Flashing eYFi-Mega ATmega 2560 Bootloader using Arduino IDE

Note: Follow the procedure given below on Windows operating system ONLY.

1. **Download Arduino IDE**
   Make sure you have Arduino IDE installed on your Windows system. If not, you can download it from https://www.arduino.cc/en/Main/Software.
2. **Connections of Arduino Mega and eYFi-Mega board**
   Grab an Arduino Mega board. Make the connections as shown in below Fig. 1.

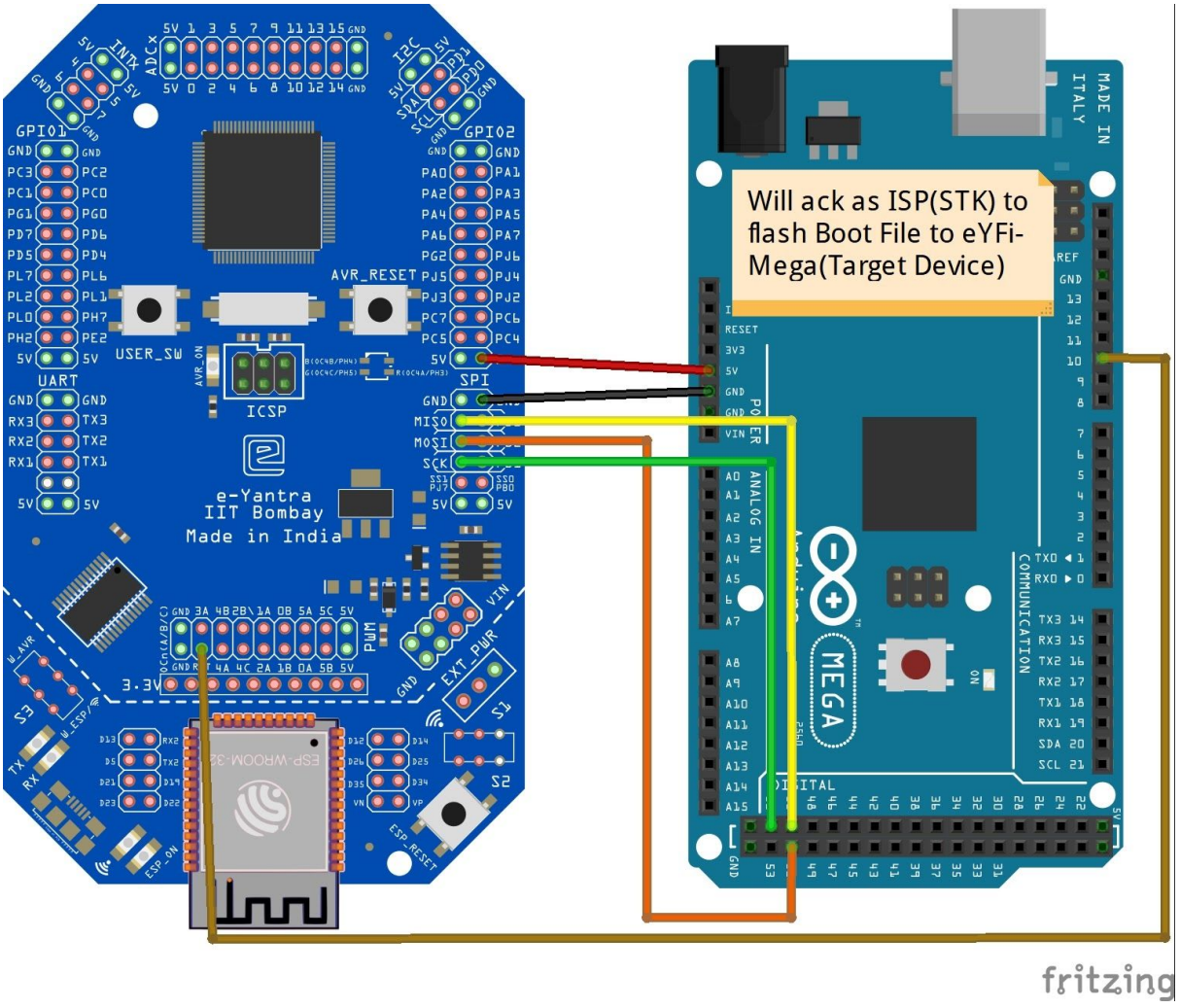
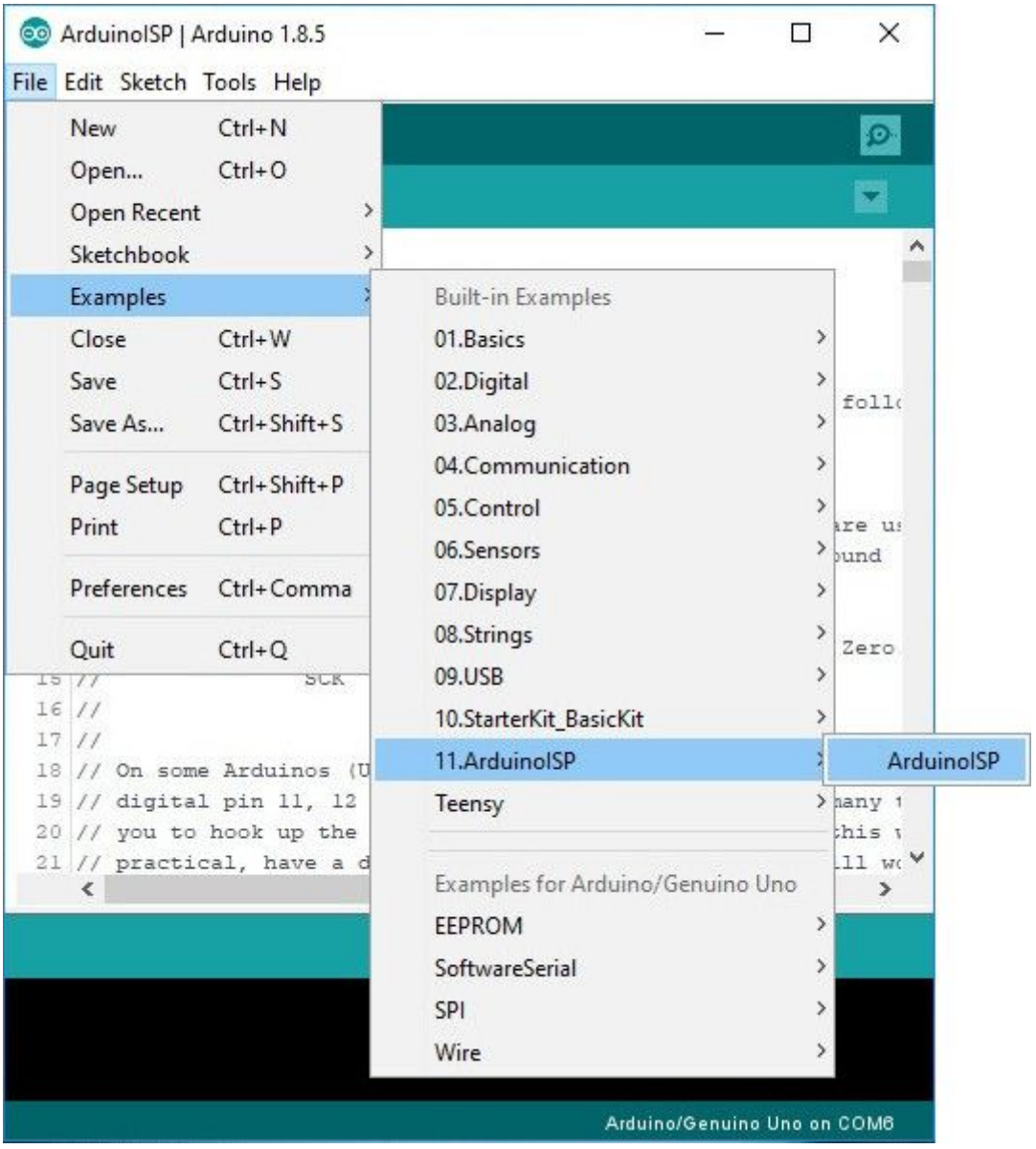


Fig. 1: Arduino as ISP Connections with eYFi-Mega board

3. **Upload Arduino as ISP**
   Open the Arduino IDE. In the menu, select **File > Examples > 11.ArduinoISP > ArduinoISP** to open up the Arduino as ISP sketch.



Select the COM port for your Arduino as ISP. The COM port may be different depending on how it is enumerated on your computer.
Note: Remember the COM port as it will be required in further sections.

Upload the code to your Arduino Mega to turn it into a **AVRISP**.

4. **Burning a Bootloader to Your Target (eYFi-Mega)**
   Download the zip file "**Arduino_as_ISP_eYFi-Mega**" from the **Downloads** section of the link: http://products.e-yantra.org/.

   Right-click on the file: **fuseset.bat** and click on Edit, this will open the file in Notepad to edit it.

First find the COM Port where the Arduino Mega board is connected to your system.
Edit the the command provided in the file and replace the default COM Port which is “COM58” and replace it with your COM Port. Save the files. **Do Not change any other part of the command provided.**

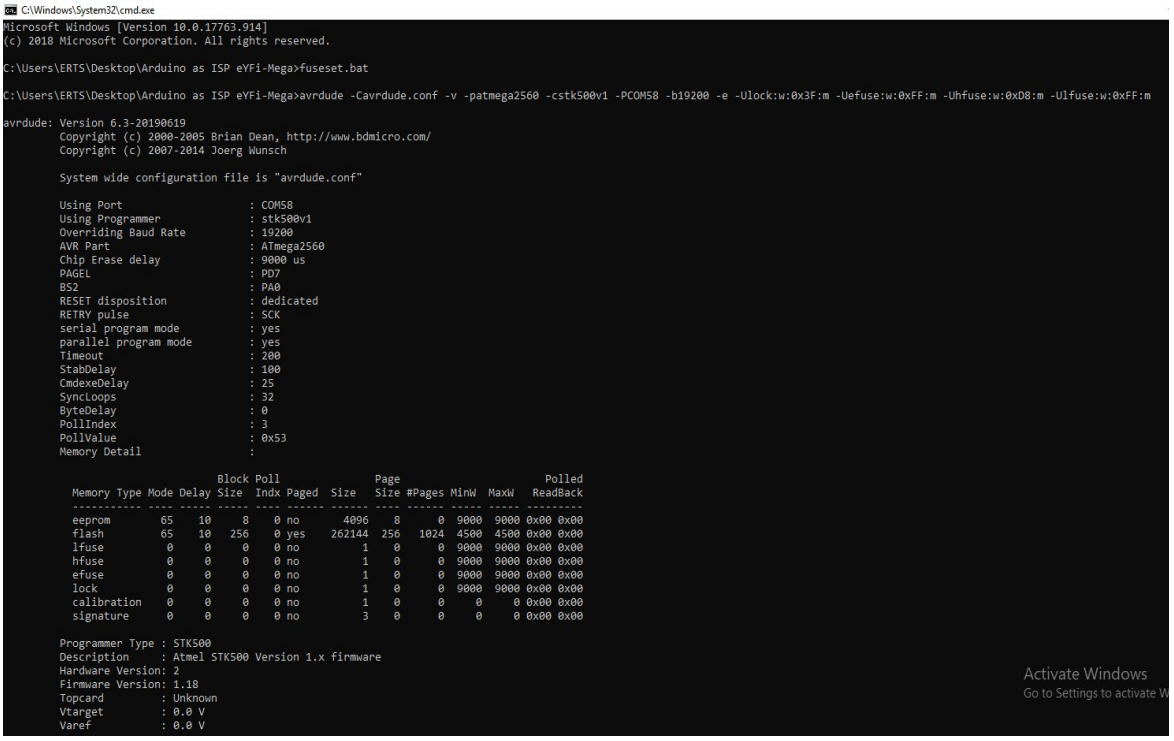
Repeat this step with the file: hexflash.bat, save the file after editing.

Open the Command Prompt, navigate to the **Arduino_as_ISP_eYFi-Mega** folder and run these two commands in the following order:

a. **fuseset.bat**
b. **hexflash.bat**

Expected Output after executing:

a. **fuseset.bat**



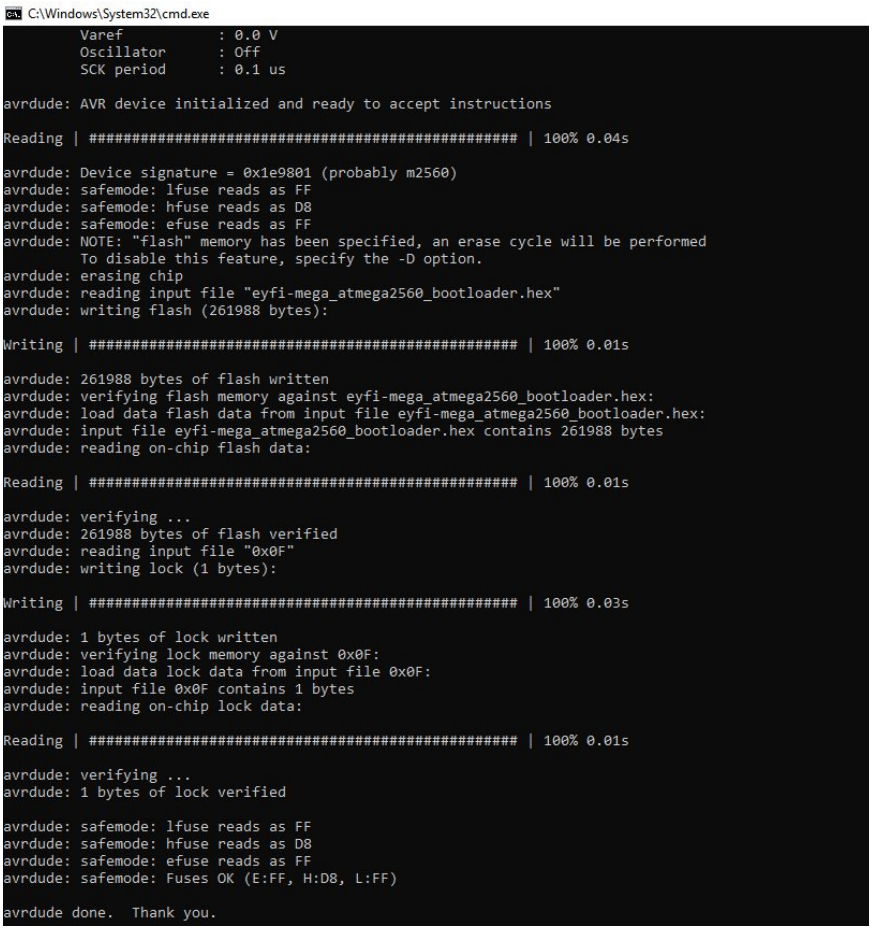
C:\Windows\System32\cmd.exe

```
Writing | ################################################## | 100% 0.01s

avrdude: 1 bytes of efuse written
avrdude: verifying efuse memory against 0xFF:
avrdude: load data efuse data from input file 0xFF:
avrdude: input file 0xFF contains 1 bytes
avrdude: reading on-chip efuse data:

Reading | ################################################## | 100% 0.01s

avrdude: verifying ...
avrdude: 1 bytes of efuse verified
avrdude: reading input file "0xD8"
avrdude: writing hfuse (1 bytes):

Writing | ################################################## | 100% 0.01s

avrdude: 1 bytes of hfuse written
avrdude: verifying hfuse memory against 0xD8:
avrdude: load data hfuse data from input file 0xD8:
avrdude: input file 0xD8 contains 1 bytes
avrdude: reading on-chip hfuse data:

Reading | ################################################## | 100% 0.01s

avrdude: verifying ...
avrdude: 1 bytes of hfuse verified
avrdude: reading input file "0xFF"
avrdude: writing lfuse (1 bytes):

Writing | ################################################## | 100% 0.01s

avrdude: 1 bytes of lfuse written
avrdude: verifying lfuse memory against 0xFF:
avrdude: load data lfuse data from input file 0xFF:
avrdude: input file 0xFF contains 1 bytes
avrdude: reading on-chip lfuse data:

Reading | ################################################## | 100% 0.01s

avrdude: verifying ...
avrdude: 1 bytes of lfuse verified

avrdude: safemode: lfuse reads as FF
avrdude: safemode: hfuse reads as D8
avrdude: safemode: efuse reads as FF
avrdude: safemode: Fuses OK (E:FF, H:D8, L:FF)

avrdude done.  Thank you.
```

b. hexflash.bat

C:\Windows\System32\cmd.exe

```
avrdude done.  Thank you.


C:\Users\ERTS\Desktop\Arduino as ISP eYFi-Mega>hexflash.bat

C:\Users\ERTS\Desktop\Arduino as ISP eYFi-Mega>avrdude -Cavrdude.conf -v -patmega2560 -cstk500v1 -PCOM58 -b19200 -Uflash:w:eyfi-mega_atmega2560_bootloader.hex:i -Ulock:w:0x0F:m

avrdude: Version 6.3-20190619
        Copyright (c) 2000-2005 Brian Dean, http://www.bdmicro.com/
        Copyright (c) 2007-2014 Joerg Wunsch

        System wide configuration file is "avrdude.conf"

        Using Port                    : COM58
        Using Programmer              : stk500v1
        Overriding Baud Rate          : 19200
        AVR Part                      : ATmega2560
        Chip Erase delay              : 9000 us
        PAGEL                         : PD7
        BS2                           : PA0
        RESET disposition             : dedicated
        RETRY pulse                   : SCK
        serial program mode           : yes
        parallel program mode         : yes
        Timeout                       : 200
        StabDelay                     : 100
        CmdexeDelay                   : 25
        SyncLoops                     : 32
        ByteDelay                     : 0
        PollIndex                     : 3
        PollValue                     : 0x53
        Memory Detail                 :

                                 Block Poll               Page                       Polled
          Memory Type Mode Delay Size  Indx Paged  Size   Size #Pages MinW  MaxW   ReadBack
          ----------- ---- ----- ----- ---- ------ ------ ---- ------ ----- ----- ---------
          eeprom        65    10     8    0 no       4096    8      0  9000  9000 0x00 0x00
          flash         65    10   256    0 yes    262144  256   1024  4500  4500 0x00 0x00
          lfuse          0     0     0    0 no          1    0      0  9000  9000 0x00 0x00
          hfuse          0     0     0    0 no          1    0      0  9000  9000 0x00 0x00
          efuse          0     0     0    0 no          1    0      0  9000  9000 0x00 0x00
          lock           0     0     0    0 no          1    0      0  9000  9000 0x00 0x00
          calibration    0     0     0    0 no          1    0      0     0     0 0x00 0x00
          signature      0     0     0    0 no          3    0      0     0     0 0x00 0x00

        Programmer Type : STK500
        Description     : Atmel STK500 Version 1.x firmware
        Hardware Version: 2
        Firmware Version: 1.18
        Topcard         : Unknown
        Vtarget         : 0.0 V
        Varef           : 0.0 V
```



Once you get this similar output on your Command Prompt, this means that the **eYFi-Mega ATmega2560 Bootloader** has been flashed successfully on your board.