# Design Specification of FLASH

## Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Revision** | **Author** | **Changes** |
| 2022/5/11 | 1.0 | QinDong | Initial version. |

## Overview:

flash存储器又称闪存，它结合了ROM和RAM的长处，不仅具备电子可擦除可编程（EEPROM）的性能，还可以快速读取数据（NVRAM的优势），使数据不会因为断电而丢失。

## Competitor comparison:

|  |  |  |
| --- | --- | --- |
|  | STM32F103 | AT103 |
| bank | 1~2 | 1 |
| page(sector) size | 1024byte | 1024byte |
| page(sector) num | 128 | 256 |
| system flash | 2K | 2K (NVR+RED)  实测RED等同于NVR的映射 |
| Option Byte | 16byte |
| 读写保护 | yes | 只有写保护，无读保护 |
| chip/page erase | yes | yes |

## Design:

### **HAL DMA API list:**

|  |  |
| --- | --- |
| STM32F103VB | AT103 |
| FLASH\_SetLatency  FLASH\_HalfCycleAccessCmd | FLASH\_UpdateLatency |
| FLASH\_ProgramWord  FLASH\_ProgramHalfWord | FLASH\_ProgramDoubleWord |
| FLASH\_PrefetchBufferCmd  FLASH\_GetPrefetchBufferStatus  FLASH\_Unlock  FLASH\_Lock  FLASH\_ErasePage  FLASH\_EraseAllPages  FLASH\_EnableWriteProtection  FLASH\_GetFlagStatus  FLASH\_ClearFlag  FLASH\_GetStatus  FLASH\_WaitForLastOperation | |
| FLASH\_UnlockBank1  FLASH\_UnlockBank2  FLASH\_LockBank1  FLASH\_LockBank2  FLASH\_EraseAllBank1Pages  FLASH\_EraseAllBank2Pages  FLASH\_GetBank1Status  FLASH\_GetBank2Status  FLASH\_WaitForLastBank1Operation  FLASH\_WaitForLastBank2Operation  FLASH\_EraseOptionBytes  FLASH\_ProgramOptionByteData  FLASH\_UserOptionByteConfig  FLASH\_GetUserOptionByte  FLASH\_GetWriteProtectionOptionByte  FLASH\_ReadOutProtection  FLASH\_BootConfig  FLASH\_GetReadOutProtectionStatus  FLASH\_ITConfig | 无 |

## Known behavior and issue: