EDU-020 LEDS MODULE WITH PICAXE 08M

Description

This module is composed by a PICAXE-08M microcontroller that makes possible to control the sate of 3 different colours LED. A button and a potentiometer allows to controlling the program behaviour charged in the microcontroller.
It represents an excellent training material, specially for initiation in the use of PICAXE microcontrollers and programmable electronics in general.

Programming software download

On the web site http://www.picaxe.com, in the software paragraph, you will free find the last version of the microcontroller-programming environment. Although the site is available in Spanish, we recommend you to use the English language version, because it is the most updated. The software is translated in several languages, between them the Spanish (change the option in the Options paragraph)

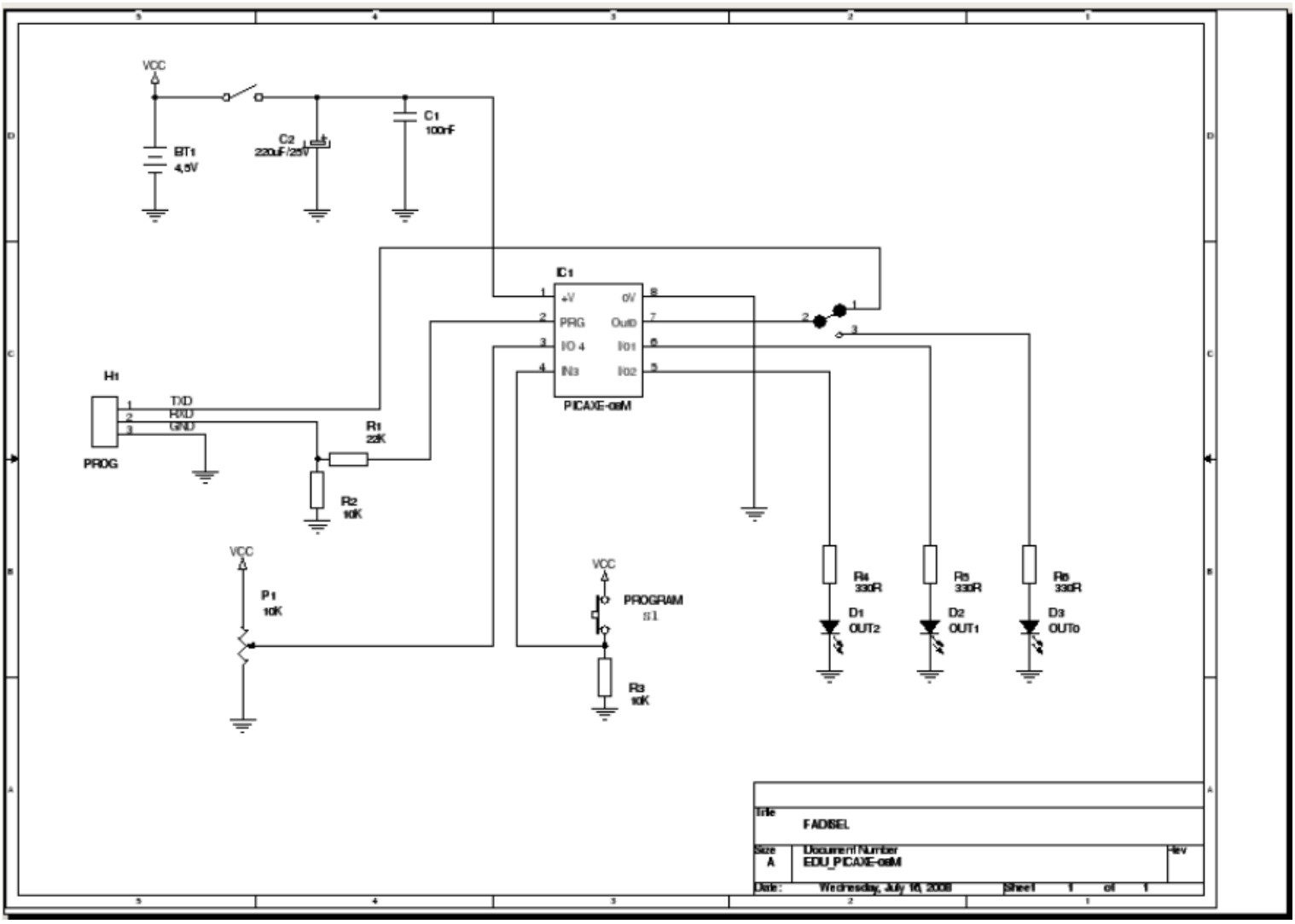
Power Supply

The module includes a battery-holder for 3 AA batteries. You can use rechageable batteries

Connection to the computer

You will need a cable (ref. EDU-PICAXE-USB) to program the module from the computer.
Do not forget to select in the programming environment Options paragraph, the serial port that connects the cable.

Wiring diagram



To program the module

The programming environment allows to operating as well in BASIC as in flow diagrams. Remember that you must select PICAXE-08M microcontroller in Options menu.
If you wish to simulate the program, you can use the virtual AXE-092 board, which has the same connection for inputs and outputs.
Once designed the control program (hereafter you will find two examples of module's behaviour), connect the module to the computer with the programming cable and activate the module. The switch must be in REC position.
In the programming environment, you will have to click Execute (blue triangle in the icons toolbar). After a few seconds, you will receive a conformity message.
Place the switch in OUT position. You can disconnect the programming cable if you wish. The program will remain stored in the module even after its deactivation, until a new program substitutes it.

EXAMPLE PROGRAMS Picaxe Leds

Program 1 This program will make the led OUT 2 intermissions

```
main:  high 2
       pause 500
       low 2
       pause 500
       high 2
       goto main
```

Program 2 With this program the LED OUT 2 will be operated intermittently while the button IN3

```
main:

label1: if pin3=1 then label2
        goto label1
label2: high 2
       pause 500
       low 2
       pause 500
       goto label1
```

Program 3 This program will make a sequence on the 3 leds

```
main:
    high 2
    pause 1000
    low 2
    high 1
    pause 1000
    low 1
    high 0
    pause 1000
    low 0
    goto main
```

Program 4 With this program we will light. When pressing the button starts the sequence IN 3 of 3 LEDs

```
main:

    high 2
    if pin3=1 then ciclo
    goto main

Ciclo:

    low 2
    high 0
    pause 3000
    low 0
    high 1
    pause 1000
    low 1
    goto main
```

Programme 5 With this program we will make the LEDs light up according to the position of the potentiometer P0 4

```
main:

readadc 4,b0
if b0<75 then led2
if b0<175 then led1
goto led0
led2: high 2
low 1
low 0
goto main
led1: high 1
low 2
low 0
goto main
led0: high 0
low 2
low 1
goto main
```

Technical Characteristics

Available inputs	Available outputs
Potentiometer connected to pin 3 / inp AD 4	Red led pin 5 / OUT 2
Push button connected to pin 4 / IN 3	Yellow led pin 6 / OUT 1
	Green led pin 7 / OUT 0

It has a REC/OUT switch on pin 7, OUT 0 to switch this pin if you are recording or executing a program
It has a ON/OFF switch which disconnects batteries, to avoid its consumption when the module doesn't work, as well as to insert or remove the microphone without problem.
Power supply for the standard circuit : 3 x R 6 batteries

IMPORTANT . Do never remove or insert the picaxe with the power supply connected, to avoid to damage it.

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