Schematic: BeagleBone AI

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17	USB Type C
18	ADC/TF/Debug
19	HDMI

Revision History

REV	Description	DATE	BY
A1	Initial Release	12/24/2018	Embest
A2	1. Changed schematic and PCB revision to A2. 2. Page 3: Added C21=2.2uF to U3 Pin C1. 3. Page 5: Deleted the net alias name JTAG_TCK of P2 Pin9. 4. Page 9: Changed R175-R179,R184,R185,R186,R188 from 10K to 47K. 5. Page 14: Added EEPROM U9 for Board ID. Added optional 0R resistor to tie CPU Pin AB10 to P9 Pin13. Added 0R resistor to tie DCAN(CPU Pin G19 G20) to P8 Pin7 Pin8. 6. Page 17: Changed the USB Type C port controller circuit, Used U13(TI HD3SS3220) instead of U22 (TI TUSB322IRWBR) and U72 (Pericom PI3USB3102ZLE). 7. Page 18: Added pull-down resistor R708=100K to UART1_RX, set R173=NI(100K). Used TI TLV758P instead of U40 (SG MICRO SGM2032-ADJYN5G/TR) for ADC voltage reference/supply. 8. Page 19: Changed the HDMI companion chip, Used U15(TI TPD12S016) instead of U12 (TI TXS0104ERGYR).	04/24/2020	Seeed
A2	1. Page 14: Deleted D82 B360A-13-F. 2. Page 17: Changed the power MUX circuit, Used U12(TI TPS2121) instead of Q15 D81 D82 Q19. 3. Page 19: Deleted Q19 and net H5V, tied FB7 to VDD_5V instead of H5V.	04/30/2020	Seeed
A2	1. Page 16: Changed Ethernet PHY from ATHEROS AR8035-AL1B to TI DP83867CRRGZ.	05/12/2020	Seeed
A2	1. Page 10: Changed R134 from 1.5K to 2.2K. 2. Page 16: Changed R475 from 10K to 2.2K; Removed R138, as "JTAG pins can be left unconnected if not used" from TI's suggestion 3. Page 16: Added some FBs and CAPs for Three-Supply Mode, but set them to NI, just reserved.	05/15/2020	Seeed
A2	1. Page 3: Fixed the wiring issue with the I2C2 on the PMIC.	05/18/2020	Seeed
A2	1. Page 16: Changed the definition of PHY_LED, keep the status like BBB. 2. Page 17: Changed R60 from NI to 0R; R35 from 4.7K to NI(200K), added R191=NI(4.7K); R52 from 10K to 200K; Set R46=0R, R47=NI(0R). 3. Page All: Added the Seeed's BOM to SCH.	06/08/2020	Seeed

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Title: BeagleBone AI AM57x

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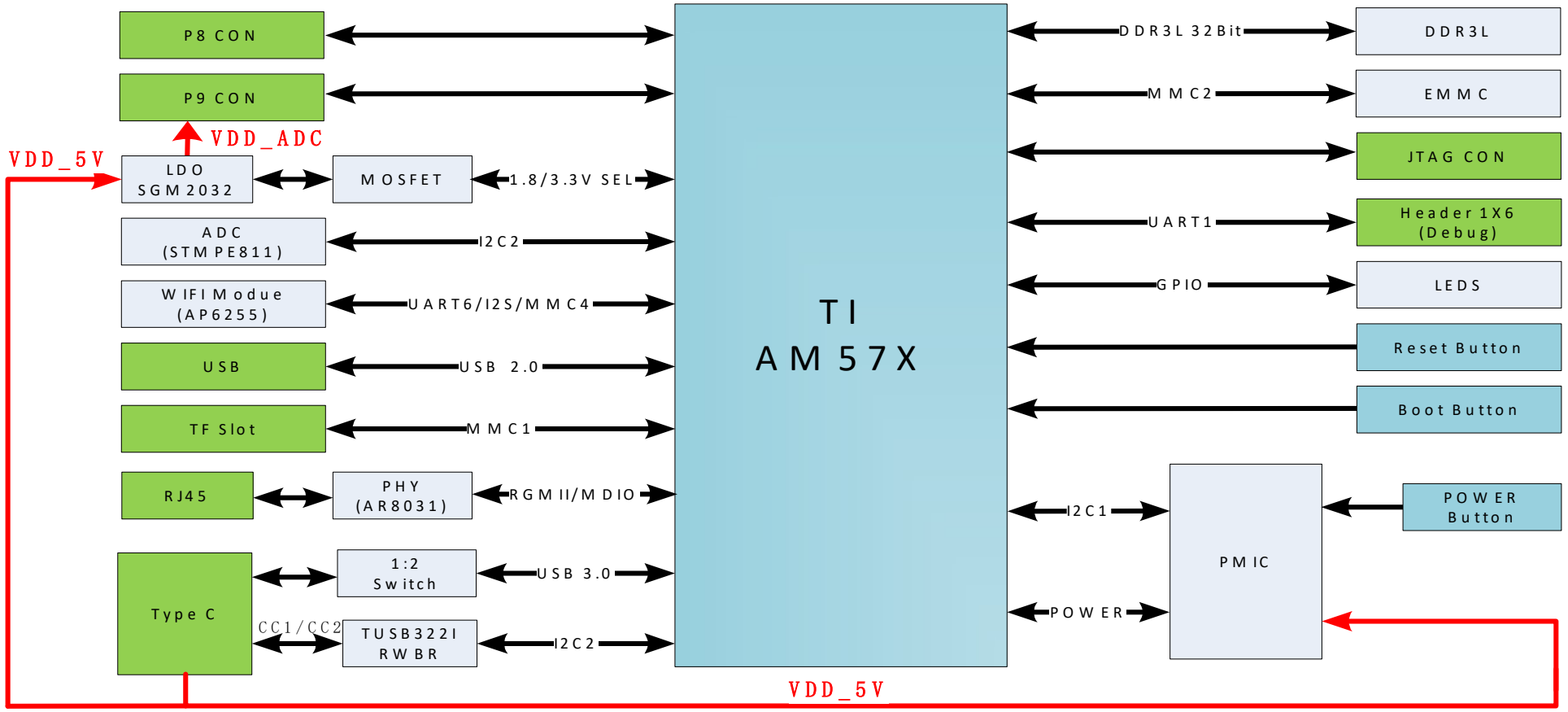
BeagleBone AI AM57x BLOCK Diagram

TBD



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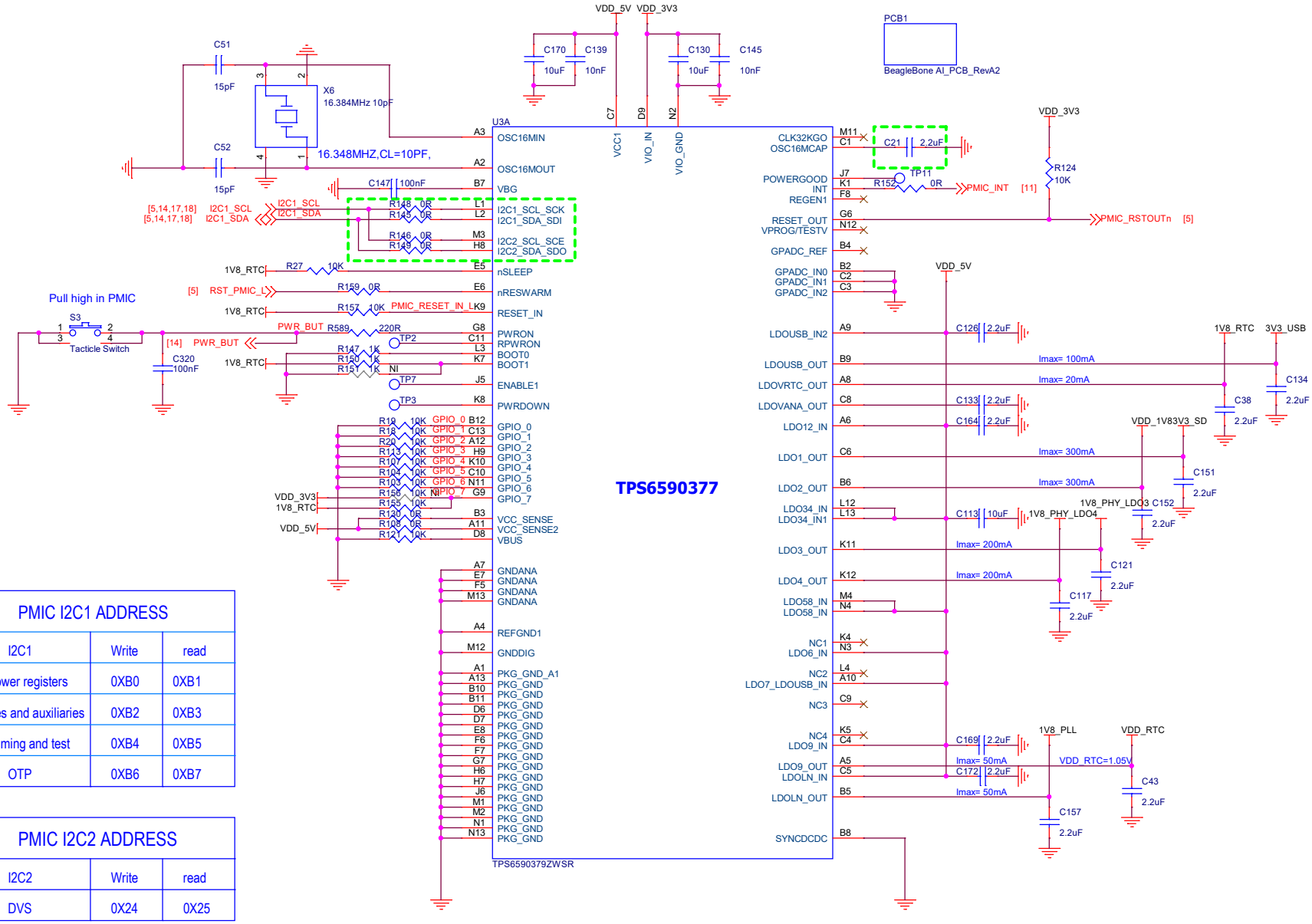
Size: B	Document Number: 02 Block Diagram		Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020		Sheet: 2 of 19



PMIC I2C1 ADDRESS		
I2C1	Write	read
Power registers	0XB0	0XB1
Interfaces and auxiliaries	0XB2	0XB3
Trimming and test	0XB4	0XB5
OTP	0XB6	0XB7

PMIC I2C2 ADDRESS		
I2C2	Write	read
DVS	0X24	0X25

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	Title: BeagleBone AI AM57x	
Size: A3	Document Number: 03 PMIC1	Rev: A2
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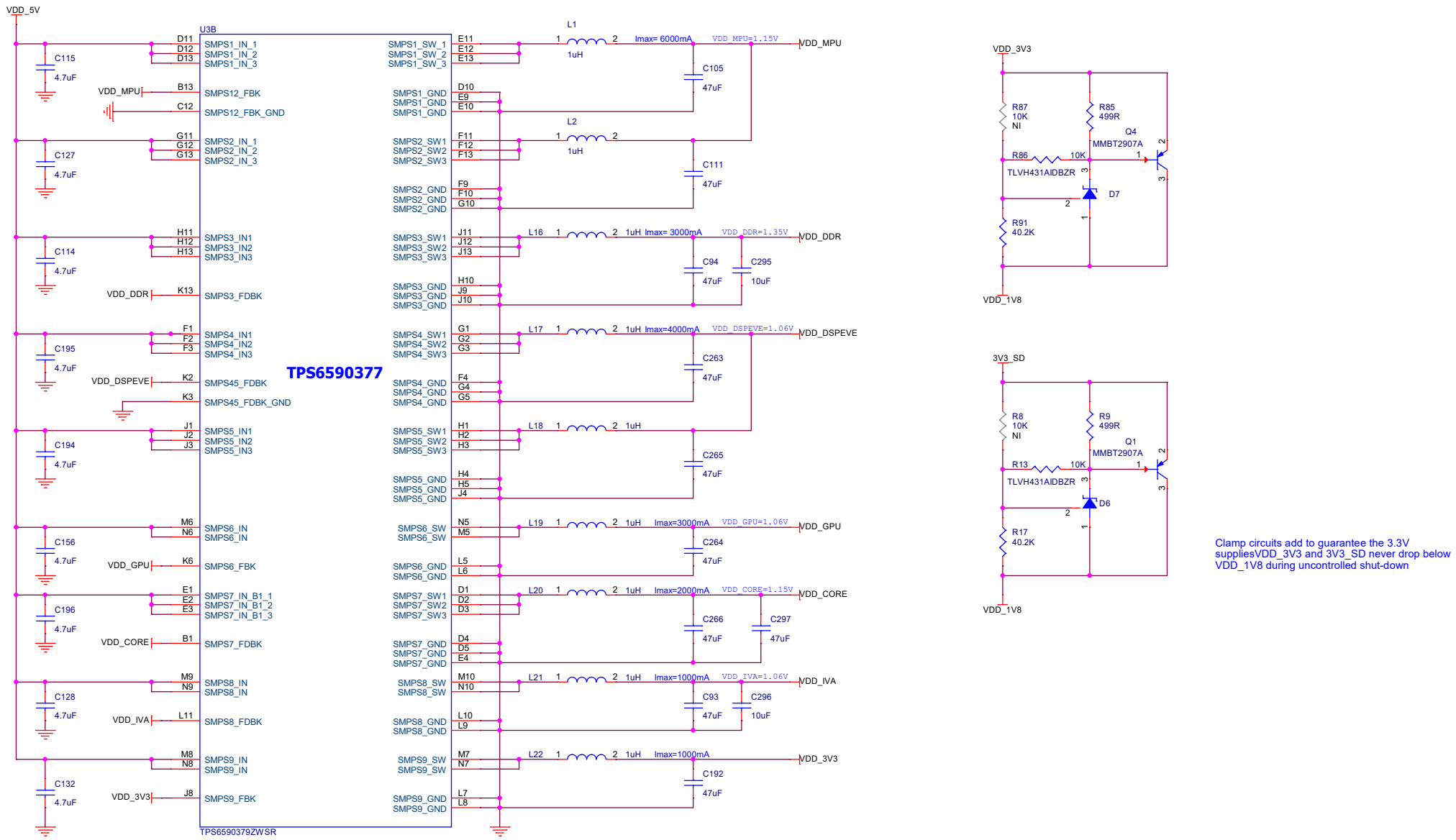

Clamp circuits add to guarantee the 3.3V suppliesVDD_3V3 and 3V3_SD never drop below VDD_1V8 during uncontrolled shut-down

Mask Point

ID1 NI
ID2 NI
ID3 NI

Hole

MH3 Plated Hole
MH2 Plated Hole
MH1 Plated Hole
MH4 Plated Hole

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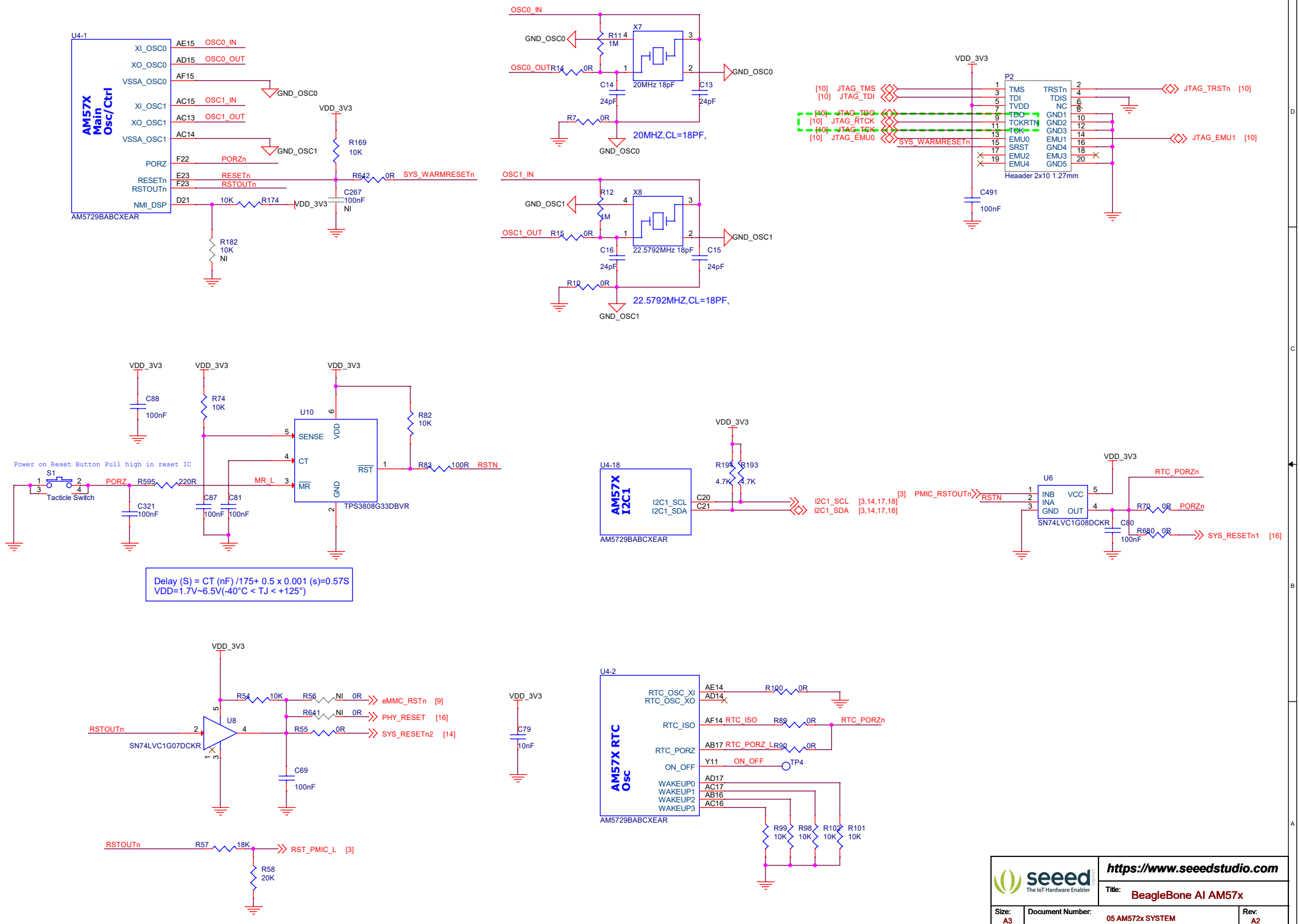
Size: A3	Document Number: 04 PMIC2	Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020	Sheet: 4 of 19


U4-1
AM57X Main Osc/Ctrl
XI_OSC0
XO_OSC0
VSSA_OSC0
XI_OSC1
XO_OSC1
VSSA_OSC1
PORZ
RESETn
RSTOUTn
NMI_DSP
AE15 OSC0_IN
AD15 OSC0_OUT
AF15
AC15 OSC1_IN
AC13 OSC1_OUT
AC14
F22 PORZn
E23 RESETn
F23 RSTOUTn
D21
AM5729BABCXEAR
GND_OSC0
GND_OSC1
VDD_3V3
R169 10K
R642 0R SYS_WARMRESETn
C267 100nF NI
10K R174
R182 10K NI
OSC0_IN
OSC0_OUT
R11 1M
R14 0R
X7
20MHz 18pF
C14 24pF
C13 24pF
R7 0R
20MHZ,CL=18PF,
OSC1_IN
OSC1_OUT
R12 1M
R15 0R
X8
22.5792MHz 18pF
C16 24pF
C15 24pF
R10 0R
22.5792MHZ,CL=18PF,
P2
TMS TRSTn
TDI TDIS
TVDD NC
TDO GND1
TCKRTN GND2
TCK GND3
EMU0 EMU1
SRST GND4
EMU2 EMU3
EMU4 GND5
Heaader 2x10 1.27mm
[10] JTAG_TMS
[10] JTAG_TDI
[40] JTAG_TDO
[10] JTAG_RTCK
[40] JTAG_TCK
[10] JTAG_EMU0
SYS_WARMRESETn
JTAG_TRSTn [10]
JTAG_EMU1 [10]
C491 100nF
C88 100nF
R74 10K
U10
SENSE
CT
MR
VDD
GND
RST
TPS3808G33DBVR
R82 10K
R83 100R RSTN
Power on Reset Button Pull high in reset IC
S1
Tactile Switch
PORZ R595 220R
MR_L
C321 100nF
C87 100nF
C81 100nF
Delay (S) = CT (nF) /175+ 0.5 x 0.001 (s)=0.57S
VDD=1.7V~6.5V(-40°C < TJ < +125°)
U4-18
AM57X I2C1
I2C1_SCL
I2C1_SDA
R195 4.7K
R193 4.7K
C20
C21
I2C1_SCL [3,14,17,18]
I2C1_SDA [3,14,17,18]
PMIC_RSTOUTn [3]
U6
SN74LVC1G08DCKR
INB VCC
INA
GND OUT
RSTN
RTC_PORZn
R70 0R PORZn
C80 100nF
R680 0R SYS_RESETn1 [16]
R54 10K
R56 NI 0R eMMC_RSTn [9]
R641 NI 0R PHY_RESET [16]
R55 0R SYS_RESETn2 [14]
U8
SN74LVC1G07DCKR
RSTOUTn
C69 100nF
C79 10nF
R57 18K RST_PMIC_L [3]
R58 20K
U4-2
AM57X RTC Osc
RTC_OSC_XI
RTC_OSC_XO
RTC_ISO
RTC_PORZ
ON_OFF
WAKEUP0
WAKEUP1
WAKEUP2
WAKEUP3
AE14 AD14
AF14 RTC_ISO
AB17 RTC_PORZ_L
Y11 ON_OFF
AD17
AC17
AB16
AC16
R100 0R
R89 0R RTC_PORZn
R90 0R
TP4
R99 10K
R98 10K
R102 10K
R101 10K
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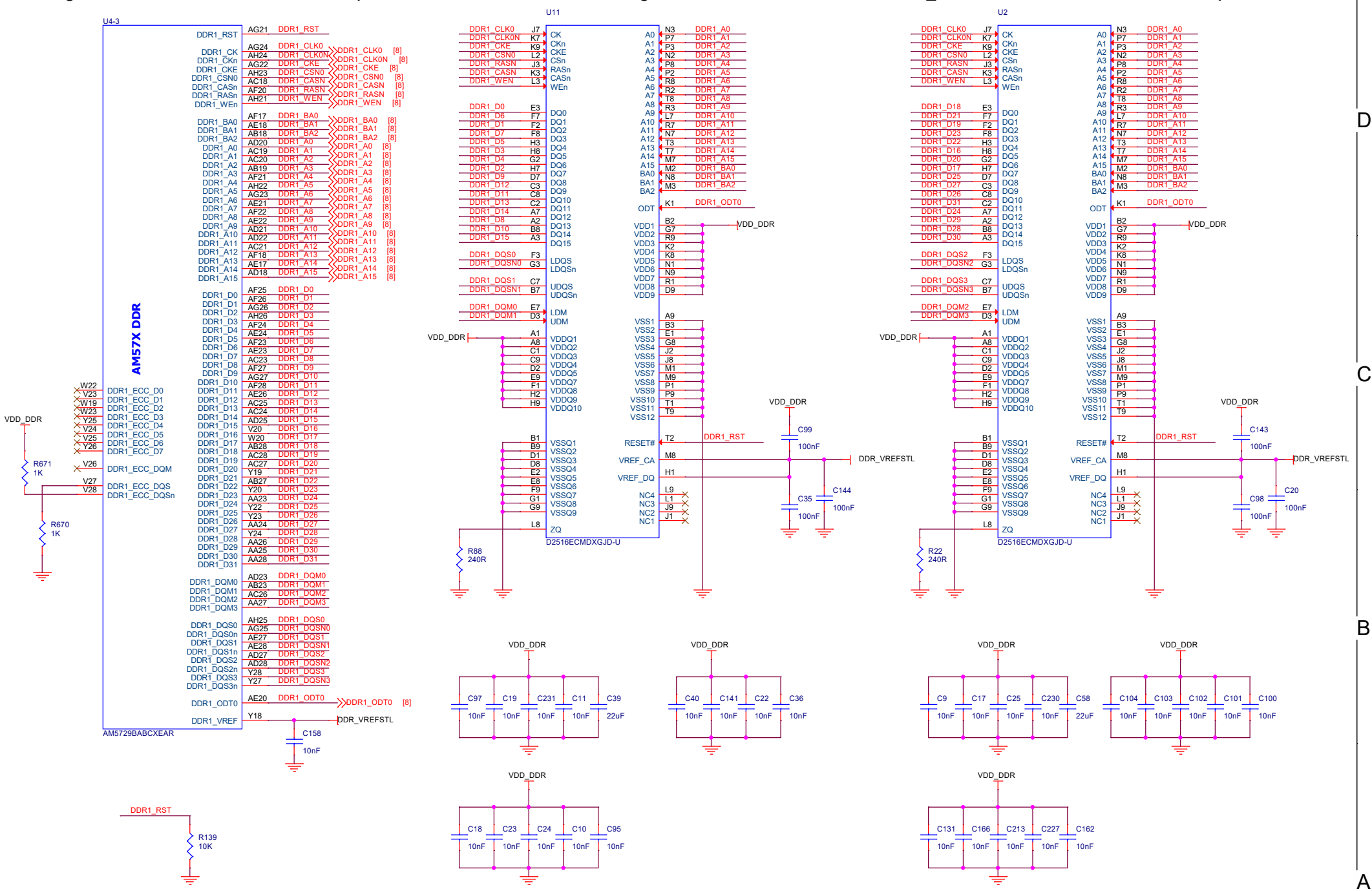
Title: BeagleBone AI AM57x
Size: A3
Document Number: 05 AM572x SYSTEM
Rev: A2
Draw By: Seeed
Date: Wednesday, July 15, 2020
Sheet: 5 of 19



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Size: A3	Document Number: 06 DDR PART1		Rev: A2
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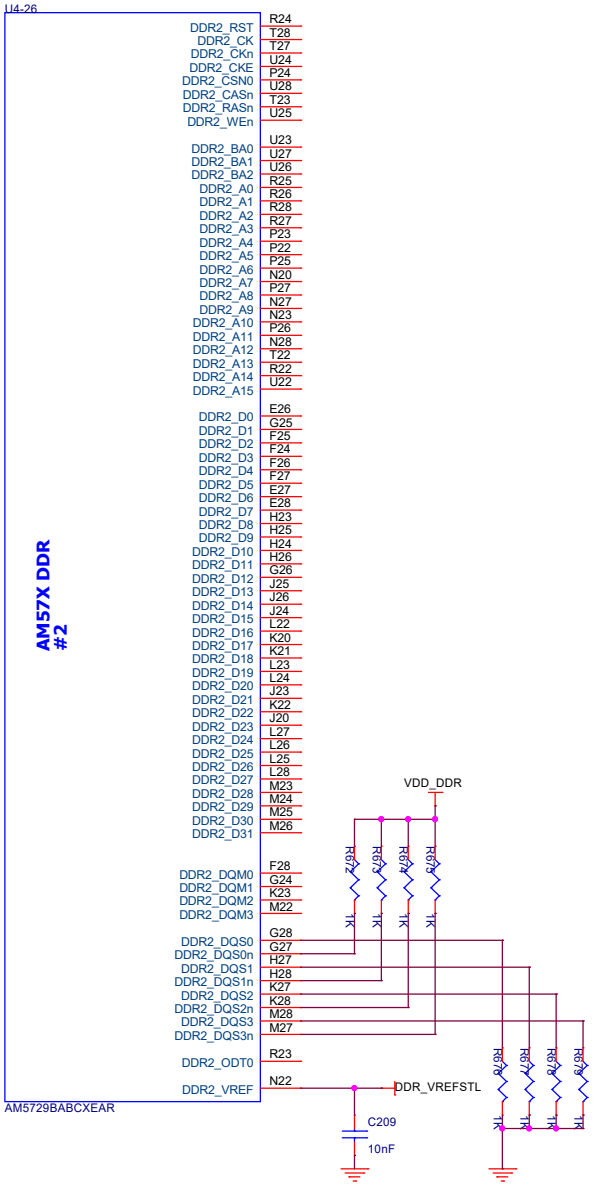

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	Title: BeagleBone AI AM57x	
Size: A3	Document Number: 07 DDR PART2	Rev: A2
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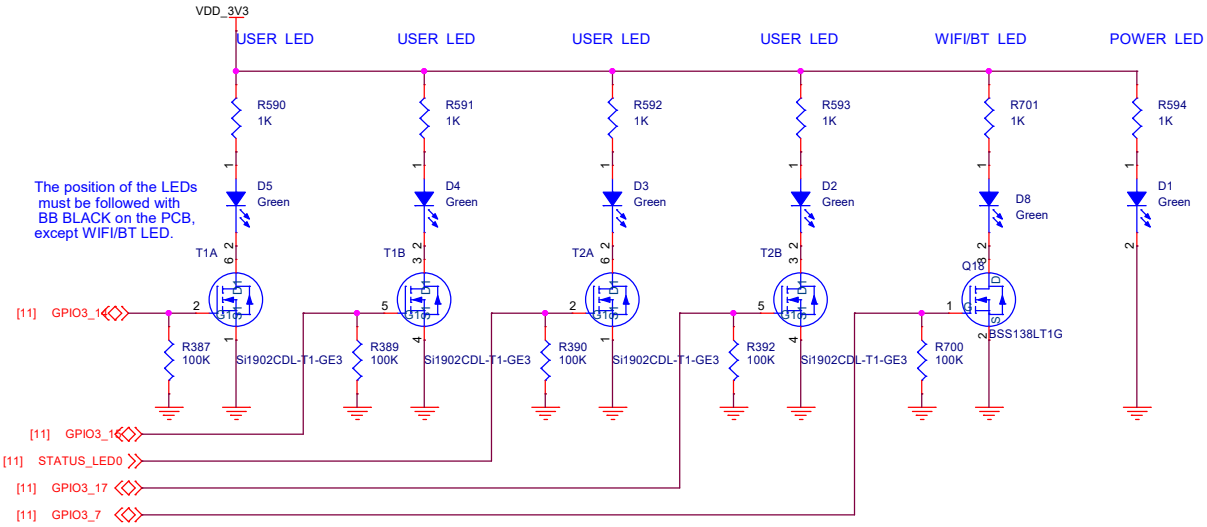
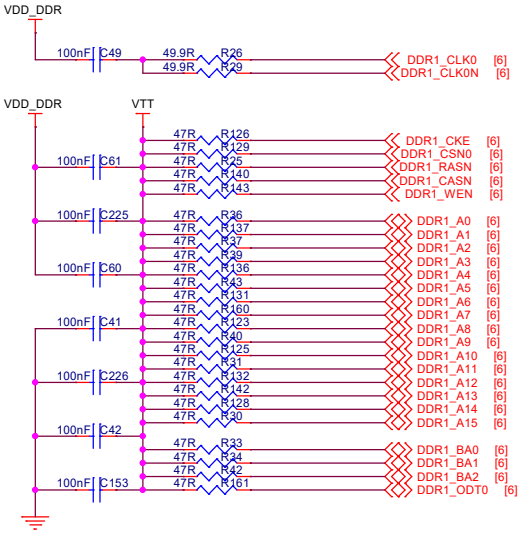
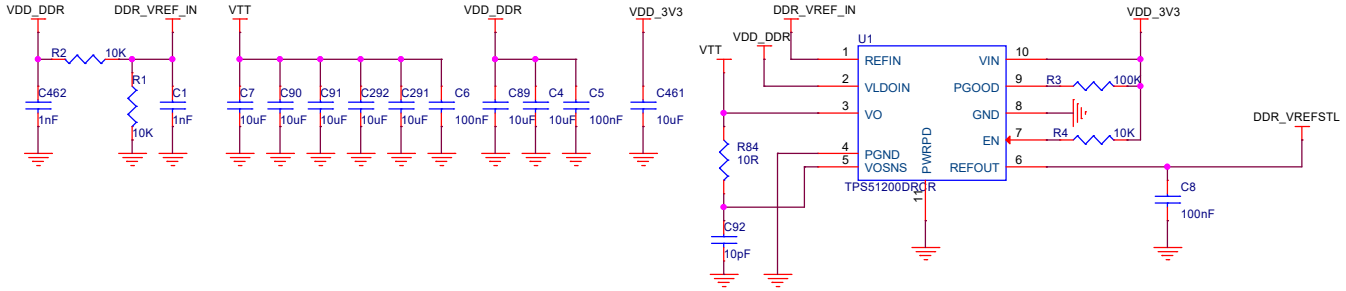
LED



VTT



VTT SUPPLY



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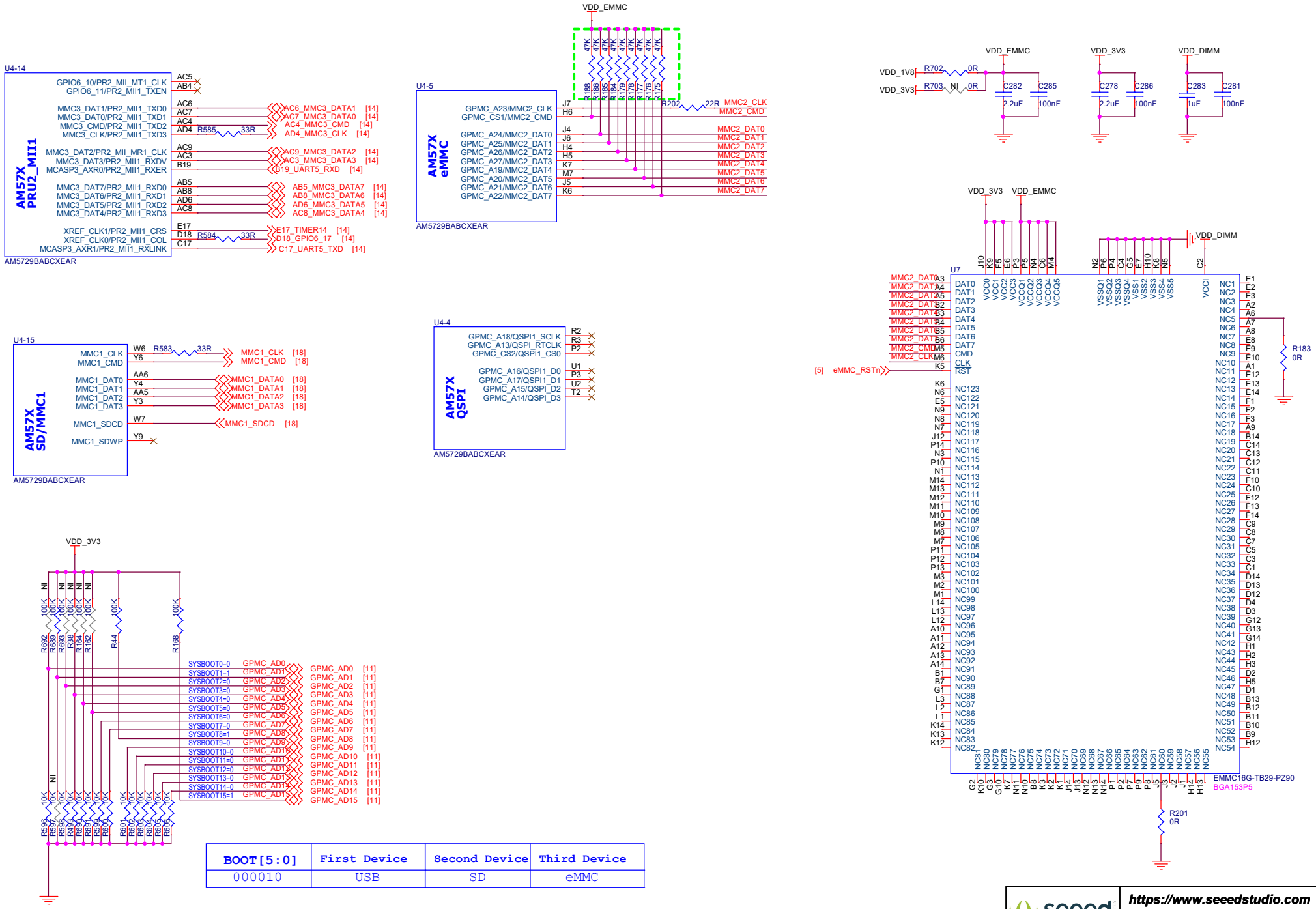
Size: A3	Document Number: 08 DDR VTT/LEDs		Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020		Sheet: 8 of 19



BOOT[5:0]	First Device	Second Device	Third Device
000010	USB	SD	eMMC

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Title: BeagleBone AI AM57x		
Size: A3	Document Number: 09 MMC/UBOOT	Rev: A2
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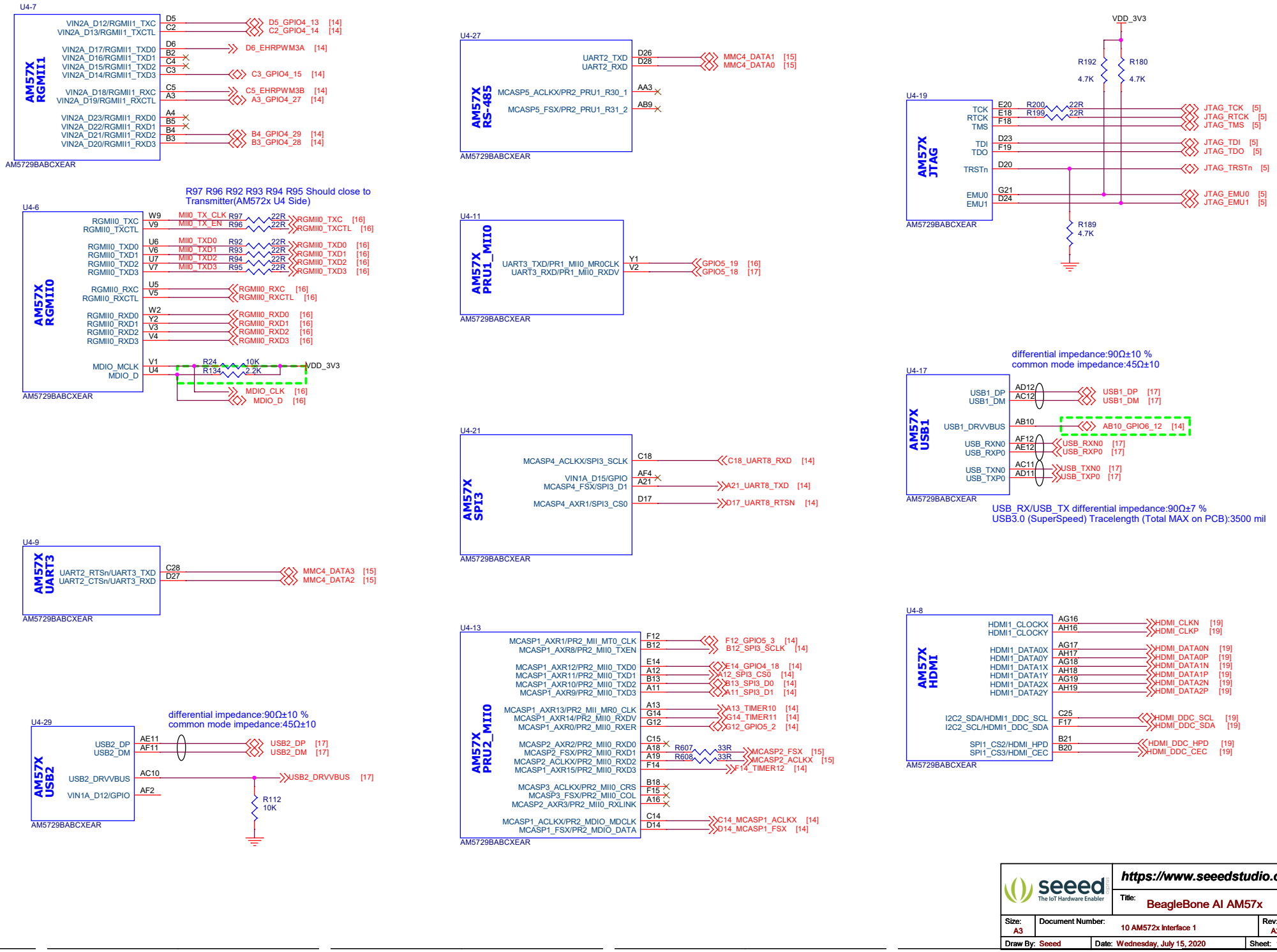
U4-7
AM57X RGMII1
VIN2A_D12/RGMII1_TXC
VIN2A_D13/RGMII1_TXCTL
VIN2A_D17/RGMII1_TXD0
VIN2A_D16/RGMII1_TXD1
VIN2A_D15/RGMII1_TXD2
VIN2A_D14/RGMII1_TXD3
VIN2A_D18/RGMII1_RXC
VIN2A_D19/RGMII1_RXCTL
VIN2A_D23/RGMII1_RXD0
VIN2A_D22/RGMII1_RXD1
VIN2A_D21/RGMII1_RXD2
VIN2A_D20/RGMII1_RXD3
D5_GPIO4_13 [14]
C2_GPIO4_14 [14]
D6_EHRPWM3A [14]
C3_GPIO4_15 [14]
C5_EHRPWM3B [14]
A3_GPIO4_27 [14]
B4_GPIO4_29 [14]
B3_GPIO4_28 [14]
AM5729BABCXEAR
R97 R96 R92 R93 R94 R95 Should close to Transmitter(AM572x U4 Side)
U4-6
AM57X RGMII0
RGMII0_TXC
RGMII0_TXCTL
RGMII0_TXD0
RGMII0_TXD1
RGMII0_TXD2
RGMII0_TXD3
RGMII0_RXC
RGMII0_RXCTL
RGMII0_RXD0
RGMII0_RXD1
RGMII0_RXD2
RGMII0_RXD3
MDIO_MCLK
MDIO_D
MII0_TX_CLK
MII0_TX_EN
MII0_TXD0
MII0_TXD1
MII0_TXD2
MII0_TXD3
22R
RGMII0_TXC [16]
RGMII0_TXCTL [16]
RGMII0_TXD0 [16]
RGMII0_TXD1 [16]
RGMII0_TXD2 [16]
RGMII0_TXD3 [16]
RGMII0_RXC [16]
RGMII0_RXCTL [16]
RGMII0_RXD0 [16]
RGMII0_RXD1 [16]
RGMII0_RXD2 [16]
RGMII0_RXD3 [16]
R24 10K
R134 2.2K
VDD_3V3
MDIO_CLK [16]
MDIO_D [16]
AM5729BABCXEAR
U4-9
AM57X UART3
UART2_RTSn/UART3_TXD
UART2_CTSn/UART3_RXD
MMC4_DATA3 [15]
MMC4_DATA2 [15]
AM5729BABCXEAR
differential impedance:90Ω±10 %
common mode impedance:45Ω±10
U4-29
AM57X USB2
USB2_DP
USB2_DM
USB2_DRVVBUS
VIN1A_D12/GPIO
USB2_DP [17]
USB2_DM [17]
USB2_DRVVBUS [17]
R112 10K
AM5729BABCXEAR
U4-27
AM57X RS-485
UART2_TXD
UART2_RXD
MCASP5_ACLKX/PR2_PRU1_R30_1
MCASP5_FSX/PR2_PRU1_R31_2
MMC4_DATA1 [15]
MMC4_DATA0 [15]
AM5729BABCXEAR
U4-11
AM57X PRU1_MII0
UART3_TXD/PR1_MII0_MR0CLK
UART3_RXD/PR1_MII0_RXDV
GPIO5_19 [16]
GPIO5_18 [17]
AM5729BABCXEAR
U4-21
AM57X SPI3
MCASP4_ACLKX/SPI3_SCLK
VIN1A_D15/GPIO MCASP4_FSX/SPI3_D1
MCASP4_AXR1/SPI3_CS0
C18_UART8_RXD [14]
A21_UART8_TXD [14]
D17_UART8_RTSN [14]
AM5729BABCXEAR
U4-13
AM57X PRU2_MII0
MCASP1_AXR1/PR2_MII_MT0_CLK
MCASP1_AXR8/PR2_MII0_TXEN
MCASP1_AXR12/PR2_MII0_TXD0
MCASP1_AXR11/PR2_MII0_TXD1
MCASP1_AXR10/PR2_MII0_TXD2
MCASP1_AXR9/PR2_MII0_TXD3
MCASP1_AXR13/PR2_MII_MR0_CLK
MCASP1_AXR14/PR2_MII0_RXDV
MCASP1_AXR0/PR2_MII0_RXER
MCASP2_AXR2/PR2_MII0_RXD0
MCASP2_FSX/PR2_MII0_RXD1
MCASP2_ACLKX/PR2_MII0_RXD2
MCASP1_AXR15/PR2_MII0_RXD3
MCASP3_ACLKX/PR2_MII0_CRS
MCASP3_FSX/PR2_MII0_COL
MCASP2_AXR3/PR2_MII0_RXLINK
MCASP1_ACLKX/PR2_MDIO_MDCLK
MCASP1_FSX/PR2_MDIO_DATA
F12_GPIO5_3 [14]
B12_SPI3_SCLK [14]
E14_GPIO4_18 [14]
A12_SPI3_CS0 [14]
B13_SPI3_D0 [14]
A11_SPI3_D1 [14]
A13_TIMER10 [14]
G14_TIMER11 [14]
G12_GPIO5_2 [14]
R607 33R
R608 33R
MCASP2_FSX [15]
MCASP2_ACLKX [15]
F14_TIMER12 [14]
C14_MCASP1_ACLKX [14]
D14_MCASP1_FSX [14]
AM5729BABCXEAR
VDD_3V3
R192 4.7K
R180 4.7K
U4-19
AM57X JTAG
TCK
RTCK
TMS
TDI
TDO
TRSTn
EMU0
EMU1
R200 22R
R199 22R
JTAG_TCK [5]
JTAG_RTCK [5]
JTAG_TMS [5]
JTAG_TDI [5]
JTAG_TDO [5]
JTAG_TRSTn [5]
JTAG_EMU0 [5]
JTAG_EMU1 [5]
R189 4.7K
AM5729BABCXEAR
differential impedance:90Ω±10 %
common mode impedance:45Ω±10
U4-17
AM57X USB1
USB1_DP
USB1_DM
USB1_DRVVBUS
USB_RXN0
USB_RXP0
USB_TXN0
USB_TXP0
USB1_DP [17]
USB1_DM [17]
AB10_GPIO6_12 [14]
USB_RXN0 [17]
USB_RXP0 [17]
USB_TXN0 [17]
USB_TXP0 [17]
AM5729BABCXEAR
USB_RX/USB_TX differential impedance:90Ω±7 %
USB3.0 (SuperSpeed) Tracelength (Total MAX on PCB):3500 mil
U4-8
AM57X HDMI
HDMI1_CLOCKX
HDMI1_CLOCKY
HDMI1_DATA0X
HDMI1_DATA0Y
HDMI1_DATA1X
HDMI1_DATA1Y
HDMI1_DATA2X
HDMI1_DATA2Y
I2C2_SDA/HDMI1_DDC_SCL
I2C2_SCL/HDMI1_DDC_SDA
SPI1_CS2/HDMI_HPD
SPI1_CS3/HDMI_CEC
HDMI_CLKN [19]
HDMI_CLKP [19]
HDMI_DATA0N [19]
HDMI_DATA0P [19]
HDMI_DATA1N [19]
HDMI_DATA1P [19]
HDMI_DATA2N [19]
HDMI_DATA2P [19]
HDMI_DDC_SCL [19]
HDMI_DDC_SDA [19]
HDMI_DDC_HPD [19]
HDMI_DDC_CEC [19]
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Title: BeagleBone AI AM57x
Size: A3
Document Number: 10 AM572x Interface 1
Rev: A2
Draw By: Seeed
Date: Wednesday, July 15, 2020
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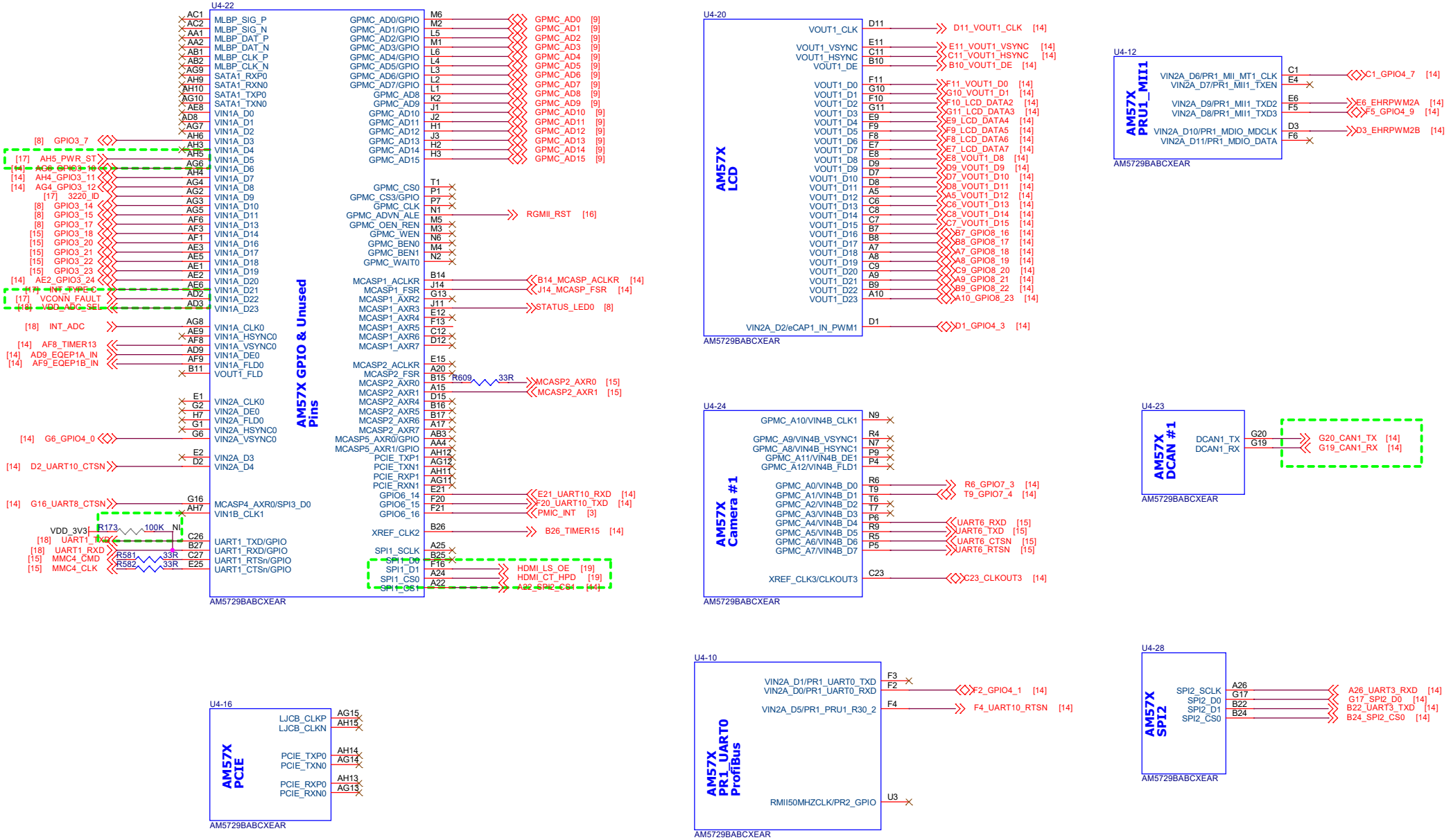
U4-22
AM57X GPIO & Unused Pins
AM5729BABCXEAR
MLBP_SIG_P
MLBP_SIG_N
MLBP_DAT_P
MLBP_DAT_N
MLBP_CLK_P
MLBP_CLK_N
SATA1_RXP0
SATA1_RXN0
SATA1_TXP0
SATA1_TXN0
VIN1A_D0
VIN1A_D1
VIN1A_D2
VIN1A_D3
VIN1A_D4
VIN1A_D5
VIN1A_D6
VIN1A_D7
VIN1A_D8
VIN1A_D9
VIN1A_D10
VIN1A_D11
VIN1A_D13
VIN1A_D14
VIN1A_D16
VIN1A_D17
VIN1A_D18
VIN1A_D19
VIN1A_D20
VIN1A_D21
VIN1A_D22
VIN1A_D23
VIN1A_CLK0
VIN1A_HSYNC0
VIN1A_VSYNC0
VIN1A_DE0
VIN1A_FLD0
VOUT1_FLD
VIN2A_CLK0
VIN2A_DE0
VIN2A_FLD0
VIN2A_HSYNC0
VIN2A_VSYNC0
VIN2A_D3
VIN2A_D4
MCASP4_AXR0/SPI3_D0
VIN1B_CLK1
UART1_TXD/GPIO
UART1_RXD/GPIO
UART1_RTSn/GPIO
UART1_CTSn/GPIO
GPMC_AD0/GPIO
GPMC_AD1/GPIO
GPMC_AD2/GPIO
GPMC_AD3/GPIO
GPMC_AD4/GPIO
GPMC_AD5/GPIO
GPMC_AD6/GPIO
GPMC_AD7/GPIO
GPMC_AD8
GPMC_AD9
GPMC_AD10
GPMC_AD11
GPMC_AD12
GPMC_AD13
GPMC_AD14
GPMC_AD15
GPMC_CS0
GPMC_CS3/GPIO
GPMC_CLK
GPMC_ADVN_ALE
GPMC_OEN_REN
GPMC_WEN
GPMC_BEN0
GPMC_BEN1
GPMC_WAIT0
MCASP1_ACLKR
MCASP1_FSR
MCASP1_AXR2
MCASP1_AXR3
MCASP1_AXR4
MCASP1_AXR5
MCASP1_AXR6
MCASP1_AXR7
MCASP2_ACLKR
MCASP2_FSR
MCASP2_AXR0
MCASP2_AXR1
MCASP2_AXR4
MCASP2_AXR5
MCASP2_AXR6
MCASP2_AXR7
MCASP5_AXR0/GPIO
MCASP5_AXR1/GPIO
PCIE_TXP1
PCIE_TXN1
PCIE_RXP1
PCIE_RXN1
GPIO6_14
GPIO6_15
GPIO6_16
XREF_CLK2
SPI1_SCLK
SPI1_D0
SPI1_D1
SPI1_CS0
SPI1_CS1
RGMII_RST [16]
B14_MCASP_ACLKR [14]
J14_MCASP_FSR [14]
STATUS_LED0 [8]
MCASP2_AXR0 [15]
MCASP2_AXR1 [15]
E21_UART10_RXD [14]
F20_UART10_TXD [14]
PMIC_INT [3]
B26_TIMER15 [14]
HDMI_LS_OE [19]
HDMI_CT_HPD [19]
A22_SPI2_CS1 [14]
R609 33R
R173 100K NI
R581 33R
R582 33R
[8] GPIO3_7
[17] AH5_PWR_ST
[14] AC6_GPIO3_10
[14] AH4_GPIO3_11
[14] AG4_GPIO3_12
[17] 3220_ID
[8] GPIO3_14
[8] GPIO3_15
[8] GPIO3_17
[15] GPIO3_18
[15] GPIO3_20
[15] GPIO3_21
[15] GPIO3_22
[15] GPIO3_23
[14] AE2_GPIO3_24
[17] INT_TYPE_C
[17] VCONN_FAULT
[18] VDD_ADC_SEL
[18] INT_ADC
[14] AF8_TIMER13
[14] AD9_EQEP1A_IN
[14] AF9_EQEP1B_IN
[14] G6_GPIO4_0
[14] D2_UART10_CTSN
[14] G16_UART8_CTSN
VDD_3V3
[18] UART1_TXD
[18] UART1_RXD
[15] MMC4_CMD
[15] MMC4_CLK
U4-20
AM57X LCD
AM5729BABCXEAR
VOUT1_CLK
VOUT1_VSYNC
VOUT1_HSYNC
VOUT1_DE
VOUT1_D0
VOUT1_D1
VOUT1_D2
VOUT1_D3
VOUT1_D4
VOUT1_D5
VOUT1_D6
VOUT1_D7
VOUT1_D8
VOUT1_D9
VOUT1_D10
VOUT1_D11
VOUT1_D12
VOUT1_D13
VOUT1_D14
VOUT1_D15
VOUT1_D16
VOUT1_D17
VOUT1_D18
VOUT1_D19
VOUT1_D20
VOUT1_D21
VOUT1_D22
VOUT1_D23
VIN2A_D2/eCAP1_IN_PWM1
D11_VOUT1_CLK [14]
E11_VOUT1_VSYNC [14]
C11_VOUT1_HSYNC [14]
B10_VOUT1_DE [14]
F11_VOUT1_D0 [14]
G10_VOUT1_D1 [14]
F10_LCD_DATA2 [14]
G11_LCD_DATA3 [14]
E9_LCD_DATA4 [14]
F9_LCD_DATA5 [14]
F8_LCD_DATA6 [14]
E7_LCD_DATA7 [14]
E8_VOUT1_D8 [14]
D9_VOUT1_D9 [14]
D7_VOUT1_D10 [14]
D8_VOUT1_D11 [14]
A5_VOUT1_D12 [14]
C6_VOUT1_D13 [14]
C8_VOUT1_D14 [14]
C7_VOUT1_D15 [14]
B7_GPIO8_16 [14]
B8_GPIO8_17 [14]
A7_GPIO8_18 [14]
A8_GPIO8_19 [14]
C9_GPIO8_20 [14]
A9_GPIO8_21 [14]
B9_GPIO8_22 [14]
A10_GPIO8_23 [14]
D1_GPIO4_3 [14]
U4-12
AM57X PRU1_MII1
AM5729BABCXEAR
VIN2A_D6/PR1_MII_MT1_CLK
VIN2A_D7/PR1_MII1_TXEN
VIN2A_D9/PR1_MII1_TXD2
VIN2A_D8/PR1_MII1_TXD3
VIN2A_D10/PR1_MDIO_MDCLK
VIN2A_D11/PR1_MDIO_DATA
C1_GPIO4_7 [14]
E6_EHRPWM2A [14]
F5_GPIO4_9 [14]
D3_EHRPWM2B [14]
U4-24
AM57X Camera #1
AM5729BABCXEAR
GPMC_A10/VIN4B_CLK1
GPMC_A9/VIN4B_VSYNC1
GPMC_A8/VIN4B_HSYNC1
GPMC_A11/VIN4B_DE1
GPMC_A12/VIN4B_FLD1
GPMC_A0/VIN4B_D0
GPMC_A1/VIN4B_D1
GPMC_A2/VIN4B_D2
GPMC_A3/VIN4B_D3
GPMC_A4/VIN4B_D4
GPMC_A5/VIN4B_D5
GPMC_A6/VIN4B_D6
GPMC_A7/VIN4B_D7
XREF_CLK3/CLKOUT3
R6_GPIO7_3 [14]
T9_GPIO7_4 [14]
UART6_RXD [15]
UART6_TXD [15]
UART6_CTSN [15]
UART6_RTSN [15]
C23_CLKOUT3 [14]
U4-23
AM57X DCAN #1
AM5729BABCXEAR
DCAN1_TX
DCAN1_RX
G20_CAN1_TX [14]
G19_CAN1_RX [14]
U4-16
AM57X PCIE
AM5729BABCXEAR
LJCB_CLKP
LJCB_CLKN
PCIE_TXP0
PCIE_TXN0
PCIE_RXP0
PCIE_RXN0
U4-10
AM57X PR1_UART0 ProfiBus
AM5729BABCXEAR
VIN2A_D1/PR1_UART0_TXD
VIN2A_D0/PR1_UART0_RXD
VIN2A_D5/PR1_PRU1_R30_2
RMII50MHZCLK/PR2_GPIO
F2_GPIO4_1 [14]
F4_UART10_RTSN [14]
U3
U4-28
AM57X SPI2
AM5729BABCXEAR
SPI2_SCLK
SPI2_D0
SPI2_D1
SPI2_CS0
A26_UART3_RXD [14]
G17_SPI2_D0 [14]
B22_UART3_TXD [14]
B24_SPI2_CS0 [14]
seeed
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https://www.seeedstudio.com
Title: BeagleBone AI AM57x
Size: A3
Document Number: 11 AM572x Interface 2
Rev: A2
Draw By: Seeed
Date: Wednesday, July 15, 2020
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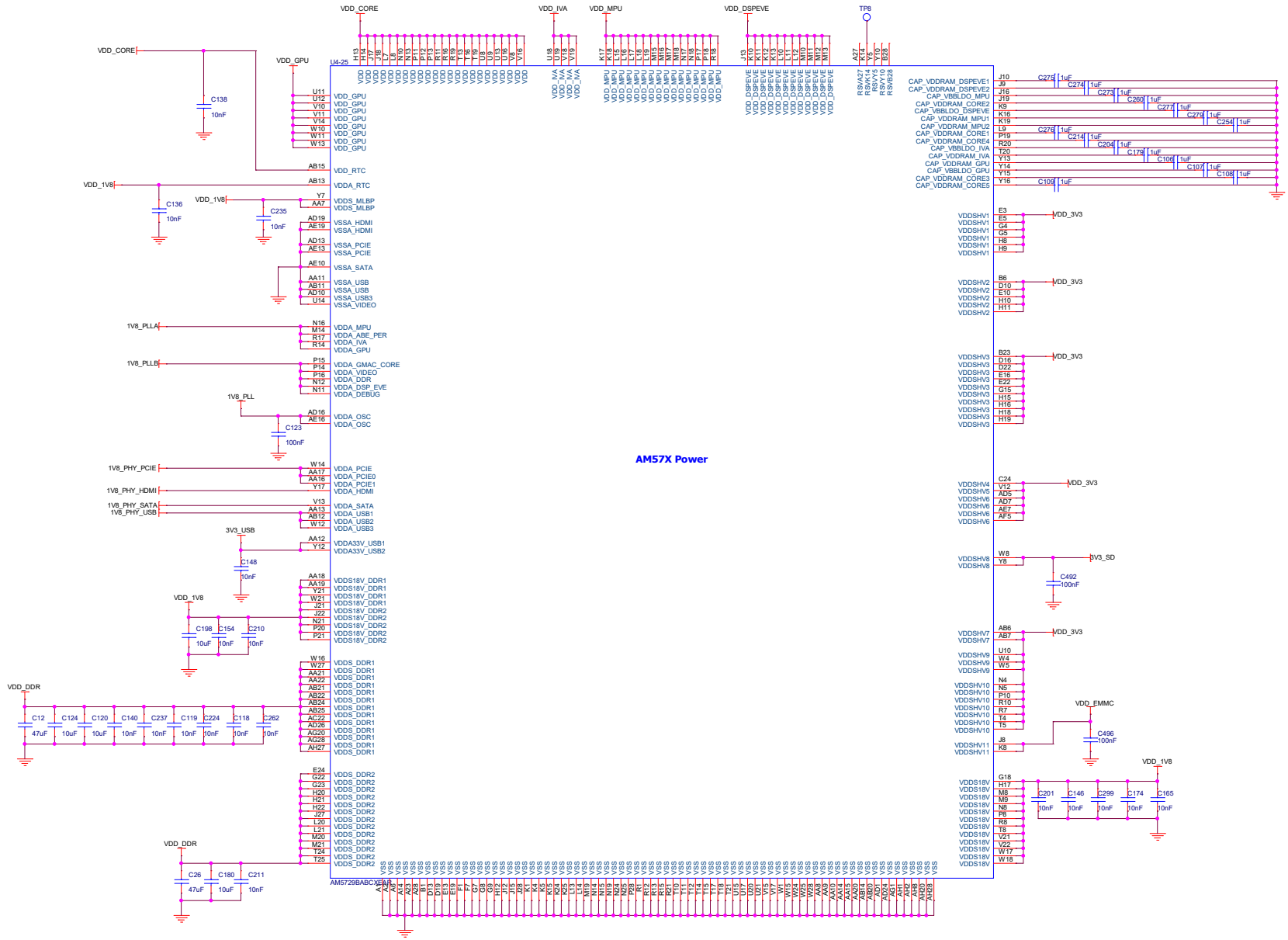

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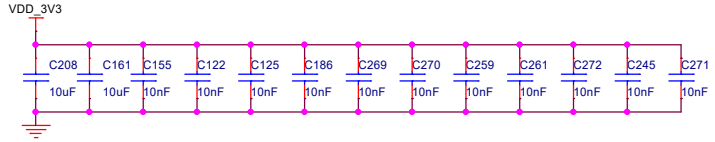
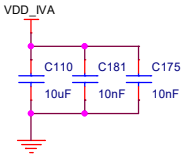
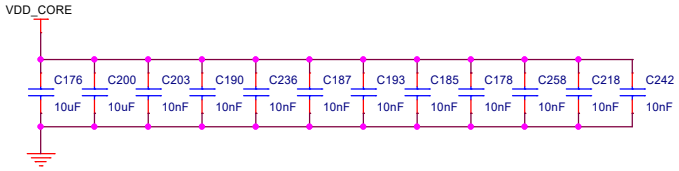
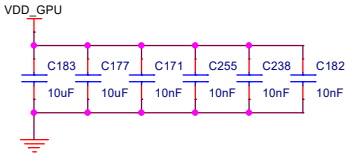
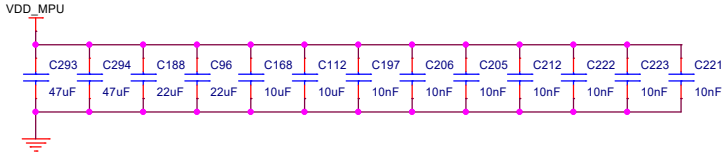
	Title: BeagleBone AI AM57x	
Size: A2	Document Number: 12 Processor Power	Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020	Sheet: 12 of 19

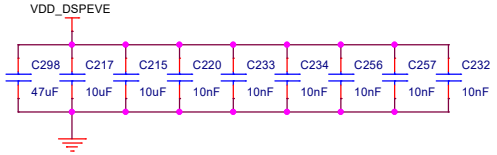


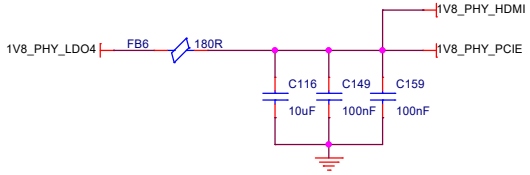


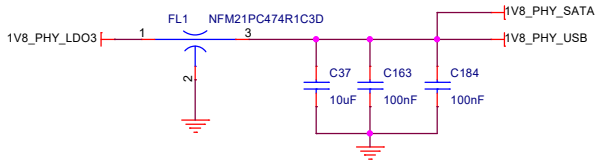


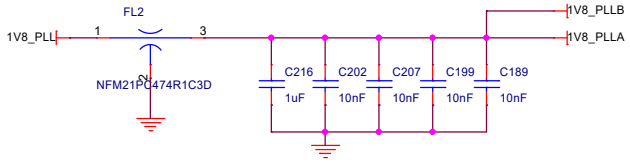












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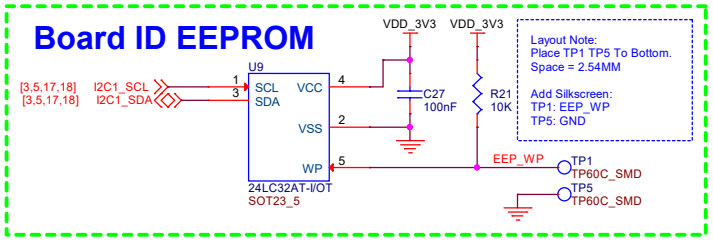
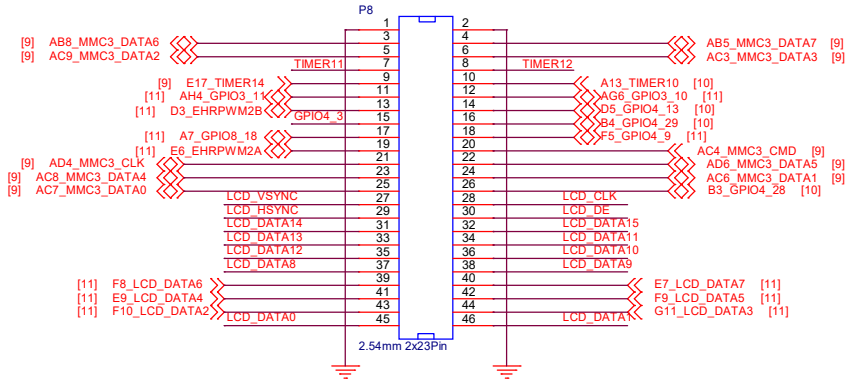
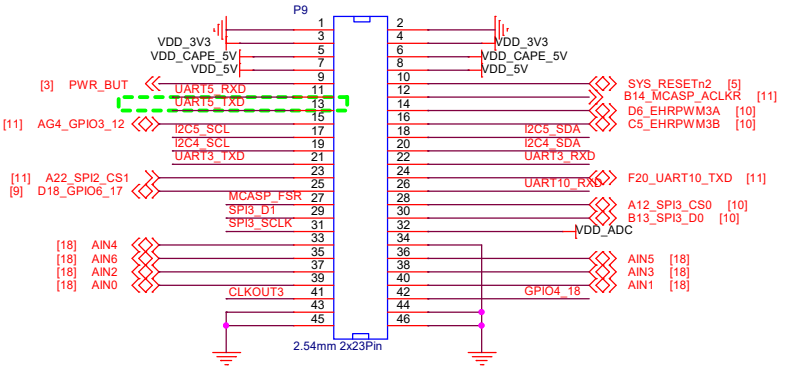
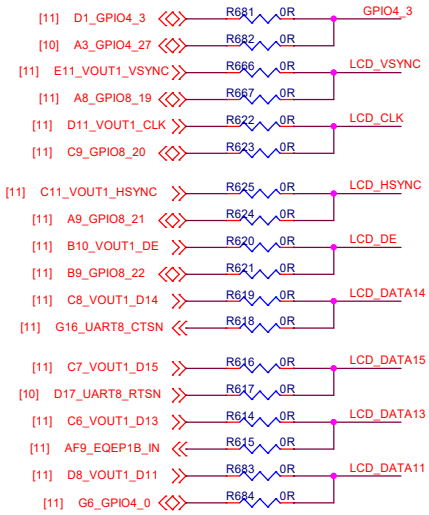
	Title: BeagleBone AI AM57x	
Size: A3	Document Number: 13 Processor Power Decoupling	Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020	Sheet: 13 of 19

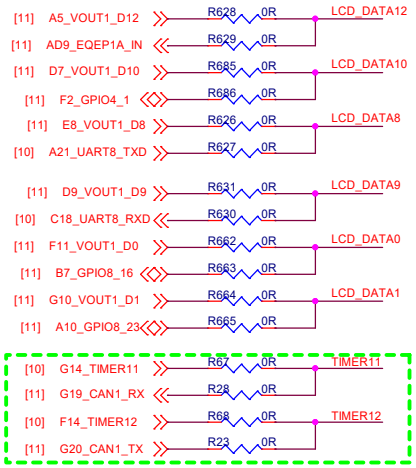


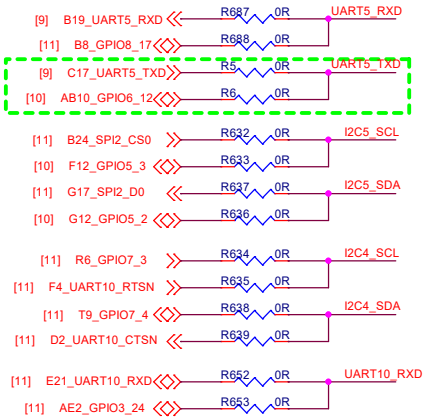


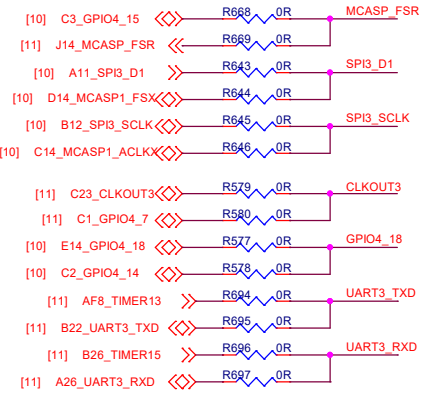
Exp Connect











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	Title: BeagleBone AI AM57x	
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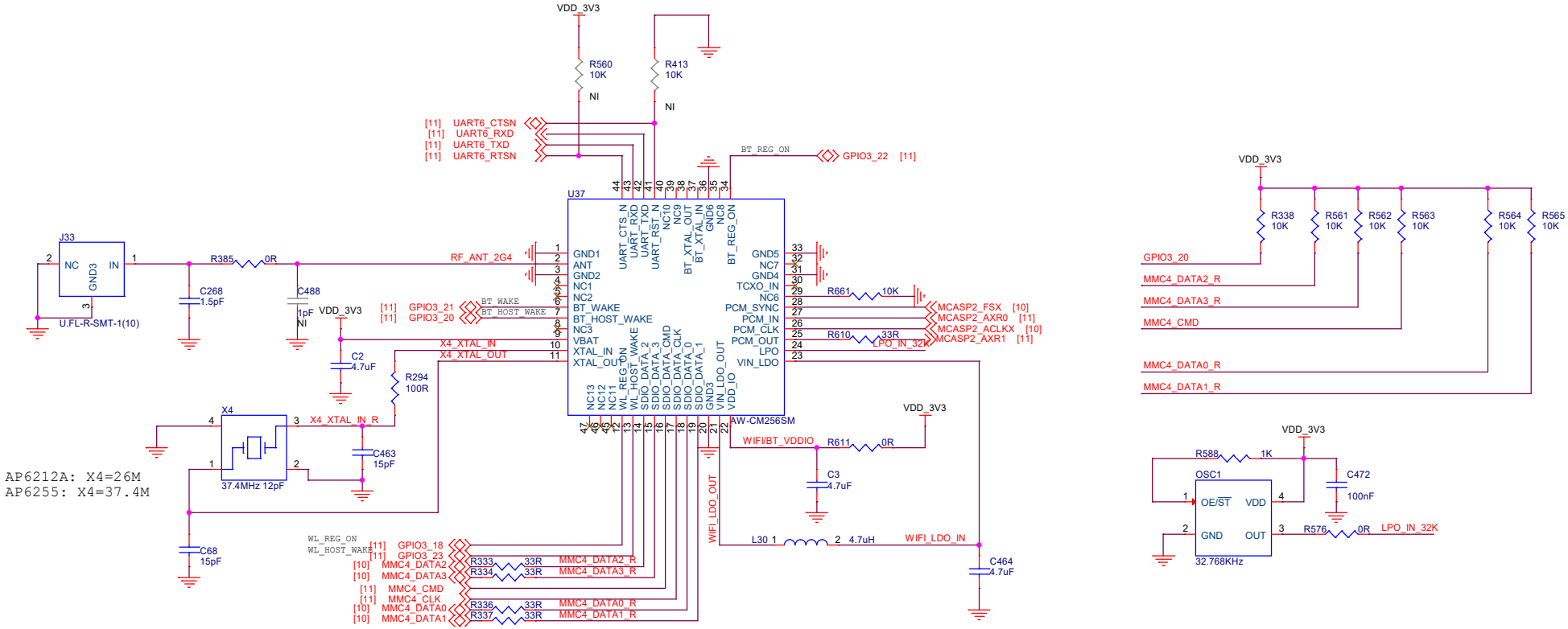

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	Title: BeagleBone AI AM57x	
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Gigabit Ethernet

R106 R109 R110 R111 R114 R115 Should close to Receiver.(PHY U14 Side)

DP83867

ETHERNET PHY

U14
DP83867CRRGZR
qfn48_0d5_7x7mm

JTAG pins can be left unconnected if not used

PHY address set to 0X00

100 ohms differential trace impedance.

U17
TPD4E05U06DQAR
uson10_0d5_2d5x1x0d5mm

U18
TPD4E05U06DQAR
uson10_0d5_2d5x1x0d5mm

J37
LPJG0801HBNL

LED0: Link
LED1: Link_1000BT
LED2: ACT

Layout Note:

Place 1uF and 0.1uF decoupling capacitors as close as possible to component VDD pins, placing the 0.1uF capacitor closest to the pin.

Mirror Enable=[0]
For Enabling Mount R141, R154

RGMII Clock Skew TX[0:2]=[000]
ANEG_SEL(Auto-negotiation)=[0]
PHY_LED[0:2] CANT CONFIGURE IN MODE4

Autoneg enable. For Disabling
R167=2.49K, R172=NI

RGMII Clock Skew RX[0:2]=[000]

When the PHY operating in different mode:
Two-Supply Mode: these FBs and CAPs must be NI (Not Installed).
Three-Supply Mode: these FBs and CAPs must be installed.

The PHY operating in Two-Supply Mode by default.

Vout = Vfb x (1 + R119 / R120)
= 0.55V x (1 + 100K / 27.4K)
= 0.55V x 4.6496
= 2.557V

Vout = Vfb x (1 + R133 / R135)
= 0.55V x (1 + 100K / 120K)
= 0.55V x 1.8333
= 1.008V

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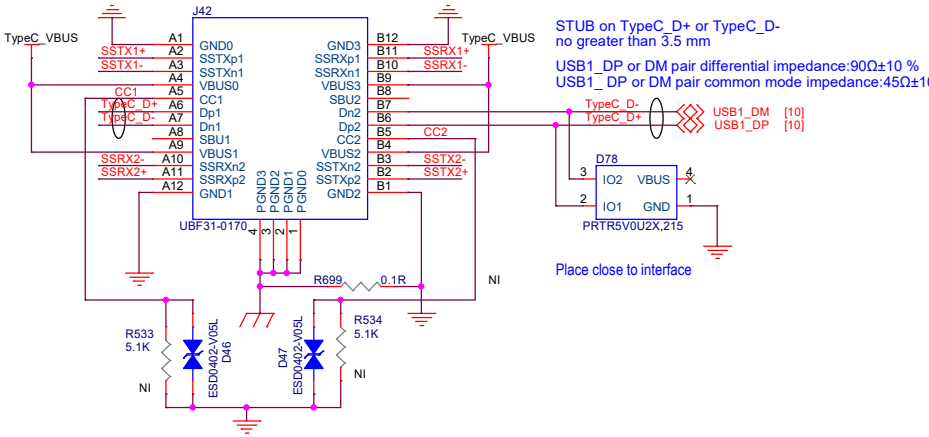
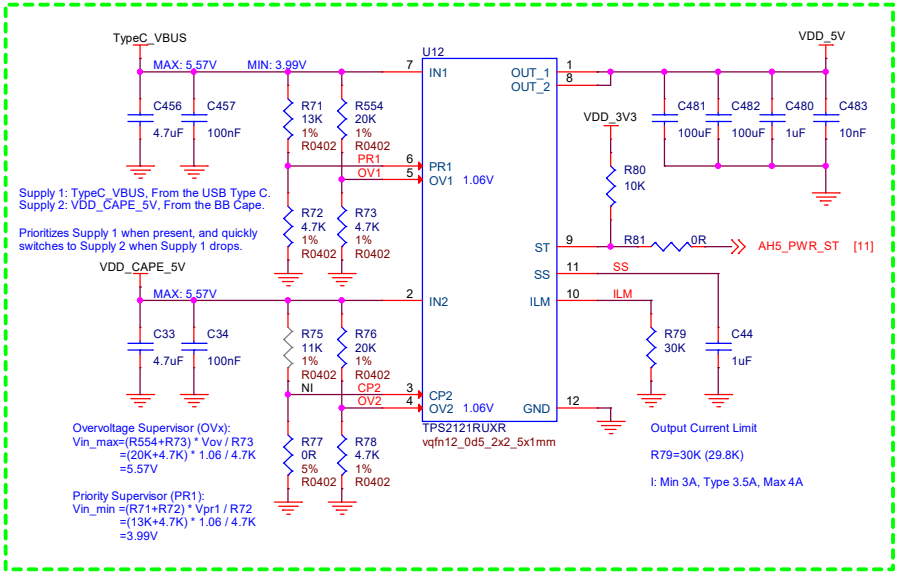
USB TYPE C



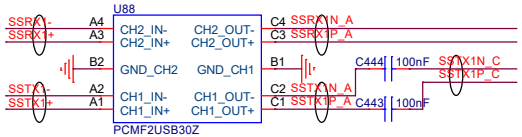
STUB on TypeC_D+ or TypeC_D-
no greater than 3.5 mm

USB1_DP or DM pair differential impedance:90Ω±10 %
USB1_ DP or DM pair common mode impedance:45Ω±10

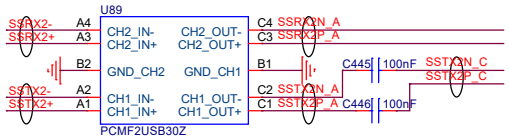
Place close to interface



All PCMF2USB30 place close to Interface

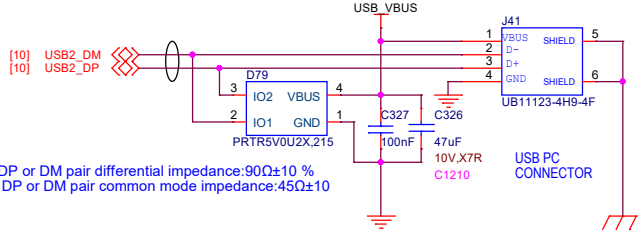


SSRX/SSTX differential impedance:90Ω±7 %

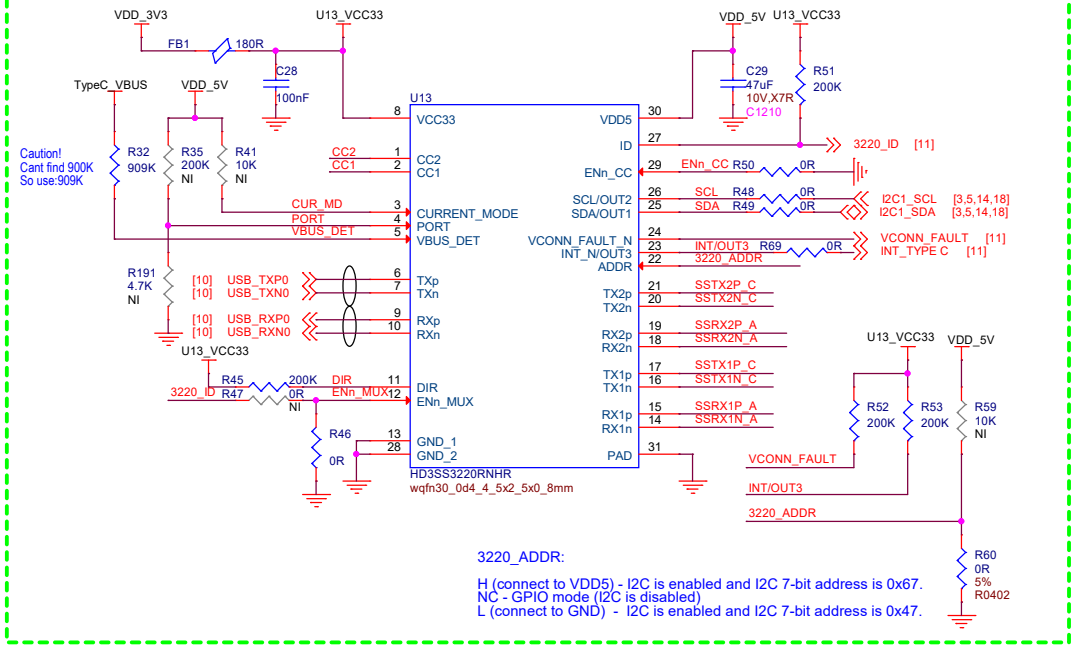


SSRX/SSTX differential impedance:90Ω±7 %

USB 3.0 Layout Parameters:
USB_RX or TX pair differential impedance:90Ω±7 %
USB3.0 (SuperSpeed) Tracelength (Total MAX on PCB):3500 mil

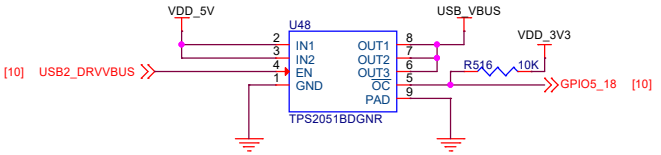


USB2_DP or DM pair differential impedance:90Ω±10 %
USB2_ DP or DM pair common mode impedance:45Ω±10



3220_ADDR:

H (connect to VDD5) - I2C is enabled and I2C 7-bit address is 0x67.
NC - GPIO mode (I2C is disabled)
L (connect to GND) - I2C is enabled and I2C 7-bit address is 0x47.



USB 2.0

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ADC

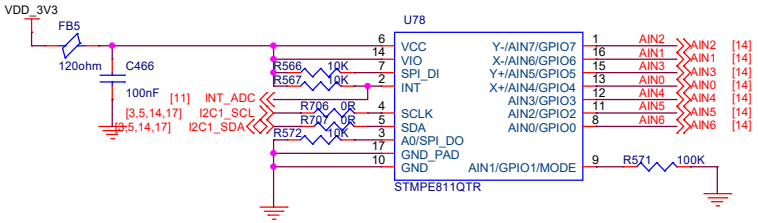
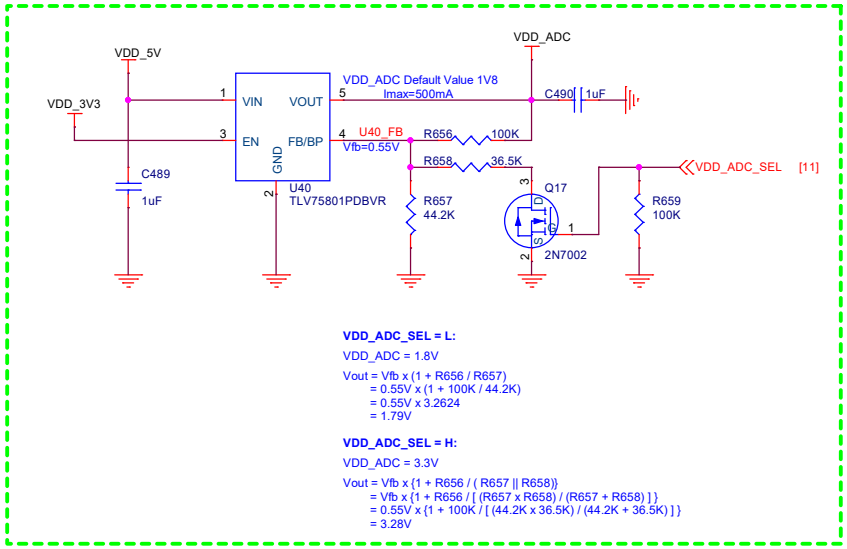
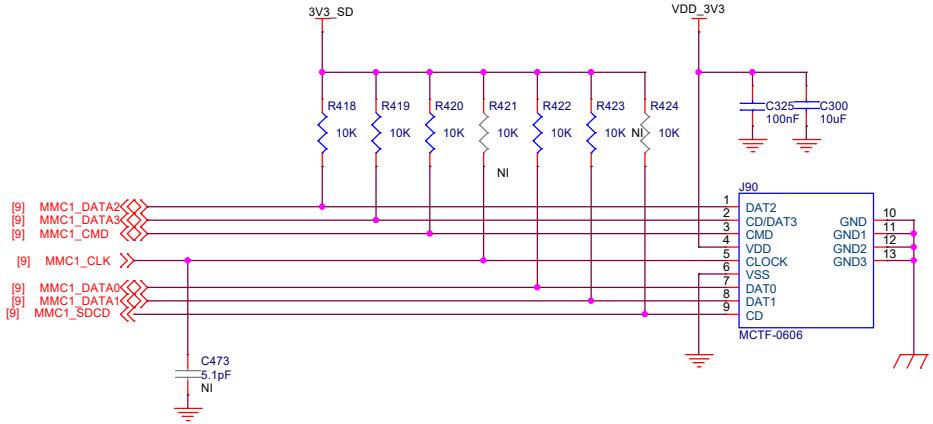


Table 6. I²C address

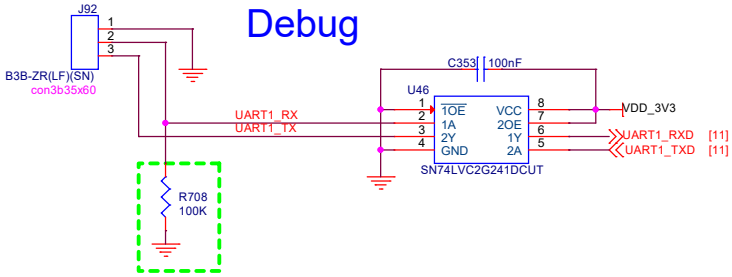
ADDR0	Address
0	0 x 82
1	0 x 88



MicroSD CARD



Debug



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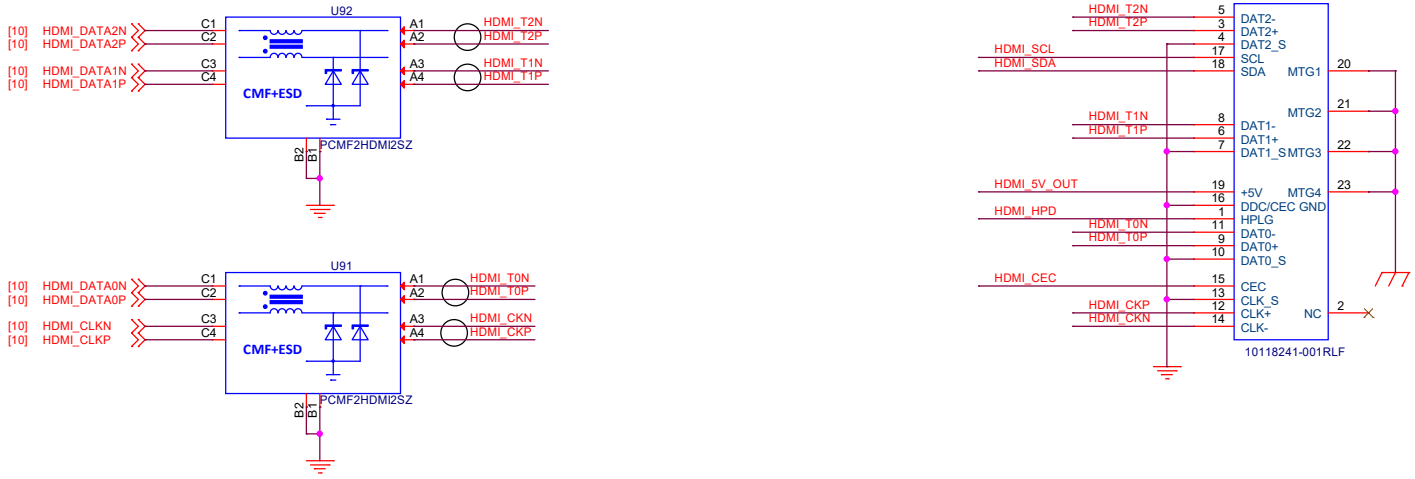
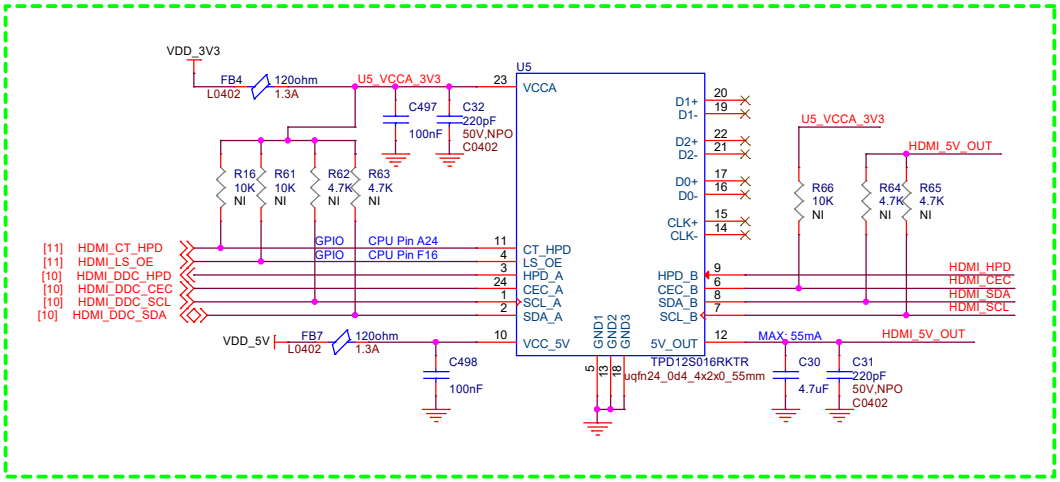
Size: A3	Document Number: 18 ADC/TF/Debug		Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020		Sheet: 18 of 19





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Title: BeagleBone AI AM57x		
Size: A3	Document Number: 19 HDMI	Rev: A2
Draw By: Seeed	Date: Wednesday, July 15, 2020	Sheet: 19 of 19