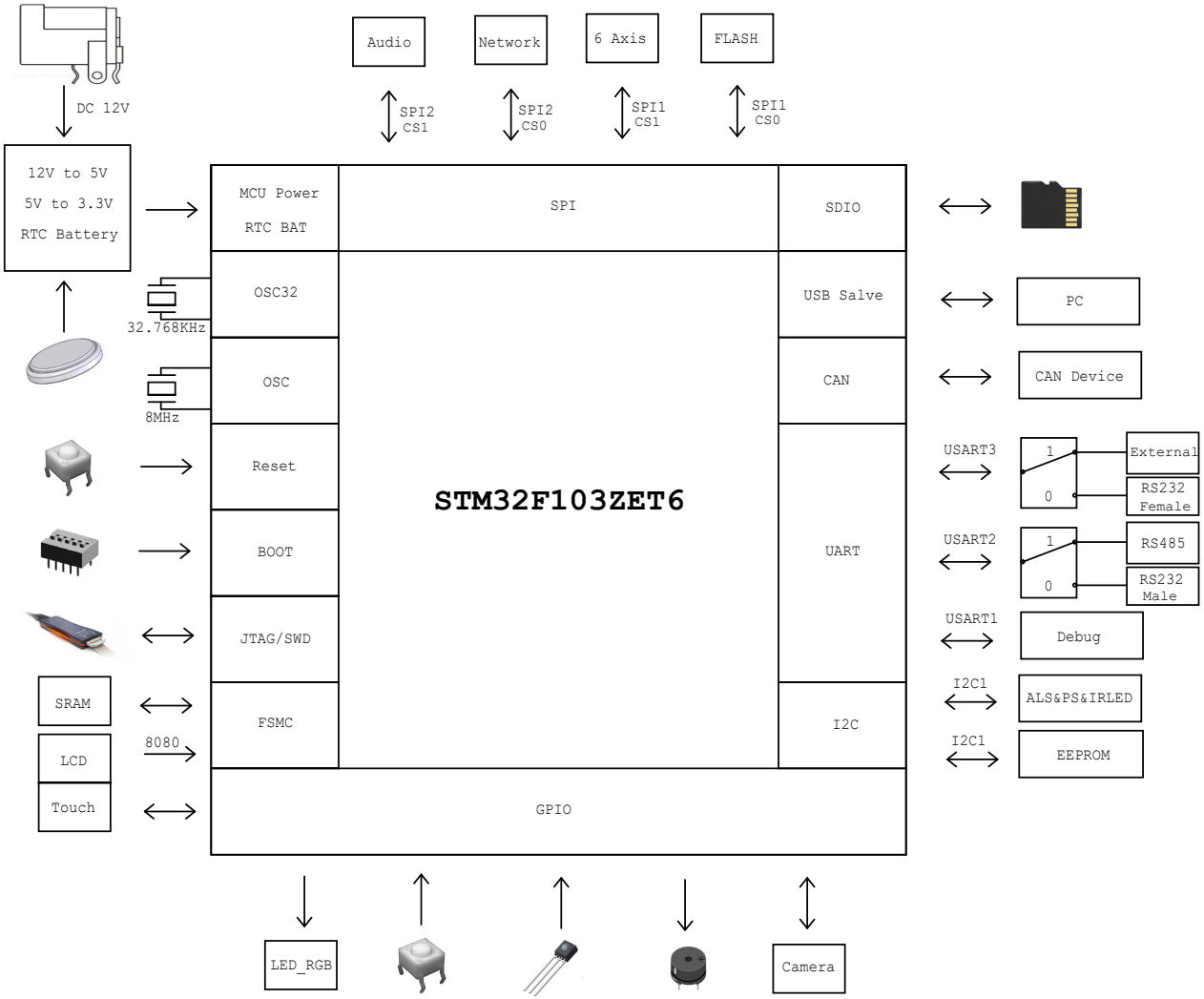
Block Diagram



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01	Block Diagram & Contents & Revision History
02	MCU
03	Boot & JTAG & Clock & Reset
04	Power
05	Modules
06	SRAM & LCD & SD Card
07	USB Serial
08	RS232 & RS485 & CAN & USB
09	Network
10	Audio
11	GPIO Export & Camera

Revision History

Date	Revision	Change Note
20200601	100ASK_STM32F103_V1.0	First editor
20201201	100ASK_STM32F103_V1.1	Second improvement
20210116	100ASK_STM32F103_V1.2	Third improvement

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MCU

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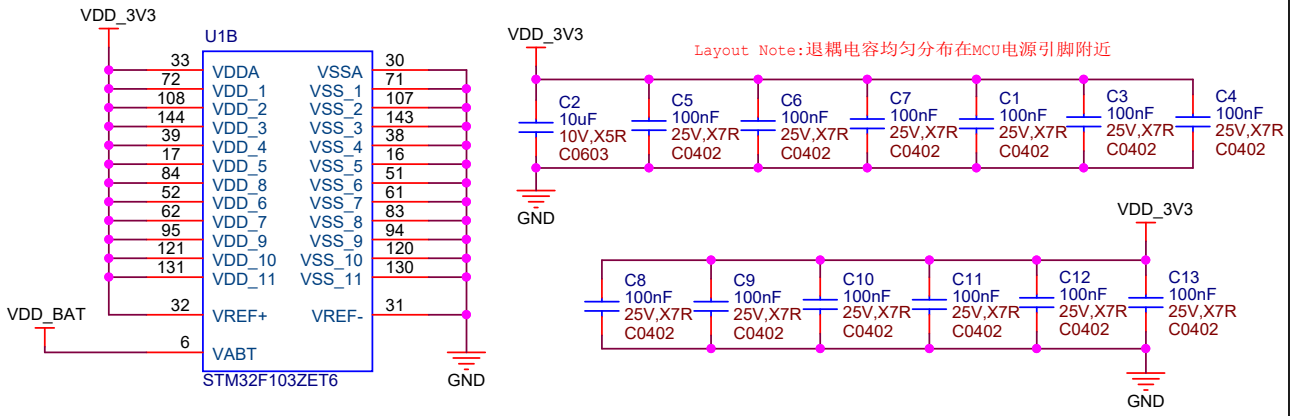
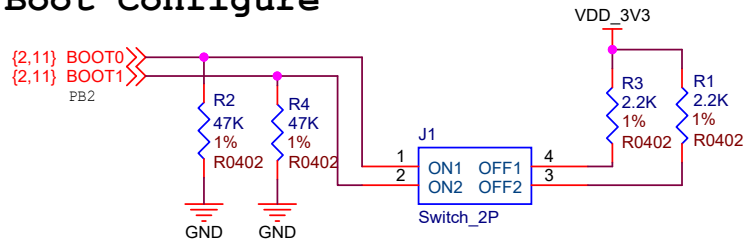
MCU Power

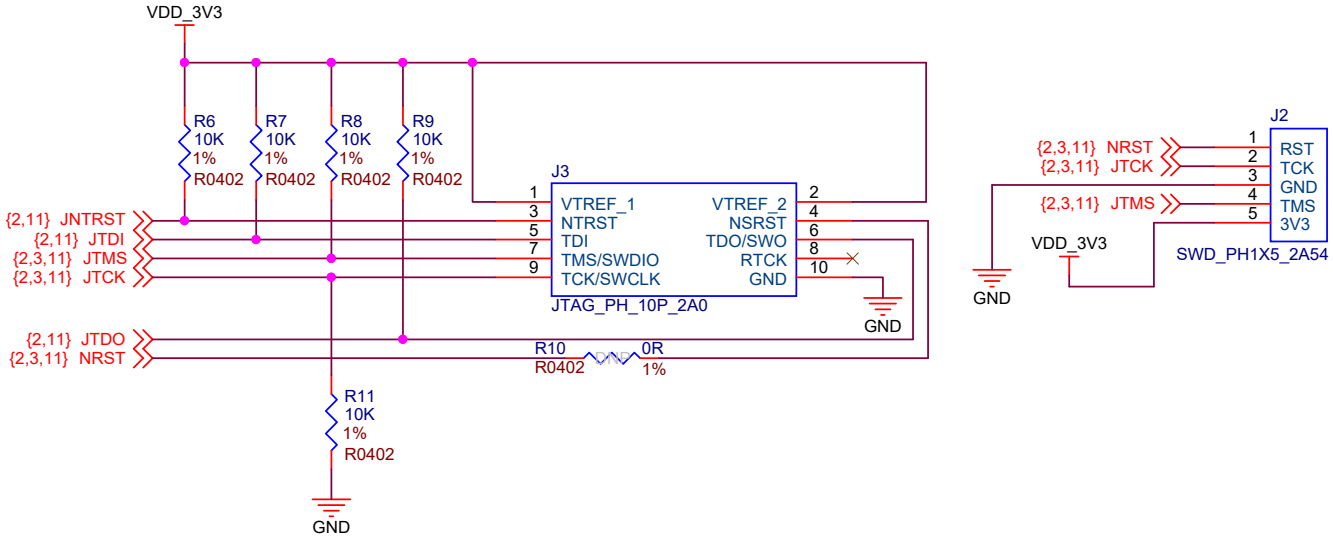


Boot Configure

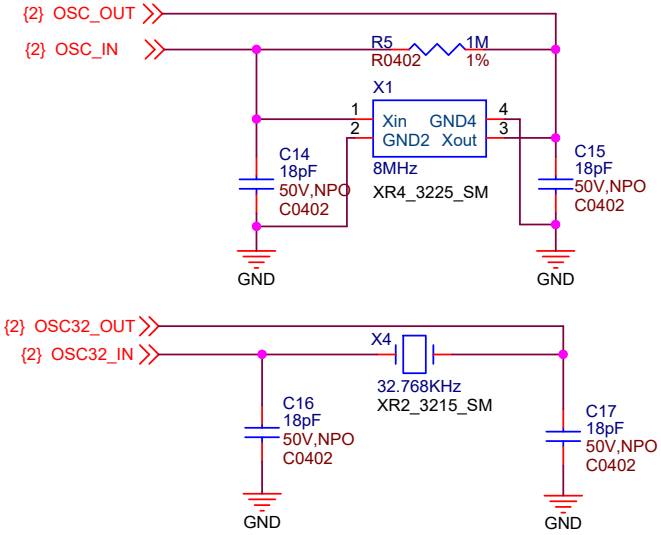


J1-1(BOOT0)	J1-2(BOOT1)	Description
OFF	*	Main Flash memory(Default)
ON	OFF	System memory
ON	ON	Embedded Memory(Debug)

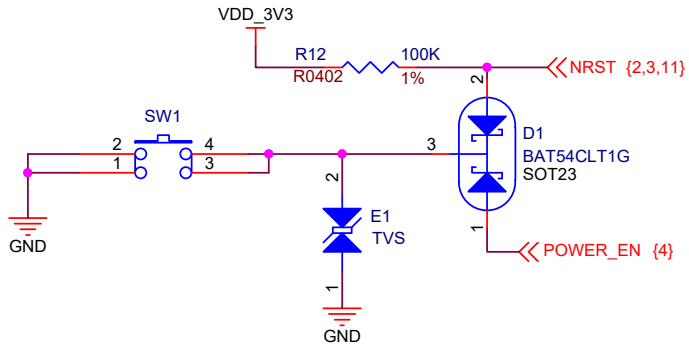
JTAG & SWD



Clock



Reset



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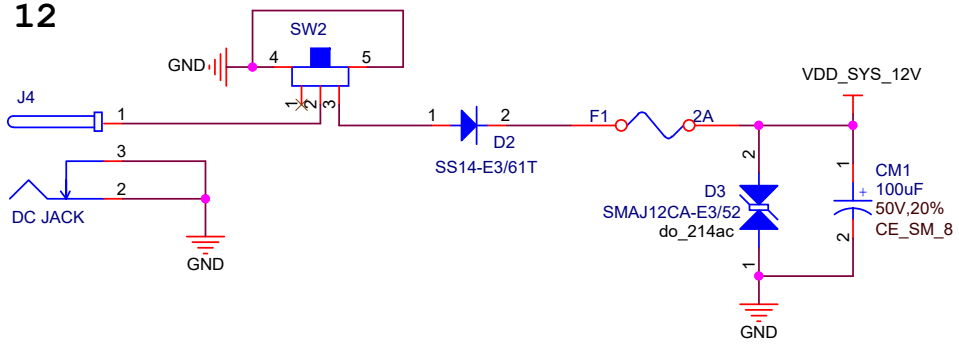
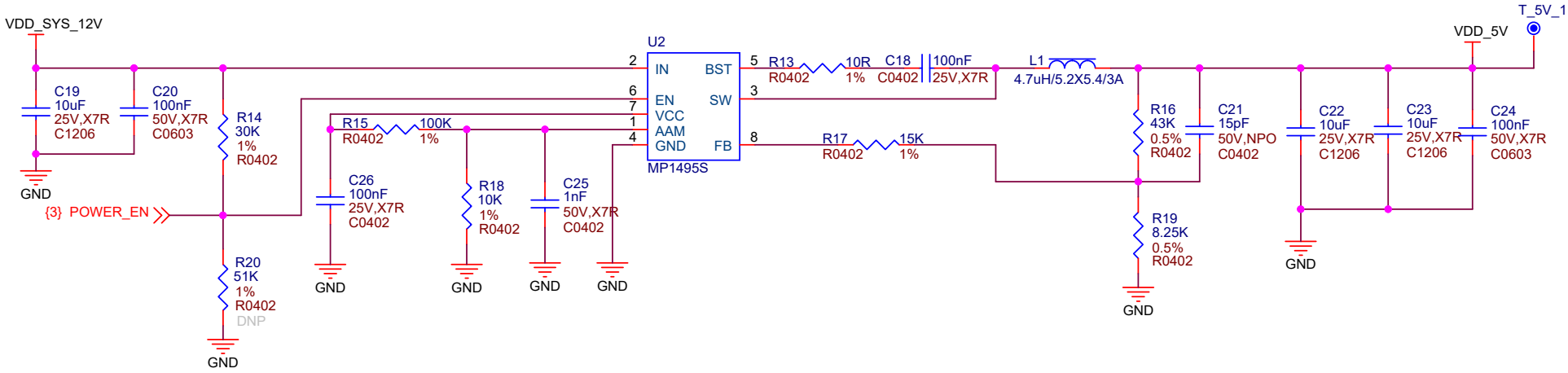
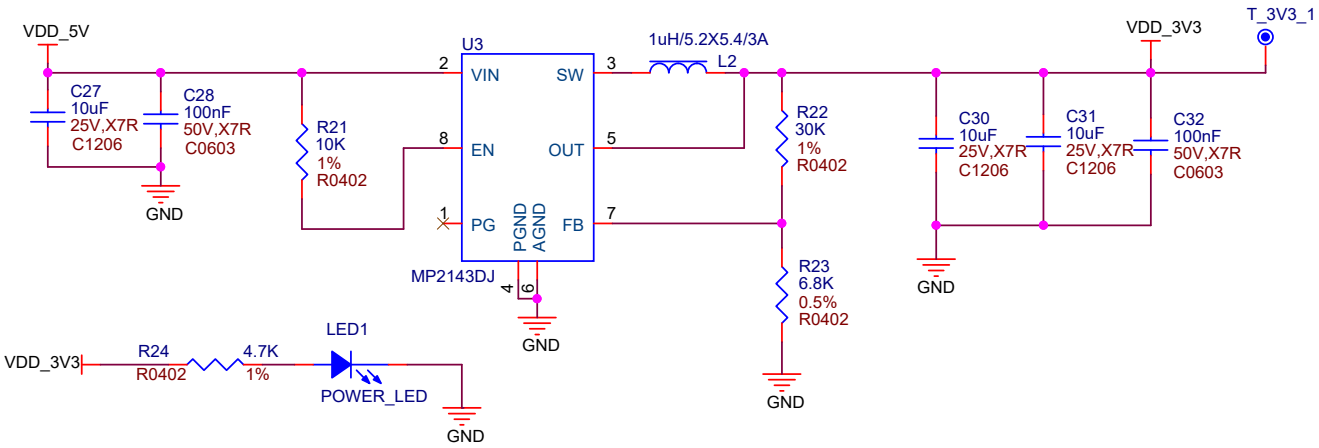
DC IN 12



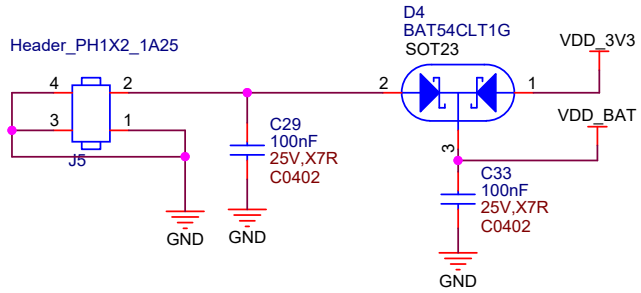
DC 12V to DC 5V



DC 5V to DC 3.3V



RTC BAT



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Title: 100ASK_STM32F103		
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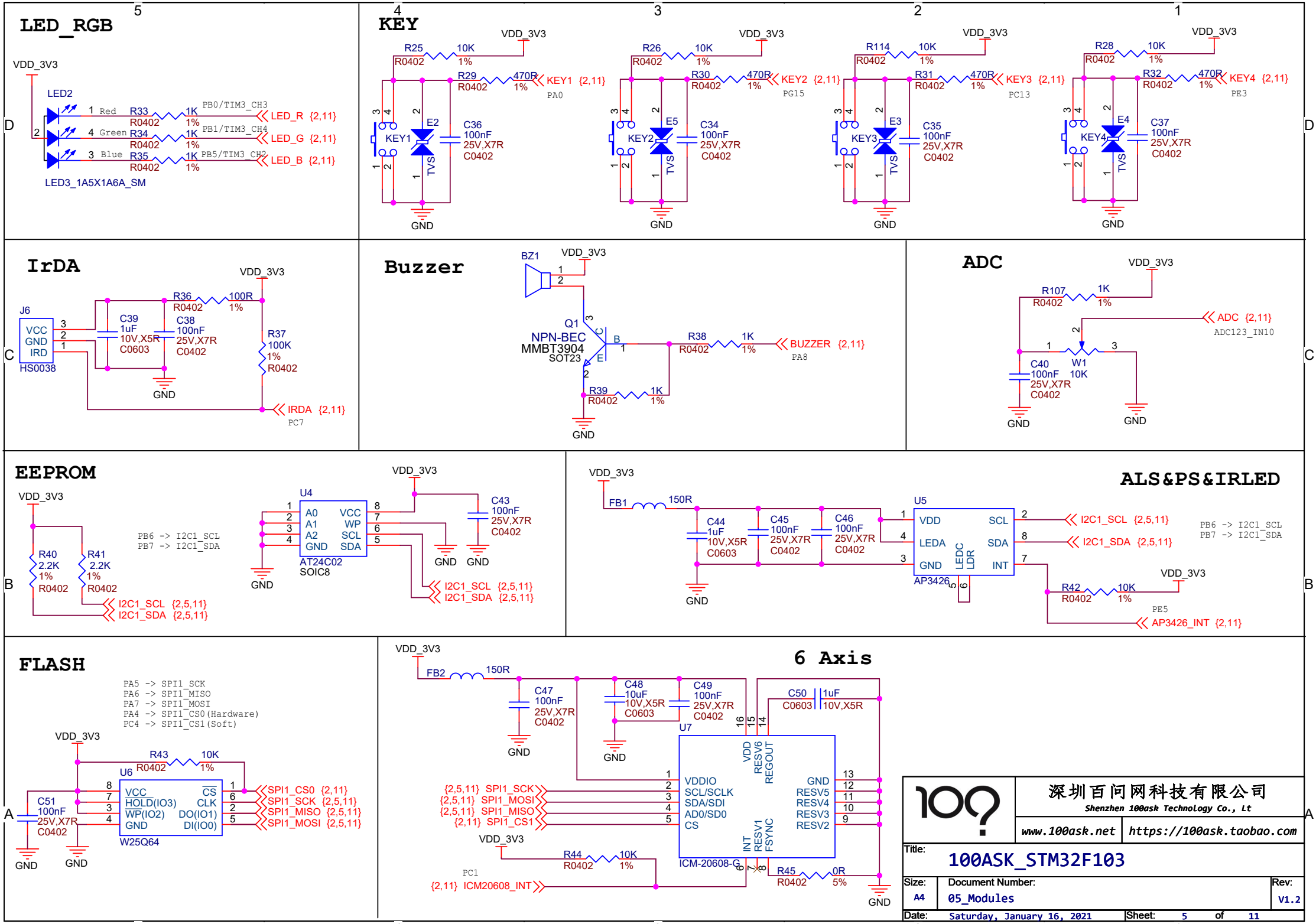
LED_RGB
VDD_3V3
LED2
1 Red
4 Green
3 Blue
R33 R0402 1K 1%
R34 R0402 1K 1%
R35 R0402 1K 1%
PB0/TIM3_CH3
PB1/TIM3_CH4
PB5/TIM3_CH2
LED_R {2,11}
LED_G {2,11}
LED_B {2,11}
LED3_1A5X1A6A_SM
KEY
R25 R0402 10K 1%
R29 R0402 470R 1%
KEY1 {2,11}
PA0
R26 R0402 10K 1%
R30 R0402 470R 1%
KEY2 {2,11}
PG15
R114 R0402 10K 1%
R31 R0402 470R 1%
KEY3 {2,11}
PC13
R28 R0402 10K 1%
R32 R0402 470R 1%
KEY4 {2,11}
PE3
E2
E5
E3
E4
KEY1
KEY2
KEY3
KEY4
TVS
C36 100nF 25V,X7R C0402
C34 100nF 25V,X7R C0402
C35 100nF 25V,X7R C0402
C37 100nF 25V,X7R C0402
GND
IrDA
J6
VCC
GND
IRD
HS0038
C39 1uF 10V,X5R C0603
C38 100nF 25V,X7R C0402
R36 R0402 100R 1%
R37 100K 1% R0402
IRDA {2,11}
PC7
Buzzer
BZ1
Q1
NPN-BEC
MMBT3904
SOT23
R38 R0402 1K 1%
BUZZER {2,11}
PA8
R39 R0402 1K 1%
ADC
R107 R0402 1K 1%
ADC {2,11}
ADC123_IN10
C40 100nF 25V,X7R C0402
W1 10K
EEPROM
R40 2.2K 1% R0402
R41 2.2K 1% R0402
PB6 -> I2C1_SCL
PB7 -> I2C1_SDA
I2C1_SCL {2,5,11}
I2C1_SDA {2,5,11}
U4
A0
A1
A2
GND
VCC
WP
SCL
SDA
AT24C02
SOIC8
C43 100nF 25V,X7R C0402
ALS&PS&IRLED
FB1 150R
C44 1uF 10V,X5R C0603
C45 100nF 25V,X7R C0402
C46 100nF 25V,X7R C0402
U5
VDD
LEDA
GND
SCL
SDA
INT
LEDC
LDR
AP3426
R42 R0402 10K 1%
PE5
AP3426_INT {2,11}
FLASH
PA5 -> SPI1_SCK
PA6 -> SPI1_MISO
PA7 -> SPI1_MOSI
PA4 -> SPI1_CS0(Hardware)
PC4 -> SPI1_CS1(Soft)
R43 R0402 10K 1%
U6
VCC
HOLD(IO3)
WP(IO2)
GND
CS
CLK
DO(IO1)
DI(IO0)
W25Q64
C51 100nF 25V,X7R C0402
SPI1_CS0 {2,11}
SPI1_SCK {2,5,11}
SPI1_MISO {2,5,11}
SPI1_MOSI {2,5,11}
6 Axis
FB2 150R
C47 100nF 25V,X7R C0402
C48 10uF 10V,X5R C0603
C49 100nF 25V,X7R C0402
C50 C0603 1uF 10V,X5R
U7
VDDIO
SCL/SCLK
SDA/SDI
AD0/SD0
CS
VDD
RESV6
REGOUT
RESV5
RESV4
RESV3
RESV2
RESV1
FSYNC
INT
ICM-20608-G
{2,5,11} SPI1_SCK
{2,5,11} SPI1_MOSI
{2,5,11} SPI1_MISO
{2,11} SPI1_CS1
R44 R0402 10K 1%
R45 R0402 0R 5%
PC1
{2,11} ICM20608_INT
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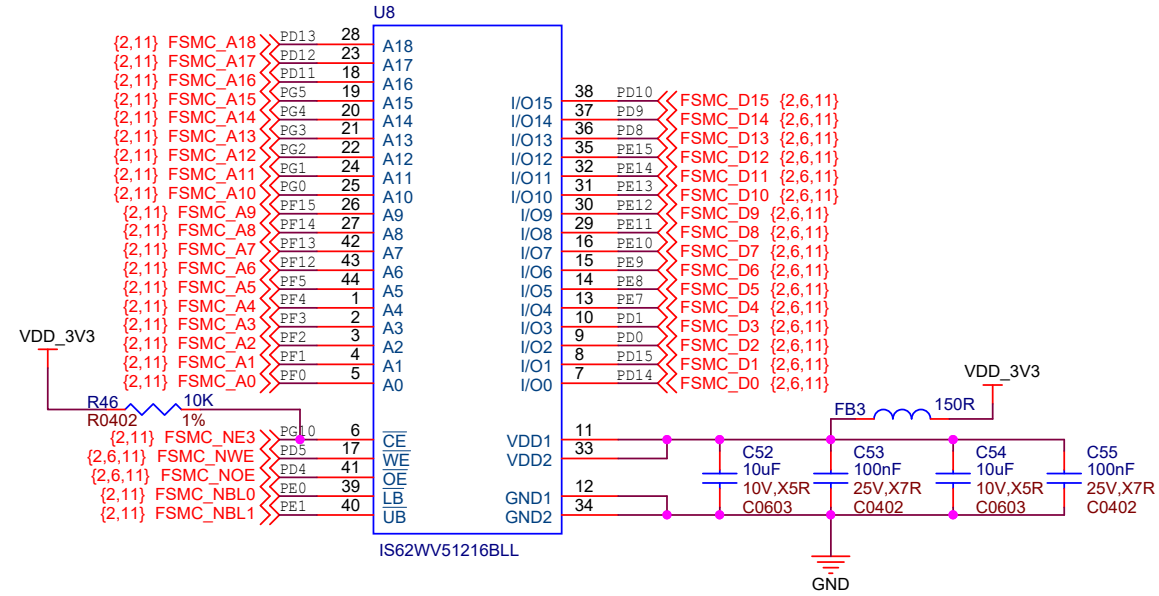
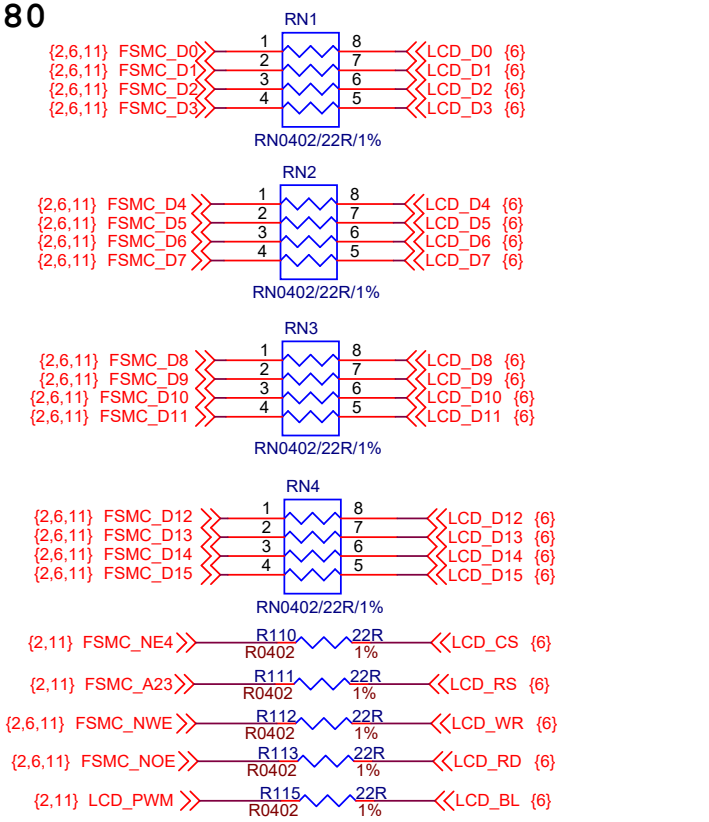
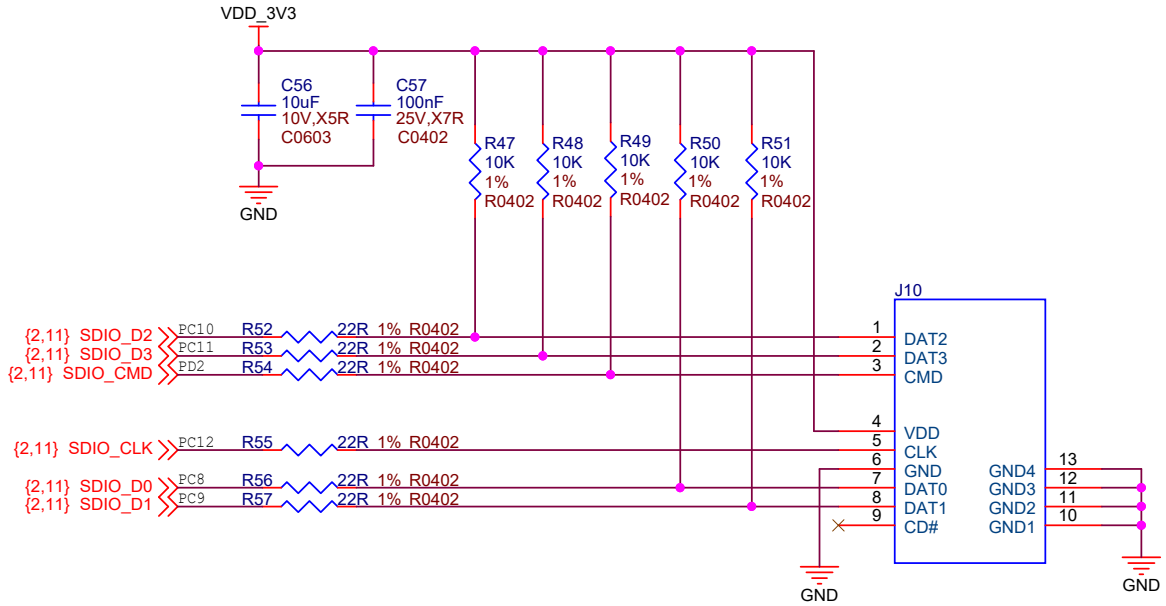
SRAM



LCD_8080



SD Card



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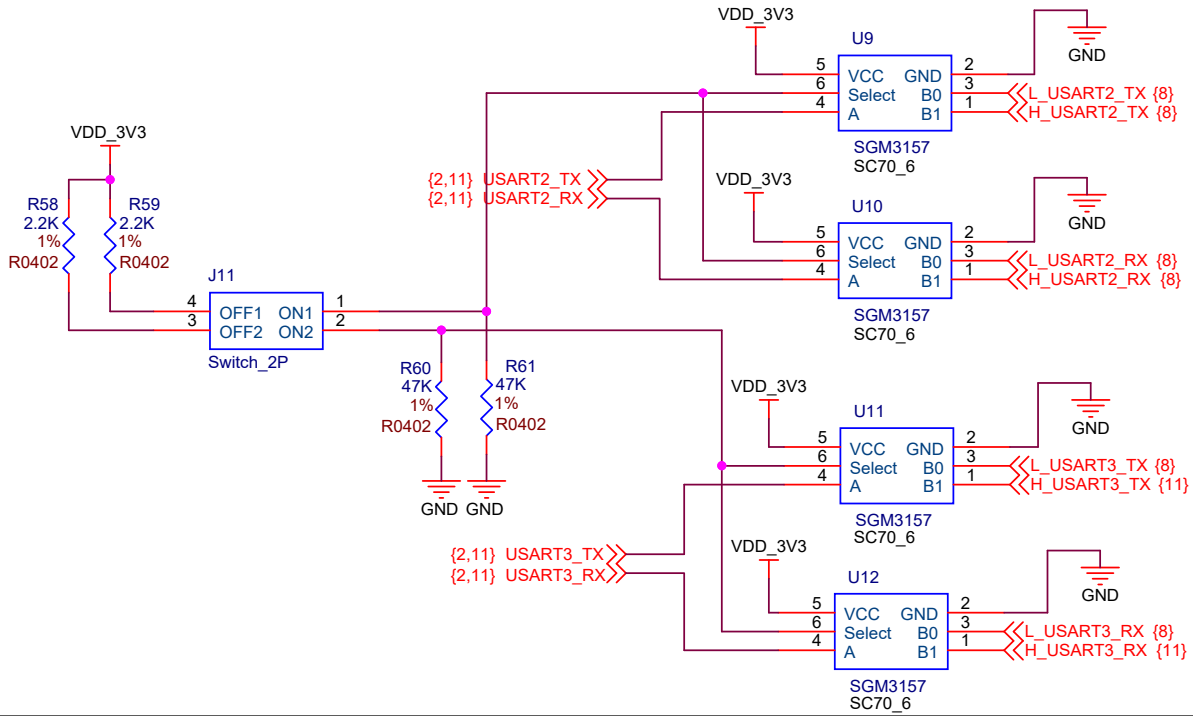
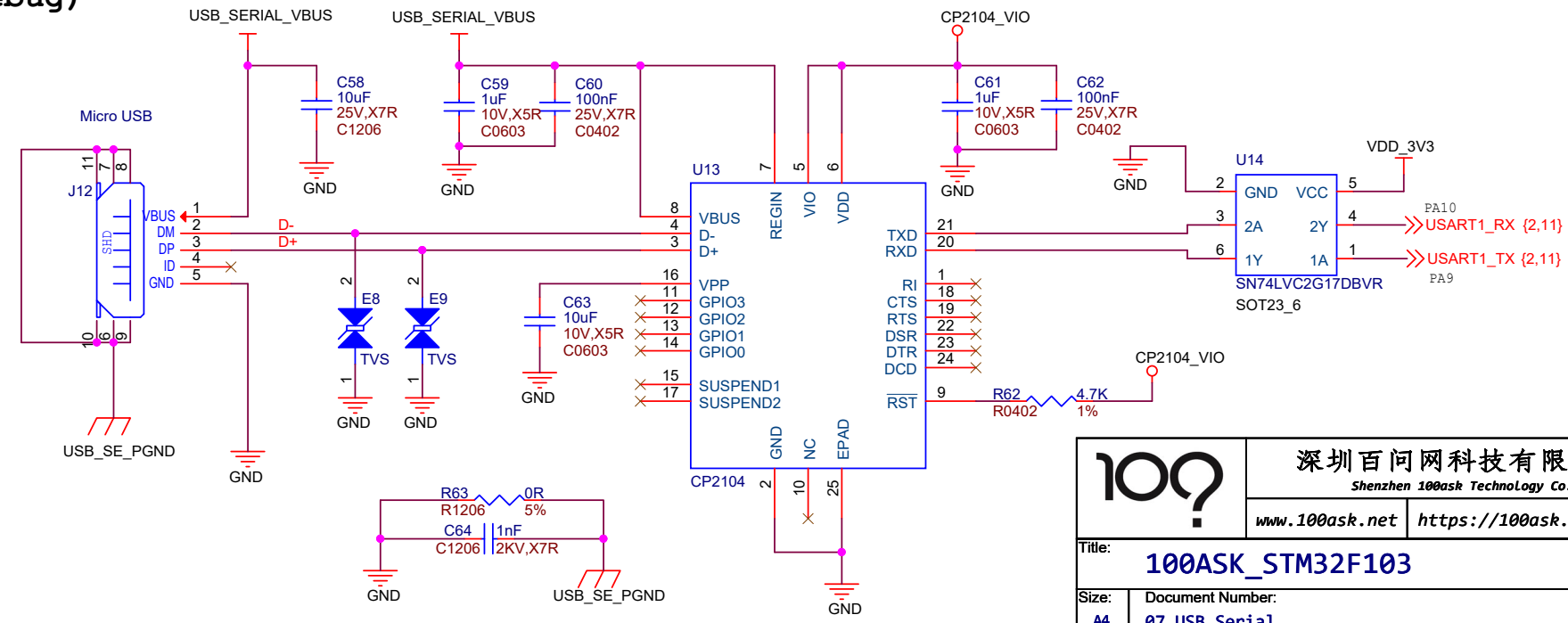
USART Switch

J11-1	J11-2	Description
OFF	*	USART2 -> RS232 Male
ON	*	USART2 -> RS485
*	OFF	USART3 -> RS232 Female
*	ON	USART3 -> External



USB Serial(Debug)



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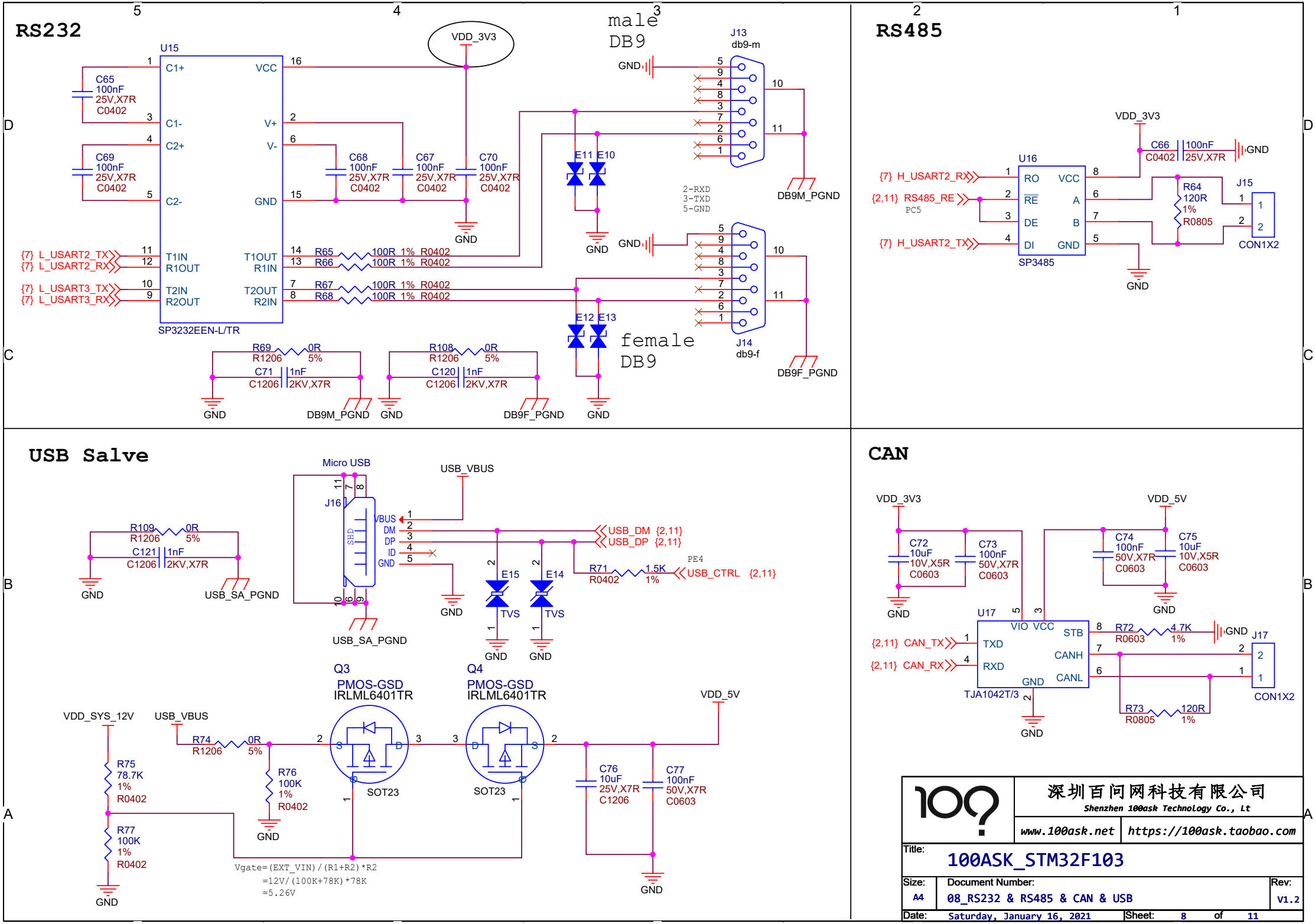
RS232
U15
SP3232EEN-L/TR
C65 100nF 25V,X7R C0402
C69 100nF 25V,X7R C0402
C68 100nF 25V,X7R C0402
C67 100nF 25V,X7R C0402
C70 100nF 25V,X7R C0402
VDD_3V3
GND
male DB9
J13 db9-m
DB9M_PGND
female DB9
J14 db9-f
DB9F_PGND
E11 E10
E12 E13
2-RXD
3-TXD
5-GND
{7} L_USART2_TX
{7} L_USART2_RX
{7} L_USART3_TX
{7} L_USART3_RX
T1IN
R1OUT
T2IN
R2OUT
T1OUT
R1IN
T2OUT
R2IN
R65 100R 1% R0402
R66 100R 1% R0402
R67 100R 1% R0402
R68 100R 1% R0402
R69 R1206 0R 5%
C71 C1206 1nF 2KV,X7R
R108 R1206 0R 5%
C120 C1206 1nF 2KV,X7R
RS485
U16
SP3485
VDD_3V3
C66 C0402 100nF 25V,X7R
{7} H_USART2_RX
{2,11} RS485_RE
PC5
{7} H_USART2_TX
RO
RE
DE
DI
VCC
A
B
GND
R64 120R 1% R0805
J15
CON1X2
USB Salve
Micro USB
J16
USB_VBUS
USB_DM {2,11}
USB_DP {2,11}
USB_CTRL {2,11}
PE4
R109 R1206 0R 5%
C121 C1206 1nF 2KV,X7R
USB_SA_PGND
E15
E14
TVS
R71 R0402 1.5K 1%
Q3
Q4
PMOS-GSD
IRLML6401TR
SOT23
VDD_SYS_12V
R74 R1206 0R 5%
R75 78.7K 1% R0402
R76 100K 1% R0402
R77 100K 1% R0402
Vgate=(EXT_VIN)/(R1+R2)*R2
=12V/(100K+78K)*78K
=5.26V
C76 10uF 25V,X7R C1206
C77 100nF 50V,X7R C0603
CAN
VDD_5V
C72 10uF 10V,X5R C0603
C73 100nF 50V,X7R C0603
C74 100nF 50V,X7R C0603
C75 10uF 10V,X5R C0603
U17
TJA1042T/3
VIO
STB
TXD
RXD
CANH
CANL
{2,11} CAN_TX
{2,11} CAN_RX
R72 R0603 4.7K 1%
R73 R0805 120R 1%
J17
CON1X2
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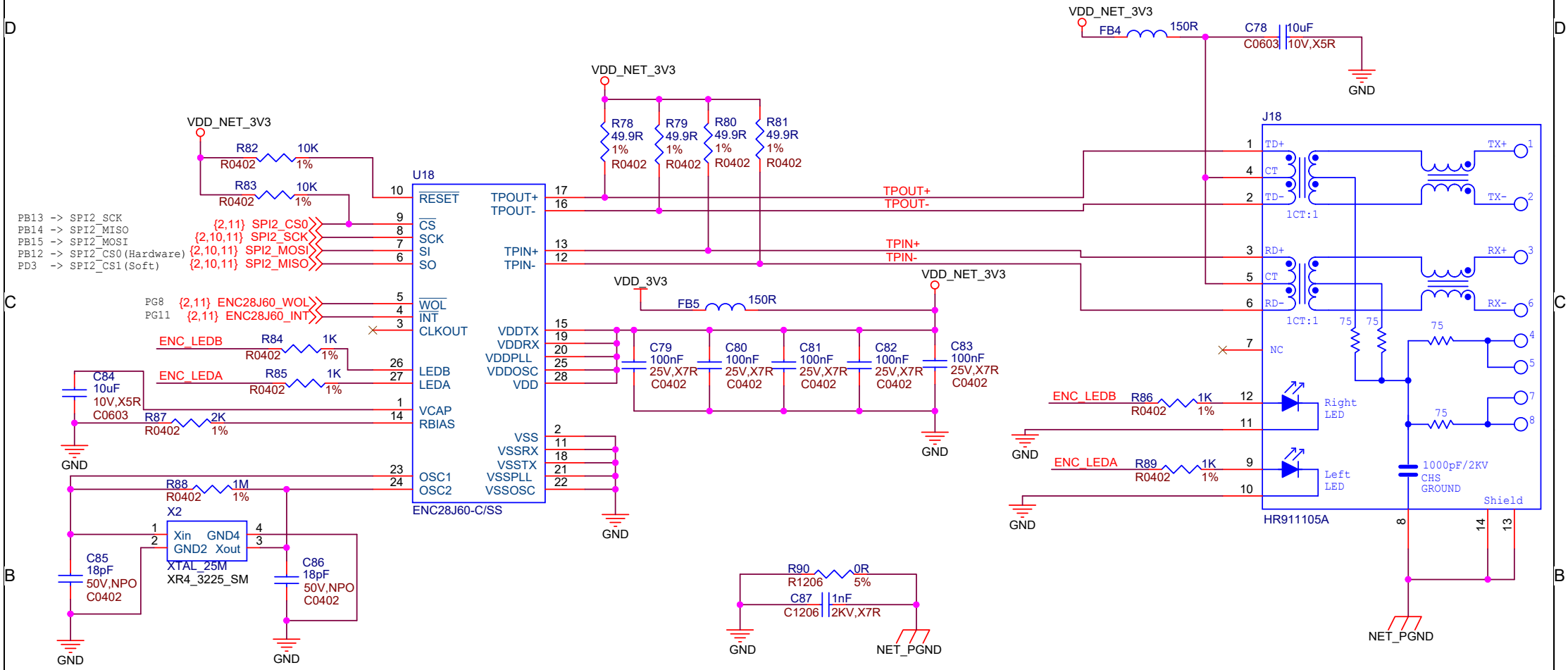
Network



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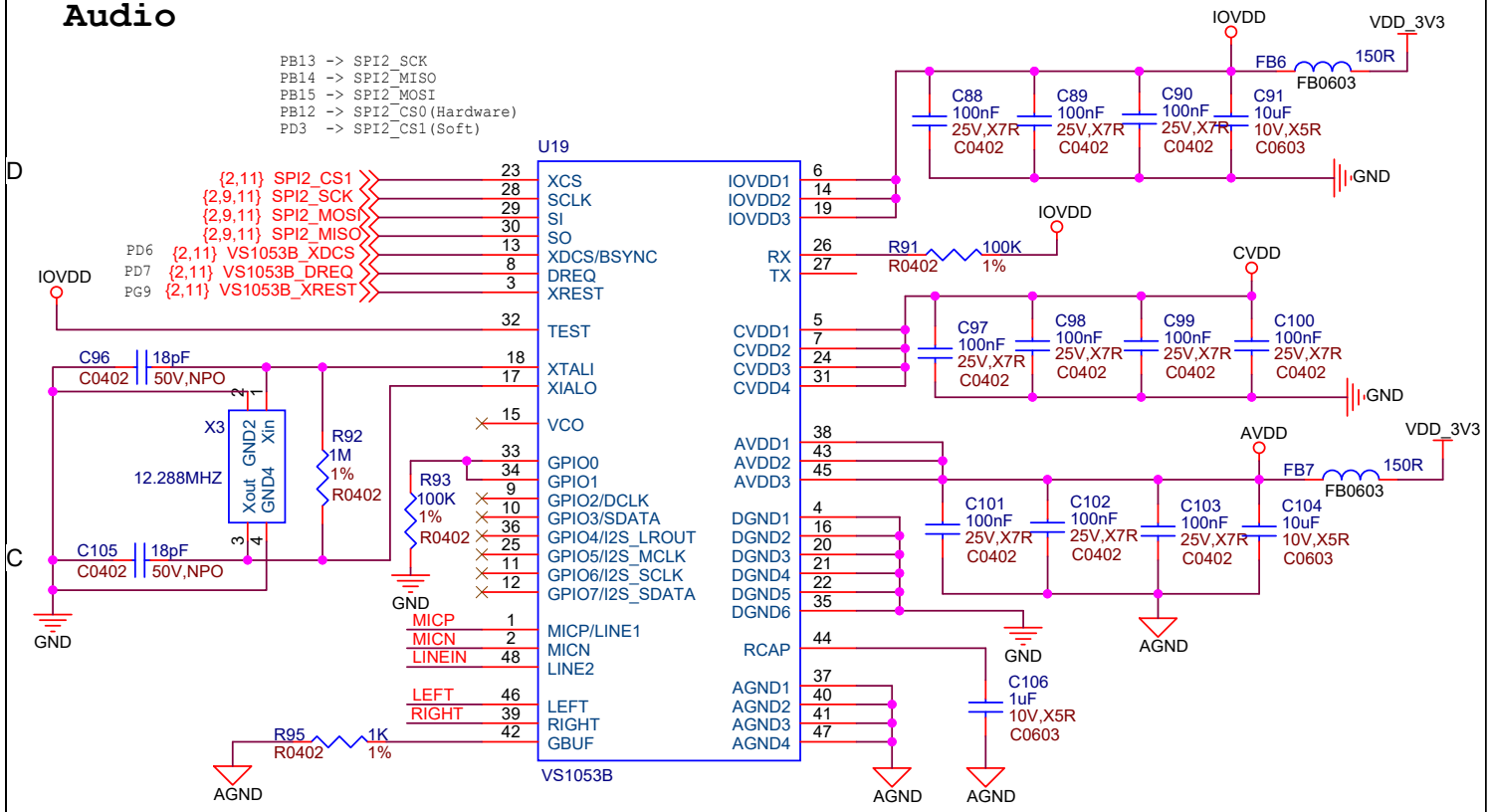
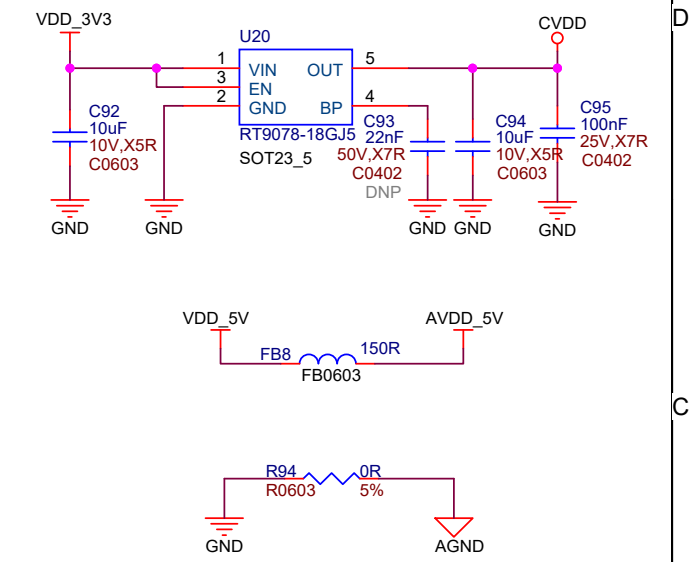
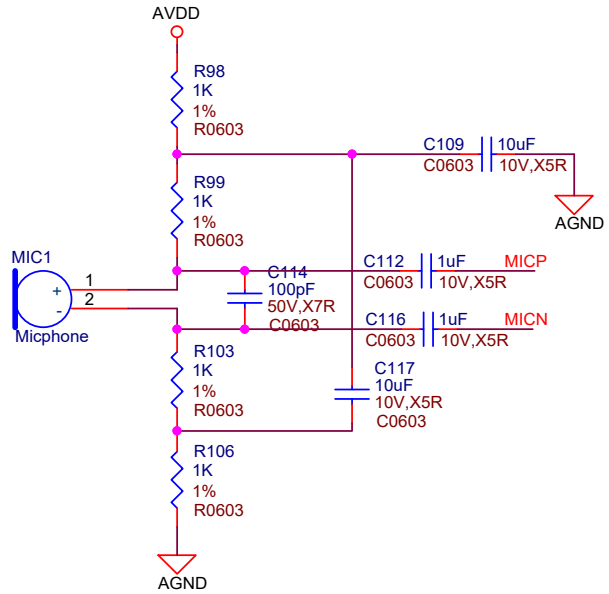
Audio



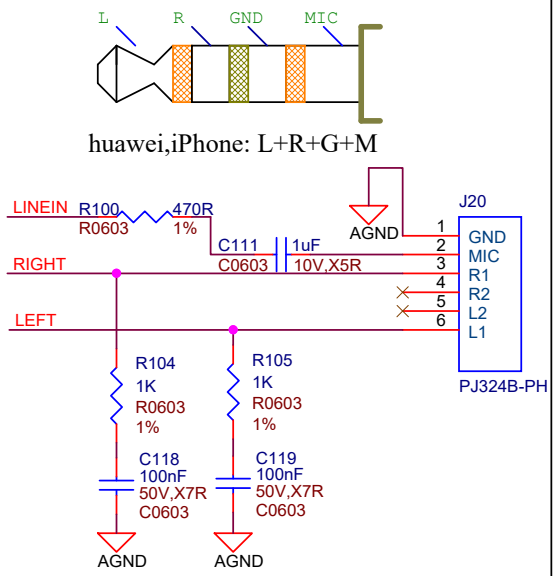
Audio Power



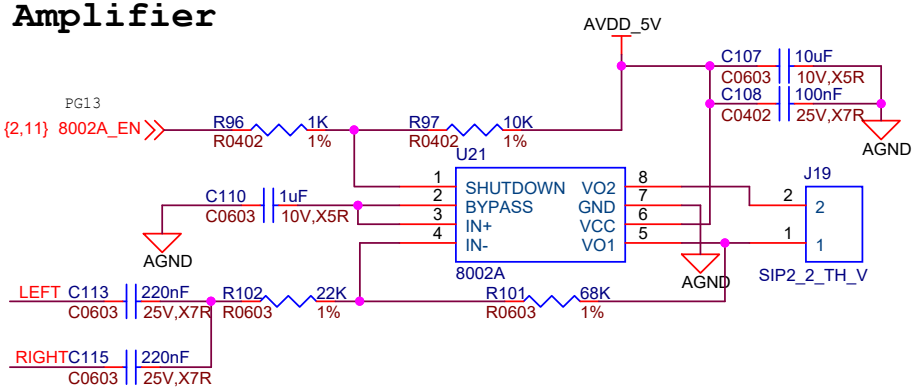
MIC



Earphone



Amplifier



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A4	10_Audio	V1.2

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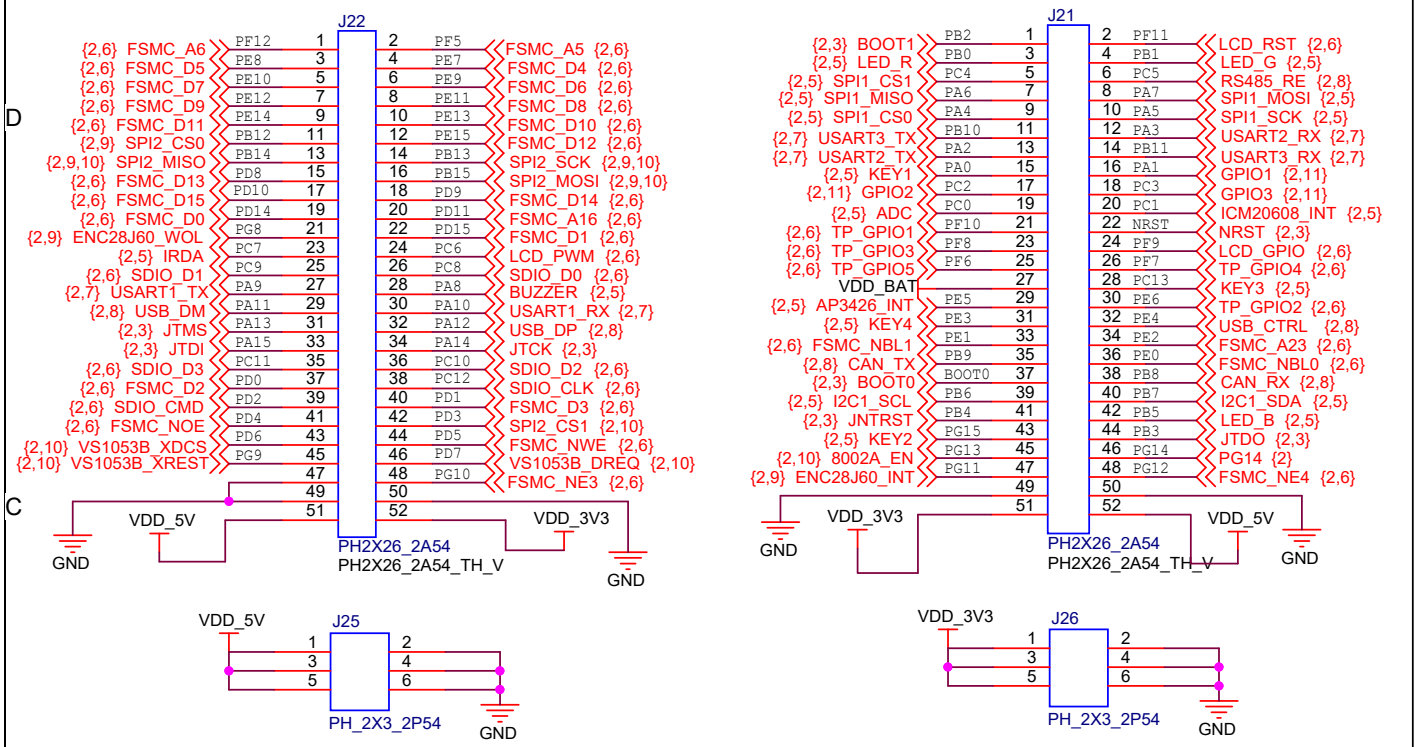
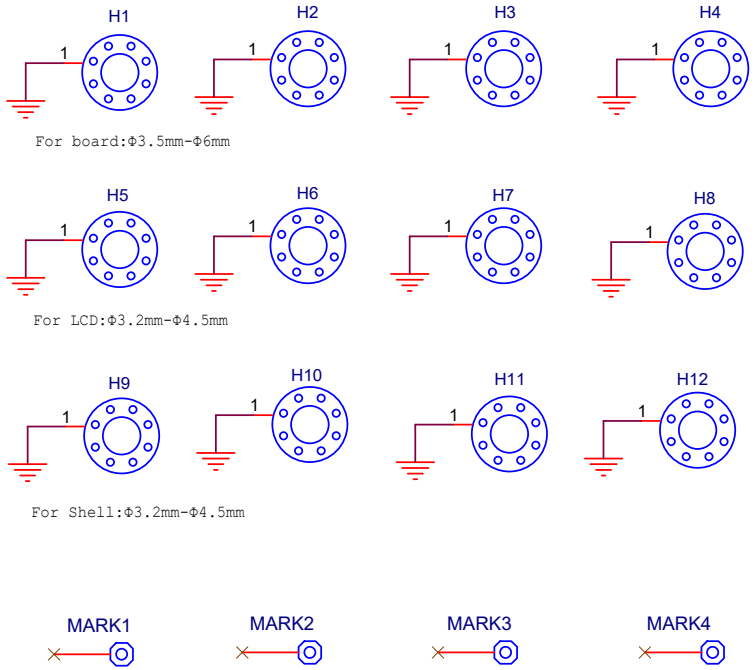
GPIO Export

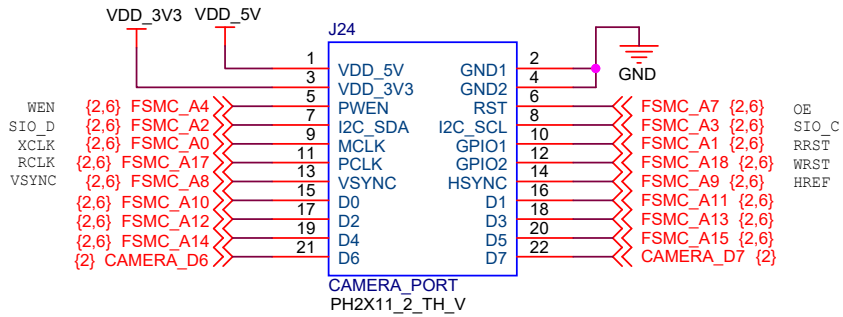
Layout Note:所有引脚，位置可交换



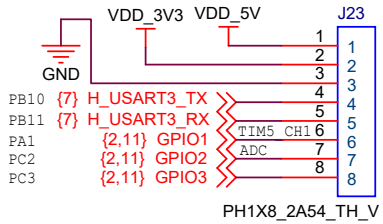
Hole



Camera



External Module



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Title:	100ASK_STM32F103	
Size: A4	Document Number: 11_GPIO Export & Camera	Rev: V1.2
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