# FM-SBSFU V2
# Secure Boot and Secure Firmware Update System

For IoT and Embedded Systems based on the STM32 line of MCUs

- End-to-end encryption and authentication
- Dual image for safe firmware programming
- Delta patching to minimize download and on-air time and costs
- Seamless integration with external SPI flash

Option 1: Fully contained in internal flash (no external flash required)

MCU Flash
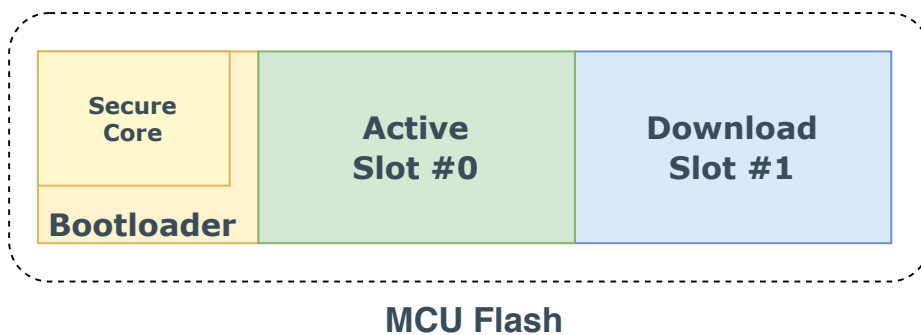
Option 2: Extend active and download slots to external SPI flash

MCU Flash   **SPI Flash**
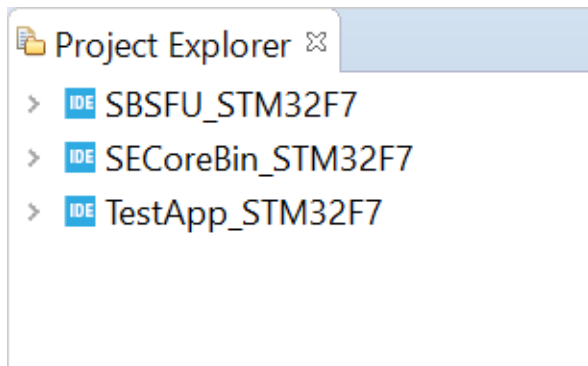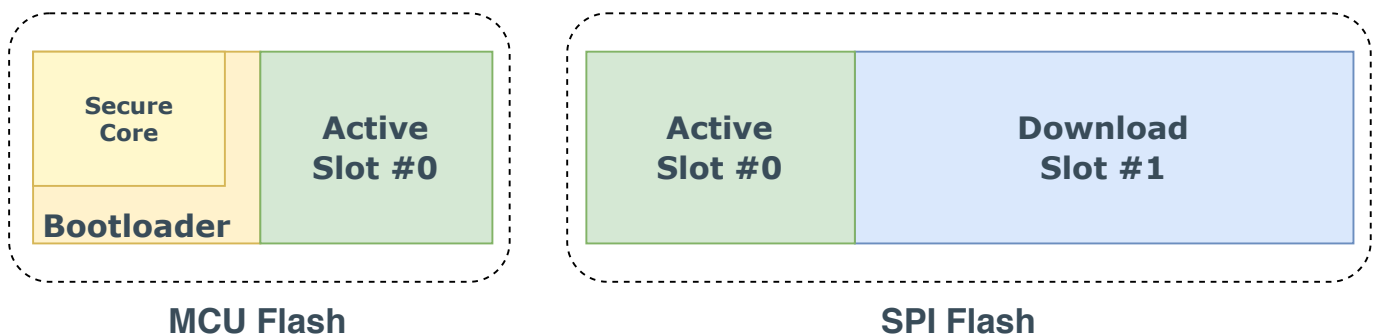
Example Project Structure
STM32CubeIDE

FM-SBSFU V2

FIRMWARE MODULES
BUILD | TEST | RELEASE

Specifications

Bootloader Size	Min 42K for base configuration. Actual size depends on enabled features, STM32 platform and sector sizes.
Encryption	AES-128 CBC
Authentication	ECDSA FIPS 186-3 Curve P-256 SHA-256
Bootloader Structure	2 Application Design - SBSFU and SECoreBin
Delta Patching Engine Compression Ratio	80% Typ. Varies with application structure.
Security Library	ST CryptoLib
Build Tool Language	Python

Supported Update Methods

- ☑ OTA Cellular
- ☑ OTA LoRaWAN
- ☑ USB Flash Drive
- ☑ Contactless NFC
- ☑ YMODEM / UART
- ☑ Custom

Features

- ☑ Encrypted Updates
- ☑ Digitally Signed Updates
- ☑ Delta Patching
- ☑ Dual Image
- ☑ STM32 MCU
- ☑ TouchGFX Support
- ☑ External SPI Flash
- ☑ STM32CubeIDE
- ☑ Build System Integration

About Firmware Modules

Since 2015 Firmware Modules has been a provider of professionally designed advanced firmware middleware and applications for MCU-based IoT and embedded systems.