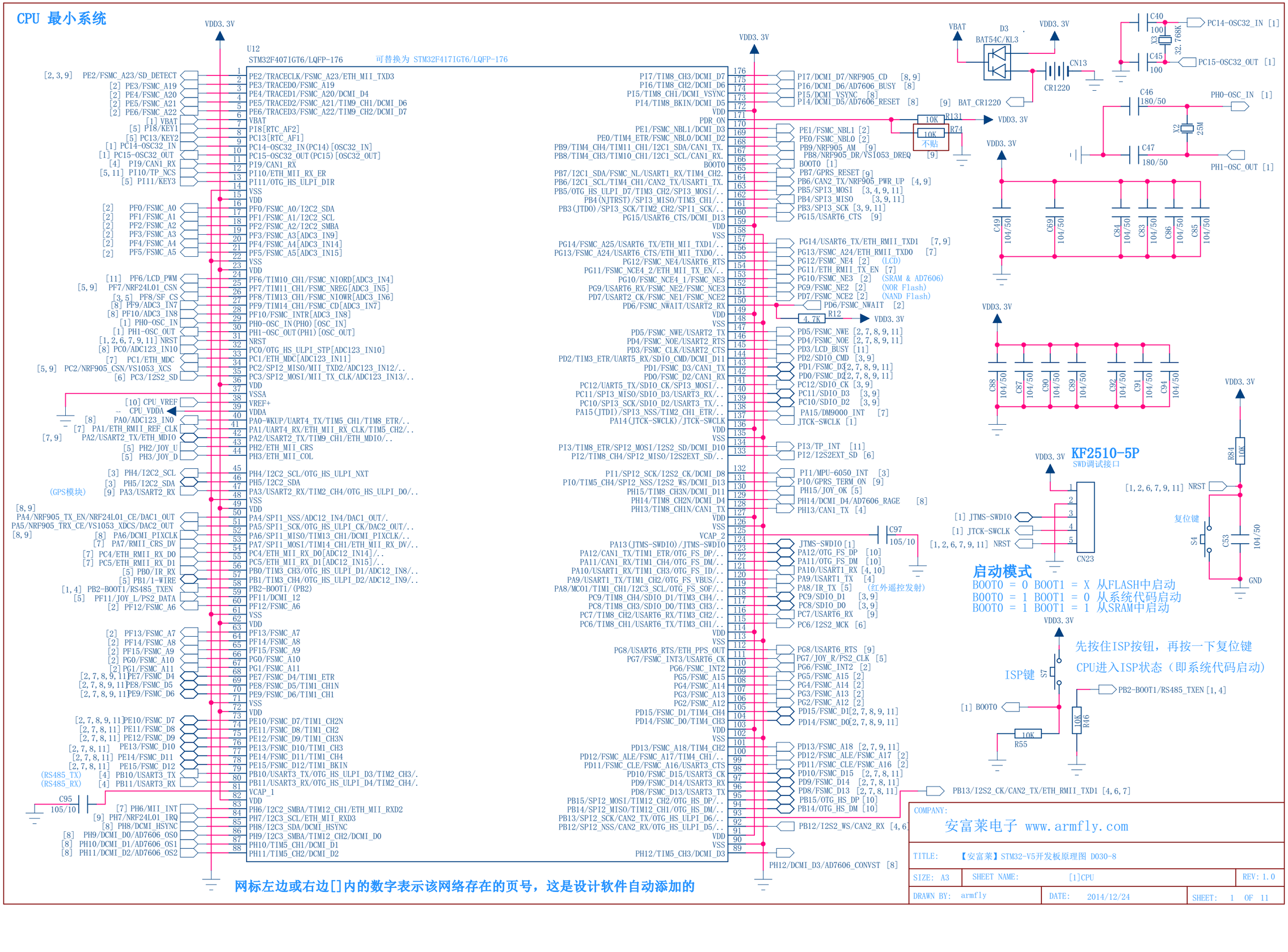
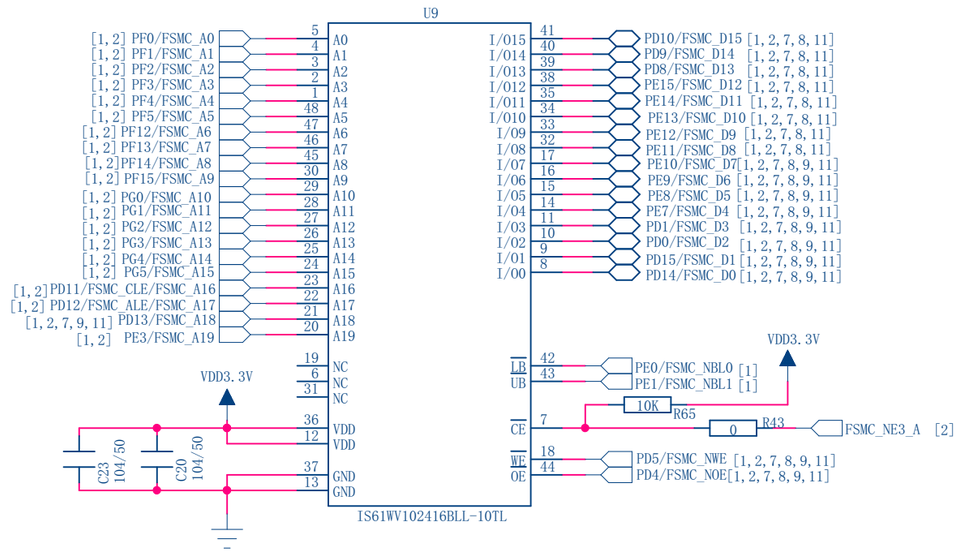
CPU 最小系统

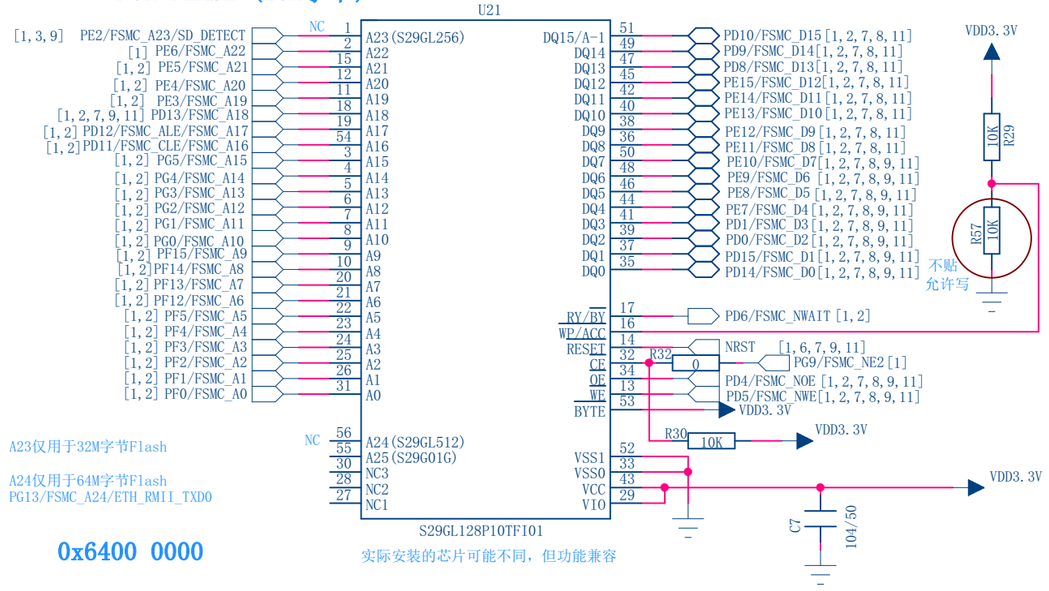


COMPANY:	安富莱电子 www.armfly.com
TITLE:	【安富莱】STM32-V5开发板原理图 D030-8
SIZE: A3	SHEET NAME: [1]CPU / REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24 / SHEET: 1 OF 11

SRAM（2M字节，16bit）　　0x6800 0000

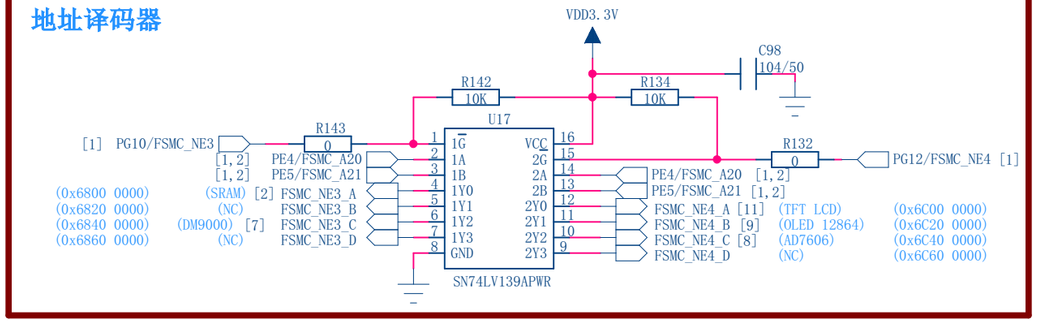


NOR FLASH（16M字节）　　0x6400 0000



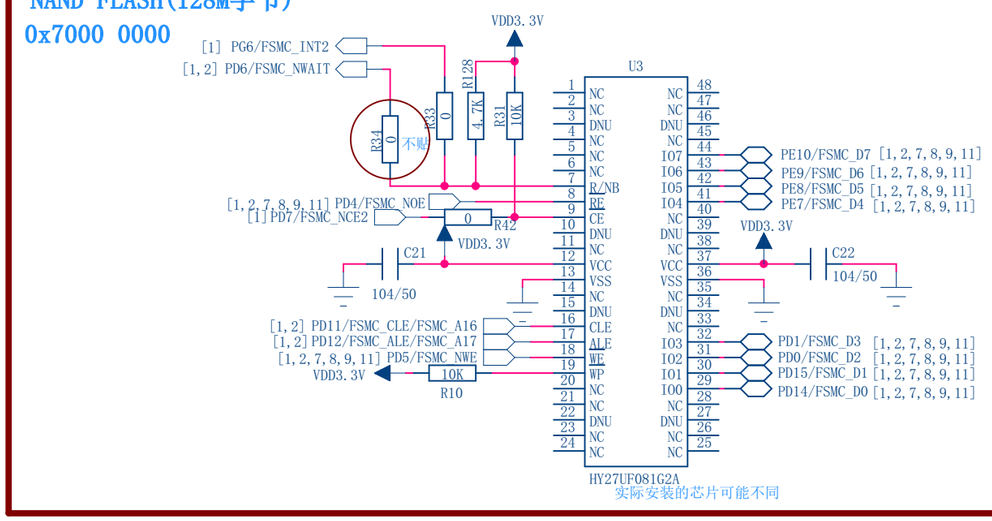
LCD的接口在第11页

地址译码器



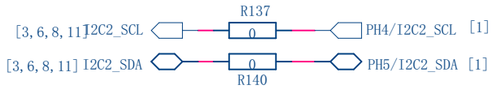
NAND FLASH(128M字节)

0x7000 0000

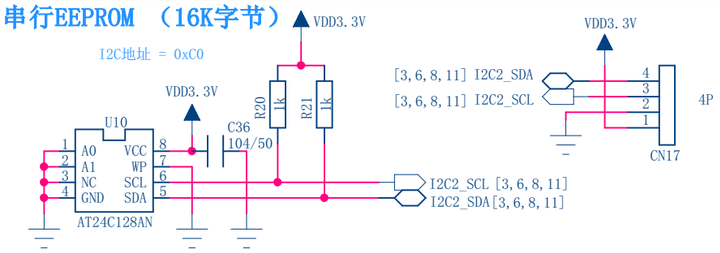


COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [2]SRAM_NAND_NOR	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 2 OF 11

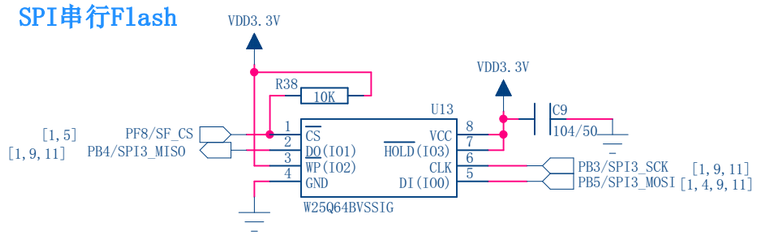
I2C口线



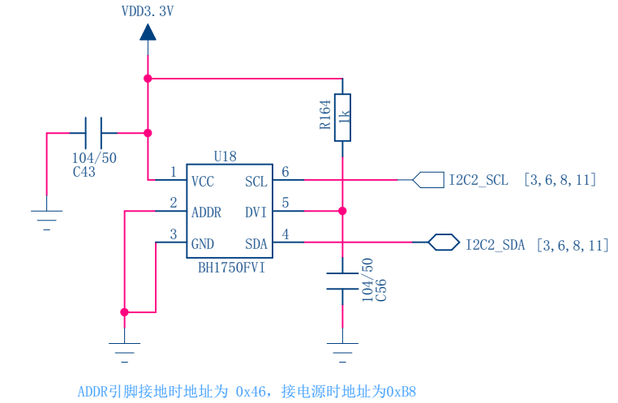
串行EEPROM （16K字节）



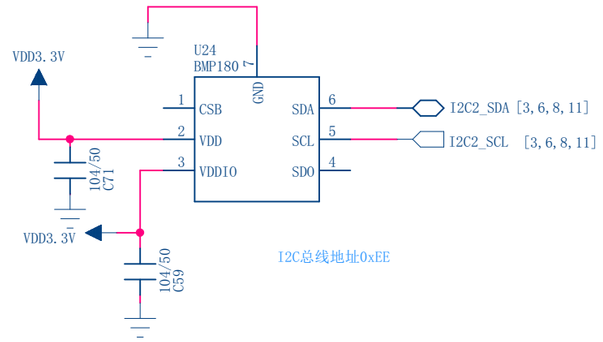
SPI串行Flash



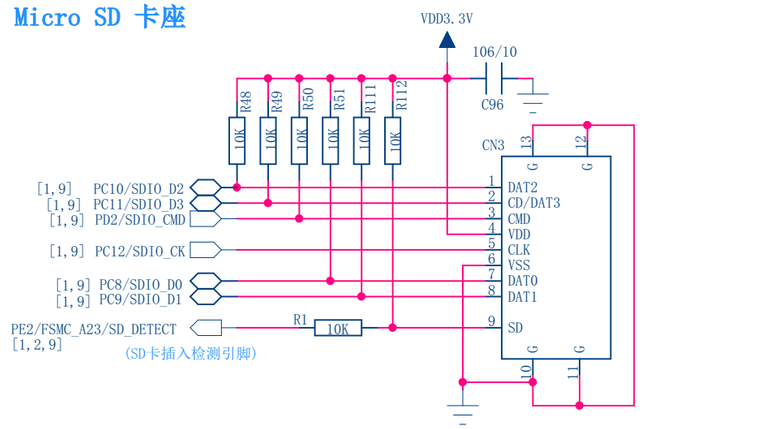
光照度传感器



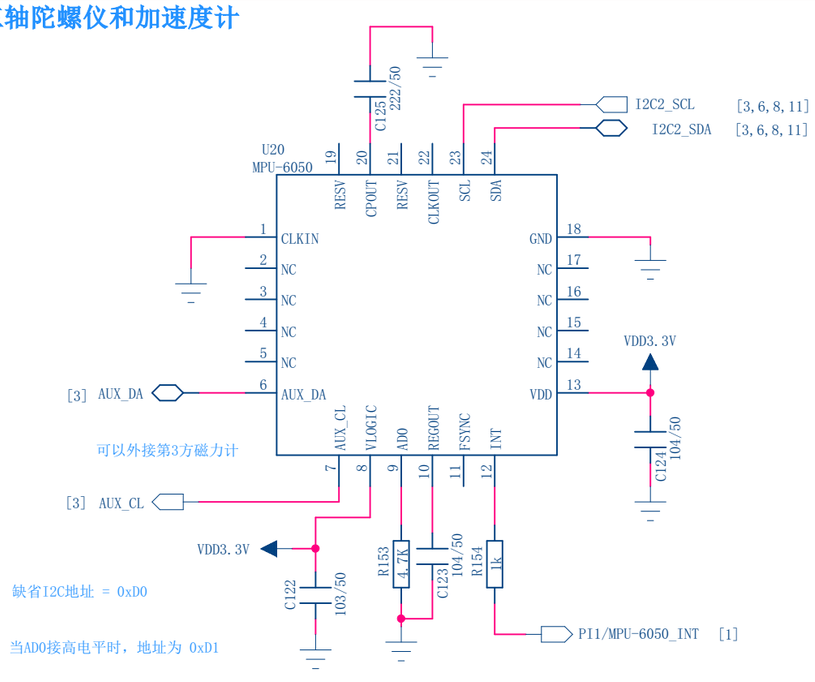
气压传感器（带温度）



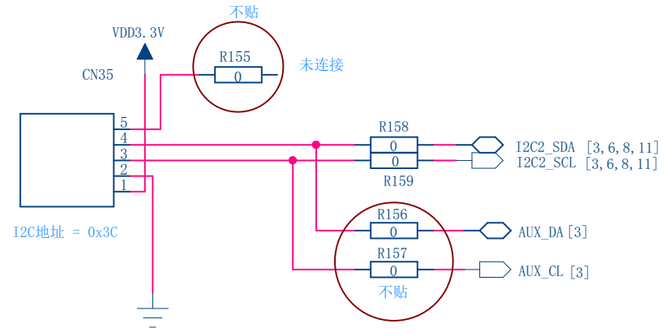
Micro SD 卡座



三轴陀螺仪和加速度计

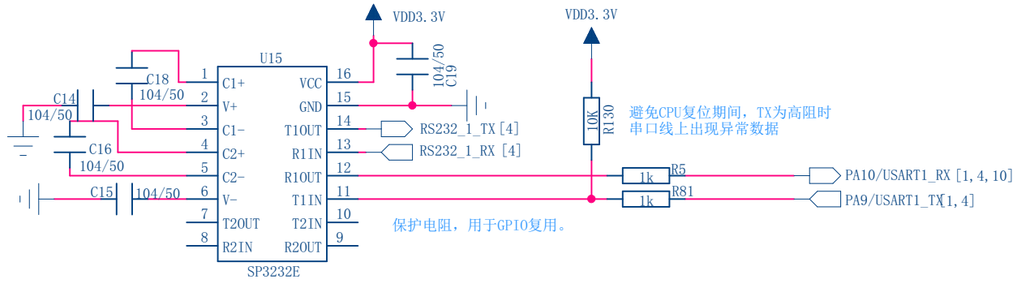


三轴磁力计（电子指南针）接口

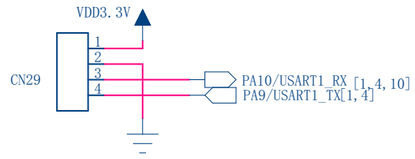


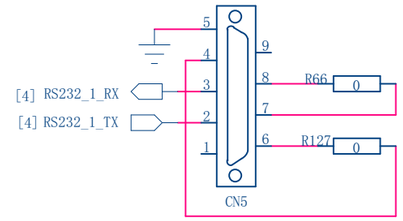
COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 DO30-8		
SIZE: A3	SHEET NAME: [3]I2C_SFLASH_SD	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 3 OF 11

两路RS232串口(USART1)

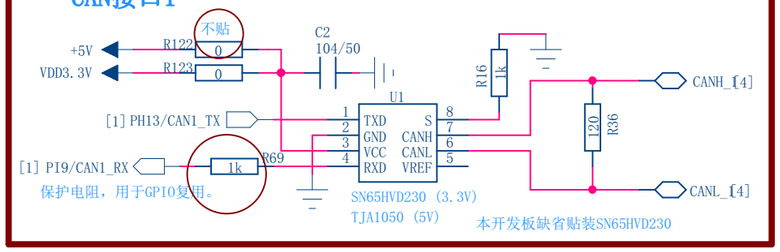


模块相同，可直接连接。

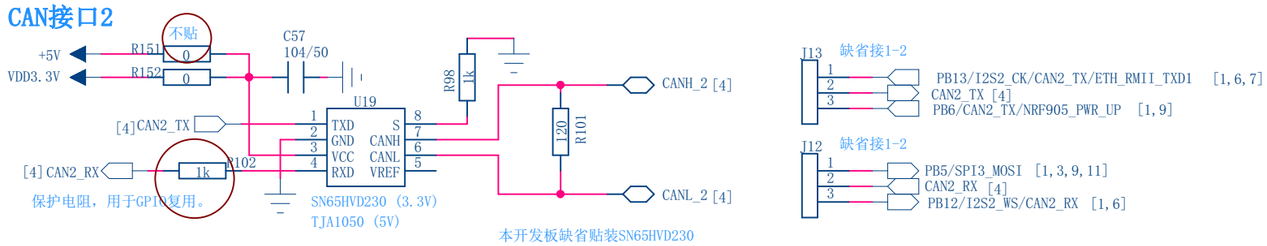




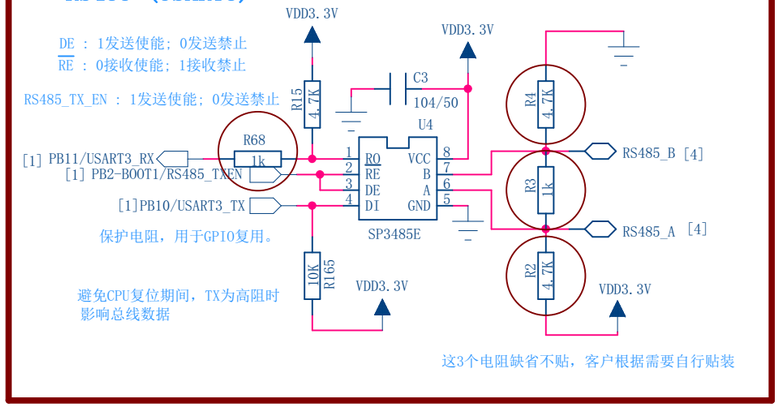
CAN接口1



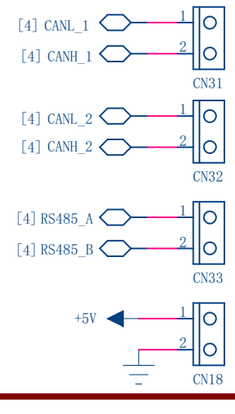
CAN接口2



RS485 (USART3)

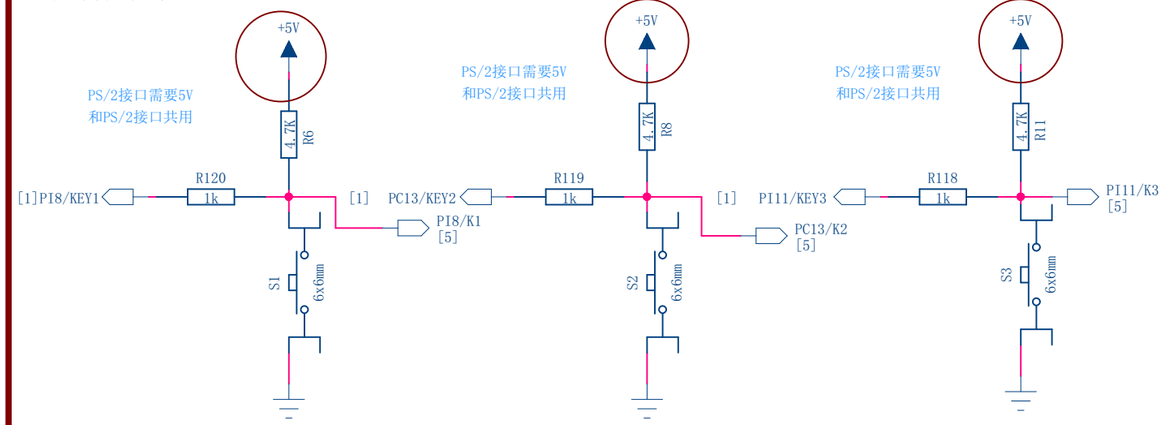


KF128 接线端子



COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [4]RS232_RS485_CAN	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 4 OF 11

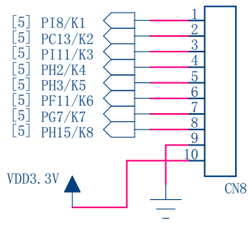
用户自定义按钮



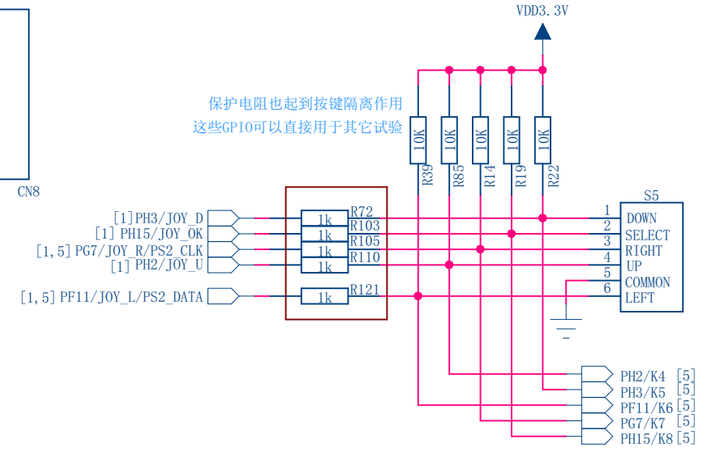
本开发板考虑到IO可能额用作它用，因此IO上并未并联滤波电容
如果做正式产品，建议加上104滤波电容

串联1K电阻的作用：保护GPIO，避免软件错误将IO设置为输出
即使不加滤波，靠软件滤波算法也可正常使用

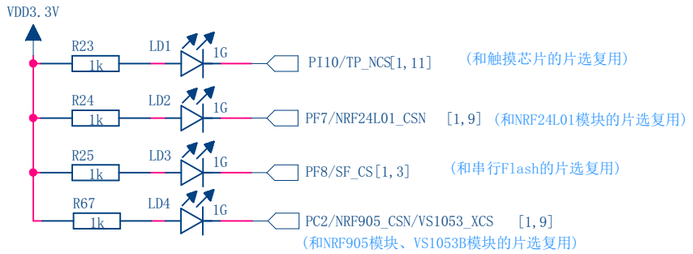
外接10P按钮排针



5向摇杆

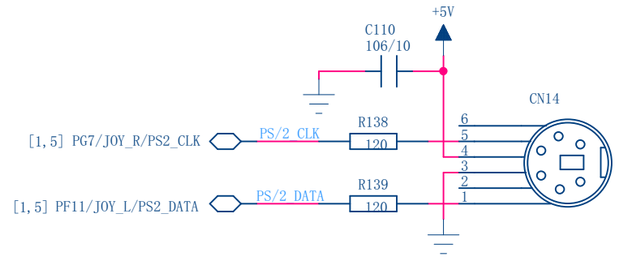


用户自定义LED指示灯

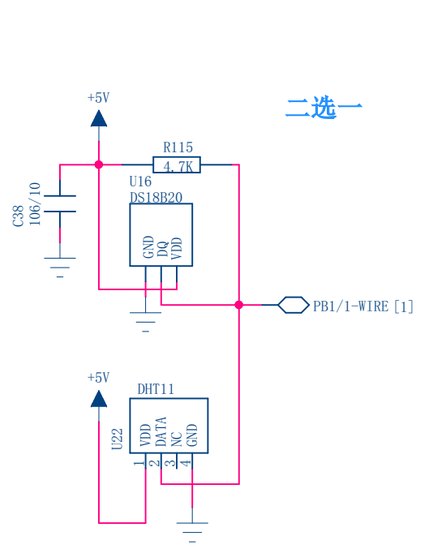


低电平点亮 高电平熄灭

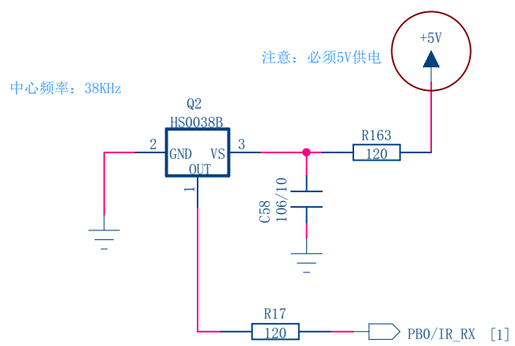
PS/2接口　　可连接键盘，鼠标，扫描枪



1-WIRE接口

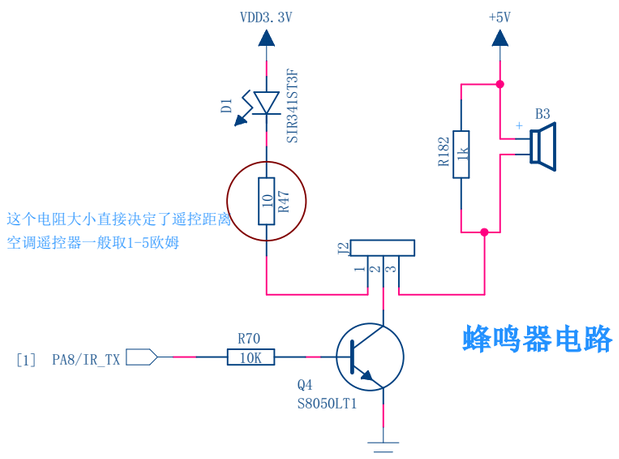


红外接收



STM32的IO可以兼容5V输入，因此无需电平转换

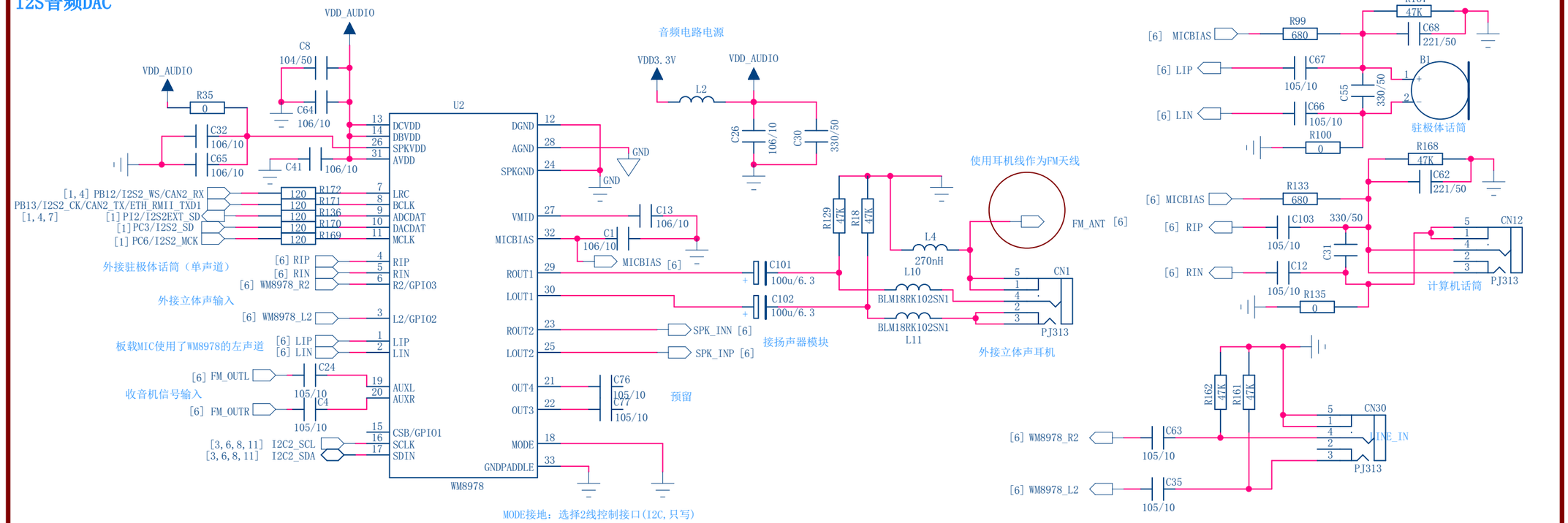
红外发射



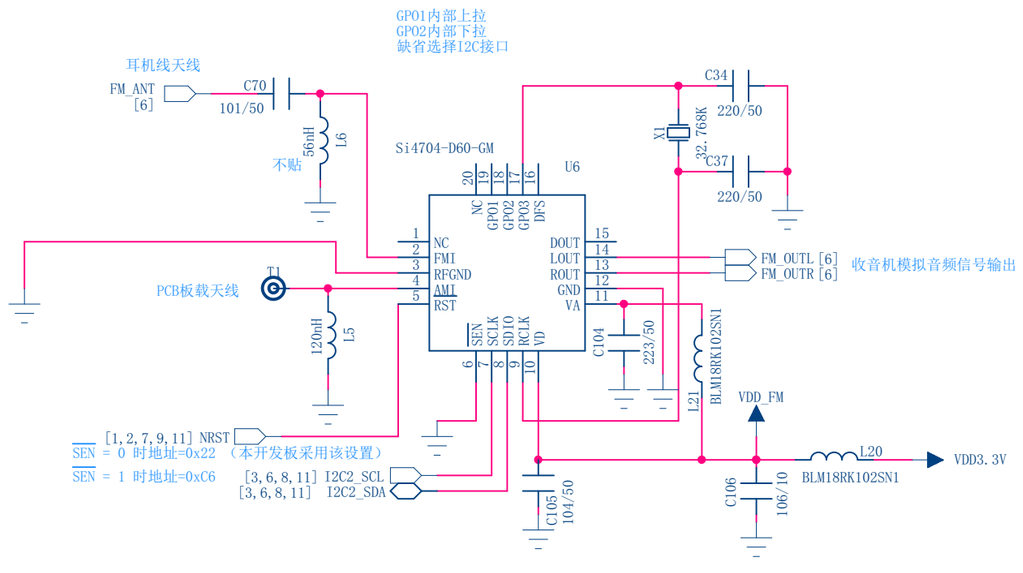
蜂鸣器电路

COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [5]KEY_LED_PS2_IR	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 5 OF 11

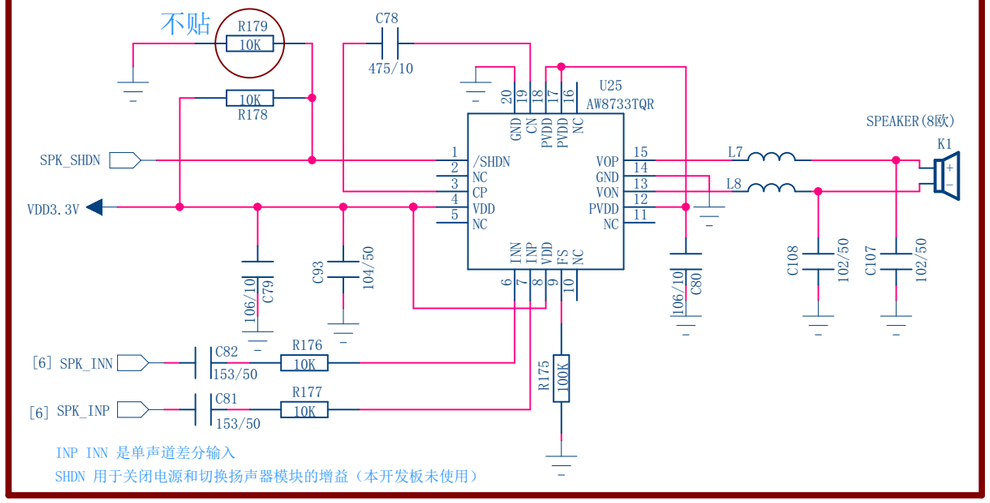
I2S音频DAC



FM收音机模块

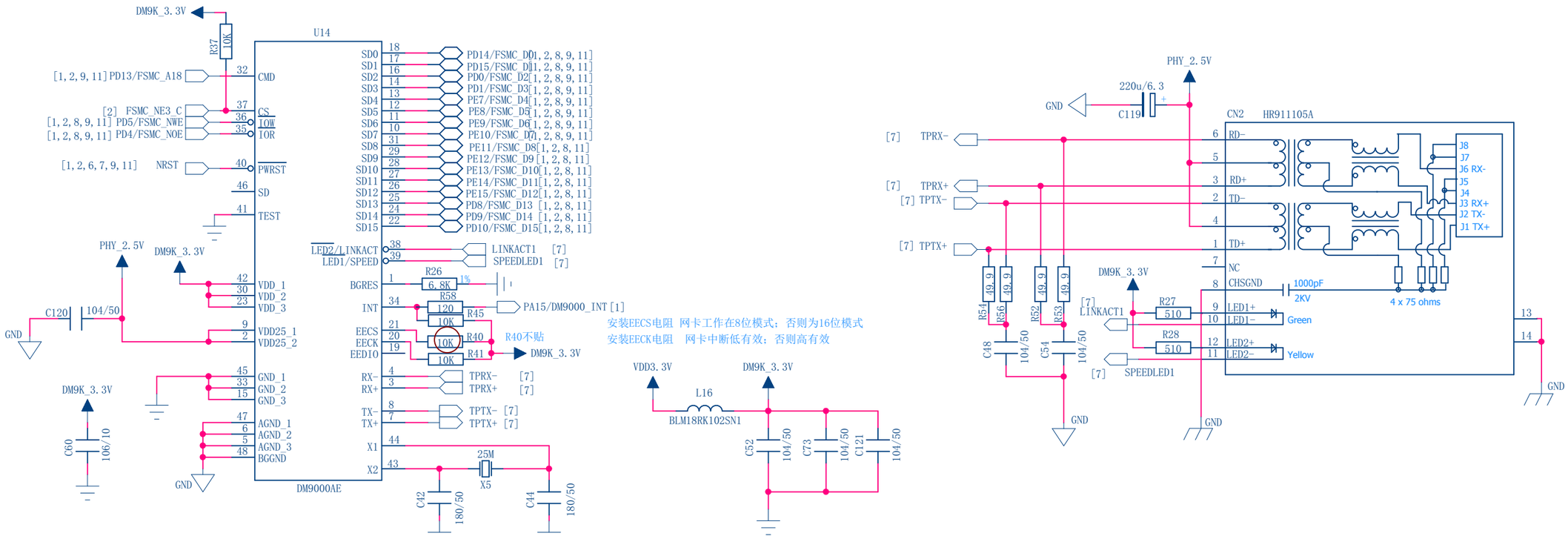


AW8733功放模块排针接口

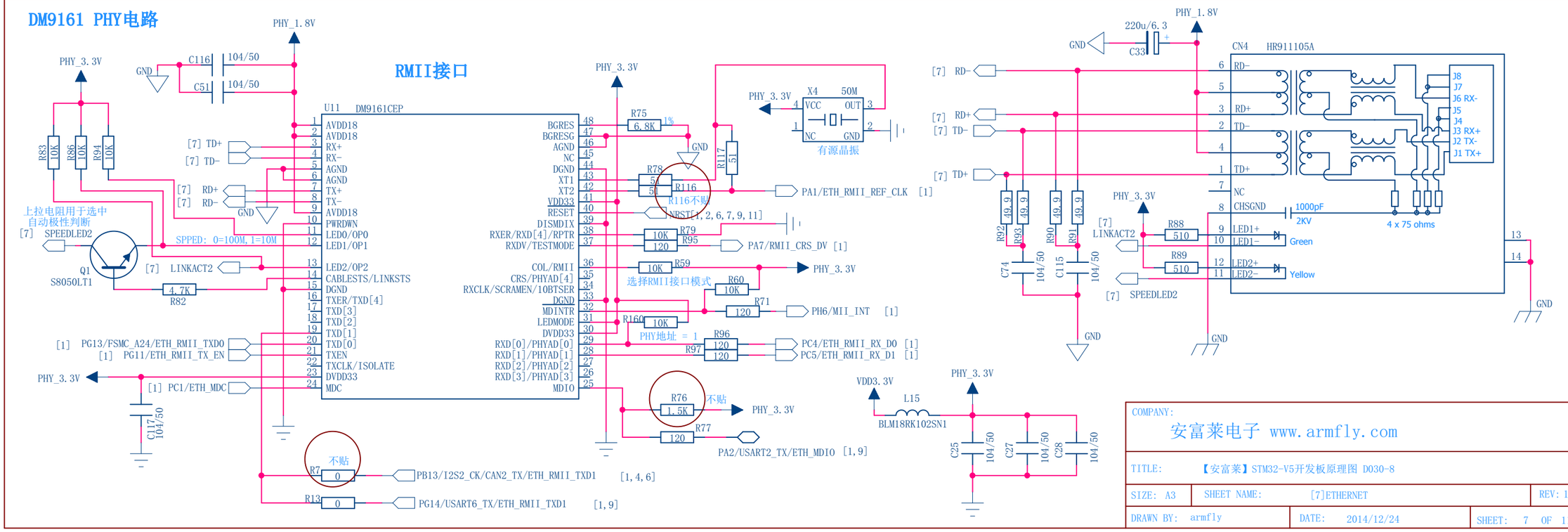


COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 DO30-8		
SIZE: A3	SHEET NAME: [6]WM8978_FM_SPK	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 6 OF 11

DM9000 网卡电路　　0x6840 0000　　0x6848 0000

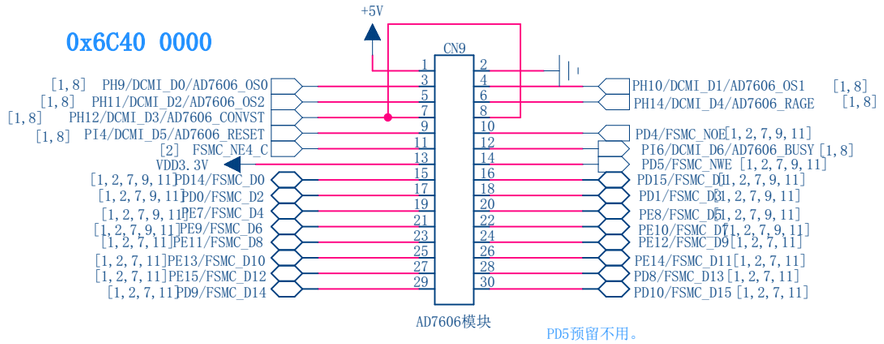


DM9161 PHY电路



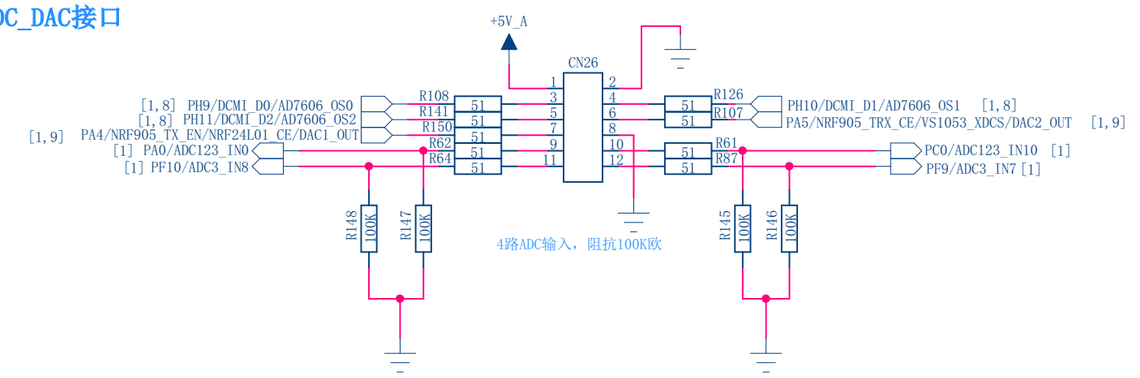
COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [7]ETHERNET	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 7 OF 11

AD7606_8通道16位ADC模块接口



PD5预留不用。

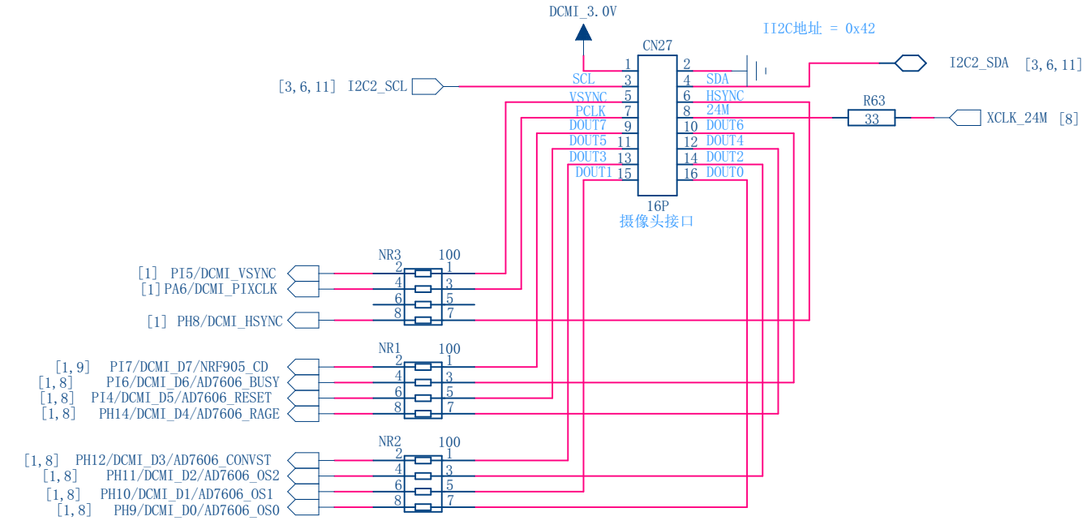
ADC_DAC接口

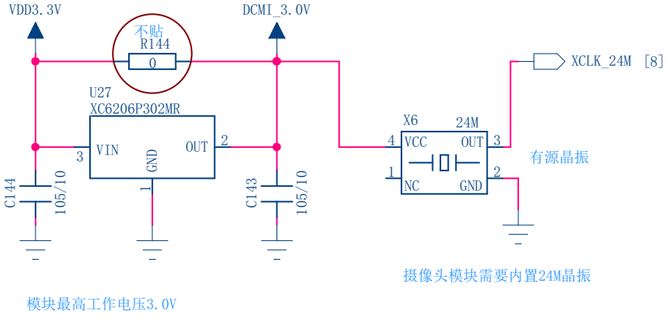


摄像头模块接口

摄像头接口的数据线和AD7606的控制口线复用

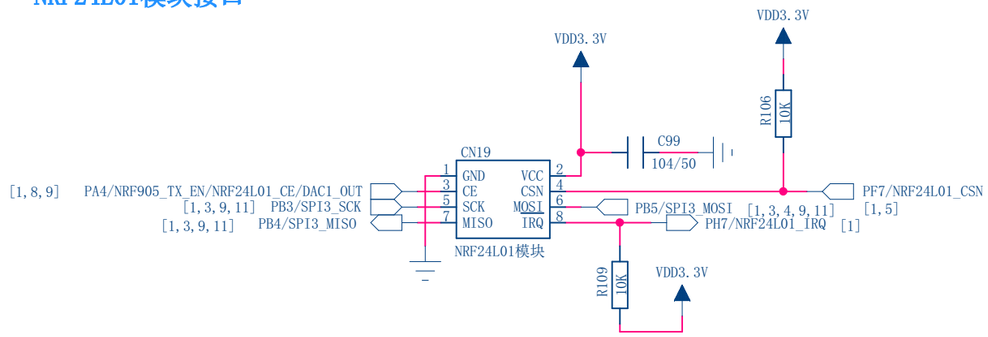
摄像头插上后可以直接使用摄像头
如果使用AD7606，请拔掉摄像头



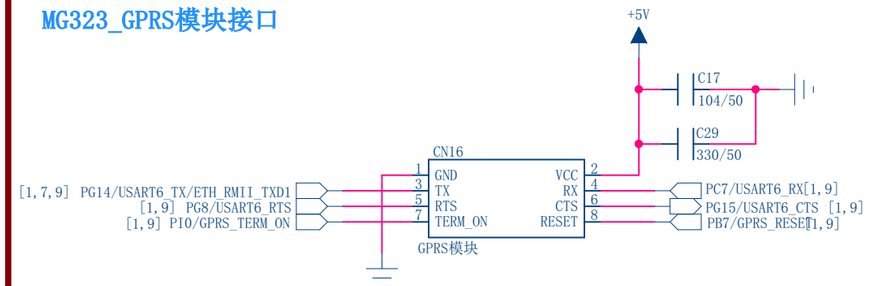


COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [8]AD7606_CAMERA	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 8 OF 11

NRF24L01模块接口



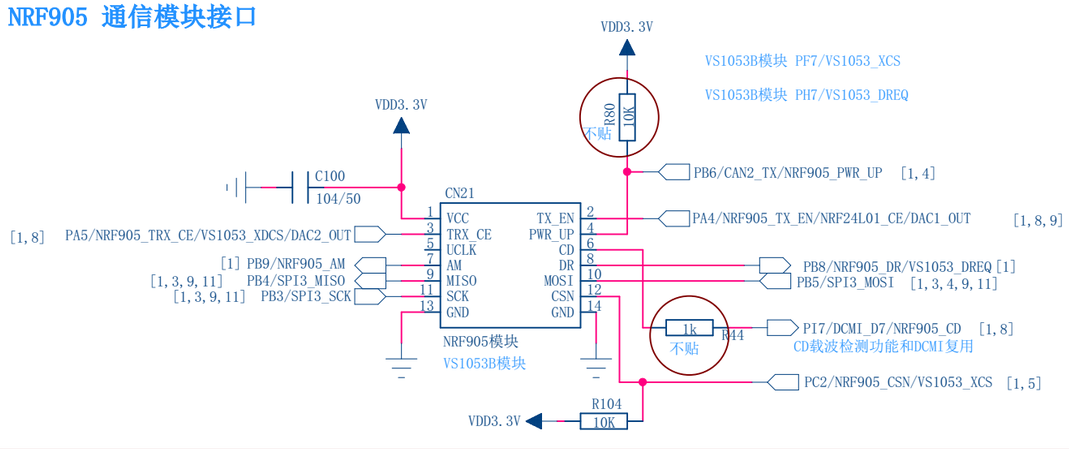
MG323_GPRS模块接口



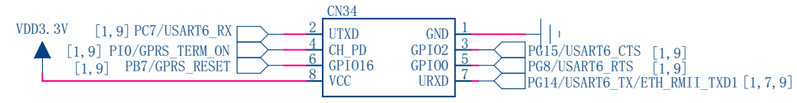
华为MG323_GPRS模块供电电压范围：3.3V - 4.8V
最大峰值电流 2A GPRS模式时平均电流 460mA

由于GPRS电源消耗功率接近USB口供电最大500mA的极限
因此使用GPRS模块时，请使用外部电源供电

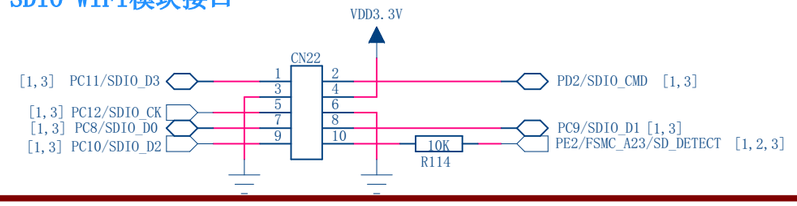
NRF905 通信模块接口



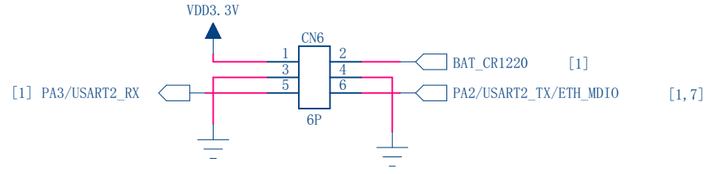
ESP8266串口WIFI接口



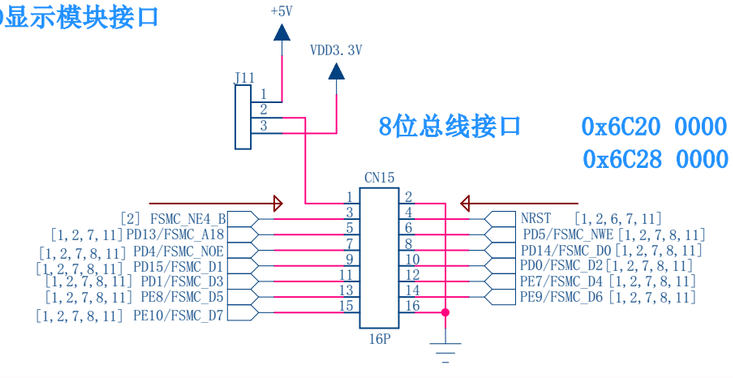
SDIO WIFI模块接口



GPS模块接口



OLED显示模块接口



COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [9]NRF_GPS_WIFI_GPRS	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 9 OF 11

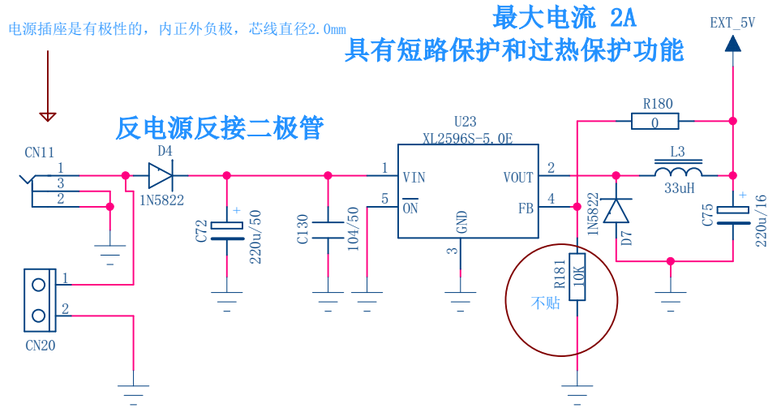
外部供电电源电路

输入电压范围：

输入电压范围：7~ 40V

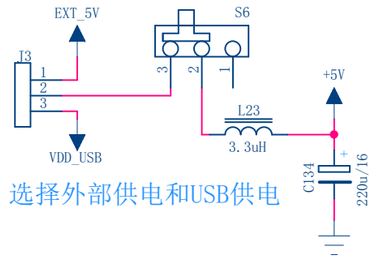
最大电流 2A

具有短路保护和过热保护功能



外部供电电源电路

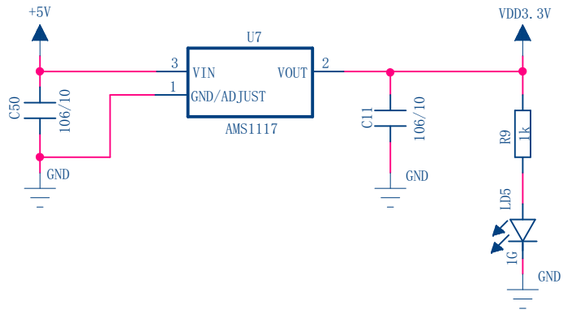
电源开关



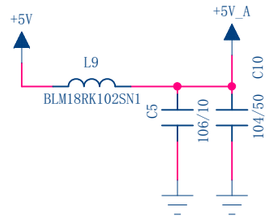
选择外部供电和USB供电

外部供电电源电路

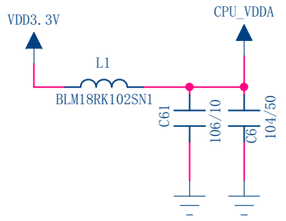
3.3V电源电路（提供给CPU和大部分外设）



ADC/DAC供电电源

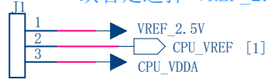


CPU内部模拟部分电源

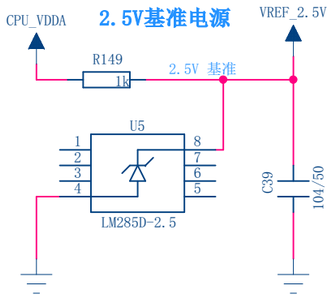


选择CPU内部ADC和DAC参考电压

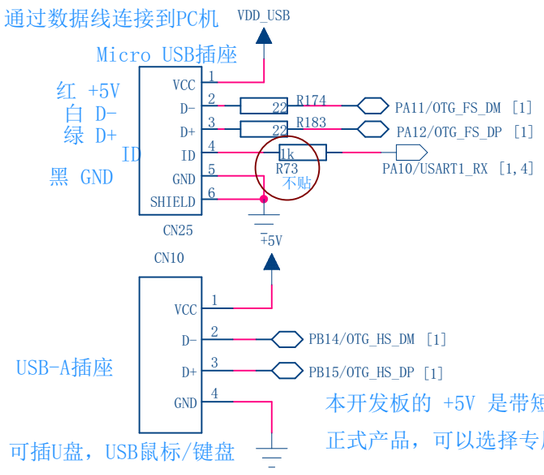
缺省是选择 VREF_2.5V



2.5V基准电源



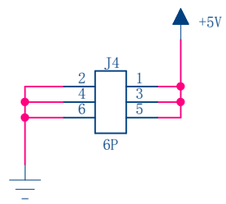
USB HOST (USB 2.0 全速12Mbps)



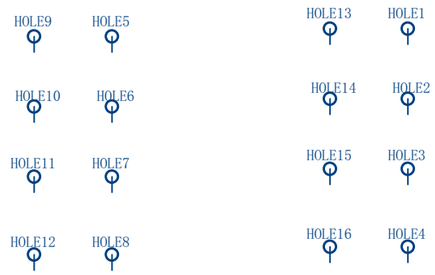
本开发板的 +5V 是带短路和限流保护的

正式产品，可以选择专用功率开关芯片 STMPS2161STR/SOT23-5L

5V电压引出排针



安装孔

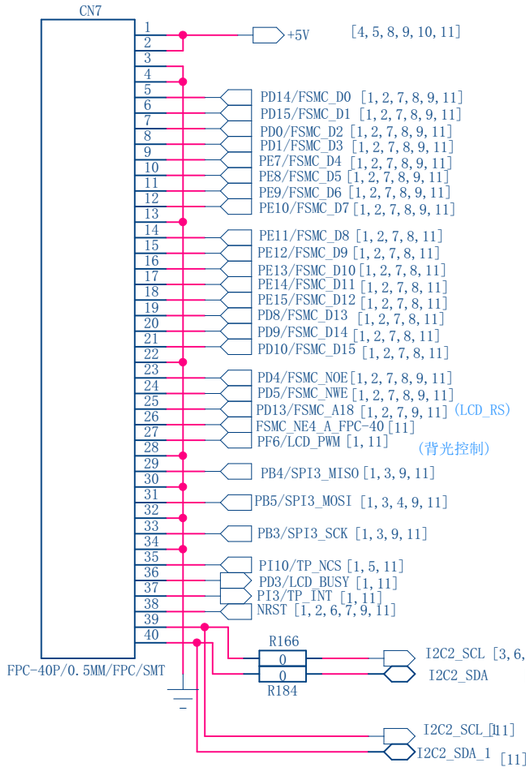


COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [10]POWER_USB	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 10 OF 11

TFT LCD接口（8080-16bit并口）

FSMC地址:
0x6C00 0000
0x6C08 0000

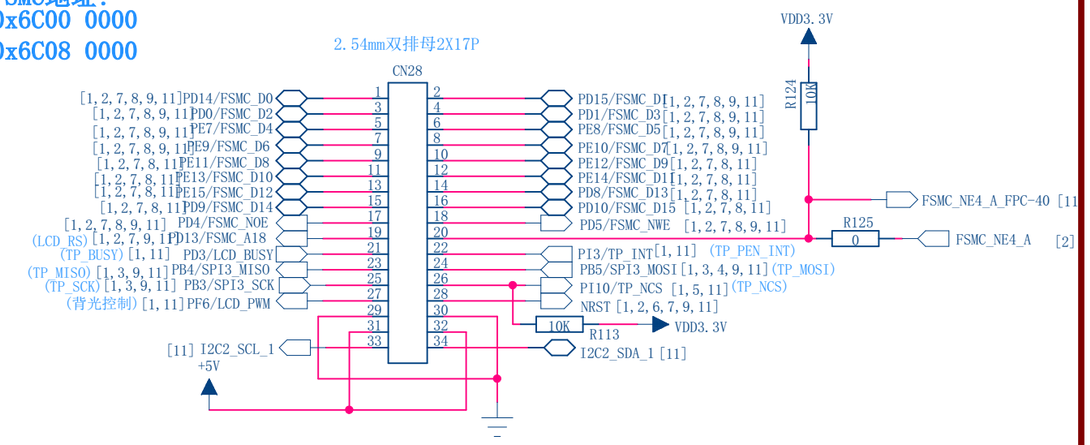
FPC-0.5-40P下接翻盖FPC插座
可以用于8080总线接口或SPI接口



TFT LCD接口（8080-16bit并口）

FSMC地址:
0x6C00 0000
0x6C08 0000

2.54mm双排母2X17P

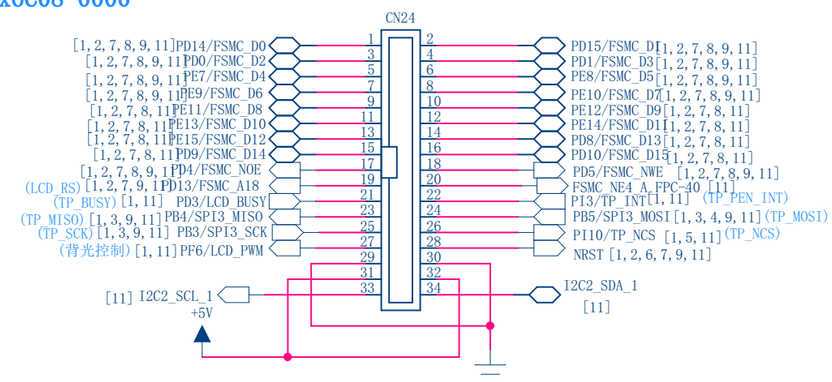


备注：33、34脚用于I2C接口的电容触摸芯片。

TFT LCD接口（8080-16bit并口）

FSMC地址:
0x6C00 0000
0x6C08 0000

2.54mmDC3简易牛角插座2X17P（脚位与双排母对调）



备注：33、34脚用于I2C接口的电容触摸芯片。

COMPANY: 安富莱电子 www.armfly.com		
TITLE: 【安富莱】STM32-V5开发板原理图 D030-8		
SIZE: A3	SHEET NAME: [11]LCD	REV: 1.0
DRAWN BY: armfly	DATE: 2014/12/24	SHEET: 11 OF 11