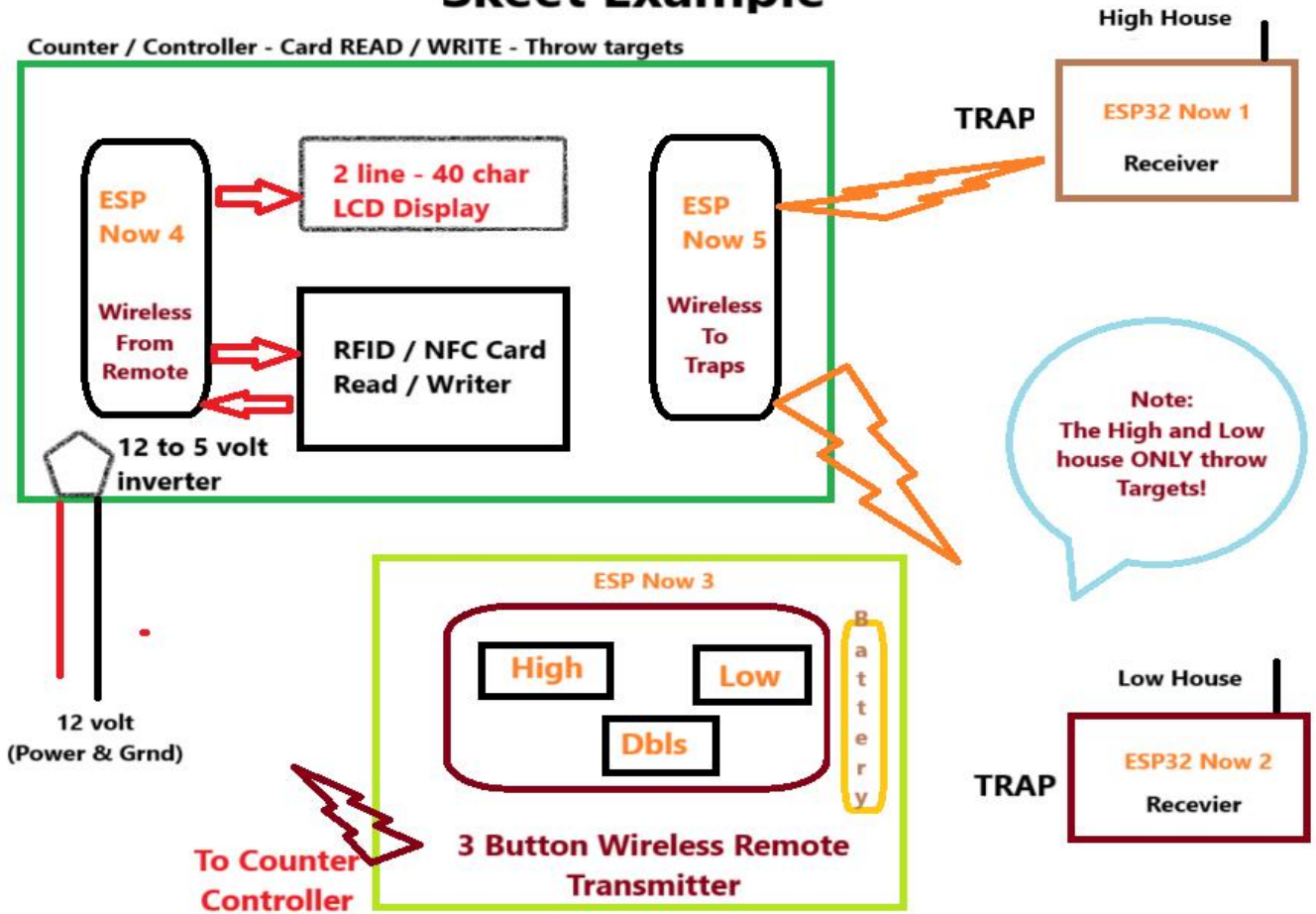


# Low Cost Shotgun Club Target Accounting System Utilizing Wireless Communications and RFID / NFC Technology

## Skeet Example



## The Issue

There is an old saying - "*You Get What You Pay For.*" However, in the world of shotgun clay target sports, one often gets *MORE* than they paid for... There are many reasons for this, but it is a common and widely recognized fact. This leads to significant monetary losses for a gun club's operation, without ever fully comprehending the actual cost / loss!

A typical round consists of 25 targets. Each round costs \$10.00 to the shooter - which is paid to the club at the end of the shooting day (number of rounds consumed). During the course of the game - the shooter may miss the target and call out - "let's see that one again!". For every occurrence of this - a new FREE target is added to the round.... For EVERY FREE target thrown to the shooter - adds a LOSS / COST for the club. These LOSS "values" are totally unknown - but all agree they do exist.

## Proposed Solution

A fair / equitable loss prevention system has been designed and produced to counteract this FREE target loss problem. Utilizing smart technologies, each round (every target released) can be accounted and PAID for.

### **Pre-Purchase** (count down method)

Every shooter MUST pay for rounds (number of targets) in advance.

### **Post-Purchase** (count up method)

Every shooter MUST pay for rounds (number of targets THROWN) at the end of the shooting day.

## The Technology

Every person (shooter) is issued a unique RFID (radio frequency ID) card. Upon payment, the card is then (magically) written to (NFC) - with the Total Number of targets purchased. At any and All stations, a card reader / writer is used to manage the amount of targets to be dispensed. These station controllers use NFC (Near Field Communications) to access (read/write) each cards data.

### **Games (ie. Skeet, Trap, 5-Stand)**

These games are typically team events. Prior to play, each participant will TAP their card on the connected reader. This will DEDUCT a round (25 targets) or ADD a round (25 targets) to the users card (depending on card type - Pre or Post pay). For example, 5 users TAP cards and a total of 125 targets are ready to dispense. For every target thrown, the controller will DEDUCT (Subtract) one from the total value. When the number on the counter reaches zero - it's GAME OVER!

### **Games (Sporting Clays)**

This game generally involves one shooter at a time. A shooter will insert his/her card into the card reader - and leave it inserted until finished at the stand. For every target dispensed, the card will be DEDUCTED or ADDED one target - based on the card type. Any number of targets can be thrown - and each one will be accurately accounted / paid for.

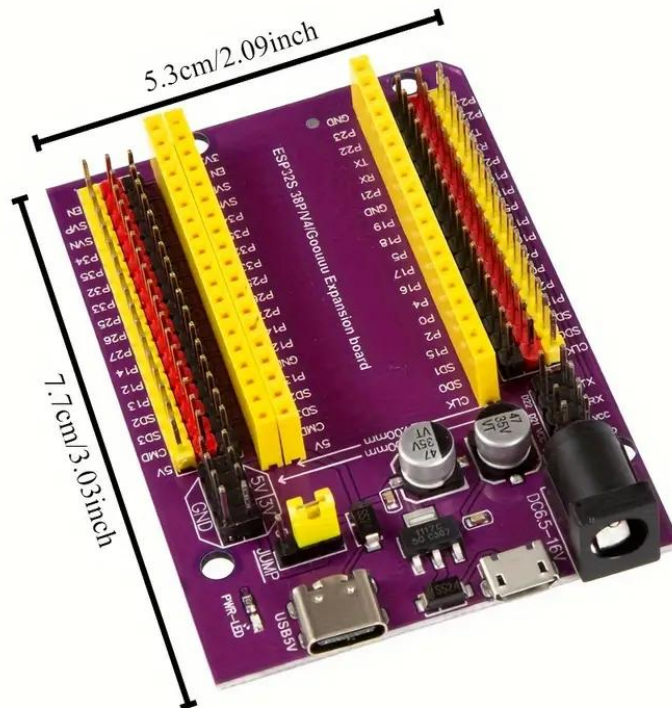
### **Throwing Targets**

In a non-controlled environment - the wireless transmitter sent the signal DIRECTLY to the associated trap. In a card controlled system, the wireless transmitter sends the signal to affixed controller, which then reduces the total target count by one, and then sends the wireless signal to the appropriate trap (releasing a target). This effectively ELIMINATES the issue of "**Show Me That Bastard Again**" - without that "**bastard**" being paid for!

# Components Required In A Low Cost Card System

## ESP32 Computer and Development Board

These components make up the actual brains of the system. More on these later...



## NFC Reader / Writer

**HONG NC**®



RC522 Blue Board

**HONG NC**®



PN532 Red Board

**To Be Continued.....**