

Software update manual

1 Required software

There are two programmers somehow tested and currently in use for updating software for Marvelmind's Robots of Grumbler series.

1.1 PonyProg

Free license.

Supports SI-Prog serial interface and AVR ISP parallel interface.

Full description of interfaces and schematics could be found on

<http://www.lancos.com/prog.html>

Version 2.06f Beta Mar 5 2005 or better.

Works with KANDA dongle.

1.2 AVR-ISP

Commercial license.

Found some instability and inconsistency with uploading software.

Further information is on <http://www.kanda.com>

Version 4.1.0.0 or better.

2 Required hardware and settings

2.1 Using LPT interface

KANDA dongle is supported. Schematics could be improved according to PonyProg developers.

If robot is not recognized, check setting of LPT port. ECP should help.

2.2 Using JTAG interface

AVR JTAG USB connector.

Drivers for USB-Serial device and serial port could be found on

<http://www.ftdichip.com/Drivers/VCP.htm>

2.2.1 Drivers installation

Download appropriate drivers for your OS using link above. Extract files somewhere to HDD, remembering path to extracted files.

Insert dongle. Point to extracted files for USB<->Serial device, when prompted.

After USB<->Serial device will be installed, second unknown device will appear.

When prompted for drivers, point to the same folder with extracted files as before.

Serial port device will be installed.

3 Wire Grumbler!

(Step by step pictures)

LPT connection

3.1 Take cable from the box



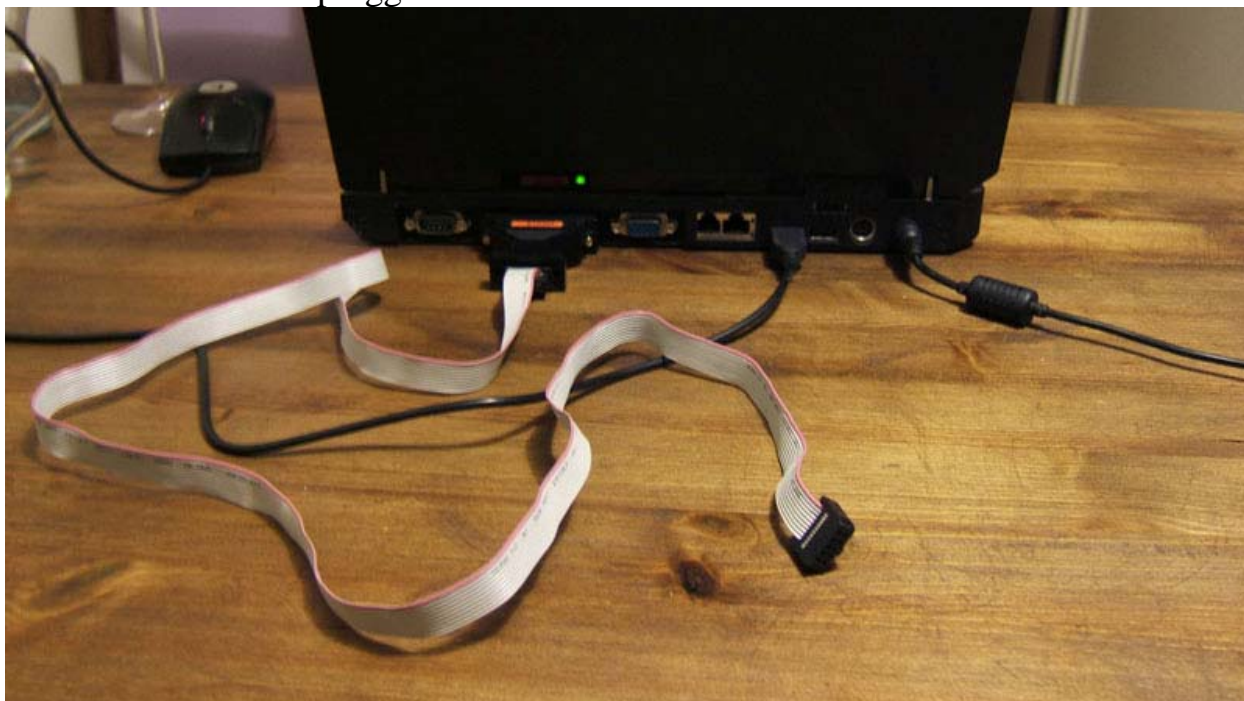
3.2 Find LPT port on your computer



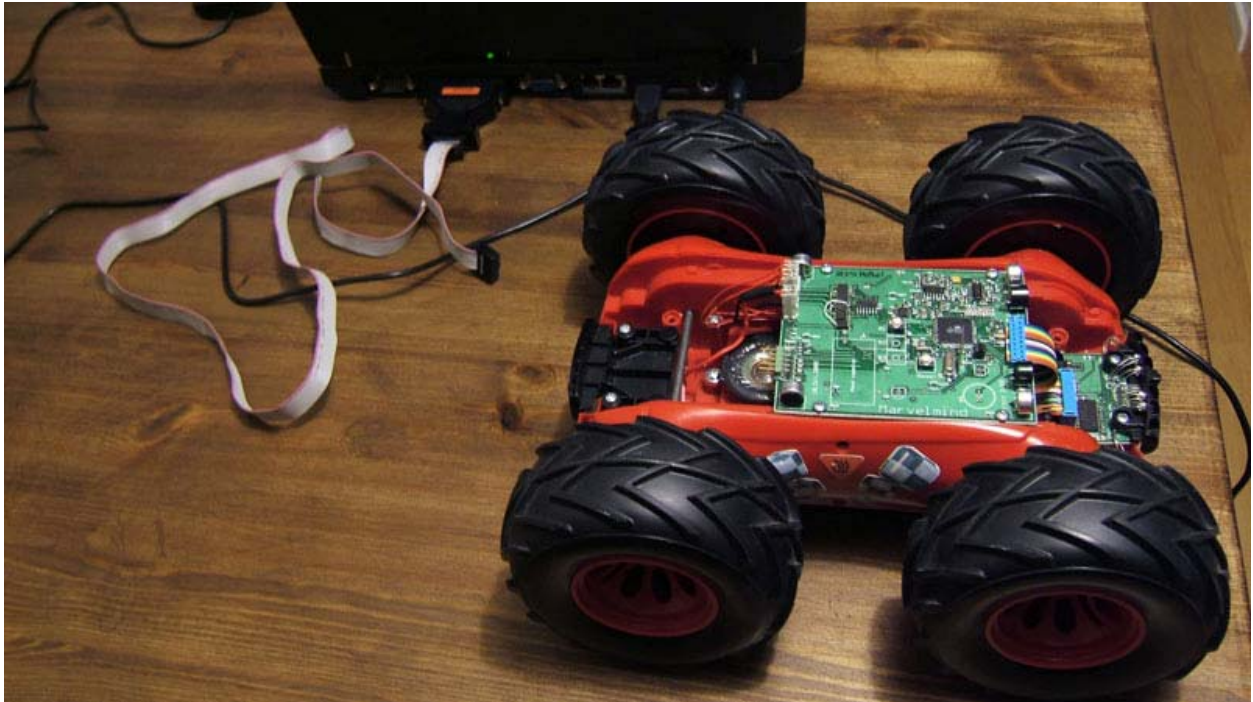
3.3 Plug cable to LPT port



Common look of plugged cable:

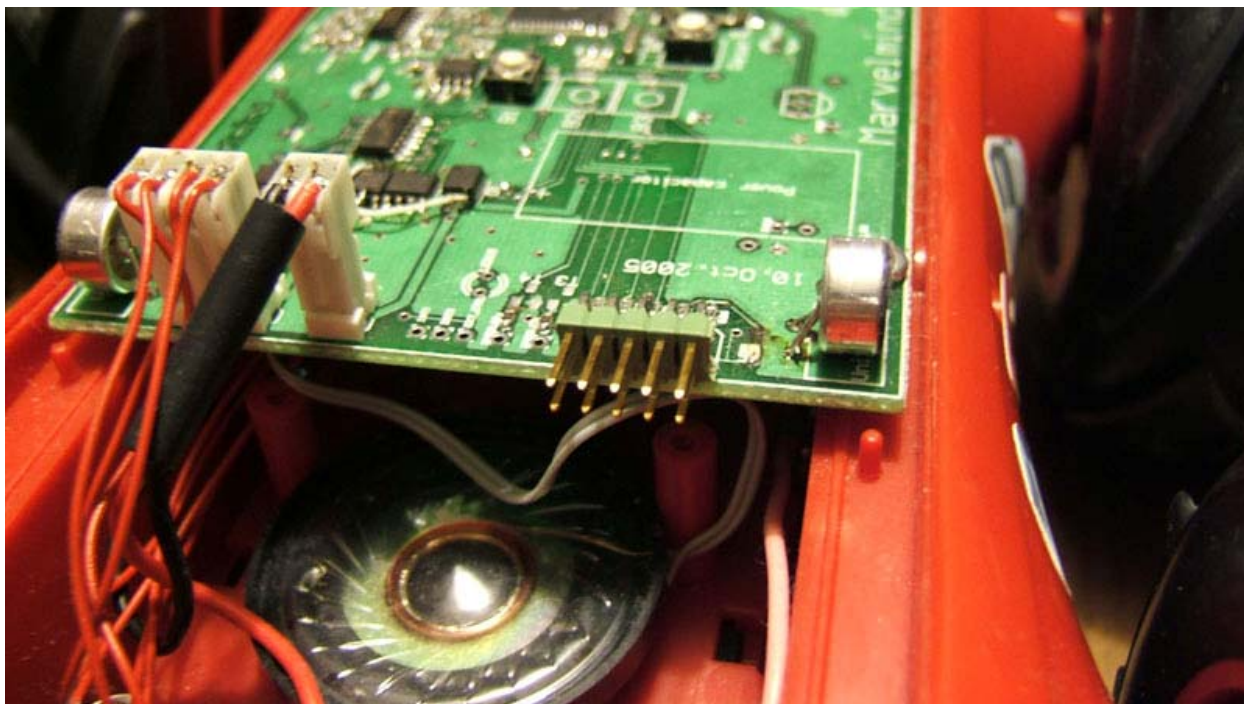


3.4 Take Grumbler from the box and put it near your computer

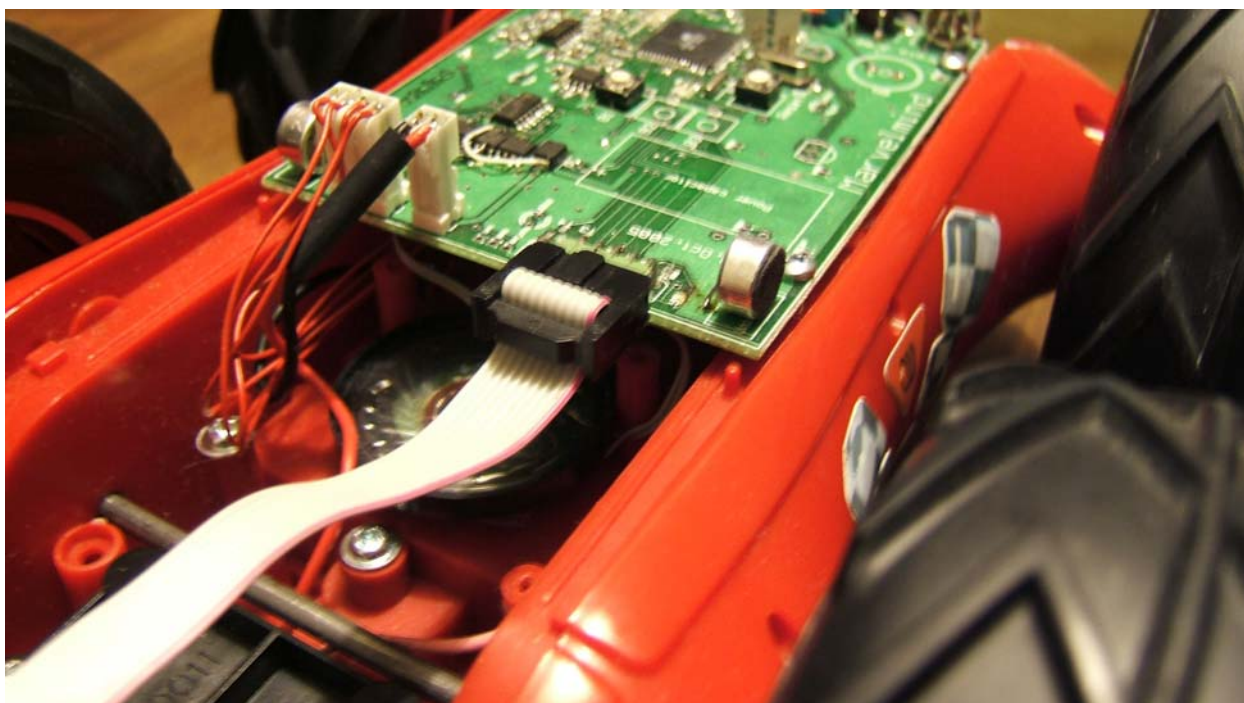


3.5 Find Grumbler's connection point

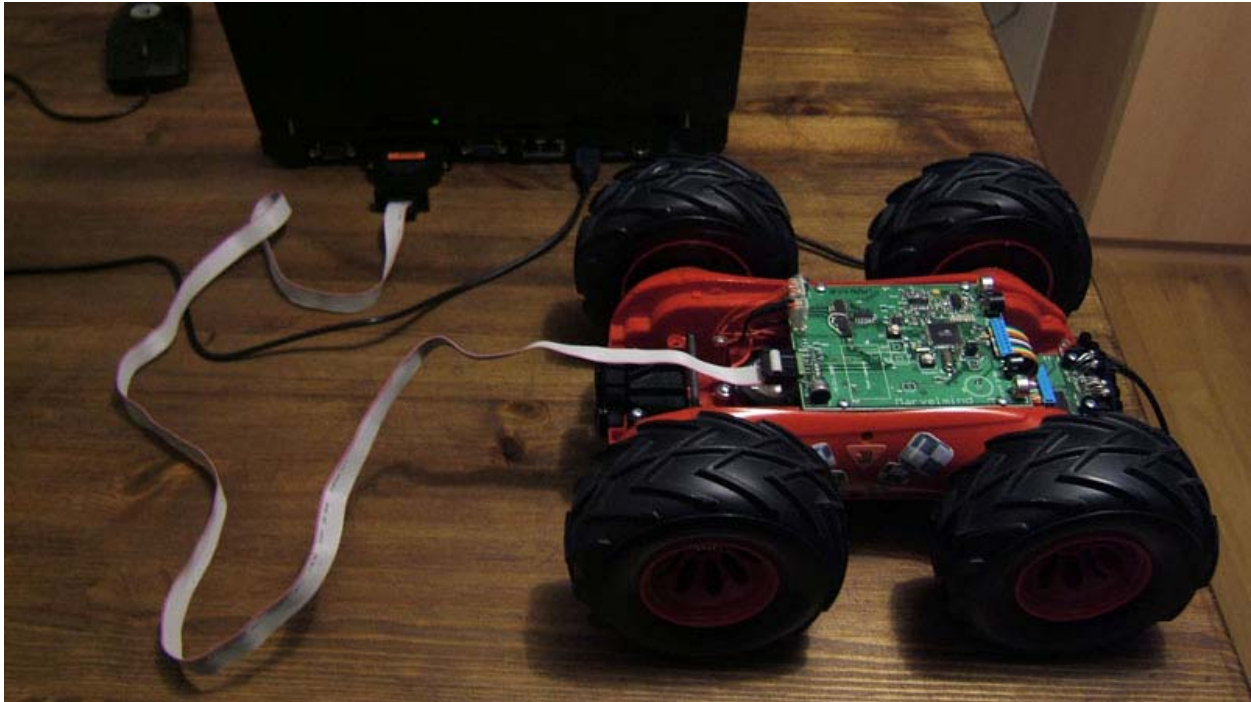




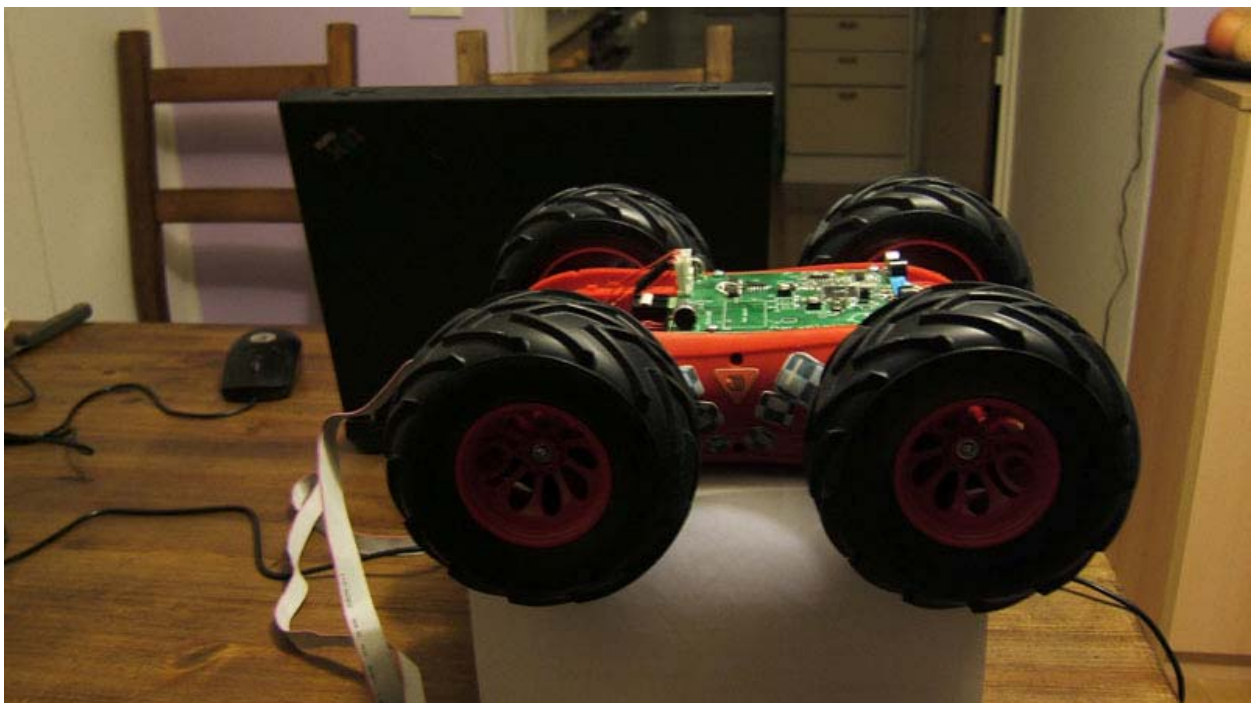
3.6 Connect Grumbler



Now everything looks like:



3.7 Protect Grumbler from movement while wired



4 Work with programmers

4.1 PonyProg

This chapter will explain how to program Grumbler. Everything you will do out of this chapter will cause lose of warranty and, possibly, death of Grumbler.

4.1.1 Interface Setup

Connect dongle to the computer and Grumbler. Turn Grumbler on, taking care about wheels.

Go to main menu Setup and select Interface setup.

Select your connection type and interface. Use Probe button to make sure that connection could be established.

Press Ok button to save settings.

4.1.2 Program FLASH

Use main menu File->Open program (FLASH) file to load .hex file to PonyProg. Use main menu Command->Write program (FLASH) to write loaded file to Grumbler.

4.1.3 Automate programming process

To automate uploading use the following steps:

- From main menu Command call Program options dialog.
- Check items: Reload files, Erase, Write program memory (FLASH).
- All other items must be unchecked!

Next time when you will be ready to update software, just press Ctrl-P (main menu Command->Program)

4.2 AVR-ISP

4.2.1 Interface Setup

Select ATmega128 from Device list under main menu bar.

Press Setup button to see that there is nothing to touch. LPT is only one choice.

4.2.2 Program FLASH

Use main menu File->Load->Flash (or use shortcut Ctrl-O) to load .hex file.

Use main menu Device->Program->Flash to upload software to robot.

4.2.3 Automate programming process

To automate uploading use the following steps:

- From main menu Device call Auto Program Options dialog.
- Check items: Reload files, Erase Device, Program Flash Memory, Run.
- All other items must be unchecked!

Next time when you will be ready to update software, just press F5 (main menu Device->Auto Program)



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