

iButton Controlled TV lock

Design Brief

A lock is required to prevent a small child watching too much television. When a parent activates the system the lock should only allow viewing for a preset amount of time. Naturally the child must not be able to reset the lock.

Circuit Explanation

The circuit uses a matching 'iButton' key and 8 pin microcontroller decoder. The iButton is an electronic key shaped like a small coin in a stainless steel can. When the key is touched against a probe the serial number is read from the key by the 8 pin microcontroller, and if it is the correct key the output is activated for ten seconds.

The output from the decoder is fed into an input of the PICAXE, which in turn activates a coax relay for a preset period (the coax relay switches the aerial connection to the TV on/off, effectively controlling the time the TV can be watched).

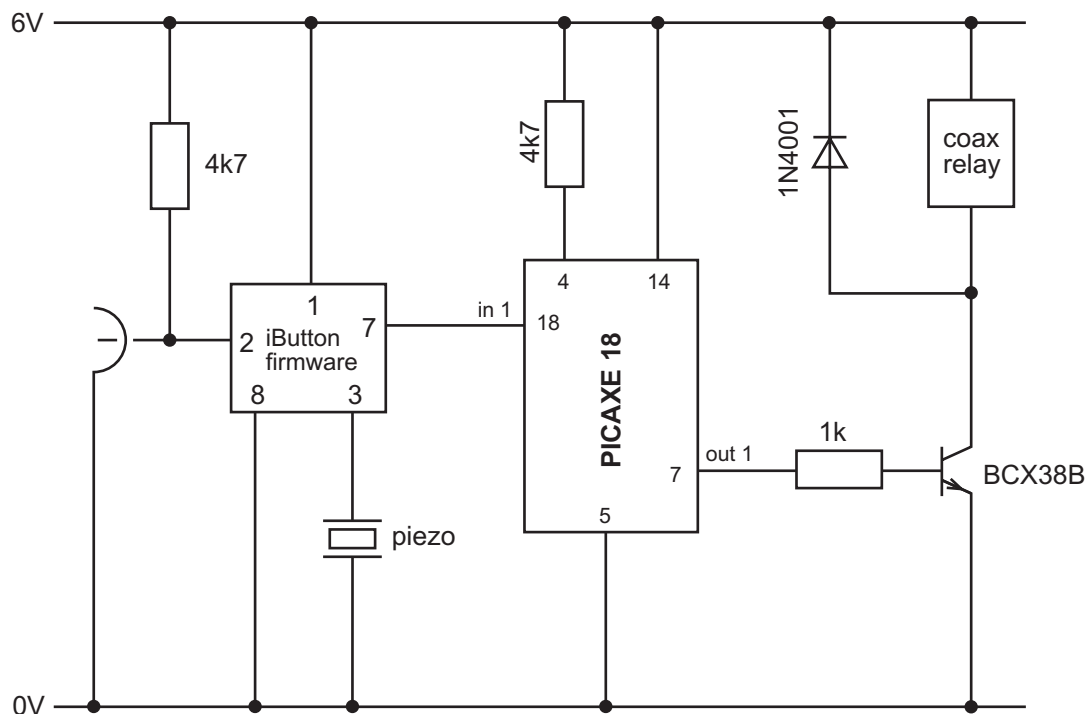
Note that this circuit could easily be expanded to add extra input switches, so that the preset time could be varied by adjusting these switches.

Further details about the iButton system (product FRM031) are available from www.rev-ed.co.uk

Program Explanation

The circuit is quite straight forward, it simply waits for a signal on input 1 and then activates the relay output for a set number of minutes. The long delays are created by placing the 'pause 60000' (1 minute) command within a for...next loop.

The extra commented lines in the program show how inputs 6 and 7 could be tested to give different time delays (30, 60 or 90 minutes) if extra switches were added on these two inputs.



Program Listing

```
` TV lock
` For PICAXE-18

` ibutton signal on input1
` optional time switches on pins 6 and 7
` relay on output1

symbol delay = b1
symbol counter = b2

` loop waiting for ibutton signal
main:
    if pin1 = 1 then start
    goto main

`set the time delay in minutes
start:
    let delay = 60

` *** optional to adjust time
` *** using inputs 6 and 7
`     let delay = 0
`     if pin7 = 1 then t30
`     if pin6 = 1 then t60
`t90: let delay = 30
`t60: let delay = delay + 30
`t30: let delay = delay + 30
` ***

` Now switch on relay and do time delay
` remember that delay is 60000 ms = 1 minute
` so use for...next loop to give number of minutes

    high 1
    for counter = 1 to delay
        pause 60000
    next counter
    low 1

    goto main
```