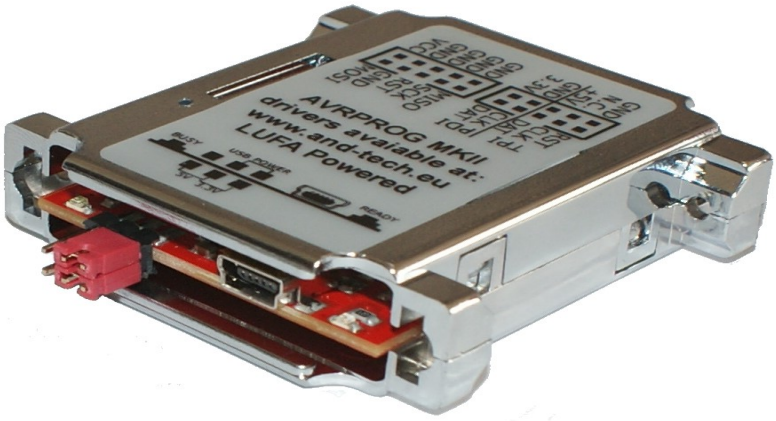
AVR Prog MKII

MANUAL



ATTENTION!!
AVRISP mkII programmer is compatible with BASCOM and AVR DUDE environment. If you want to use this programmer with AVR Studio, you need to update its firmware (instruction in chapter 3: Firmware update)

1. Programming in BASCOM

a) Driver installation

ATTENTION!!
Before you connect programmer to computer , install AVRJungoUSB drivers first.
link: http://www.and-tech.pl/MKII/AVRJungoUSB.exe

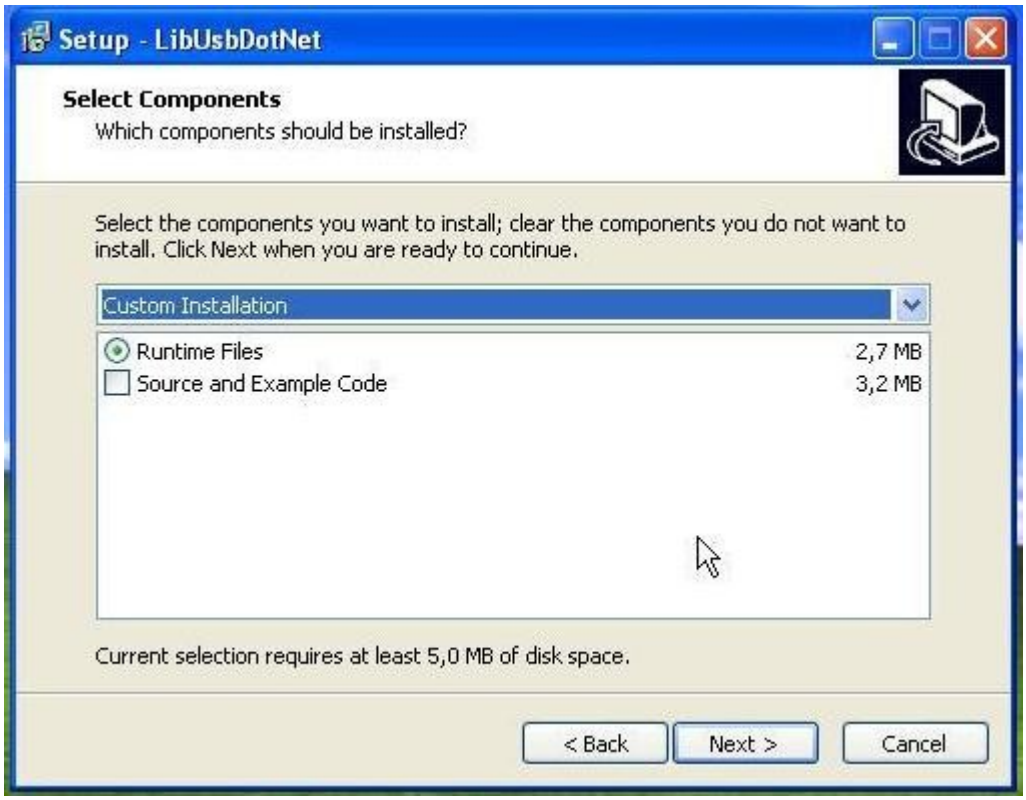
To connect programmer to computer, mini USB cable is needed (widely used with mobile devices and cameras). It is recommended to use 1.8m long cable or shorter.
To connect programmed circuit with programmer, IDC-10 cable is needed (pins order on programmer).
After you connect programmer, system should find and install appropriate drivers. If I nstallations is successful, device Jungo (with AVRISP mkII and WinDriver) should be available in device manager.

Picture 1

ATTENTION!!
When programmer is installed successfully, green LED diode should turn on. If not, connect programmer directly to PC or laptop without HUBs or dock stations. In some cases, programmer doesn't work properly with these devices.

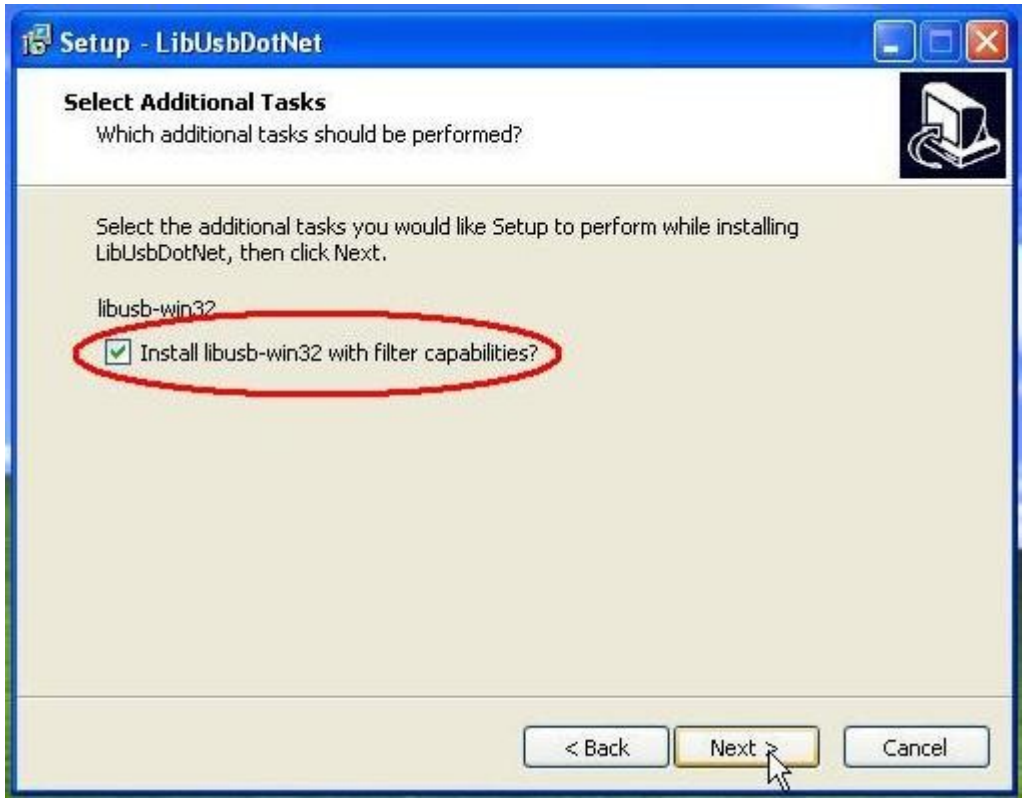
Please download **LibUsbDotNet_Setup.2.2.8**.
link: http://www.and-tech.pl/MKII/LibUsbDotNet_Setup.2.2.8.exe

After you accept licence agreement and chose installation path, you should see window presented in Picture 2. Check only first position – *Runtime Files and click Next.*

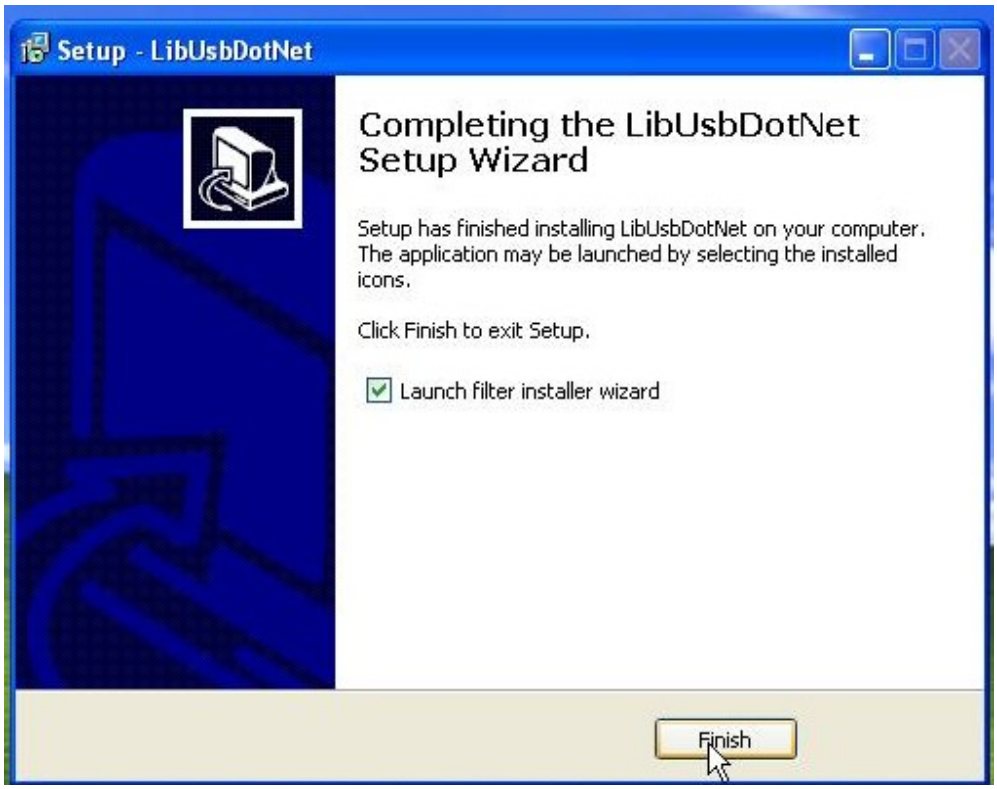


Picture 2

Check *Instalall libusb-win32 with filter capabilitied?* as in Picture 3 and click *Next.*

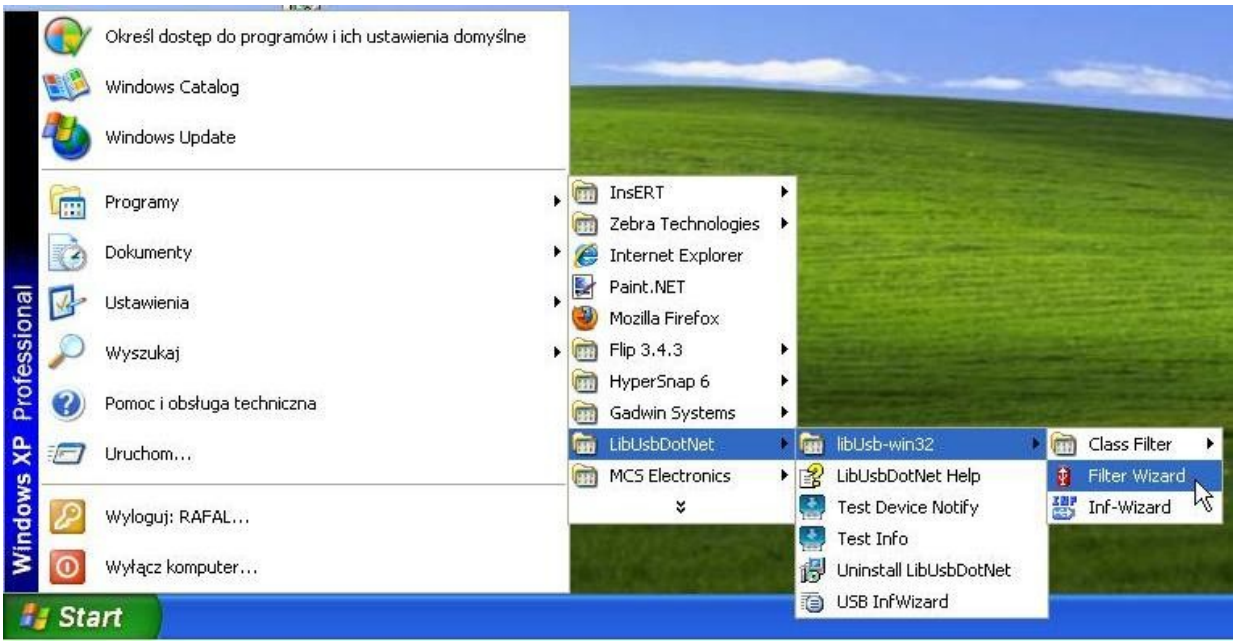


Picture 3



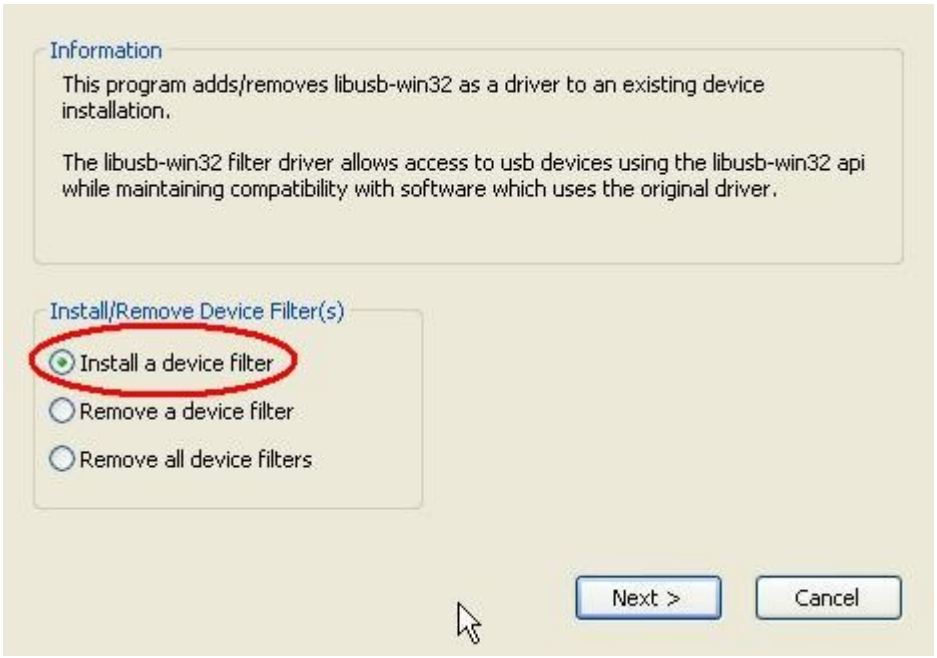
Picture 4

Start Filter Wizard. It is available in the following path: Start >Programy >LibUsbDotNet >libUsb-win32 >Filter Wizard.



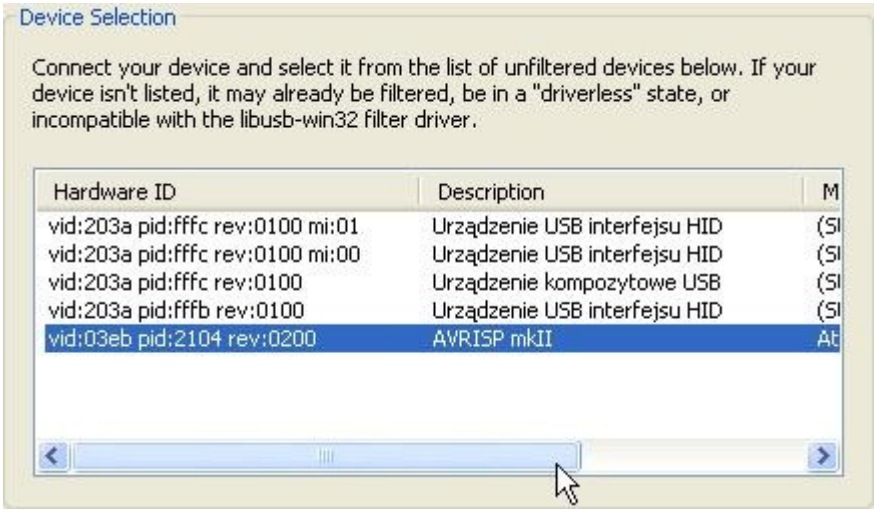
Picture 5

In window Install/Remove Device Filter(s) choose first option: I*nstall a device filter*- Picture 6.



Picture 6

Now, please find device AVRISP mkII, as in Picture 7.



Picture 7

If installation is successful, the following window appears:

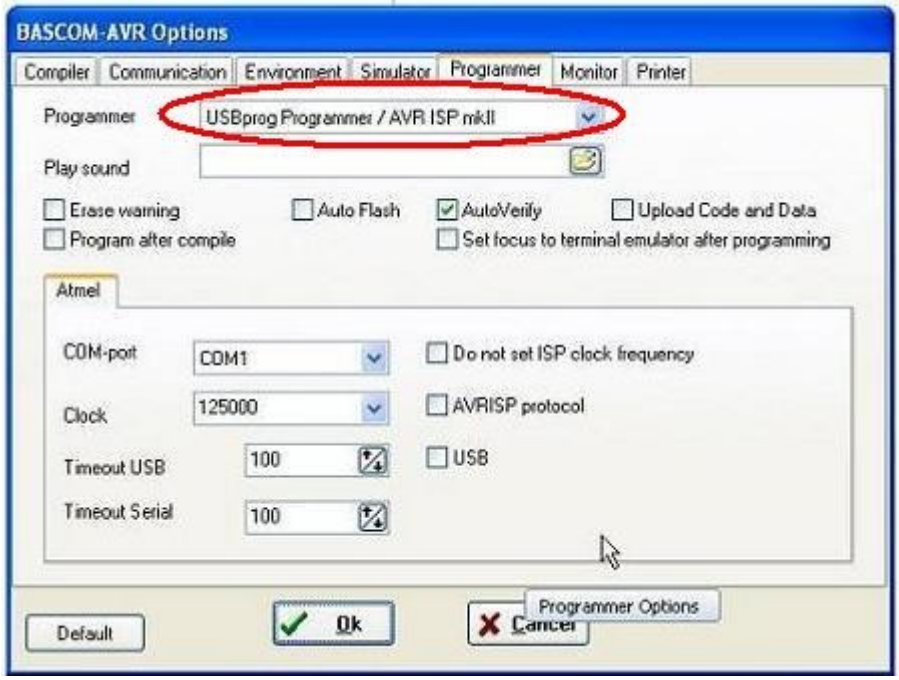
Picture 8

Programmer is installed correctly.

b) Configuration

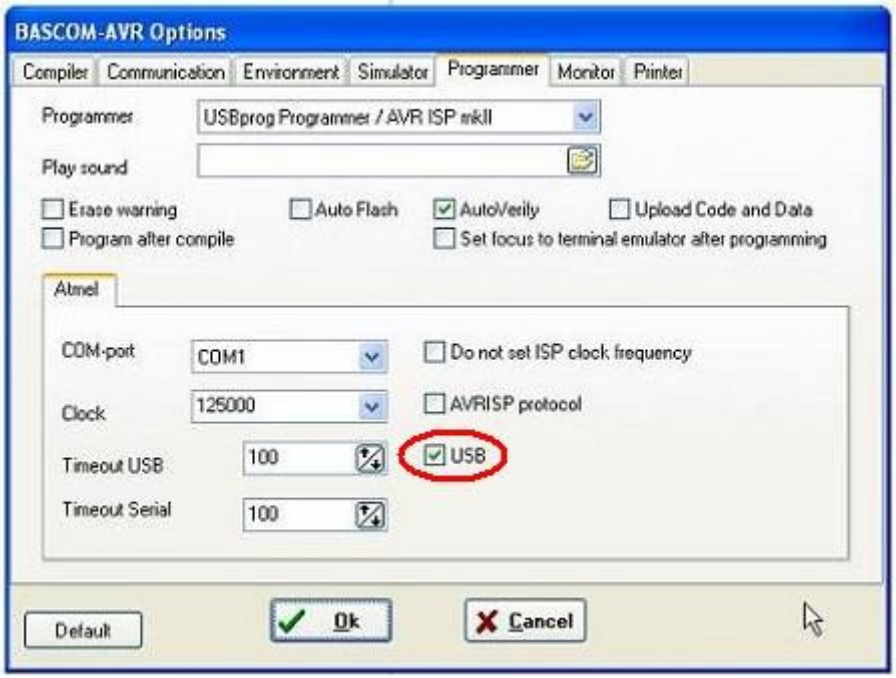
1. BASCOM

We need to configure programmer to make it work with BASCOM environment. Please, start BASCOM and find programmer settings (Options >Programmer). Now find *USBprog Programmer / AVRISP mkII* in the following list (Picture 9).



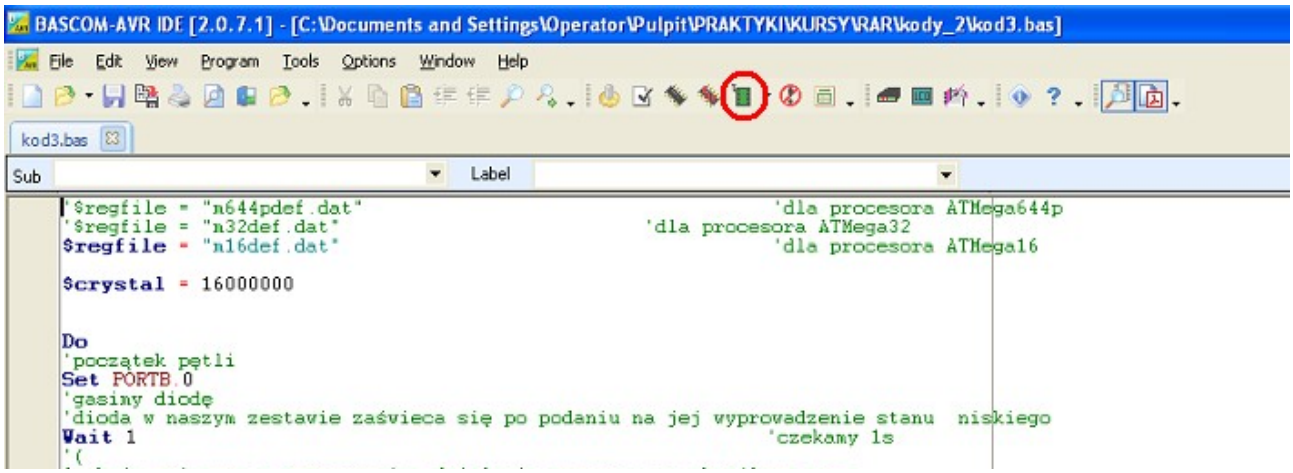
Picture 9

Check USB and click *OK*.

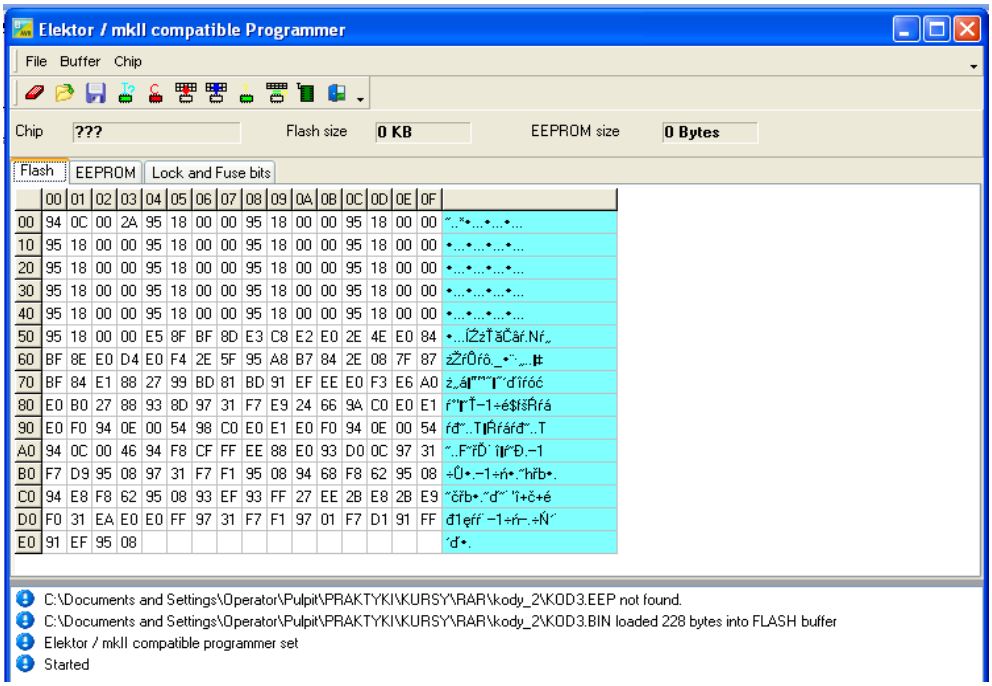


Picture 10

Click *Program chip icon in order to program circuit.*



Picture 11



Picture 12

Flash, EEPROM, Lock and Fuse bookmarks show state of FLASH, EEPROM memory and fuse bits after sending current program to processor.

Button:

 - identifies processor

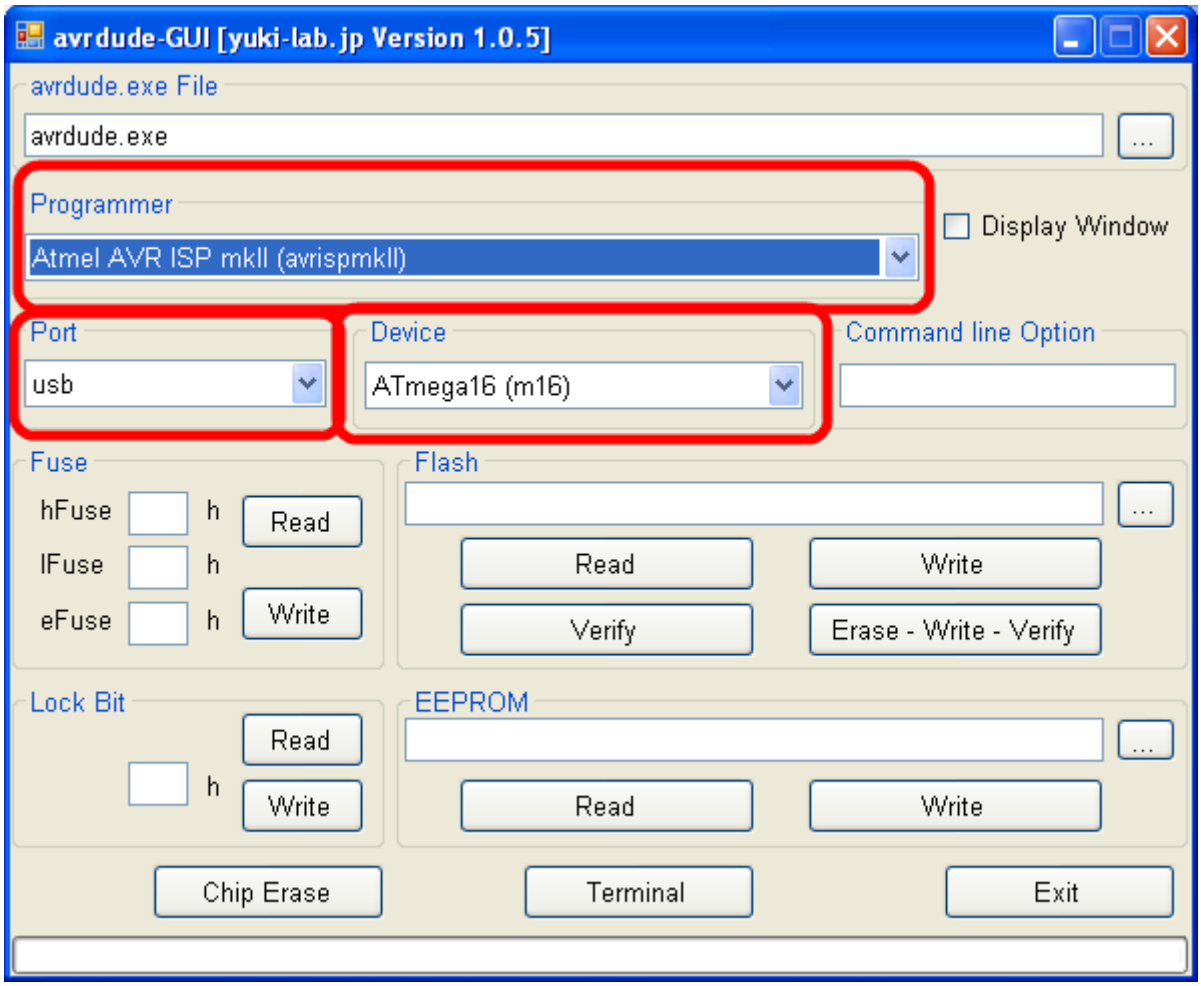
 - checks if processor's memory is empty

 - erases processor's memory and sends new program

2. AVRDUDE

In order to use AVRDUDE environment, please download **avrdude-5.8-w32_avrdude-GUI_1.0.5**
link: **http://www.and-tech.pl/MKII/avrdude-5.8.zip**

After you extract it, turn on graphical user interface: *avrdude-GUI.exe* and then choose from list *Programmer:* *Atmel AVR ISP mkII (avrispmkII)*, from list *Port:* - *usb* and from *Device* – choose model of processor, you want to program.



Picture 13

2. Programming in AVR Studio

a) Driver installation

ATTENTION!!
Before you connect programmer to computer , install AVRJungoUSB drivers first.
link: http://www.and-tech.pl/MKII/AVRJungoUSB.exe

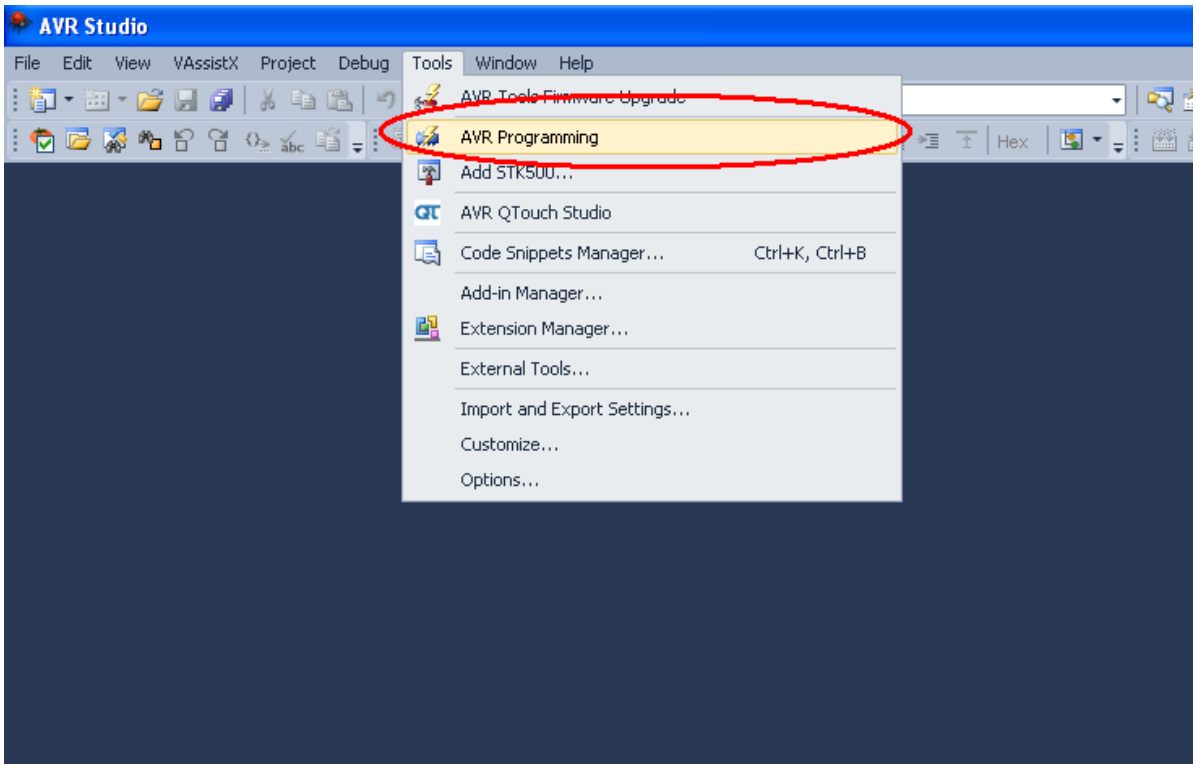
To connect programmer to computer, mini USB cable is needed (widely used with mobile devices and cameras). It is recommended to use 1.8m long cable or shorter.
To connect programmed circuit with programmer, IDC-10 cable is needed (pins order on programmer).
After you connect programmer, system should find and install appropriate drivers. If installations is successful, device Jungo (with AVRISP mkII and WinDriver) should be available in device manager.

Picture 14

ATTENTION!!
When programmer is installed successfully, green LED diode should turn on. If not, connect programmer directly to PC or laptop wihout HUBs or dock stations. In some cases, programmer doesn't work properly with these devices.

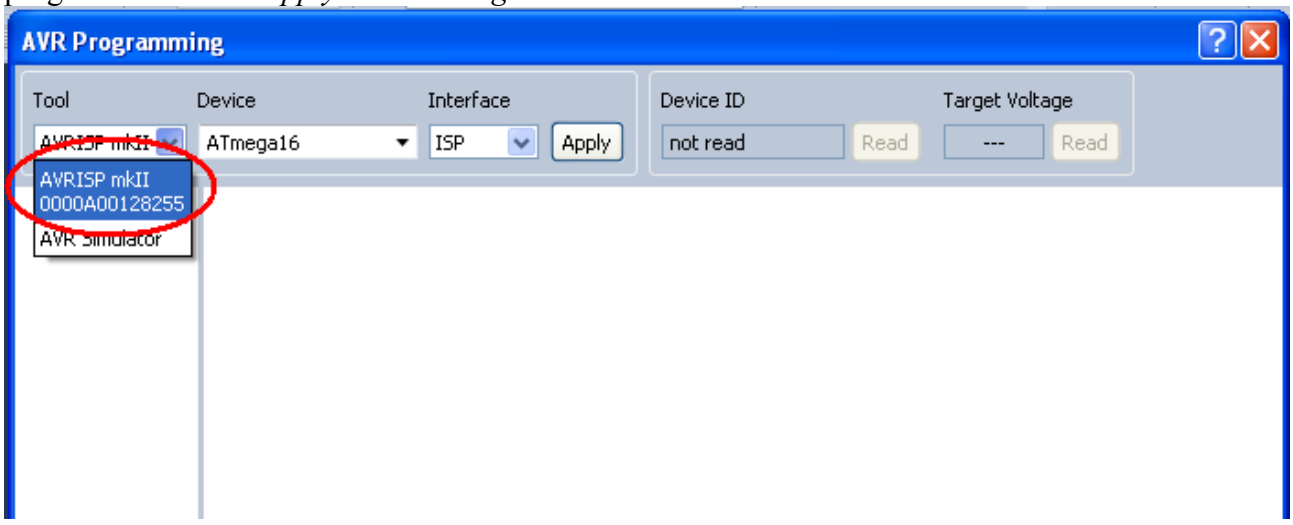
b) Configuration

To configure AVR Prog MKII, please start AVR Studio. Programmer's options are available in Tools->AVR Programming. (Picture 14).



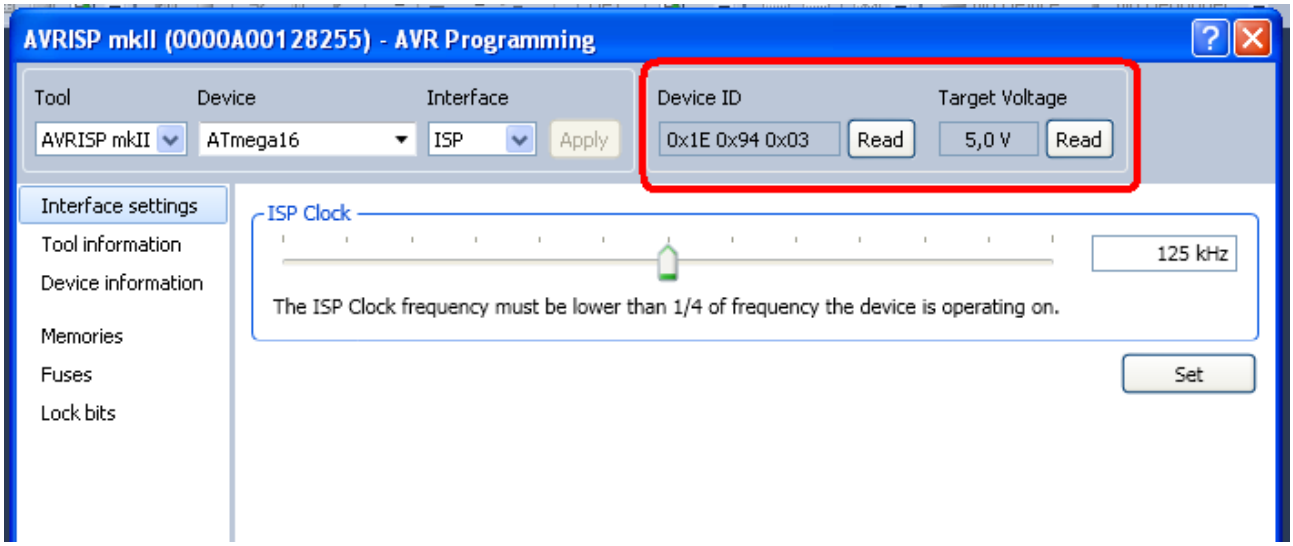
Picture 15

From *Tool list choose AVRISP mkII*. List *Device* specifies model of processor , which you want to program and button *Apply saves settings.*



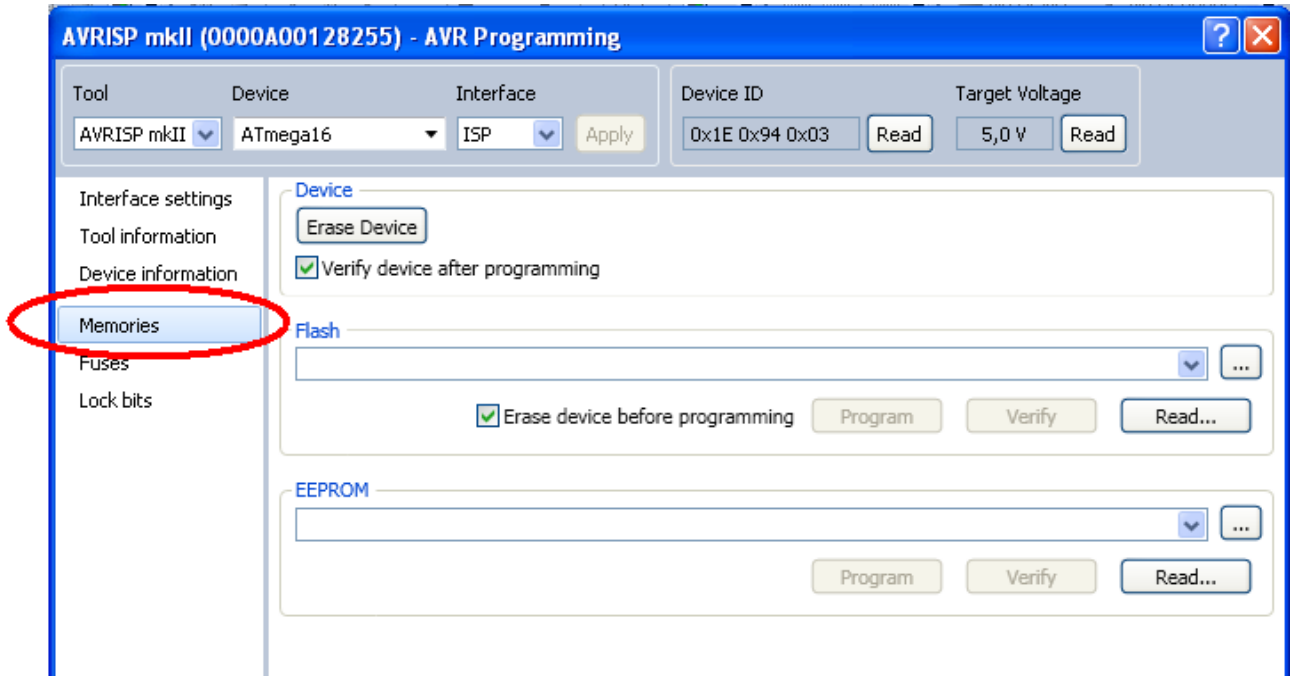
Picture 16

Read buttons read ID and voltage of programmed processor.



Picture 17

To program processor, find Memory bookmark – Picture 17.



Picture 18

3. Firmware update

AVRISP mkII is originally compatible with **BASCOM and AVR DUDE**. **If you use these programmes, please omit this chapter.** If you want to make programmer compatible with AVR Studio, you need to update its firmware according to this instruction.

To update the firmware you will need a copy of program FLIP:
link: http://www.atmel.com/dyn/resources/prod_documents/JRE%20-%20Flip%20Installer%20-%203.4.3.exe

and new firmware:

101116_AVRISP_studio.zip
link: http://www.and-tech.pl/MKII/101116_AVRISP_studio.zip

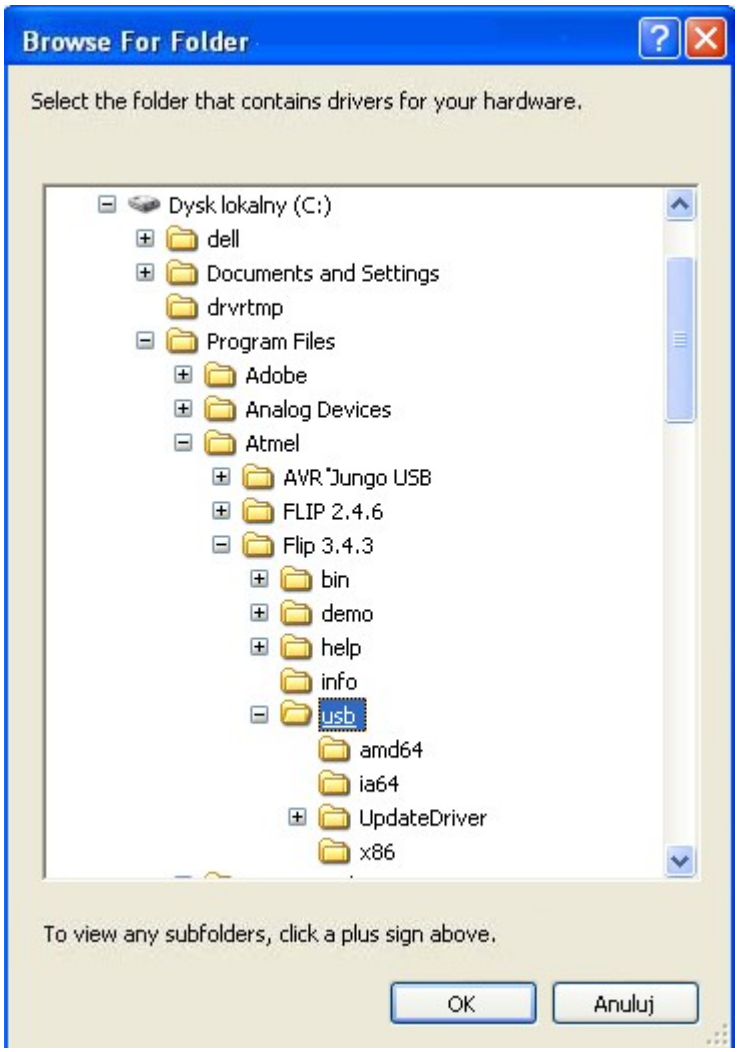
Please follow step by step to get the new firmware uploaded to your target programmer using FLIP.

To put the AVRPROG MKII into DFU bootloader mode, push bootloader button. The green led should go out indicating it is in bootloader mode.

New hardware should be found.

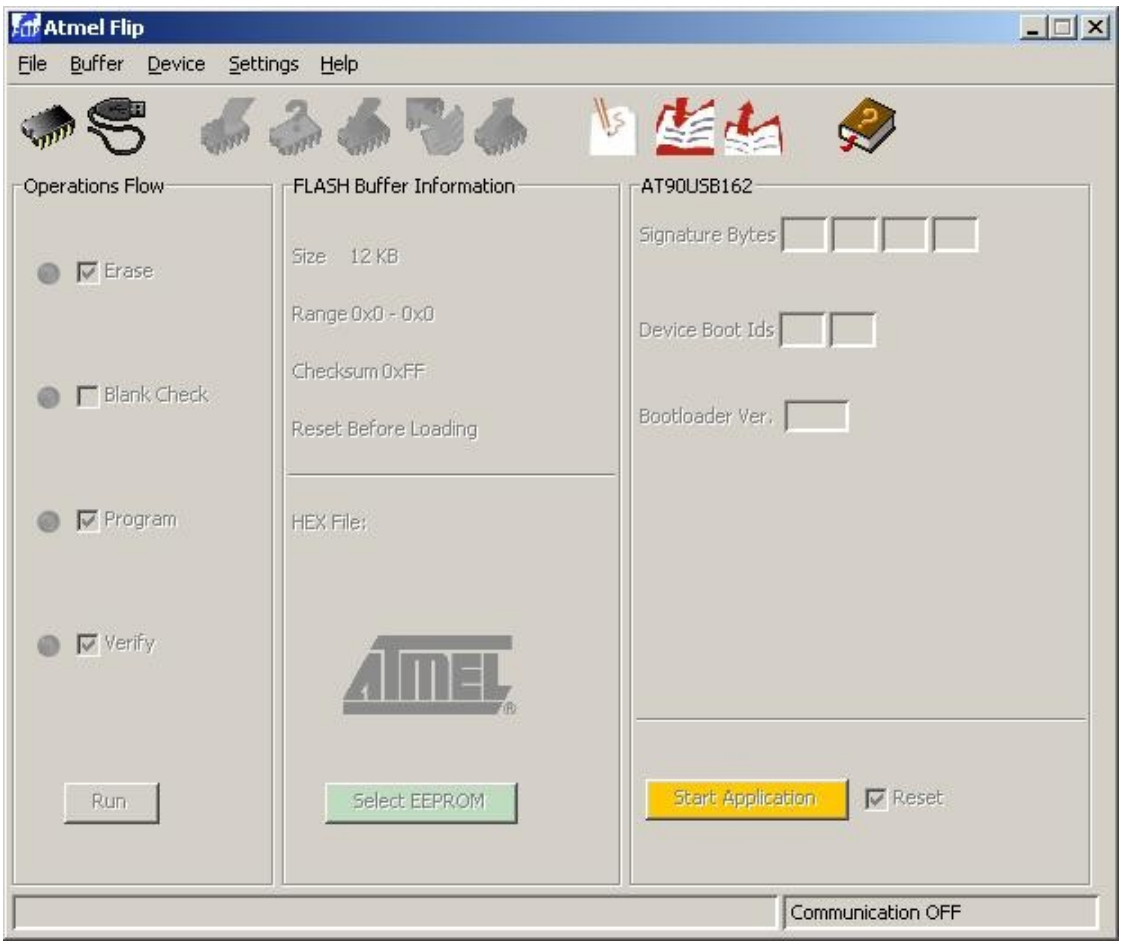
Picture 19

Please choose: *Install from a list or specific location (Advanced)* and find the following path: C:/Program Files / Atmel / Flip 3.4.3 / usb. - Picture 20



Picture 20

Click *OK* and start FLIP program.

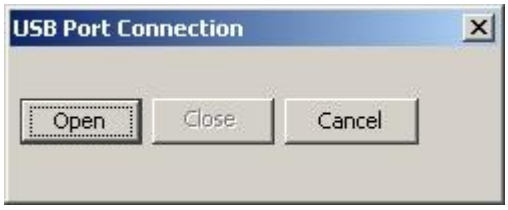


Picture 21

Click on the 'chip' icon or 'Device-->Select' menu option and select the device from the menu (at90usb162) – *Picture 22.*

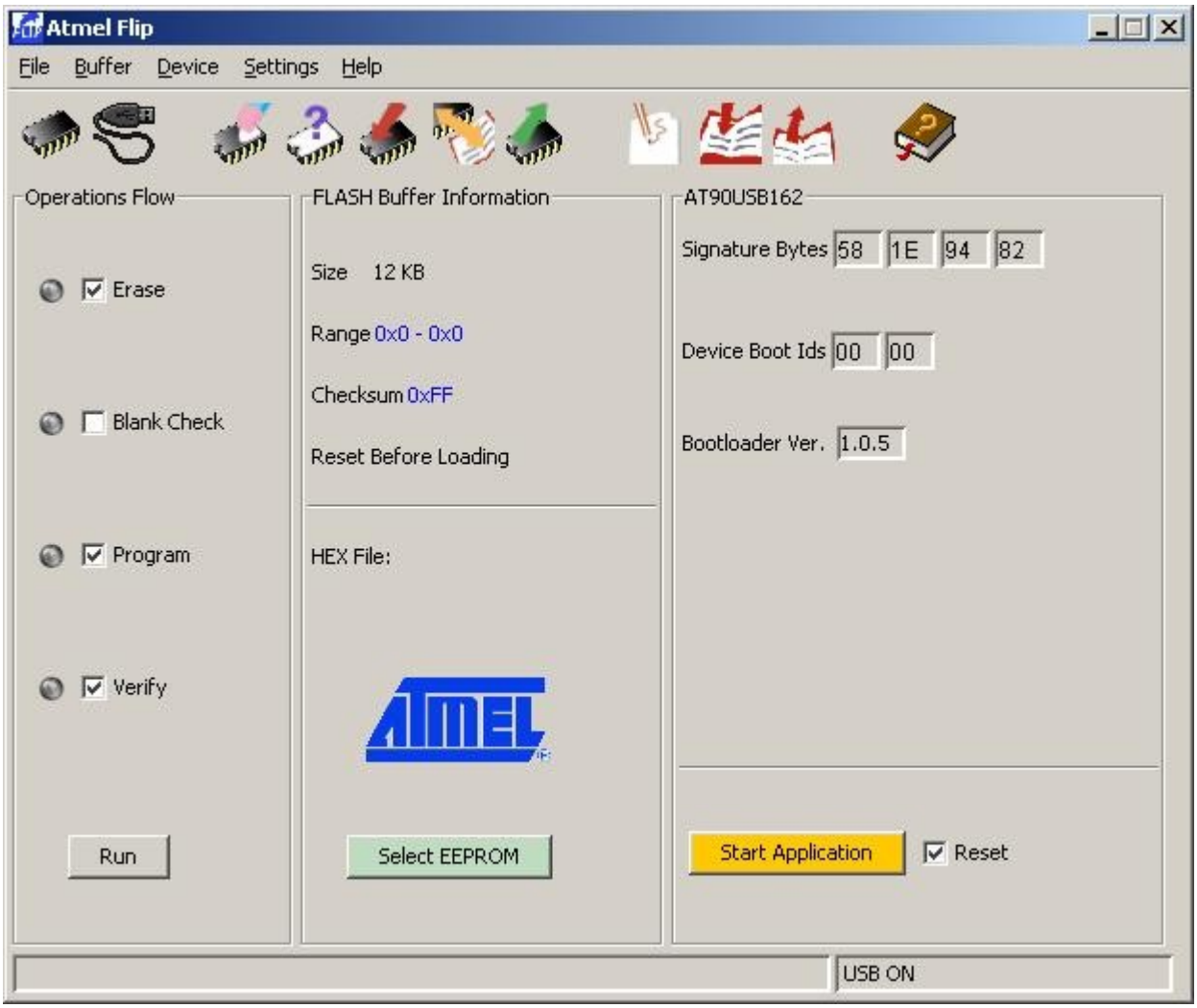
Picture 22

Click on the 'USB cable' icon and select 'USB' from the menu and connect to the device.



Picture 23

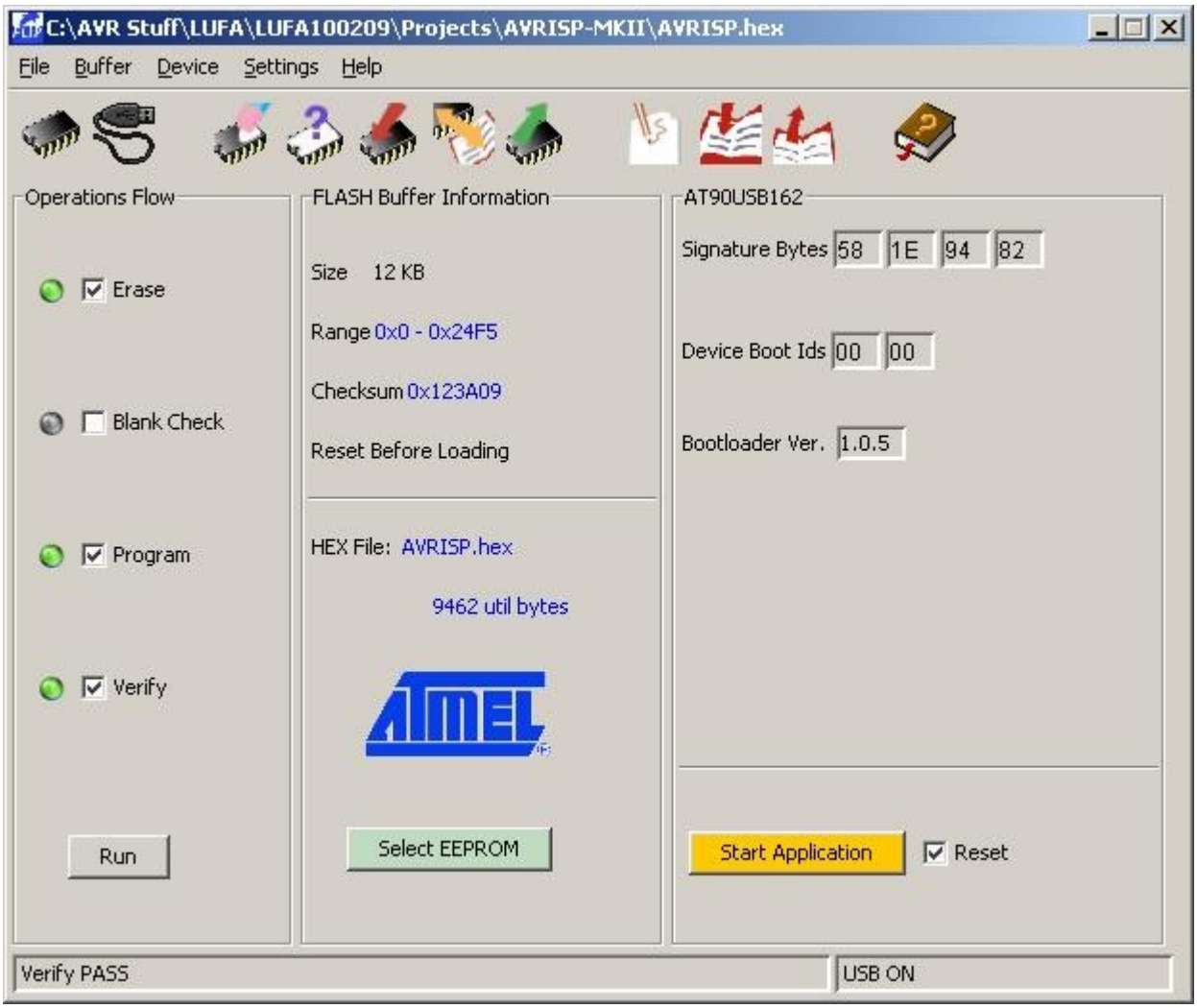
Click *Open.*



Picture 24

Load the new hex file from the 'LOAD hex file' icon or from the 'File-->LOAD HEX file' menu. Click on the 'RUN' button in the lower left corner.

DONE! Your programmer should be up to date now.



Picture 25

Click *Start Application* to restart programmer.

ATTENTION!!
If you want your programmer to work again with BASCOM and AVR DUDE, follow this instruction again, but use the following firmware:

101116_AVRISP_avrdude.hex
link: http://www.and-tech.pl/MKII/101116_AVRISP_avrdude.zip

4. Programmer interface

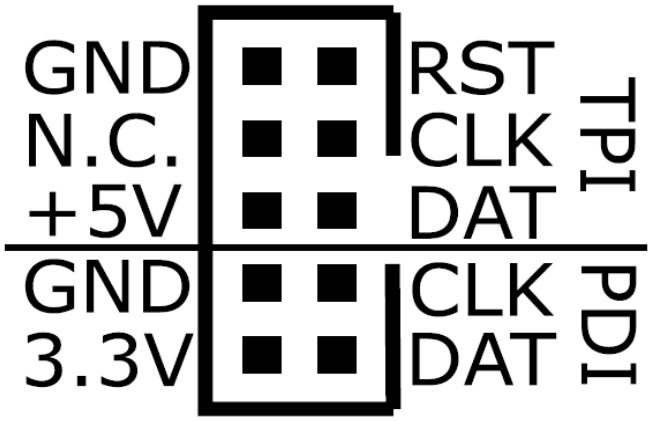
a) ISP connector

Programmer is equipped with 10-pin ISP connector (standard KANDA). Picture 23 presents pins order.

Picture 26

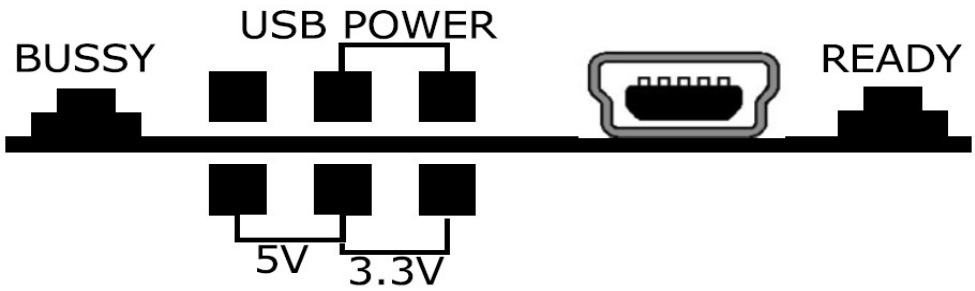
b) TPI and PDI connector

Second 10-pin ISP connector consists of TPI connector (for Attiny programming) and PDI (for Atxmega programming).



Picture 27

c) Jumpers and LED diodes



Picture 28

Jumpers:

USB-POWER – supply programmed circuit from programmer

5v – supply programmed circuit with 5V

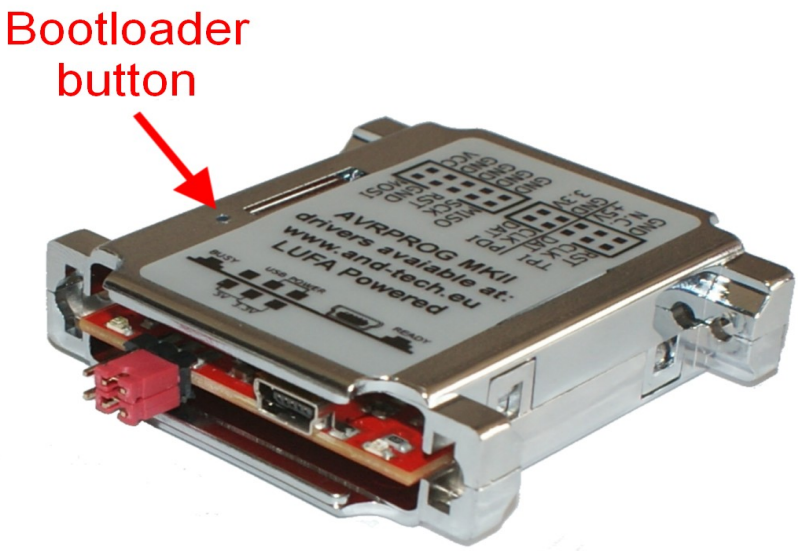
3.3v – supply programmed circuit with 3,3V

LED diodes:

READY – programmer turn on and ready
BUSSY – programmer busy (working)

d) Bootloader button

This button puts AVR Prog MKII into DFU bootloader mode – the green led goes out



Picture 29

5. Environment protection

The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at the product end-of-life. This applies
to your device but also to any enhancements marked with this symbol. Do not dispose of these products as unsorted municipal waste.

NOTE

AVRPROG MKII is powered by **LUFA library**, which is currently released under the MIT licence (http://www.fourwalledcubicle.com/LUFA.php).