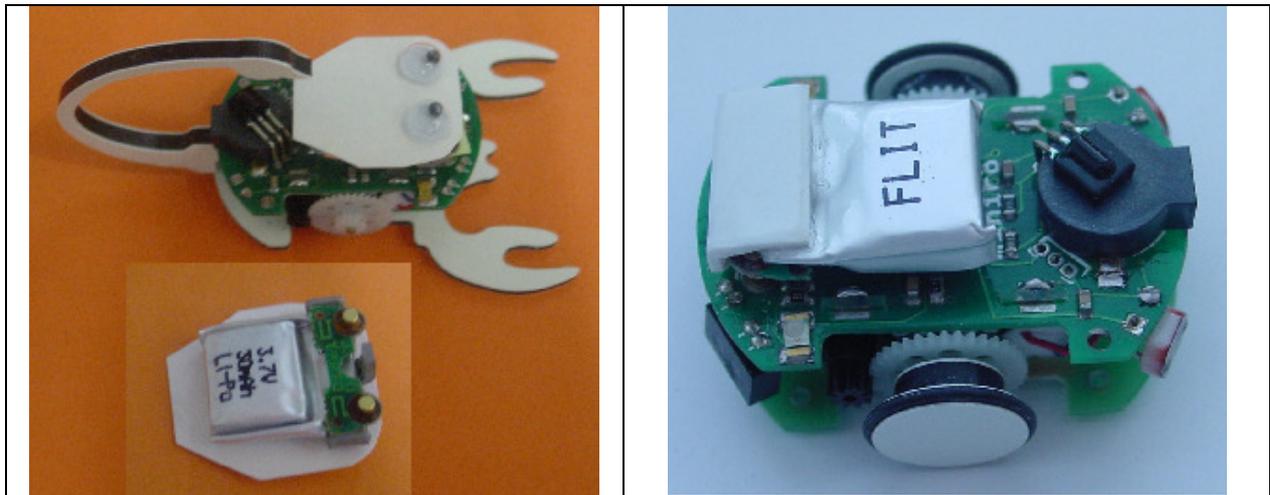


## Small robot – decorative design – cute performance



The functionality of the Miniuro is quite impressive. The 16F882 microcontroller is programmed in assembly language (1300 bytes) and offers a nice set of tasks selected by depressing the front push-button at power-up.

When the Lipo accumulator is inserted, the right led blink and a bip is heard.

Robot is ready to be controlled by the Emir2 transmitter of a Bimo. Right led blinks quickly. When Emir transmit, both Leds are on. If Emir stops transmitting, or the distance is greater than 5 metres (depending the Emir battery) a decrescendo is heard and the robot return to the initial mode.

Depressing the front switch starts different behaviours. One depress several times. There is an acoustic feedback repeating the number of times and the task starts. One need to remove the Lipo to stop that task.

- 1 push The robot avoid obstacles. Dark obstacles are not recognized.
- 2 pushes Moves at reduced speed and recognize the side of white tables. If dark table, it will not get out of a white sheet. There is a calibration to the ground reflections when a kind of siren is heard.
- 3 pushes Photophobe (goes away from light). Pilot with a flashlight, very funny.
- 4 pushes Predefined simple displacements (back if obstacles)
- 5 pushes A simple melody. The linearity of the speaker is very bad, no hope to get better music, but it is easy to encode a melody
- 6 pushes The light sensors on the back influence a continuous sound. Use a flashlight to see the effect (just for something original)

The principle for avoiding obstacles and table edge is the following.

The distance sensors is a logarithmic value between 0 and h'3F, a typical value is h'28. That value uncrease if there is no reflection on the ground floor and decreases if these is a reflection on an obstacle.

If the sensor value increases or decreases significantly, the robot back-up. If the value decreases a little at left, right motor speed decreases, same rule the other side.

The robot is powered by a 30 or 50 mA Lipo with Bahoma 10mm. Use the Ucha10 or Bicha2 to recharge after 10-20 minutes of operation.