RP6v2-C

Autonomous Robotic Vehicle

RP6V2-C 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^2C 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 I2C 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

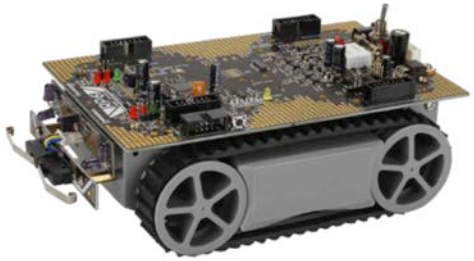
Overview:

The RP6V2-C 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-C has many possibilities for expansion as your programming skills grow.

The RP6V2-C 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)!



Global® Specialties
Innovative Training Solutions

RP6v2-C

RP6V2-C comes with the following items:

RP6V2 Robot

CD

10-pin connector

USB connector cable

USB programmer interface

Battery charger

RC5 Remote control

Available Accessories

RP6V-M32

RP6V2-WIFI

RP6V2-EXP

RP6V2-DSP

Specifications

RP6V2 Robot	
Processor memory	32KB Flash ROM 2 KB SRAM 1 KB EEPROM
USB upload rate	500kBaud
Expansion system	Two-wire I^2C bus 400 kBit/s transfers 127 devices
Encoder resolution	625 CPR
Max speed of vehicle	25 cm/s
Traverse obstacles	ca. 2 cm height
Negotiate ramps	30% steepness 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 (4 may be appropriated)
Light sensors	2
ADC (Analog to Digital Converter)	2 (may be used as I/0)
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 (L x W x H)	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

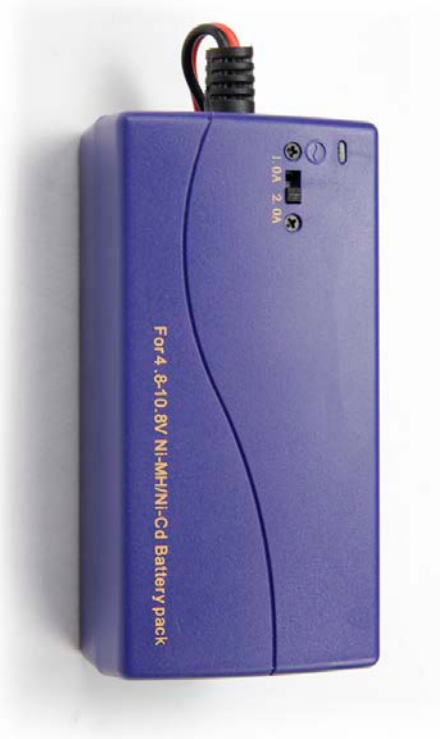
Global® Specialties

Innovative Training Solutions

RP6v2-C

Specifications

RP6V2 RC5 Remote Control	
Model	RP6V2-RMT
Frequency	RC5
Batteries	2X AAA 1.5V



Specifications

RP6V2 Charger	
Model	RP6V2-CHG
Use	USA & Europe
Voltage	110-240 VAC
Frequency	50-60 Hz
Voltage range	4.8 - 10.8 V
Charging current	1 A or 2 A
1 A usage	Battery pack 1000-2000 mAh
2 A usage	Battery packs over 2000 mAh
Battery charge time	Time (Hrs) = Battery capacity (Ah) / Charging current (1A or 2 A)

Contact:
Industrial Process Measurement, Inc.
3910 Park Avenue, Unit 7
Edison, NJ 08820
732-632-6400
support@instrumentation2000.com
http://www.instrumentation2000.com