

# iPod Touch Barcode Scanner

Senior Design Team May13-10

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## PROBLEM STATEMENT

Current barcode scanners do not meet Marshalltown Company's warehouse needs. Popular stand-alone barcode scanners are bulky and expensive with poor user interfaces. Existing barcode scanners that interface with the iPod Touch are too expensive and include unnecessary features such as credit card readers and batteries. Barcode scanning camera apps for the iPod Touch are time consuming to operate and require interaction with the touch screen which is unsuitable for a warehouse environment.

## OBJECTIVE

To create an efficient, inexpensive, and portable 1D barcode scanner, utilizing an iPod Touch and an off-the-shelf barcode engine, that is user-friendly and can be easily integrated into Marshalltown Company's current inventory system

## FUNCTIONAL REQUIREMENTS

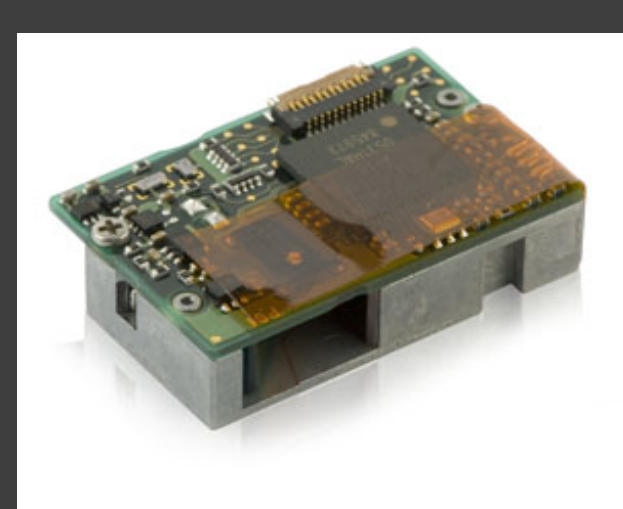
- TRRS audio jack interface used for data communication
- Physical hardware trigger used to initiate a scan
- Software library that integrates with client's inventory app
- Compatible with 4th generation (30-pin connector) and 5th generation (Lightning connector) iPods
- 8 hour battery life

## DESIGN

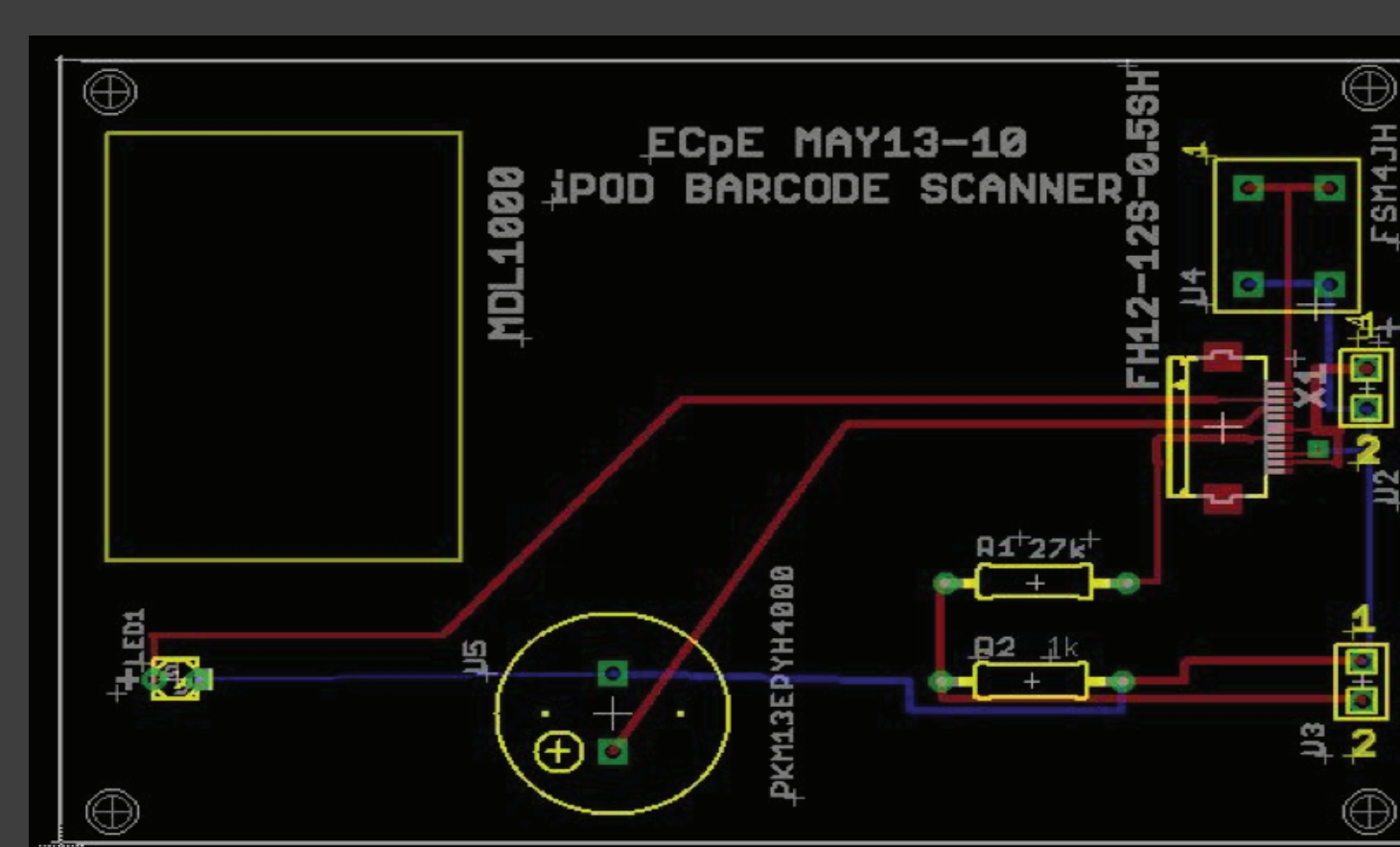
- The barcode scanning hardware will draw power from the iPod Touch
- The scan engine will read a barcode after a pushbutton is pressed
- Upon a successful scan, the engine will transmit RS232 barcode data to the microphone input of the iPod, indicator LED and buzzer will be activated
- Software library captures the incoming barcode data and returns it to Marshalltown's inventory app

## TECHNICAL DETAILS

- Scan Engine: Opticon MDL1000
- Baud Rate: 9600
- Software developed using the Audio Units architecture provided by Core Audio



Opticon MDL1000



PCB Design

## SYSTEM DIAGRAM

