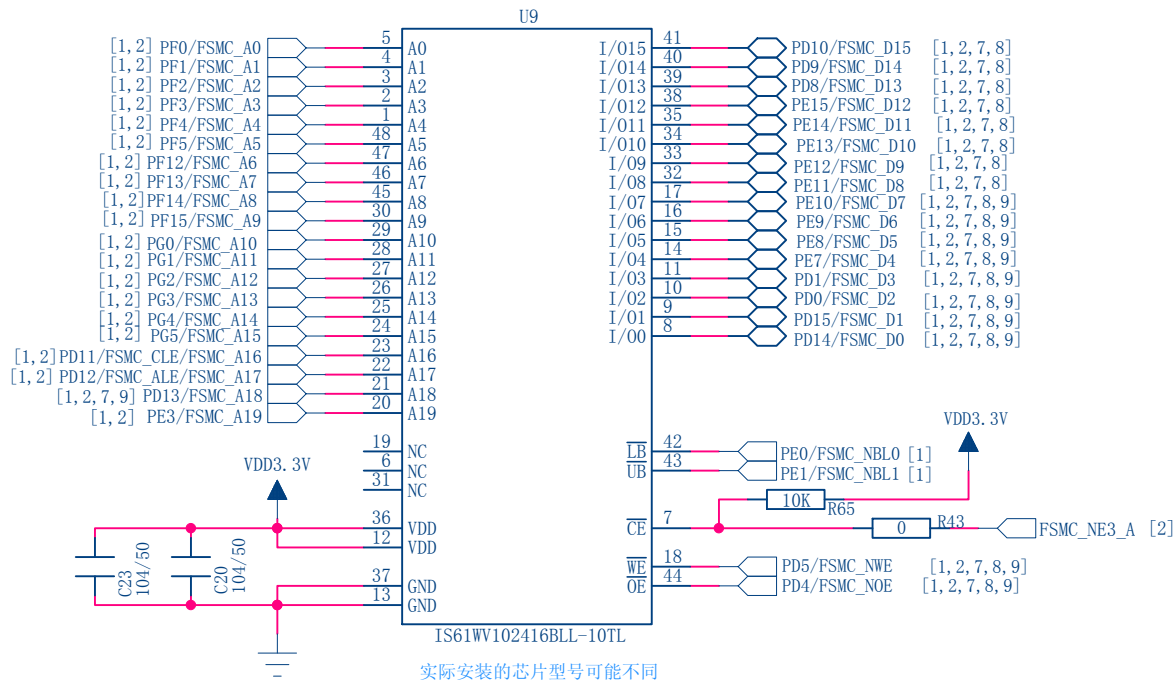


[illegible]

网标左边或右边□内的数字表示该网络存在的页号，这是设计软件自动添加的

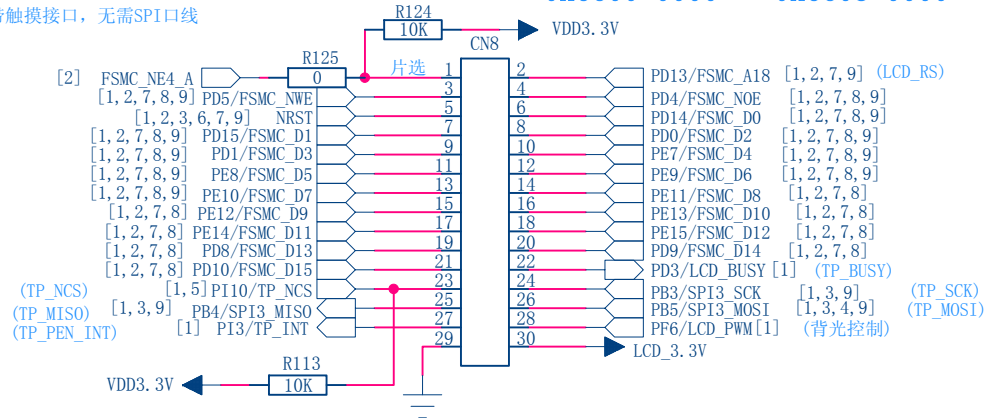
COMPANY:			
安富莱电子 www.armfly.com			
TITLE: 【安富莱】STM32-V5开发板原理图 D030-3			
SIZE: A3	SHEET NAME: [1]CPU		REV: 1.0
DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 1 OF 10	

SRAM (2M字节, 16bit) 0x6800 0000

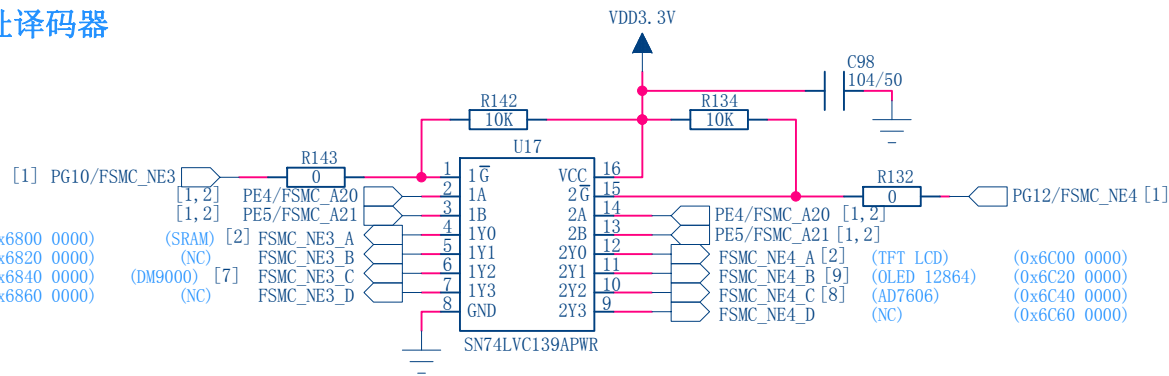


TFT LCD接口（带触摸屏控制信号） 0x6C00 0000 0x6C08 0000

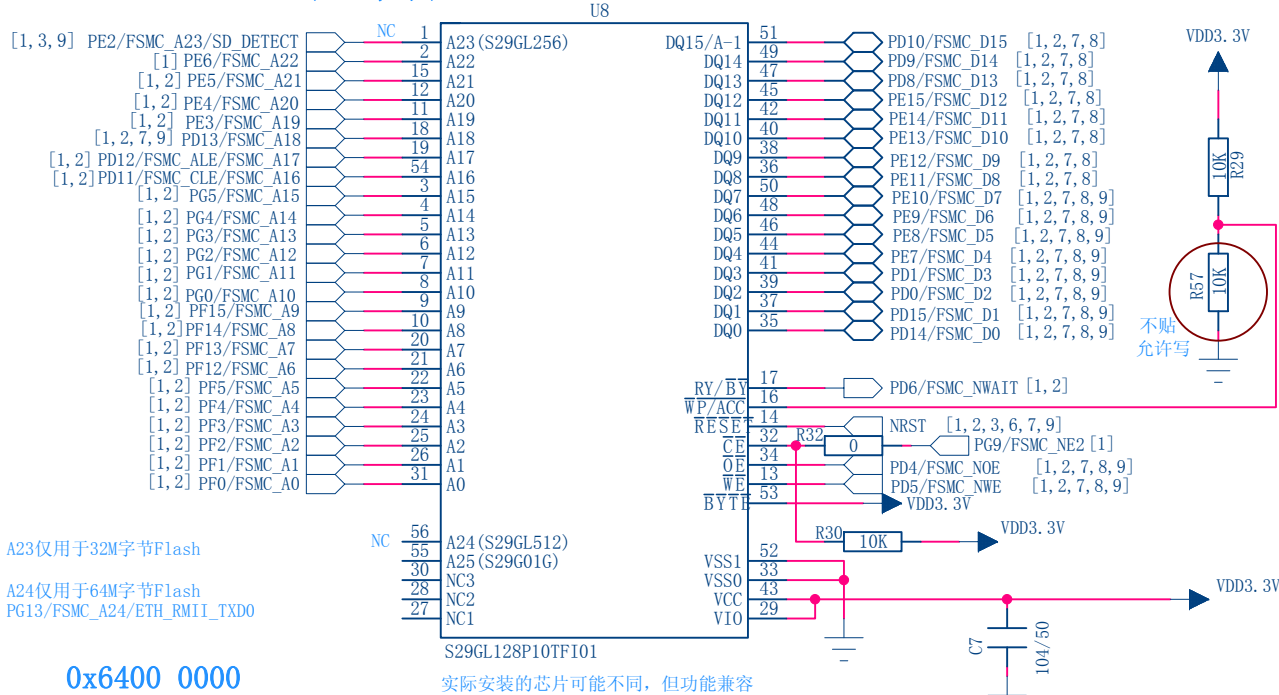
RA8875屏自带触摸接口，无需SPI口线



地址译码器



NOR FLASH (16M字节) 0x6400 0000

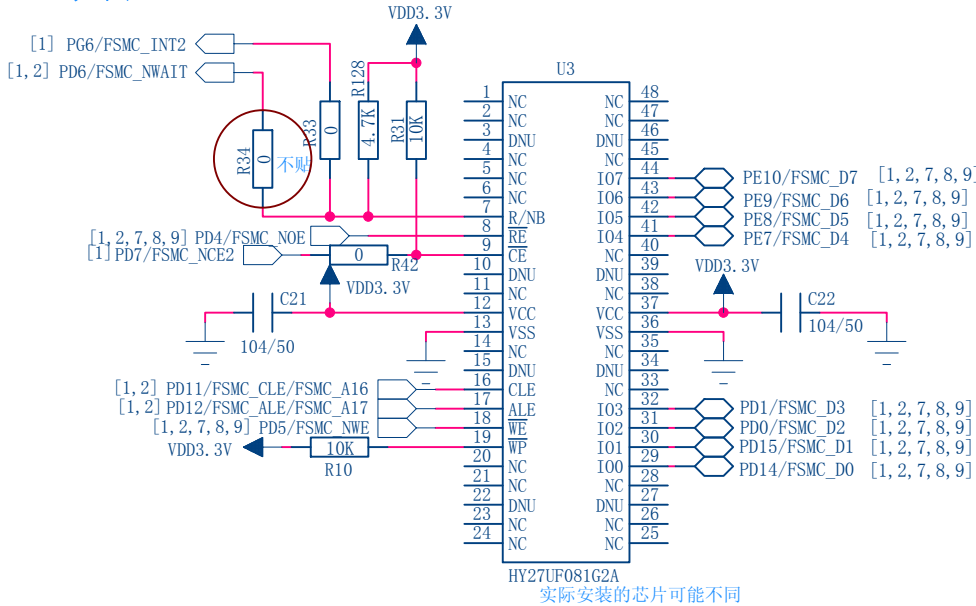


0x6400 0000

实际安装的芯片可能不同，但功能兼容

NAND FLASH(128M字节)

0x7000 0000



实际安装的芯片可能不同

COMPANY:

安富莱电子 www.armfly.com

TITLE: 【安富莱】STM32-V5开发板原理图 D030-3

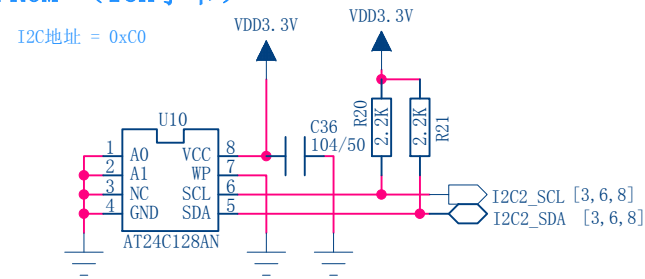
SIZE: A3 SHEET NAME: [2]SRAM_NAND_NOR_LCD REV: 1.0

DRAWN BY: armfly DATE: 2013-5-19 SHEET: 2 OF 10

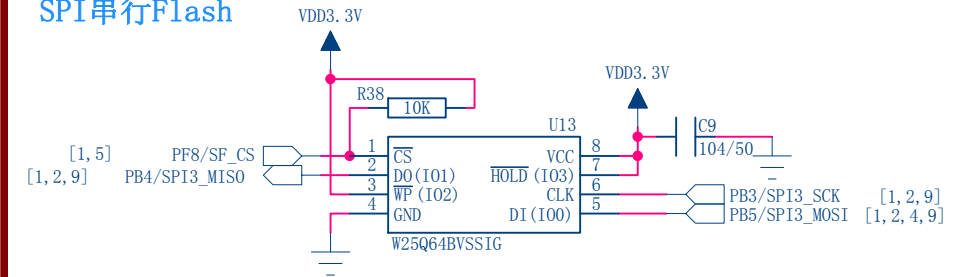
I2C口线



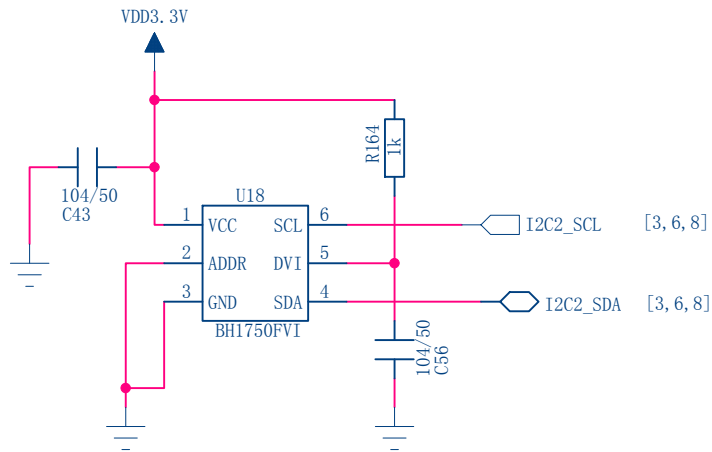
串行EEPROM (16K字节)



SPI串行Flash

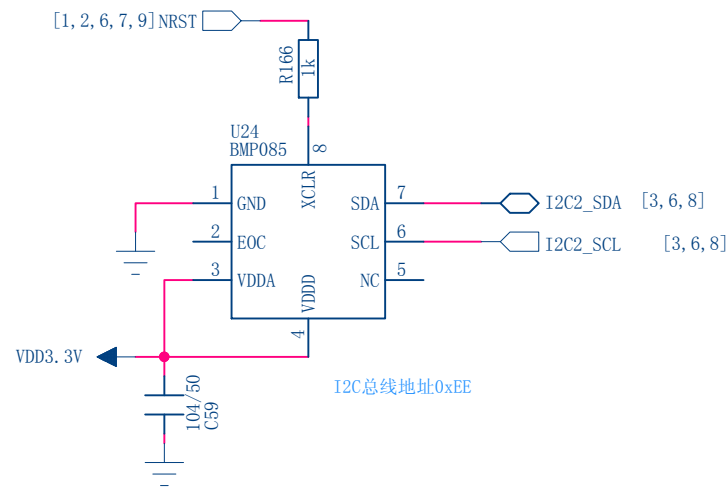


光照度传感器



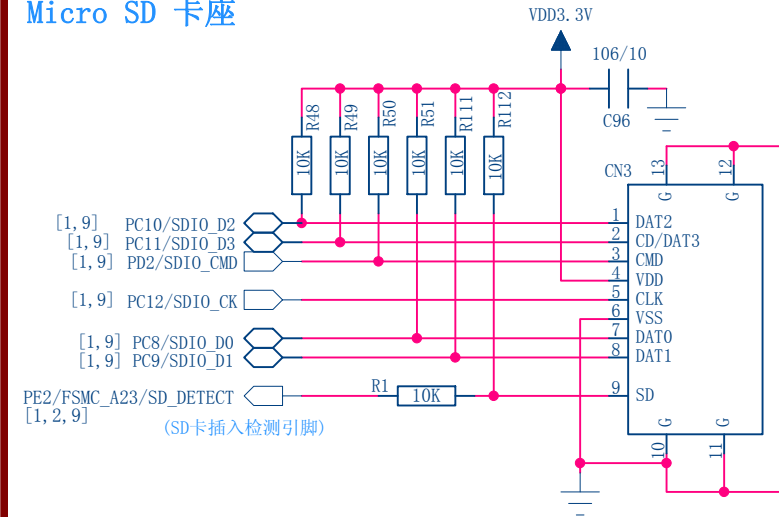
ADDR引脚接地时地址为 0x46, 接电源时地址为0xB8

气压传感器 (带温度)

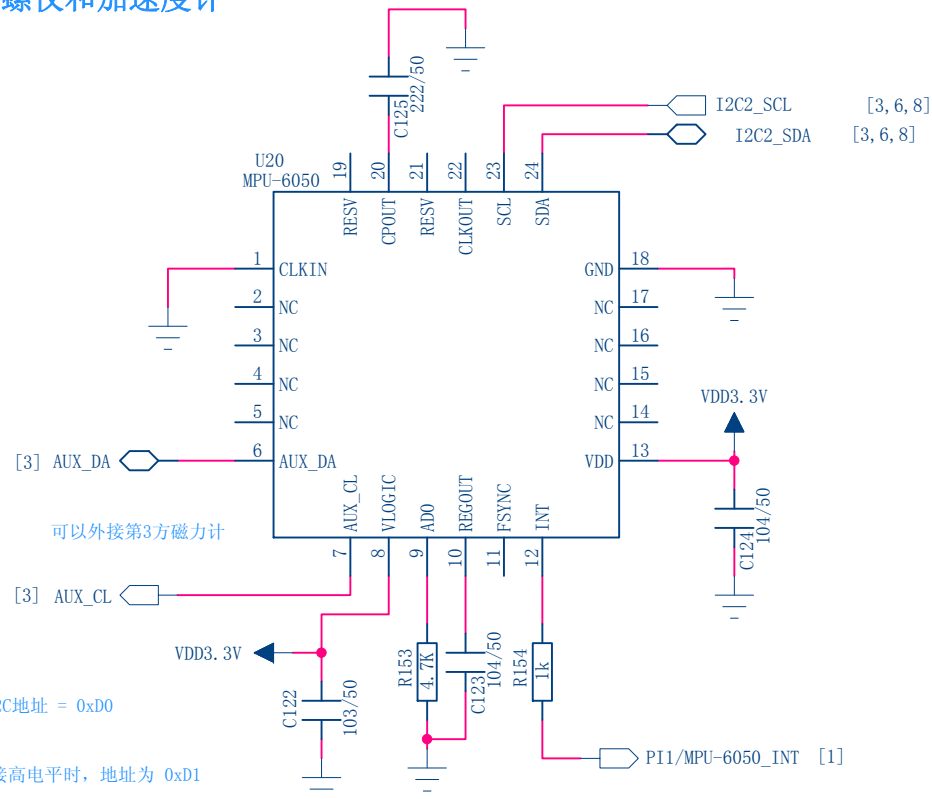


I2C总线地址0xEE

Micro SD 卡座



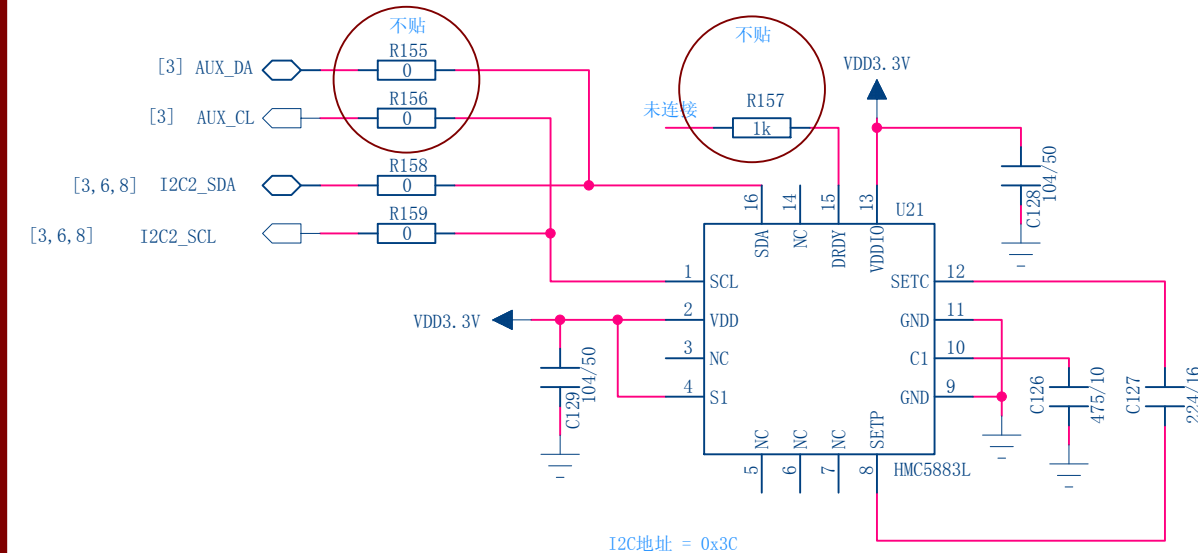
三轴陀螺仪和加速度计



缺省I2C地址 = 0xD0

当AD0接高电平时, 地址为 0xD1

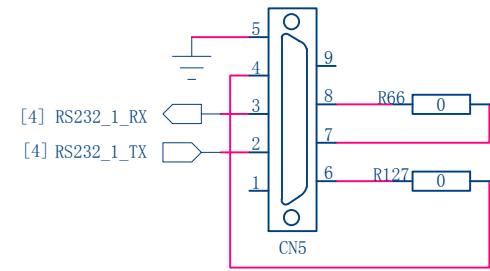
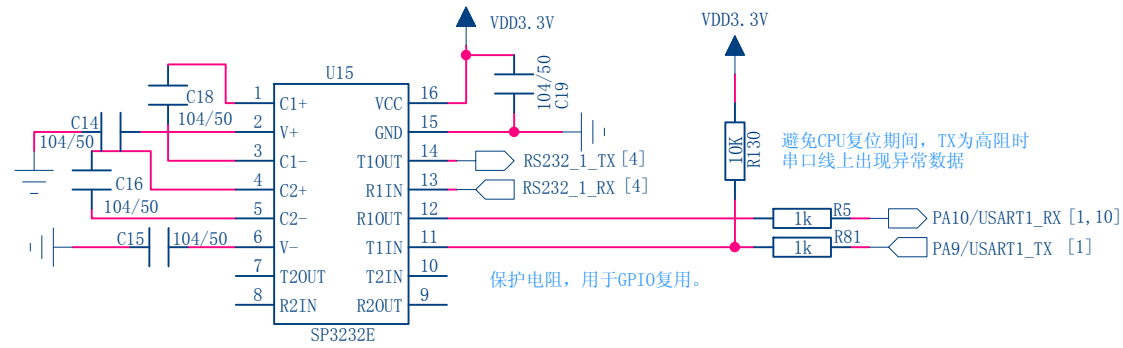
三轴磁力计 (电子指南针)



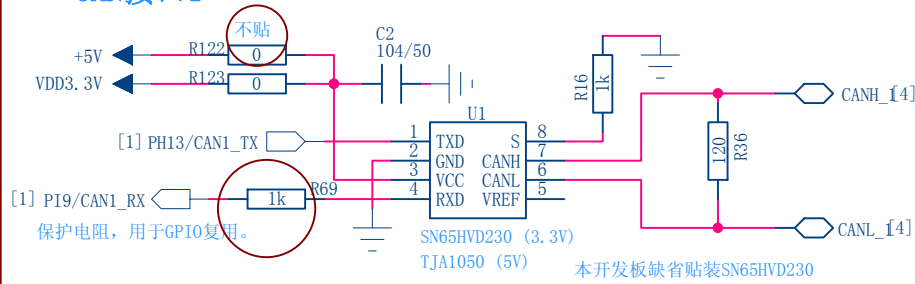
I2C地址 = 0x3C

COMPANY: 安富莱电子 www.armfly.com			
TITLE: 【安富莱】STM32-V5开发板原理图 D030-3			
SIZE: A3	SHEET NAME: [3]I2C_SFLASH_SD		REV: 1.0
DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 3 OF 10	

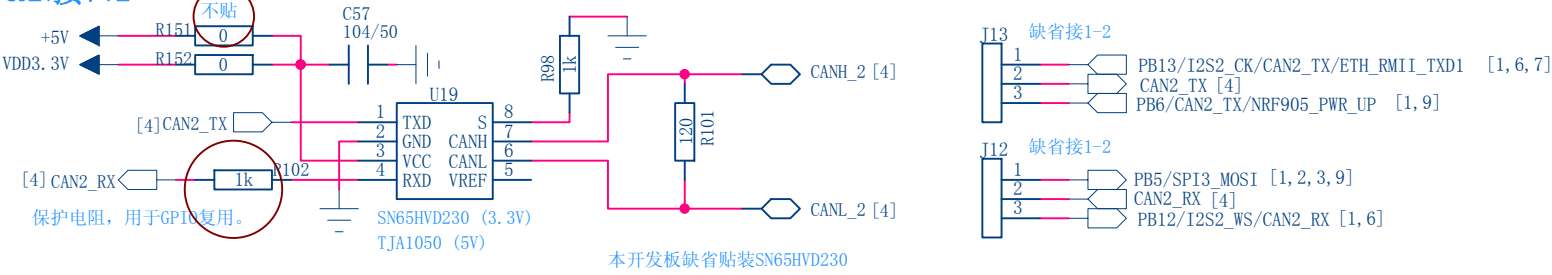
两路RS232串口 (USART1)



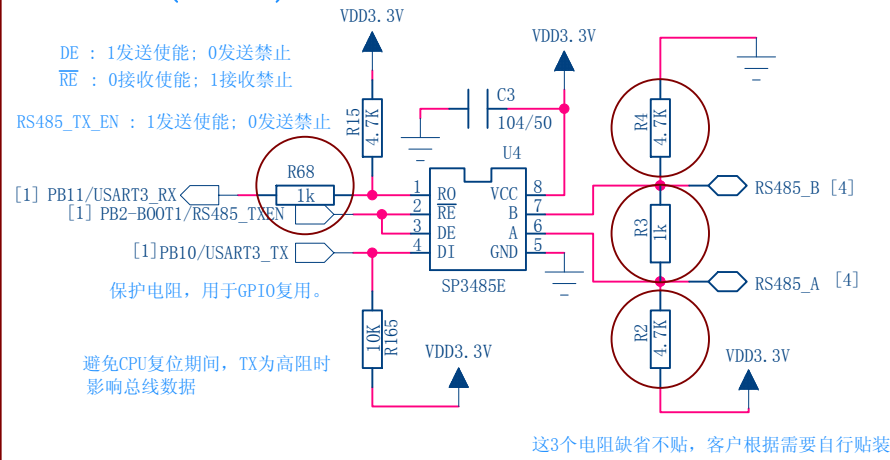
CAN接口1



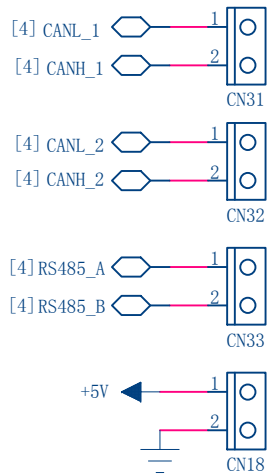
CAN接口2



RS485 (USART3)

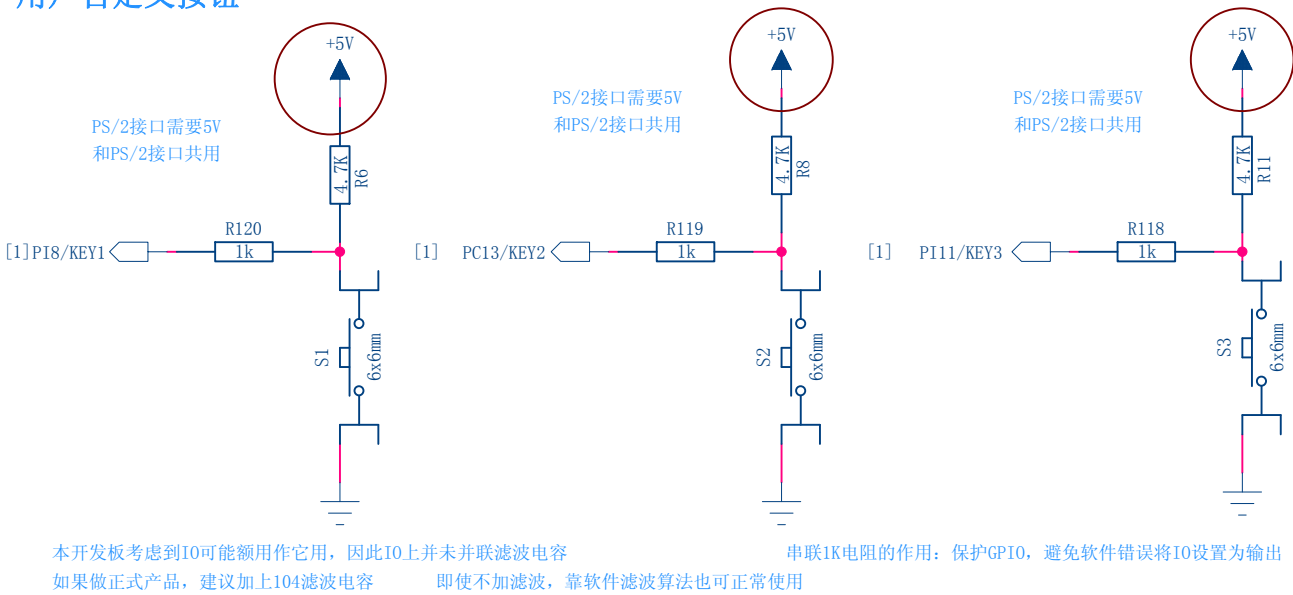


KF128 接线端子

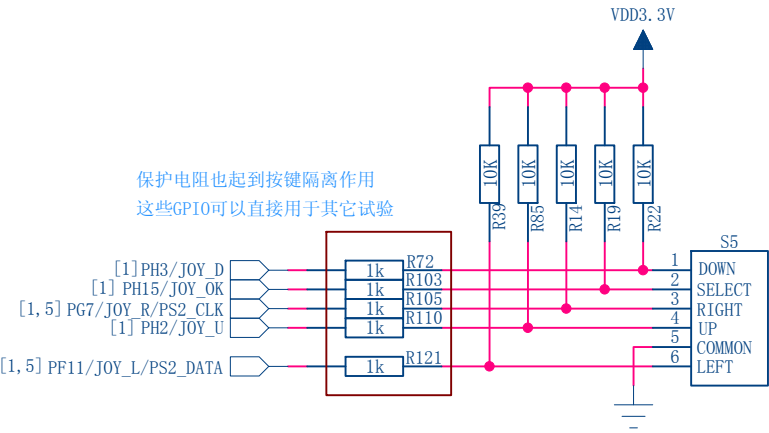


COMPANY: 安富莱电子 www.armfly.com			
TITLE: 【安富莱】STM32-V5开发板原理图 D030-3			
SIZE: A3	SHEET NAME: [4]RS232_RS485_CAN		REV: 1.0
DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 4 OF 10	

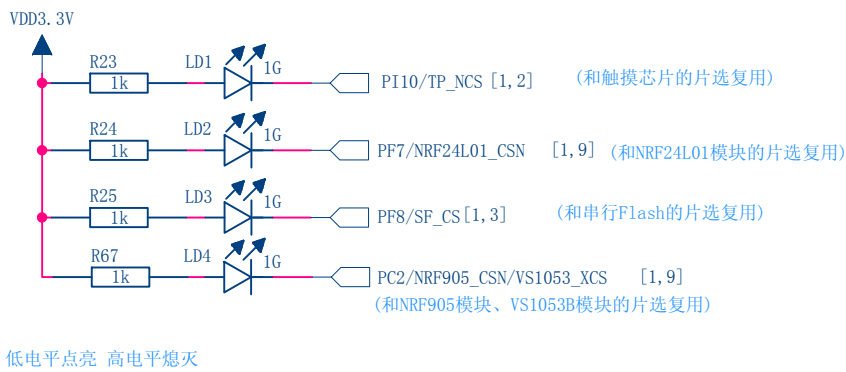
用户自定义按钮



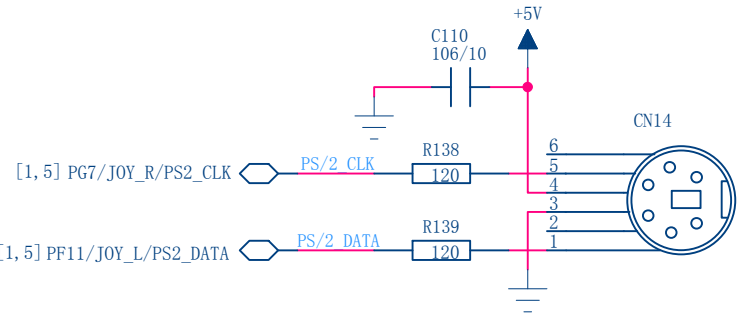
5向摇杆



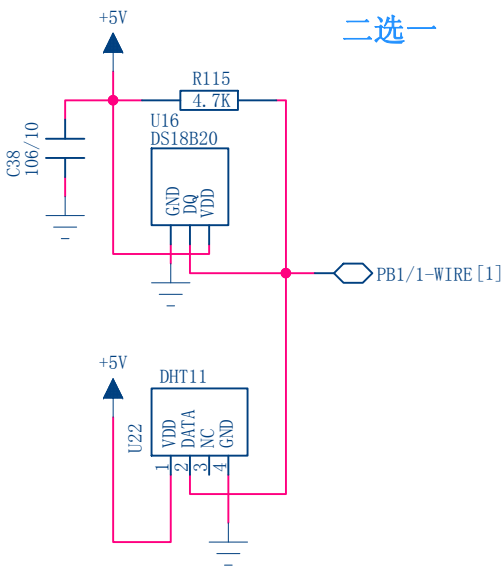
用户自定义LED指示灯



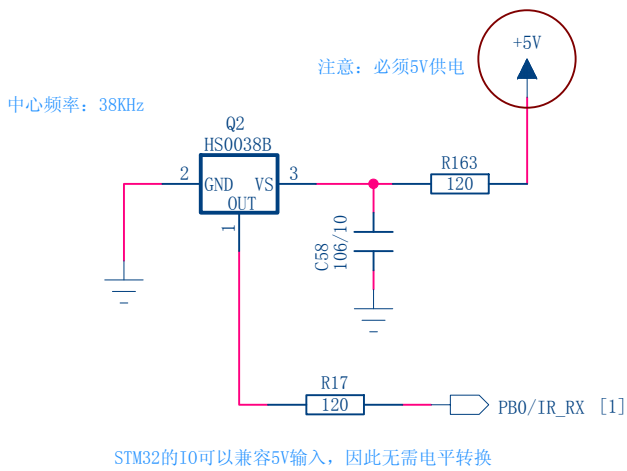
PS/2接口 可连接键盘，鼠标，扫描枪



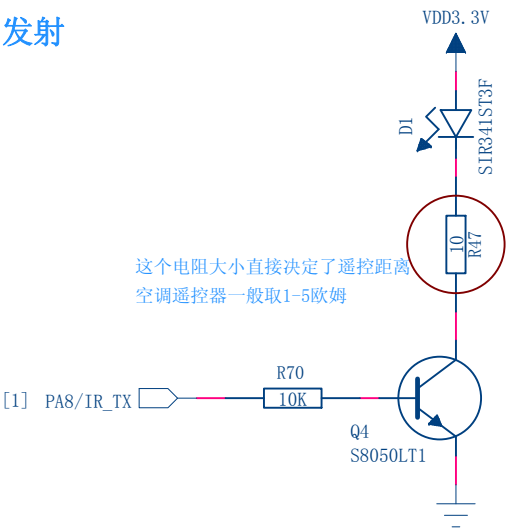
1-WIRE接口



红外接收



红外发射



COMPANY: 安富莱电子 www.armfly.com			
TITLE: 【安富莱】STM32-V5开发板原理图 D030-3			
SIZE: A3	SHEET NAME: [5]KEY_LED_PS2	REV: 1.0	
DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 5 OF 10	

音频电路电源

VDD3.3V

VDD_AUDIO

驻极体话筒

外接立体声耳机

外接立体声输入

收音机信号输入

板载MIC使用了WM8978的左声道

MODE接地：选择2线控制接口(I2C, 只写)

4 = MIC_BIAS
1 = MIC_IN

LINE_IN

GP01内部上拉
GP02内部下拉
缺省选择I2C接口

FM天线
L4
ANT-FM
C70 102/50
56nH
L6
不贴
AM天线
L5
C71 474/16
[1, 2, 3, 7, 9] NRST

U6
Si4730-D60-GM
NC 20
FMI 19
RF/GND 18
AMI 17
RST DFS
SEN 6
SCLK 7
SDIO 8
RCLK 9
VD 10
DOUT 15
LOUT 14
ROUT 13
GND 12
VA 11

C34 220/50
X1 32.768K
C37 220/50
C104 223/50
BLM18RK492SN1
VDD_FM
C105 104/50
C106 106/10
BLM18RK102SN1
VDD3. 3V

[3, 6, 8] I2C2_SCL
[3, 6, 8] I2C2_SDA

收音机模拟音频信号输出
FM_OUTL [6]
FM_OUTR [6]

$\overline{SEN} = 0$ 时地址=0x22 (本开发板采用该设置)
 $\overline{SEN} = 1$ 时地址=0xC6

INP INN 是单声道差分输入

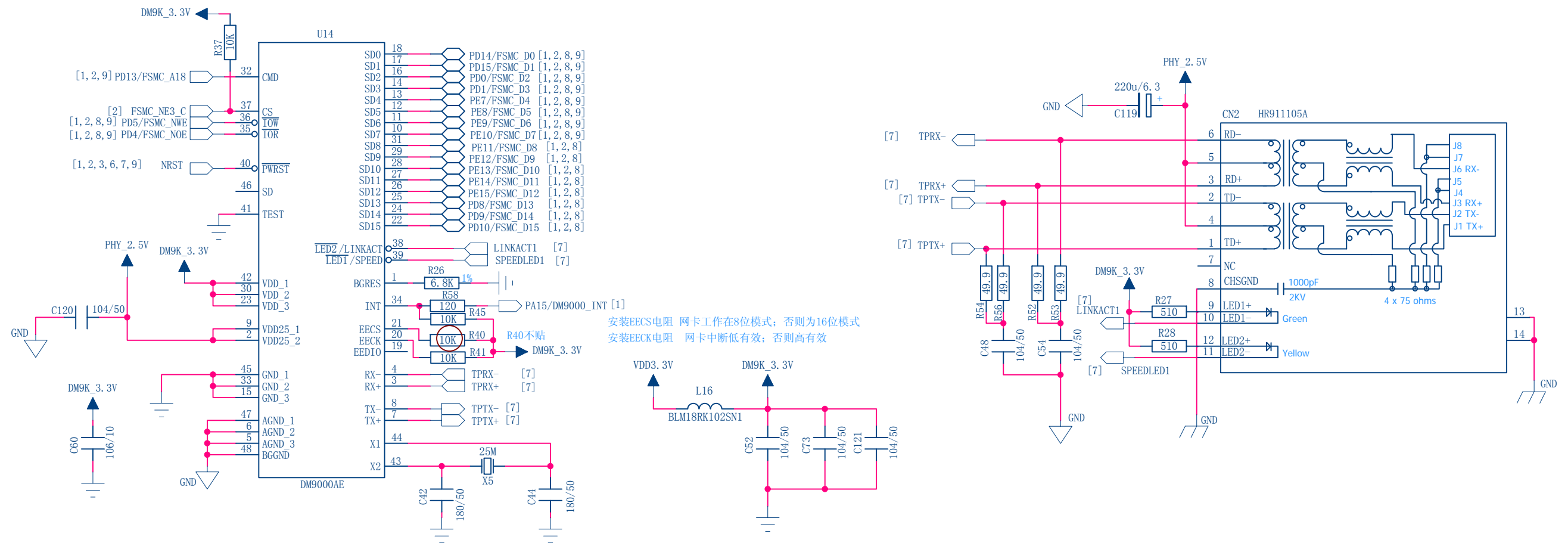
SHDN 用于关闭电源和切换扬声器模块的增益（本开发板未使用）

DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 6 OF 10
------------------	-----------------	----------------

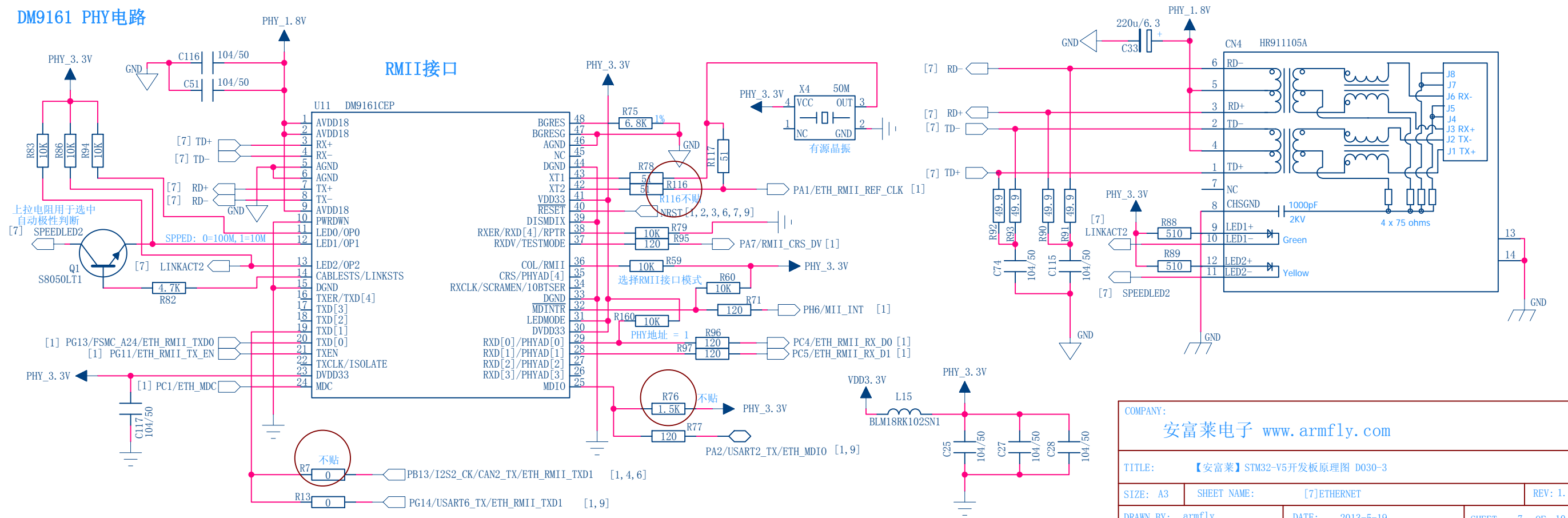
DM9000 网卡电路

0x6840 0000

0x6848 0000

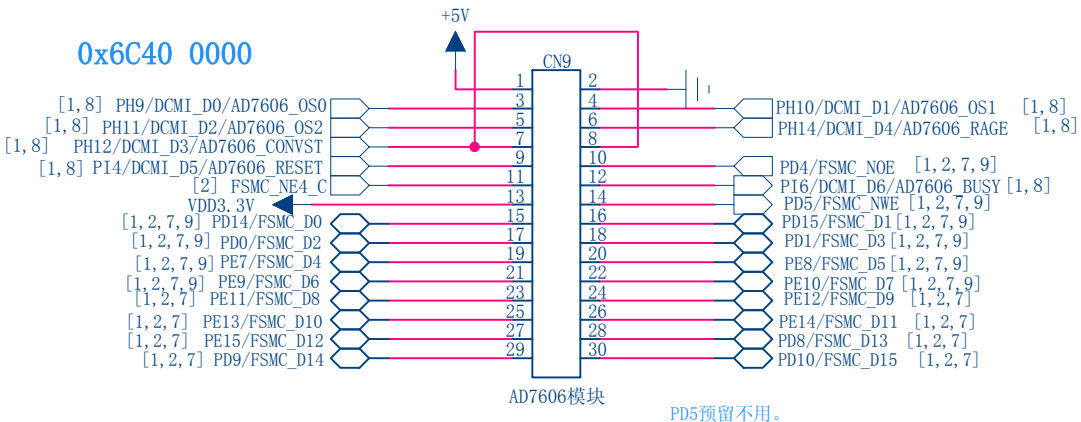


DM9161 PHY电路

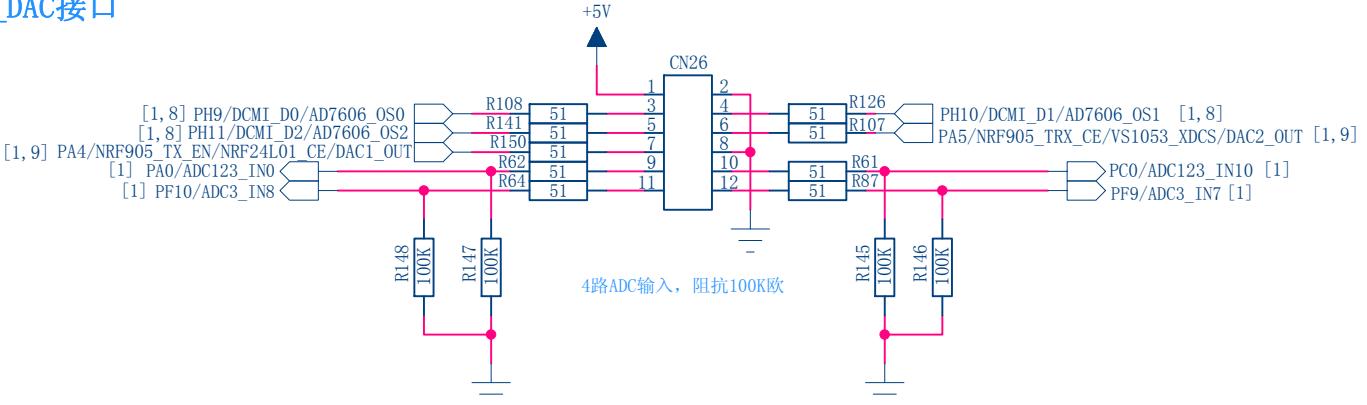


AD7606_8通道16位ADC模块接口

0x6C40 0000

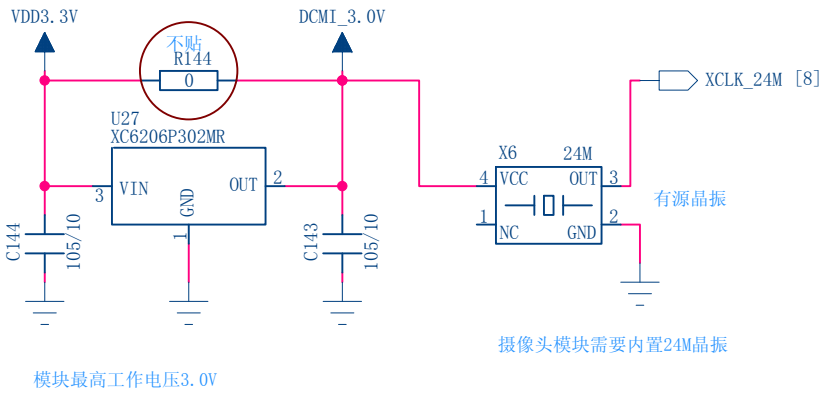
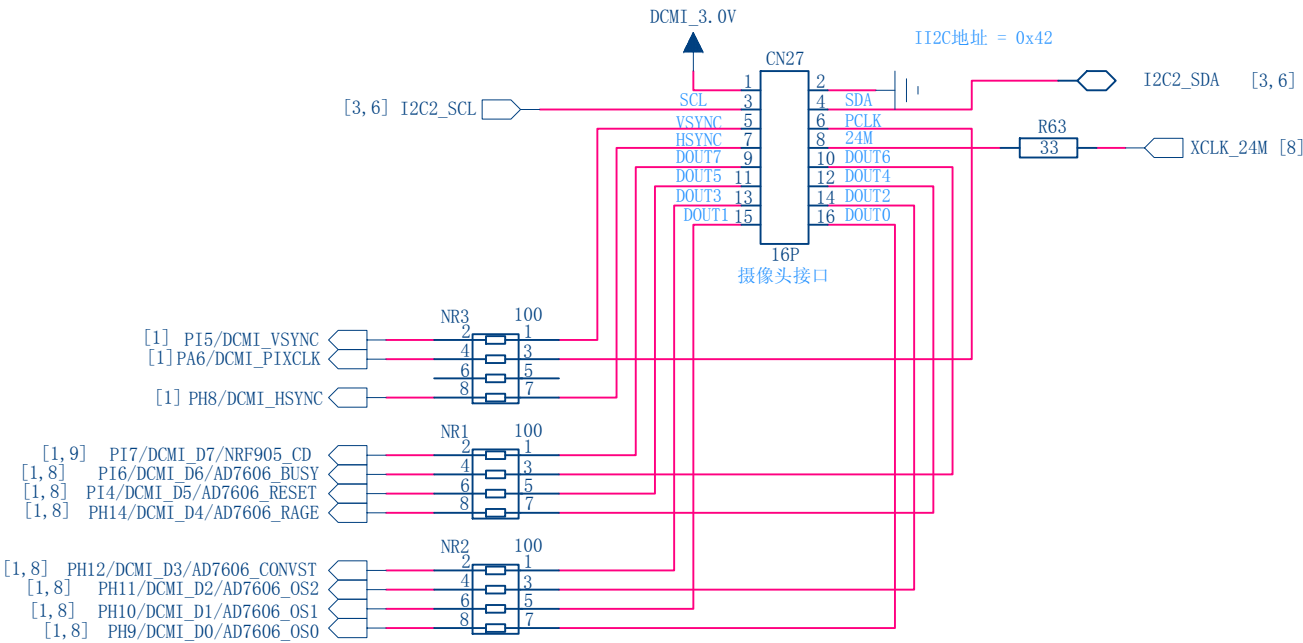


ADC_DAC接口



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



NRF24L01模块接口

The diagram illustrates the pin connections for the NRF24L01 module. The module is labeled 'NRF24L01模块' and has pins 1 through 8. The connections are as follows:

- Pin 1 (GND) is connected to ground.
- Pin 2 (VCC) is connected to VDD3.3V.
- Pin 3 (CE) is connected to VDD3.3V through a 104/50 capacitor (C99).
- Pin 4 (CSN) is connected to VDD3.3V through a 10K resistor (R106).
- Pin 6 (SCK) is connected to PB3/SPI3_SCK [1, 2, 3, 9].
- Pin 7 (MISO) is connected to PB4/SPI3_MISO [1, 2, 3, 9].
- Pin 8 (IRQ) is connected to PH7/NRF24L01_IRQ [1] through a 10K resistor (R109).

The diagram also shows a VDD3.3V supply and a 10K resistor (R109) connected to the IRQ pin.

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

[illegible]

SDIO WIFI模块接口

Diagram illustrating the SDIO WIFI module interface connections:

- Pin 1:** Connected to PC11/SDIO_D3.
- Pin 3:** Connected to PC12/SDIO_CK.
- Pin 5:** Connected to PC8/SDIO_D0.
- Pin 7:** Connected to PC10/SDIO_D2.
- Pin 2:** Connected to VDD3.3V.
- Pin 4:** Connected to PD2/SDIO_CMD.
- Pin 6:** Connected to PC9/SDIO_D1.
- Pin 8:** Connected to PE2/FSMC_A23/SD_DETECT through a 10K resistor (R114).
- Pin 10:** Connected to ground.
- Pin 3, 5, 7, 9:** Connected to ground.

GPS模块接口

[1] PA3/USART2_RX

VDD3.3V

CN6

6P

BAT_CR1220

PA2/USART2_TX/ETH_MDIO

[1], [7]

OLED显示模块接口

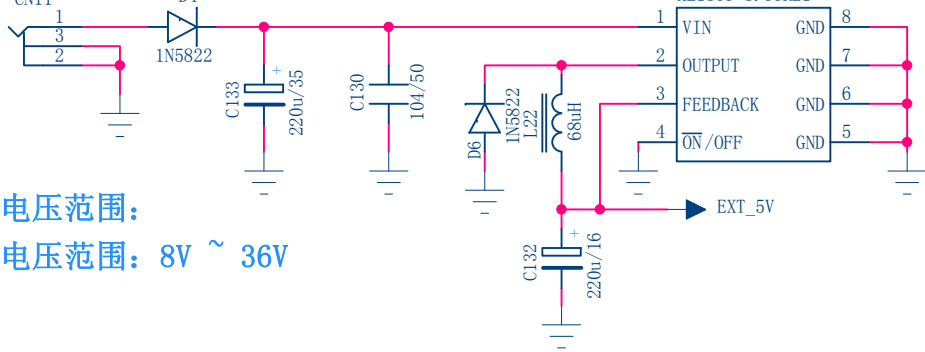
DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 9 OF 10
------------------	-----------------	----------------

外部供电电源电路

电源插座是有极性的，内正外负极，芯线直径2.0mm

最大电流 2A
具有短路保护和过热保护功能

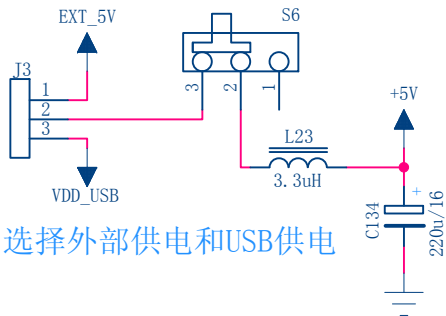
反电源反接二极管



输入电压范围：
输入电压范围：8V ~ 36V

外部供电电源电路

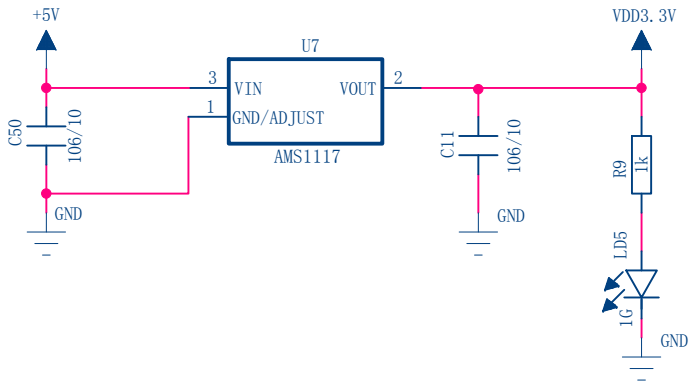
电源开关



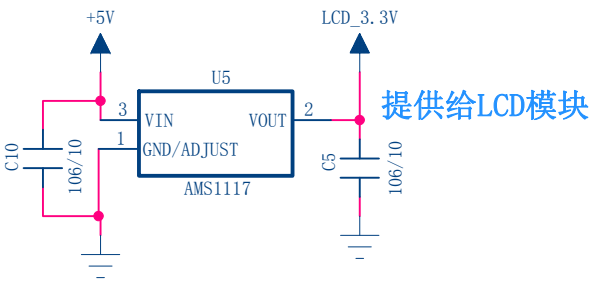
选择外部供电和USB供电

外部供电电源电路

3.3V电源电路（提供给CPU和大部分外设）

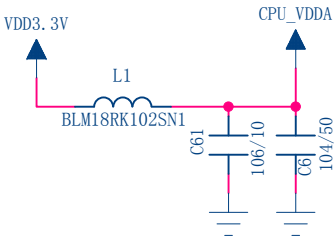


外部供电电源电路

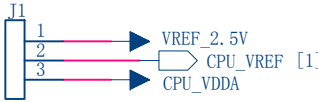


提供给LCD模块

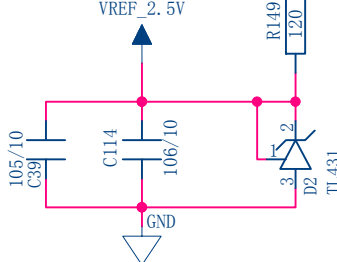
CPU内部模拟部分电源



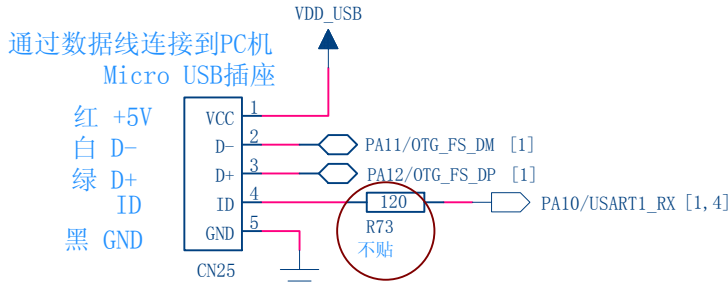
选择CPU内部ADC和DAC参考电压
缺省是选择 VREF_2.5V



2.5V基准电压

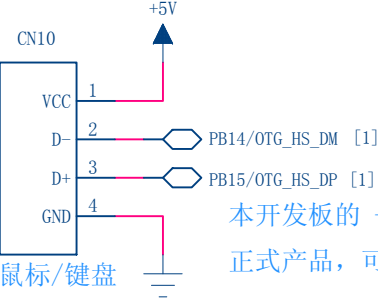


USB HOST（USB 2.0 全速12Mbps）



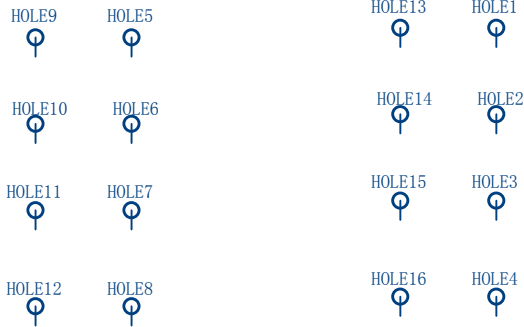
USB-A插座

可插U盘，USB鼠标/键盘



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 STMP2161STR/SOT23-5L

安装孔



COMPANY: 安富莱电子 www.armfly.com			
TITLE: 【安富莱】STM32-V5开发板原理图 D030-3			
SIZE: A3	SHEET NAME: [10]POWER_USB		REV: 1.0
DRAWN BY: armfly	DATE: 2013-5-19	SHEET: 10 OF 10	