TIVALAB

TIVA EK-TM4C123GXL MICROCONTROLLER PROJECT

Embedded Systems Project

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TIVALAB PROJECT OVERVIEW

In TivaLab Project I performed some TM4C123G LaunchPad Workshop labs (proposed in TM4C123G_LaunchPad_Workshop_Workbook.pdf), writing C code and running it on the Tiva board.

Actually that Workshop has been tested on Windows XP, 7 and 8. I've tested it on Windows 10, so in this short report I'm mostly going to explain the problems I found and their solutions. The code files are rich of comments by the way, and I performed homeworks too (they are all available on Github).

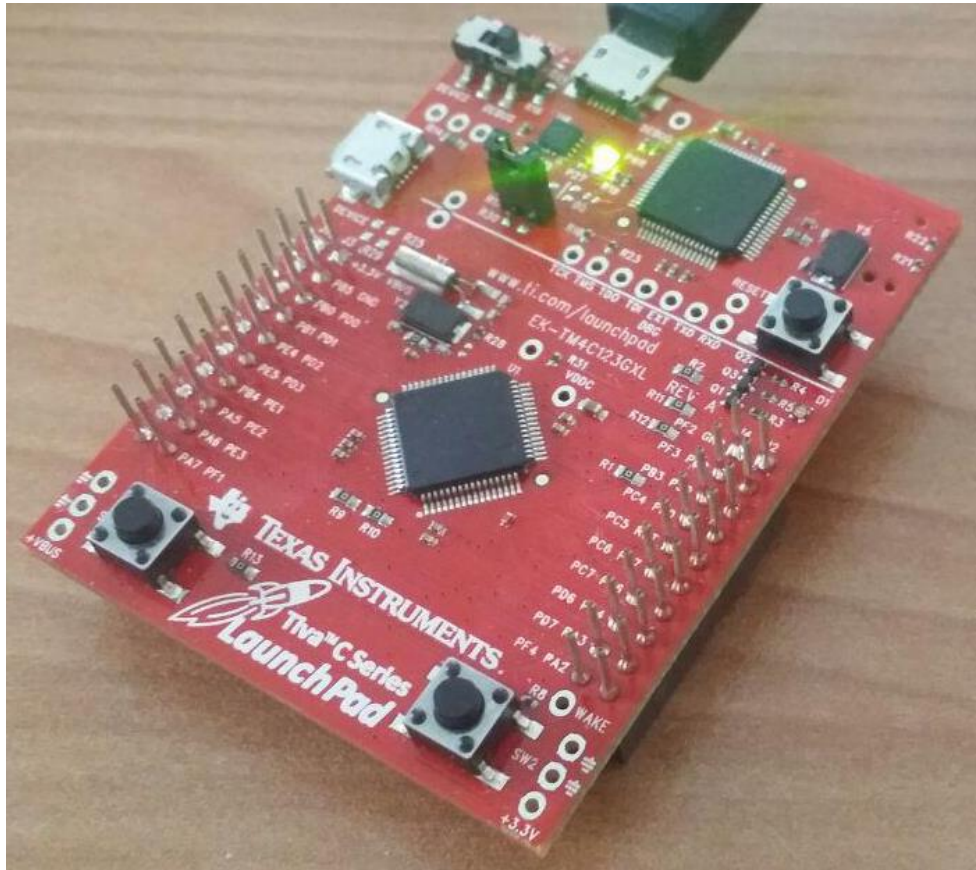
Each lab correspond to a different folder (1, 2, 6, and 7 are for setting up and testing the environment, so they don't have a folder):

- 3: GPIO
- 4: Interrupts and timers
- 5: ADC
- 6: Hibernation Module
- 8: Memory
- 9: Floating-Point Unit
- 12: UART
- 13: Micro DMA

ENVIRONMENT

In addition to the Tiva board, I used the following Software tools:

- IDE:
  - Code Composer Studio: http://processors.wiki.ti.com/index.php/Download_CCS
- Drivers:
  - Stellaris Drivers: http://www.ti.com/tool/STELLARIS_ICDI_DRIVERS#descriptionArea
- C libraries for Tiva board:
  - TivaWare for C series: http://www.ti.com/tool/sw-tm4c
- (Optional) Flash Programmer:
  - LM Flash Programmer: http://www.ti.com/tool/lmflashprogrammer
- Labs material:
  - Workshop files: http://www.ti.com/TM4C123G-Launchpad-Workshop
  - Workshop Workbook: http://www.ti.com/TM4C123G-Launchpad-Workshop
- Terminal:
  - Putty: https://www.putty.org/



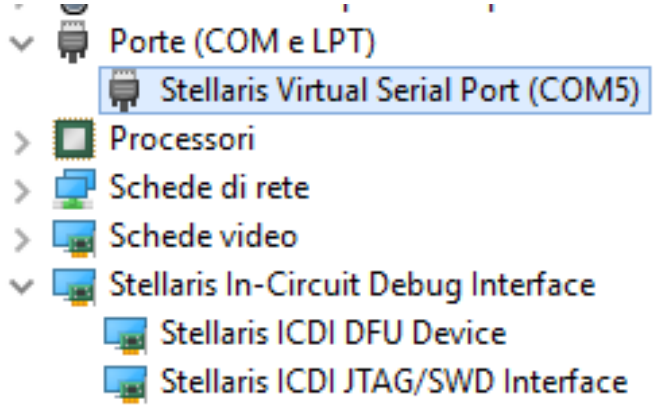
1 - STELLARIS DRIVERS

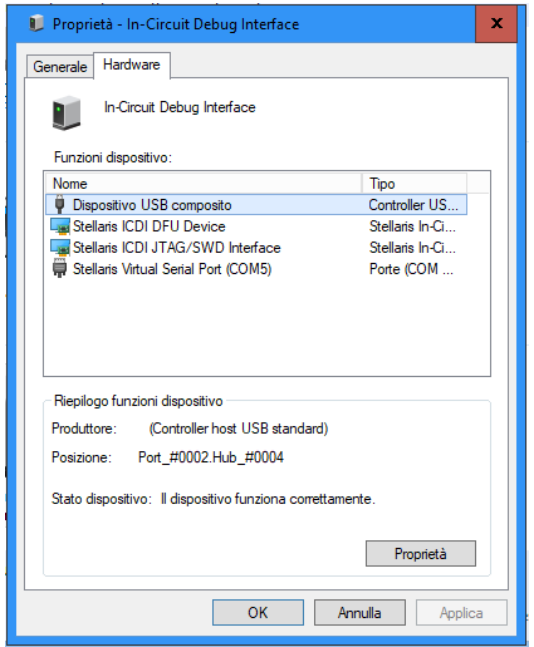
The first thing I had to pay attention to was Stellaris Drivers installation on Windows 10.

Solution:

- Open Computer > Devices Management (the board as to be plugged in, obviously)
- The board is detected as 3 different components, one under COM Ports and the other two under Unknown Devices: find them all and install the downloaded drivers.

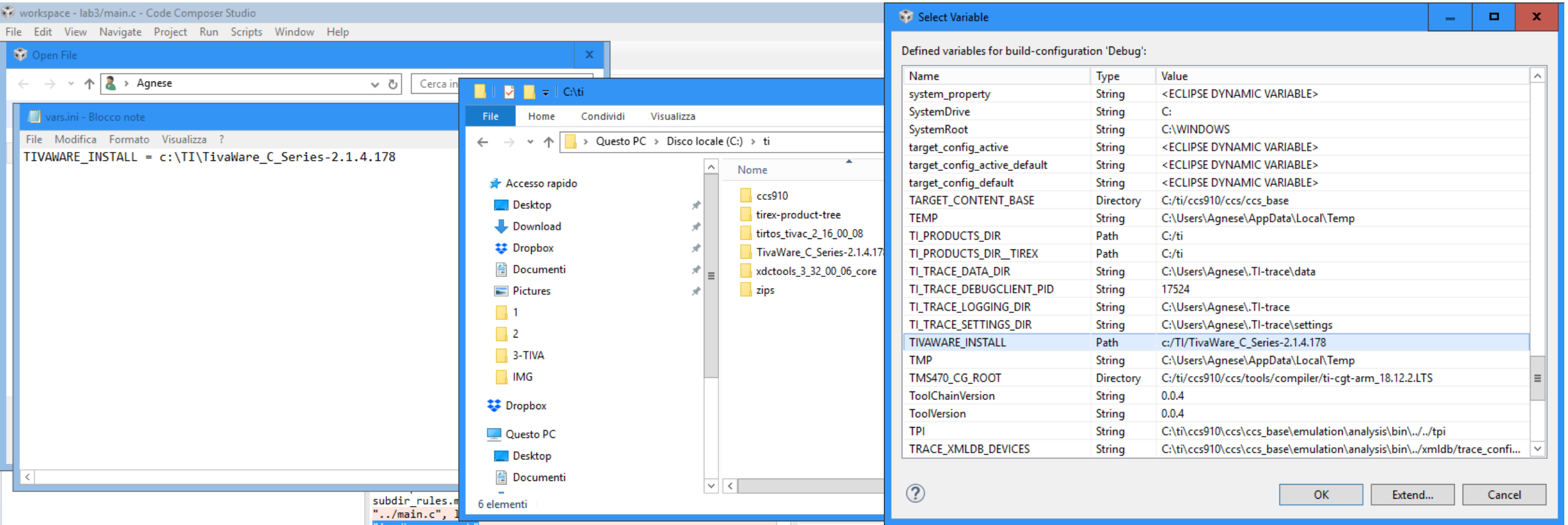
Finally, I had the following configuration:





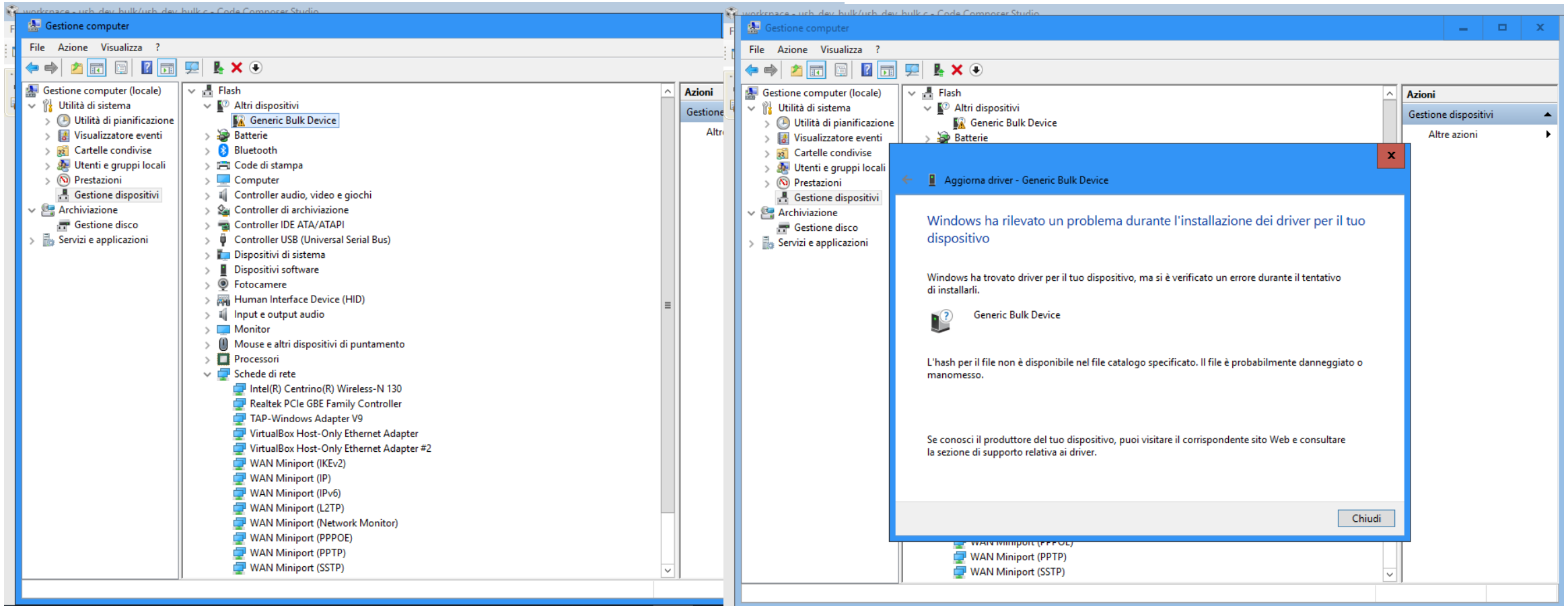
3 - VARS.INI

The next problem I found was because the configuration file of the Workshop workspace, vars.ini, was made for an older version of TivaWare, so I changed it and I added it to the variable paths like this:



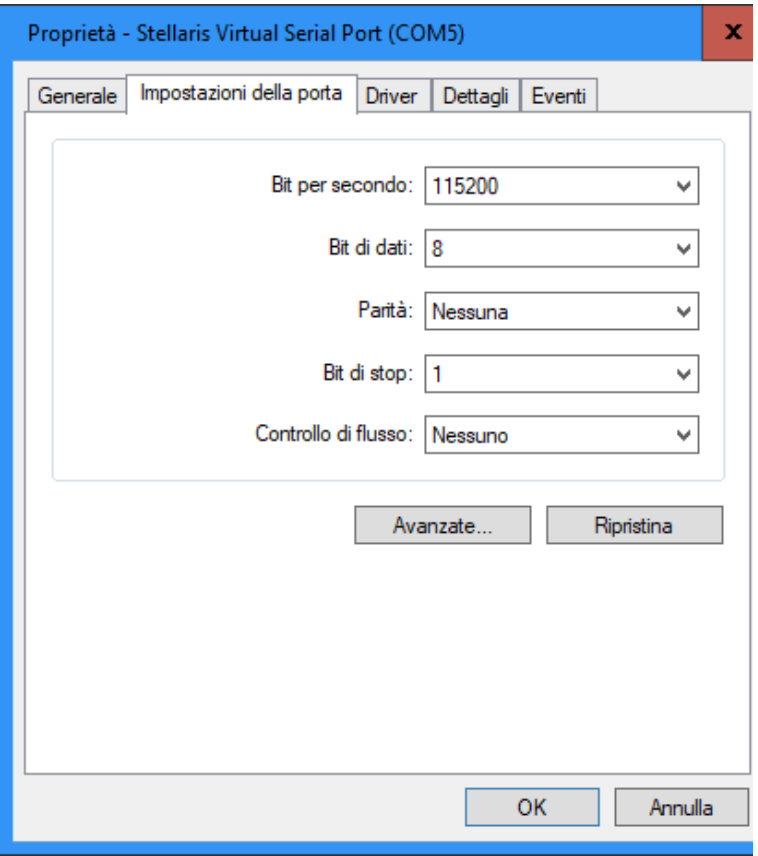
7 - USB BULK

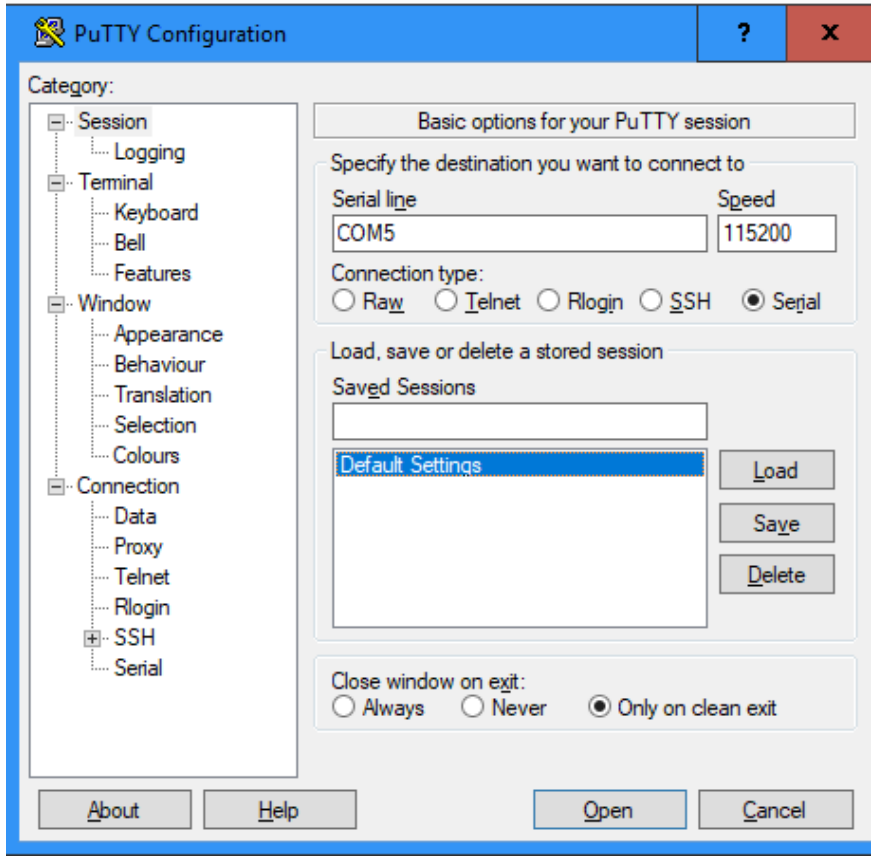
The TivaWare drivers, necessary to run USB Bulk example, are not compatible with Windows 10:

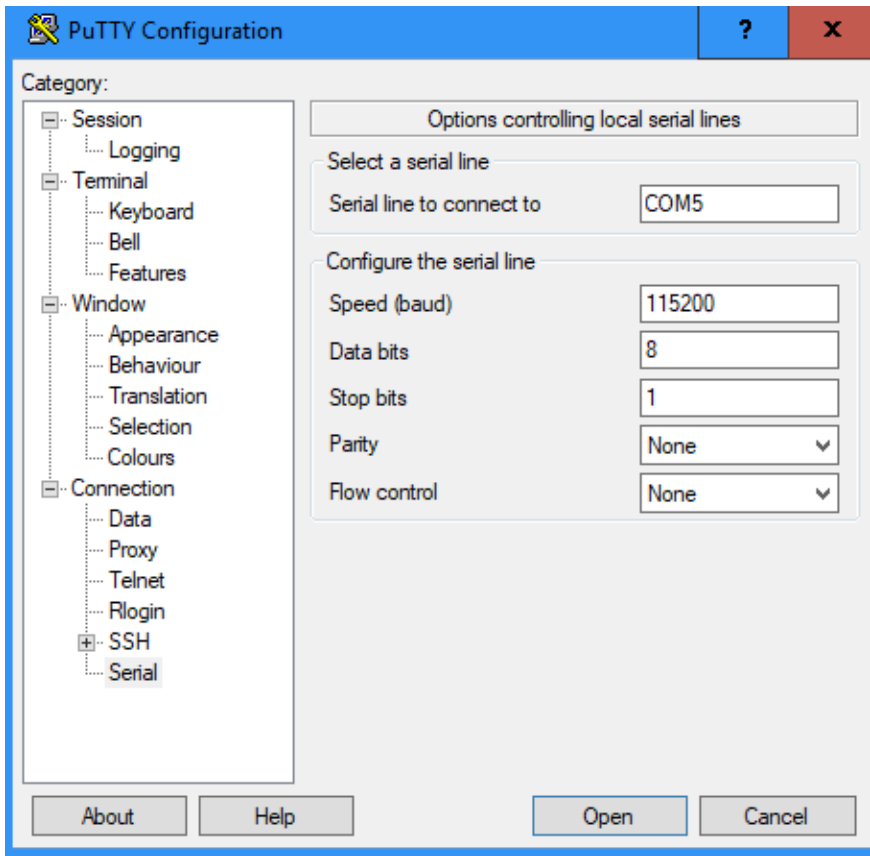


8 - PUTTY CONFIGURATION

I had to configure the board COM Port and Putty like this:

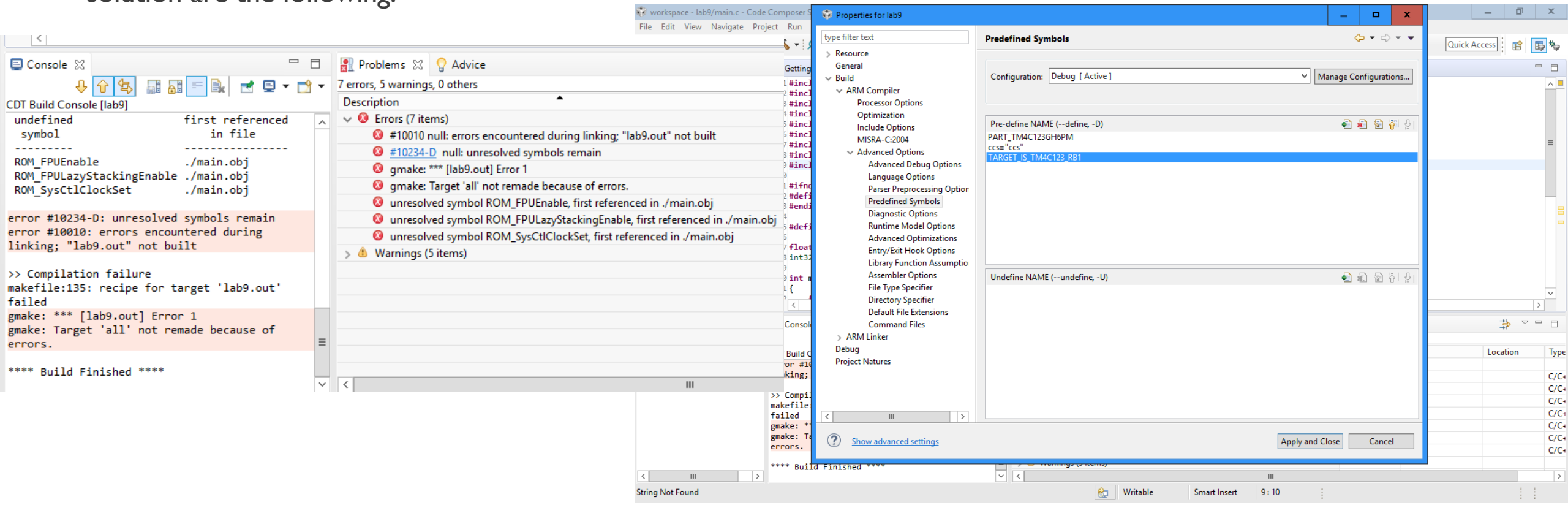






9 – BUILD ERROR

In lab 9, I had to make some changing in build settings in order to run Workshop code. The error I faced with and the solution are the following:



THANKS FOR YOUR ATTENTION