

Your Product Development Partner!

Secure Bootloader Plus
Product Brief
Rev 3, 2020.04.02

Introducing Secure Bootloader Plus from Driven 2 Design!

In the field

- Securely and easily update your STM32 based product in the field.
- Distribute your firmware update files over open networks and channels without fear of IP theft or reverse engineering. Your IP is protected using 128 bit AES encryption.
- Updates are performed easily from a laptop through your product's RS-232 port or USB device port. All decryption is performed inside the MCU and not on the PC, providing the greatest security for your IP.
- Prevents execution of unauthorized code by your device.
- Brick proof your product eliminating the need for the main board to be returned for firmware reprogramming, even in the event of an update release that crashes the system. The bootloader is not erased or re-flashed in the update process. The bootloader occupies the default reset vector and is always there to boot your board and accept a new firmware update.
- Connect to your products in the field and know these things immediately
 - The current firmware part number
 - The current firmware version number
 - The current firmware version date
 - The date that the connected board was updated with its current firmware
 - The current firmware version's authentication code
 - Also immediately and automatically updates the board's RTC to the PC systems date and time.
- The bootloader will refuse to boot an update that does not pass authentication preventing your product from executing unauthorized applications.

On the production line

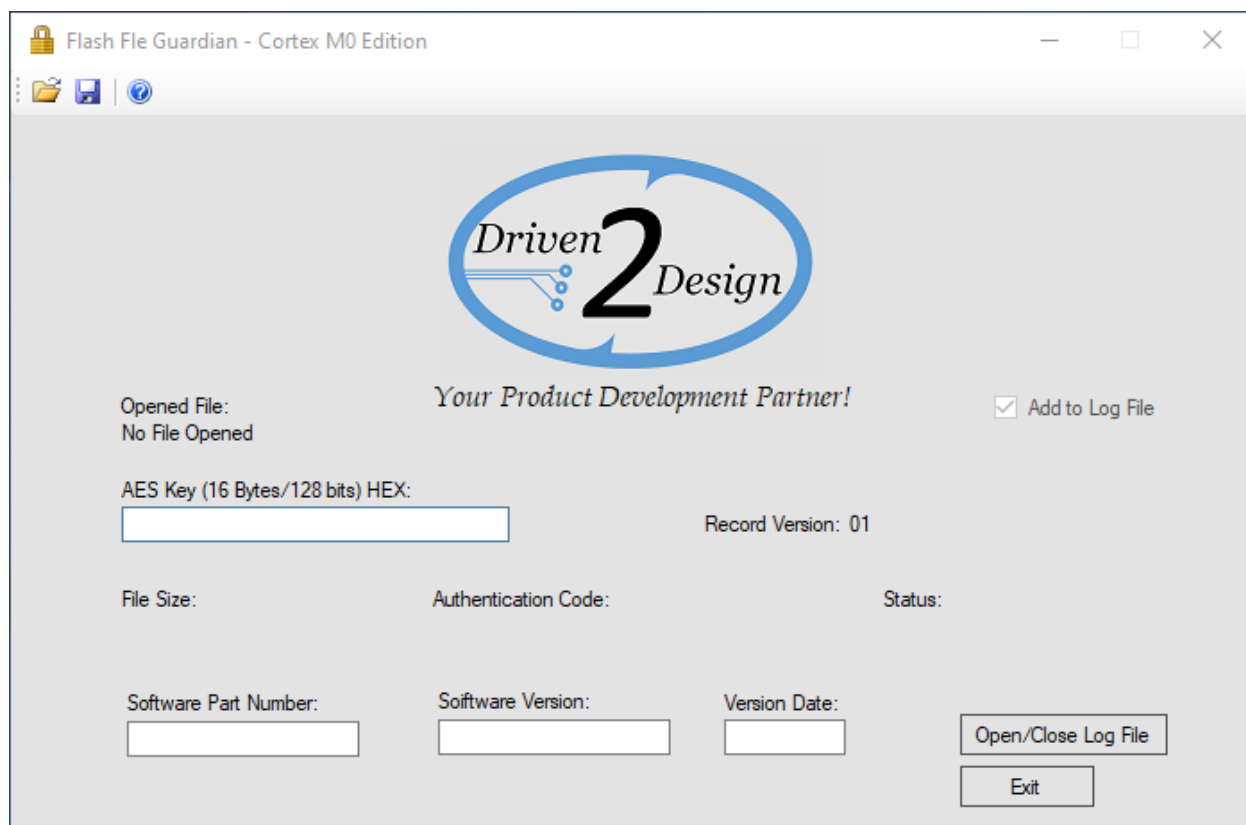
- Commission the board by writing its serial number to FLASH memory without the need to rebuild your code for each serial number. The serial number is burned into the bootloader's FLASH area and becomes a permanent part of the board.
- Set the board's RTC automatically and quickly from the PC's system date and time eliminating the need to set it manually through the device's HMI.
- Program your boards on the production line from a secured file not the actual binary protecting your IP from theft.

Use Sequence

1. Program your boards with Secure Bootloader Plus at time of board manufacture.
2. Build your board's application software using the tool of your choice.
3. Encrypt the application binary output created by your software tool using Flash File Guardian that is supplied with the bootloader.
4. Distribute your encrypted binary as required without fear of IP theft.
5. In the field and on the production line, use MCU Flasher, supplied with the bootloader to update your product with the secured binary file which is your product update software.

You're done! It's that easy.

Use Flash File Guardian to secure your board's firmware binary file, Flash File Guardian is supplied with the bootloader.



Flash File Guardian uses 128 bit AES encryption and 32 bit proprietary authentication to ensure that your IP may be distributed without theft or reverse engineering. It also ensures that your product will never accept firmware that is unauthorized when used with Secure Bootloader.

Flash File Guardian reads your firmware tool's binary output file, adds security data then encrypts it using 128 bit AES encryption and writes this encrypted file out as an .ffg file.

In the field, update your product over its UART port or its USB device port from a PC using MCU Flasher, supplied with the bootloader.

On the production line, use MCU Flasher to commission your board with its serial number and first application software.



Using MCU Flasher from Driven 2 Design you can now securely update your product in the field from a laptop via either your product's UART (232/485) or USB device port. MCU Flasher may also be used on the production line to commission your STM32 board with its initial application and a serial number. It also sets the MCU's RTC if

equipped. The Driven 2 Design Secure Bootloader must be installed on your STM32 board and Flash File Guardian must have been used to secure your board's firmware prior to use with Secure Bootloader.

In the field, know immediately upon connection if application code is present, its version, its version date and the date the board was updated with that version as well as the board's serial number and commissioning date.

Secure Bootloader Plus, Flash File Guardian and MCU Flasher are licensed as a package to a single product's production without royalties. Use the contact info below for pricing and purchase.

sales@drvn2dsn.com