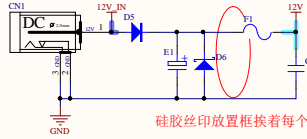


Main Board Power Tree

SYSTEM FUNCTION BLOCK DIAGRAM

外置12V电源接口

DC座子便于调试，量产可去掉



硅胶丝印放置框挨着每个电解电容放置

电源端子 DC JACK, HDC 2.0, Black, DBPDC-005B-2.0-EPCS
肖特基二极管 D5D SMD S, 1A, 40V, SOD-123FL, SMD, S143 V7
铝电解电容 CAP AL, 25V, 470uF, ±20%, LD, PKLH, P.5, 0mm, 10*12.5, DIP, TP, Koshin
自恢复保险丝 PUSE, PTC, 1.1A, 6V, 1206, SMD, TP, T1C
稳压二极管 ZEN, 1TV, 500mW, SOD-123, SMD, 1MSZ524BTT, GL, LRC
陶瓷电容 CAP MC, 50V, 0.1uF, ±10%, X7R, 0603, SMD, TP, H 专用

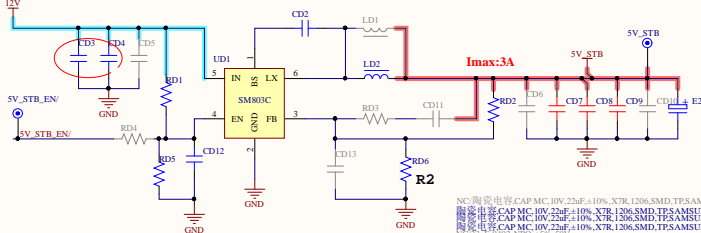
$V_{out} = 0.6V \cdot (1 + R_{HURL}) \approx 3.31V$

Module: STM32

12V==> 5V_STB

Pc: 0.3W
Current: 500mA

NC 功率电感 Power Inductor, 4.7uH, ±30%, 3.5A, DR5, 0*4.0, SMD, SWPA5040S-4R7NT, Sunlord
陶瓷电容 CAP MC, 25V, 0.1uF, ±10%, X7R, 0402, SMD, TP, H 专用
NC 陶瓷电容 CAP MC, 25V, 0.1uF, ±10%, X7R, 0402, SMD, TP, H 专用
功率电感 Power Inductor, 2.2uH, ±20%, 8A, 7.3*6.6mm, SMD, TMP0603H-2R2MG-D, TAI-TECH



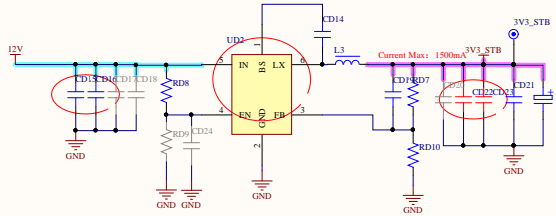
陶瓷电容 CAP MC, 25V, 10uF, ±10%, X7R, 1206, SMD, TP
陶瓷电容 CAP MC, 25V, 10uF, ±10%, X7R, 1206, SMD, TP
厚膜电阻 RES, 1/16W, 100Kohm, ±1%, 0402, SMD, H 专用
厚膜电阻 RES, 1/16W, 100Kohm, ±1%, 0402, SMD, H 专用
NC 功率电感 RES, 1/16W, 100Kohm, ±1%, 0402, SMD, H 专用
片式陶瓷电容 MC, 16V, 1uF, ±10%, X7R, 0603, SMD, TP, H 专用
NC 陶瓷电容 CAP MC, 25V, 0.1uF, ±10%, X7R, 0402, SMD, TP, H 专用
DC-DC 芯片 IC DC-DC, Syn, 2A, 18V, 500kHz, SOT23-6, SMD, SM102ABC, Silergy

使用位置: RK1808

12V ==> 3V3_STB

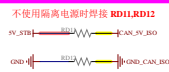
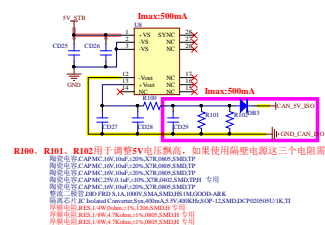
Pc: 0.7W
Current: 1500mA

功率电感 Power Inductor, 2.2uH, ±20%, 8A, 7.3*6.6mm, SMD, TMP0603H-2R2MG-D, TAI-TECH
DC-DC 芯片 IC DC-DC, Syn, 2A, 18V, 500kHz, SOT23-6, SMD, SM102ABC, Silergy
陶瓷电容 CAP MC, 25V, 0.1uF, ±10%, X7R, 0402, SMD, TP, H 专用



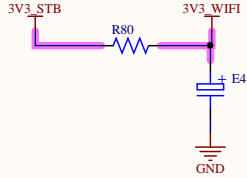
NC 陶瓷电容 CAP MC, 25V, 0.1uF, ±10%, X7R, 0402, SMD, TP, H 专用
NC 陶瓷电容 CAP MC, 10V, 0.22uF, ±20%, X7R, 0402, SMD, TP
厚膜电阻 RES, 1/16W, 100Kohm, ±1%, 0402, SMD, H 专用
NC 陶瓷电容 CAP MC, 25V, 0.1uF, ±10%, X7R, 0402, SMD, TP, H 专用
厚膜电阻 RES, 1/16W, 22Kohm, ±1%, 0402, SMD, H 专用
陶瓷电容 CAP MC, 10V, 22uF, ±10%, X7R, 1206, SMD, TP, SAMSUNG
陶瓷电容 CAP MC, 10V, 22uF, ±10%, X7R, 1206, SMD, TP, SAMSUNG
陶瓷电容 CAP MC, 25V, 10uF, ±10%, X7R, 1206, SMD, TP
铝电解电容 CAP AL, 16V, 220uF, ±20%, LD, KF, P.2, 5mm, 6.3*11, DIP, TP, CapXon

位号范围:



3V3_Wifi

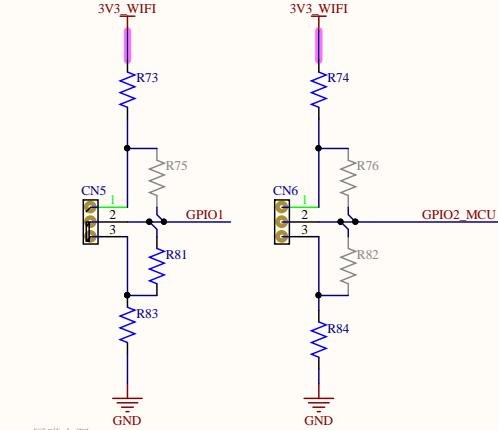
厚膜电阻,RES,1/10w,0ohm,±1%,0603,SMD,H 专用
铝电解电容,CAP AL,16V,220uF,±20%,LD,PKLJ,P,2.5mm,6.3×7,DIP,TP,Koshin



BOOT

MCU对wifi升级的使能控制

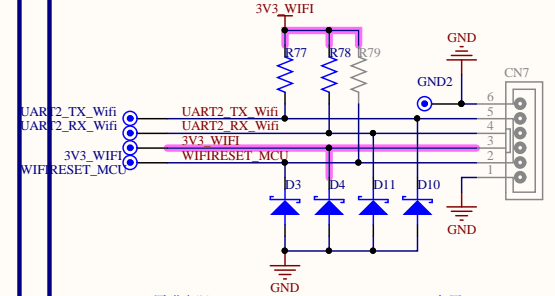
金针座,1R,3Pin,D2.54,V,H8.4,Red,L3mm,DIP,901611-103421116-00002,G/F,EIVW



NC/厚膜电阻,RES,1/16W,0ohm,±5%,0402,SMD
NC/厚膜电阻,RES,1/16W,0ohm,±5%,0402,SMD
厚膜电阻,RES,1/16W,4.7Kohm,±1%,0402,SMD,H 专用
金针(带跳帽),1R,3Pin,D2.54,V,H8.64,T6.1,DIP,LD
厚膜电阻,RES,1/16W,0ohm,±1%,0402,SMD,H 专用
厚膜电阻,RES,1/16W,4.7Kohm,±1%,0402,SMD,H 专用
厚膜电阻,RES,1/16W,4.7Kohm,±1%,0402,SMD,H 专用

与MCU连接的IO

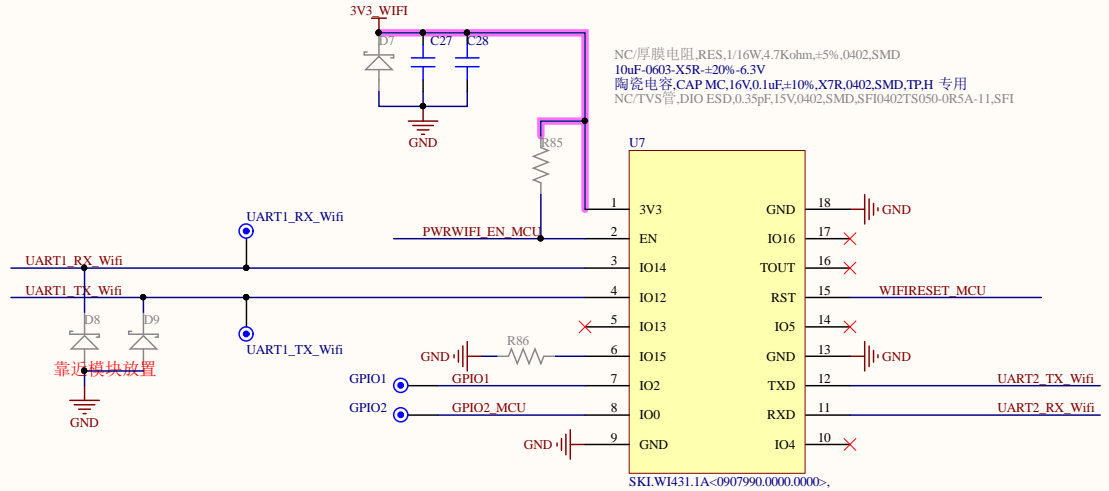
PWRWIFI_EN_MCU	PWRWIFI_EN_MCU
WIFIRESET_MCU	WIFIRESET_MCU
UART1_TX_Wifi	UART1_TX_Wifi
UART1_RX_Wifi	UART1_RX_Wifi
GPIO2_MCU	GPIO2_MCU



厚膜电阻,RES,1/16W,4.7Kohm,±1%,0402,SMD,H 专用
厚膜电阻,RES,1/16W,4.7Kohm,±1%,0402,SMD,H 专用
TVS管,DIO ESD,0.35pF,15V,0402,SMD,SF10402TS050-0R5A-11,SFI
TVS管,DIO ESD,0.35pF,15V,0402,SMD,SF10402TS050-0R5A-11,SFI
TVS管,DIO ESD,0.35pF,15V,0402,SMD,SF10402TS050-0R5A-11,SFI
TVS管,DIO ESD,0.35pF,15V,0402,SMD,SF10402TS050-0R5A-11,SFI
NC/连接插座,connect jack,6Pin,D2.0,D,SNAP,L=2.8mm,DIP,CNJST
NC/厚膜电阻,RES,1/16W,10Kohm,±1%,0402,SMD,H 专用

配置管脚	电平状态	描述
PIN7	high	\
	low	
PIN8	high	从内部的Flash启动
	low	禁止从内部Flash启动,可通过UART2烧写程序到内部的Flash

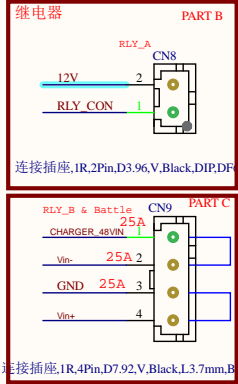
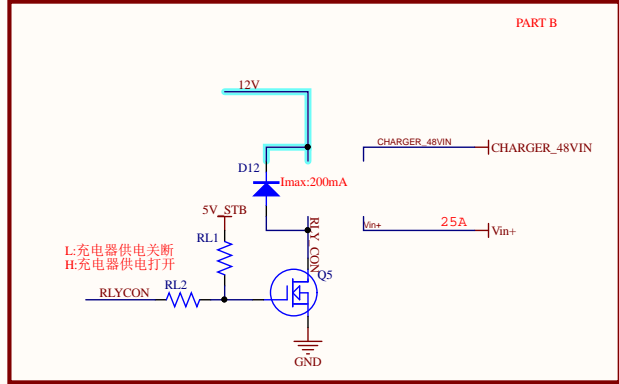
UART2: PIN11,PIN12



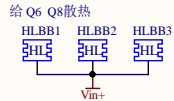
NC/厚膜电阻,RES,1/16W,4.7Kohm,±5%,0402,SMD
NC/TVS管,DIO ESD,0.35pF,15V,0402,SMD,SF10402TS050-0R5A-11,SFI
NC/TVS管,DIO ESD,0.35pF,15V,0402,SMD,SF10402TS050-0R5A-11,SFI

电机关断供电开关

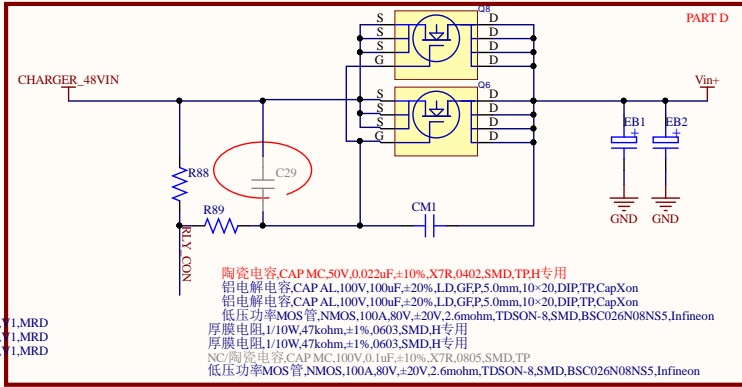
方案一、RLYCON直接连接充电电机使能信号——NC此页
方案二、RLYCON连接控制继电器——上件PART A&B&C
方案三、RLYCON连接控制MOS管——上件PART C&D



薄膜电阻,RES,1/16W,10Kohm,±1%,0402,SMD,H专用
薄膜电阻,RES,1/16W,1Kohm,±1%,0402,SMD,H专用
整流二极管,DIO,SI S,1A,1000V,DO-214AC,SMD,M7,GOOD-ARK
场效应管,NMOS,5.7A,30V,0.0265ohm/ID=5.7A/VGS=10V,SOT-23,AO3400A,AOS



汇流条,LP,168W,1.701,6×4×2.5mm,T=2.5mm,红铜片,本色,镀雾锡,本色,1.MRD
汇流条,LP,168W,1.701,6×4×2.5mm,T=2.5mm,红铜片,本色,镀雾锡,本色,1.MRD
汇流条,LP,168W,1.701,6×4×2.5mm,T=2.5mm,红铜片,本色,镀雾锡,本色,1.MRD

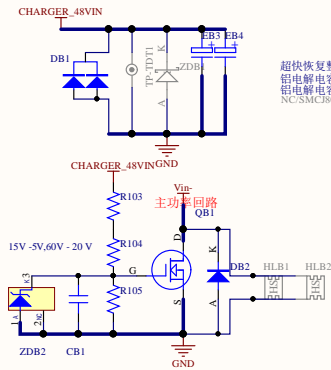


陶瓷电容,CAP,MC,50V,0.022uF,±10%,X7R,0402,SMD,TP,H专用
铝电解电容,CAP,AL,100V,100uF,±20%,LD,GEP,5.0mm,10×20,DIP,TP,CapXon
铝电解电容,CAP,AL,100V,100uF,±20%,LD,GEP,5.0mm,10×20,DIP,TP,CapXon
低压功率MOS管,NMOS,100A,80V,±20V,2.6mohm,TDSON-8,SMD,BSC026N08NS5,Infineon
薄膜电阻,1/10W,47kohm,±1%,0603,SMD,H专用
薄膜电阻,1/10W,47kohm,±1%,0603,SMD,H专用
NC陶瓷电容,CAP,MC,100V,0.1uF,±10%,X7R,0805,SMD,TP
低压功率MOS管,NMOS,100A,80V,±20V,2.6mohm,TDSON-8,SMD,BSC026N08NS5,Infineon

说明:
版本: 继电器开关

说明:

防反插电路



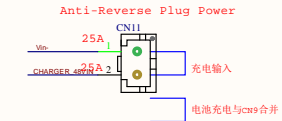
超快恢复整流二极管,SL10A,400V,TO-252,SMD,TP,10F40R,H 专用,JLHW
铝电解电容,CAPAL,100V,100uF,±20%,LD,GFP,5.0mm,10×20,DIP,TP,CapXon
铝电解电容,CAPAL,100V,100uF,±20%,LD,GFP,5.0mm,10×20,DIP,TP,CapXon
NC/SMCJ80A

陶瓷电容,CAP MC,50V,0.1uF,±10%,X7R,0603,SMD,TP,H 专用
稳压二极管,DIO ZEN,15V,225mW,SOT-23,SMD,LBZX84C15LT1G-HW,LRC,H 专用

中压功率MOS管,NMOS,140A,150V,±20V,5.6mohm,TO-263,SMD,NCEP15T14D,NCEPOWER
肖特基二极管,DIO SBD S,3A,100V,SMB,SMD,SK3BB,GOOD-ARK
NC/汇流条,CCP,南桥,CP2,200SOP,1.210mm,T=1.0mm,表面1,微凸焊,微凸焊,本色,MRD

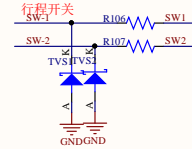
厚膜电阻,RES,1/4W,10Kohm,±1%,1206,SMD,H 专用
厚膜电阻,RES,1/4W,10Kohm,±1%,1206,SMD,H 专用
厚膜电阻,RES,1/4W,10Kohm,±1%,1206,SMD,H 专用

防反插电路&输入电容放电假负载

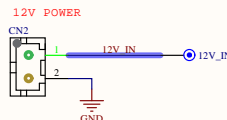


连接插座,1R,2Pin,D7.92,V,Black,DIP,DF22R-2P-7.92DSA(23),HRS

行程开关&电源

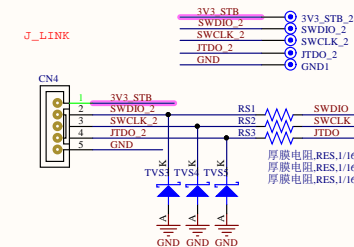


TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing
TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing
厚膜电阻,RES,1/16W,100ohm,±1%,0402,SMD,H 专用
厚膜电阻,RES,1/16W,100ohm,±1%,0402,SMD,H 专用



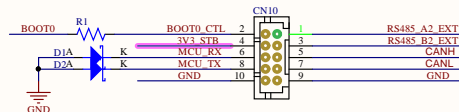
连接插座,1R,2Pin,D3.96,V,Black,DIP,DF63M-2P-3.96DSA(01),HRS

DEBUG

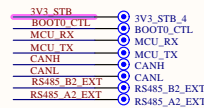


TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing
TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing
TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing
连接插座,connect jack,5Pin,D2.0,D,SNAP,L=2.8mm,DIP,CNJST

UART&R485&CAN

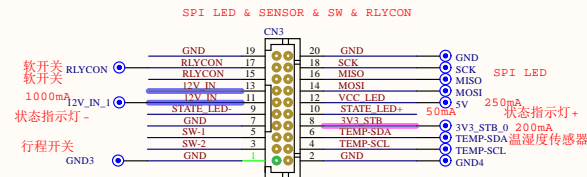


厚膜电阻,RES,1/16W,10Kohm,±1%,0402,SMD,H 专用
连接插座,2R,10Pin,D2,V.Black,DIP,DF51A-10DP-2DSA(01),HRS
TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing
TVS管,DIO ESD,0.5pF,25V,0402 DFN,SMD,AZ5325-01F,R7G,Amazing



MCU UART & BOOT0

R485&CAN

SPI LED & SENSOR & SW & RLYCON

连接插座,2R,20Pin,D2,V,Black,L3mm,DIP,DF51A-20DP-2DSA(01),HRS

此页面由**PCB**工程师填写

MARK			
定位孔			注意数量和孔径
标识丝印	冷热地		TV&电源多合一
	高压		TV&电源多合一
	条码框		
	MAC地址		带互联网功能
	认证标识	<div></div> <p>优选全规格，优先级：全规格>精简A级>精简B级，空间极度有限，实属无奈才能选精简规格</p>	
杜比认证丝印预留框			预留范围： TV、供应链服务、厦门部件
AI部件			
导电泡棉		规格：10*10*10，使用其他规格须申请新封装	

1	2	3	4	5	6
改板必查项目，此页面由硬件工程师逐行确认					
工程师		刘兴鹏	日期	2020.12.12	
类型描述		原理图(一一对应/非一一对应)		备注	
板卡型号		PCB_NAME RBT.STM32.CHARGER.01			
版本周期号		PCB_TIME A20363			
测试点					
辅料		硅胶、硅脂、螺丝、热缩套管、贴纸等辅料虚拟封装，请自行添加		没有的封装请PCB添加	
散热片		注意添加主IC散热片封装和硅胶（脂）！			
标识丝印	杜比丝印				
1	2	3	4	5	6