Schematic: Expansion Accessory

SHEET	SHEET NAME
01	Title/Revision History
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16	Exp Conn

Revision History

DATE	REVISION	DESCRIPTION
May. 21 2021	v0.1	1. Initial
Aug. 9 2022	v0.2	1.Change MPU From MPFS250 to MPFS025. 2.Change Ethernet PHY From TI_DP83867CSRGZ to Realtek_RTL8211FS-CG. 3.Change High Speed Connector to QSH-020-01-F-D-DP-A. 4.P8,P9,CSI and High Speed Connector Some Pins Re-assignment. 5.SD Card is connected to the same SPI bus as the ADC. 6.Change User Button and Reset Signals GPIO. 7.Connect eMMC directly to MSS eMMC controller . 8.Change J4 to LPJG0933H11NL. 9.Change LPDDR4 to Samsung_K4F6E3S4HM-MGCJ.

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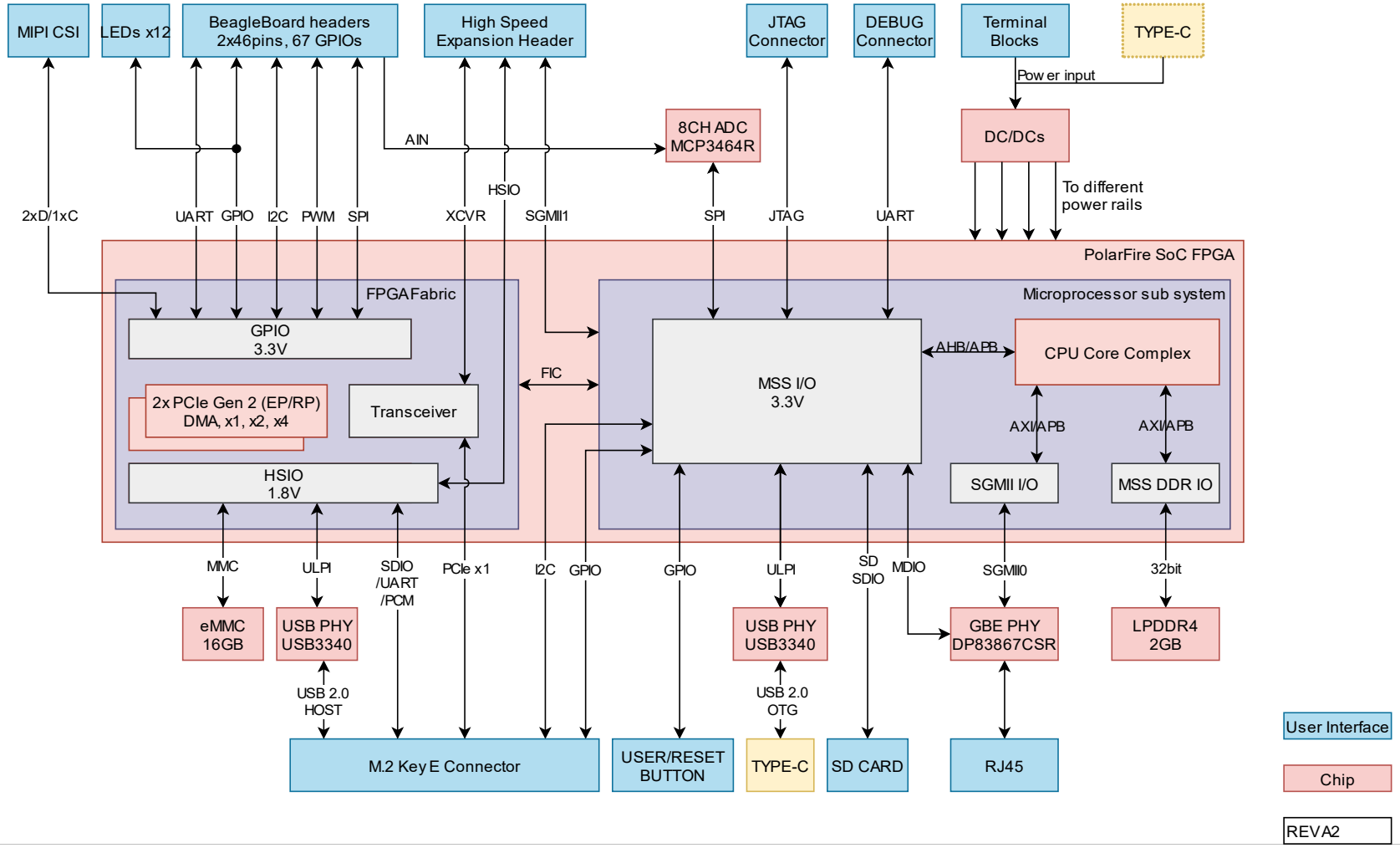
Title: Beagleboard BeagleV-Fire

Size: A3	Document Number: 01_Title/Revision History	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 1 of 16

System Block Diagram



TBD

seeed studio	https://www.seeedstudio.com	
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 02_System Block Diagram	Rev: V0.2
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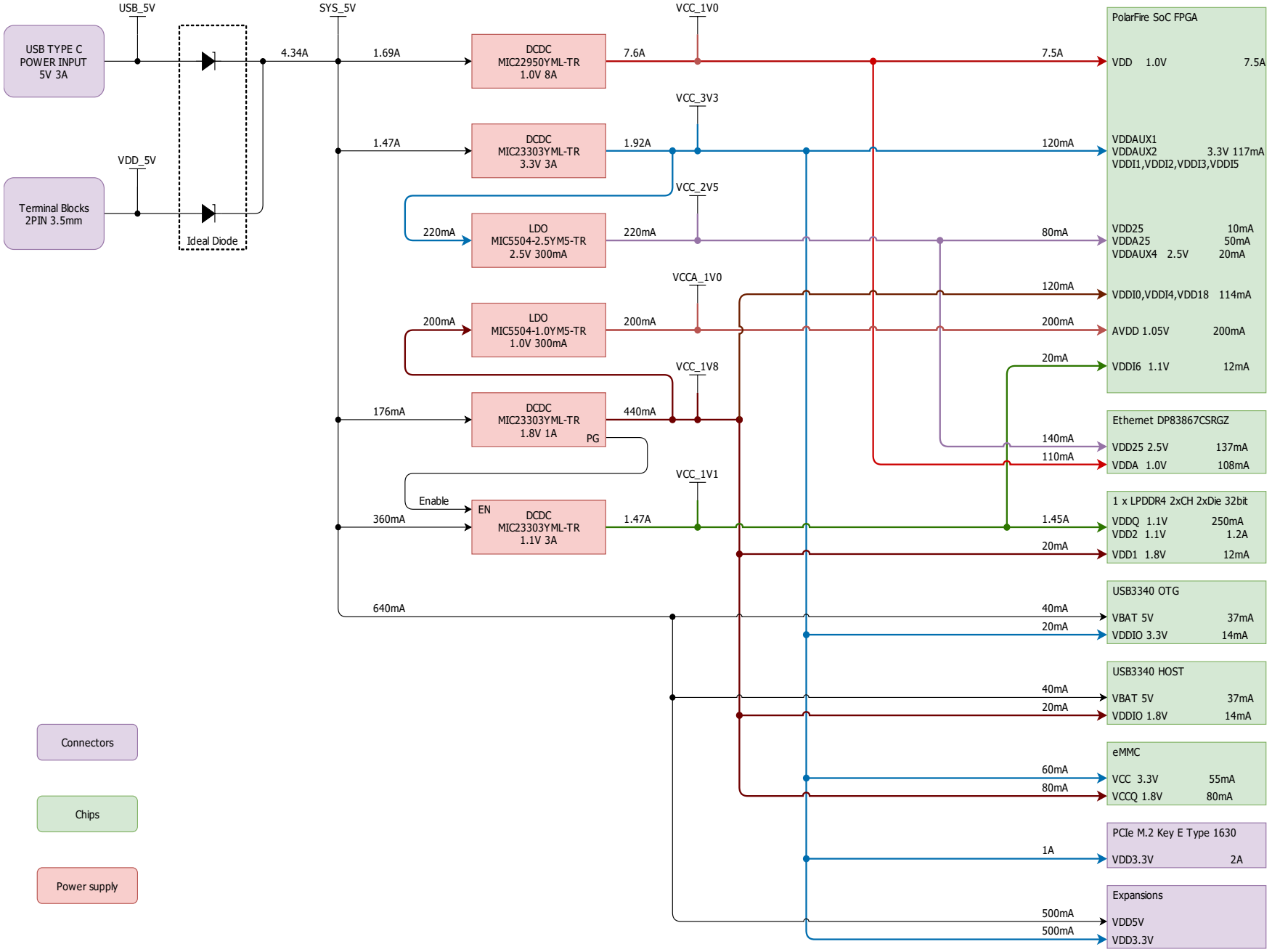
Power Tree Diagram



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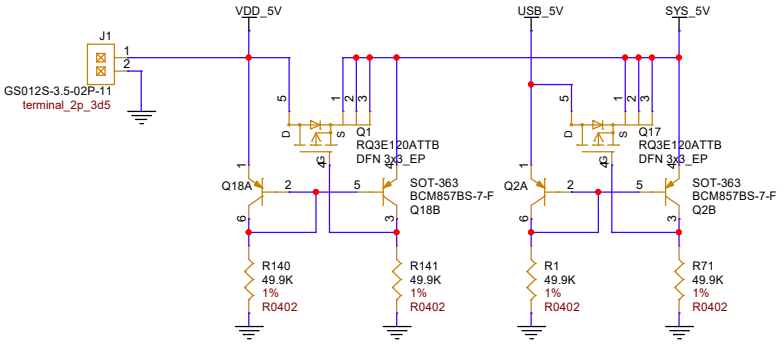
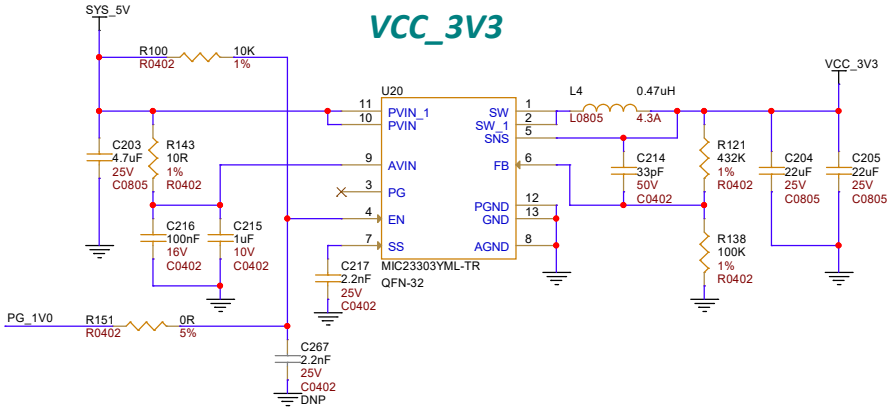
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 03_Power Tree Diagram	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 3 of 16

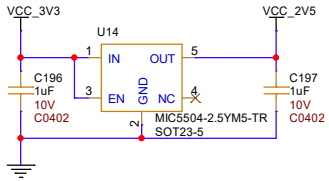
DC IN/Ideal Diode



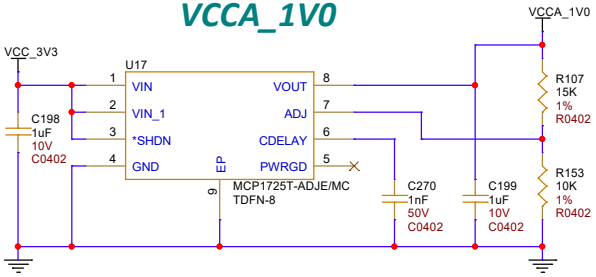
VCC_3V3



VCC_2V5



VCCA_1V0



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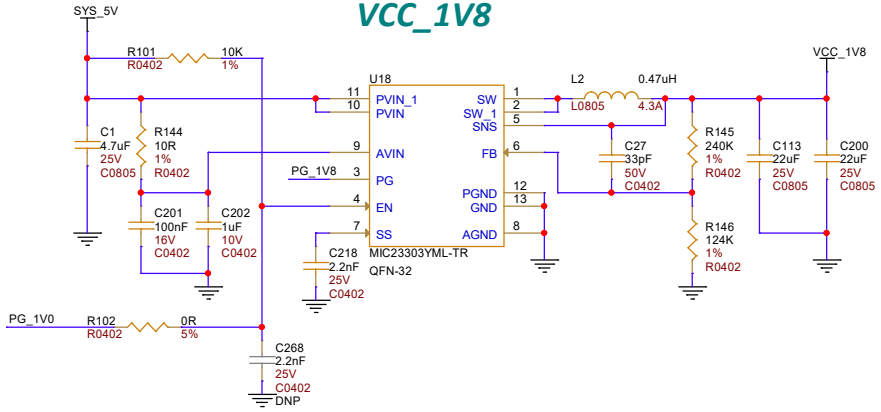
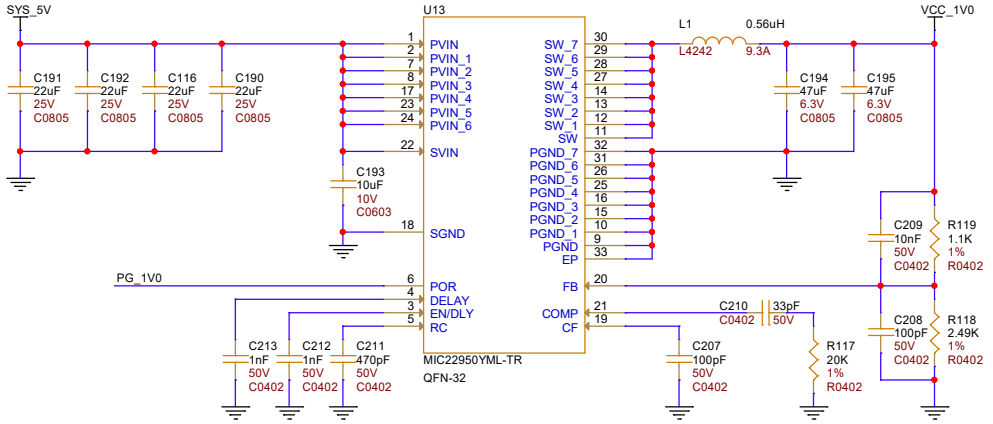


VCC_1V0



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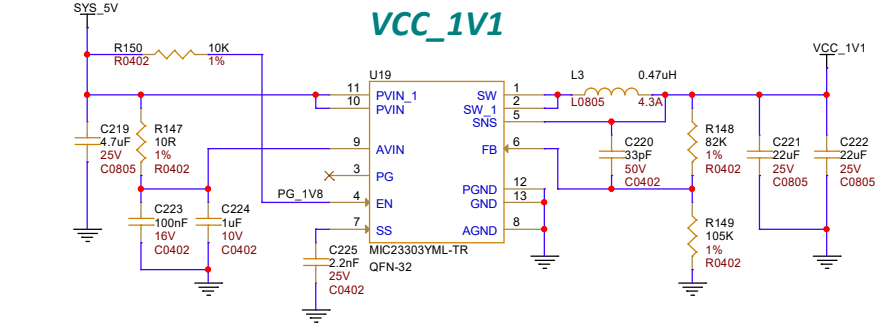
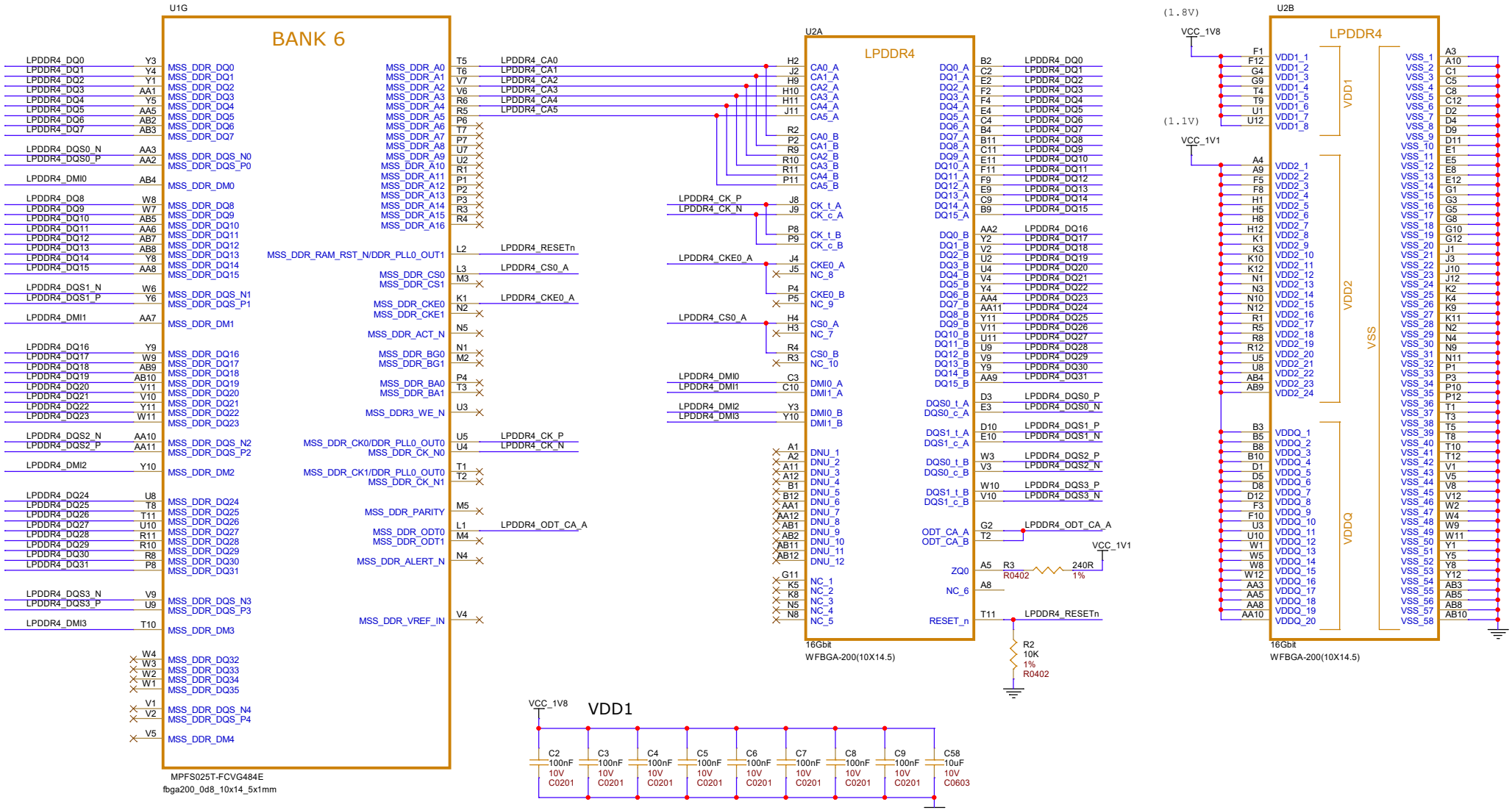
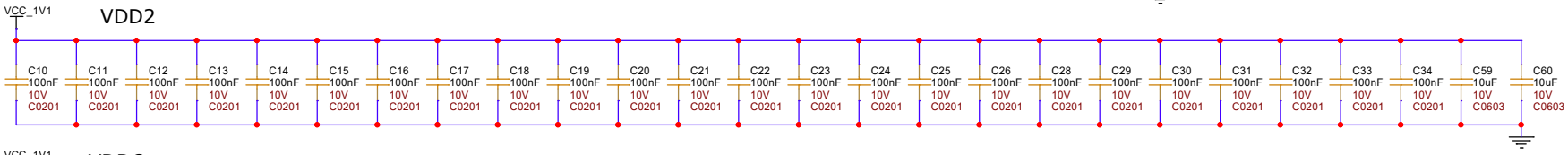
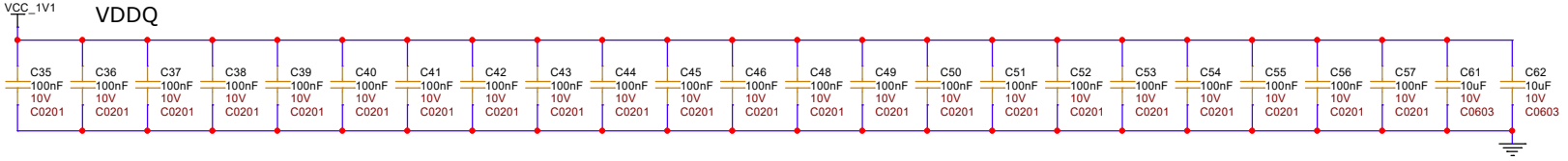


seeed studio	https://www.seeedstudio.com	
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 04_Power Supply	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 4 of 16

LPDDR4_CONNECTION







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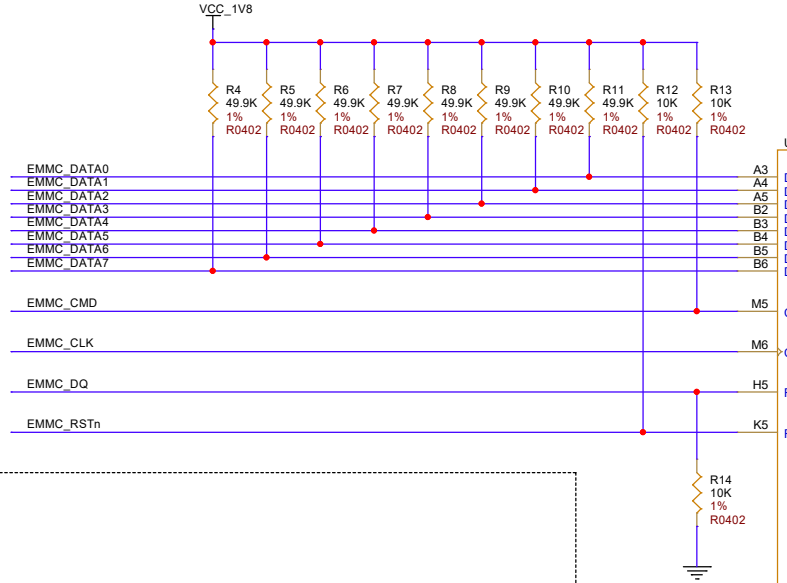
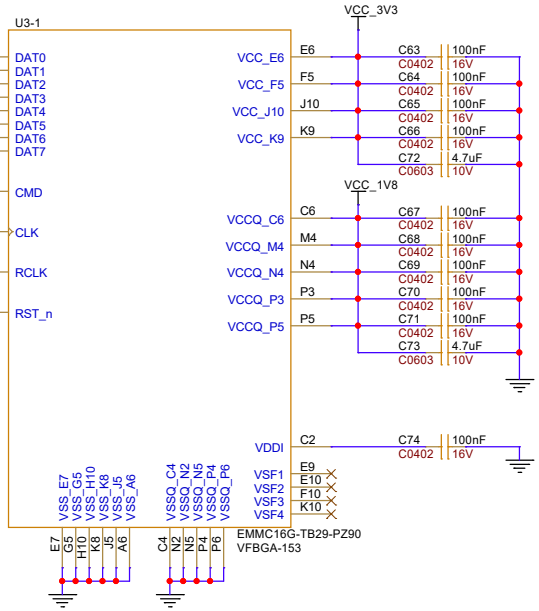
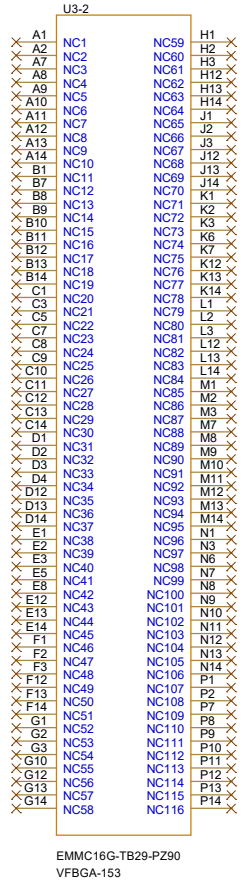
	Title: Beagleboard BeagleV-Fire		
Size: A3	Document Number: 05_LPDDR4		Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022		Sheet: 5 of 16

eMMC/SD

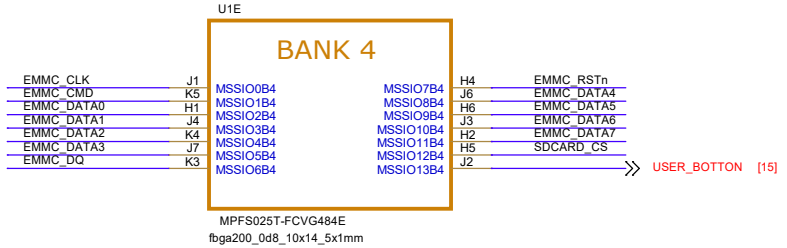


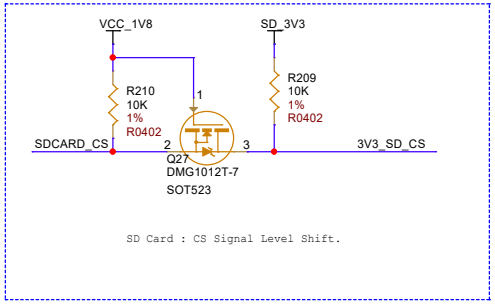
eMMC

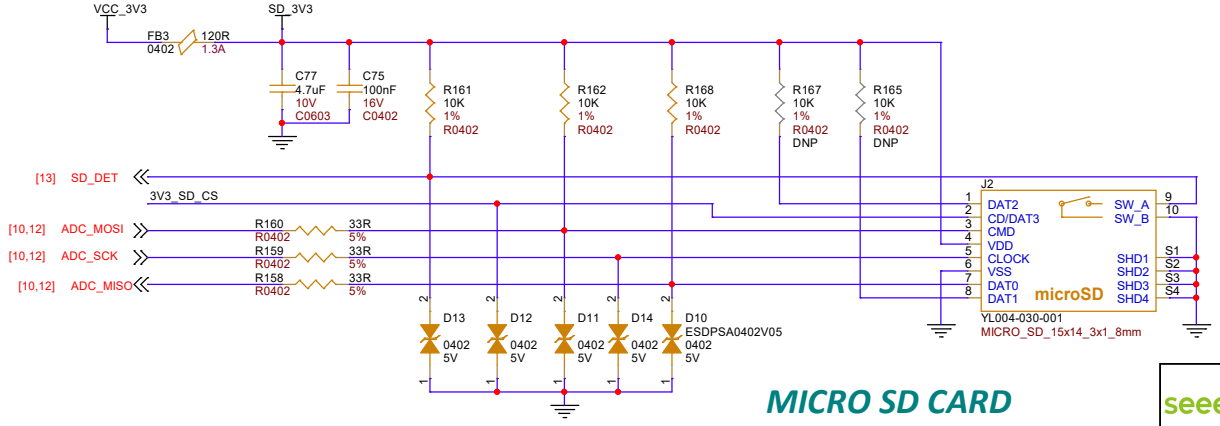




BANK4 1.8V







MICRO SD CARD

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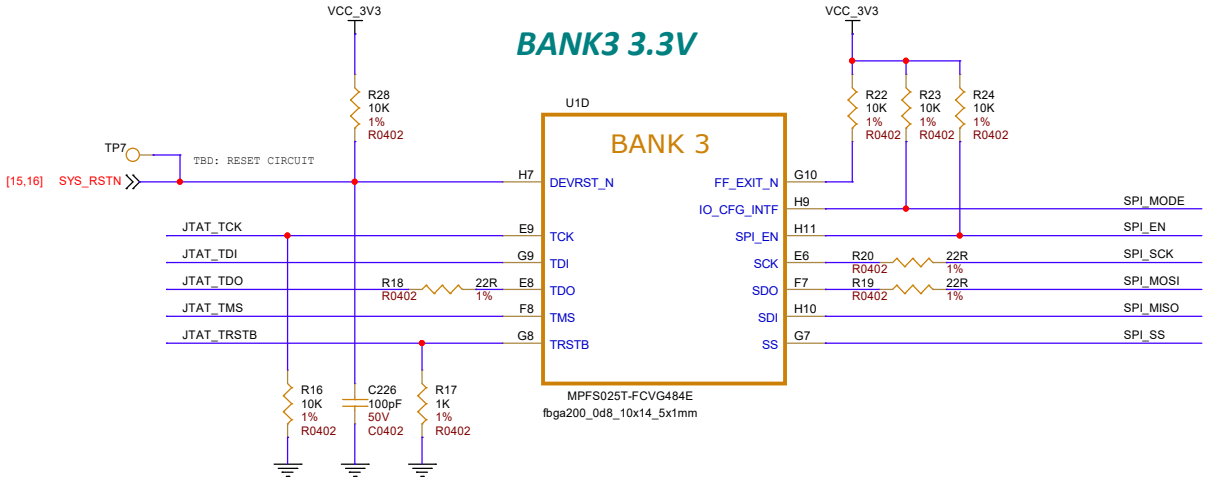
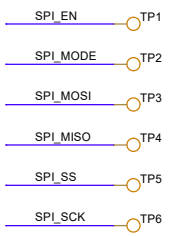
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 06_eMMC/SD	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 6 of 16

JTAG/SPI Flash

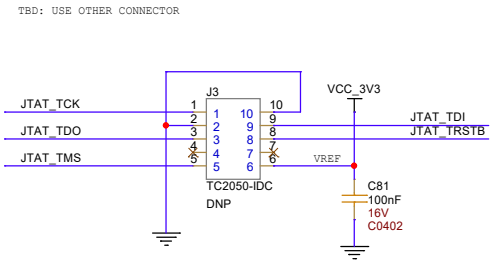
BANK3 3.3V



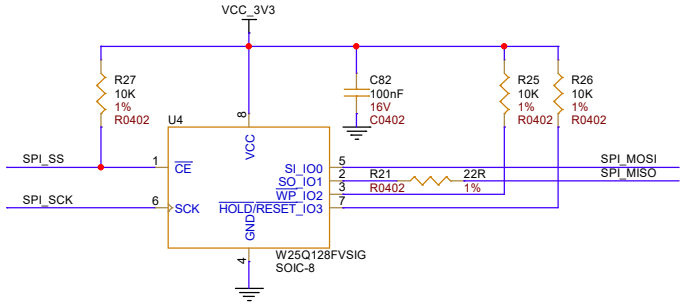
Programming the SPI Flash Using External Master



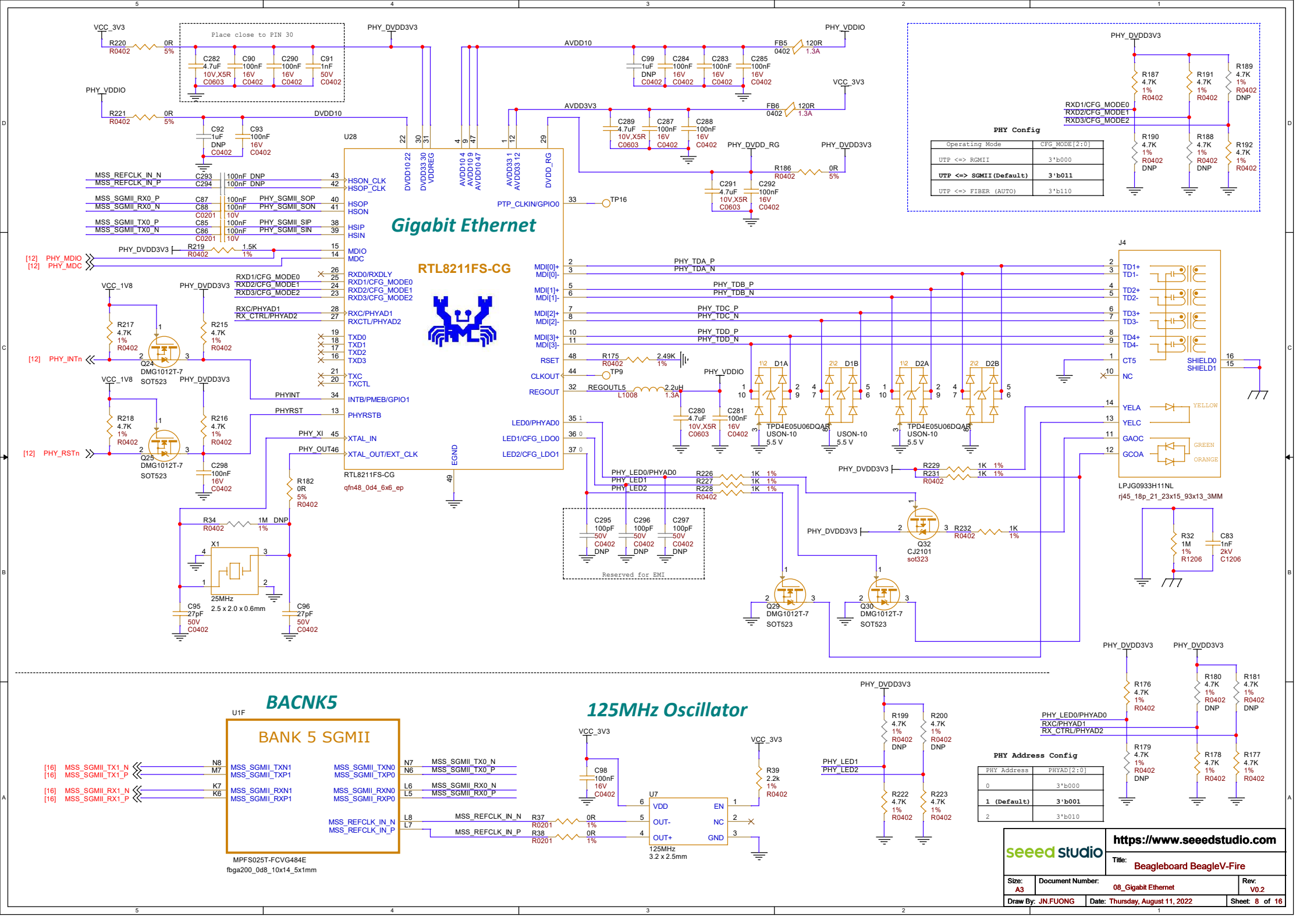
JTAG for Tag-Connect cable



SPI Flash

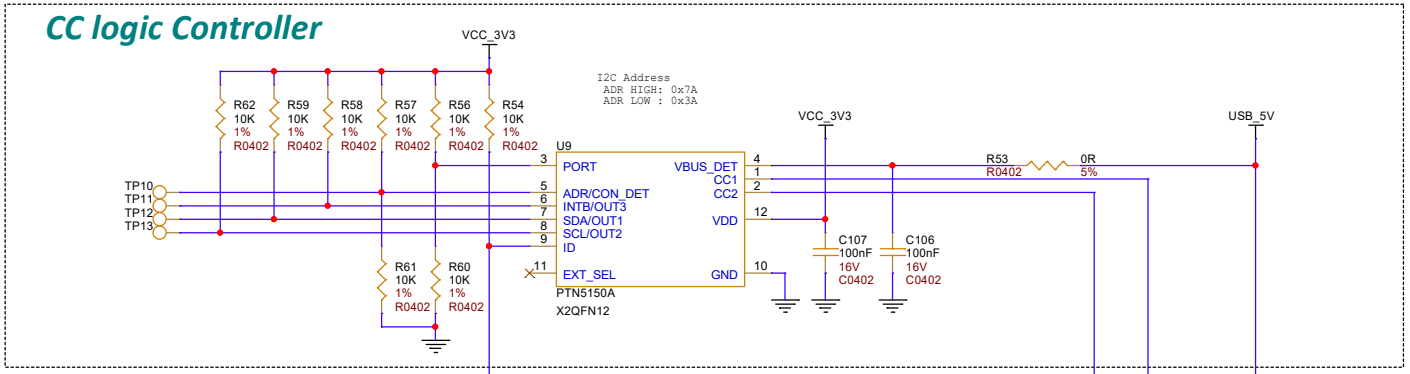


seeed studio	https://www.seeedstudio.com	
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 07_JTAG/SPI Flash	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 7 of 16

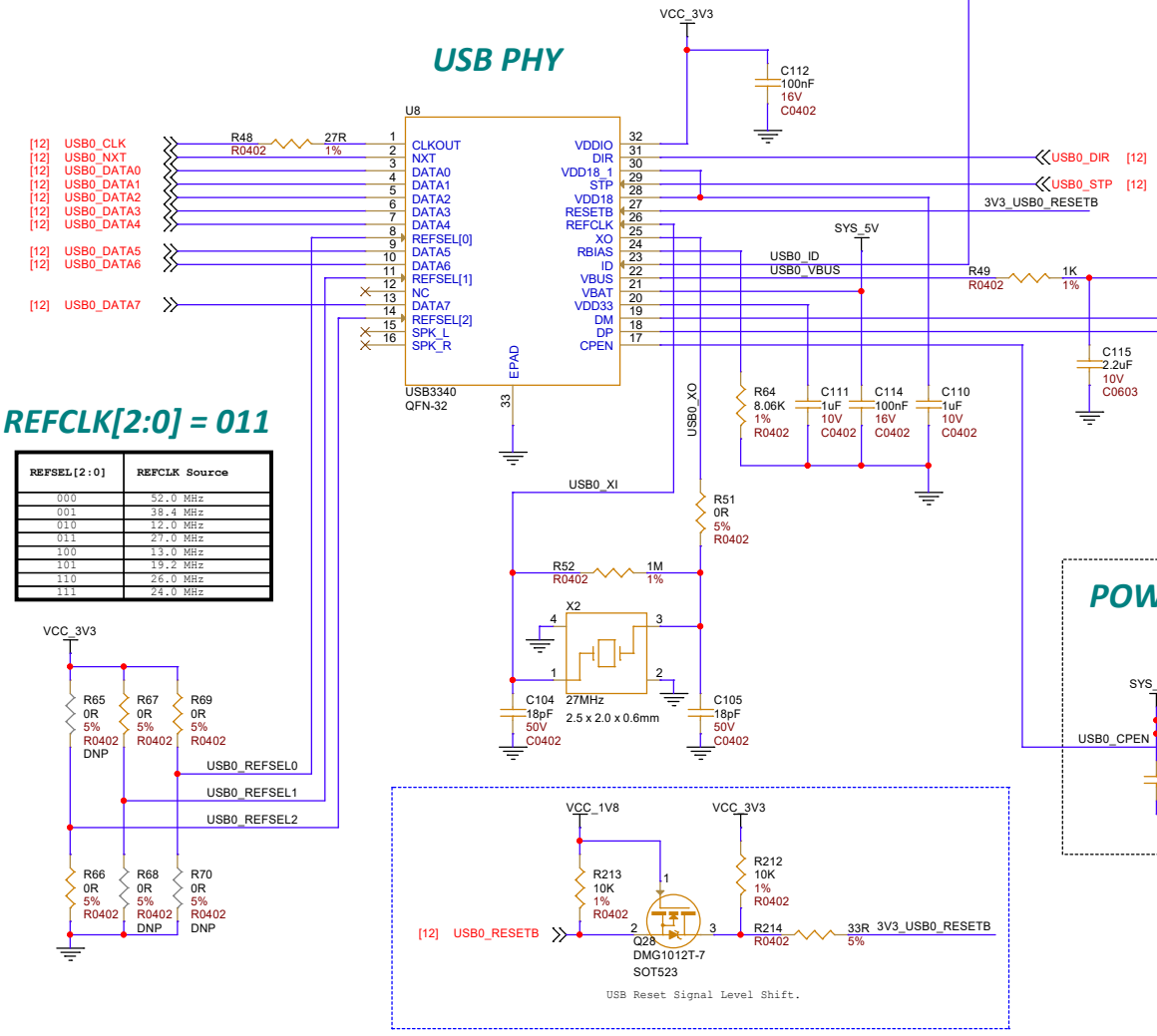

Gigabit Ethernet
RTL8211FS-CG
BACNK5
125MHz Oscillator
PHY Config
PHY Address Config
J4
U28
U1F
U7
Reserved for EMI
seeed studio
https://www.seeedstudio.com
Title: Beagleboard BeagleV-Fire
Size: A3
Document Number: 08_Gigabit Ethernet
Rev: V0.2
Draw By: JN.FUONG
Date: Thursday, August 11, 2022
Sheet: 8 of 16

USB OTG

CC logic Controller



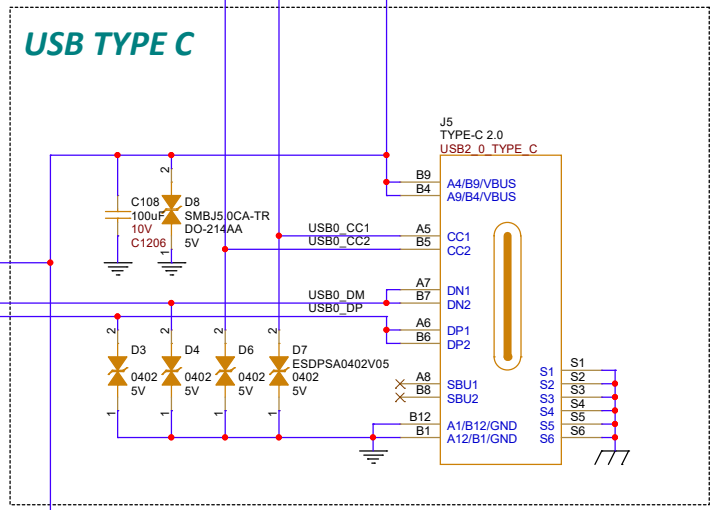
USB PHY



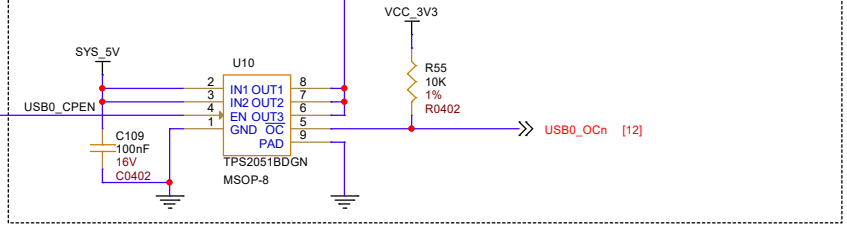
REFCLK[2:0] = 011

REFSEL[2:0]	REFCLK Source
000	52.0 MHz
001	38.4 MHz
010	12.0 MHz
011	27.0 MHz
100	13.0 MHz
101	19.2 MHz
110	26.0 MHz
111	24.0 MHz

USB TYPE C



POWER SWITCH



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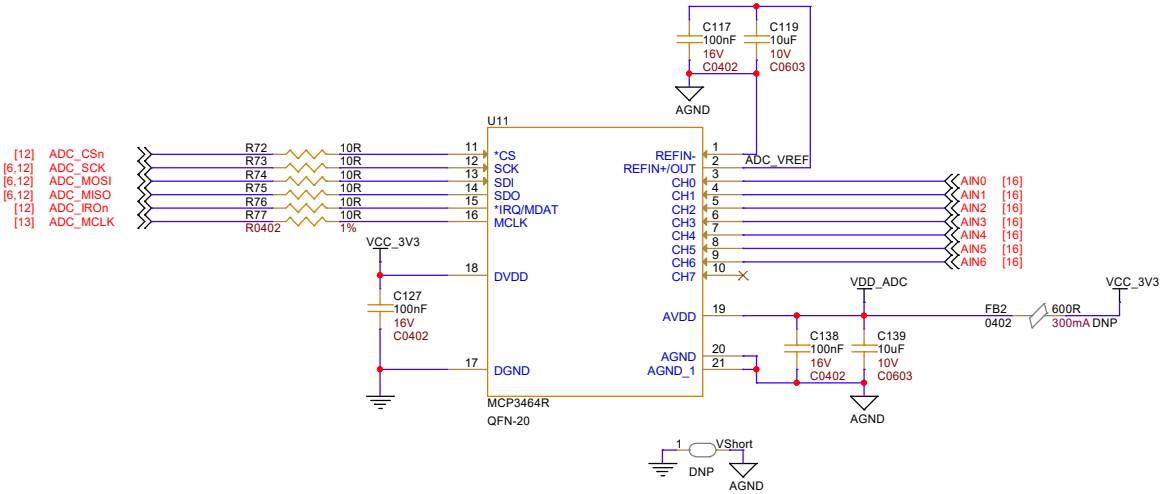
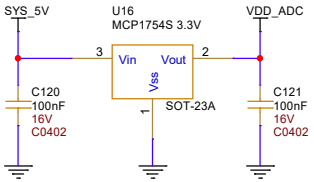
	Title: Beagleboard BeagleV-Fire		
Size: A3	Document Number: 09_USB OTG TYPE C		Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 9 of 16	

16-bit Delta-Sigma ADC



High PSRR LDO



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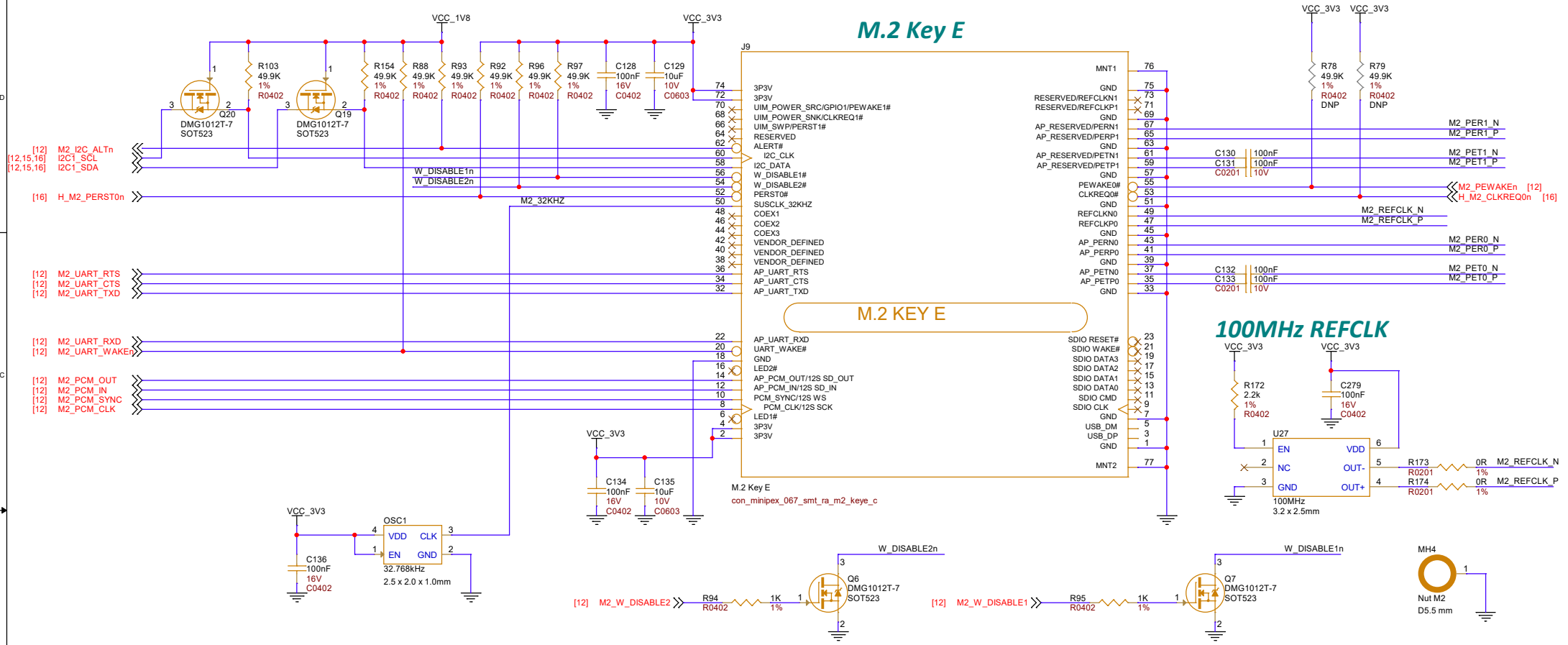
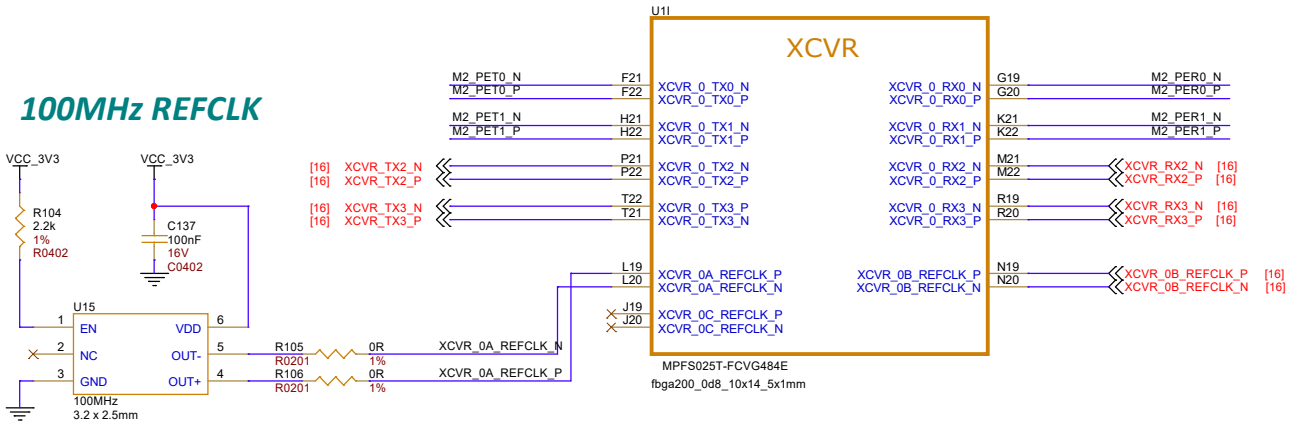
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 10_USB HOST/ADC	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 10 of 16

M.2 Key E/XCVR



XCVR



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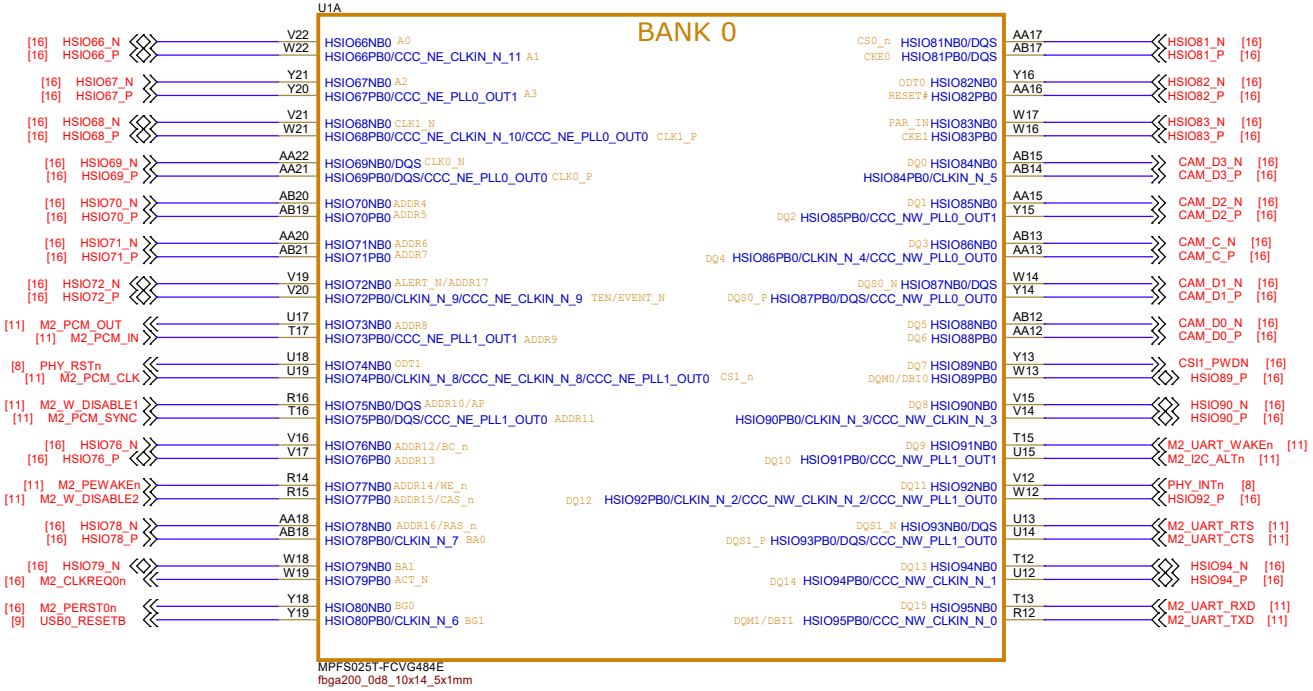
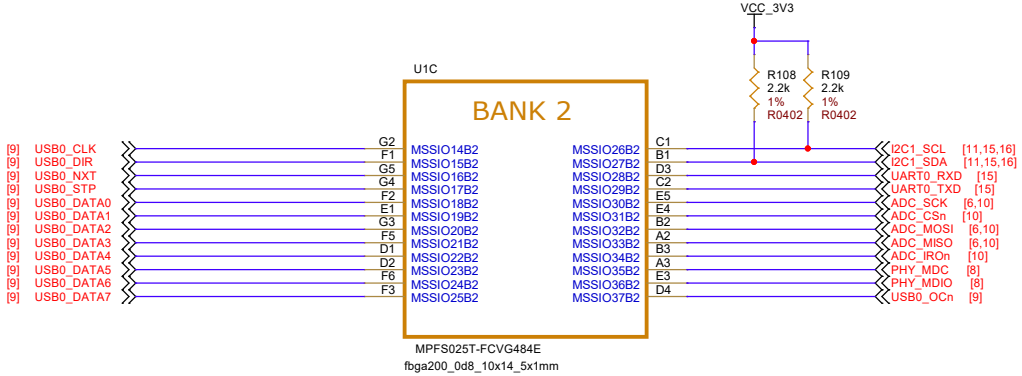
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 11_M.2 Key E/XCVR	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 11 of 16

SoC Back0/Bank2

BANK0 HSIO 1.8V



BANK2 MSSIO 3.3V



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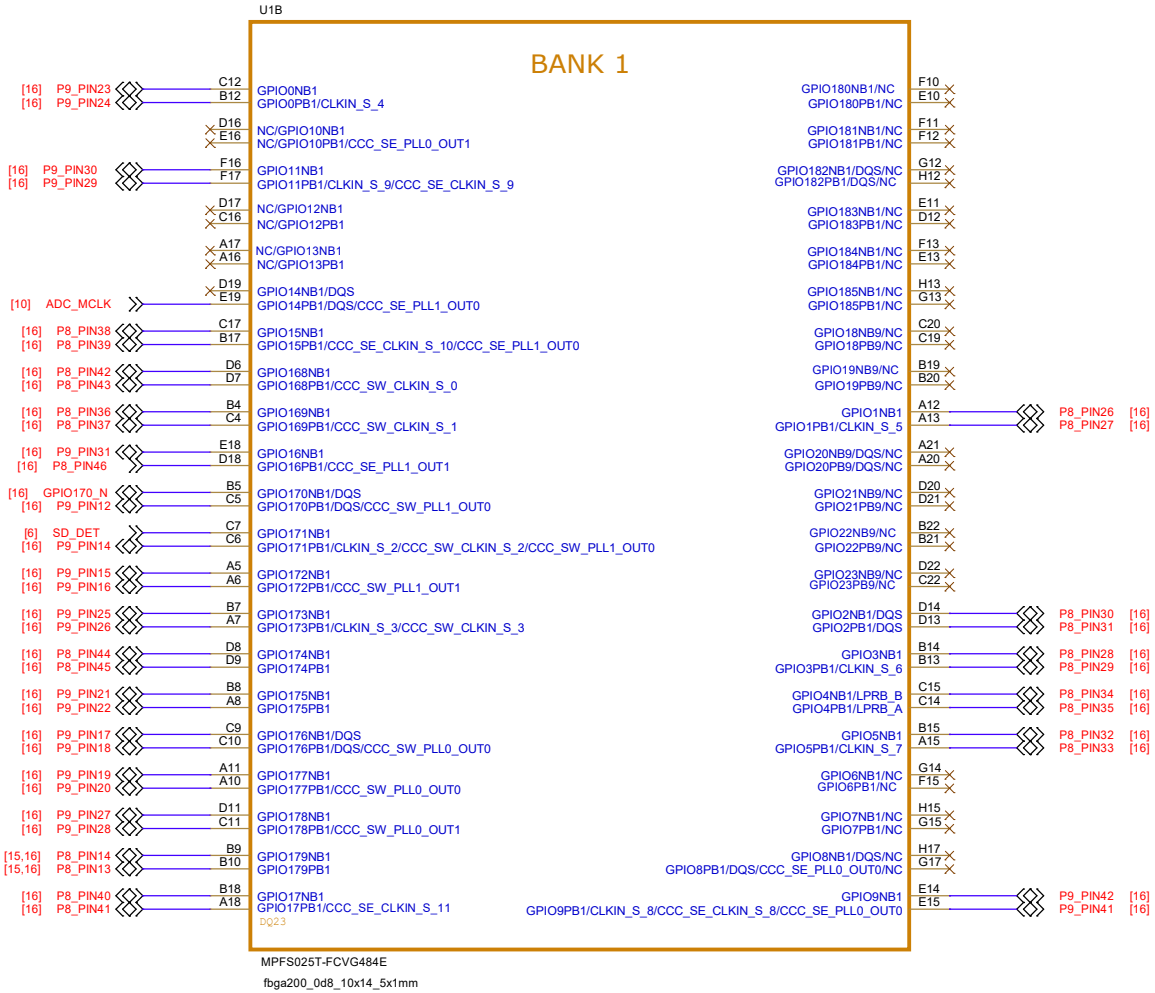
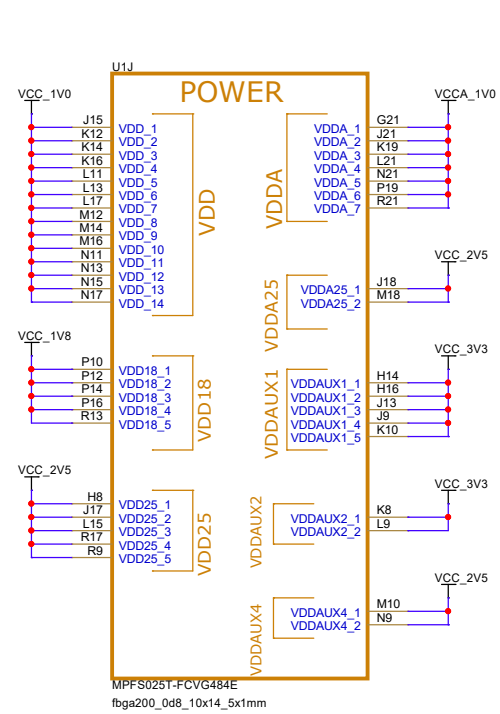
Size: A3	Document Number: 12_SoC BANK0/BANK2	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 12 of 16

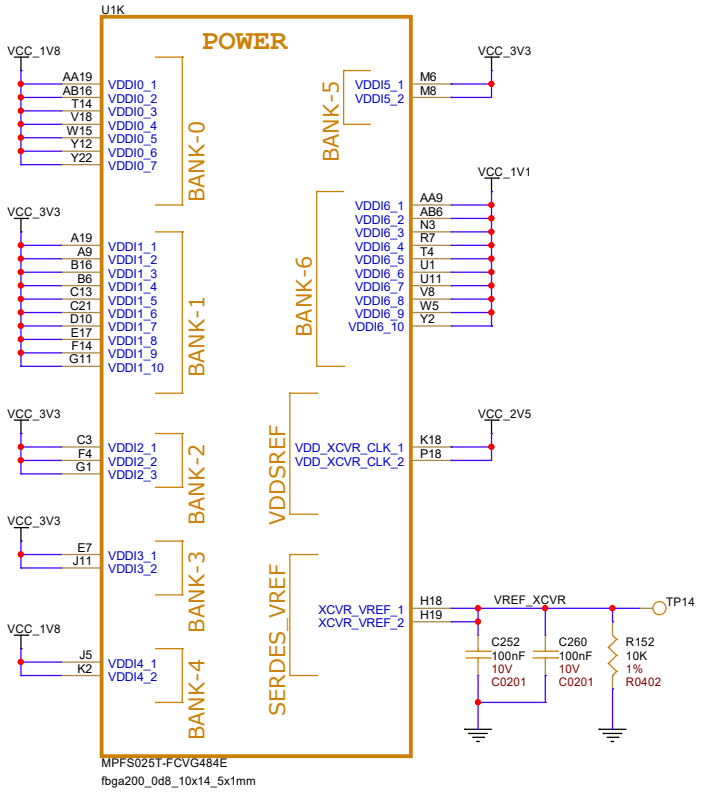
SoC BANK1

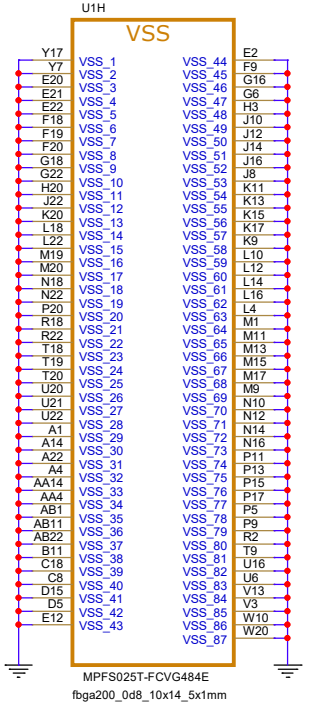


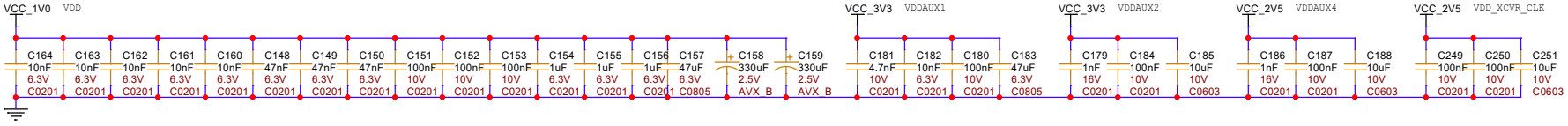
seeed studio	https://www.seeedstudio.com	
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 13_SoC BANK1	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 13 of 16

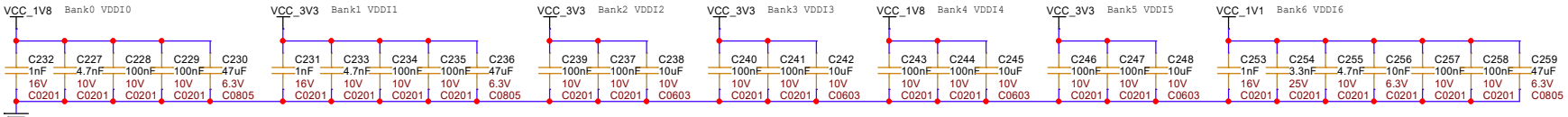
SoC Power

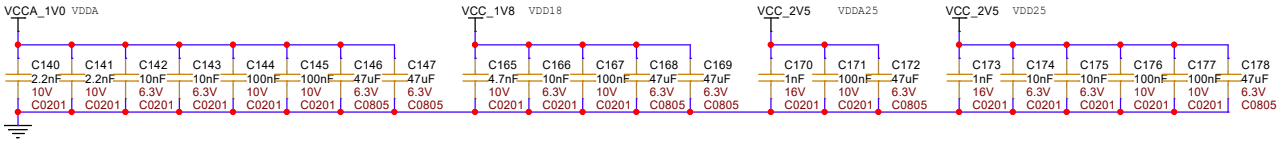












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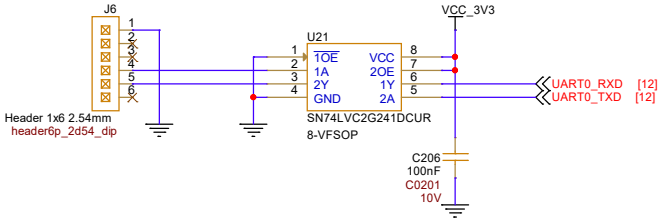
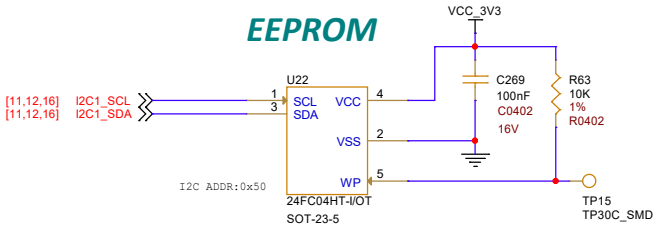
	Title: Beagleboard BeagleV-Fire	
Size: A3	Document Number: 14_SoC Power	Rev: V0.2
Draw By: JN.FUONG	Date: Thursday, August 11, 2022	Sheet: 14 of 16

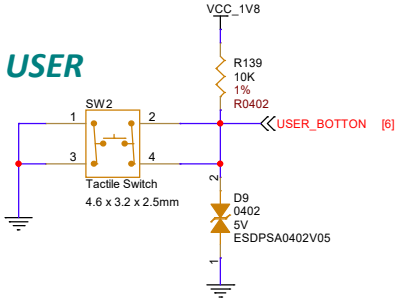
Debug



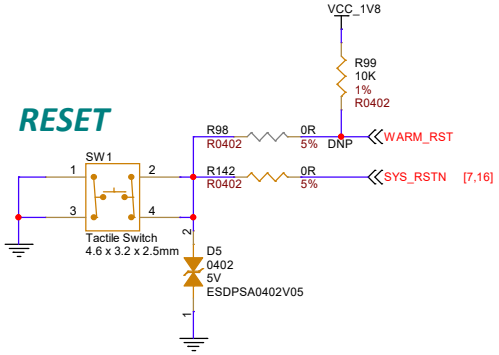
EEPROM



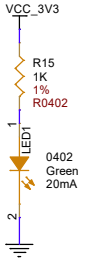
USER



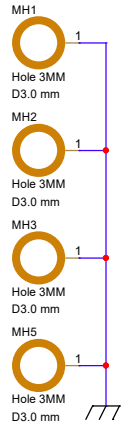
RESET



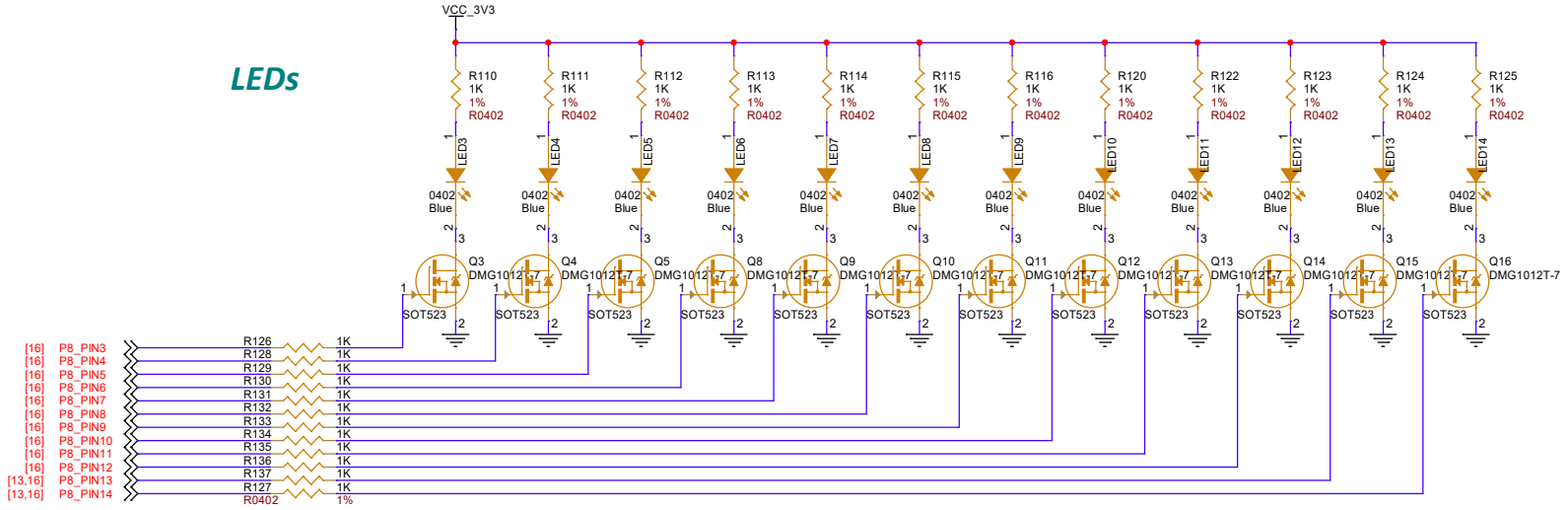
Power LED



MHoles



LEDs



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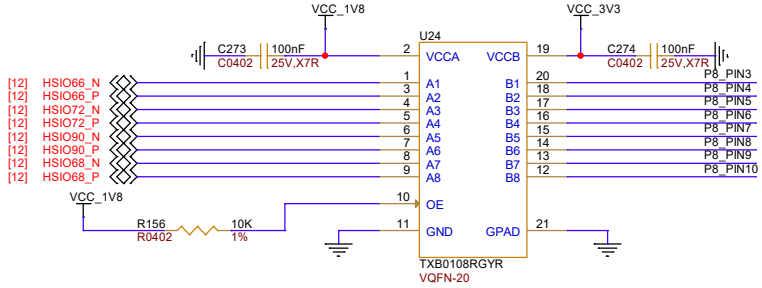
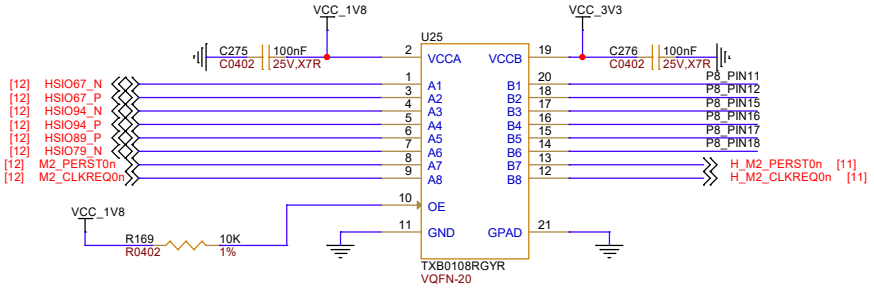
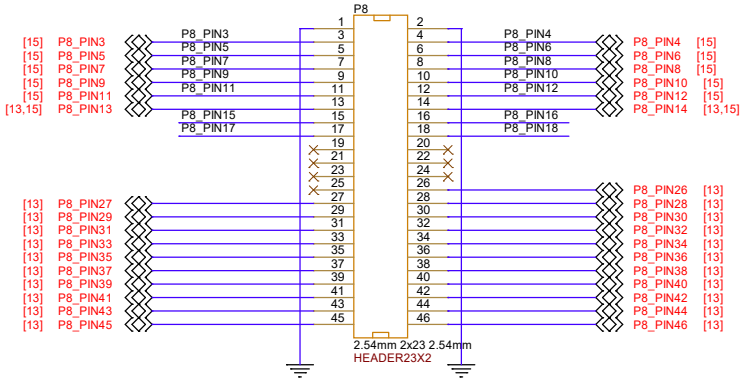
3.3V To 1V8 Level translator



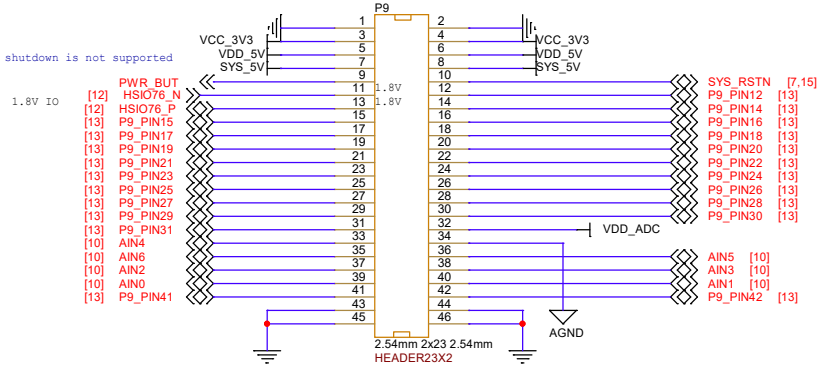
3.3V To 1V8 Level translator



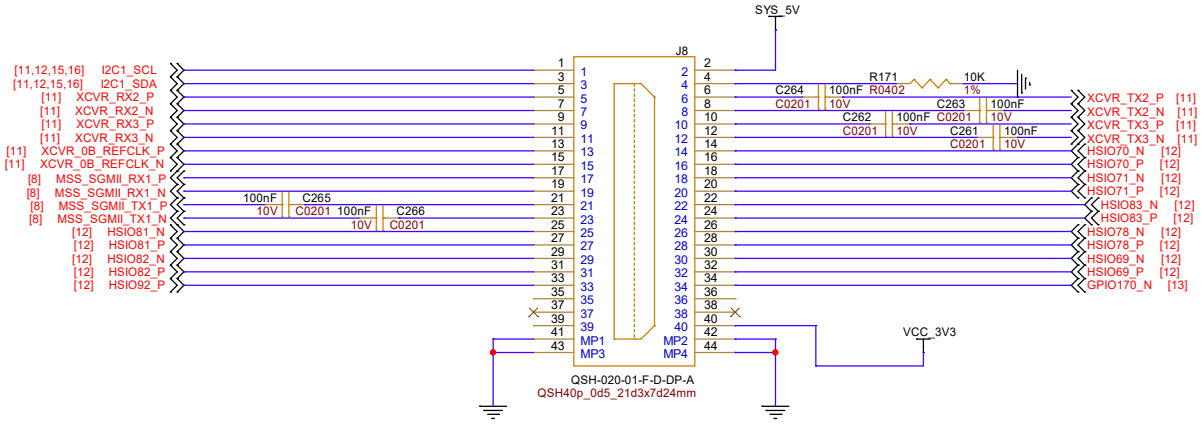
BeagleBoard Header



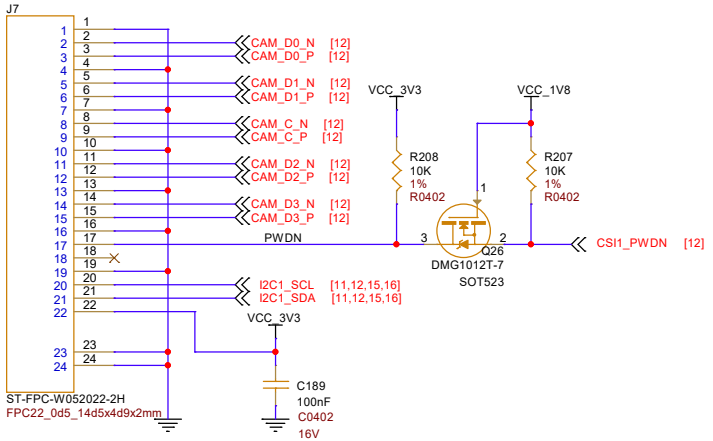
Issue:
The PWR_BUT PIN is NC,
this means that hardware shutdown is not supported



High Speed Exp Conn



MIPI CSI



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