Using the Atmel AVRISP II with AVRDUDESS

These instructions are for Windows10.

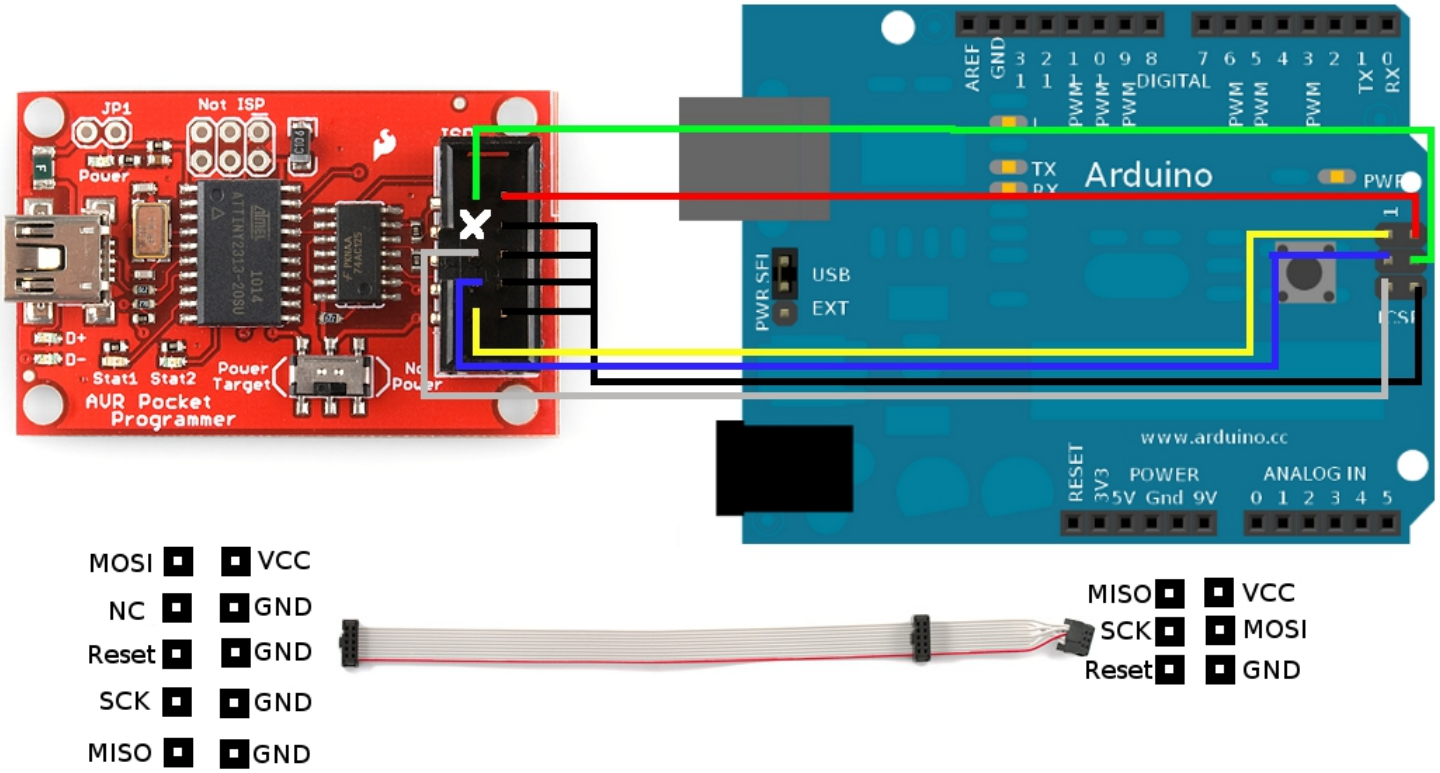
Download the Avrdudess software from https://blog.adafruit.com/2013/02/19/avrdudess-a-gui-for-avrdude/ and install on your computer.

Step 1.

We are going to burn a Bootloader into an ATmega 328P new blank chip. You can either use an Arduino to plug in your new device or use this setup. https://learn.sparkfun.com/tutorials/installing-an-arduino-bootloader#uploading-code---hard-way (see below).

Connecting an AVR Programmer to Target.

If you are using a programmer such as the MKII , your setup should look something like this:



For simplicity I am using my AVRISP II with my Arduino UNO and its 6 pin ICSP header on the right hand side (As shown in picture above). My AVRISP II came with a 10 pin to 6 pin converter similar to above, but with single wires. Make sure the connections are as follows:
(6 pin header/Pin 1) H6/1 MISO to H10/9. H6/2 VCC to H10/2. H6/3 SCK to H10/7. H6/4 MOSI to H10/1. H6/5 RESET to H10/5. H6/6 GND to H10/10.

Step 2.

Use the USB cable that came with the AVRISP II. Plug one end into the AVRISP II and the other into a USB port on your PC. This should set up a COM port which can be viewed in Device Manager. (Make a note of the Port). Power also needs to be supplied to the UNO. This can be done using a power supply of 7-12V DC plugged into the barrel connector or with a USB cable. If using a USB cable make sure that it is plugged into a USB charger and NOT a PC USB port. The AVRISP II should have a Green led glowing and the UNO, the Green ON LED.
We are now connected and ready to go.

Step 3.

Open AVRDUDESS. In the Programmer (-c) box, select the down arrow, scroll down and select Atmel AVRISP mkII.
In the Port (-P) box, select the down arrow and the Port that was written down earlier should appear in the drop down box for selection.
In the right hand pane in the MCU (-p) box, select ATmega328P.
The next pane underneath labelled Presets, select the down arrow and Arduino Uno (ATmega328P). This will change the Baud Rate (-b) to 115200.

Step 4.

When programming with this method we are not looking for a .ino file as this is for Arduino. Instead as for any type of microcontroller programming we need to upload a .hex file. The bootloader file that we are looking for is installed when the Arduino IDE is installed on your hard drive.
To load the file go to the centre pane and to the Flash box. Select the 3 buttons … to the right and browse to location : C:\ Program Files (x86)\ Arduino\ hardware\ arduino\ avr\ bootloaders\ optiboot\ optiboot_atmega328.hex This should appear in the Flash box.
Under the Flash box there are 3 radio buttons marked Write (write the program to the chip), Read (read the program from the chip) and Verify (verify the contents in the chip with the program selected in the Flash box). Select Write to put the program into the chip.

Finally, near the bottom select **Program!**