

PiBorg PiCy

Ben Everard loses hours of his life to this little kit that sets your Raspberry Pi free to roam around the kitchen.

DATA

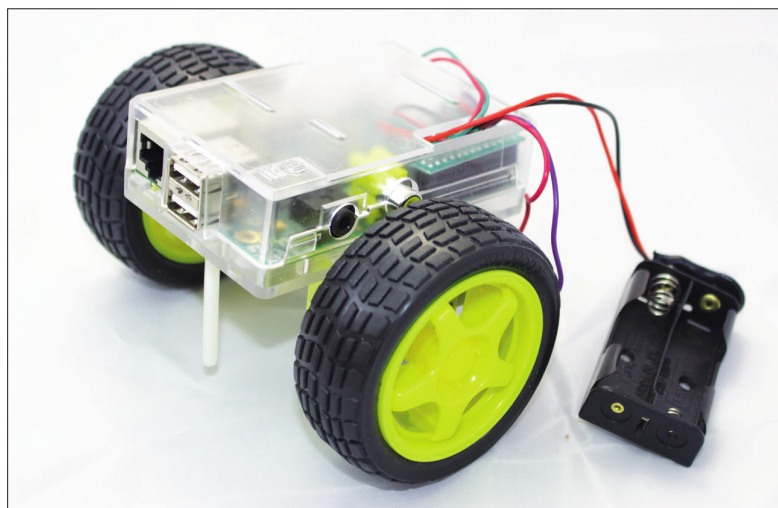
Web
www.piborg.org
Developer
PiBorg
Price
£29.99 (not including Raspberry Pi)

The Raspberry Pi is a great base for robotics projects of all shapes and sizes, and the PiCy is about as small as they come. It's just a Raspberry Pi case with a pair of motors and wheels. Assembling the kit requires a little soldering, though none of it is difficult or fiddly (the kit is also available pre-soldered for an extra £7). Everything else can be assembled with no tools at all. The case snaps over the Pi, the motors and battery case are glued on, and the wheels are just pushed into place. It took us about 30 minutes to build ours, and that included time to take step-by-step photos.

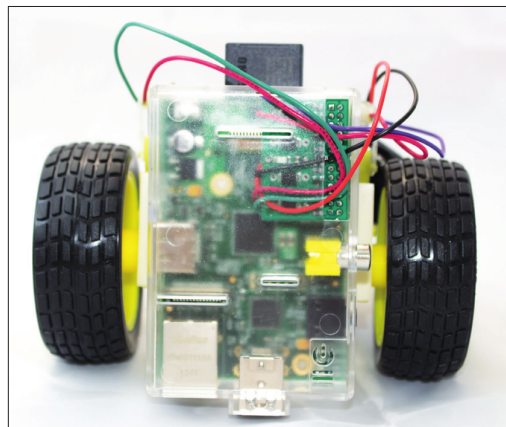
The only electronics are a small circuit board to power the motors. This board (called a PicoBorg) is just a group of Field Effect Transistors (FETs) that are used to control higher-power devices such as motors.

Once assembled, controlling it is just a matter of using the GPIO pins. There's example code on the PiBorg website to do this with Python, though it could be done in other languages if you prefer. Getting this running was as easy as assembling it. Most other motor control boards for the Pi use special libraries to control the hardware. The fact that this works on pure GPIO output makes it a great first kit for anyone who wants to learn more about controlling things with the Pi. However, this does give you less control over the motors – you can only turn each one on or off, so there's no speed control and no reverse.

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Though not strictly necessary, a portable USB power supply will let you run your creation untethered, and a Wi-Fi dongle will enable you to communicate with it once it's free.



The PicoBorg (the electronics at the heart of the kit) is available by itself for £6.99 including UK shipping.

The essence of robotics is compromise, and in order to make it easy to get started, the kit sacrifices some things. The glued-together frame doesn't feel particularly strong, so it's unlikely to cope well with rough handling. That said, the first thing to break will almost certainly be the double-sided tape, which would be trivial to repair.

My First Robot

The two video connectors on the Pi are inaccessible when it's strapped into the PiCy, so you couldn't use this as a base for anything with a HDMI screen, but then it's not likely to be big enough for that anyway.

To get up and running, you'll need the PiCy kit, a Raspberry Pi and the usual paraphernalia (SD card, power supply, etc). The main base for the chassis is a ModMyPi case, which is excellent at protecting the Pi, but doesn't make a very expandable basis on which to build. There aren't any holes or anything else to mount additional hardware on. The best bet for expanding it is either gluing parts on or drilling into the case. On the plus side, there are two unused protected GPIOs on the PicoBorg (including one with PWM) to add more motors or other peripherals to your robot. At this price, and considering how easy it is to assemble and program, the PiCy is a great introduction to robotics, and the parts it's made from can easily be recycled into more advanced projects as your skills develop.

LINUX VOICE VERDICT

Possibly the easiest way that we've seen to build a robot based on the Raspberry Pi.

