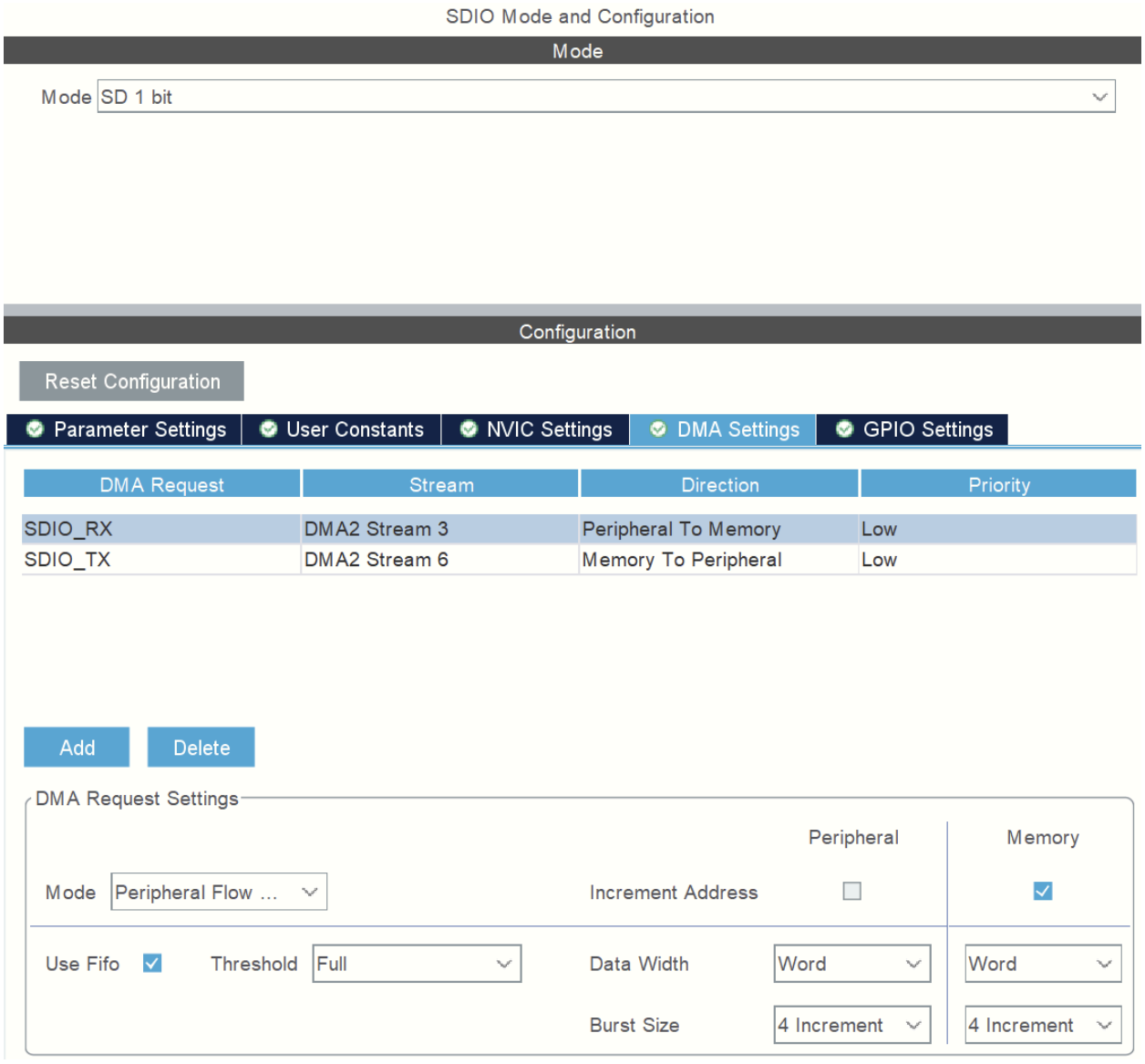
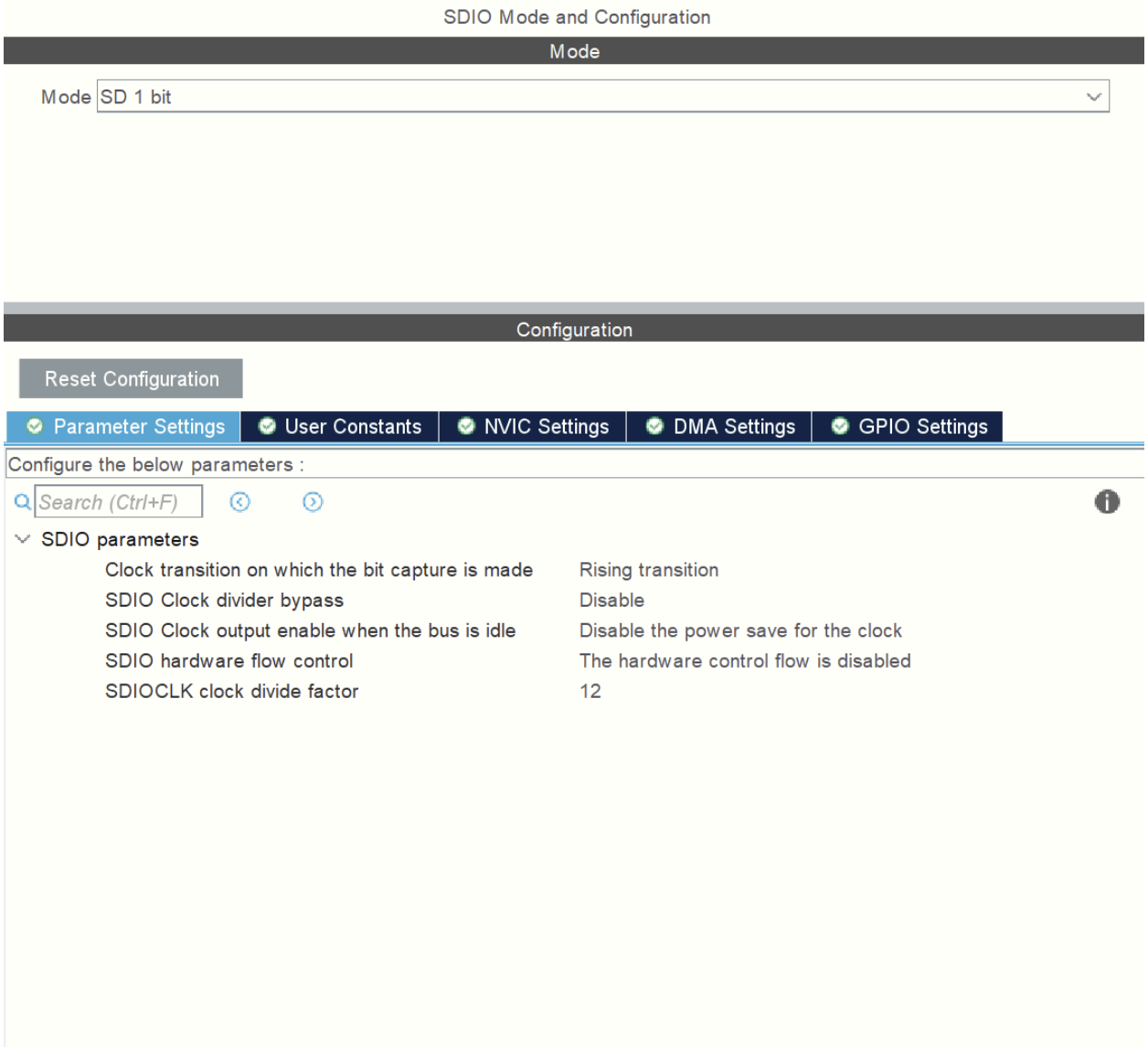
SDcard.h

Driver Description

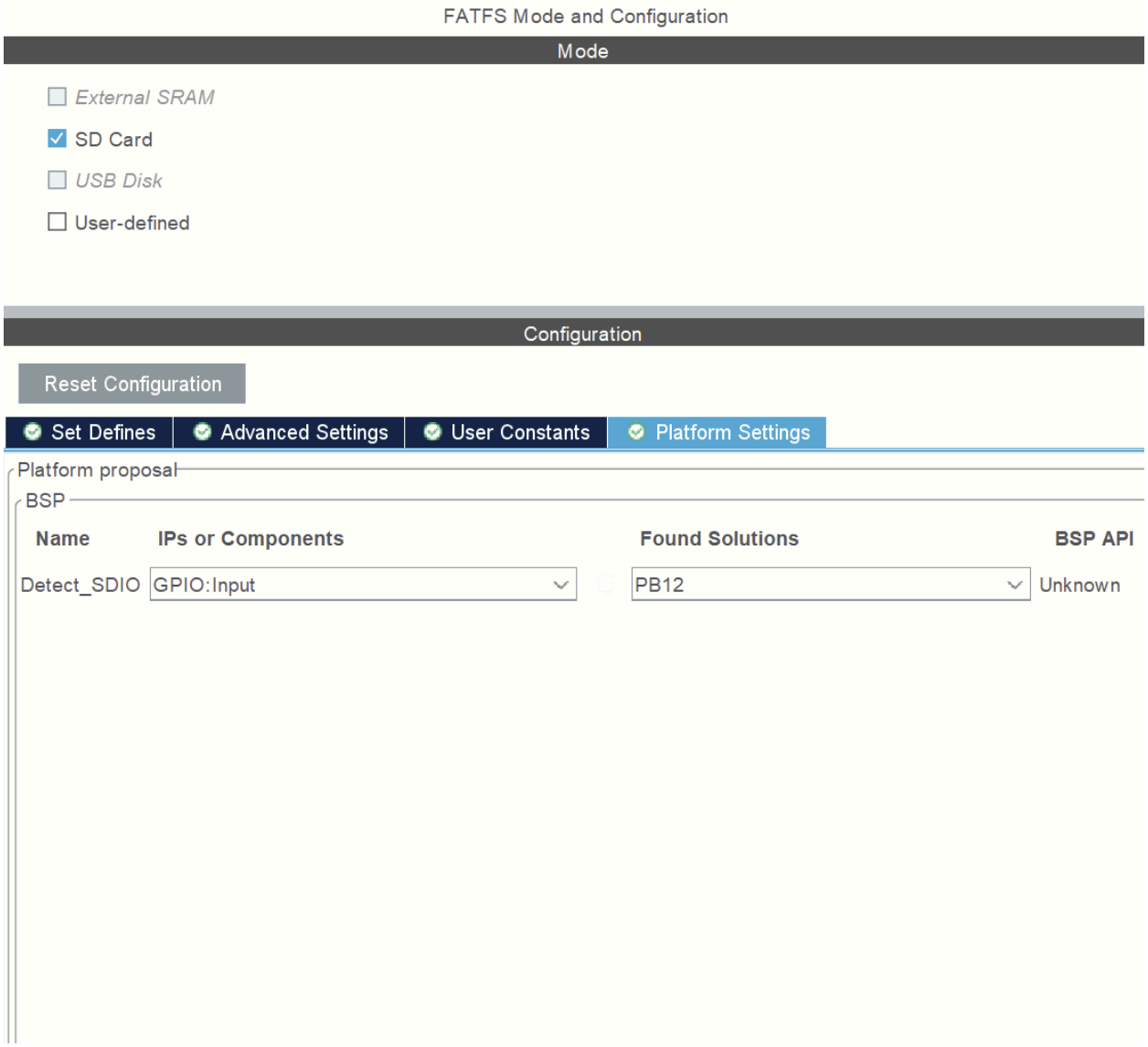
A bare minimum driver library for interfacing with the SDcard on the STM32F407ZGT6 development board. FATFS and SDIO interfaces are required for this to work.

FATFS & SDIO Setup

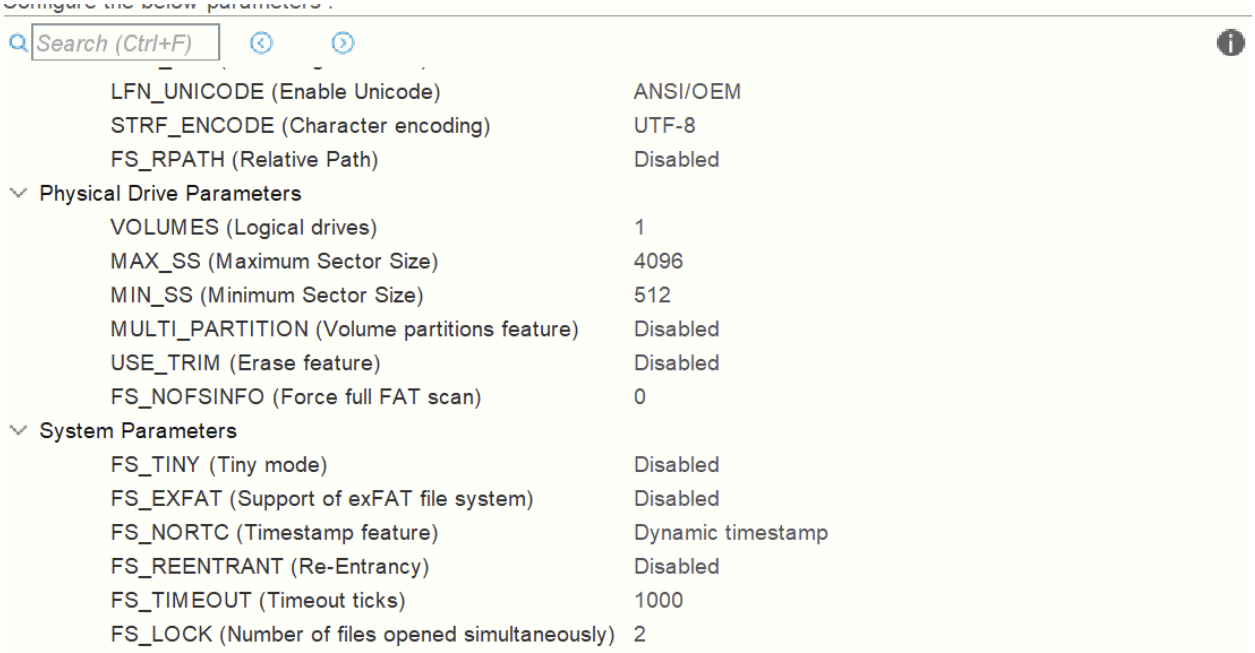




The SDIOCLK needs to be adjusted based on the APB2 clock frequency. At 168MHz, divide by 12 is working



FATFS requires SD card detection. Here we use PB12 permanently pulled down to simulate a permanently inserted SD card.



All other settings are default except MAX_SS is set to 4096

Library Functions

```
SDcard_STATUS SD_Init();
```

Description: Mounts the SD card. Call on initialization of the code.

```
SDcard_READ_STATUS SD_ReadFile(char* FILENAME, char* BUF, uint32_t DATA_LEN)
```

Description:

Read a file given the filename. The data is stored into BUF.

Specify DATA_LEN, which is the length of data in bytes expected to be read. If the read function reads the same number of bytes as DATA_LEN, it returns SDcard_READ_OK. Otherwise, it returns SDcard_READ_COUNT_ERROR. This error can be ignored if the DATA_LEN is not known or specified.

```
SDcard_WRITE_STATUS SD_WriteFile(char* FILENAME, char* DATA, uint32_t
DATA_LEN)
```

Description: Write to a file given the filename, where DATA is the data to be written. If this file does not exist, the file will be created.

Specify DATA_LEN, which is the length of data in bytes expected to be written. If the write function writes the same number of bytes as DATA_LEN, it returns SDcard_WRITE_OK. Otherwise, it returns SDcard_WRITE_COUNT_ERROR. This error can be ignored if the DATA_LEN is not known or specified.