

FPGA RFID: Checkoff Checklist

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Commitment

- Read module: this module will take raw analog input from the card reading coil and translate that into bits. *Proof of goal: display bits on VGA screen.*
- Spoof module: this module will simulate the PSK 62.5kHz signal generated by the ID card. This can be demonstrated by viewing the resulting waveform on an oscilloscope and compared to the response of an actual ID card. *Proof of goal: View phase shifted waveform and incoming waveform on oscilloscope.*
- *Basic Deliverable: Upload code to two FPGA's, and show the spoofed signal is correctly read.*

Goal

- SD Card Interface: Each time a new ID is read, offer the option to save it to an SD card. Then, select ID numbers from the SD card to playback as a spoofed signal. Index into the SD card via switches.
- VGA Interface: Add visual navigation for the SD card. Display a list of ID numbers stored on the SD card. Scroll through them with the up and down buttons. Use the center button to select an ID to playback.

Stretch Goal

- Program Cards:
 - Reverse engineer the programming protocol by reading the bits from the Arduino programmer.
 - Program blank RFID cards with ID numbers stored on the SD card.
- All Systems Go: Read Joe or Jim's ID card onto the SD card, and spoof their ID to open the 38-6 lab doors.