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3. Board to Board Connectors
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6. 512MB DDR3L SDRAM
7. Wireless Connectivity

Note:

Always match the compatible revision numbers carfully.

PCB Revision number – 1.0.0
BOM Revision number – 1.0.0
Assembly docs Rev number – 1.0.0
Fabrication file Rev number – 1.0.0

Goals:

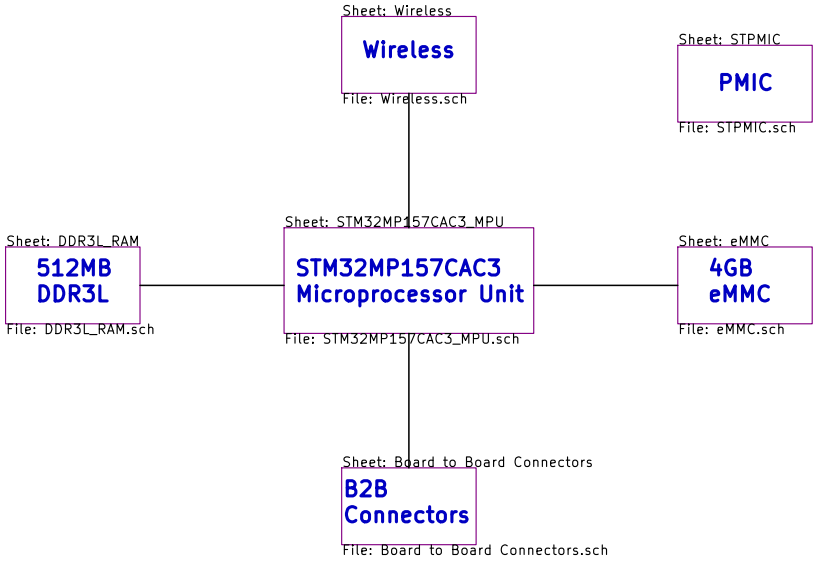
1. Test all components
2. Test WiFi Connectivity
3. Cost of Developement
4. PCB Manufacturer checking
4. Proto for Crowd Funding Campaign

Todo:

1. Implement Bluetooth Connections
2. Connect all GPIOs to Board to Board Connectors

BLOCK DIAGRAM

LB1A_DCA7M4_R512MB_F4GB



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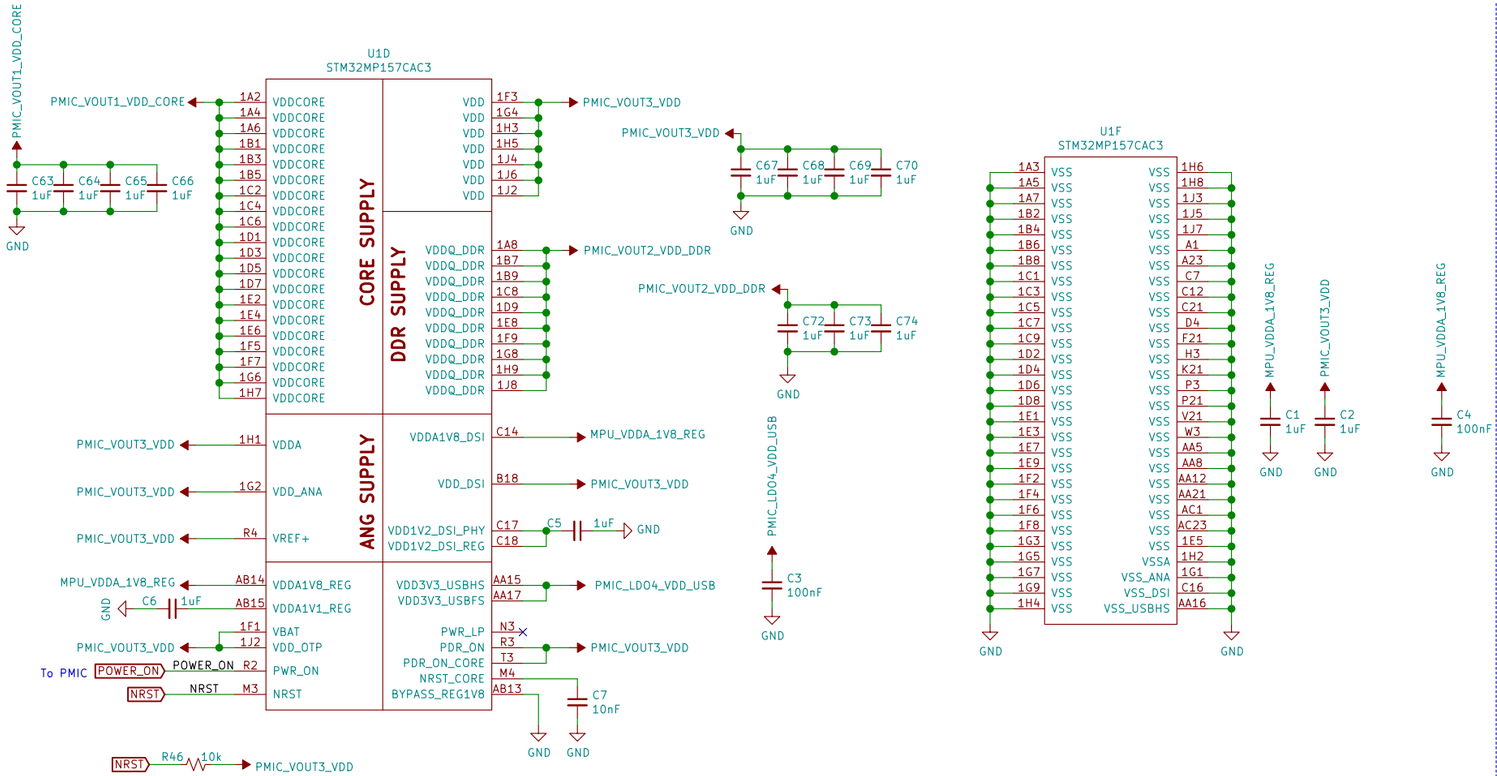
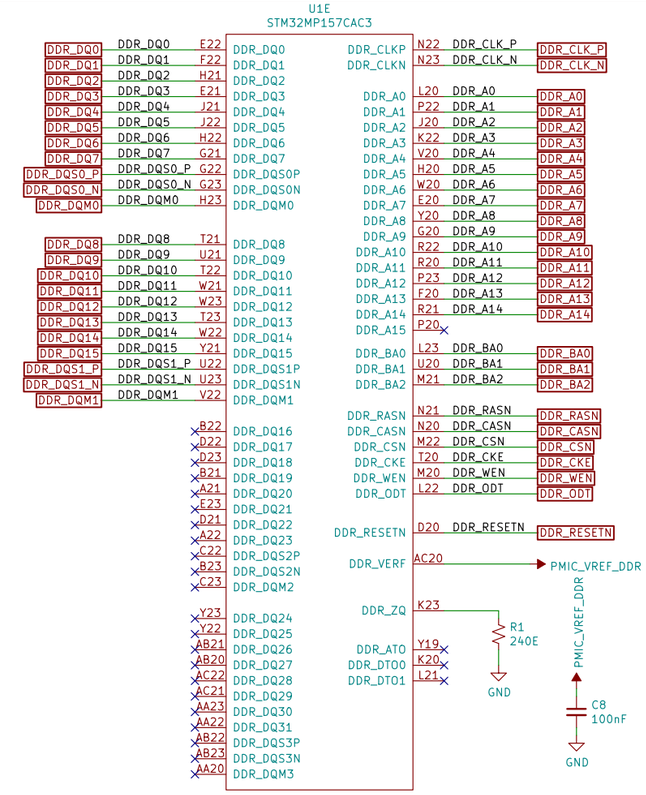
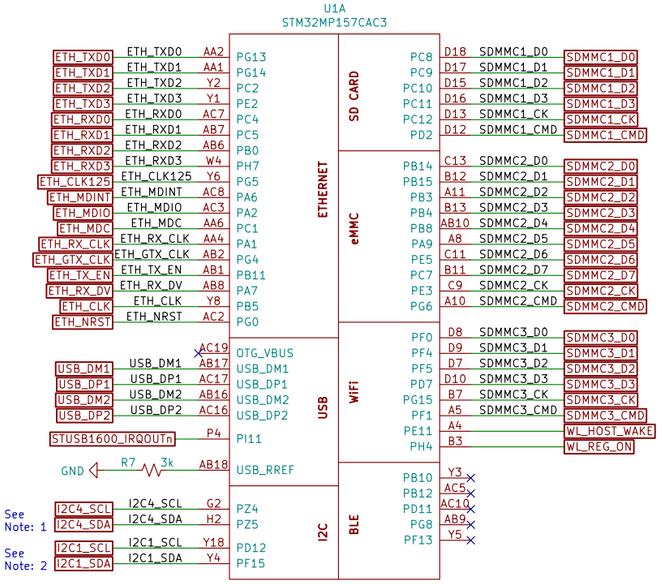
Sheet: /
File: LB1A_DCA7M4_R512MB_F4GB.sch

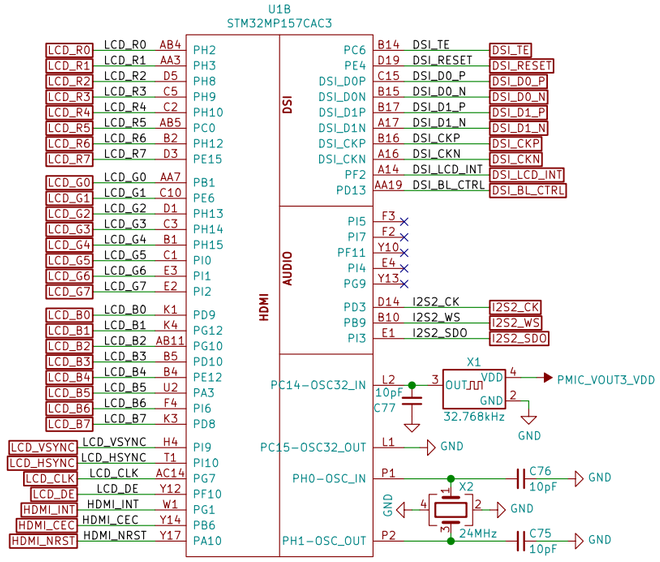
Title: LOGIC BOARD 1A (LB1A_DCA7M4_R512MB_F4GB)

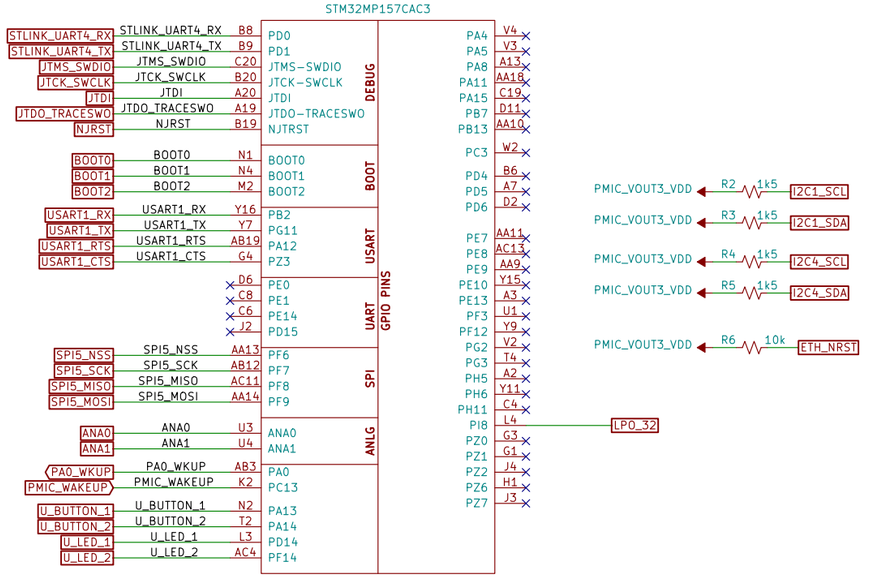
Size: A4	Date: 2021-06-02	**Rev: 1.0.0**
KiCad E.D.A.	kicad 5.1.10-88a1d61d5888ubuntu20.04.1	Id: 1/7











Notes

1. Used for PMIC & USB-C
2. Used for DSI, HDMI & RPi Header

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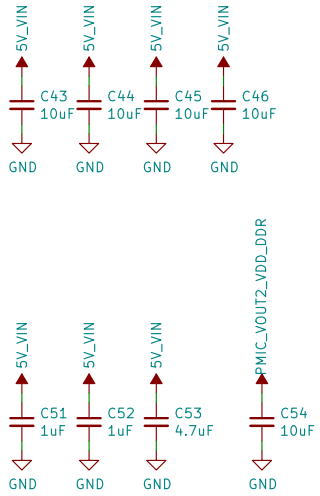
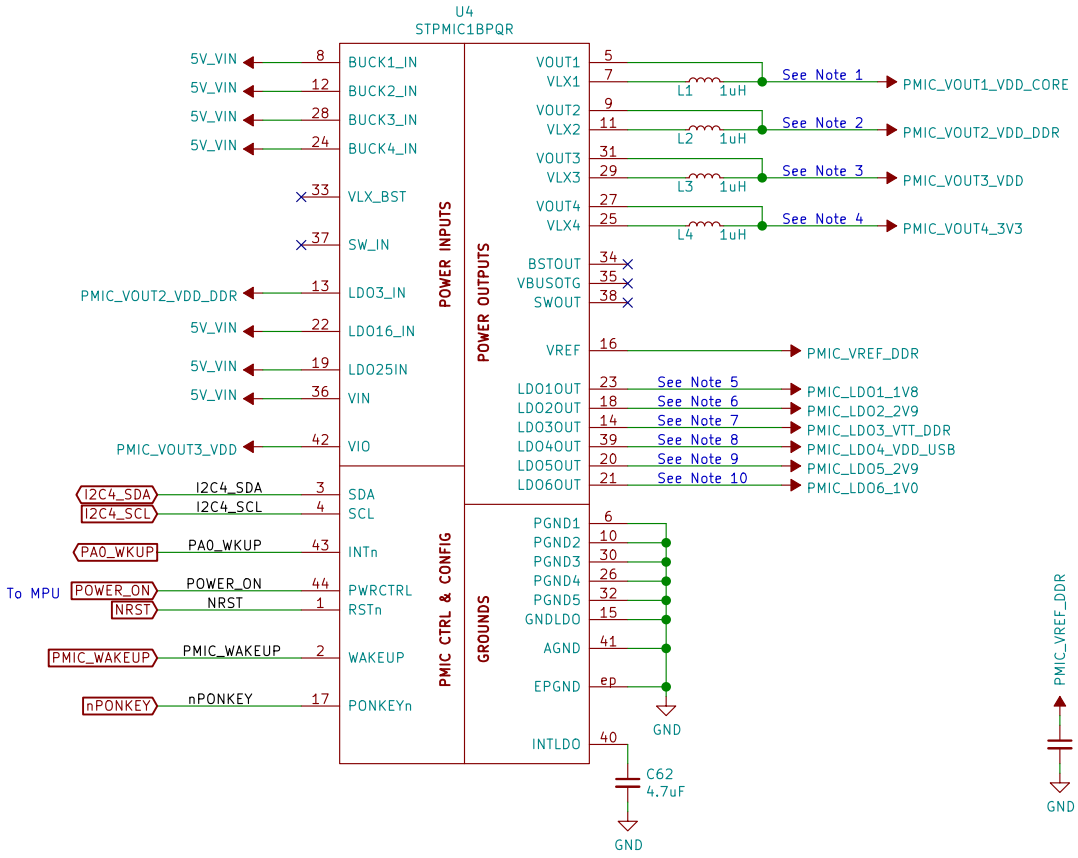
Sheet: /STM32MP157CAC3_MPU/
File: STM32MP157CAC3_MPU.sch

Title: MPU – STM32MP157CAC3

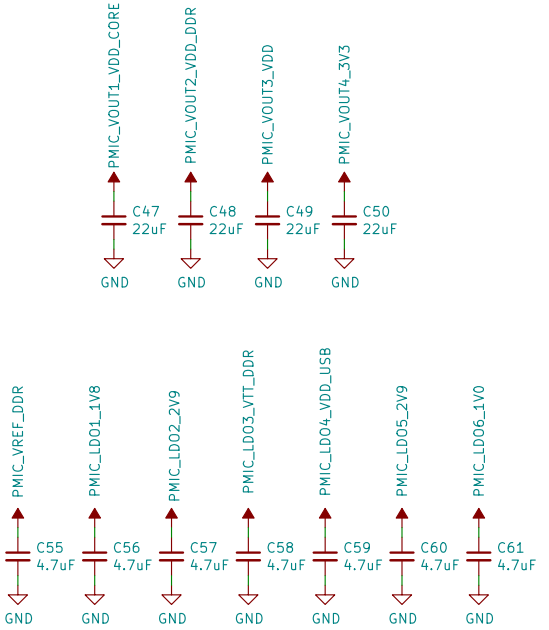
Size: A3	Date: 2021-06-02	**Rev: 1.0.0**
KiCad E.D.A.	kicad 5.1.10-88a1d61d5888ubuntu20.04.1	Id: 2/7

Input Power Caps

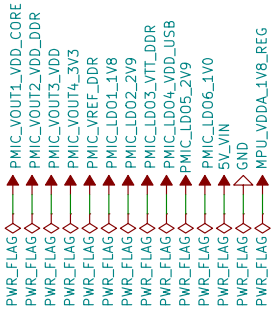




Output Power Caps



ERC Power Flags



Notes

PMIC Power On Sequence:
PWR_ON_RESET –> BUCK3 –> BUCK1, BUCK4, LDO2, LDO5 –> LDO4
BUCK2, LDO1, LDO3, LDO6, REFDDR enable by I2C

BUCK Converters

1. Default = 1.2V; Imax = 2000mA; Application = CORE
2. Default = 1.1V; Imax = 1600mA; NOT ON BY DEFAULT; Application = DDR3L RAM
3. Default = 1.8V; Imax = 1000mA; Application = VIO
4. Default = 3.3V; Imax = 3000mA; Application = Application CPU or GP

LDOs

5. Default = 1.8V; Imax = 800mA; NOT ON BY DEFAULT; Application = GP
6. Default = 2.9V; Imax = 800mA; Application = SD-Card or GP
7. Default = 1.8V; Imax = 150mA; NOT ON BY DEFAULT; Application = DDR3 Termination
8. Default (fixed) = 3.3V; Imax = 200mA; Application = USB PHY
9. Default = 2.9V; Imax = 800mA; Application = Flash Memory or GP
10. Default = 1.0V; Imax = 350mA; NOT ON BY DEFAULT; Application = GP

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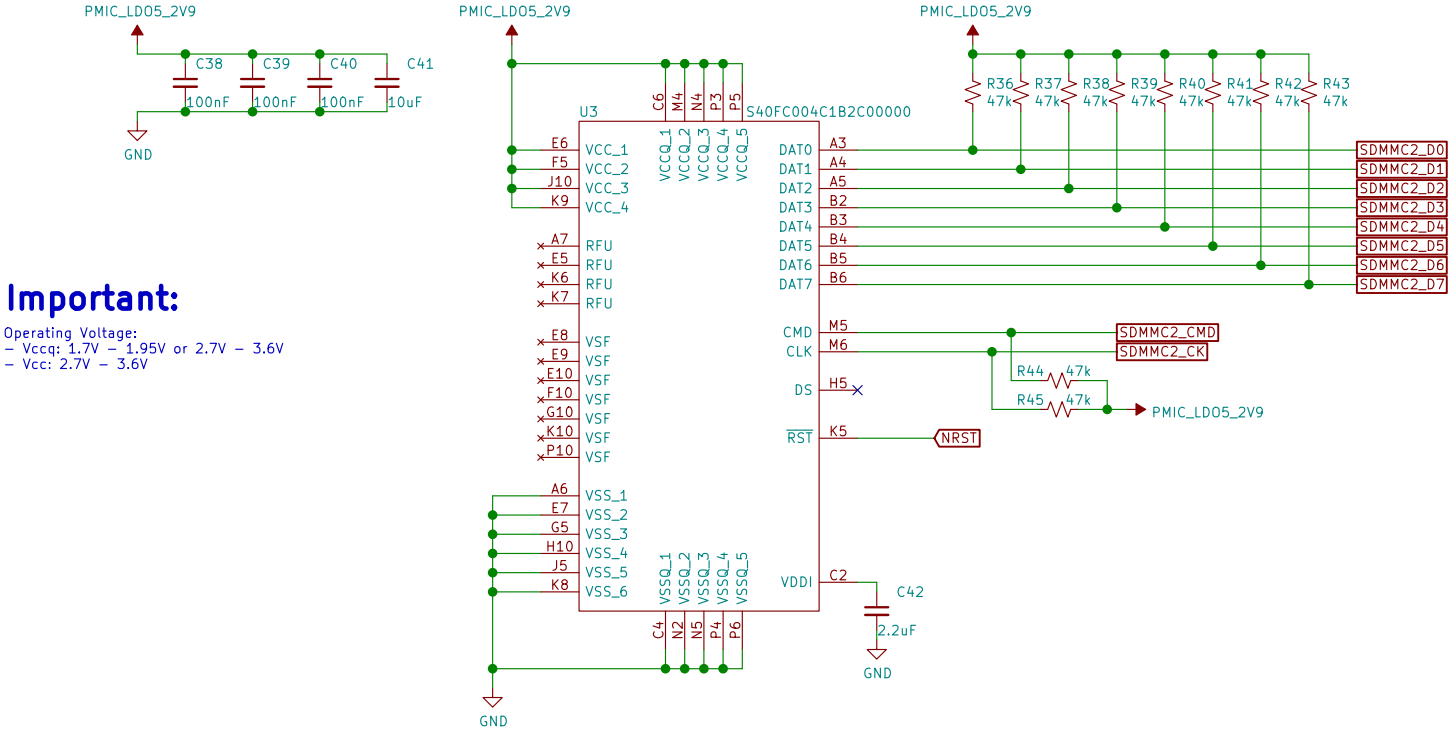
Sheet: /STPMIC/
File: STPMIC.sch

Title: POWER MANAGEMENT – STPMIC1BPQR

Size: A4	Date: 2021-06-02	Rev: 1.0.0
KiCad E.D.A.	kicad 5.1.10-88a1d61d5888ubuntu20.04.1	Id: 3/7



Important:

Operating Voltage:
– Vccq: 1.7V – 1.95V or 2.7V – 3.6V
– Vcc: 2.7V – 3.6V

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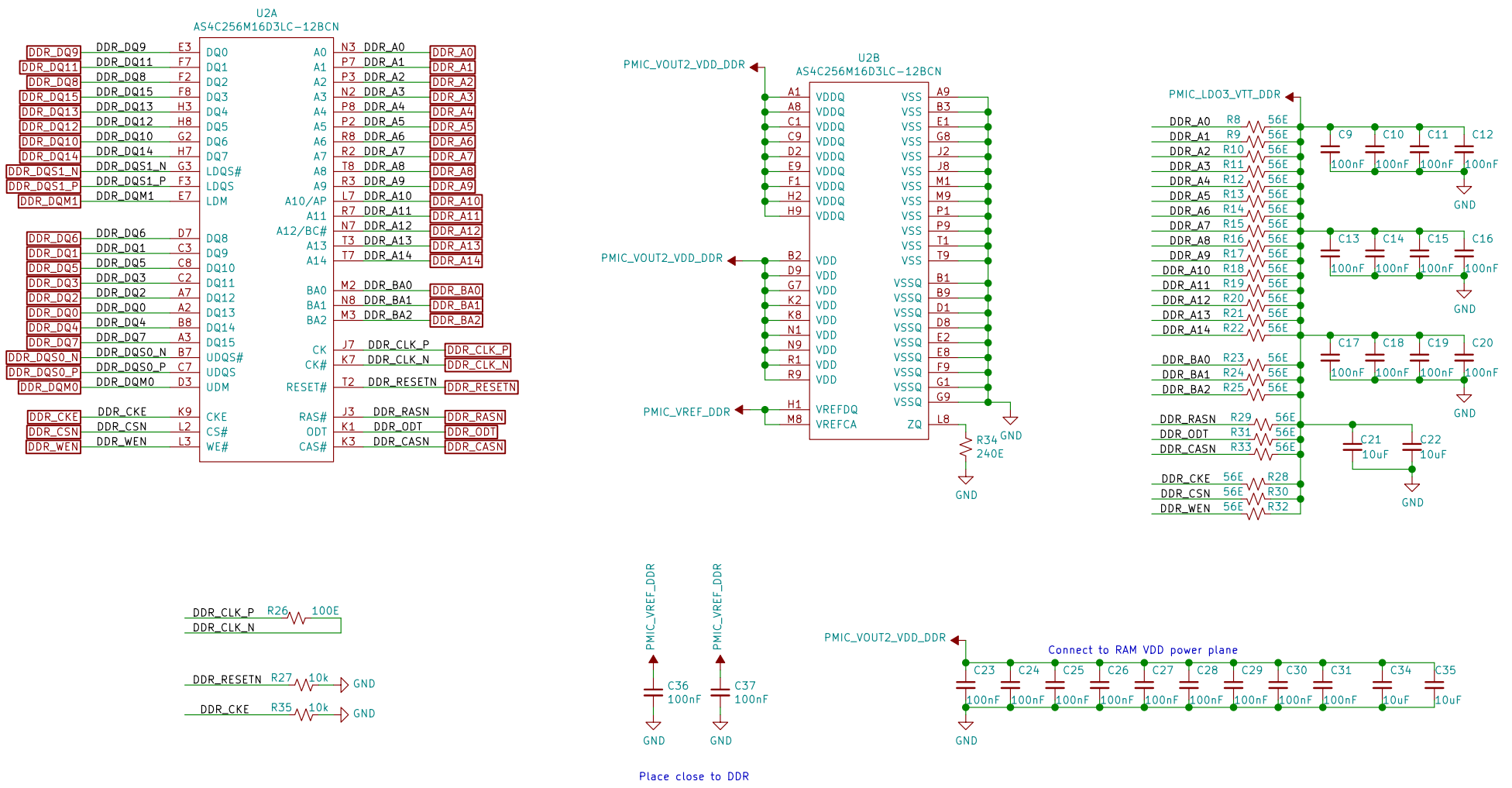
Sheet: /eMMC/
File: eMMC.sch

Title: eMMC FLASH – S40FC004C1B2C00000

Size: A4	Date: 2021-06-02	**Rev: 1.0.0**
KiCad E.D.A. kicad 5.1.10-88a1d61d5888ubuntu20.04.1		Id: 4/7


U2A
AS4C256M16D3LC-12BCN
DDR_DQ9 DDR_DQ11 DDR_DQ8 DDR_DQ15 DDR_DQ13 DDR_DQ12 DDR_DQ10 DDR_DQ14 DDR_DQS1_N DDR_DQS1_P DDR_DQM1
DDR_DQ6 DDR_DQ1 DDR_DQ5 DDR_DQ3 DDR_DQ2 DDR_DQ0 DDR_DQ4 DDR_DQ7 DDR_DQS0_N DDR_DQS0_P DDR_DQM0
DDR_CKE DDR_CSN DDR_WEN
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 LDQS# LDQS LDM
DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15 UDQS# UDQS UDM
CKE CS# WE#
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 A12/BC# A13 A14
BA0 BA1 BA2
CK CK#
RESET#
RAS# ODT CAS#
DDR_A0 DDR_A1 DDR_A2 DDR_A3 DDR_A4 DDR_A5 DDR_A6 DDR_A7 DDR_A8 DDR_A9 DDR_A10 DDR_A11 DDR_A12 DDR_A13 DDR_A14
DDR_BA0 DDR_BA1 DDR_BA2
DDR_CLK_P DDR_CLK_N
DDR_RESETN
DDR_RASN DDR_ODT DDR_CASN
U2B
AS4C256M16D3LC-12BCN
PMIC_VOUT2_VDD_DDR
PMIC_VOUT2_VDD_DDR
PMIC_VREF_DDR
VDDQ VDD VREFDQ VREFCA
VSS VSSQ ZQ
R34 240E
GND
PMIC_LDO3_VTT_DDR
DDR_A0 DDR_A1 DDR_A2 DDR_A3 DDR_A4 DDR_A5 DDR_A6 DDR_A7 DDR_A8 DDR_A9 DDR_A10 DDR_A11 DDR_A12 DDR_A13 DDR_A14
DDR_BA0 DDR_BA1 DDR_BA2
DDR_RASN DDR_ODT DDR_CASN
DDR_CKE DDR_CSN DDR_WEN
56E
C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20
100nF
C21 C22
10uF
GND
DDR_CLK_P R26 100E
DDR_CLK_N
DDR_RESETN R27 10k GND
DDR_CKE R35 10k GND
PMIC_VREF_DDR
C36 C37
100nF
GND
Place close to DDR
PMIC_VOUT2_VDD_DDR
Connect to RAM VDD power plane
C23 C24 C25 C26 C27 C28 C29 C30 C31 C34 C35
100nF
10uF
GND
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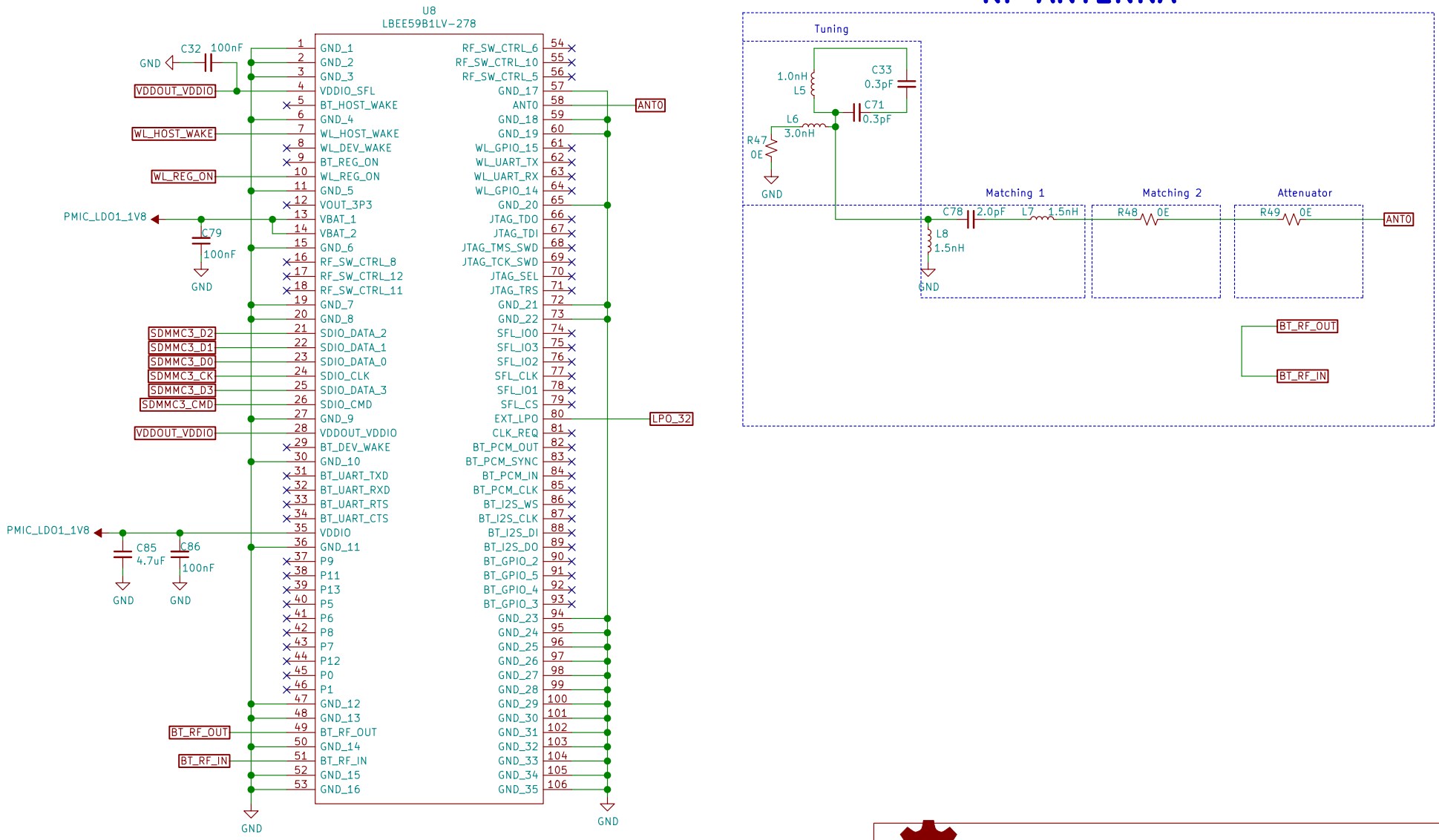
Sheet: /DDR3L_RAM/
File: DDR3L_RAM.sch
Title: DDR3 RAM – AS4C256M16D3LC-12BCN
Size: A4
Date: 2021-06-02
Rev: 1.0.0
KiCad E.D.A. kicad 5.1.10-88a1d61d5888ubuntu20.04.1
Id: 5/7

RF ANTENNA



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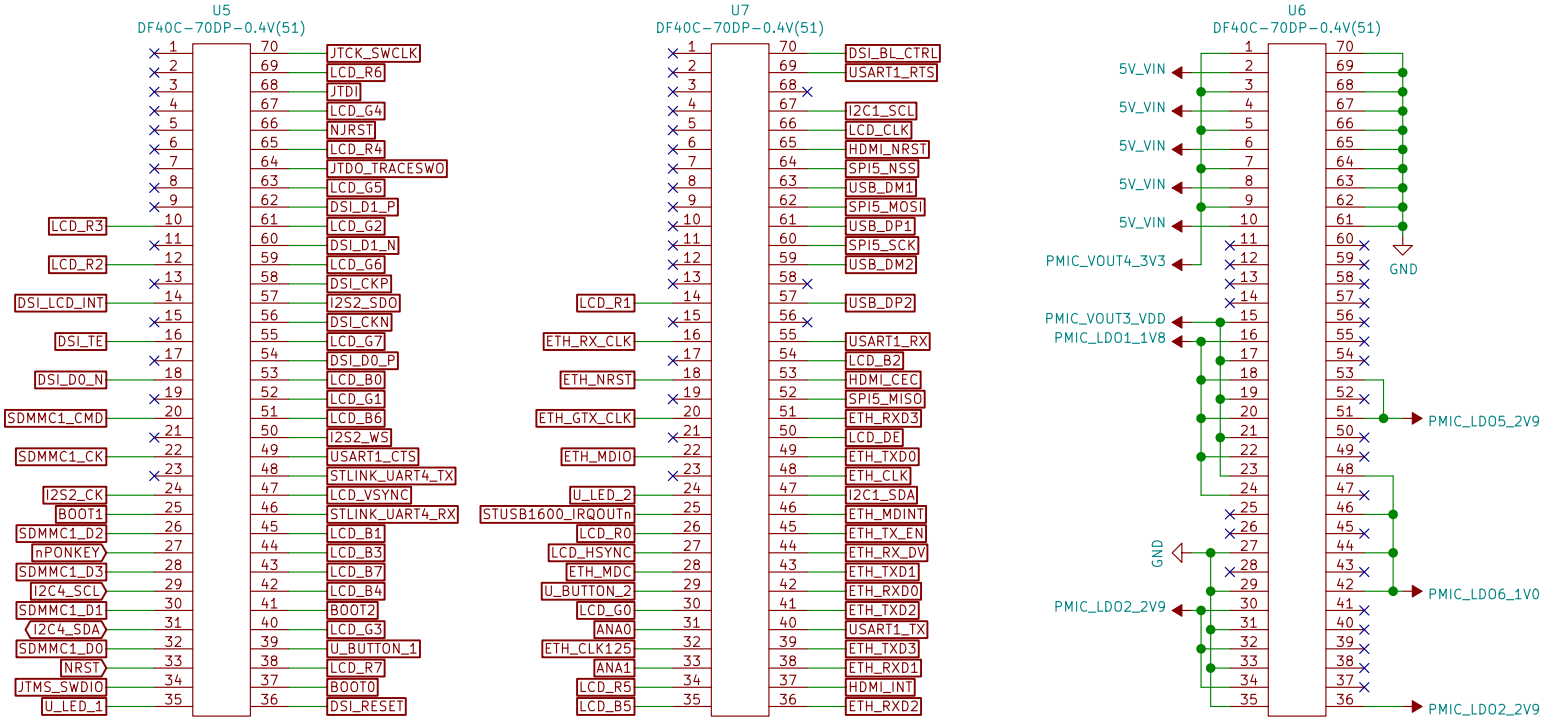
Sheet: /Wireless/
File: Wireless.sch

Title: WIFI + BLUETOOTH – LBEE59B1LV-278

Size: A4	Date: 2021-06-02	**Rev: 1.0.0**
KiCad E.D.A.	kicad 5.1.10-88a1d61d5888ubuntu20.04.1	Id: 6/7



Mounting Holes

H1 H3

Fiducials

FID1 FID2 FID3

FID4 FID5 FID6

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Sheet: /Board to Board Connectors/
File: Board to Board Connectors.sch

Title: BOARD TO BOARD CONNECTORS – DF40C-70DP-0.4V(51)

Size: A4	Date: 2021-06-02	**Rev: 1.0.0**
KiCad E.D.A. kicad 5.1.10-88a1d61d5888ubuntu20.04.1		Id: 7/7