

## Instruction for WS90,WS80 firmware flashing with linux or macOS

1.Install software:

```
>> brew install dfu-util
```

Or:

```
>> sudo apt install dfu-util
```

2.download the firmware folder from our server, unzip the file and copy the latest version of the firmware to current folder: (for example: the current firmware of ws90\_v1.3.3.dfu is loaded here in this example. Your final version can be different)

```
>> WS90_V1.3.3.dfu
```

3. Connect the USB cable between your ws90/ws80 and the computer. Press “reset” button from the device. The LED will start to flash rapidly: indicating the device is detected by the computer in USB connection mode).

4. You may confirm the device with this command:

```
>> sudo dfu-util -l
```

If correctly installed, it will show: Found DFU: [0483:df11] ver=0200, devnum=19, cfg=1, intf=0, path="2-2.1", alt=0, name="@Internal Flash /0x08000000/192\*256ba,320\*256bg", serial="00000000001A"

5. Download the firmware:

```
>> sudo dfu-util -a 0 -t 512 -D WS90_V1.3.3.dfu
```

It will show this for flashing write status:

```
Download [=====] 100% 53336 bytes
```

Download done.

done parsing DfuSe file

If failed, please repeat from step 3 again.

6. Unplug usb cable , press “reset” button. The LED will be on for 4s and then in normal operation mode.

```
lcg@ubuntu:~$ sudo dfu-util -l
[sudo] password for lcg:
dfu-util 0.9

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Match vendor ID from file: 0483
Match product ID from file: df11
Opening DFU capable USB device...
ID 0483:df11
Run-time device DFU version 011a
Claiming USB DFU Interface...
Setting Alternate Setting #0 ...
Determining device status: state = dfuIDLE, status = 0
dfuIDLE, continuing
DFU mode device DFU version 011a
DfuSe interface name: "Internal Flash"
dfu-util: Non-valid multiplier 'b', assuming bytes
dfu-util: Non-valid multiplier 'b', assuming bytes
file contains 1 DFU images
parsing DFU image 1
image for alternate setting 0, (1 elements, total size = 53344)
parsing element 1, address = 0x0800c000, size = 53336
Download [=====] 100% 53336 bytes
Download done.
done parsing DfuSe file
lcg@ubuntu:~$
```