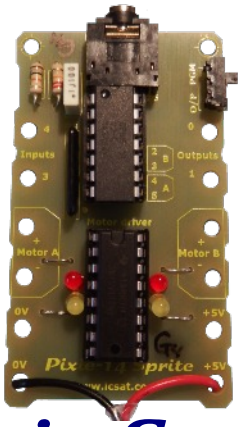


Pixie Sprite

Introduction

Pixie Sprite is an all-in-one project board for Programmable Components within D&T:

- PICAXE 14M2 or Genie 14 v2 in a 'Crumble-like' format
- 3.5mm download connector
- Program/output 0 switch
- PP3 battery connector 3V - 4.5V
- 2 output connections
- 2 input connections with pull-down resistors
- 2 bidirectional motor outputs with monitor LEDs
- All connections can be made using croc-clips, soldering or conductive thread
- 35mm x 60mm

Assembling your Pixie Sprite

Solder on the two DIL sockets U1-14 pin and U2-16 pin.

Solder on R1 (10K), R2 (22K) and C1 (100nF).

Solder on the 3.5mm socket (CN1) and the program/output switch.

Solder on the 10K resistor array **ensuring** that the dot on the resistor array matches that on the pcb.

Solder on 4 wire links for the Motor driver.

Solder on the 2 Red 3mm LEDs into the top pair of holes near the middle of the driver chip, the cathode leg is nearest to the chip socket.

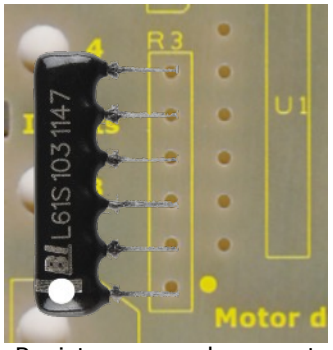
Solder on the 2 Green 3mm LEDs into the bottom pair of holes near the middle of the driver chip, the cathode leg is nearest to the chip socket.

If you are going to use a PP3 battery connector, use the bottom 0V and +5V holes, thread through and solder in place.

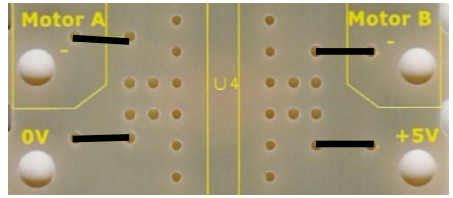
Now you need to insert your PICAXE / Genie chip into the top 14 pin socket with the notch at the top.

Now you need to insert the motor driver chip (L293D) into the 16 pin socket with the notch at the top.

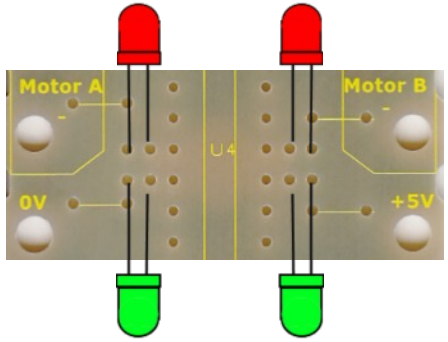
You are now ready to power up and use your Pixie Sprite.



Resistor array placement



Wire link placement



Monitor LED placement

Programming your Pixie Sprite

To program your Pixie Sprite you will need to use:

1. **PICAXE Programming Editor** and a USB download cable, AXE027.

OR

2. **Circuit Wizard V3** or the **Genie Programming Editor** and a Genie USB Plug & Play download cable.

The **small switch** on the pcb is to allow the selection of pin 13 to be used for downloading and as an I/O pin. It **must** be moved into the correct position to allow correct operation.

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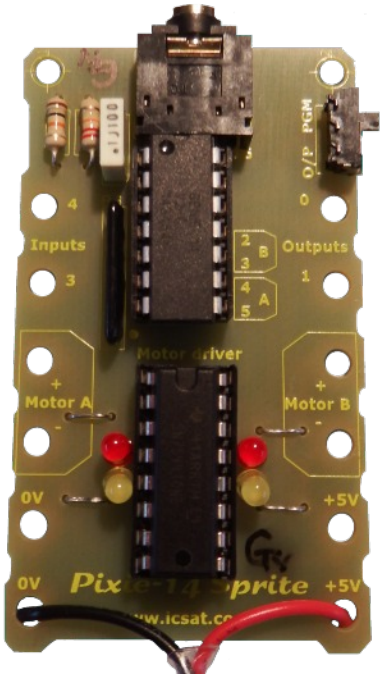
Pixie Sprite Manual

Ver. 1.00

Pixie Sprite - PICAXE pin assignments

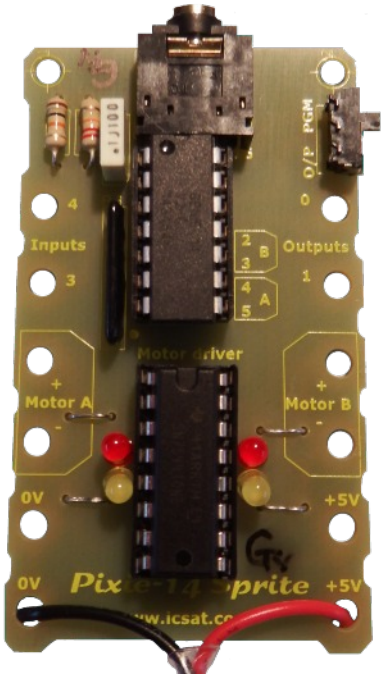
In, Out, ADC	**C.4**
In	**C.3**
Mtr A + conn	**B.5**
Mtr A - conn	**B.4**
Gnd conn	**0V**
Gnd conn	**0V**



B.0	SO, Out, DAC
B.1	In, Out, ADC
B.2	Mtr B - conn
B.3	Mtr B + conn
+5V	+ Supply conn
+5V	+ Supply conn

Pixie Sprite - Genie assignments

Input, A4	**D4/A**
Input	**D3**
Mtr A + conn	**Q5**
Mtr A - conn	**Q4**
Gnd conn	**0V**
Gnd conn	**0V**



Q0	Output
Q1	Output
Q2	Mtr B - conn
Q3	Mtr B + conn
+5V	+ Supply conn
+5V	+ Supply conn

Notes on the input connections

The inputs have pull down resistors fitted so your switch or sensor just needs one end connecting to the input conn and the other end to +5V.

You then can read the input via the appropriate command for either PICAXE or Genie

Notes on the output connections

The two 'normal' outputs 0 & 1 can be used to drive LEDs, piezo buzzers, transducers etc. For more current you may need to use a transistor for example.

Code Examples

We have a range of supporting code examples for both PICAXE and Genie, available by joining the **D&T Programmable Components** group on Facebook. This group has a wide range of users, with great examples for both the beginner and the more advanced user.

Notes on the motor driver

Each motor output can operate a motor with bidirectional control, it can also operate 2 motors with on/off control - one motor conn to 0V the other to a motor output (+ or -), they can also be used to supply the control signal to servo motors.

PWM drive can be provided using the appropriate commands for PICAXE or Genie on appropriate pins.

Power Supply

The Pixie Sprite is designed to use a 3V to 5V power supply, this can be easily obtained from a set of AA batteries to give 3V or 4.5V

Acknowledgements

PICAXE™ is the trademark of Revolution Education Ltd

Genie™ is the trademark of New Wave Concepts Ltd

Support

ICSAT offers **FREE Tech Support** via our website or Facebook

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