**k = [1, 0, A, B, C, D, #, *]**
**$k_i$ is a given index of k**

**TO = Timed Out**
**ST = Start Timer**

**S0 = No input**

**S1 = 2 Pressed 1 Time**
**S2 = 2 Pressed 2 Times**
**S3 = 2 Pressed 3 Times**
**S4 = 2 Pressed 4 Times**

**S5 = 3 Pressed 1 Time**
**S6 = 3 Pressed 2 Times**
**S7 = 3 Pressed 3 Times**
**S8 = 3 Pressed 4 Times**

**S9 = 4 Pressed 1 Time**
**S10 = 4 Pressed 2 Times**
**S11 = 4 Pressed 3 Times**
**S12 = 4 Pressed 4 Times**

**S13 = 5 Pressed 1 Time**
**S14 = 5 Pressed 2 Times**
**S15 = 5 Pressed 3 Times**
**S16 = 5 Pressed 4 Times**

**S17 = 6 Pressed 1 Time**
**S18 = 6 Pressed 2 Times**
**S19 = 6 Pressed 3 Times**
**S20 = 6 Pressed 4 Times**

**S21 = 7 Pressed 1 Time**
**S22 = 7 Pressed 2 Times**
**S23 = 7 Pressed 3 Times**
**S24 = 7 Pressed 4 Times**
**S25 = 7 Pressed 5 Times**

**S26 = 8 Pressed 1 Time**
**S27 = 8 Pressed 2 Times**
**S28 = 8 Pressed 3 Times**
**S29 = 8 Pressed 4 Times**

**S30 = 9 Pressed 1 Time**
**S31 = 9 Pressed 2 Times**
**S32 = 9 Pressed 3 Times**
**S33 = 9 Pressed 4 Times**
**S34 = 9 Pressed 5 Times**