

STM32WBA65I-DK1

MB2143

Table of contents

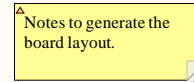
- Sheet 1 : Project overview (this page)
- Sheet 2 : MB1802 TOP: Hierarchical view
- Sheet 3 : MCU
- Sheet 4 : MCU CLOCK & RESET
- Sheet 5 : AUDIO Codec
- Sheet 6 : ARDUINO
- Sheet 7 : STMod+
- Sheet 8 : OLED
- Sheet 9 : BOARD PWR
- Sheet 10 : ST LINK V3EC
- Sheet 11: External Debug Interface

Legend

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

Text to be added to silkscreen.

Warning text.



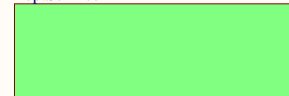
Open Platform License Agreement

The Open Platform License Agreement (“Agreement”) is a binding legal contract between you (“You”) and STMicroelectronics International N.V. (“ST”), a company incorporated under the laws of the Netherlands acting for the purpose of this Agreement through its Swiss branch 39, Chemin du Champ des Filles, 1228 Plan-les-Ouates, Geneva, Switzerland.

By using the enclosed reference designs, schematics, PC board layouts, and documentation, in hardcopy or CAD tool file format (collectively, the “Reference Material”), You are agreeing to be bound by the terms and conditions of this Agreement. Do not use the Reference Material until You have read and agreed to this Agreement terms and conditions. The use of the Reference Material automatically implies the acceptance of the Agreement terms and conditions.

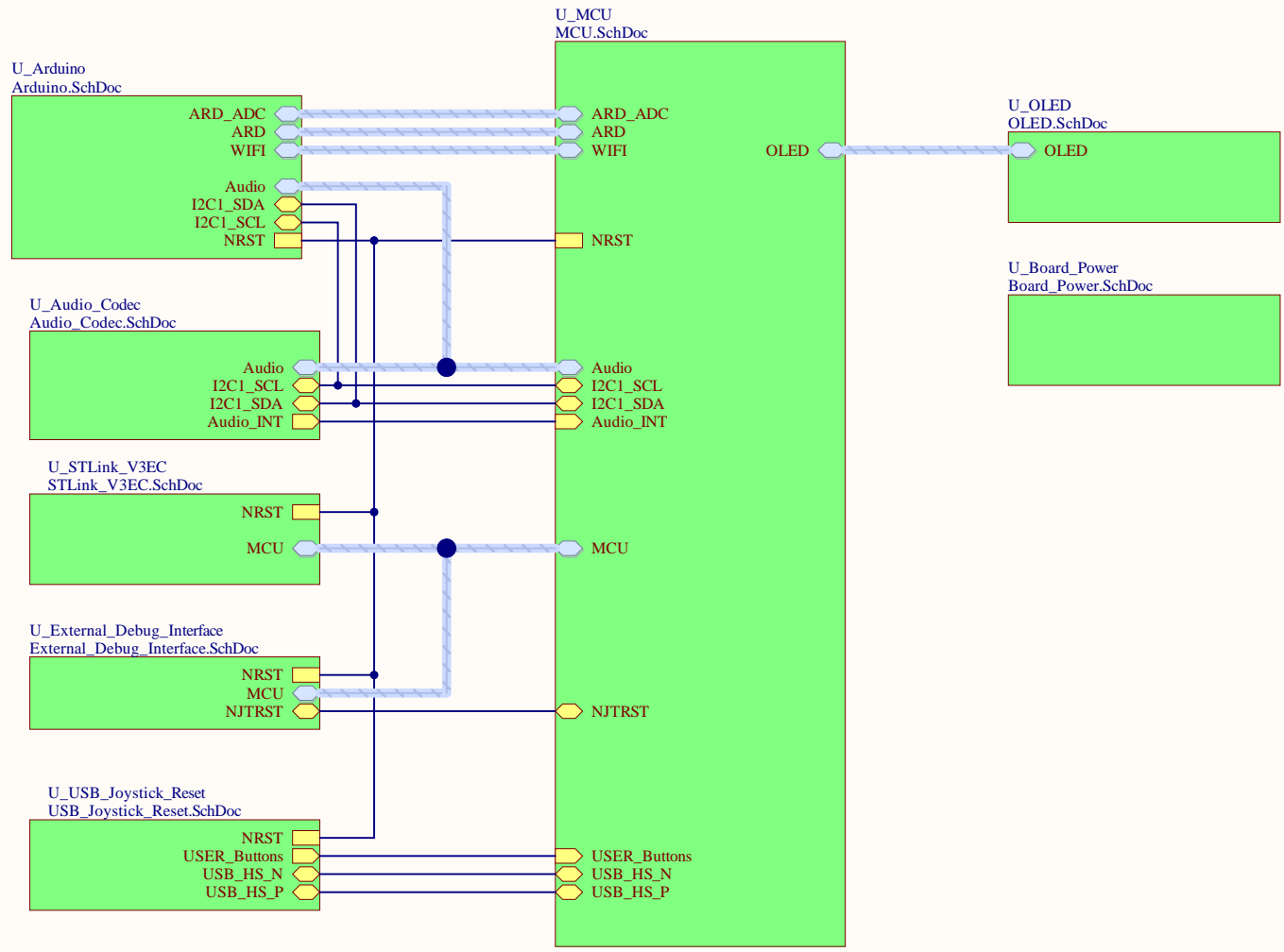
The complete Open Platform License Agreement can be found on www.st.com/opla.

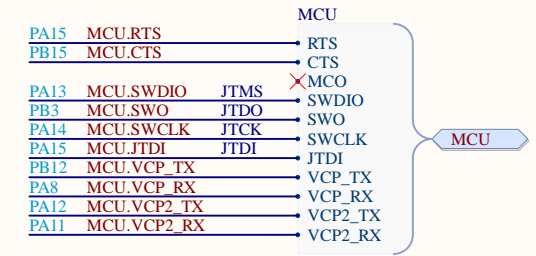
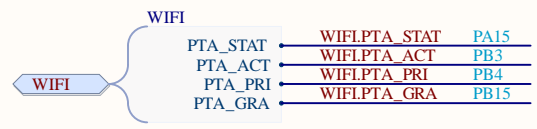
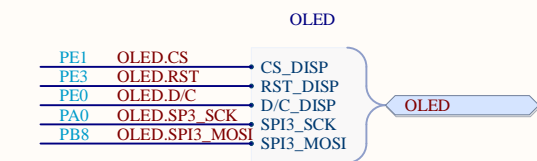
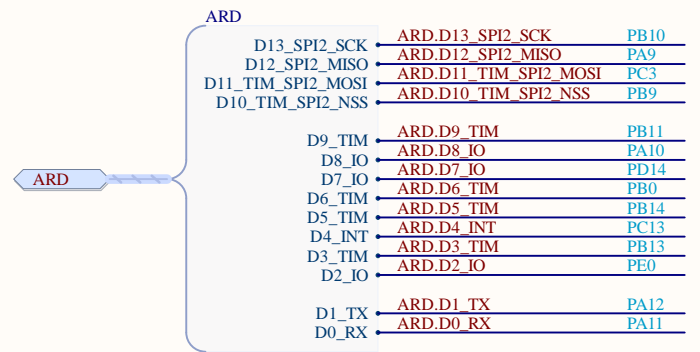
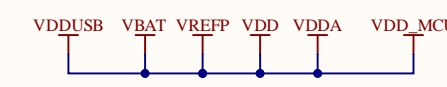
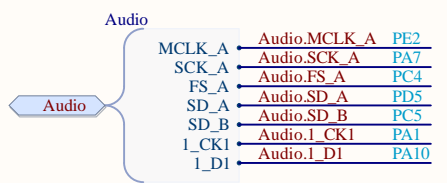
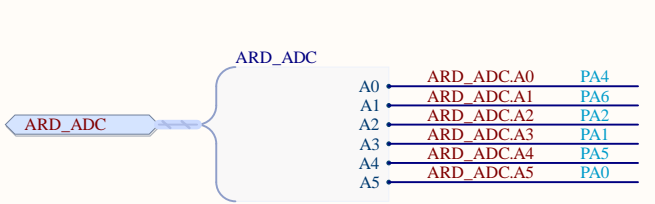
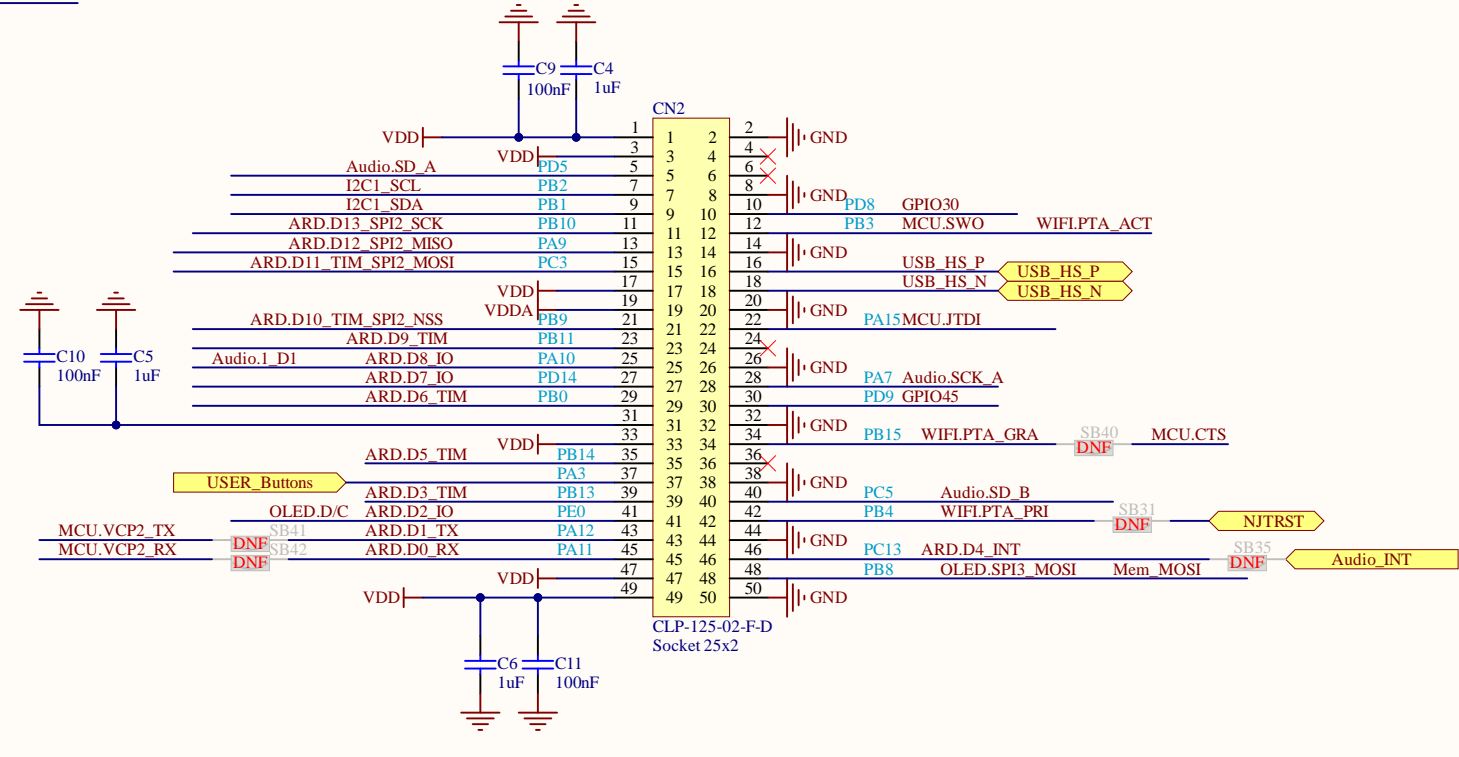
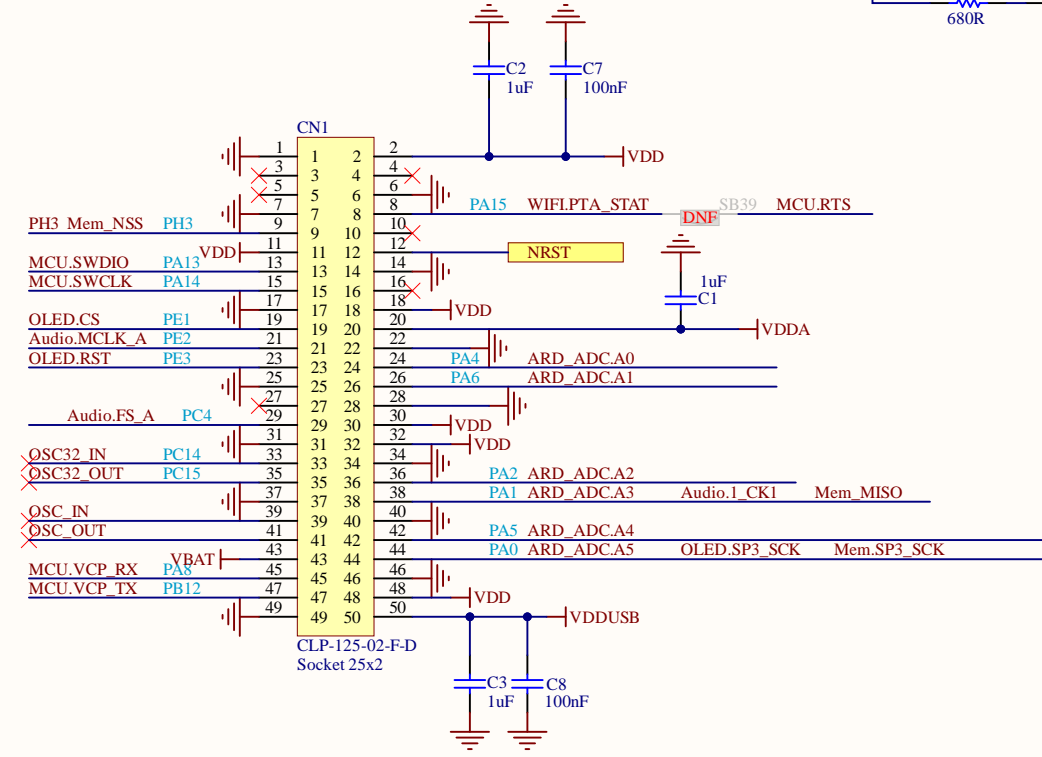
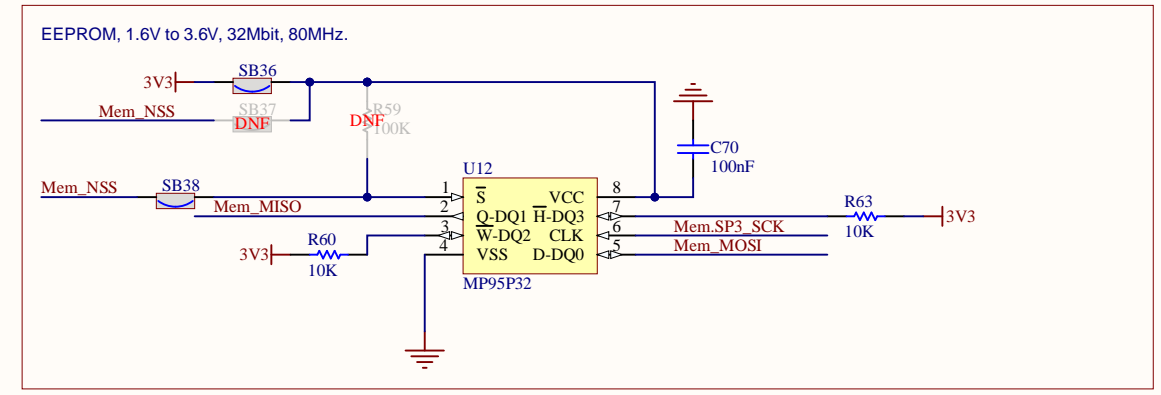
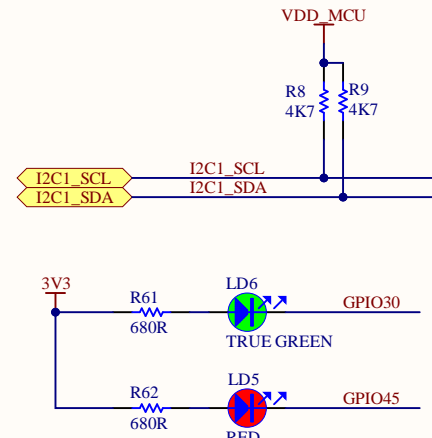
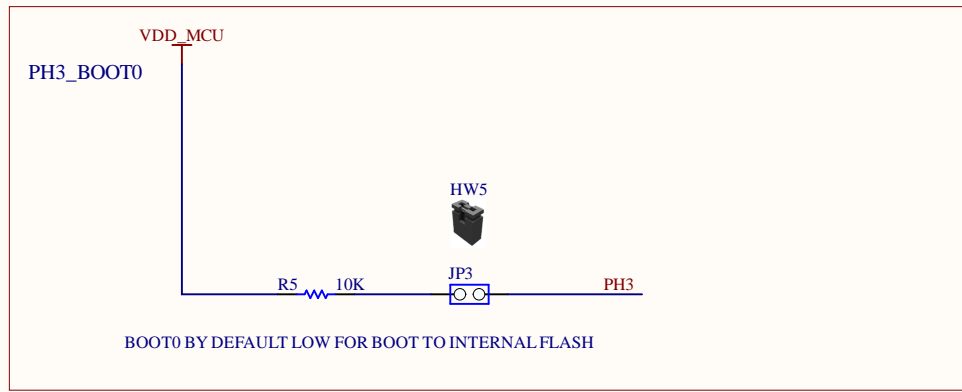
[U_Top](#)
[Top.SchDoc](#)



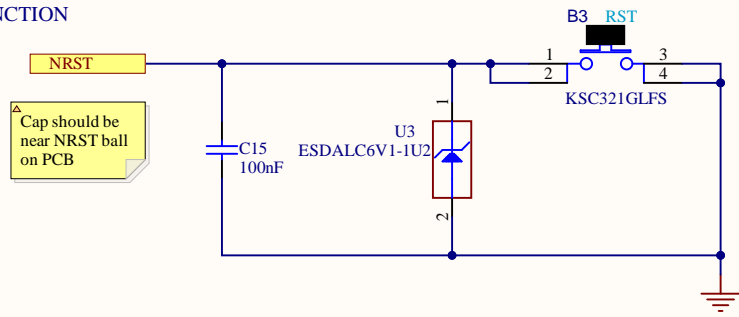
Title: Project overview	
Project: STM32WBA65I-DK1	
Variant: WBA65I	
Revision: A-02	Reference: MB2143
Size: A4	Date: 02-September-24 Sheet: 1 of 11



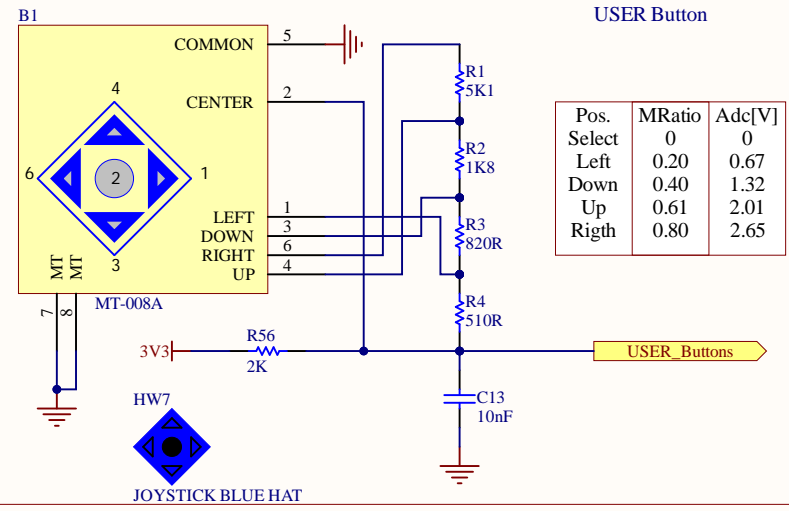




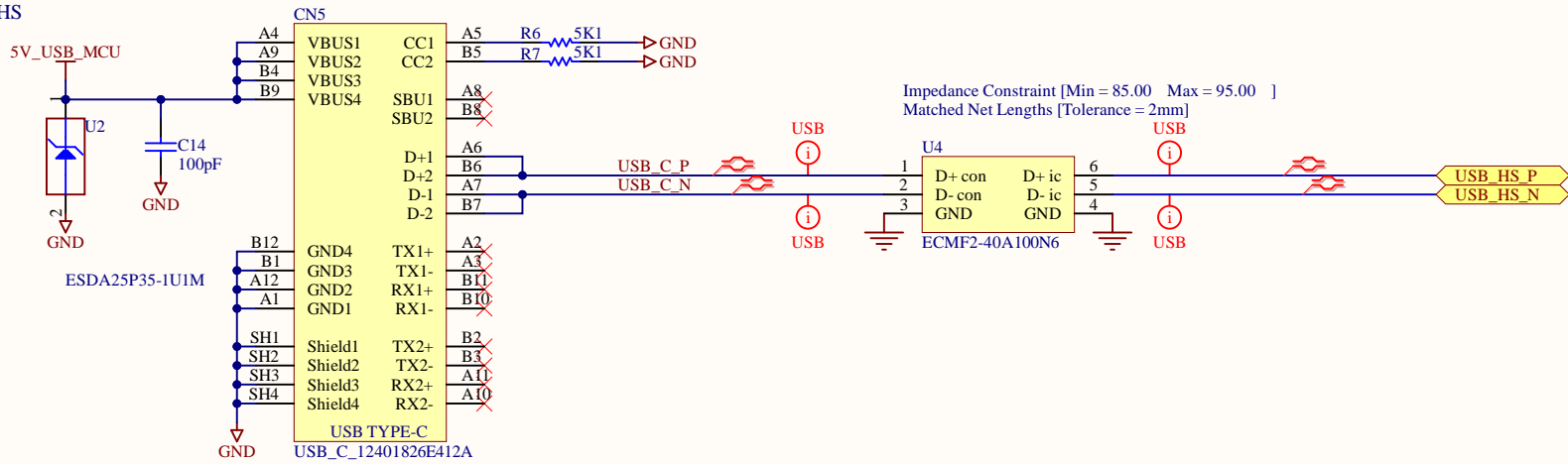
RESET FUNCTION



USER Button



USB C HS



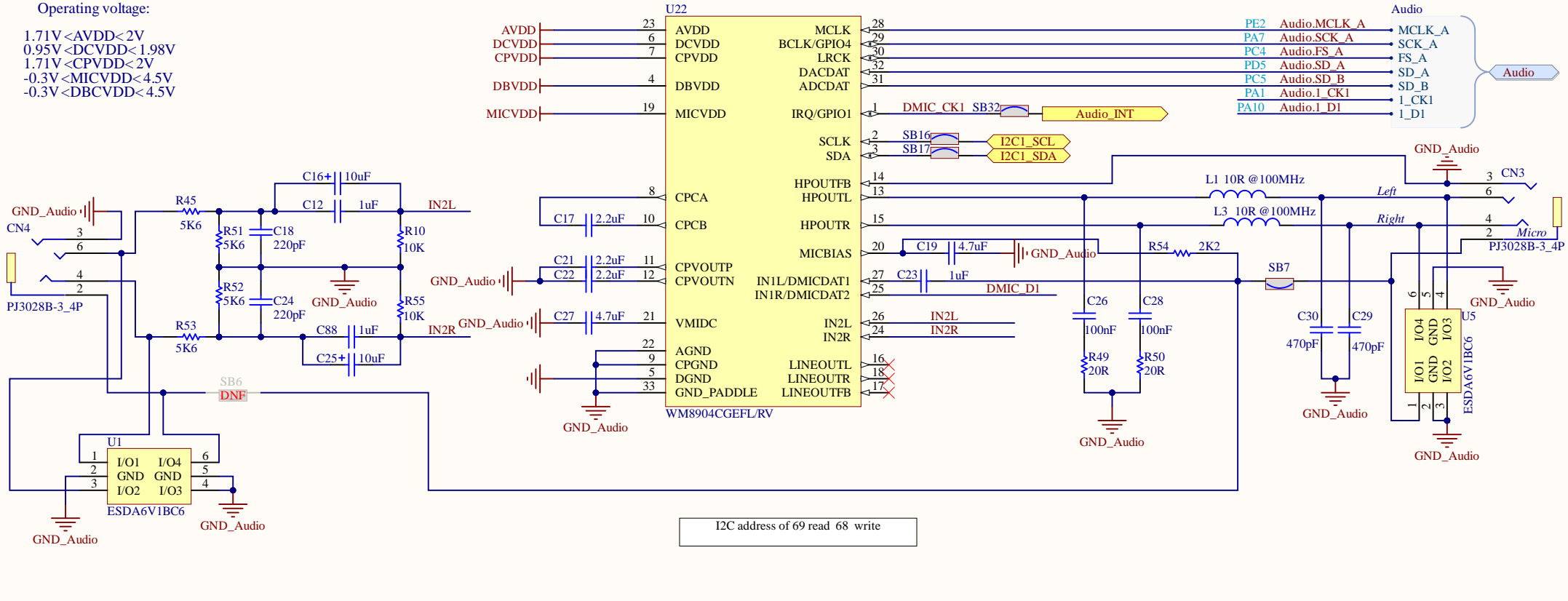
Fitted and Used only when the USB is available on the MCU



AUDIO CODEC

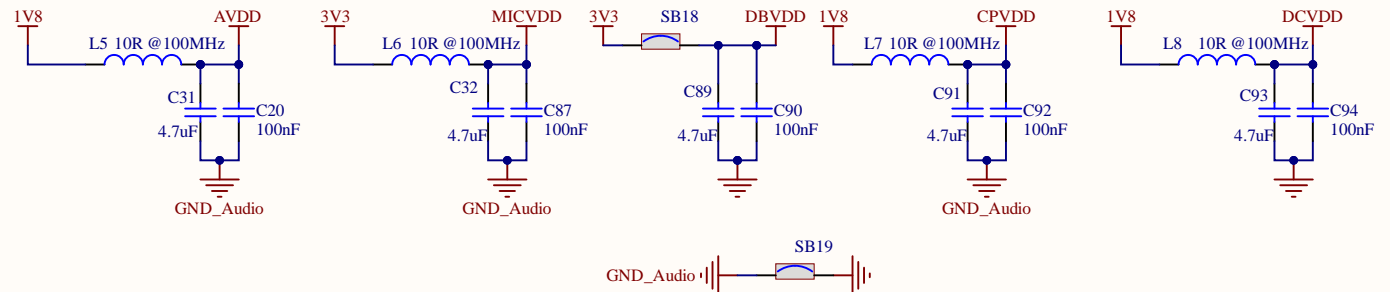
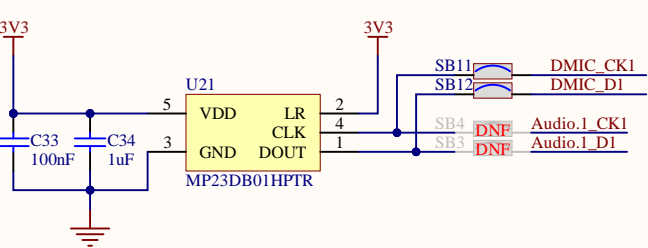
Operating voltage:

- 1.71V <AVDD<2V
- 0.95V <DCVDD<1.98V
- 1.71V <CPVDD<2V
- 0.3V <MICVDD<4.5V
- 0.3V <DBCVDVDD<4.5V

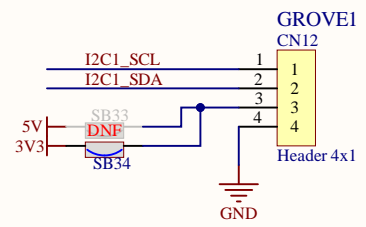


On-board MEMS microphone

Operating voltage: 1.6V <VDD<3.6V



ARDUINO



GROVE1
CN12
Header 4x1

Audio

MCLK_A	Audio.MCLK_A	PE2
SCK_A	Audio.SCK_A	PA7
FS_A	Audio.FS_A	PC4
SD_A	Audio.SD_A	PD5
SD_B	Audio.SD_B	PC5
I2C1	Audio.I2C1	PA1
I2C1_D1	Audio.I2C1_D1	PA10

ARD_ADC

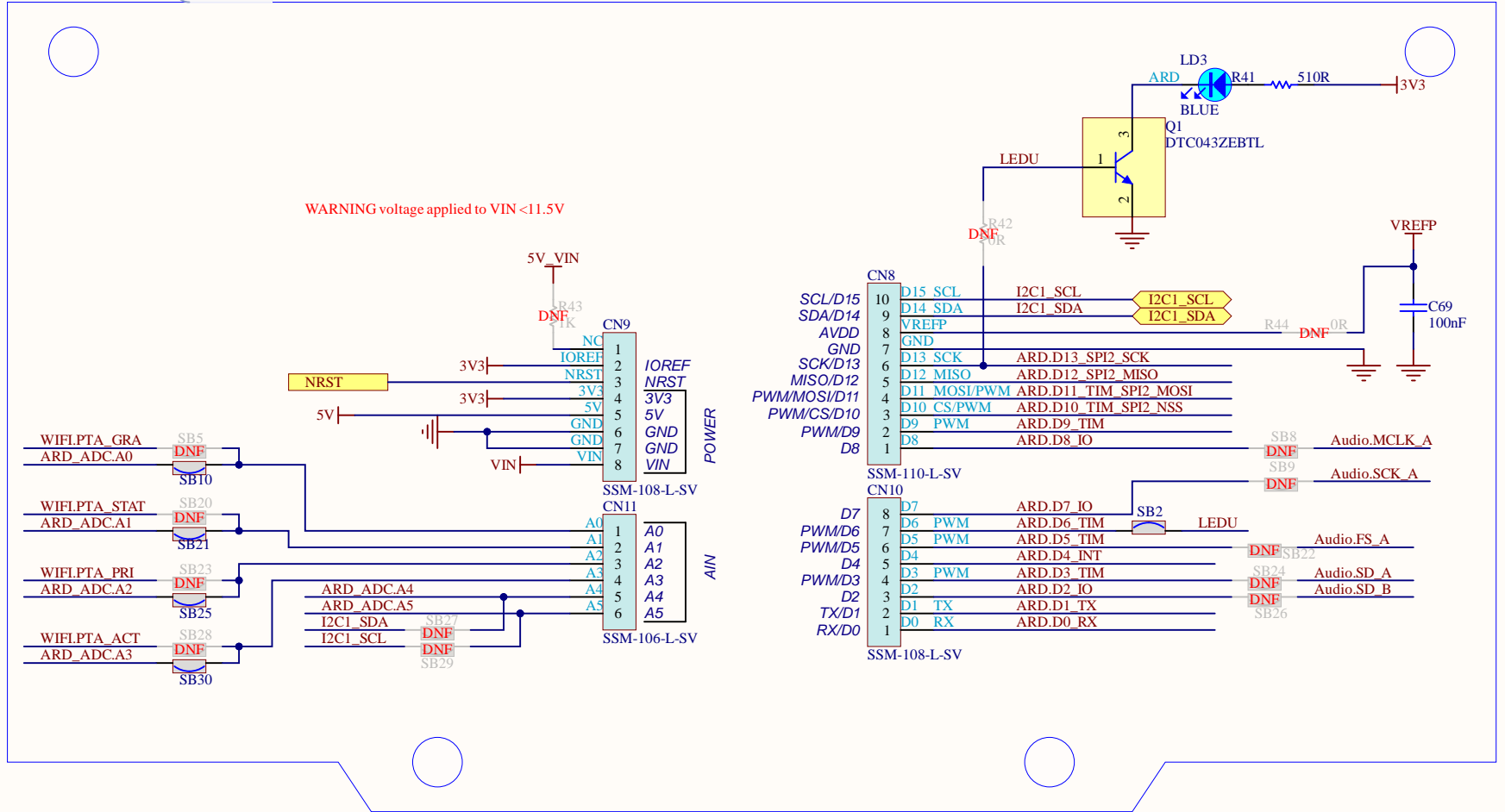
A0	ARD_ADC.A0	PA4
A1	ARD_ADC.A1	PA6
A2	ARD_ADC.A2	PA2
A3	ARD_ADC.A3	PA1
A4	ARD_ADC.A4	PA5
A5	ARD_ADC.A5	PA0

WIFI

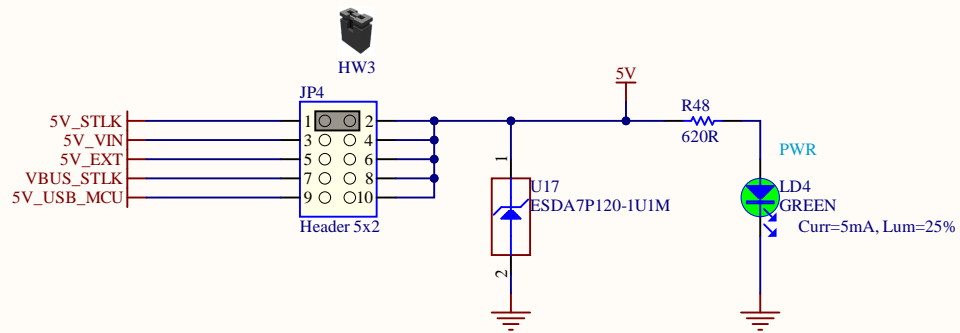
PTA_STAT	WIFI.PTA_STAT	PA15
PTA_ACT	WIFI.PTA_ACT	PB3
PTA_PRI	WIFI.PTA_PRI	PB4
PTA_GRA	WIFI.PTA_GRA	PB15

ARD

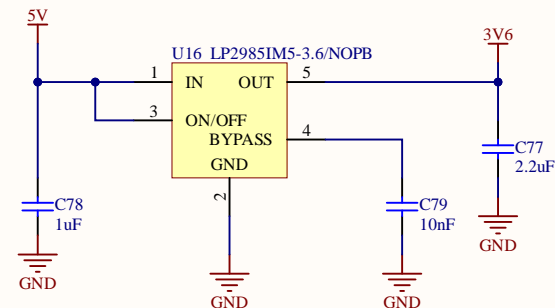
D13_SPI2_SCK	ARD.D13_SPI2_SCK	PB10
D12_SPI2_MISO	ARD.D12_SPI2_MISO	PA9
D11_TIM_SPI2_MOSI	ARD.D11_TIM_SPI2_MOSI	PC3
D10_TIM_SPI2_NSS	ARD.D10_TIM_SPI2_NSS	PB9
D9_TIM	ARD.D9_TIM	PB11
D8_IO	ARD.D8_IO	PA10
D7_IO	ARD.D7_IO	PD14
D6_TIM	ARD.D6_TIM	PB0
D5_TIM	ARD.D5_TIM	PB14
D4_INT	ARD.D4_INT	PC13
D3_TIM	ARD.D3_TIM	PB13
D2_IO	ARD.D2_IO	PE0
D1_TX	ARD.D1_TX	PA12
D0_RX	ARD.D0_RX	PA11



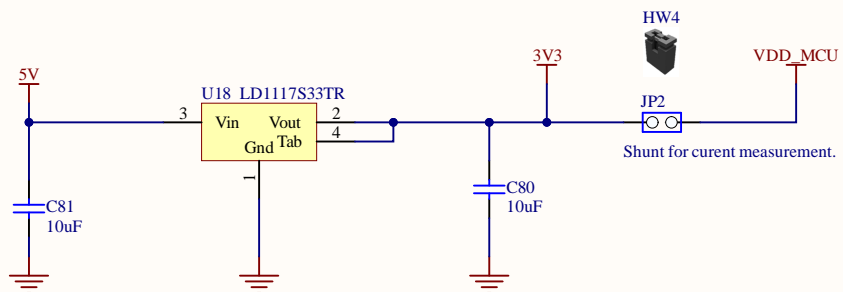
5V PWR SOURCE SELECTION



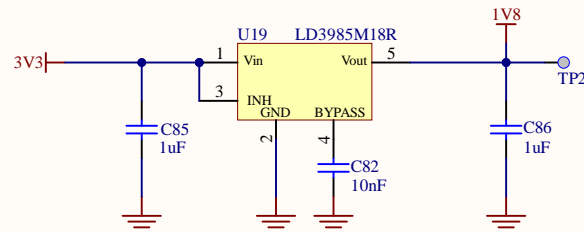
PWR SOURCE: 3V6 / 150mA(OLED)



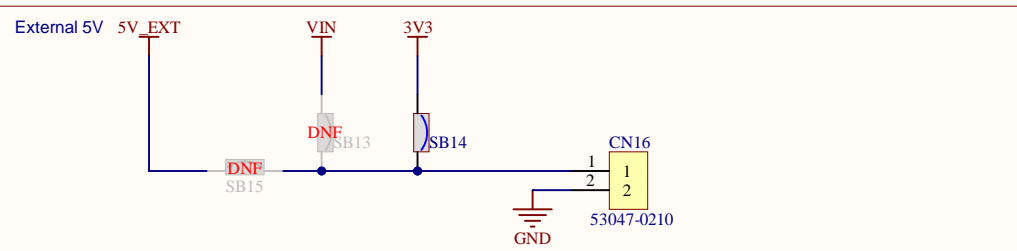
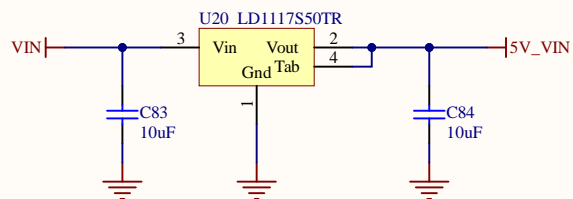
3V3 PWR SOURCE: 3V3 / 800mA

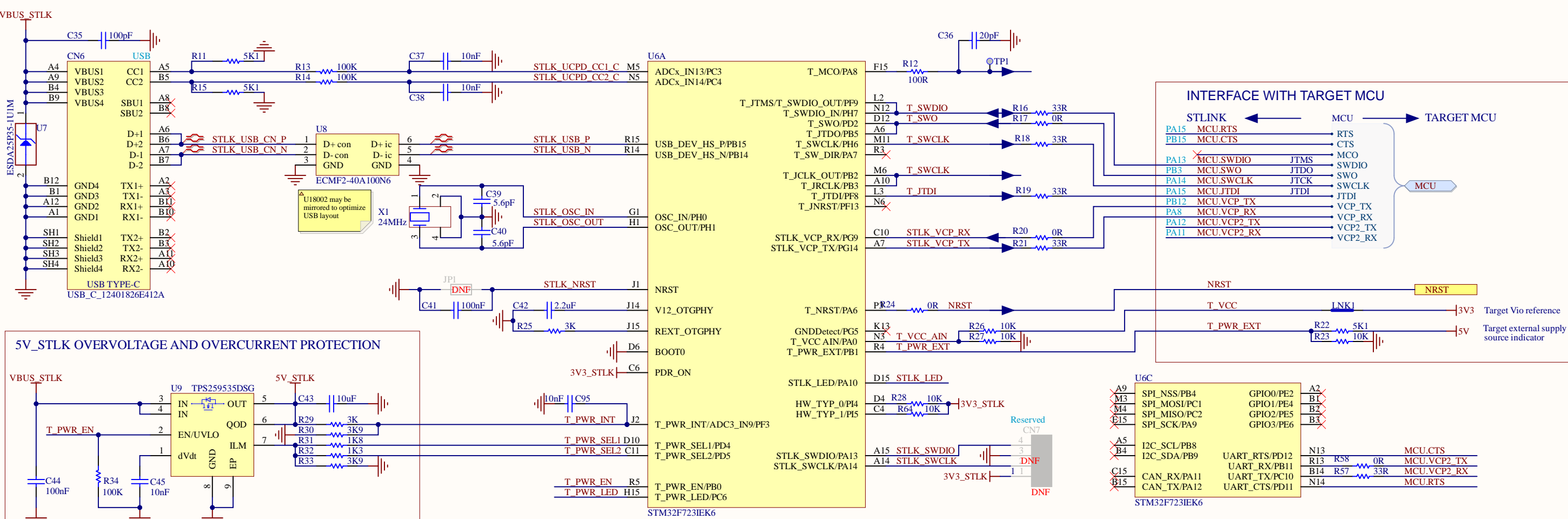


1V8 / 150mA (Audio codec)

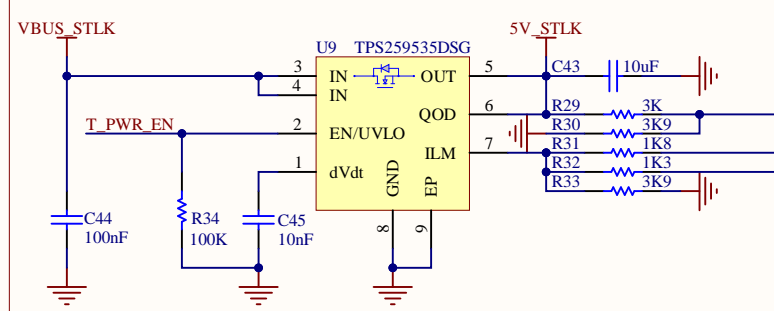


VIN FROM ARDUINO up to 12V: OUTPUT 5V / Up to 800mA (depend of VIN)





5V_STLK OVERVOLTAGE AND OVERCURRENT PROTECTION

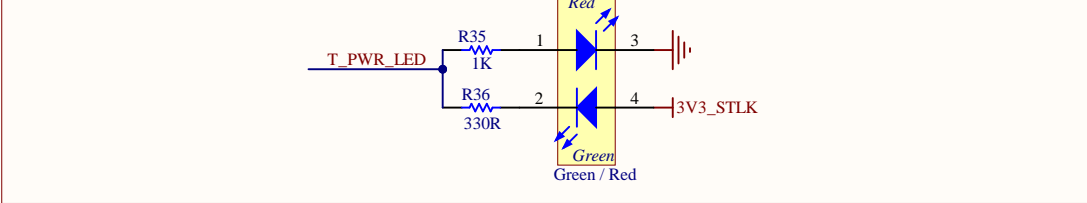


5V_STLK OVERCURRENT PROTECTION MANAGEMENT

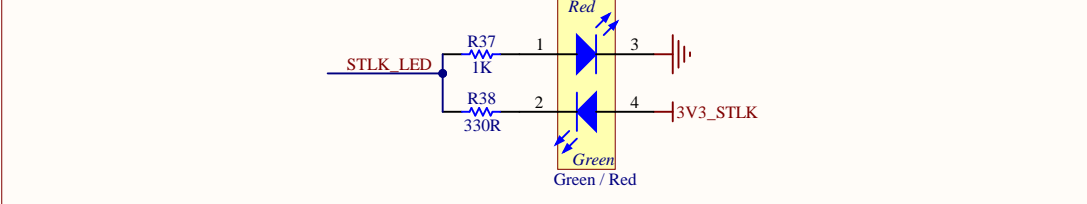
	T_PWR_SEL2/PD5	T_PWR_SEL1/PD4
PowerDefault.SNK (current limit: 550mA)	Hi-Z	Hi-Z
Power1.5.SNK (current limit: 1.66A)	Hi-Z	0
Power3.0.SNK (current limit: 3.2A)	0	0

Hi-Z = IO set in high impedance

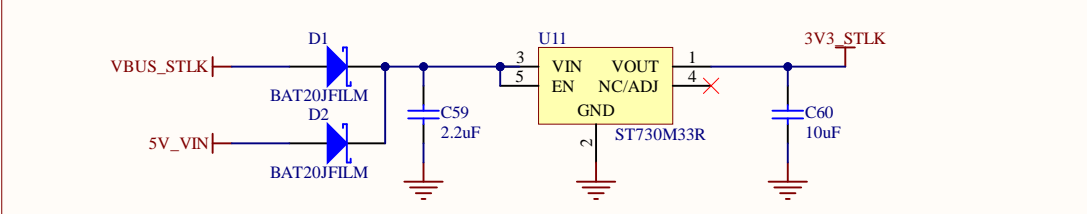
LED POWER STATUS



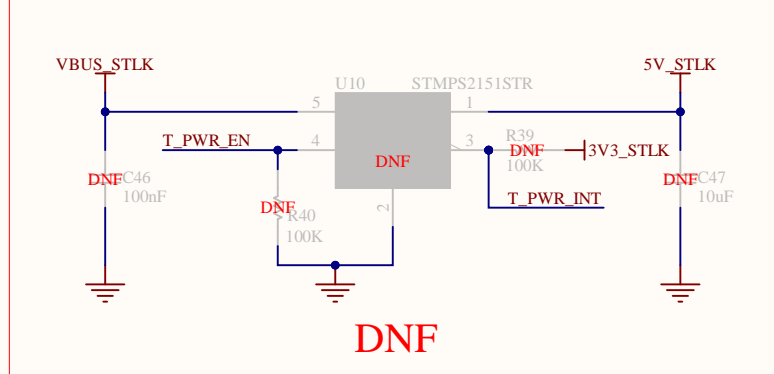
LED STLINK



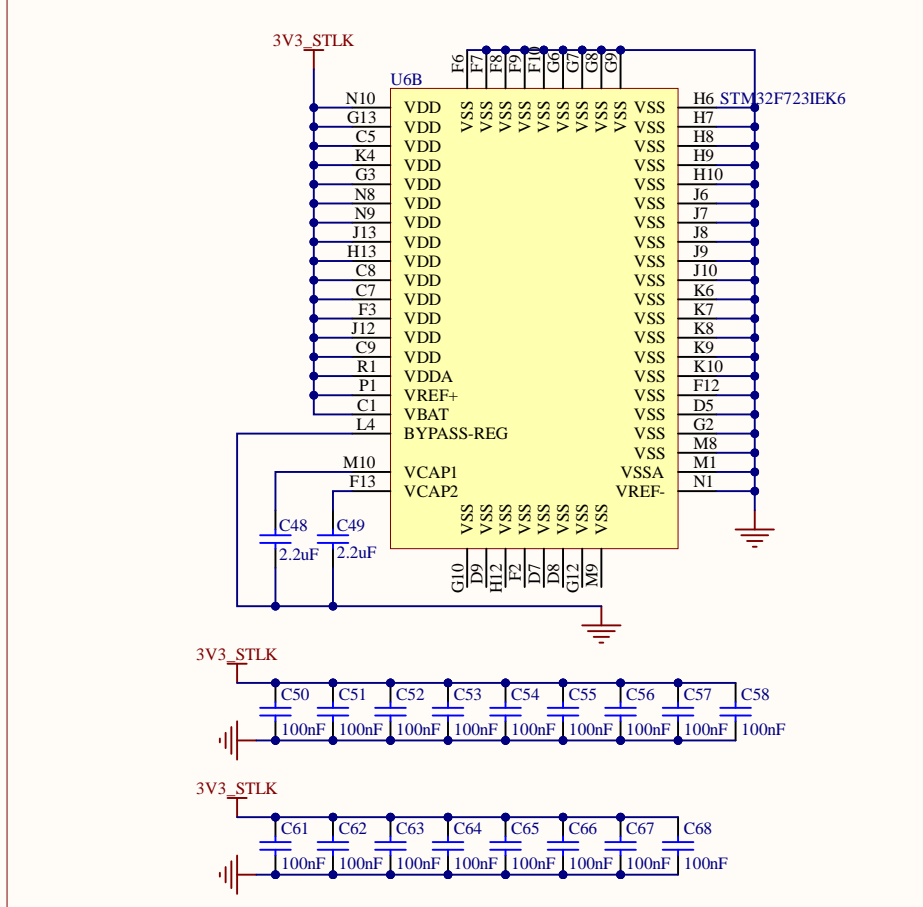
ST-LINK POWER (3V3/300mA)



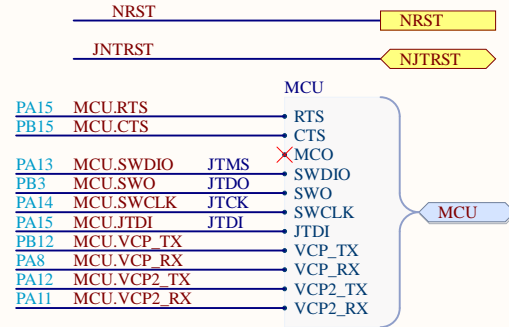
STMP52151STR is backup of the TPS25953DSG



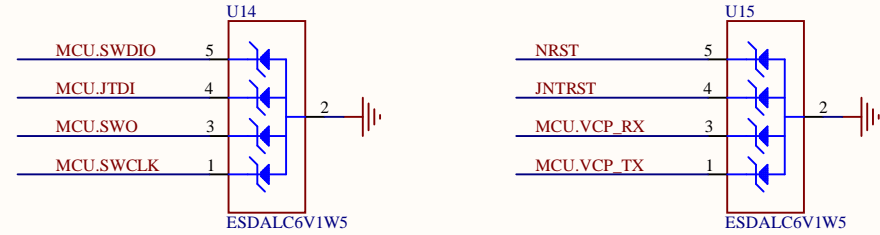
STLINK MCU POWER



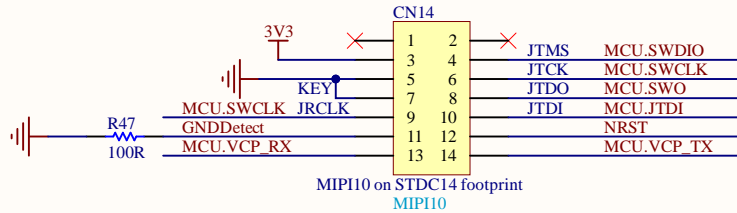
EXTERNAL DEBUGGER INTERFACE



ESD PROTECTIONS



STDC14 RECEIVER (Optional)



TAG RECEIVER (Optional)

