FPGA RFID Utility

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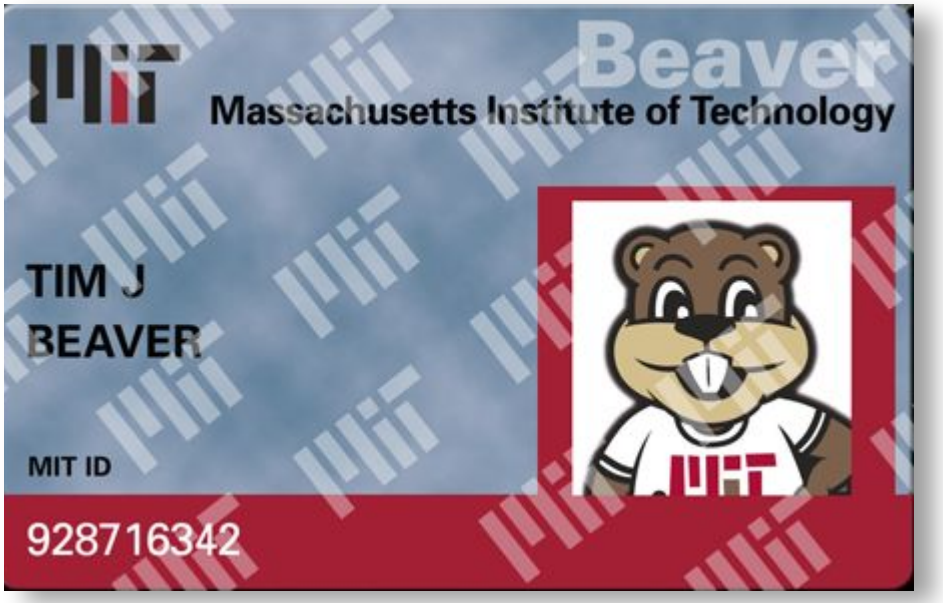
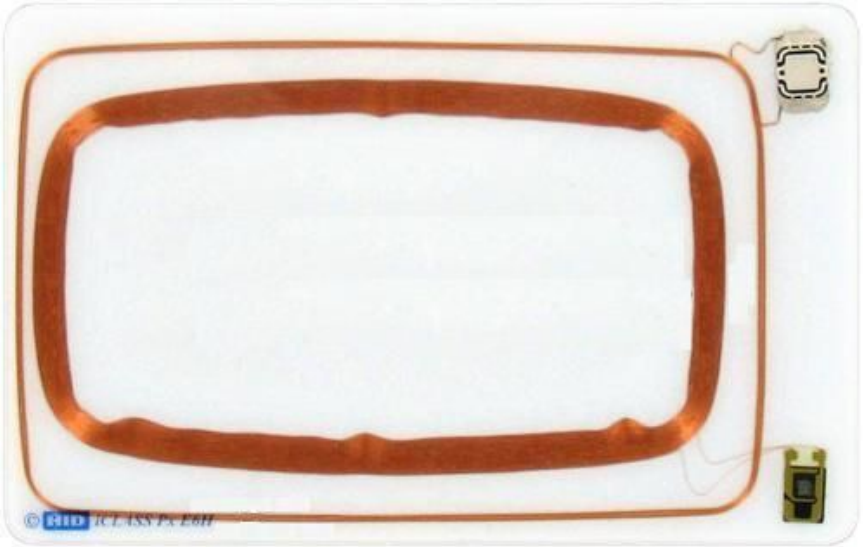
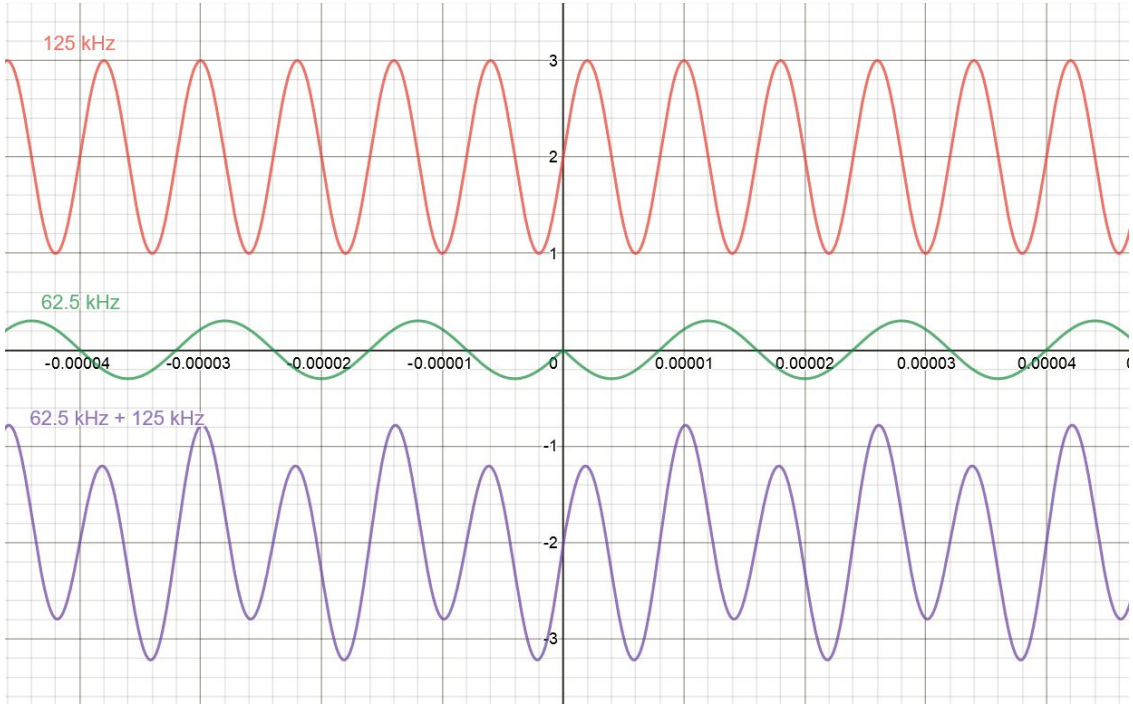
RFID Crash Course



RFID Crash Course



Data Transmission



Project Overview

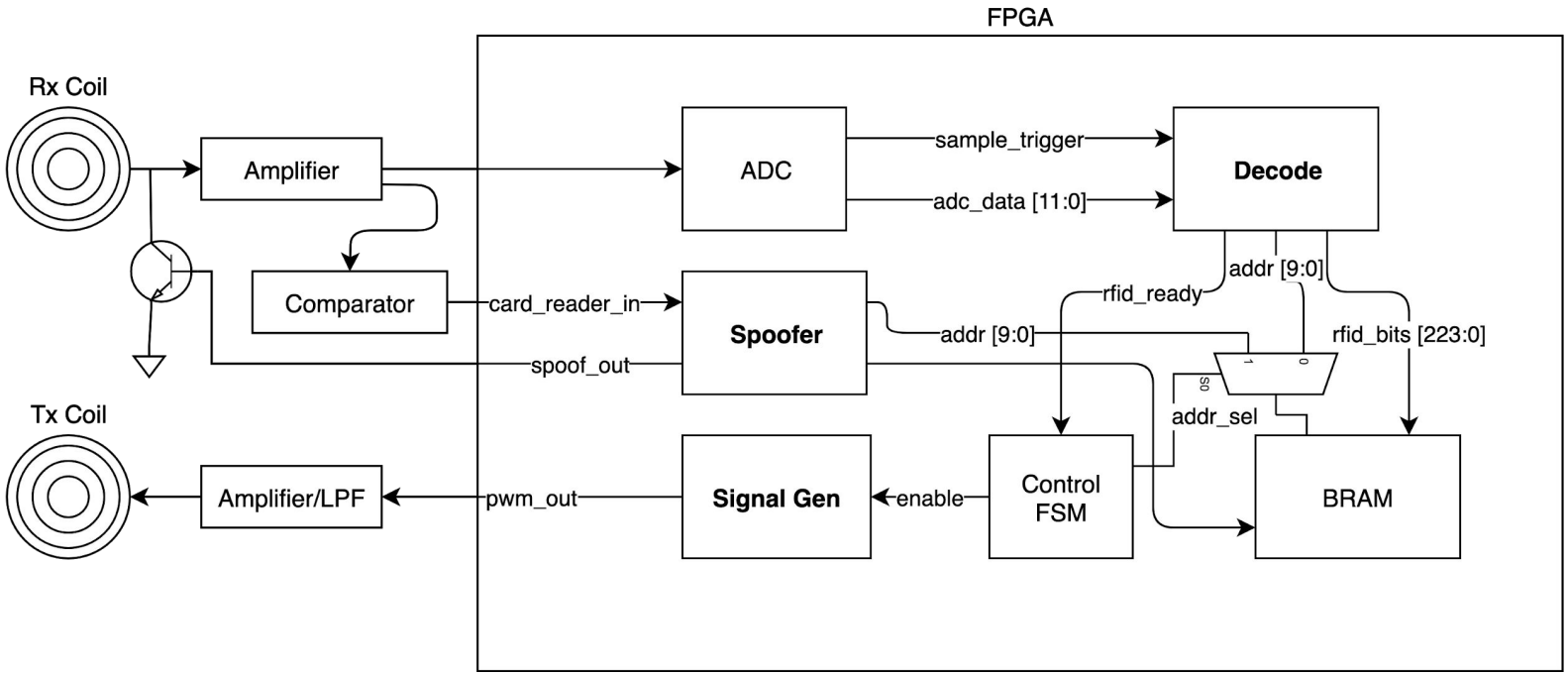
Create a multipurpose RFID tool

- Read cards
- Spoof cards

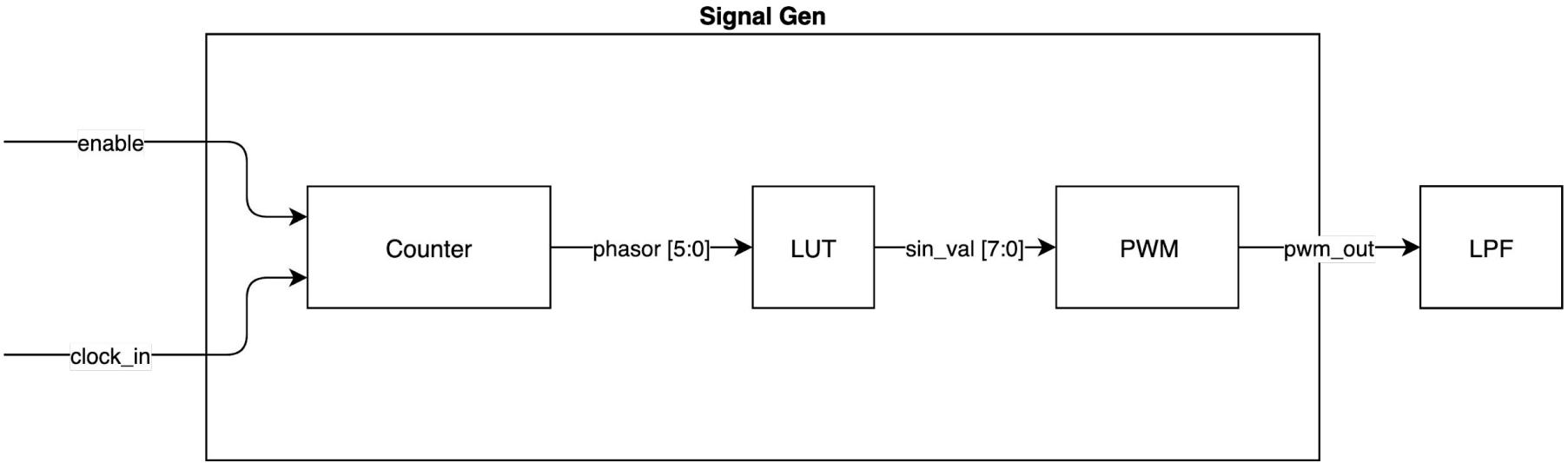
Stretch Goal

- Program blank cards
- Increase portability

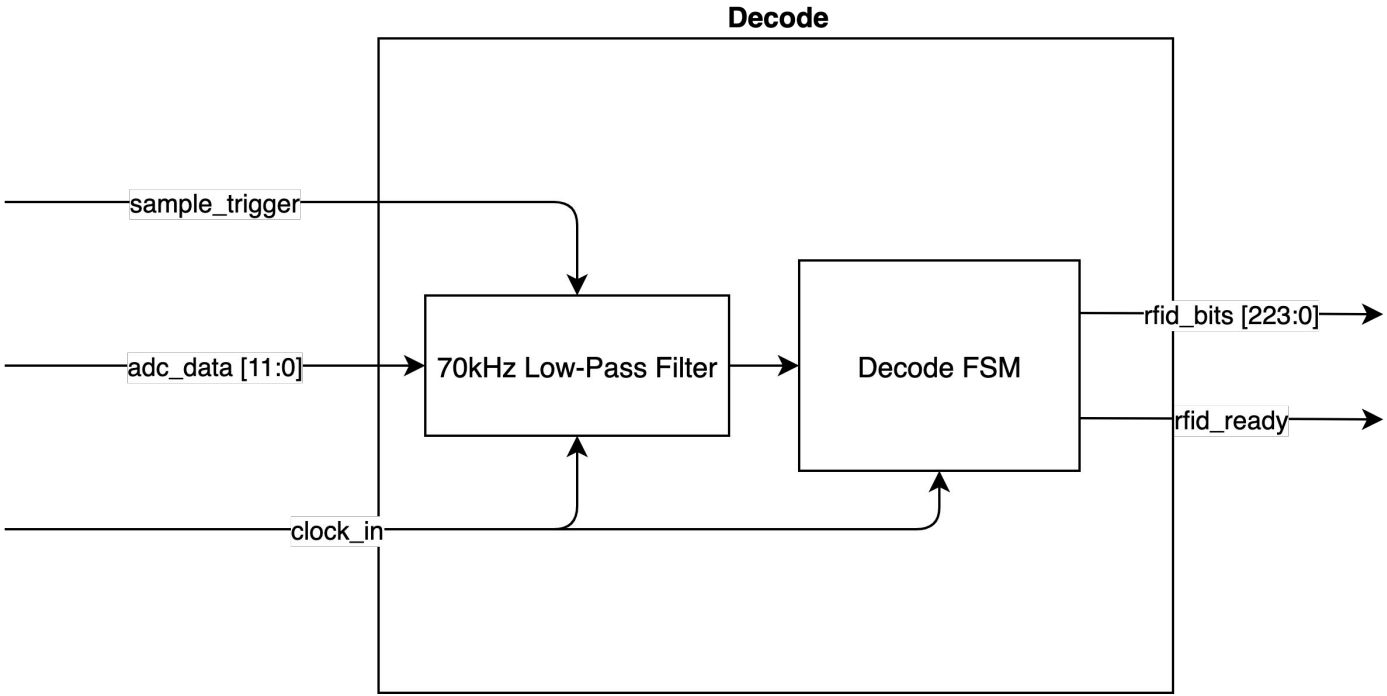
High Level Block Diagram



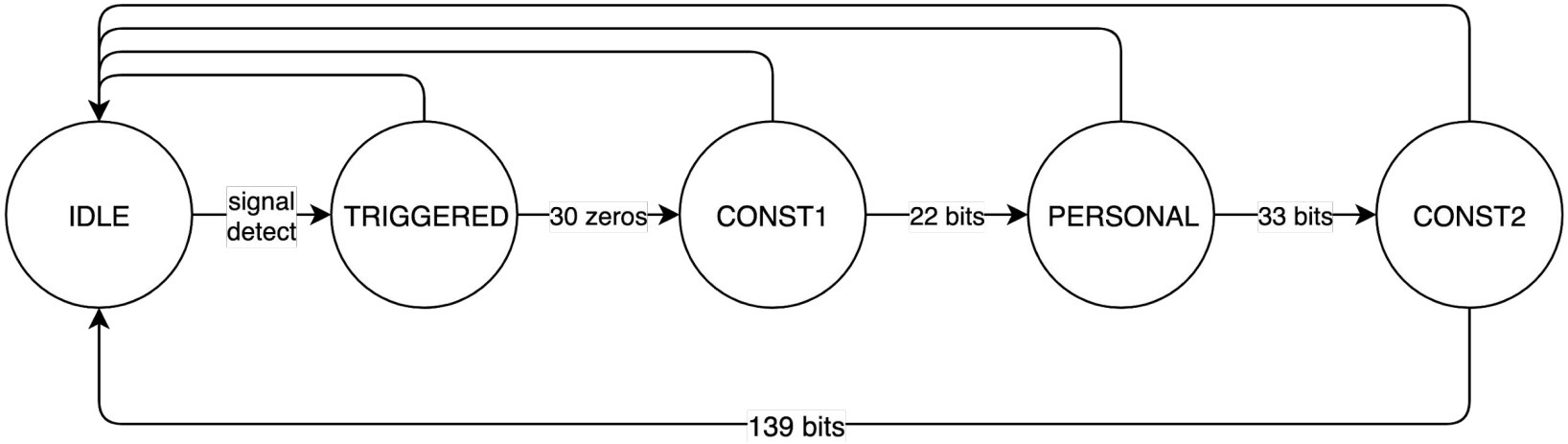
1: Generate 125 kHz signal



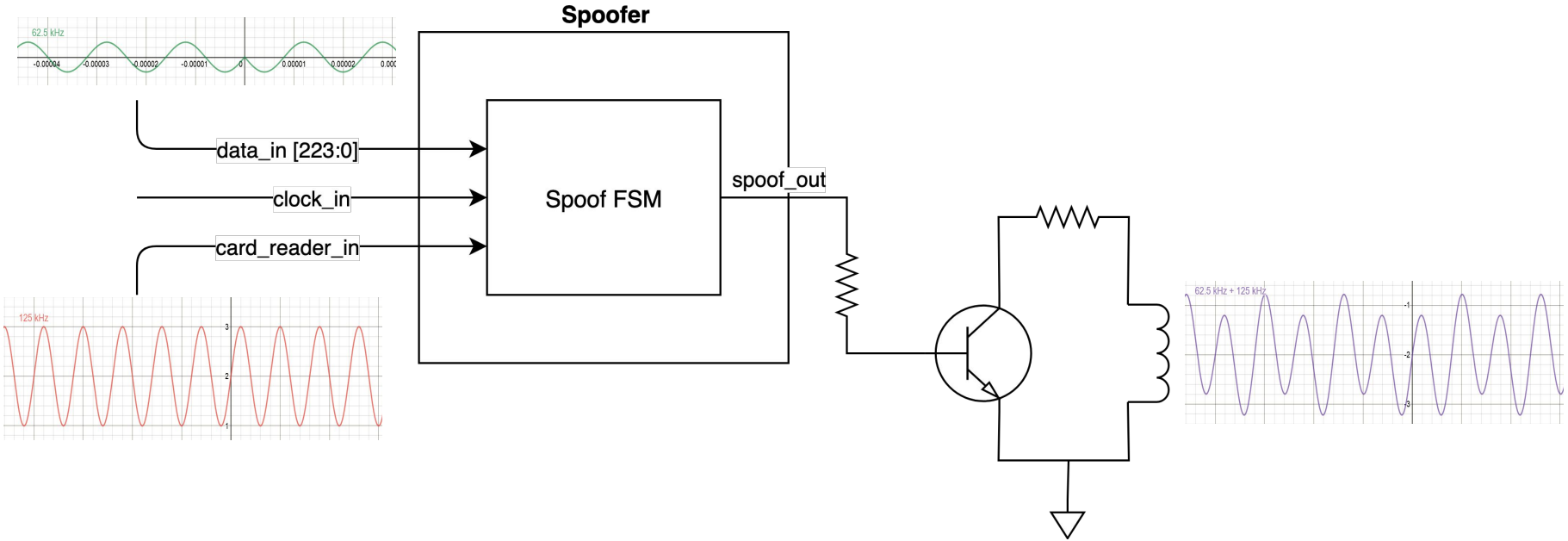
2: Read bits from RFID signal



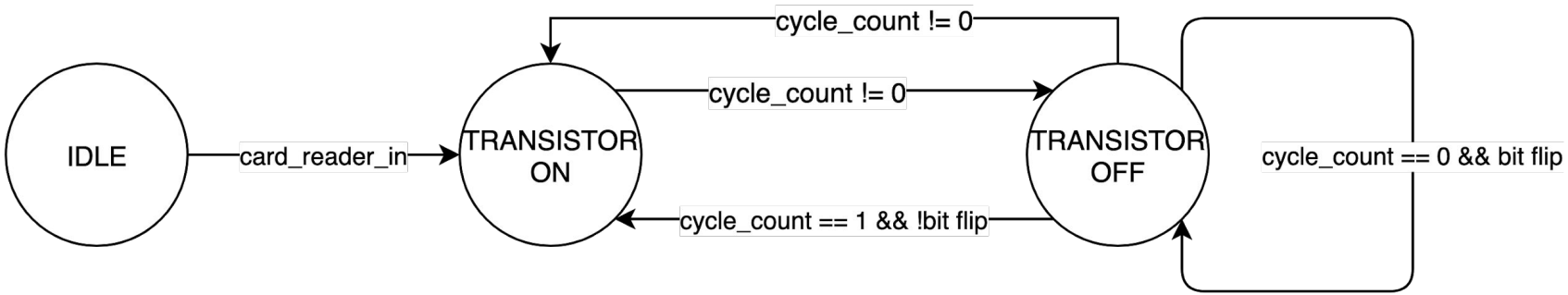
2: Decode FSM


IDLE
signal detect
TRIGGERED
30 zeros
CONST1
22 bits
PERSONAL
33 bits
CONST2
139 bits

3: Generate spoofed signal



3: Spoofing FSM



Timeline

Sat 11/9	Analog frontend prototype
	Read raw bits from card
Sat 11/16	Add ability to store ID numbers
	Basic BPSK signal generation
Sat 11/23	Open a card-access controlled door
Sat 11/30	Stretch Goal: Generate signals to write blank ID cards
Sat 12/7	Stretch Goal: Increase portability and final touches