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// CJ09 has the VeroBoard interface Shield //

const int red = 8;
const int yel = 9;
const int grn = 10;
const int wht1 = 2;
const int rly1w = A2;
const int tPin = A4;
int uFlag = 0;
int tssFlag = 0;
int loopCnt = 0;
int tsCnt = 0;
String sigNo = "CJ09 "; // Signal wireless network ID number & white space at the end.
String rxStr = "";
String txStr = "";
//String stuff = "";

void setup() {
  Serial.begin(19200);
  pinMode(0, INPUT);
  digitalWrite(0, HIGH);
  digitalWrite(red, HIGH);
  digitalWrite(yel, LOW);
  digitalWrite(grn, LOW);
  digitalWrite(wht1, LOW);
  digitalWrite(rly1w, LOW);
  pinMode(tPin, INPUT);
  uFlag = 0;
  tssFlag = 0;
  Serial.println(sigNo + "REDS");
}

void loop() {
  // Start TSS detection //
  ++loopCnt;

  if (loopCnt >= 80) {
    loopCnt = 0;
    tsCnt = 0;
  }

  int tss = digitalRead(tPin);

  if (tss == 1){
    ++tsCnt;
  }
  // Set to 0 for Track circuit switch or to 1 for PIR detector //
  // A4 is biased to ground with 47K for PIR. If track switch //
  // is used then do not use A4 use A3 which is biased to 5V+
  // with 10K & change the pin no. assigned to tPin from A4 to A3 //
  // If this shield is used on NB01 A4 will have to be used and the //
  // bias resister changed from 47K to 10K from 5V+. A3 is used to //
  // change from NB control to CJ control with an external switch. //

  if (tsCnt >= 50 && tssFlag == 0) {

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tssFlag = 1;
tsCnt = 0;
Serial.println(sigNo + "TSS");
delay(50);
Serial.println(sigNo + "REDS");
digitalWrite(red, HIGH);
digitalWrite(yel, LOW);
digitalWrite(grn, LOW);
digitalWrite(wht1, LOW);
}

// End TSS

rxStr = "";

if (Serial.available() > 0) {
{
    rxStr = Serial.readStringUntil('\r');

// CJ09 SIGNAL CONTROL //

    if (rxStr == sigNo + "GRNM"){
        digitalWrite(red, LOW);
        digitalWrite(yel, LOW);
        digitalWrite(grn, HIGH);
        delay(200);
        Serial.println(sigNo + "GRNS");
        tssFlag = 0;
        tsCnt = 0;
        loopCnt = 0;
        rxStr = "";
    } else if (rxStr == sigNo + "YELM"){
        digitalWrite(red, LOW);
        digitalWrite(yel, HIGH);
        digitalWrite(grn, LOW);
        delay(330);
        Serial.println(sigNo + "YELS");
        tssFlag = 0;
        tsCnt = 0;
        loopCnt = 0;
        rxStr = "";
    } else if (rxStr == sigNo + "REDM") {
        digitalWrite(red, HIGH);
        digitalWrite(yel, LOW);
        digitalWrite(grn, LOW);
        delay(200);
        Serial.println(sigNo + "REDS");
        digitalWrite(wht1, LOW);
        digitalWrite(rly1w, LOW);
        rxStr = "";
    } else if (rxStr == sigNo + "WHT1M") {
        tssFlag = 0;

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digitalWrite(red, HIGH);
digitalWrite(yel, LOW);
digitalWrite(grn, LOW);
digitalWrite(wht1, HIGH);
delay(200);
//delay(100);
Serial.println(sigNo + "WHT1S");
} else if (rxStr == sigNo + "BLK1M") {
digitalWrite(red, HIGH);
digitalWrite(yel, LOW);
digitalWrite(grn, LOW);
Serial.println(sigNo + "REDS");
delay(200);
digitalWrite(wht1, LOW);
Serial.println(sigNo + "BLK1S");
rxStr = "";
}
}
}
}
```