

ELEMENTZ ENGINEERS GUILD PVT LTD

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Embedded Module Manufacturers and Distributors

# USER GUIDE

# USBASP SERIAL PROGRAMMER USER GUIDE

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IMPORTANT  
NOTE

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This user guide describes how to get started with your board in Windows.

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## Overview

**U**SBasp serial programmer will allow you to painlessly transfer hex programs to most ATMEL AVR microcontrollers.

It is more reliable than most other AVR programmers available. Entire AVR programmer has been built with using common parts and fits in the case of the serial connector. The socket pcb has been created to fit a 28-DIP AVR ATmega8 microcontroller, but you can build a socket pcb for any other AVR microcontroller out there. This AVR programmer is compatible with AVRdude GUI software.

## Features

- Microcontroller      ATmega8
- Operating Voltage    5V

### Module Snapshot

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PICTURE

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Following figure contains the Snapshot of the USBasp AVR serial programmer.



# Connection Details

## How to connect



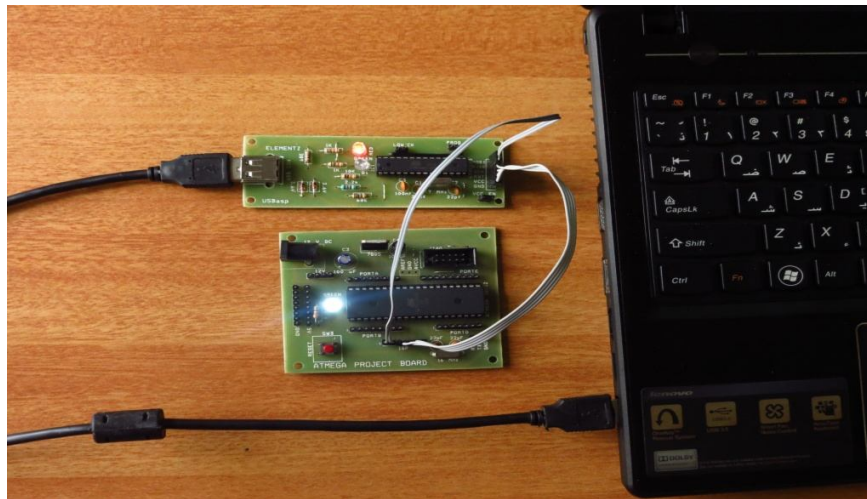
Connect the USBasp serial programmer to the pc with male to male usb connector. +5V for the microcontroller chip will be provided directly from usb.

Connect the target board to the USBasp serial programmer using ICSP CON.

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### CONNECTION DIAGRAM

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### IMPORTANT

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While Programming, its better to use External Power Source, because USB port can only supply maximum current of 500mA. Short the pins VCC and EN for powering the target board.

# Installing the drivers

Extract the software provided in the support CD to any preferred location in your computer. Select the driver for 32 bit/64 bit and install it or show the path

This section explains how to install driver for your USBasp AVR serial programmer.

On Windows7

- Right click on My computer.
- Select **Manage**→**Device Manager**→**Other devices**→**Usbasp**.
- Right click on Usbasp and select **Properties**→**Update driver**→**Browse my computer** for driver software .
- Click on it and browse for the **win-driver**→**libusb\_1.2.4.0** .

Device manager

On Windows XP, the Add New Hardware wizard will open:

- When asked **Can Windows connect to Windows Update to search for software?** select **No, not this time**. Click next.
- Select **Install from a list or specified location (Advanced)** and click next.
- Make sure that **Search for the best driver in these locations** is checked; uncheck **Search removable media**; check **Include this location in the search** and browse to the **windriver**→**libusb\_1.2.4.0** directory extracted from the support CD. Click **Next**.
- The wizard will search for the driver and should install the drivers successfully.

You can check that the drivers have been installed by opening the Windows Device Manager (in the Hardware tab of System control panel). Look for "**ELEMENTZ AVR-USB PROGRAMMER**" in the **LibUSB-Win32 Devices** section.



successfully.

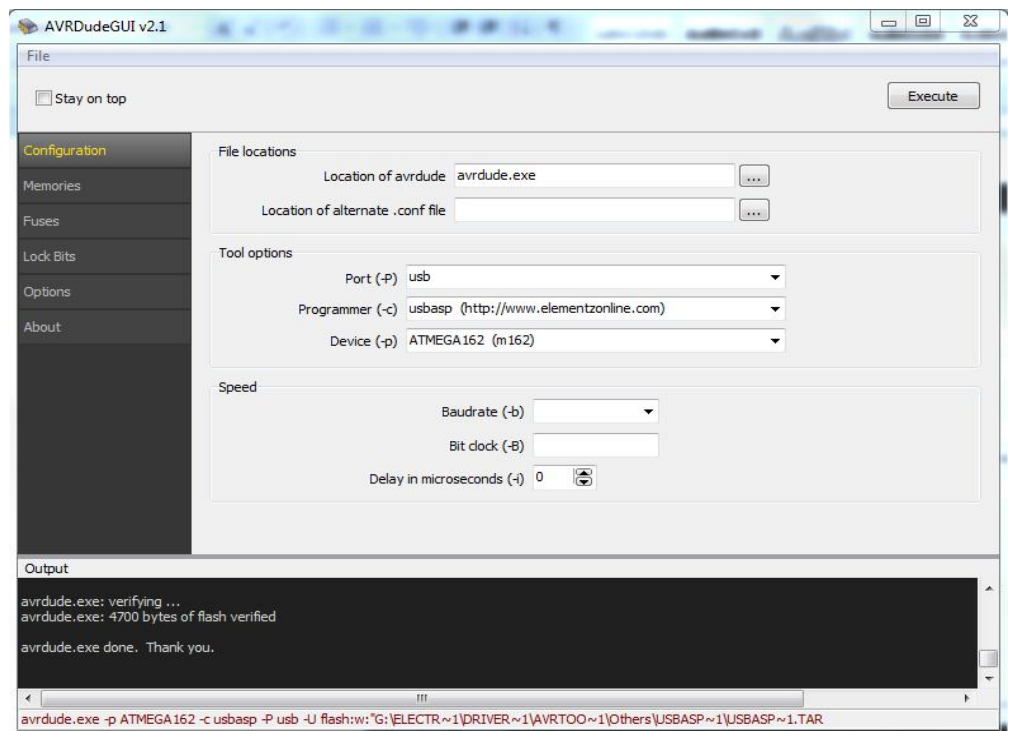
It should look like this, after installing the drivers

# Configuring AVRdude GUI

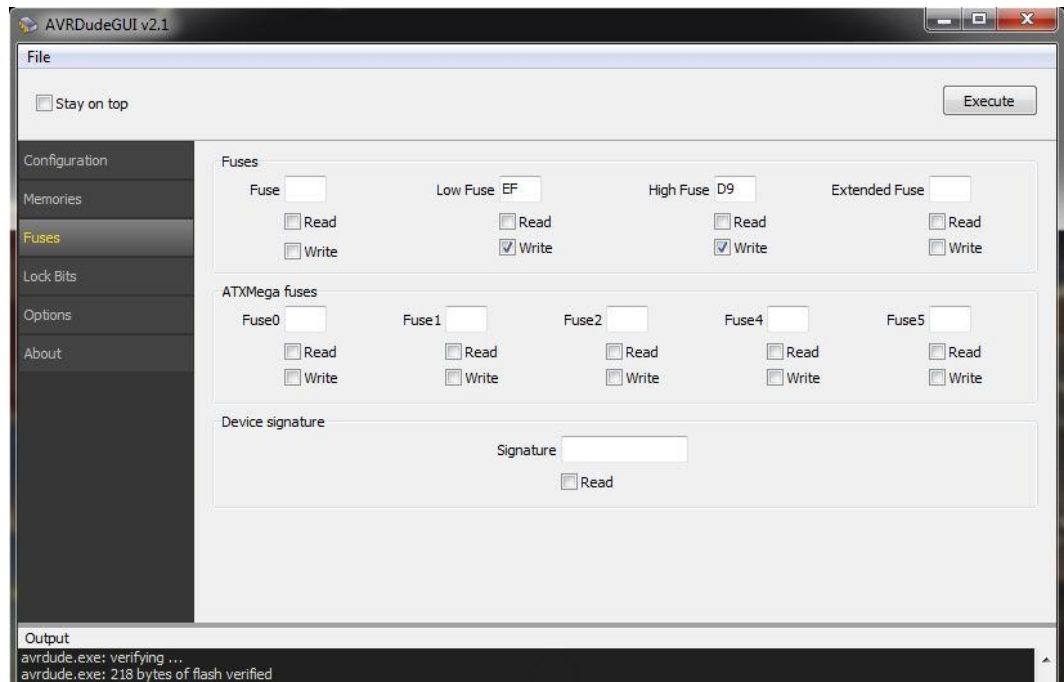
This section explains initial configuration of AVRdude GUI.

Connect the USBasp Serial Programmer to the pc using usb connector. Open AVRdudeGUI by double-clicking the "AVRDudeGUI" application.

- Select the **Configuration** tab.



- In the "**Location of avrdude**", browse and show the path where the avrdude application is located.
- In **Tool options>Port(-P)**>select **usb** from the dropdown menu.
- In **Programmer(-c)**>select **usbasp**(USBasp, <http://www.elementzonline.com>).
- In **Device(-p)**>select the microcontroller you are using in your target board.
- Now select the **Fuses** tab.



- Enter the following settings
- Low Fuse - **XX**          High Fuse - **XX**
- Tick the **Write** boxes below Low Fuse & High Fuse.
- Click the **Execute** button.
- Output will show

avrdude.exe: verifying ...

avrdude.exe: 1 bytes of hfuse verified

avrdude.exe done. Thank you.

- After execution **remove** the ticks from the **Write** boxes.

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I M P O R T A N T  
N O T E

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Be careful to select the fuses for your target IC, otherwise it can brick your IC forever. User may use the online tool in <http://www.engbedded.com/fusecalc> for finding the fuse bits for your Target.

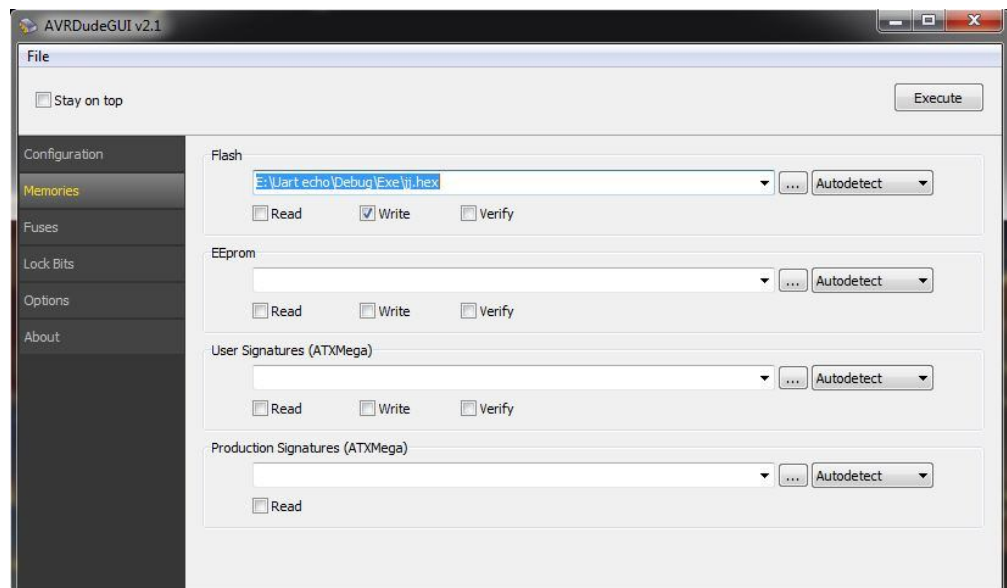


# Downloading hex code to the target board

This section explains how to download hex code to the target board.

Connect the USBasp Serial programmer to the pc using usb connector. Connect the target board which is to be programmed to the USBasp Serial programmer. Now open the AVRdudeGUI application.

- Select the **Memories** tab.



- In **Flash**, browse for the hex code to be dumped to the target board.
- Tick the **write** box.
- Click **Execute**.
- Output will show

```
avrdude.exe: verifying ...
```

```
avrdude.exe: xxx bytes of flash verified
```

```
avrdude.exe done. Thank you.
```

- After execution **remove** the tick from the **Write** box.
- During execution the led will blink and that's it.