



**BEAST-TEK**  
INSTRUMENTS

## **FIRMWARE UPDATE GUIDE v1.2**

[www.beast-tek.com](http://www.beast-tek.com)

**Dirty Glitch v3.0**

**Hyper Fist v3.0**

**Irukandji v3.0**

# Prerequisites

## AVRDUDE

Avrdude is a command line executable that is installed as part of the Arduino IDE which can be downloaded from [www.arduino.cc](http://www.arduino.cc)

You can also install avrdude via the AVR Toolchain or AVR Studio, but Arduino IDE is by far the easiest way of obtaining it.

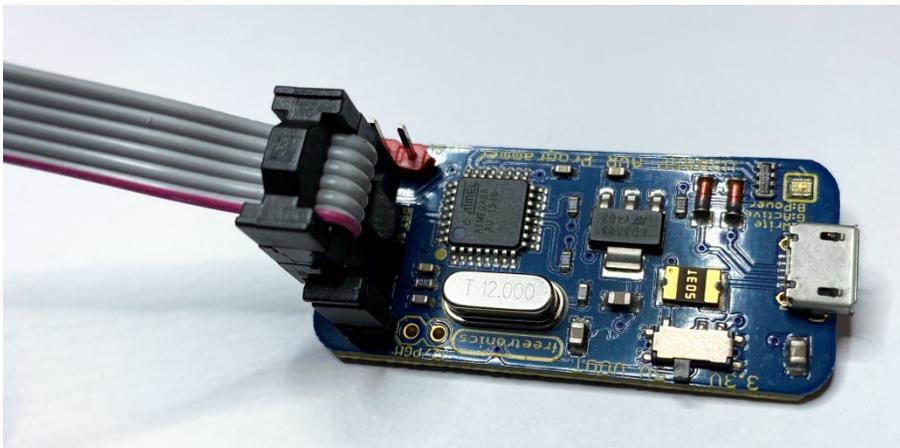
## Firmware .hex file

This can be downloaded from the Beast-Tek website [www.beast-tek.com/firmware-updates.html](http://www.beast-tek.com/firmware-updates.html)

There is a different filename for each module. The update process is the same of all 3 modules, the only difference is the name of the firmware file must be changed on the avrdude command line to match the appropriate firmware file.

## USBASP programmer

Avrdude supports many different programmers. My example is going to use a USBASP programmer but you can use a different programmer by specifying different commands to avrdude.

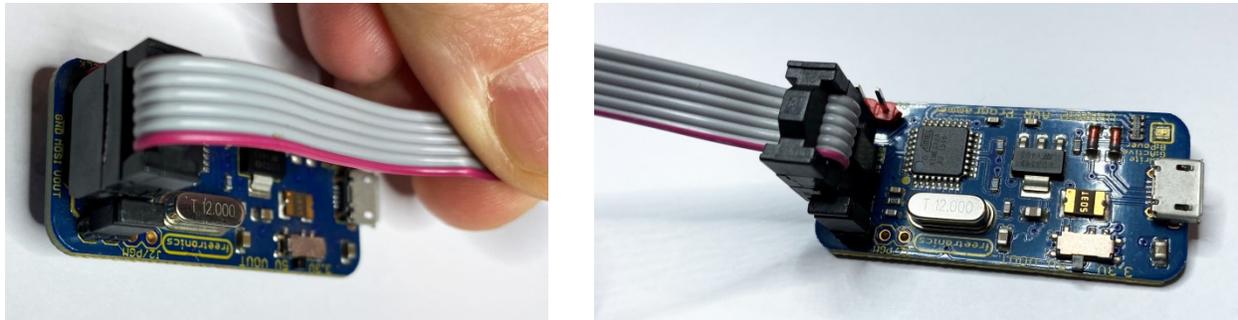


USBASP programmer (above)

NOTE: Make sure it is set to 5V

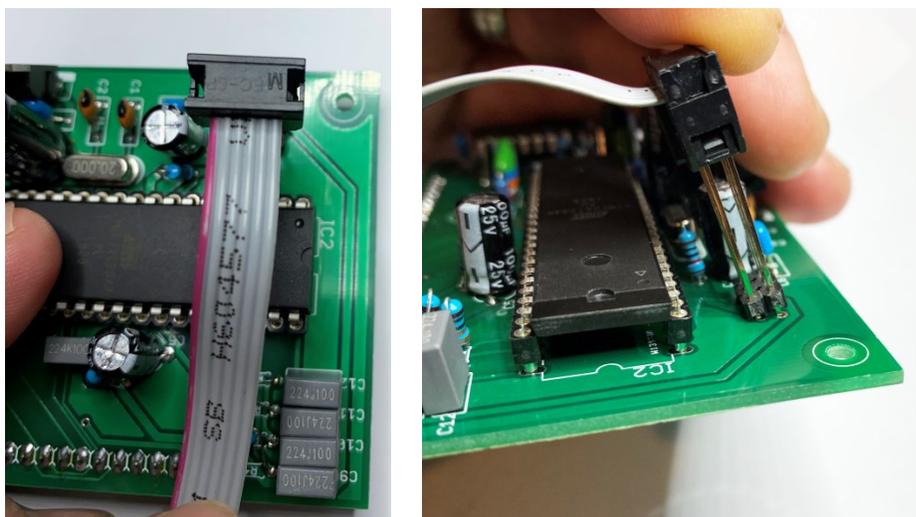
# USB ASP Connections

In my example the RED STRIPE is facing the VOUT as per the photo below. Make sure the RED stripe on the cable is facing VOUT marked on the USBASP pcb.



The picture below shows the 2x3 pin IDC cable from the USBASP programmer connected to the main board. The location of the RED stripe is important, I am using the red stripe to indicate VOUT / +5v from the USBASP programmer.

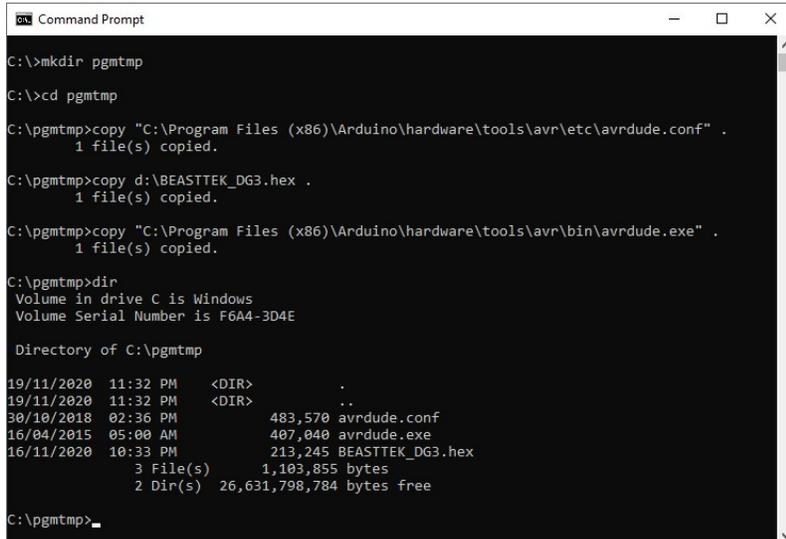
To connect the cable to the main board, either solder a 2x3 pin header into the ICSP connector on the main board PCB OR the header pins can be inserted into the IDC header and held at an angle (with light pressure applied by hand) during the programming process if you are not comfortable with soldering.



**NOTE!** The main board and IO/control board must be separated for programming to succeed. The IO board interferes with the pins required for programming.

# Stop. Programming Time!!

Create a temporary folder named pgmtmp on the root of C:\ where we will copy the files into. Locate avrude.exe, avrdude.conf and the firmware file into C:\pgmtmp



```
Command Prompt
C:\>mkdir pgmtmp
C:\>cd pgmtmp
C:\pgmtmp>copy "C:\Program Files (x86)\Arduino\hardware\tools\avr\etc\avrdude.conf" .
1 file(s) copied.
C:\pgmtmp>copy d:\BEASTTEK_DG3.hex .
1 file(s) copied.
C:\pgmtmp>copy "C:\Program Files (x86)\Arduino\hardware\tools\avr\bin\avrdude.exe" .
1 file(s) copied.
C:\pgmtmp>dir
Volume in drive C is Windows
Volume Serial Number is F6A4-3D4E

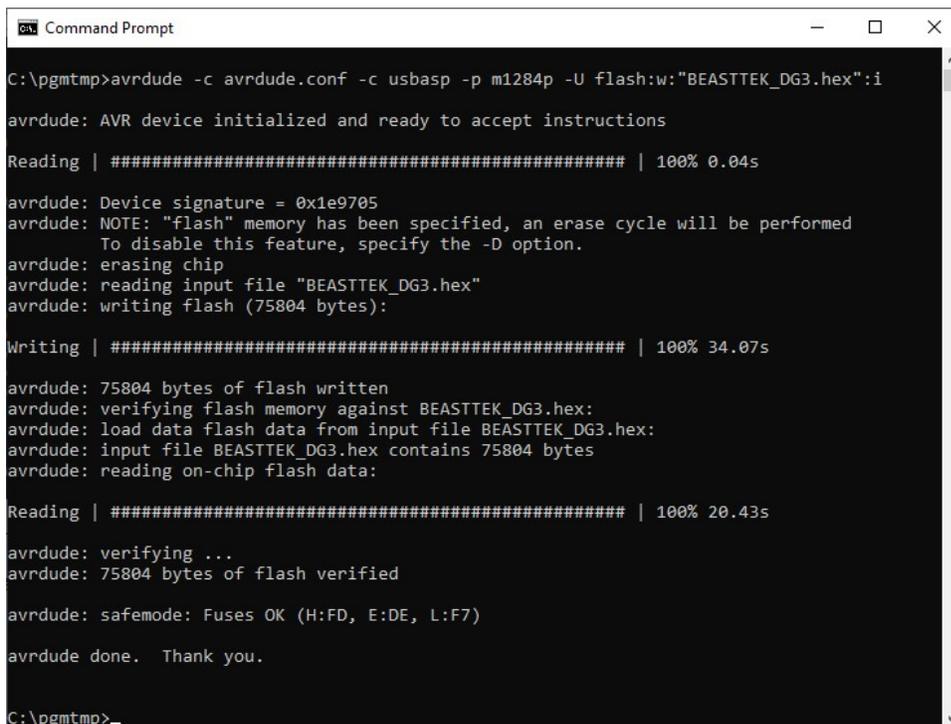
Directory of C:\pgmtmp

19/11/2020  11:32 PM  <DIR>          .
19/11/2020  11:32 PM  <DIR>          ..
30/10/2018  02:36 PM             483,570 avrdude.conf
16/04/2015  05:00 AM             407,040 avrdude.exe
16/11/2020  10:33 PM             213,245 BEASTTEK_DG3.hex
3 File(s)    1,103,855 bytes
2 Dir(s)    26,631,798,784 bytes free

C:\pgmtmp>
```

The command to program is as follows:

```
avrdude -C "avrdude.conf" -c usbasp -p m1284p -U flash:w:"BEASTTEK_DG3.hex":i
```



```
Command Prompt
C:\pgmtmp>avrdude -c avrdude.conf -c usbasp -p m1284p -U flash:w:"BEASTTEK_DG3.hex":i
avrdude: AVR device initialized and ready to accept instructions

Reading | ##### | 100% 0.04s

avrdude: Device signature = 0x1e9705
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 "BEASTTEK_DG3.hex"
avrdude: writing flash (75804 bytes):

Writing | ##### | 100% 34.07s

avrdude: 75804 bytes of flash written
avrdude: verifying flash memory against BEASTTEK_DG3.hex:
avrdude: load data flash data from input file BEASTTEK_DG3.hex:
avrdude: input file BEASTTEK_DG3.hex contains 75804 bytes
avrdude: reading on-chip flash data:

Reading | ##### | 100% 20.43s

avrdude: verifying ...
avrdude: 75804 bytes of flash verified

avrdude: safemode: Fuses OK (H:FD, E:DE, L:F7)

avrdude done. Thank you.

C:\pgmtmp>
```

# Connections For Different Programmers

The picture below shows the individual pinouts of the ICSP connector on the main PCB board. This is provided for clarity and also in case you are using a different programmer with a different pinout/cable.

