A'Swiss Army Knife for the Blind' using Freescale Kinetis MCUs

The Make It Challenge featuring Kinetis MCUs is Freescale's latest design contest. This design utilizes Freescale's Kinetis K60 Tower System, MQX software, the i.MX53 Quick Start board, along with IAR Systems' Embedded Workbench and GainSpan's Tower System 802.11b Wi-Fi Module.

The Swiss Army Knife is a portable product for blind people, integrating:
- Notepad
- Portable Scan to Braille
- Twitter Communication

Also provides PC software so blind people can be trained/monitored by people without Braille coding knowledge:
- Writing Coach
- Reading Coach

The K60-based B-Notepad offers a portable solution for storage into a SDHC card, so students type notes using the B-Keyboard and review using the B-Display B-Writing Coach is used to capture dictation to the B-Keyboard; the data is sent to the PC using the Tower Wi-Fi module so it can be graded by the teacher. With the B-Reading Coach, the instructor digitalizes text line by line to the PC using a pen scanner, then data is sent wirelessly to the K60 module, instructing a student to read the text shown in the B-Display. The dictation may be stored to SDHC for future educational use. The B-PortableScaner transcribes complete pages at the moment. A UART connection is established from the K60 to the Freescale i.Mx53 (camera connected), commanding to capture an image, then a Linux application performs optical character recognition. The characters are then sent back to the K-60 and shown on the B-Display. B-Twitter is the low-cost/stand-alone application that provides access to Twitter using the GainSpan Wi-Fi module.

http://www.freescale.com/kinetischallenge [1]

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[1] http://www.freescale.com/kinetischallenge