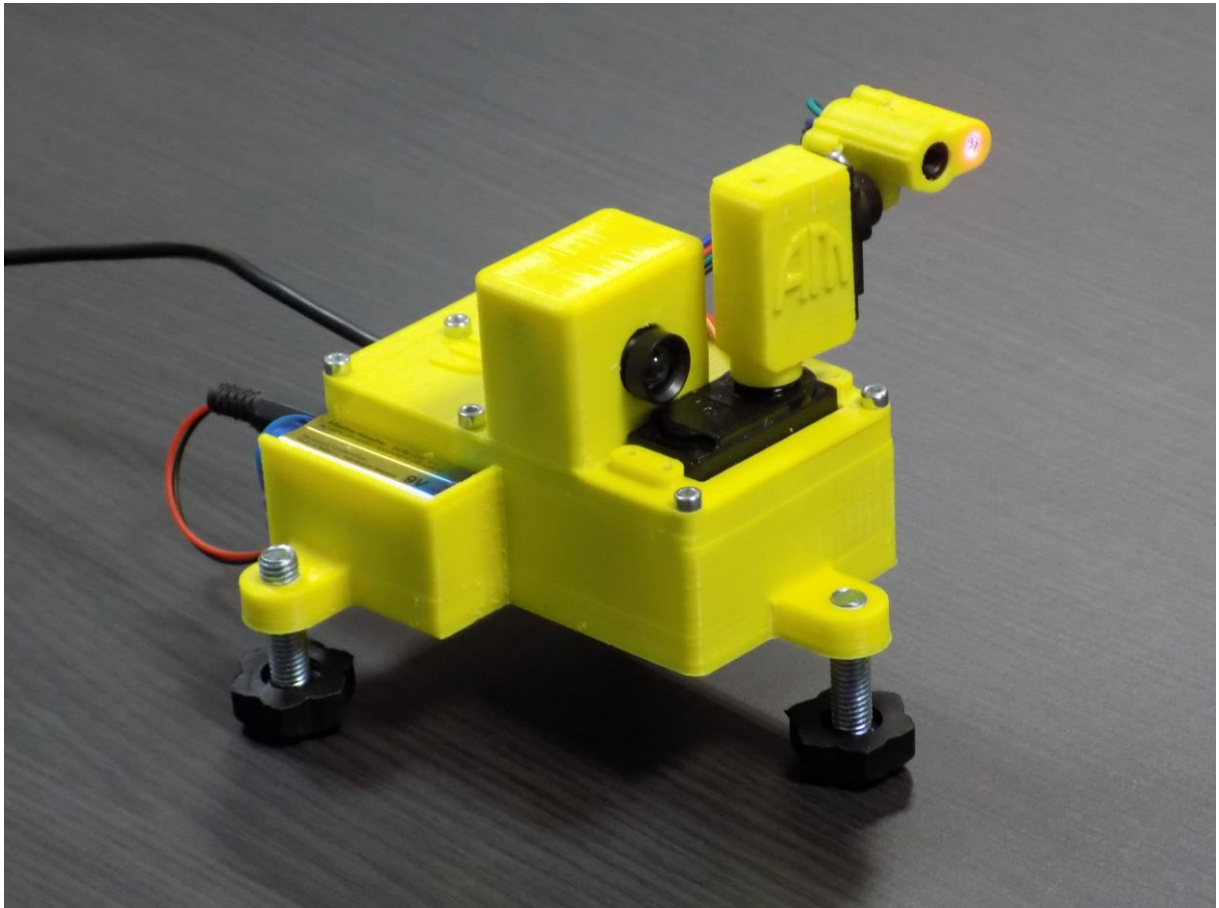


Thermal camera AM Lab v2.0





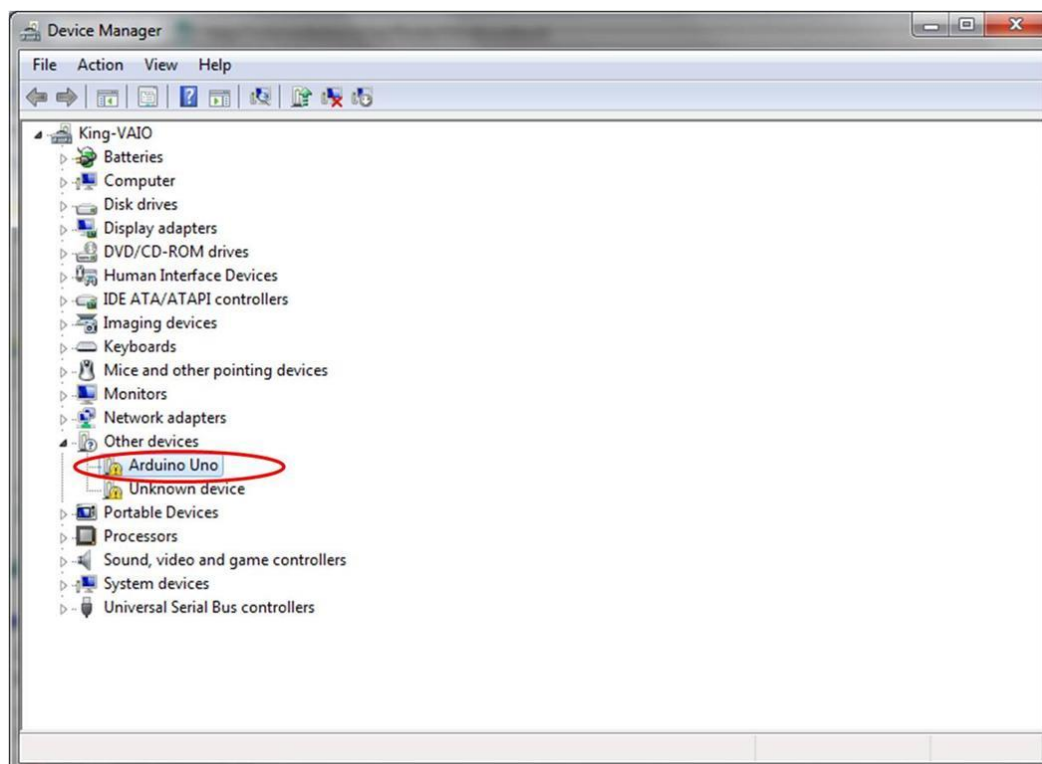
1. Main installation

- 1.1 Unpack the machine, screw in the regulating legs (3 pcs).
- 1.2 Go to www.amlab.ee/manuals/ and download the zip file „Termokaamera AM Lab v2.0“.
- 1.3 Unzip the file to a single folder, make sure that You have all the administrative rights and no limitations.
- 1.4 First of, connect the WebCam USB cable (the one that cannot be detached from the thermal camera) to Your computer. It should install itself.
- 1.5 If You have a VLC player or some other software to check the camera's functionality, have a quick check. Don't forget to remove the camera's lense cover!
- 1.6 **Do not connect the 9V battery yet!**
- 1.7 **Never pick or move the camera from the cables or move the servo motors manually! It can permanently damage the device.**

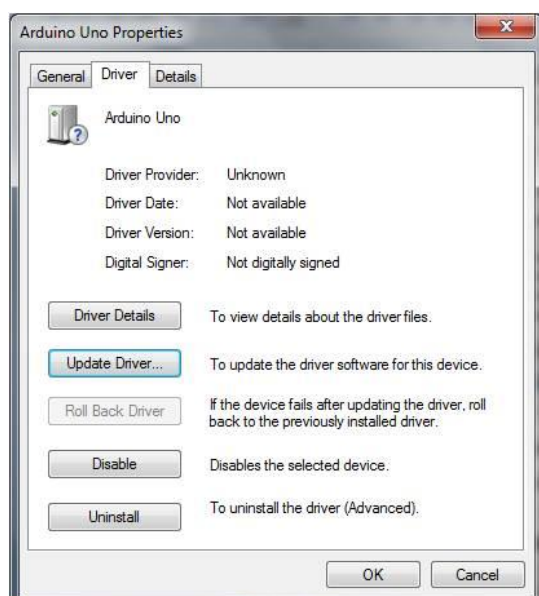
2. Arduino installation

2.1 Connect the USB type B cable to the thermal camera main processor and the other end to Your computer. When connecting, there might be a problem where the device „Arduino Uno“ does not install normally. This is due to the fact that You have not used Arduino software or hardware before and Windows does not initially have drivers for them. In that case do the following:

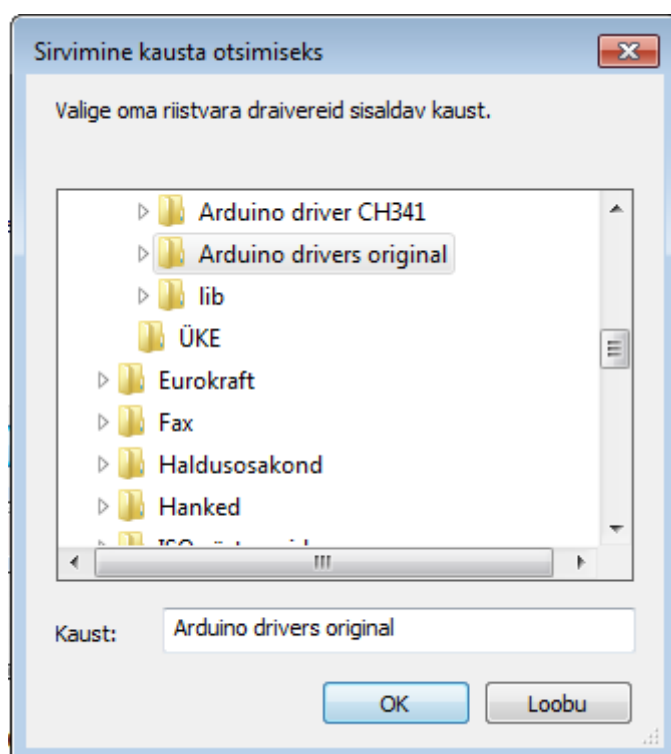
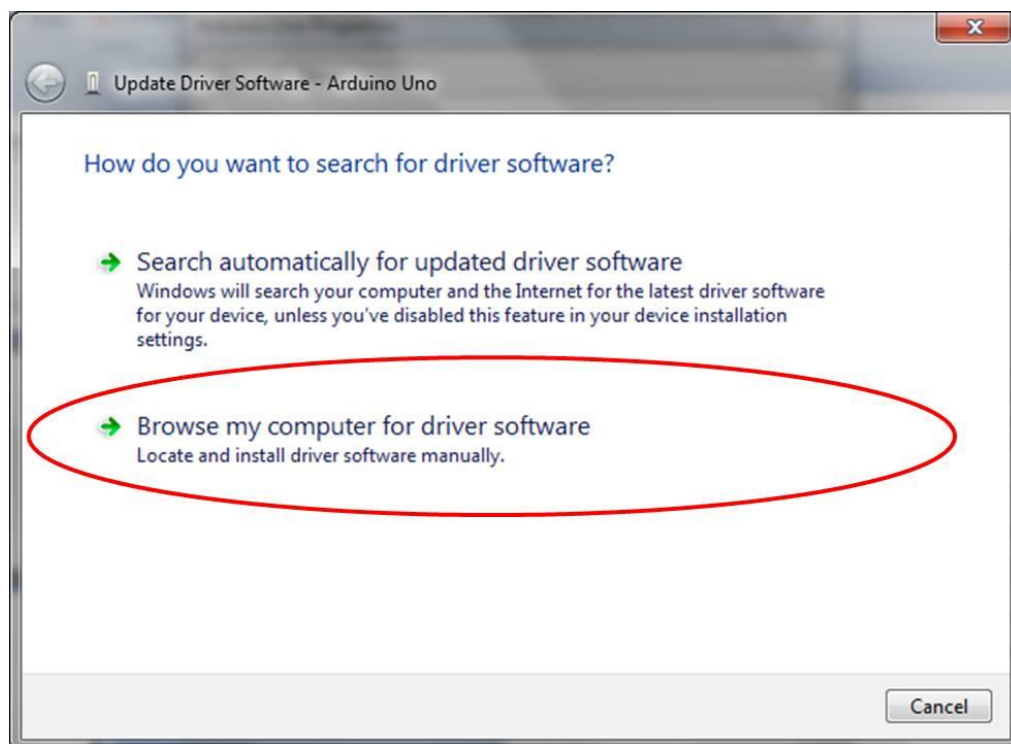
2.2 Go to Windows Device Manager. You should find from the Windows Device Manager that there is an **“Arduino Uno”** device.



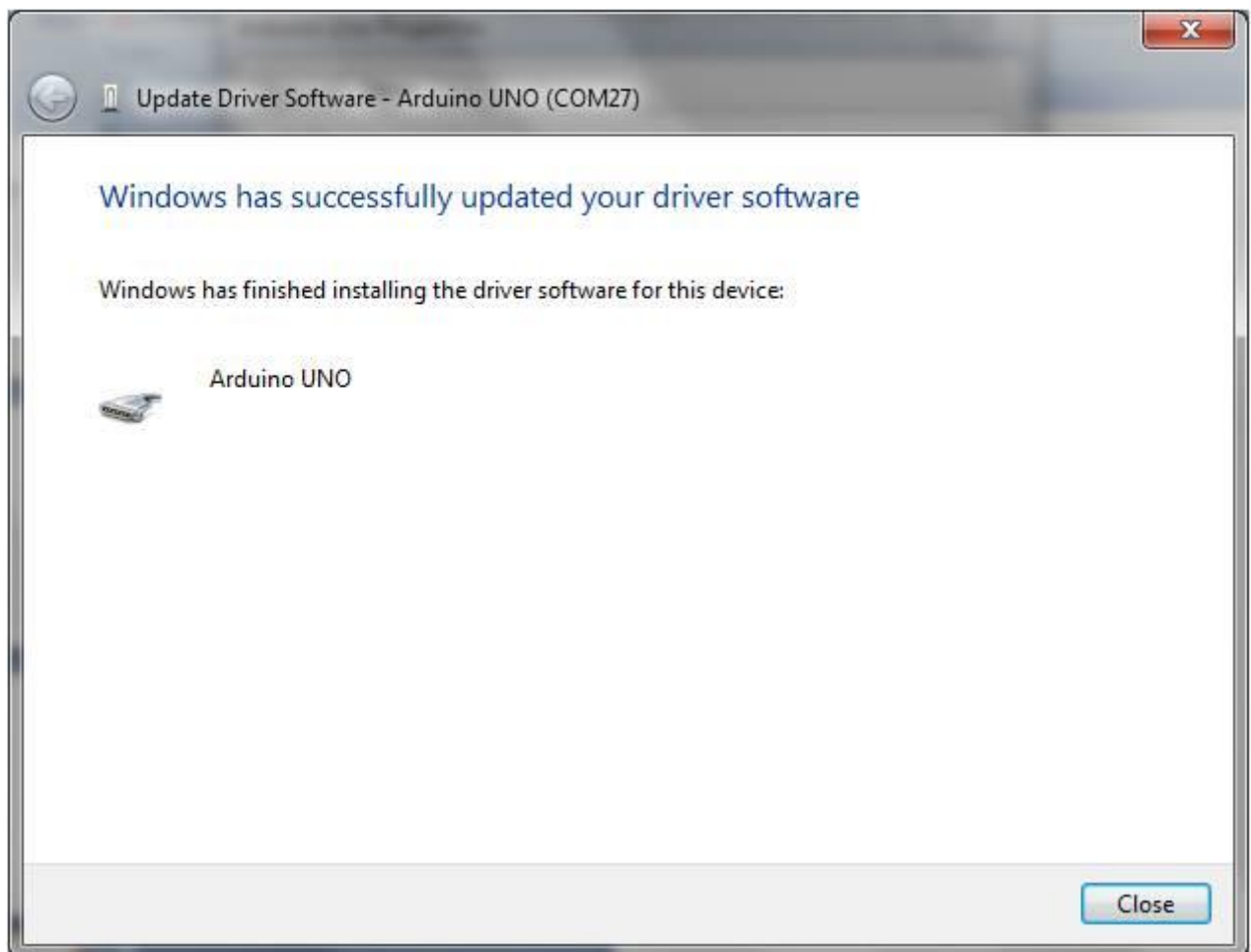
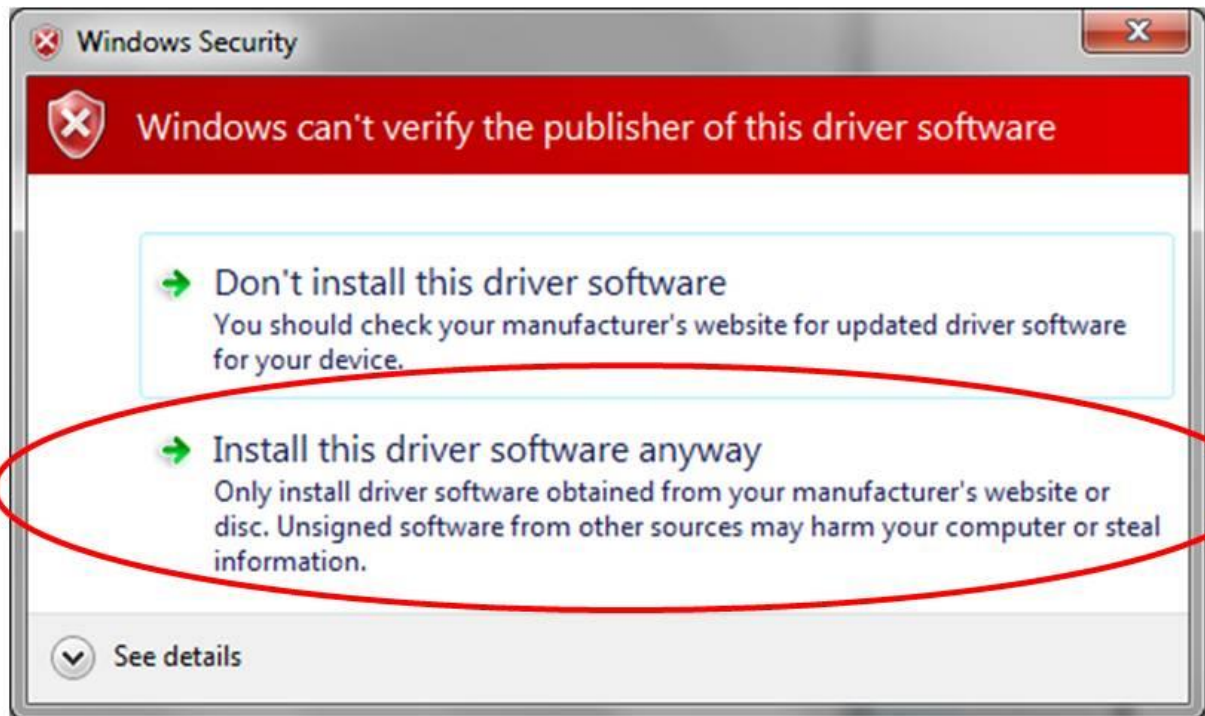
2.3 Double click the unknown Arduino Uno device, a property window pops up.

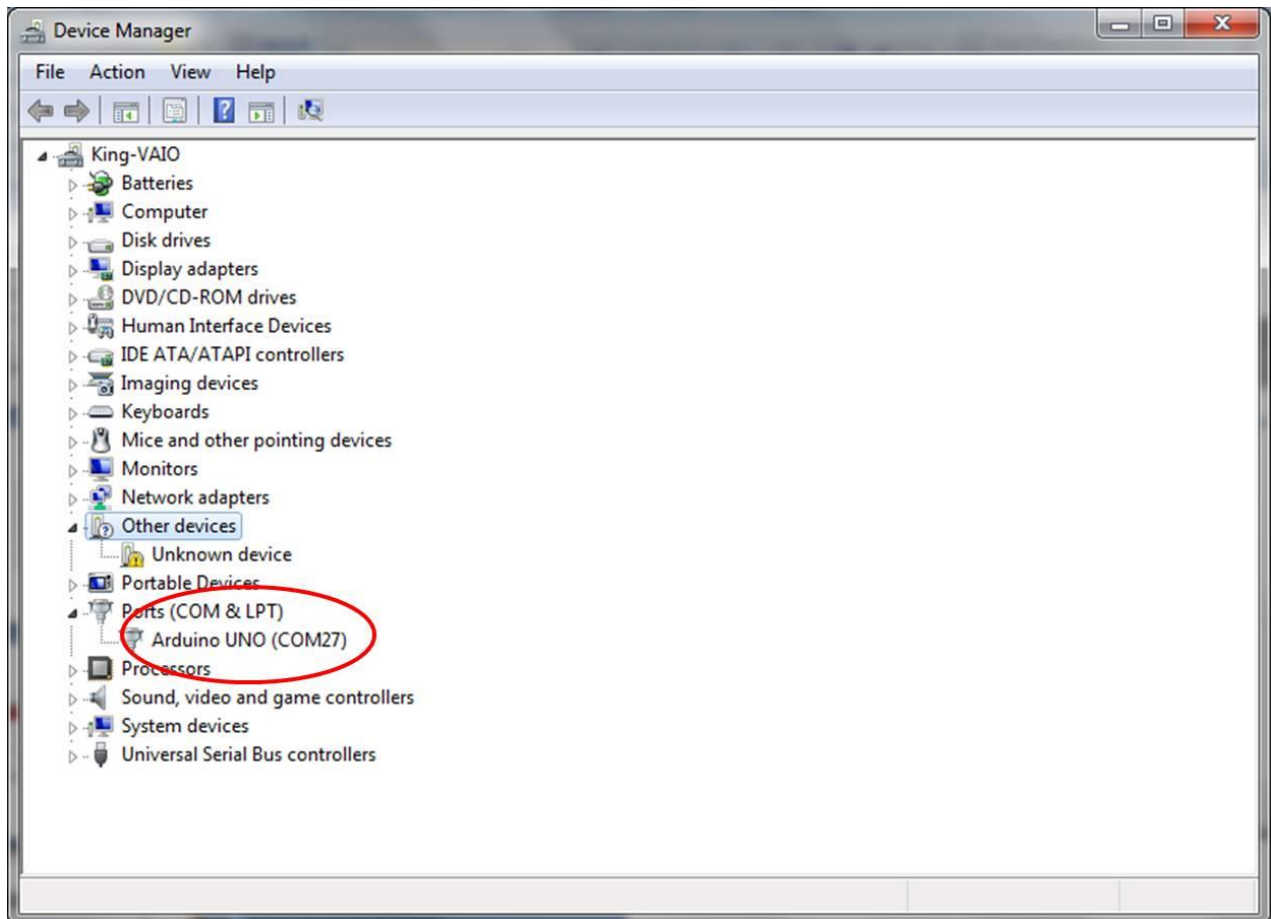


2.4 Choose the 'Driver' tab, and select 'Update Driver...'



2.5 Go to the folder with Thermal Camera software, there should be a folder named "Arduino drivers original", click on it once (do not open further), then click 'OK'.





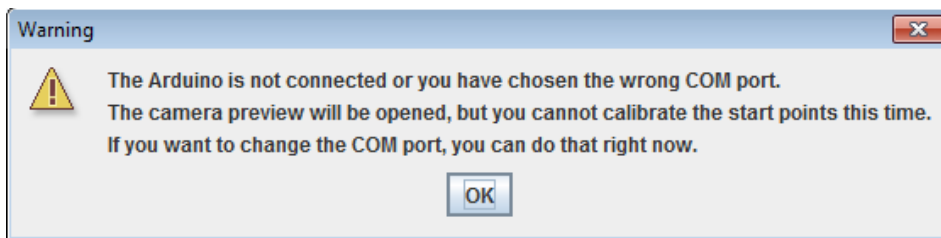
2.6 Do a final check to make sure the driver has been correctly installed. Remember the COM-port number, it is needed later.

3. Using thermal camera

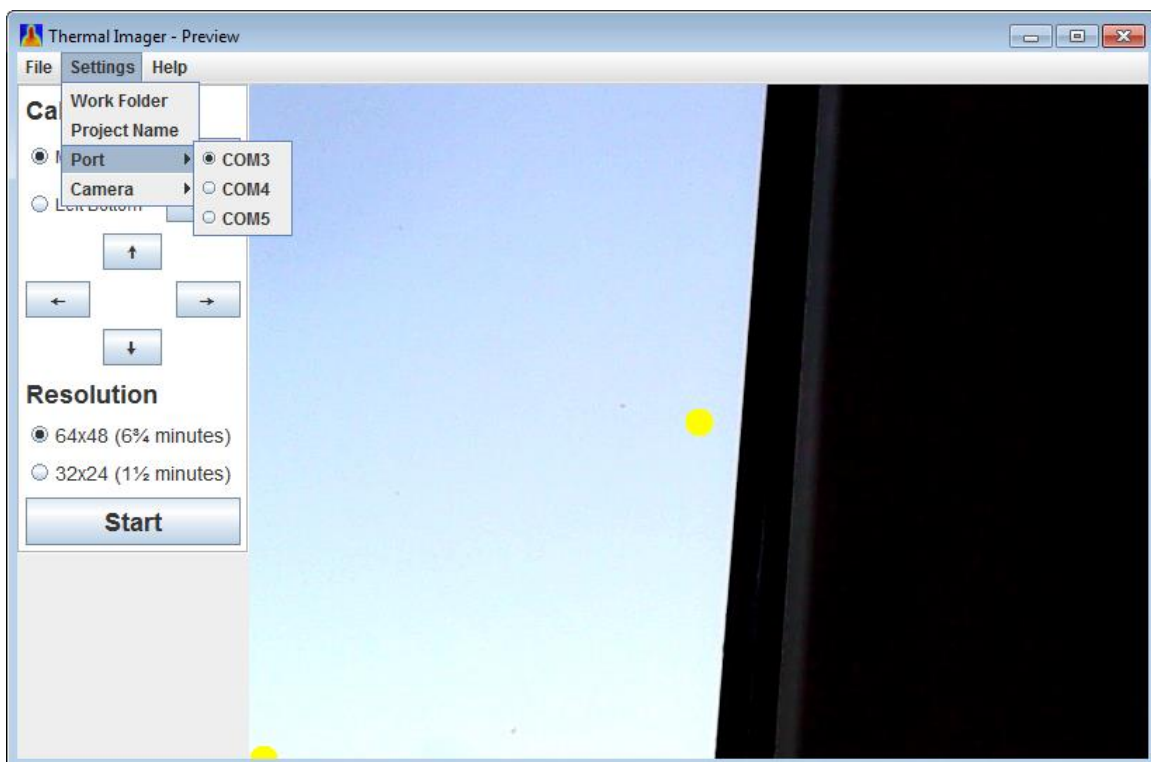
3.1 Make sure that the two USB cables (Arduino controller and WebCam) are connected and in working order. Do not connect the battery yet!

3.2 Start the program “ThermalCamera.jar”. Java is needed for that, if You do not have the program, please install it.

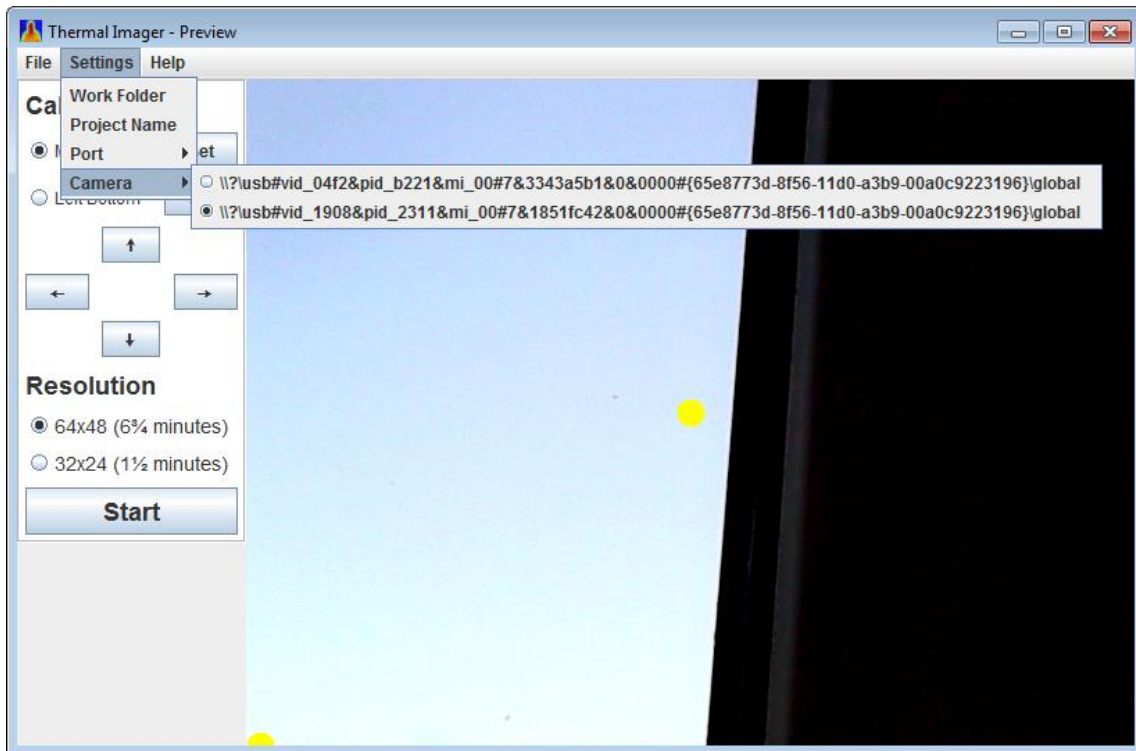
3.3 At first the program warns that there is no camera or Arduino connected. Do not worry, these will be specified in the software.



3.4 Set the Arduino port (the one that was specified at 2.6). Choose “Settings” -> “Port” -> Arduino COM Port nr:

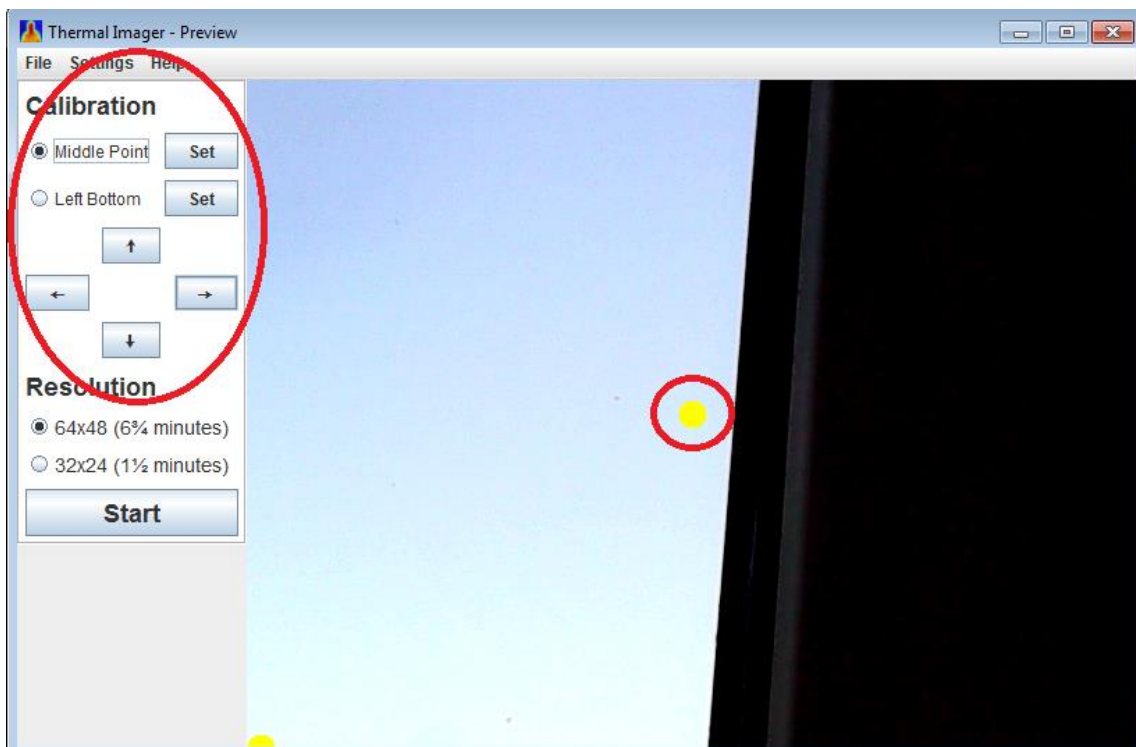


3.5 Next set the WebCam. If You have multiple WebCam’s listed, the easiest way is to try them out one after another and choose the one that is on the thermal camera.



3.6 Close the software. Connect the 9V battery now! Start the software again. If the servo motors of the thermal camera turn to some end and make a disturbing “humming sound”, try to make the following steps as fast as possible.

3.7 Using the arrow buttons, at first regulate the “Middle point”. Point the camera to a flat wall or surface to have best results. The laser beam should be pointing at the yellow point in the centre. Press “Set” button at the right of “Middle Point” to save the calibrated place.





3.8 Next regulate the “Left Bottom” using the same method described in 3.7.

3.9 After saving “Middle Point” and “Left Bottom” You can try to switch between them and see if they will point to the places previously saved.

3.10 You’re all finished and should be able to make Your first thermal image! Press “Start” button.

3.11 If at some point the camera does not move at all (for example after making an thermal image) restart the software and/or disconnect and reconnect the USB cables or the supply battery.

3.12 Note that the batteries run out pretty fast. It is recommended that You use a rechargeable battery or an external AC-DC adapter of 9V DC, > 450 mA. The 9V DC voltage needs to be precisely that!