

# AAR

## Arduino-Compatible Robot

### AAR Capabilities:

Cruise around via PC control

Programmable with Arduino

Follow a black or white line

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

Read data sent via USB from a PC

Transfer data to a PC via USB

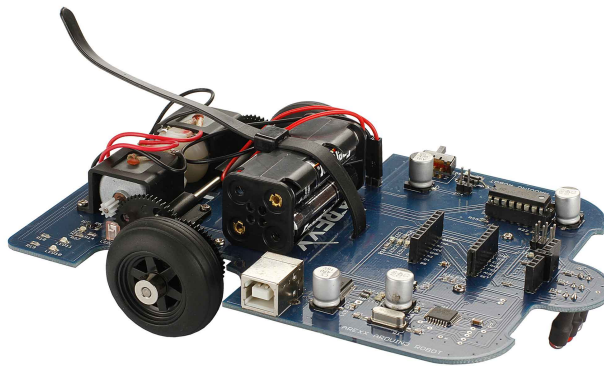
Expandable via expansion pins

### With optional Bluetooth:

Read data sent via Bluetooth from a PC or Android phone

Transfer data to a PC or Android phone via Bluetooth

Cruise around via Android phone control



### Features:

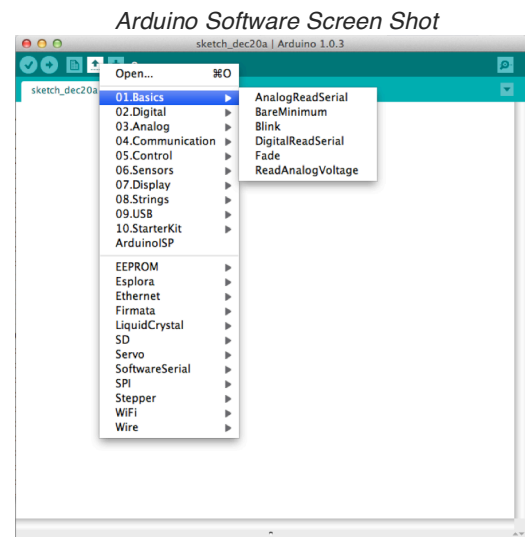
- ATmega328P, 8-bit AVR-RISC processor with 16 MHz clock
- Includes firmware and hardware selftest
- Delivered fully assembled (no soldering needed)
- CD with software, manual, and many extras
- Arduino open source software
- On-board odometer sensor on both wheels
- Line tracker sensor
- USB interface programming
- Expansion kits available
- I<sup>2</sup>C bus
- 2 independently controlled 3V-DC motors
- 14 digital I/Os on the processor (9 free)
- 8 analog input lines (2 free)
- ISP connector for bootloader programming
- Wireless control possible with optional Bluetooth and 433 MHz RF

### Overview:

The AAR (Arduino-Compatible) Robot is a small autonomous mobile robot which is perfect for those new to the robotics world and also for experienced Arduino fans.

Designed in the Arduino open-source prototyping platform, the AAR is easy to program and run. With many expansion kits available your creativity is the only limit to where your AAR Robot will go.

The AAR is ideal as an introduction into processor controlled hobby electronics, and also for educational projects in schools and colleges.



# AAR

## Specifications

| <i>AAR (Arduino-Compatible) Robot</i>                  |                                   |
|--|-----------------------------------|
| <b>LED indicators</b>                                  | 13                                |
| <b>Processor memory</b>                                | 32kb in-system programmable flash |
| <b>Supply voltage</b>                                  | 4 x AAA batteries (Not Included)  |
| <b>Supply current</b>                                  | Min 10mA<br>Max 600mA             |
| <b>Dimension (H x W x D)</b>                           | 40 x 120 x 180 mm                 |
| <b>Technical data subject to change without notice</b> |                                   |

### AAR comes with the following items:

AAR vehicle

CD

USB Cable

### Available Accessories:

ARX-WRL

ARX-BT3

ARX-SNK

ARX-ULT

ARX-MSP

ARX-EXP

## Training & Support Manual on CD

### Chapter 1: Introduction

The Arduino robotics family  
Specifications

### Chapter 2: General Description

### Chapter 3: Arduino Robot

Block diagram  
AAR hardware  
Arduino software

### Chapter 4: The AAR

Download and installation of  
software

The Arduino language  
Installation of a USB driver  
AAR hardware

Installing the battery  
compartment

Arduino software

Programming with Arduino  
programs

Selecting an Arduino program

Selecting the correct COM-port

Program transfers to the Arduino  
Robot

### Chapter 5: H-Bridge Circuits

### Chapter 6: Odometry

### Chapter 7: Programming a Boot-loader

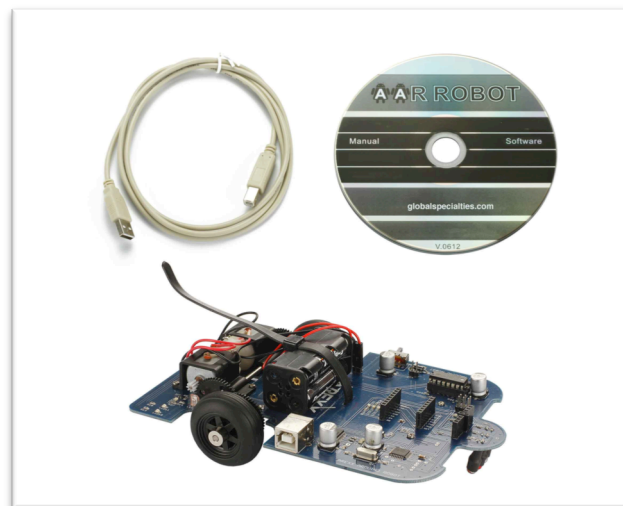
### Appendix:

Parts list

Main board—top view

Main board—bottom view

Schematics AAR



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