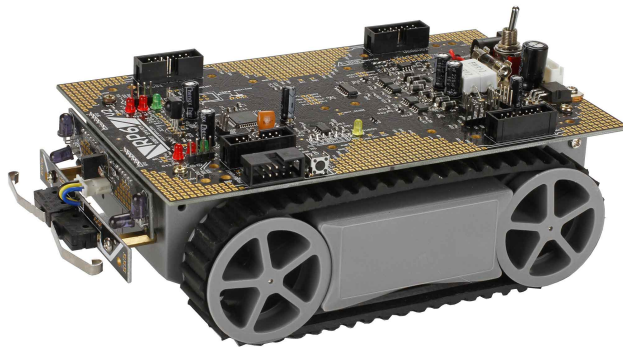


# RP6v2

## C-Programmable Robotic Vehicle

### RP6v2 Capabilities:

Cruise around autonomously  
Avoid obstacles  
Follow light sources  
Measure light intensity  
Detect collisions  
Detect blocked engines  
Detect low battery  
Measure and control rotational speed of motors via high-resolution encoders  
Move given distance  
Rotate specific angles  
Measure driven distance  
Move in geometric paths: circles, polygons, and others  
Exchange data with other robots or devices  
Operate as remote control car (RC5)  
Transfer sensor data to PC via USB  
Expand via I<sup>2</sup>C bus



### Features:

- ATMEGA32 8-bit RISC microcontroller with 8 MIPS and 8MHz clock
- Delivered fully assembled (no soldering needed)
- CD with software, 138 page manual, and many extras
- AVR-GCC and RobotLoader open source software for use with Windows and Linux
- Programmable in C
- Receives IR codes in RC5 format
- USB Interface for easy programming and communication
- Module I<sup>2</sup>C bus expansion system
- Expansion boards may be stacked as needed
- Sample C programs and huge C function library
- Powerful tank drive train can drive up steep ramps and over obstacles
- Large payload capacity
- Light, collision, speed and IR-obstacle sensors integrated
- Two 7.2V DC motors
- 625 CPR encoder resolution for precise speed regulation
- Six PCB expansion areas

### Overview:

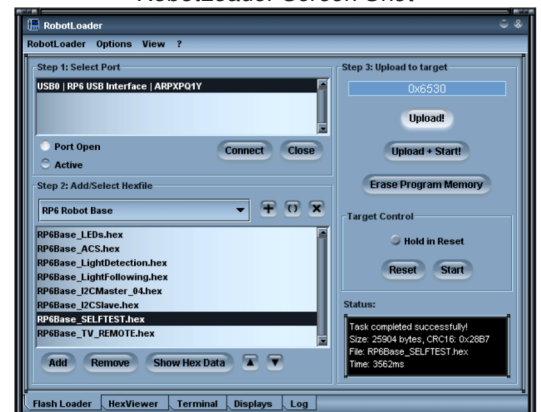
The RP6v2 is an economical autonomous mobile robot system which provides an introduction to the fascinating world of robotics. It is designed for beginners as well as experienced electronics and software developers.

Programmable in C, the RP6v2 has many possibilities for expansion as your programming skills grow.

The RP6v2 is ideal for educational curriculum at universities, trade schools, high schools and of course hobby users.

With an extensive manual, lots of example programs, and a huge C function library, programming is easy and you can instantly start experimenting with your robot. All library and example programs are open source (GNU GPL)!

RobotLoader Screen Shot



# RP6v2

RP6v2 comes with the following items:

RP6v2 vehicle

CD

10-pin connector

USB connector cable

USB programmer interface

## Specifications

| Model RP6v2                                     |                                                                      |
|-------------------------------------------------|----------------------------------------------------------------------|
| Processor memory                                | 32KB Flash ROM<br>2 KB SRAM<br>1 KB EEPROM                           |
| USB upload rate                                 | 500kBaud                                                             |
| Expansion system                                | Two-wire I <sup>2</sup> C bus<br>400 kBit/s transfers<br>127 devices |
| Encoder resolution                              | 625 CPR                                                              |
| Max speed of vehicle                            | 25 cm/s                                                              |
| Traverse obstacles                              | ca. 2 cm height                                                      |
| Negotiate ramps                                 | 30% steepness<br>40% with modifications                              |
| Bumper sensors                                  | 2 in front                                                           |
| ACS (Anti-Collision-System)                     | IR receiver and two IR diodes for left and right                     |
| Status LEDs                                     | 6<br>(4 may be appropriated)                                         |
| Light sensors                                   | 2                                                                    |
| ADC (Analog to Digital Converter)               | 2 (may be used as I/O)                                               |
| Motor drivers                                   | 2 optimized MOSFET H-Bridges                                         |
| Ground clearance                                | 10 mm                                                                |
| Power supply connectors                         | 2 x 5V and 1 x 7.2V                                                  |
| Voltage regulator                               | 5V                                                                   |
| Operating time                                  | 3-6 hours                                                            |
| Power supply                                    | 6 AA rechargeable batteries (not included)                           |
| Current consumption                             | 500 mA                                                               |
| Dimensions (LxWxH)                              | 172 x 128 x 50 mm                                                    |
| Technical data subject to change without notice |                                                                      |

## Training & Support Manual on CD

**Chapter 1:** Introduction  
Expansion and technical data  
What the RP6 can do  
Application suggestions

**Chapter 2:** The RP6 in Detail  
Control system  
Power supply  
Sensors  
Drive system  
Expansion system

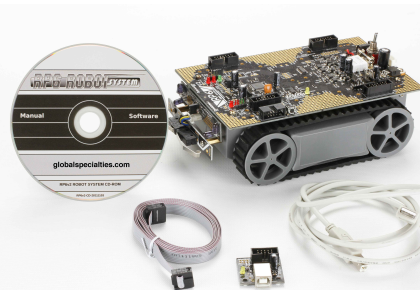
**Chapter 3:** Hardware & Software Setup

**Chapter 4:** Programming the RP6  
Configuring the Source Code Editor  
Program upload to the RP6  
Why C? And what's "GCC"?  
C- Crash Course for Beginners  
Makefiles  
The RP6 function library  
Example programs

**Chapter 5:** Experiment Board

**Chapter 6:** Closing Words

**Appendix:**  
Troubleshooting  
Encoder calibration  
Connector pinouts  
Recycling and safety instructions



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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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