

Patroller Firmware Upgrade End-User Guide



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Subject: Patroller Firmware Upgrade End-User Guide

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Note that the flash upgrade program is incompatible with the serial ports of some docking stations for laptops. In the event of problems using a docking station serial port, please remove the laptop from the docking station, connect the upgrade lead directly to the laptop, and try again.

Also please make sure that Microsoft ActiveSync is not installed on the PC/laptop. If it is, please ask your technical support team to set up a new login for you.

Alternatively open Microsoft ActiveSync. Go to File option and select Connection Setting. Make sure the check-box for “Allow connections to one of the following: “is unchecked.

Revision History	Date	Editor
First Release	29 June 2007	Alaina Tan
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Section 1: Introduction

This document is written to facilitate Palmer Client to upgrade Patroller Firmware via the serial communication interface with Patroller Interface Unit and the User's computer.

Please note that a serial port must exist on the PC/laptop. If a laptop is to be used, please remove it from the docking unit before continuing.

Section 2: Required Files & Equipments

Required Equipments:

1. Patroller Interface Unit (with battery)
2. Palmer provide Firmware upgrade cable
3. PC/Laptop

Required Files:

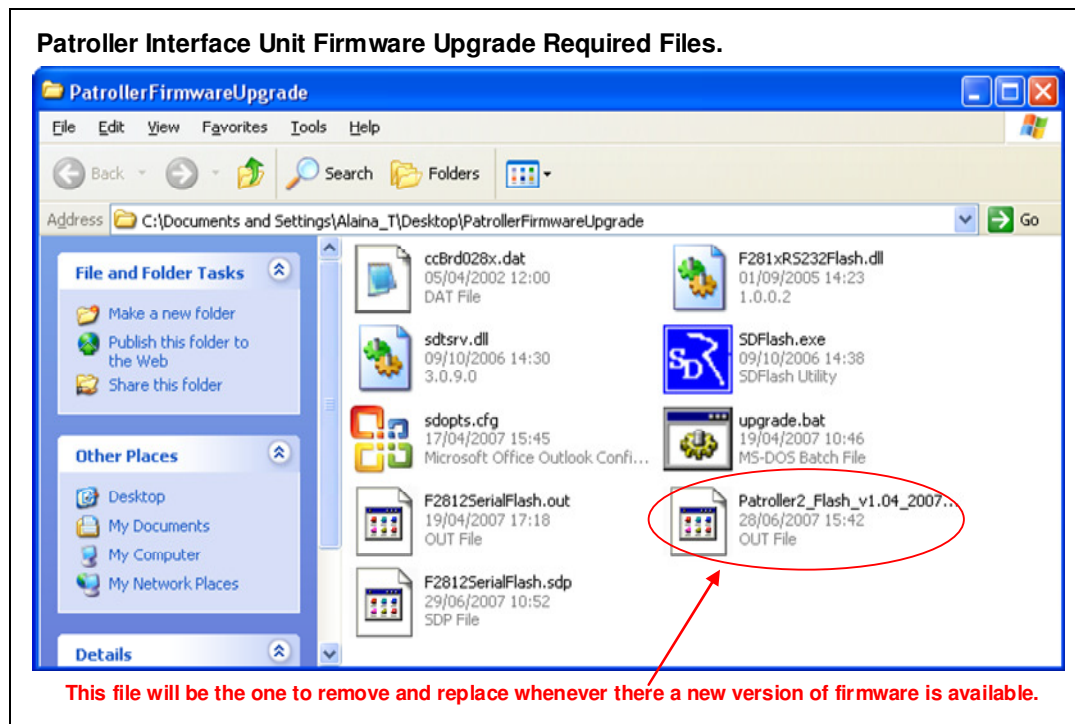


Figure 1: Required Files

The files shown in *Figure 1* are required to complete the firmware upgrade process.

Note the circled red area in *Figure 1*: This file is the actual firmware to be upgraded into the Patroller Interface Unit and should be replaced with the new file.

Version number shown:

Patroller2_Flash_v1.04_2007.out

Future release number should be:

Patroller2_Flash_vx.xx_uuuu.out

Where x.xx defines the version number and uuuu defines the year the firmware is released.

Section 3: Patroller Normal Operations & Upgrade Operations Procedures

Normal Operations:

The user should press the power button briefly to turn on or turn off the Patroller Interface Unit.

On power on: LED: **AMBER**.

On release of power button: LED **GREEN**, flashing every second.

Please wait 45 seconds for the LED to go green if LED goes from **AMBER** to **RED**.

(Please read Patroller User Manual for normal operations)

Upgrade Operations:

If firmware upgrade is required:

1. While power is off (the LED (**GREEN**) is not flashing), the user must hold the power button down for about three seconds until the LED colour changes from **AMBER** to **RED**.
2. After the LED goes **RED**, the user has 45 seconds to start the firmware upgrade with the SDFlash program. After this time, the normal program resumes operation. To continue with the flash operation if this stage is reached, the user should return to step 1.
3. Follow the procedure in *Section 4 & Section 5* to complete the upgrade process

Successful Firmware Upgrade:

When communication is established (using SDFLASH) between the Computer/laptop and the Patroller Interface Unit, erase, programme, verify will be activated between the user computer/laptop and Patroller. LED will stay **RED** throughout the process. When the process is completed, the power button should be pressed, and the unit will resume normal operation with the new firmware in place.

Unsuccessful Firmware Upgrade:

Note that if Please make sure that this step is completed, if any changes required between Step 5 to 8.

- 1.1. Go to File -> Save Project
- 1.2. See *Figure 7*.

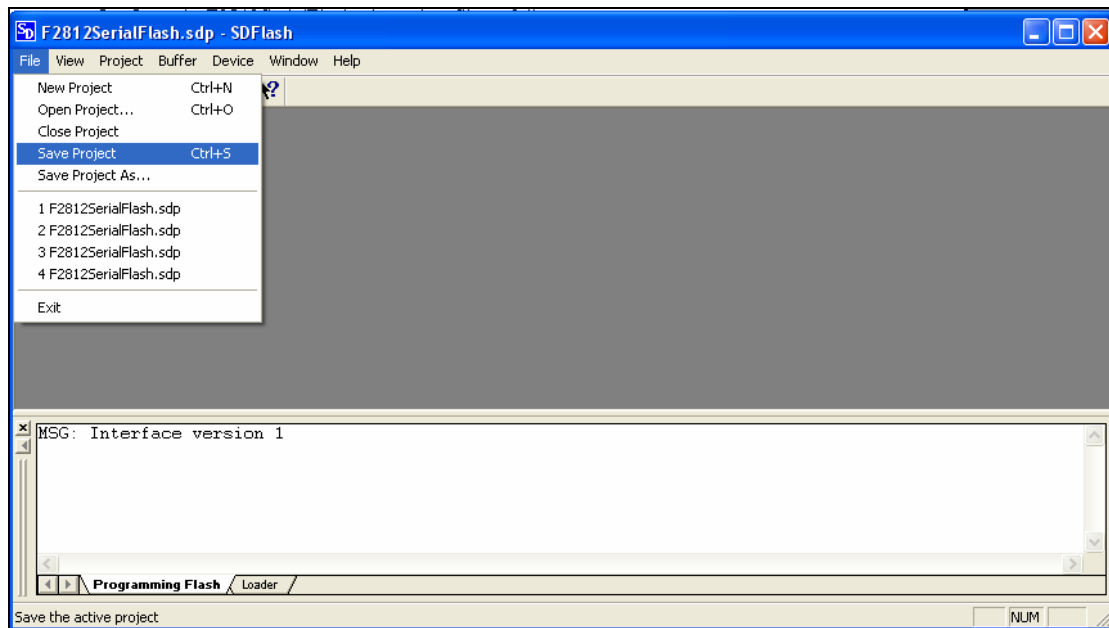


Figure 7: File save Project after changes to SDFLASH Utility

Section 5 is not completed, normal Patroller operation resumes after 45 seconds. LED will be flashing **GREEN**. In this case, the firmware upgrade has failed or not commenced within the 45 second time windows while the LED was **RED**.

Section 4: SDFlash Utilities Screens Check

This setup could be checked directly on the PC/Laptop without Patroller Interface Unit connected.

Please check each screen before commencing Patroller Interface Unit upgrade.

2. Make sure that all required files indicated in are stored in the same directory.
 - 2.1. All files are currently stored in Firmware_upgrade_files directory (This directory will be defined by the end-user). An example is shown in *Figure 1*.
3. Start up SDFlash.exe. See *Figure 8*.
4. Go to File and select F2812SerialFlash.sdp. See *Figure 11*.
5. Select *Project -> Settings...*
 - 5.1. See *Figure 2*.

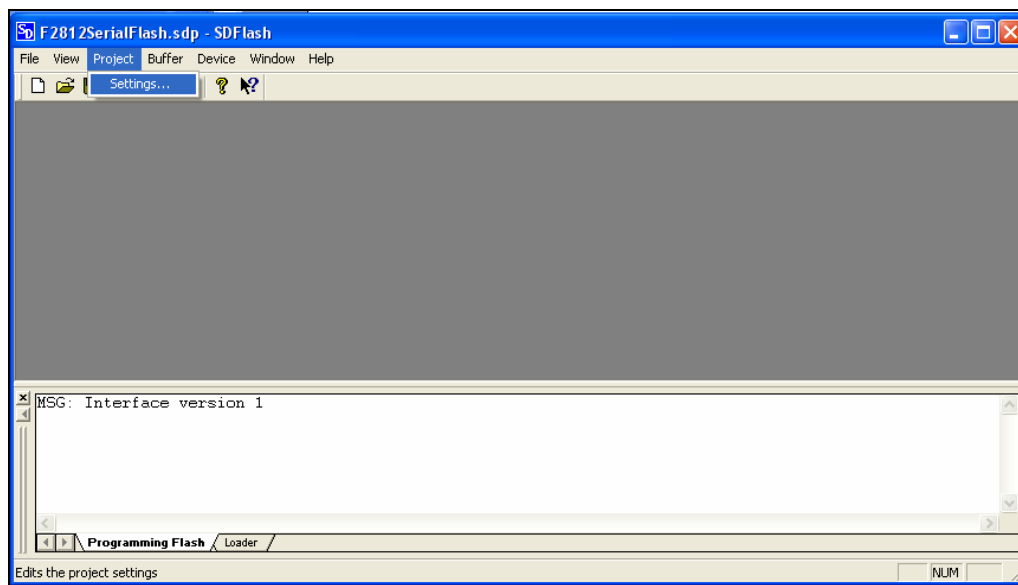


Figure 2: SDFlash Setup for firmware upgrade. Developer's side

6. Step 4 will open up the PSD_EMU_CONTROLLER_INFO window shown in *Figure 3*.
 - 6.1. In the Target tab:
 - 6.1.1. Please make sure that the screen setup for the Target tab is as shown in *Figure 3*.

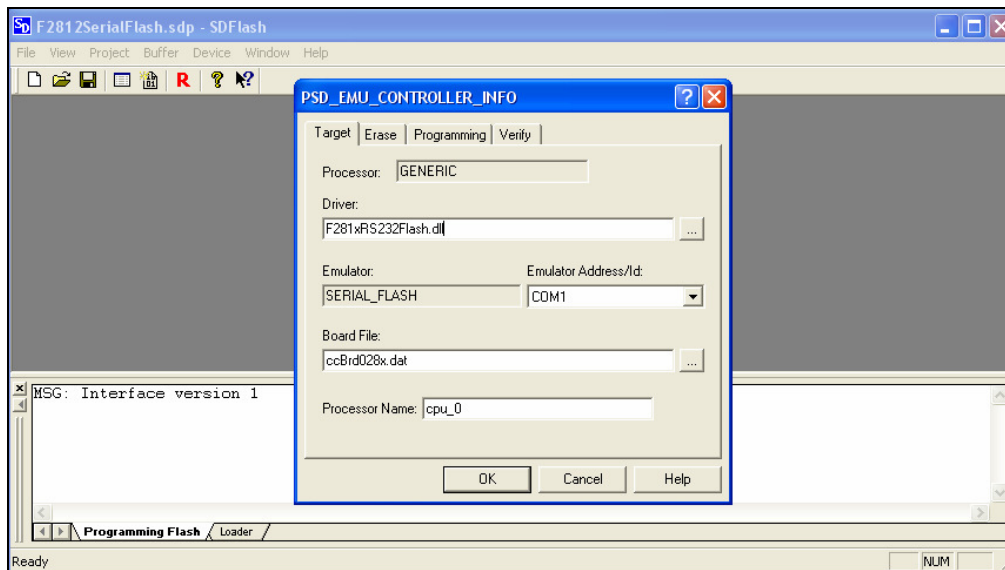


Figure 3: PSD_EMU_CONTROLLER_INFO Target Tag

7. In the PSD_EMU_CONTROLLER_INFO Erase tab shown in *Figure 4*
 - 7.1. Please make sure that the screen setup for the Erase tab is as shown in *Figure 4*.

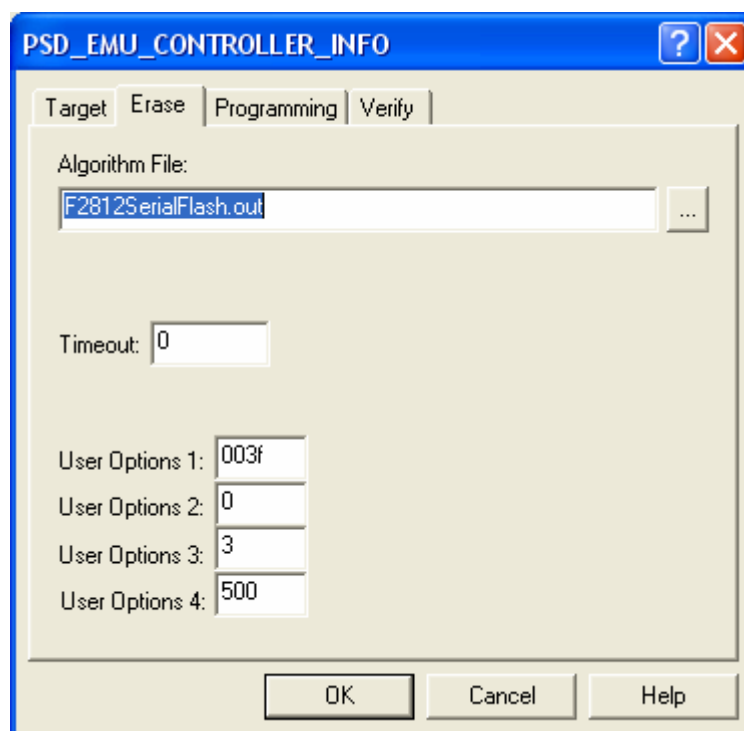


Figure 4: PSD_EMU_CONTROLLER_INFO Erase Tab

8. In the PSD_EMU_CONTROLLER_INFO Programming tab shown in *Figure 5*.
 - 8.1. Please make sure that the screen setup for the Programming tab is as shown in *Figure 5*.

8.2. Note that Flash Data File should be changed to the new firmware version to be upgraded.

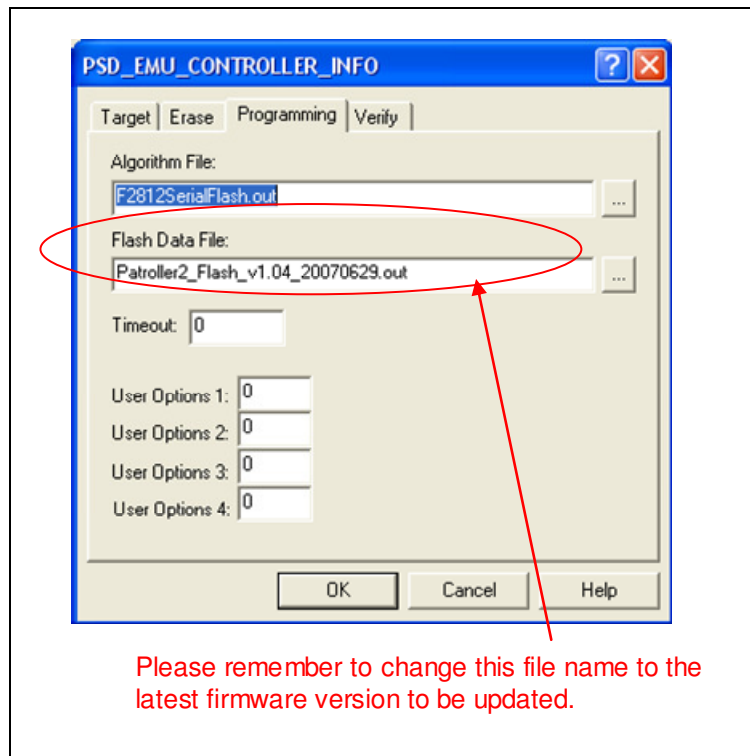


Figure 5: PSD_EMU_CONTROLLER_INFO Programming Tab

9. In the PSD_EMU_CONTROLLER_INFO Verify tab shown in *Figure 6*.

9.1. Please make sure that the screen setup for the Verify tab is as shown in *Figure 6*.

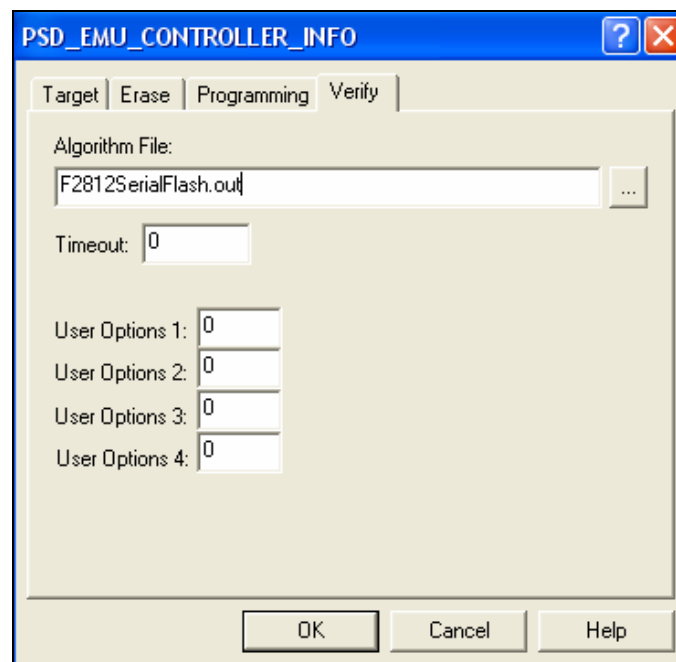


Figure 6: PSD_EMU_CONTROLLER_INFO Verify Tab

10. Please make sure that this step is completed, if any changes required between Step 5 to 8.
- 10.1. Go to File -> Save Project
- 10.2. See *Figure 7*.

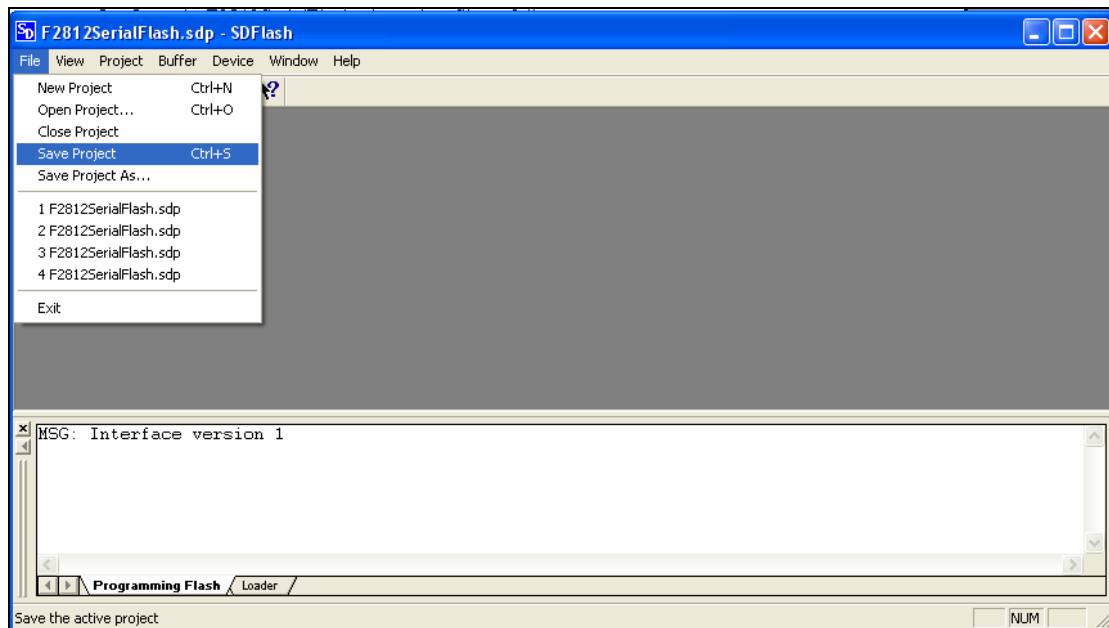


Figure 7: File save Project after changes to SDFLASH Utility

Section 5: Firmware Upgrade procedure after initial setup

Once everything is set up as described in the *Section 4* above, it is necessary for the end user to complete the following procedure:

1. Connect the serial upgrade cable between the PC (COM1) and Patroller Interface Unit.
2. Start up upgrade.bat, which copies files into their necessary locations and starts up the SDFlash utility.

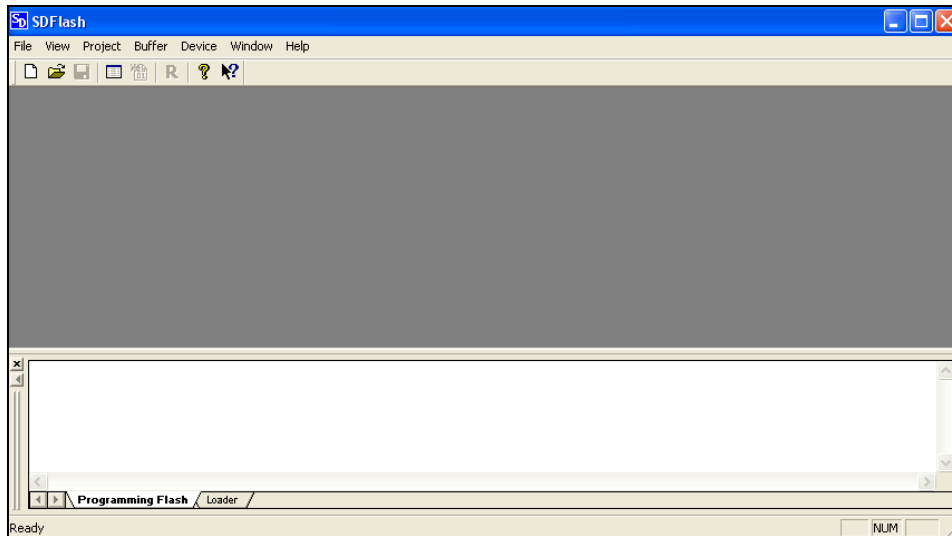


Figure 8: SDFlash Utility

3. Open the F2812SerialFlash.sdp project file as follows.
 - 3.1. If this is the first time SDFlash has been run on the Host PC:
 - 3.1.1. Go to *File*. See *Figure 9* and *Figure 10*.
 - 3.1.2. Select *Open Project ...*
 - 3.1.3. Go to the directory where F2812SerialFlash.sdp is located on the Host PC (it will be in the folder in which the firmware upgrade files were unpacked), and open the project.

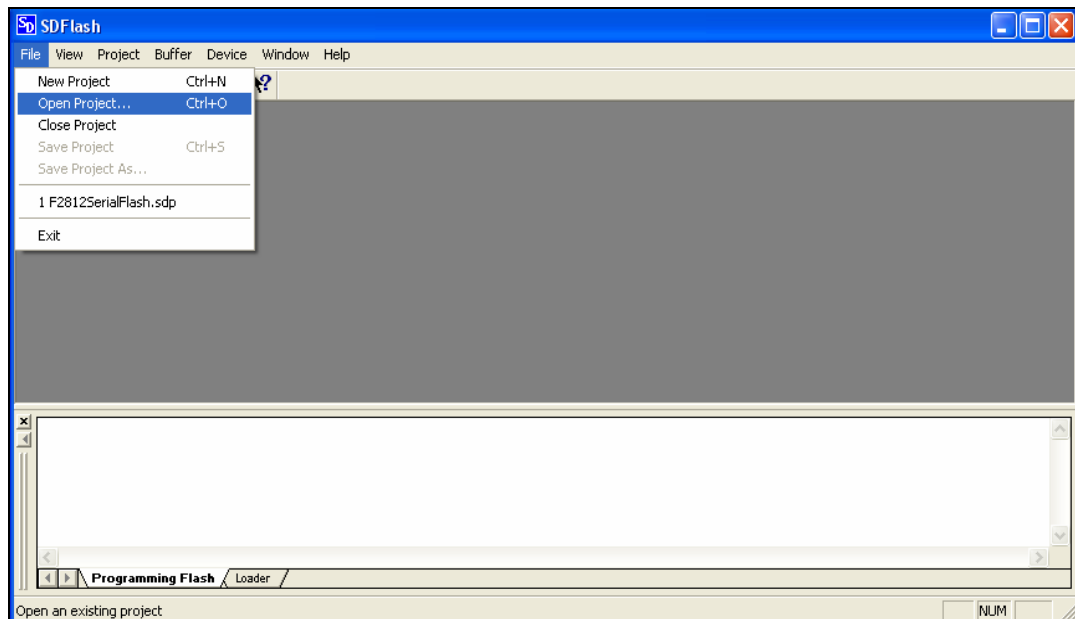


Figure 9: End-User: Using SDFLASH for the first time

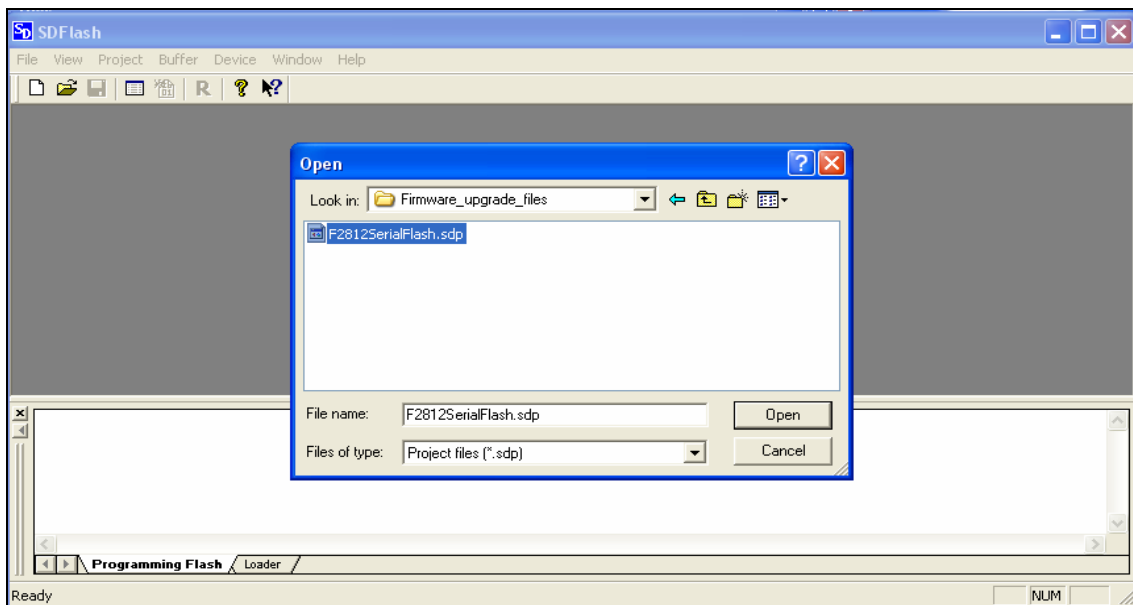


Figure 10: End User opening F2812SerialFlash.sdp project for the first time

3.2. If SDFlash has been used on the host PC before, the File menu will contain the entries shown in *Figure 11*.

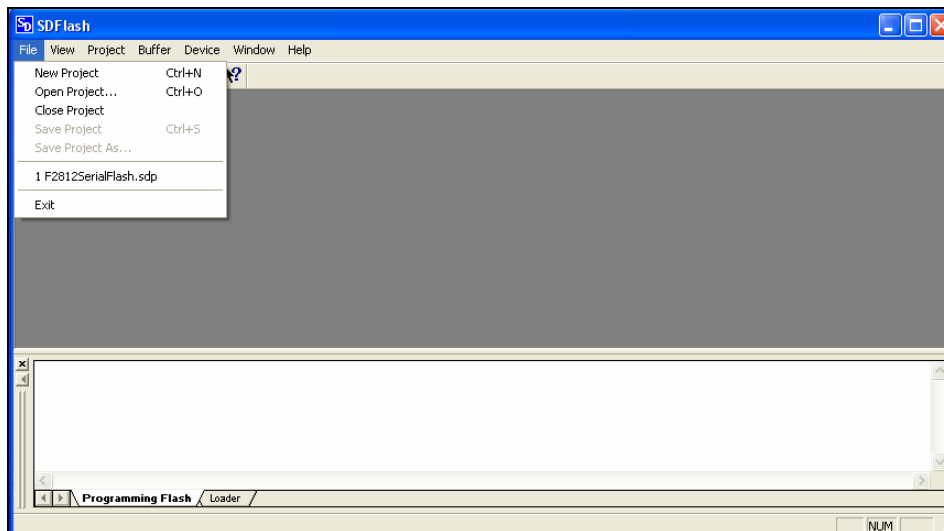


Figure 11: Select F2812SerialFlash.sdp in SDFLASH Utility

3.3. Once F2812SerialFlash.sdp is selected, the white message screen at the bottom of the window will show the following message: “MSG: Interface version 1”.

4. Select Reset icon **R** as shown in *Figure 12*.

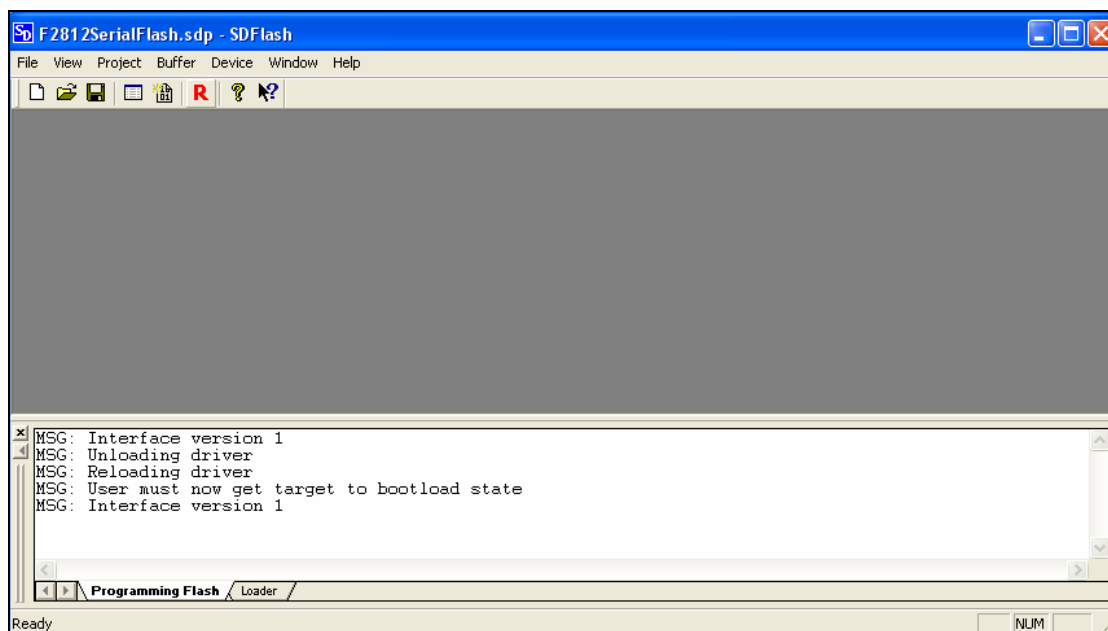


Figure 12: RESET after opening. It is required to reset before performing the flash upgrade

4.1. The additional messages shown in *Figure 12* will be shown in the message board.

5. Select the flash icon as shown in *Figure 13* below. The red arrow on the figure shows the location of the flash icon on the screen. Alternatively, select Device->

Flash from the main menu. *Figure 14* shows the SDFlash window once this step is completed.

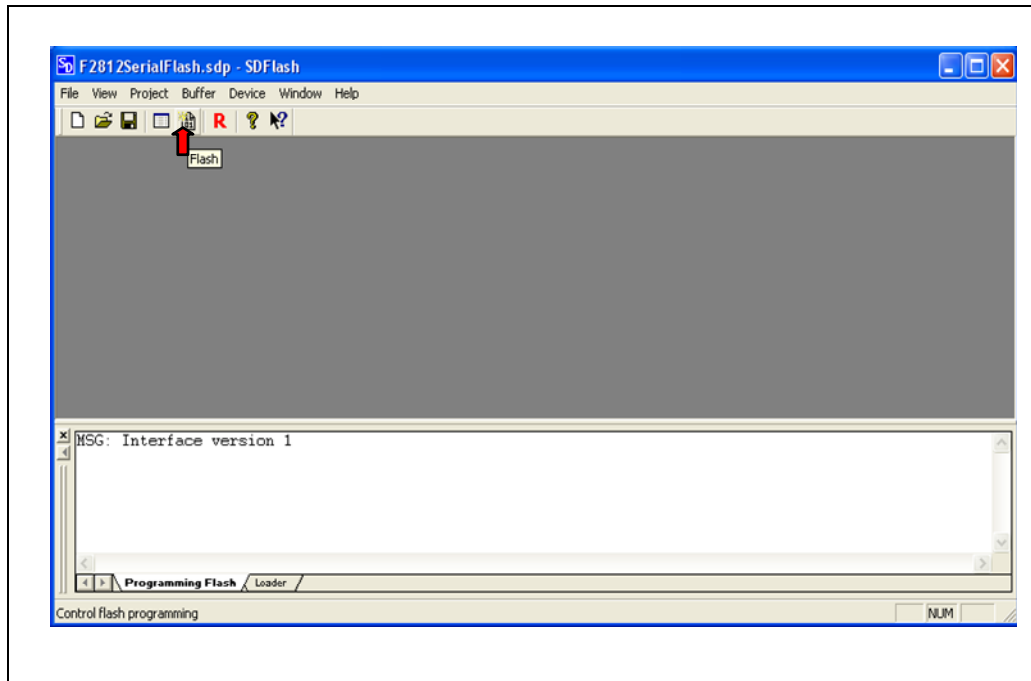


Figure 13: Select Flash Icon

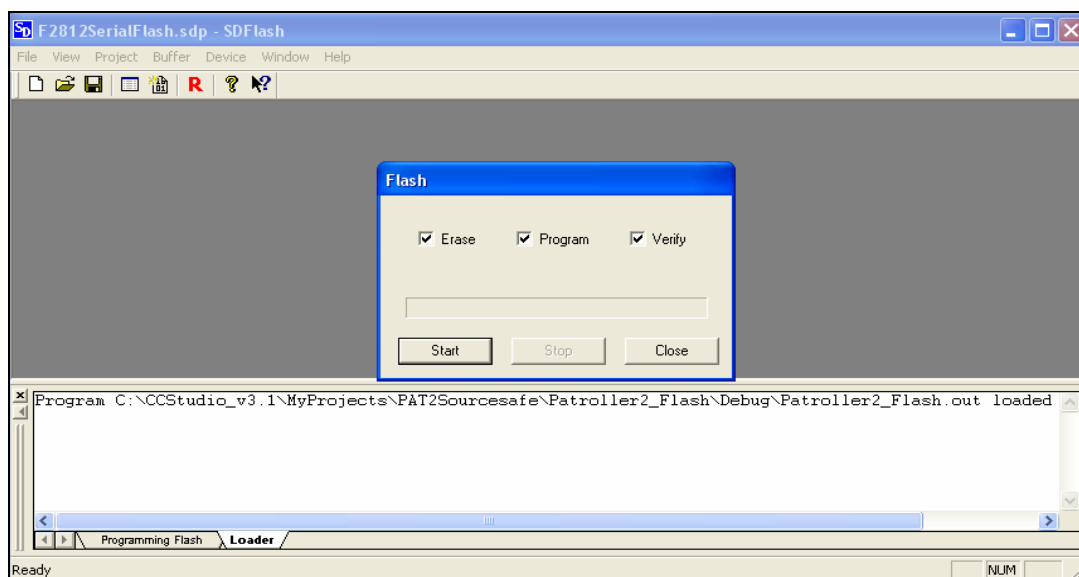


Figure 14: Erase, Program and Verify

6. At this point, the Patroller Interface Unit should be made ready to receive a firmware upgrade. It is then necessary to press Start to Erase, Program and Verify the DSP FLASH memory. See *Figure 15* and *Figure 16*.

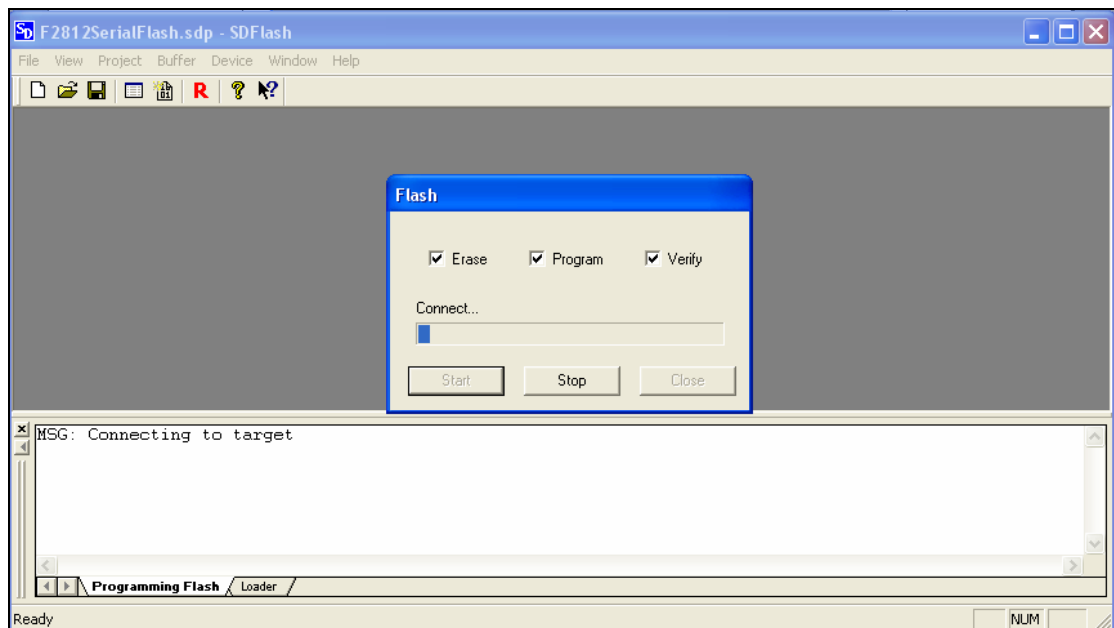


Figure 15: Connecting to target

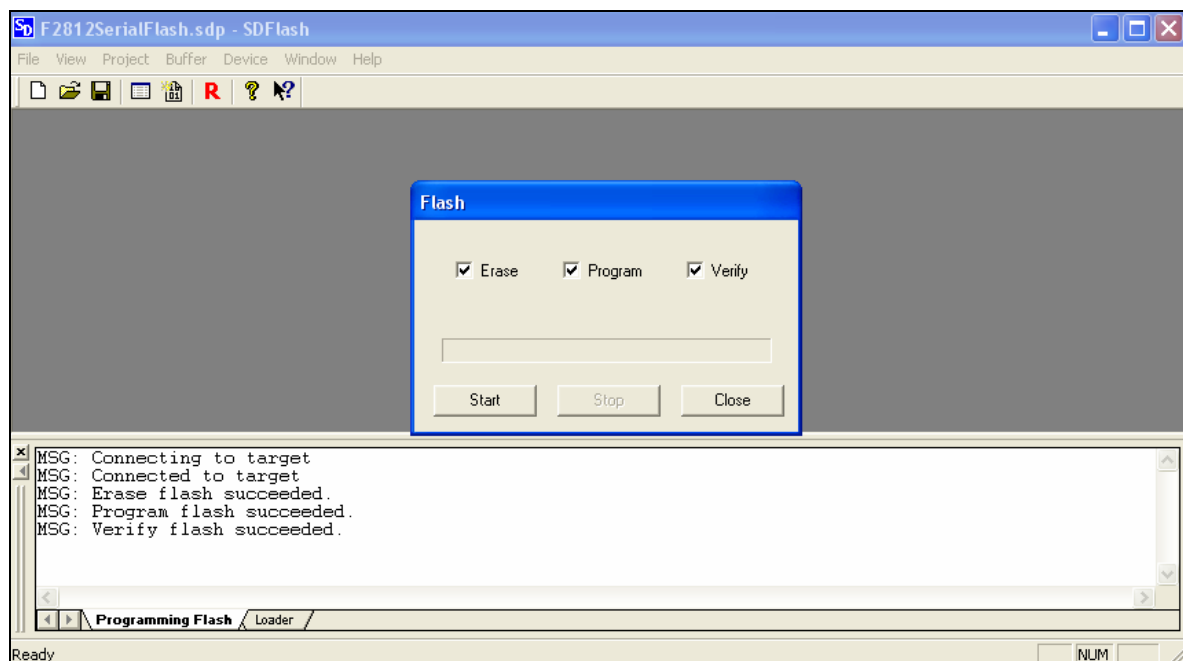


Figure 16: Erase, Program, and Verify Flash succeeded

The firmware has been successfully upgraded after this stage. The user should press the push button once to exit boot mode and return to normal flash operation.

Note: Do not unselect Erase, Program or Verify options individually.

If SDFLASH is interrupted at any time during the operation, the end-user should remove and re-connect the battery. In this situation, the boot-loader should still be present, as this is not erased during the normal programming process, so to recover the situation, it is necessary for the boot-loader to be started in the normal way by holding down the power button, and resuming the flash upgrade from step 4 of this section. In the event that the LED does not illuminate when the power button is pressed, contact Palmer Environmental for support.