

Button1 inputs 1 for the code
Button0 inputs 0 for the code

The Q from this flip flop is
going to be our input X

Button1

Button0

RESET

Lock

Pulse
RESET LOCK

This is the 16-bit Lock that allows us to stop counting

This is a reset button to the system that
presumably only the owner could control: when RESET is pressed the system is again
enabled and can accept bits.

In the testing circuit try to reset before we input the 16bit code.

$$D1 = Q1Q2^*Q3^*X^* + Q1Q2Q3^*X + Q1^*Q2Q3X + Q1Q2^*Q3X$$

$$D2 = Q2Q3^*X^* + Q2^*Q3X + Q1Q3X$$

$$D3 = X^*$$

$$z = Q1Q2Q3X^*$$

STATUS

Should output 1 if the 16 bit code ends with the secret code