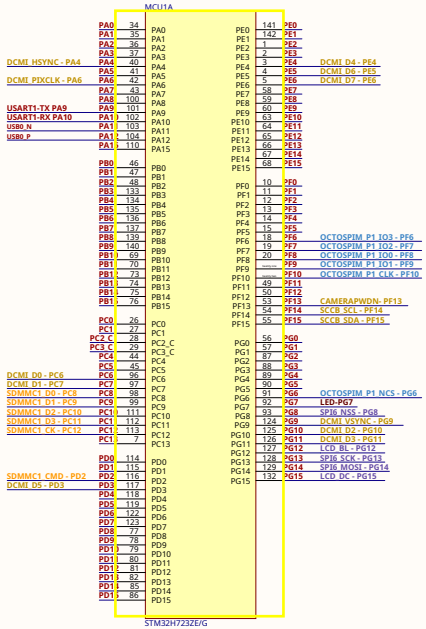
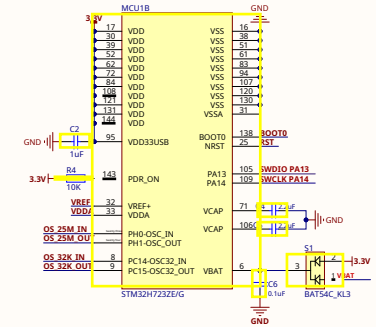
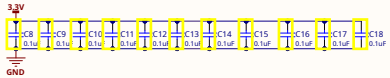
Here, the STM32H723 is divided into two parts, but they are actually the same chip.



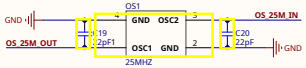


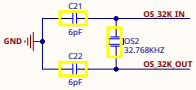
VDD filter capacitor



25M master clock crystal

Package: 3225 4P

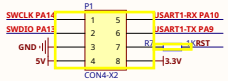




RTC clock crystal oscillator 32.768KHz

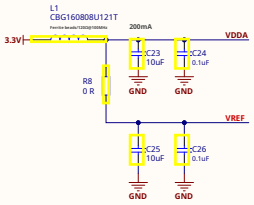
Package: 3215 2P

SWD and USART1 interfaces



1. The purpose of the 1K resistor here is to provide current limiting protection when the user connects the power line to RST by mistake.

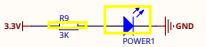
2. It is recommended to use 5V power supply, and then get 3.3V to the MCU through the onboard voltage regulator chip to avoid damage to the MCU due to accidental input of high voltage



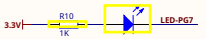
Analog voltage

Reference voltage

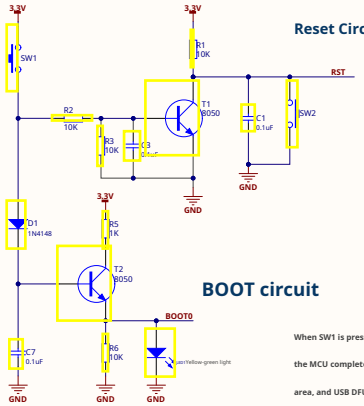
Disconnect the 0 ohm resistor and connect to the external reference voltage



Power indicator LED, white light



User LED, blue light



Reset Circuit

R1, C1 and SW2 form a conventional reset circuit.

Trigger MCU reset when power is turned on or SW2 is pressed

In normal state, the two transistors are cut off, and BOOT0 is grounded through a 10K resistor.

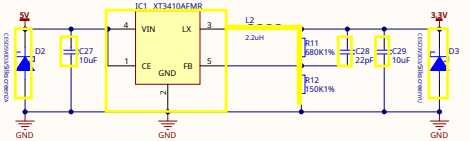
MCU boots from on-chip flash

BOOT circuit

When SW1 is pressed, T1 and T2 are turned on, triggering the MCU reset, and BOOT0 is pulled high by T2. If SW1 is released at this time, T1 is immediately turned off, and the MCU completes the reset. Due to the effect of C7, T2 will be delayed to turn off. At this time, BOOT0 is still high level, and the MCU will start from the system storage area, and USB DFU download or serial port ISP download can be performed.

The purpose of this is to enter the ISP state by pressing the BOOT button once, without having to press the reset and BOOT buttons separately, simplifying the operation.

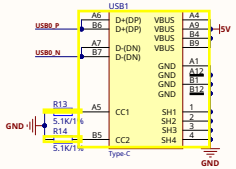
3.3V power supply circuit



1. It is recommended to use 5V power supply, and then use the voltage regulator chip to get 3.3V to avoid damage to the microcontroller due to accidental input of high voltage

2. The two ESD diodes here provide overvoltage and reverse connection protection

USB interface circuit



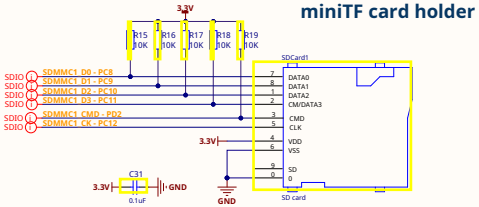
1. Use 16-pin Type C socket, support forward and reverse insertion

2. Type C is directly connected to PA11 and PA12 of STM32, and USB applications can be developed(Not serial communication!)

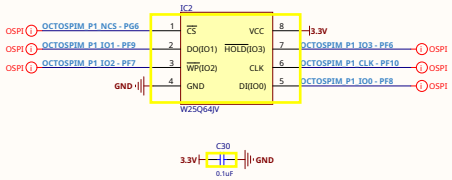
3. Use Type C data cable to connect to the computer and download the user program via USB DFU(Not serial port download!)

Note: The core board does not have a hardware USB to serial port circuit! !

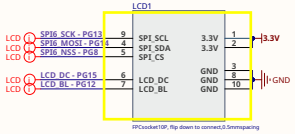
miniTF card holder



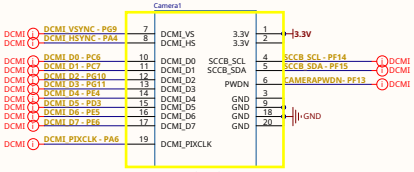
Extended Flash W25Q64

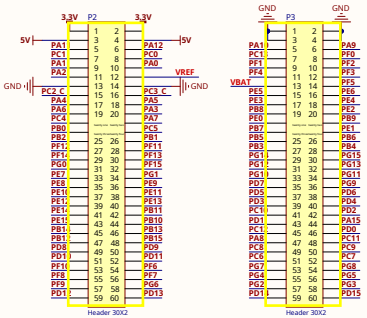


SPI LCD interface



DCMI Camera Interface





IO port lead

1. Lead out through 2.54 pitch pin header, pin header specification is 2*30 P

2.VBAT:This is the backup power pin. When the user does not need to use the backup power, just leave it unconnected.

3.VREF:In general, it can be left floating (the core board has been connected to 3.3 V). If you need to connect an external reference voltage,

The onP 0 ohm isolation resistor of the core board needs to be removed.

4. The IO ports occupied by the SWD interface and the crystal oscillator are not brought out:PA13, PA14, PC14, PC15, PH0, PH1

5. It is recommended to use 5V power supply, and then get 3.3V to the MCU through the onboard voltage regulator chip to avoid damage to the MCU due to accidental input of high voltage

6. For the pin multiplexing of IO ports, you can refer to the STM32 data sheet, which has a complete and detailed table for users to refer to.

When using the core board to drive motors, high voltage or high interference equipment, be sure to add optocoupler isolation, otherwise it is easy to damage the microcontroller!!!

Drawing: FK723M1- ZGT6 Schematic

Design: Fanke Technology

Version: V1.0

Time: 2023-6-14