**Abstract**

The team has created an add-on module to an insulin pump design that forms a path of auditory communication between pump and user. The add-on should report all necessary information from the viewing screen to the user allowing a blind user to control it independently.

The Snap Pump is an insulin pump produced by Asante Solutions. Insulin pumps administer insulin, and a diabetic patient will interact with his or her pump 4-6 times a day. Using a UART connection, the Snap pump sends an ASCII signal to the microcontroller.

Capacitive touch, produced by the microcontroller, is added to each button, and allows for the user to touch and hear the button function. Once the user finds the necessary button they can press it and move on to the next screen.

The power supply runs off of a nine volt battery. It provides three point three volts to the microcontroller using a Pololu Step-Down Voltage regulator.

**Conclusion**

Incorporating capacitive touch and the UART connection of the microcontroller and the text-to-speech and digital speech technology of the V-stamp, the team created an insulin pump design that can speak the text on the screen. It’s small and compact size, benefited by the efficient power supply, allows this design to be easily integrated into a blind individual’s life.

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**Team 4**

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**RC-System’s V-Stamp**

has text-to-speech technology as well as digital speech, voice recording. The team used both in the design to give the user a more comprehensive reading of the screen.

**MSP430G2553 Launchpad**

is used in the design for its small size and programming ease with Energia software.

**Digital Speech Chip**

**Audio**

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**Power Supply**

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** UART**

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**Microcontroller**

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**Snap Pump**

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**Capacitive Touch**

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