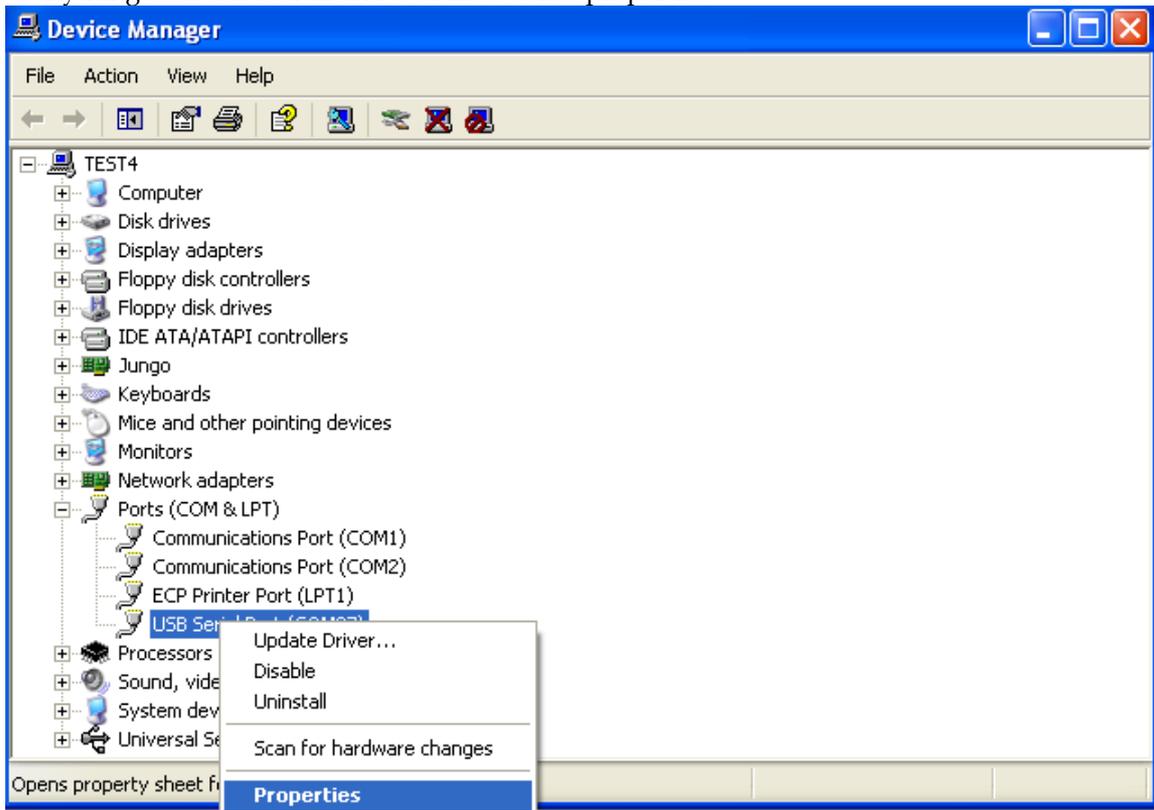# How to install and use AVR-JTAG-USB
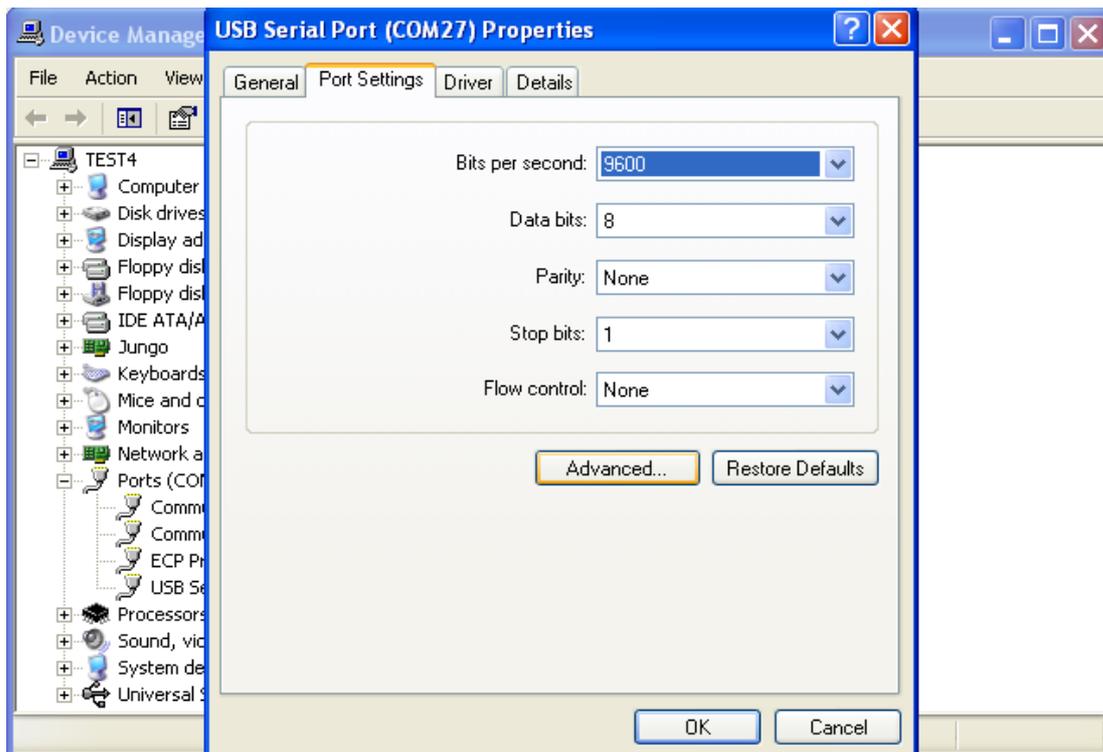
When you connect AVR-USB-JTAG for a first time to your computer via 1.8 meter USB A-B cable, you should install drivers. You can download them from: http://www.ftdichip.com/Drivers/VCP.htm.

After the drivers installation is complete – look up in Device Manager of your computer for the number of the virtual com of AVR-JTAG-USB – it should be 3 or 4, otherwise AvrStudio might not be able to detect the programmer. Here are the steps to change it:
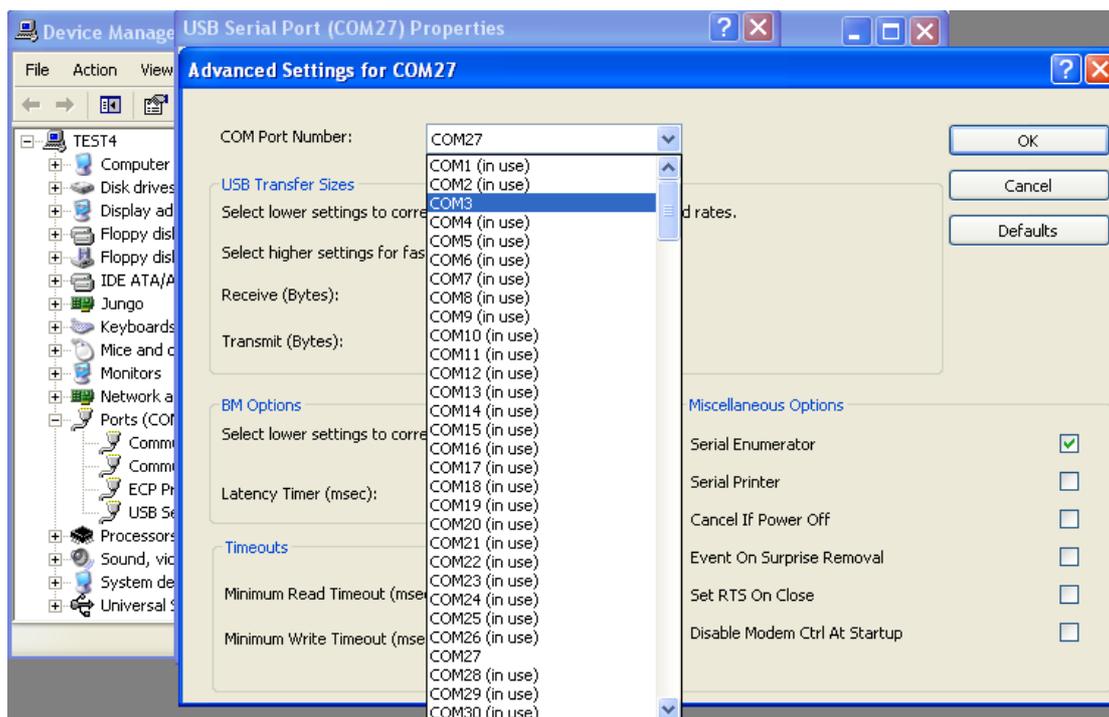
1. Go to Device Manager.
2. Unfold "Ports (COM&LPT)" and right-click on "USB Serial Port (COMxx)" where COMxx can be anything between COM1 and COM255. Select properties.

3. Go to the "Port Settings" tab and click the "Advanced" button.

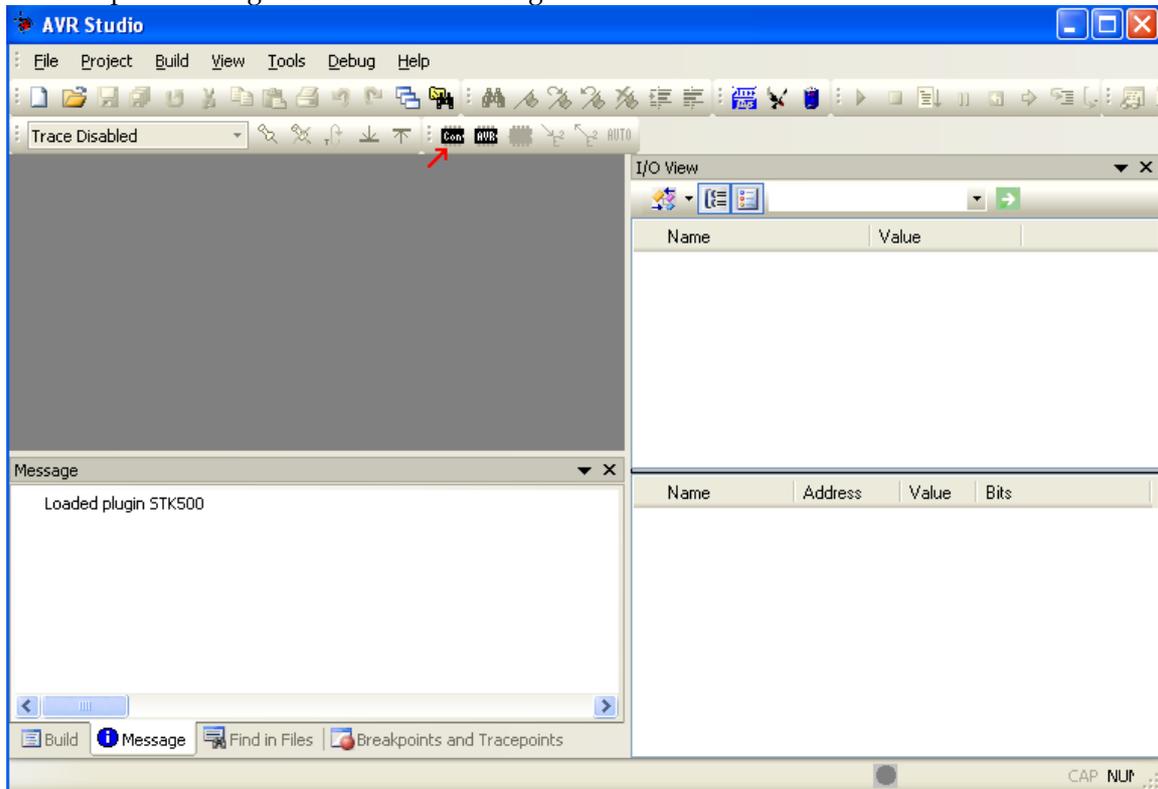4. Change the "COM Port Number" to COM3 or COM4.

5. Click OK.
6. If a warning message pops up and complains about COM port being used by another device, click "Yes".
7. Click OK to close the device properties.
8. After you have changed the "COM Port Number" disconnect and connect AVR-JTAG-USB from the PC. Now check in Device Manager whether the change has taken effect.

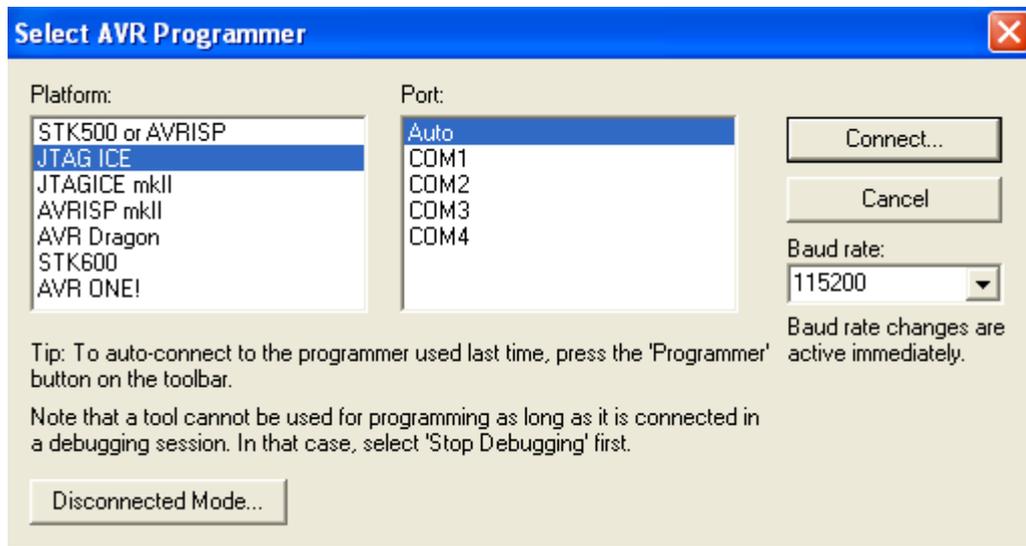   Now your AVR-JTAG-USB is ready to use.

Using AVR-JTAG-USB with AVR Studio

       Supply power to your target board and connect AVR-JTAG-USB to it's JTAG connector, then follow the steps described below:
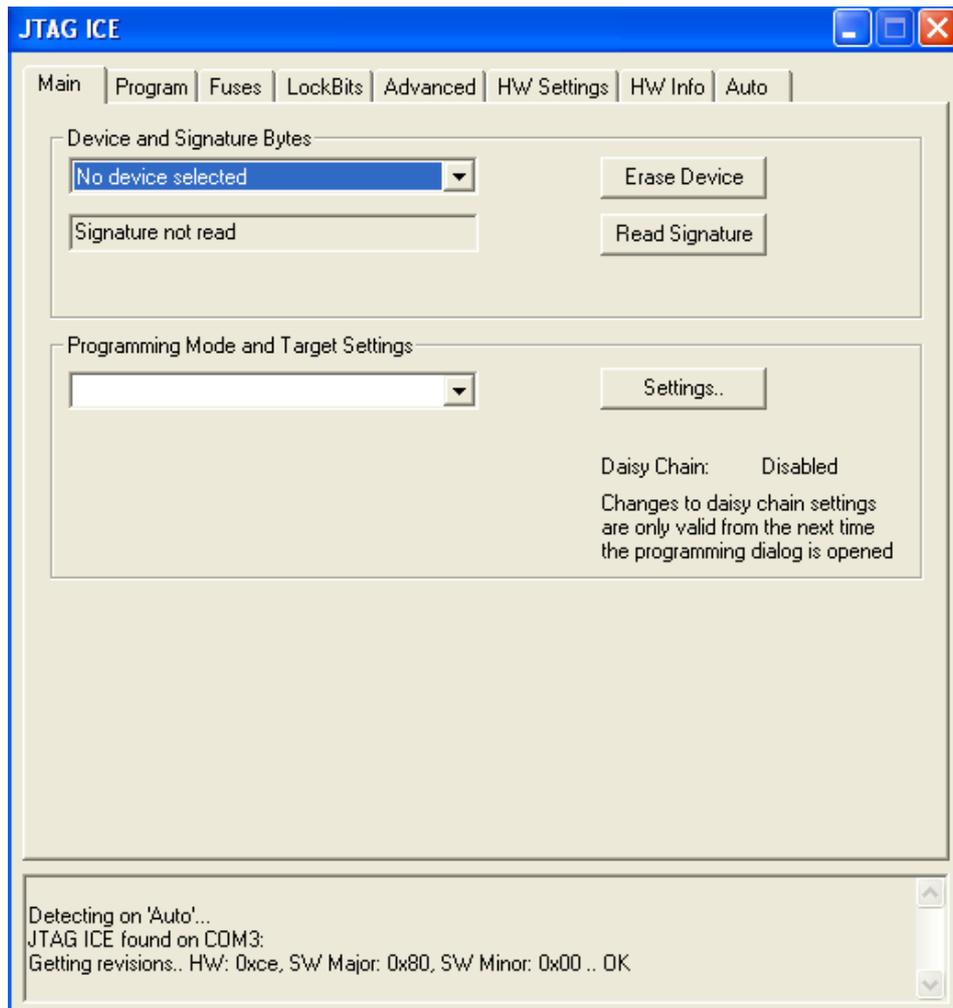
       First open the Programmer Connect dialog:

Then select "JTAG ICE" option with automatic port detection:

After pressing "Connect" the programming dialog should appear:

Target AVR now can be erased, flashed with a provided HEX file, FUSES and LOCK bits can be written and/or verified. For more information please consult the AvrStudio documentation.