Voice Electronics

COEN-4790/5790 StartUp Project
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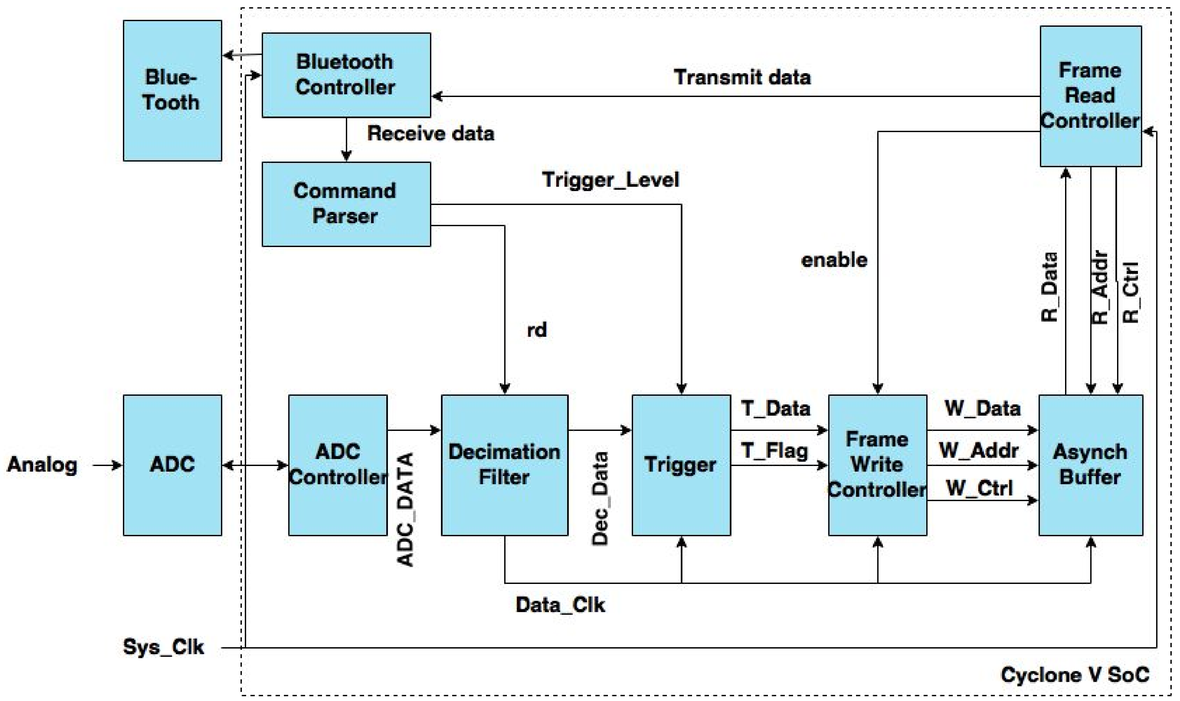
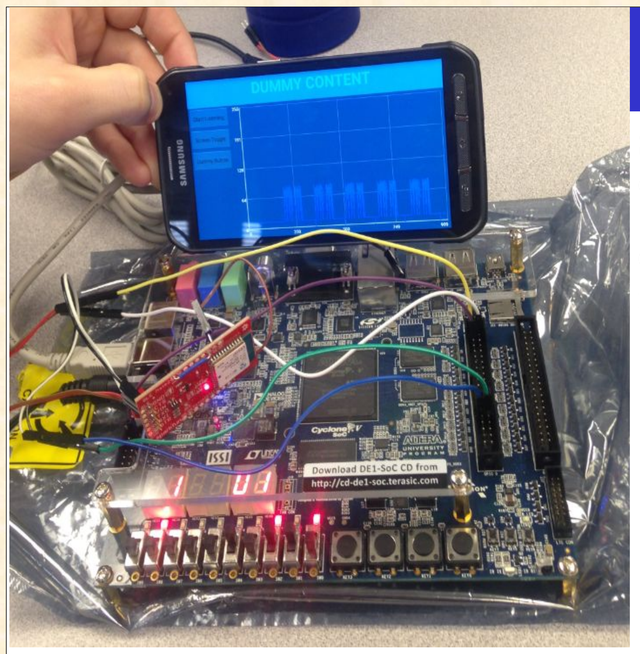
Project Definition

Product	***Voicilloscope***
Form Factor	- Small, lightweight, mobile signal measuring device
Functionality	- Analyze signals in terms of voltage, current, frequency, period, duty-cycle, and digital communication protocols for each line-in individually and comparatively. - Voice commands of oscilloscope using an Android app to both process voice commands and display the oscilloscope output.
Features	- Connectable to any Android app compatible device - Lightweight and mobile voice controlled device
Architecture	- The product is made up of an Android app compatible device which communicates with an FPGA to generate an output using up to two inputs into the FPGA. The output is sent back to the phone and be displayed by the app.
IP	- Our distinct product uses a mobile device to serve as the voice input and display output of a portable FPGA-based oscilloscope capable of taking up to two input signals.

Block Diagram





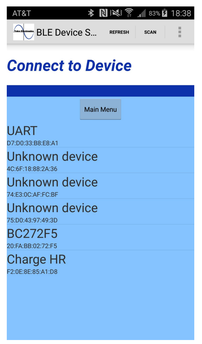
Experimental setup of FPGA connected with our bluetooth module, ADC, and Android Application

Results

Successfully implemented a working oscilloscope on an FPGA board

Created corresponding Android Application for interfacing with scope

VoScope in Action



IIllustration of Device Select

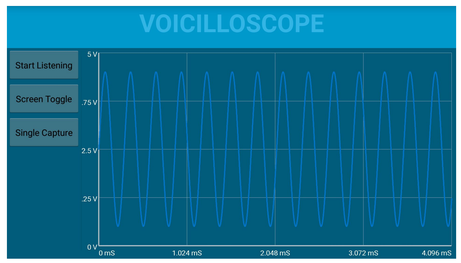


Illustration of Sample Graph

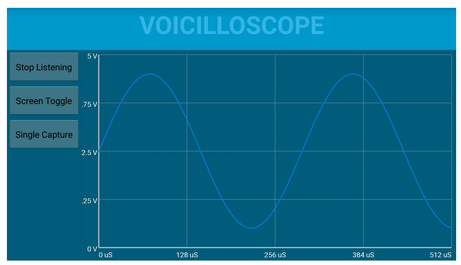


Illustration of Zoom functionality

Future Goals

Pursue investment funding to aid in continuation of product development.

Improve functionality and implement additional features to our application based on customer needs and requests.