STM32H7B3I-DK

MB1332

Table of contents

Sheet 1 : Project overview
  Sheet 2 : TOP
    Sheet 3 : MCU STM32H7B3LIH6QU
    Sheet 4 : Memory
    Sheet 5 : OCSPI
    Sheet 6 : SD Card
    Sheet 7 : Audio Codec
    Sheet 8 : Camera
    Sheet 9 : LCD
    Sheet 10 : FDCAN
    Sheet 11 : Arduino
    Sheet 12 : Peripherals
    Sheet 13 : Power Board
    Sheet 14 : Power MCU
    Sheet 15 : JTAG
    Sheet 16 : STLINK-V3E SWD
    Sheet 17: USB OTG HS with external PHY

Legend

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

Text to be added to silkscreen.

Warning text.

Notes to generate the board layout.

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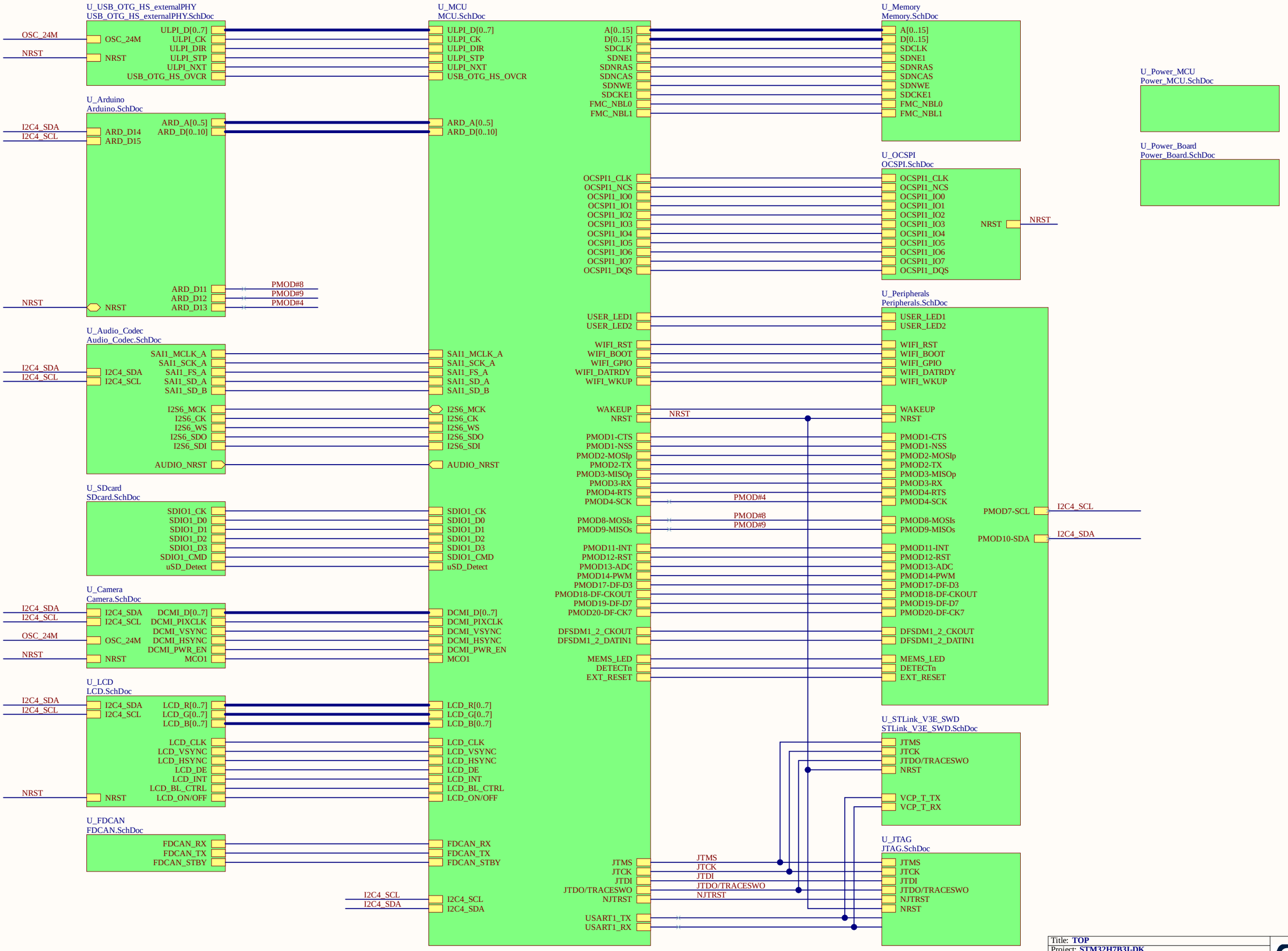
The complete Open Platform License Agreement can be found on www.st.com/opla.

U_Top
MB1332_TOP.SchDoc



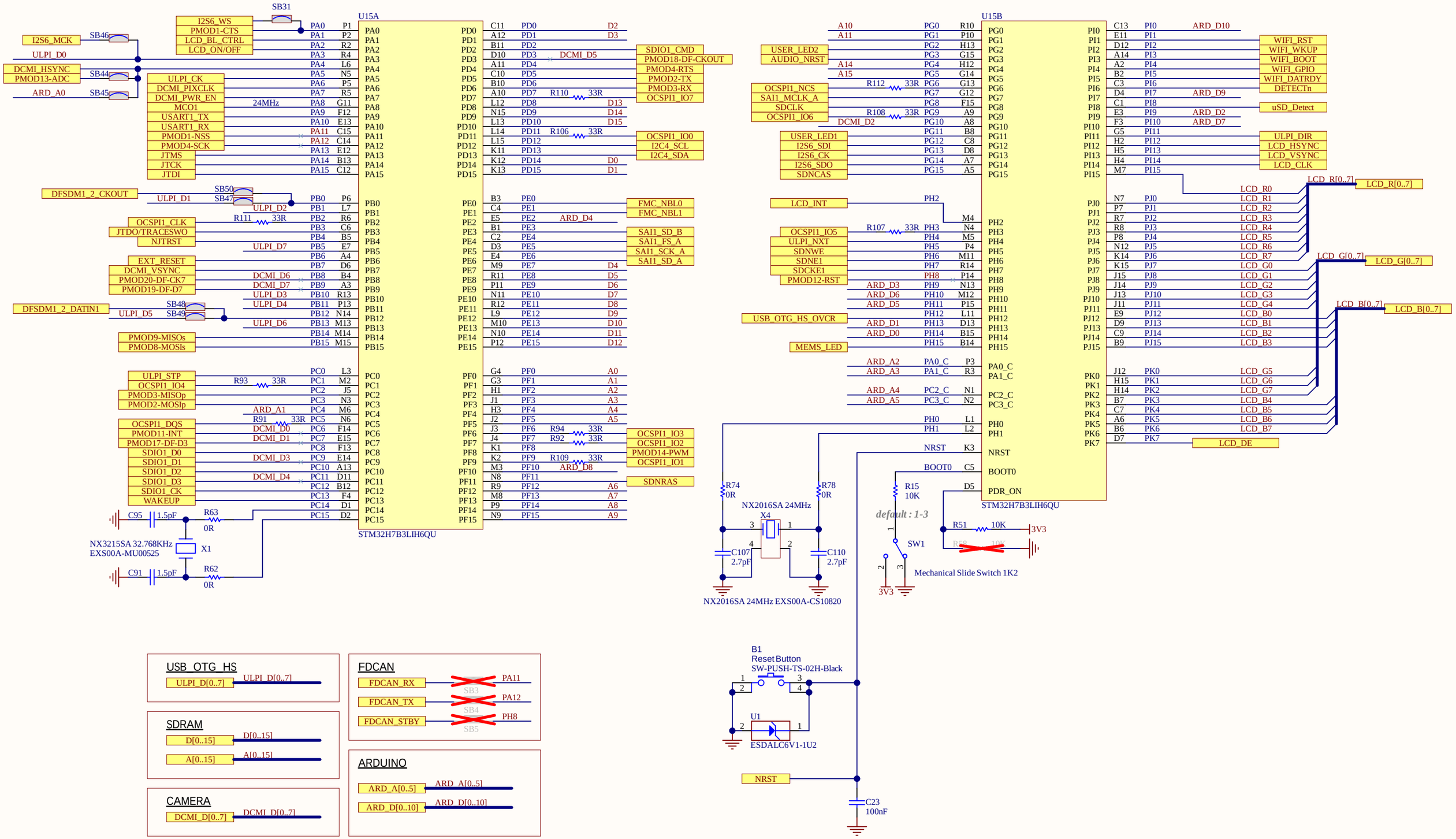
Title: **Project overview**			
Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 1 of 17	

TOP

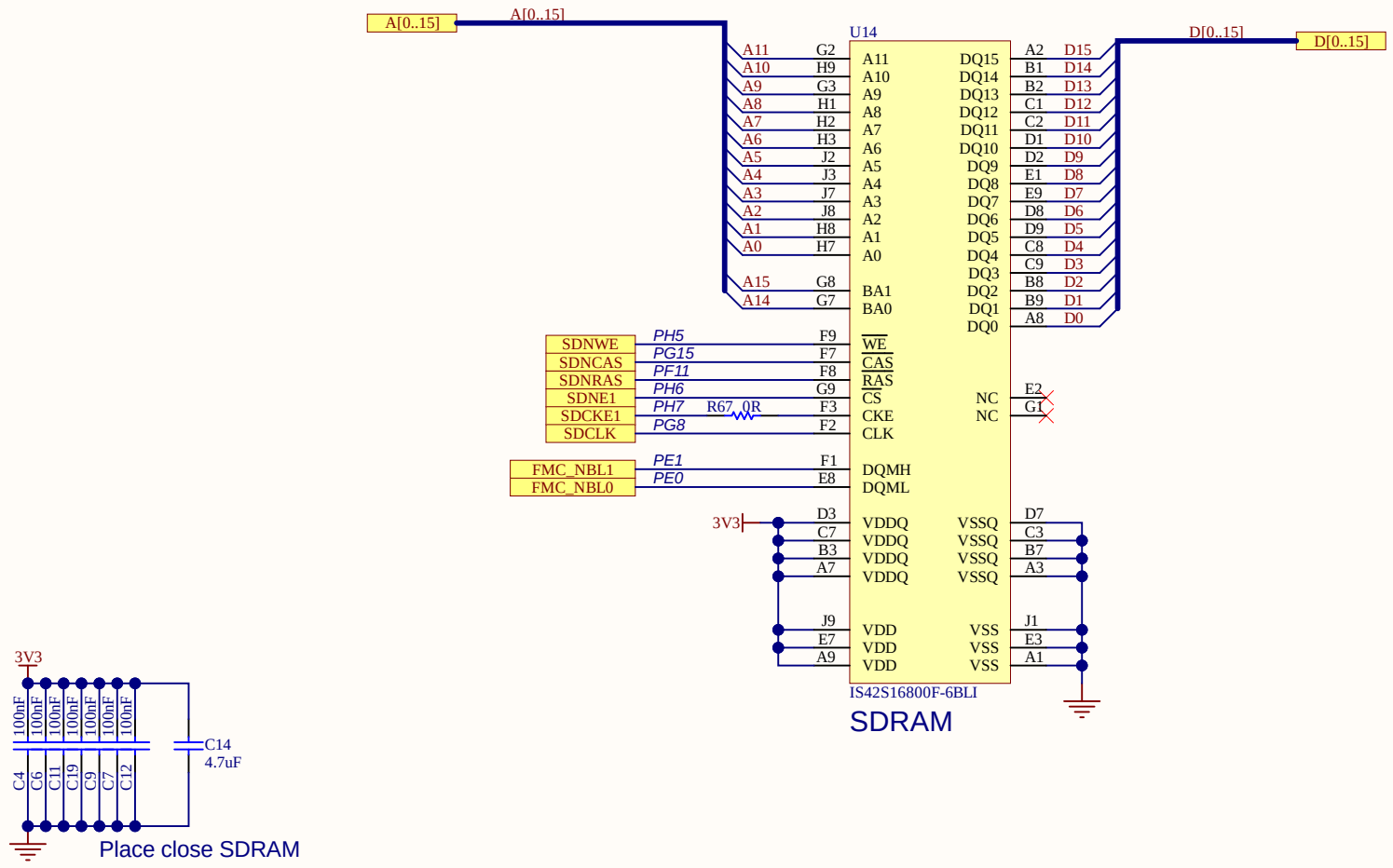


Title: **TOP**			
Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A3	Date: 21-FEB-20	Sheet: 2 of 17	

MCU STM32H7B3LIH6QU

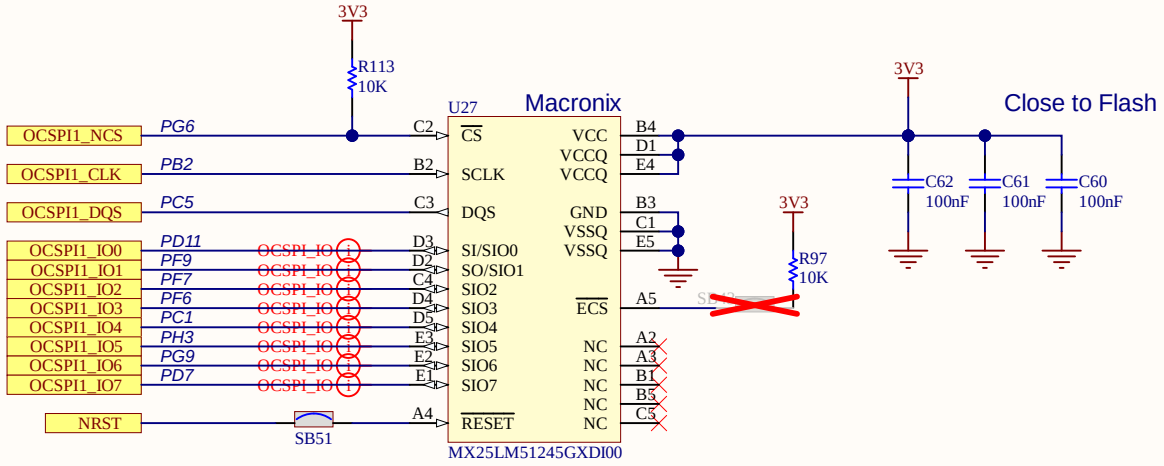


Title: **MCU STM32H7B3LIH6QU**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A3	Date: 21-FEB-20	Sheet: 3 of 17



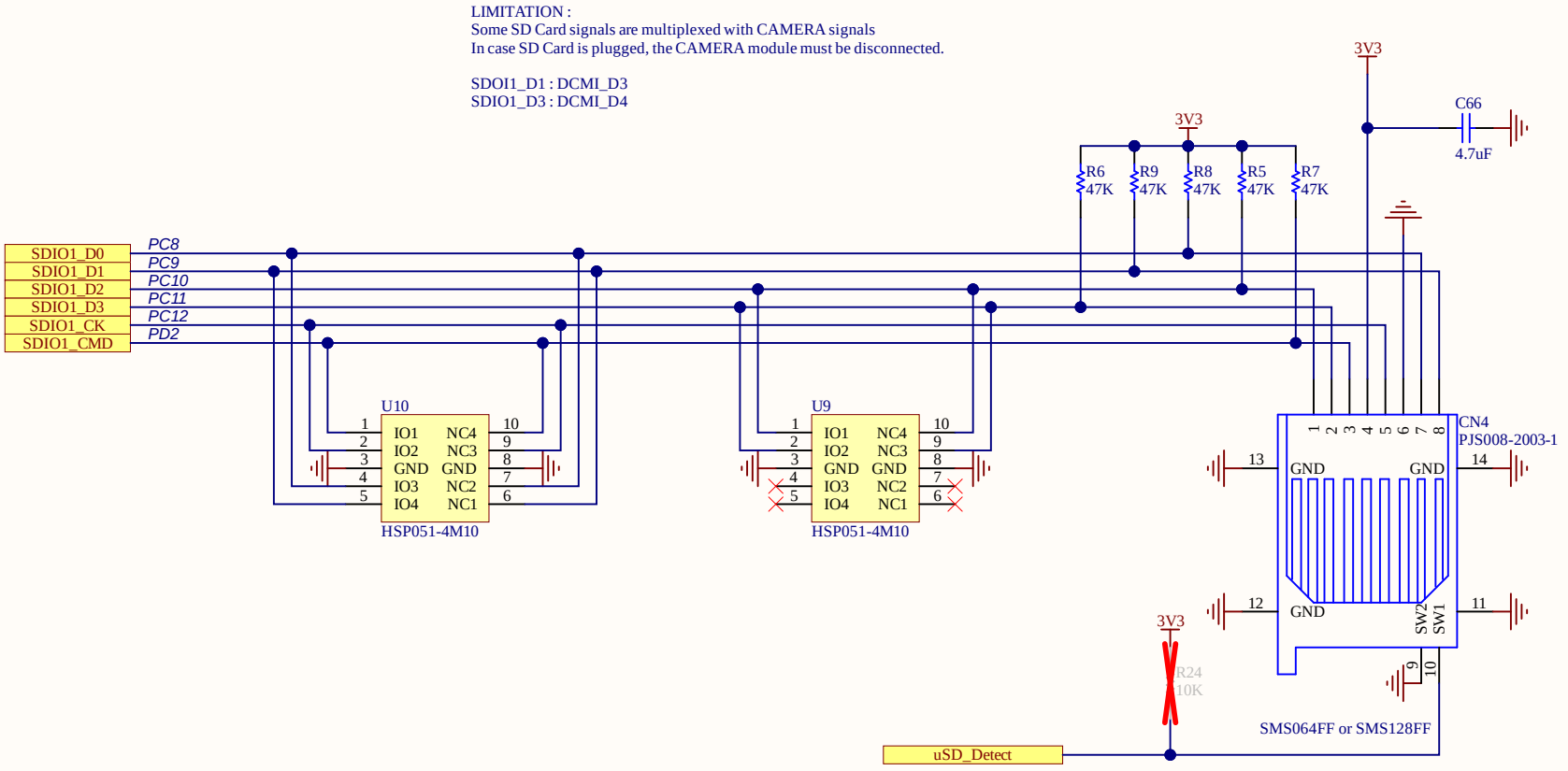
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Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 4 of 17	

OCTOSPI Flash



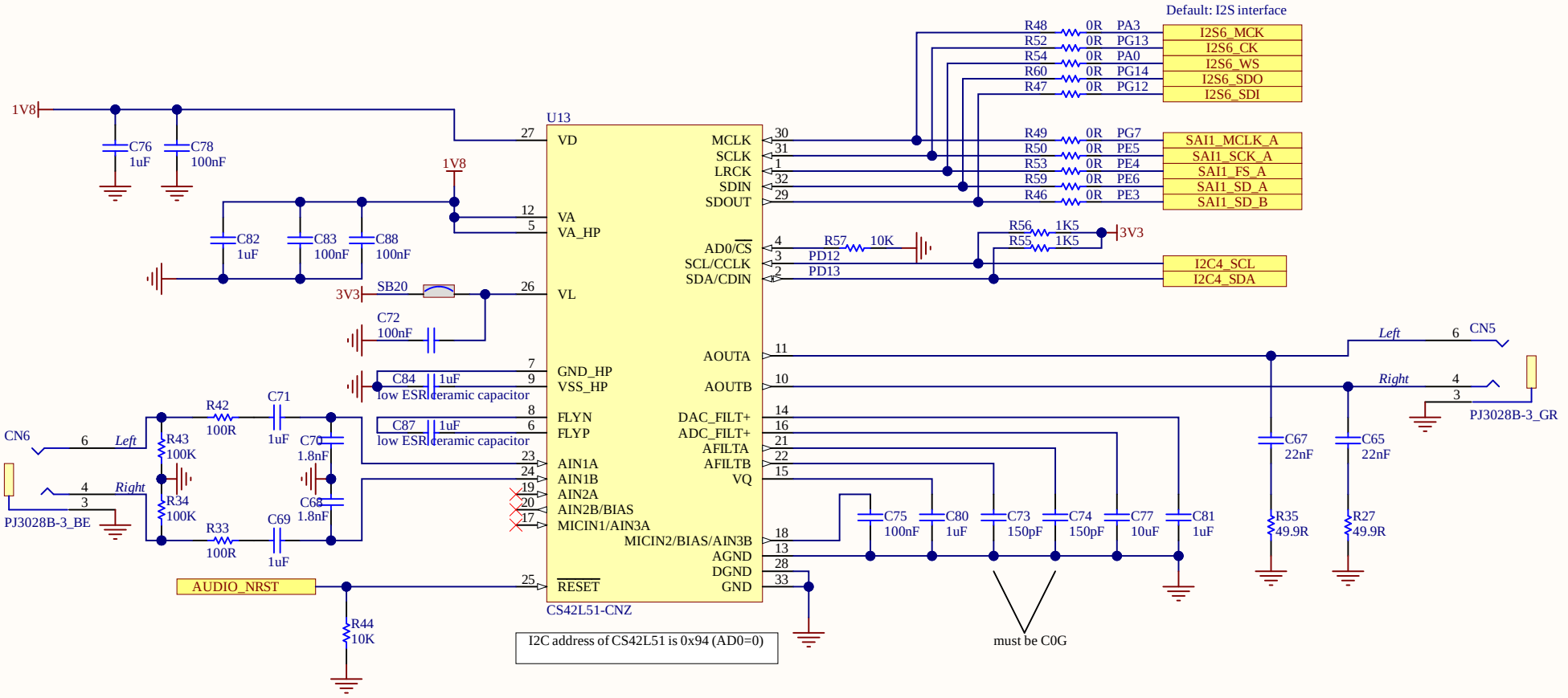
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Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 5 of 17	

microSD card



Title: **SD Card**			
Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 6 of 17	

Audio Codec

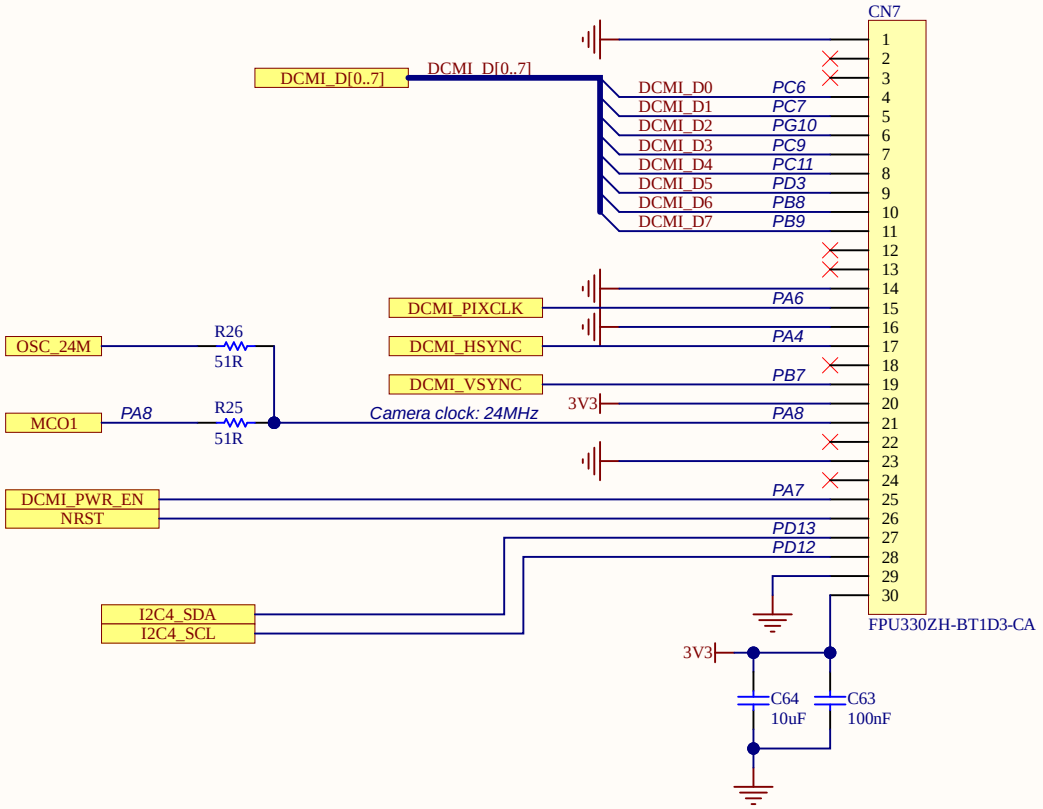


Title: **Audio Codec**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A4	Date: 21-FEB-20	Sheet: 7 of 17

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

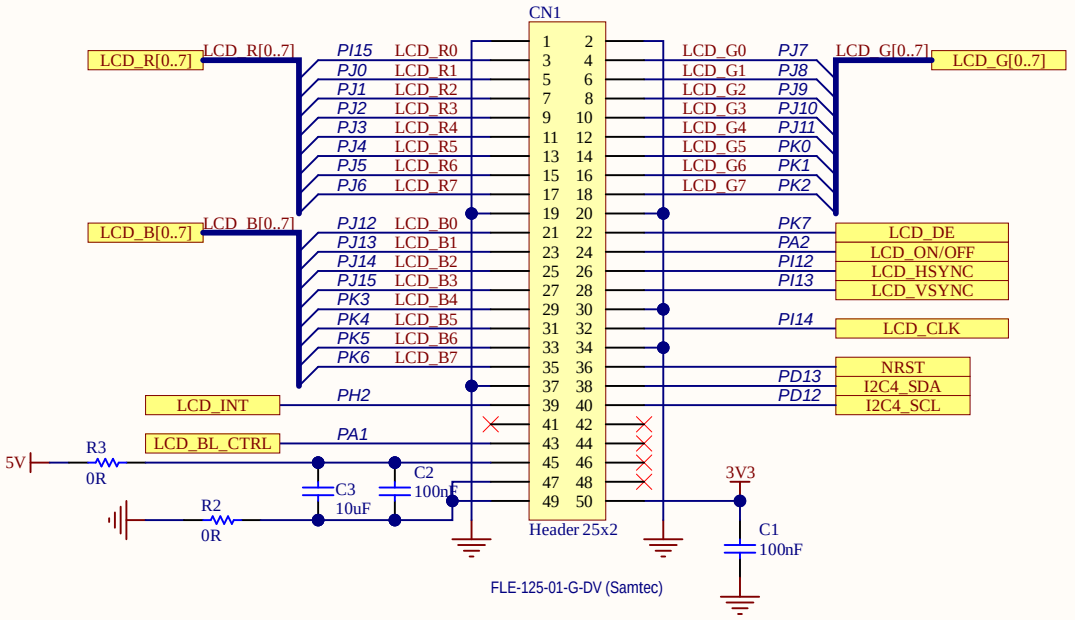
DCMI_D0 : PMOD#11-INT
DCMI_D1 : PMOD#17-DF-D3
DCMI_D3: SDOI1_D1
DCMI_D4 : SDIO1_D4
DCMI_D5: PMOD#18-DF-CKOUT
DCMI_D6 : PMOD#20-DF-CK7
DCMI_D7 : PMOD#19-DF-D7
DCMI_HSYNC : PMOD#13-ADC and ARD_A0

Camera connector for STM32F4DIS-CAM



Title: **Camera**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A4	Date: 21-FEB-20	Sheet: 8 of 17

Compatible with MB1315 (4.3 inch LCD board)

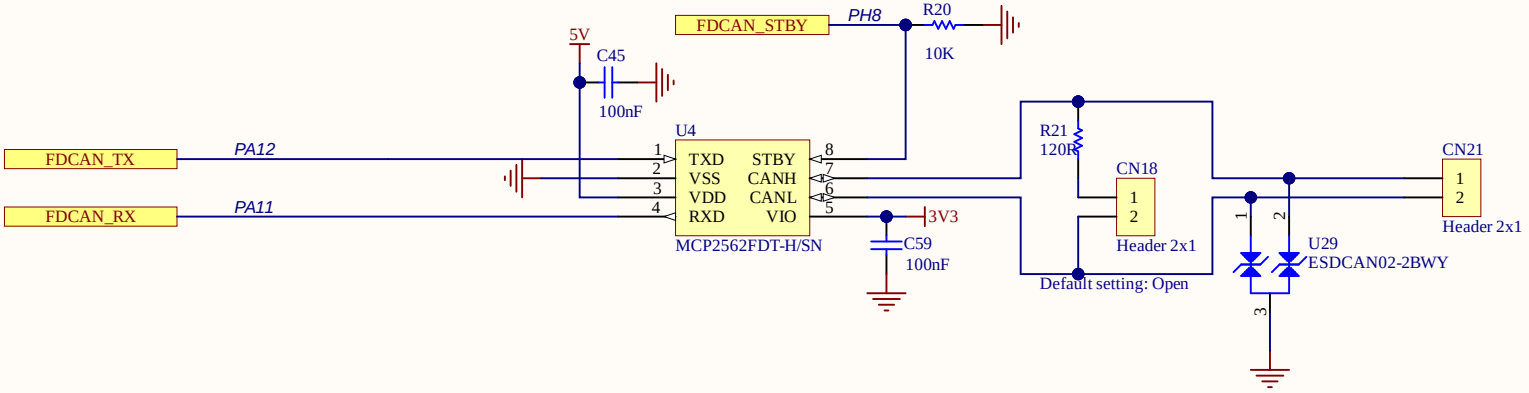


Title: **LCD**			
Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 9 of 17	

FD-CAN

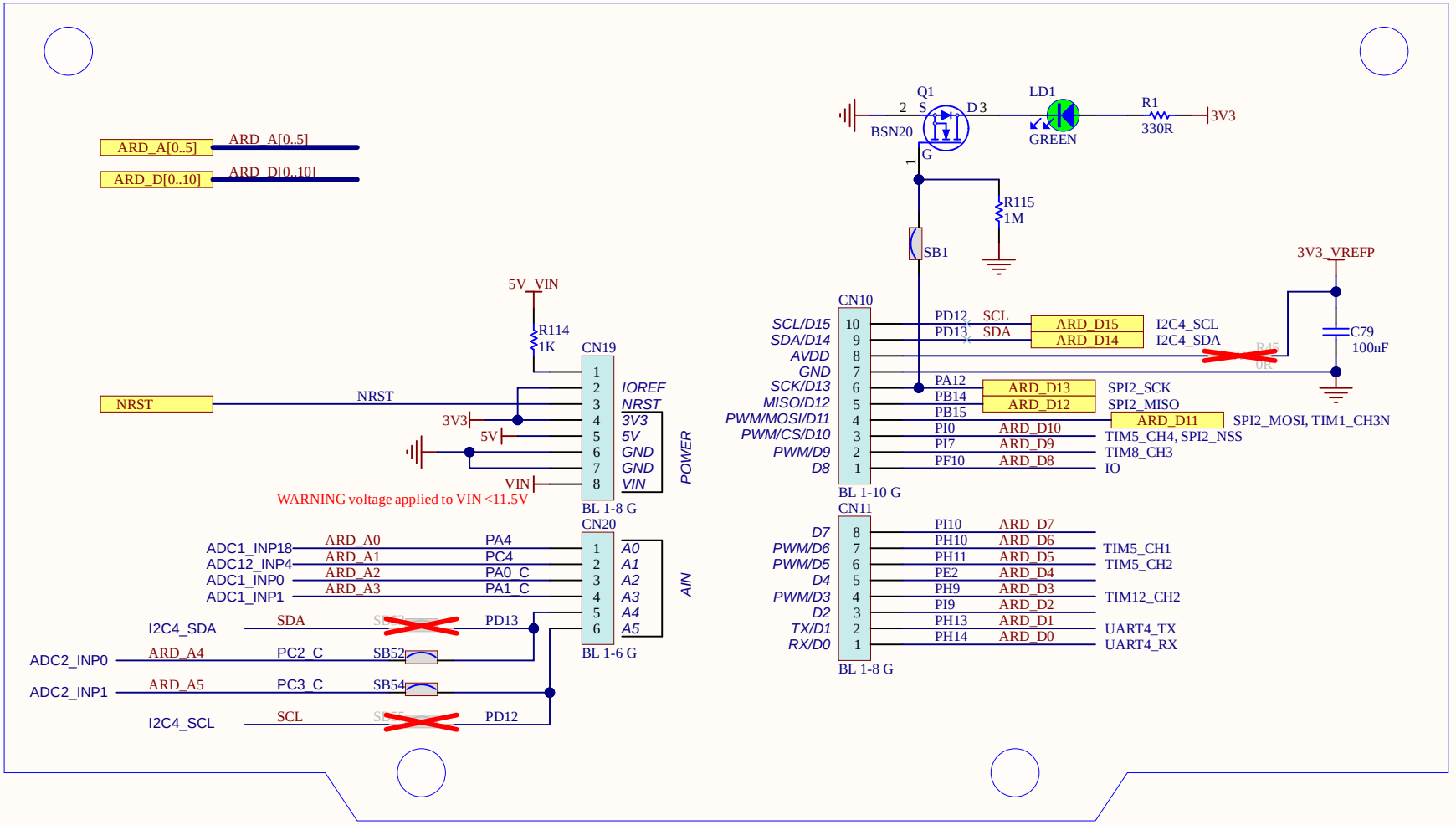
LIMITATION :
FD-CAN signals are multiplexed with STMOD+ function
In case FD-CAN module is connected, STMOD+ must be disconnected.

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



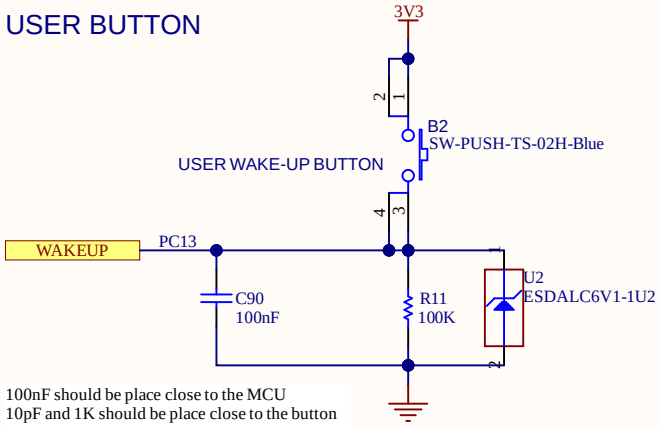
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Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A4	Date: 21-FEB-20	Sheet: 10 of 17

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



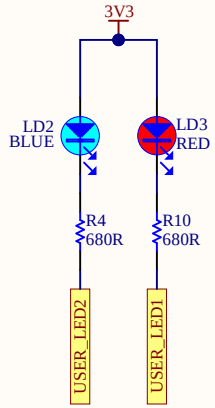
Title: **Arduino**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A4	Date: 21-FEB-20	Sheet: 11 of 17

USER BUTTON



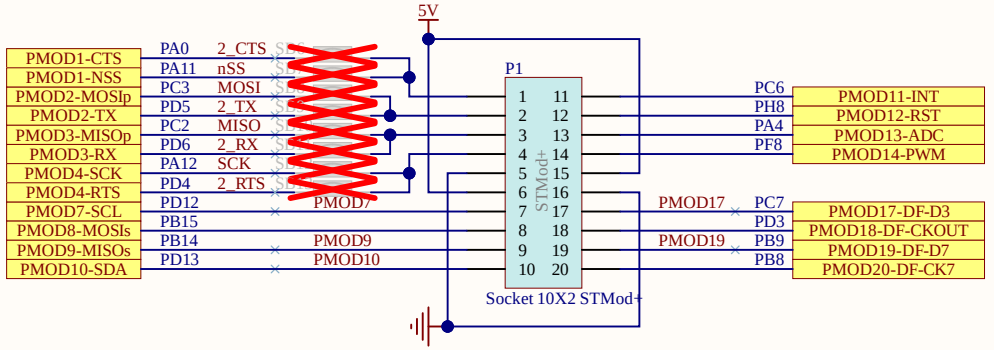
100nF should be place close to the MCU
10pF and 1K should be place close to the button

USER LED



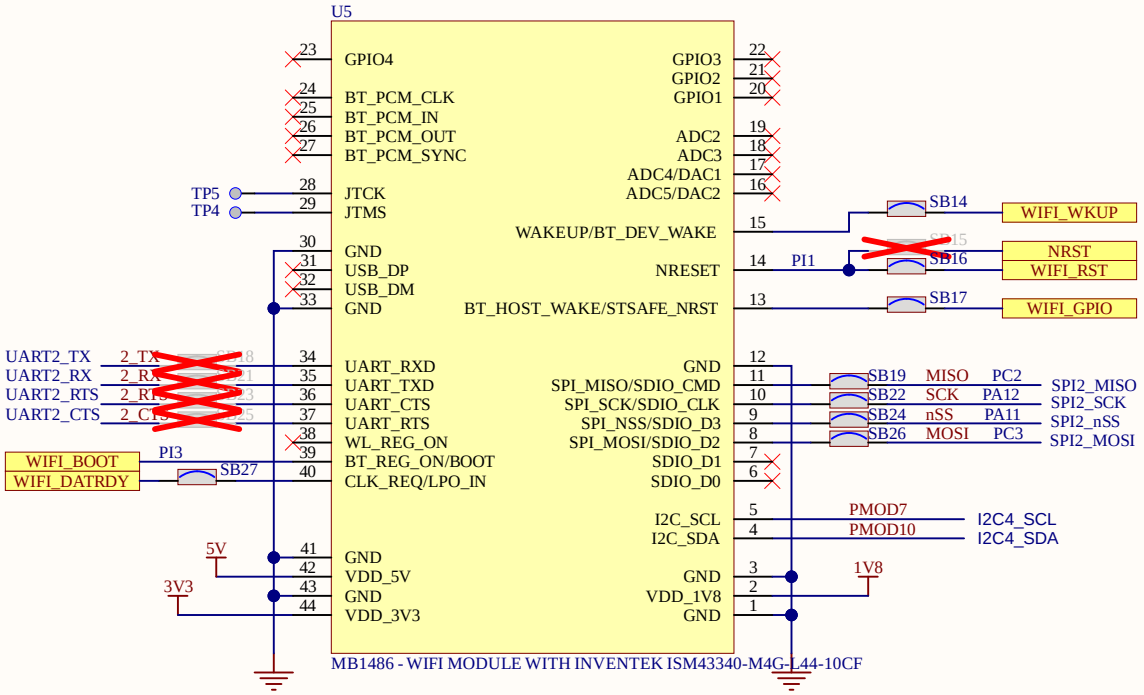
STMOD+

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)

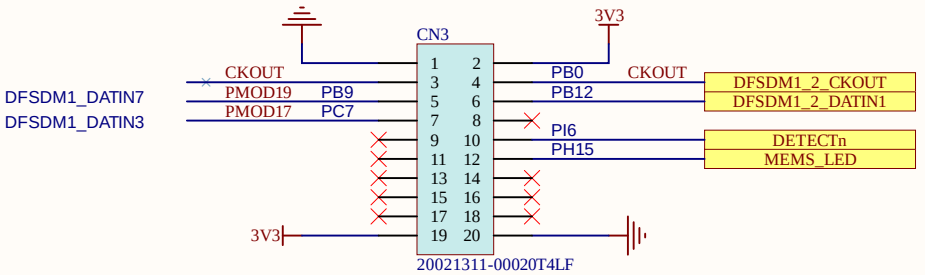
LIMITATION :
WiFi signals are multiplexed with STMOD+
In case WiFi-BT is activated, STMOD+ must be disconnected.



MB1486 - WIFI MODULE WITH INVENTEK ISM43340-M4G-L44-10CF

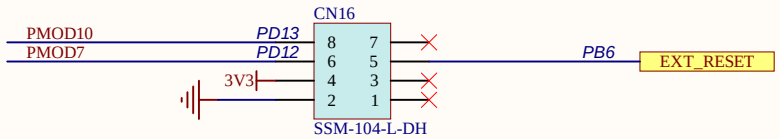
AUDIO DFSDM

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



Extension microphones module (MB1299)

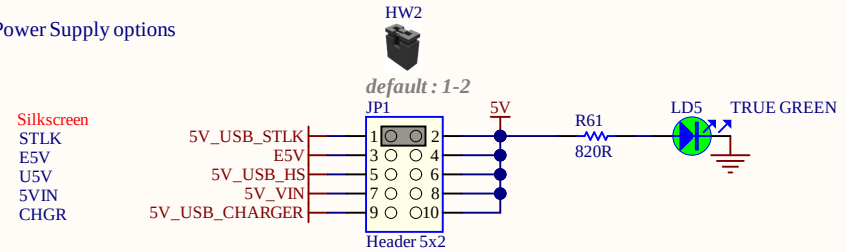
I2C Connector



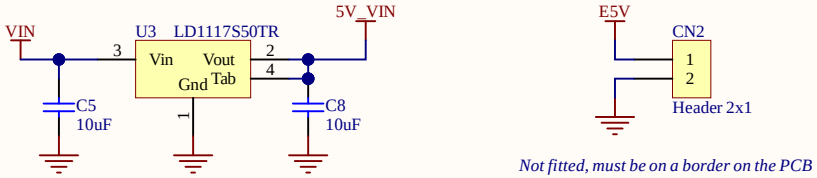
Title: **Peripherals**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A4	Date: 21-FEB-20	Sheet: 12 of 17

Board power

5V Power Supply options

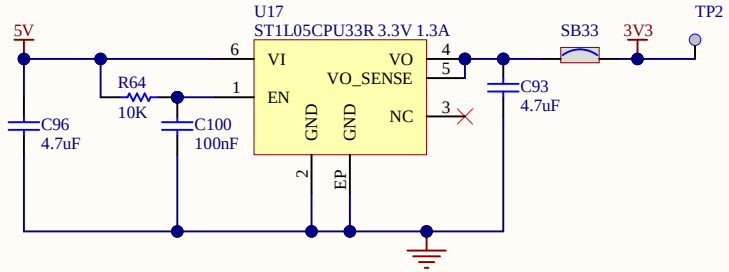


5V External Supply

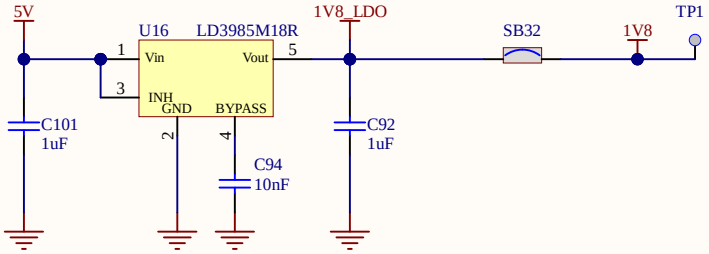


Not fitted, must be on a border on the PCB

3V3 and VDD_MCU Supplies

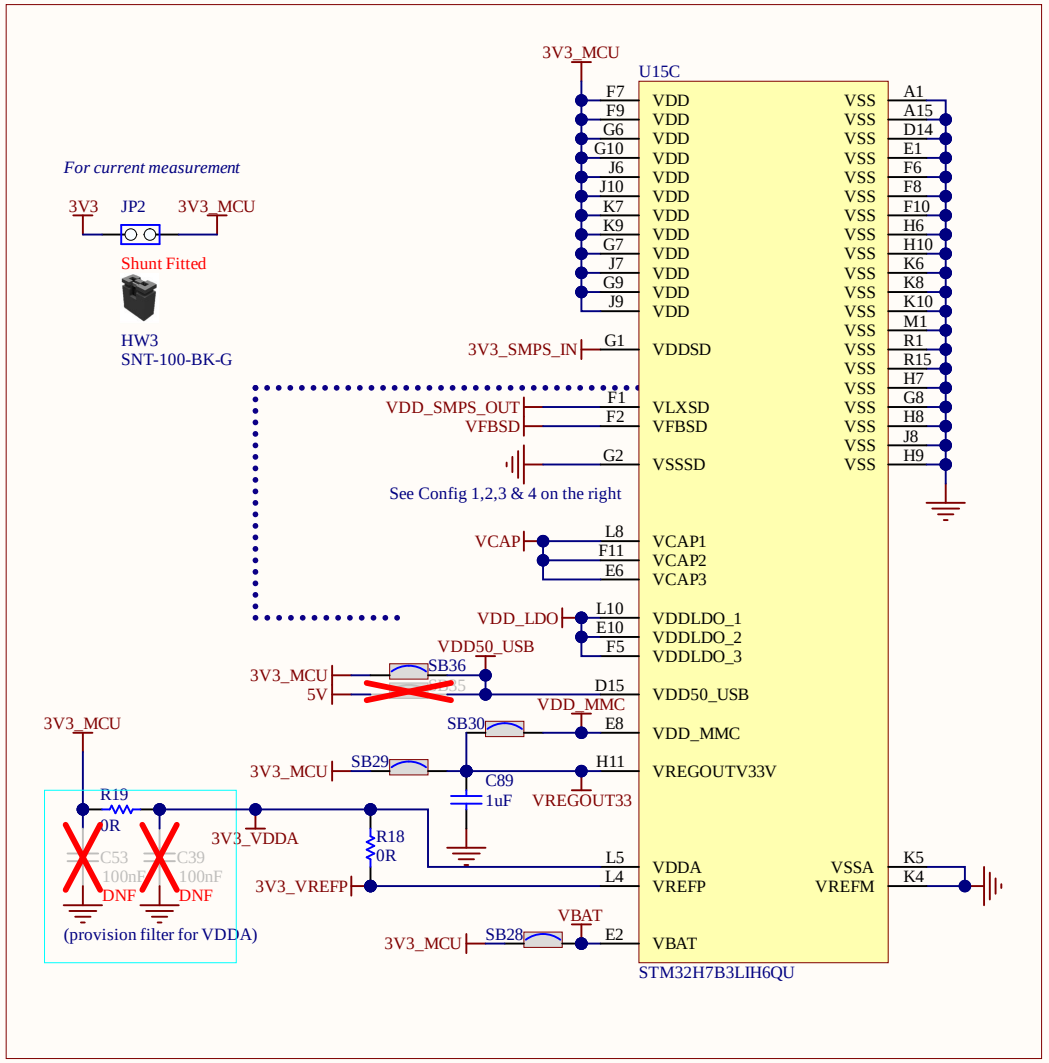


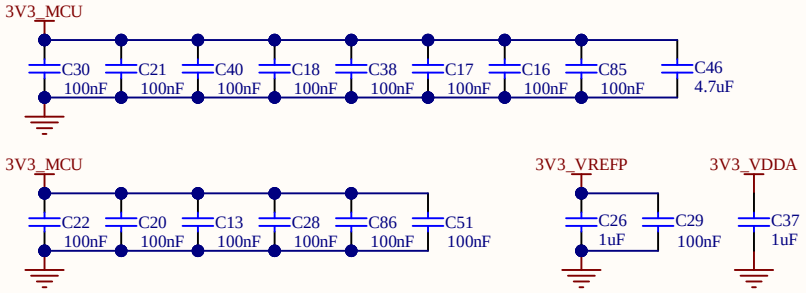
1V8 / 150mA (Audio codec and USB HS)



Title: **Board_Power**			
Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 13 of 17	

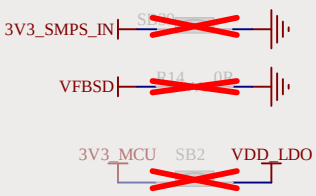
MCU power



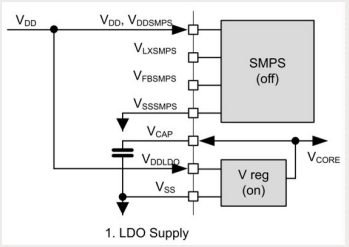


Internal SMPS Supply Config

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



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 plans/pins

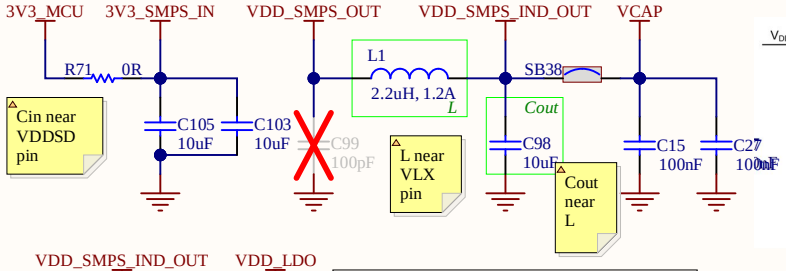


1. LDO Supply

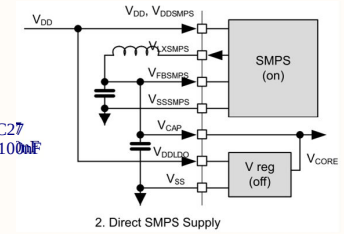
Supply Config 2 : SMPS only (SMPS ON, LDO OFF)

Default config

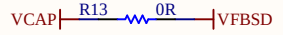
2x100nF near VCAP pins / plan



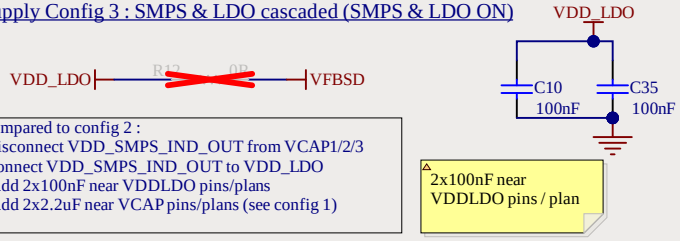
Connect 3V3_SMPS_IN to 3V3_MCU
Connect VDD_SMPS_IND_OUT to VCAP1/2/3
2x100nF near VCAP plans/pins



2. Direct SMPS Supply

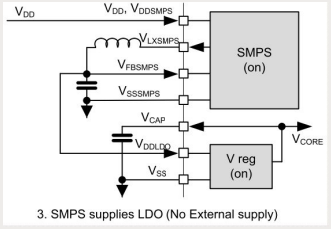


Supply Config 3 : SMPS & LDO cascaded (SMPS & LDO ON)



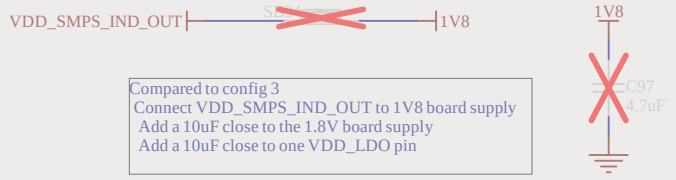
Compared to config 2 :
Disconnect VDD_SMPS_IND_OUT from VCAP1/2/3
Connect VDD_SMPS_IND_OUT to VDD_LDO
Add 2x100nF near VDDLDO pins/plans
Add 2x2.2uF near VCAP pins/plans (see config 1)

2x100nF near VDDLDO pins / plan

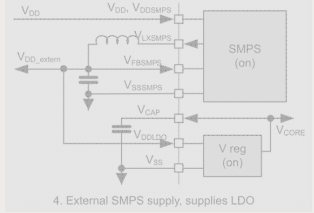


3. SMPS supplies LDO (No External supply)

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



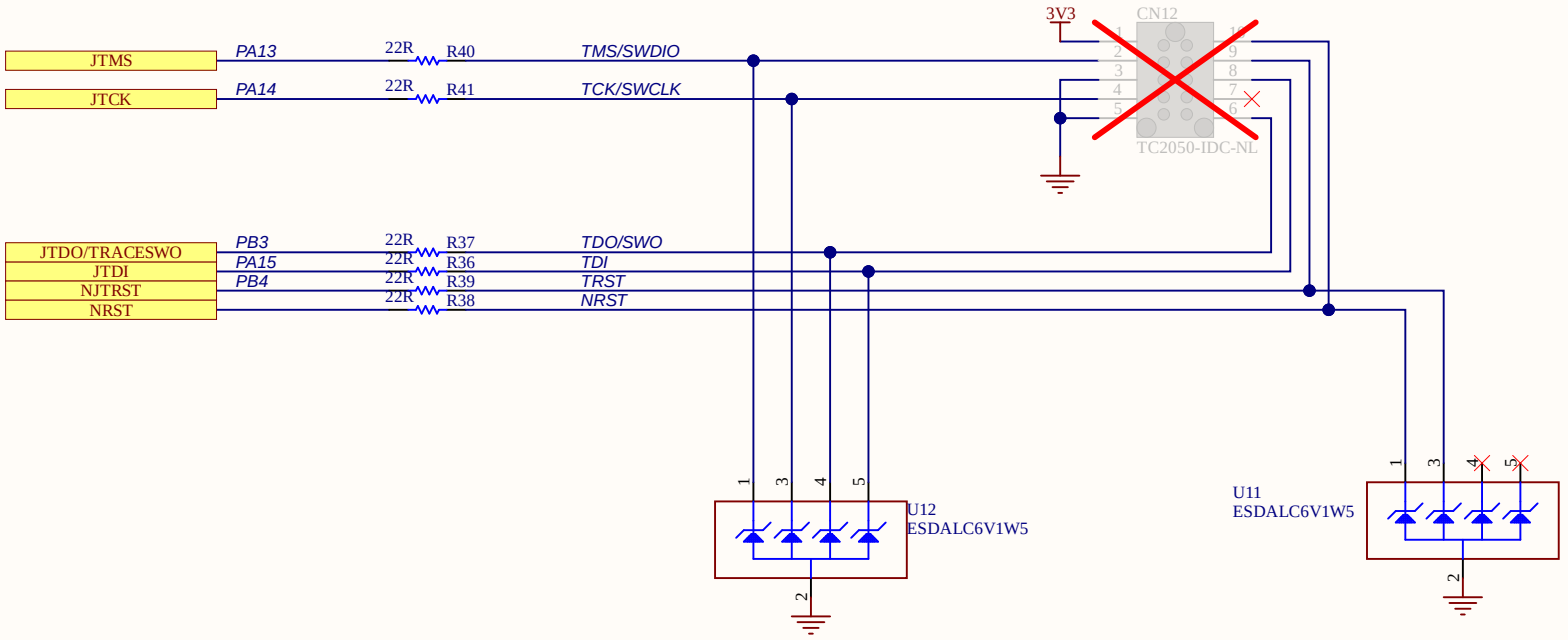
Compared to config 3
Connect VDD_SMPS_IND_OUT to 1V8 board supply
Add a 10uF close to the 1.8V board supply
Add a 10uF close to one VDD_LDO pin



4. External SMPS supply, supplies LDO

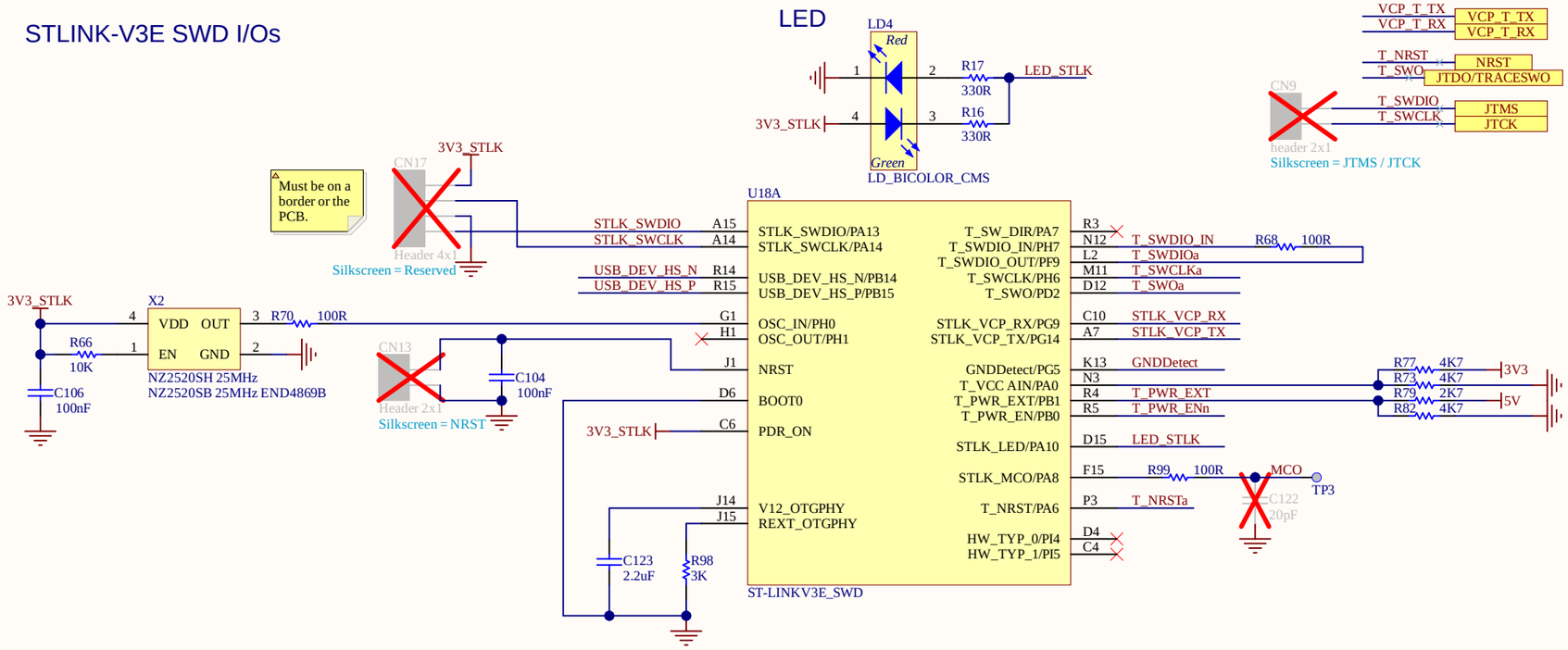
Title: **MCU_Power**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A4	Date: 21-FEB-20	Sheet: 14 of 17

JTAG

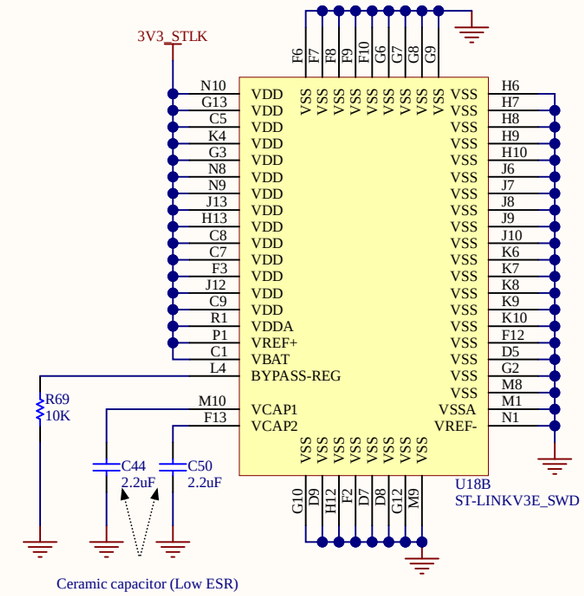


Title: **JTAG**			
Project: **STM32H7B3I-DK**			
Variant: H7B3I			
Revision: C-01		Reference: MB1332	
Size: A4	Date: 21-FEB-20	Sheet: 15 of 17	

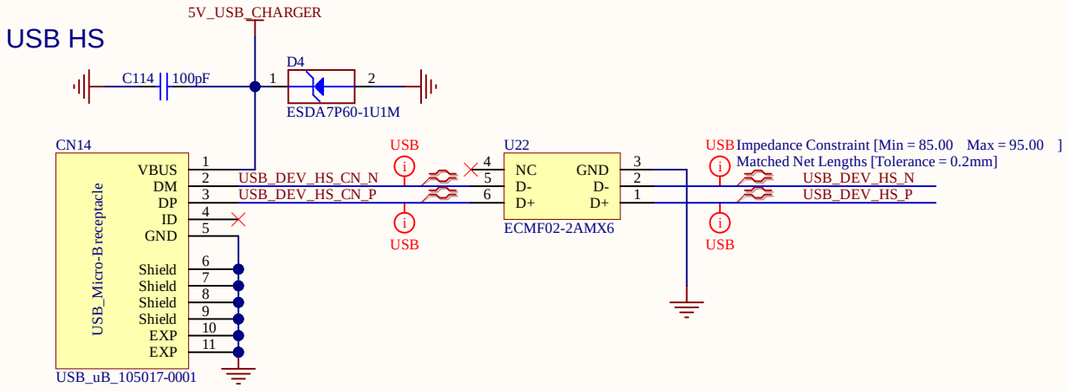
STLINK-V3E SWD I/Os

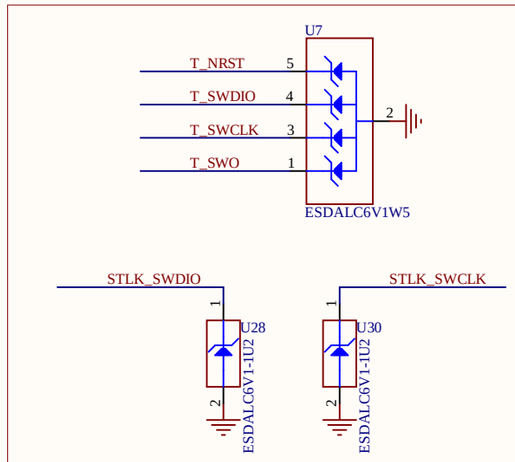


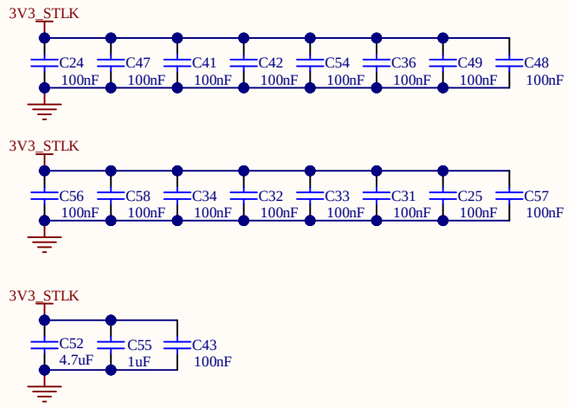
STLINK-V3E SWD POWER

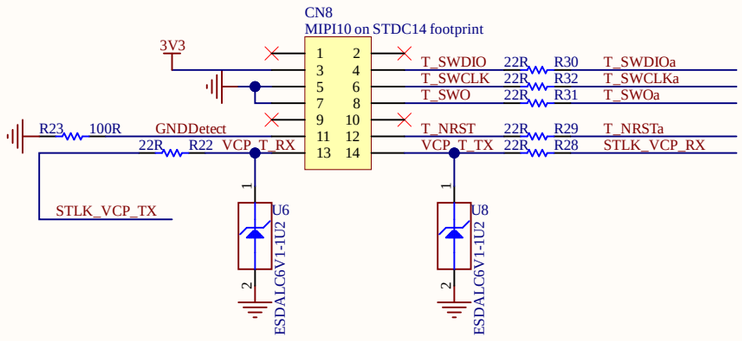


USB HS

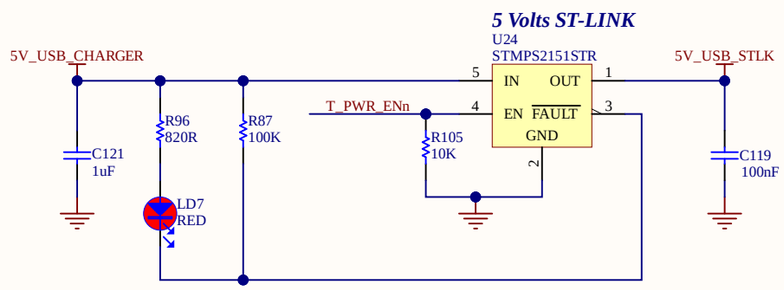


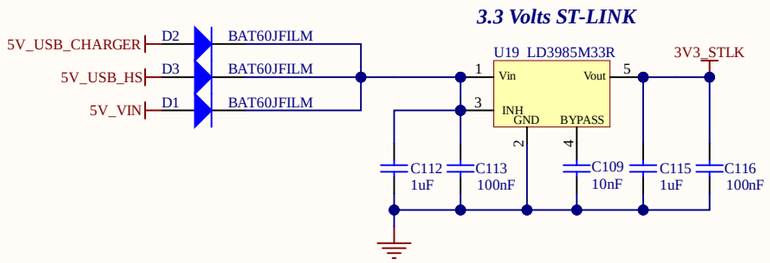






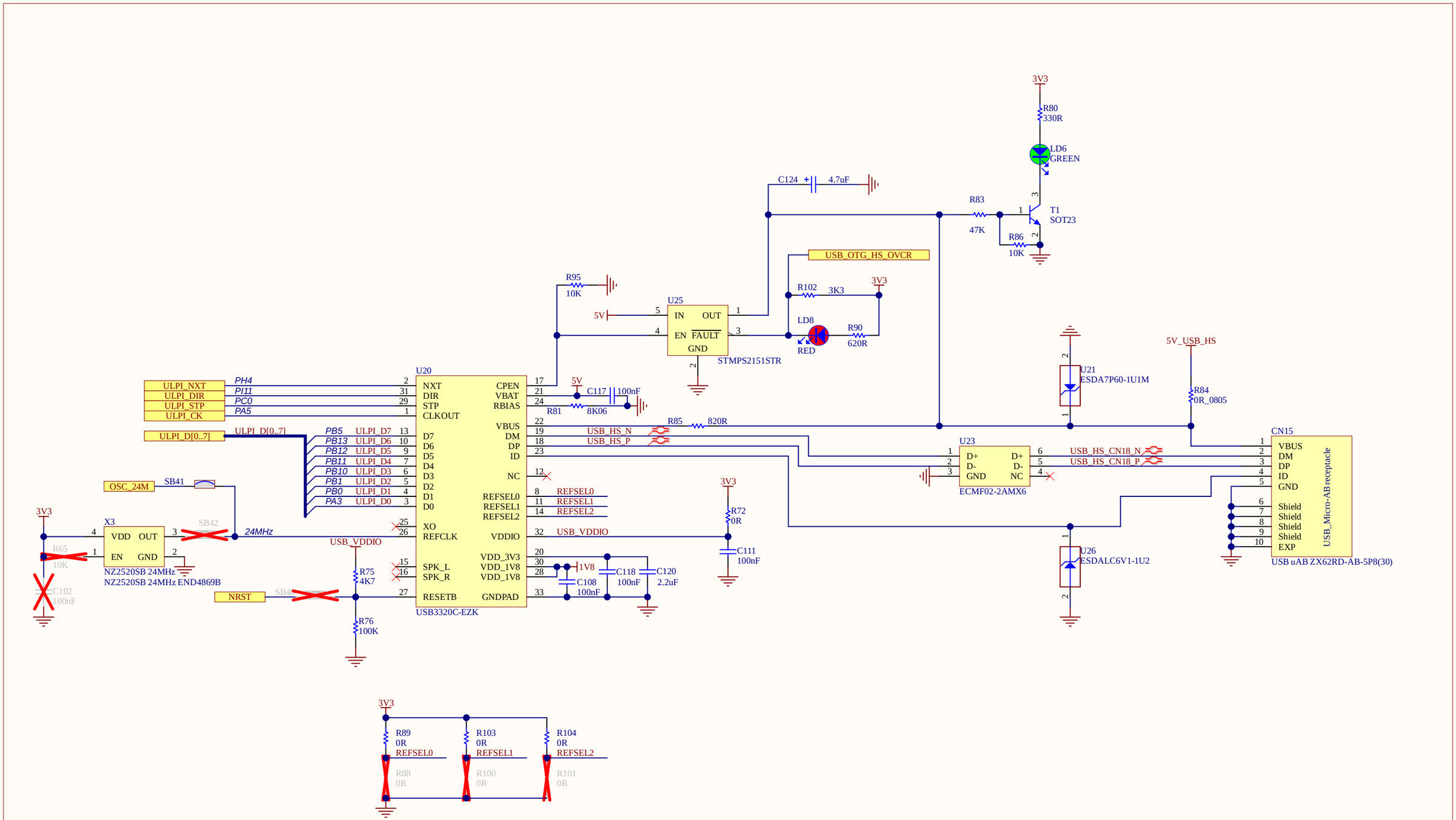
STLINK-V3E SWD POWER



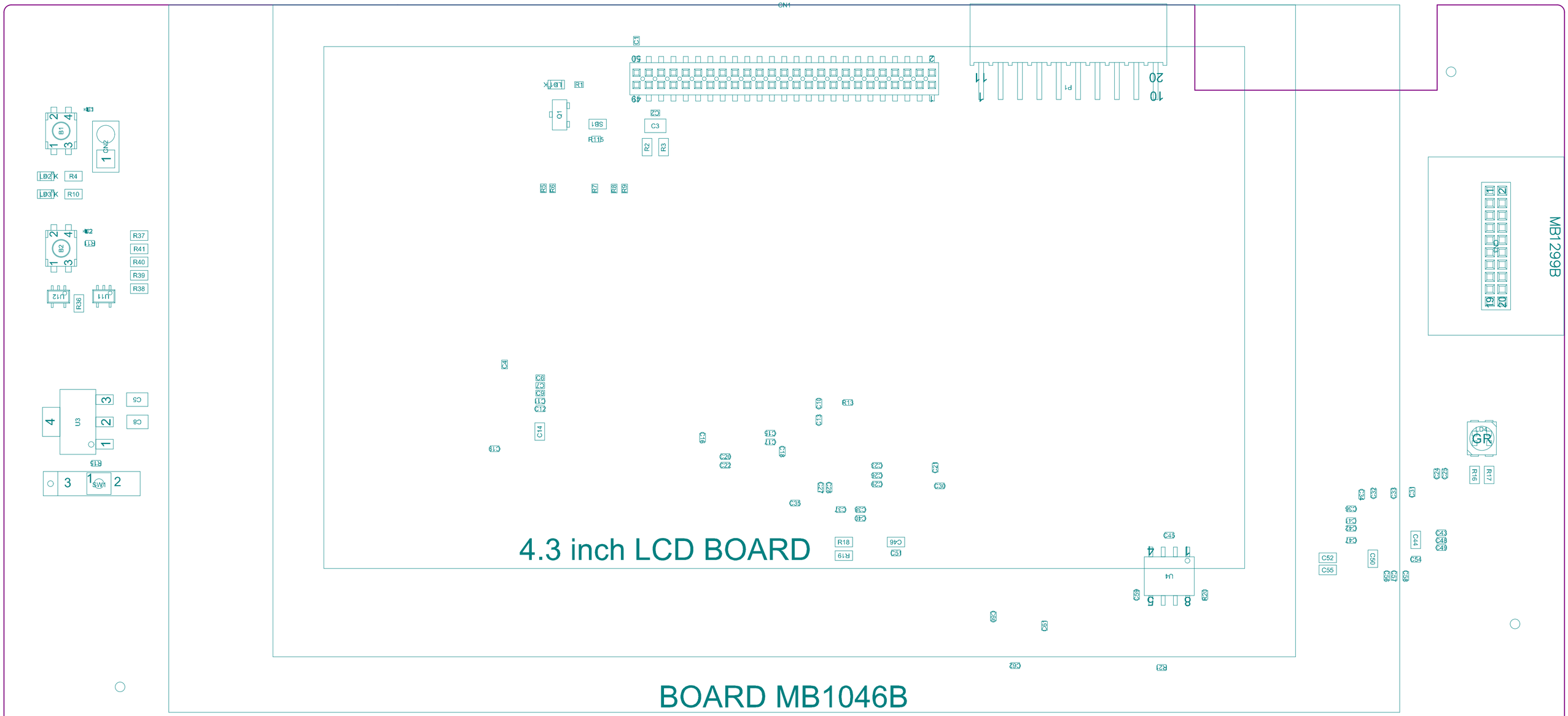


Title: **ST-LINK-V3E SWD**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A3	Date: 21-FEB-20	Sheet: 16 of 17

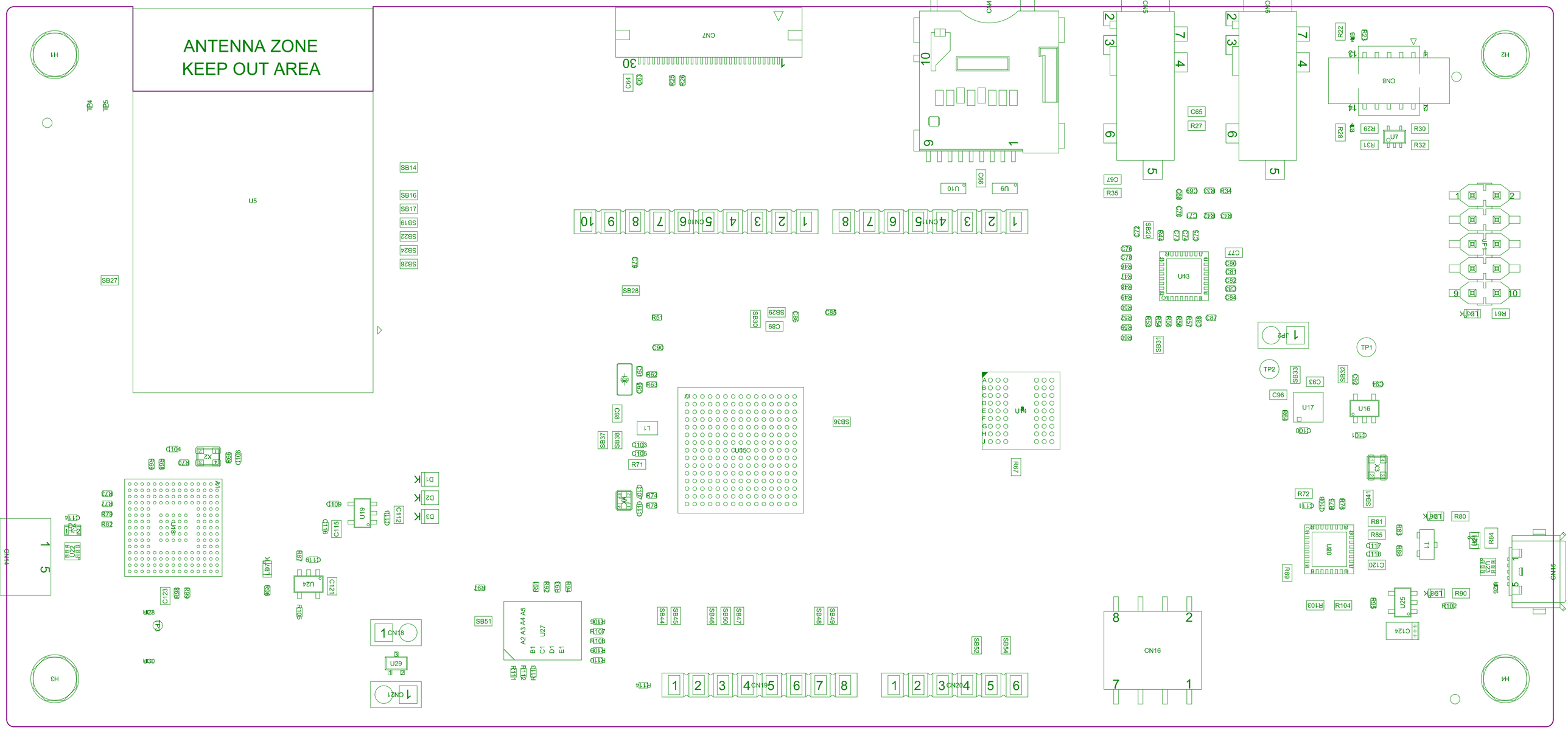
USB_OTG_HS



Title: **USB OTG HS with external PHY**		
Project: **STM32H7B3I-DK**		
Variant: H7B3I		
Revision: C-01		Reference: MB1332
Size: A3	Date: 21-FEB-20	Sheet: 17 of 17



Project: STM32H7B3I-DK	
Layer: M14-Top Assembly	Gerber: .GM14
Variant: H7B3I	MB1332
Date: 21-FEB-20	Rev: C


ANTENNA ZONE
KEEP OUT AREA
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TP1
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JP2
X2
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