Schematic: Expansion Accessory

SHEET	SHEET NAME
01	Title/Revision History
02	System Block Diagram
03	Power Tree Diagram
04	PMIC
05	VIC Power
06	VIC DDR Ctrl
07	VIC ChipLink & CM
08	VIC LCD & GMII & GPIOs
09	VIC HighIF & Ctrl Other
10	LPDDR (A)
11	LPDDR (B)
12	Type C,uSD, QSIP Flash
13	USB 3.0 HUB
14	2 x USB TYPE A (A)
15	2 x USB TYPE A (B)
16	2 x CSI CONN
17	DSI, AUDIO JACK
18	HDMI FRAMER
19	WiFi, Bluetooth
20	10/100/1000 ETHERNET
21	RPI EXP CONN, LED, BUTTON

Revision History

DATE	REVISION	DESCRIPTION
Nov. 23 2020	v0.1	1. Initial release
Nov. 25 2020	v0.2	1. Add USB Hub circuit 2. Modify reset circuit of KSZ9031, removed interrupt funcfion 3. Change 1V2 output form LDO3 to BUCK5
Nov. 25 2020	v0.3	1. Add Power down control and power on button
Dec. 1 2020	v0.4	1. Add reset button
Dec. 23 2020	v0.5	1. Add U74 JTAG connector for Tag-Connect cable 2. Modiy GPIO assignment for better layout
Dec. 28 2020	v0.6	1. Swap Buck2 and Buck6 of PMIC for better layout 2. Remove R67 and R76 from DNP group 3. Modify the value of C46 C215 C223 C224
Feb. 18 2021	v0.7	1. Add 100kOhm pull-up to UART3_RXD_3V3 2. Modify LED, JTAG, 3. Add boot selection button 4. Add UART3_1V8 5. Change R256 and R262 to 12.1kOhm 6. Modify Q6, Q7 schematic package 7. Add GPIO controll to GMAC reset pin 8. Change System Reset High voltage to 3.3V 9. Add reset IC for VIC
Feb. 22 2021	v0.8	1. Add a diode at the USB input to prevent the reverse current
Feb. 22 2021	v0.9	1. Remove Power down control and power on button 2. Modify Power LED control

MAIN

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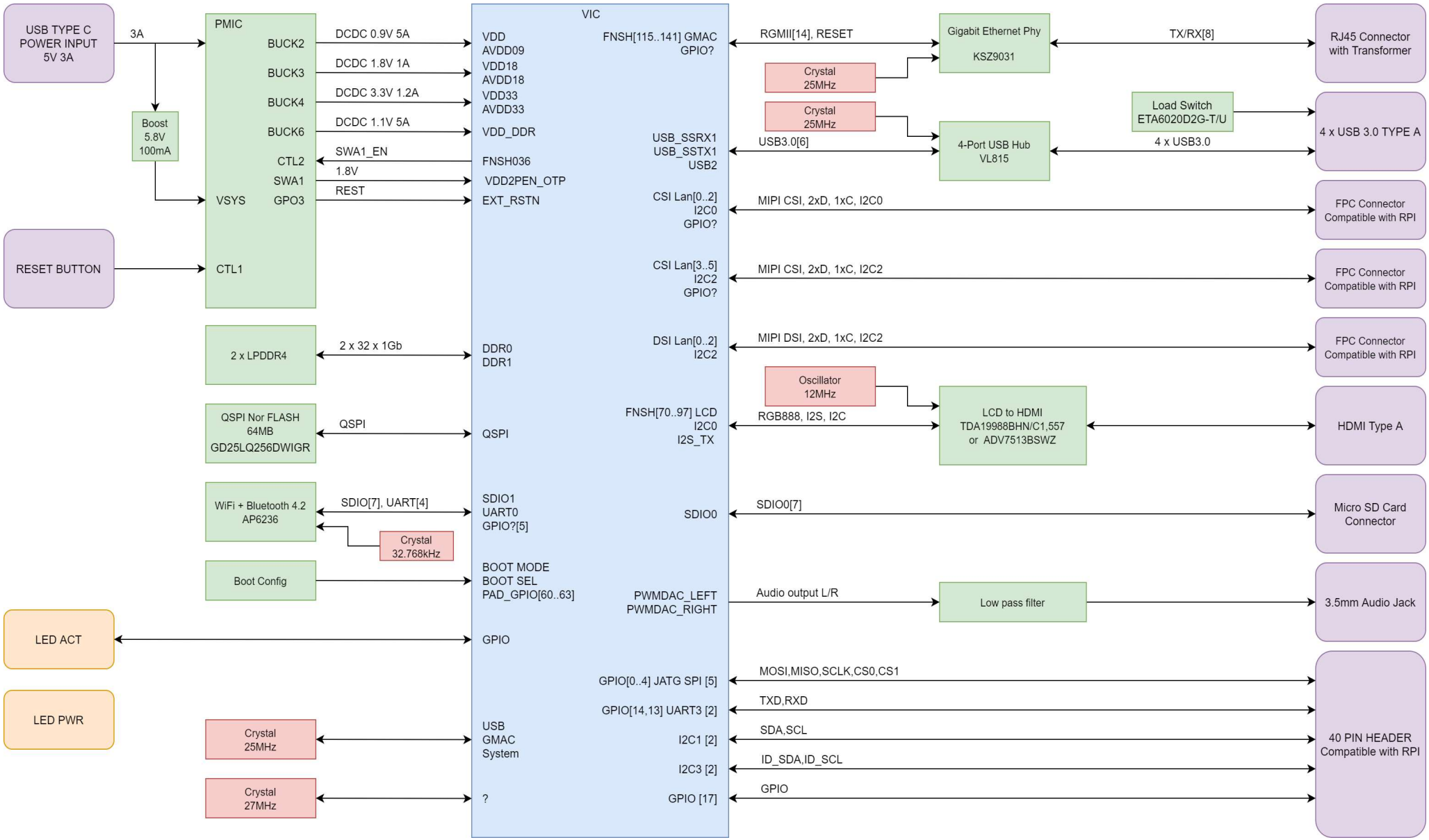
Title: Beagle V

Size: A3	Document Number: 01_Title/Revision History	Rev: v0.7
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 1 of 21



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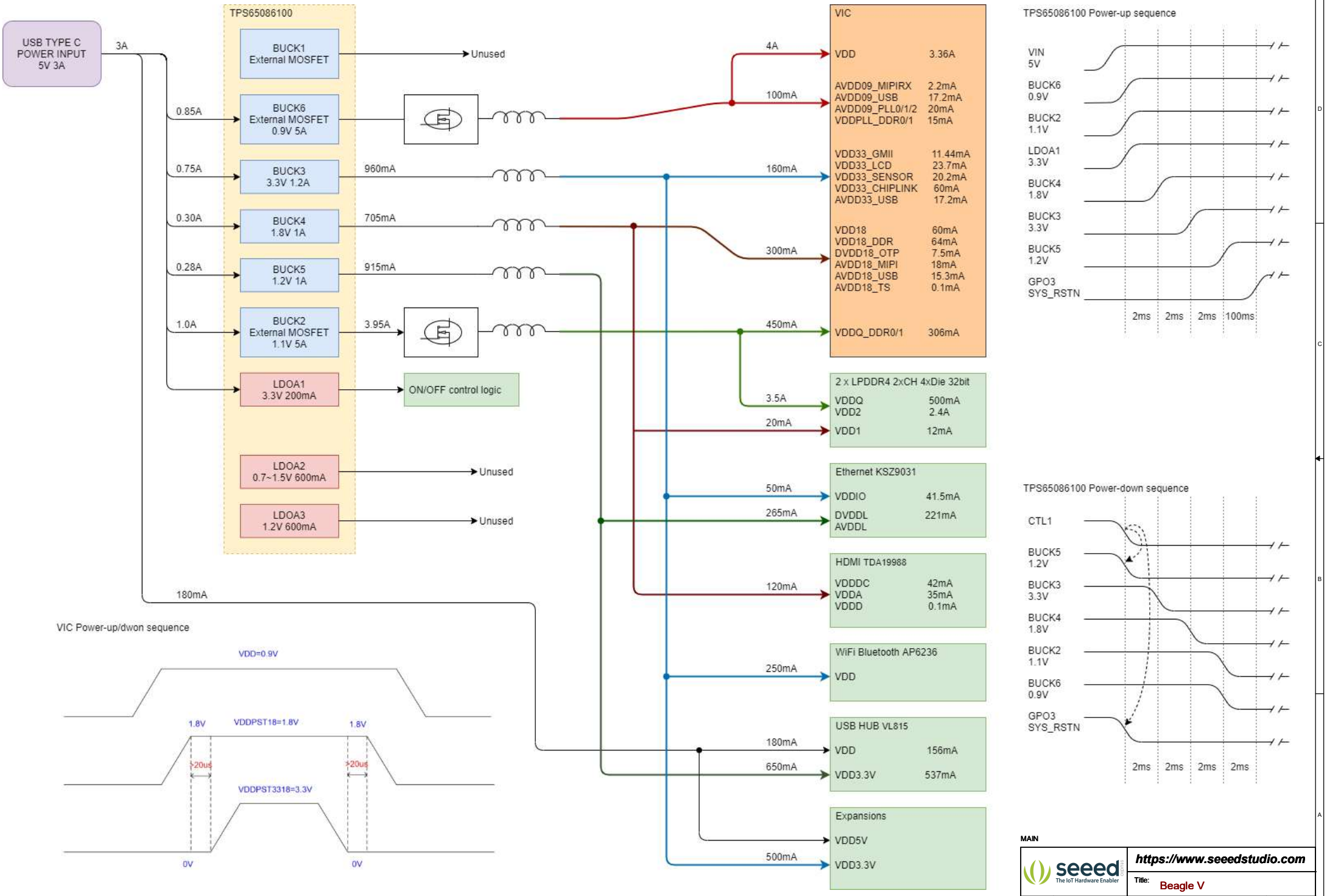

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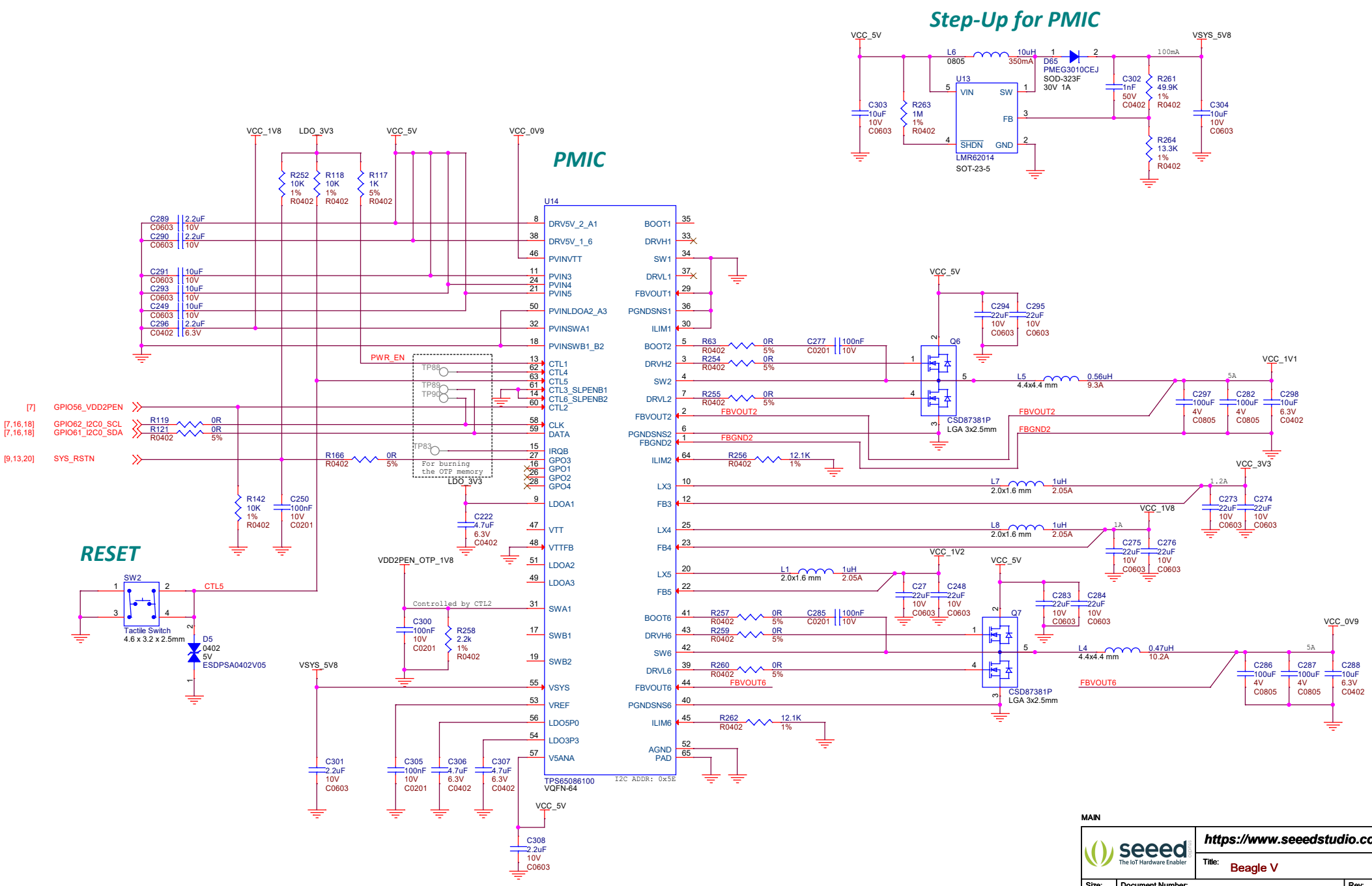
Step-Up for PMIC
PMIC
RESET
U14
TPS65086100
VQFN-64
I2C ADDR: 0x5E
LMR62014
SOT-23-5
CSD87381P
LGA 3x2.5mm
Tactile Switch
4.6 x 3.2 x 2.5mm
ESDPSA0402V05
For burning
the OTP memory
Controlled by CTL2
VCC_5V
VCC_1V8
LDO_3V3
VCC_0V9
VSYS_5V8
VCC_1V1
VCC_3V3
VCC_1V2
PWR_EN
VDD2PEN_OTP_1V8
FBVOUT2
FBVOUT6
FBGND2
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https://www.seeedstudio.com
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Rev: v0.7
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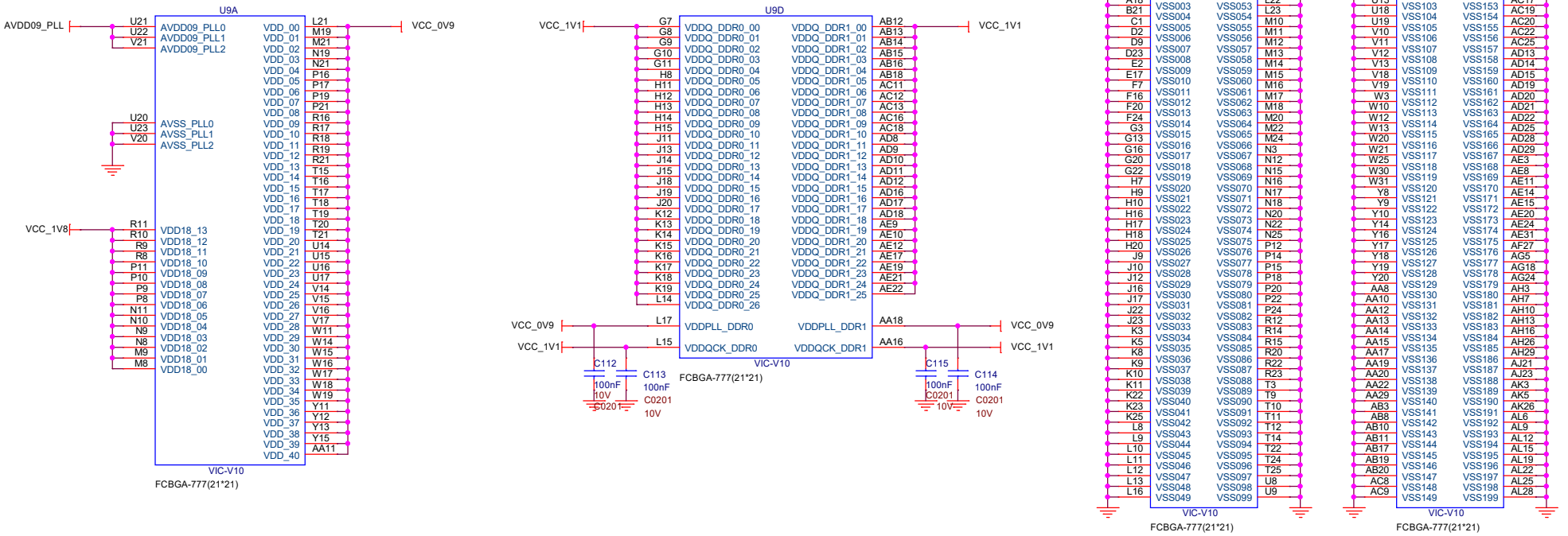
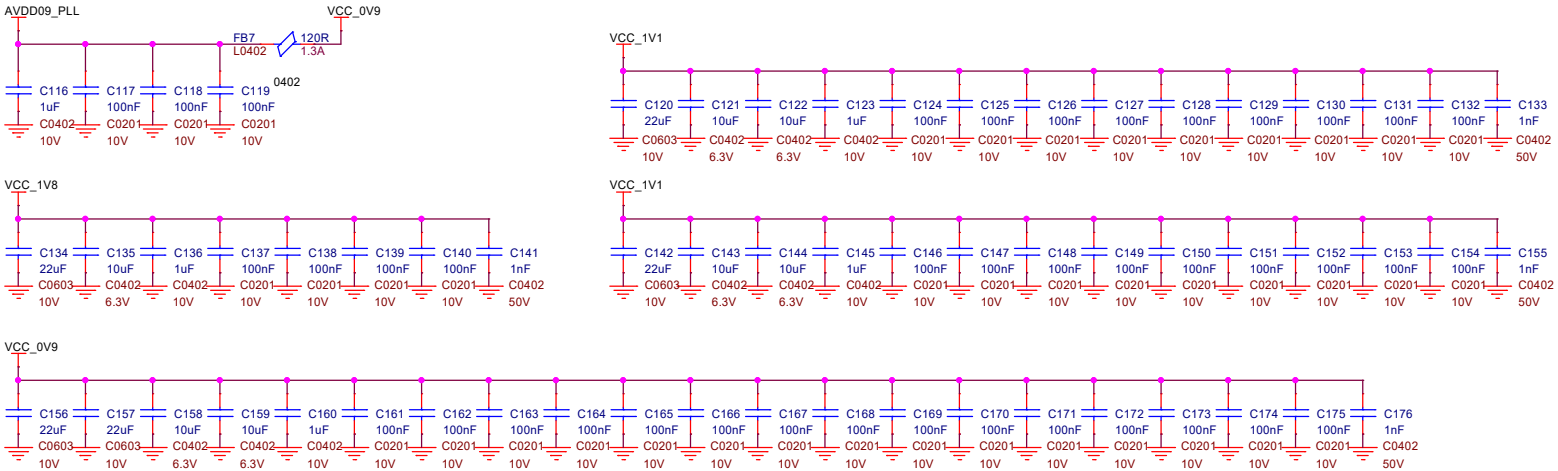
Date: Monday, March 22, 2021
Sheet: 4 of 21

VIC Power





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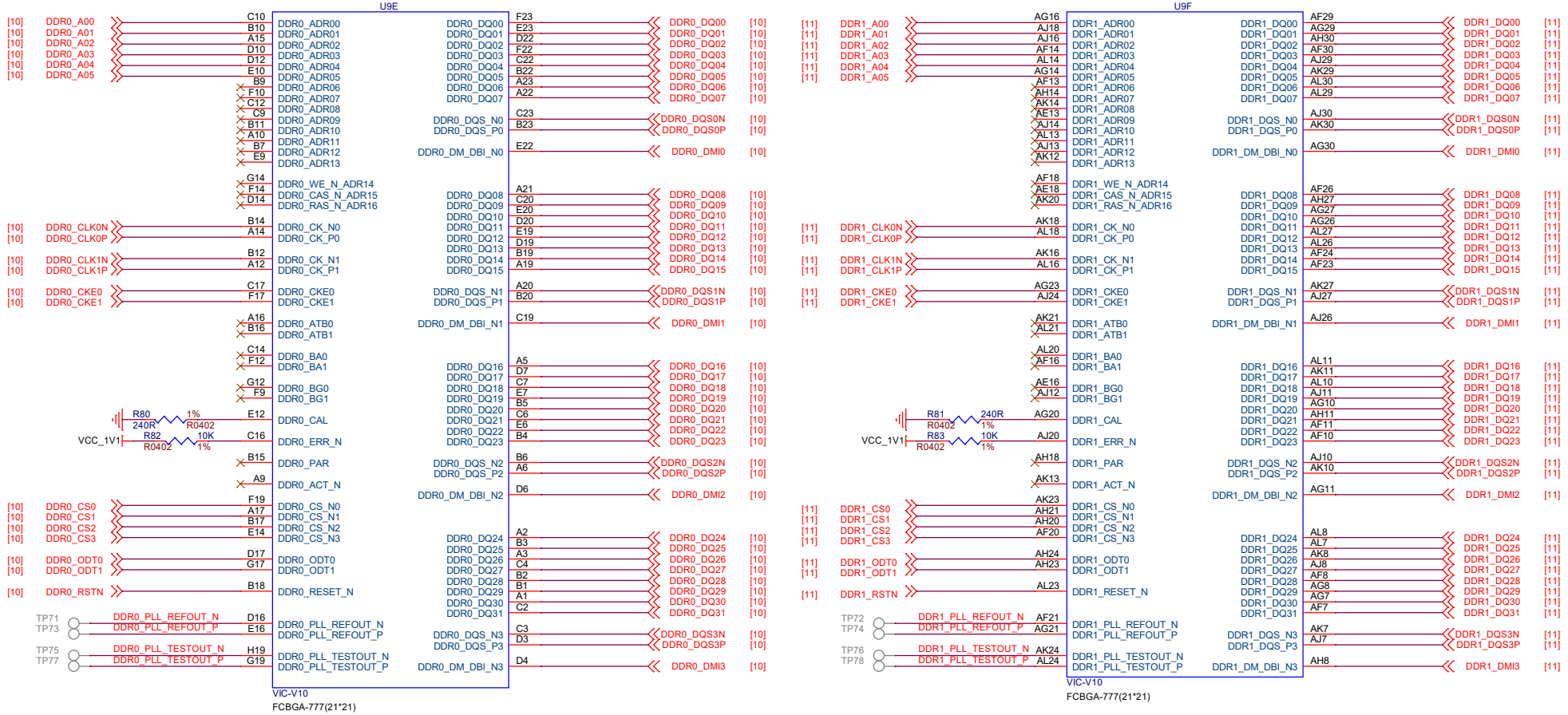
Size: A3	Document Number: 05_VIC Power	Rev: v0.7
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 5 of 21

VIC DDR controller



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https://www.seeedstudio.com

Title: Beagle V			
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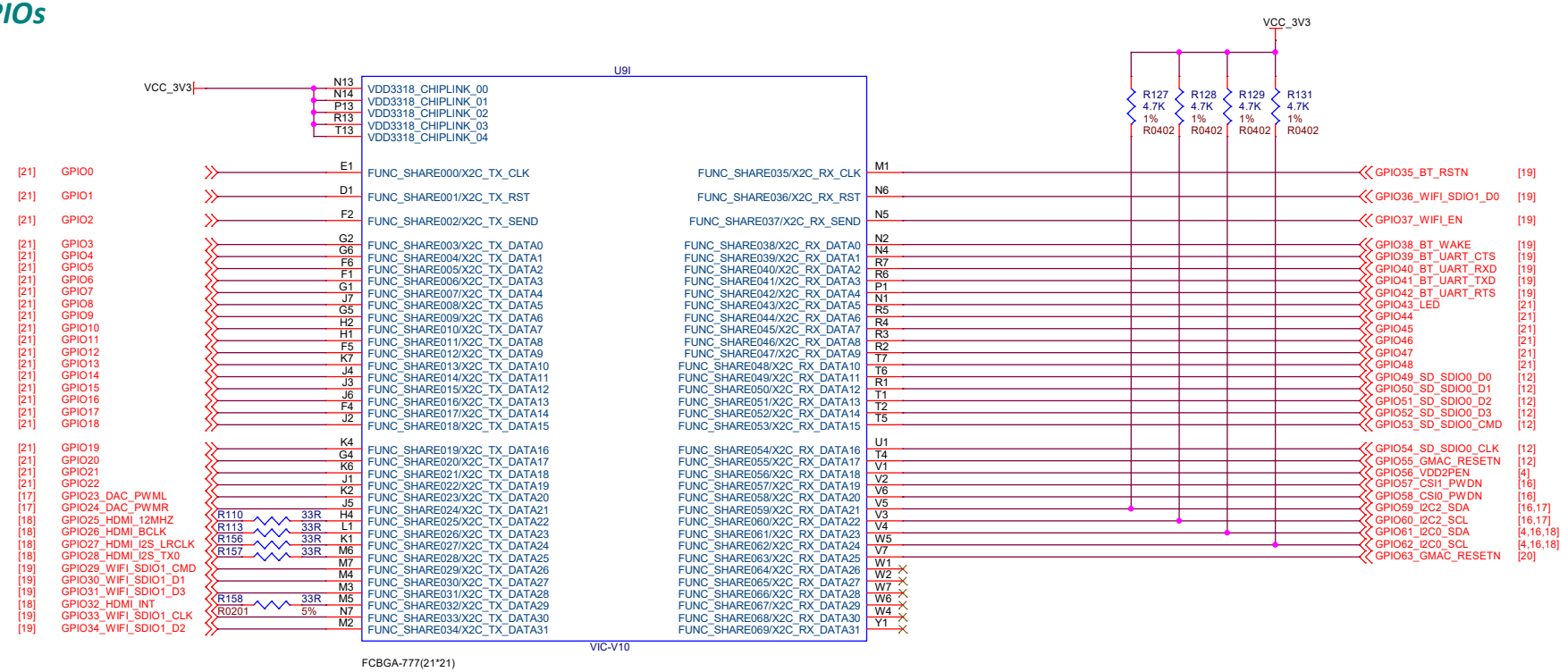
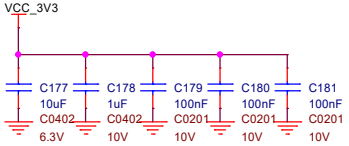
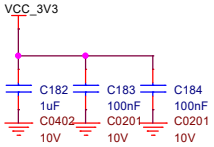
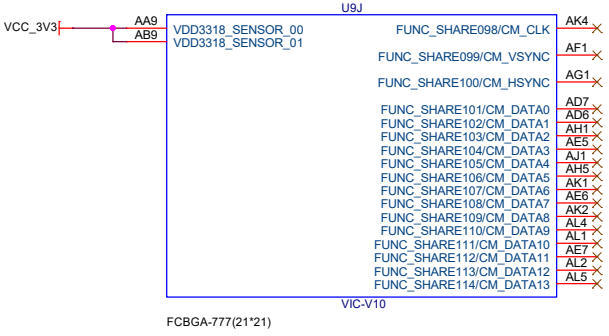
VIC 3.3V GPIOs









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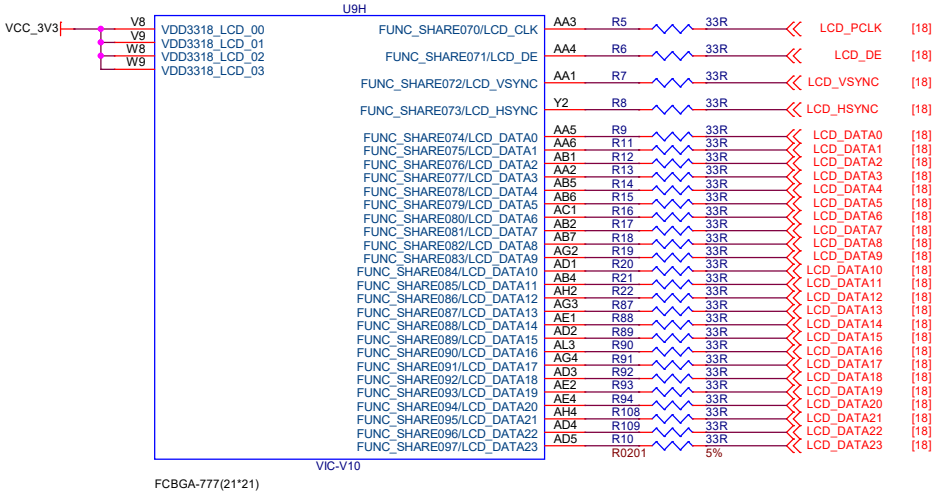
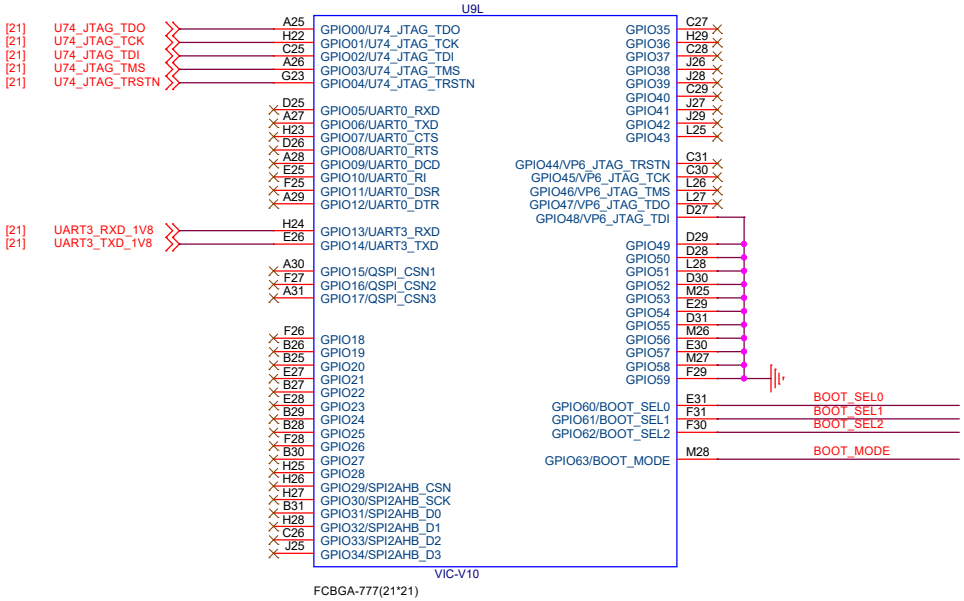
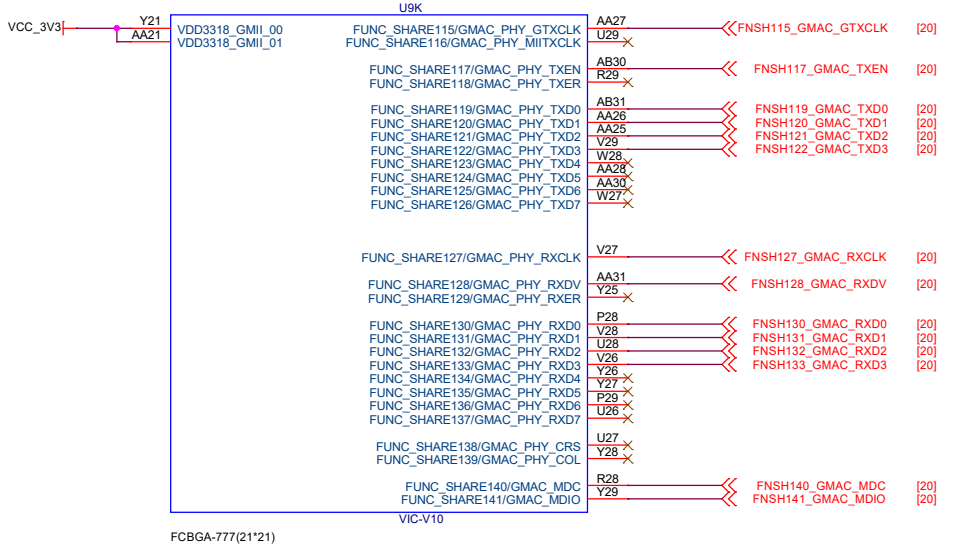
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 7 of 21

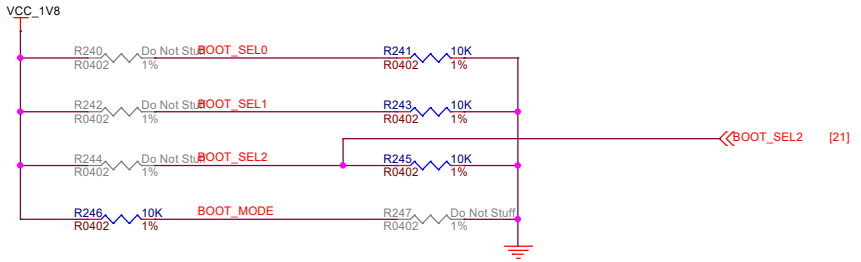
VIC LCD&RGMII

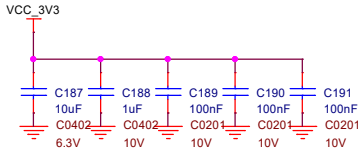


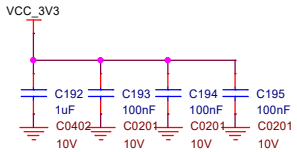




BOOT MODE







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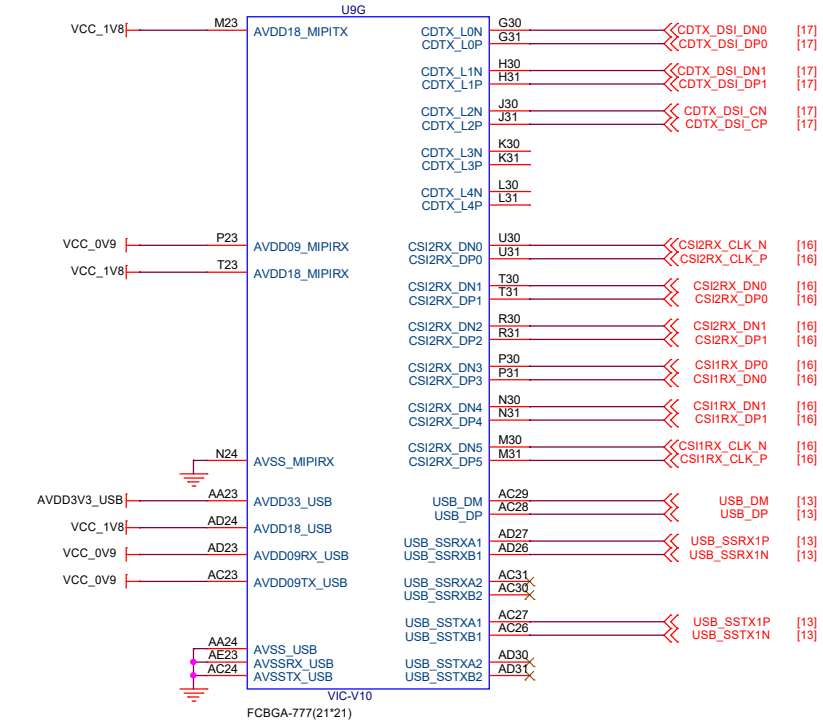
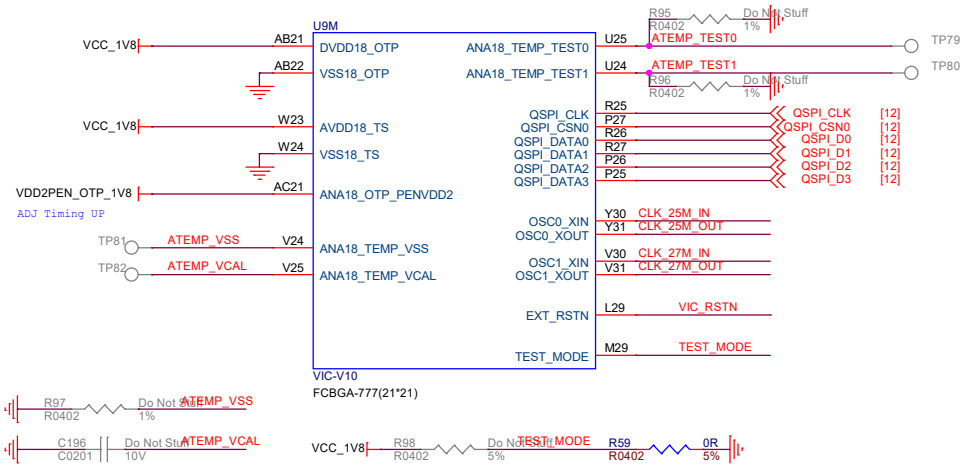
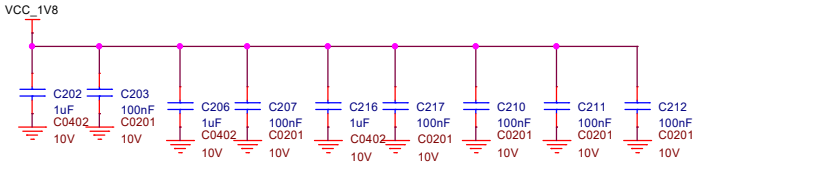
Size: A3	Document Number: 08_VIC LCD & GMII & GPIOs	Rev: v0.7
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 8 of 21

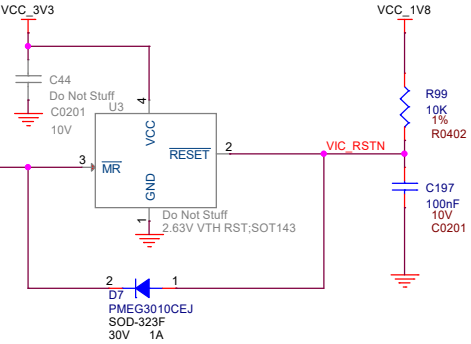
VIC MIPI&USB

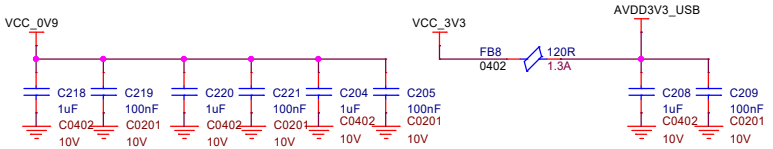


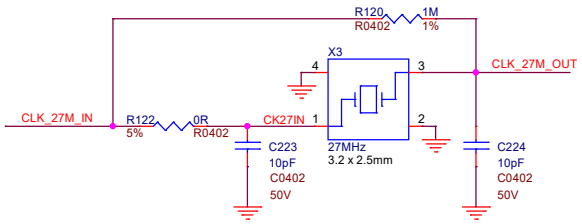
VIC Clock&

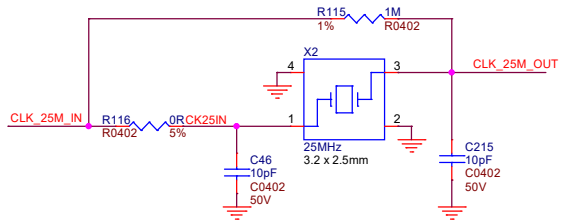












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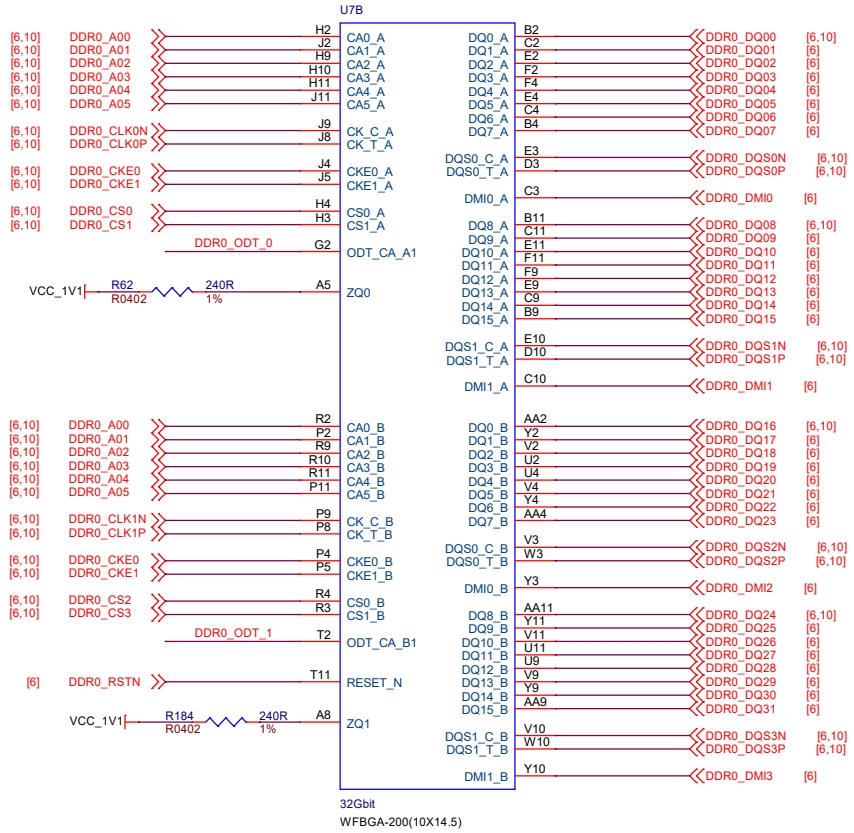
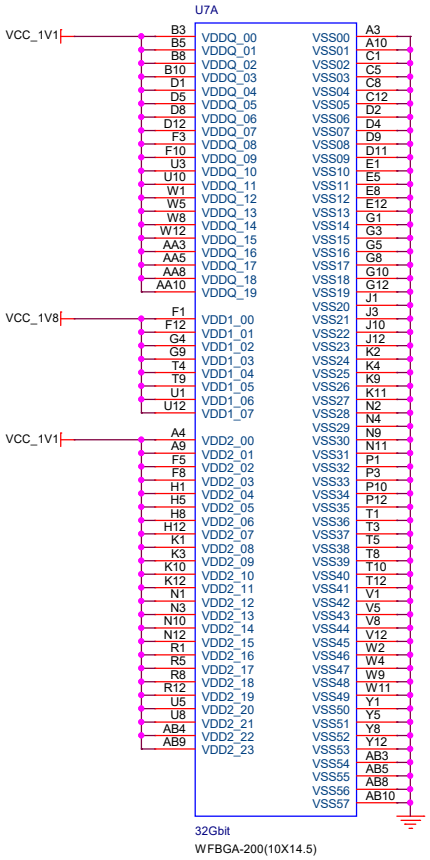
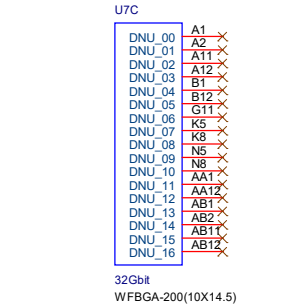
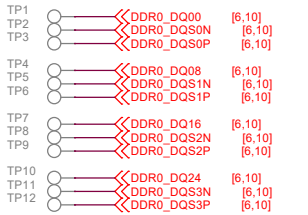
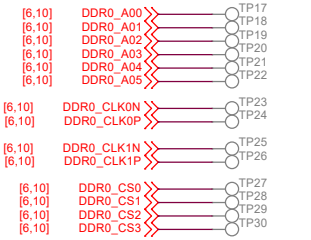
LPDDR4

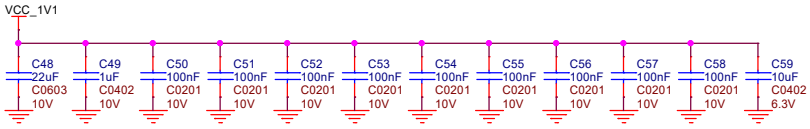


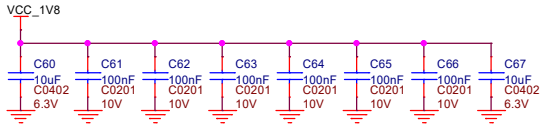


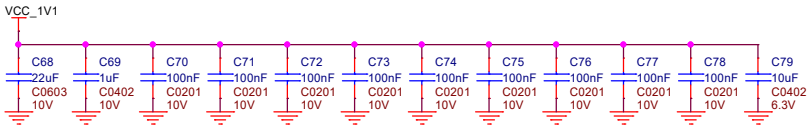


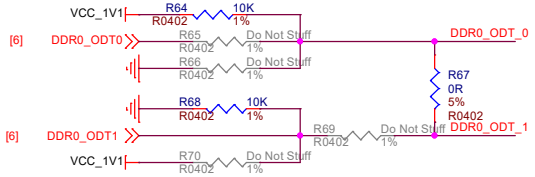


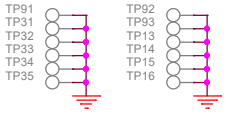












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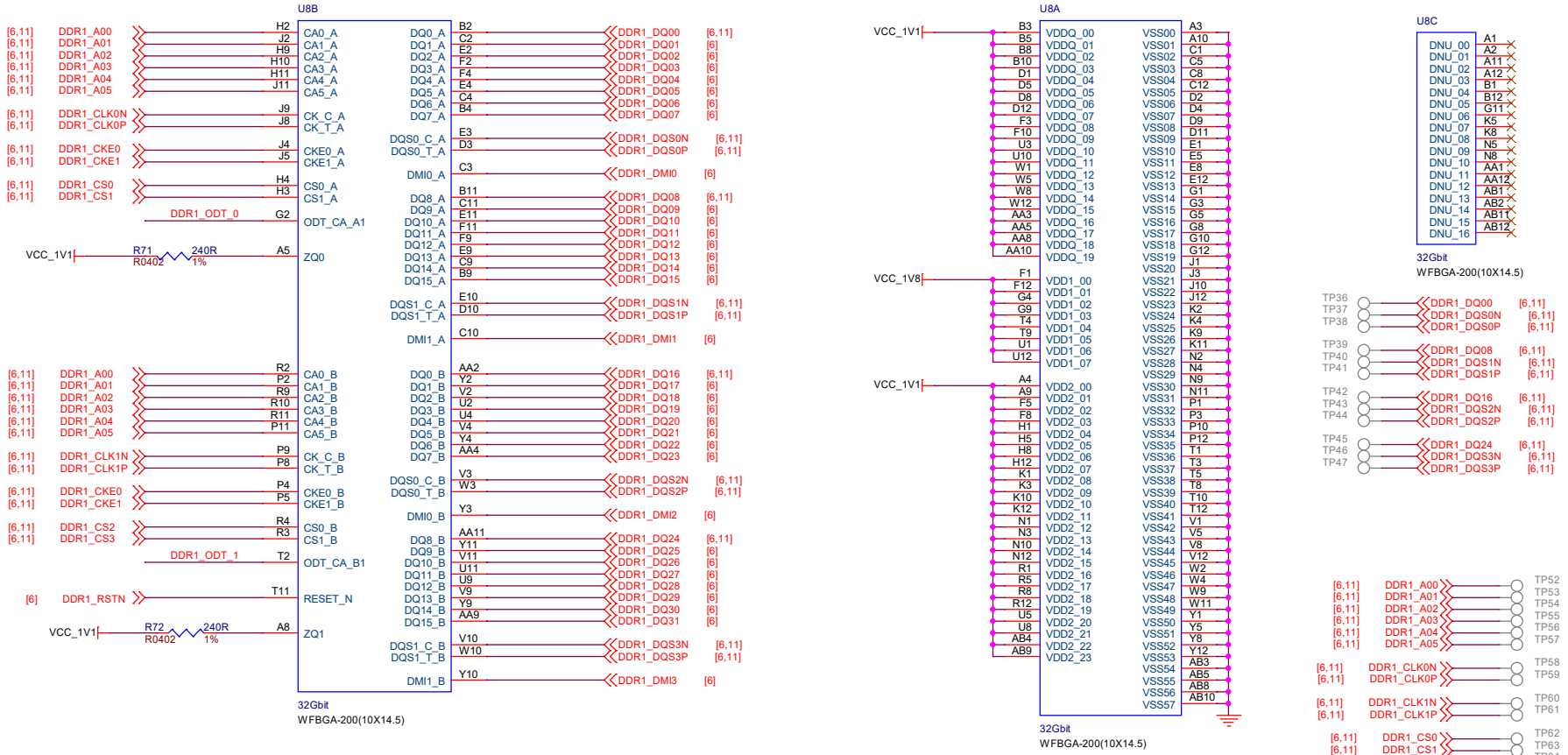
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 10 of 21

LPDDR4



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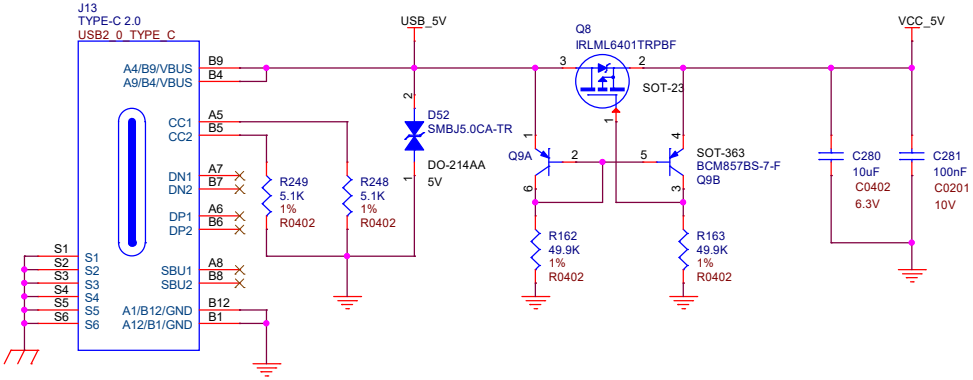
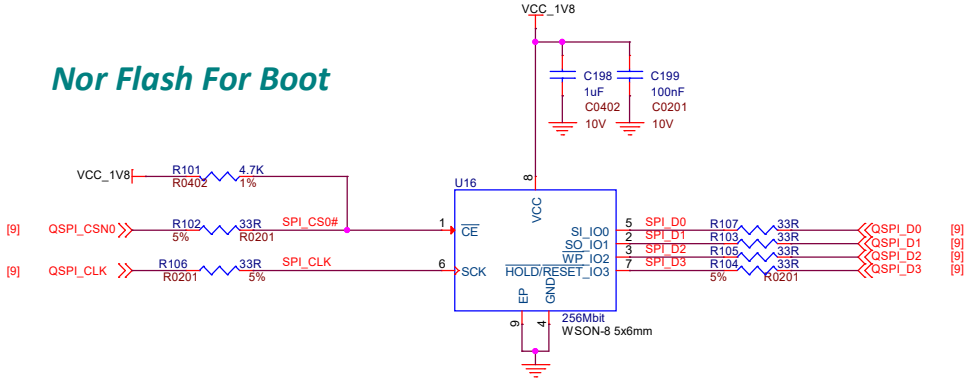
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 11 of 21

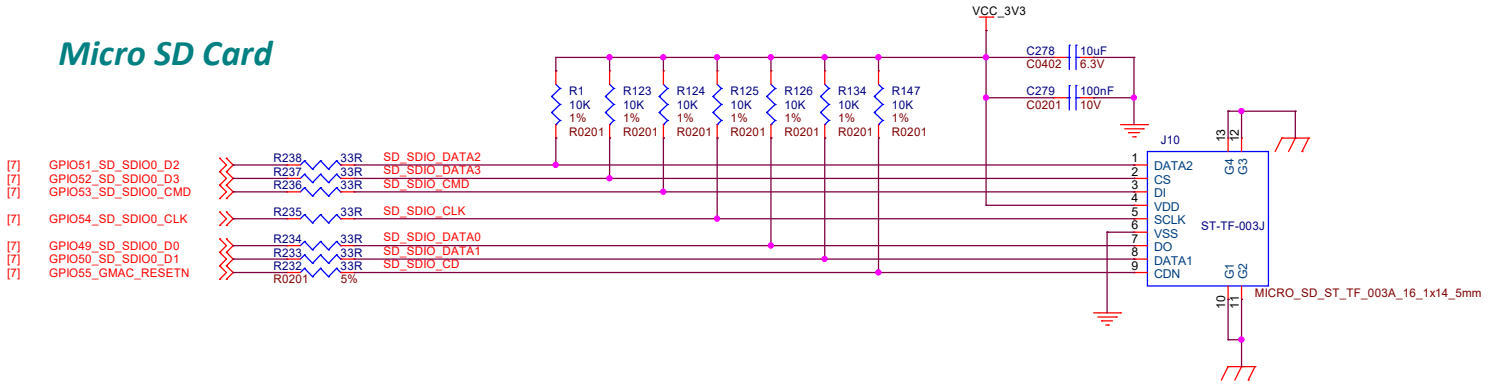
USB Tpye-C Power



Nor Flash For Boot



Micro SD Card



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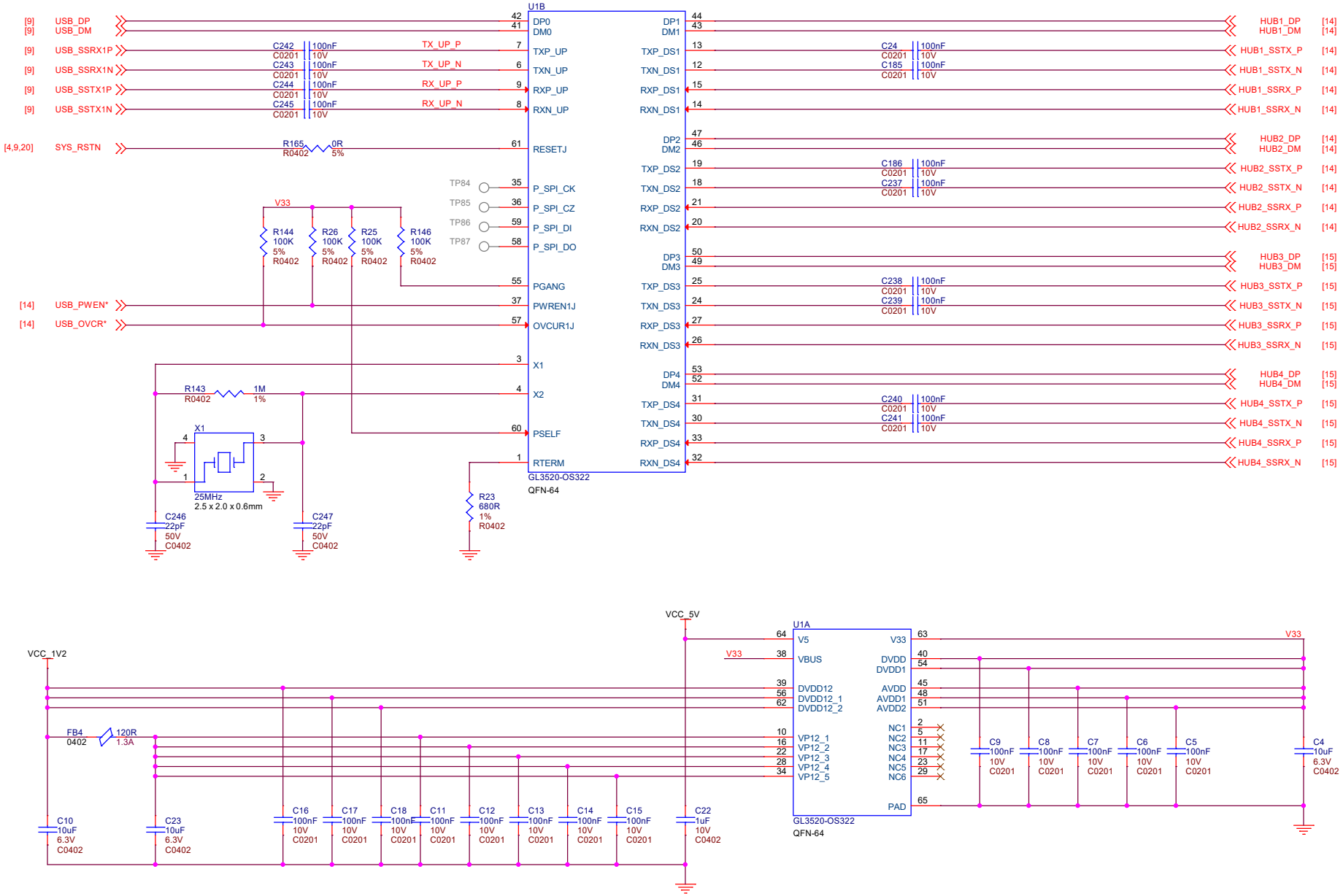
USB 3.0 HUB
TBD



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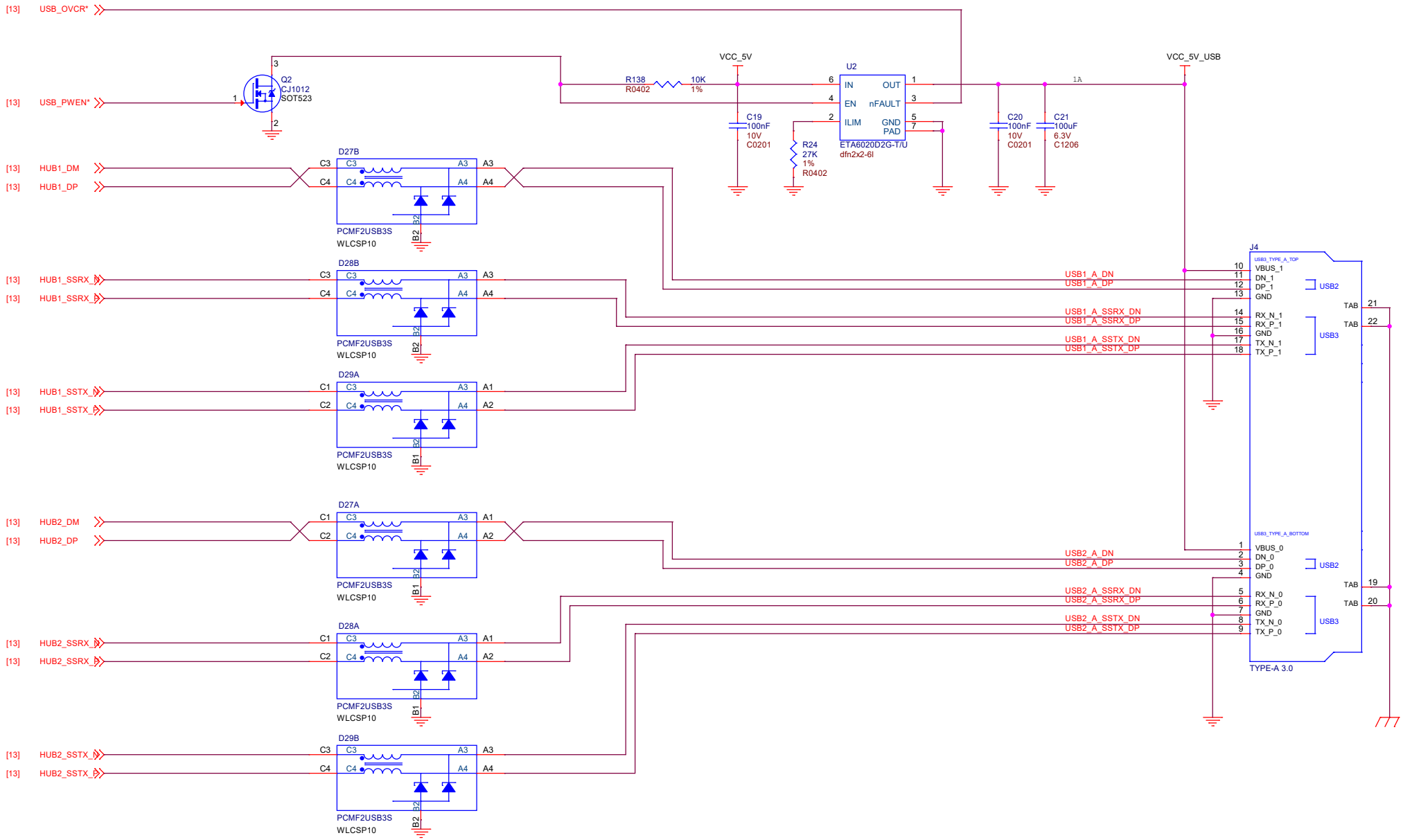
Draw By: <Drawing>	Date: Monday, March 22, 2021	Sheet: 13 of 21

USB 3.0 TYPE A x2



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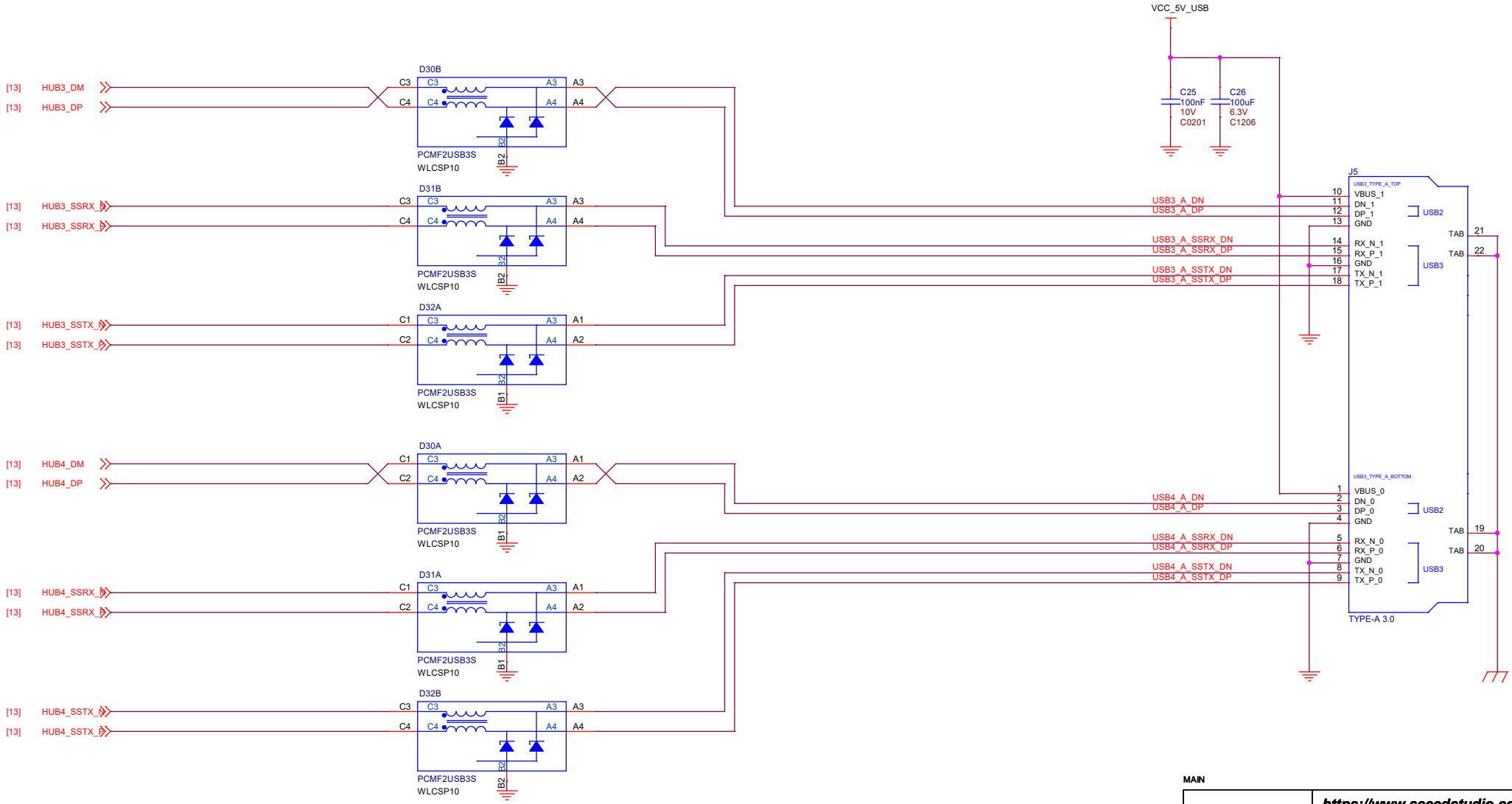
USB 3.0 TYPE A x2



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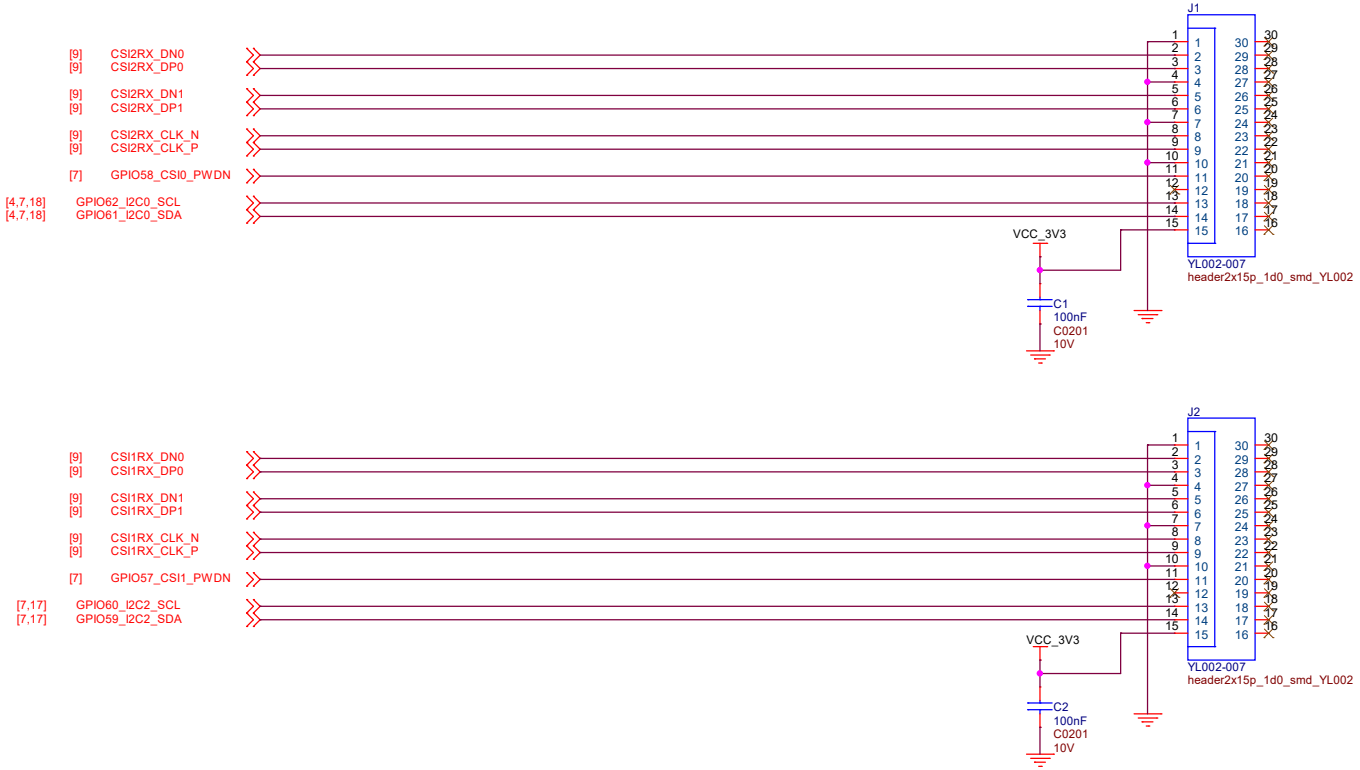
CAMERA CONNECTOR



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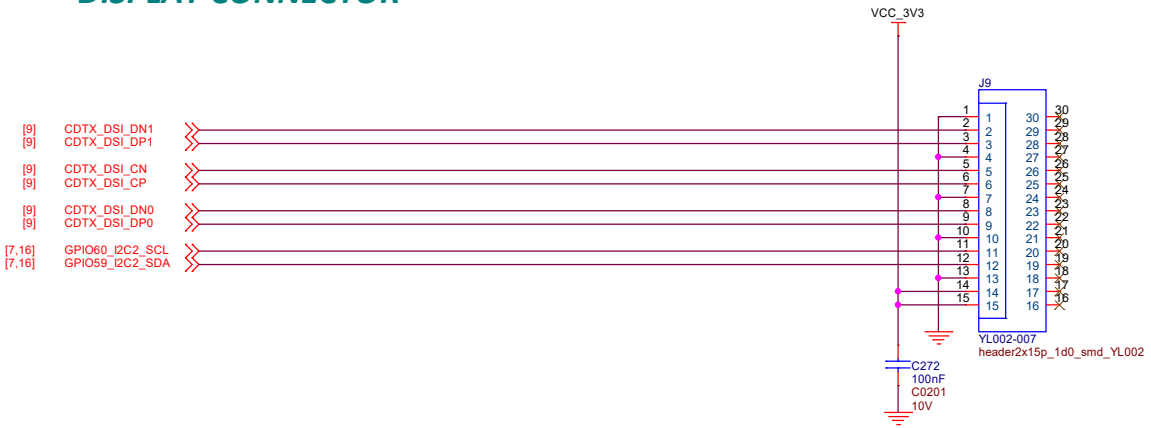
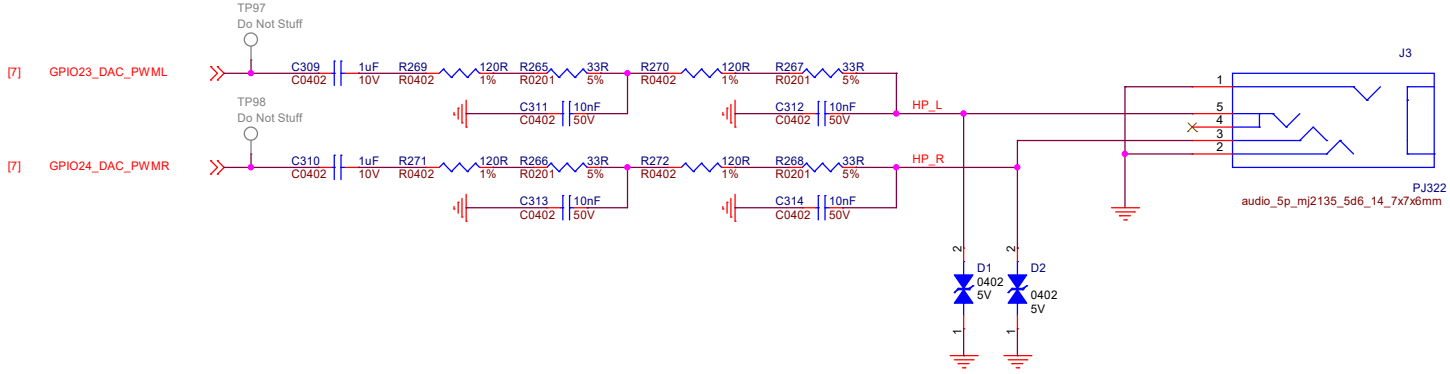
DISPLAY CONNECTOR



AUDIO



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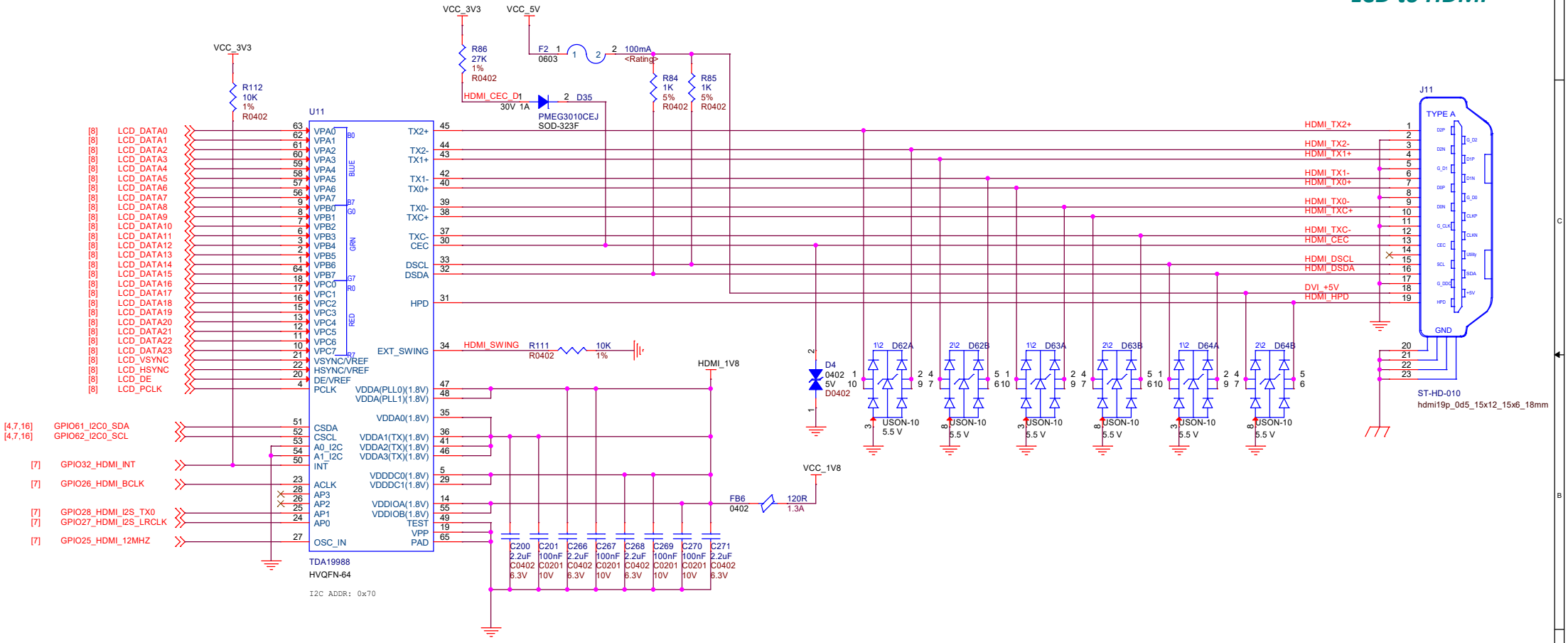
LCD to HDMI



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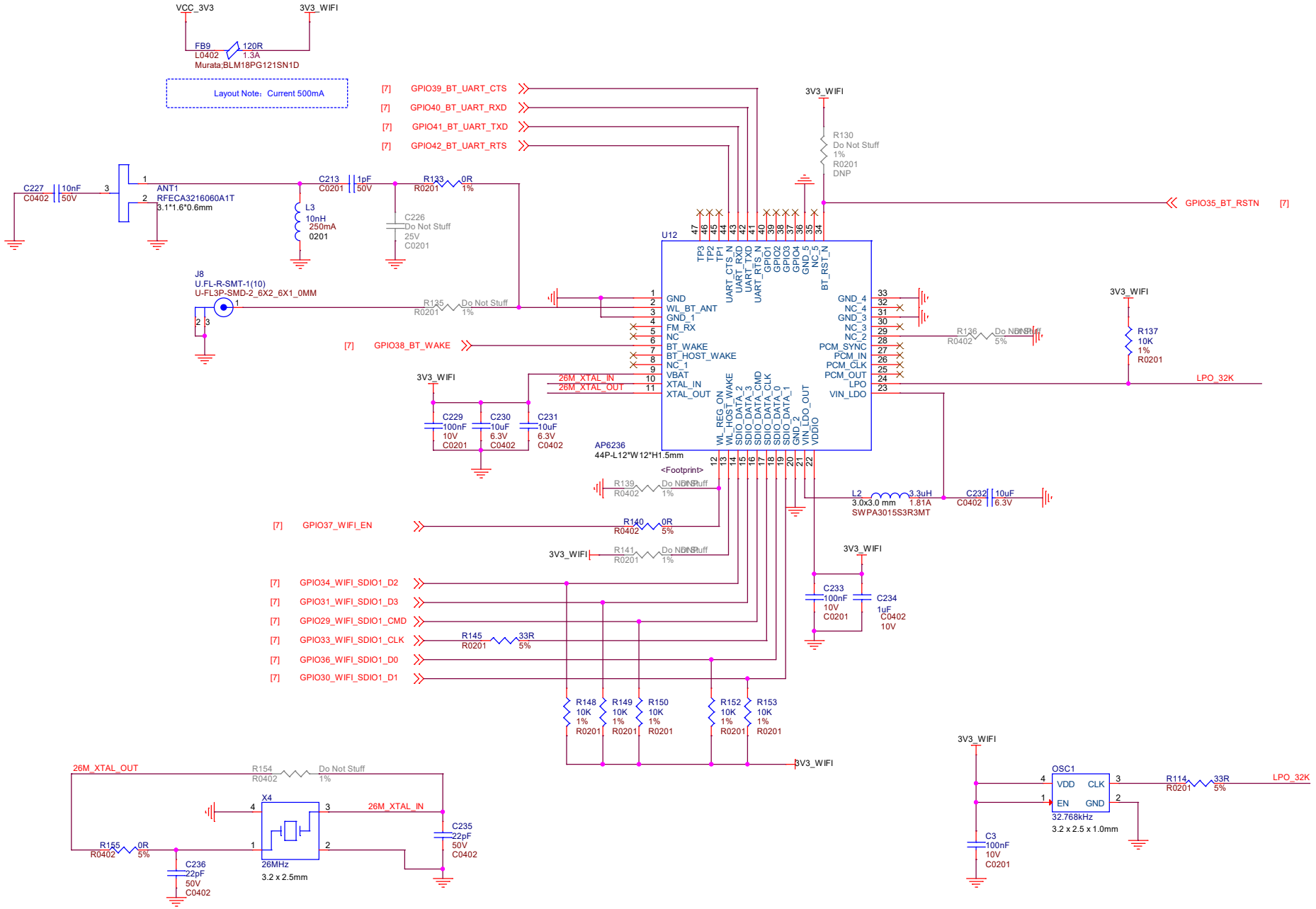
WiFi & Bluetooth



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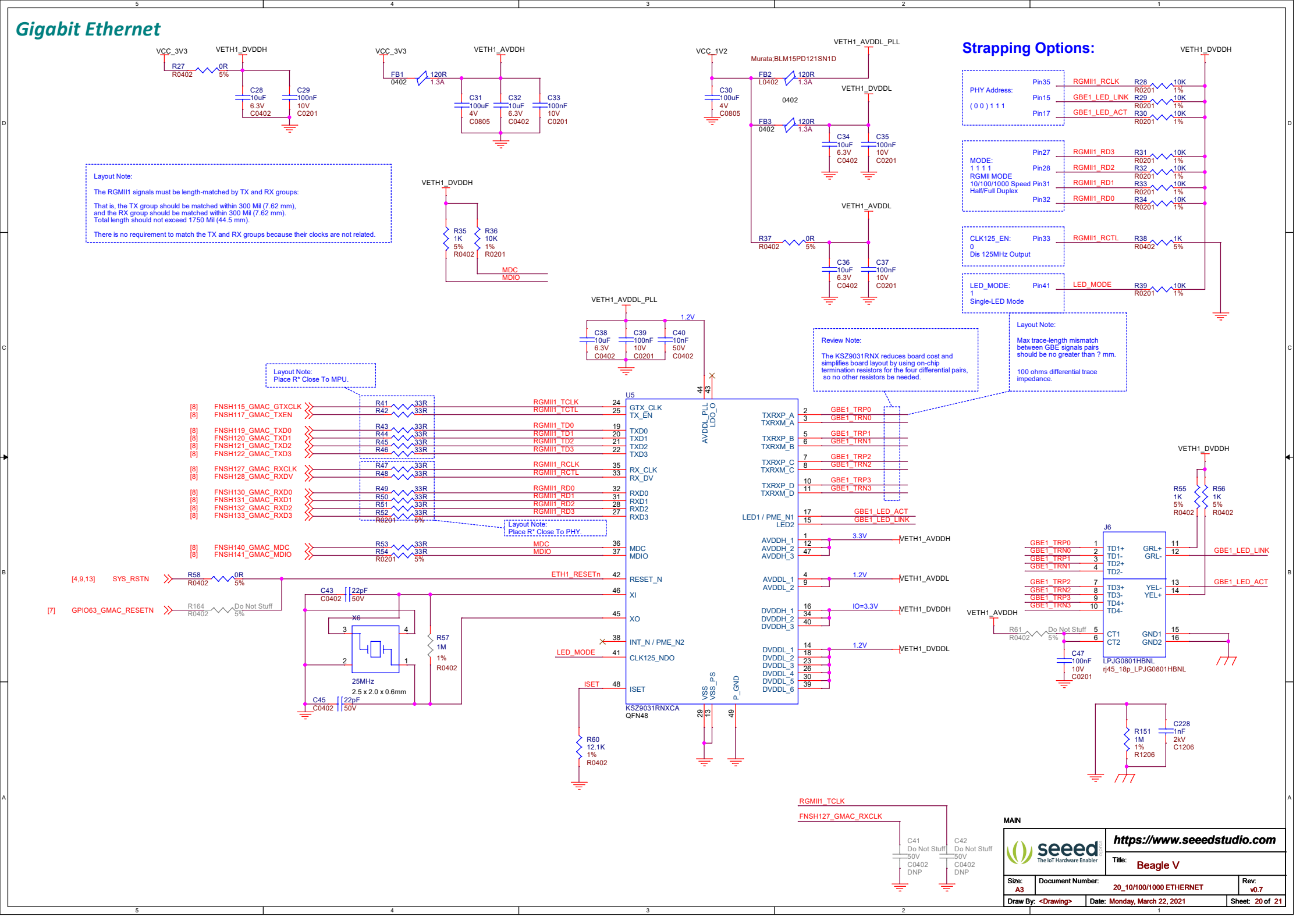
Gigabit Ethernet



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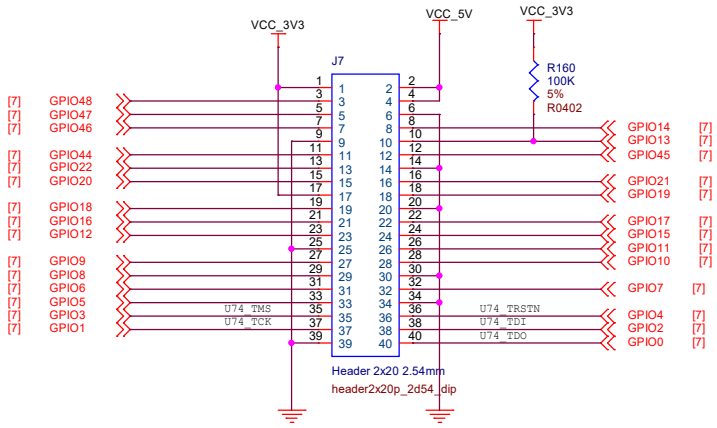
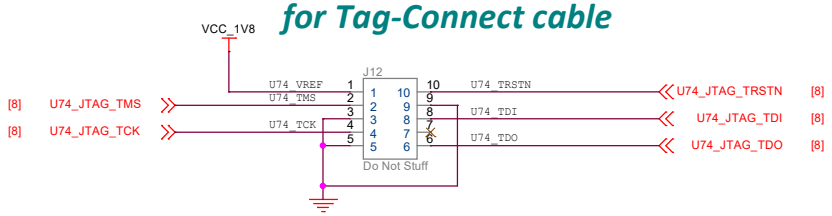
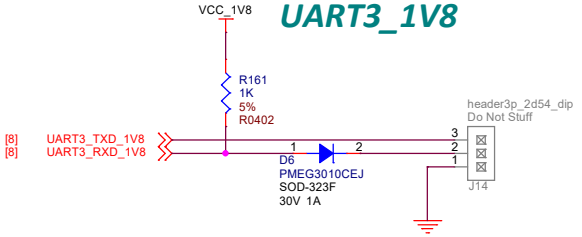
PI connector



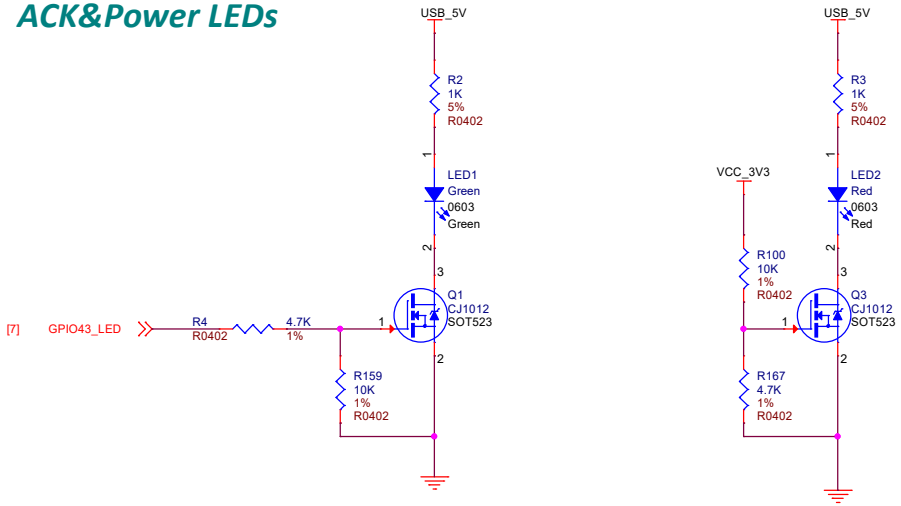
U74 JTAG 1V8 for Tag-Connect cable



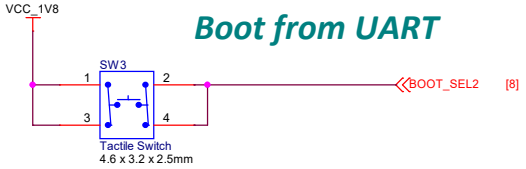
UART3_1V8



ACK&Power LEDs



Boot from UART



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