CONTENT

- Install POB-Tools and Compiler
- Software setting
- Download program
- Application sample

Install Software

- Download: “POB-Tools” and “GNUARM Compiler”
- Download the latest version at: http://www.pob-tech.com/en/downloads/

Softwares

Download name	Update date	
Risbee	04/03/2013	View details →
POB-Tools	04/03/2013	View details →
Wifi updater	04/03/2013	View details →
GNUARM Compiler	04/03/2013	View details →
POB-EYE 1 Driver	04/03/2013	View details →
Orbee	04/03/2013	View details →
POB-Bot Driver	04/03/2013	View details →

Install Software

- Install both “POB-Tools” and “GNUARM Compiler” to your computer.

  -Run “pobtools-4.2.6-setup.exe” and “gcc_yagarto_arm.exe” in Windows. (The system used in this manual is Windows, you can also choose software versions for Linux or Mac OS)

Software Setting

- Start “POB-TOOLS”
- Set compiler path for POB-TOOLS:

  Setting -> Preferences -> POB-Bot Ⅱ -> Select YAGARTO GCC compiler location for C language compiler path

  For example: suppose the GNUARM Compiler is installed at C:\Program Files, then select the path: C:\Program Files\yagarto\bin

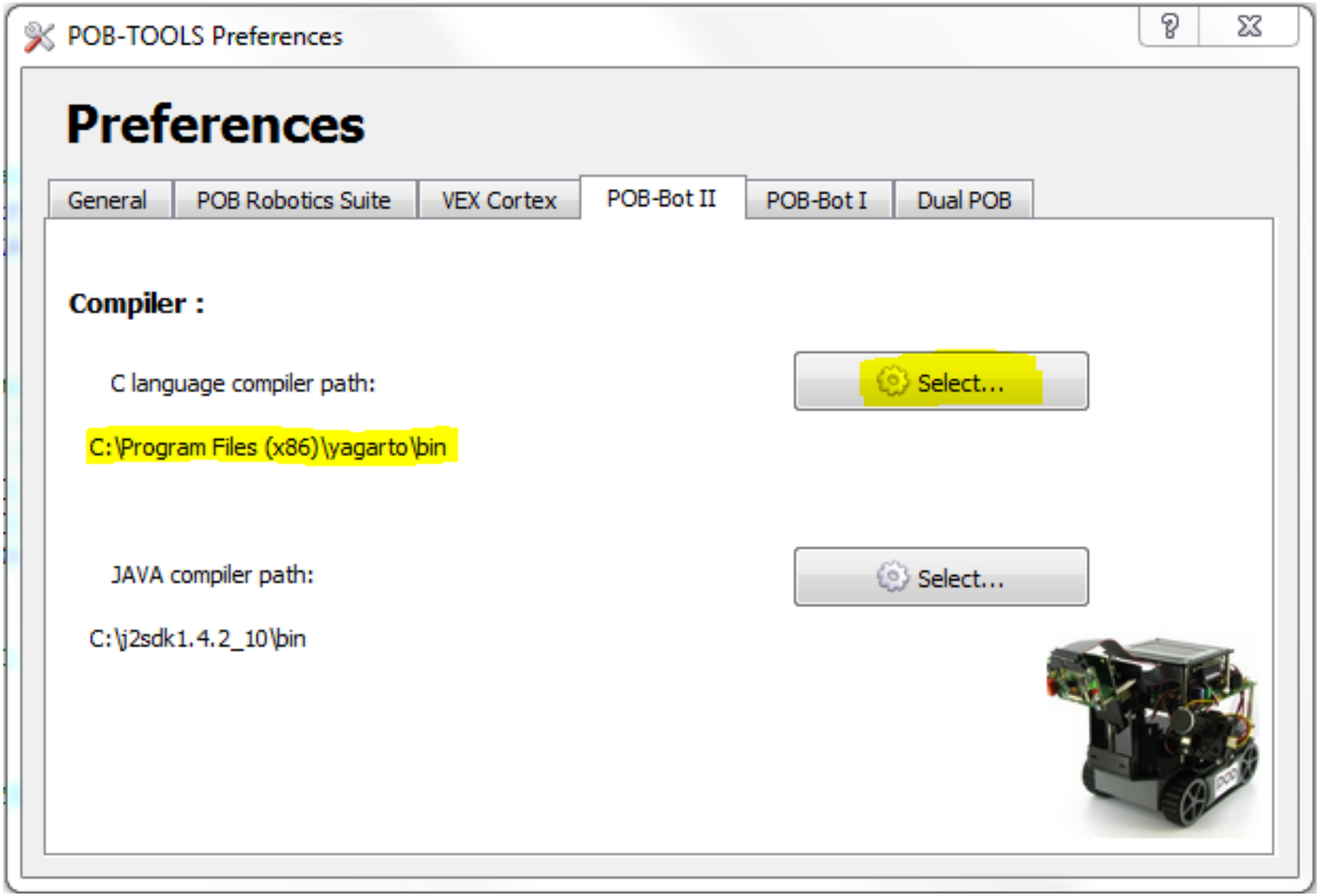
  Notice that your robot type are all “POB-Bot Ⅱ”, so just set compiler path for POB-Bot Ⅱ.

POB-Bot Ⅱ

The camera is different

POB-Bot Ⅰ

Software Setting



Download Program to Robot

- Start the robot in "**Programming Mode**"

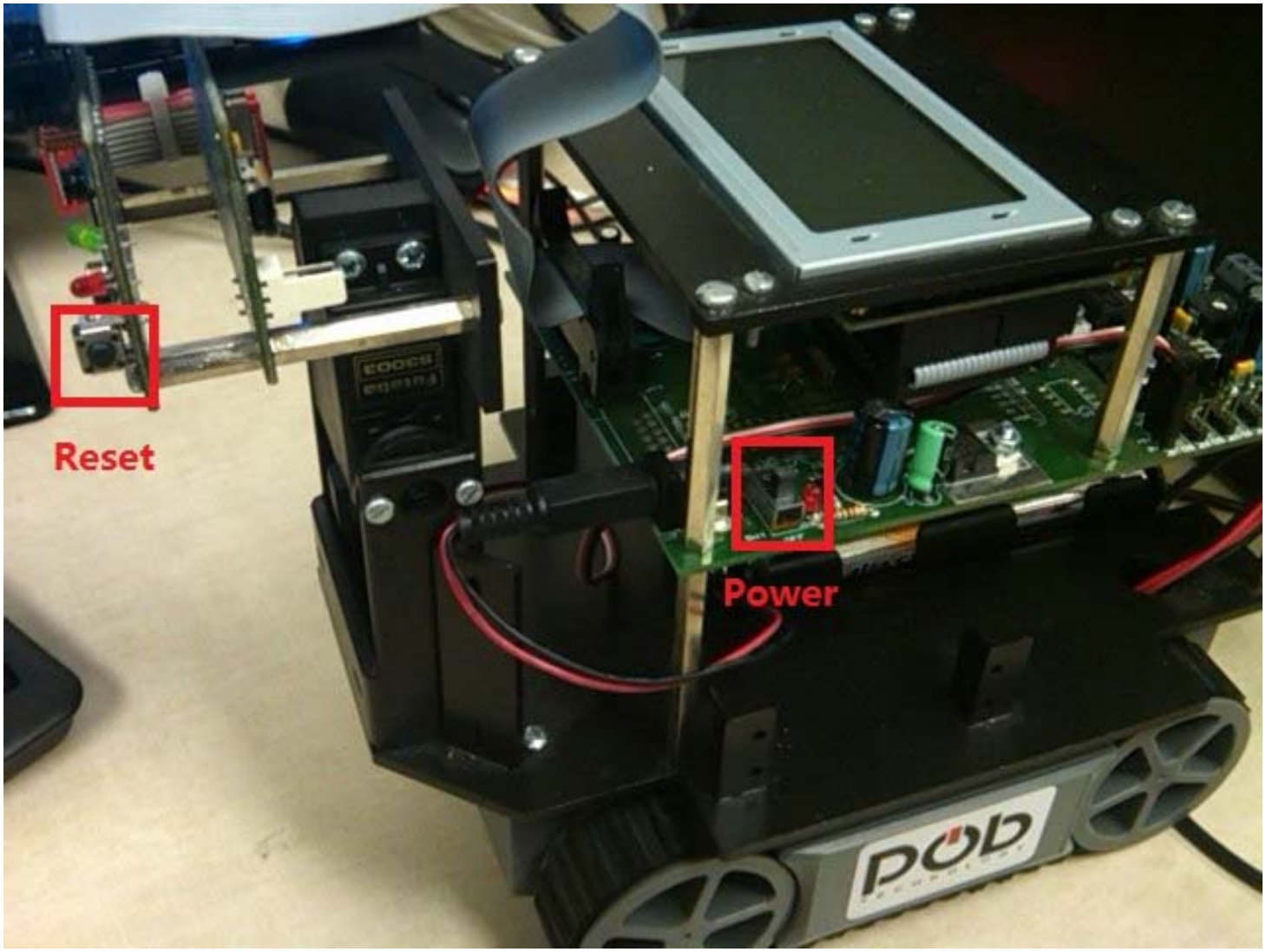
  - The robot has two start mode: Execution mode and Programming mode

  - Start robot in execution mode: click on the power button

  - Start robot in programming mode: keep pressing the reset button, then click on the power button.

- If you want to download the program to your robot, make sure that you **start it in the programming mode**.

Download Program to Robot



Download Program to Robot

- STEP 1:

  Start POB-TOOLS and open your project.

  Have a check whether your code can be successfully compiled.

- STEP 2:

  Connect the robot and computer with USB line.

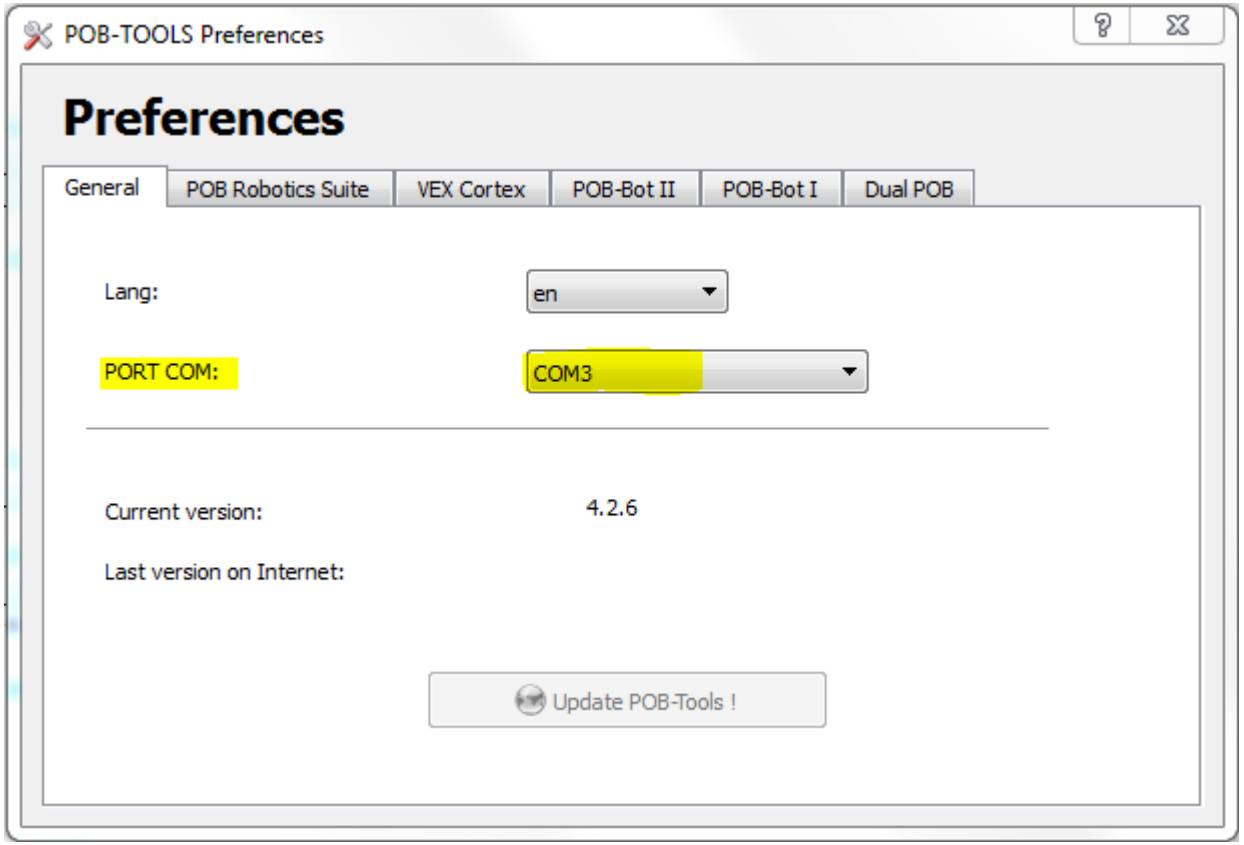
  And **start the robot in the programming mode.**

Download Program to Robot

- STEP 3

  Make sure you have correctly set the PORT COM:

  - Setting -> Preferences -> General -> choose correct one for PORT COM (based on your connection)

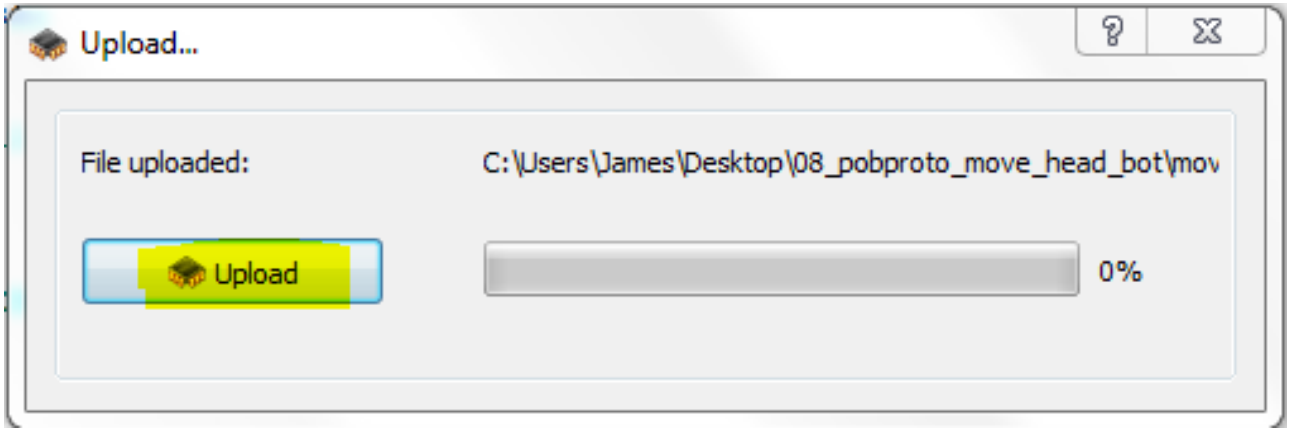


Download Program to Robot

- STEP 4

  Click Upload button in POB-TOOLS

  - Build -> Upload -> Upload



Download Program to Robot

- STEP 5

  Done!

  Click reset button on the robot, and start it in execution mode (usually, it will be done by the robot itself after successful download).

  Enjoy your design!

Example code

- You can get examples at

  C:\Program File\POB-Technology\POBTOOLS4\sdk\pobeye2\examples

- Develop your program based on these sample codes.
- The useful sample code:

  04 form_recognition_and_print

  - How to recognition shapes and how to print output on LCD

  09 pobproto_move_bot

  - How to move robot

  08 pobproto_move_head_bot

  - How to move robot and its head (you can modify the view for camera by moving head)

- The above three examples are helpful to implement your design.

A Sample Design

- Input: Camera
- Output: BotMove

The robot should be able to choose actions (move forward/backward, turn right/left, stop…) based on what it reads from camera.

Simple signs (circle, triangle, cross…) can be used as traffic signs, for example:

cross: train track

circle: stop sign

triangle: can safely pass

I will print some basic shape signs and locate them in the lab 3.217. But I suggest you to print or design your own sign which will be more appropriate for your own program. Actually, it's not so easy to improve the performance of recognition.

A Sample Design

- You can also use more input and output sensors, like LCD or HeadMove… All of that are based on your design.
- **Feel free to modify your design.**
- If you have problems with software installation or program download, feel free to contact me.

- You can also download a pdf version of this manual at:

www.utdallas.edu/~jxy123730

Good luck!