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1  const int ledSpkr = PA0; // Output 1 = LED on
2  const int ledOT = PA1; // Output 1 = LED on
3  const int ledDC = PA2; // Output 1 = LED on
4  const int ledOC = PA3; // Output 1 = LED on
5  const int SpkrON = PA4; // Output 1 = Speaker SSR on
6  const int inOT = PA7; // Input 1 = Overtemperature
7  const int inDC = 10; // Input 1 = DC detected
8  const int inOC = 9; // Input 1 = Overcurrent
9  const int inPWR = 8; // Input 0 = Power on (SMPS)
10 int State = 0; // Status 0 = INIT, 1 = WAIT, 2 = START, 3 = RUN, 4 =
... ERROR, 5 = TEST
11
12 void setup() {
13     // set port modes
14     pinMode(ledSpkr, OUTPUT);
15     pinMode (ledOT, OUTPUT);
16     pinMode (ledDC, OUTPUT);
17     pinMode (ledOC, OUTPUT);
18     pinMode (SpkrON, OUTPUT);
19     pinMode (inOT, INPUT);
20     pinMode (inDC, INPUT);
21     pinMode (inOC, INPUT);
22     pinMode (inPWR, INPUT);
23 }
24
25 void StartDelay() {
26     for (int i = 0; i <= 10; i++) {
27         digitalWrite(ledSpkr, HIGH);
28         delay(200);
29         digitalWrite(ledSpkr, LOW);
30         delay(200);
31     }
32 }
33
34 int CheckError(){
35     if (digitalRead(inOC) == HIGH){ // Overcurrent
36         digitalWrite(SpkrON, LOW);
37         digitalWrite(ledSpkr, LOW);
38         digitalWrite(ledOC, HIGH);
39         return HIGH;
40     }
41     if (digitalRead(inDC) == HIGH){ // DC detected
42         digitalWrite(SpkrON, LOW);
43         digitalWrite(ledSpkr, LOW);
44         digitalWrite(ledDC, HIGH);
45         return HIGH;
46     }
47     if (digitalRead(inOT) == HIGH){ // Overtemperature
48         digitalWrite(SpkrON, LOW);
49         digitalWrite(ledSpkr, LOW);
50         digitalWrite(ledOT, HIGH);
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51     return HIGH;
52 }
53 return LOW;
54 }
55 void loop() {
56     // put your main code here, to run repeatedly:
57     switch(State){
58         case 0: // INIT
59             digitalWrite(SpkrON, LOW);
60             digitalWrite(ledSpkr, LOW);
61             digitalWrite(ledDC, LOW);
62             digitalWrite(ledOC, LOW);
63             digitalWrite(ledOT, LOW);
64             State = 1;
65             break;
66         case 1: // WAIT for Power ON
67             delay(100);
68             if (digitalRead(inPWR) == LOW) {
69                 State = 2;
70             }
71             break;
72         case 2: // START
73             if (CheckError() == HIGH) {
74                 State = 4;
75             } else {
76                 StartDelay();
77                 digitalWrite(SpkrON, HIGH);
78                 digitalWrite(ledSpkr, HIGH);
79                 State = 3;
80             }
81             break;
82         case 3: // RUN
83             if (CheckError() == HIGH) {
84                 State = 4;
85             }
86             if (digitalRead(inPWR) == HIGH){ // Power OFF
87                 digitalWrite(SpkrON, LOW);
88                 digitalWrite(ledSpkr, LOW);
89                 State = 1;
90             }
91             break;
92         case 4: // ERROR
93             if (digitalRead(inPWR) == HIGH){ // Power OFF
94                 digitalWrite(SpkrON, LOW);
95                 digitalWrite(ledSpkr, LOW);
96                 State = 0;
97             }
98             break;
99         case 5: // TEST
100             if (digitalRead(inOC) == HIGH){
101                 digitalWrite(SpkrON, LOW);
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102
103     } else {
104         digitalWrite(Spkr0N, HIGH);
105     }
106     break;
107 }
108 }
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