

STM32H7B3I-DK

MB1332

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Legend

General comment such as function title, configuration, ...

Text to be added to silkscreen.

Warning text.

A

Notes to generate the board layout.

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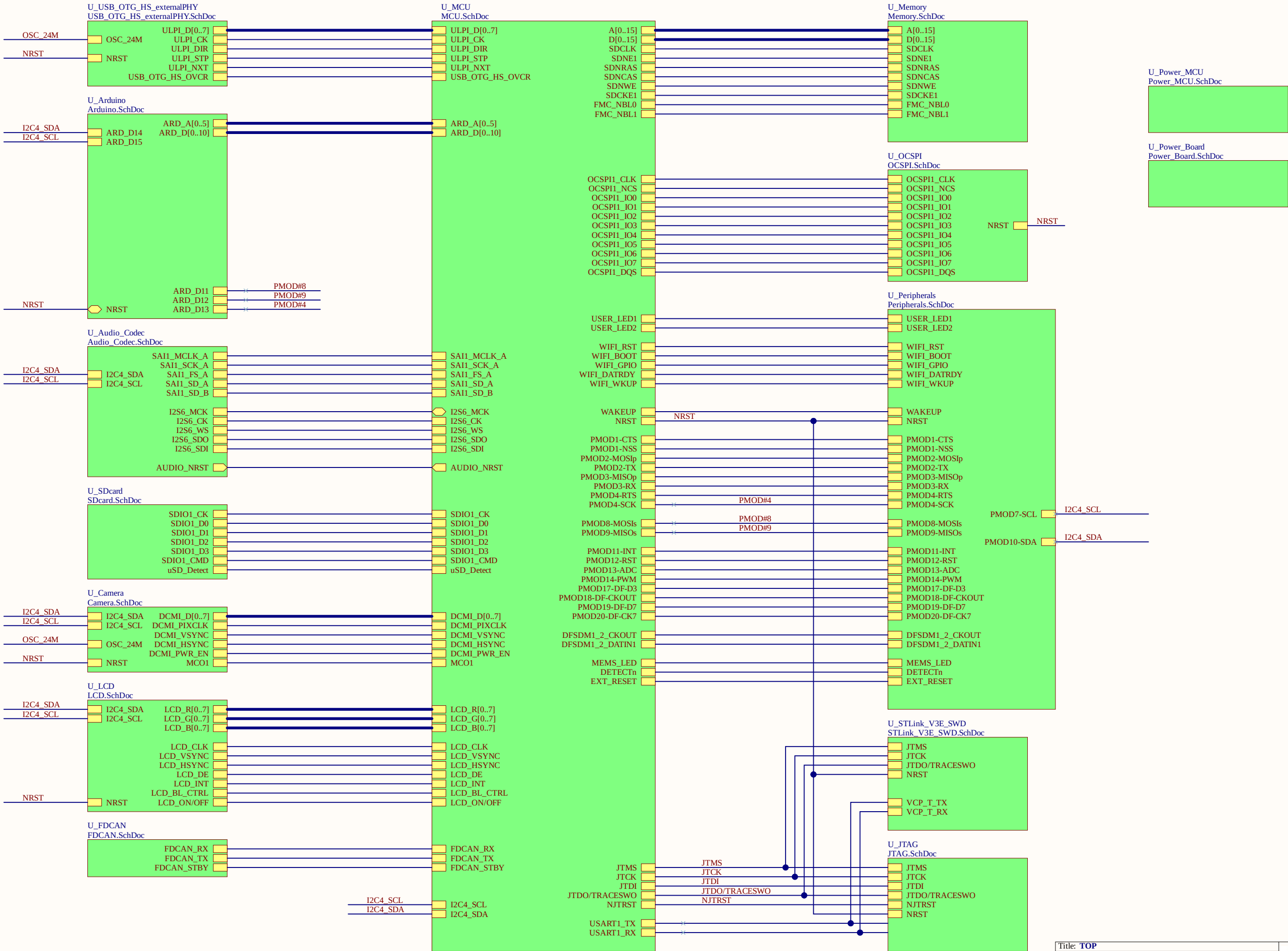
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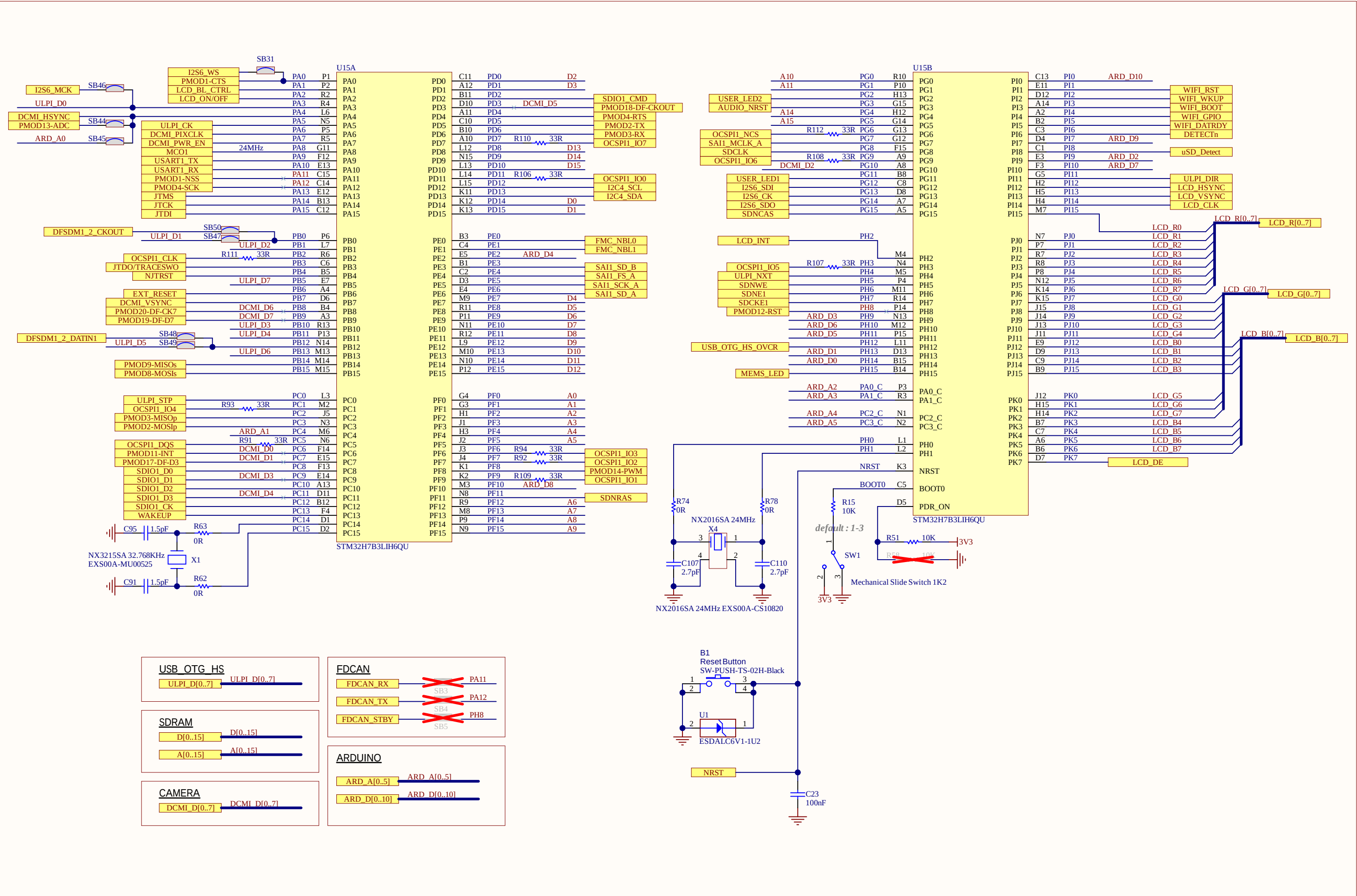
U_Top
MB1332_TOP.SchDoc

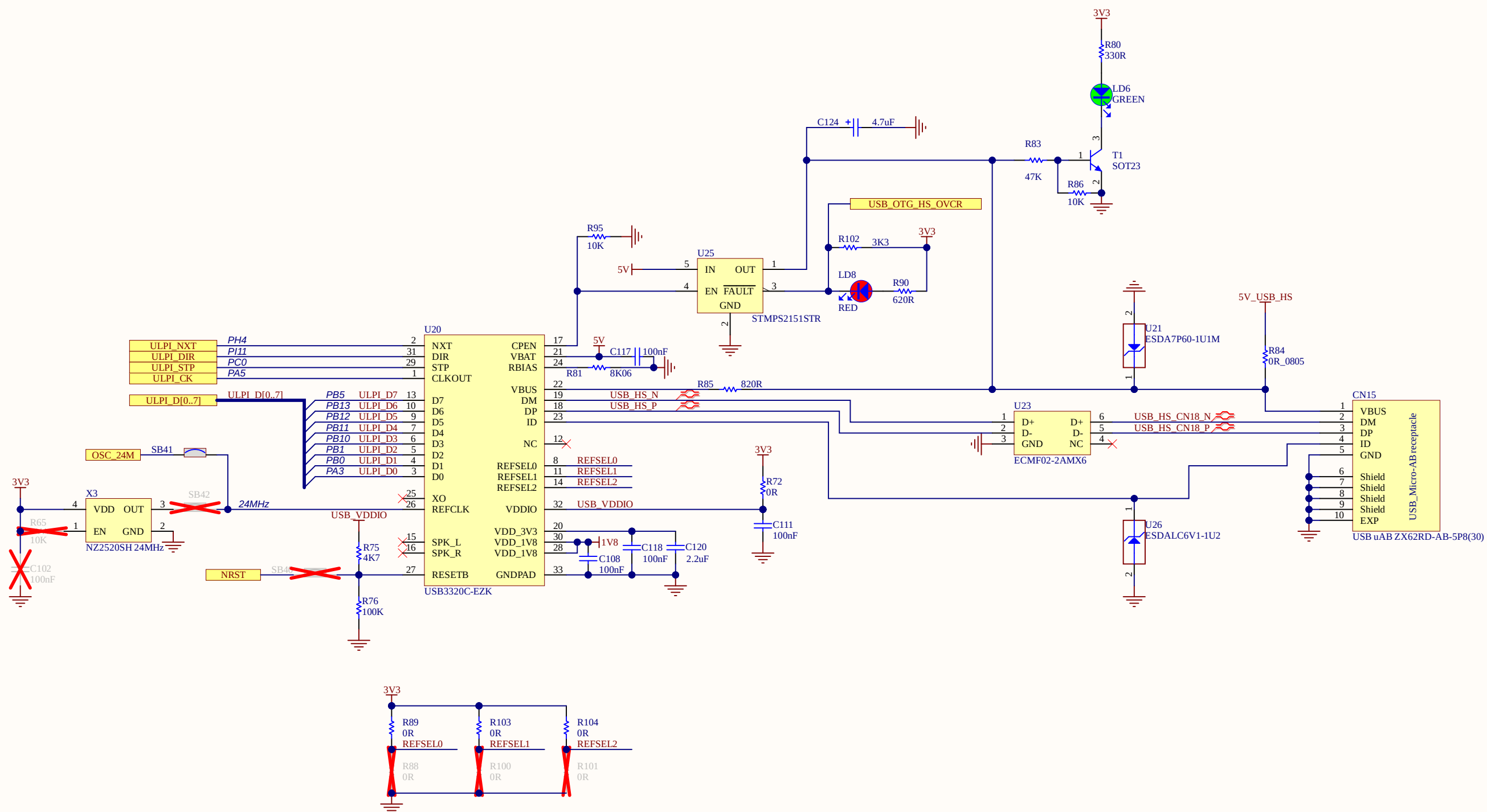


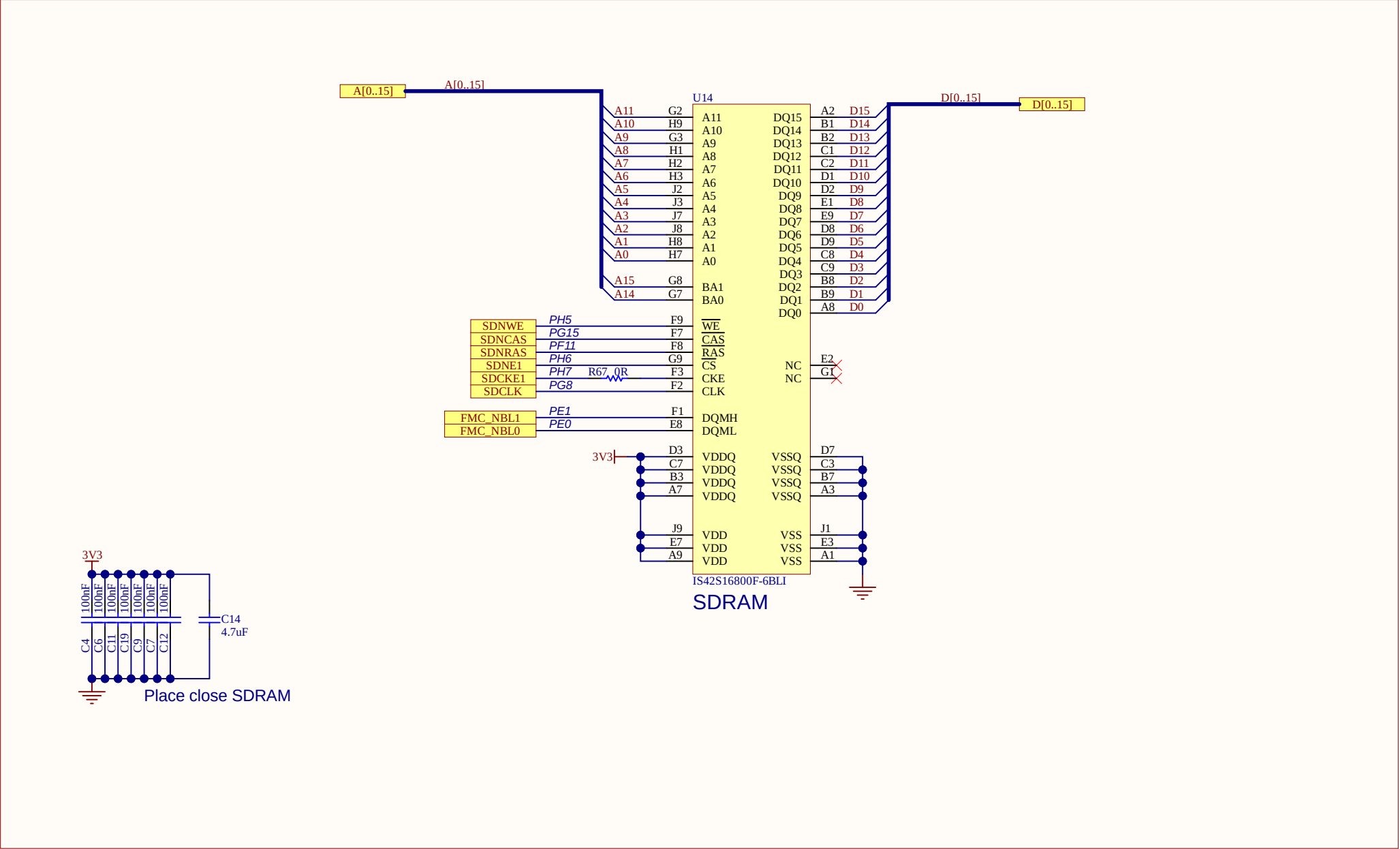
Title: Project overview		
Project: STM32H7B3I-DK		
Variant: H7B3I		
Revision: C-02		Reference: MB1332
Size: A4	Date: 13-NOV-2020	Sheet: 1 of 17

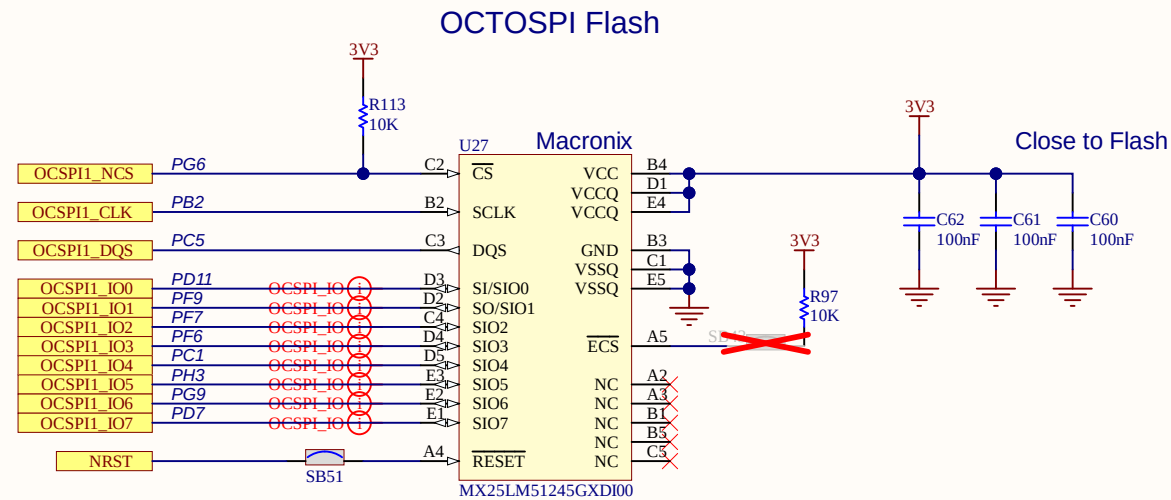






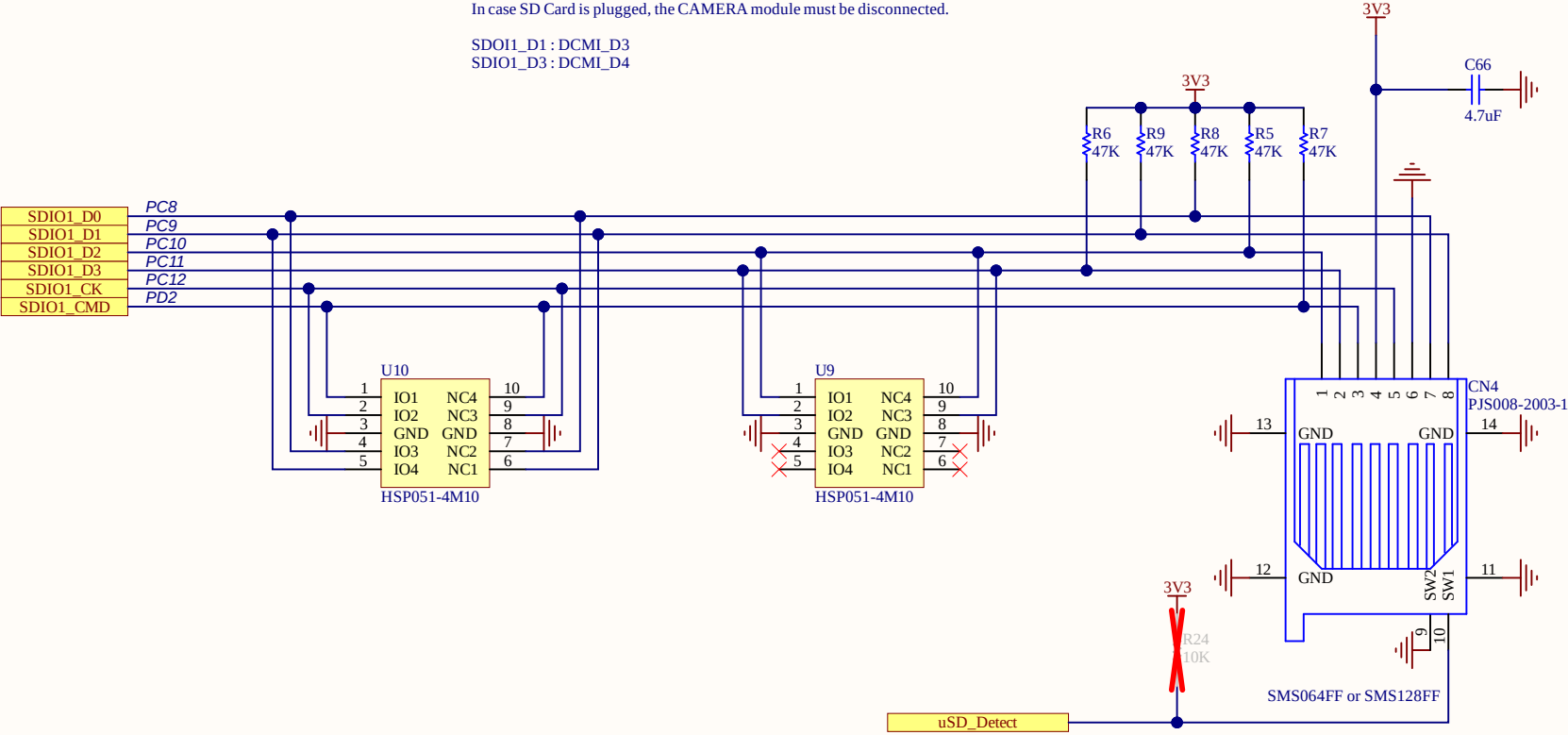


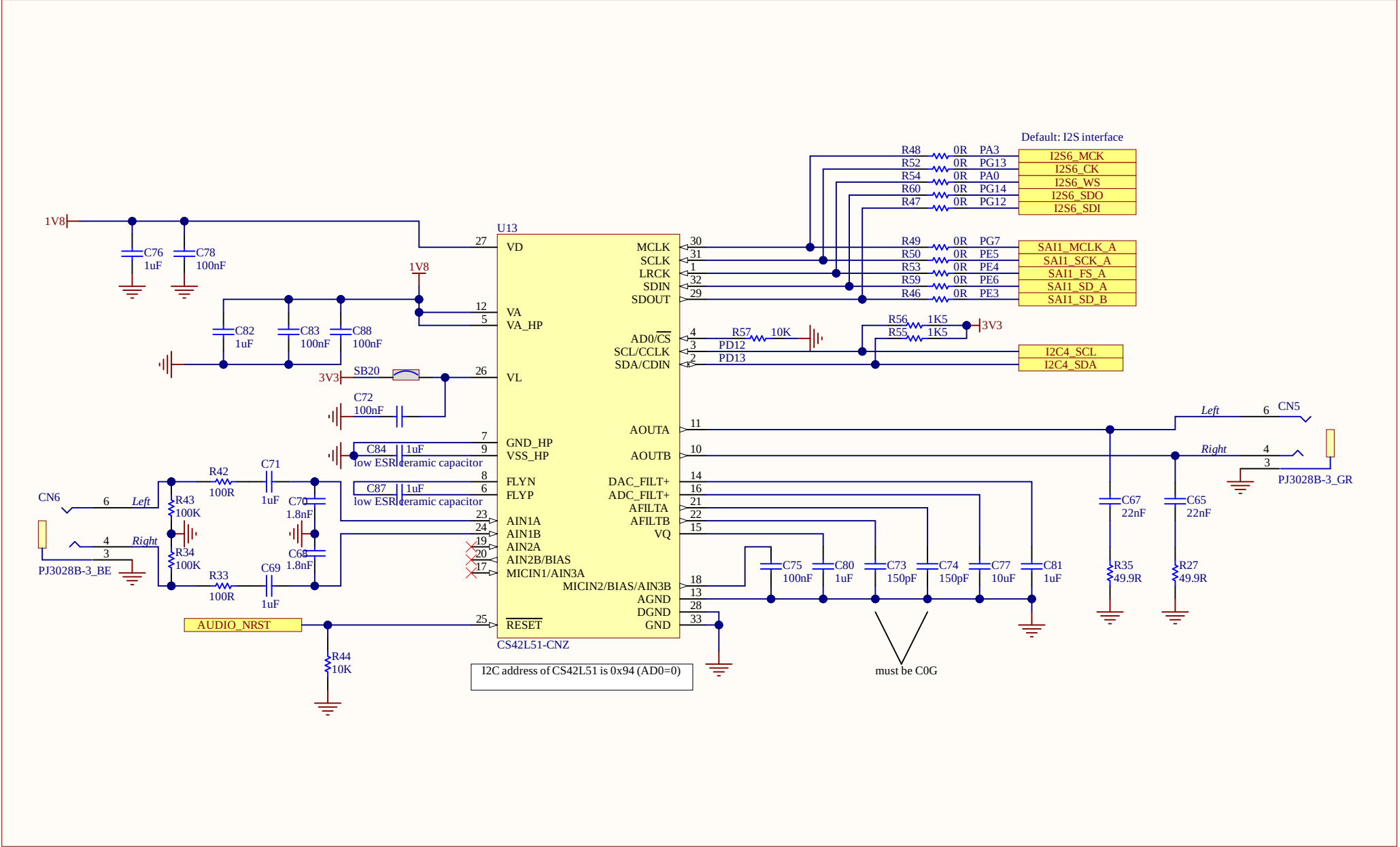




LIMITATION :
Some SD Card signals are multiplexed with CAMERA signals
In case SD Card is plugged, the CAMERA module must be disconnected.

SDIO1_D1 : DCM1_D3
SDIO1_D3 : DCM1_D4

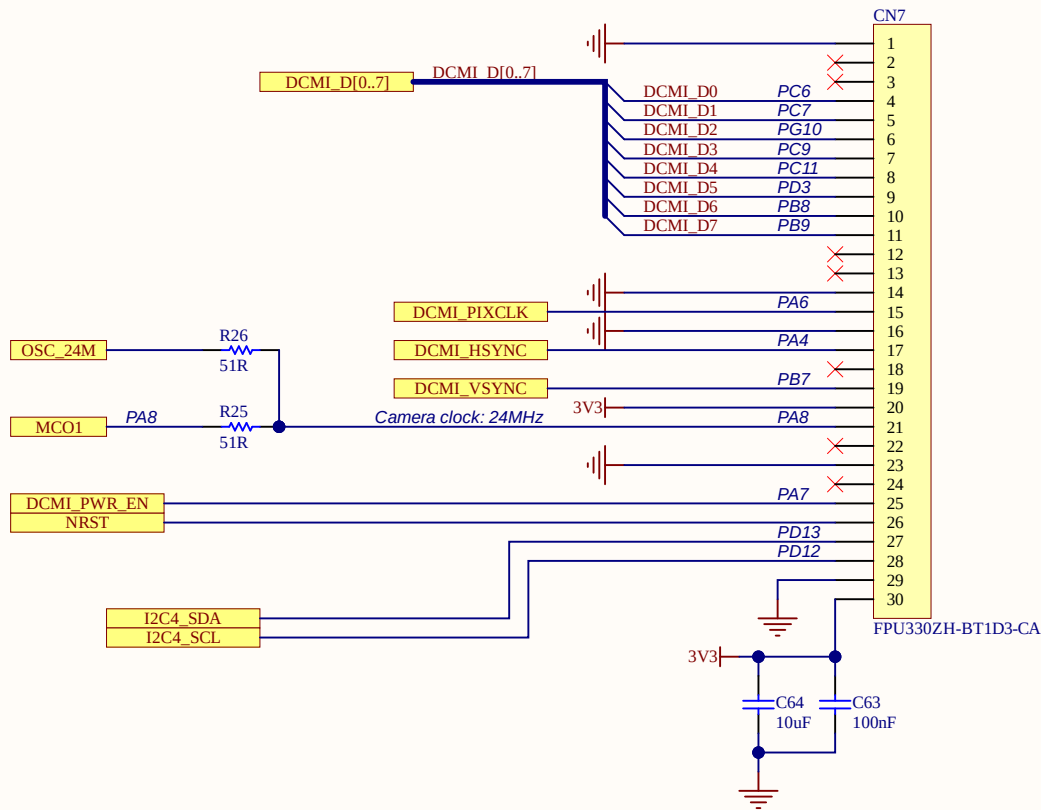




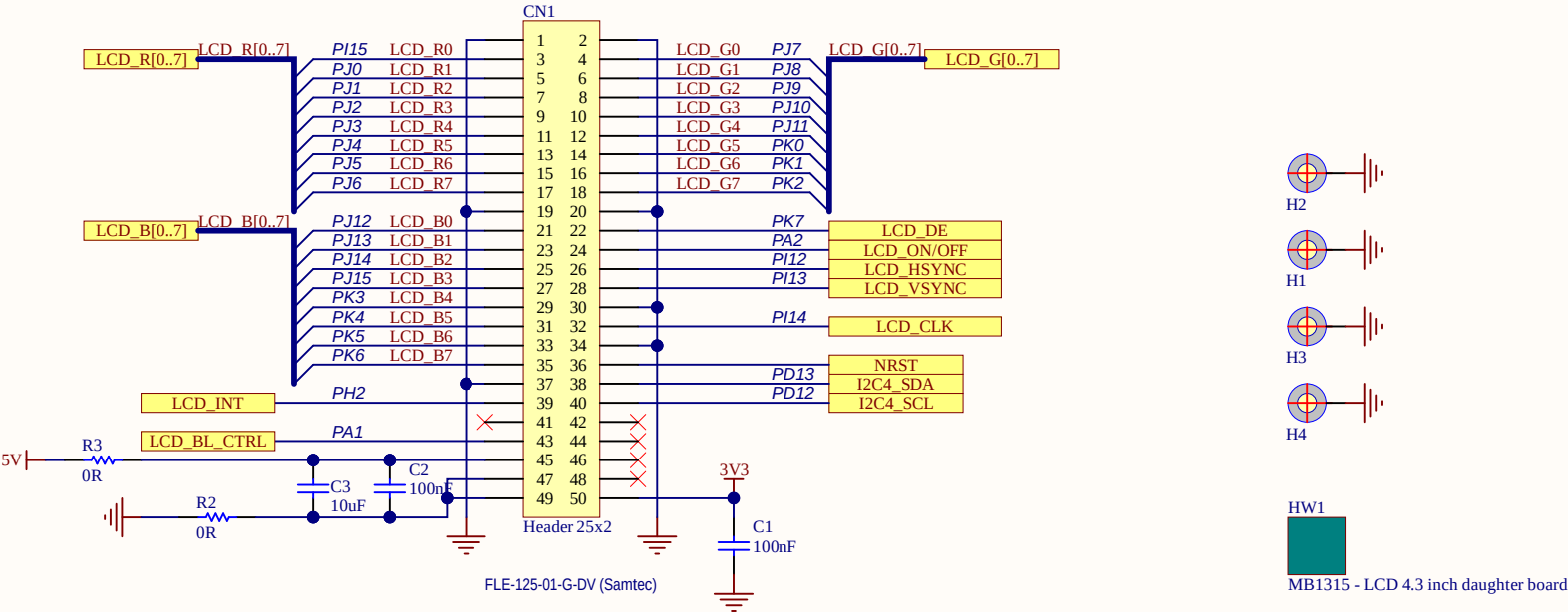
LIMITATION :
DCMI signals are multiplexed with several functions (SD Card, STMOD+ and Arduino)
In case CAMERA module is plugged, SD Card, STMOD+ and Arduino must be disconnected.
Videos are stored in USB

DCMI_D0 : PMOD#11-INT
DCMI_D1 : PMOD#17-DF-D3
DCMI_D3: SDO11_D1
DCMI_D4: SDIO1_D4
DCMI_D5: PMOD#18-DF-CKOUT
DCMI_D6 : PMOD#20-DF-CK7
DCMI_D7 : PMOD#19-DF-D7
DCMI_HSYNC : PMOD#13-ADC and ARD_A0

Camera connector for STM32F4DIS-CAM

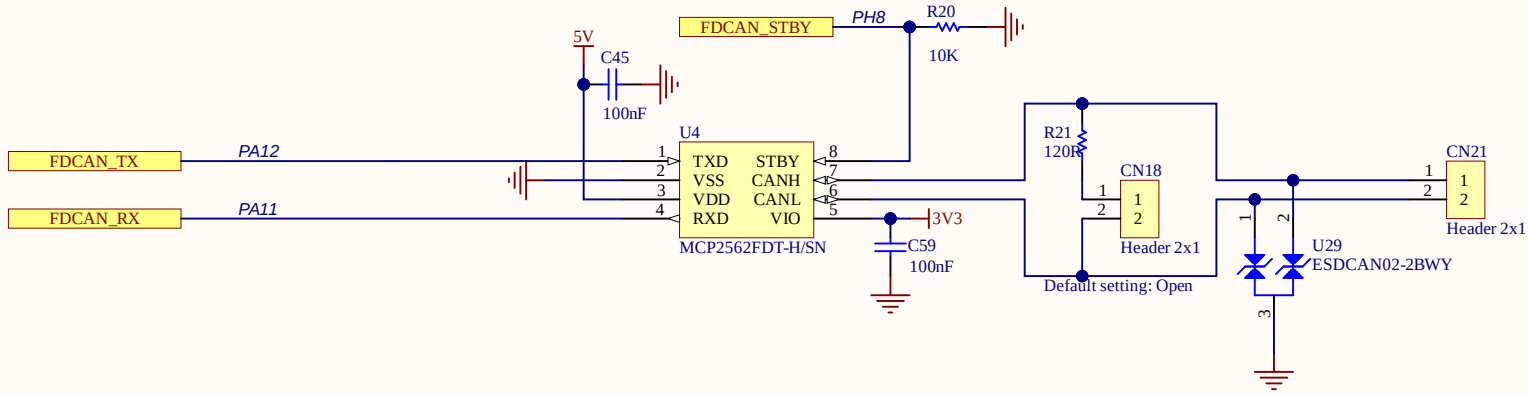


Compatible with MB1315 (4.3 inch LCD board)

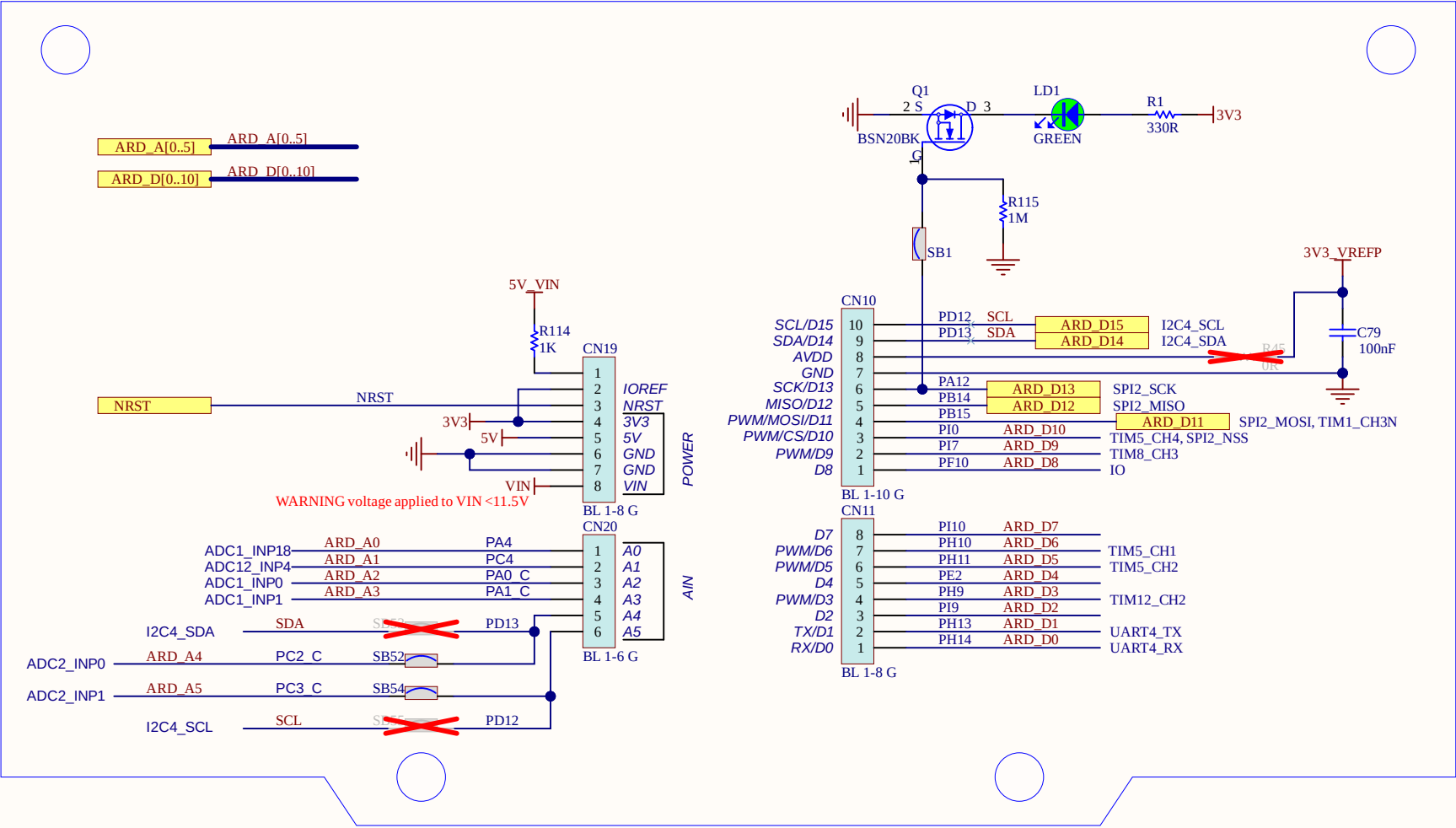


LIMITATION :
FD-CAN signals are multiplexed with STMOD+ function
In case FD-CAN module is connected, STMOD+ must be disconnected.

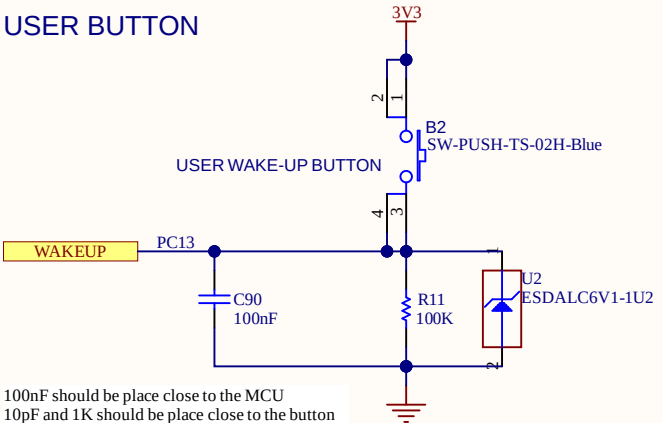
FDCAN_RX : PMOD1-NSS
FDCAN_TX : PMOD4-SCK
FDCAN_STBY : PMOD12-RST



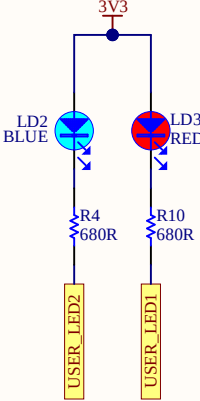
LIMITATION :
ARDUINO signals are multiplexed with STMOD+ signals
In case ARDUINO SHIELD is plugged, STMOD+ and Camera must be disconnected.



USER BUTTON

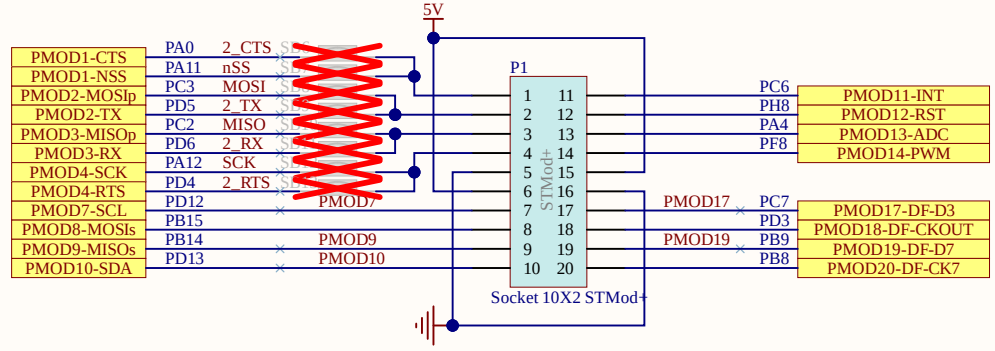


USER LED



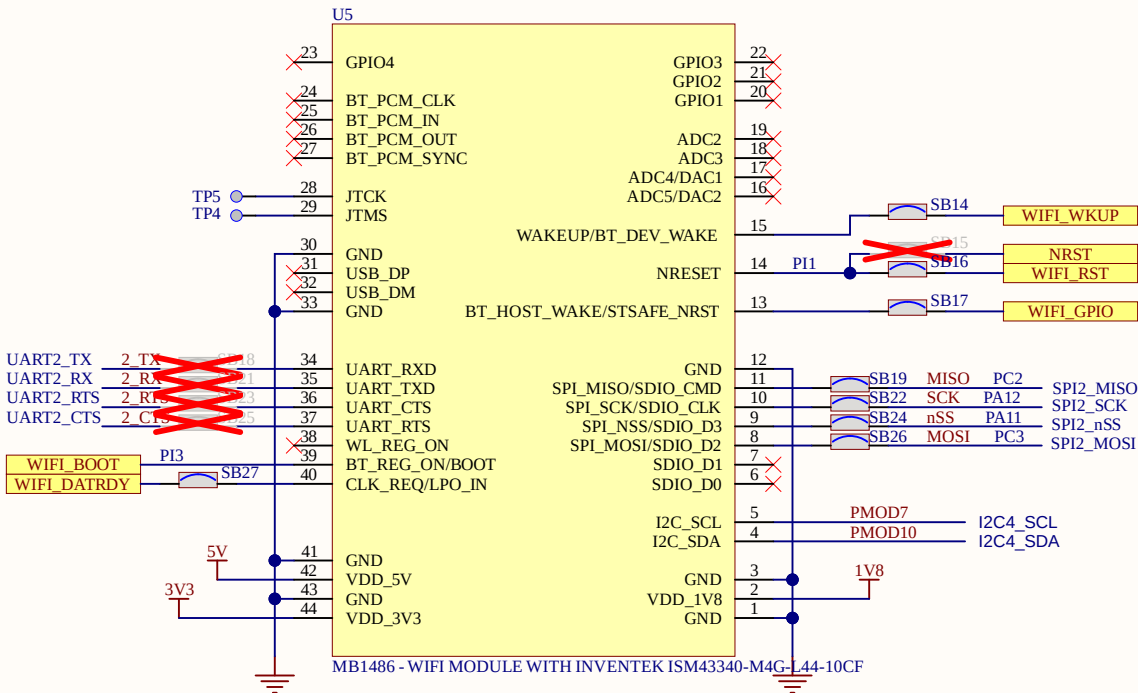
STMOD+

LIMITATION :
STMOD+ signals are multiplexed with AUDIO, CAMERA and Arduino signals
In case STMOD+ is used, Digital Microphones, Camera and Arduino must be disconnected.



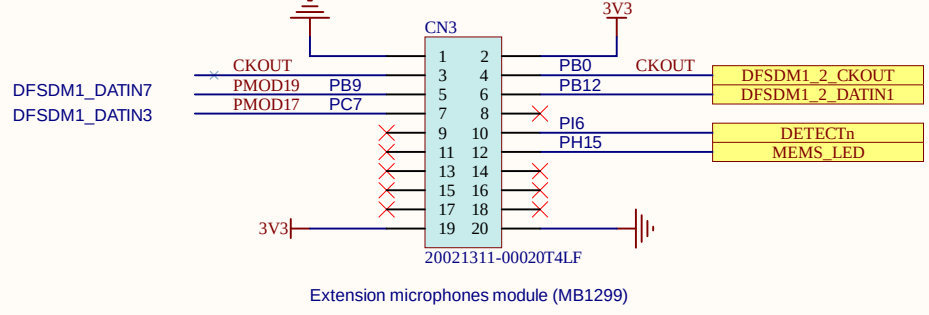
WIFI MODULE (ISM43340-M4G-L44-10CF)

LIMITATION :
WiFi signals are multiplexed with STMOD+
In case WiFi-BT is activated, STMOD+ must be disconnected.

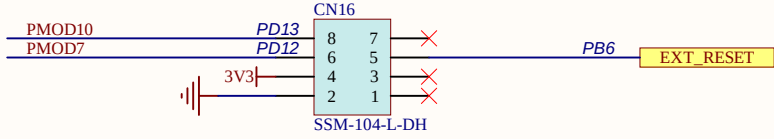


AUDIO DFSDM

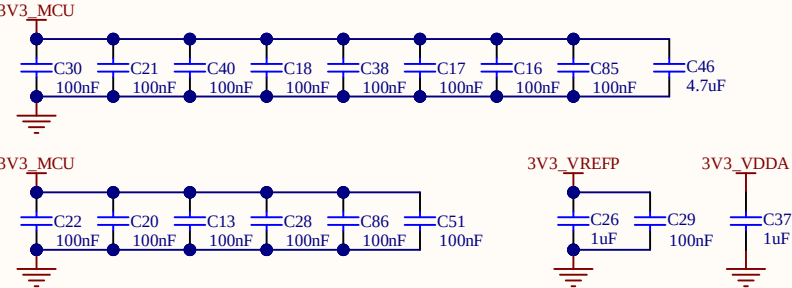
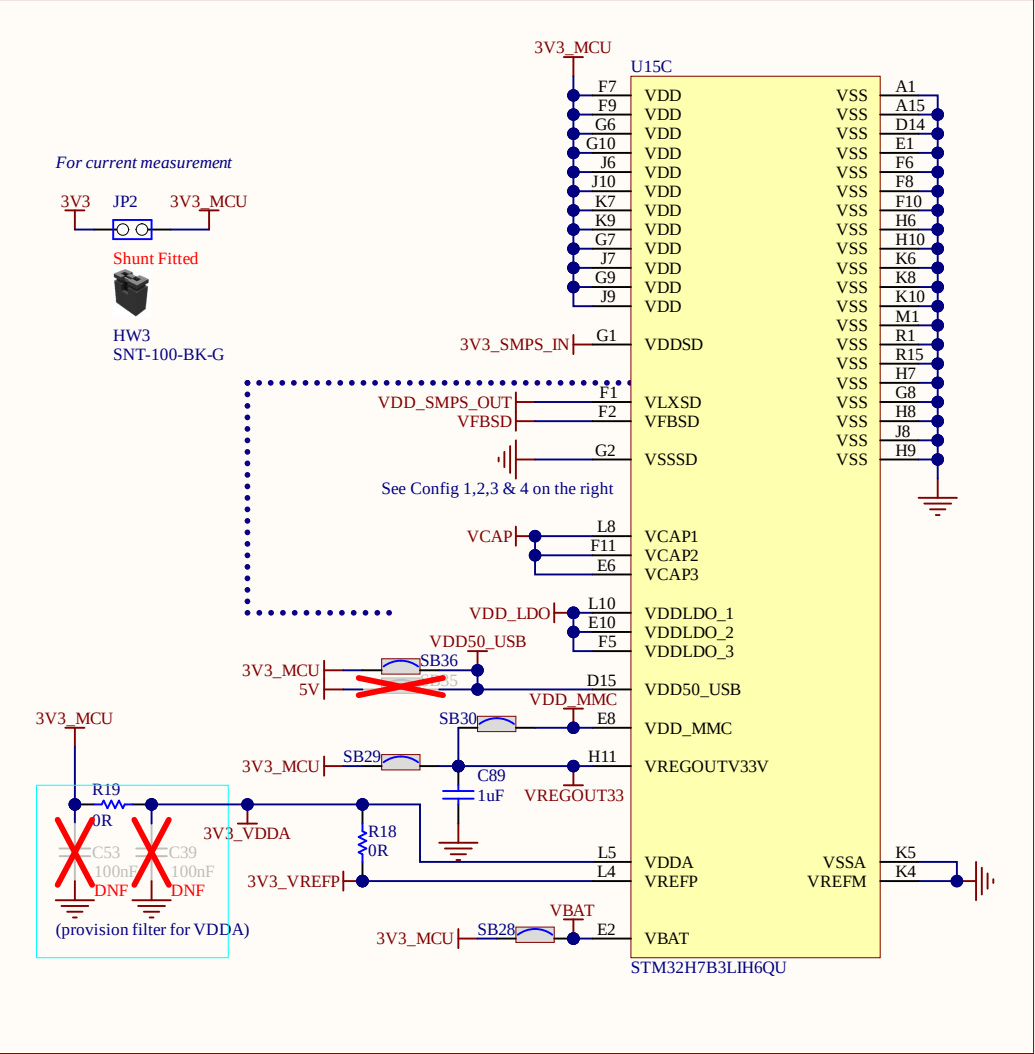
LIMITATION :
DFSDM signals are multiplexed with STMOD+ signals
In case microphones are activated, noting must be connected on STMOD+.



I2C Connector



MCU power



Internal SMPS Supply Config

Supply Config 1 : LDO only (SMPS OFF, LDO ON)

3V3_SMPS_IN

VFBS

3V3_MCU

VDD_LDO

Disconnect 3V3_SMPS_IN from 3V3_MCU
Connect 3V3_SMPS_IN to GND
Connect VDD_SMPS_IND_OUT to GND
Connect VDD_LDO to 3V3_MCU
2 x 2.2uF near VCAP pins/pins

1. LDO Supply

Supply Config 2 : SMPS only (SMPS ON, LDO OFF)

Default config

2x100nF near VCAP pins / plan

3V3_MCU 3V3_SMPS_IN VDD_SMPS_OUT VDD_SMPS_IND_OUT VCAP

R71 0R

Cin near VDDSD pin

C105 10uF

C103 10uF

C99 100pF

L 2.2uH, 1.2A

L near VLX pin

Cout 10uF

C98 10uF

Cout near L

C15 100nF

C27 100nF

SB38

SB37

VDD_SMPS_IND_OUT

VDD_LDO

Connect 3V3_SMPS_IN to 3V3_MCU
Connect VDD_SMPS_IND_OUT to VCAP1/2/3
2x100nF near VCAP pins/pins

2. Direct SMPS Supply

Supply Config 3 : SMPS & LDO cascaded (SMPS & LDO ON)

VDD_LDO

VFBS

C10 100nF

C35 100nF

2x100nF near VDD_LDO pins / plan

Compared to config 2 :
Disconnect VDD_SMPS_IND_OUT from VCAP1/2/3
Connect VDD_SMPS_IND_OUT to VDD_LDO
Add 2x100nF near VDD_LDO pins/pins
Add 2x2.2uF near VCAP pins/pins (see config 1)

3. SMPS supplies LDO (No External supply)

Supply Config 4 : same as config 3, but SMPS supplies also 1V8 to board

VDD_SMPS_IND_OUT

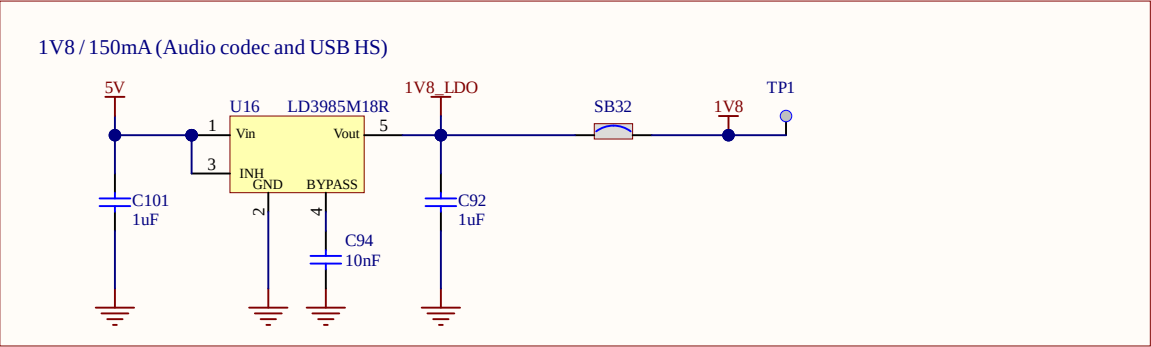
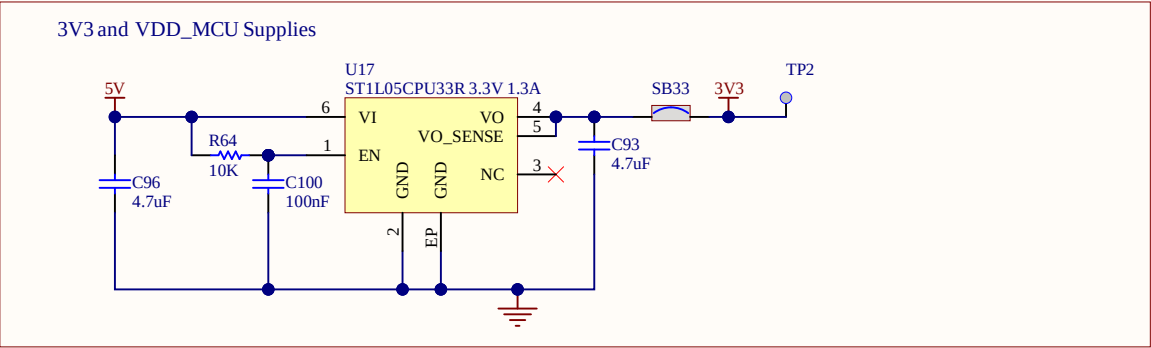
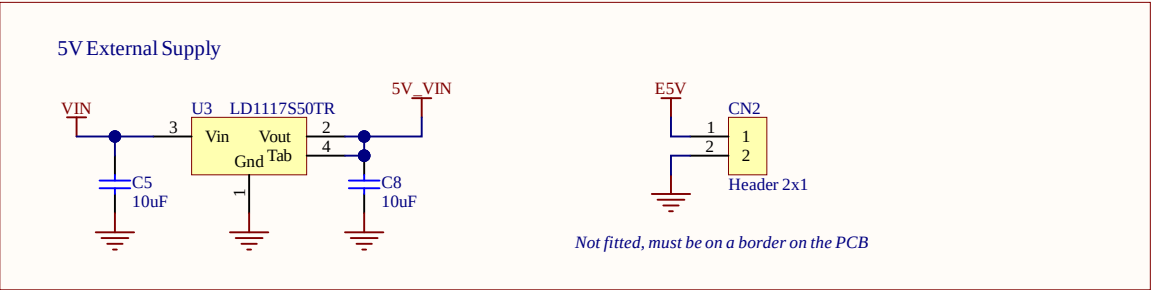
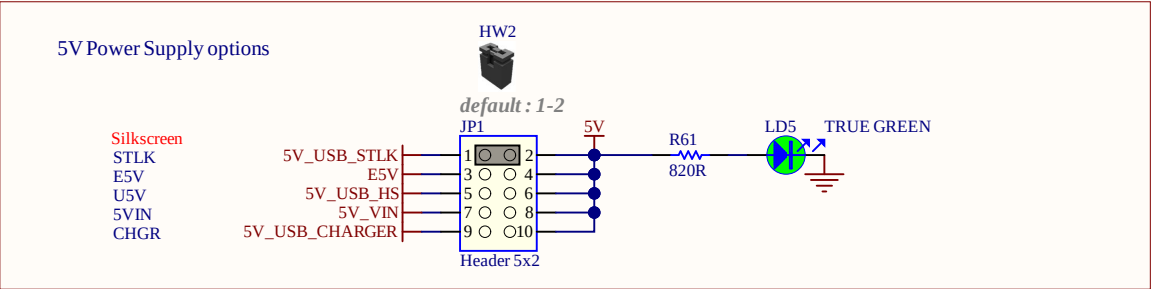
1V8

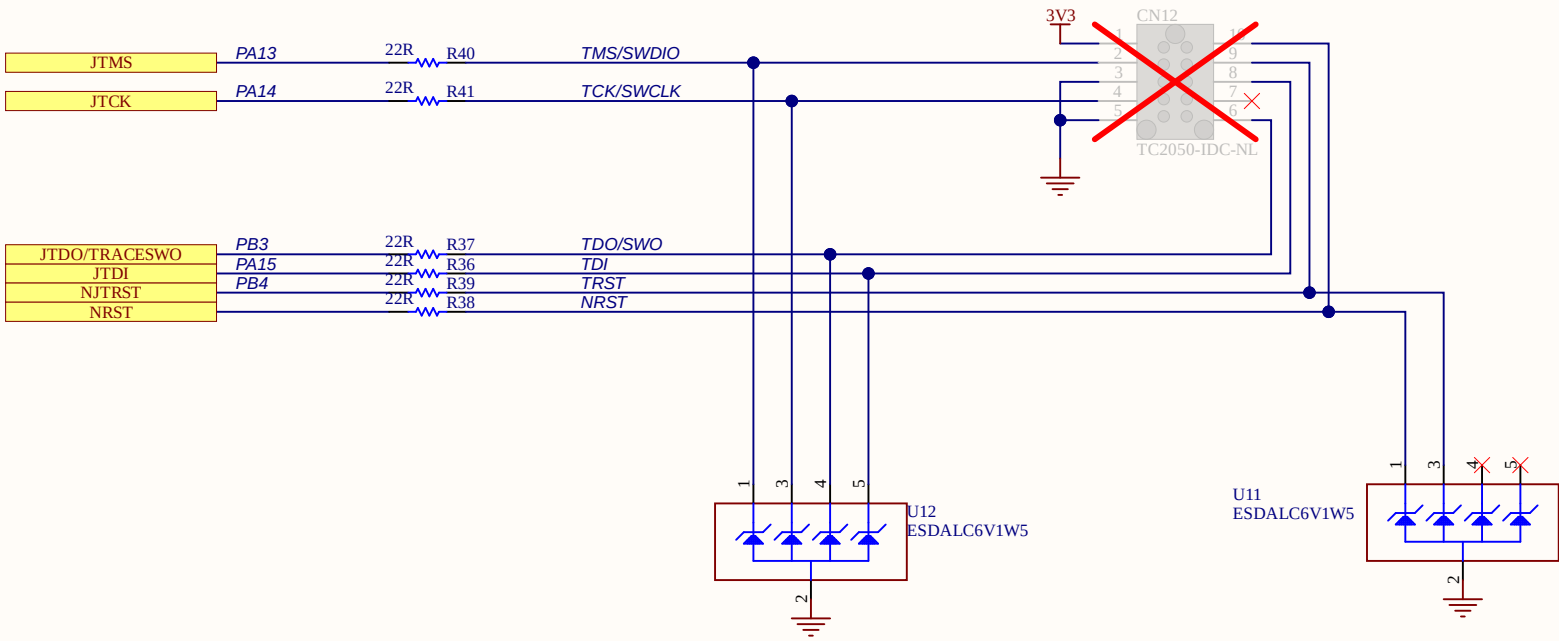
C97 4.7uF

Compared to config 3
Connect VDD_SMPS_IND_OUT to 1V8 board supply
Add a 10uF close to the 1.8V board supply
Add a 10uF close to one VDD_LDO pin

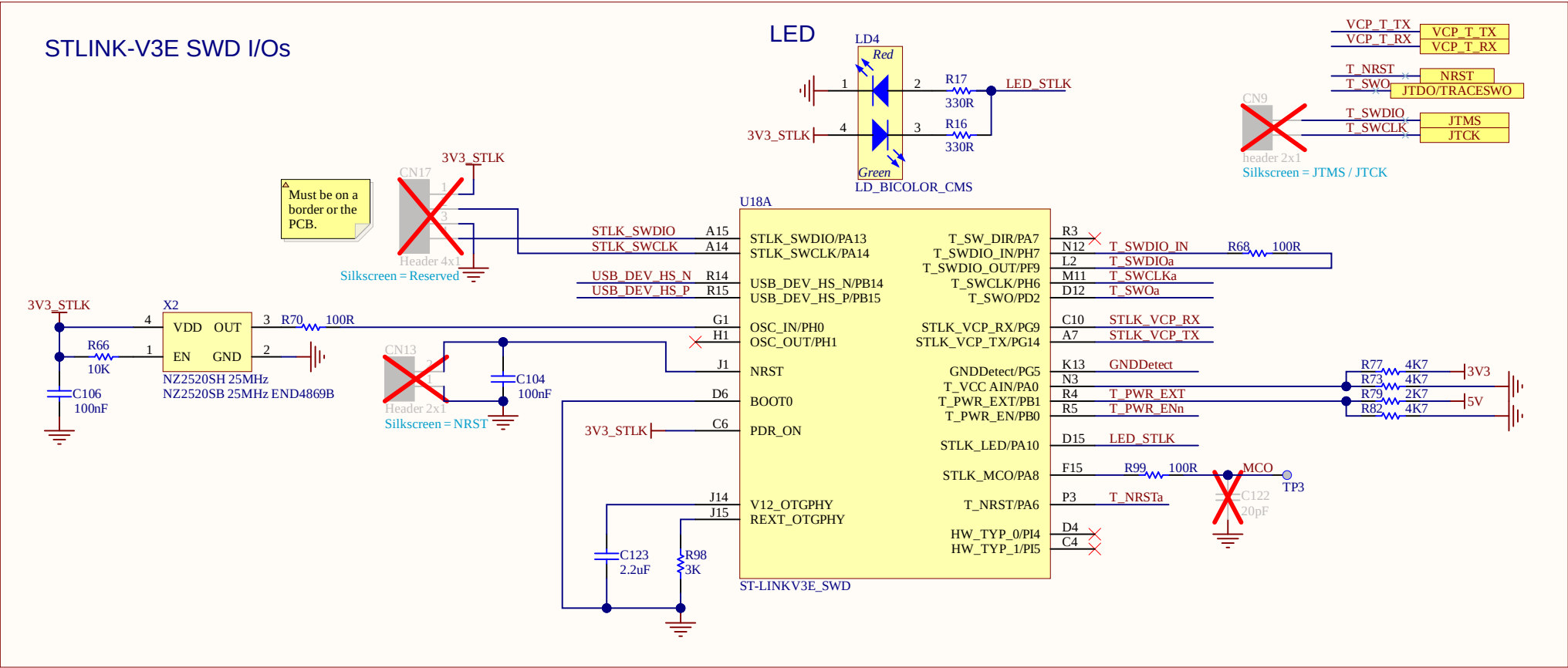
4. External SMPS supply, supplies LDO

Board power

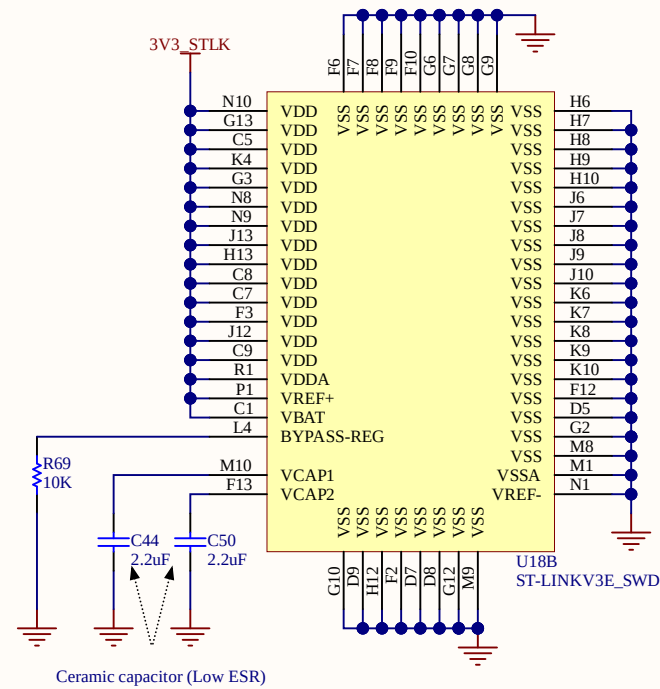




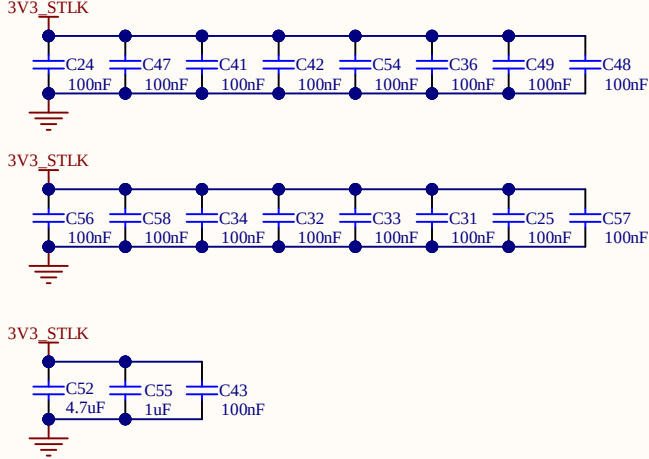
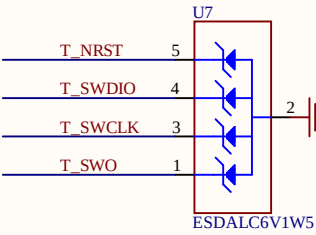
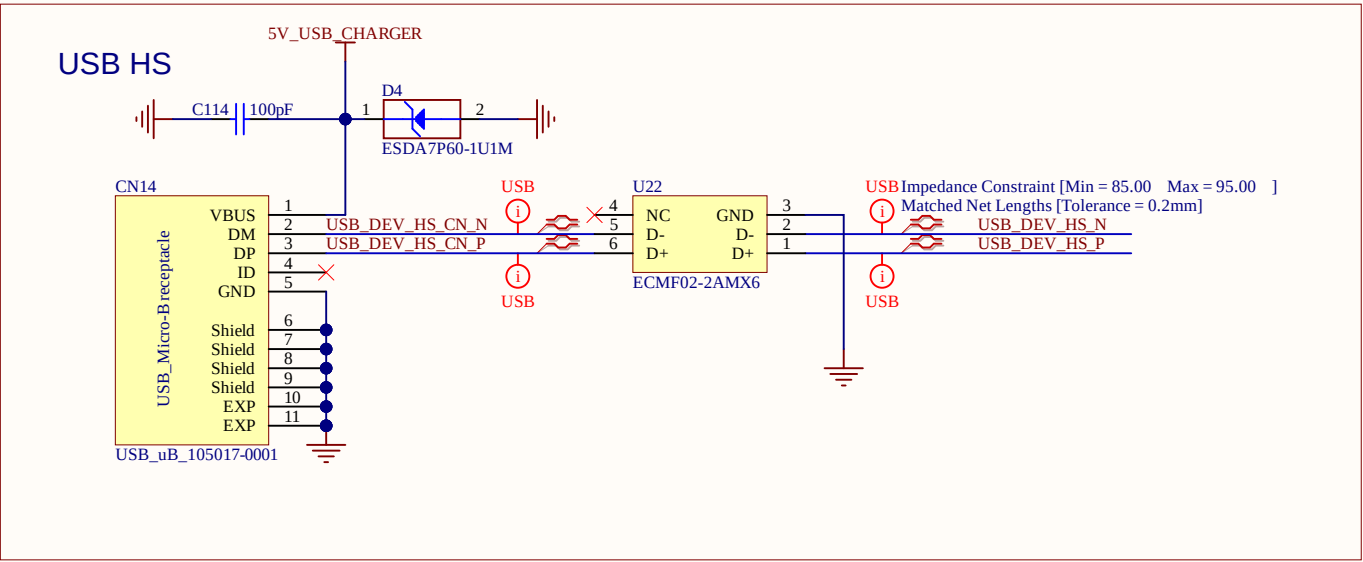
STLINK-V3E SWD I/Os



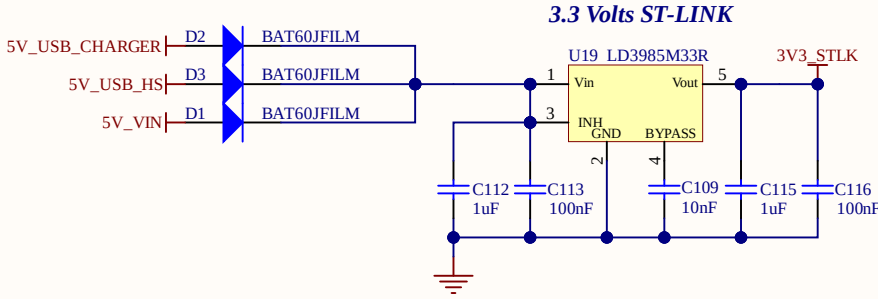
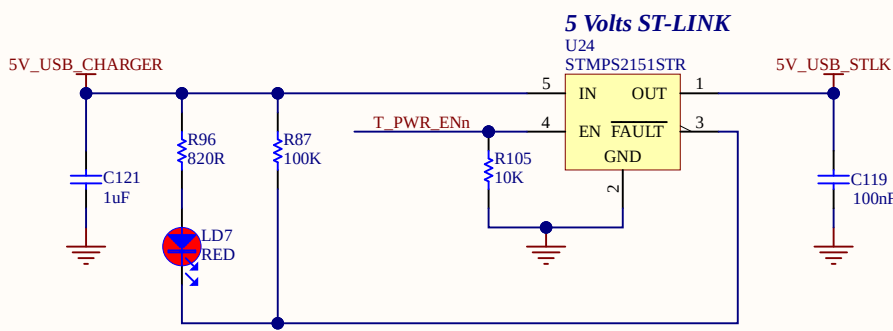
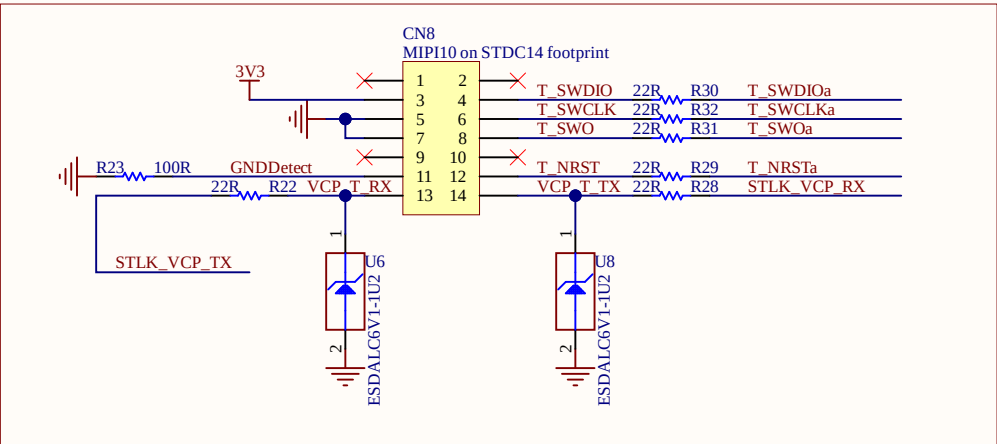
STLINK-V3E SWD POWER

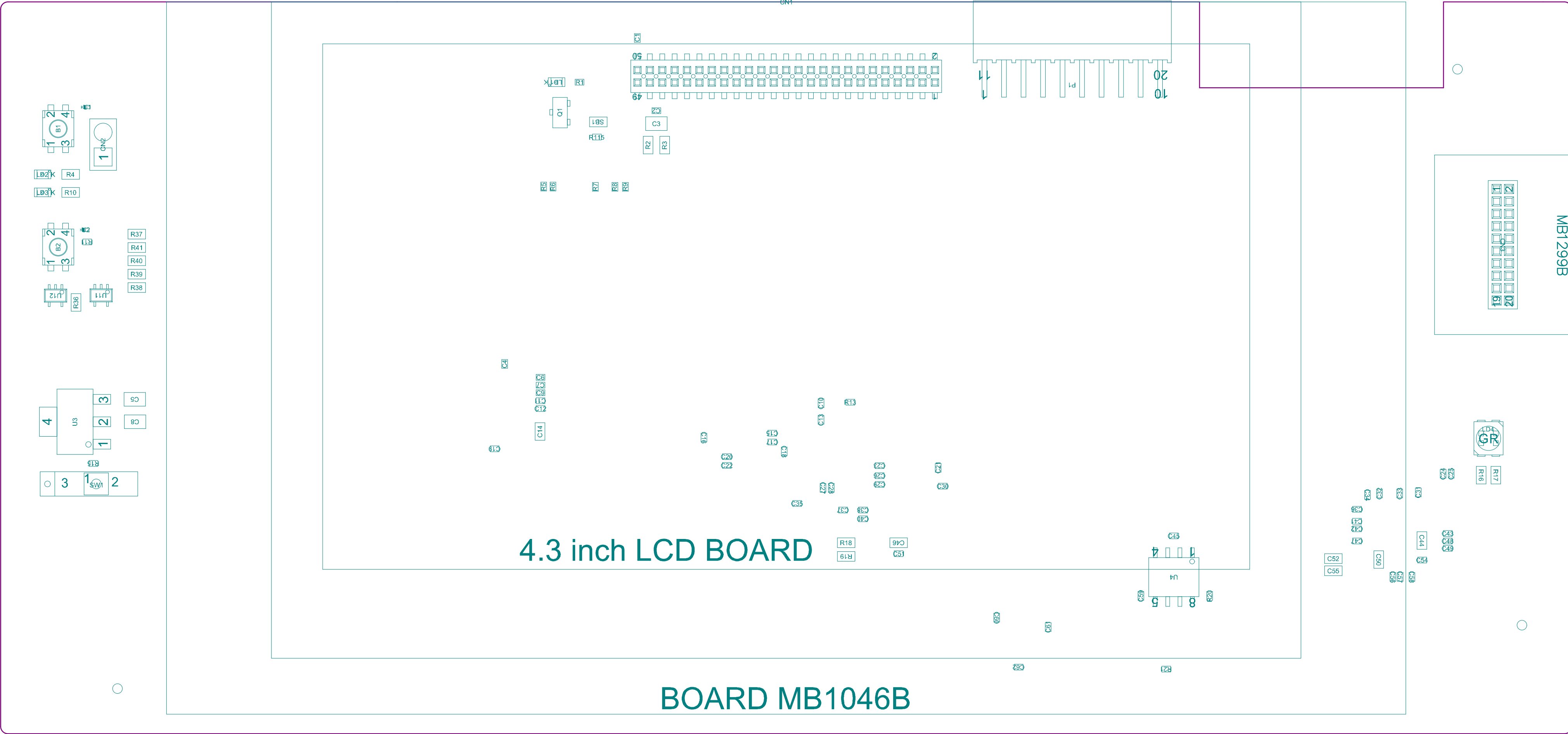


USB HS



STLINK-V3E SWD POWER





Project: STM32H7B3I-DK		
Layer: M14-Top Assembly	Gerber: .GM14	
Variant: H7B3I	MB1332	
Date: 13-NOV-2020	Rev: C	



