

STM32G474E-EVAL

MB1397

Table of contents

Sheet 1: Project overview (this page)

Sheet 2: MB1397_TOP

Sheet 3: STM32_microcontroller_IOs

Sheet 4: STM32_microcontroller_Power

Sheet 5: USB_PD

Sheet 6: USB-TYPEC_CON

Sheet 7: FMC Memory

Sheet 8: QSPI Memory

Sheet 9: Audio

Sheet 10: LCD & SD Card

Sheet 11: RS232 & RS485

Sheet 12: FDCAN

Sheet 13: Analog Interfaces

Sheet 14: Peripherals

Sheet 15: SmartCard

Sheet 16: MotorControl

Sheet 17: Extension Connector

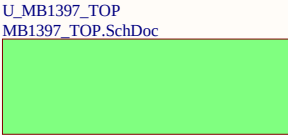
Sheet 18: Debug connector

Sheet 19: Multi-Function Expander

Sheet 20: Power Board

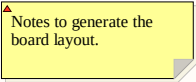
Sheet 21: ST-LINK/V3E-SWD Module

Sheet 22: HW Mechanical parts



Legend

- General comment such as function title, configuration, ...
- Text to be added to silkscreen.
- Warning text.



OPEN PLATFORM LICENSE AGREEMENT

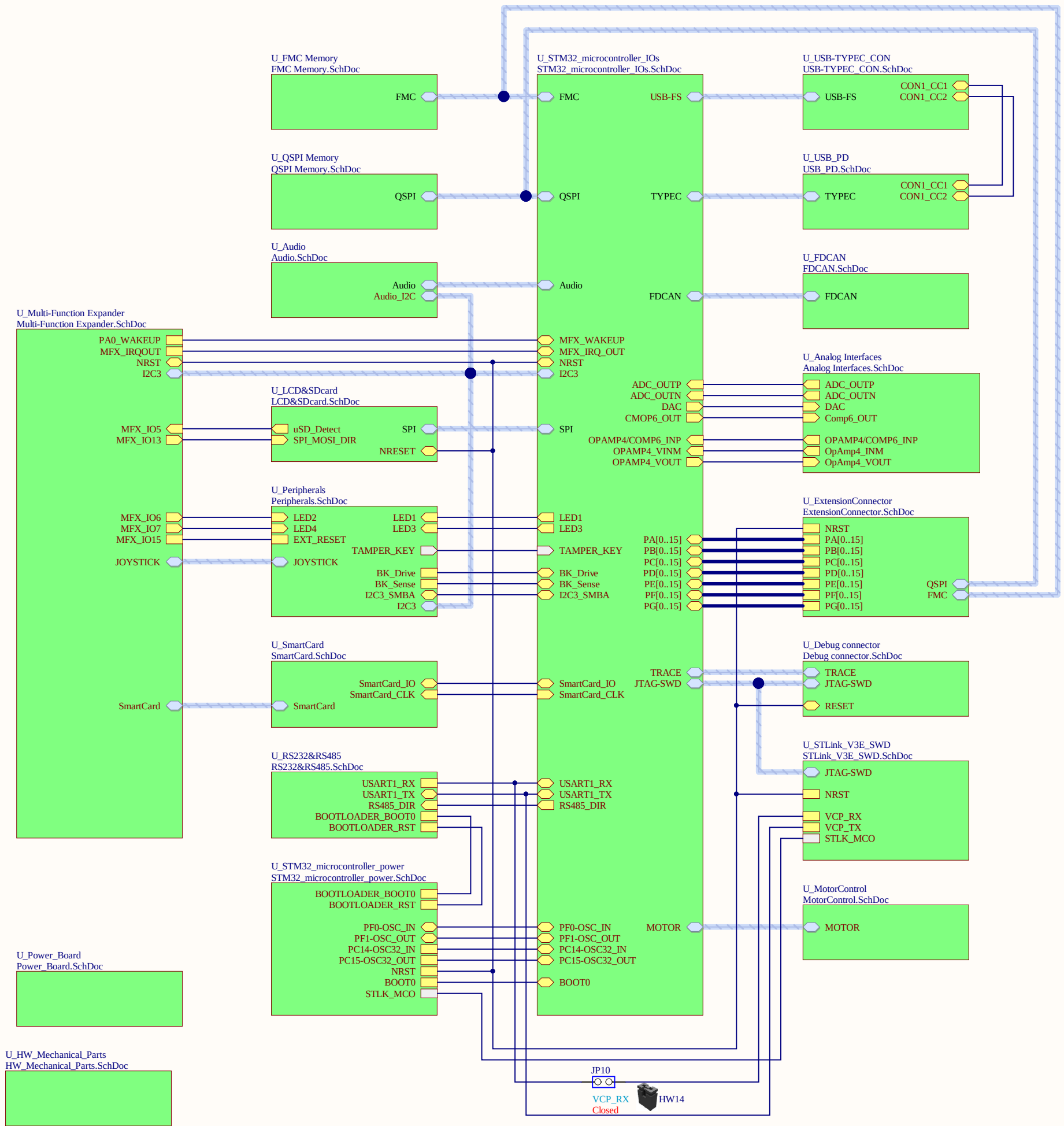
The Open Platform License Agreement (“Agreement”) is a binding legal contract between you (“You”) and STMicroelectronics International N.V. (“ST”), a company incorporated under the laws of the Netherlands acting for the purpose of this Agreement through its Swiss branch 39, Chemin du Champ des Filles,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

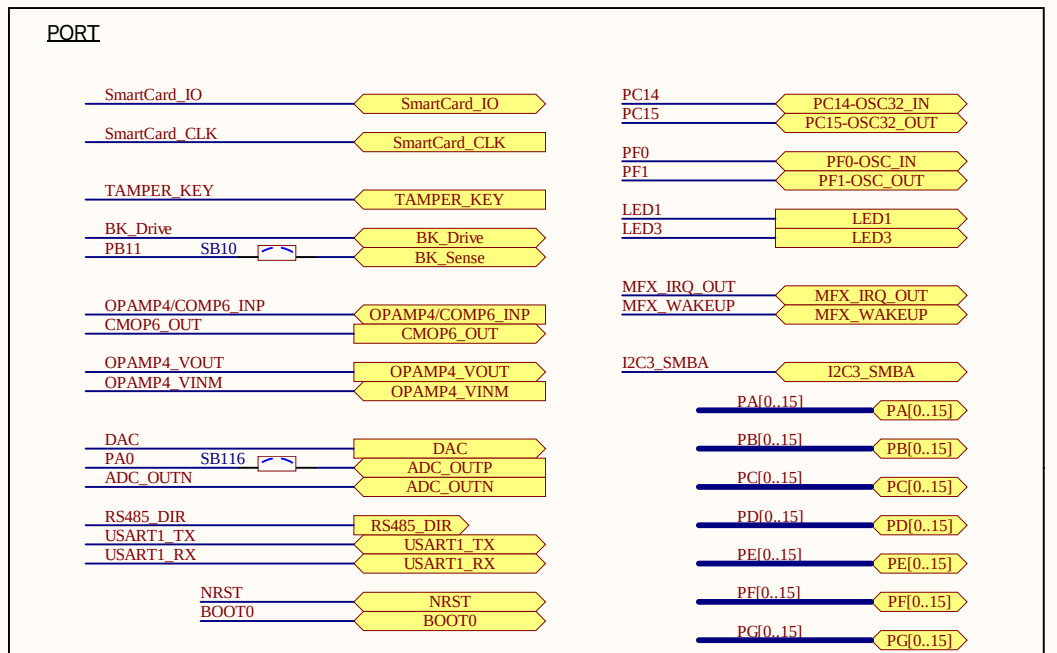
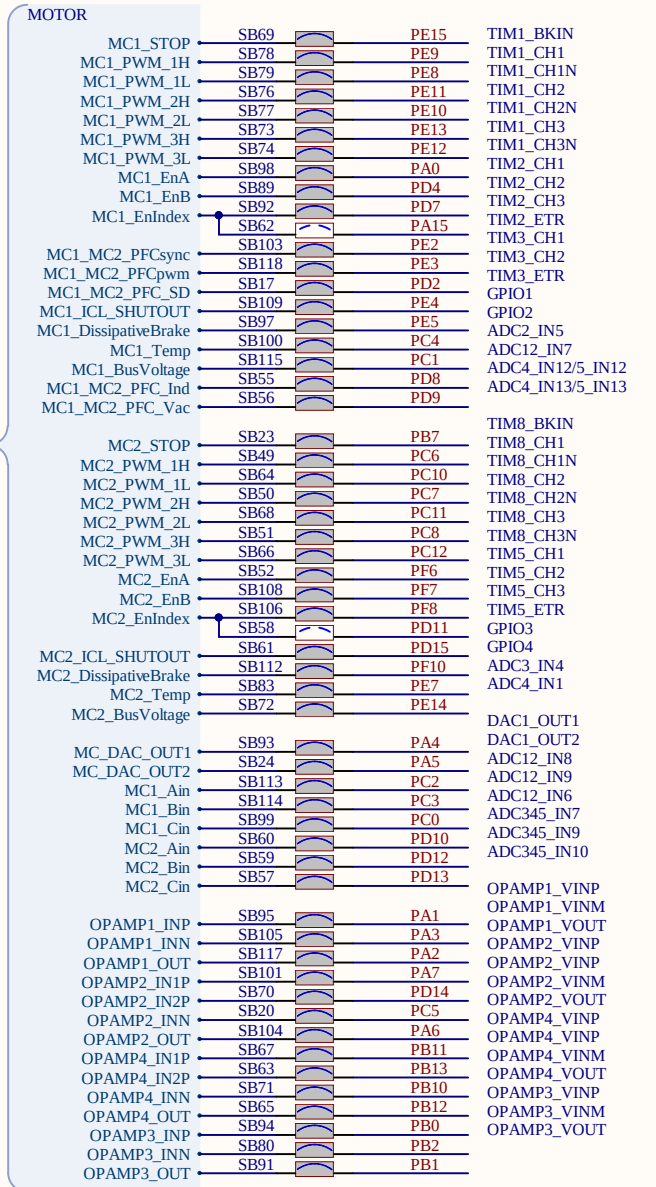
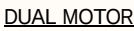
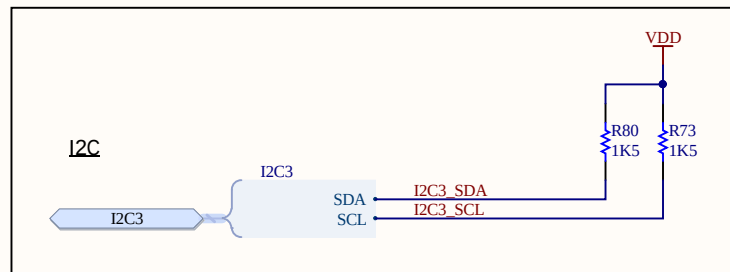
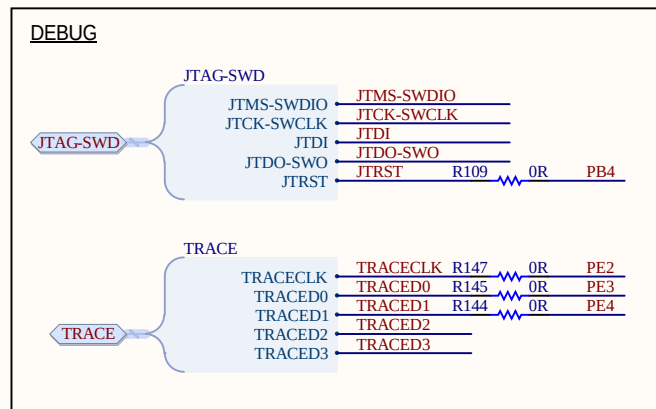
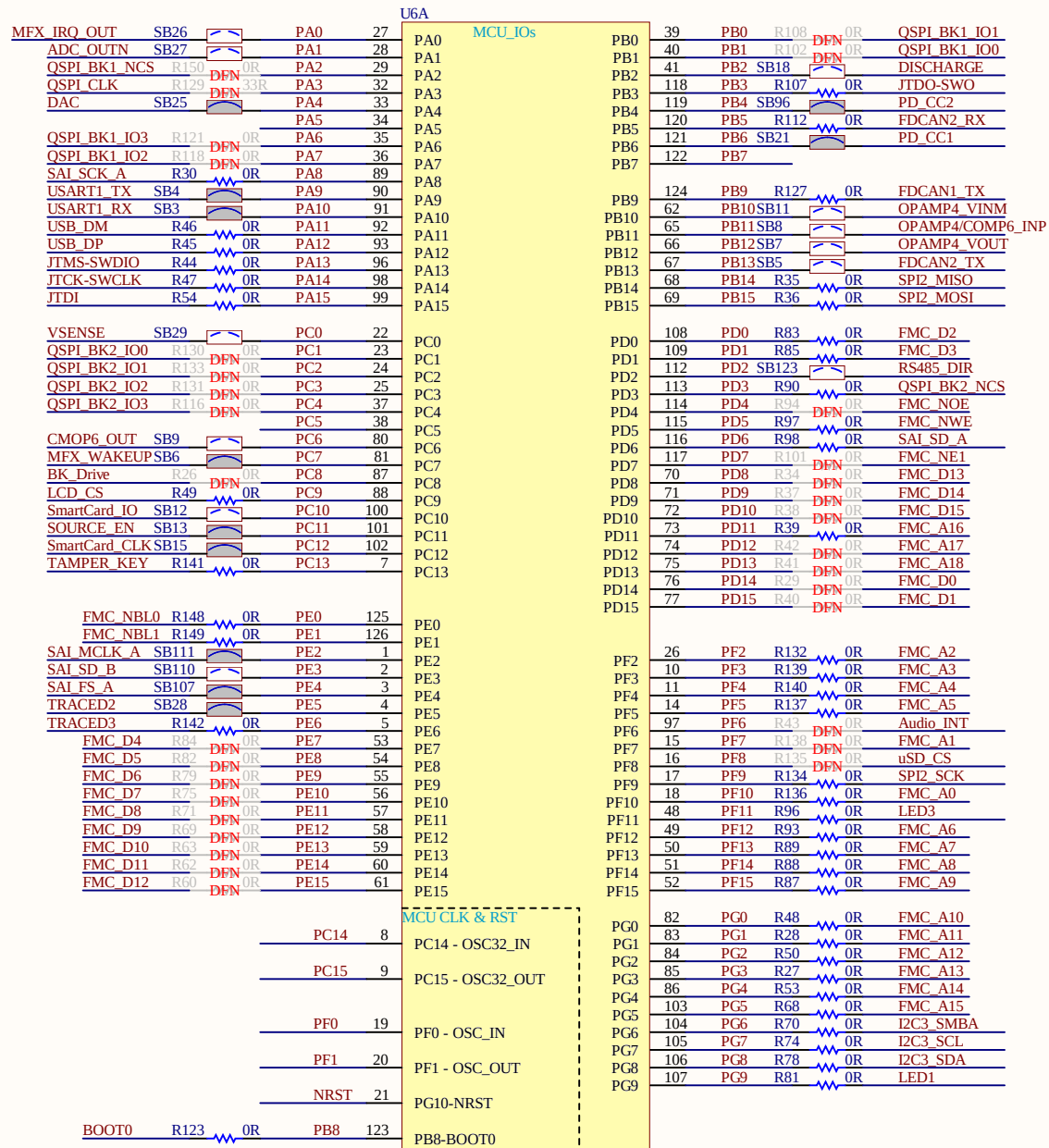
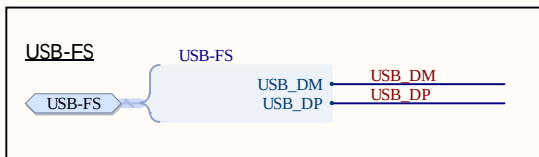
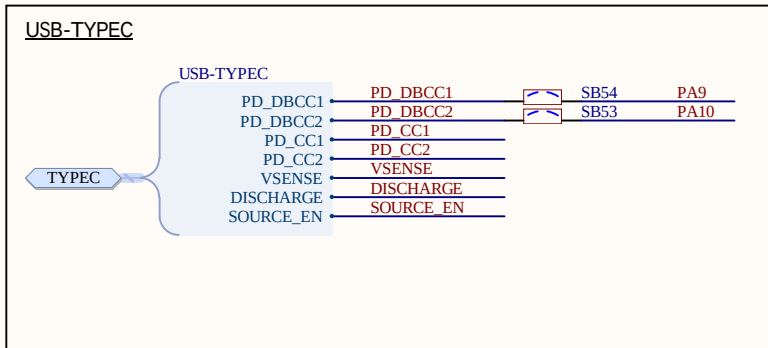
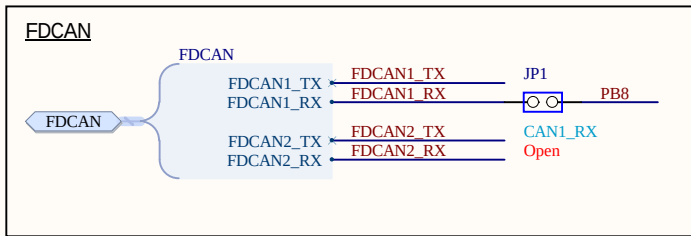
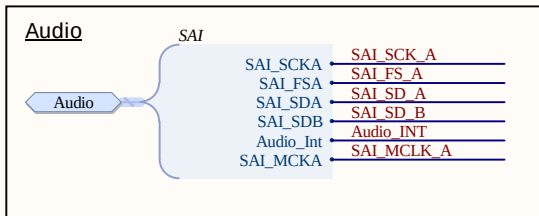
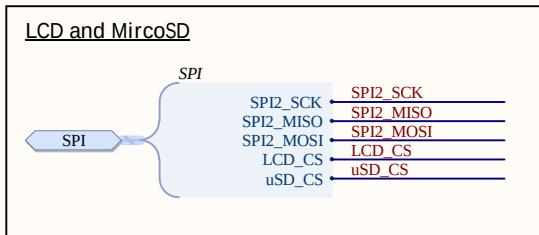
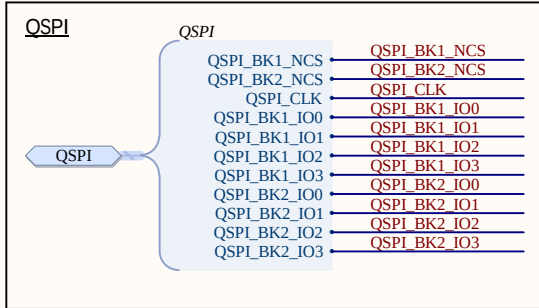
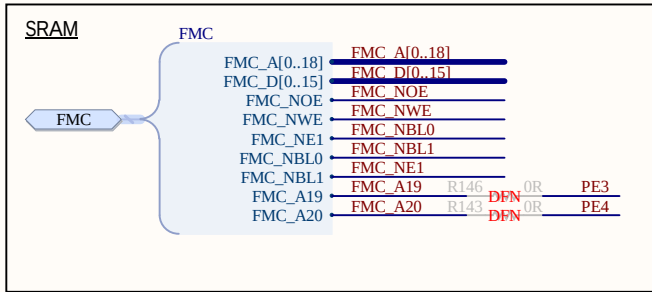
The complete Open Platform License Agreement can be found on www.st.com/opla.

Title: Project overview		
Project: STM32G474E-EVAL		
Variant: G474EMC		
Revision: B-05	Reference: MB1397	
Size: A4	Date: 21-MAY-19	Sheet: 1 of 22



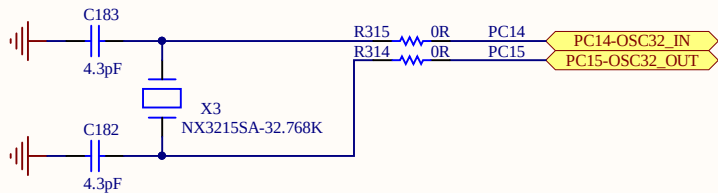


STM32G474QET6 MCU I/Os

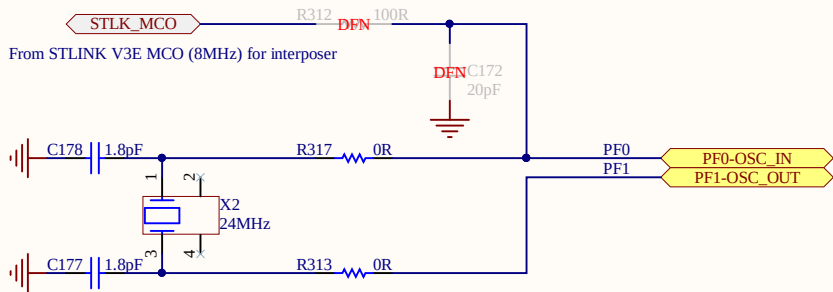


MCU POWER, CLOCK, RESET & BOOT

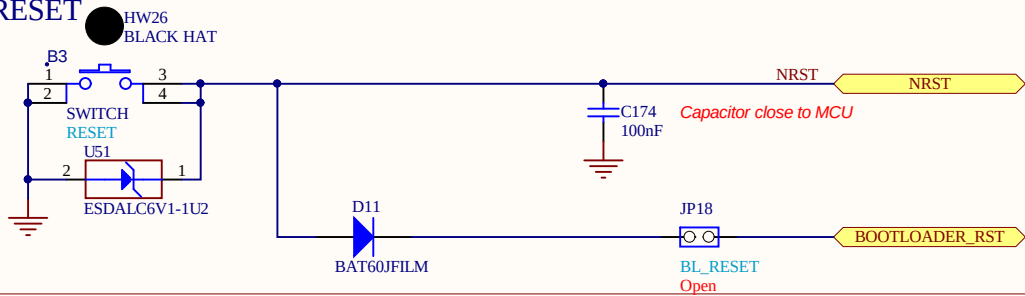
32kHz Clock



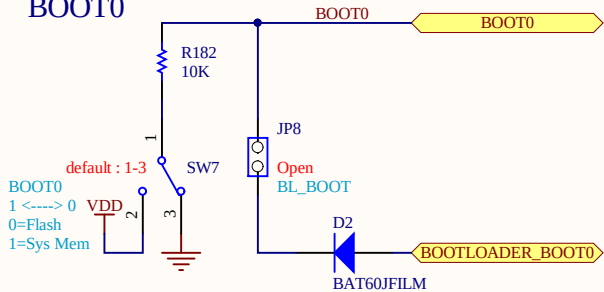
24MHz Clock



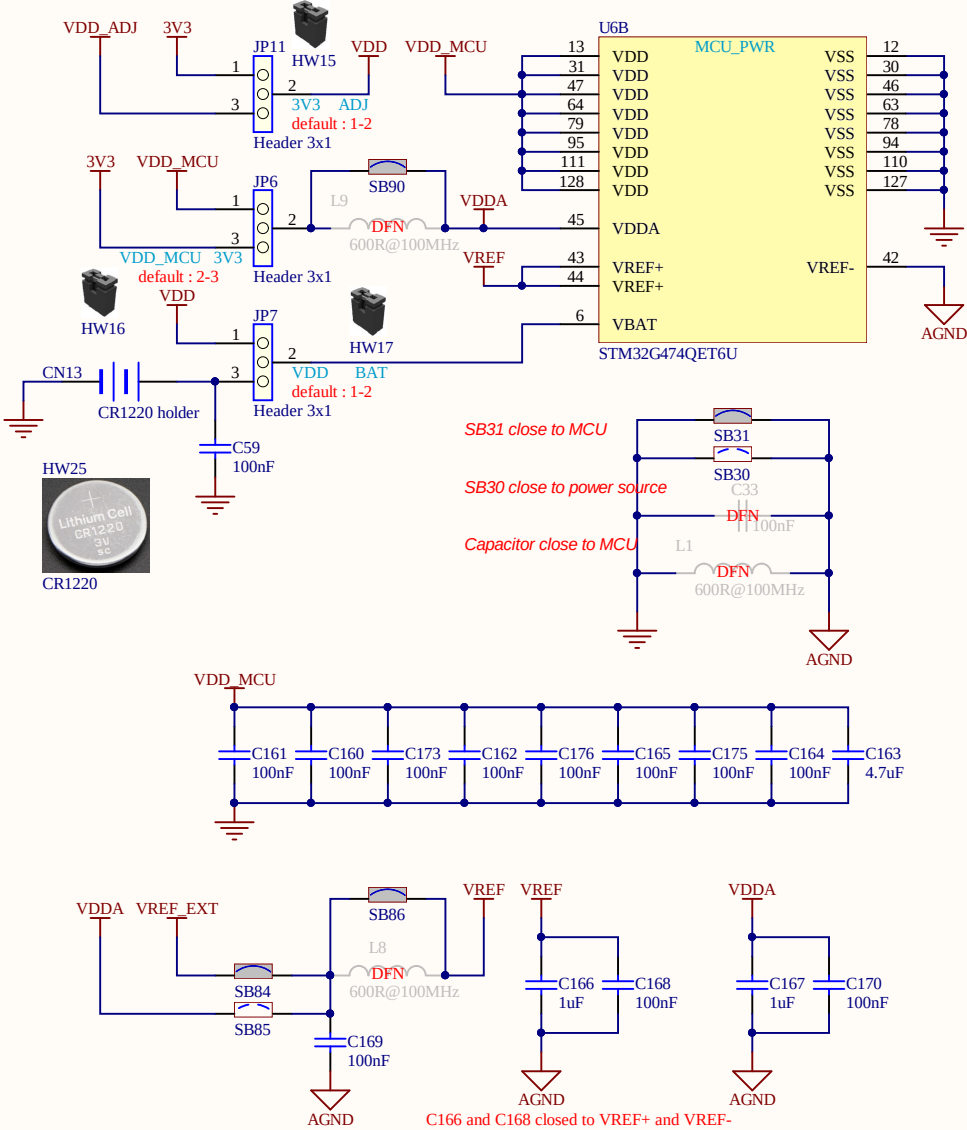
RESET



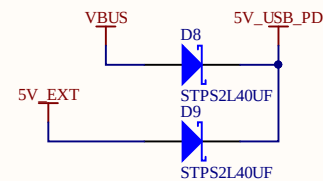
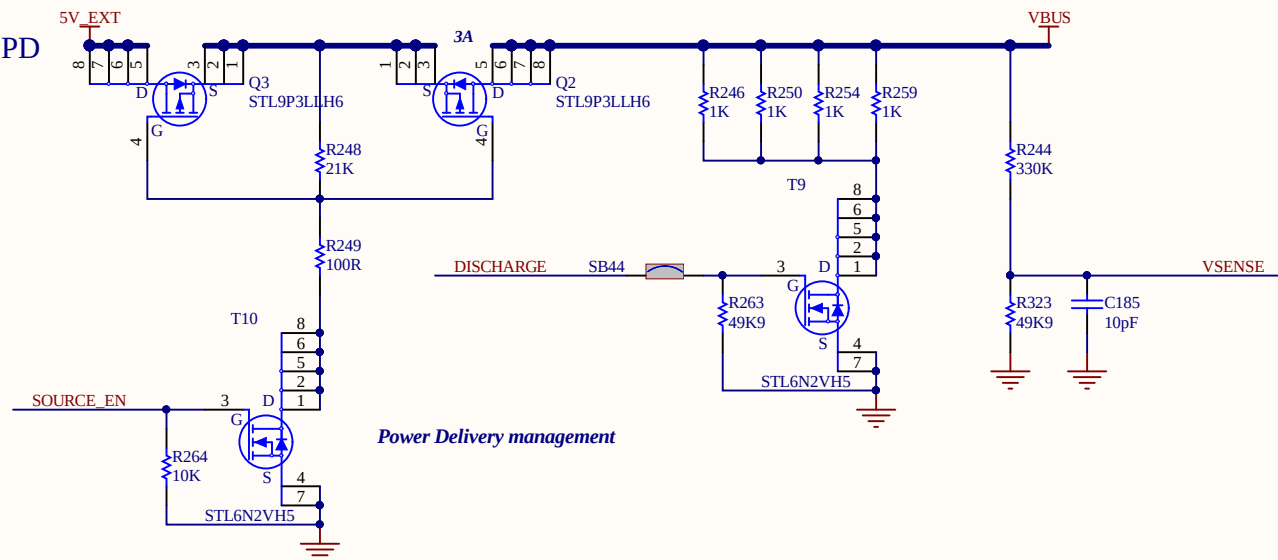
BOOT0



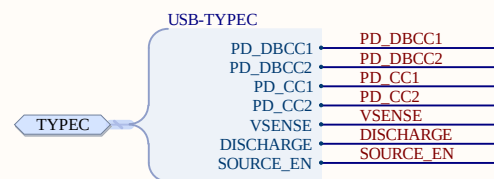
MCU POWER



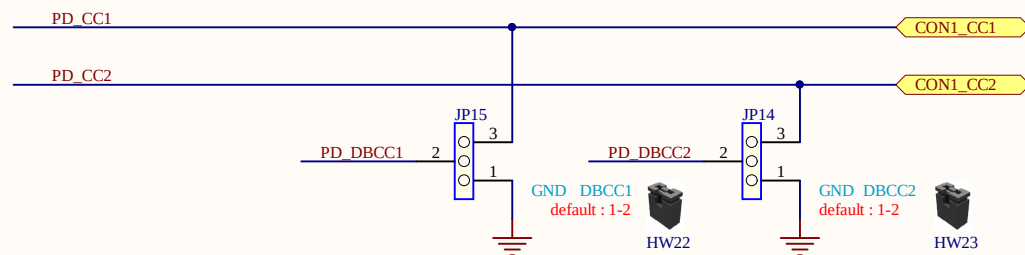
USB PD



USB-TYPEC



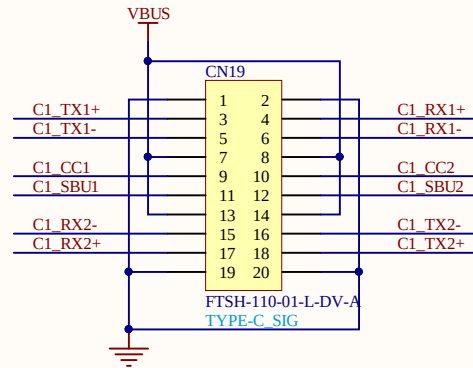
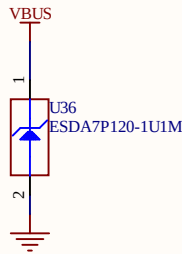
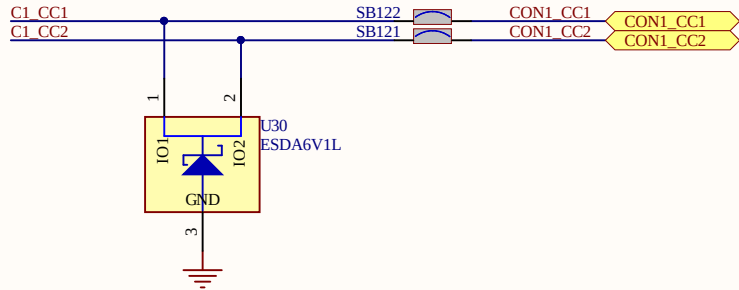
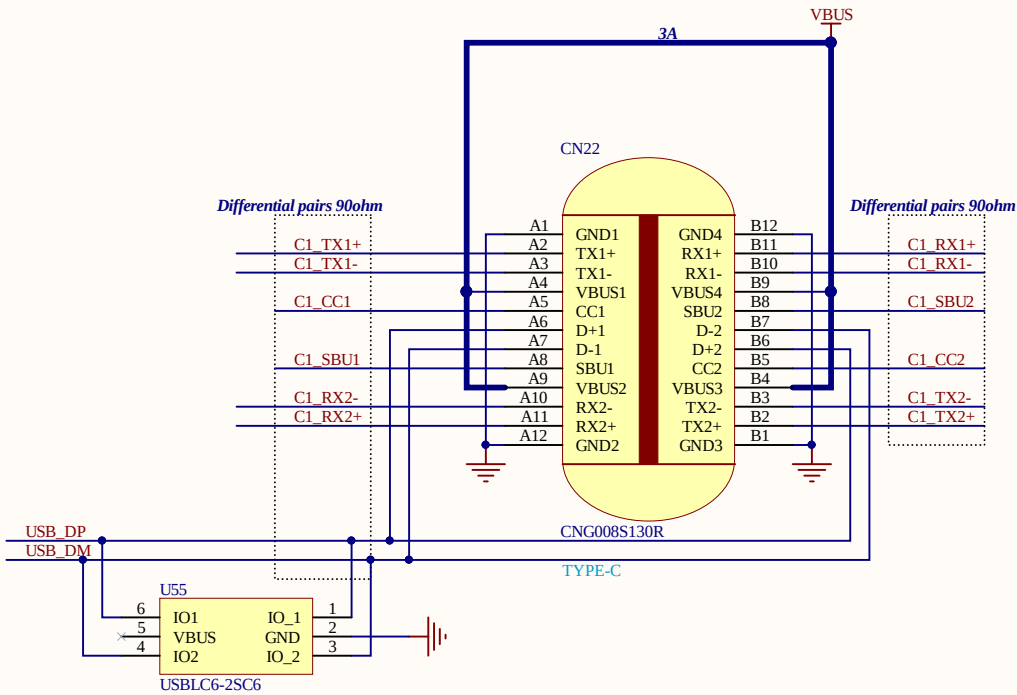
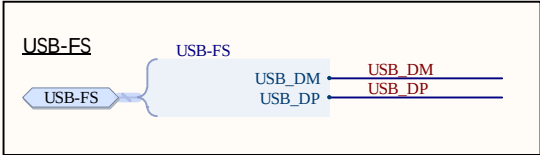
TYPE-C Source port CC management



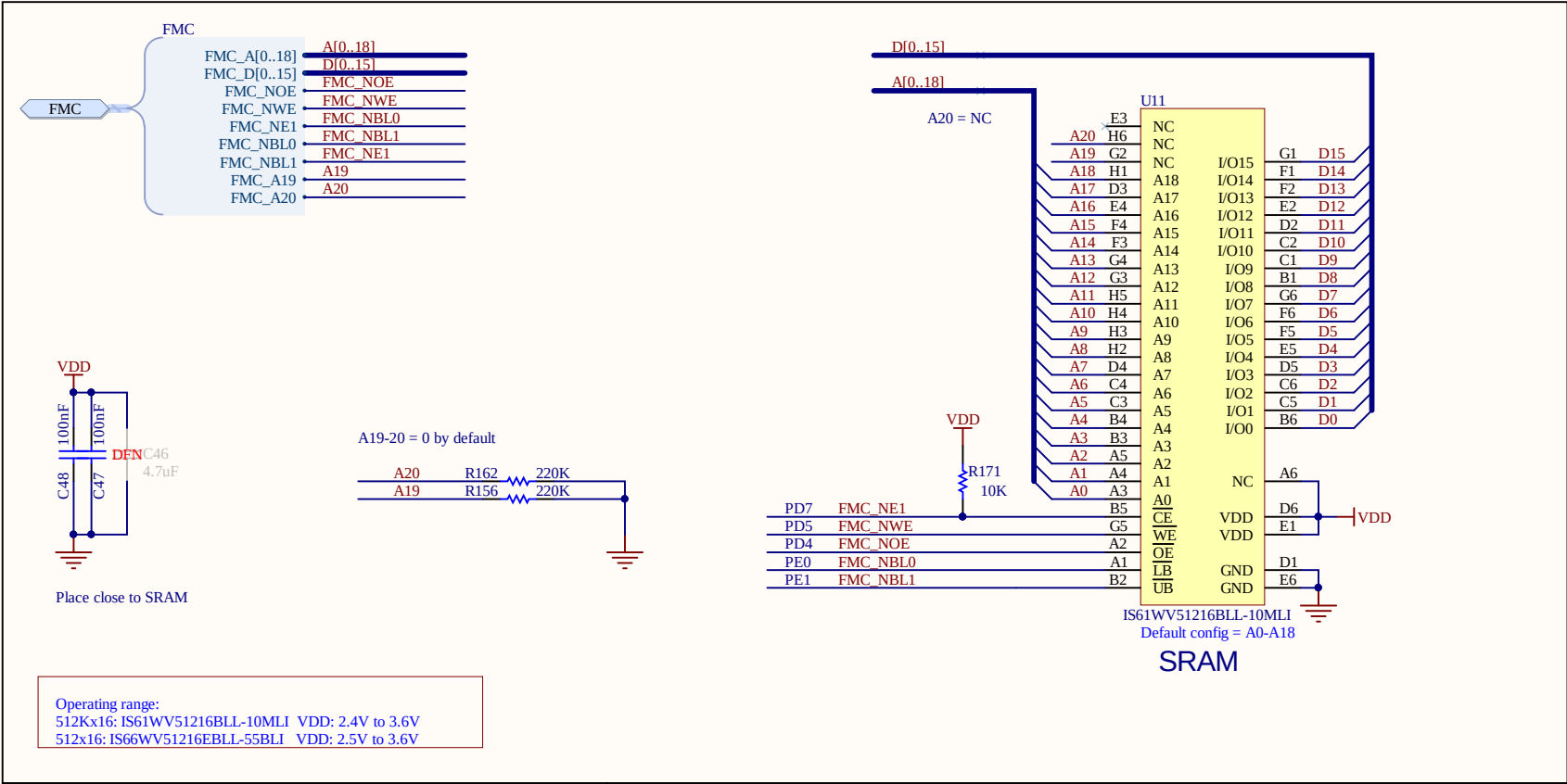
Title: USB_PD		
Project: STM32G474E-EVAL		
Variant: G474EMC		
Revision: B-05		Reference: MB1397
Size: A4	Date: 21-MAY-19	Sheet: 5 of 22



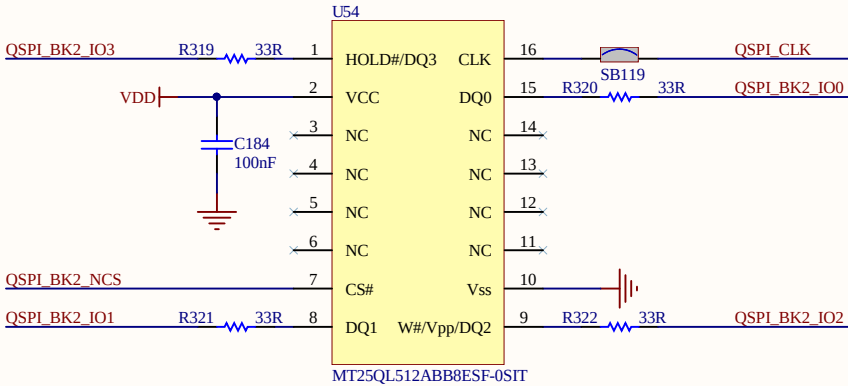
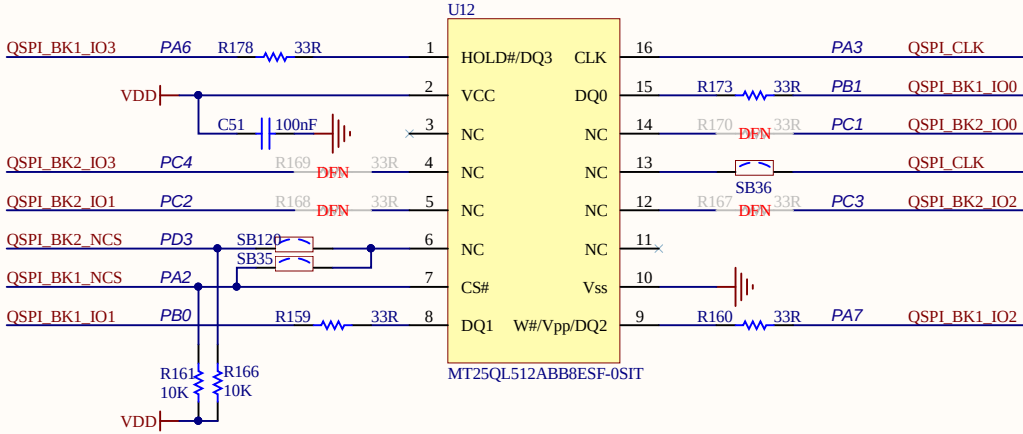
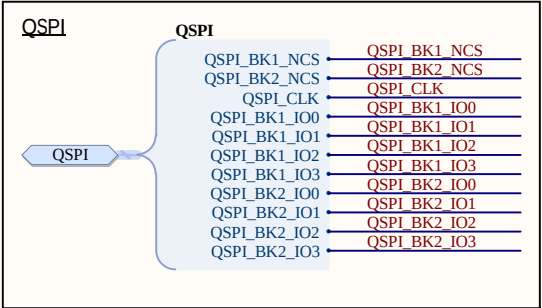
USB-TYPEC CON



MEMORY



QSPI Memory



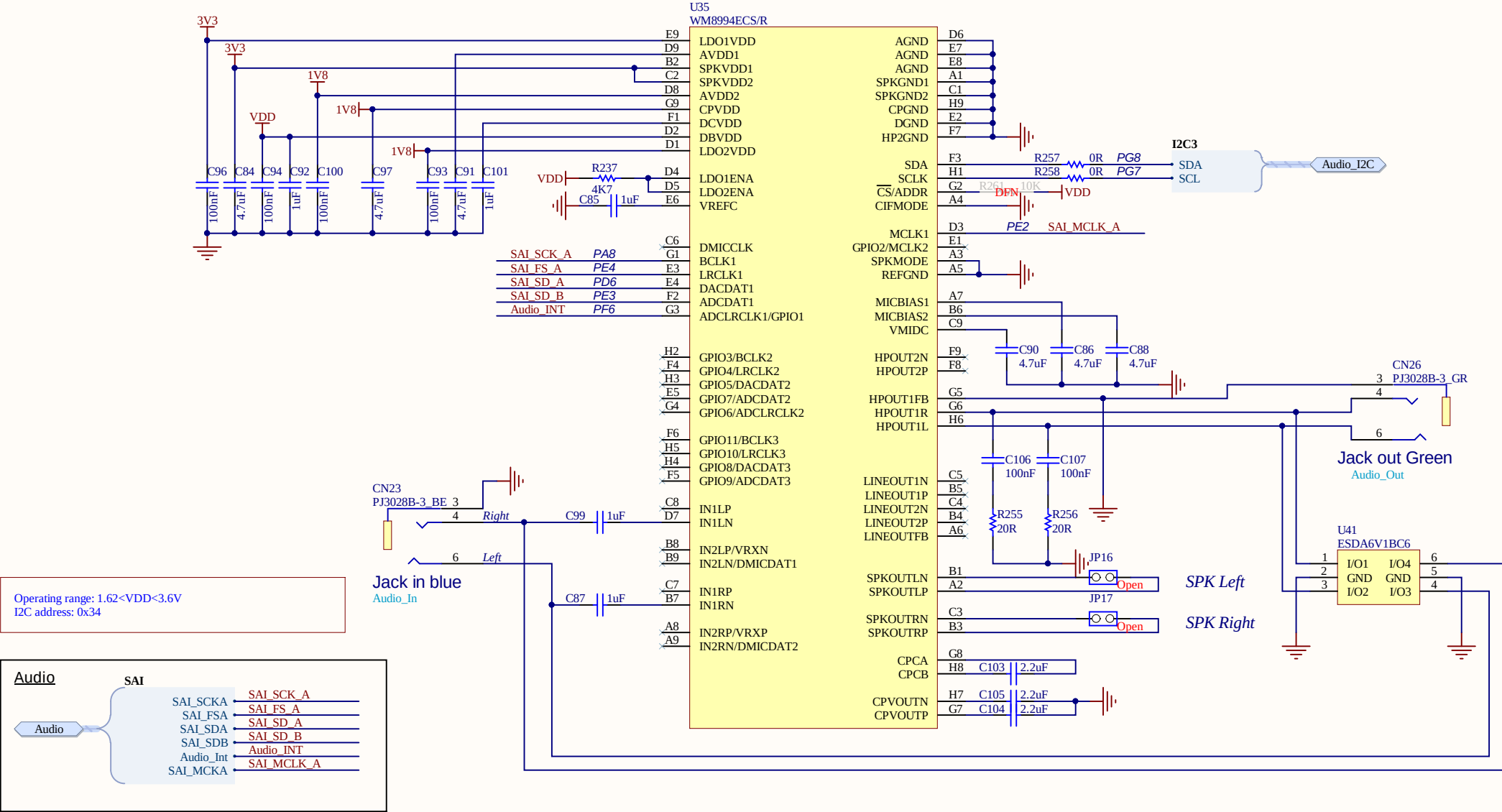
Operating range: 2.7V<VDD<3.6V

Twin Quad SPI Flash solutions:

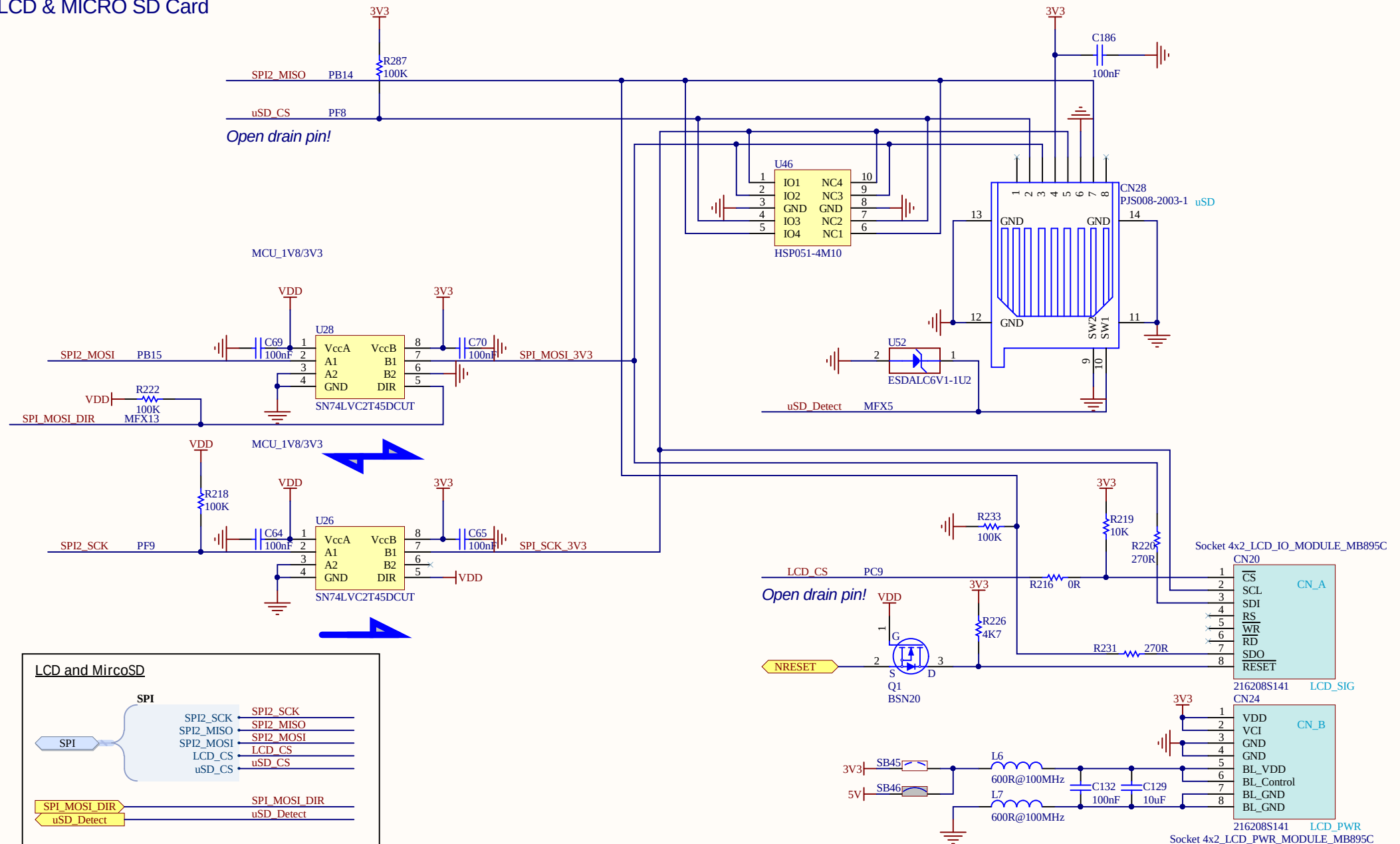
One Twin Quad SPI Flash	U12:MT25TL01GHHB8ESF-0SIT	U54:NA	R167/R168/R169/R170, SB120,SB36 ON	R319/R320/R321/R322, SB119, SB35, C184 OFF
Two Quad SPI Flash (Default)	U12:MT25QL512ABB8ESF-0SIT	U54:MT25QL512ABB8ESF-0SIT	R319/R320/R321/R322, SB119, C184 ON	R167/R168/R169/R170, SB120, SB35, SB36 OFF



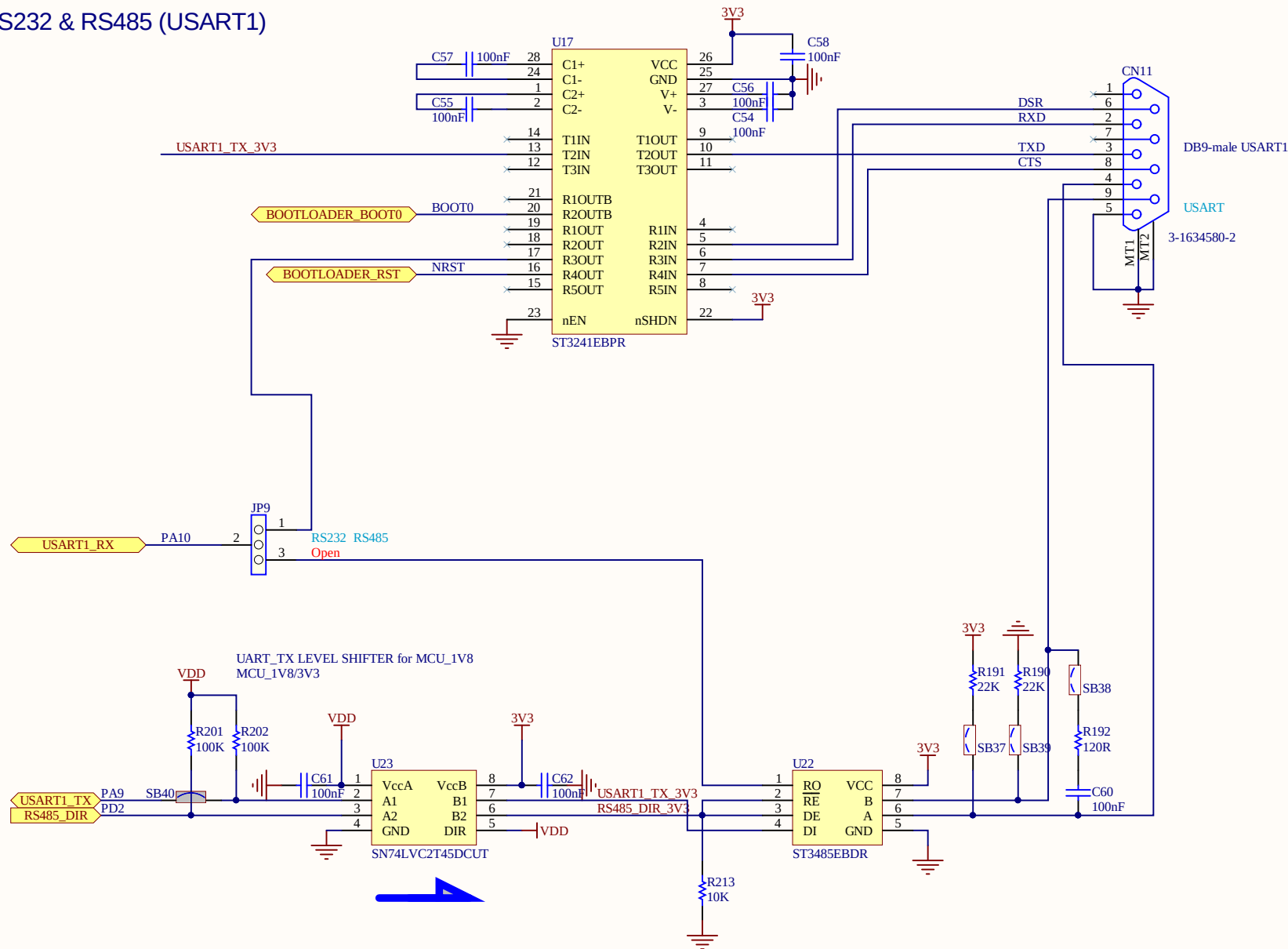
Audio



LCD & MICRO SD Card



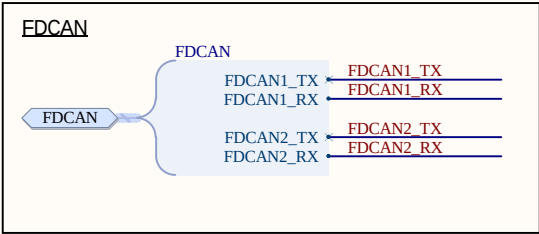
RS232 & RS485 (USART1)



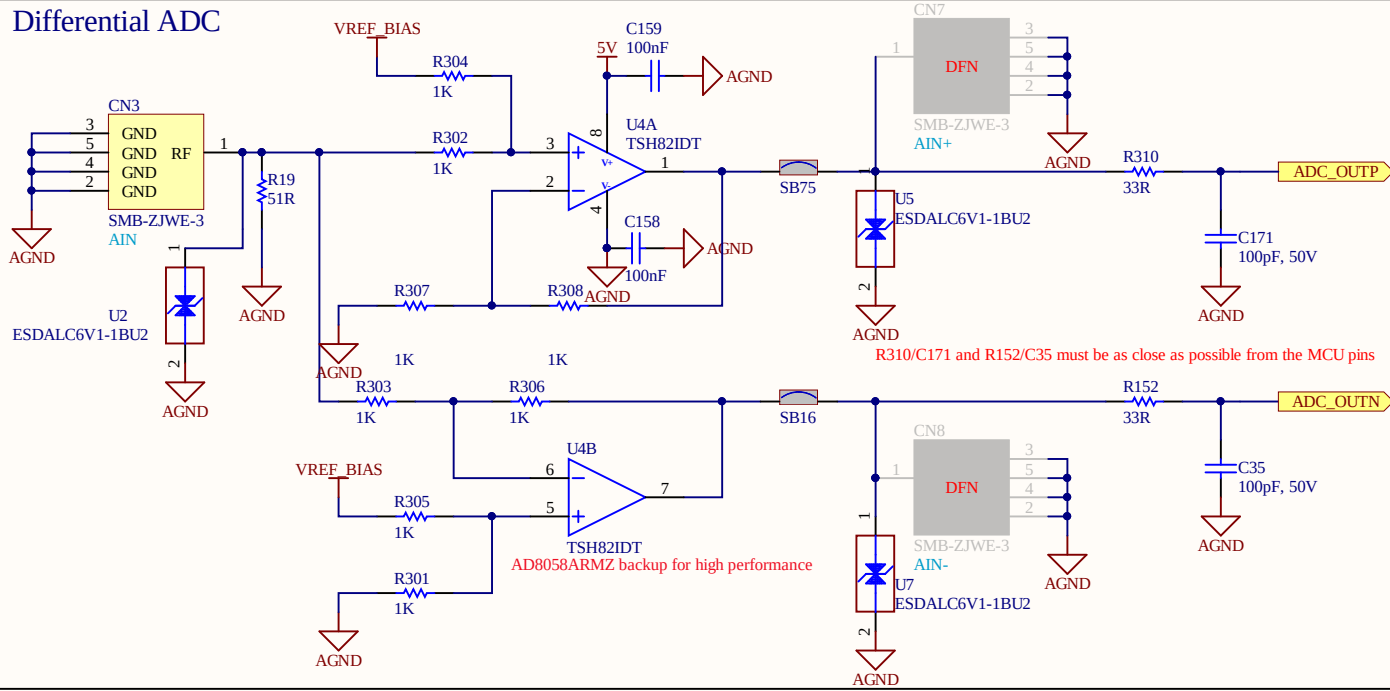
Title: RS232 & RS485		
Project: STM32G474E-EVAL		
Variant: G474EMC		
Revision: B-05		Reference: MB1397
Size: A4	Date: 21-MAY-19	Sheet: 11 of 22



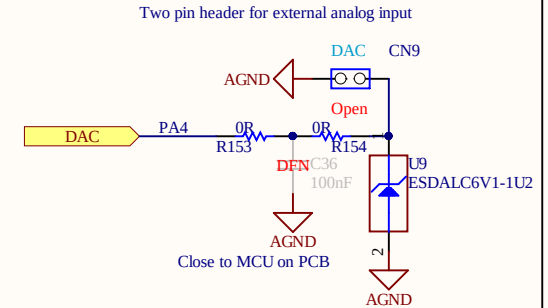
2x CAN FD



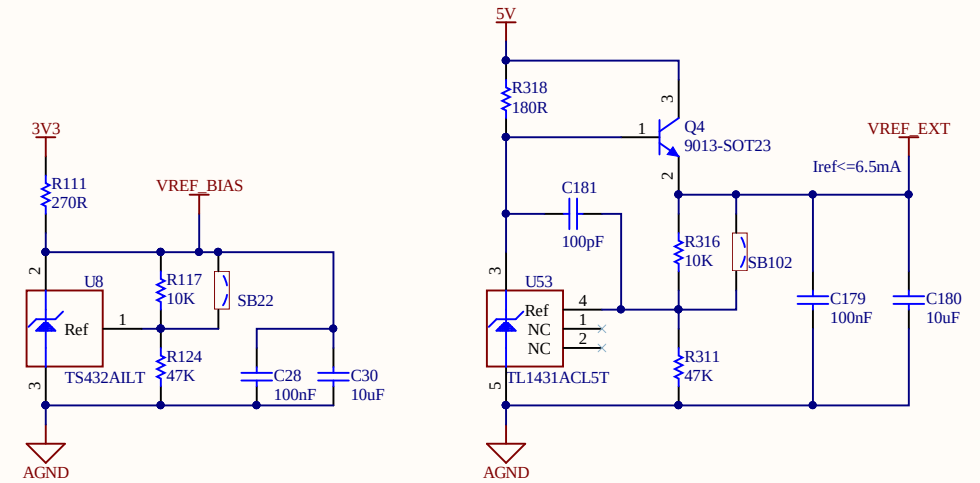
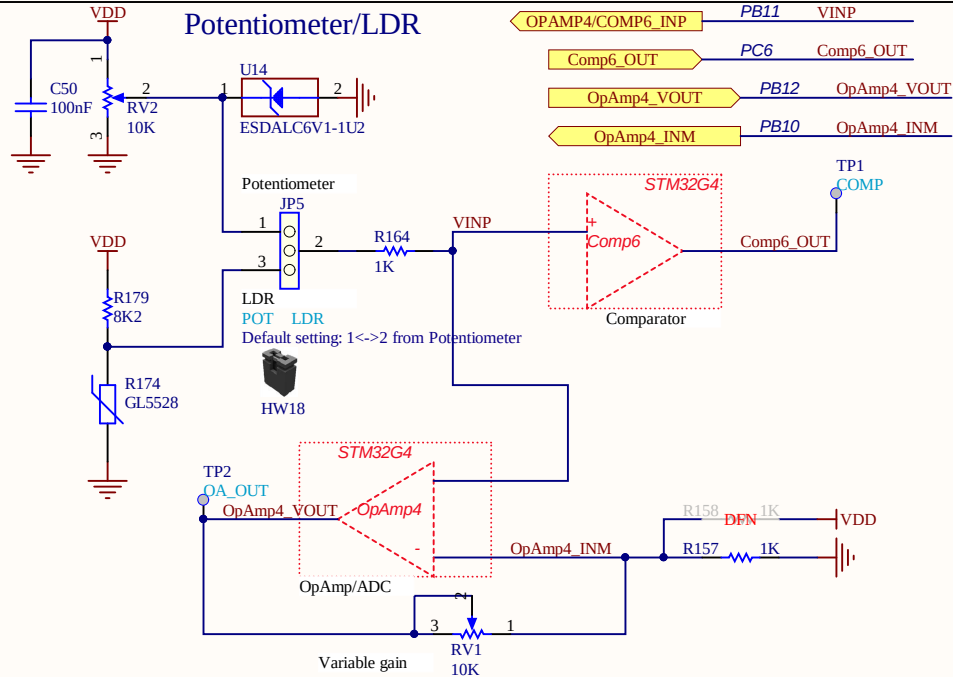
Differential ADC



DAC connector



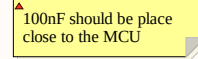
Potentiometer/LDR



LM4030AMF-2.5 Backup for high accuracy

Title: Analog Interfaces		
Project: STM32G474E-EVAL		
Variant: G474EMC		
Revision: B-05		Reference: MB1397
Size: A4	Date: 21-MAY-19	Sheet: 13 of 22

excl with WIFI wake-up



The diagram shows the wiring for a joystick. On the left, a joystick is connected to a 5-pin header. The connections are: JOY_SEL to MFX0, JOY_LEFT to MFX2, JOY_DOWN to MFX1, JOY_RIGHT to MFX3, and JOY_UP to MFX4. On the right, a joystick is connected to a 5-pin header. The connections are: MT-008A Joystick to 1, 3, 6, 4, and 8. Below the joystick, there is a component labeled HW20 Joystick, which is connected to the same 5-pin header. The connections are: HW20 Joystick to 1, 3, 6, 4, and 8. The joystick is also connected to a 5-pin header. The connections are: HW20 Joystick to 1, 3, 6, 4, and 8.

[illegible]

The diagram illustrates the EXT_I2C interface. It features a USBLC6-2SC6 (U1) connected to an SSM-104-L-DH (CN1) via I2C3 SDA and SCL lines. The SSM-104-L-DH is connected to an MFX15 (EXT_RESET) via a resistor R1 and a Schmitt trigger SB1. The MFX15 is connected to a 5V supply. The SSM-104-L-DH is also connected to a 5V supply via a resistor R1 and a Schmitt trigger SB1. The SSM-104-L-DH is connected to a 5V supply via a resistor R1 and a Schmitt trigger SB1.

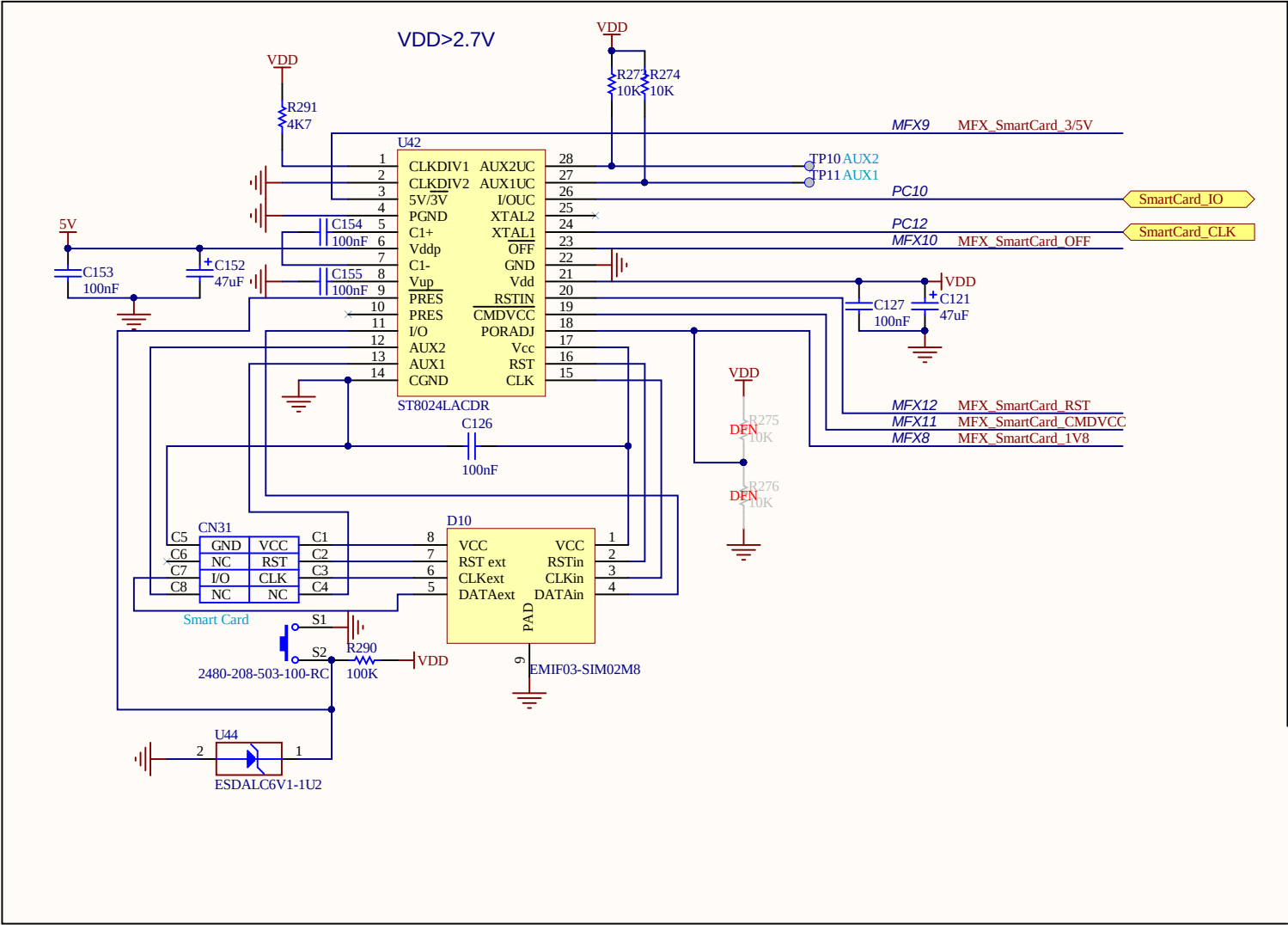
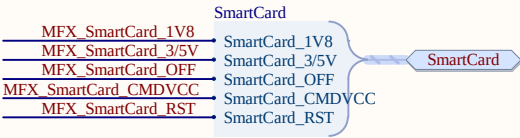
Temperature sensor

Operating range: VDD > 2.25V
I2C address: 1001000

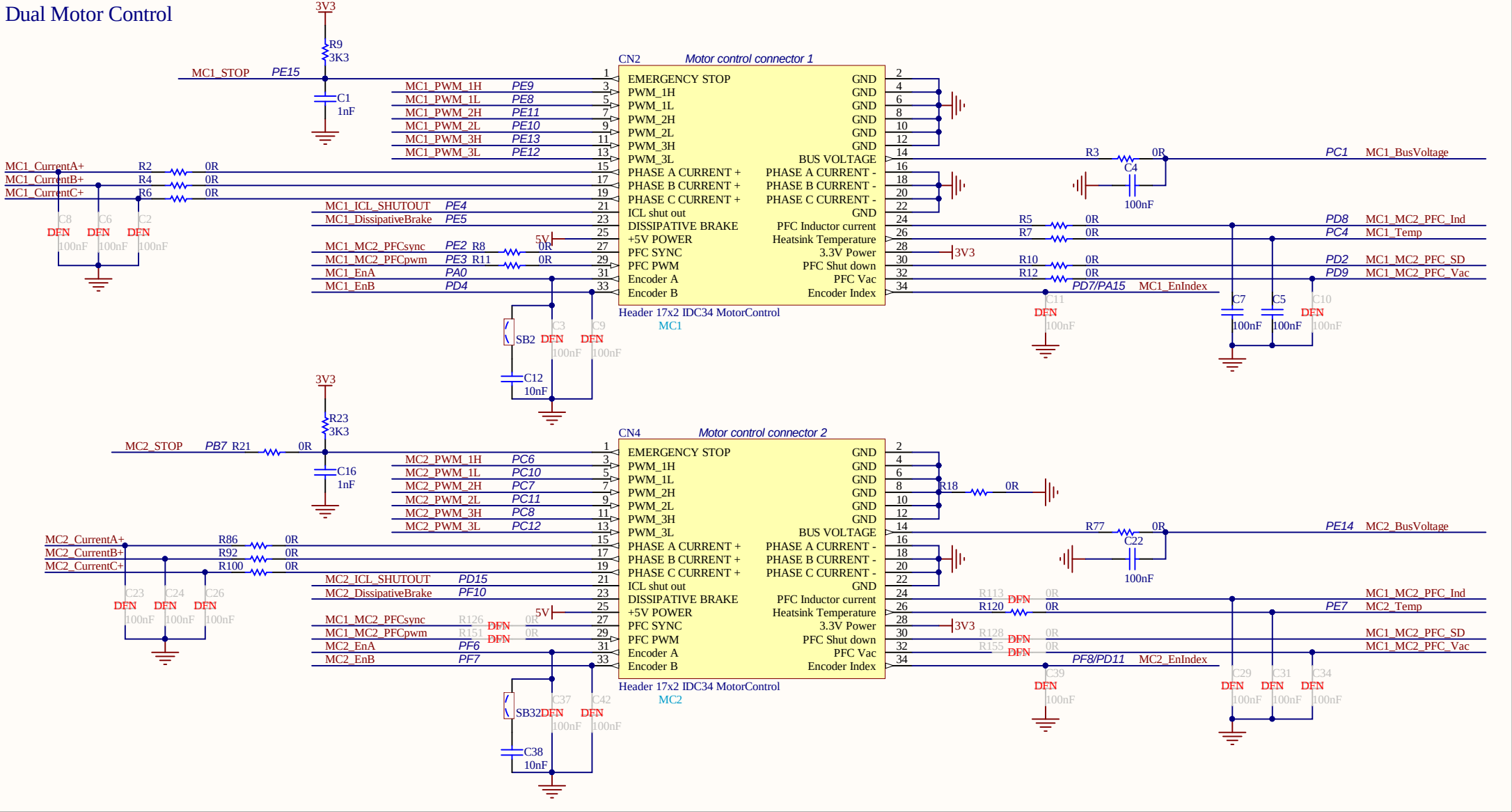
Title: Peripherals		
Project: STM32G474E-EVAL		
Variant: G474EMC		
Revision: B-05		Reference: MB1397
Size: A4	Date: 21-MAY-19	Sheet: 14 of 22



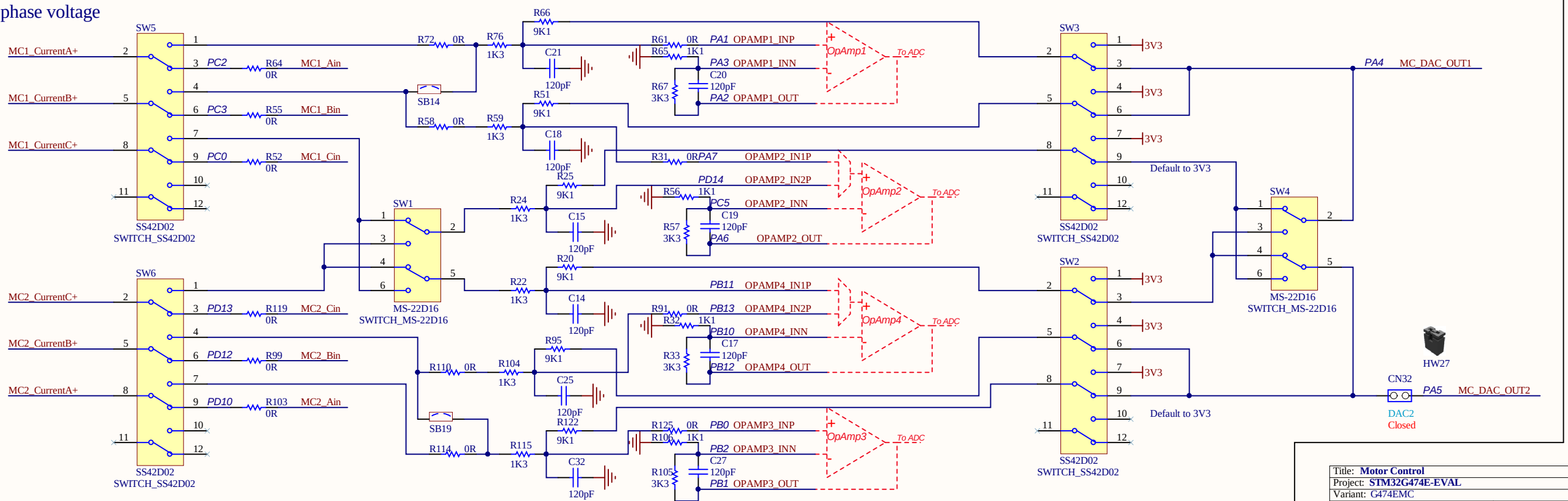
Smart Card



Dual Motor Control

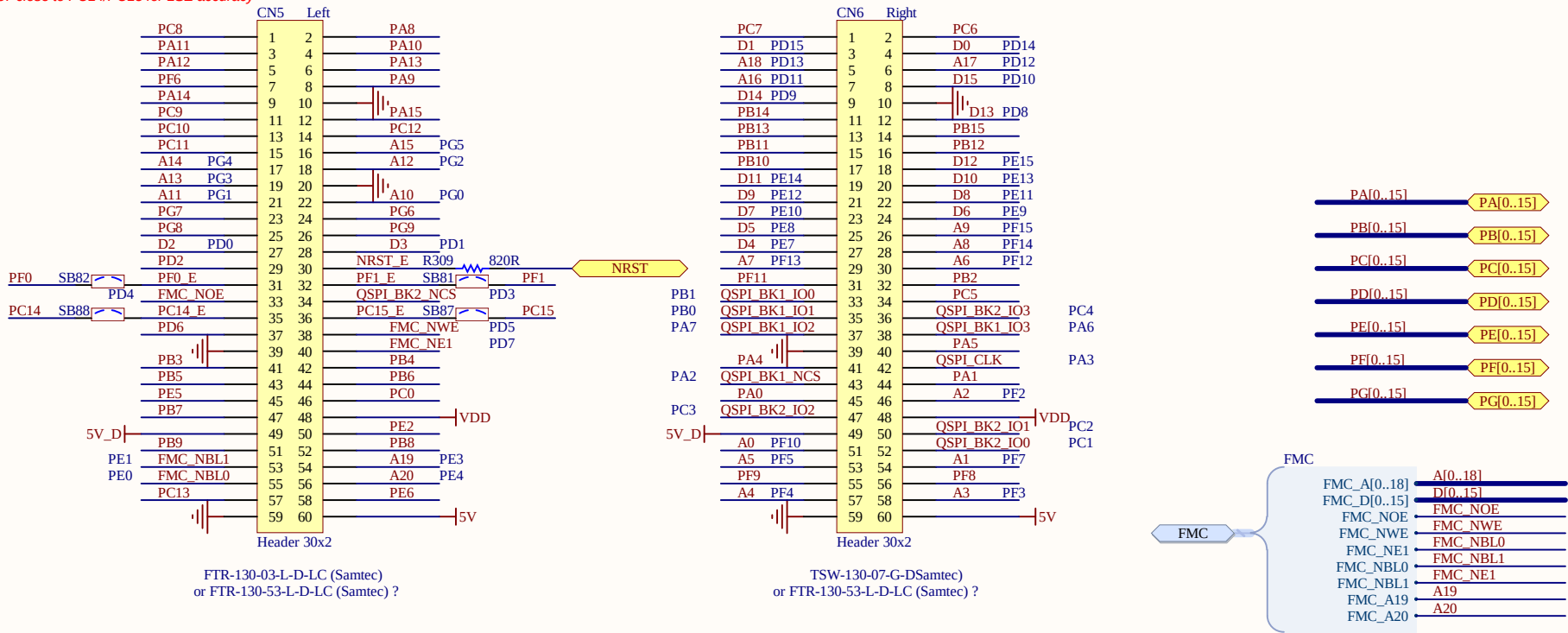


3-phase voltage

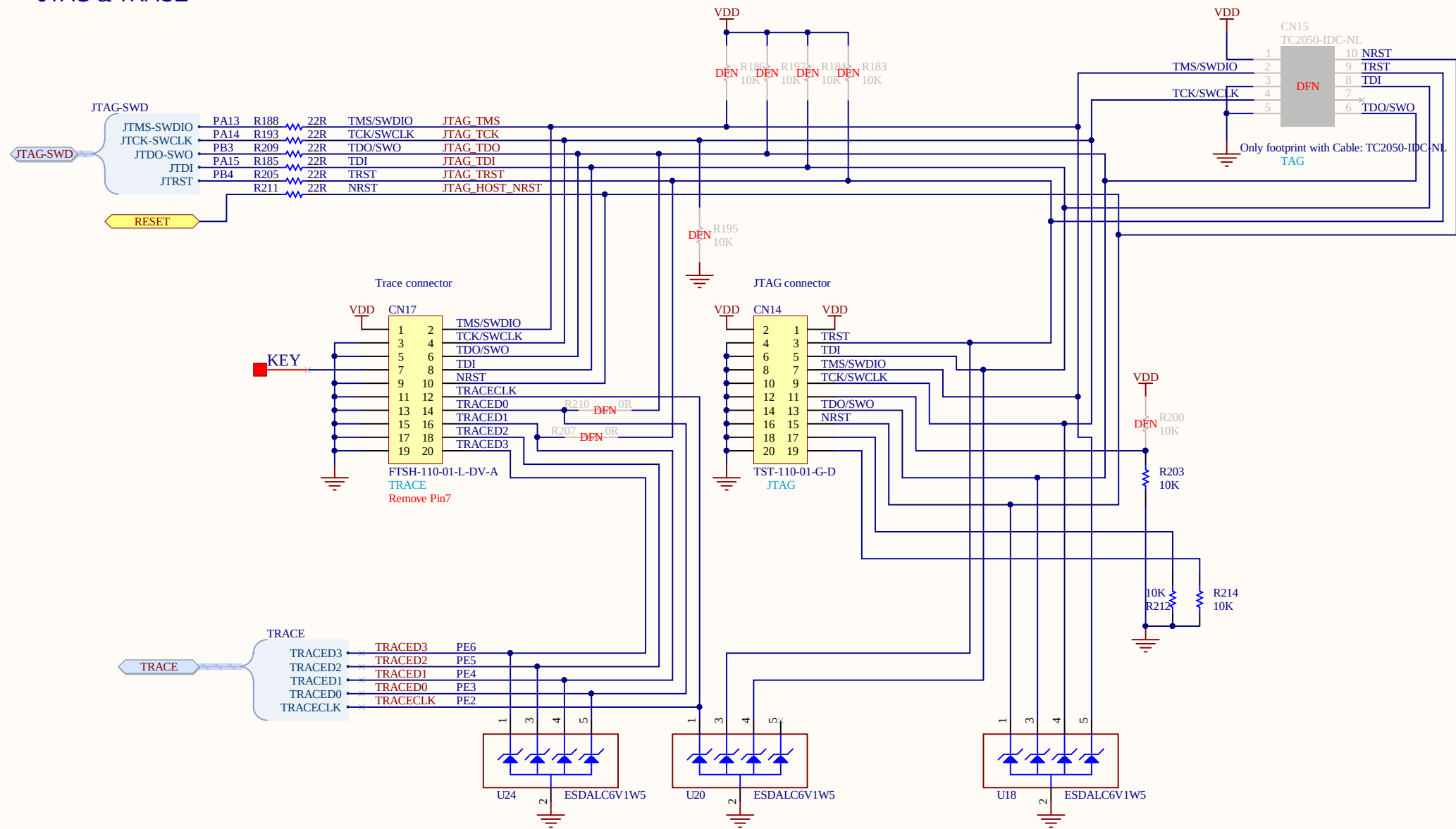


MCU EXTENSION CONNECTORS

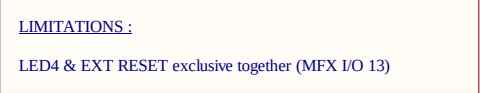
SB82 and SB81 close to PF0/PF1 for HSE accuracy
SB88 and SB87 close to PC14/PC15 for LSE accuracy



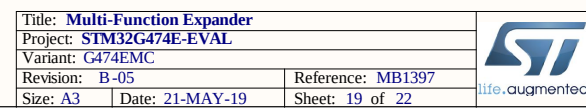
JTAG & TRACE



MFX I/O EXPANDER

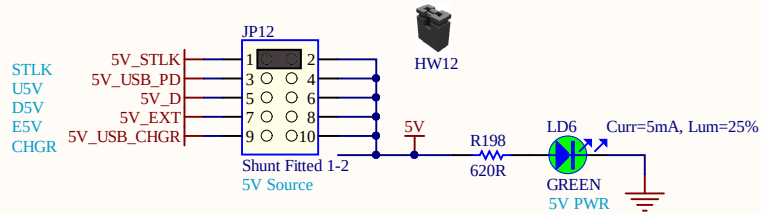


MFX CURRENT MEASUREMENT

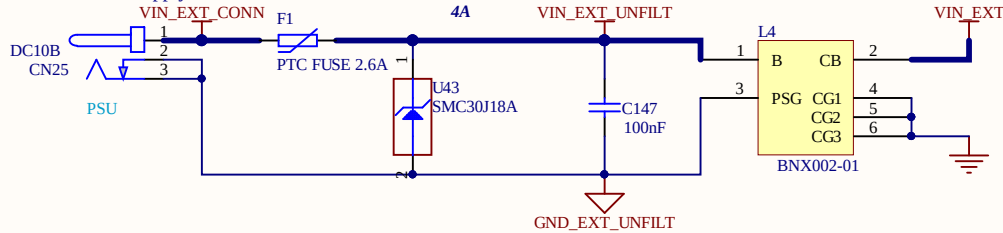


BOARD POWER

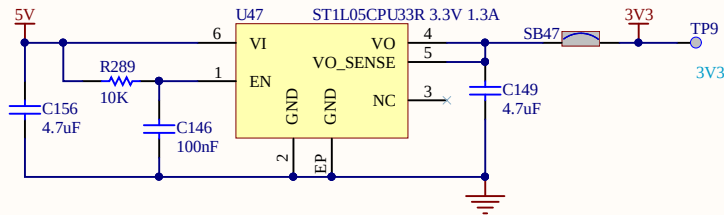
5V Power Supply options



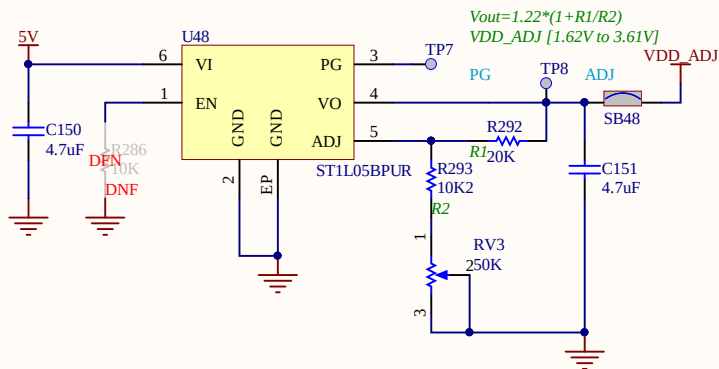
5V to 18V External supply



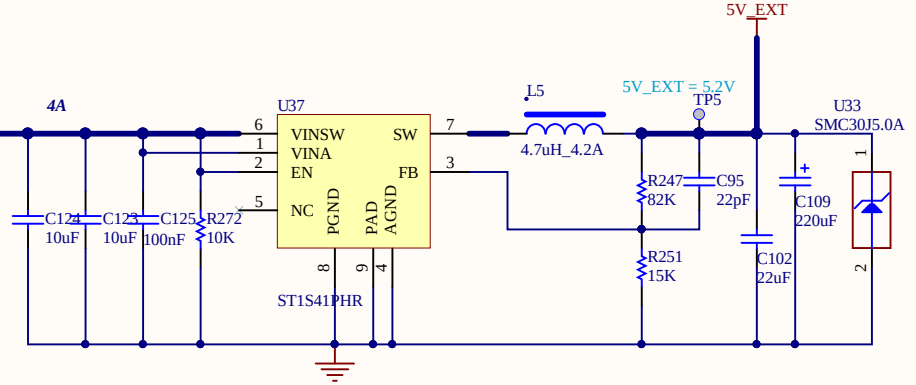
3V3 Supply



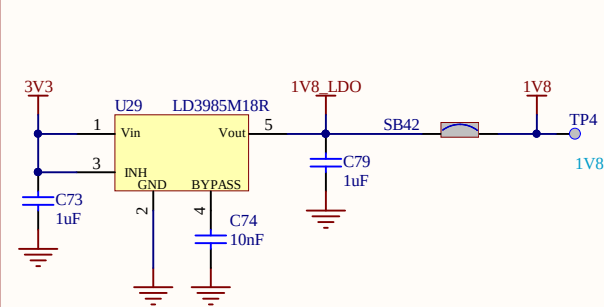
VDD ADJ Supply



VIN_EXT

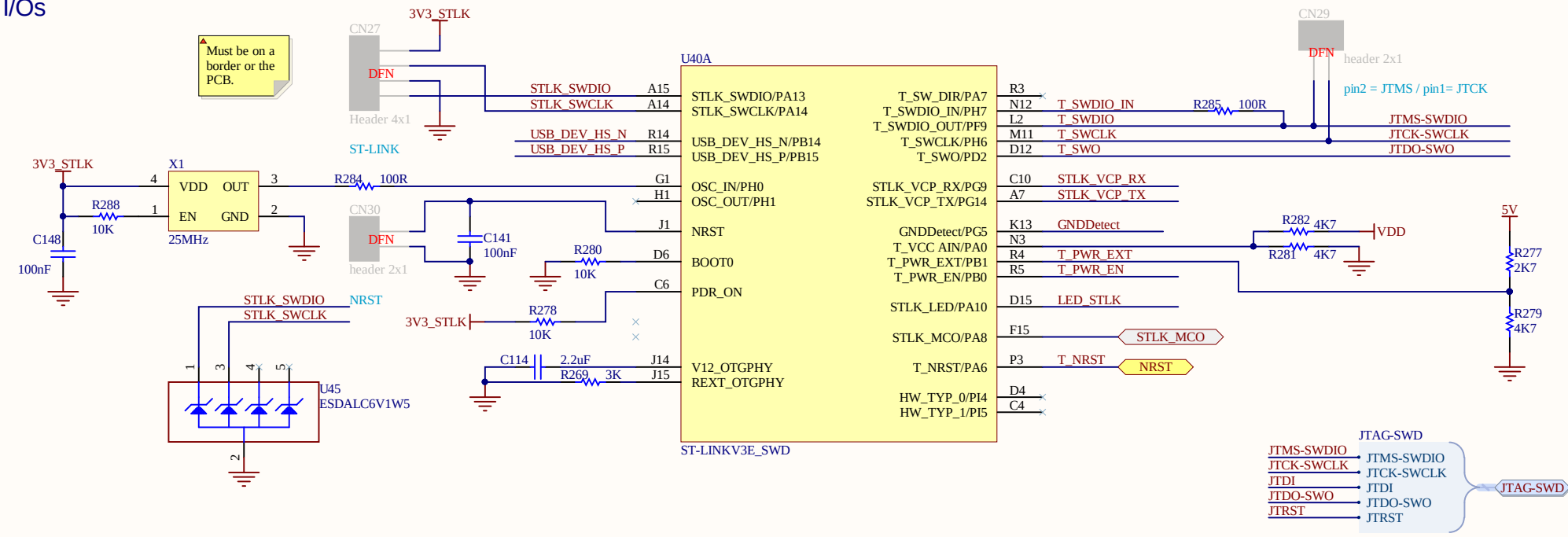


1V8

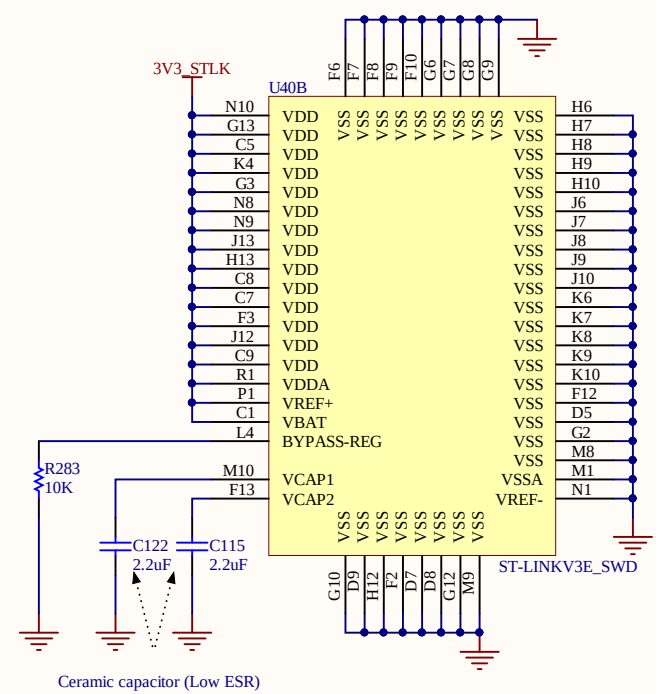


STLINK V3E SWD

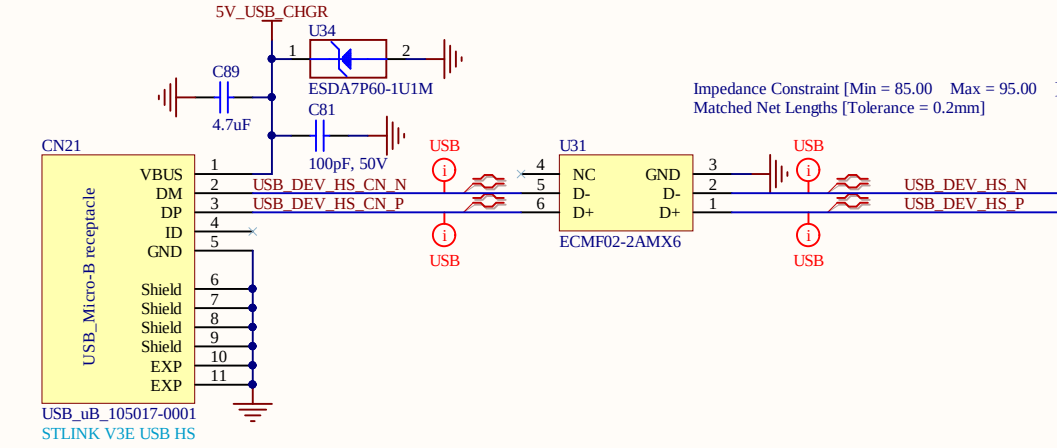
I/Os



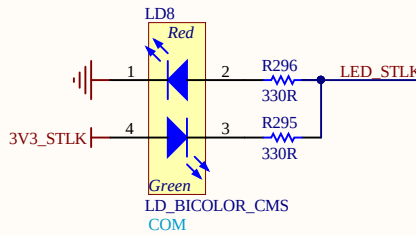
POWER



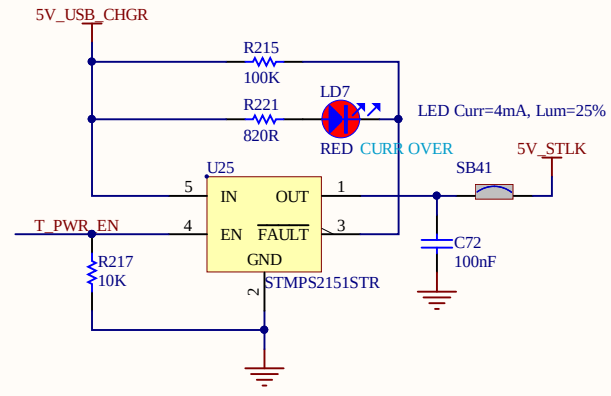
USB HS



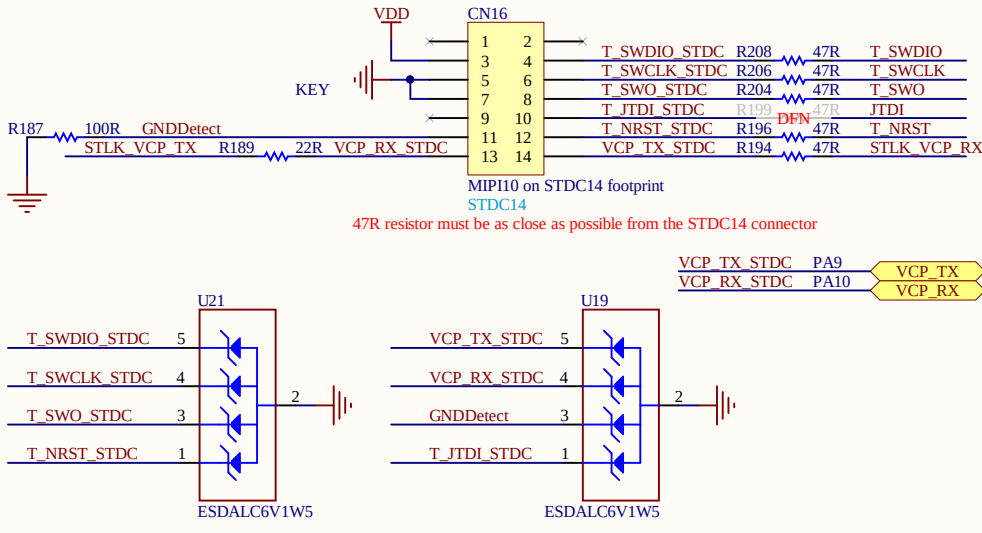
LED



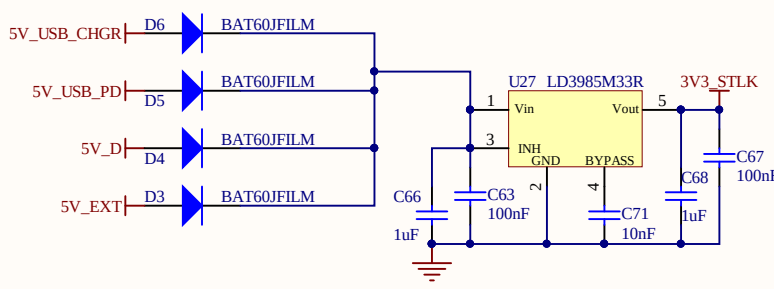
5V ST-LINK



STDC14 RECEIVER

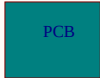


3.3V ST-LINK



HW Mechanical parts

HW6



PCB

PCB

HW7

MB1397-G474E-B01 syywwxxxxx QR code



BOARD REF

HW8

STM32G474E-EVAL



BOARD CPN

HW2



LOGO ST

HW5



LOGO CE

HW4



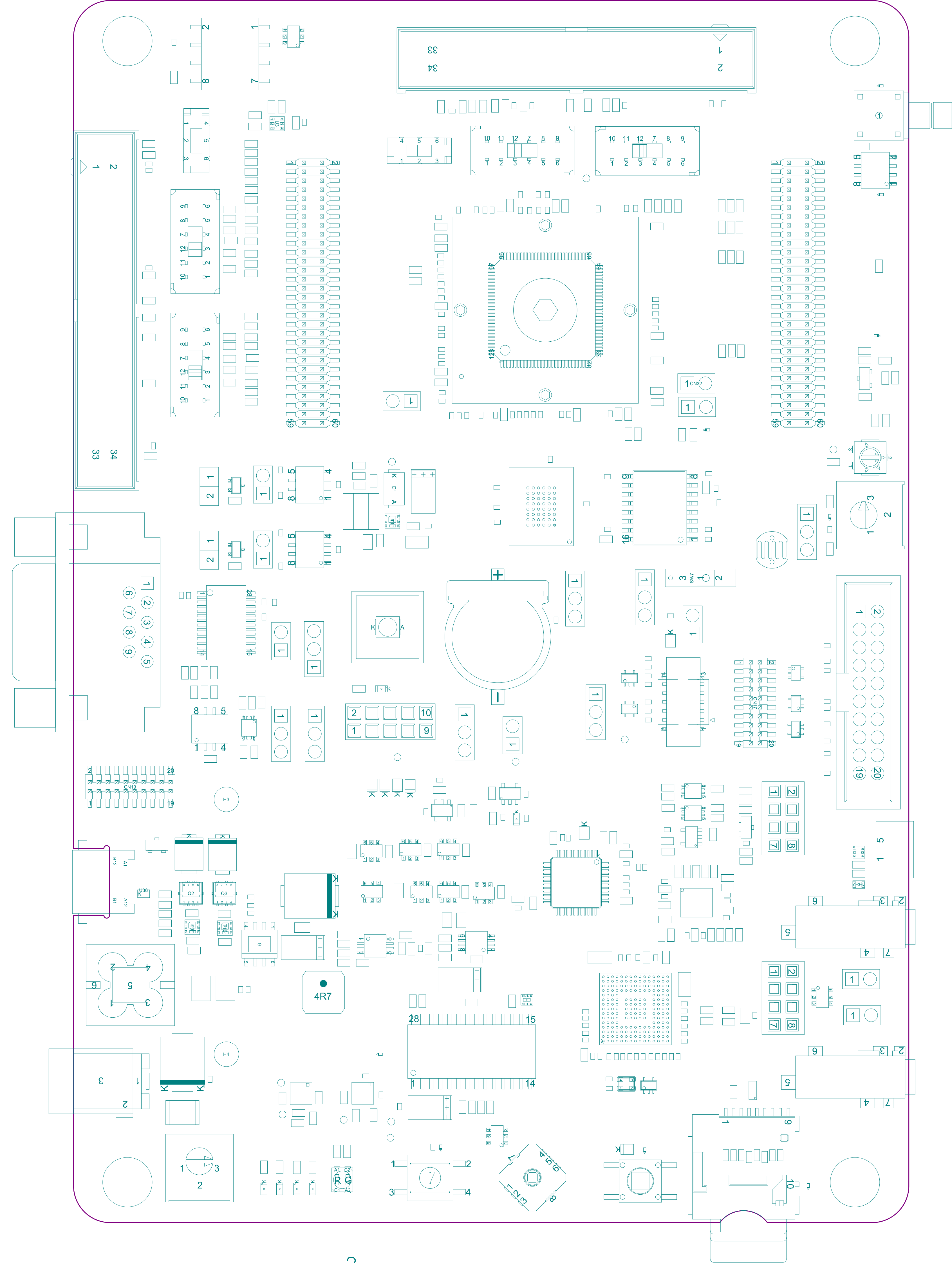
LOGO ESD

HW3



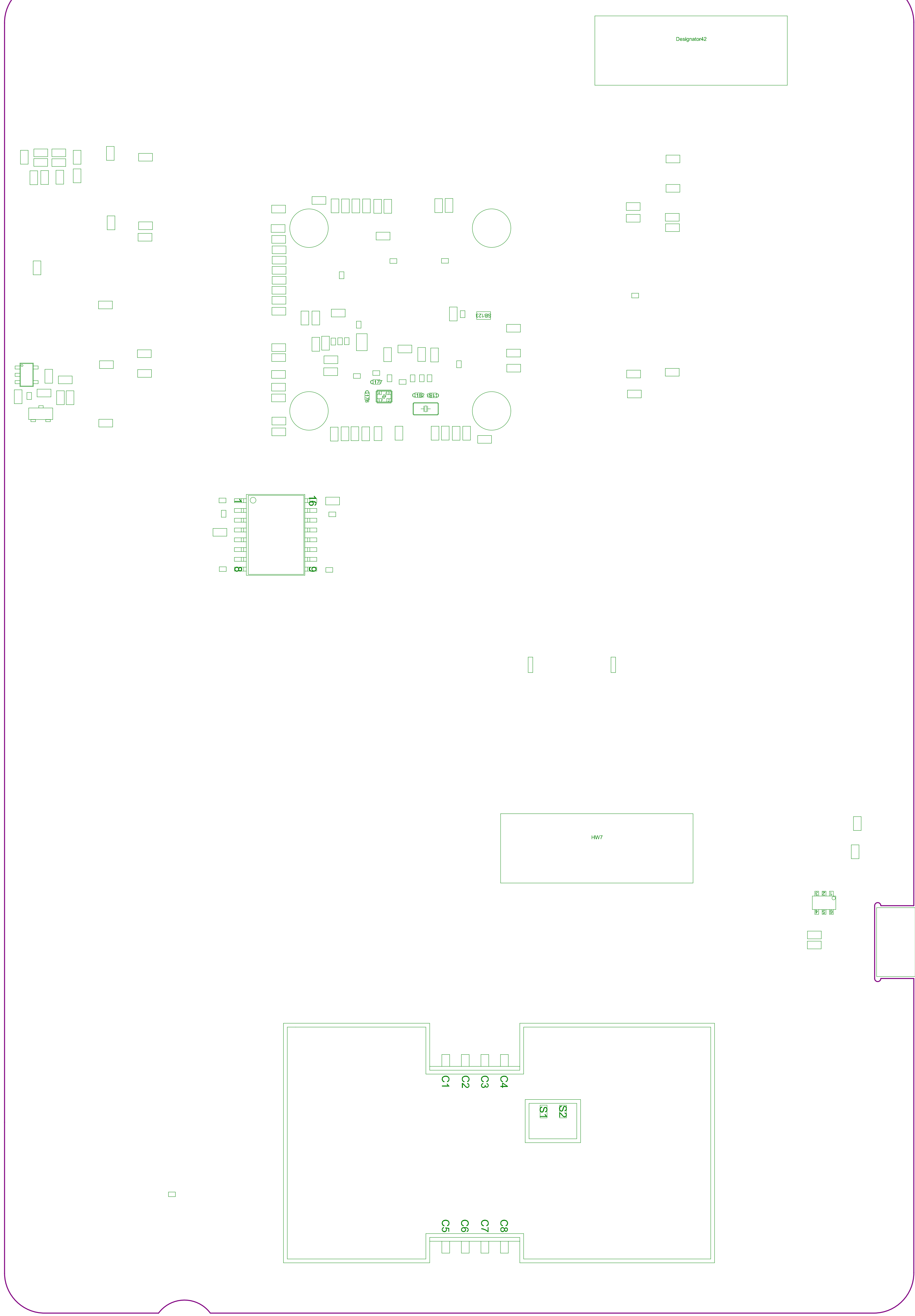
LOGO ROHS





2
LAYER 2 (GND PLANE)

FAB DARWING & DRILL LEGEND



FAB DRAWING & DRILL LEGEND

