Rocky Mountain Safe Co. Guardian Smart Gun Safe

Overview
The goal of this project is to design a gun safe different than any other currently on the market. Our safe will allow quick access to a loaded firearm, prevent any unauthorized person from accessing the weapon, and provide the owner with 24/7 monitoring of the weapon. Then, any safe the owner owns will be able to communicate with the owner via a communication bridge that constantly monitors their statuses. If the safe detects any movement, shock, or tampering, the user will be notified via text message and/or email that a disruption has occurred and will send a picture from a camera mounted on the safe.

Objectives
Our objectives were to design an electronics system that will activate a locking mechanism when a correct swipe pattern is entered, monitor the safe for tampering with accelerometer data, and on tamper detection transmit an image alert to a communication bridge that will send a notification to the safe’s owner. This will be installed in a quick access, scout cup style gun safe that we designed and built to house a handgun.

Approach
- Researched existing patents and similar products on the market
- Set up design goals based on sponsor requirements and patent restrictions
- Brainstormed as a group and along with sponsors to determine design ideas
- Purchased electronics and components in order to begin prototyping
- Mechanical design was heavily influenced by a design chosen by our teammates at BYU
- Created CAD models to visualize and plan design
- Built prototype safe and optimized
- Incorporated electronic system into safe
- Tested and debugged safe and electronic system

Outcomes
The outcome of this project resulted in a prototype that yields proof of concept for the Sponsors. The Sponsors can now take our prototype to a professional engineering design firm to optimize the design and electronics and produce a product ready for market.