const int pulsePin = 10;

const int ramanPin = 8;

int PulseWidth = 10;  // us

int DutyCycle = 190;    // Number of us between pulses

int NumPulse = 1;   // Number of pulses to fire

int readPin1 = A1;

int readPin3 = A3;

int J24\_1 = 0;

int J24\_2 = 0;

int LO = 500; //3.3V is HI and ~720 (1.8V is HI and ~390)

unsigned long Duration = 1; // Seconds to fire a burst

void setup() {

  Serial.begin(9600);

  Serial.println("Arduino is ON");

  pinMode(pulsePin, OUTPUT);

  digitalWrite(pulsePin, LOW);

  pinMode(ramanPin, OUTPUT);

  digitalWrite(ramanPin, LOW);

  pinMode(readPin1, INPUT);

  pinMode(readPin3, INPUT);

}

void loop() {

  //Read mask ON voltage (HI if mask ON and LO if mask OFF)

//  J24\_1 = analogRead(readPin1);

//  Serial.println(J24\_1);

  //delay(500);

  //if (J24\_1 < LO){ //if mask is OFF

    //Serial.println(1);

    //}

  //Read mask change pulse

  J24\_2 = analogRead(readPin3);

  Serial.println(J24\_2);

  //delay(100);

  //if (J24\_2 > LO){ //if mask has changed

    //Serial.println(1);

    //}

  if (Serial.available() > 0) {

    byte incomingByte = Serial.read();

    if (incomingByte == 'B') {

        while (Serial.available() == 0) {

        }

        NumPulse = Serial.read();

        Serial.print("Number of pulses set to ");

        Serial.print(NumPulse);

        Serial.print(" pulses");

        Serial.print("\r\n");

    }

    if (incomingByte == 'D') {

        while (Serial.available() == 0) {

        }

        Duration = Serial.read();

        Serial.print("Set fire duration to ");

        Serial.print(Duration);

        Serial.print(" seconds");

        Serial.print("\r\n");

    }

    if (incomingByte == 'M') { // Set duty cycle in microseconds

        while (Serial.available() == 0) {

        }

        DutyCycle = Serial.read()\*2;

        Serial.print("Duty cycle set to ");

        Serial.print(DutyCycle);

        Serial.print(" microseconds");

        Serial.print("\r\n");

    }

    if (incomingByte == 'N') { // Set duty cycle in milliseconds

        while (Serial.available() == 0) {

        }

        DutyCycle = Serial.read()\*1000;

        Serial.print("Duty cycle set to ");

        Serial.print(DutyCycle);

        Serial.print(" milliseconds");

        Serial.print("\r\n");

    }

    if (incomingByte == 'P') {

      for (int numPulses = 0; numPulses < NumPulse; numPulses++) {

          digitalWrite(pulsePin, HIGH);

          delayMicroseconds(PulseWidth);

          digitalWrite(pulsePin, LOW);

          delayMicroseconds(PulseWidth);

          digitalWrite(ramanPin, HIGH);

          delayMicroseconds(PulseWidth);

          digitalWrite(ramanPin, LOW);

          delayMicroseconds(DutyCycle);

      }

      Serial.print("Done pulsing.");

      Serial.print("\r\n");

    }

    if (incomingByte == '>') {

      unsigned long thisTime = millis();

      unsigned long stopTime = thisTime + Duration\*1000UL;

      while (millis() < stopTime) {

          digitalWrite(pulsePin, HIGH);

          delayMicroseconds(PulseWidth);

          digitalWrite(pulsePin, LOW);

          delayMicroseconds(DutyCycle);

      }

      Serial.print("Done pulsing.");

      Serial.print("\r\n");

    }

  }

}