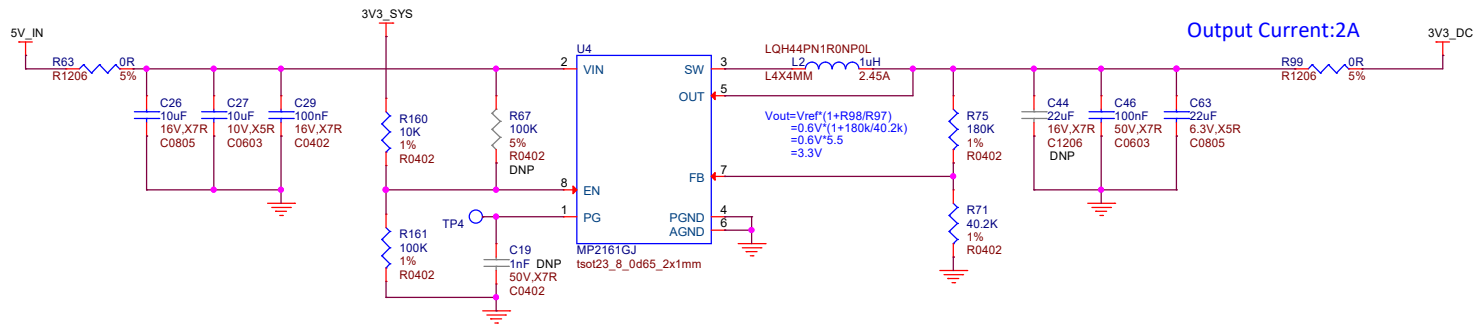
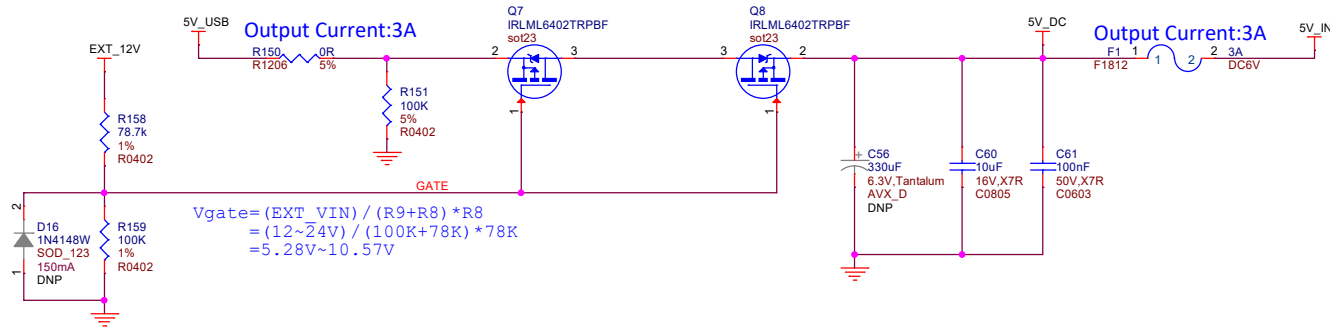
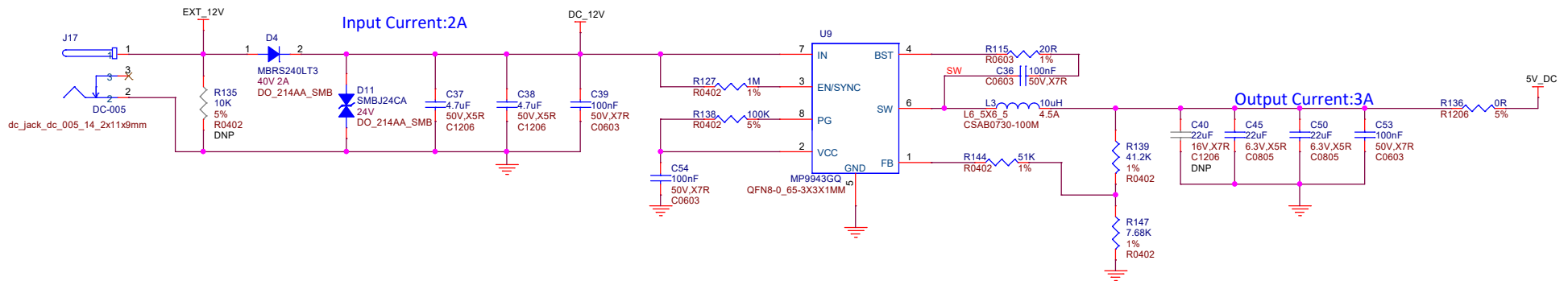


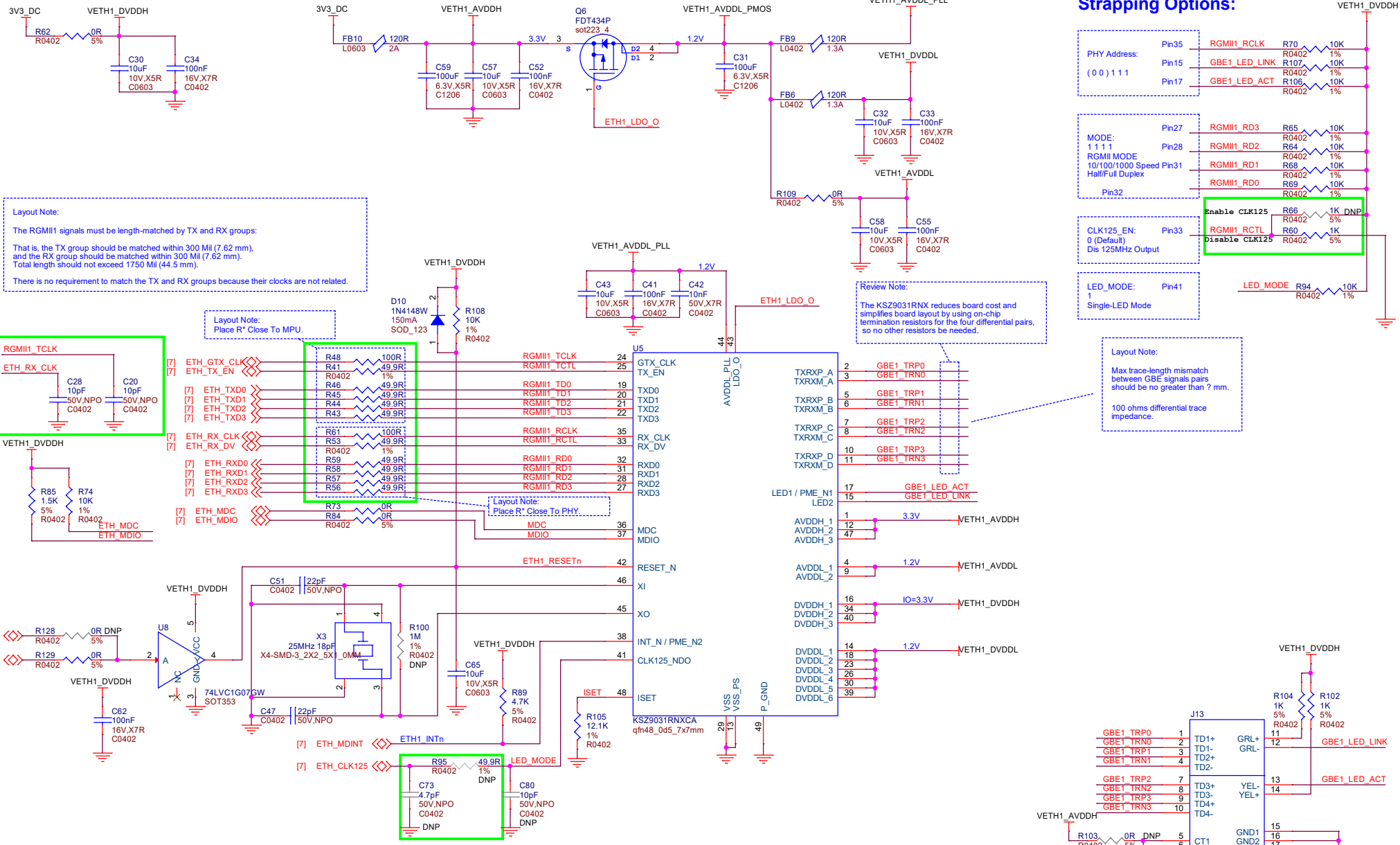
Schematic: Seeed NPi - STM32MP157C

SHEET	SHEET NAME
01	Title/Revision History
02	POWER
03	1000M Ethernet
04	USB HOST/Device
05	Audio/MIPI DSI/DVP CAMERA
06	WIFI/BLE
07	PIN NAME
08	SD CARD/RPI
09	Grove/DEBUG Interface

Revision History

DATE	REVISION	DESCRIPTION
2019/07/23	Seeed NPi - STM32MP157C_0723	Initial Release
2019/09/21	Seeed NPi - STM32MP157C_0921	





Layout Note:
The RGMII signals must be length-matched by TX and RX groups:
That is, the TX group should be matched within 300 Mil (7.62 mm), and the RX group should be matched within 300 Mil (7.62 mm). Total length should not exceed 1750 Mil (44.5 mm).
There is no requirement to match the TX and RX groups because their clocks are not related.

Layout Note:
Place R* Close To MPU.

Review Note:
The KSZ9031RXN reduces board cost and simplifies board layout by using on-chip termination resistors for the four differential pairs, so no other resistors are needed.

Layout Note:
Max trace-length mismatch between GBE signals pairs should be no greater than 7 mm.
100 ohms differential trace impedance.

Strapping Options:

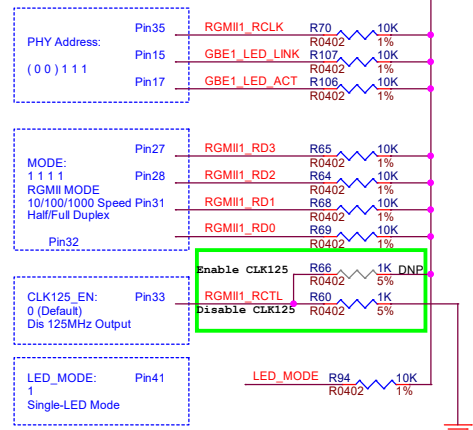
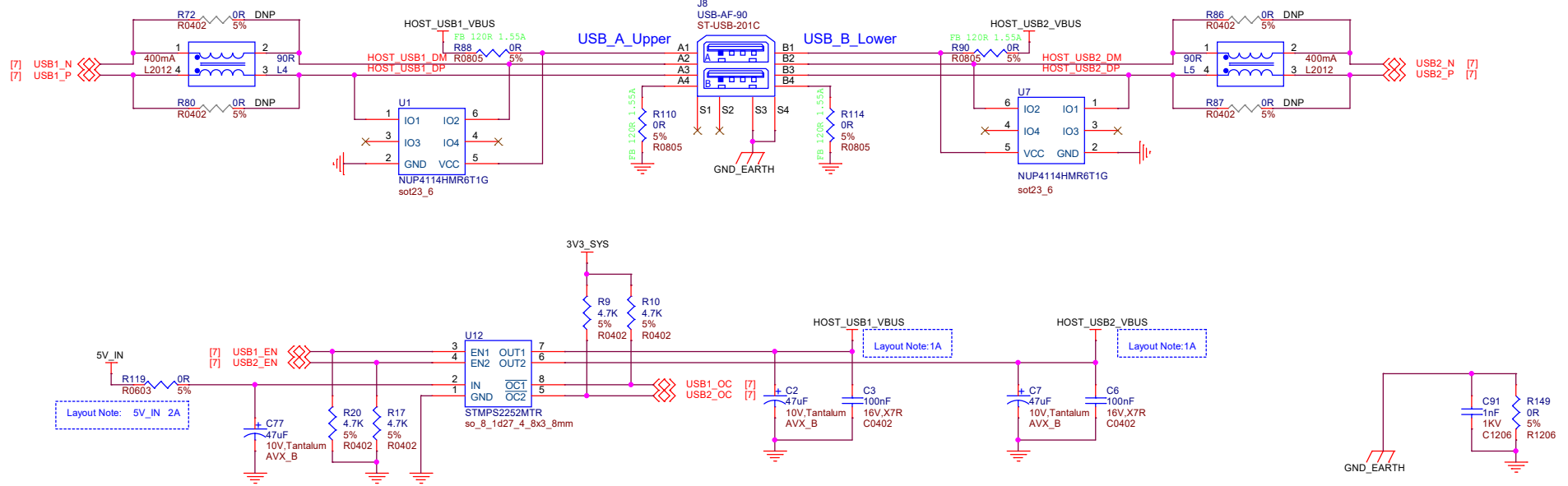


TABLE 3-12: TYPICAL CURRENT/POWER CONSUMPTION TRANSCIEVER (3.3V), DIGITAL I/O (3.3V)

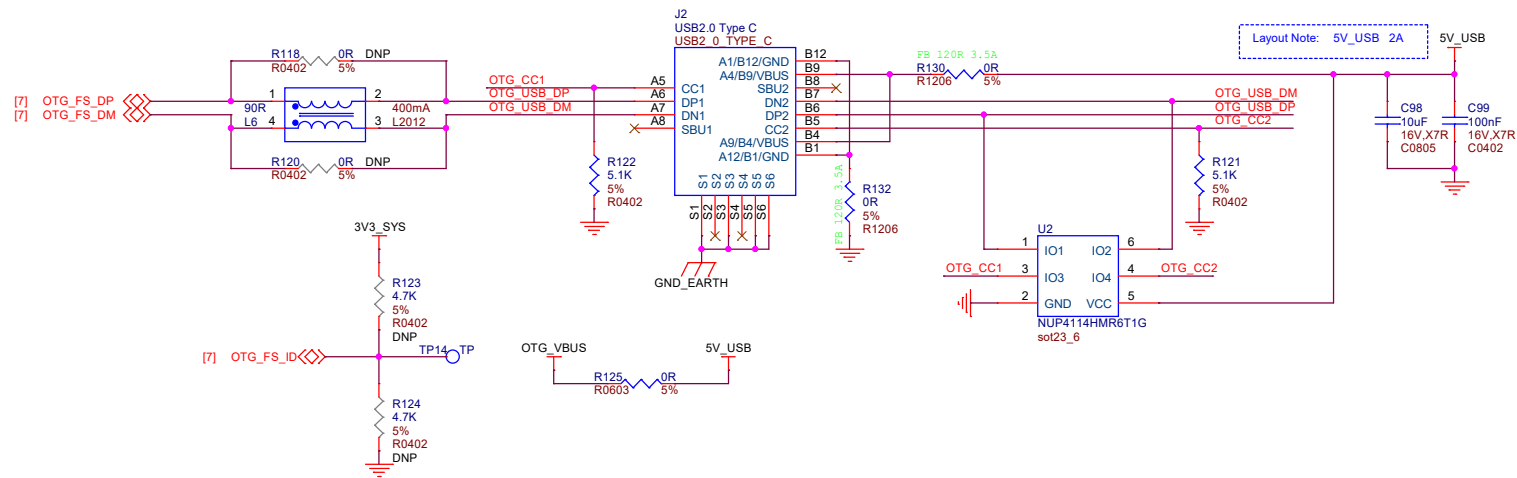
Condition	1.2V Core (DVDDL, AVDDL, AVDDL_PLL)	3.3V Transceiver (AVDDH)	3.3V Digital I/O (DVDDH)	Total Chip Power
1000BASE-T Link-Up (no traffic)	210 mA	67.4 mA	19.5 mA	538 mW
1000BASE-T Full-Duplex at 100% Utilization	221 mA	66.3 mA	41.5 mA	621 mW
100BASE-TX Link-Up (no traffic)	63.6 mA	28.7 mA	13.9 mA	217 mW
100BASE-TX Full-Duplex at 100% Utilization	63.8 mA	28.6 mA	17.2 mA	228 mW
10BASE-T Link-Up (no traffic)	7.1 mA	15.9 mA	11.5 mA	99 mW
10BASE-T Full-Duplex at 100% Utilization	7.7 mA	28.6 mA	13.7 mA	149 mW
Software Power-Down Mode (Reg. Oh.11 = 1)	1.0 mA	4.2 mA	9.3 mA	46 mW

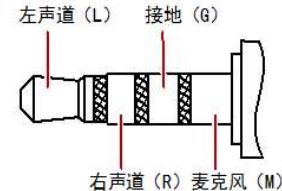
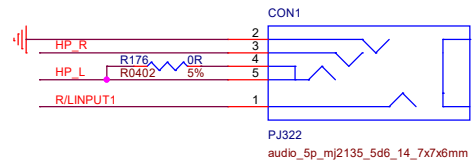
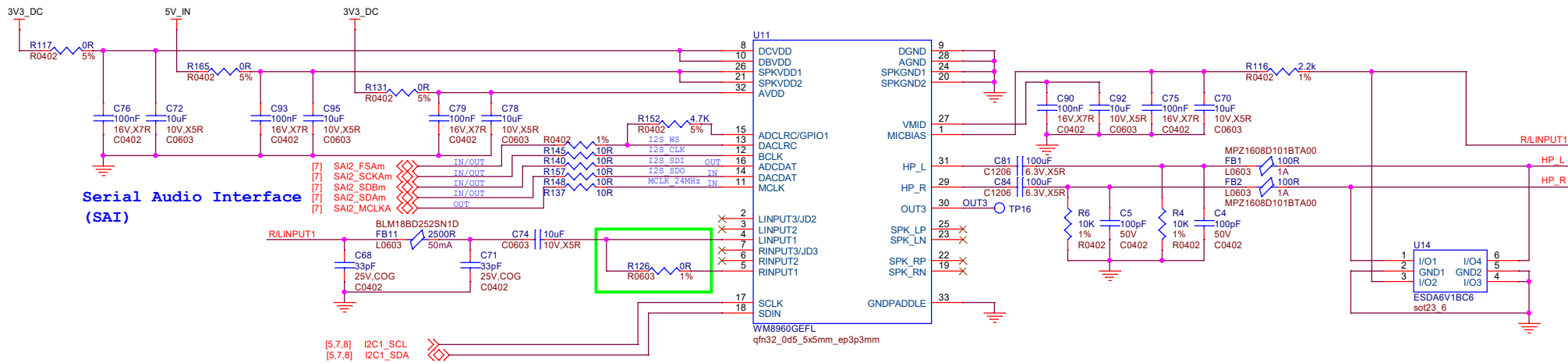
seed The IoT Hardware Enabler <https://www.seedstudio.com>
Title: Seeed NPi - STM32MP157C
Size: A3 **Document Number:** 03 1000M Ethernet **Rev:** v1.01
Draw By: welfeng **Date:** Tuesday, December 17, 2019 **Sheet:** 3 of 9

USB HOST

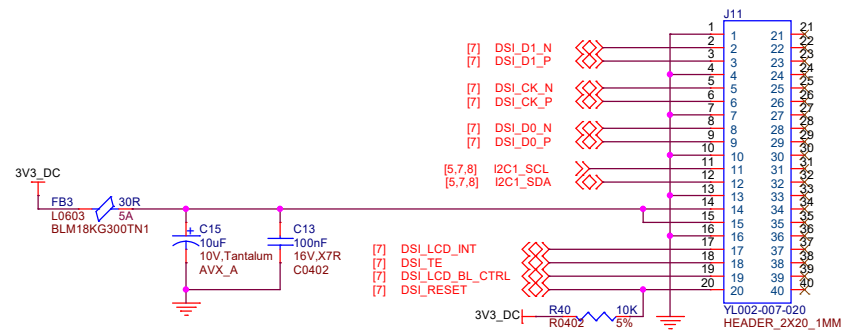


USB Device

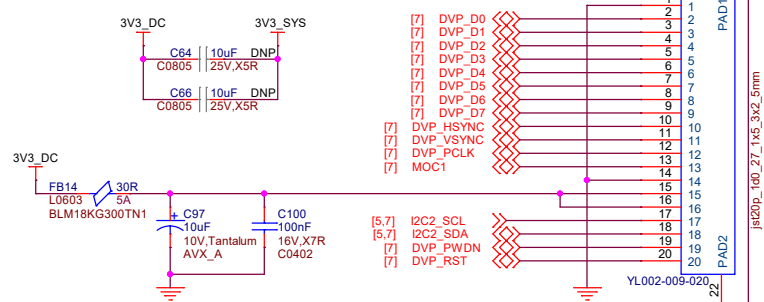




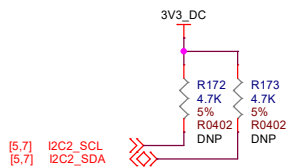
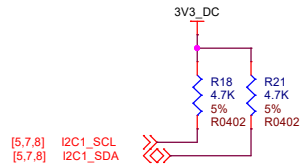
AUDIO

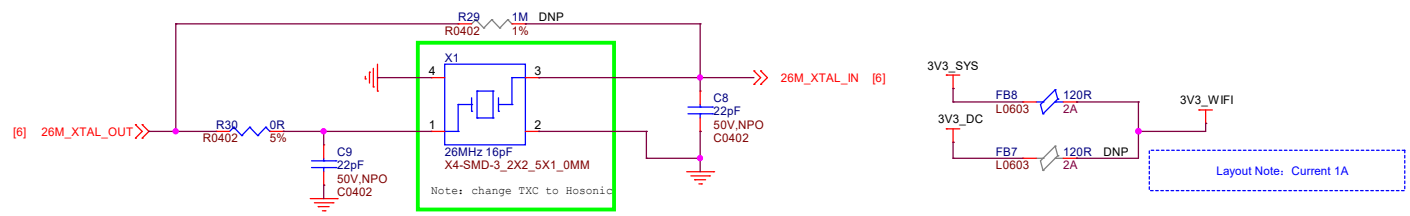
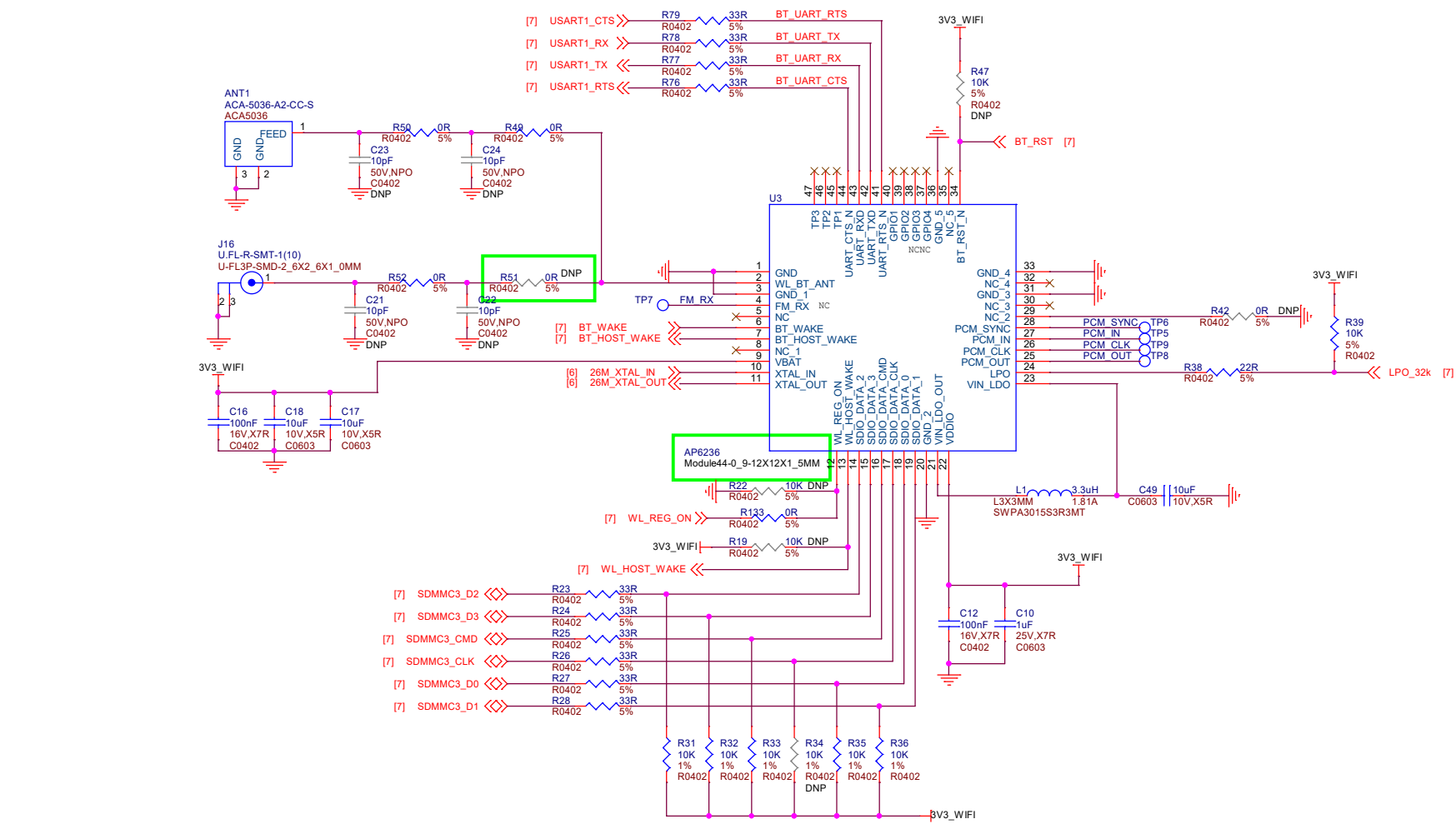


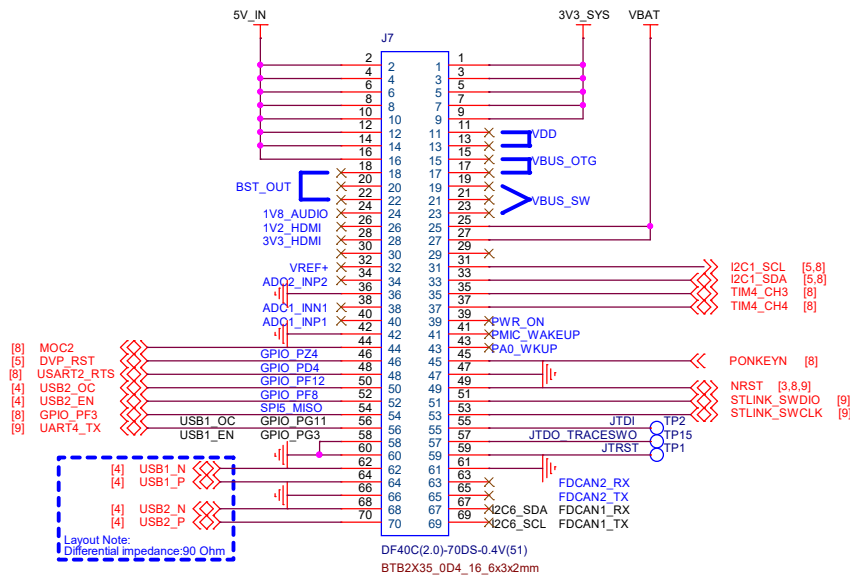
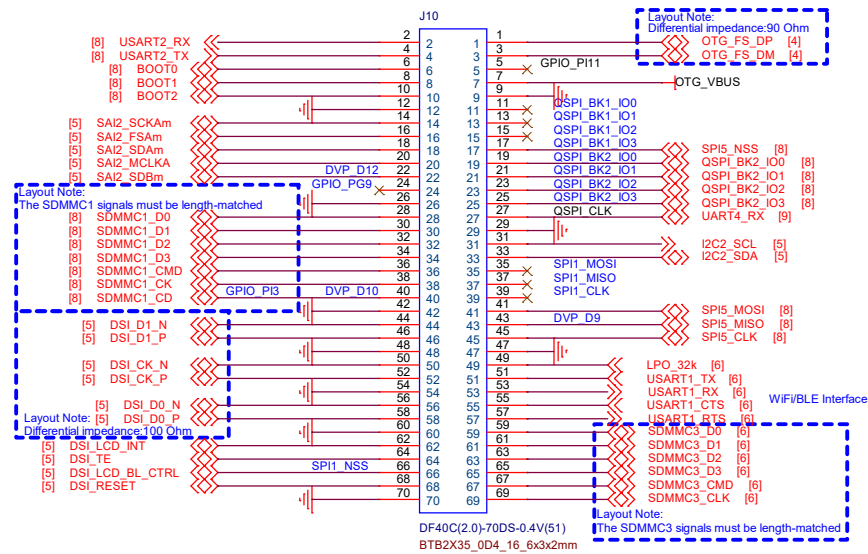
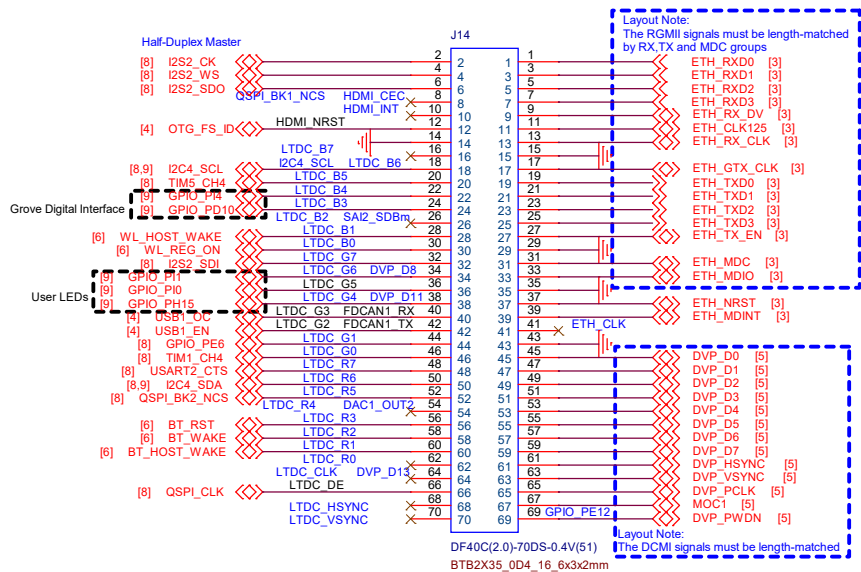
MIPI DISPLAY

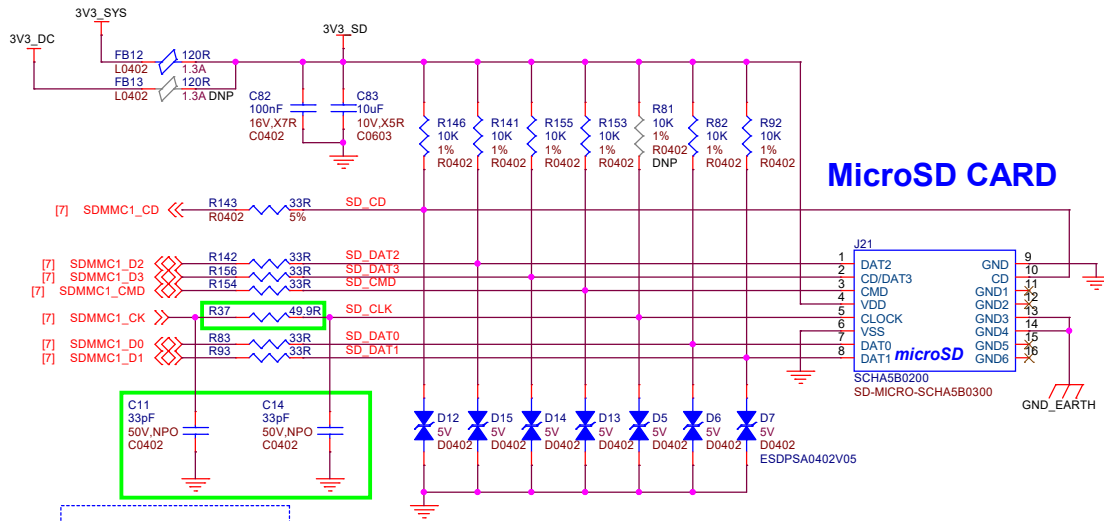


DVP CAMERA



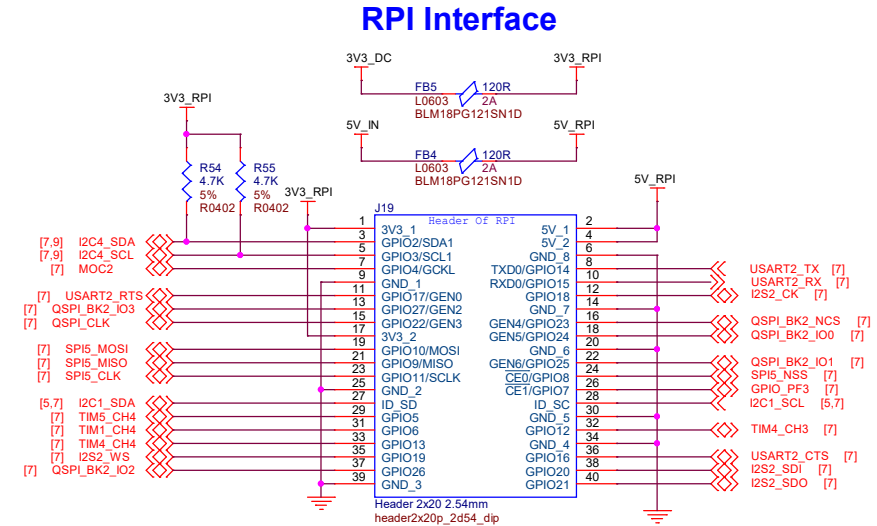




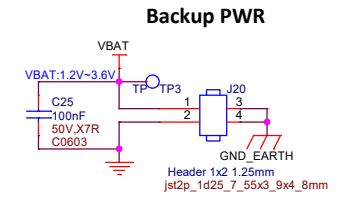


MicroSD CARD

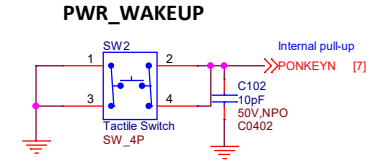
Layout Note:
Place C52 R80 C53 Close To MPU.



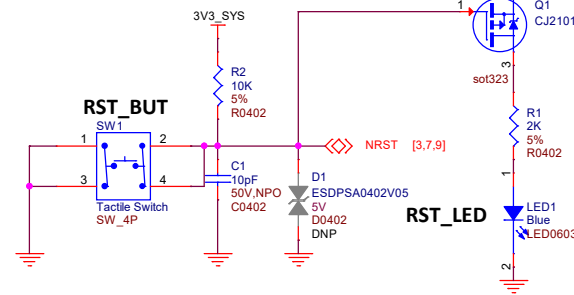
RPI Interface



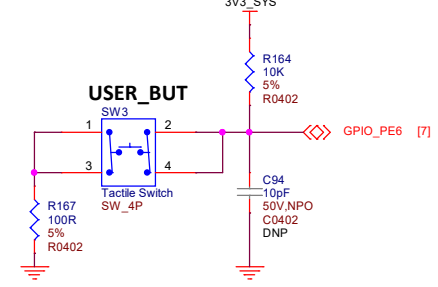
Backup PWR



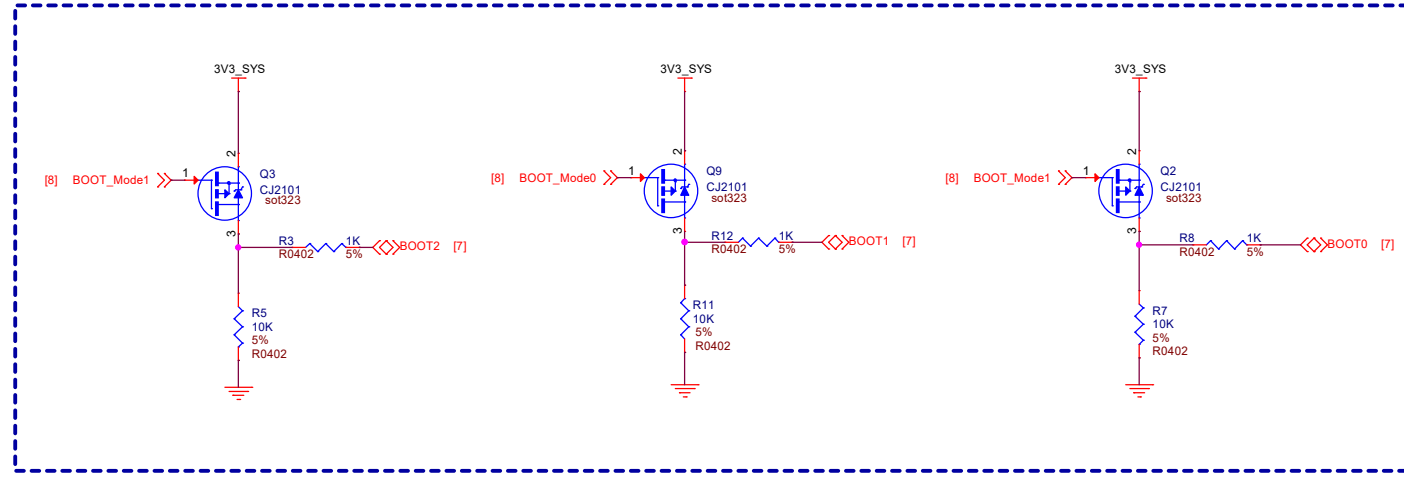
PWR_WAKEUP



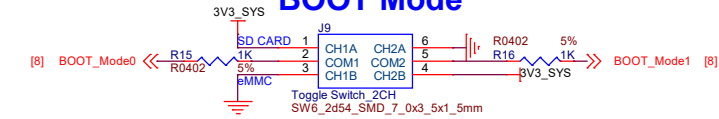
RST_LED



USER_BUTTON

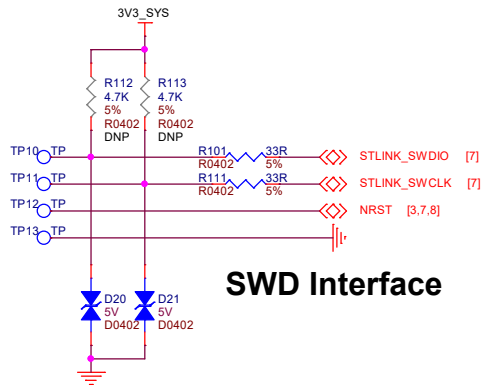


BOOT Mode

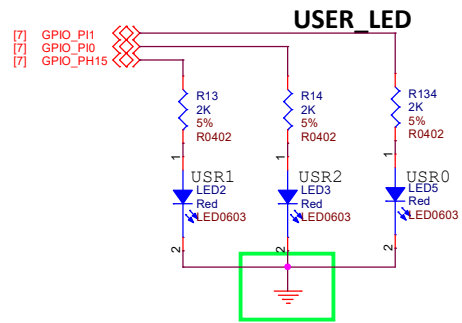


Truth Table

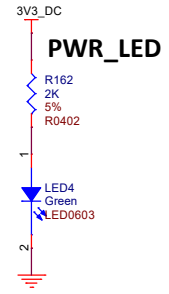
	BOOT2	BOOT1	BOOT0
eMMC	0	1	0
SD	1	0	1



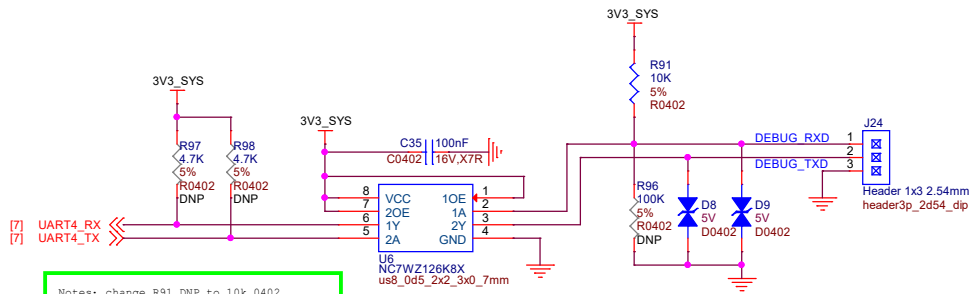
SWD Interface



USER_LED



PWR_LED



DEBUG UART

Notes: change R91 DNP to 10k 0402
change R96 100k, R97 4.7k, R98 4.7k to DNP

Function Table

Inputs		Output
OE	A _n	Y _n
H	L	L
H	H	H
L	L	Z
L	H	Z

H = HIGH Logic Level L = LOW Logic Level Z = 3-STATE

Grove Connector

