

# How to flash GNSS using Dr Watson

This tutorial demonstrates how to flash [Zubax GNSS 2](#) using Dr. Watson on a bunker laptop.

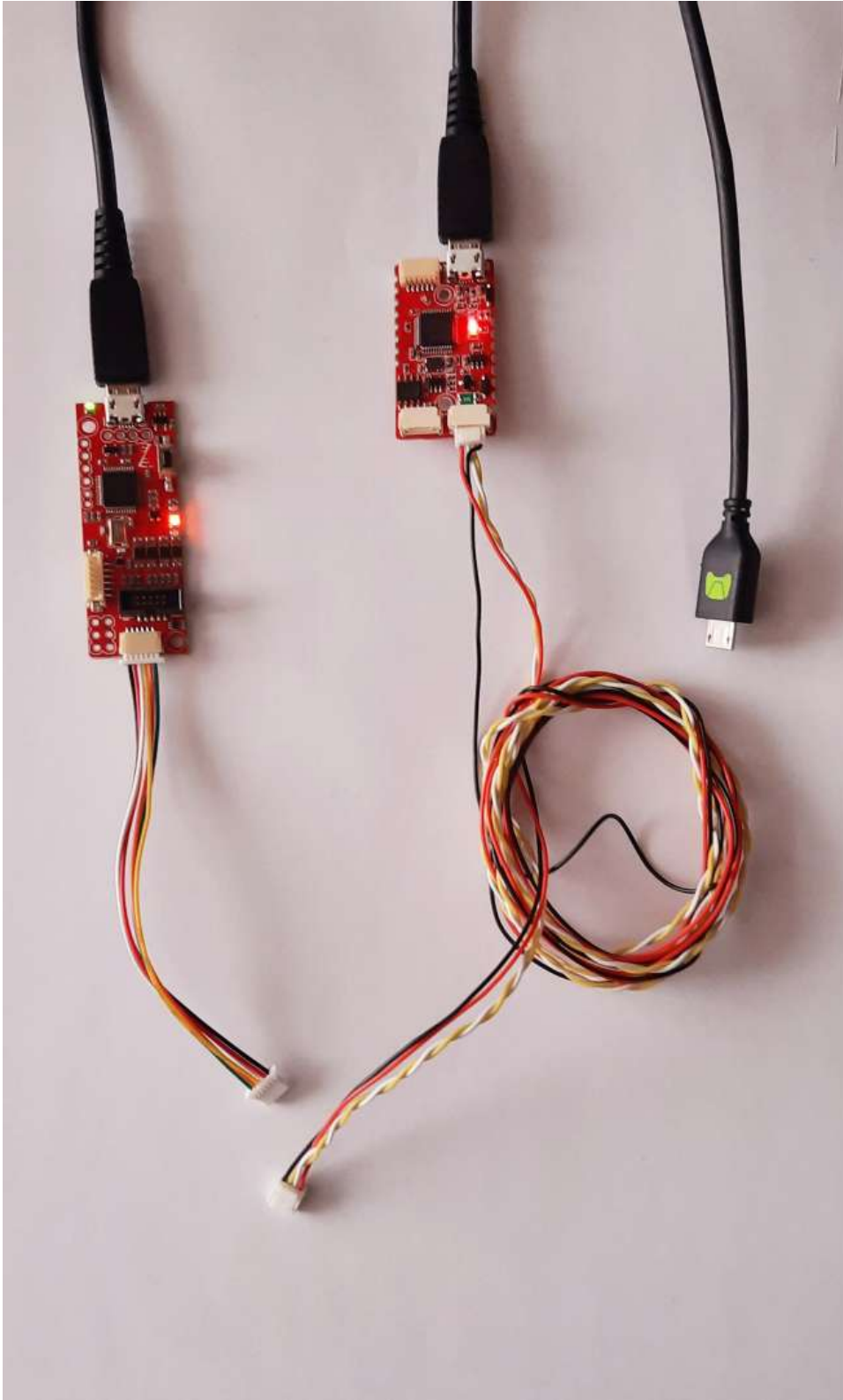
## Required parts

The following parts will be needed:

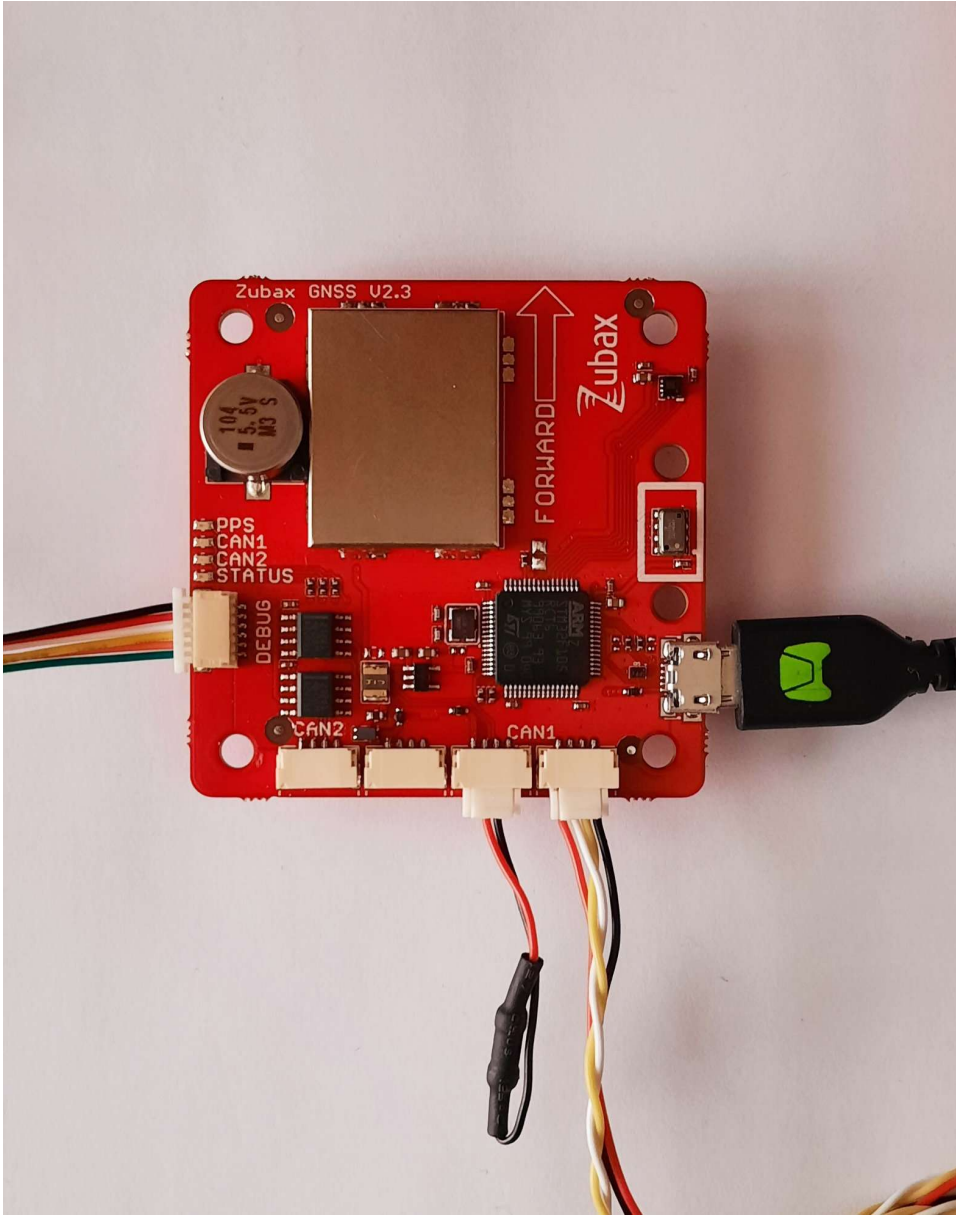
- 1 x Zubax Babel
- 1 x Dronecode Probe v2.3
- 1 x UAVCAN Micro patch cable
- 1 x DCD-M Cable
- 1 x UAVCAN/CAN Micro termination plug
- 3 X Micro USB cable Type B

## Connecting

Connect all hardware to bunker laptop.



- Connect DroneCode Probe to the debug connector.
- Connect CAN to the first CAN1 connector on the device; terminate the other CAN1 connector.
- Connect USB to the device.



## Flashing

Use `dmesg` command to find out the port number of Zubax Babel (alternatively, use udev symlinks like `/dev/serial/by-id/*Babel*`).

```
farzansaleem@farzansaleem-OMEN-by-HP-Laptop-15-ce0xx: ~/Downloads/zubax_gnss/te
[ 4011.678026] usb 1-2.1: USB disconnect, device number 8
[ 4011.949738] usb 1-2: new high-speed USB device number 13 using xhci_hcd
[ 4012.107854] usb 1-2: New USB device found, idVendor=0bda, idProduct=5411
[ 4012.107856] usb 1-2: New USB device strings: Mfr=1, Product=2, SerialNumber=0
[ 4012.107857] usb 1-2: Product: 4-Port USB 2.0 Hub
[ 4012.107857] usb 1-2: Manufacturer: Generic
[ 4012.108676] hub 1-2:1.0: USB hub found
[ 4012.109256] hub 1-2:1.0: 4 ports detected
[ 4012.180196] usb 1-2: USB disconnect, device number 13
[ 4014.717729] usb 1-2: new high-speed USB device number 14 using xhci_hcd
[ 4014.876908] usb 1-2: New USB device found, idVendor=0bda, idProduct=5411
[ 4014.876914] usb 1-2: New USB device strings: Mfr=1, Product=2, SerialNumber=0
[ 4014.876918] usb 1-2: Product: 4-Port USB 2.0 Hub
[ 4014.876921] usb 1-2: Manufacturer: Generic
[ 4014.878016] hub 1-2:1.0: USB hub found
[ 4014.879366] hub 1-2:1.0: 4 ports detected
[ 4015.169621] usb 1-2.1: new full-speed USB device number 15 using xhci_hcd
[ 4015.270487] usb 1-2.1: New USB device found, idVendor=1d50, idProduct=60c7
[ 4015.270489] usb 1-2.1: New USB device strings: Mfr=1, Product=2, SerialNumber
=3
[ 4015.270491] usb 1-2.1: Product: Zubax Babel
[ 4015.270492] usb 1-2.1: Manufacturer: Zubax Robotics
[ 4015.270492] usb 1-2.1: SerialNumber: 3F003E000757424E3430302000000000
[ 4015.271194] cdc_acm 1-2.1:1.0: ttyACM0: USB ACM device
```

From the Dr Watson root directory ( /zubax\_gnss/tools/drwatson) execute.

```
sudo ./drwatson_zubax_gnss.py /dev/ttyACM0
```

Note: Passed argument should be the serial port number of the attached Zubax Babel

```
farzansaleem@farzansaleem-OMEN-by-HP-Laptop-15-ce0xx: ~/Downloads/zubax_gnss/...
farzansaleem@farzansaleem-OMEN-by-HP-Laptop-15-ce0xx:~/Downloads/zubax_gnss/tool
s/drwatson$ sudo ./drwatson_zubax_gnss.py /dev/ttyACM0
[sudo] password for farzansaleem:
Color legend:
  FOLLOW INSTRUCTIONS IN GREEN
  ERRORS ARE REPORTED IN RED
  WARNINGS ARE REPORTED IN YELLOW
  INFO MESSAGES ARE PRINTED IN WHITE
Press CTRL+C to exit the application. In case of technical difficulties,
please send the file 'drwatson.log' to licensing@zubax.com.

Usage instructions:

1. Connect a CAN adapter to this computer. Supported adapters are:
1.1. SLCAN-compliant adapters. If you're using an SLCAN adapter,
    use its serial port name as a CAN interface name (e.g. "/dev/ttyACM0").
1.2. SocketCAN-compatible adapters. In this case it is recommended to use
    8devices USB2CAN. The correct interface name would be "can0".

2. Connect exactly one DroneCode Probe to this computer.
   For more info refer to https://kb.zubax.com/x/iIAh.

3. Follow the instructions printed in green. If you have any questions,
   don't hesitate to reach licensing@zubax.com, or use the emergency
   contacts provided to you earlier.

Checking interfaces...
GDB port is OK
CLI port is OK
slcand: no process found
CAN interface is OK
Enter your credentials for 'licensing.zubax.com'
Login [ZubaxRobotics]:
```

After that follow the on-screen instructions to complete the flashing process.