e-puck

mini mobile robot from EPFL

The e-puck mini mobile robot was originally developed at the Swiss Federal Institute of Technology in Lausanne (EPFL) for teaching purposes. Over 400 units have been used in the past two years in different universities. It is now a commercial product available from and supported by Cyberbotics Ltd.

e-puck is powered by a dsPIC processor and features a large number of sensors. The e-puck hardware and software is fully open source(*) providing low level access to every electronic device and offering unlimited extension possibilities.

e-puck at work

Overview

Developed by the creators of the successful Khepera robot, e-puck offers the following features:

Neat Design: the simple mechanical structure, electronics design and software of e-puck is an example of a clean and modern system.

Flexibility: e-puck covers a wide range of educational activities, offering many possibilities with its sensors, processing power and extensions.

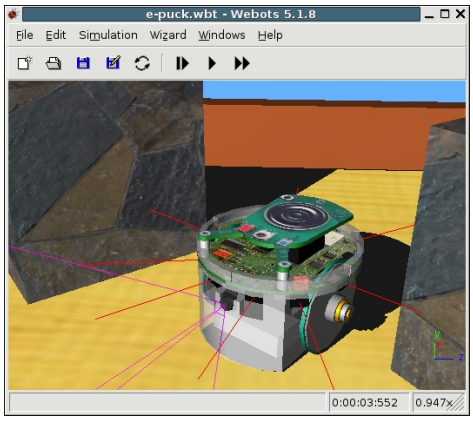
Simulation software: e-puck is integrated in the Webots simulation software for easy programming, simulation and remote control of real robot.

User friendly: e-puck is small and easy to setup on a table top next to a computer. It doesn't need any cable (rely on Bluetooth) and provides optimal working comfort.

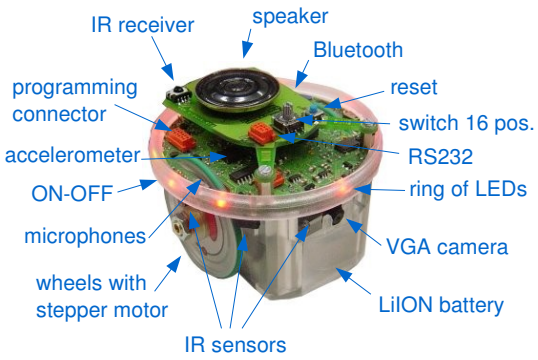
Robustness and maintenance: e-puck resists to student use and is simple to repair.

Affordable: the price tag of e-puck is friendly to university budgets.

(*) e-puck is based on an open hardware concept, where all documents are distributed and submitted to a license allowing everyone to freely use and contribute to the project. The official e-puck web site gathers all the contributions of the user community at www.e-puck.org



Webots simulation



SWISS MADE

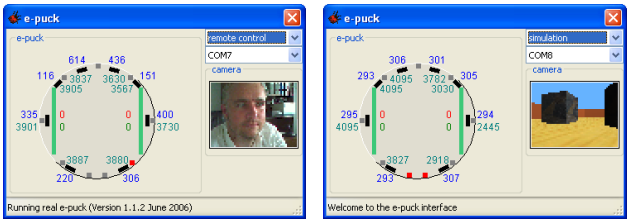
CYBERBOTICS
professional mobile robot simulation

www.cyberbotics.com

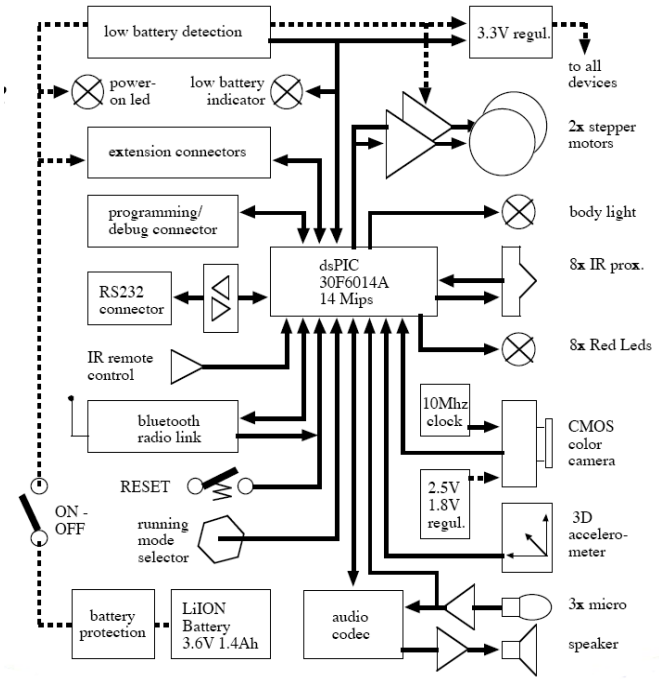
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Specifications

Feature	Technical information
Size, weight	70 mm diameter, 55 mm height, 150 g
Battery autonomy	5Wh LiION rechargeable and removable battery providing about 3 hours autonomy.
Processor	dsPIC 30F6014A @ 60 MHz (~15 MIPS) 16 bits microcontroller with DSP core
Memory	RAM: 8 KB; FLASH: 144 KB
Motors	2 stepper motors with a 50:1 reduction gear, resolution: 0.13 mm
Speed	Max: 15 cm/s
Mechanical structure	Transparent plastic body supporting PCBs, battery and motors
IR sensors	8 infra-red sensors measuring ambient light and proximity of objects up to 6 cm
Camera	VGA color camera with resolution of 640x480 (typical use: 52x39 or 640x1)
Microphones	3 omni-directional microphones for sound localization
Accelerometer	3D accelerometer along the X, Y and Z axis
LEDs	8 red LEDs on the ring, green LEDs in the body, 1 strong red LED in front
Speaker	On-board speaker capable of WAV or tone sounds playback
Switch	16 position rotating switch on the top of the robot
PC Connection	Standard serial port up to 115kbps
Wireless	Bluetooth for robot-computer and robot-robot wireless communications
Remote control	Infra-red receiver for standard remote control commands
Expansion bus	Large expansion bus designed to add new capabilities
Programming	C programming with the free GNU GCC Graphical IDE (integrated development environment) provided in Webots
Simulation	Webots facilitates the use of the e-puck: powerful simulation, remote control and C programming system.



Webots remote control



Applications

e-puck has already been used in a wide range of applications, including mobile robotics engineering, real-time programming, embedded systems, signal processing, image processing, sound and image feature extraction, human-machine interaction, inter-robot communication, collective systems, evolutionary robotics, bio-inspired robotics, etc.

Pricing

e-puck robot: CHF 950 (~ €580/$800)
(includes a battery and a battery charger)

Webots EDU - from: CHF 320 (~ €200/$270)
Webots PRO - from: CHF 2,300 (~ €1,410/$1,930)

prices are given in Swiss Francs (CHF)

Order your e-puck now from our web site at:
http://www.cyberbotics.com/order/

e-mail: info@cyberbotics.com
tel/fax: +41 21 693 8624