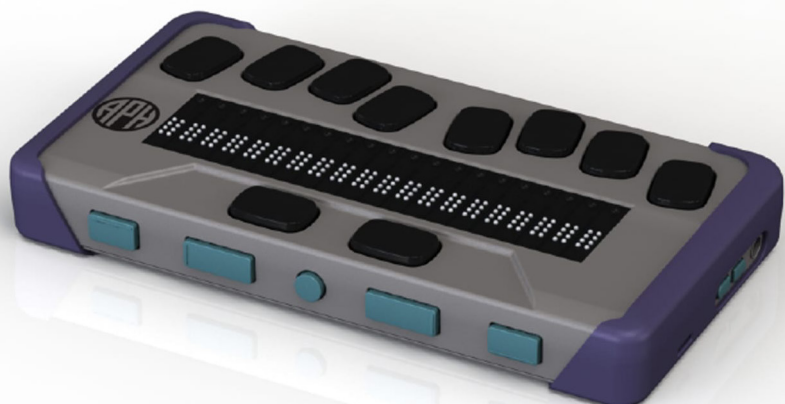# APH Refreshable Braille Comparison – What product is best for my student?

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If you have questions about which refreshable braille display is right for you or your student, contact APH Customer Service at 800-223-1839

Criteria	Mantis Q40™	Chameleon 20™	Braille Trail Reader™	Orbit Reader 20™
APH Partner Company	**HumanWare™**	**HumanWare™**	**HumanWare™**	**Orbit Research**
Who is it for?	Ideal for students learning traditional computer keyboarding skills. A great tool for students from elementary school through advanced education, and into employment. Number of internal applications and connectivity options can grow with the user as they progress. Creates transitional skills to the workplace while having the 6-key entry feature available if the user wants to type in braille directly. Compatible with PCs, Macs, and mobile devices.	Ideal for students of all ages from elementary to higher education. Provides a great platform to teach both reading and writing braille using its internal note taker application, and creates many opportunities to practice reading with its connection to online libraries. Chameleon provides 20 cells of braille in a portable and comfortable size to carry from class to class, or to use as an efficiency accessory with modern mobile devices.	Serves as a great entry-level braille product for younger students just learning braille or being introduced to using a braille display with mobile devices. Generally not designed for long reading stretches with 14 braille cells, but is a powerful efficiency accessory when connected to mobile devices. Contains the Sync feature which enables users to type a note anywhere and ensure that note is synchronized with their mobile device for later use - a great feature for older students or professionals.	Great low-cost, entry-level braille device for those new to braille. The Orbit Reader serves as an accessory to connected devices or as a braille reader for internal files that come from SD cards. The new locked dot style is especially beneficial for those who have neuropathy challenges or struggle with traditional braille dots. Device has no online or cloud based functionality.
Quota / Non-Quota Price?	$1,995 Quota / $2,495 Non-Quota	$1,295 Quota / $1,595 Non-Quota	$995	$699
Number of braille cells?	40	20	14	20
Cell type	Traditional Piezoelectric	Traditional Piezoelectric	Traditional Piezoelectric	New DC Motors/Orbit Tactuators
Braille Refresh Rate?	Instantaneous	Instantaneous	Instantaneous	Cell by cell, 0.7 S
Cursor routing capabilities? (Ability to quickly move one's cursor to a specific braille cell.)	Yes	Yes	Yes	No
Keyboard style?	Laptop-style keyboard	Braille entry keyboard	Braille entry keyboard	Braille entry keyboard
On-board WIFI?	Yes, for software updates, downloading books from Bookshare or NFB Newsline	Yes, for software updates, downloading books from Bookshare or NFB Newsline	No	No
Bluetooth Connectivity?	Yes, up to 5 devices at once	Yes, up to 5 devices at once	Yes, up to 2 devices at once	Yes, up to 2 devices at once
Supported Operating Systems?	Windows 8 or later: Jaws, NVDA MacOSX 15.5.1 or later iOS 13.6 or later	Windows 8 or later: Jaws, NVDA MacOSX 15.5.1 or later iOS 13.6 or later	Windows 8 or later: Jaws, NVDA, SuperNova MacOSX 14 or later iOS 12 or later Android: BrailleBack	Windows 8 or later: Jaws, NVDA, System AccessMacOSX 14 or later iOS 12 or later Android: BrailleBack ChromeOS: ChromeVox
Internal Applications?	Editor Library File Manager Clock Calculator	Editor Library File Manager Clock Calculator	Stop Watch Note Taker Notes Sync feature to sync with iOS Notes App Clock	Note Taker File Manager
Can remotely wake up connected device? Especially valuable when working with deaf-blind students.	Yes	Yes	Yes	No
Internal Braille Translation?	Yes: Users can type notes in their preferred grade of braille and ensure it will be readable in print when transferred to a computer or sighted user.	Yes: Users can type notes in their preferred grade of braille and ensure it will be readable in print when transferred to a computer or sighted user.	Yes: Users can type notes in their preferred grade of braille and ensure it will be readable in print when transferred to a computer or sighted user.	No
Vibration feedback?	Yes	Yes	Yes	No
Dimensions	290 x 170 x 20 mm	182 x 93 x 23 mm	166 x 100 x 23 mm	168 x 112 x 36 mm
Weight?	1.7 lb.	0.9 lb.	0.63 lb.	1 lb.
Battery?	15 Hours - User Replaceable	15 Hours - User Replaceable	20 Hours - Not User Replaceable	72 Hours - User Replaceable
External Storage Ports?	USB host for thumb drives and SD card slot	USB host for thumb drives and SD card slot	None	SD Card
Internal Storage?	16 GB for books and note files	16 GB for books and note files	8GB for notes	SD storage only
Included Case?	Green TPU protective shell	3 different colored TPU shells + protective case with lanyard	Protective case with lanyard	No
Support For Additional Languages?	Yes: Ability to add language profiles if a user types or reads different languages. For example if a student takes a Spanish class, they can setup a Spanish language profile with the Spanish braille table.	Yes: Ability to add language profiles if a user types or reads different languages. For example if a student takes a Spanish class, they can setup a Spanish language profile with the Spanish braille table.	Yes: Can switch the entire system's language	Yes: Can switch the entire system's language
Supported File Formats?	Notes are created in TXT format Microsoft Word files can be read but editing them changes the format to TXT, BRF, BRL, PEF, HTML, RTF, and DAISY/NISO	Notes are created in TXT format Microsoft Word files can be read but editing them changes the format to TXT, BRF, BRL, PEF, HTML, RTF, and DAISY/NISO	TXT BRF	TXT BRF BRL