CS1	<p>default</p> <p>In practice only CS1 is used.</p>
2	CS2	
3	CS3	
4	CS4	
5	CS5	
6	CS6	

8.1.4 Digital Style

	Digital Style Settings	Notes
1	Text Style	Digital Style configures the appearance of digital closed captions and does not apply to analog captions broadcast over a digital program (e.g. 608 over 708).
2	Text Size	
3	Text Color	
4	Text Opacity	
5	Text Edges	
6	Text Edges Color	
7	Background Color	
8	Background Opacity	
9	Window Color	
10	Window Opacity	

8.1.4.1 Text Style

	Text Style Settings	Font	Notes
1	As Broadcast		Default or if undefined then Modern The font style defined by the broadcaster.
2	Playbill	LatinModernMono	Monospaced serif font
3	Newsprint	AftaSerif	Proportional serif font
4	Computer	NotCourierSans	Monospace sans serif font
5	Modern	TitilliumText	Proportional sans serif font
6	Casual	IndieFlower	Casual print font
7	Script	DancingScript	Script font
8	Capitals	Folk	capital letters font

8.1.4.2 Text Size

	Text Size Settings	Notes
1	As Broadcast	default or if undefined then Medium The text size defined by the broadcaster.
2	Small	
3	Medium	
4	Large	

8.1.4.3 Text Color

	Text Color Settings	Notes
1	As Broadcast	default or if undefined then White The text color defined by the broadcaster.
2	Black	
3	White	
4	Green	
5	Blue	
6	Red	
7	Cyan	
8	Yellow	
9	Magenta	

8.1.4.4 Text Opacity

	Text Opacity Settings	Notes
1	As Broadcast	default or if undefined then Solid The text opacity defined by the broadcaster.
2	Solid	
3	Translucent	
4	Transparent	
5	Flashing	

8.1.4.5 Text Edges

	Text Edges Settings	Notes
1	As Broadcast	default or if undefined then None The text edge defined by the broadcaster.
2	None	
3	Raised	
4	Depressed	
5	Uniform	
6	Drop Shadow	

8.1.4.6 Text Edges Color

	Text Edges Color Settings	Notes
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1	As Broadcast	default or if undefined then White The Text Edges color defined by the broadcaster.
2	Black	
3	White	
4	Green	
5	Blue	
6	Red	
7	Cyan	
8	Yellow	
9	Magenta	

8.1.4.7 Background Color

	Background Color Settings	Notes
1	As Broadcast	default or if undefined then Black The background color defined by the broadcaster.
2	Black	
3	White	
4	Green	
5	Blue	
6	Red	
7	Cyan	
8	Yellow	
9	Magenta	

8.1.4.8 Background Opacity

	Background Opacity Settings	Notes
1	As Broadcast	default or if undefined then Solid The background opacity defined by the broadcaster.
2	Solid	
3	Translucent	
4	Transparent	
5	Flashing	

8.1.4.9 Window Color

	Text Size Settings	Notes
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1	As Broadcast	default or if undefined then Black The window color defined by the broadcaster.
2	Black	
3	White	
4	Green	
5	Blue	
6	Red	
7	Cyan	
8	Yellow	
9	Magenta	

8.1.4.10 Window Opacity

	Window Opacity Settings	Notes
1	As Broadcast	default or if undefined then Solid The window opacity defined by the broadcaster.
2	Solid	
3	Translucent	
4	Transparent	
5	Flashing	

8.2 Video Description

	Video Description Settings	Description	Notes
1	On	Video Description is the verbal description of the action on the video, included in the secondary audio program.	When “On” is selected then Spanish/Video Description is selected for Digital Audio.
2	Off (default)		When Off is selected then English is selected for Digital Audio.

8.2.1 Video Description Requirements

	Video Description Requirements	Notes
1	Broadcasters have included video description in the “SPA” (Spanish) secondary audio channel.	Added to limited content as designated by broadcasters.

8.3 Talk Back

2	Selection of the SPA setting produces either Spanish or English with video description as provided by the broadcaster.	This is the same as the Digital Audio setting of Spanish/Video Description setting.
3	Video Description applies to the following inputs: <ul style="list-style-type: none"> tuner composite WatchFree+ For all other inputs is grayed out or does not display for SmartCast app. When setting is enabled EAS warnings will also be heard.	Inclusion for WatchFree applies due to the WatchFree+ OTA integration.
	Talk Back Settings	Notes
1	Off	default
2	On	

8.3.1 Talk Back Requirements

	Talk Back Requirements	
1	Selection of Text-to-Speech Talk back speaks all settings changes adjusted using the basic remote in English, spoken at the current customer volume.	
2	Maximum latency is 250 Msec.	
3	Media audio and UI sounds are attenuated to 50% of current system volume.	
4	Media audio and UI sound attenuation should ramp down at 50-100 Msec.	
5	Talk Back must be read back to completion unless interrupted and replaced by a new event.	default
6	Talk Back does not apply to notifications resulting from SmartCast Mobile adjustments, only setting changes.	Annunciations of settings changed using the SmartCast Mobile are not spoken to avoid TTS of the same setting change on both the SmartCast Mobile and the TV.
7	If Talk Back is enabled and the TV language is set to French or Spanish, then Talk Back is not heard as Talk Back only supports English.	
8	If demo mode is enabled, then Talk Back is disabled, grayed out and unavailable and for SmartCast Mobile, does not display.	
9	For applications, the following must provide Talk Back support: <ul style="list-style-type: none"> On press of HOME button, Talk Back annunciates the display of the SmartCast TV App launcher as well as the highlighted app. 	

	<ul style="list-style-type: none"> • Talk Back of the highlighted app during navigation of the SmartCast TV App Launcher • Playback buttons must Talk Back when used with an app. 	
10	<p>Applications must provide Talk Back support as follows:</p> <ul style="list-style-type: none"> • Talk Back required when navigating an application for content. • Playback buttons must Talk Back when used with an application. 	
11	If launched during OOB, Talk Back is persistent after OOB exit.	

8.3.2 Talk Back Events Read in Full

	Talk Back Events Read in Full	Key Pressed	Notes
1	Text-to-Speech applies to basic remote events and if applicable resulting OSD display.	<ul style="list-style-type: none"> • Power key (announces power on and power off) • Input key • Channel Up/Down keys or digits when direct channel entry • Wide key • Pic key • Play/Pause key • CC key • Mute key on release of mute – volume level only • Playback keys to control streaming content (embedded apps only) • Partner and VIA keys. 	No Talk Back for Volume Up/Down or mute of volume
2	On input or channel, speak OSD in full until completed or interrupted.		
3	System Notification (e.g. sleep timer will turn off TV)		
4	Media Player application navigation		
5	SmartCast TV App Launcher		
6	User Manual		

8.4 Speech Rate

	Speech Rate Settings	Rate TTS is spoken
1	Slow	200 words per minute

2	Normal (default)	300 words per minute
3	Fast	400 words per minute


8.4.1 Speech Rate Requirements

	Speech Rate Requirements	Notes
1	If demo mode is enabled, then Speech Rate is disabled, grayed out and unavailable.	For SmartCast app, does not display.

8.5 Zoom Mode

	Zoom Mode Settings	Notes
1	Off	default
2	On	If On is selected, zoom mode persists through power cycles.

8.5.1 Zoom Mode Requirements

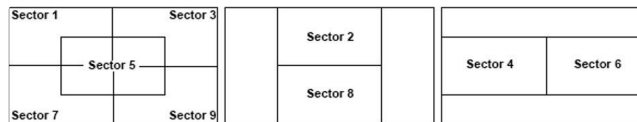
	Zoom Mode Requirements	Notes
1	Zoom Mode enlarges the graphics plane for the quadrant of the OSD or the currently highlighted Settings by 200% (font size based on minimum required for legibility at 20/200).	
2	The font size has been defined to allow a person with 20/20 vision to read the text from a distance of 7 – 10 times the screen height.	
3	For example, for a 50" TV with a screen height of 2 feet, the font should be easily legible for a consumer from a minimum of 14 to a maximum of 20 feet away.	
4	This results in a minimum preferred font size of approximately 22 pixels or 16 points.	
5	If demo mode is enabled then Zoom Mode is disabled, grayed out and unavailable and for SmartCast app, does not display.	
6	When Zoom Mode is enabled, the current graphics plane is doubled.	
7	For graphics that are full screen, a sector, defined as one quarter of the original image, fills the screen. There are 9 locations for sectors with doubled graphical content.	
8	Zoom mode does not enlarge the graphic layer when Closed captions displayed on the TV.	Closed captions has a text size setting that can be changed to large as per  8.0 Accessibility 5.1.4.2 Text Size .
9	Any App launcher is doubled with sector 1 as default.	

- For any app, during navigation of content using a graphic layer, the default zoom mode is defined by the highlighted area on the app. The TV shall receive a highlighted region bounding box and IsText boolean flag from the graphical framework and use that to determine the appropriate zoom region to display. Priority given to an anchor in the upper-left-hand corner of text fields and the center of any other field. The highlighted zone will guarantee the display of the anchor point determined from the field characteristics and maximize the area of the highlighted region displayed.

8.5.2 Zoom Mode applies as follows

	Zoom Mode Application	Notes
1	All screens and OSD, including SmartCast TV UI.	
2	All settings and parameters in the Settings menu	
3	Display of channel and program information	
4	Applications	

8.5.3 Zoom Mode Image



Graphic 1. Zoom Mode sectors

8.5.4 Zoom Mode Sector Selection

	Zoom Mode sector selection	Notes
1	When zoom mode is selected the notification is:	<ul style="list-style-type: none"> • Zoom mode enabled. Press and hold the <gear icon>/MENU key to enable zoom focus navigation using up, down, left and right.
2	A long press of the MENU key enables zoom navigation mode and displays a confirming notification.	
3	Another long press of the MENU key disables zoom navigation mode and displays a confirming notification.	
4	Notifications for long MENU key press are:	<ul style="list-style-type: none"> • Zoom navigation mode is On. • Zoom navigation mode is Off.
5	Up/Down/Left/Right keys moves the quadrant in the direction of the arrow.	Zoom Mode sector is changed using the arrow keys.
6	During zoom navigation mode a press of OK key if source is tuner displays digit page for channel entry and disables	

	zoom mode navigation mode.	
7	During zoom navigation mode short press of MENU key displays the menu and disables zoom navigation mode (zoom mode persists)	Adjust keys sent to Quick menu for navigation as expected by user instead of to Zoom navigation mode.
8	A subsequent long press of the MENU key disables zoom navigation mode and displays a confirming notification.	

8.5.5 Zoom Mode Sector Selection 2020 V/M ONLY (not 2020 P or 2021 & beyond)

	Zoom Mode sector selection 2020	Notes
1	When the Zoom Mode is enabled (from the setting or a long press of the WIDE key) and at each subsequent power on, a notification displays.	<ul style="list-style-type: none"> Zoom mode enabled. Use your number pad to move the focus for zoom mode. Press the – (Dash) key to stop using digits for zoom mode. Or press and hold the <gear icon>/MENU key to use Left, Right, Up or Down to move the zoom mode focus.
2	A press of a digit key switches to the content in the sector of the same number, doubling the graphics in the sector.	For example, the default for SmartCast TV is sector 1. To see SmartCast TV bottom left, press 7 key. For TV center, press 5.
3	Only the graphic plane is doubled, any video below is unchanged and still visible if not covered by graphics	
4	If the sector requested does not include graphic content, then the sector is not changed and a message displays.	
5	To exit number pad Zoom Navigation mode, press the dash key. If number pad Zoom navigation mode has been disabled, another press of the DASH key enters Zoom Navigation mode only if a digit has not preceded the DASH key (within 2 seconds tunable), as would be the case during channel entry.	To change channels with direct digit entry, press dash key to end zoom navigation mode.
6	When Zoom Mode is disabled, then Zoom Navigation mode exits automatically.	
7	The messages for launch and exit of Zoom Navigation mode are:	<ul style="list-style-type: none"> Number pad in zoom mode Number pad in digit mode.
8	The message when an empty sector is requested:	<ul style="list-style-type: none"> No content to display.
9	While number pad is in zoom mode, a press of 0 pauses zoom mode: graphics are again full screen instead of doubled by sector. <ul style="list-style-type: none"> A press of any digit (including 0), returns to zoom mode for the graphics layer as defined by the digit. 	

8.5.6 Zoom mode sector

10	When TV is powered on, if zoom mode is enabled, the number pad Zoom Navigation mode is enabled even if disabled during the last power session.		
	Graphic Element	Sector Default	Notes
1	SmartCast Home	1	
2	User Manual	1	
3	Full Multi Media Player	1	
4	PIN entry for content	2	
5	Warnings & Notifications	7	Notifications moved to screen bottom
6	Picture Sliders	2	
7	Audio Sliders	2	
8	Input Change Control	3	Input change control (top right) replaced Info Bar
9	Input Selector	4	
10	Wide Selector	4	
11	Picture Mode selector (PIC key)	4	
12	Dialog box	5	
13	Picture Size/Position adjustment	5	
14	Volume adjustment	3	Volume moved to top right
15	Color Tuner	8	
16	Full Screen apps	apps determine	