



Accessible and Verifiable Voting Technology: Vision

The latest version of this chart appears at <http://www.verifiedvotingfoundation.org/accesscharts>

<u>Vendor</u>	<u>Model</u>	<u>Display Font Size</u>	<u>Display Contrast</u>	<u>Display Color Shift</u>	<u>Audio Device</u>	<u>Audio Speed</u>	<u>Audio Volume</u>	<u>Voice Type</u>	<u>VVPR Readback</u>	<u>Tactile Keypad</u>	<u>Additional Features</u>	<u>All Units Accessible</u>	<u>VVPR on All?</u>
AccuPoll	AVS 1000 1	yes 2	yes 1	yes 1	yes 1	yes 1	yes 3	human 3	yes 1	yes 1	braille keypad 1	yes	always
AutoMARK (ES&S)	ballot marking device 4	yes 4	yes 5	yes	yes 4	yes 4	yes 6	synth 7	yes 8	yes 6	instructions in braille repeat key 5	yes	always
Avante	Vote Trakker 9	yes 10	no 11	yes 10	yes 12	yes 12	no 11	synth 11	yes 13	yes 10	can navigate audio ballot 14	yes	always
Avante	Vote Trakker Full Face 15	yes 16	yes 15	yes 15	yes 15	-	-	-	yes 15	yes 15	-	yes	always
Diebold	AccuVote TS 17	yes 17	no 18	no 18	optional 17	no 11	yes 19	human 11	-	no 20	-	no	optional
Diebold	AccuVote TSX 21	yes 21	yes 22	yes 22	optional 21	yes 23	-	-	-	no 20	-	no	optional
ES&S	iVotronic 24	yes 2	no 11	-	yes 24	no 25	no 25	human 11	-	yes 26	braille keypad 26	no	optional
ES&S	iVotronic LS 27	yes 27	yes 27	-	yes 27	-	-	-	-	-	-	no	optional
Hart Intercivic	eSlate 28	yes 2	yes 29	-	optional 30	no 11	yes 31	human 11	-	yes 29	-	no	optional

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<u>Populex</u>	<u>Digital Paper Ballot</u> ³²	yes ³³	yes ³⁴	yes ³⁴	-	-	yes ³⁴	-	yes ³⁴	-	-	yes	optional
<u>Sequoia</u>	<u>AVC Edge</u> ³⁵	yes ²	no ¹¹	-	optional ³⁶	no ³⁷	yes ³⁷	human ¹¹	-	optional ³⁶	braille keypad ³⁸	no	optional

Key to Vision Chart:

- A. "Display Font Size" = capability to enlarge font so that voters with limited vision can more easily read the text.
- B. "Display Contrast" = increase or change contrast so text stands out, for voters with color-blindness and/or limited vision.
- C. "Display Color Shift" varies the colors shown on the screen, for voters with color-blindness and/or limited vision.
- D. "Audio Device" refers to a feature which allows voters to hear the instructions and ballot choices read to them through headphones. Some systems use synthesized voice, while others use human voice. Only the AutoMARK offers synchronized audio/video (enables the audio interface to be synchronized to the text being displayed on the screen, an important benefit for voters with a variety of cognitive impairments). New draft NIST Voluntary Voting Systems Guidelines indicate "it is anticipated that this will become a requirement in future versions [of the VVSG]."
- E. "Audio Speed" refers to a feature which allows voters to adjust the speed at which text is read to them through headphones.
- F. "Audio Volume" refers to a feature which allows voters to adjust the volume at which text is read to them through headphones.
- G. "Voice Type" refers to recorded human speech or synthesized computer speech.
- H. "VVPR Readback" is an audio readback of the voter-verified paper record (VVPR) enabling the visually impaired voters to verify that their votes are recorded as intended and to make changes as necessary. In order to provide this feature, audio readback must be from the paper record itself and not from the voting machine's internal memory.
- I. "Tactile Keypad" refers to manual controls which may include Braille, specially raised or shaped buttons, etc., to facilitate the selection of choices as the voter goes through the ballot.

Footnotes for Vision Chart:

1. <http://www.accupoll.com/TheAccuPollAdvantage/Brochures/accessibility.pdf>
2. http://www.capc.umd.edu/rpts/md_evote_ContempVotingMach.pdf p.7
3. <http://www.accupoll.com/TheAccuPollAdvantage/WhitePapers/Accessible.pdf>
4. <http://www.essvote.com/HTML/docs/AutoMark.pdf> (Note: Although some maintain that ballot-marking devices are not accessible to mobility-impaired and dexterity-impaired individuals due to the need to move the paper ballot from the device to the secure ballot box, in most areas election workers insert the ballots into the ballot box for all voters, and since it is possible to use privacy sleeves to maintain ballot secrecy for all voters, the ballot-marking devices provide as much accessibility to mobility-impaired and dexterity-impaired voters as to all other voters.)
5. http://www.solidworks.com/pages/popups/viewrelease.html?prfile=11_01_2004.html
6. <http://www.automarkts.com/> under tutorial under navigation
7. <http://www.johnson-county.com/auditor/min/050502vote.htm>
8. <http://vote.nist.gov/NISTEACResaultitest.pdf> under ?ensuring access to voting?
9. <http://www.vote-trakker.com/White%20Papers/ACCESSIBLE%20VOTING%20with%20voter%20verifiable%20paper%20records%20in%20DRE%20Voting%20System.pdf> and http://www.vote-trakker.com/accessible_optical_voting.html
10. http://www.uhavavote.org/vendorfair/survey_results/avante_4.5.doc
11. <http://www.cvfieldsmbp.org/Voting%20Technology%20for%20People%20With%20Disabilities.pdf> p.42
12. <http://www.afb.org/afbpress/pub.asp?DocID=aw050404&select=1#1> under Voting Machines: Vote-Trakker
13. <http://www.votersunite.org/info/ElectronicVotingInBrief.pdf> p. 3
14. http://www.verifiedvoting.org/downloads/Avante_AccessibleVVPB.pdf p.4
15. <http://www.vote-trakker.com/White%20Papers/fullfaceballottouchscreensystem.pdf> and http://www.vote-trakker.com/accessible_optical_voting.html
16. <http://www.vote-trakker.com/evc308sprff.html>

17. http://www6.diebold.com/dieboldes/accuvote_ts.htm
18. Email letter from Carrie Frank at Diebold Corporation, July 5, 2005 (attached chart).
19. <http://www.cs.umd.edu/~bederson/voting/umd-dre-report.pdf>
20. Diebold claims that their machines have a tactile keyboard, but in their letters they describe it as a telephone keypad with a dotted five key, which is a regular telephone keypad.
21. http://www6.diebold.com/dieboldes/accuvote_tsx.htm
22. Email letter from Buck Jones at Diebold Corporation, July 3, 2005.
23. http://www.tbpc.state.tx.us/cat_page/578-N1DieboldAccuVoteTSX.pdf p. 3
24. <http://www.essvote.com/HTML/docs/iVotronic.pdf>
25. <http://www.cvfieldsmbp.org/Voting%20Technology%20for%20People%20With%20Disabilities.pdf> p.22
26. <http://www.essvote.com/HTML/products/ivotronic.html> right side column
27. http://www.essvote.com/HTML/docs/ESS_iVotronic_LS.pdf
28. http://www.hartintercivic.com/files/accessible_DLA_12_rev.pdf
29. http://www.uhavavote.org/vendorfair/survey_results/hart_4.5.doc - pg 1
30. <http://www.hartintercivic.com/innerpage.php?pageid=26> DAU section
31. <http://www.cvfieldsmbp.org/Voting%20Technology%20for%20People%20With%20Disabilities.pdf> p.27
32. <http://www.populex.com/dfb.htm>
33. <http://www.advocacyla.org/whatsnew.html>
34. http://www.populex.com/DPB_Features.htm in Allows blind and visually impaired voting section

35. <http://www.sequoiavote.com/docs/AVCEdge.pdf>

33. http://www.dcboee.org/pdf_files/AVC_Edge_Web_Instructions.pdf p.5

36. <http://www.cvfieldsmbp.org/Voting%20Technology%20for%20People%20With%20Disabilities.pdf>
p.33

37. http://www.capc.umd.edu/rpts/md_evote_ContempVotingMach.pdf

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