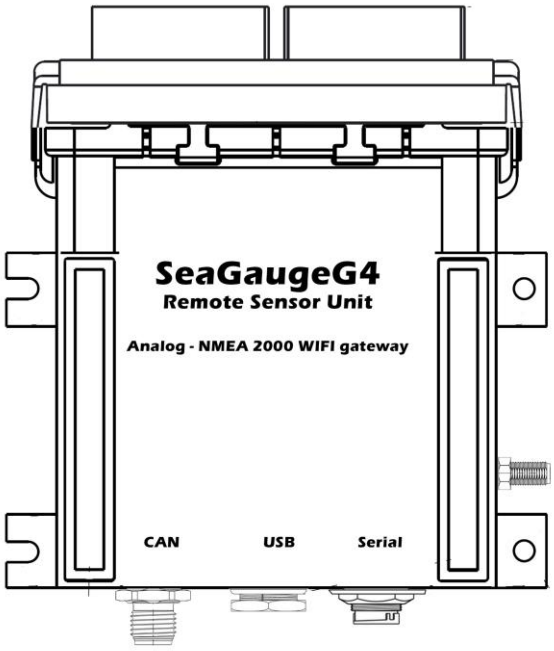
Application Note

ANSGG425090901 – SeaGauge G4 Firmware update via USB



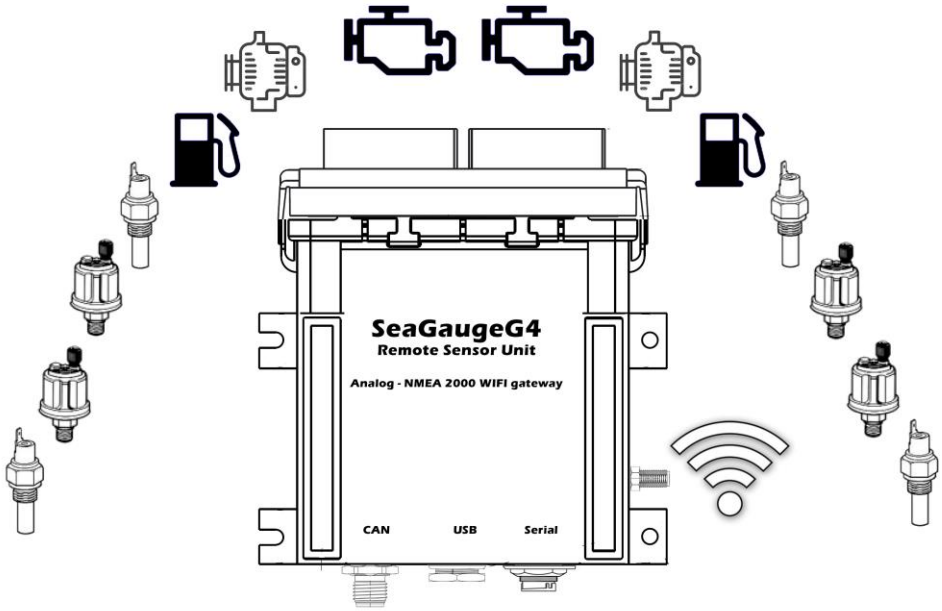
Chetco Digital Instruments, Inc
Revision 090925

SeaGaugeG4 supports up to 12 resistive or voltage style analog sensor inputs and 3 pulse style inputs.

SeaGaugeG4 also provides 4 additional indicator/status inputs (18VDC max) and 4 relay driver (12VDC) outputs

Sensors are connected to the dual 20 pin Molex style connectors and analog voltages converted to digital protocol compatible with CAN bus and WIFI interfaces.

SeaGaugeG4 can trigger multiple alarms based on sensor voltages from any of the 12 analog inputs and 3 pulse inputs



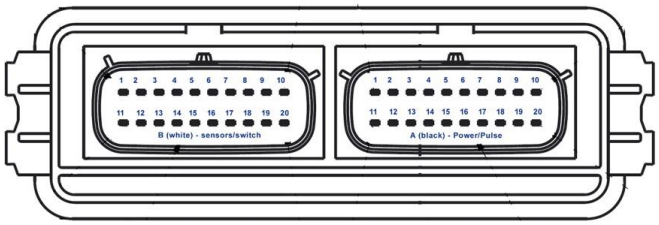
SeaGaugeG4 supports up to 12 analog sensor inputs and 4 indicator inputs via a 20 pin Molex MX150 plug (black) and 3 pulse style inputs via separate 20 pin Molex MX150 plug (white).

Molex style crimp pins are provided to attach 18 gauge tinned wire and insert into appropriate locations in supplied plugs.

The 4 indicator inputs (INC00-INC03) are used to provide on/off status for 12VDC circuits. When voltages of 10V to 18VDC are applied, the associated indicator channel will be set. When no voltage is applied, the indicator channel is cleared.

Each indicator channel has a runtime accumulator that counts the number of seconds the channel is active up to 16,777,216 seconds

SeaGaugeG4 Header

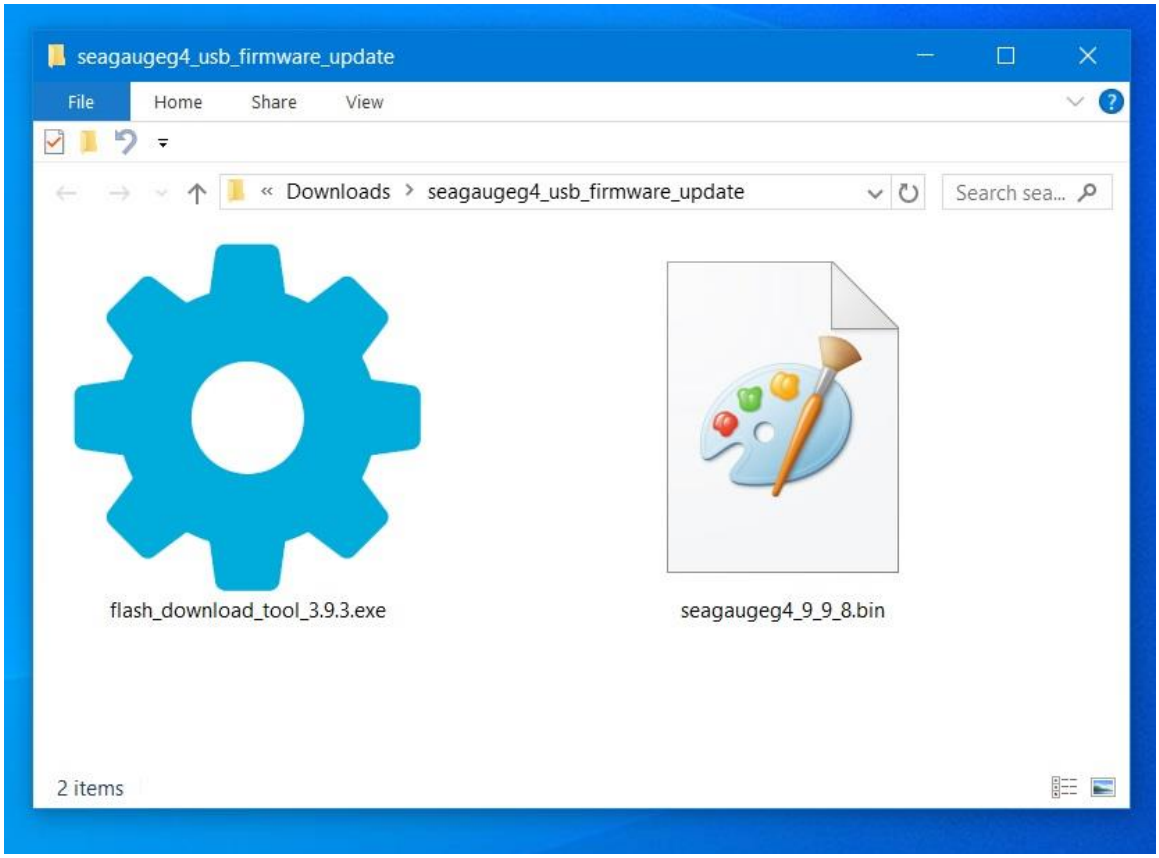


B1 - NC	B11 - NC	A1 - SW5	A11 – SW4
B2 - NC	B12 - NC	A2 - SW7	A12 – SW6
B3 – SEN10 (SBOOST)	B13 – SEN11 (STRAN)	A3 - NC	A13 - NC
B4 – SEN04 (STEMP)	B14 – SEN05 (SOIL)	A4 – P1 (SRPM)	A14 - GND
B5 – SEN06 (SFUEL)	B15 – SEN07 (SBAT)	A5 – P0 (PRPM)	A15 - GND
B6 – SEN00 (PBAT)	B16 – SEN01 (PFUEL)	A6 – P2	A16 - GND
B7 – SEN02 (PTEMP)	B17 – SEN03 (POIL)	A7 – 5VOUT	A17 – 5VOUT
B8 – SEN08 (PBOOST)	B18 – SEN09 (PTRAN)	A8 - GND	A18 - GND
B9 – INC03	B19 – INC02	A9 – 12VIN	A19 = 12VIN
B10 – INC01	B20 – INC00	A10 - NC	A20 - NC

SeaGaugeG4 firmware can be updated using several methods including local SD card and over the internet using the HelmSmart-Cloud.com service.

This application note describes how use a direct connection via the SeaGaugeG4 USB port to a Windows OS 11/10 PC/laptop using the supplied download utility.

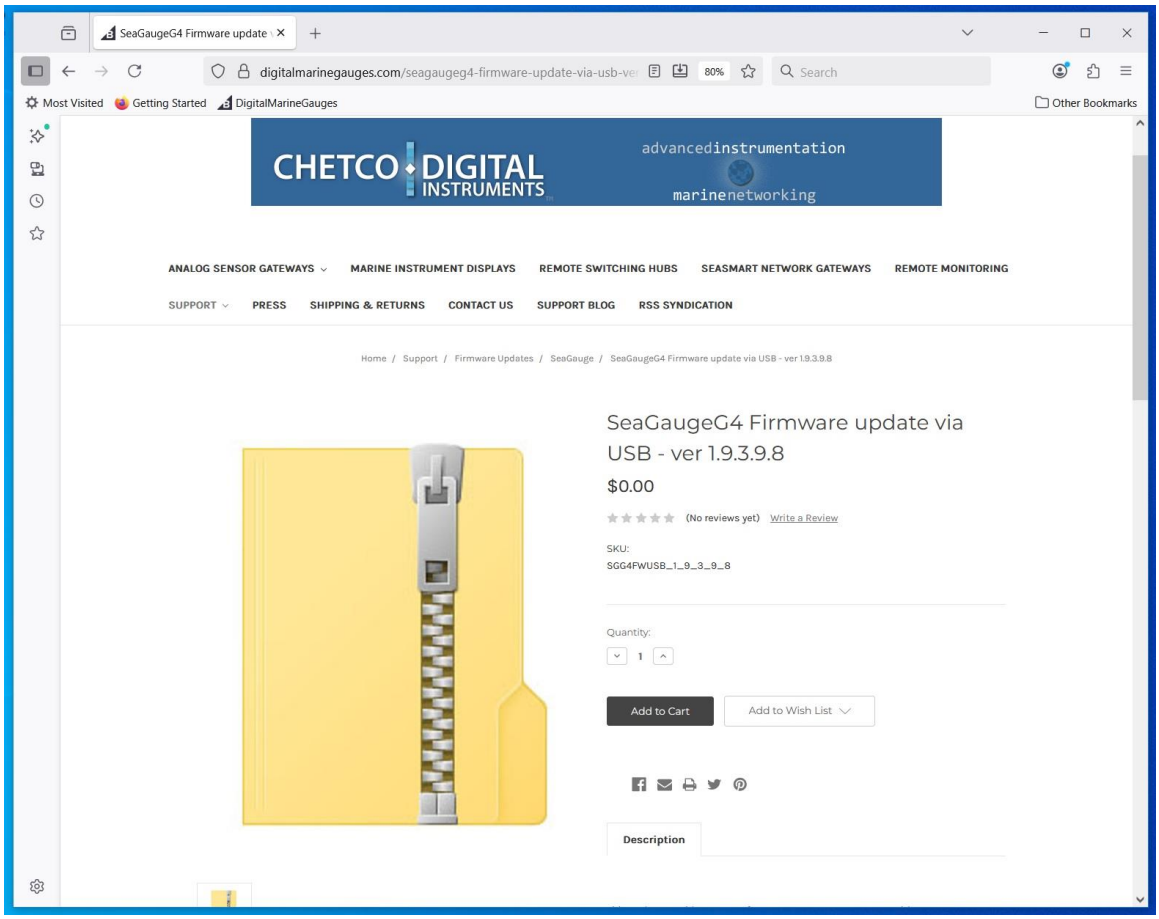
Performing a firmware update via the USB port allows complete erase and restore using a single image file and restores to factory defaults



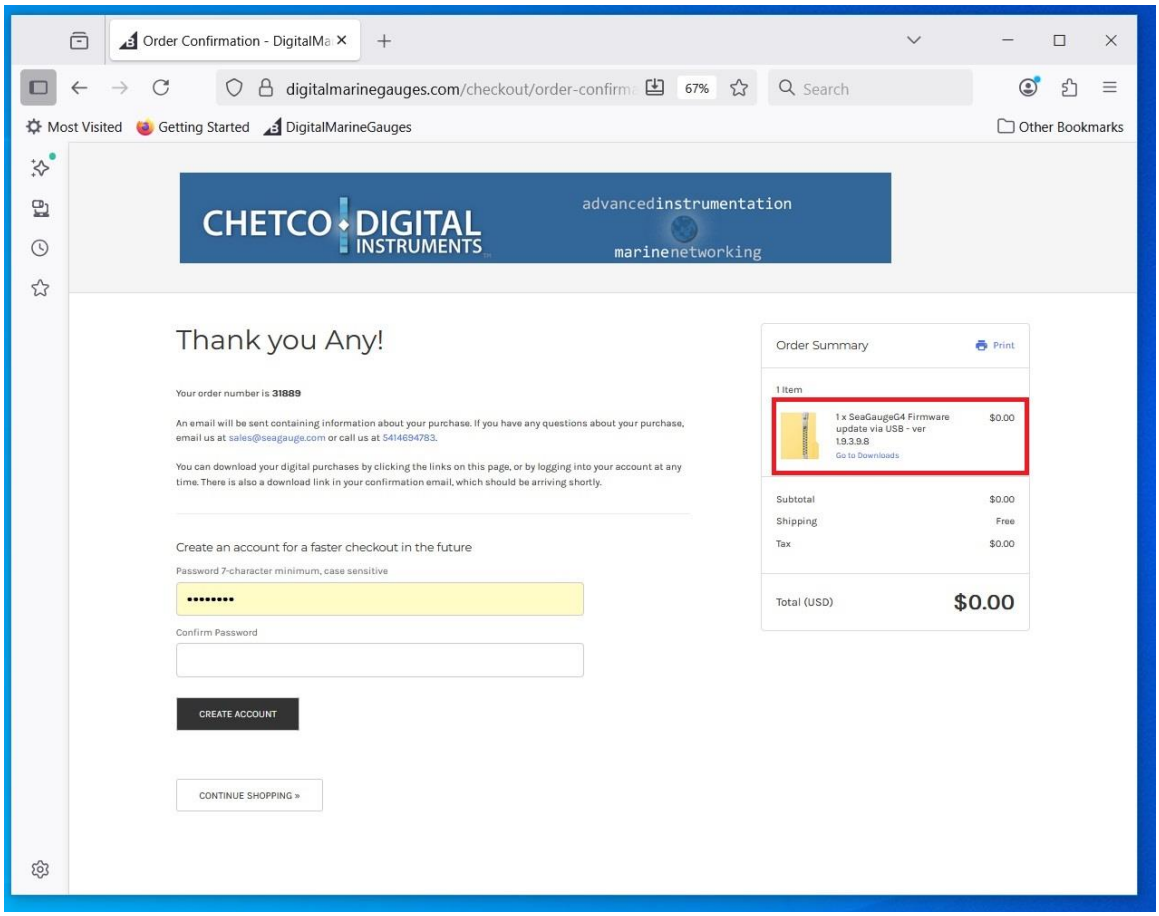
To perform a direct update via USB you will need to download and install the latest firmware package from the www.digitalmarinegauges.com website which can found under https://digitalmarinegauges.com/support/firmware-updates/seagauge/

Select the most recent version and Add to Cart

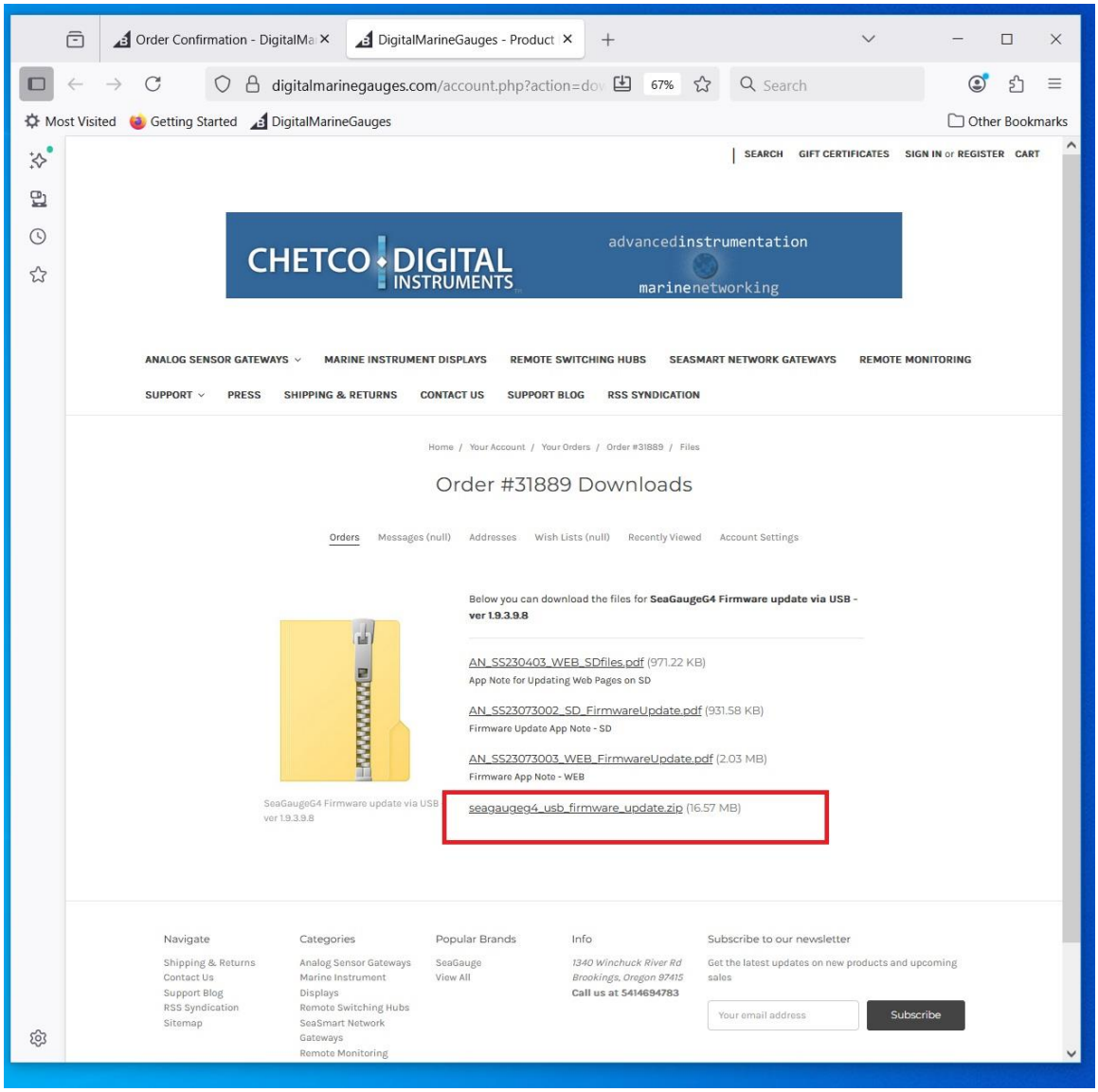
You will receive the download link once you complete checkout.



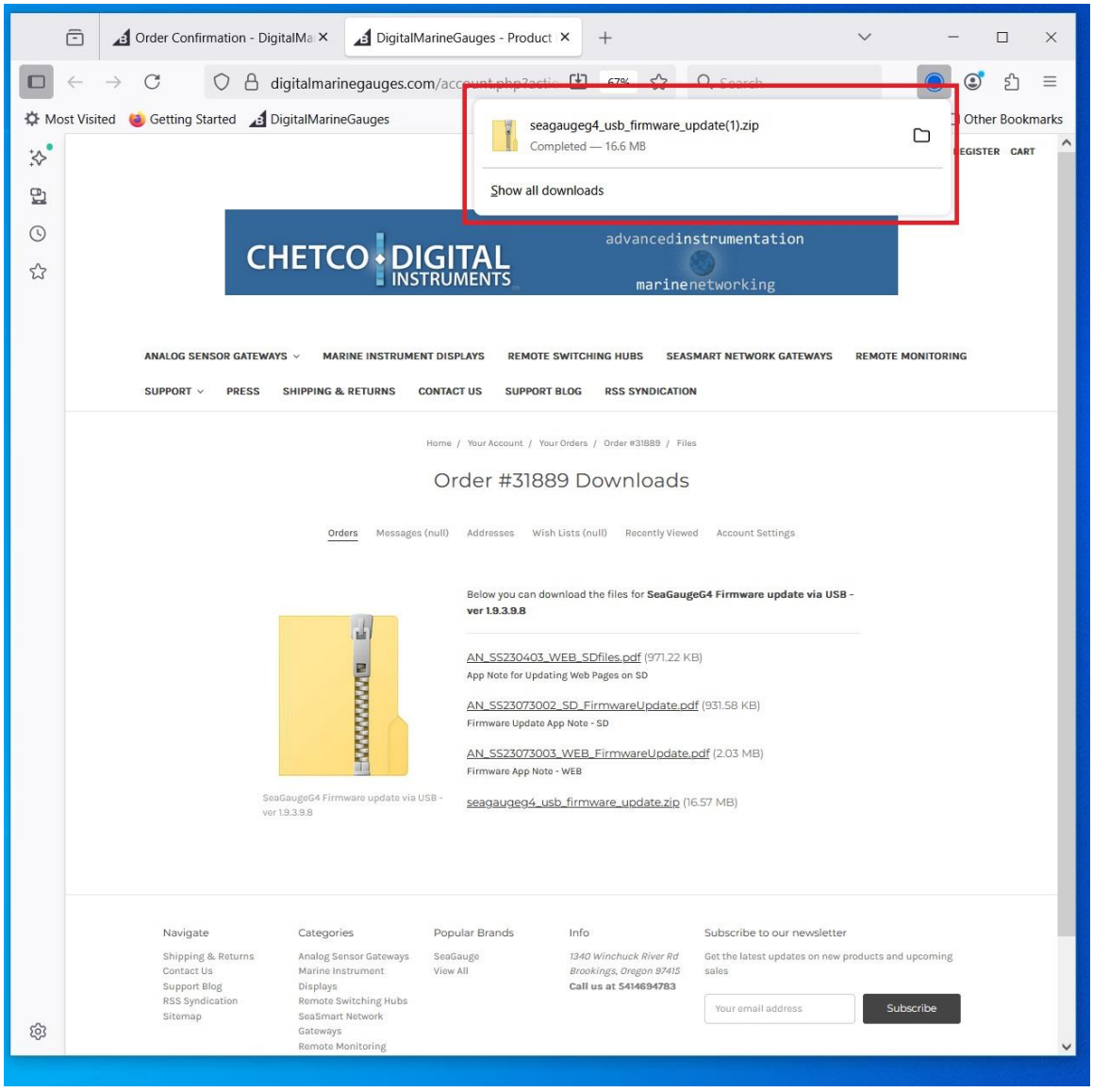
Once you complete the checkout process, you will get a download link in the right side pane



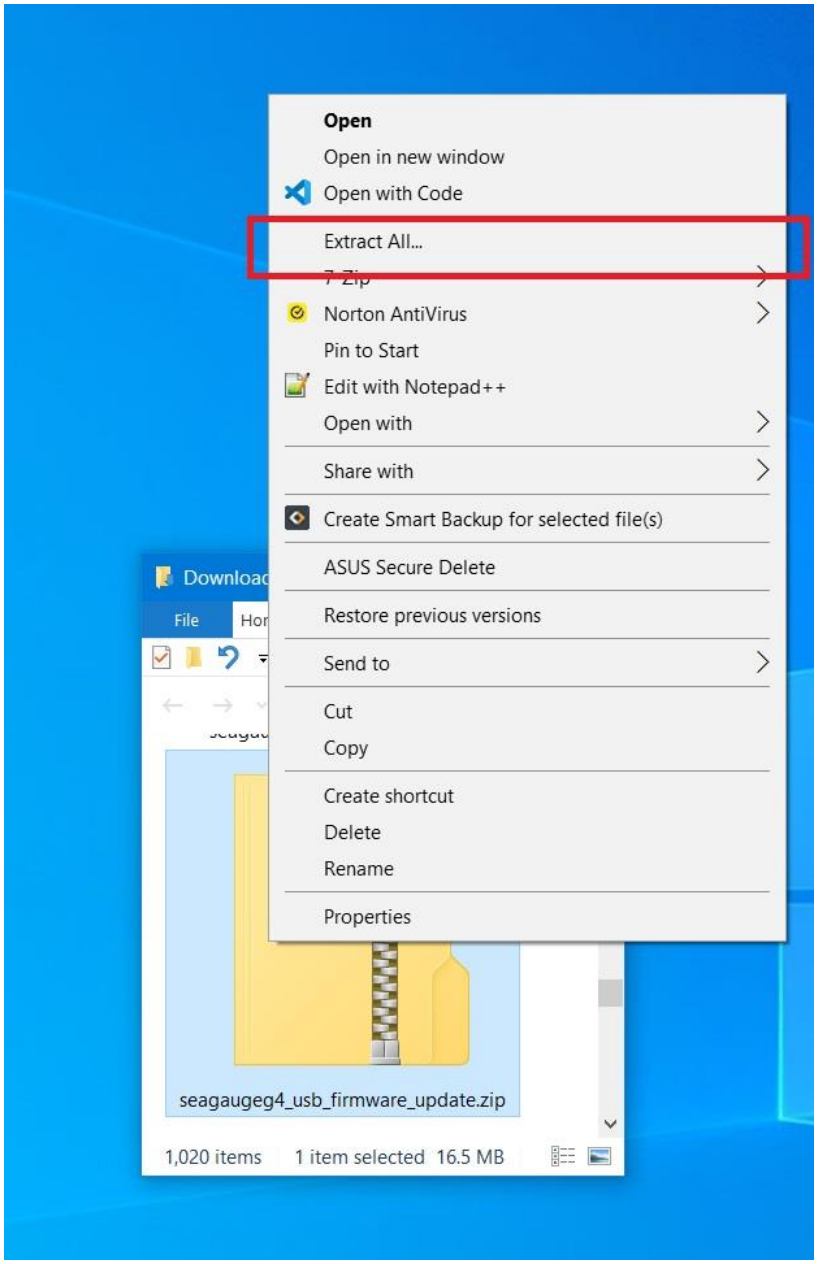
Select the .zip package for download to local PC/Laptop



The update package should automatically be stored in the local DOWNLOADS directory

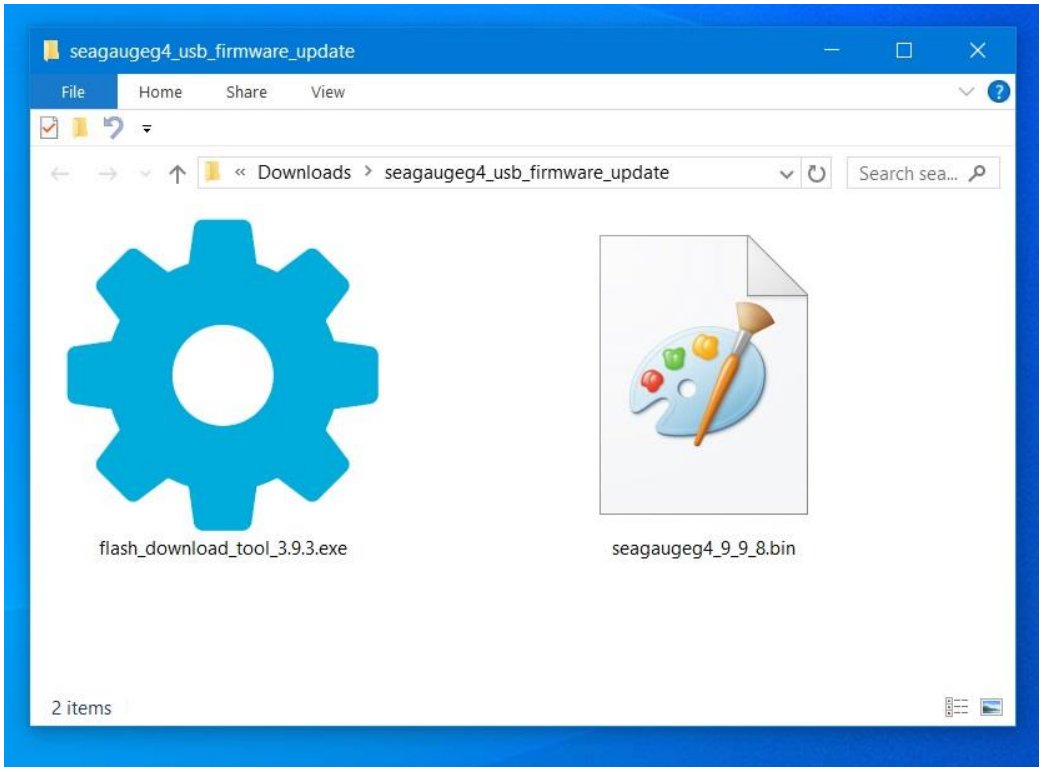


Right-click and extract the .zip contents.



There will be two files, the download utility and the firmware.bin image

The firmware.bin file contains all SPIFFS (WWW and Calibrations) along with the new firmware in a single file.

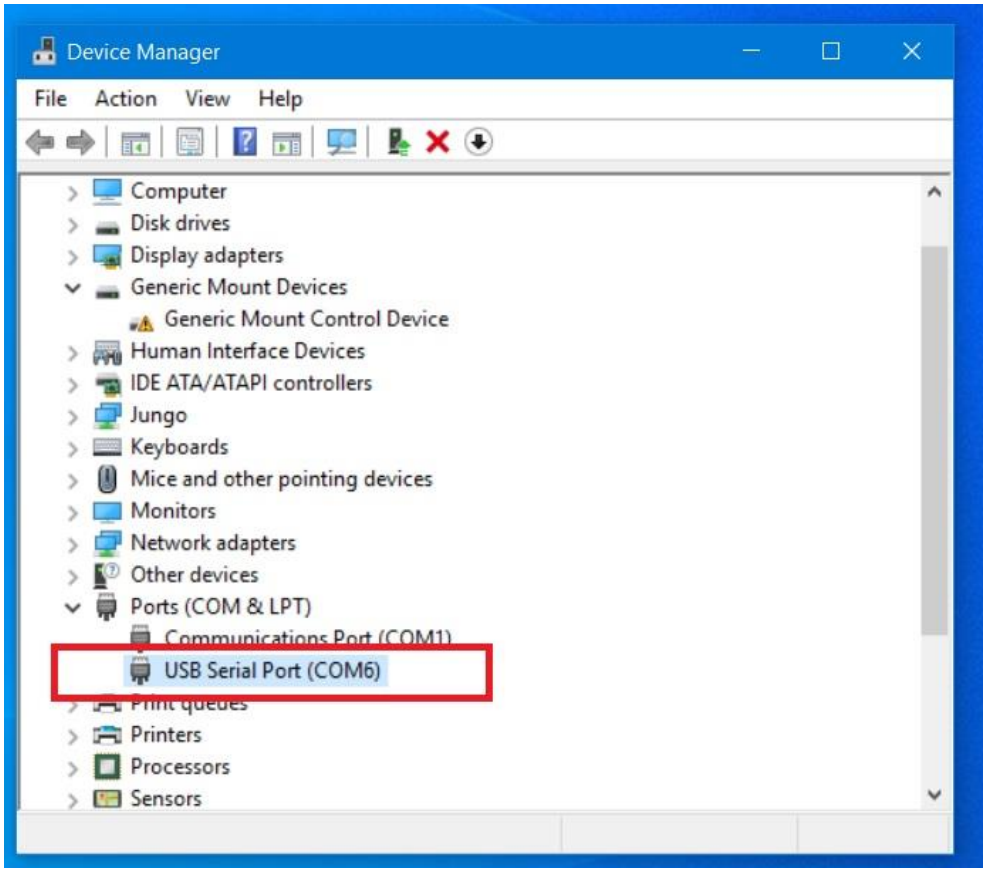


Connect the supplied USB cable to the SeaGaugeG4.

You can use Windows Device Manager to confirm connection and that all drivers properly loaded.

If connected to the Internet, Windows 11/10 will automatically scan and load the correct USB drivers. This may take several minutes the first time connection is made.

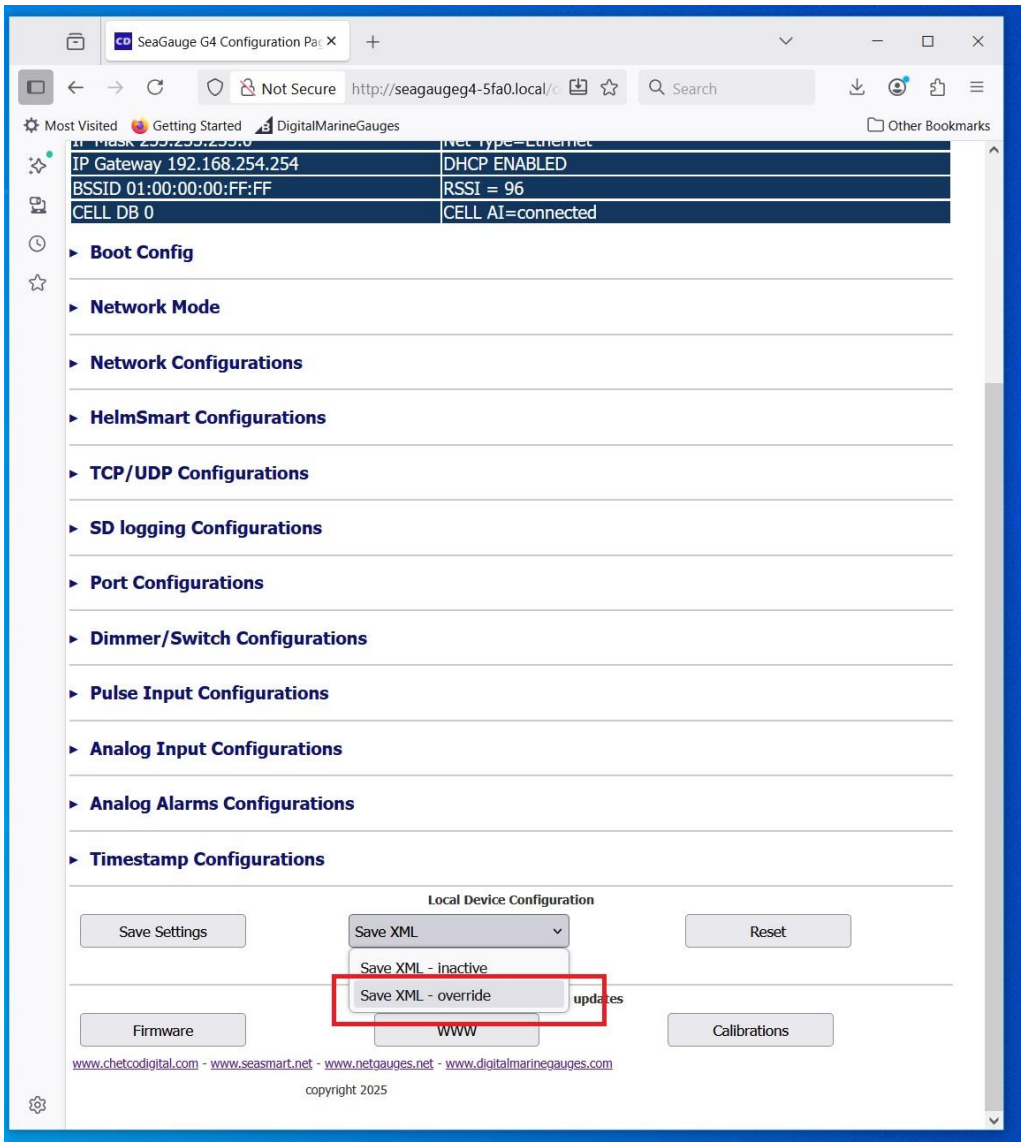
Make note of the automatically assigned COM port number as you will need to set this value in the download utility.



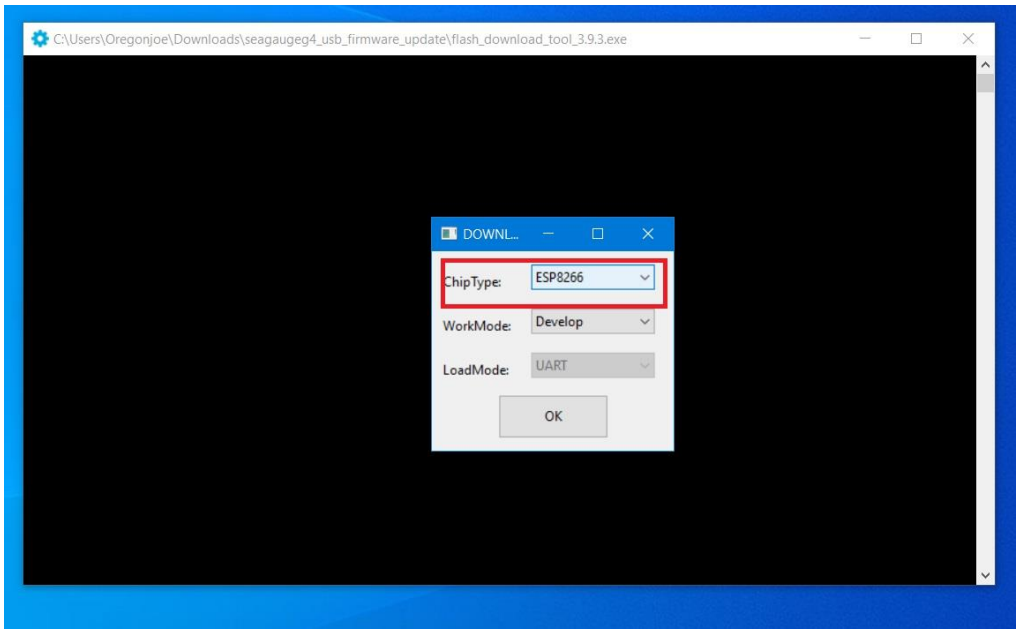
If you do not want to clear all user settings during the update – you can save all current settings to be restored after the update is completed.

On the SeaGaugeG4 Configuration page – select the Save XML – override option.

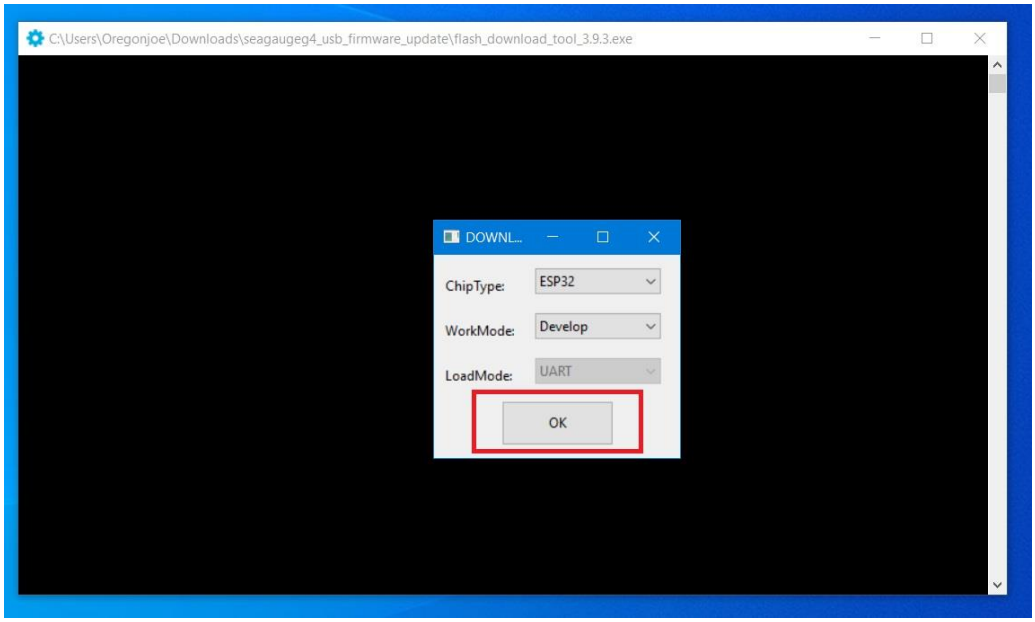
This will copy all current settings to the SD card Config folder and use them to override any defaults on each reboot.



Start the download utility

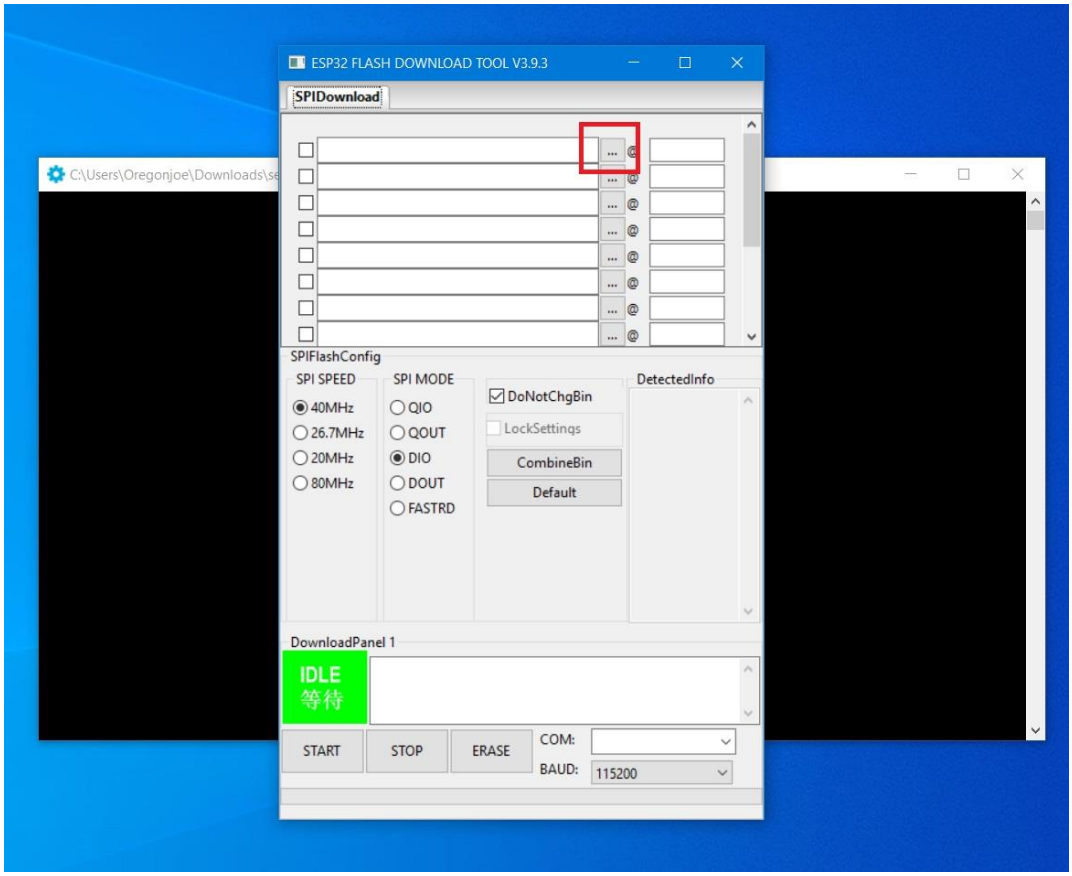


Set the Chip Type to ESP32 then OK

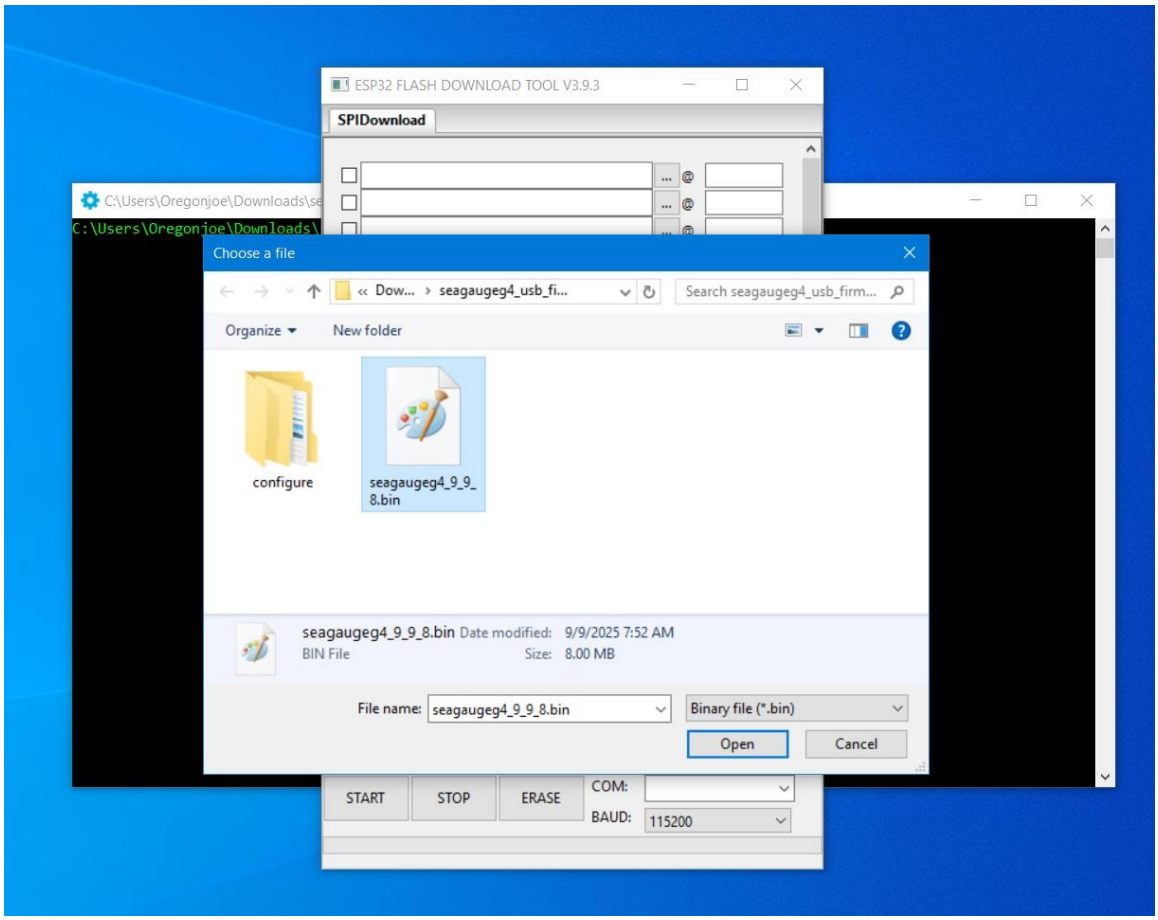


On first run, all parameters will be blank.

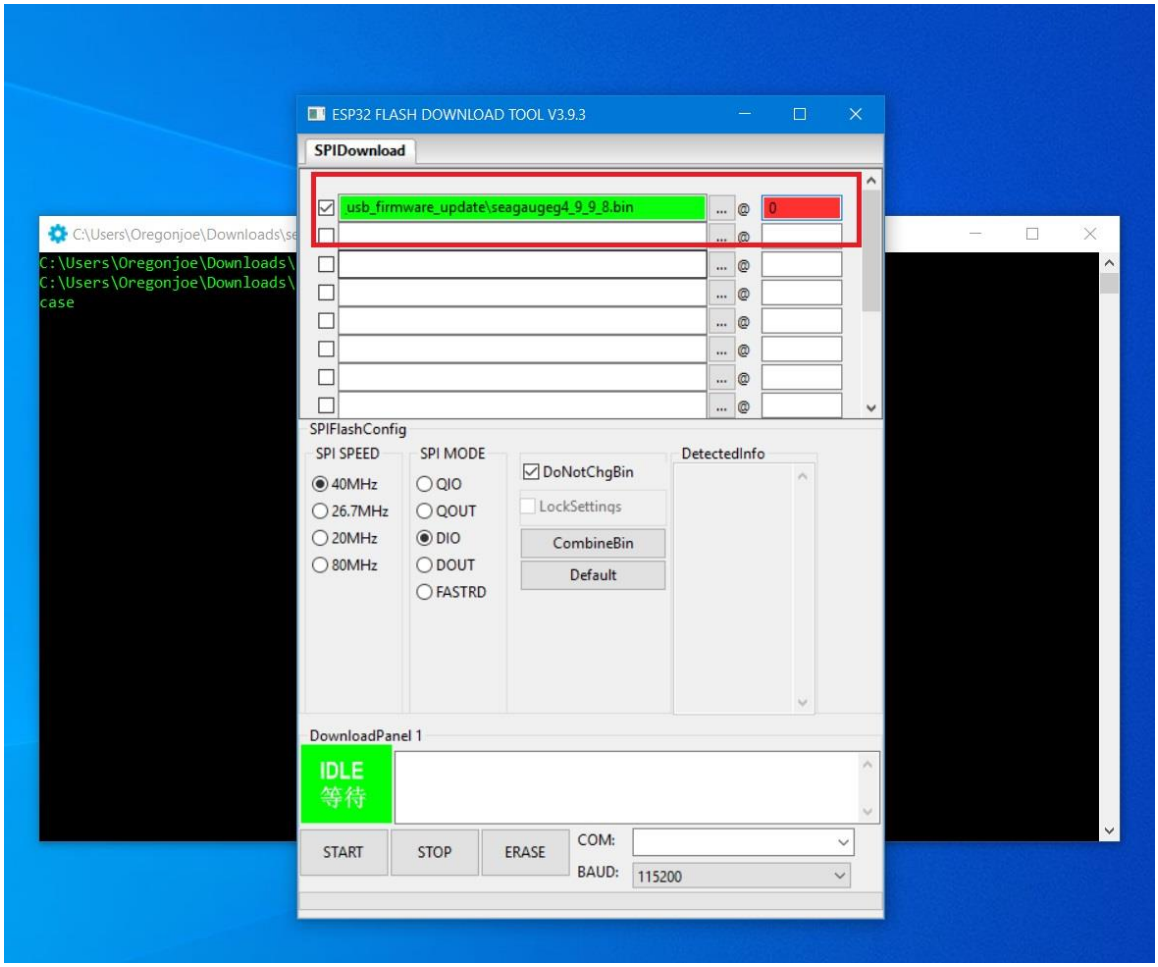
You will need to select the firmware file to use for download.



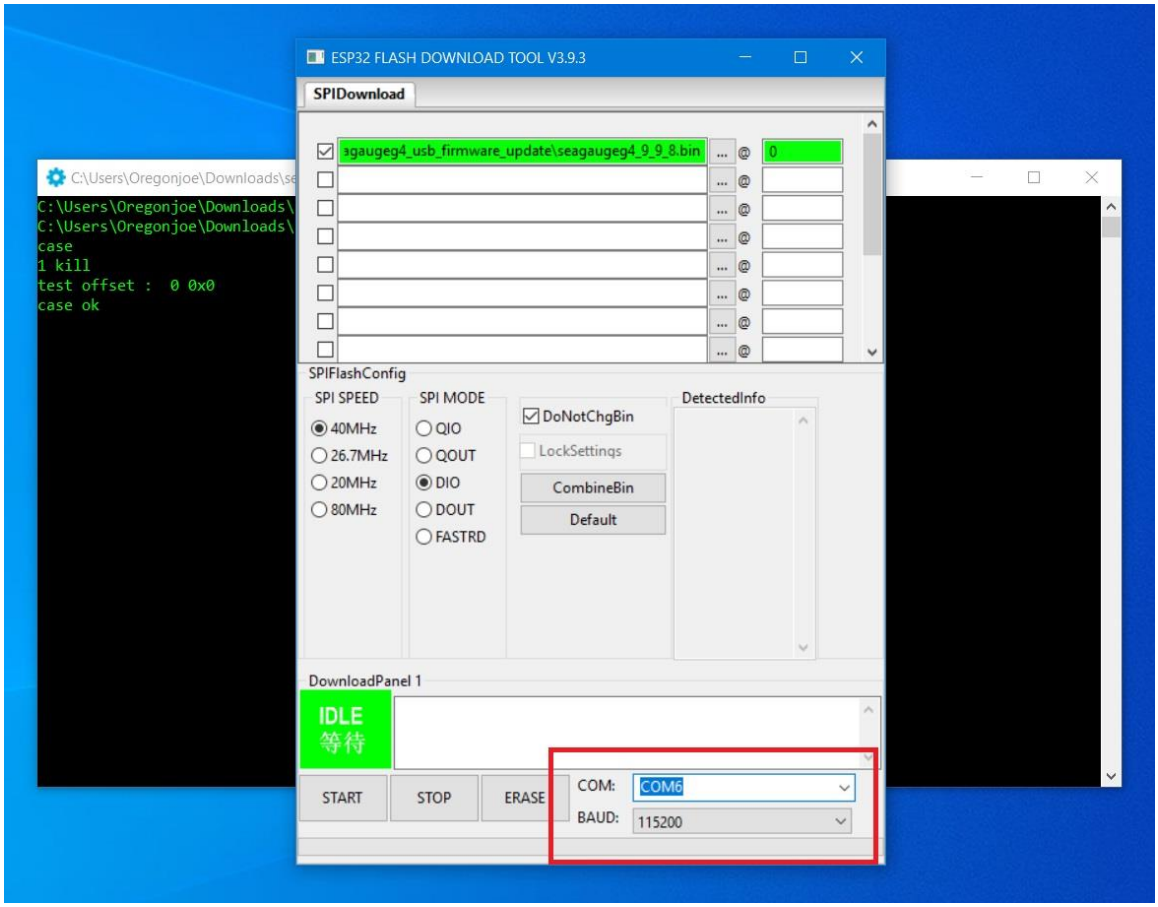
Select the firmware file



Be sure to enable the first line and set the offset address to 0 as shown



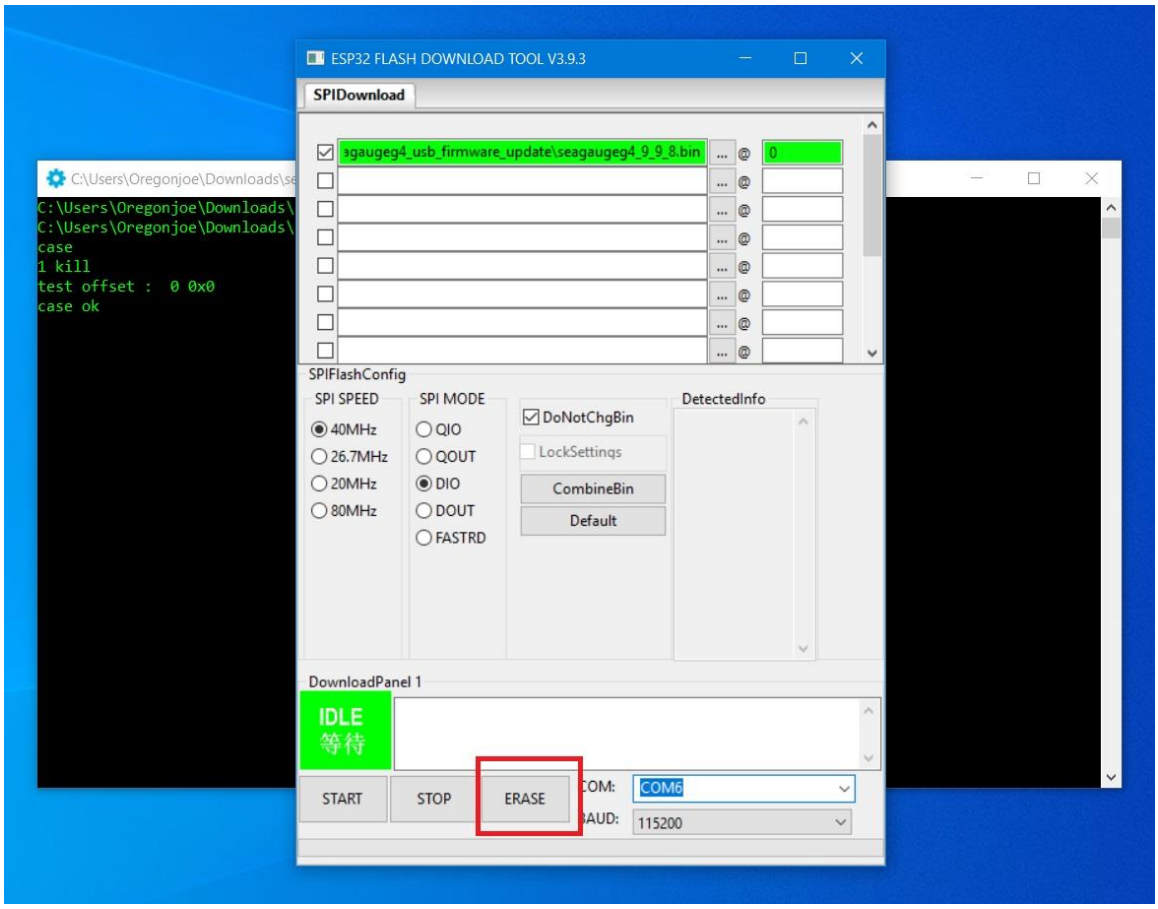
Set the COM PORT number and BAUD RATE to 115200



Select the ERASE option to clear all stored values and set unit back to factory defaults.

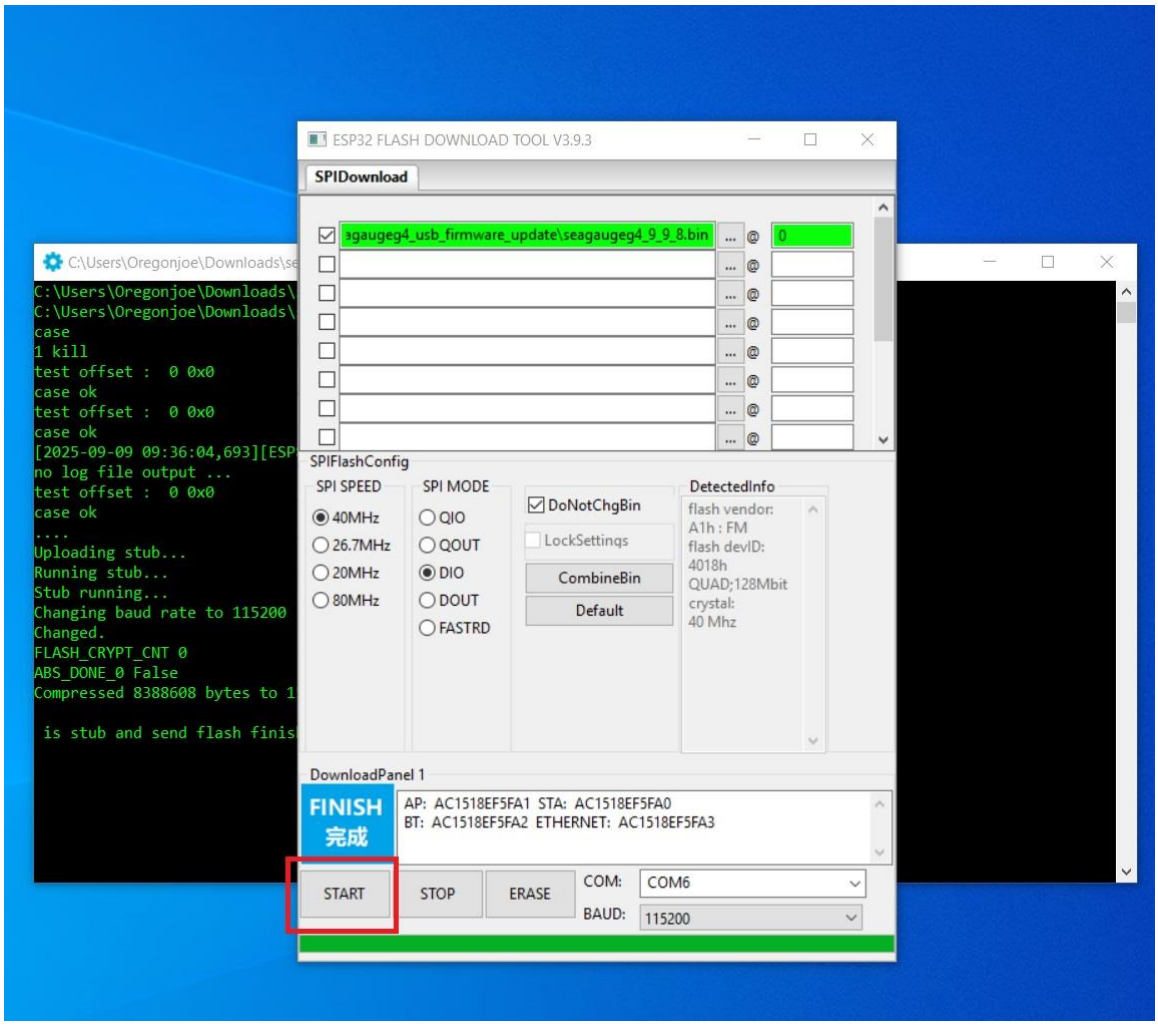
This will erase all user settings and set the WIFI connection back to AP mode

When doing a major update – it is recommended to ERASE first.



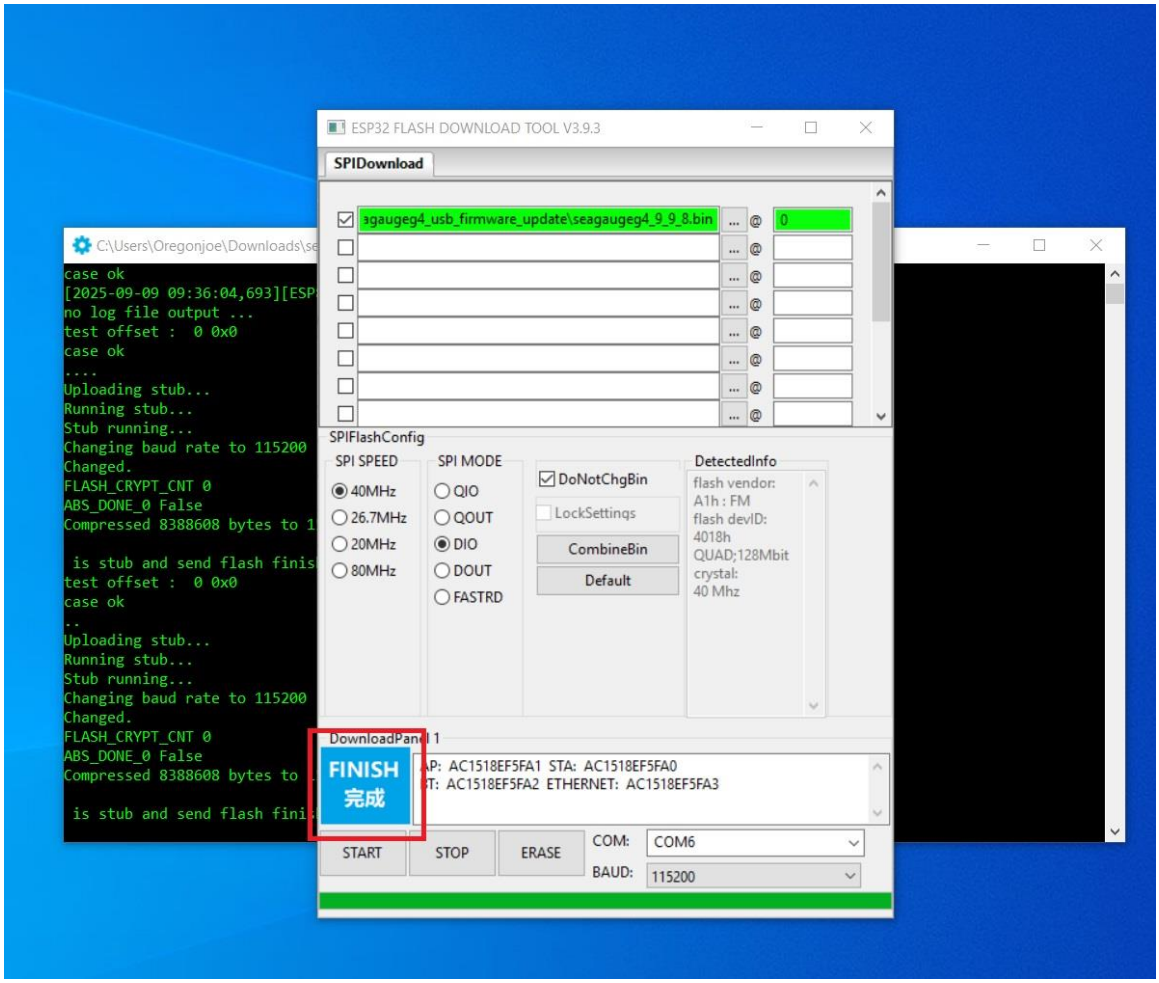
The ERASE may take some time to complete (several minutes).

Wait until the FINISH button is active then select START to perform the firmware update



The upload will take 1-2 minutes to complete and then the FINISH button will become active.

At this point the update is complete, and you can repower the SeaGaugeG4 unit.

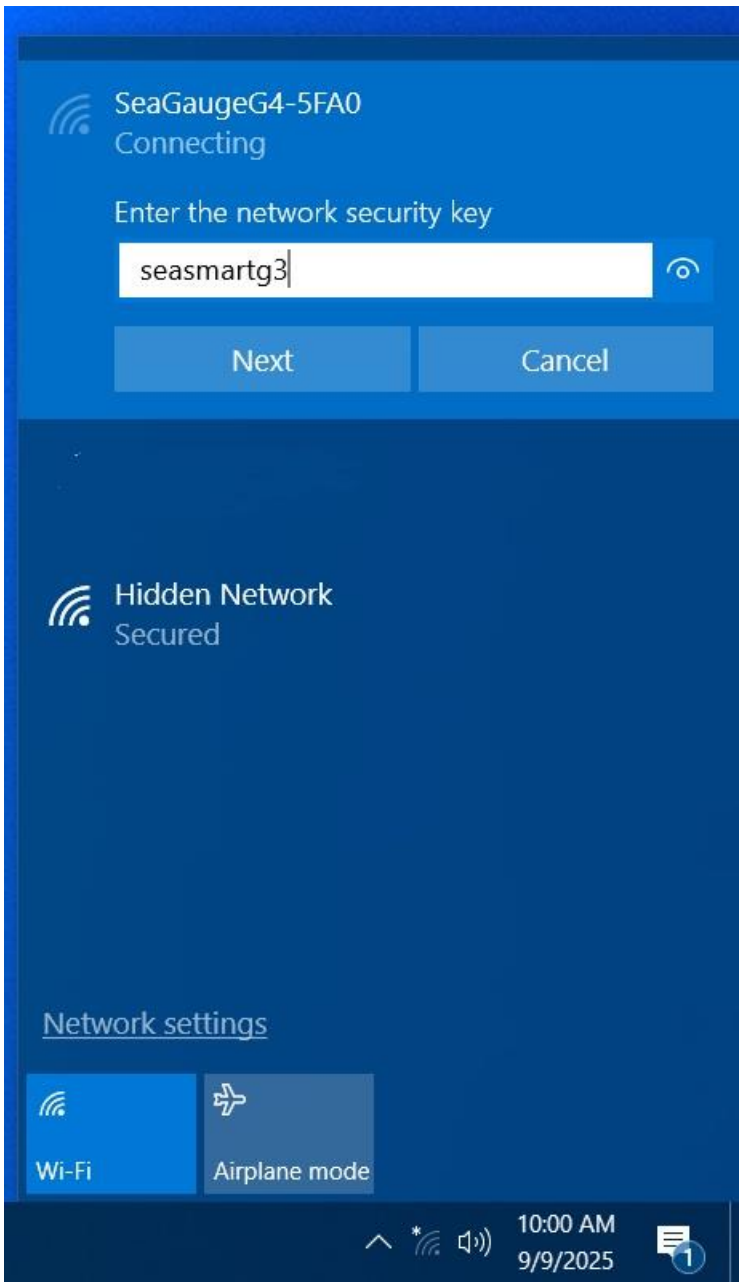


When SeaGaugeG4 reboots, it will be in factory defaults so you will need to connect to WIFI in ADHOC mode to continue reconfiguring.

Go to your WIFI settings and select the SeaGaugeG4-XXX device.

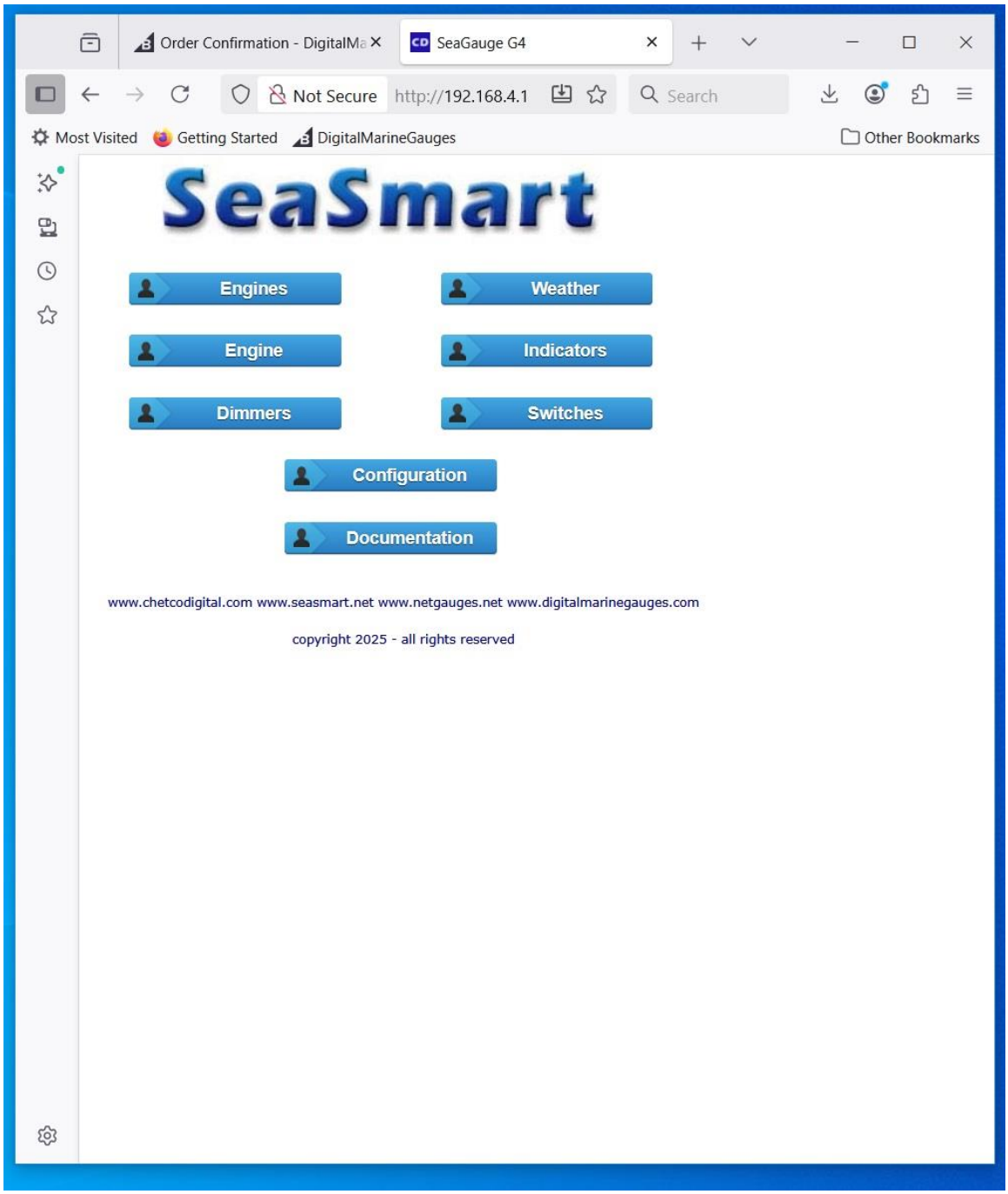
Note: you will not have internet access when connected directly to SeaGaugeG4 in ADHOC mode

Select the SeaGaugeG4-XXXX and enter the default password



Enter the default address for AP mode in any Web Browser (192.168.4.1)

Then select Configuration



Finally, verify the new Firmware Version matches the loaded file.