



Accessible and Verifiable Voting Technology: Dexterity

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

<u>Vendor</u>	<u>Model</u>	<u>Touchscreen</u>	<u>Dual Switch</u>	<u>Foot Pedal</u>	<u>Jelly Switch</u>	<u>Additional Features</u>	<u>All Units Accessible</u>	<u>VVPR on All?</u>
AccuPoll	AVS 1000 ¹	yes ²	yes ¹	-	yes ³	-	yes	always
AutoMARK (ES&S)	ballot marking device ⁴	yes ⁴	yes ⁴	yes ⁵	-	write-in capability ⁶	yes	always
Avante	Vote Trakker ⁷	yes ⁸	yes ⁹	-	-	-	yes	always
Avante	Vote Trakker Full Face ¹⁰	yes ¹¹	yes ⁹	-	-	-	yes	always
Diebold	AccuVote TS ¹²	yes ¹²	no ⁵	no ⁵	no ⁵	-	no	optional
Diebold	AccuVote TSX ¹³	yes ¹³	planned ¹⁴	no ⁵	no ⁵	tethered telephone keypad ¹⁵	no	optional
ES&S	iVotronic ¹⁶	yes ²	no ¹⁷	-	-	-	no	optional
ES&S	iVotronic LS ¹⁸	yes ¹⁸	-	-	-	-	no	optional
Hart Intercivic	eSlate ¹⁹	no ²	optional ²⁰	-	optional ²⁰	optional blink device ²¹	no	optional
Populex	Digital Paper Ballot ²²	yes ²³	yes ²³	-	-	-	no	optional
Sequoia	AVC Edge ²⁴	yes ²	planned ²⁵	-	-	-	no	optional

Key to Dexterity Chart:

A. "Touchscreen" refers to a computer monitor screen which allows a voter to make selections by touching the screen. Example:
<http://www.emi-marine.com/products/dps/images/touchscreen%20to%20night%20mode.jpg>



Photo credit: Touchscreen from Engine Motor, Inc. (www.emi-marine.com)

B. A "Dual Switch" interface is a 3.5 mm "stereo jack" that dual switch devices plug into. These devices include joysticks and sip/puff devices.

C. "Foot Pedal" refers to device that permits a voter to make selections using his/her foot. Example:
<http://www.atpm.com/9.01/images/kinesis-foot-pedal.jpg>



D. "Jelly Switch" refers to a single input switch which has a large surface area and is very sensitive to the touch. Example:
<http://www.tecsol.com.au/images/JBx2-Holder.jpg>



Photo credit: Disability Access Switch from Technical Solutions Australia (www.tecsol.com.au)

E. "Joystick" refers to a hand-controlled lever which enables a voter to make selections by pressing on it in different directions. Example:
<http://www.aerotech.com/products/accessories/pics/joystick.jpg>



F. "Sip/Puff" refers to a straw-like accessory which enables a voter to make selections by either sucking from or blowing into the device. Example:
http://www.orin.com/access/images/sip_pufED.jpg



Photo credit: Sip and puff device from Origin Instruments Corp. (<http://www.orin.com/index.htm>)

Footnotes for Dexterity Chart:

1. <http://www.accupoll.com/TheAccuPollAdvantage/Brochures/accessibility.pdf>
2. http://www.capc.umd.edu/rpts/md_evote_ContempVotingMach.pdf p.7
3. [Email letter from Frank Wiebe](#), AccuPoll Media Relations, July 7, 2005
4. <http://www.essvote.com/HTML/docs/AutoMark.pdf> (Note: Some people maintain that ballot-marking devices are not accessible to mobility-impaired individuals and dexterity-impaired individuals because many of them are not able to move the paper ballot from the ballot-marking device to a secure ballot box. However, the AutoMARK ballot-marking device can release the marked ballot into a [privacy sleeve \(mirror\)](#) to maintain the secrecy of the vote during handling by a poll worker. A voter may also request a "visually impaired ballot" which has no plain text on it (Lou Dedier of Automark, San Francisco mock election, August 10, 2005). Many dexterity-impaired individuals use a gripper jaw to move paper ballots. Volume 1, Section 2.2.7.2.2.5, of the Election Assistance Commission's draft Voluntary Voting System Guidelines, states that voting technology vendors should make provisions for voters who are blind to submit the ballot themselves without the help of an election administrator.)
5. http://electionarchive.net/doc_other/dopp/AdviceReDiebolds.pdf pp.8,9
6. <http://www.automarkts.com/> under tutorial under write-in screen
7. <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
8. <http://www.afb.org/afbpress/pub.asp?DocID=aw050404&select=1#1>
9. [Email letter from Cynthia Chu](#) of Avante, August 4, 2005, and attached "["DRE" & "ACCESSIBLE OPTICAL MARKSENSE" VOTE-TRAKKER? Provides Real and Full Accessibility](#)" chart from Avante.
10. <http://www.vote-trakker.com/White%20Papers/fullfaceballottouchscreensystem.pdf> and http://www.vote-trakker.com/accessible_optical_voting.html
11. <http://www.vote-trakker.com/evc308sprff.html>
12. http://www6.diebold.com/dieboldes/accuvote_ts.htm

13. http://www6.diebold.com/dieboldes/accuvote_tsx.htm
14. [Email letter from Carrie Frank at Diebold Corporation](#), July 5, 2005 (see also [attached chart](#)).
15. [Email letter from Buck Jones at Diebold Corporation](#), July 3, 2005.
16. <http://www.essvote.com/HTML/docs/iVotronic.pdf>
17. <http://www.sdsos.gov/3-20-03min.htm>
18. http://www.essvote.com/HTML/docs/ESS_iVotronic_LS.pdf
19. http://www.hartintercivic.com/files/accessible_DLA_12_rev.pdf
20. <http://www.hartintercivic.com/innerpage.php?pageid=26> DAU section
21. <http://www.cvfieldsmbp.org/Voting%20Technology%20for%20People%20With%20Disabilities.pdf> p.28 of the document and p.38 of the PDF file.
22. http://www.populex.com/DPB_Intro.htm
23. <http://www.advocacyla.org/whatsnew.html>
24. <http://www.sequoiavote.com/docs/AVCEdge.pdf>
25. Sequoia presentation by Sheree Noell at the mock election sponsored by the San Francisco Department of Elections, August 10, 2005

Acknowledgements: Thanks to Verified Voting Foundation interns Jason Kim and Sarah Glaubman for the research required to prepare these charts.

© Copyright 2005, Verified Voting Foundation, Inc. All rights reserved, although reprint permission granted for nonprofit purposes with attribution to Verified Voting Foundation, Inc., a 501(c)(3) nonprofit corporation.