



SYSTEM-IN-PACKAGE



Using already learned knowledge for firmware writing

After the entire process of design, fabrication, assembly, and verification, it will be necessary to perform a write with the test board. This follows the process described in the Evaluation Board: Test Board Recording and Firmware Execution track.

- Use firmware writing features purchased from EVB on the assembled board

To perform firmware writing, you must follow these steps:

1. Use the ST RF Flasher as a recording software;
2. Set Jumpers P1 and P2 to start a new recording;
3. Make the firmware recording;
4. Check the connection of the PCB with the other Boards such as FTDI and the breakout board;
5. Connect the USB cable to the FTDI board.



Image 01: Connecting USB to the Test Board. Source: Source: The author.

6. Open the Device Manager on your computer and check which port the card has been connected to. A COM port will be shown under Ports (COM) and (LPT).

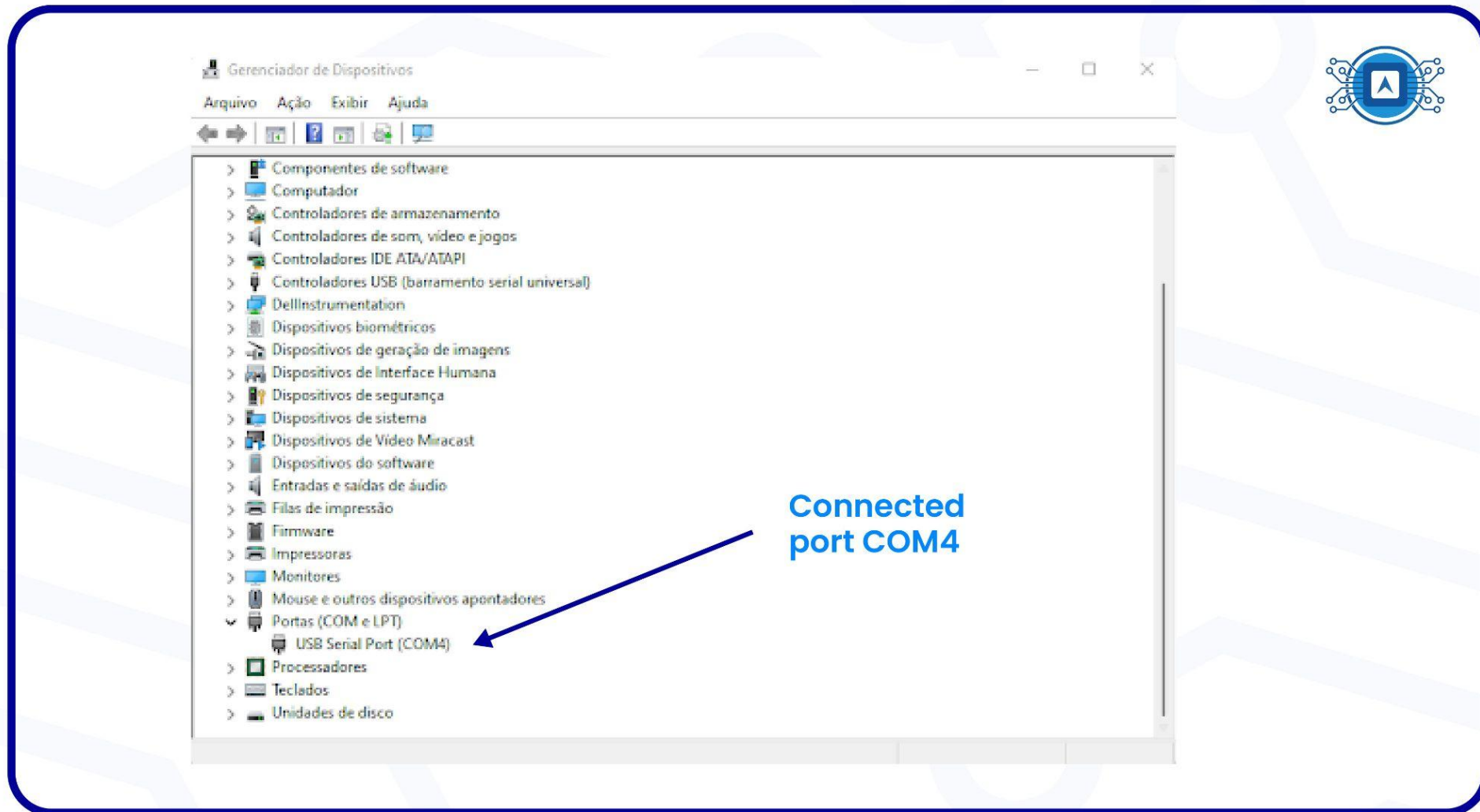


Image 02: Device Manager Screen. Source: Screenshot by the author.

7. Open the RF Flasher utility application.

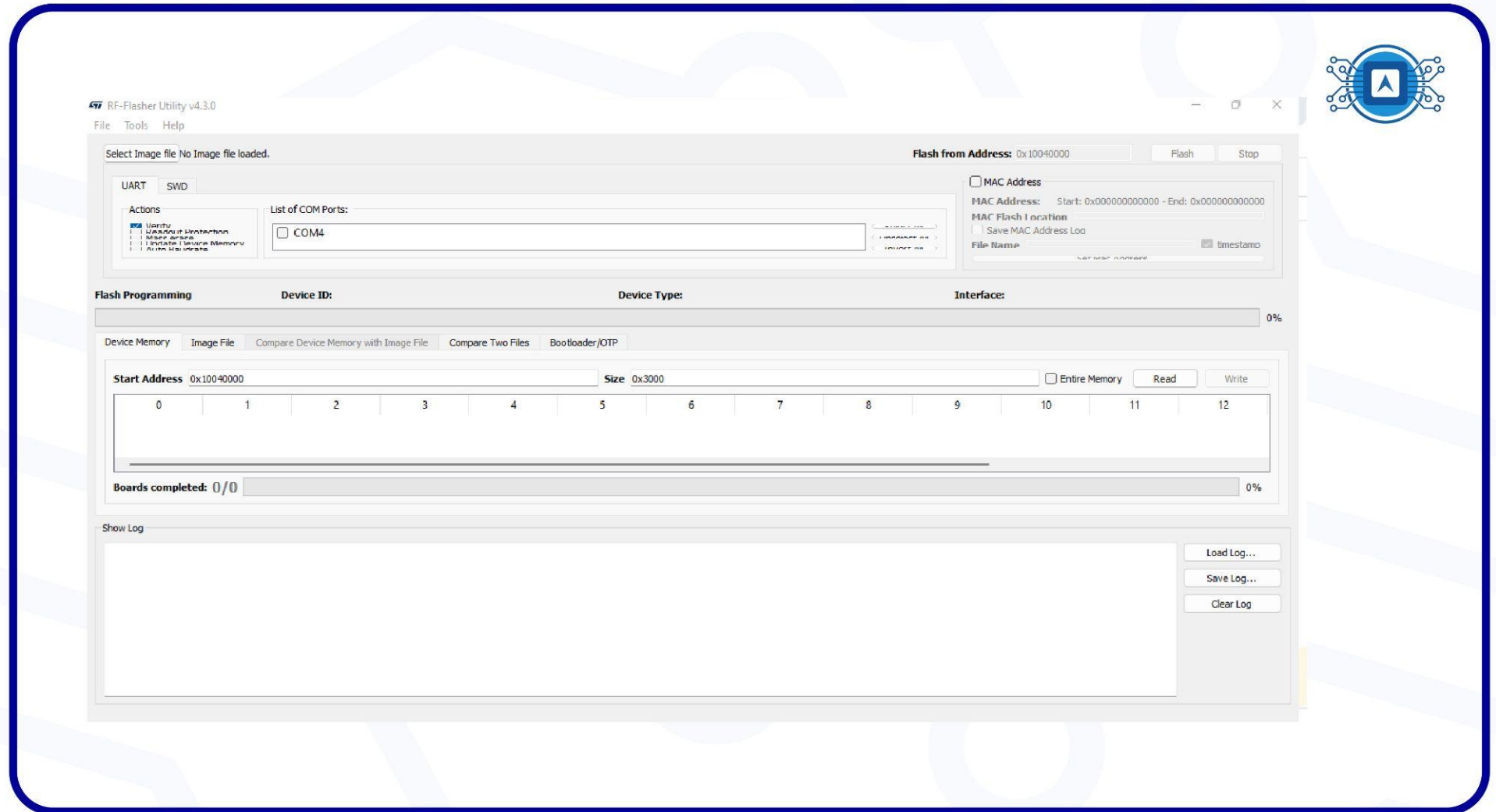


Image 03: RF Flasher Utility screen. Source: Screenshot by the author.

8. Open the .bin file that will be written to the Test Board.

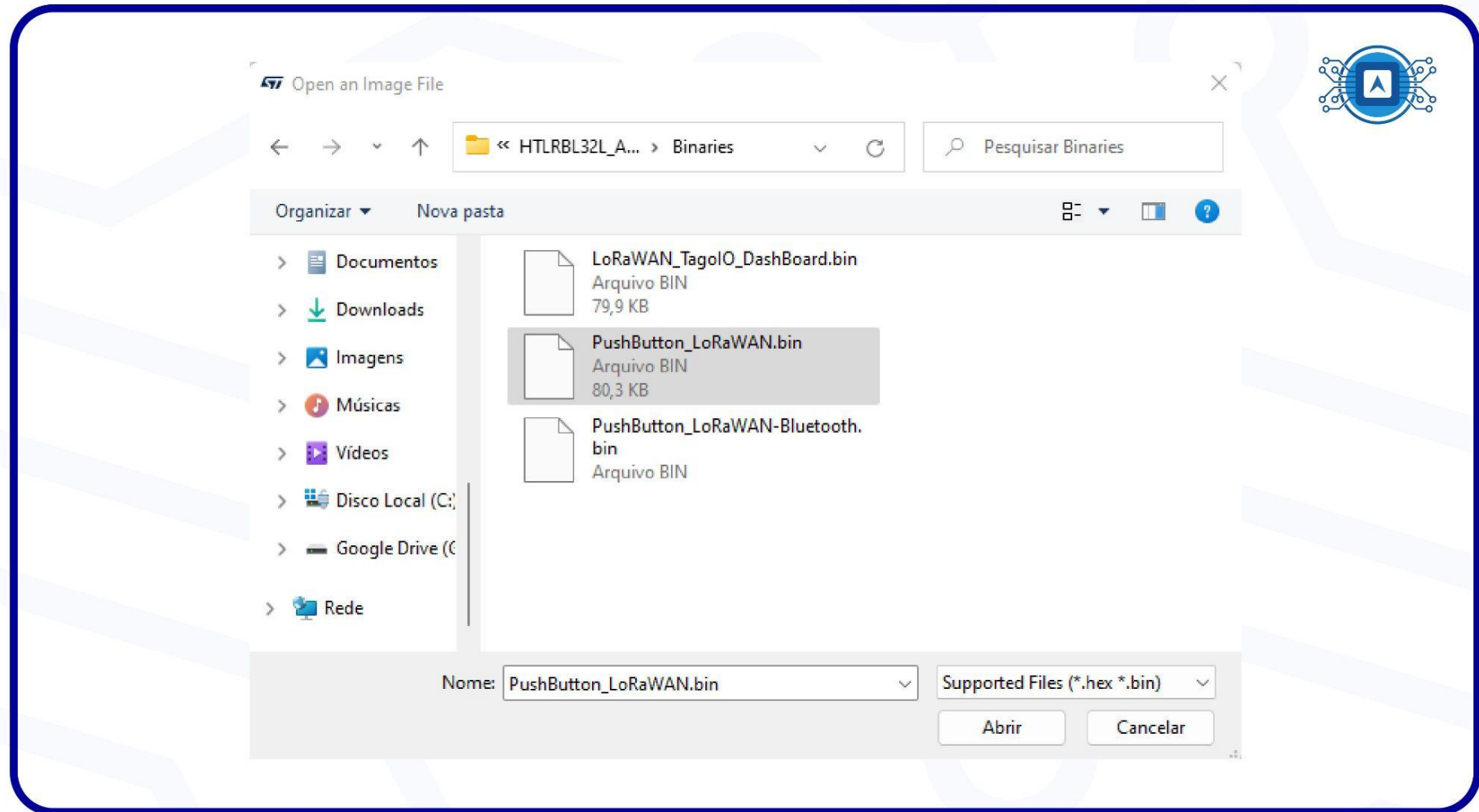


Image 04: Bin file. Source: Screenshot by the author.

9. In the RF Flasher application, follow the on-screen instructions by placing the jumpers in the required position.
10. Set **JP1(DI07)** to **High** and **JP2** to **Low**, thus resetting the chip, and after the reset we will set **Jumper P2** to the **HIGH** position.

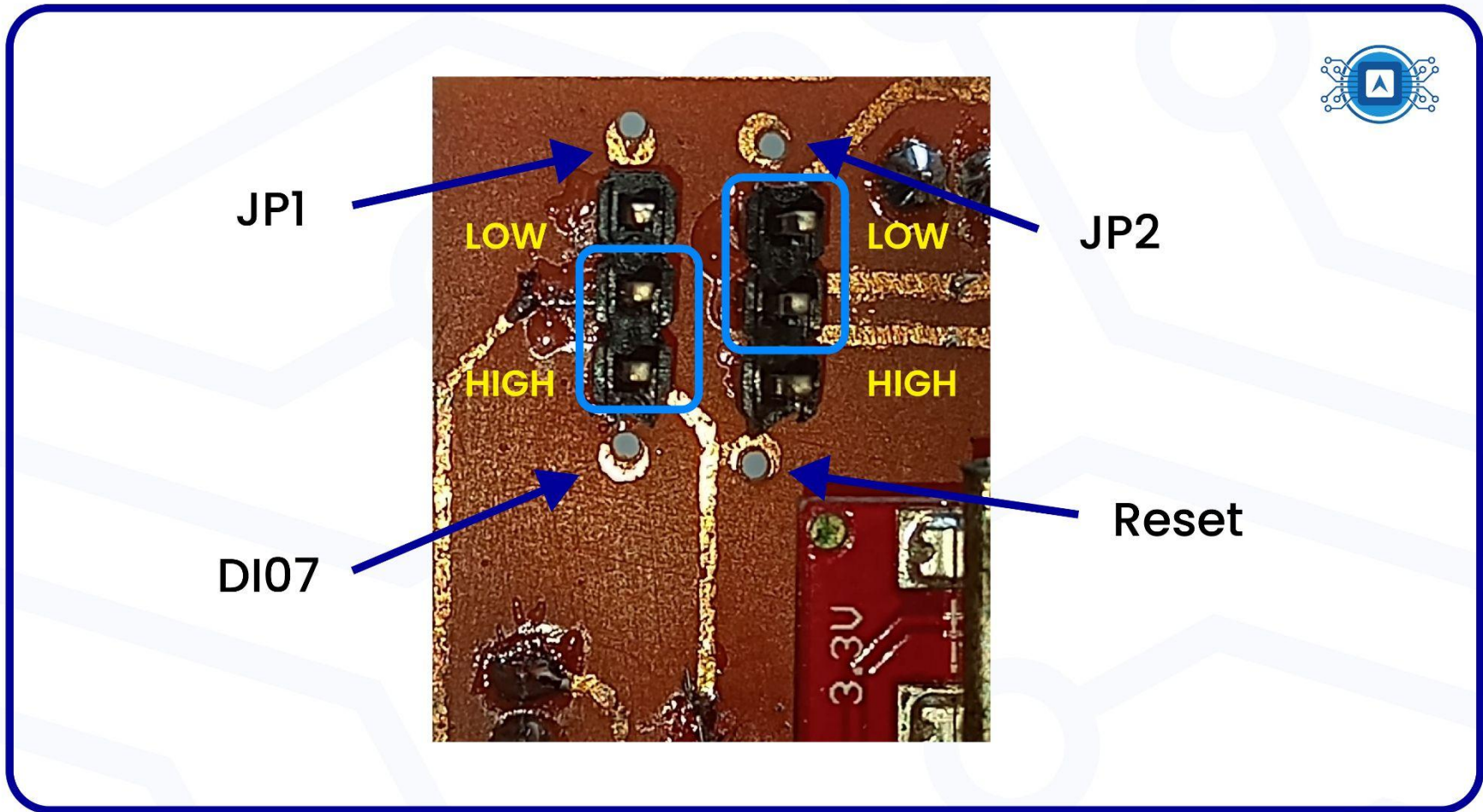


Image 05: Positioning Jumpers. Source: The author.

11. Check with the **READ** button to read data from memory.

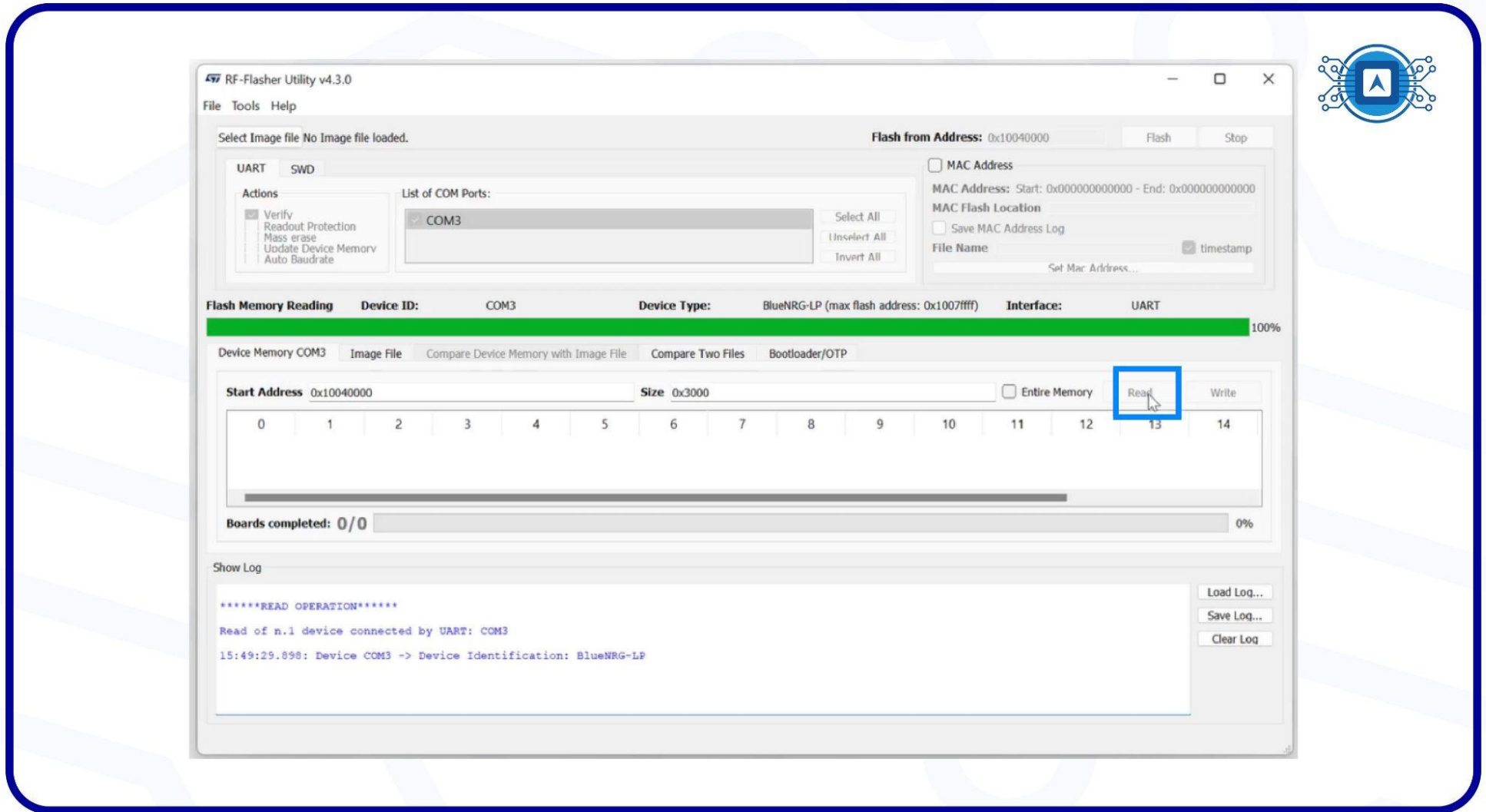


Image 06: Read button in the RF Flasher Utility. Source: Screenshot by the author.

12. Still in the RF Flasher Utility application, click the **FLASH** button.

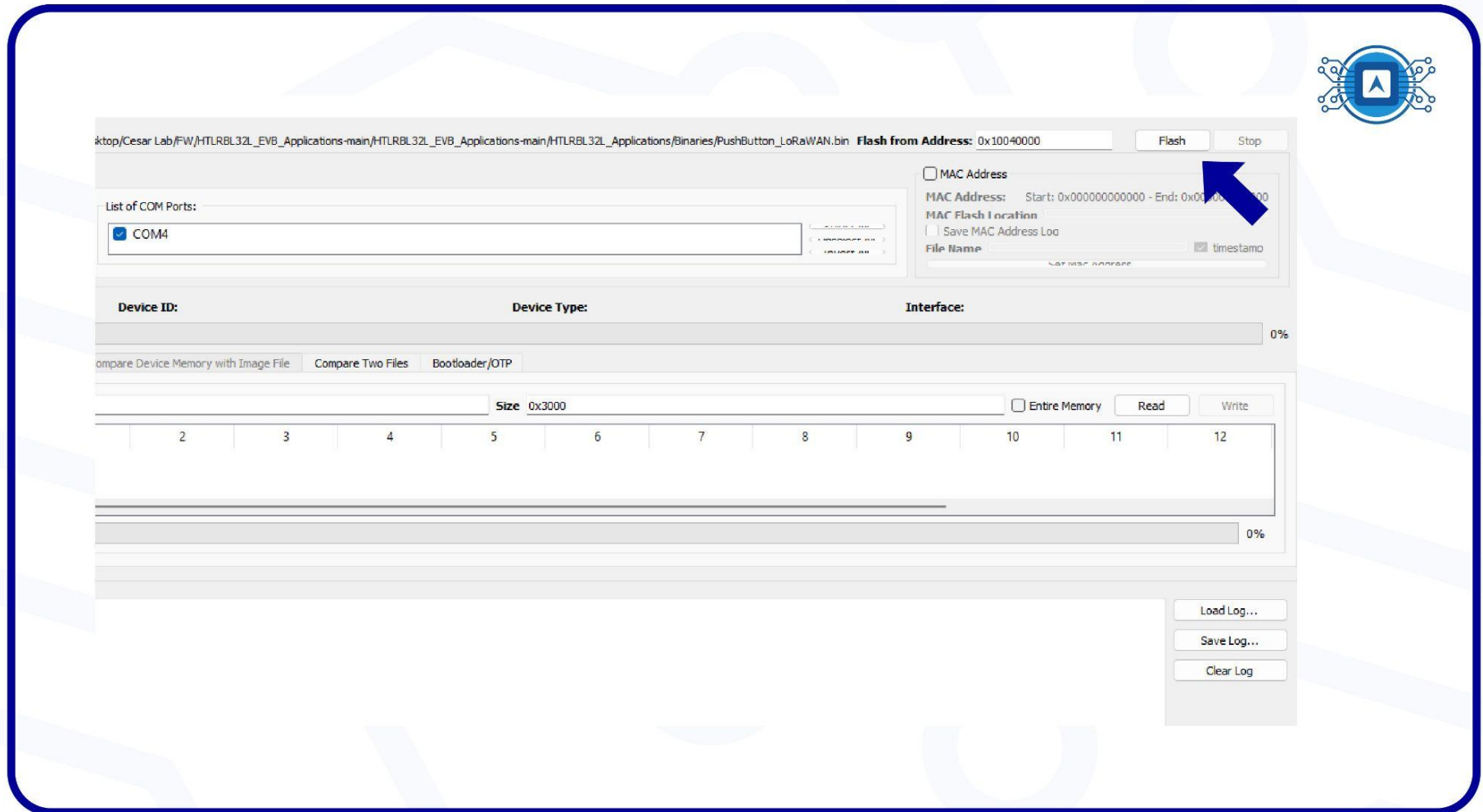


Image 07 - RF Flasher Utility FLASH button. Source: Screenshot by the author.

13. Then the firmware update will start.
14. When the process is finished, the **SUCCESS** screen will appear.

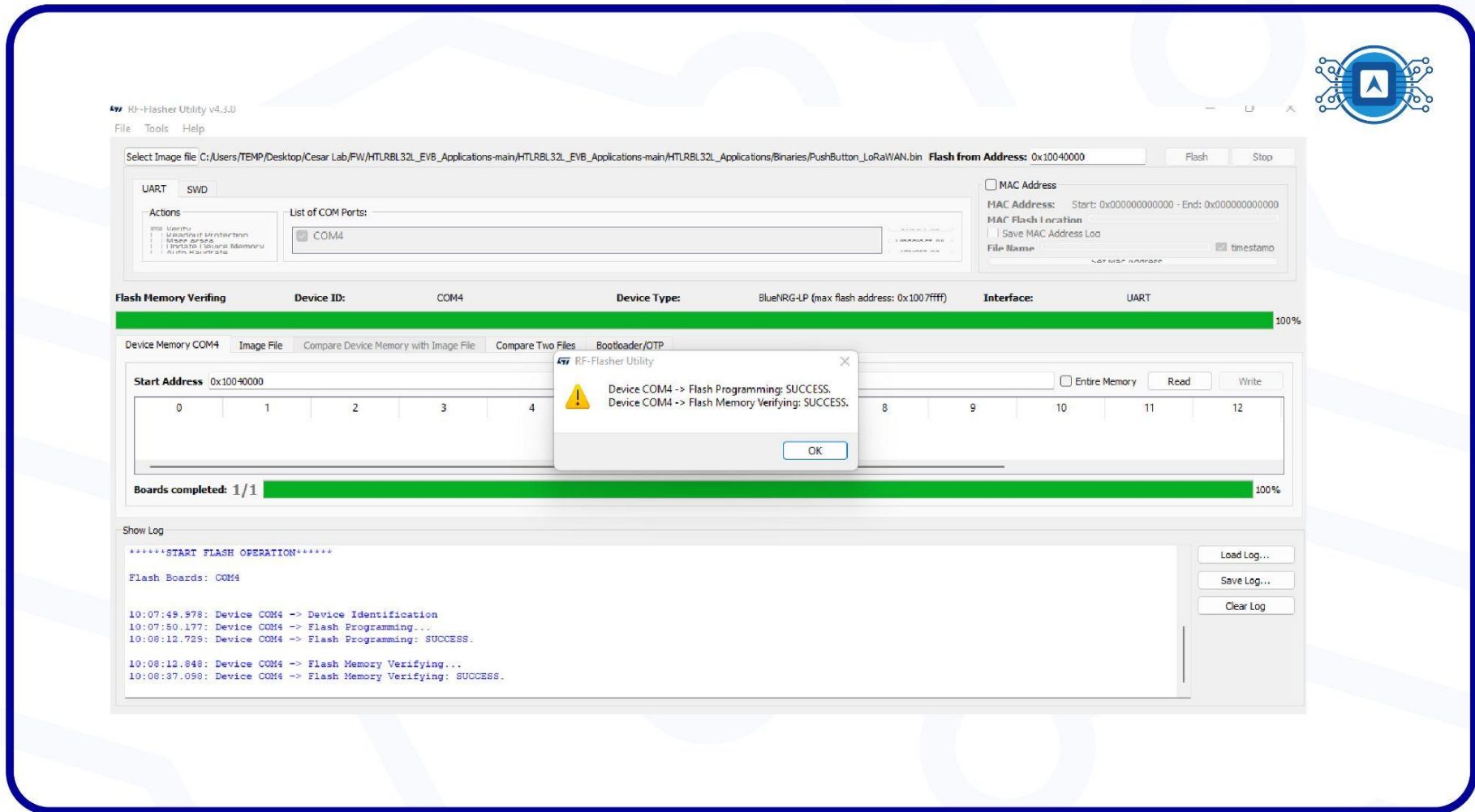


Image 08: Completed Memory Recording Screen. Source: Screenshot by the author.

15. Return jumper P1 to the **LOW** position.
16. Run a test with **Termite Software** and check the serial port information.

17. Let's open the Termite software, check that the COM port is correct.

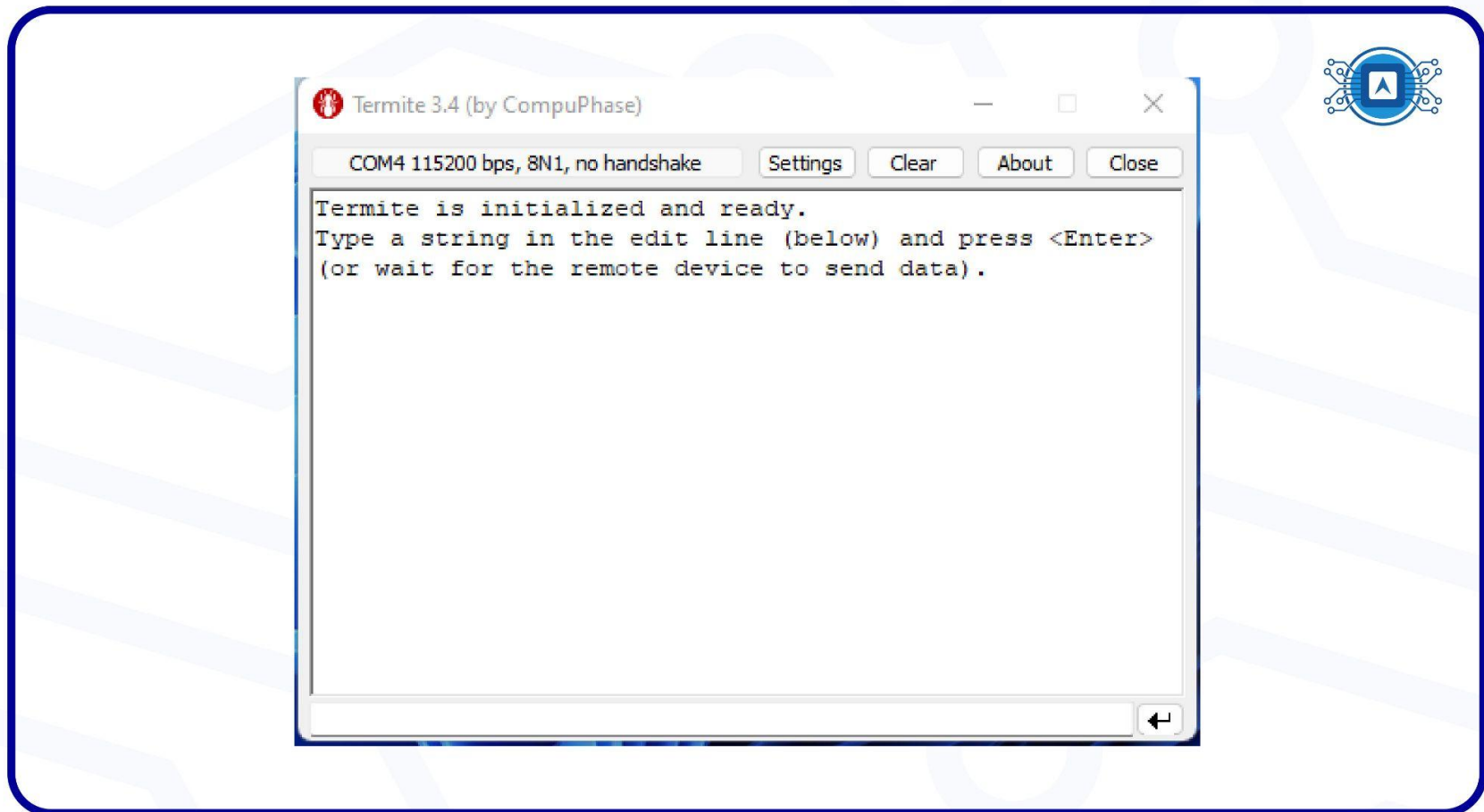


Image 09: SW Termite screen. Source: *Screenshot by the author.*

18. Then press the SW1 button and check the information that appears on the screen.

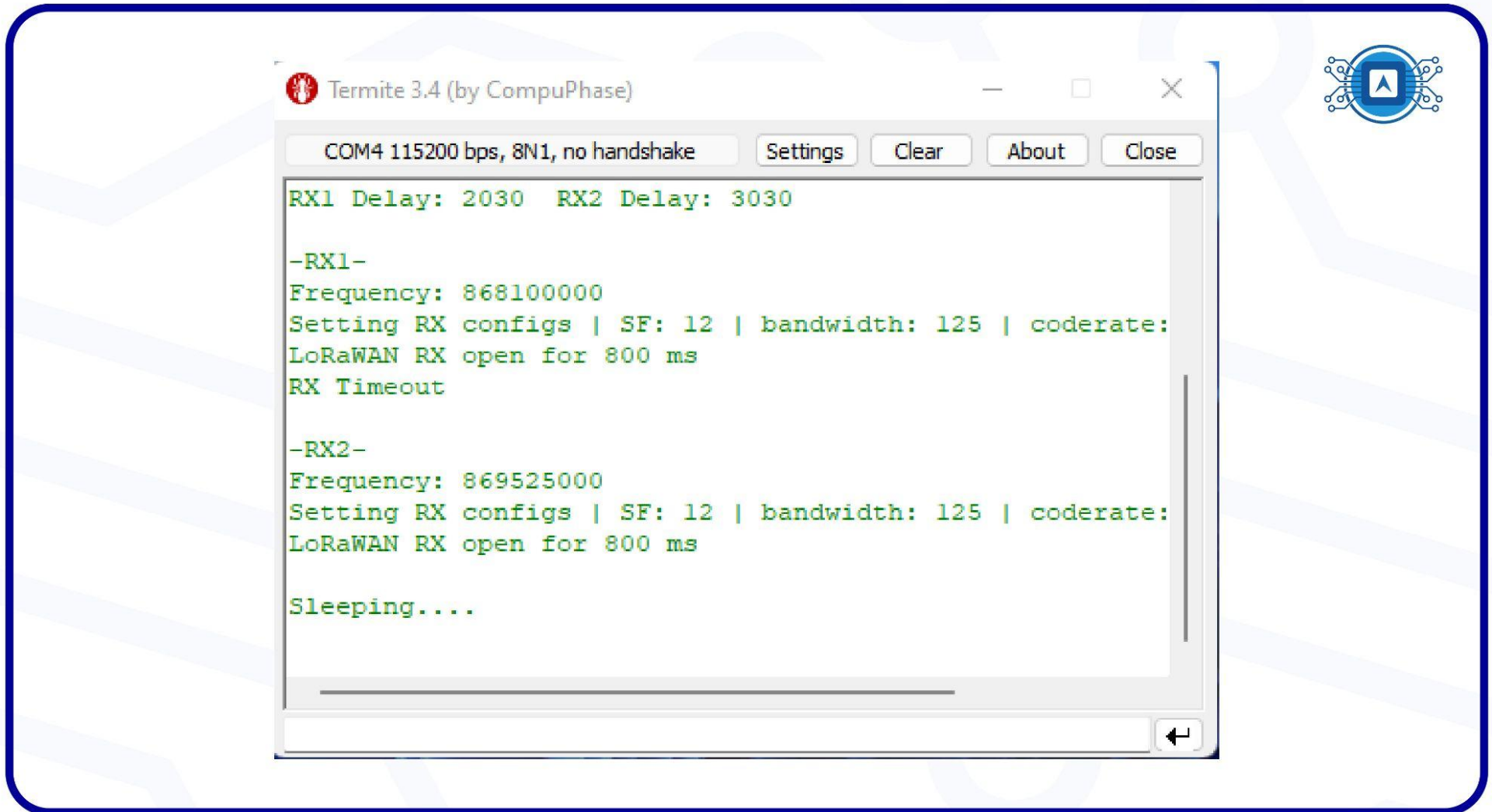


Image 10: Serial Port Information. Source: Screenshot by the author.

References

IMCP HTLRBL32L - New System-in-Package LoRa® & Bluetooth Low Energy®. In: Github HTMicron HTLRBL32L. [S.l.], 2022. Available at: < <https://github.com/htmicron/htlrb32l> > . Accessed on aug 05th 2022.