



Updating USBasp by Arduino Uno R3 as ISP Programmer

Requirements

1. Arduino IDE 1.0 (IDE1.5.8 had problem with ATMEGA8 Series)
2. Usbasp and latest firmware here <http://www.fischl.de/usbasp/>

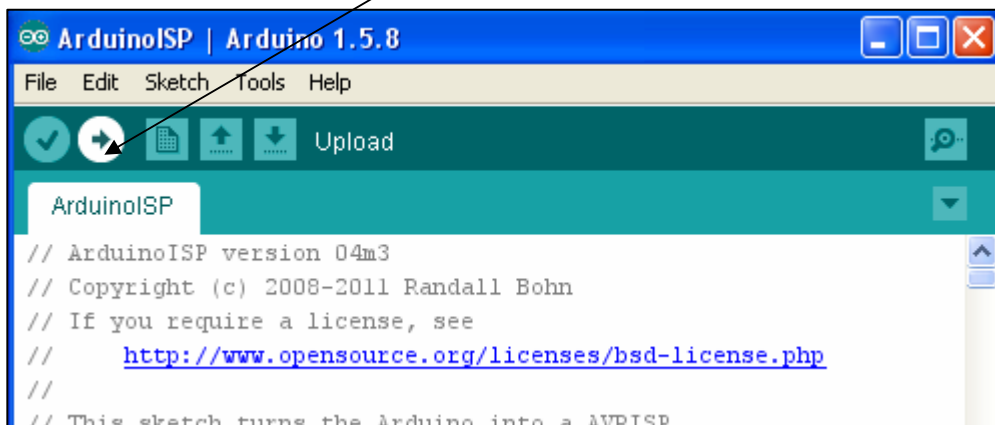
Drivers installation:

1. USBasp Driver installation and ensure USBasp device works
2. Arduino UNO R3 USB Install Driver, ensure Arduino Board works

Preparation:

Arduino UNO R3 as ISP Programmer

1. Run Open Arduion IDE 1.0
2. File>>Examples>>ArudinoISP
3. Tools>>Board>>Arduino UNO
4. Tools>>Port>>Com N
5. Upload this Sketch to Arduino UNO



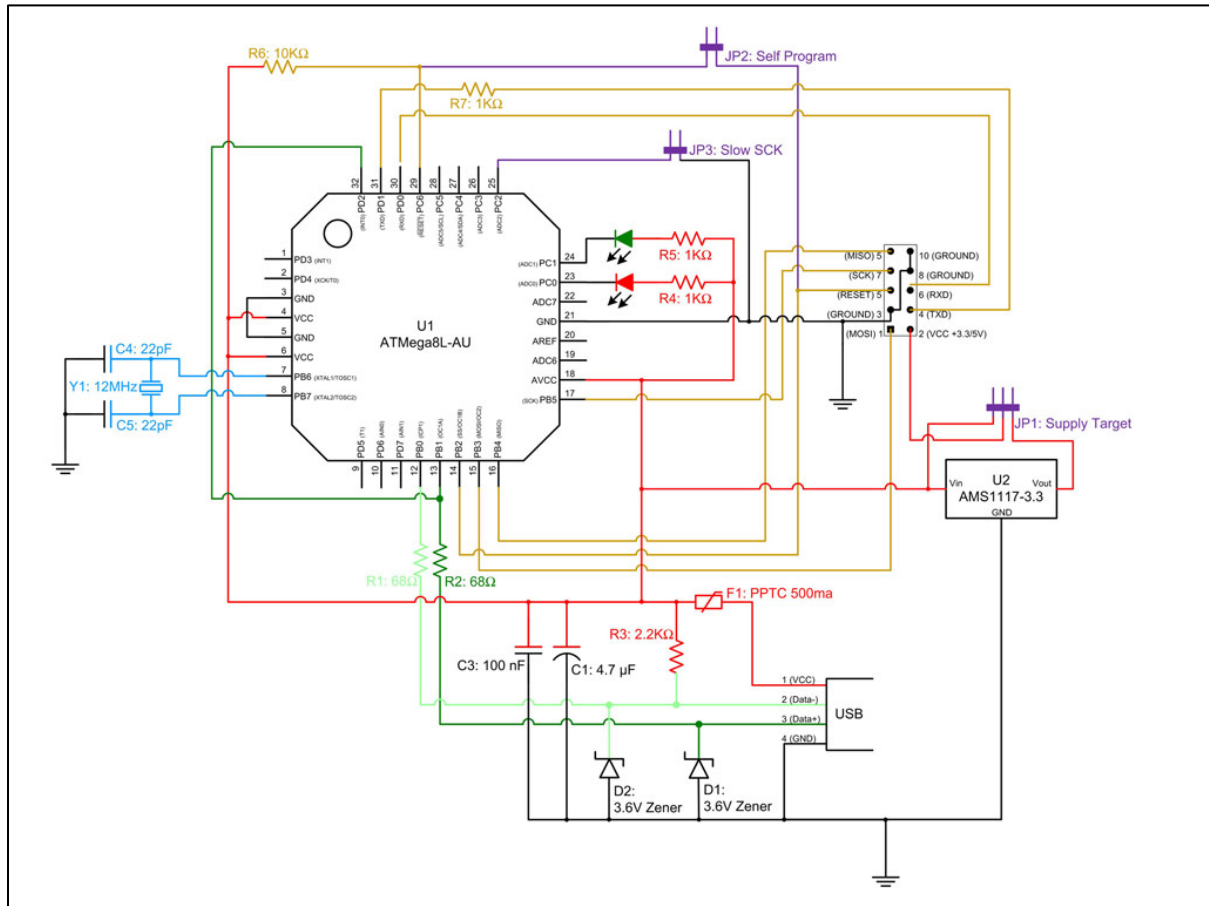
USBasp

1. Install JP2 and Close Jumper
2. Make Connection to Arduino Uno as below:

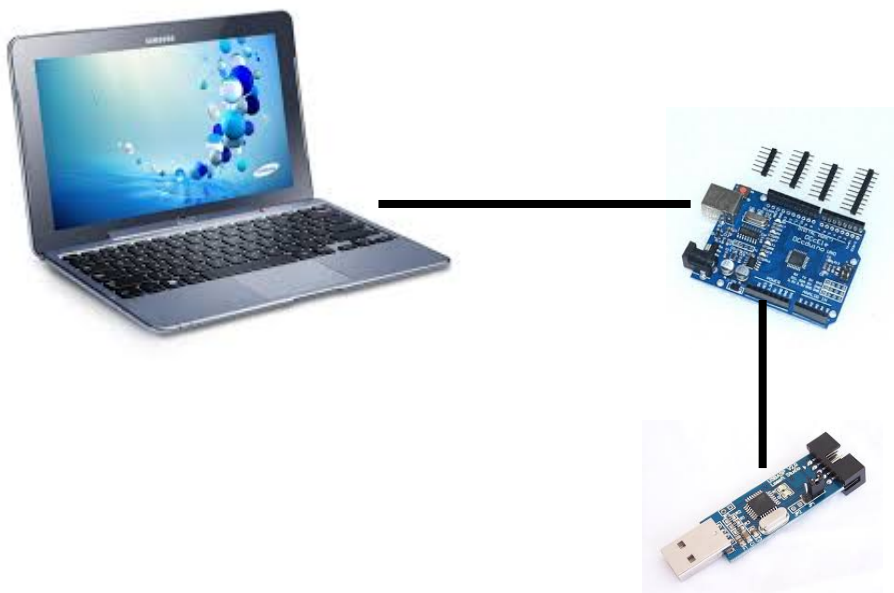
Arduino Uno	USBasp 10P Header
Pin10-----	Pin5 RESET
Pin11-----	Pin1 MOSI
Pin12-----	Pin9 MISO
Pin13-----	Pin7 SCK
GND-----	Pin3/8/10 GND
VCC-----	Pin2 VCC
3. Extract : usbasp.2011-05-28.tar.gz and copy **usbasp.atmega8.2011-05-28.hex** to
C:\..\hardware\tools\avr\bin



Chinese USBasp Schematic



Connection





Updating Firmware

Prompt to directory that avrdude.exe existing normally `C:\Arduino-1.0\hardware\tools\avr\bin`

then run command as below change your COM number to match your comport that Arduino connected

notes: Ensure `usbasp.atmega8.2011-05-28.hex` put in above directory

1. Run this command to check Connection and Chip

```
avrdude -C ../etc/avrdude.conf -c avrisp -P COM3 -b 19200 -p m8 -v
```

Failure connection

```
C:\WINDOWS\system32\cmd.exe

C:\arduino-1.0\hardware\tools\avr\bin>avrdude -C ../etc/avrdude.conf -c avrisp -P COM3 -b 19200 -p m8 -v

avrdude: Version 5.11, compiled on Sep  2 2011 at 19:38:36
Copyright (c) 2000-2005 Brian Dean, http://www.bdmicro.com/
Copyright (c) 2007-2009 Joerg Wunsch

System wide configuration file is "../etc/avrdude.conf"
avrdude: can't open config file "../etc/avrdude.conf": No such file or directory
avrdude: error reading system wide configuration file "../etc/avrdude.conf"

C:\arduino-1.0\hardware\tools\avr\bin>avrdude -C ../etc/avrdude.conf -c avrisp -P COM3 -b 19200 -p M8 -v

avrdude: Version 5.11, compiled on Sep  2 2011 at 19:38:36
Copyright (c) 2000-2005 Brian Dean, http://www.bdmicro.com/
Copyright (c) 2007-2009 Joerg Wunsch

System wide configuration file is "../etc/avrdude.conf"

Using Port                      : COM3
Using Programmer                 : avrisp
Overriding Baud Rate            : 19200
AUR Part                         : ATMEGA8
Chip Erase delay                 : 10000 us
PAGEL                           : PD7
BS2                             : PC2
RESET disposition               : dedicated
RETRV 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

      Polled      Block Poll      Page
W  ReadBack Memory Type Mode Delay Size  Indx Paged  Size  Size #Pages MinW  Max
-----
00 0xff 0xff eeprom      4    20   128    0 no    512    4    0 9000  90
00 0xff 0x00 flash       33    10    64    0 yes   8192   64   128 4500  45
00 0x00 0x00 lfuse       0     0     0    0 no     1     0    0 2000  20
00 0x00 0x00 hfuse       0     0     0    0 no     1     0    0 2000  20
00 0x00 0x00 lock        0     0     0    0 no     1     0    0 2000  20
00 0x00 0x00 calibration 0     0     0    0 no     4     0    0    0
00 0x00 0x00 signature  0     0     0    0 no     3     0    0    0

Programmer Type : STK500
Description    : Atmel AVR ISP
Hardware Version: 2
Firmware Version: 1.18
Topcard       : Unknown
Utarget       : 0.0 U
Uaref         : 0.0 U
Oscillator    : Off
SCK period    : 0.1 us

avrdude: AVR device initialized and ready to accept instructions

Reading : ##### : 100% 0.06s

avrdude: Device signature = 0x000000
avrdude: Yikes! Invalid device signature.
Double check connections and try again, or use -F to override
this check.

avrdude done. Thank you.
```



Correct Connection

```
C:\> C:\WINDOWS\system32\cmd.exe
C:\> C:\arduino-1.0\hardware\tools\avr\bin>avrdude -C ../etc/avrdude.conf -c avrisp -
P COM3 -b 19200 -p M8 -v
avrdude: Version 5.11, compiled on Sep  2 2011 at 19:38:36
Copyright (c) 2000-2005 Brian Dean, http://www.bdmicro.com/
Copyright (c) 2007-2009 Joerg Wunsch

System wide configuration file is "../etc/avrdude.conf"

Using Port                : COM3
Using Programmer           : avrisp
Overriding Baud Rate      : 19200
AUR Part                  : ATMEGA8
Chip Erase delay          : 10000 us
PAGEL                     : PD7
BS2                       : PC2
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

      Polled      Block Poll      Page
W  ReadBack  Memory Type Mode Delay Size  Indx Paged  Size  Size #Pages MinW  Max
-----
00 0xff 0xff  eeprom          4   20  128   0 no    512    4    0  9000  90
00 0xff 0x00  flash          33   10   64   0 yes   8192   64  128  4500  45
00 0x00 0x00  lfuse           0    0    0   0 no     1    0    0  2000  20
00 0x00 0x00  hfuse           0    0    0   0 no     1    0    0  2000  20
00 0x00 0x00  lock            0    0    0   0 no     1    0    0  2000  20
00 0x00 0x00  calibration     0    0    0   0 no     4    0    0    0
00 0x00 0x00  signature       0    0    0   0 no     3    0    0    0
00 0x00 0x00

Programmer Type : STK500
Description     : Atmel AUR ISP
Hardware Version: 2
Firmware Version: 1.18
Topcard        : Unknown
Utarget        : 0.0 U
Uaref          : 0.0 U
Oscillator     : Off
SCK period     : 0.1 us

avrdude: AUR device initialized and ready to accept instructions
Reading : ##### : 100% 0.08s
avrdude: Device signature = 0x1e9307
avrdude: safemode: lfuse reads as EF
avrdude: safemode: hfuse reads as C9
avrdude: safemode: lfuse reads as EF
avrdude: safemode: hfuse reads as C9
avrdude: safemode: Fuses OK
avrdude done. Thank you.

C:\arduino-1.0\hardware\tools\avr\bin>_
```



2. Run This command to flash MPU

```
avrdude -C ../etc/avrdude.conf -c avrisp -P COM3 -b 19200 -p m8 -U  
flash:w:usbasp.atmega8.2011-05-28.hex
```

```
C:\arduino-1.0\hardware\tools\avr\bin>avrdude -C ../etc/avrdude.conf -c avrisp -  
P COM3 -b 19200 -p M8 -U flash:w:usbasp.atmega8.2011-05-28.hex  
avrdude: AVR device initialized and ready to accept instructions  
Reading ! ##### ! 100% 0.06s  
avrdude: Device signature = 0x1e9307  
avrdude: NOTE: FLASH memory has been specified, an erase cycle will be performed  
To disable this feature, specify the -D option.  
avrdude: erasing chip  
avrdude: reading input file "usbasp.atmega8.2011-05-28.hex"  
avrdude: input file usbasp.atmega8.2011-05-28.hex auto detected as Intel Hex  
avrdude: writing flash (4700 bytes):  
Writing ! ##### ! 100% 7.88s  
avrdude: 4700 bytes of flash written  
avrdude: verifying flash memory against usbasp.atmega8.2011-05-28.hex:  
avrdude: load data flash data from input file usbasp.atmega8.2011-05-28.hex:  
avrdude: input file usbasp.atmega8.2011-05-28.hex auto detected as Intel Hex  
avrdude: input file usbasp.atmega8.2011-05-28.hex contains 4700 bytes  
avrdude: reading on-chip flash data:  
Reading ! ##### ! 100% 5.77s  
avrdude: verifying ...  
avrdude: 4700 bytes of flash verified  
avrdude: safemode: Fuses OK  
avrdude done. Thank you.  
C:\arduino-1.0\hardware\tools\avr\bin>_
```

3. Run this command to set fuse bit

```
avrdude -C ../etc/avrdude.conf -c avrisp -P COM3 -b 19200 -p m8 -U  
hfuse:w:0xc9:m -U lfuse:w:0xef:m
```

```
C:\arduino-1.0\hardware\tools\avr\bin>avrdude -C ../etc/avrdude.conf -c avrisp -  
P COM3 -b 19200 -p M8 -U hfuse:w:0xc9:m -U lfuse:w:0xef:m  
avrdude: AVR device initialized and ready to accept instructions  
Reading ! ##### ! 100% 0.06s  
avrdude: Device signature = 0x1e9307  
avrdude: reading input file "0xc9"  
avrdude: writing hfuse (1 bytes):  
Writing ! ##### ! 100% 0.02s  
avrdude: 1 bytes of hfuse written  
avrdude: verifying hfuse memory against 0xc9:  
avrdude: load data hfuse data from input file 0xc9:  
avrdude: input file 0xc9 contains 1 bytes  
avrdude: reading on-chip hfuse data:  
Reading ! ##### ! 100% 0.02s  
avrdude: verifying ...  
avrdude: 1 bytes of hfuse verified  
avrdude: reading input file "0xef"  
avrdude: writing lfuse (1 bytes):  
Writing ! ##### ! 100% 0.02s  
avrdude: 1 bytes of lfuse written  
avrdude: verifying lfuse memory against 0xef:  
avrdude: load data lfuse data from input file 0xef:  
avrdude: input file 0xef contains 1 bytes  
avrdude: reading on-chip lfuse data:  
Reading ! ##### ! 100% 0.02s  
avrdude: verifying ...  
avrdude: 1 bytes of lfuse verified  
avrdude: safemode: Fuses OK  
avrdude done. Thank you.  
C:\arduino-1.0\hardware\tools\avr\bin>_
```

4. Remove JP2 Jumper. Done updating firmware.