BACANCY®
SYSTEMS PVT LTD

Flashing Guide

CCS2 Controller

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Change Record

Rev. No.	Date	Details	Revised By	Approved By
1	04/04/2024	Initial Release	Nikunj Bambhroliya	Kanji Viroja
2	10/04/2024	• Instead of the PLC module section, flashing firmware for the CCS2 Con Controller has been included. • Section 3.3: The setup steps have been added.	Jasmin Nakrani	Kanji Viroja
3	06/06/2024	Contact Details	Jasmin Nakrani	Kanji Viroja
4	25/04/2025	Legal Entity Conversion: LLP to PVT LTD	Jasmin Nakrani	Kanji Viroja
5	11/07/2025	Addition of Section 2 Flashing Essentials	Jasmin Nakrani	Kanji Viroja
6	05/05/2026	Revised Email Address	Jasmin Nakrani	Kanji Viroja

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1 Intended Use

This flashing guide will lead you through the general approach for flashing firmware for RFID or LED modules, PLC modules, ESP controllers and CCS2Con controller.

Furthermore, the user can contact our team to resolve their issue by using the contact information provided on the last page.

WARNING!	**Risk caused by inappropriate use!**
	Any unconventional usage or operation of the product may have unintended repercussions. • Only conventionally use the product.

1.1 Alteration and Restoration of the Product or System

To prevent risks and ensure optimal performance, no alterations, attachments, or restoration of the product are permitted without explicit authorisation of Bacancy Systems PVT LTD.

2 Flashing Essentials

Before beginning the flashing process for the RFID, LED, PLC, EPS, and CCS2 Controller, the user must gather all the essential tools required to complete the procedure.

This includes the necessary hardware, software, and firmware, all of which are crucial for successful flashing. The detailed requirements are listed below:

- **For RFID or LED Module**

Table 1 Flashing Essentials: RFID or LED Module

No.	Type	Tools
1.	Hardware	Nuvoton Flasher
2.	Software	Flashing Utility (Numicro ICP Programming Tool 3.10) Link
3.	Firmware	Bacancy Systems

- **For PLC Module**

Table 2 Flashing Essentials: PLC Module

No.	Type	Tools
1.	Hardware	PCAN-USB
2.	Software	Flashing Utility (Peak Driver) Link
3.	Firmware	Bacancy Systems

- **For ESP Controller**

Table 3 Flashing Essentials: ESP Controller

No.	Type	Tools
1.	Hardware	USB to TTL Programmer
2.	Software	Flashing Utility (Espressif Systems Flashing Tool) Link
3.	Firmware	Bacancy Systems

- **For CCS2CON Controller**

Table 4 Flashing Essentials: CCS2CON Controller

No.	Type	Tools
1.	Hardware	J-link Flasher
2.	Software	Flashing Utility (J-Link) Link
3.	Firmware	Bacancy Systems

3 Flashing Firmware for RFID or LED Module

3.1 Pre-requisites

- Nuvoton flasher
- Flashing utility (Numicro ICP Programming Tool 3.10)

3.2 Hardware Connection

To connect the Nuvoton flasher to an RFID module or LED module, use the FRC cable shown in the figure below.

Table 5 Programming Header Pin Configuration

No.	Programming Header Pin Configuration	Details
1.	Pin 1	VCC
2.	Pin 2	Data
3.	Pin 3	Clock
4.	Pin 4	Reset
5.	Pin 5	GND

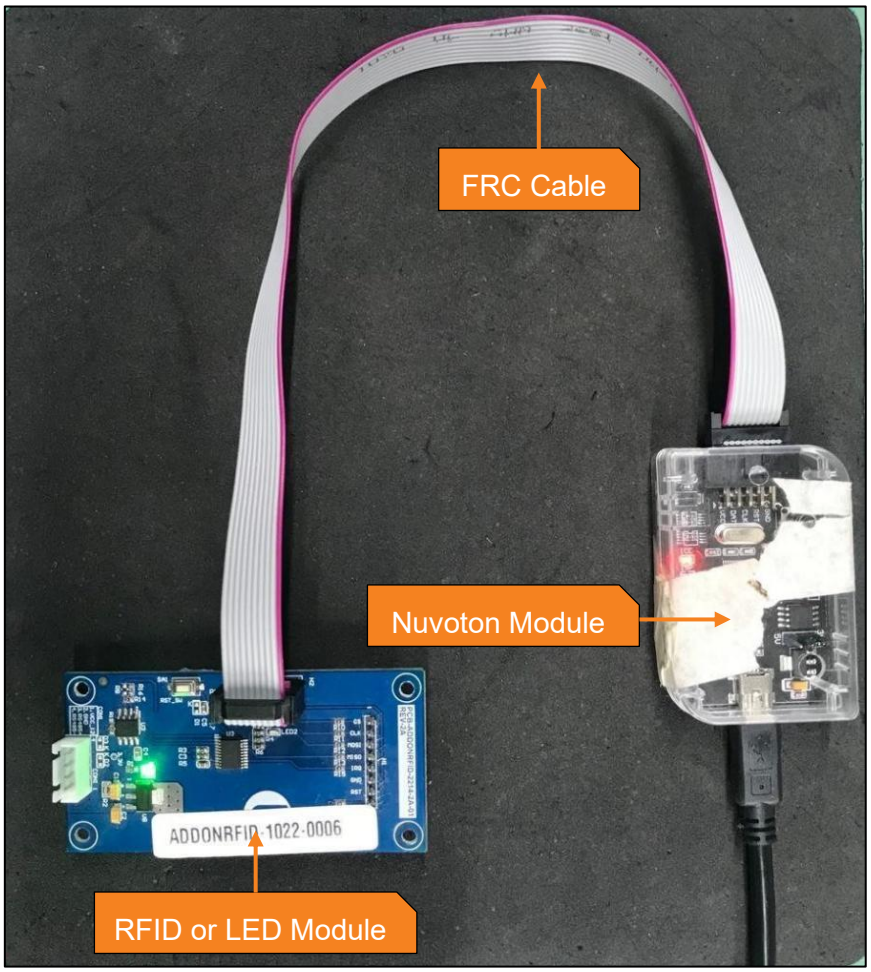


Figure 1 Hardware connection: RFID or LED module with nuvoton flasher.

3.3 Procedure for Flashing Firmware

Follow these procedures to flash firmware using Nuvoton application:

Step 1. Connect the Nuvoton flasher to your PC or laptop.

Step 2. Download Nuvoton Numicro ICP Programming Tool 3.10 from the links provided here: [Download the Numicro ICP Tool 3.10]

Step 3. Install Nuvoton Numicro ICP Programming Tool 3.10.

Step 4. Open the application on your PC or laptop.

Step 5. Select the “8051 1T Series” from the MCU Series of tool.

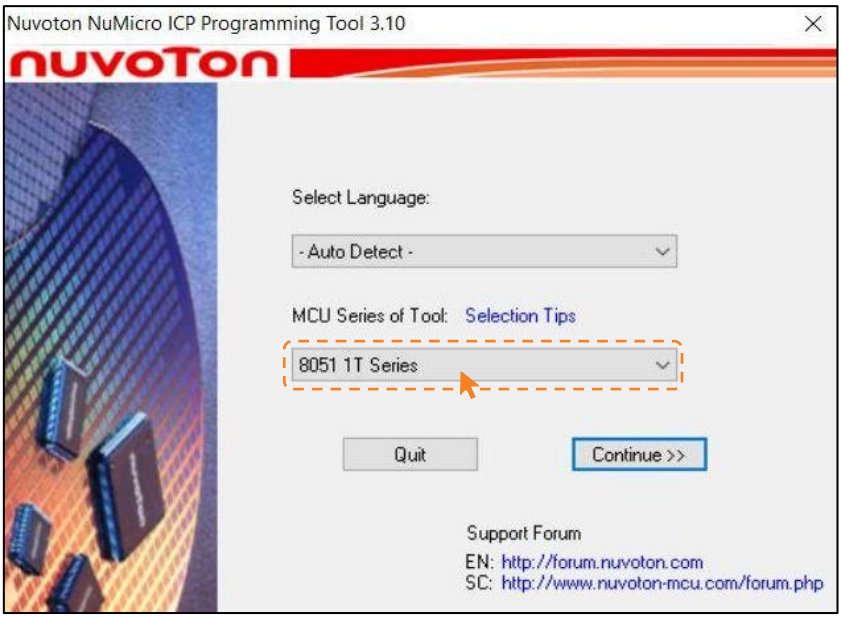


Figure 2 select the “MCU Series of Tool”.

Step 6. Click the “continue” button.

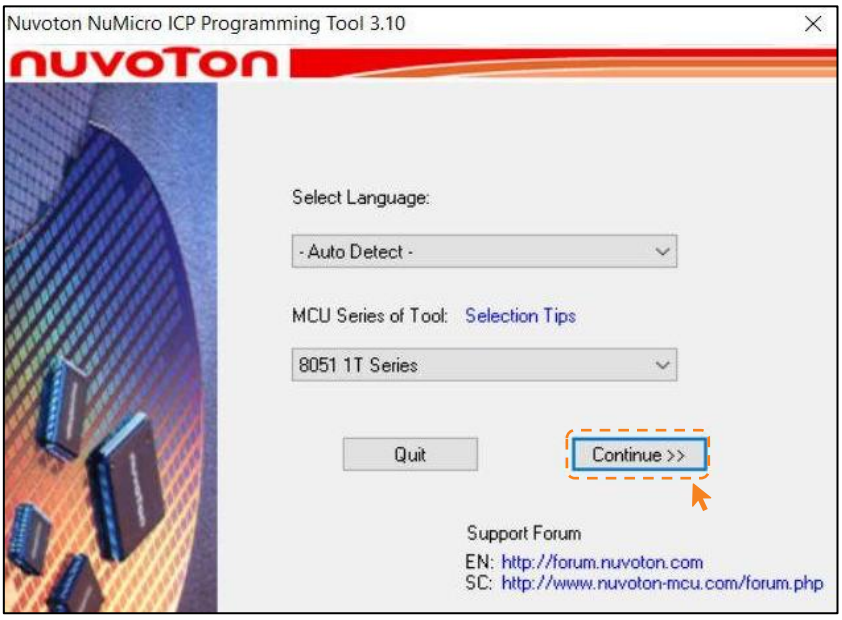


Figure 3 Click the “Continue” button.

Step 7. To connect the chip to the flasher application, just click the “Connect” button.

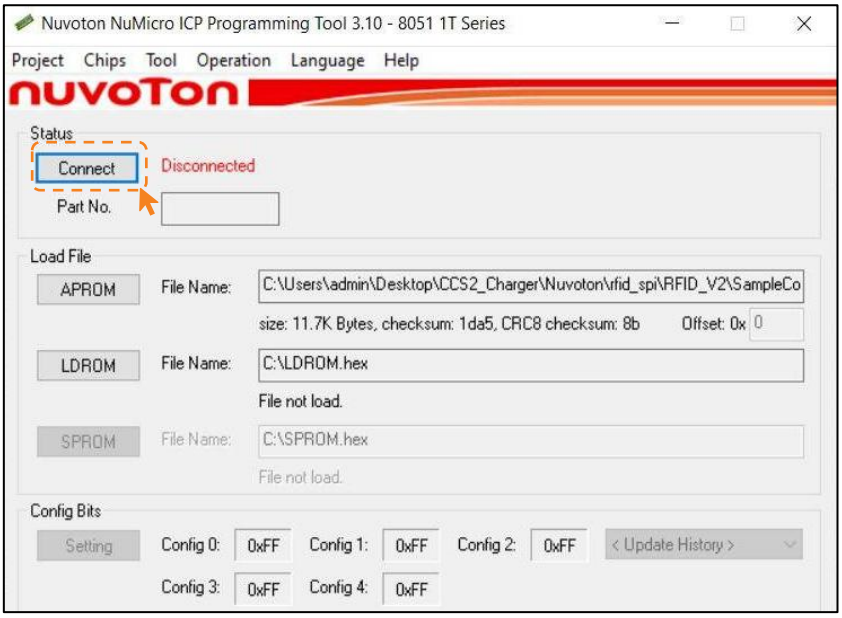


Figure 4 Click the “Connect” button.

Step 8. After properly connecting the chip to the flasher application, the details will appear on the screen.

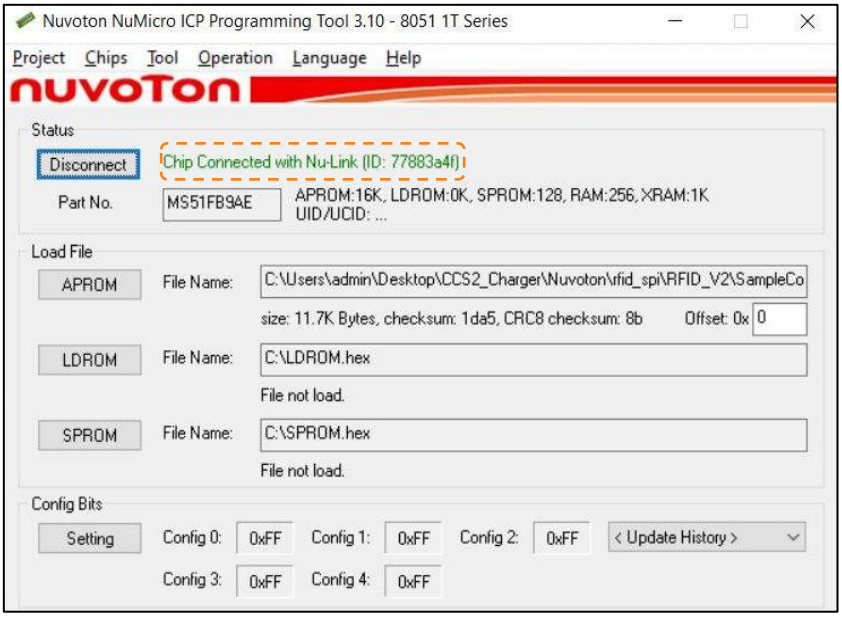


Figure 5 The chip connection with flasher application status.

Step 9. Click the “APROM” button to load the “.bin” extension file.

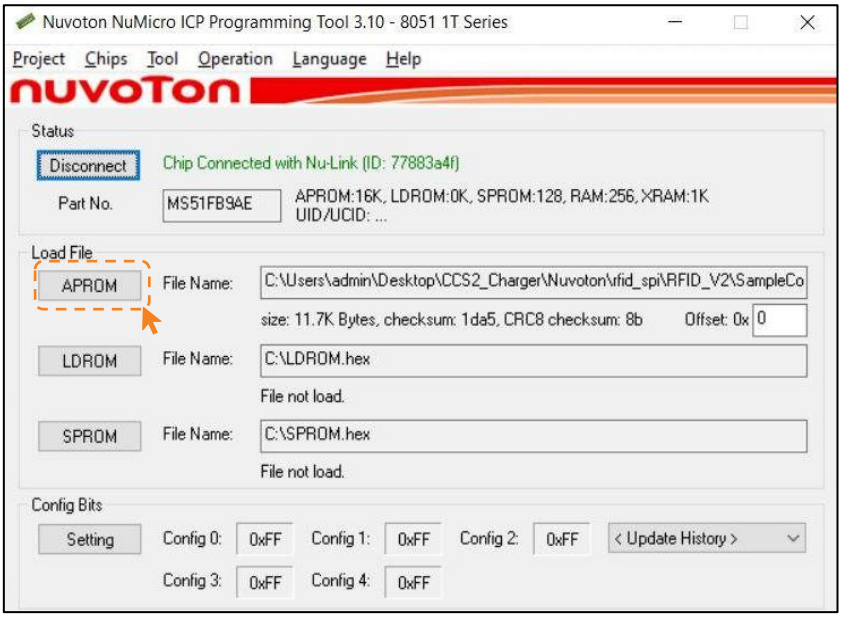


Figure 6 Click the “APROM” button.

Step 10. Here, the user must select a “.bin” extension (binary) file given by Bacancy Systems and click the “Open” button.

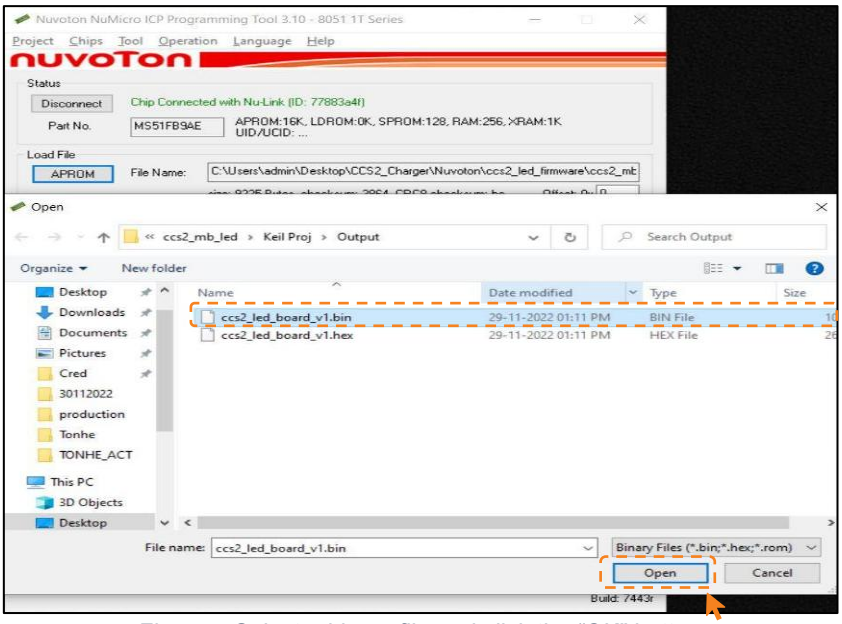


Figure 7 Select a binary file and click the “OK” button.

Step 11. After correctly uploading a file, you will receive a pop-up requesting confirmation; click the “Ok” button.

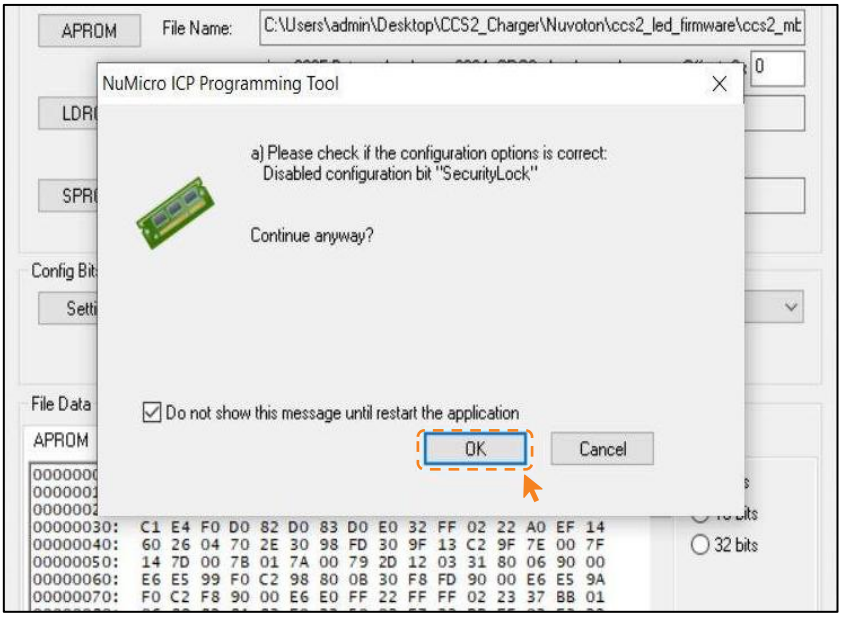


Figure 8 Click the “OK” button to confirm.

Step 12. Following successful confirmation, you will receive another pop-up indicating that your Nuvoton Flash is in programming state. To successfully start the flashing procedure, click the “Ok” button.

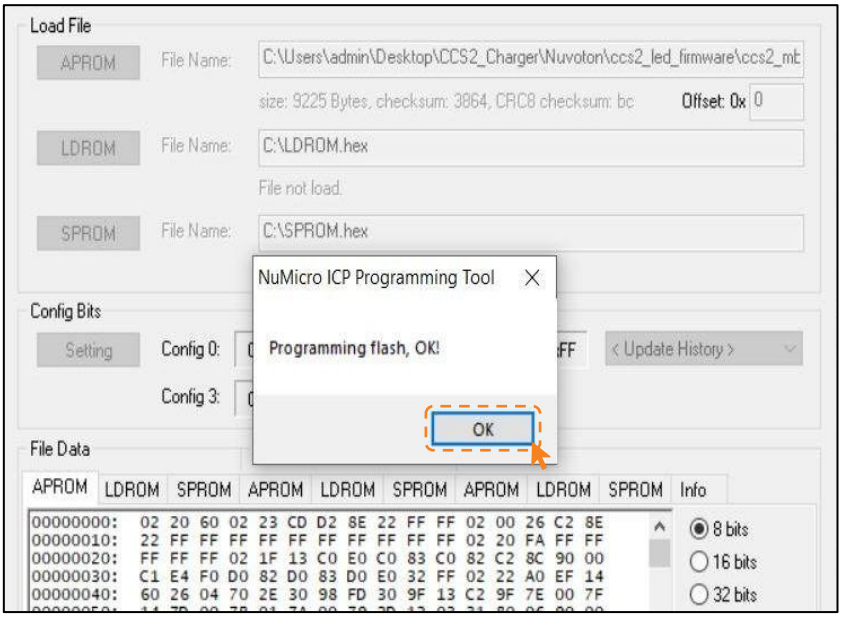


Figure 9 Click the “OK” button to confirm programming flash.

4 Flashing Firmware for PLC Module with PCAN-USB

4.1 Pre-requisite

- PCAN-USB
- Flashing Utility

4.2 Hardware Connection

Table 6 Cable Connection from PLC to PCAN-USB Module

No.	2 Pin Female Connector	DB 9 Connector	Details
1.	Pin 1	Pin 2	CAN L
2.	Pin 2	Pin 7	CAN H

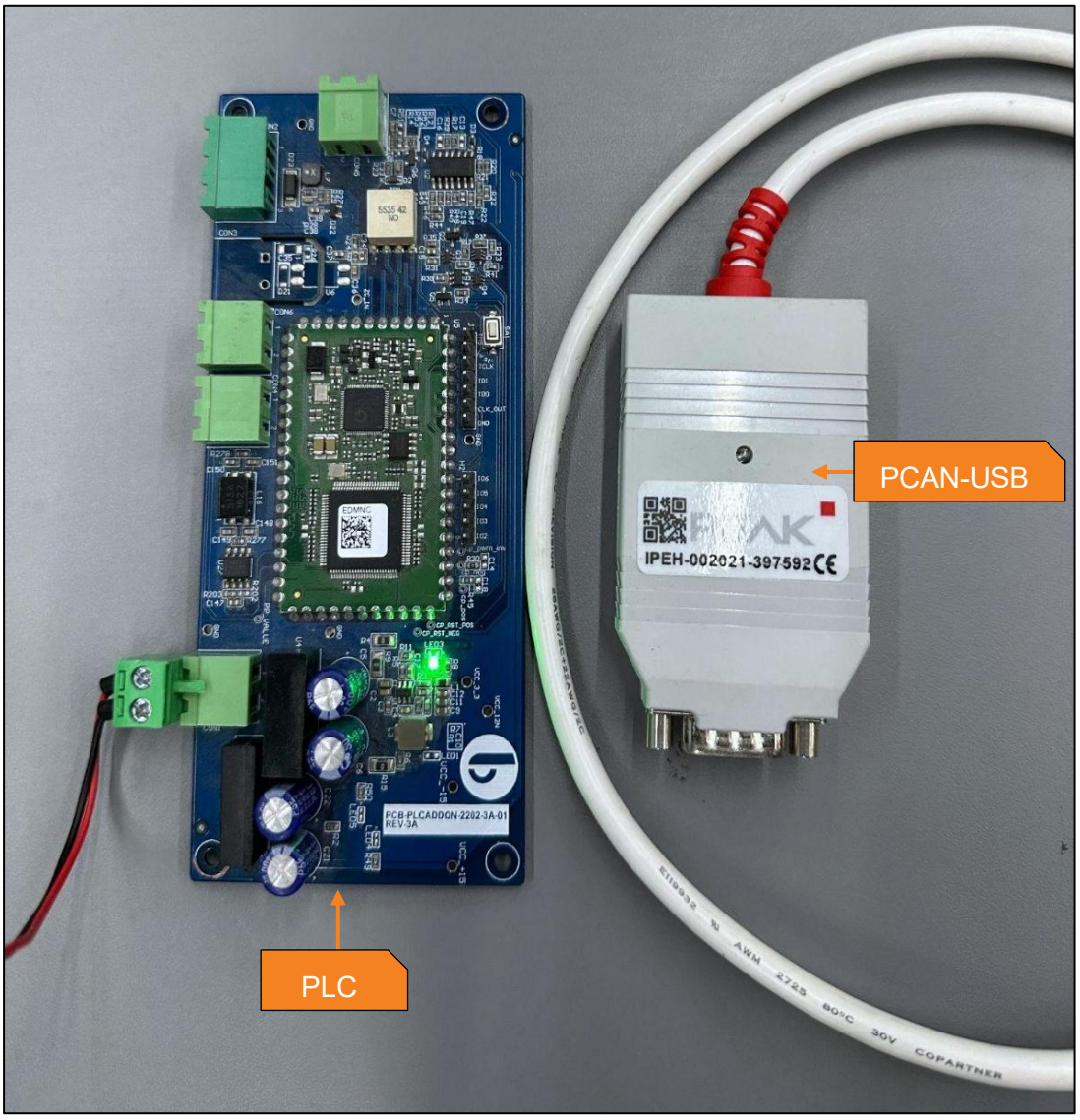


Figure 10 Hardware connection with PLC to PCN-USB module.

4.3 Procedure for Flash Firmware

Step 1. Connect your PCAN-USB flasher to PC or laptop.

Step 2. Install the PCAN-USB driver on your system using the link provided here.
https://www.peak-system.com/Drivers.523.0.html?&L=1

Step 3. Open the plc_module_tool.exe file.

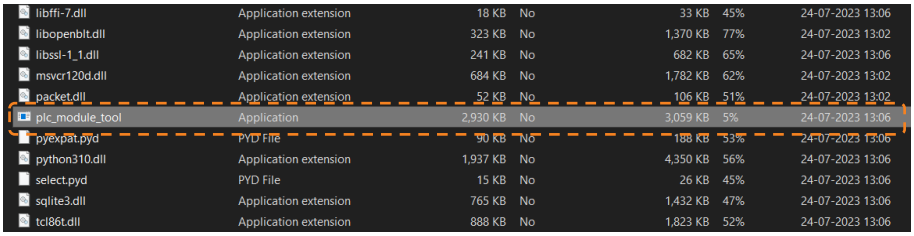


Figure 11 Open the "PLC module toll.exe" file.

Step 4. Click the "Setting" icon to change the hardware interface and module ID.

Figure 12 Click the "Setting" Icon.

Step 5. In the hardware section, select the "CAN" interface option and the "Module ID" based on the PLC requirements.

Step 6. To save the preset parameters, click the "Ok" button.

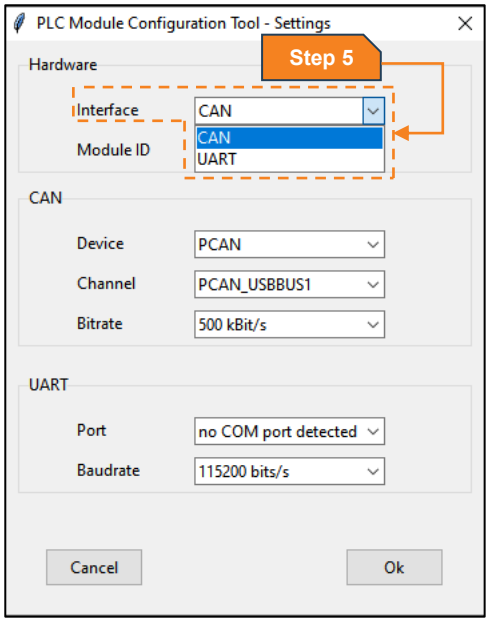


Figure 14 Select "CAN" interface.

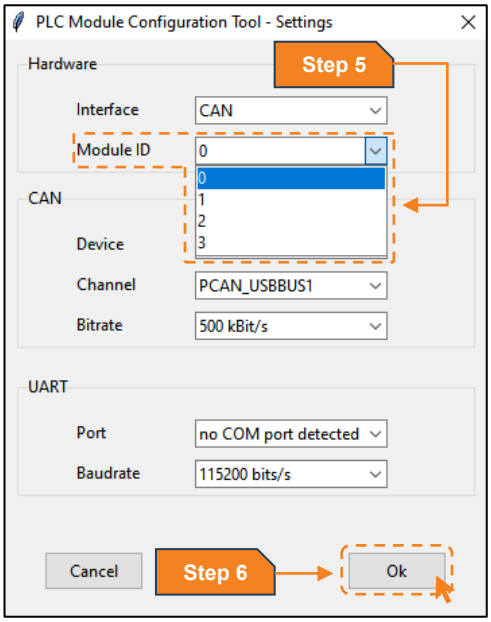


Figure 13 Select "Module ID".

Step 7. Click the “Update Latest Bootloader” button from the firmware update tab.

Figure 15 Click the “Update Latest Bootloader” button.

Step 8. When the latest bootloader is updated, the “Finished firmware update session” message appears on the screen.

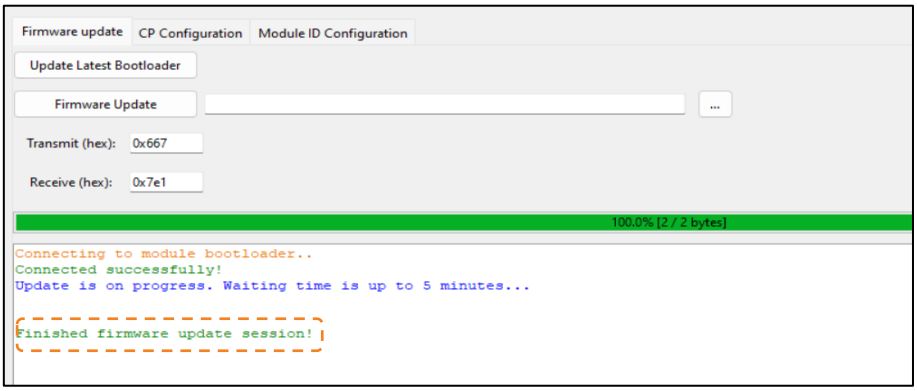


Figure 16 Successfully updated the latest version of bootloader.

Step 9. To upload the firmware update file, just click the “Upload” button.

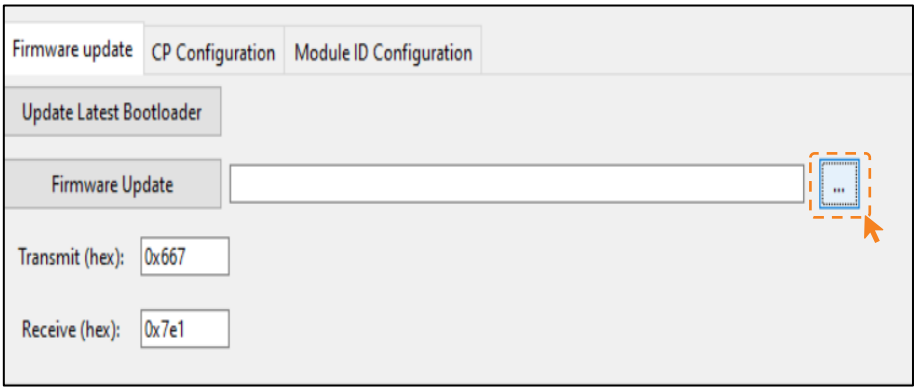


Figure 17 Click the “Upload” button.

Step 10. Select and open the firmware file with the extension ".srec" provided by Bacancy Systems on your PC or laptop.

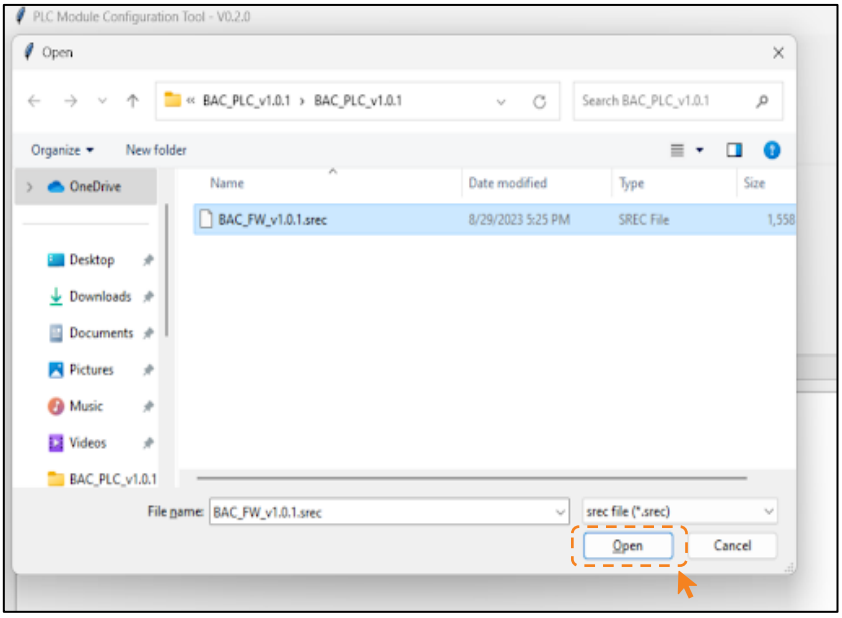


Figure 18 Select the ".srec" file and open it.

Step 11. To upgrade the firmware, click the "Firmware Update" button.

Figure 19 Click the "Firmware Update" button.

Step 12. Once the firmware has been updated, the message "Finished firmware update session" appears on the screen.

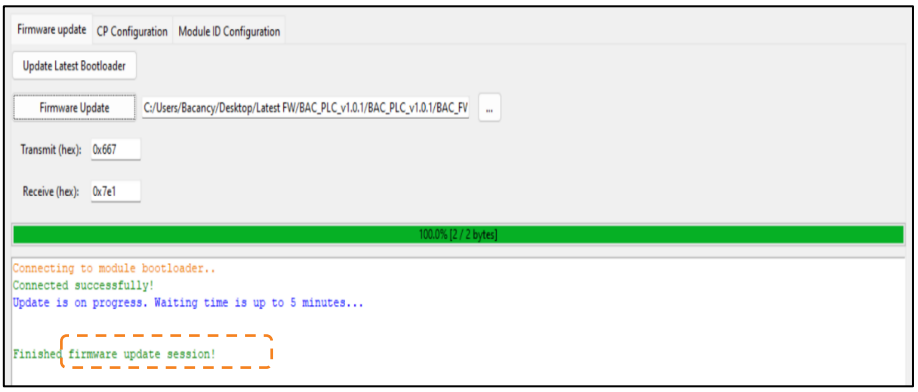


Figure 20 The message "Finished firmware update session" will appear on the screen.

5 Flashing Firmware for ESP Controller

5.1 Pre-requisites

- USB to TTL Programmer
- Flashing Utility

5.2 Hardware Connection

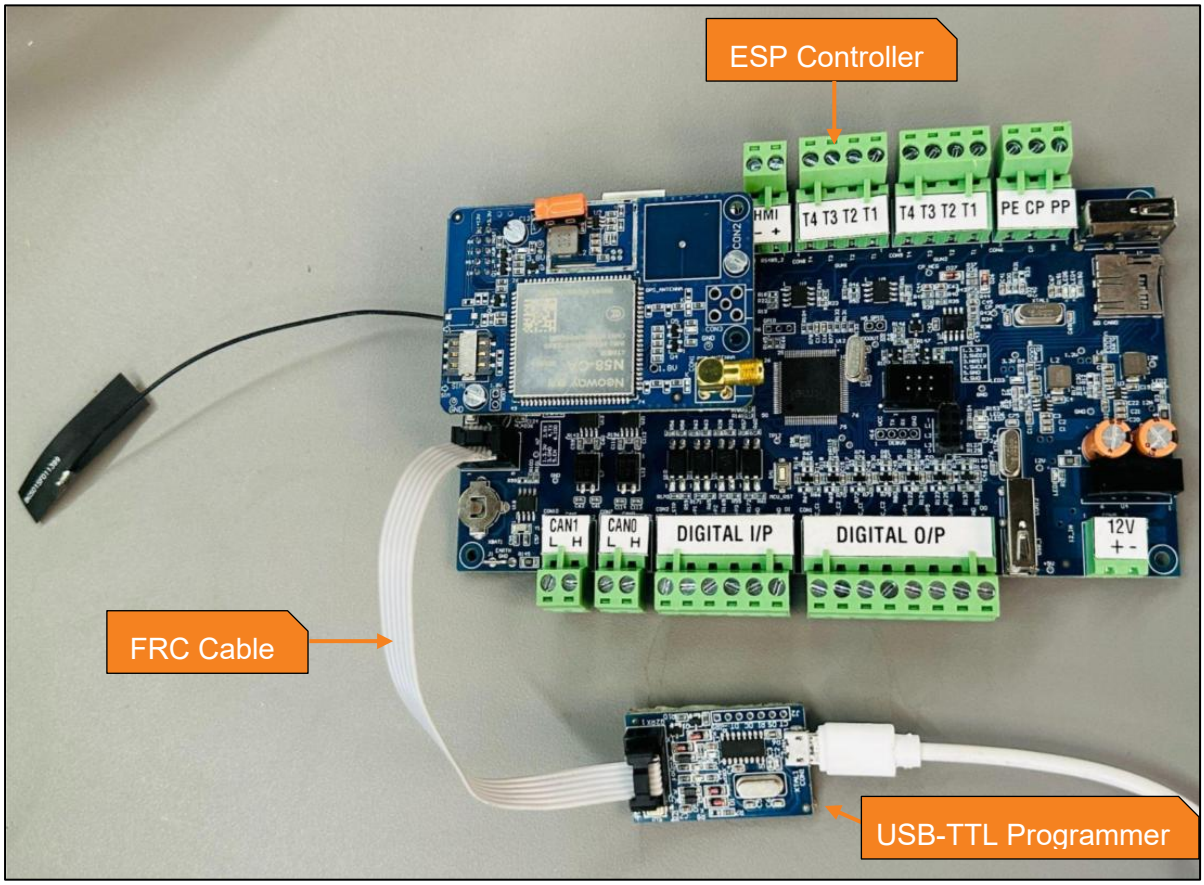


Figure 21 Hardware connection with ESP flasher.

5.3 Procedure for Flash Firmware

Step 1. Download and install the flash tool from the link provided here.
https://www.espressif.com/en/support/download/other-tools

Step 2. Open the “Flash_Download_Tool_3.9.2.exe” file.

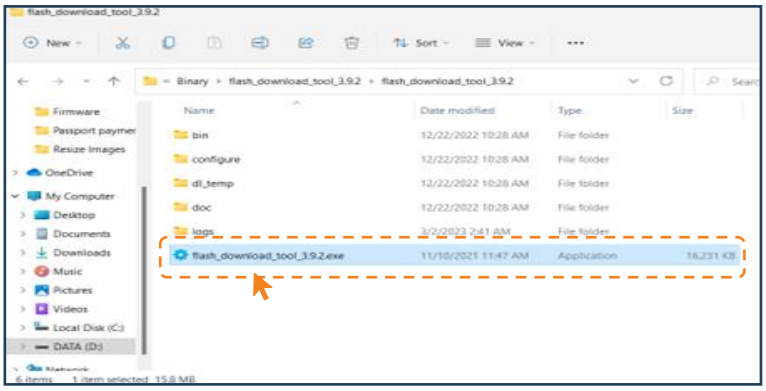


Figure 22 Open the “Flash_Download_Tool_3.9.2.exe” file.

Step 3. Select “ESP32” as the chip type and click "OK.”

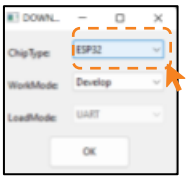


Figure 23 Select “ESP32”.

Step 4. After properly selecting a chip type, the ESP flashing tool's main window will display on the screen.

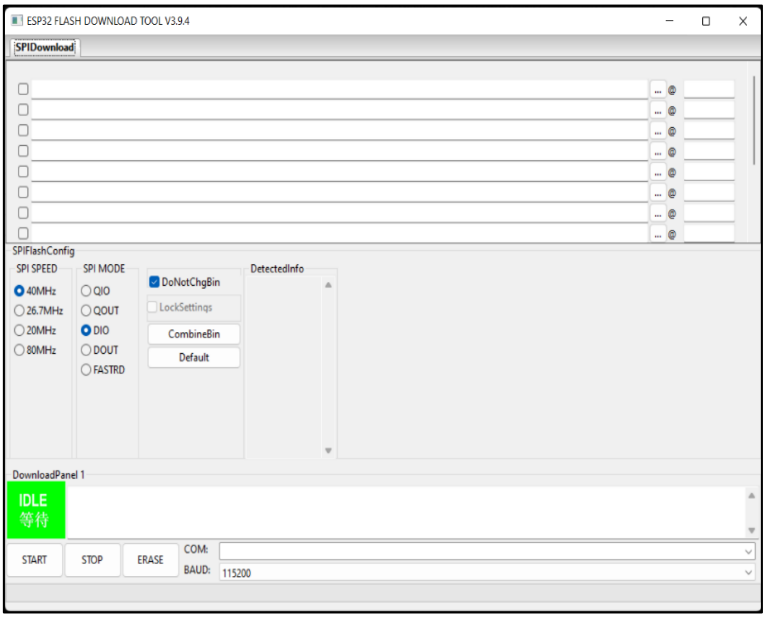


Figure 24 ESP flashing tool's main window.

Step 5. Click the “Upload” button to add a file path from your computer or laptop.

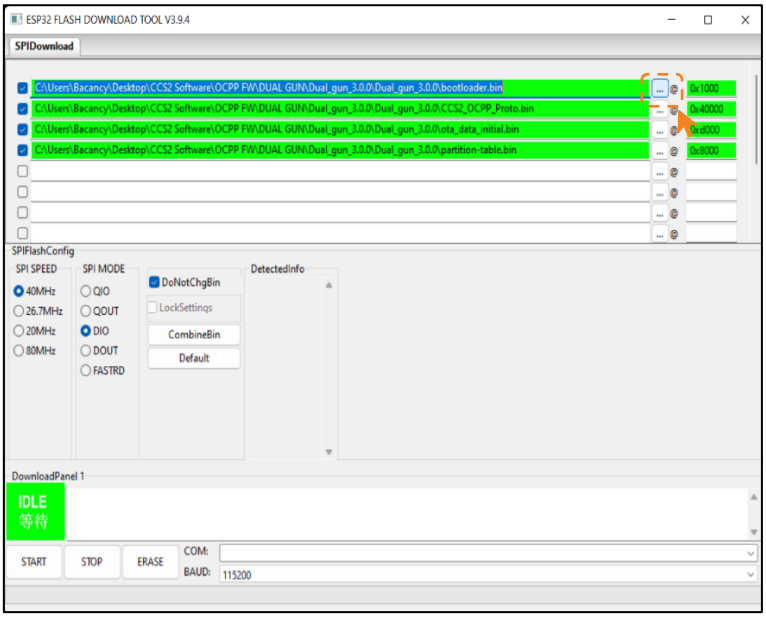


Figure 25 Click the “Upload” button.

Step 6. Select the appropriate upload files from the list provided by Bacancy Systems. Click the “Open” button.

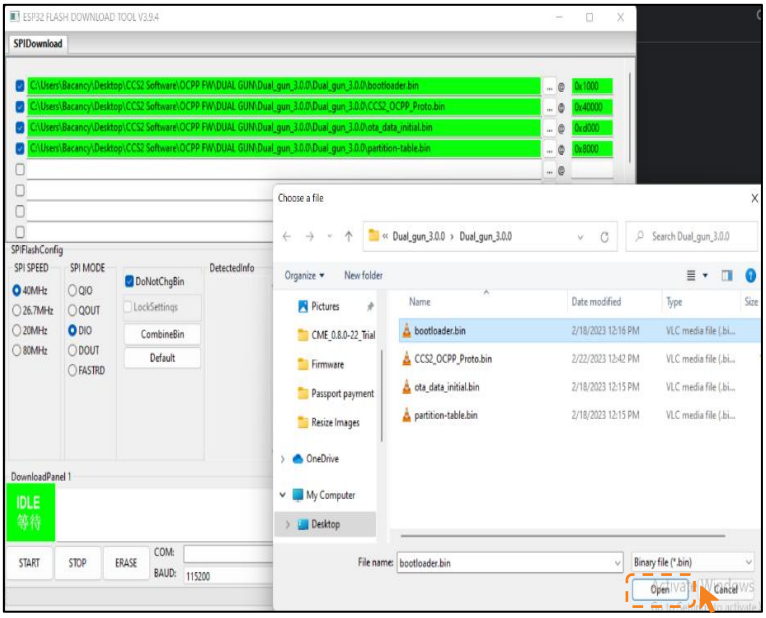
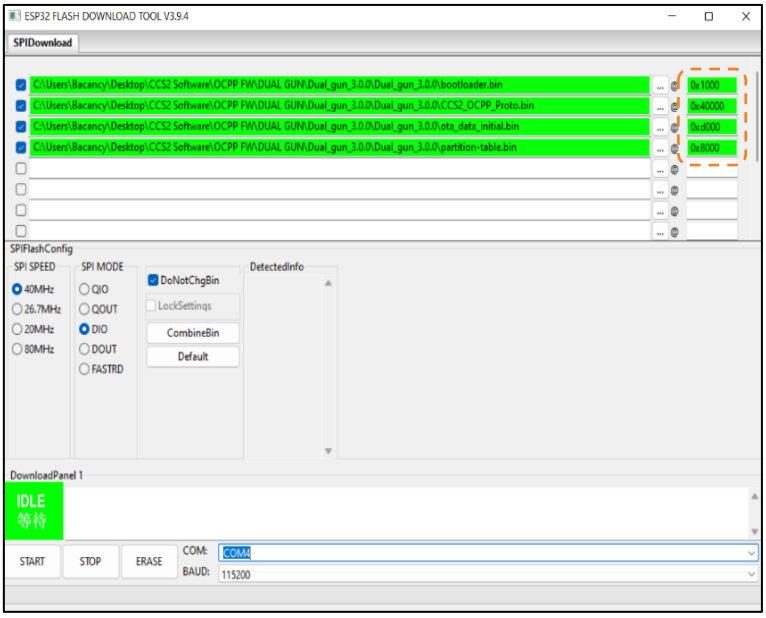


Figure 26 Select and click the “Open” button to upload the file.

Step 7. After successfully uploading all of the files, check the file address through the readme file that is included with each file.



Step 8. Enter “Com Port” and “Baud Rate.”

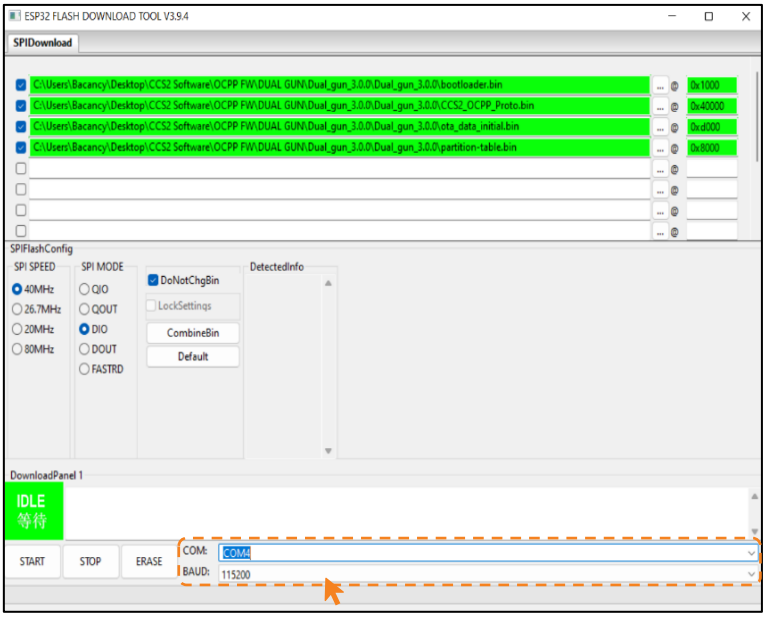


Figure 27 Enter “Com Port” and “Baud Rate.”

Step 9. Once all files have been successfully uploaded, click the “ERASE” button.

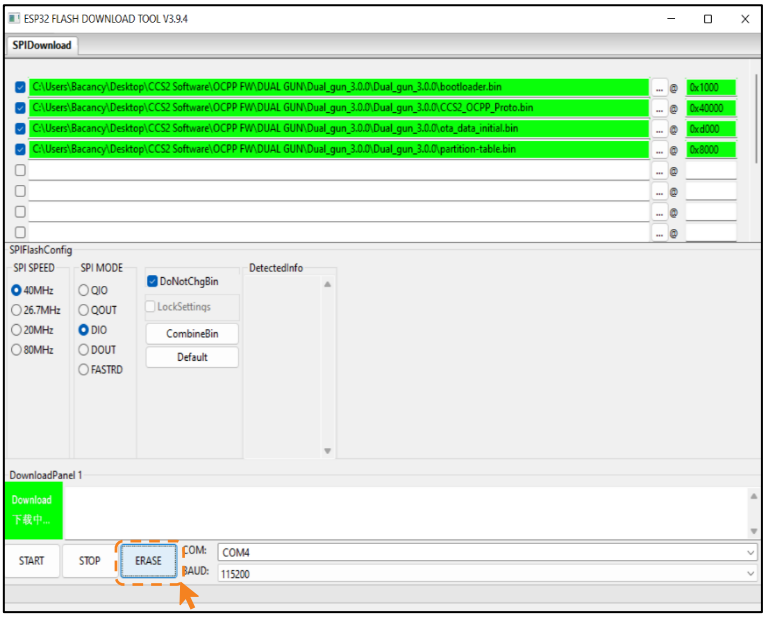


Figure 28 Click on the “ERASE” button.

Step 10. After “erase” the files, the “FINISH” message will appear on the screen.

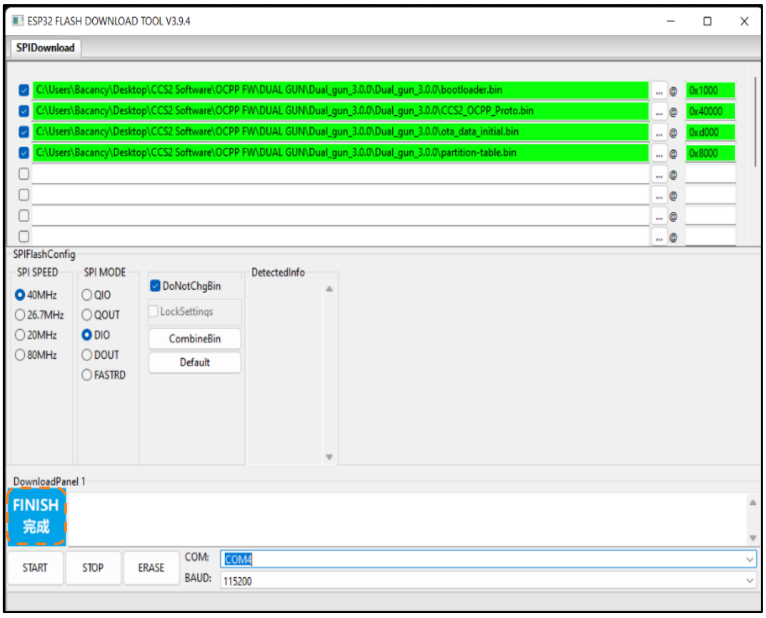


Figure 29 The “FINISH” message appears on the screen.

Step 11. After clicking the “START” button, the “DOWNLOAD” message will appear on the screen.

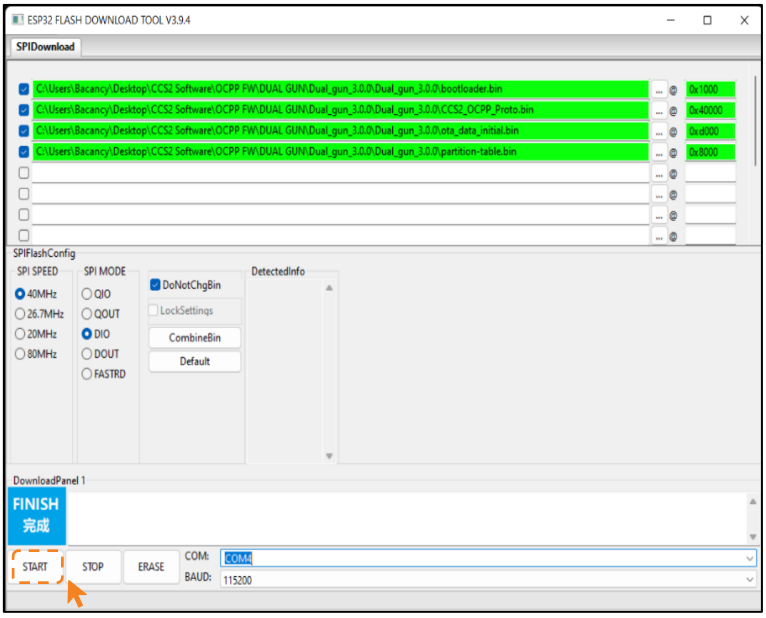


Figure 30 Click the “START” button.

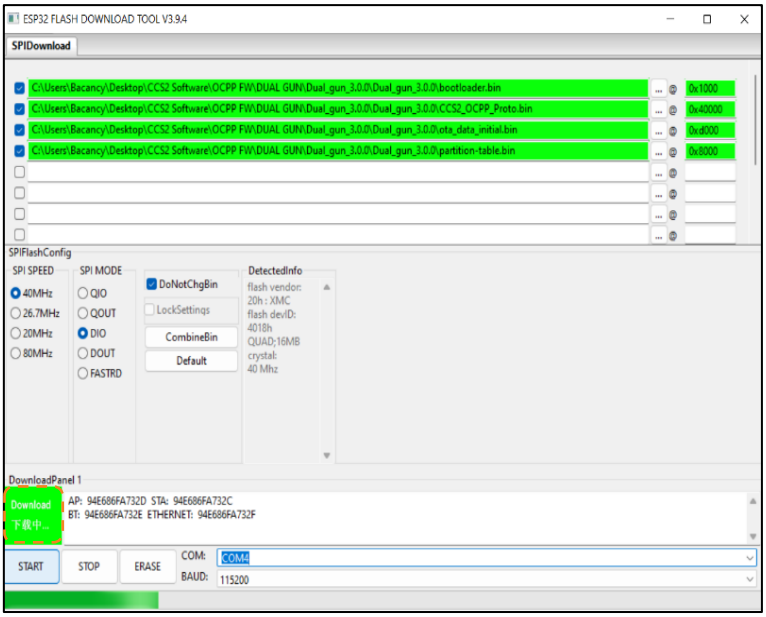


Figure 31 The “DOWNLOAD” message appears on the screen.

Step 12. When the download process is complete, the “FINISH” message will appear on the screen.

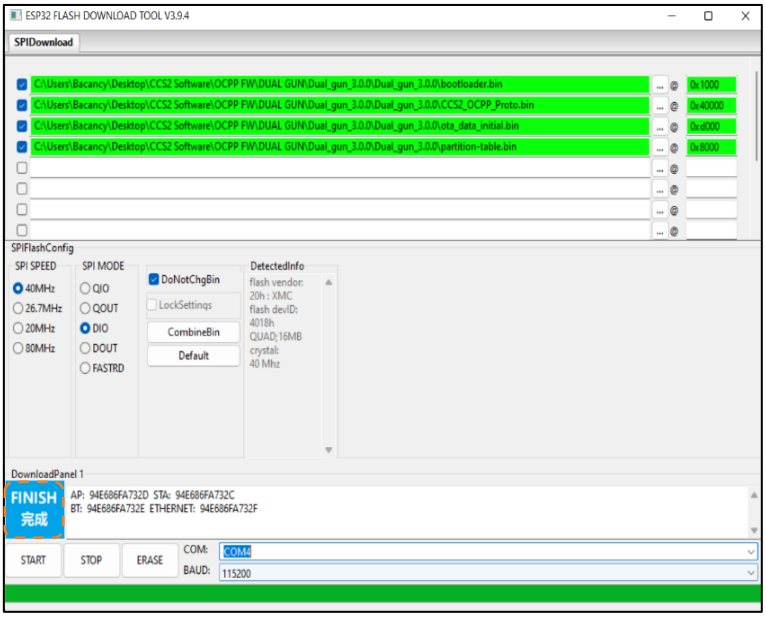


Figure 32 “FINISH” message appears on screen.

6 Flashing Firmware for CCS2Con Controller

6.1 Pre-requisite

- J-Link Flasher
- Flashing Utility

6.2 Hardware Connection

Table 7 Cable Connection from J-link to CCS2Con Controller

No.	6 Pin FRC Header	20 Pin Male Header	Details
1.	Pin 1	Pin 1	VCC
2.	Pin 2	Pin 7	SWDIO
3.	Pin 3	Pin 15	NRST
4.	Pin 4	Pin 9	SWCLK
5.	Pin 5	Pin 4	GND
6.	Pin 6	Pin 13	TRACESWO

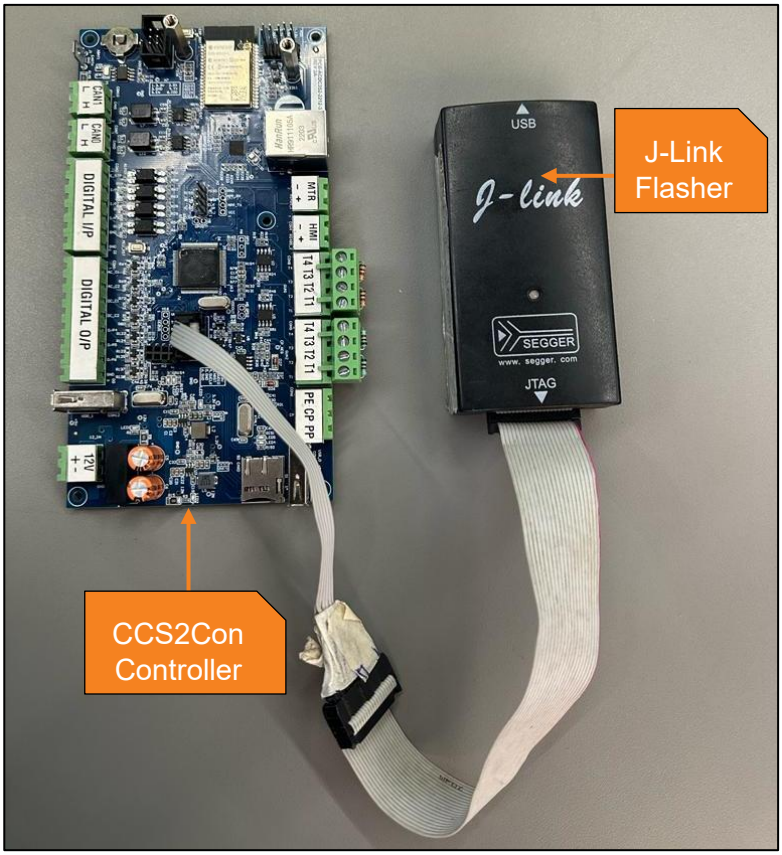


Figure 33 Hardware Connection

6.3 Procedure for Flash Firmware

Step 1. Connect your J-Link flasher to your PC or laptop.

Step 2. Install the “SEGGER J-Flash Lite Tool” on your PC or laptop from the link provided here. https://www.segger.com/downloads/jlink/

Step 3. Open the “SEGGER J-Flash Lite Tool” on your PC or laptop.

Step 4. Select a “Device ID”.

Figure 34 Select “Device ID”.

Step 5. Click the “Data File” button.

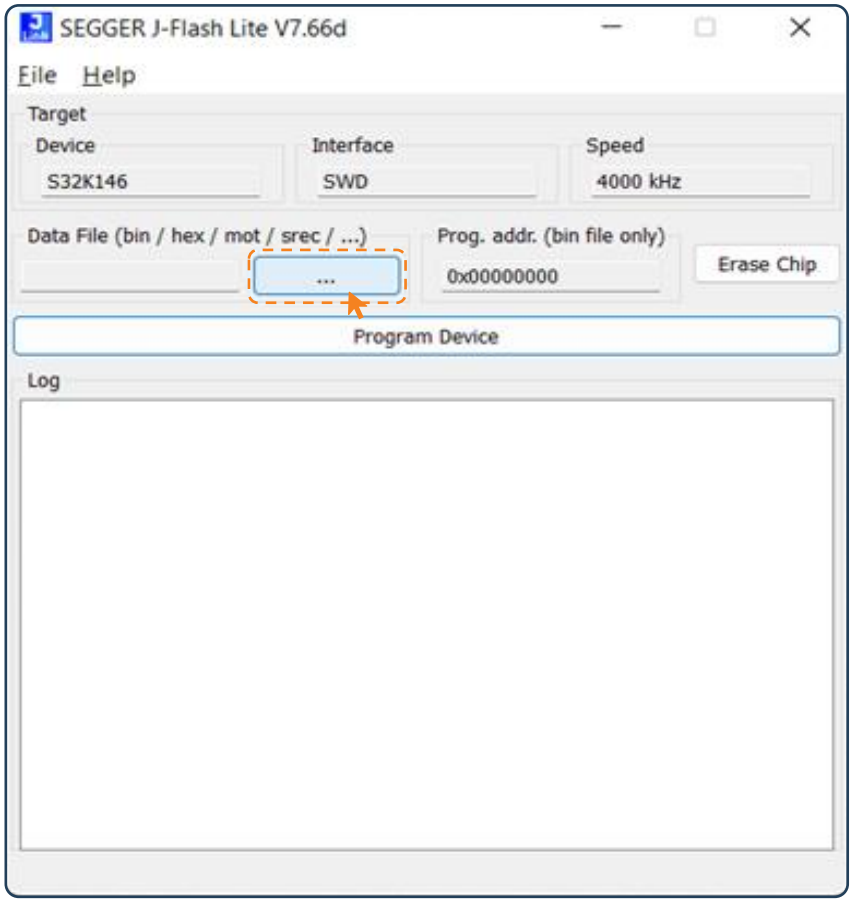


Figure 35 Click the “Data File” button.

Step 6. Select and open the “unified.hex” file.

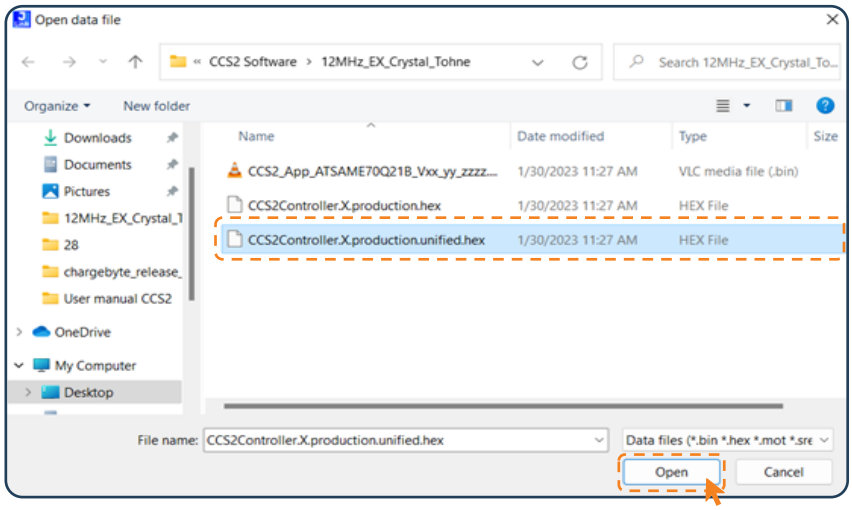


Figure 36 Select and open the “unified.hex” file.

Step 7. After successfully uploading the file, click the “Program Device” button.

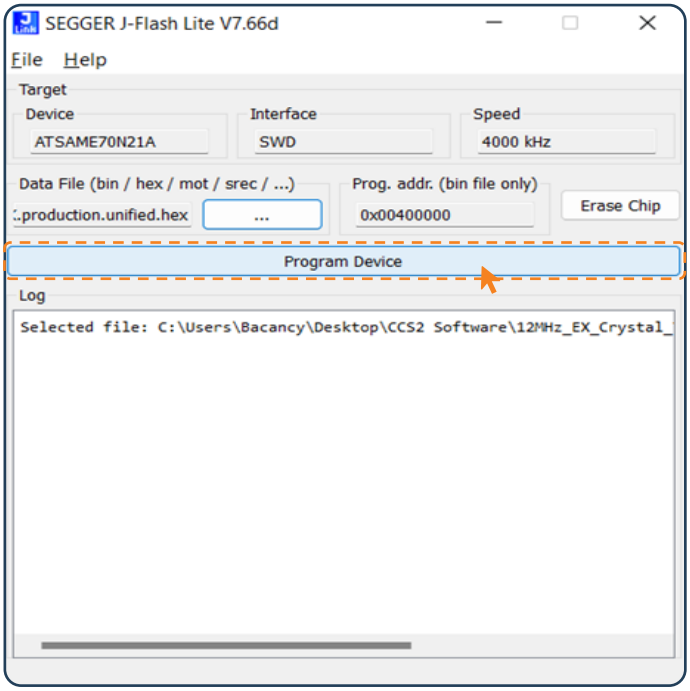


Figure 37 Click the “Program Device” button.

Step 8. After clicking the "Programme Device" button, the flash download process pop-up displays on the screen, as well the "Downloading" log message.

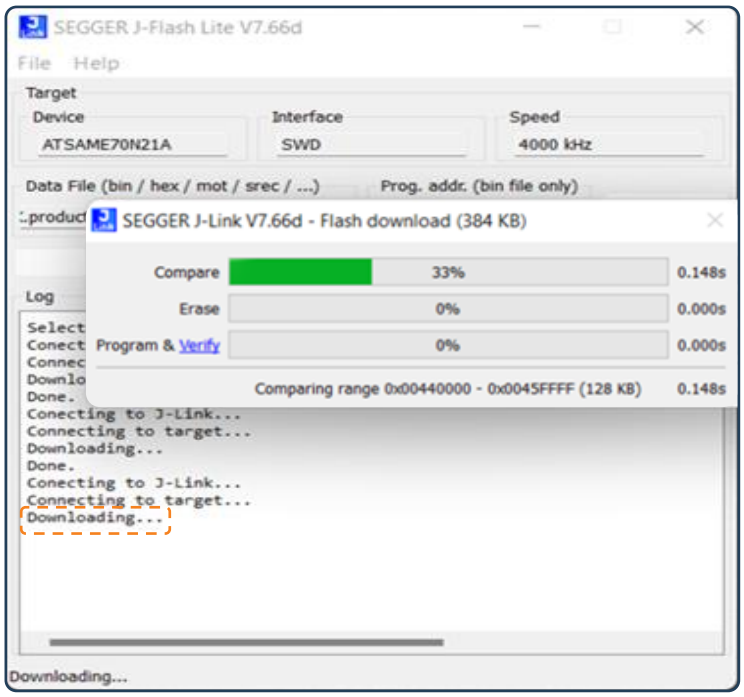


Figure 38 Firmware downloading process.

Step 9. The "Done" log message appears on screen once the flash download procedure is complete.

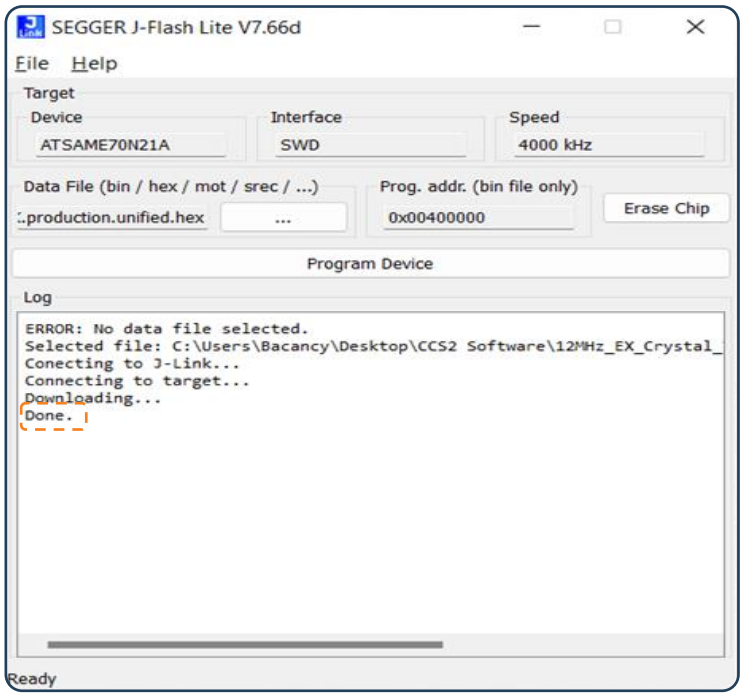


Figure 39 "Done" log message.

7 Appendix

7.1 Abbreviations and Glossary

CCS2	*The Combined Charging System (CCS) is a standard for charging electric vehicles.*
PLC	*Programmable Logic Controllers (PLCs) are industrial computers, with various inputs and outputs, used to control and monitor industrial equipment based on custom programming*
CAN	*A controller area network (CAN) bus is a high-integrity serial bus system for networking intelligent devices. CAN busses and devices are common components in automotive and industrial systems.*
RFID	*Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify, and track tags attached to objects.*
COM	*COM (communication port) is the original, yet still common, name of the serial port interface on PC-compatible computers.*
LED	*A light-emitting diode (LED) is a semiconductor device that emits light when current flows through it.*
RFID	*Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify, and track tags attached to objects.*

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