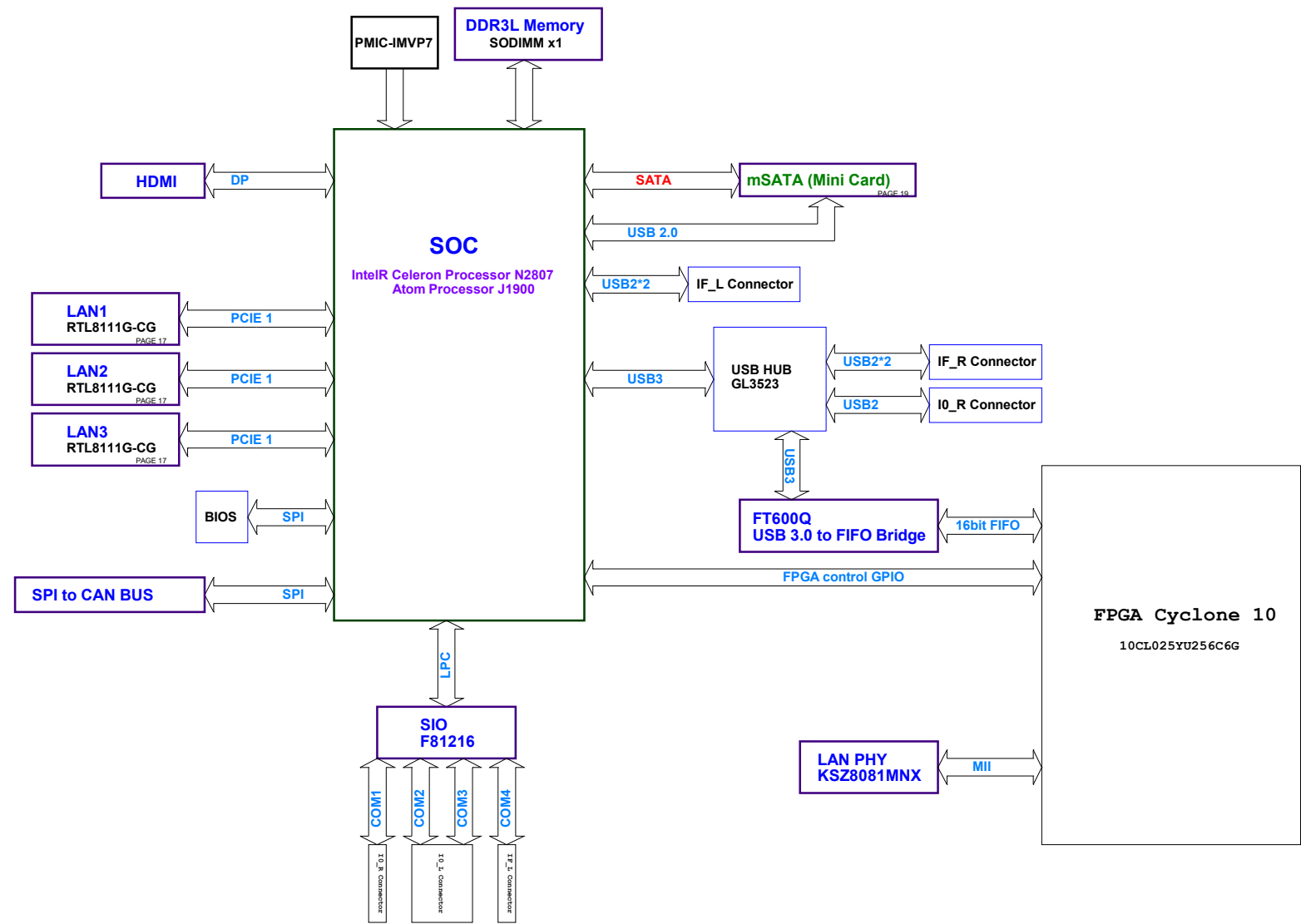


HF-MPLC01



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35	POWER VR_PMIC
36	FPGA Power
37	POWER SEQUENCE LOGIC
38	History

SOC GPIO Pins :

Name	Power Well	Default	GPIO Function
GPIO S0 SC[00]	1.8V Core	GPI	
GPIO S0 SC[01]	1.8V Core	GPI	
GPIO S0 SC[07]	1.8V Core	GPI	
GPIO S0 SC[55]	1.8V Core		
GPIO S0 SC[56]	1.8V Core		
GPIO S0 SC[57]	1.8V Core		DDR ID0
GPIO S0 SC[58]	1.8V Core		DDR ID1
GPIO S0 SC[59]	1.8V Core		BOARD ID0
GPIO S0 SC[60]	1.8V Core		BOARD ID1
GPIO S0 SC[61]	1.8V Core		BOARD ID2
GPIO S0 SC[92]	1.8V Core		DDR ID2
GPIO S0 SC[93]	1.8V Core		
GPIO S0 SC[94]	1.8V Core		
GPIO S0 SC[95]	1.8V Core		
GPIO S5[00]	1.8V Suspend		
GPIO S5[01]	1.8V Suspend		PME#
GPIO S5[02]	1.8V Suspend		
GPIO S5[03]	1.8V Suspend		EN_FPGA_PM
GPIO S5[04]	1.8V Suspend		LAN1_DISABLE#
GPIO S5[05]	1.8V Suspend		
GPIO S5[06]	1.8V Suspend		
GPIO S5[07]	1.8V Suspend		
GPIO S5[08]	1.8V Suspend		RUN_STOP
GPIO S5[09]	1.8V Suspend		FN-KEY
GPIO S5[10]	1.8V Suspend		24V_DEC_INT
GPIO S5[17]	1.8V Suspend		5V_DEC_INT
GPIO S5[22]	1.8V Suspend		USB1_PORT1_EN
GPIO S5[23]	1.8V Suspend		FPGA_GPIO0
GPIO S5[24]	1.8V Suspend		FPGA_GPIO1
GPIO S5[25]	1.8V Suspend		FPGA_GPIO2
GPIO S5[26]	1.8V Suspend		FPGA_GPIO3
GPIO S5[27]	1.8V Suspend		FPGA_GPIO4
GPIO S5[28]	1.8V Suspend		SPI_CAN_INT#
GPIO S5[29]	1.8V Suspend		SPI_CAN_INT0#
GPIO S5[30]	1.8V Suspend		SPI_CAN_INT1#



Title

System Settings

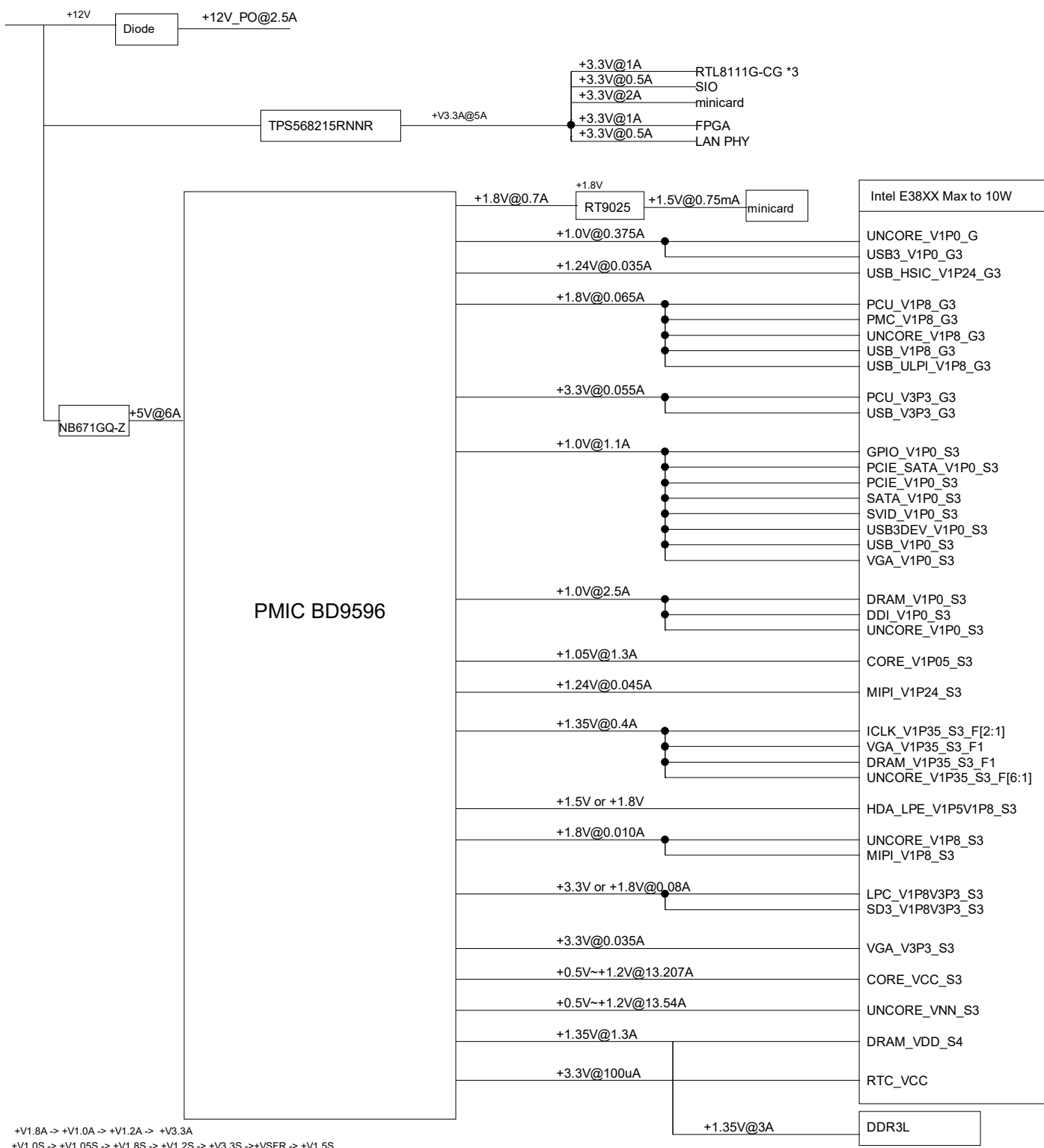
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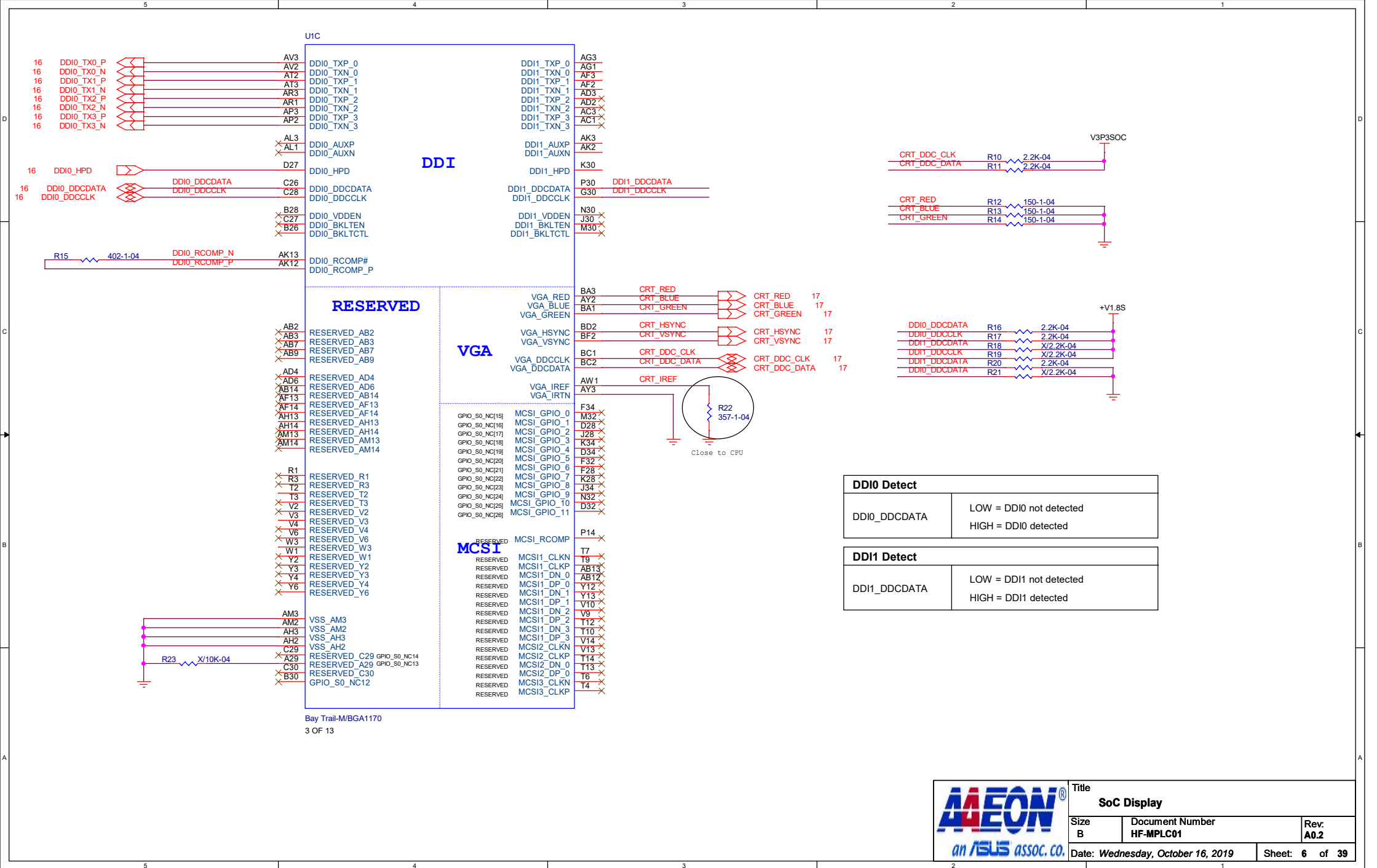
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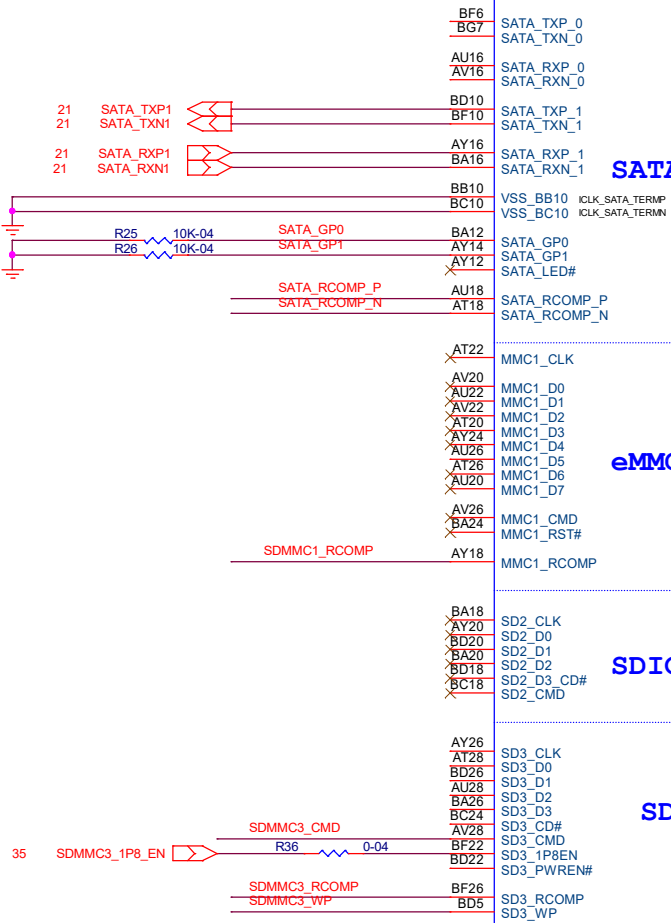


Platform Rail	Voltage Tolerances	Max Icc Premium
V1P0A - UNCORE_V1P0_G3 - USB3_V1P0_G3	1.0 V DC: ±2% AC: ±3%	375 mA
V1P24A - USB_HSIC_V1P24_G3 (Can connect to V1P0A when USB HSIC isn't used)	1.24 V DC: ±3% AC: ±2%	35 mA
V1P8A - PCU_V1P8_G3 - PMC_V1P8_G3 - UNCORE_V1P8_G3 - USB_V1P8_G3 - USB_ULPI_V1P8_G3	1.8 V DC: ±3% AC: ±2%	65 mA
V3P3A - PCU_V3P3_G3 - USB_V3P3_G3	3.3 V DC: ±2% AC: ±3%	55 mA
V1P0S - GPIO_V1P0_S3 - PCIE_SATA_V1P0_S3 - PCIE_V1P0_S3 - SATA_V1P0_S3 - SVID_V1P0_S3 - USB3DEV_V1P0_S3 - USB_V1P0_S3 - VGA_V1P0_S3	1.0 V DC: ±2% AC: ±3%	1.1 A

Platform Rail	Voltage Tolerances	Max Icc Premium
V1P0S - DRAM_V1P0_S3 - DDI_V1P0_S3 - UNCORE_V1P0_S3	1.0 V DC: ±2% AC: ±3%	2.5 A
V1P05S - CORE_V1P05_S3	1.05 V DC: ±2% AC: ±3%	1.3 A
V1P24S - MIPI_V1P24_S3 (can be grounded if MIPI CSI not used)	1.24 V DC: ±2% AC: ±3%	45 mA
V1P35S (VSFR) - ICLK_V1P35_S3_F[2:1] - VGA_V1P35_S3_F1 - DRAM_V1P35_S3_F1 - UNCORE_V1P35_S3_F[6:1]	1.35 V DC: ±3% AC: ±2%	400 mA
V1P5V1P8S (VAUD) - HDA_LPE_V1P5V1P8_S3	1.5 V (LV HDA) 1.8 V (LPE)	In V1P8S
V1P8S - UNCORE_V1P8_S3 - MIPI_V1P8_S3	1.8 V DC: ±3% AC: ±2%	10 mA
V1P8V3P3S (VSDIO,VLPC) - LPC_V1P8V3P3_S3 - SD3_V1P8V3P3_S3	1.8 V 3.3 V (V3P3A) DC: ±2% AC: ±3%	8 mA
V3P3S - VGA_V3P3_S3	3.3 V DC: ±2% AC: ±3%	35 mA
VCC - UNCORE_VCC_S3	See Table 78	11 A
VNN - UNCORE_VNN_S3	See Table 78	14 A
VDD - DRAM_VDD_S4	1.35 V DC: ±2% AC: ±3%	1.3 A
VRTC - RTC_VCC	G3: 2-3 V at battery* Otherwise: V3P3A (pre diode drop)	100 uA (6 uA Avg.) (see note)

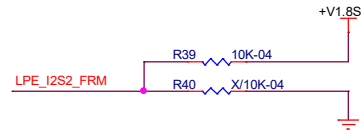


To mini PCIe

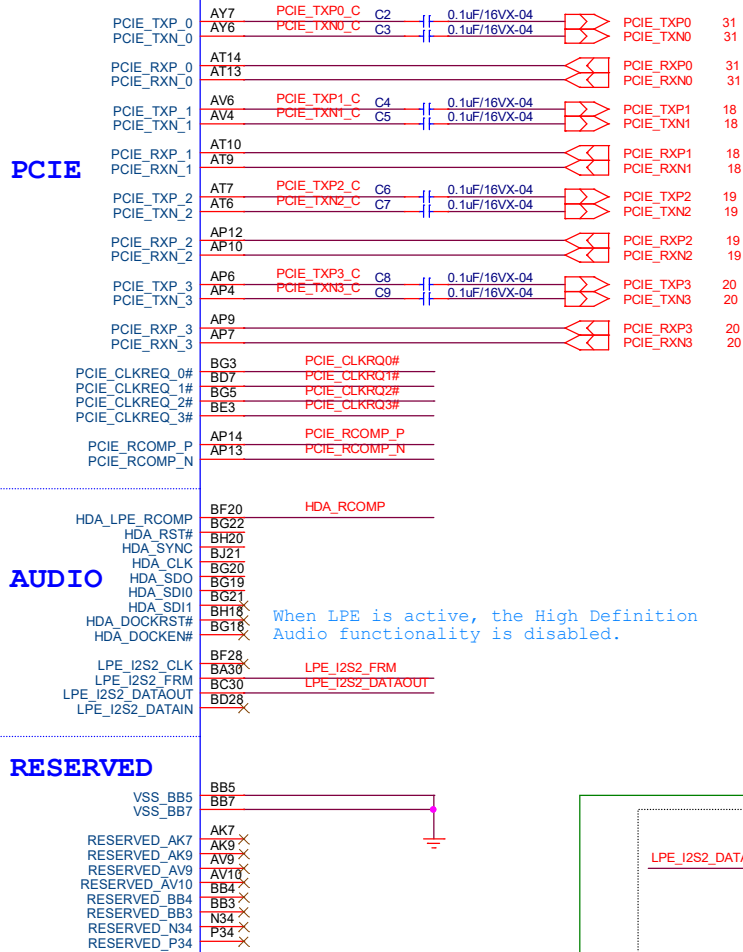
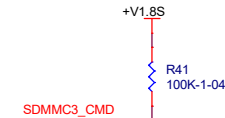


Bay Trail-M/BGA1170

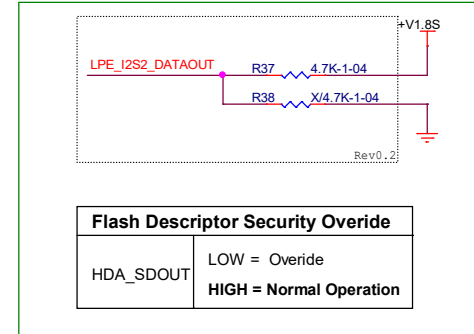
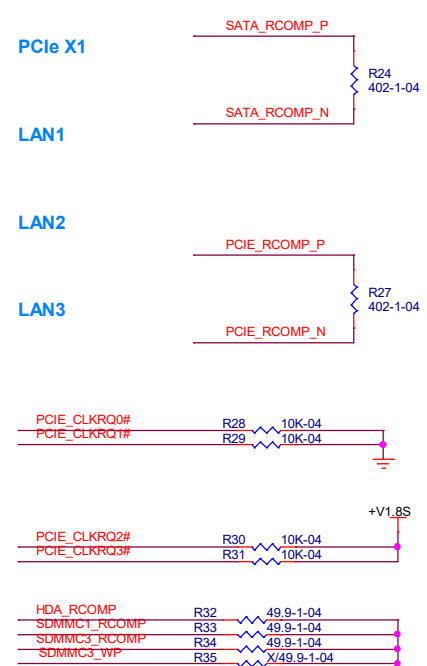
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Boot BIOS Strap	
LPE_I2S2_FRM/GPIO_S0_SC[63]	Boot BIOS
0	LPC
1 (default)	SPI



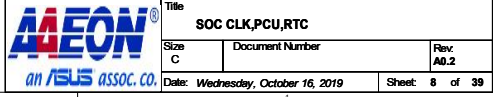
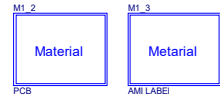
When LPE is active, the High Definition Audio functionality is disabled.

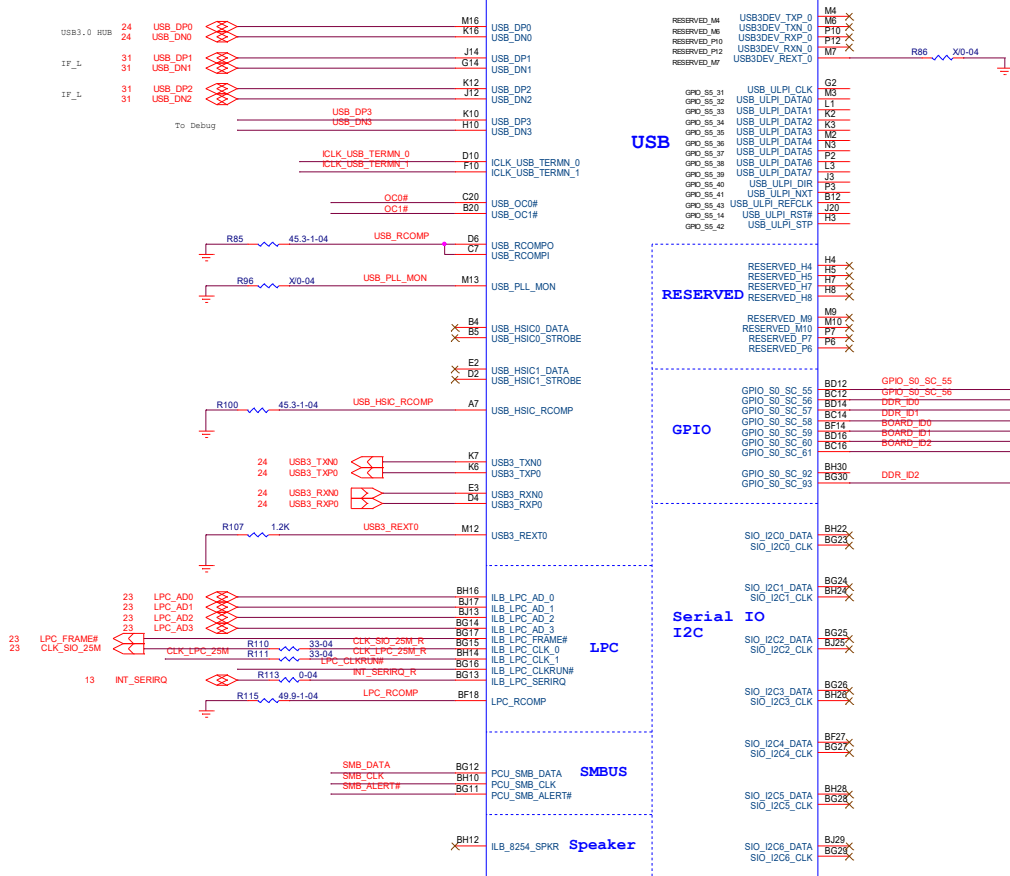


Flash Descriptor Security Override	
HDA_SDOUT	LOW = Override HIGH = Normal Operation



Title SoC SATA,PCIE,HDA,eMMC,SD		
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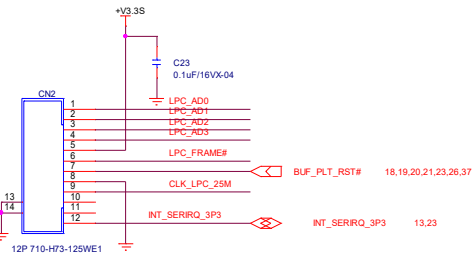
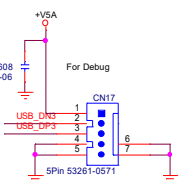
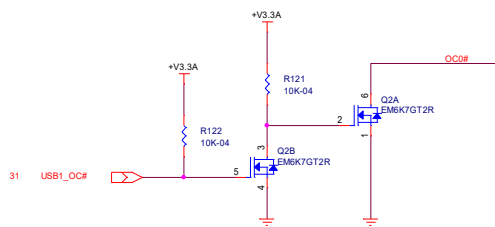
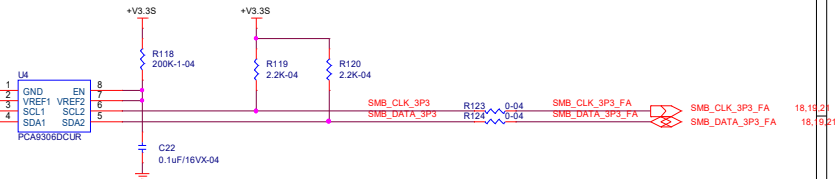




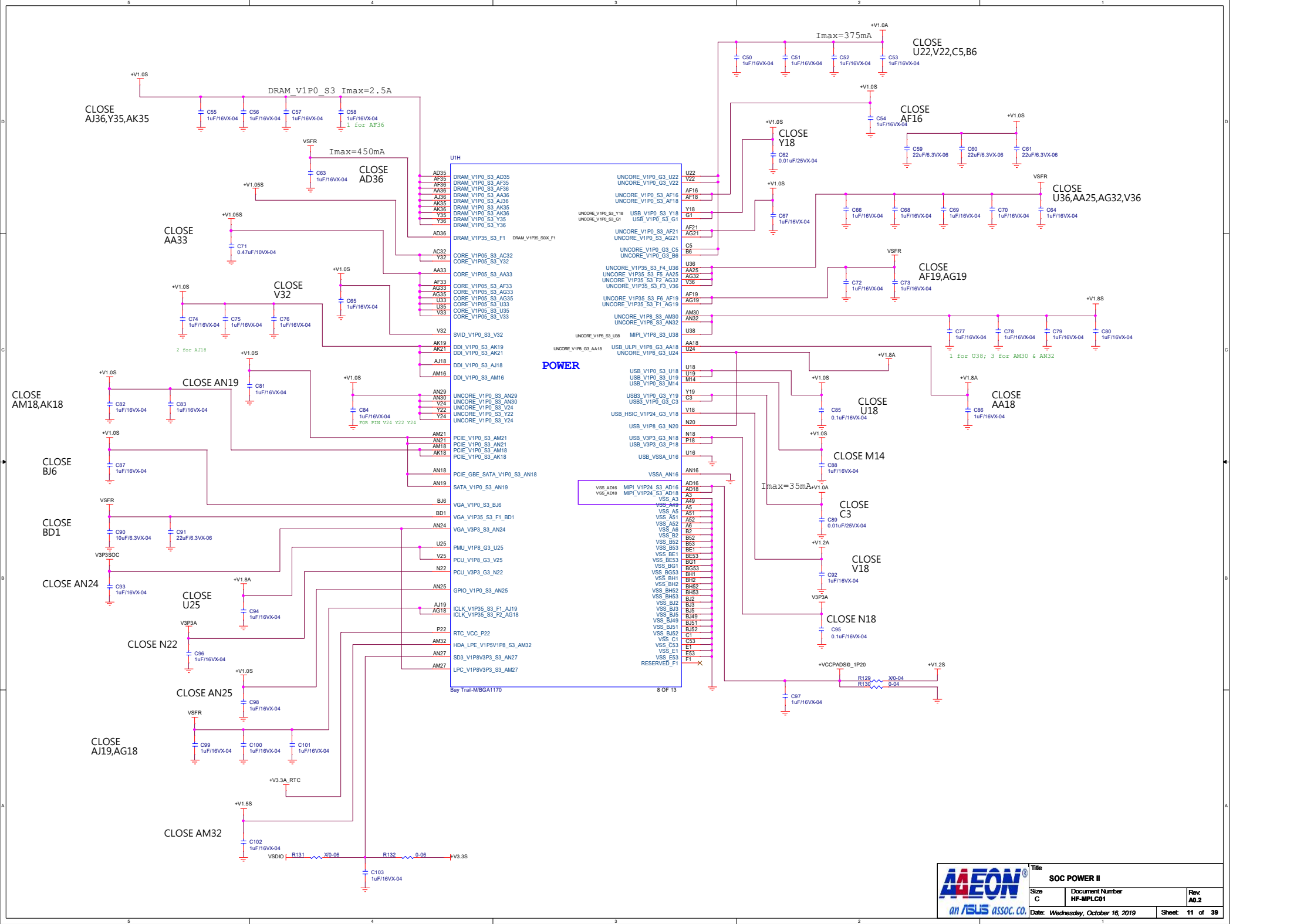
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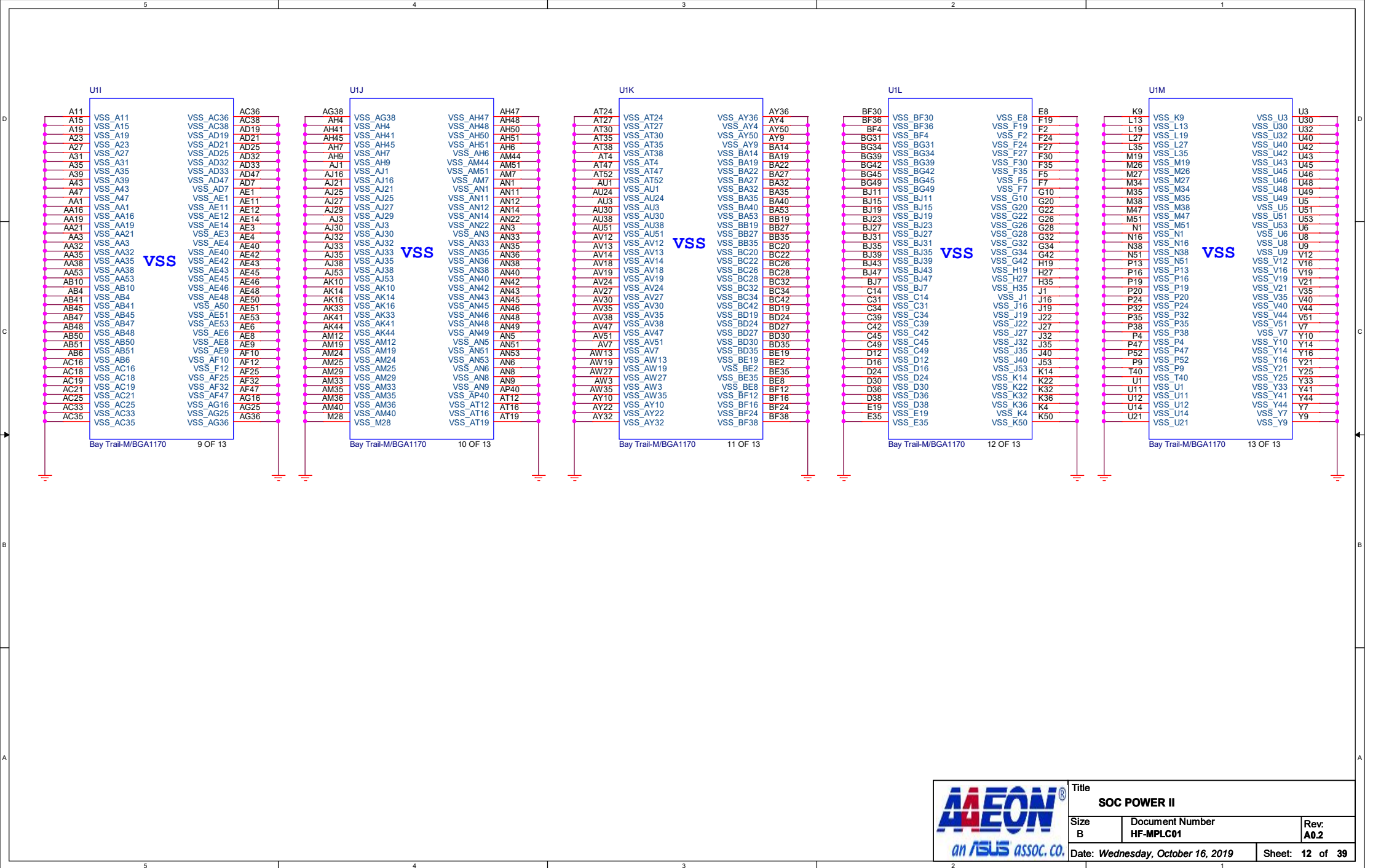
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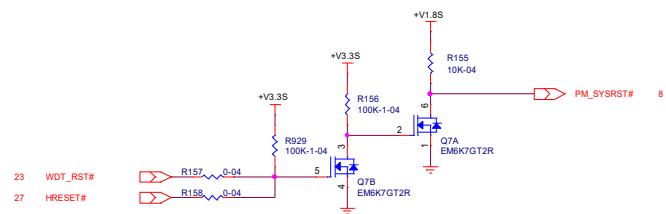
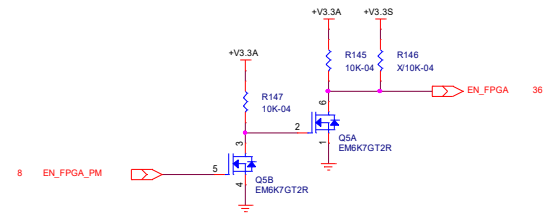
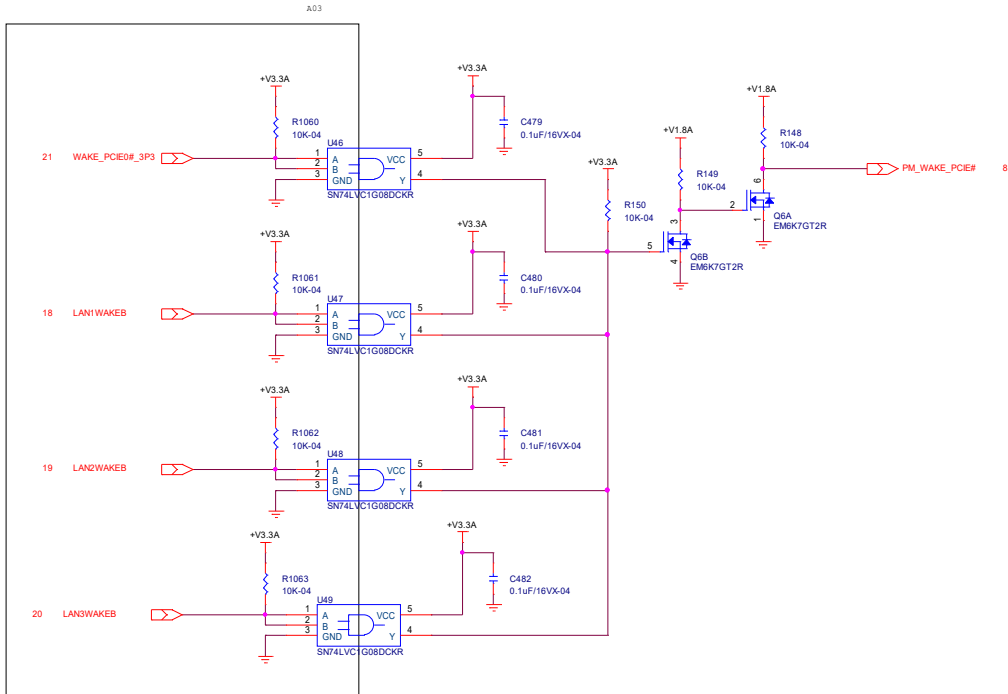
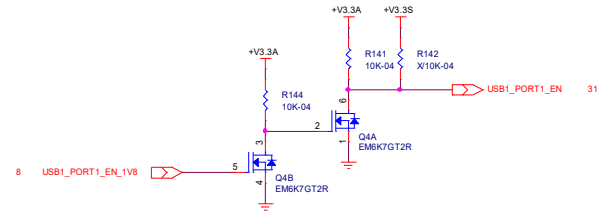
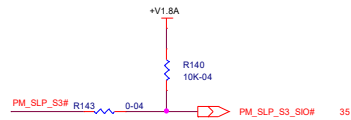
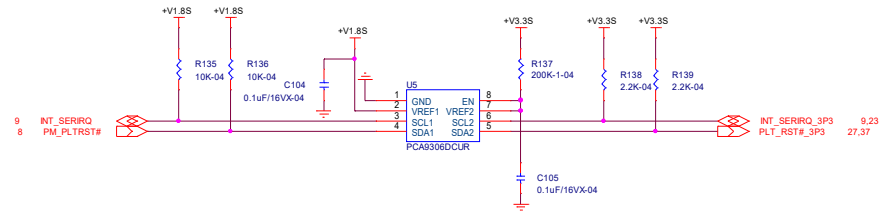
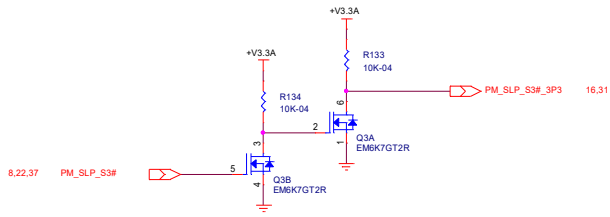
DDR	DDR_ID0	DDR_ID1	DDR_ID2
8G	L	H	H
4G	L	H	L
2G	L	L	H
1G	L	L	L

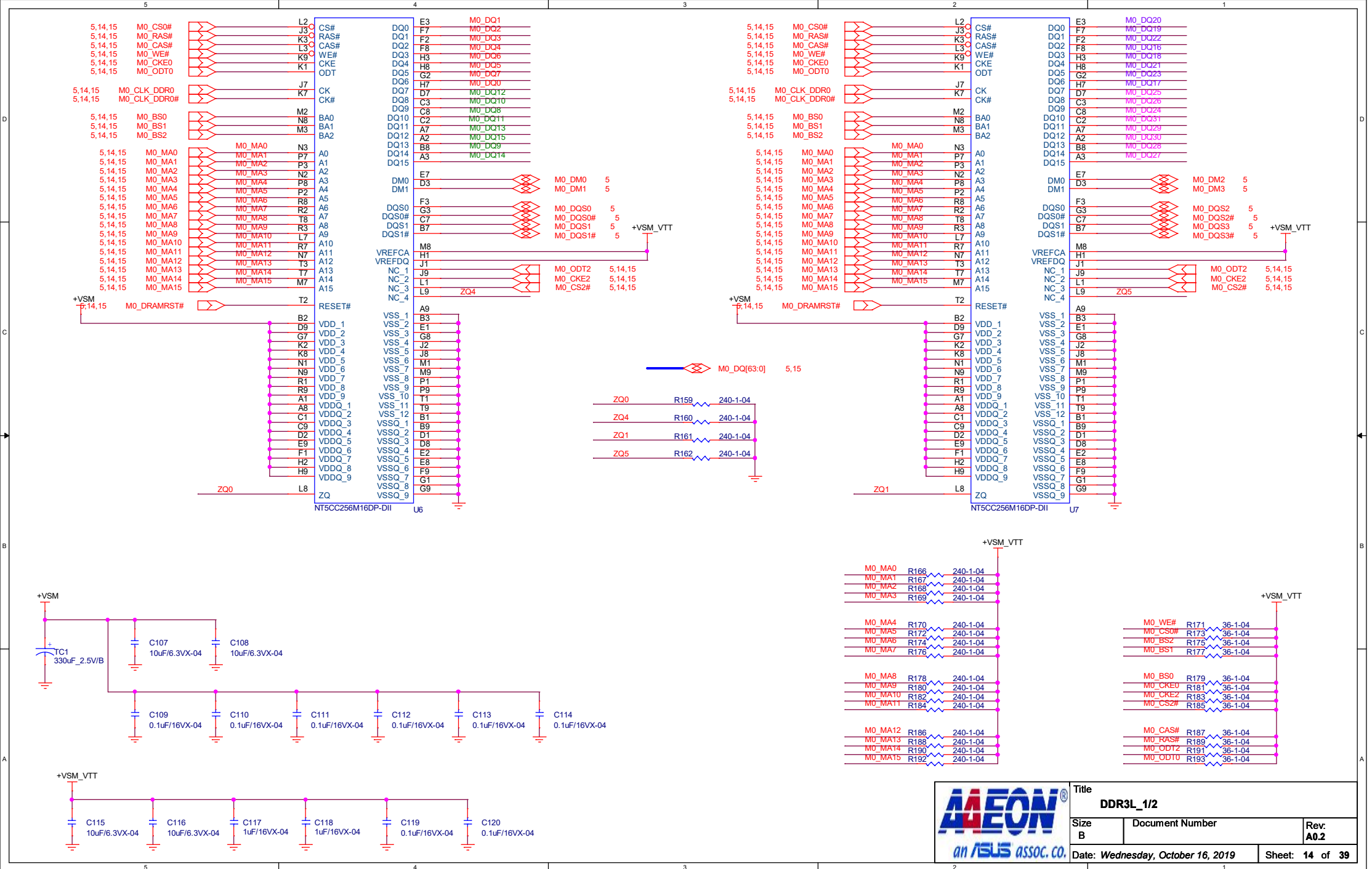


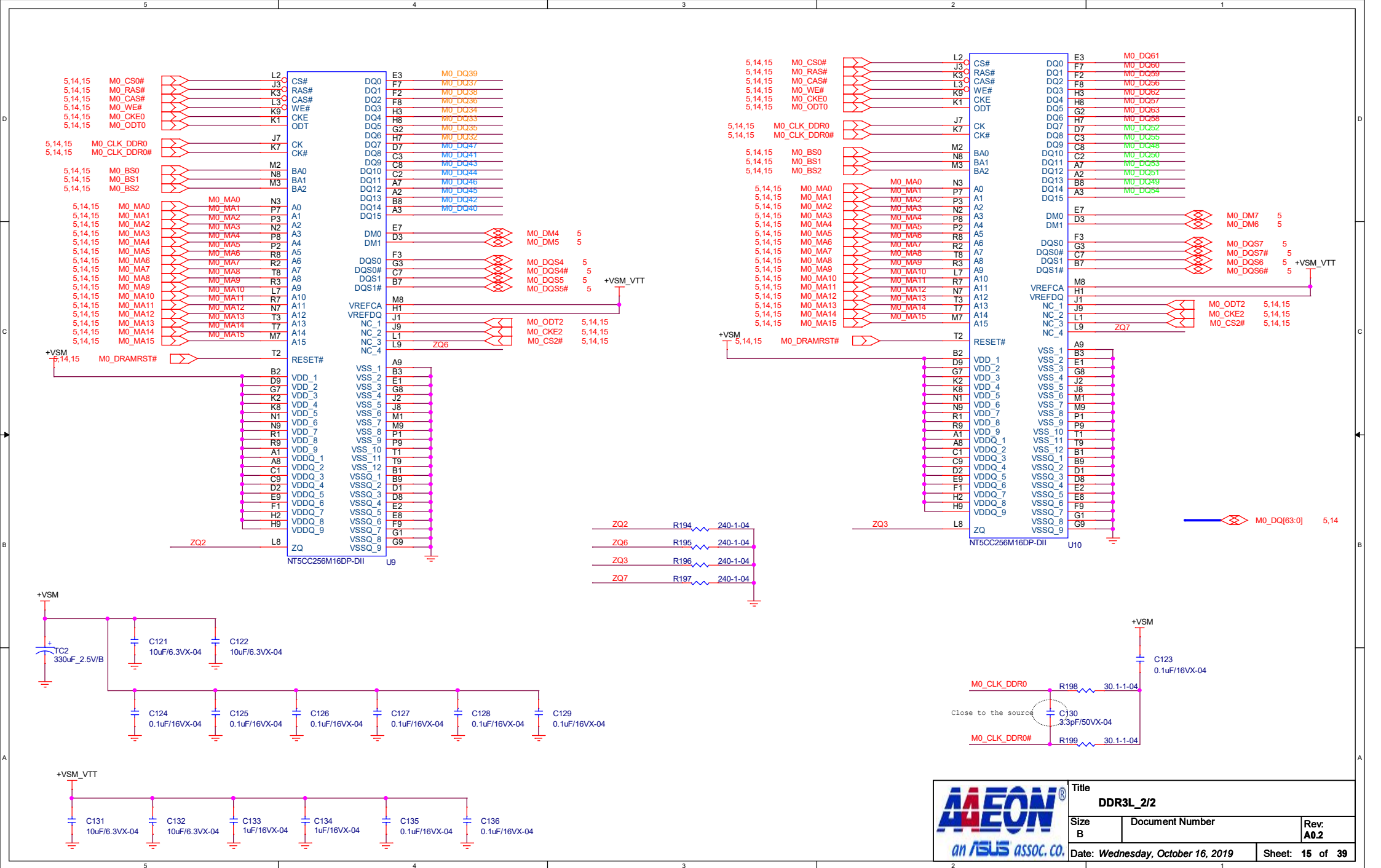
80 Port





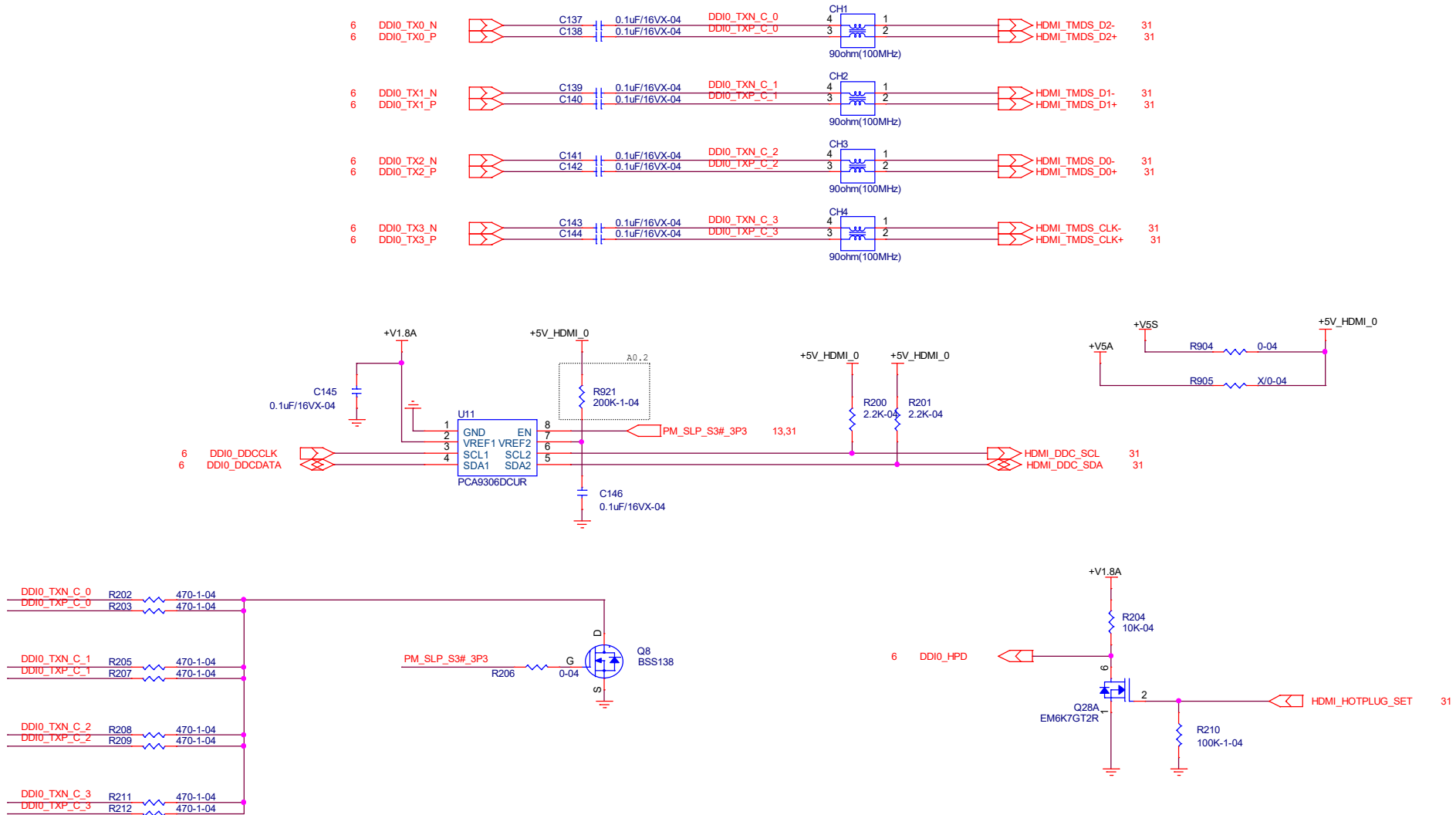


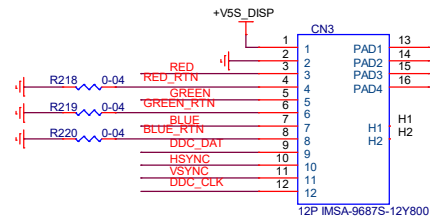
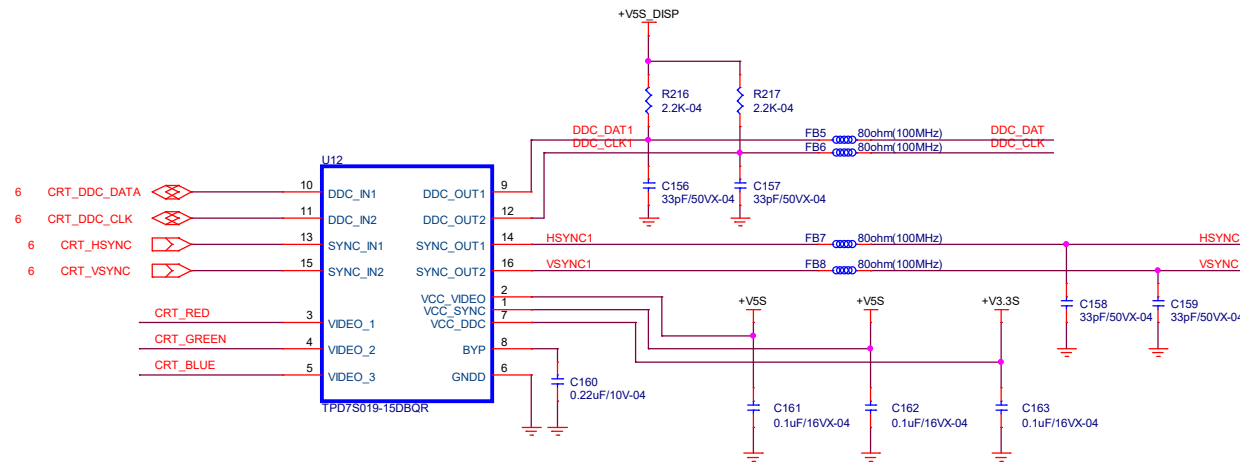
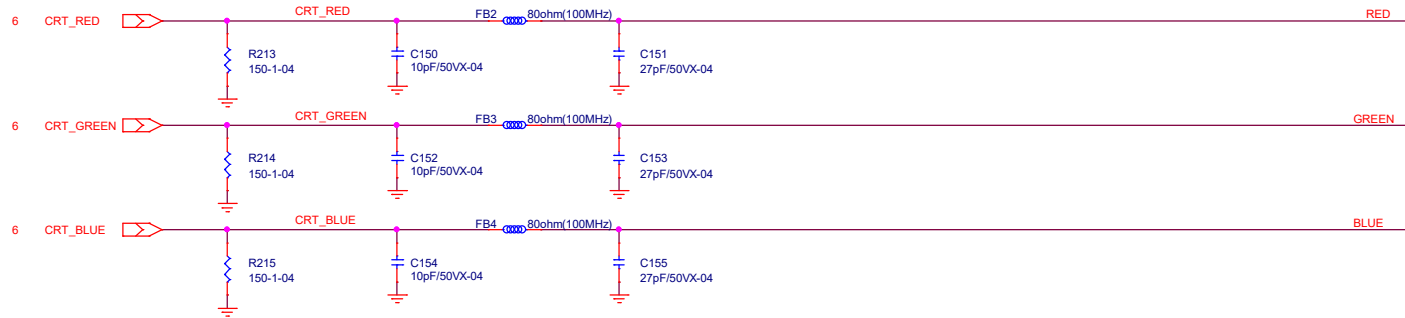
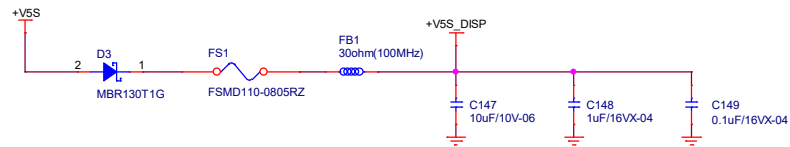




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HDMI LEVEL SHIFT





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Pearsonville(i211)

Intel GbE
WGI211AT

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Title	
I211 ETHERNET1	
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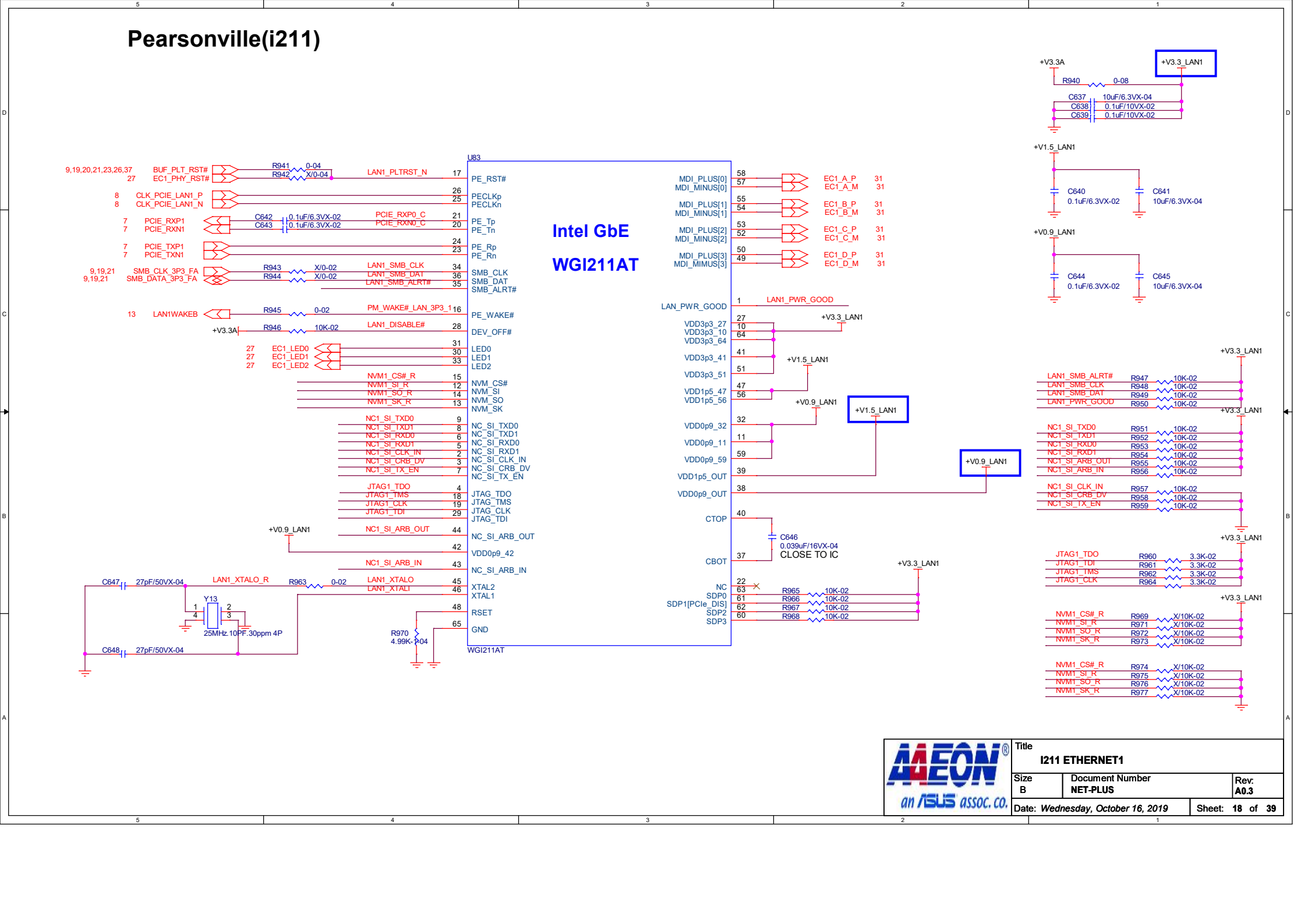
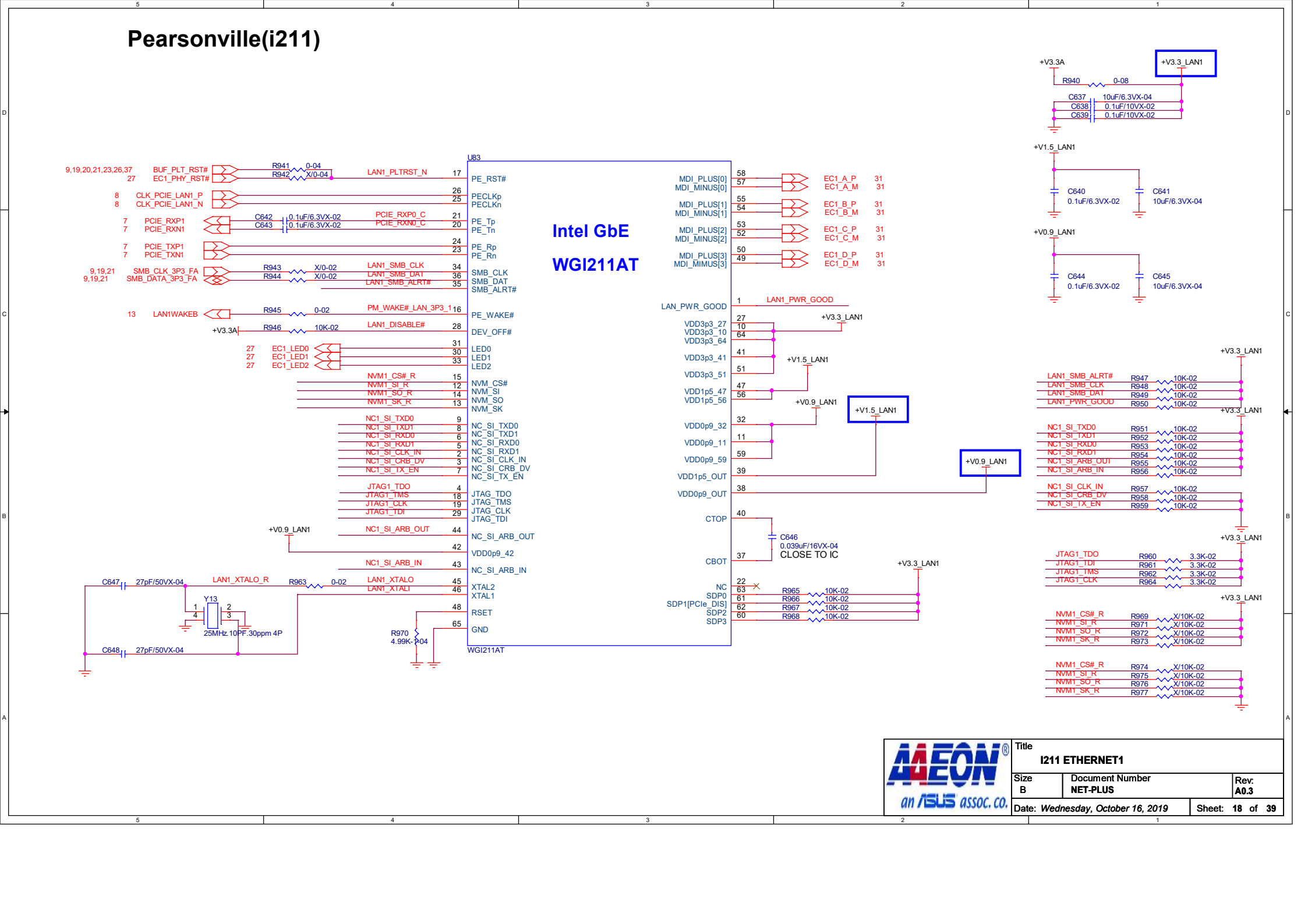
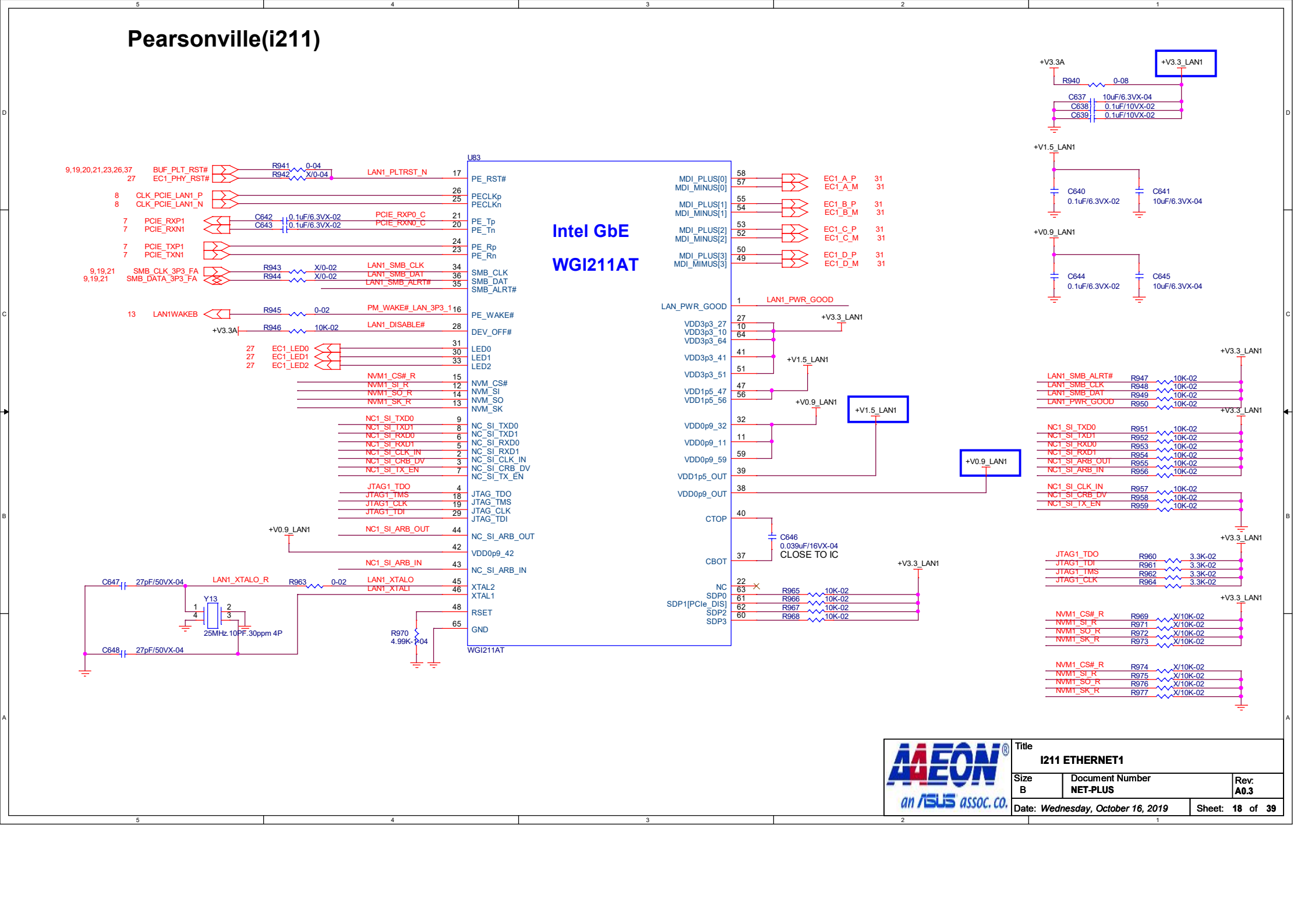
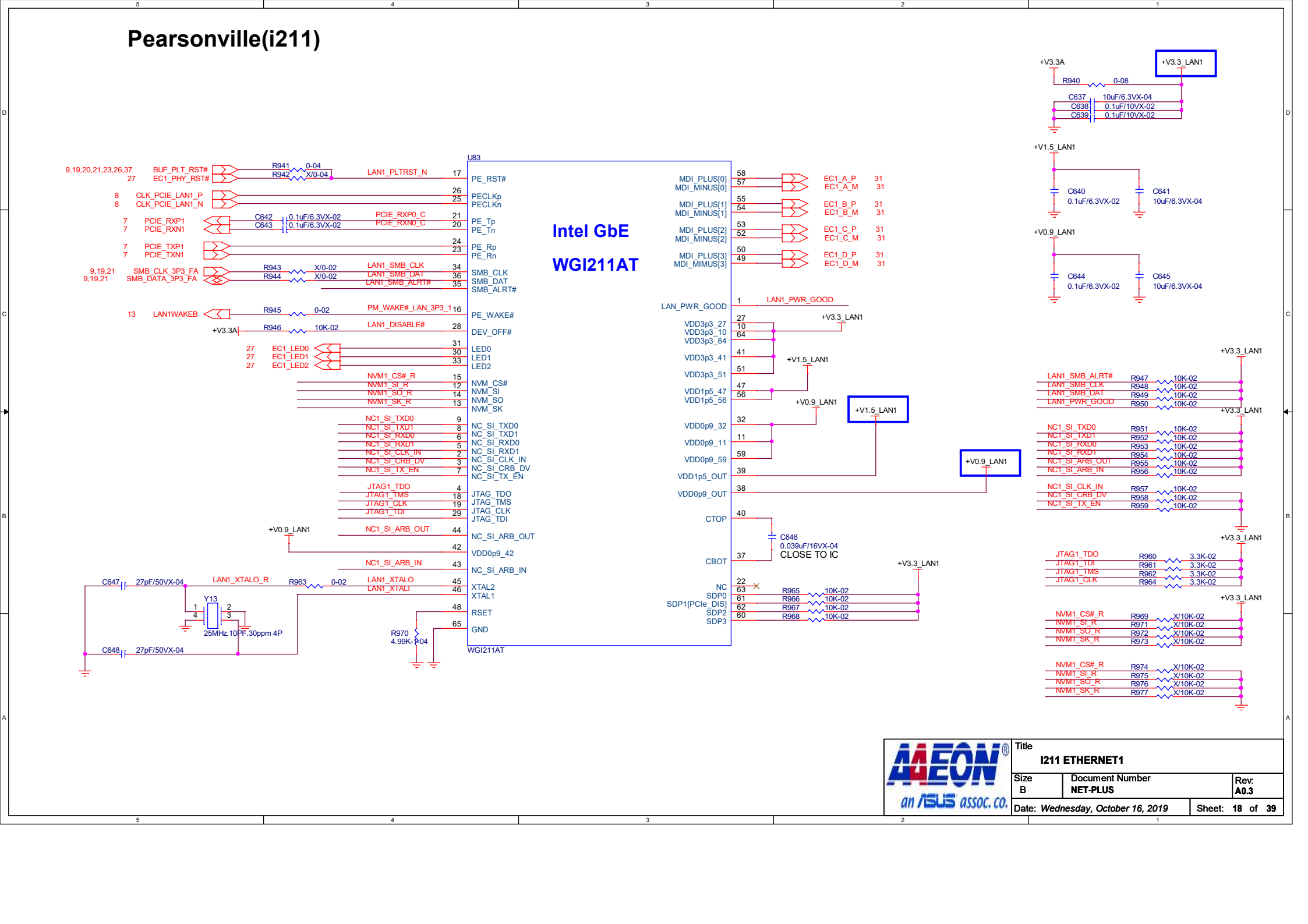
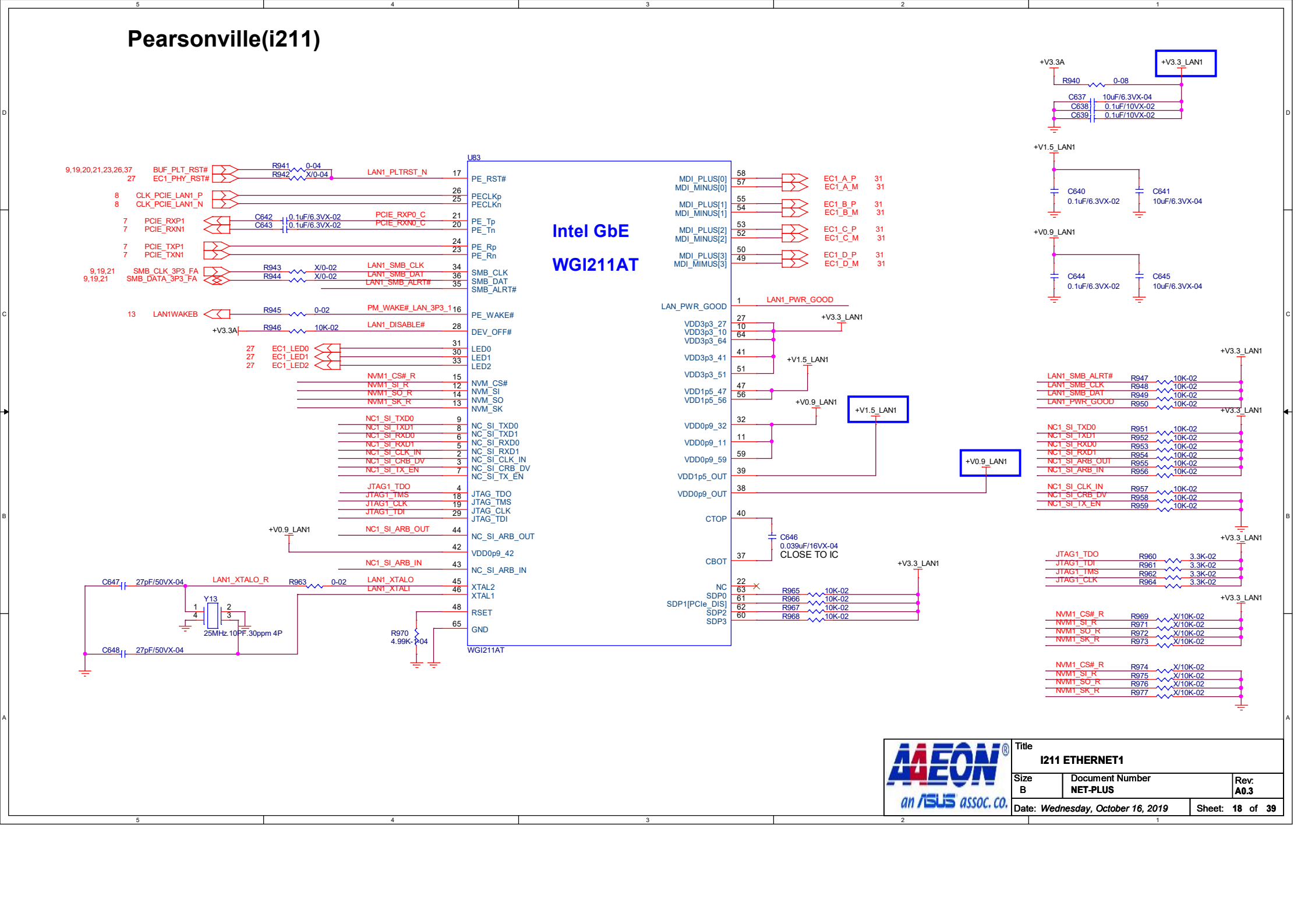
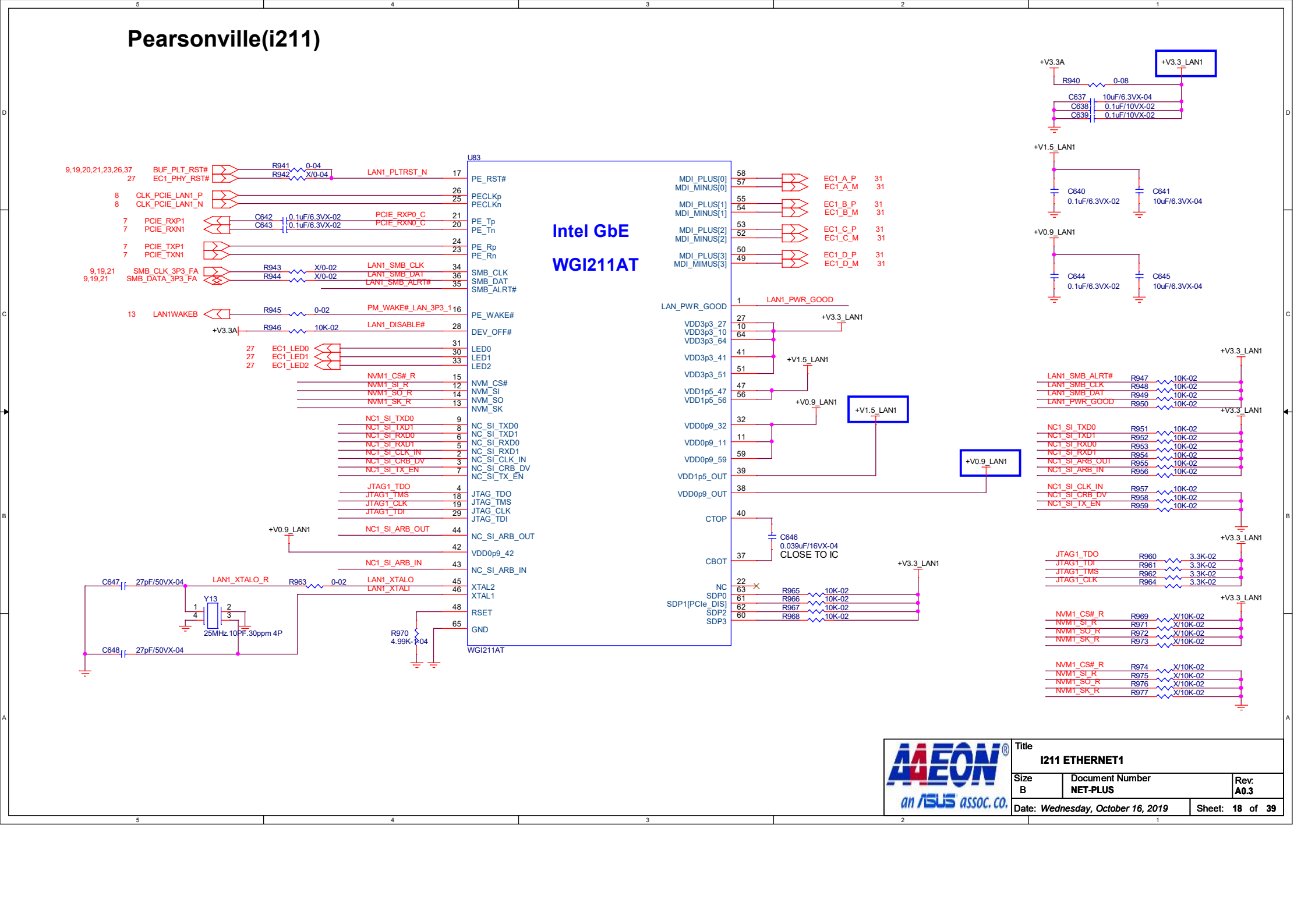
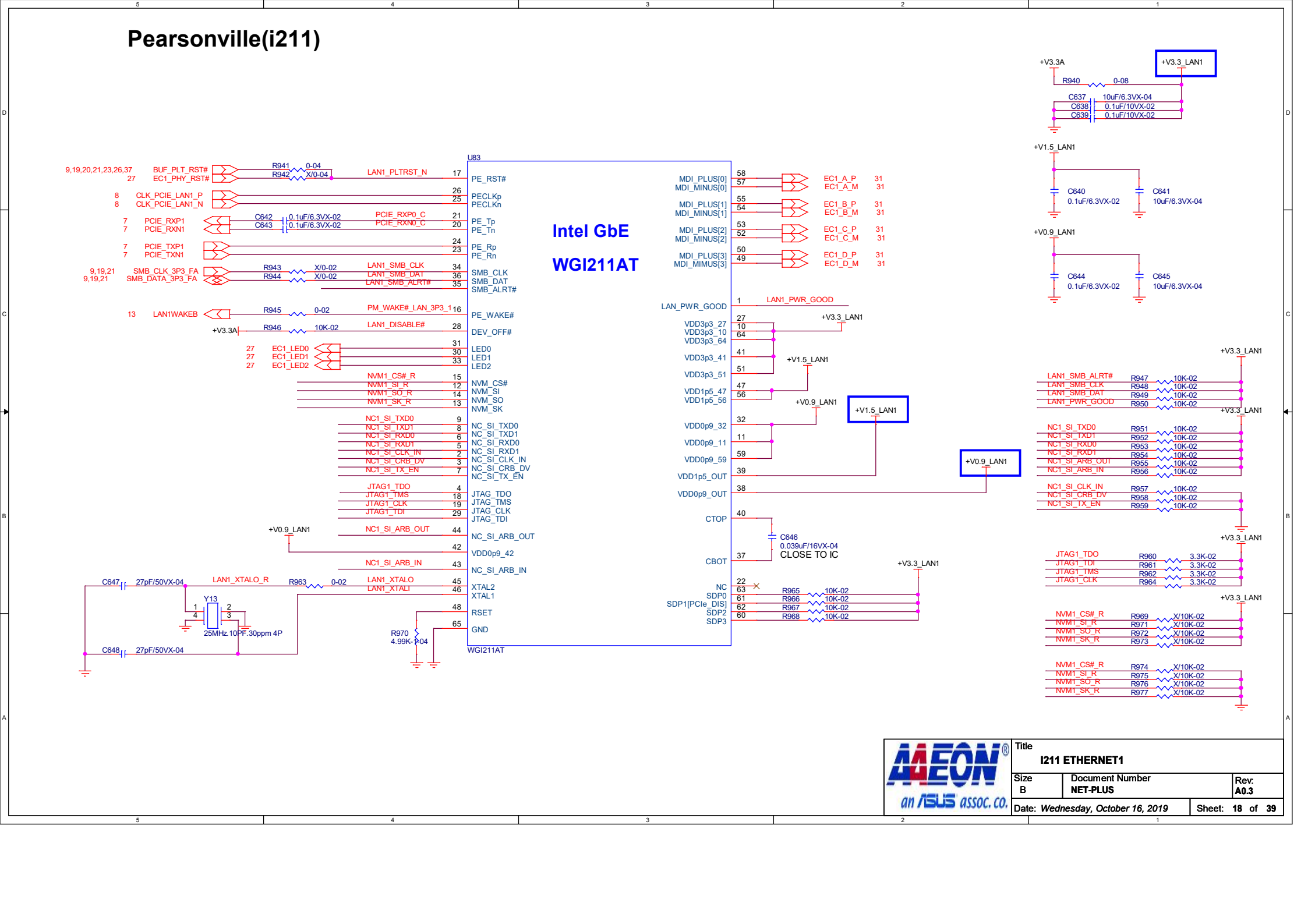
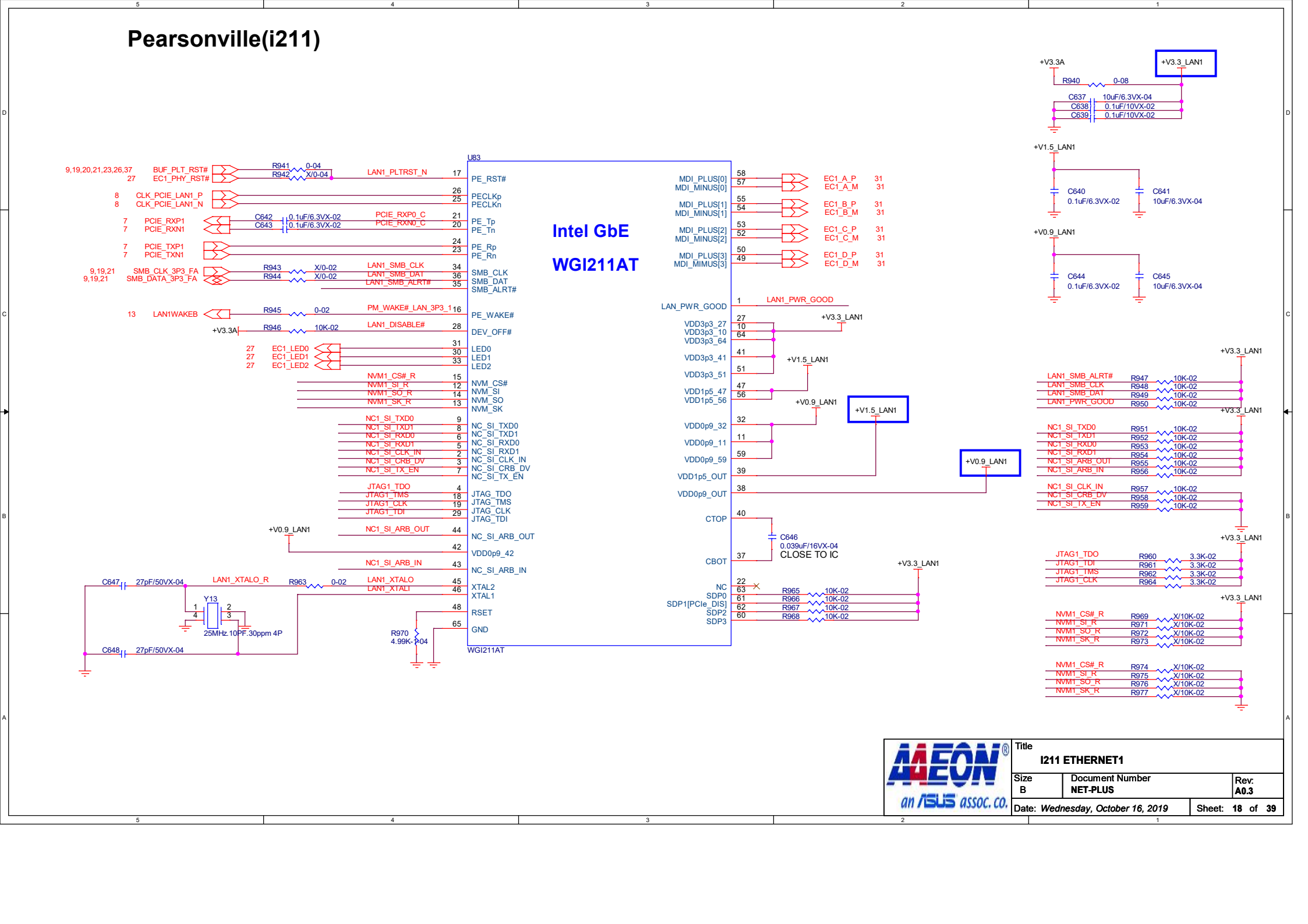
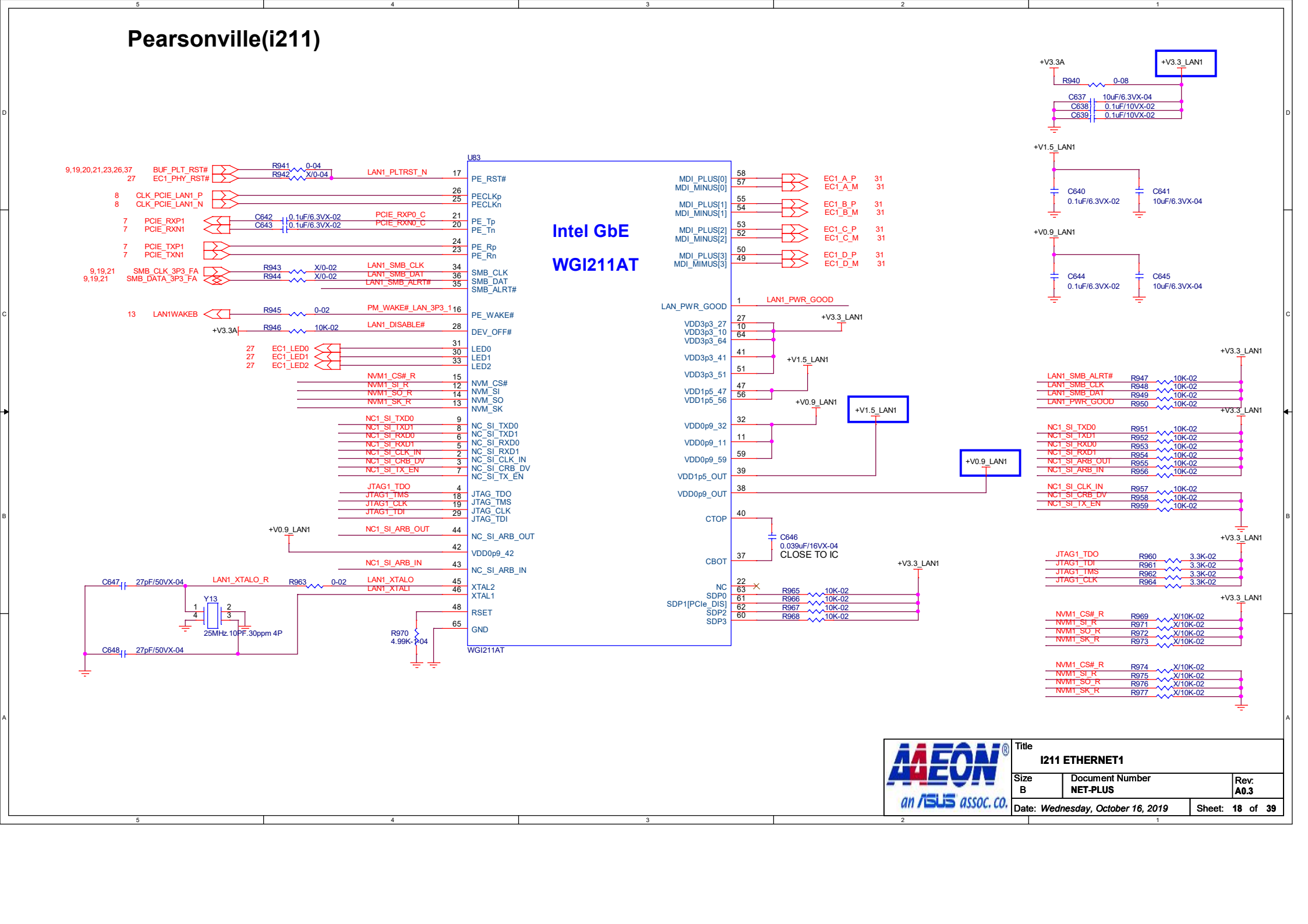
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Diagram illustrating the hardware configuration for the Pearsonville(i211) system, centered around the Intel GbE WGI211AT network controller.

Central Component: Intel GbE WGI211AT (U84)

Left Side Connections (U84 Pins 17-35):

- 17: PE_RST#
- 26: PECLKp
- 25: PECLKn
- 21: PE_Tp
- 20: PE_Tn
- 24: PE_Rp
- 23: PE_Rn
- 34: SMB_CLK
- 36: SMB_DAT
- 35: SMB_ALRT#
- 16: PE_WAKE#
- 28: DEV_OFF#
- 31: LED0
- 30: LED1
- 33: LED2
- 15: NVM_CS#_R
- 12: NVM_SI_R
- 14: NVM_SO_R
- 13: NVM_SK_R
- 9: NC2_SI_TXD0
- 8: NC2_SI_TXD1
- 6: NC2_SI_RXD0
- 5: NC2_SI_RXD1
- 2: NC2_SI_CLK_IN
- 3: NC2_SI_CRB_DV
- 7: NC2_SI_TX_EN
- 4: JTAG2_TDO
- 18: JTAG2_TMS
- 19: JTAG2_CLK
- 29: JTAG2_TDI
- 44: NC2_SI_ARB_OUT
- 42: NC_SI_ARB_OUT
- 43: NC2_SI_ARB_IN
- 45: XTAL2
- 46: XTAL1
- 48: RSET
- 65: GND

Right Side Connections (U84 Pins 58-60):

- 58: MDI_PLUS[0]
- 57: MDI_MINUS[0]
- 55: MDI_PLUS[1]
- 54: MDI_MINUS[1]
- 53: MDI_PLUS[2]
- 52: MDI_MINUS[2]
- 50: MDI_PLUS[3]
- 49: MDI_MINUS[3]

Power and Ground Connections:

- +V3.3A:** Connected to R979 (0-04) and R980 (X/0-04).
- +V3.3A LAN2:** Connected to R978 (0-08), C649 (10uF/6.3VX-04), C650 (0.1uF/10VX-02), and C651 (0.1uF/10VX-02).
- +V1.5 LAN2:** Connected to C654 (0.1uF/6.3VX-02) and C655 (10uF/6.3VX-04).
- +V0.9 LAN2:** Connected to C656 (0.1uF/6.3VX-02) and C657 (10uF/6.3VX-04).
- +V3.3 LAN2:** Connected to R985 (10K-02), R986 (10K-02), R987 (10K-02), R988 (10K-02), R989 (10K-02), R990 (10K-02), R991 (10K-02), R992 (10K-02), R993 (10K-02), R994 (10K-02), R995 (10K-02), R996 (10K-02), R997 (10K-02), R998 (3.3K-02), R999 (3.3K-02), R1000 (3.3K-02), R1001 (3.3K-02), R1005 (X/10K-02), R1007 (X/10K-02), R1009 (X/10K-02), R1010 (X/10K-02), R1012 (X/10K-02), R1013 (X/10K-02), R1014 (X/10K-02), and R1015 (X/10K-02).

Other Connections:

- LAN2_PWR_GOOD:** Connected to pin 1.
- VDD3p3_27:** Connected to pin 27.
- VDD3p3_10:** Connected to pin 10.
- VDD3p3_64:** Connected to pin 64.
- VDD3p3_41:** Connected to pin 41.
- VDD3p3_51:** Connected to pin 51.
- VDD1p5_47:** Connected to pin 47.
- VDD1p5_56:** Connected to pin 56.
- VDD0p9_32:** Connected to pin 32.
- VDD0p9_11:** Connected to pin 11.
- VDD0p9_59:** Connected to pin 59.
- VDD1p5_OUT:** Connected to pin 39.
- VDD0p9_OUT:** Connected to pin 38.
- CTOP:** Connected to pin 40.
- CBOT:** Connected to pin 37.
- NC:** Connected to pin 22.
- SDP0:** Connected to pin 63.
- SDP1[PCle_DIS]:** Connected to pin 61.
- SDP2:** Connected to pin 62.
- SDP3:** Connected to pin 60.

Resistor and Capacitor Values:

- R979: 0-04
- R980: X/0-04
- R978: 0-08
- C649: 10uF/6.3VX-04
- C650: 0.1uF/10VX-02
- C651: 0.1uF/10VX-02
- C652: 0.1uF/6.3VX-02
- C653: 0.1uF/6.3VX-02
- R981: X/0-02
- R982: X/0-02
- R983: 0-02
- R984: 10K-02
- R985: 10K-02
- R986: 10K-02
- R987: 10K-02
- R988: 10K-02
- R989: 10K-02
- R990: 10K-02
- R991: 10K-02
- R992: 10K-02
- R993: 10K-02
- R994: 10K-02
- R995: 10K-02
- R996: 10K-02
- R997: 10K-02
- R998: 3.3K-02
- R999: 3.3K-02
- R1000: 3.3K-02
- R1001: 3.3K-02
- R1005: X/10K-02
- R1007: X/10K-02
- R1009: X/10K-02
- R1010: X/10K-02
- R1012: X/10K-02
- R1013: X/10K-02
- R1014: X/10K-02
- R1015: X/10K-02
- C654: 0.1uF/6.3VX-02
- C655: 10uF/6.3VX-04
- C656: 0.1uF/6.3VX-02
- C657: 10uF/6.3VX-04
- C658: 0.039uF/16VX-04
- C659: 27pF/50VX-04
- C660: 27pF/50VX-04
- R1002: 0-02
- R1003: 10K-02
- R1004: 10K-02
- R1006: 10K-02
- R1008: 10K-02
- R1011: 4.99K-04

Crystal and JTAG Connections:

- LAN2_XTALO_R:** Connected to pin 45.
- LAN2_XTALO:** Connected to pin 46.
- LAN2_XTALI:** Connected to pin 48.
- Y14:** 25MHz 10PF 30ppm 4P
- JTAG2_TDO:** Connected to pin 4.
- JTAG2_TMS:** Connected to pin 18.
- JTAG2_CLK:** Connected to pin 19.
- JTAG2_TDI:** Connected to pin 29.

Legend:

- MDI_PLUS[0]
- MDI_MINUS[0]
- MDI_PLUS[1]
- MDI_MINUS[1]
- MDI_PLUS[2]
- MDI_MINUS[2]
- MDI_PLUS[3]
- MDI_MINUS[3]
- EC2_A_P
- EC2_A_M
- EC2_B_P
- EC2_B_M
- EC2_C_P
- EC2_C_M
- EC2_D_P
- EC2_D_M

Footer:

MEON
an ASUS ASSOC. CO.

Title: I211 ETHERNET2

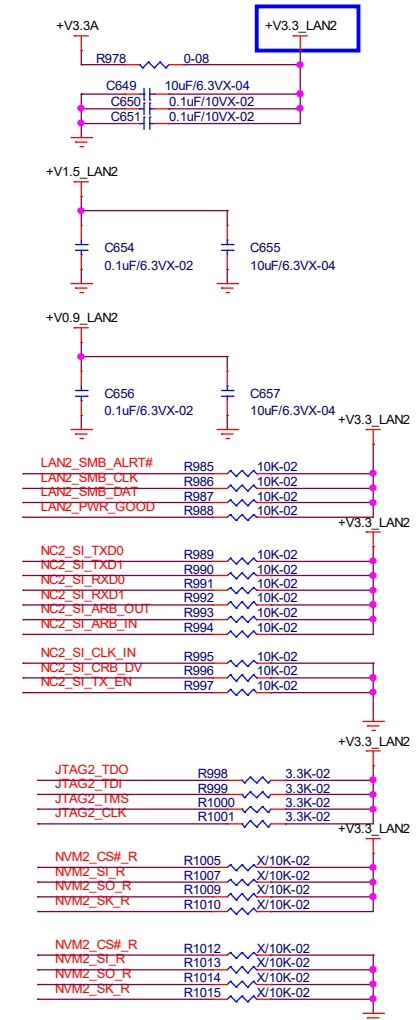
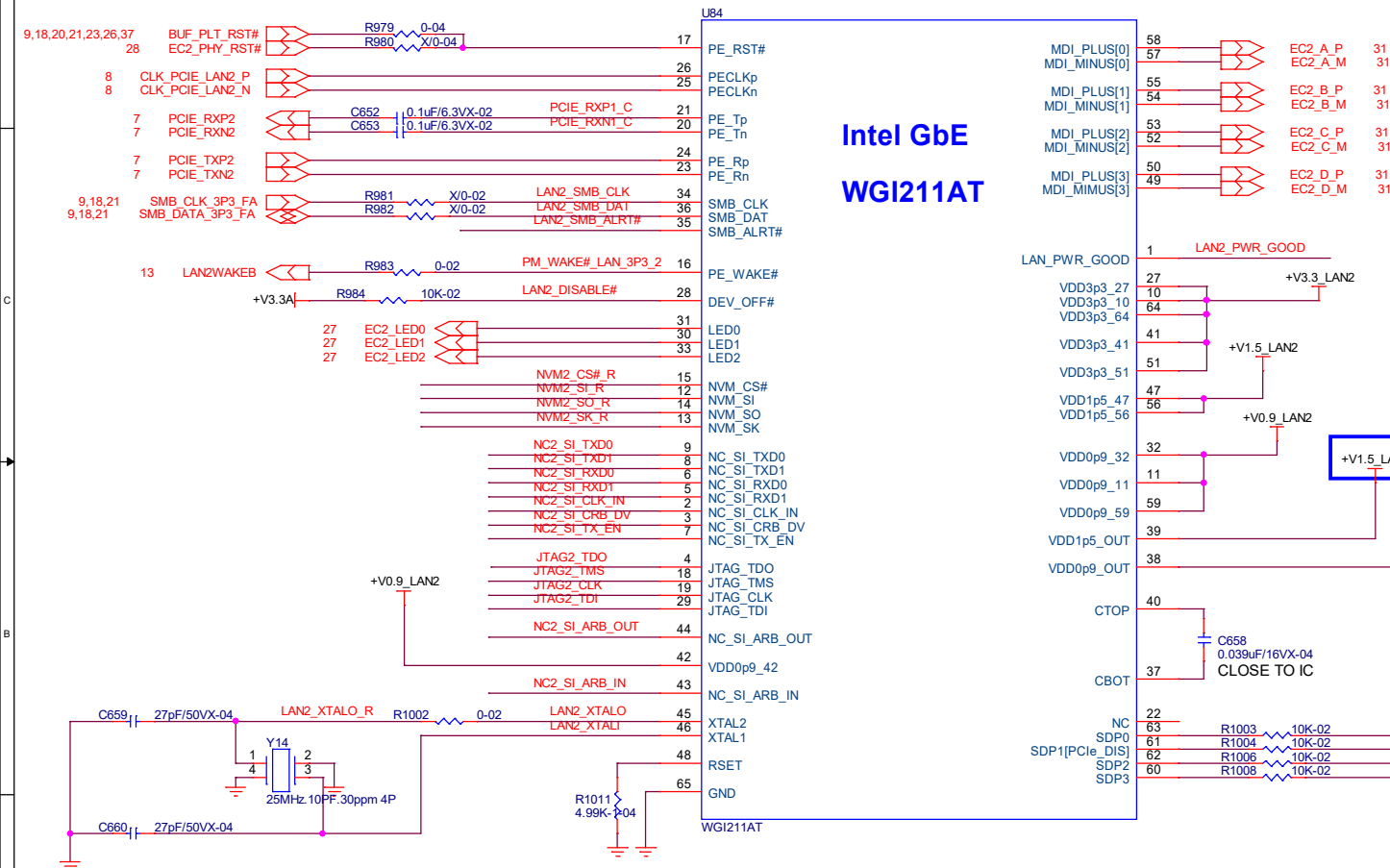
Size: B

Document Number: NET-PLUS

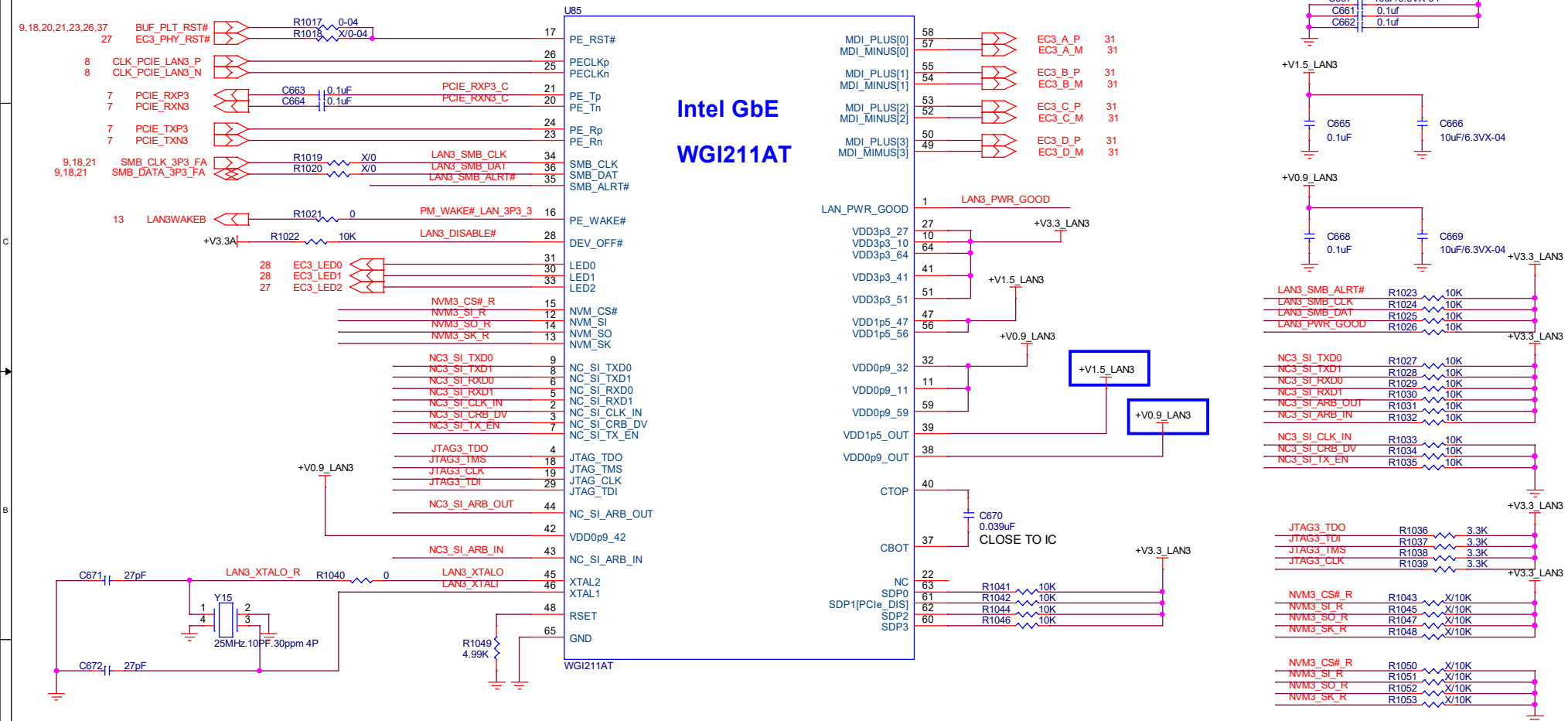
Rev: A0.3

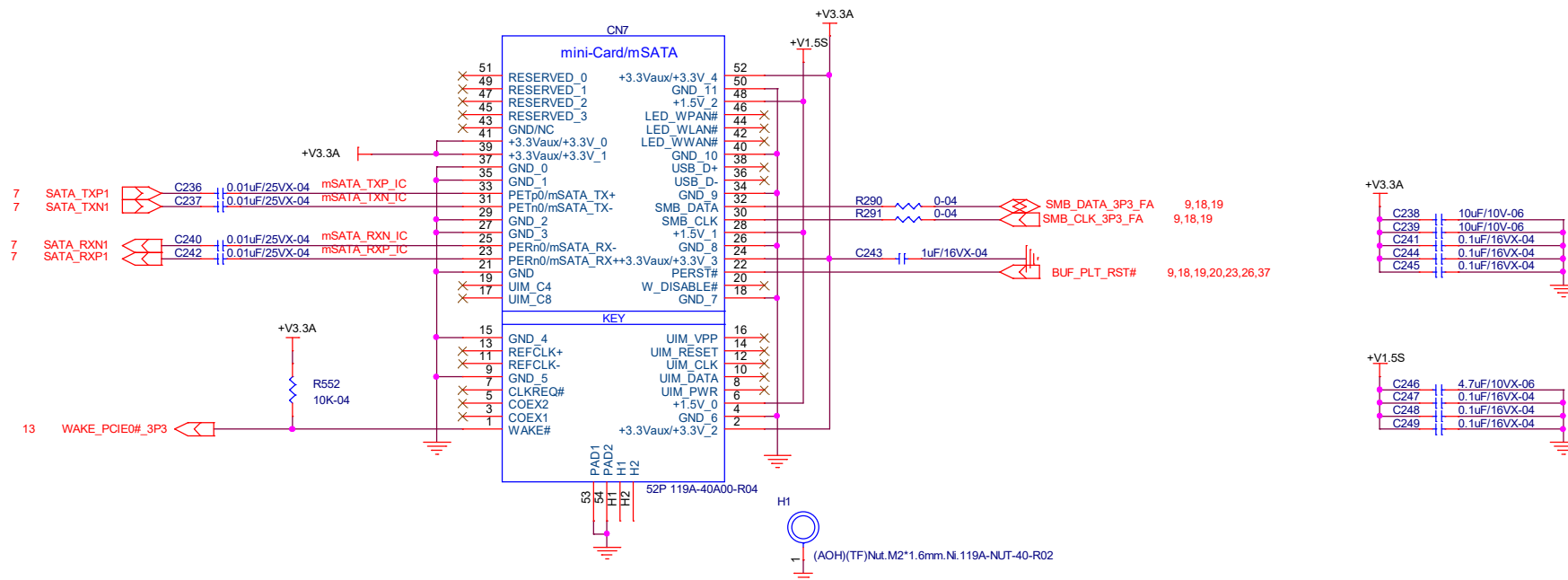
Date: Wednesday, October 16, 2019


Sheet: 19 of 39



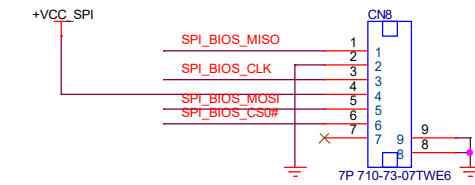
Pearsonville(i211)





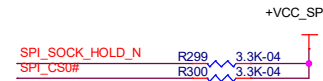
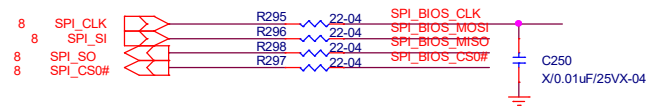
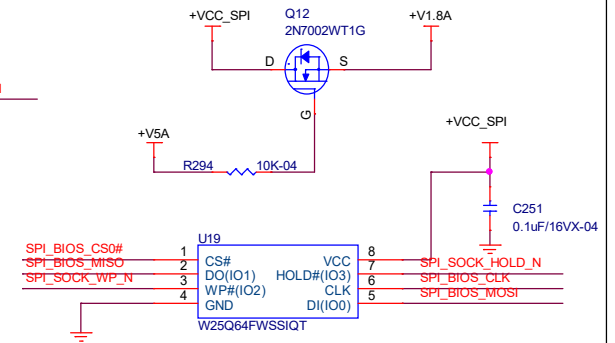
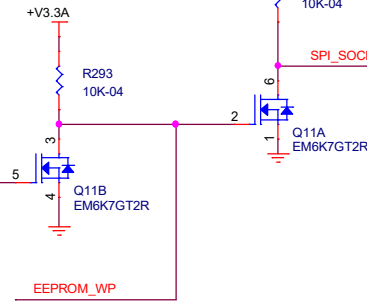
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		Mini-card	
Size	Document Number	Rev.	
B		A0.2	
Date: Wednesday, October 16, 2019		Sheet: 21 of 39	

SPIBIOS

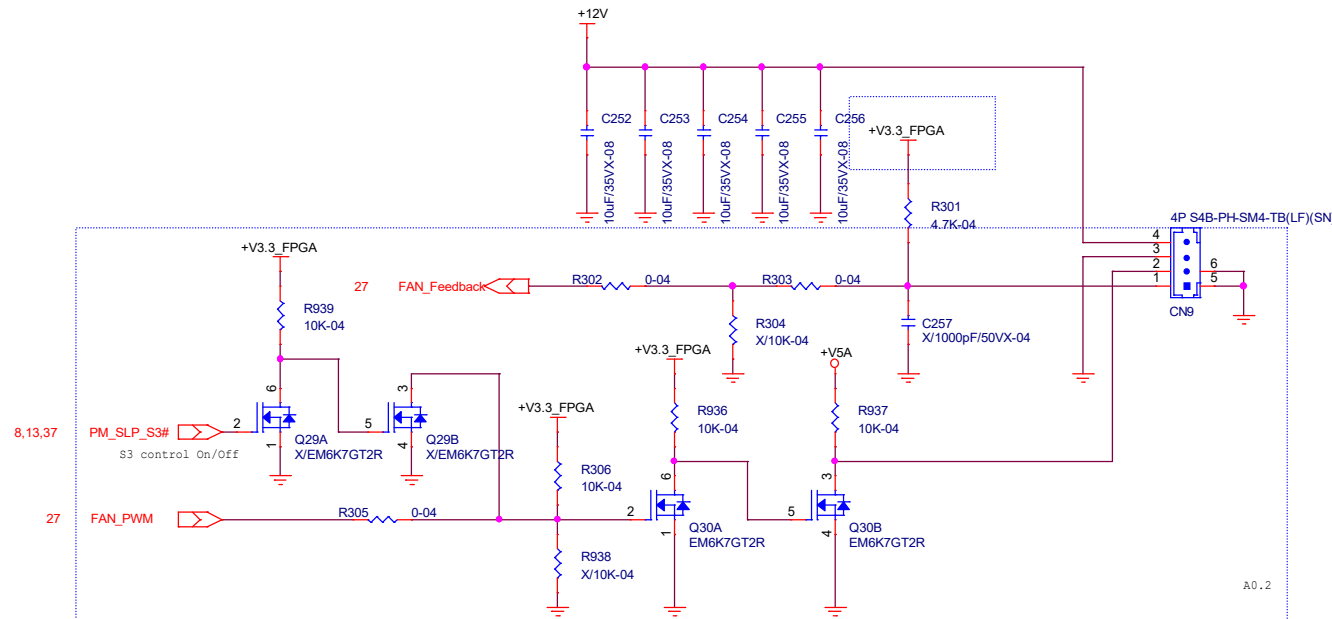


5,8,35

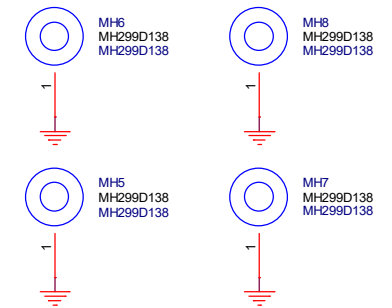
PM_CORE_PWROK



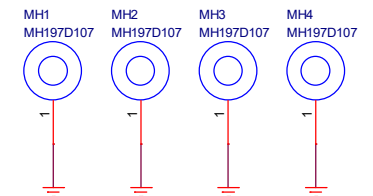
FAN Control



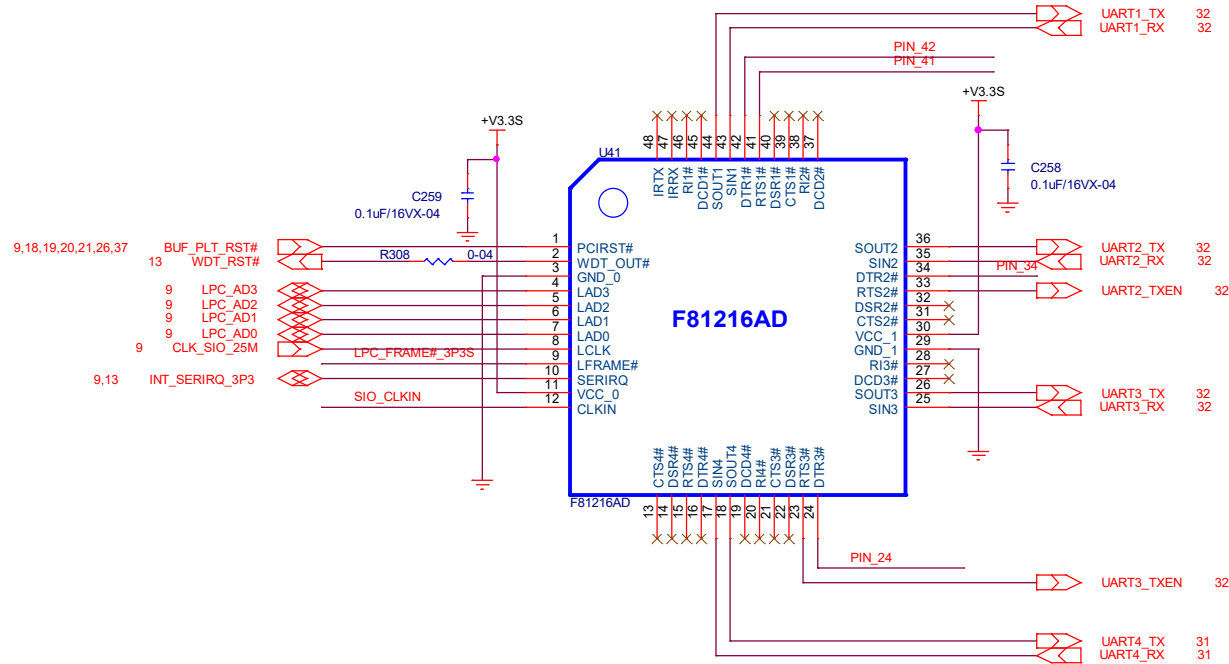
Mounting Holes / PTH



SINK Hold

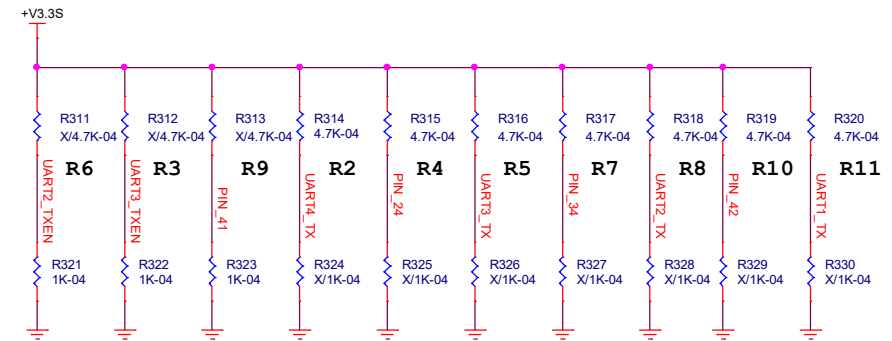
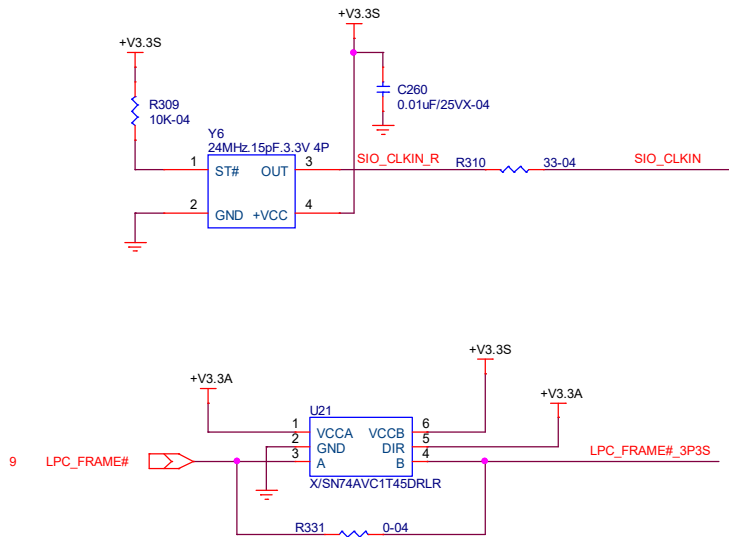


Title H/W Mon/ Debug /CMOS		
Size B	Document Number	Rev. A0.2
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R2 on and R12 off: UART 4 addr:0x2e8 IRQ9; off:UART 4 disabled.
 R5 on and R15 off: UART 3 addr:0x3e8 IRQ5; off:UART 3 disabled.
 R8 on and R18 off: UART 2 addr:0x2f8 irq4; R7 on, R17 off and R8 off, R18 on:UART 2 disabled.
 R6 R3 R9 Entry Key
 on : UART 2 addr:0x2e0 IRQ4; R7 off, R17 on and R8 off, R18 on:UART 2 disabled.
 R11 on and R21 off: UART 1 addr:0x3f8 irq3; R10 on, R20 off and R11 off, R21 on: UART 1 addr:0x3e0 IRQ3; R10 off, R20 on and R11 off, R21 on:UART 1 disabled.
 R4 on and R14 off: Watch Dog Timer enabled and setting to 10 second when the clock input is 24Mhz. If the clock input is 48Mhz , the timer is setting to 5 second. off :disabled.
 R13 is 0 when R3=1, R13 is 1 when R3=0.
 R16 is 0 when R6=1, R16 is 1 when R6=0.
 R19 is 0 when R9=1, R19 is 1 when R9=0.

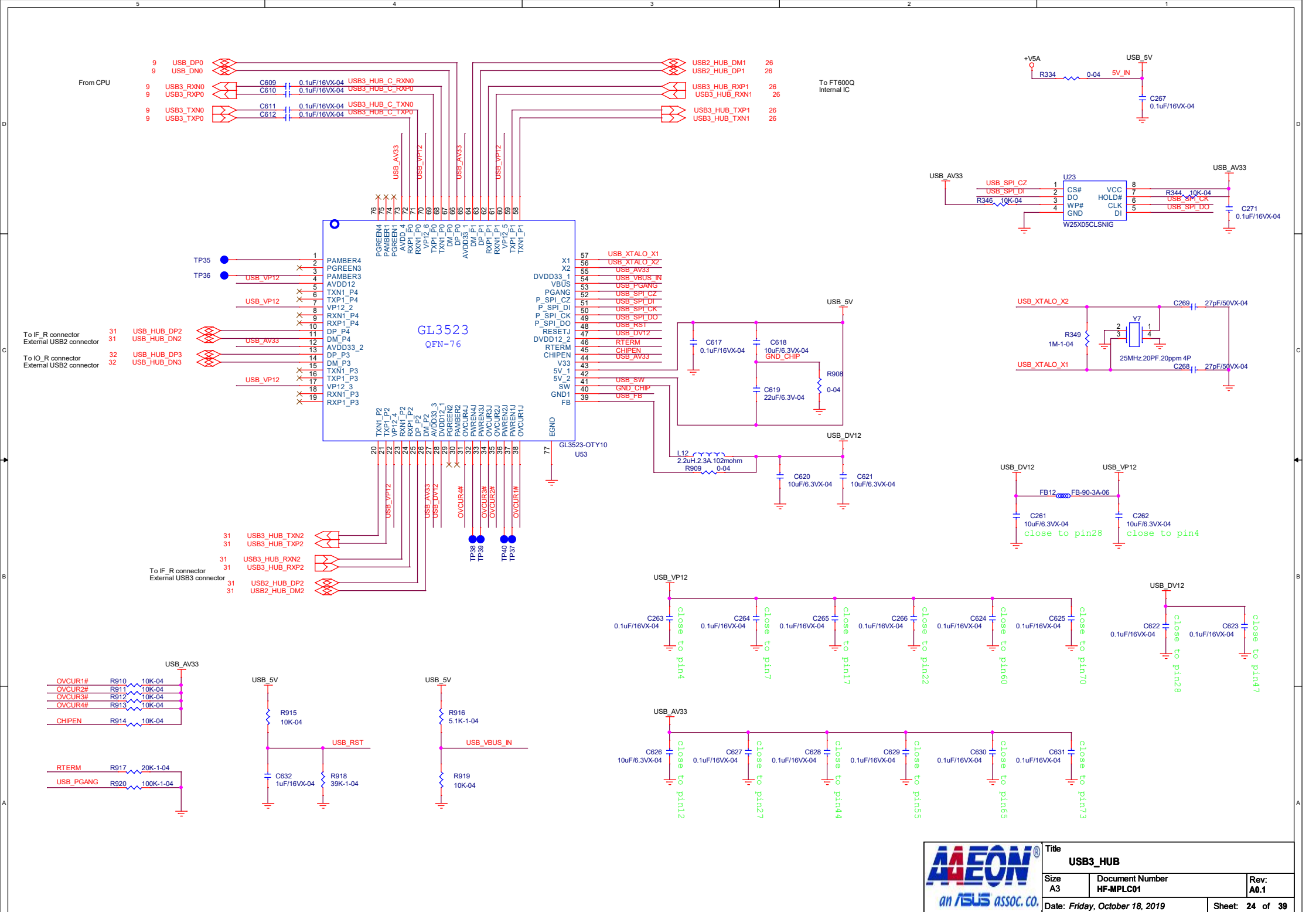
UART2_TXEN	UART3_TXEN	PIN 41	Address	Entry Key	On:1 Off:0
R6	R3	R9	0x4e/0x4f	0x77	
0	0	0	0x2e/0x2f	0x77	
0	0	1	0x4e/0x4f	0xa0	
0	1	1	0x2e/0x2f	0xa0	
1	0	0	0x4e/0x4f	0x87	
1	0	1	0x2e/0x2f	0x87	
1	1	0	0x4e/0x4f	0x67	
1	1	1	0x2e/0x2f	0x67	

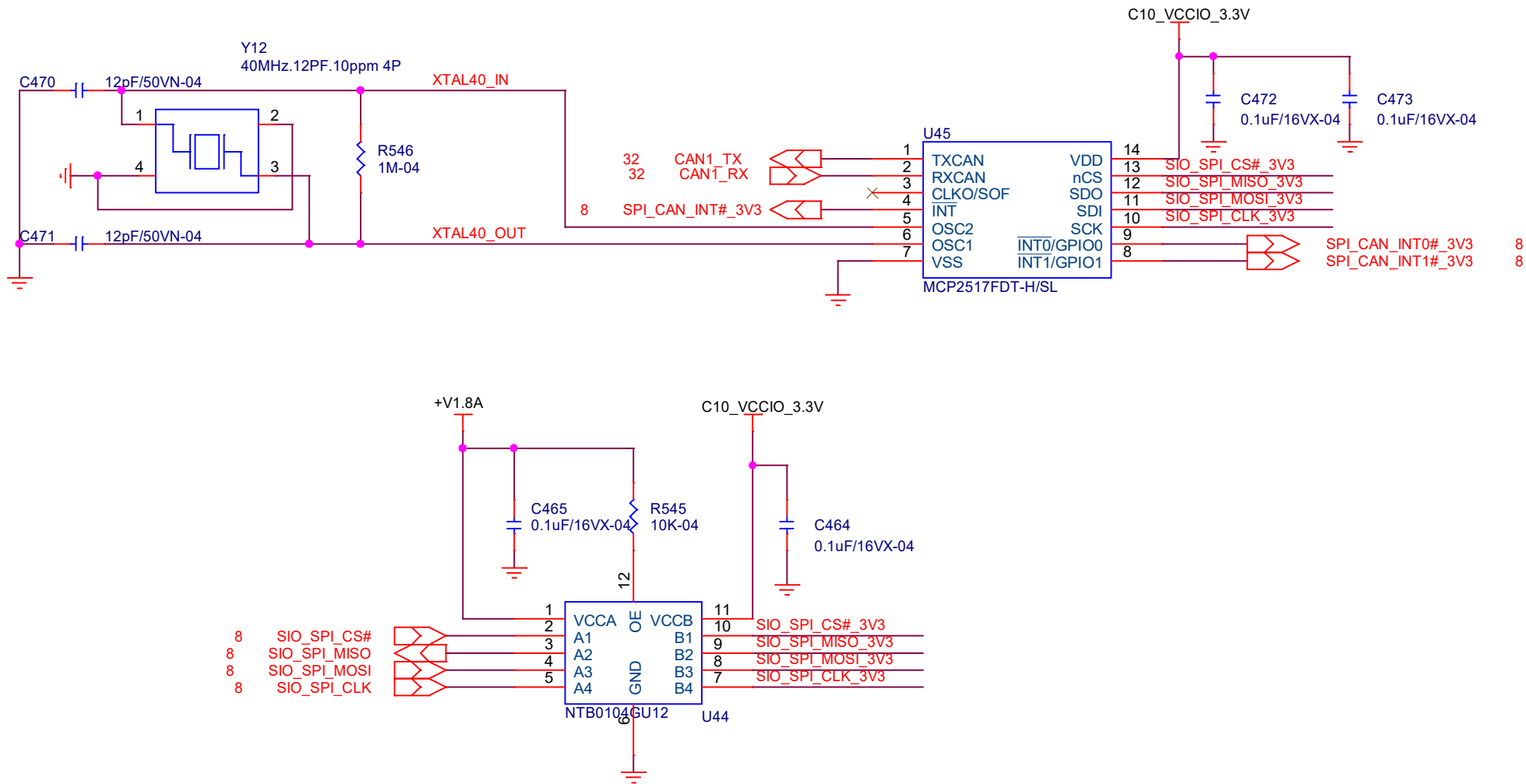


<Core Design>



Title SUPERIO_FINTEK 81966		
Size B	Document Number HF-MPLC01	Rev. A0.2
Date: Wednesday, October 16, 2019		Sheet: 23 of 39

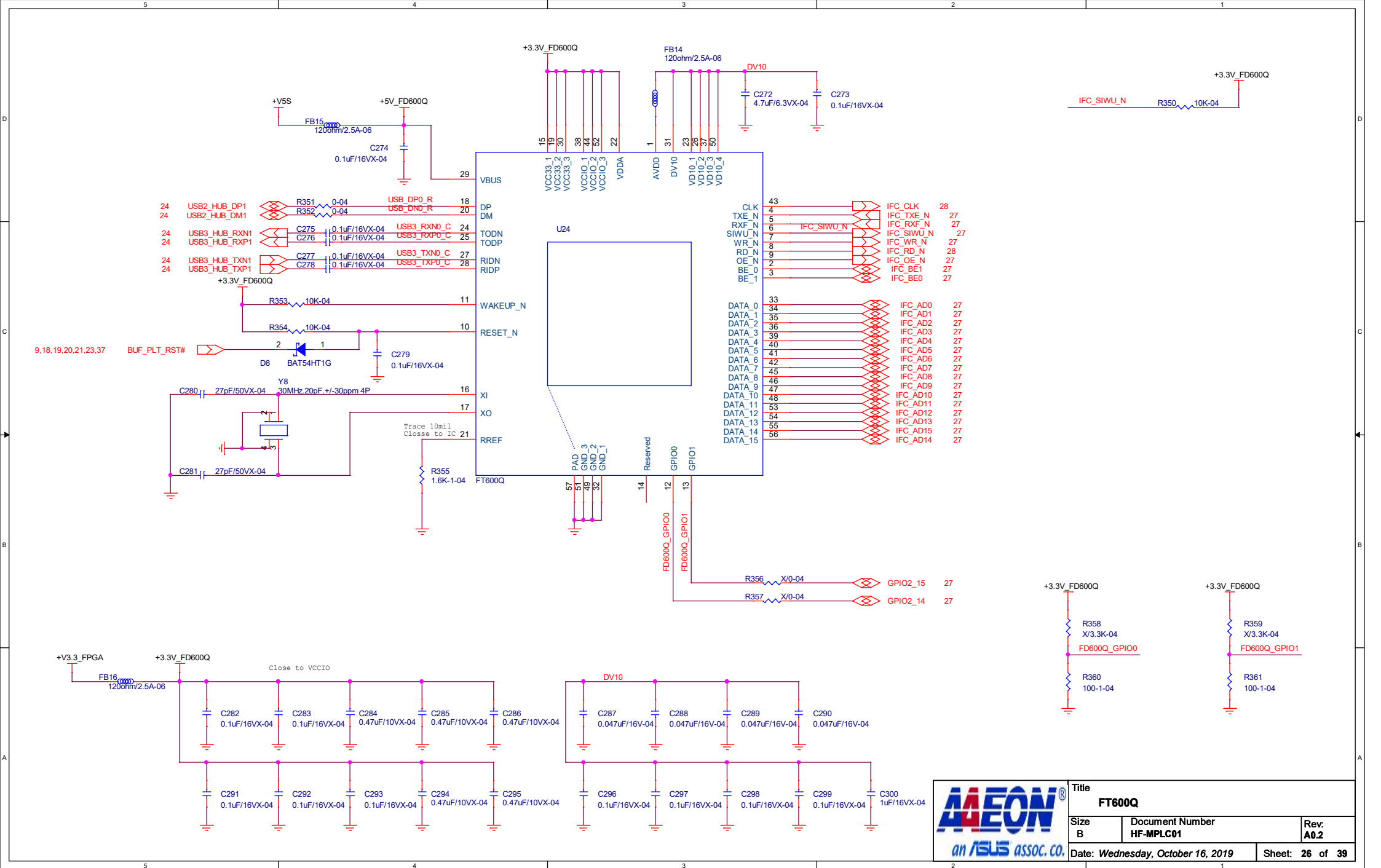




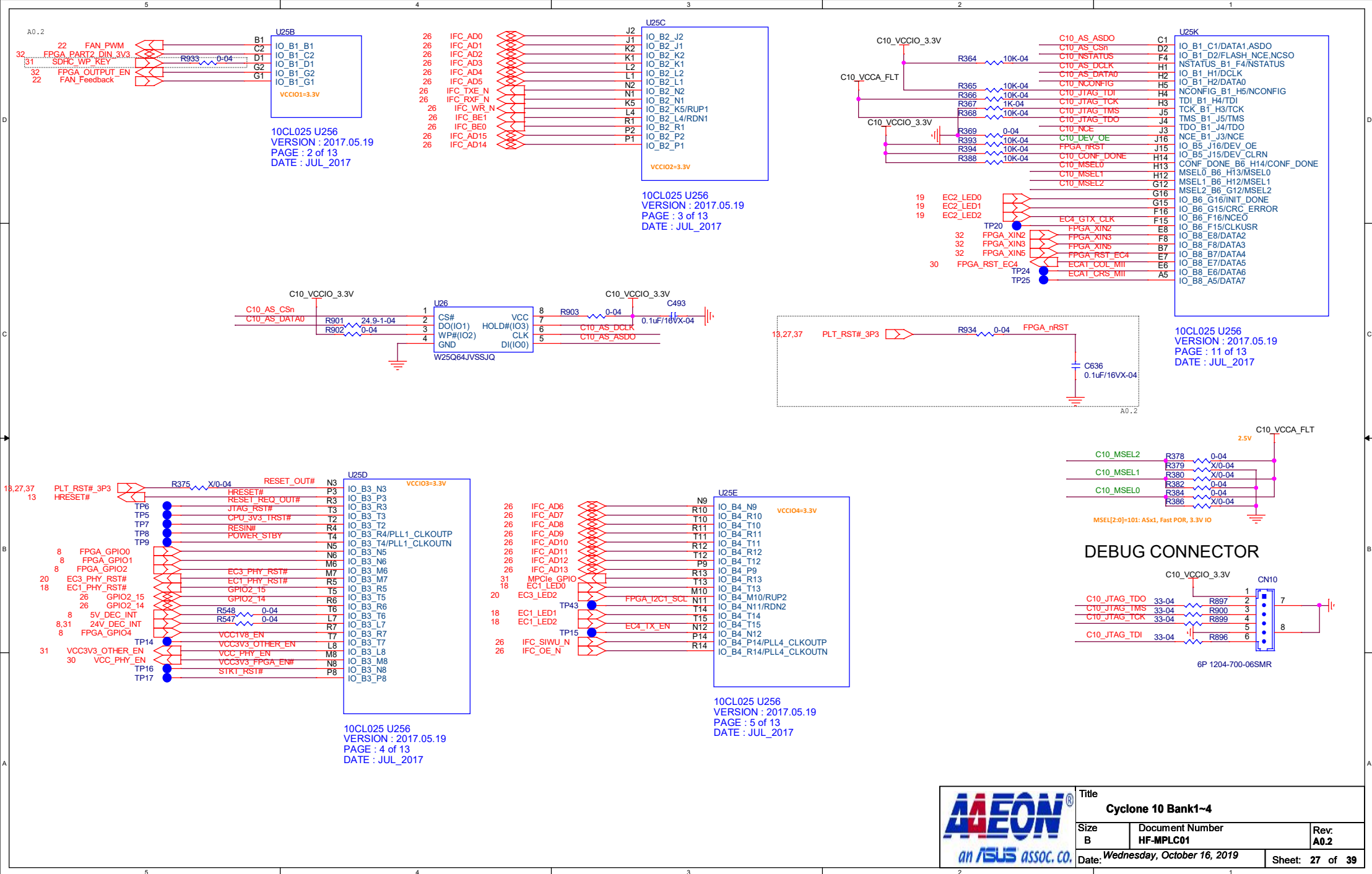
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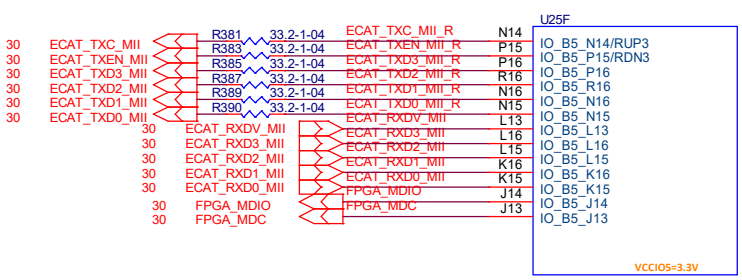


Title MCP2517FDT SPI to CAN		
Size A	Document Number HF-MPLC01	Rev: A0.2
Date: <i>Wednesday, October 16, 2019</i>		Sheet: 25 of 39

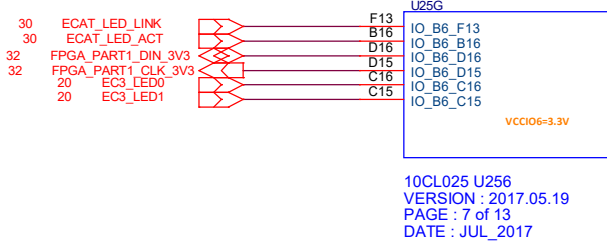


Title FT600Q		
Size B	Document Number HF-MPLC01	Rev. A0.2
Date: Wednesday, October 16, 2019		Sheet: 26 of 39

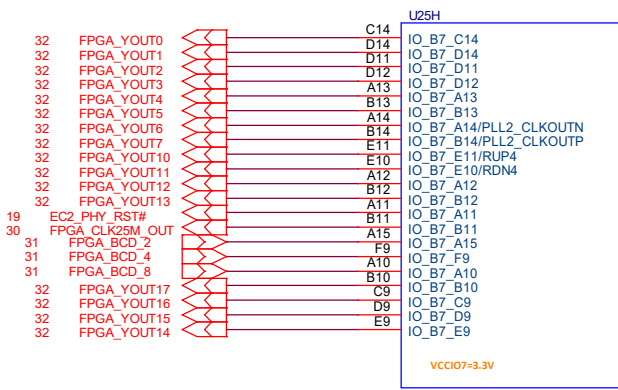
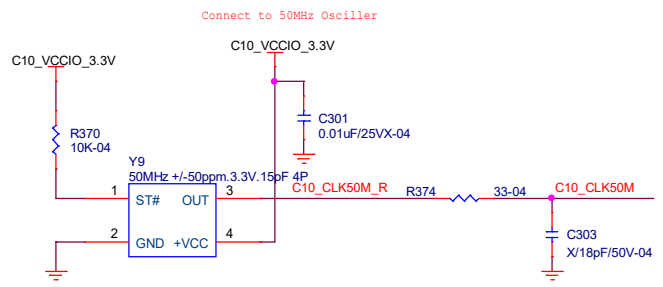




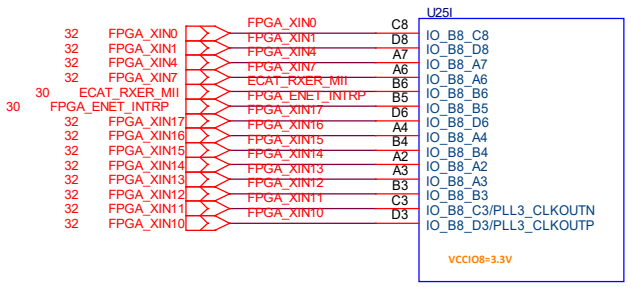
10CL025 U256
VERSION : 2017.05.19
PAGE : 6 of 13
DATE : JUL_2017



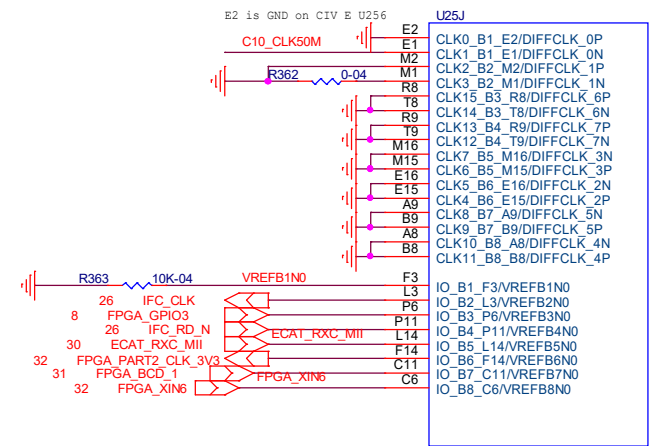
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VERSION : 2017.05.19
PAGE : 7 of 13
DATE : JUL_2017



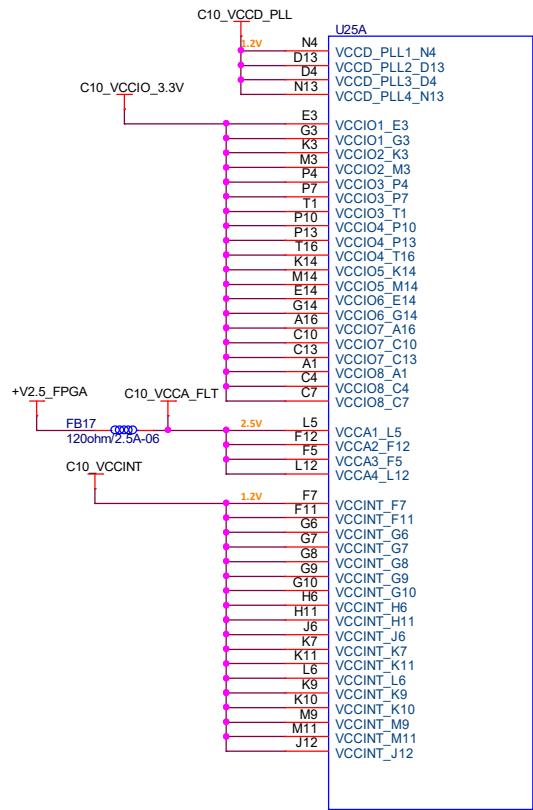
10CL025 U256
VERSION : 2017.05.19
PAGE : 8 of 13
DATE : JUL_2017



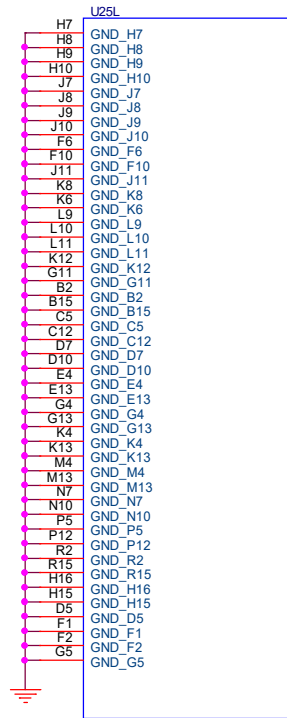
10CL025 U256
VERSION : 2017.05.19
PAGE : 9 of 13
DATE : JUL_2017



10CL025 U256
VERSION : 2017.05.19
PAGE : 10 of 13
DATE : JUL_2017

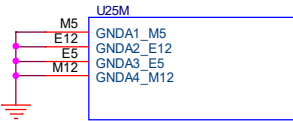


10CL025 U256
VERSION : 2017.05.19
PAGE : 1 of 13
DATE : JUL_2017

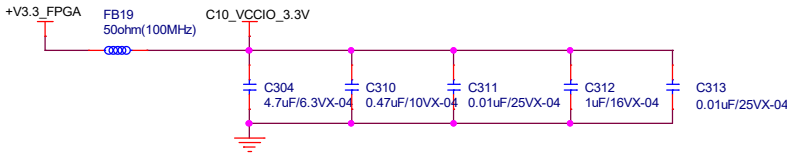
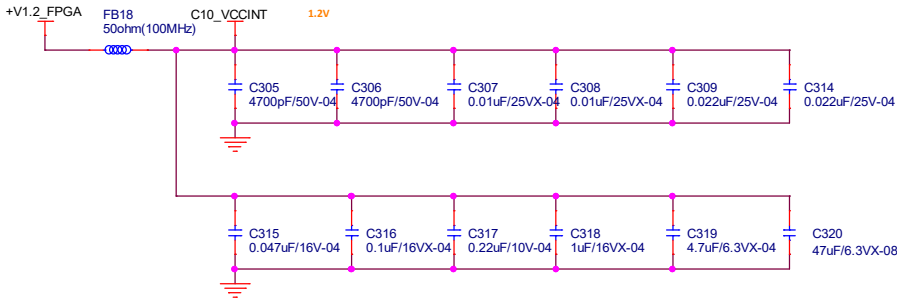
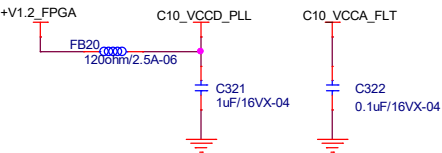


10CL025 U256
VERSION : 2017.05.19
PAGE : 12 of 13
DATE : JUL_2017

D5, F1, F2, G5 are IO on CIV E U256



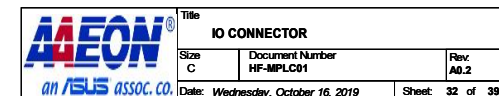
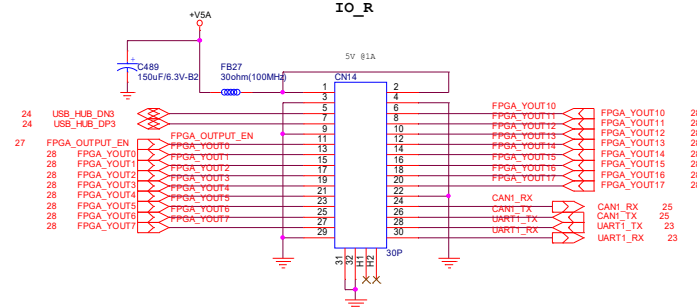
10CL025 U256
VERSION : 2017.05.19
PAGE : 13 of 13
DATE : JUL_2017



Title		
Cyclone 10 Power		
Size	Document Number	Rev.
B	HF-MPLC01	A0.2
Date: Wednesday, October 16, 2019		Sheet: 29 of 39

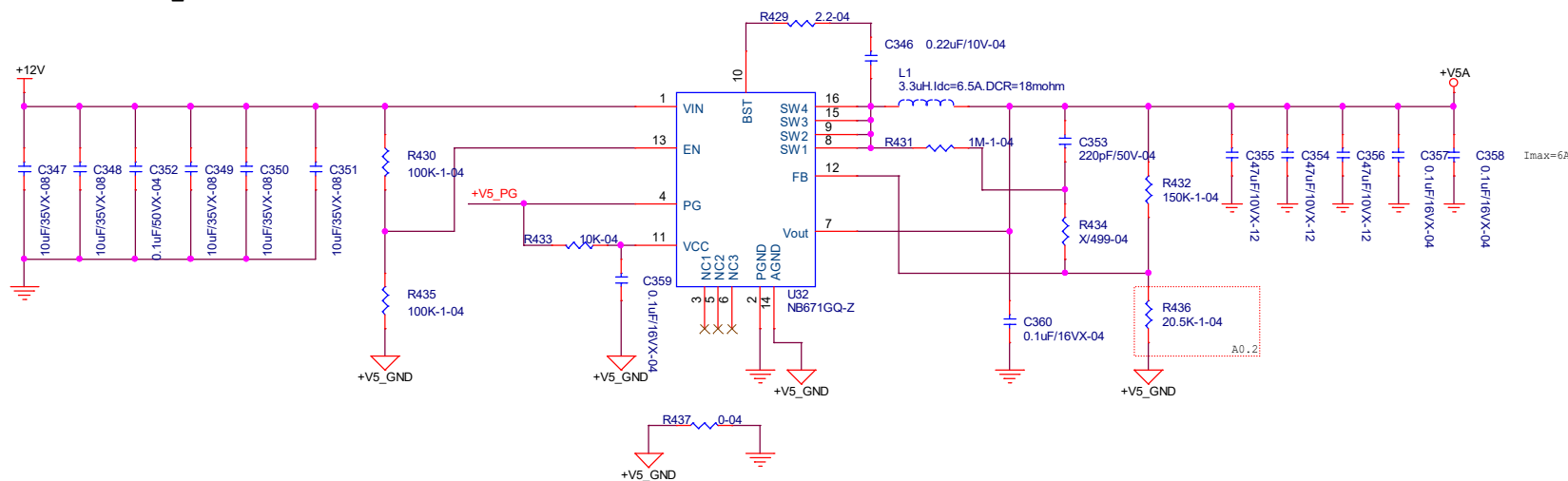


Title		
LAN PHY		
Size B	Document Number HF-MPLC01	Rev. A0.2
Date: <i>Wednesday, October 16, 2019</i>		Sheet: 30 of 39



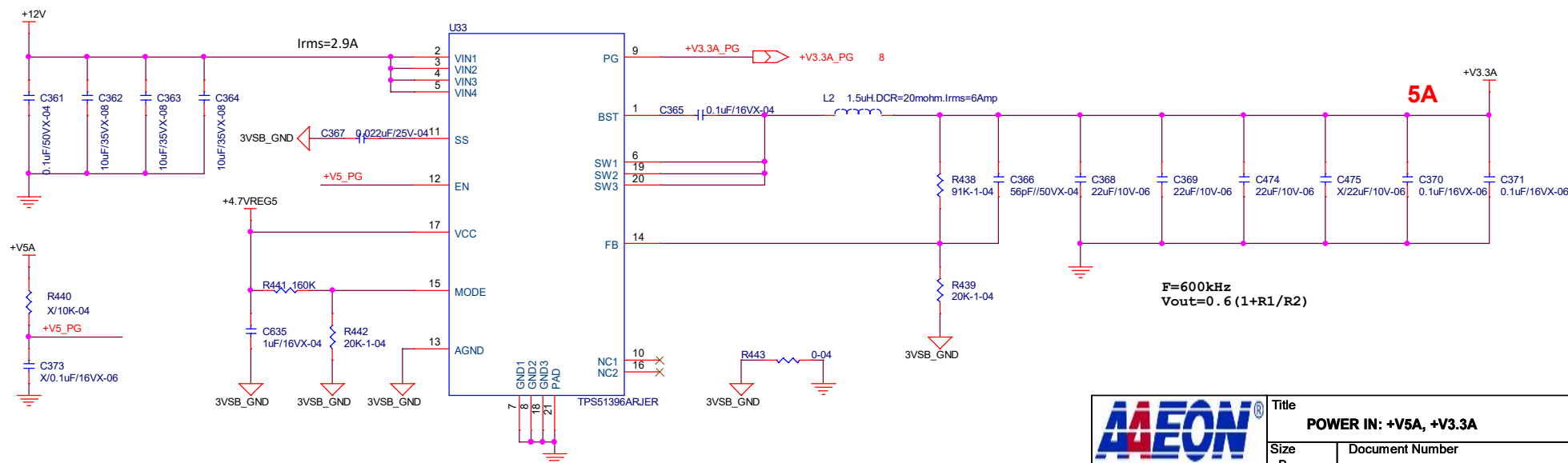
+12V Power Input

Power From IF_L connector



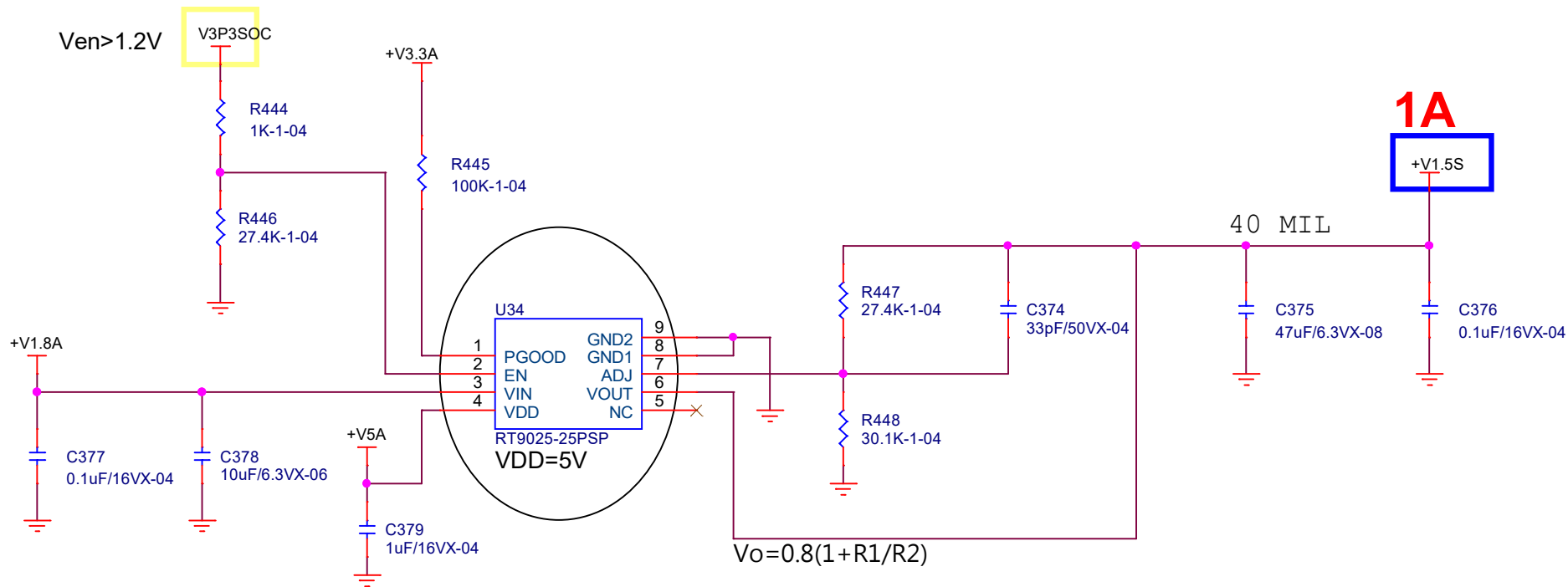
+V3.3A

A0.2

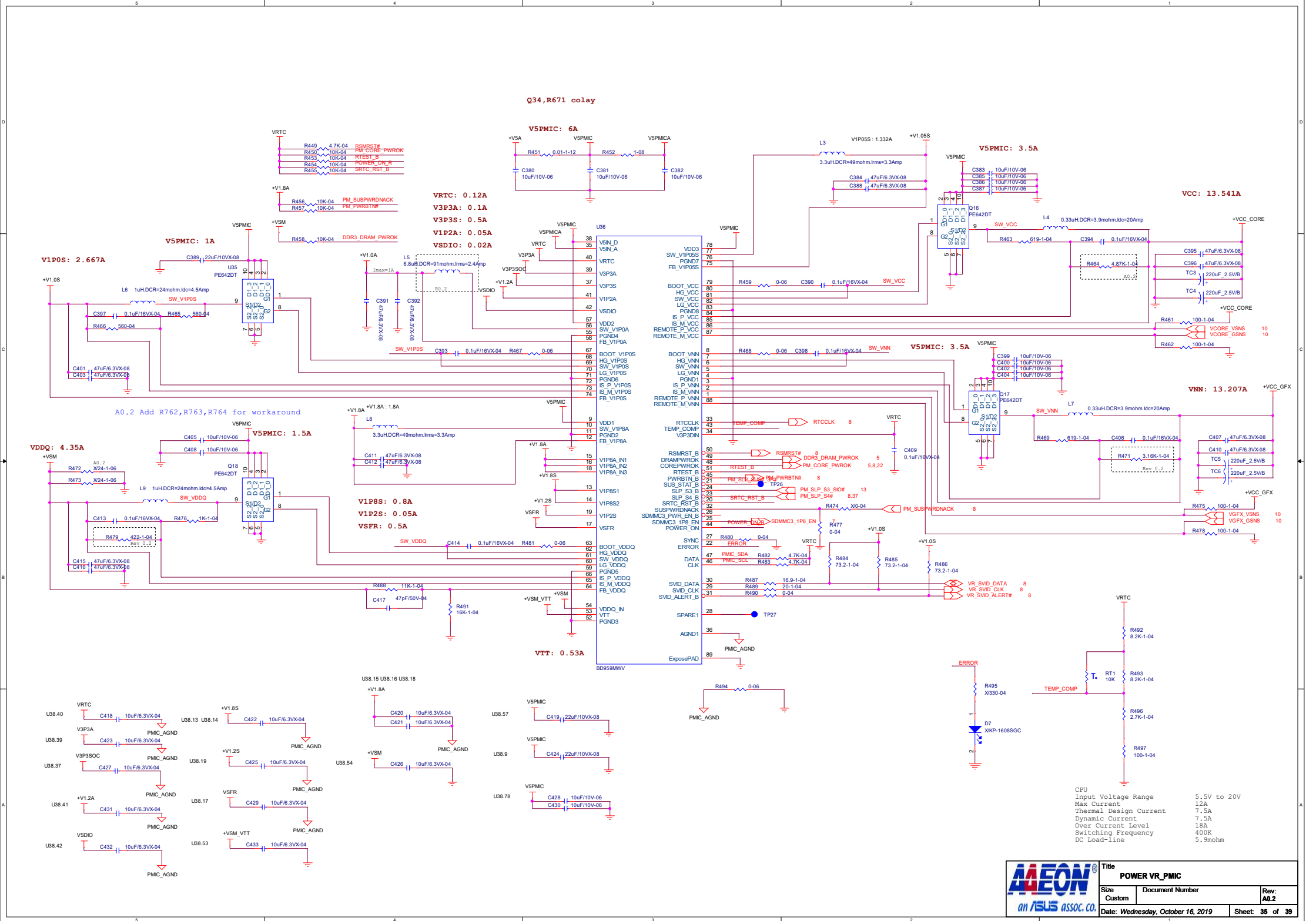


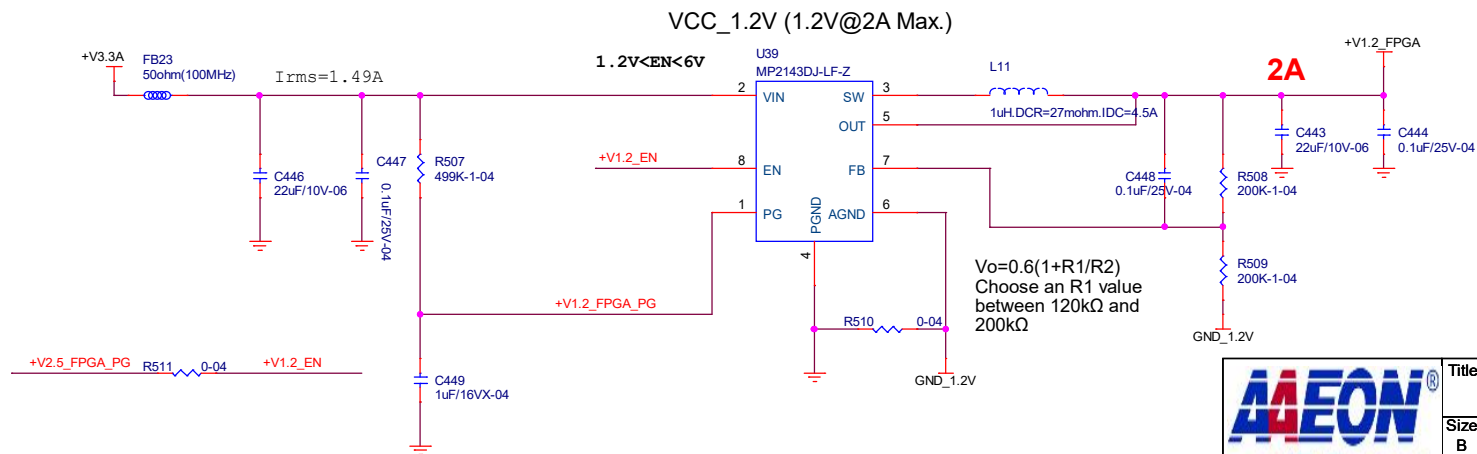
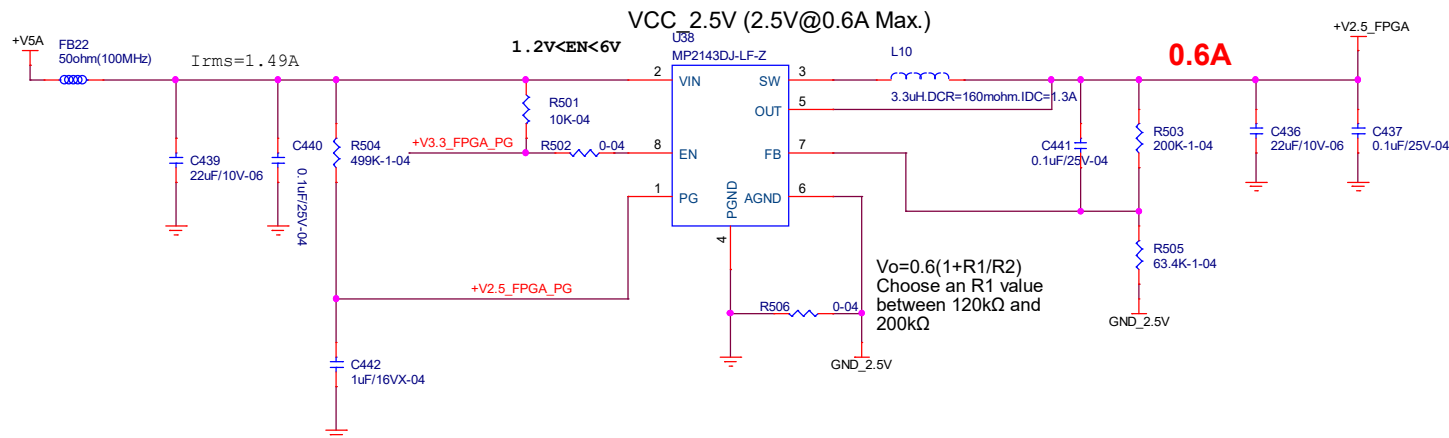
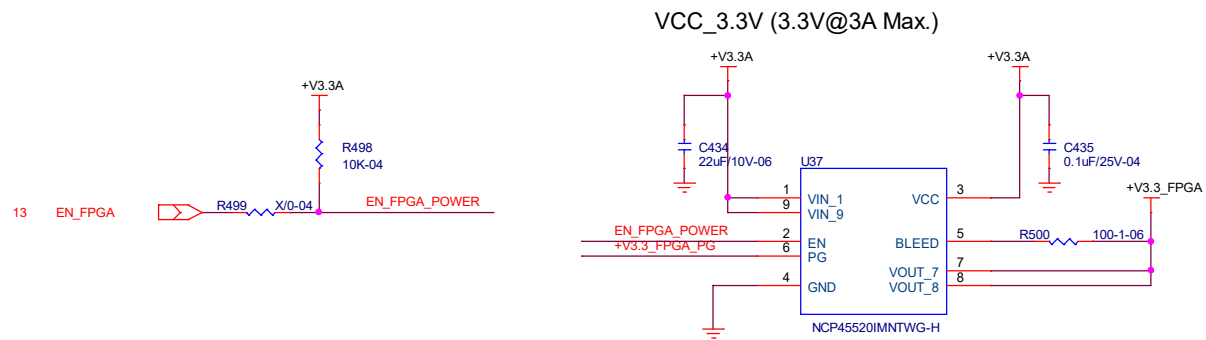
Title POWER IN: +V5A, +V3.3A		
Size B	Document Number	Rev. A0.2
Date: Wednesday, October 16, 2019	Sheet: 33 of 39	

+V1.5S



Title POWER VR_LDO		
Size A	Document Number	Rev: A0.2
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Title FPGA Power-I		
Size B	Document Number HF-MPLC01	Rev. A0.2
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A0.2

- 1.Change CN1 CN2 CN3 CN4 Footpint.
- 2.3.3V power solution phase out change to TPS51396ARJER.
3. Add ESD protect IC on IF IO connector
4. Change RTC crystal to ESR 50Kohm.
5. Modify pin define of FAN connector.
6. Add pull up resistor on HRESET#.
7. Add Pull up resistor on FPGA_ENET_INTRP.
8. Add ECAT_COL_MII to CONFIG0 of LAN PHY.
9. Add ECAT_CRS_MII to CONFIG1 of LAN PHY.
- 10.Revers D9.
- 11.Change C257 to 1000pF.
- 12.Add Cap on FPGA_nRST.
- 13.Modify FPGA pin out as below.

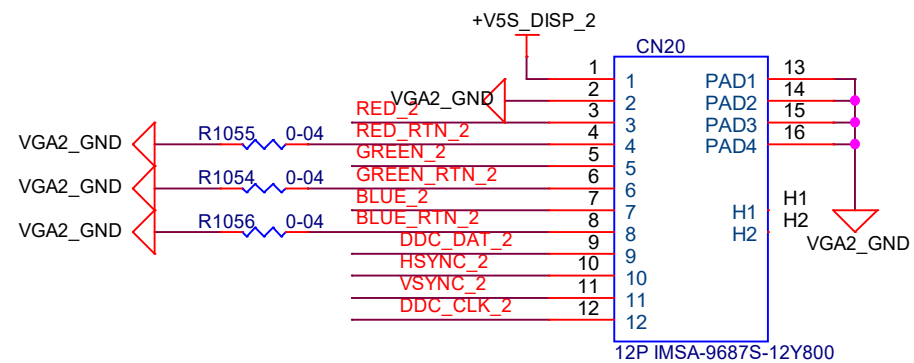
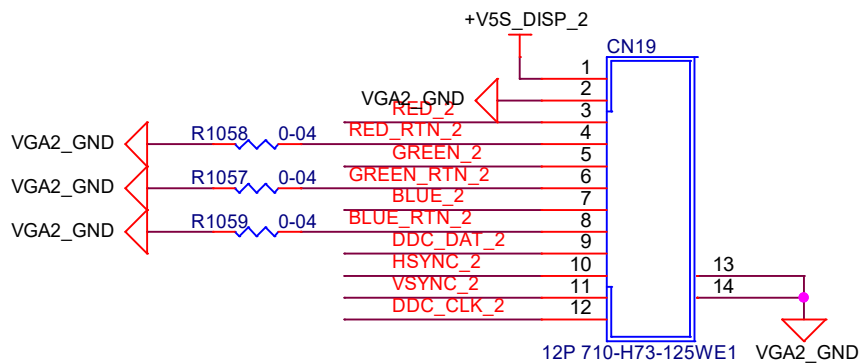
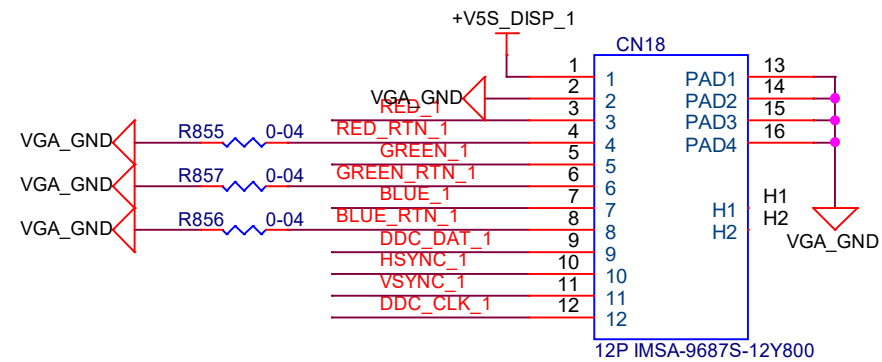
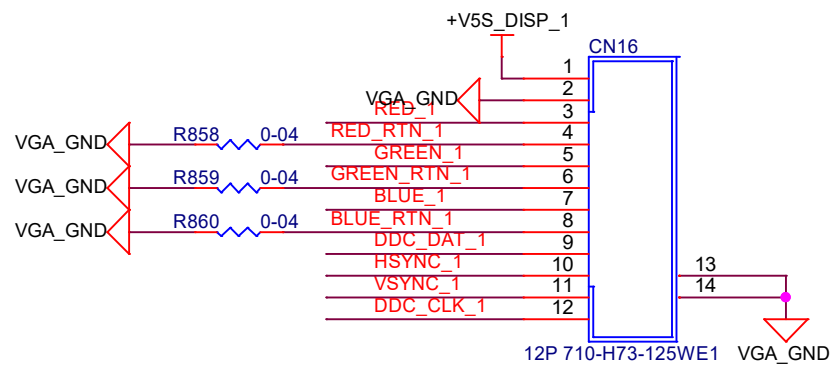
Net name	FPGA
EC1_LED0	T13
EC1_LED1	T14
EC1_LED2	T15
EC2_LED0	G16
EC2_LED1	G15
EC2_LED2	F16
ECAT_LED_LINK	F13
ECAT_LED_ACT	B16
EC3_LED0	C16
EC3_LED1	C15
EC3_LED2	M10

- 14.Change VGA connector type to FPC.
- 15.Modify FAN control circuit.

<Variant Name>



Title		
History		
Size A	Document Number	Rev: A0.2
Date: Thursday, December 05, 2019		Sheet: 38 of 39



<Variant Name>



Title Test Board		
Size A	Document Number	Rev: A0.2
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