Robot and Roboplus Documentation

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Install Roboplus software

Scroll down and download RoboPlus v1.1.3.0 from:
http://en.robotis.com/BlueAD/board.php?bbs_id=downloads&scate=SOFTWARE

Embedded C Tutorial: http://support.robotis.com/en/software/embeded_c/cm510_cm700.htm

Atmel Studio 7.0

Follow these steps to be able to use Embedded C:
http://support.robotis.com/en/software/embeded_c/cm510_cm700.htm

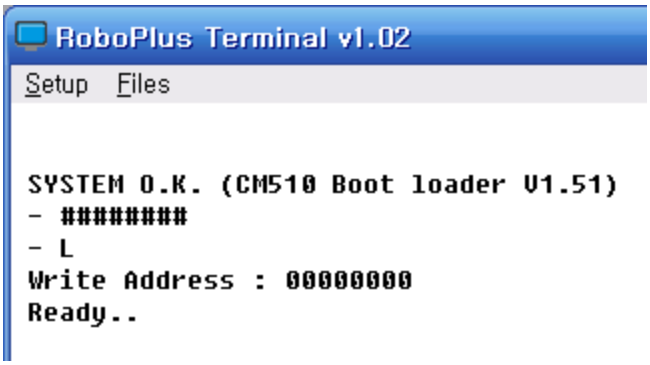
Download WinARM from:
http://www.webring.org/l/rd?ring=avr;id=59;url=http%3A%2F%2Fwinavr%2Esourceforge%2Enet%2F

Download Atmel Studio from: http://www.atmel.com/tools/atmelstudio.aspx#download

Uploading Code

When uploading code, open Roboplus Terminal and switch to the correct COM port.

Hold SHIFT+3 while turning the controller off and on. The bootloader should appear on the screen.



Type L and enter to prepare upload of code

Go to Files, Select Transmit File, and choose the HEX file generated by Atmel Studio

Once code is uploaded, type GO and press enter to run code

To upload code while an already existing code is running, simply hold SHIFT+3, turn the controller off and on, and when the boot loader screen appears, repeat the steps above.

Uploading Firmware

Open RoboPlus Manager and click Controller Firmware Management

Follow steps to re-upload firmware.

Firmware is useful for detailed configuration of motors through RoboPlus manager. It can be used to change the ID of the motor, switch from joint/wheel mode, etc.

CM-700 Controller

Requires at least 9V to operate properly. Takes power from the 2-pin port next to the on/off switch

CM-700 Manual:

http://support.robotis.com/en/product/auxdevice/controller/cm700_manual.htm

Dynamixel Motors

AX-18A

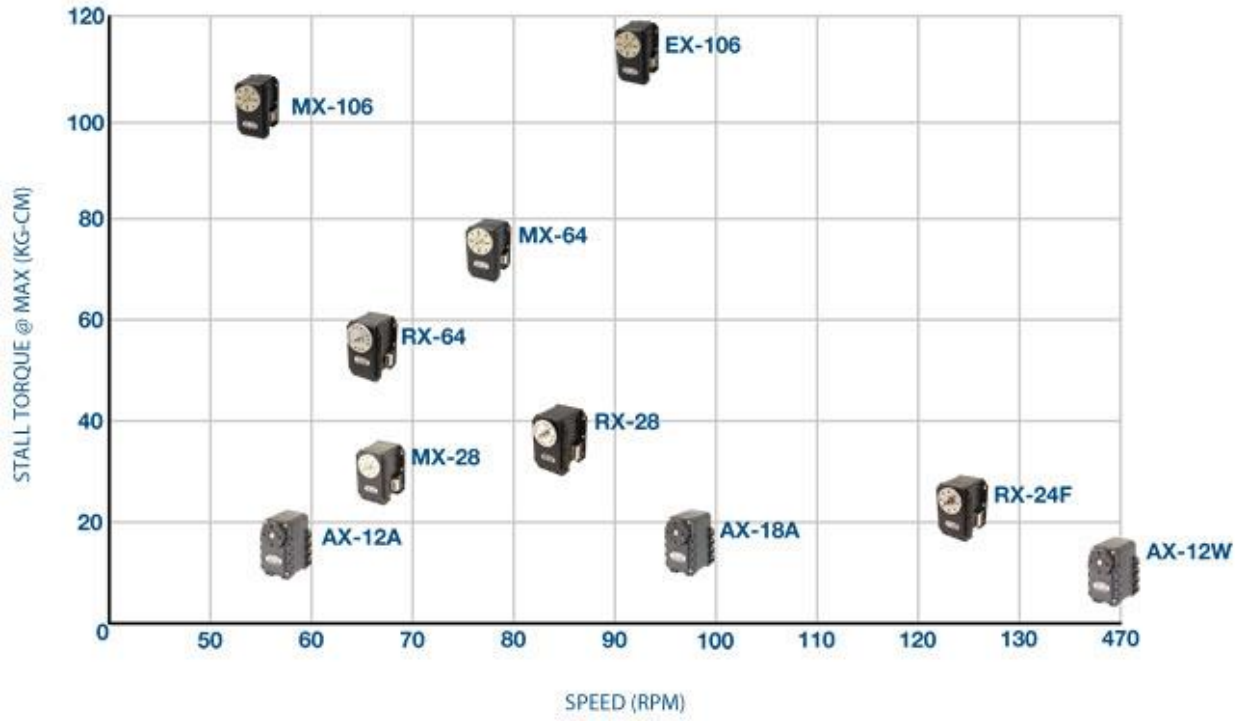
Slow Spinning, high-torque

http://support.robotis.com/en/techsupport_eng.htm#product/dynamixel/ax_series/ax-18f.htm

AX-12W

Fast spinning, low-torque

http://support.robotis.com/en/techsupport_eng.htm#product/dynamixel/ax_series/ax-12w.htm



Operating Motors

When first connecting the motors, change each motor's ID to avoid conflicting ID values.

When running code on the motor, make sure the motor is set-up to the right mode. Open Roboplus Manager and turn motor into wheel/joint mode, depending on which mode is more appropriate.

Example Code

https://github.com/Wxia33/agile-systems-lab