TURBOT Dual-E

Rev : R200

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REVISION HISTORY:

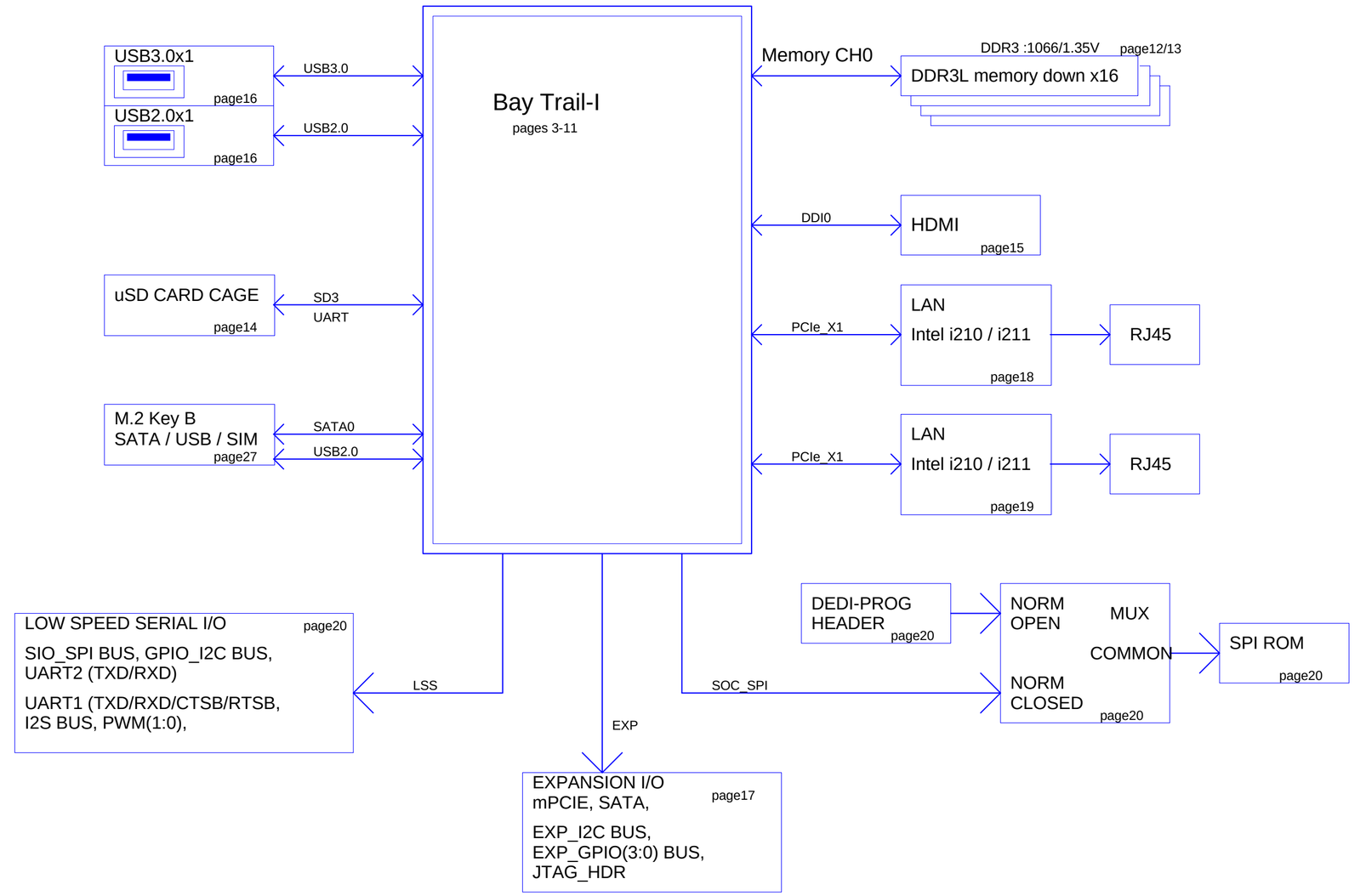
Rev	Date	Notes
X100	2016/04/29	Prototype Release
R100	2016/10/19	Production Release
R200	2016/12/16	Changed M.2 RESET# from 3.3V to 1.8V

For all design files, including bill of materials and gerber files, please visit www.minnowboard.org

Prepared For:

BY:
ADI ENGINEERING INC.
1758 WORTH PARK
CHARLOTTESVILLE, VA 22911
WWW.ADIENGINEERING.COM

TITLE	Turbot Dual i210 Enet / Quad Core E3845	
SIZE C	DWG NO 80200-0141-G01	REV R200
DATE 04/17/2017	SHEET 1 of 30	



BLOCK DIAGRAM

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE: C	DWG NO: 80200-0141-G01
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FOR HDMI VIDEO/AUDIO,

REVERSE BIT CONNECTIONS
FROM (0:2) TO (2:0), BIT3

IS THE CLOCK SIGNAL.
STRAIGHT BIT ORDER is

for EDP ONLY
HDMI

CPU1

HDMI_TX2_DP AV3 DDI0_TXP_0
HDMI_TX2_DN AV2 DDI0_TXN_0
HDMI_TX1_DP AT2 DDI0_TXP_1
HDMI_TX1_DN AT3 DDI0_TXN_1
HDMI_TX0_DP AR3 DDI0_TXP_2
HDMI_TX0_DN AR1 DDI0_TXN_2
HDMI_CLK_DP AP3 DDI0_TXP_3
HDMI_CLK_DN AP2 DDI0_TXN_3

(+V1P0S) AL3 DDI0_AUXP
(+V1P0S) AL1 DDI0_AUXN

HDMI_HPD_B (+V1P8S) D27 DDI0_HPD

HDMI_DDCDAT (+V1P8S) C26 DDI0_DDCDATA
HDMI_DDCCLK (+V1P8S) C28 DDI0_DDCCLK

(+V1P8S) B28 DDI0_VDDEN
(+V1P8S) C27 DDI0_BKLTEN
(+V1P8S) B26 DDI0_BKLTCTL

R217 1 2 402 DDI_RCOMP_P (+V1P0S) AK13 DDI0_RCOMP
DDI_RCOMP_N (+V1P0S) AK12 DDI0_RCOMP_P
AM14 RESERVED_AM14
AM13 RESERVED_AM13
R42 1 2 0 AM3 RESERVED_VSS0
GND R41 1 2 0 AM2 RESERVED_VSS1
GND
Bay Trail-I Different

+V1P8S
GND C375 0.1uF
HDMI_HPD 2 U39 NC 4 5 1 3
SN74LVC1G14DCKR
SC70-5
GND

T2 RESERVED_T2
T3 RESERVED_T3
AB3 RESERVED_AB3
AB2 RESERVED_AB2
Y3 RESERVED_Y3
Y2 RESERVED_Y2
W3 RESERVED_W3
W1 RESERVED_W1
V2 RESERVED_V2
V3 RESERVED_V3
R3 RESERVED_R3
R1 RESERVED_R1
AD6 RESERVED_AD6
AD4 RESERVED_AD4
AB9 RESERVED_AB9
AB7 RESERVED_AB7
Y4 RESERVED_Y4
Y6 RESERVED_Y6
V4 RESERVED_V4
V6 RESERVED_V6
A29 RESERVED_A29
C29 RESERVED_C29
AB14 RESERVED_AB14
B30 GPIO_S0_NC12
C30 RESERVED_C30

GND R102 10.0K GPIO_NC13
TP15

ATOM E3845 SOC
DISPLAY SECTION

Bay Trail-M Remove eDP Port

DDI1_TXP_0 AG3 (+V1P0S)
DDI1_TXN_0 AG1 (+V1P0S)
DDI1_TXP_1 AF3 (+V1P0S)
DDI1_TXN_1 AF2 (+V1P0S)
DDI1_TXP_2 AD3 (+V1P0S)
DDI1_TXN_2 AD2 (+V1P0S)
DDI1_TXP_3 AC3 (+V1P0S)
DDI1_TXN_3 AC1 (+V1P0S)

DDI1_AUXP AK3 (+V1P0S)
DDI1_AUXN AK2 (+V1P0S)

DDI1_HPD K30 (+V1P8S) GND

DDI1_DDCDATA P30 (+V1P8S) DDI1_DDCDAT R257 1 2 2.2K GND
DDI1_DDCCLK G30 (+V1P8S) GND

DDI1_VDDEN N30 (+V1P8S)
DDI1_BKLTEN J30 (+V1P8S)
DDI1_BKLTCTL M30 (+V1P8S)

RESERVED_AH14 AH14
RESERVED_AH13 AH13
RESERVED_AF14 AF14
RESERVED_AF13 AF13
RESERVED_VSS2 AH3 R46 1 2 0 GND
RESERVED_VSS3 AH2 R43 1 2 0 GND

VGA_RED BA3 (VVGA_GPIO)
VGA_BLUE AY2 (VVGA_GPIO)
VGA_GREEN BA1 (VVGA_GPIO)
VGA_IREF AW1 R40 357 GND
VGA_IRTN AY3 GND

VGA_HSYNC BD2 (VVGA_GPIO)
VGA_VSYNC BF2 (VVGA_GPIO) CRT_CLK 150 1% R39 0402 GND

VGA_DDCCLK BC1 (VVGA_GPIO)
VGA_DDCDATA BC2 (VVGA_GPIO) CRT_DAT 150 1% R38 0402

RESERVED_T7 T7 (V1P24S)
RESERVED_T9 T9 (V1P24S)
RESERVED_AB13 AB13 (V1P24S)
RESERVED_AB12 AB12 (V1P24S)
RESERVED_Y12 Y12 (V1P24S)
RESERVED_Y13 Y13 (V1P24S)
RESERVED_V10 V10 (V1P24S)
RESERVED_V9 V9 (V1P24S)
RESERVED_T12 T12 (V1P24S)
RESERVED_T10 T10 (V1P24S)
RESERVED_V14 V14 (V1P24S)
RESERVED_V13 V13 (V1P24S)
RESERVED_T14 T14 (V1P24S)
RESERVED_T13 T13 (V1P24S)
RESERVED_T6 T6 (V1P24S)
RESERVED_T4 T4 (V1P24S)
RESERVED_P14 P14 (V1P24S) MCSI_RCOMP R213 1 2 150 GND

RESERVED_K34 K34 (V1P24S)
RESERVED_D32 D32 (V1P24S)
RESERVED_N32 N32 (V1P24S)
RESERVED_J34 J34 (V1P24S)
RESERVED_K28 K28 (V1P24S)
RESERVED_F28 F28 (V1P24S)
RESERVED_F32 F32 (V1P24S)
RESERVED_D34 D34 (V1P24S)
RESERVED_J28 J28 (V1P24S)
RESERVED_D28 D28 (V1P24S)
RESERVED_M32 M32 (V1P24S)
RESERVED_F34 F34 (V1P24S)

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Bay Trail-I MCSI Port

CPU-DDI/VGA

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TITLE: Turbot Dual i210 Enet / Quad Core E3845

SIZE	DWG NO	REV
C	80200-0141-G01	R200

DATE	SHEET
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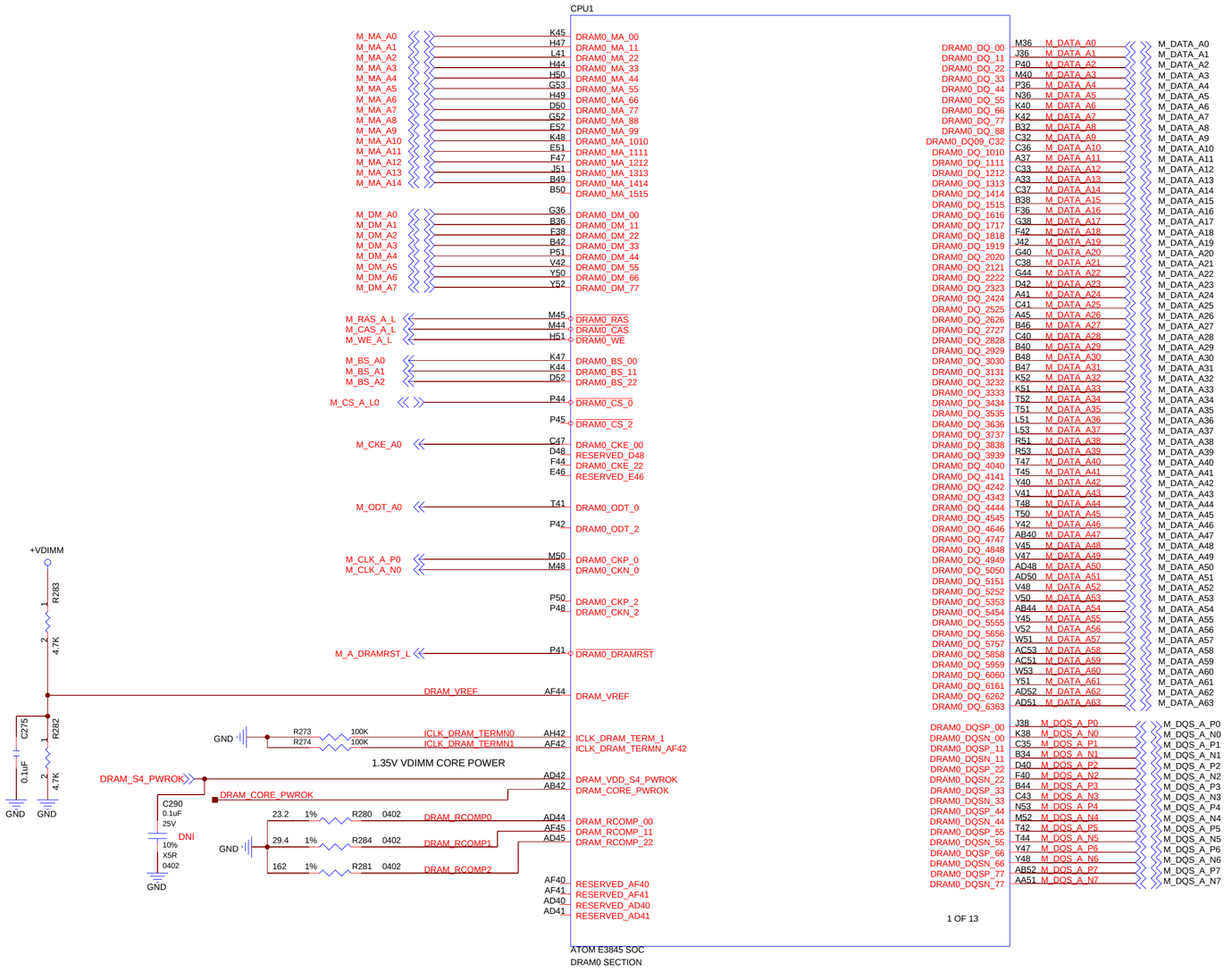

CPU-DDR3-CHA

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
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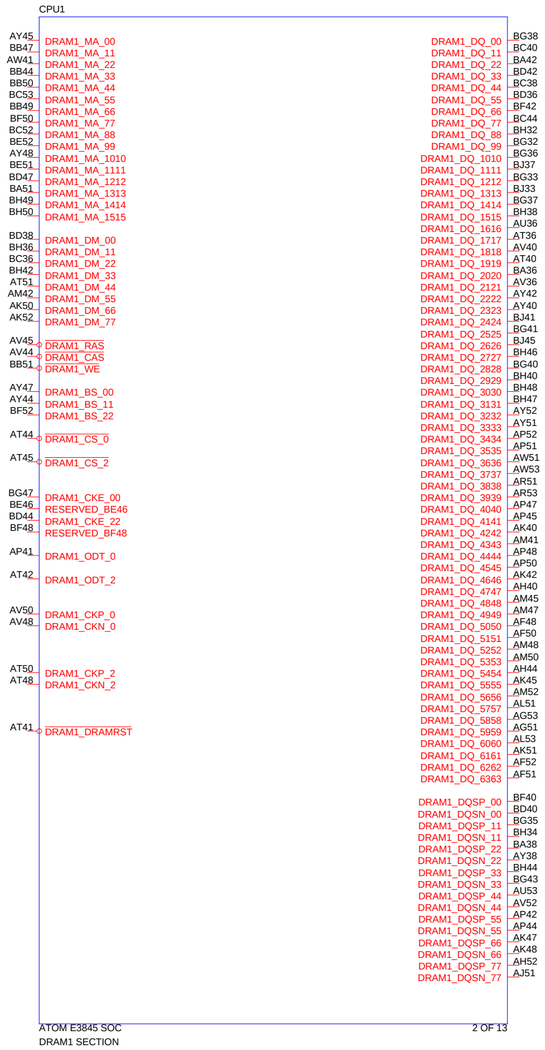
REV: R200	
DATE: 12/16/2016	SHEET 4 of 30



CPU-DDR3-CHB

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
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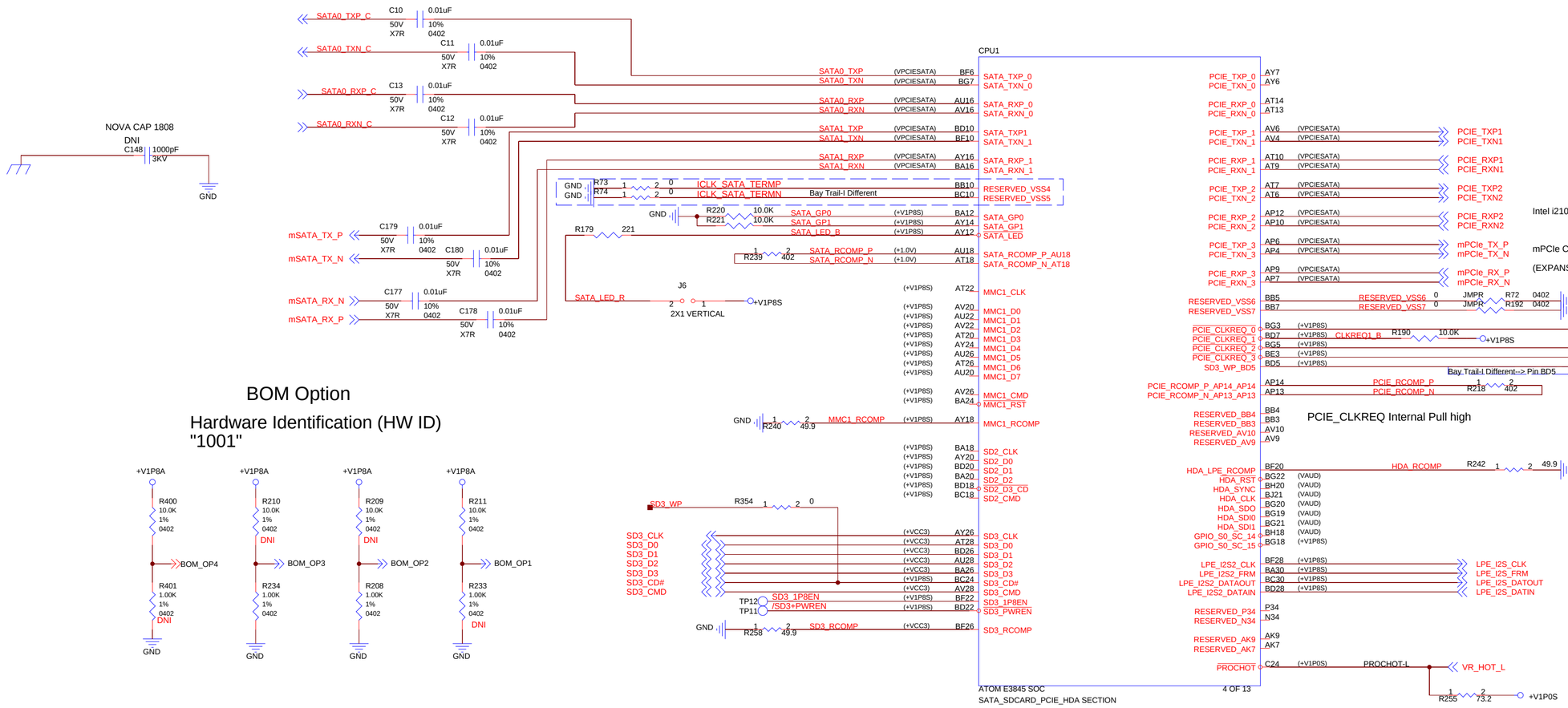

CPU-PE/HDA/SD/eMMC/Strap

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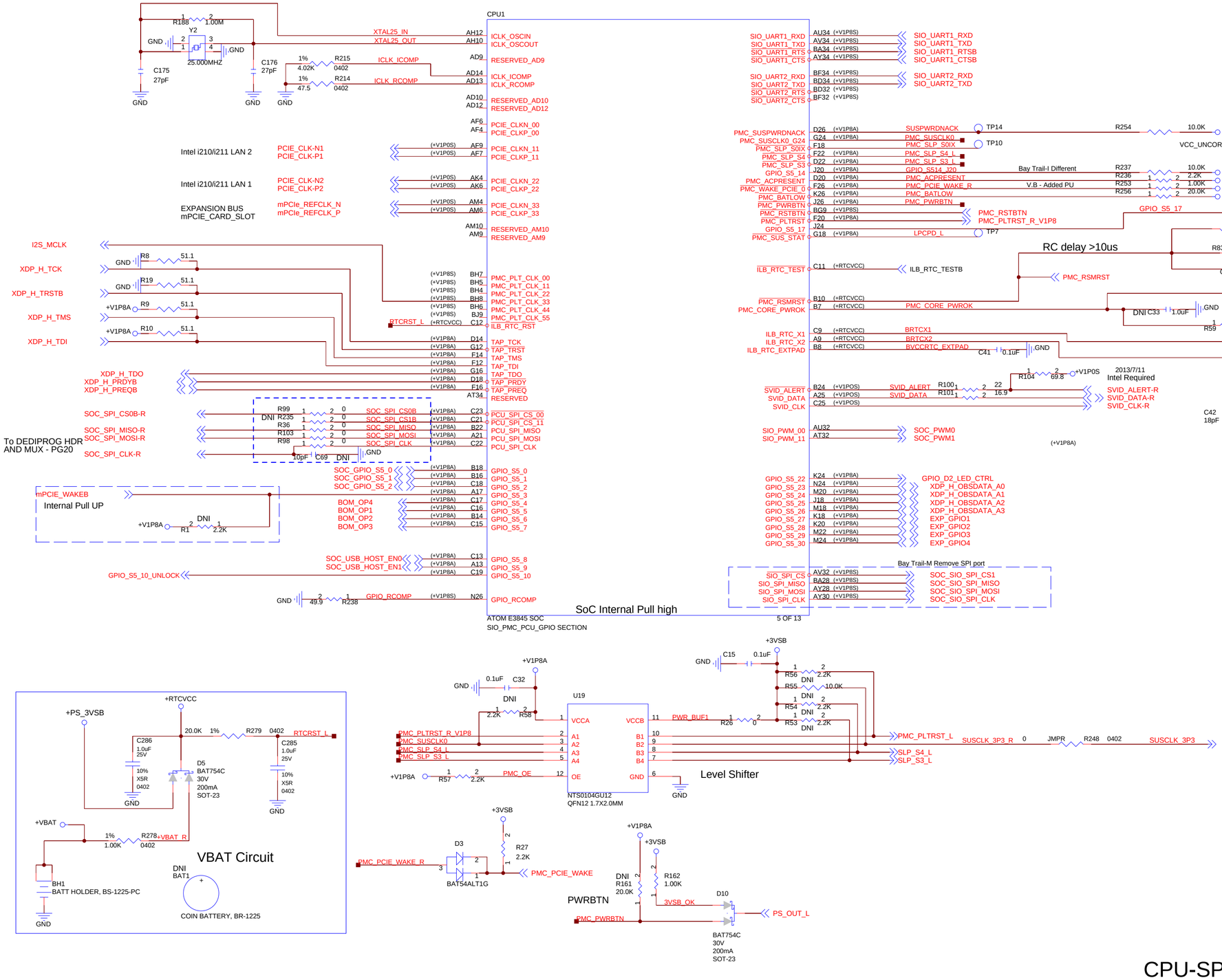

CPU-SPI/CLOCK/RTC/PMC/UART

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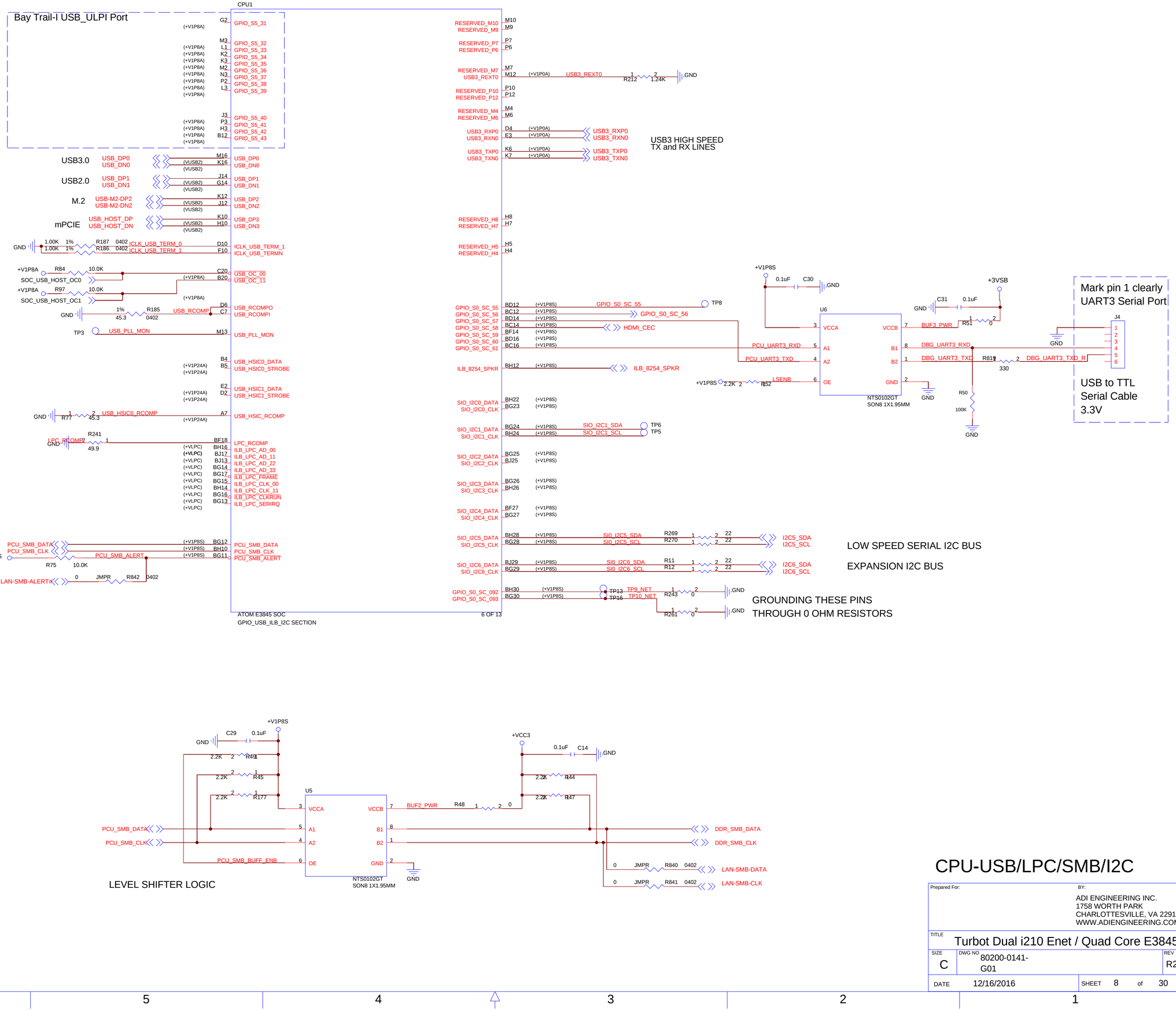

CPU-USB/LPC/SMB/I2C

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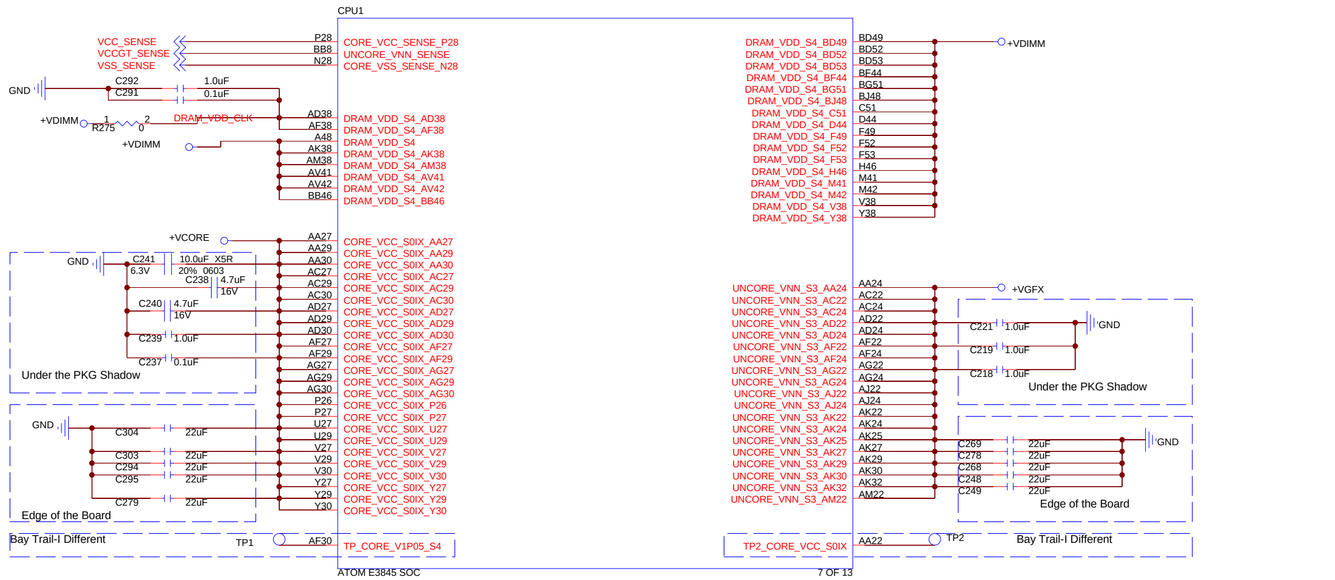

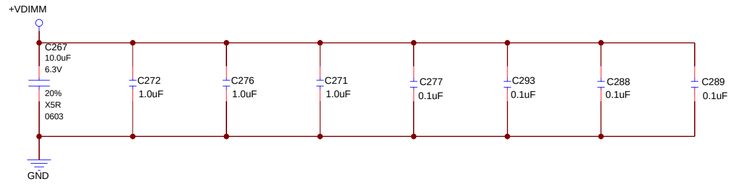

CPU-PWR1/TPM/LPC

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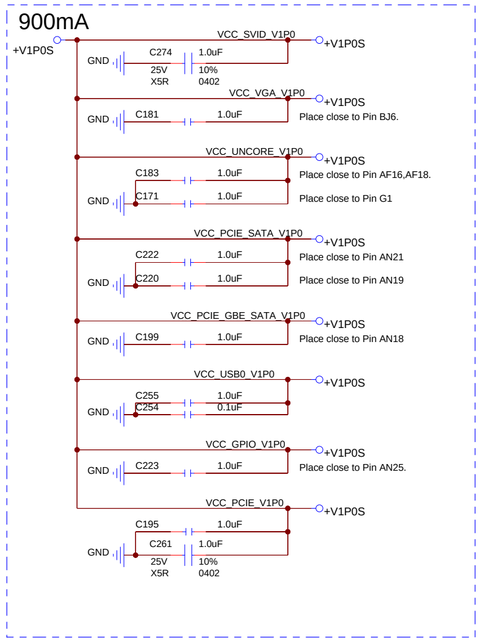

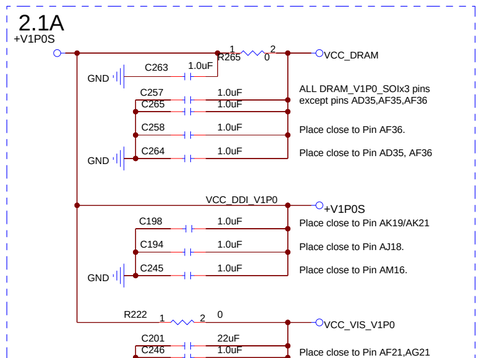

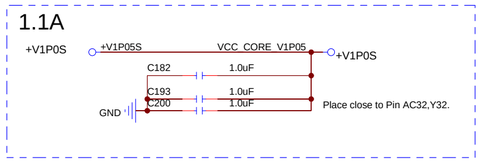

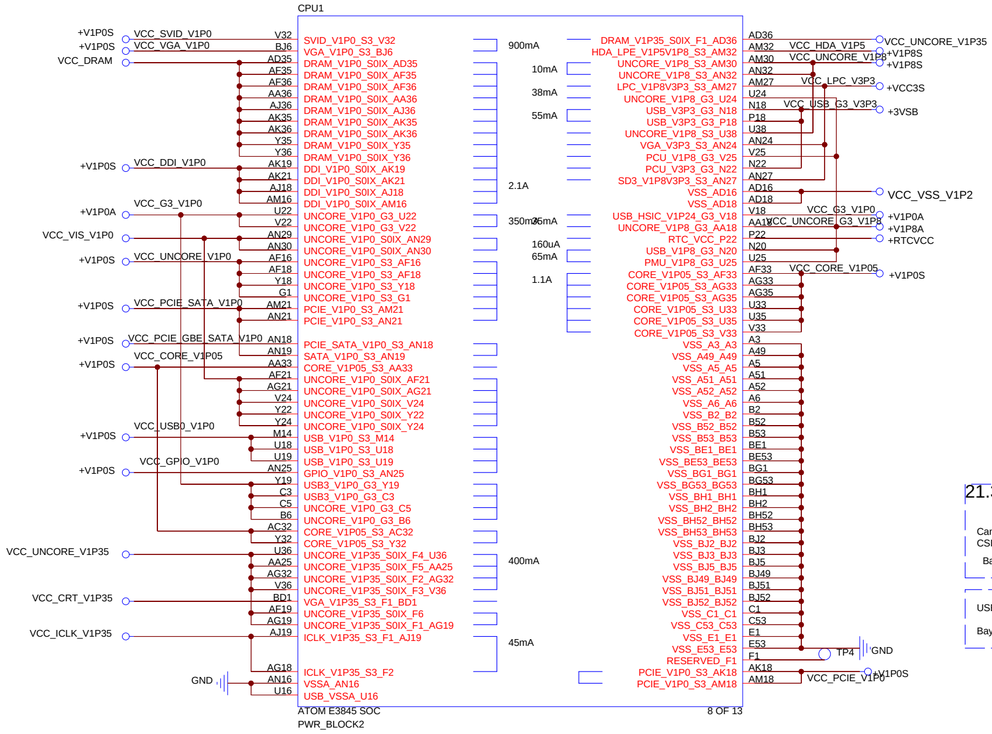

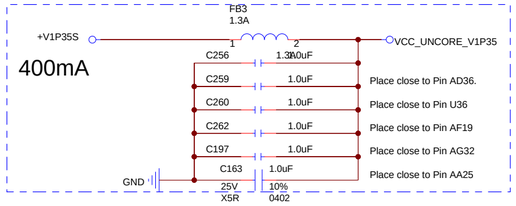

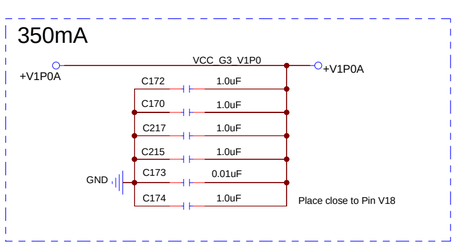

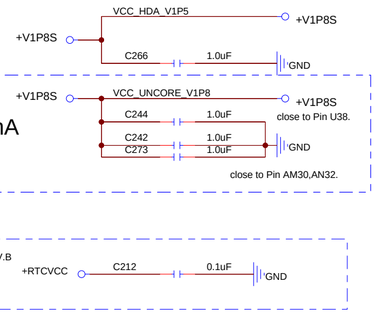

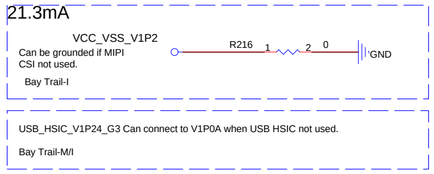

CPU-PWR2

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
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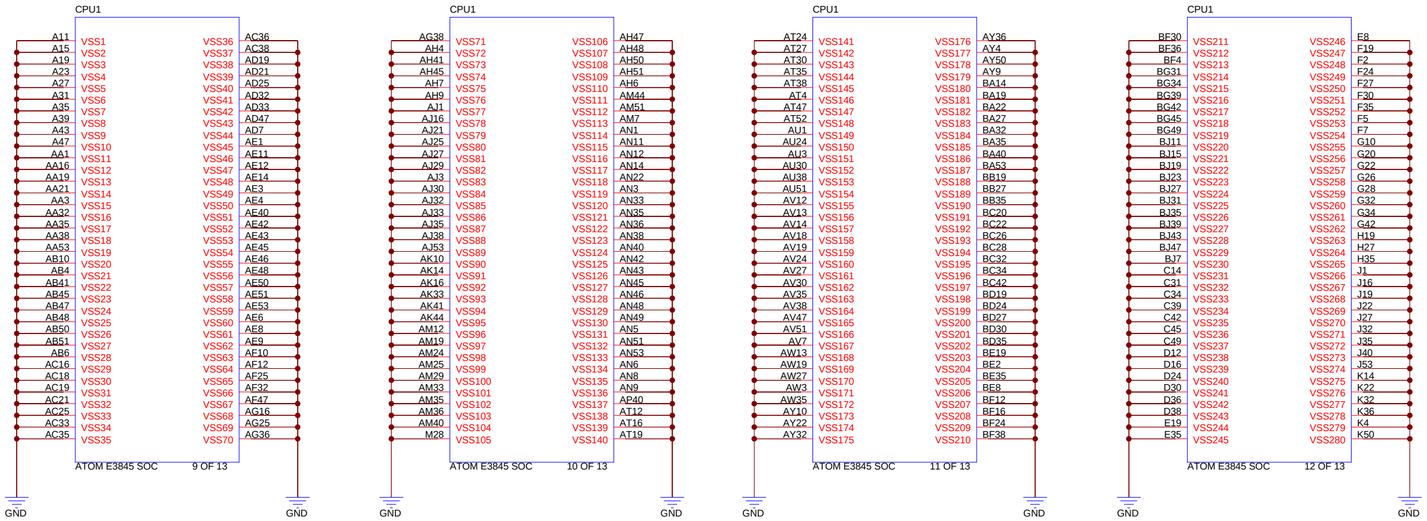
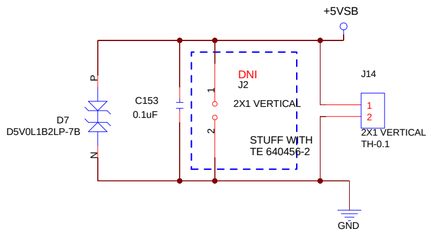


PINOUT PIN1=5V



Note: Do not Populate J2 and J14 at same time as they occupy the same space.
J2 is 2.54 mm pitch and J14 is 2.00 mm pitch.

CPU-GND

Prepared For:

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SIZE	DWG NO	REV
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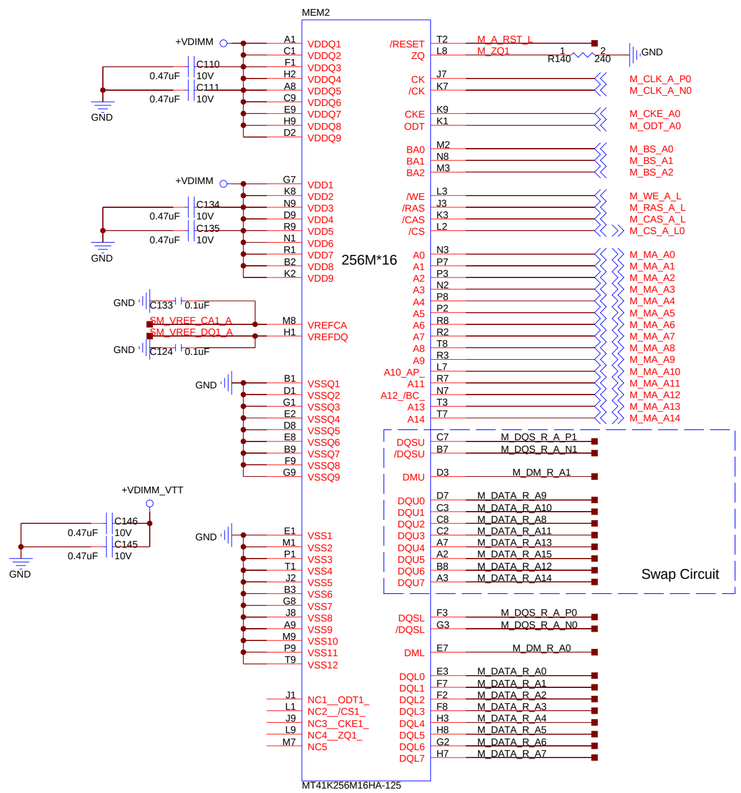

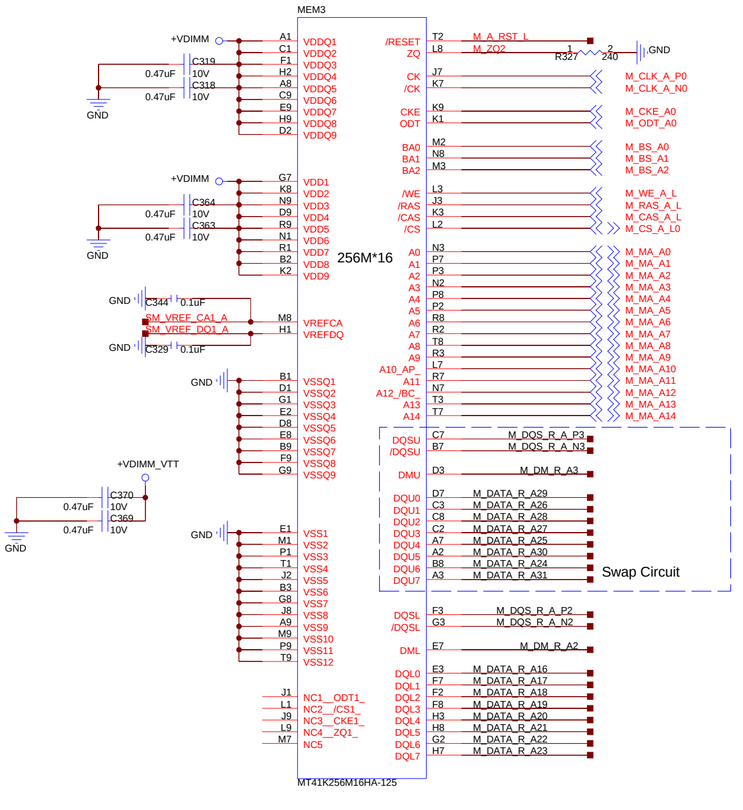

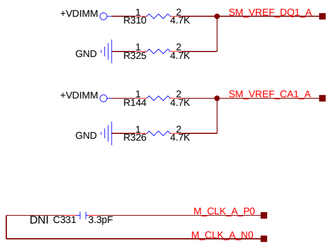

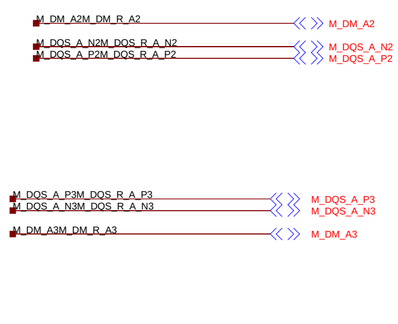

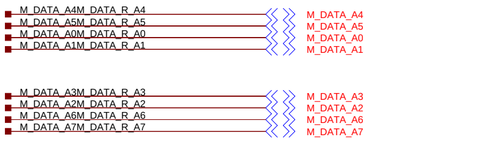

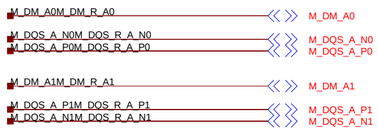

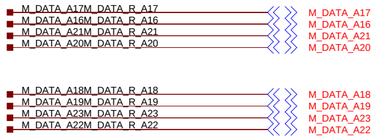

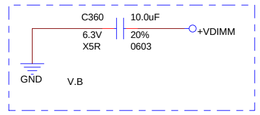

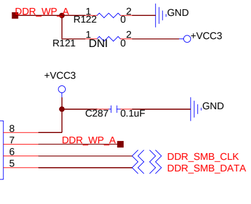

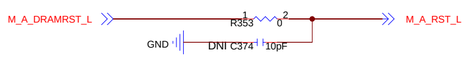

NOTE: COMPATIBLE DDR3L MEMORIES
FOR THE MINNOWMAX
ARE THE FOLLOWING:
MICRON MT41K128M16HA-125:D,
MICRON MT41K256M16HA-125:E,
MICRON MT41K512M16TNA-125:X

Memory_CHA-1

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
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SIZE C	DWG NO 80200-0141-G01
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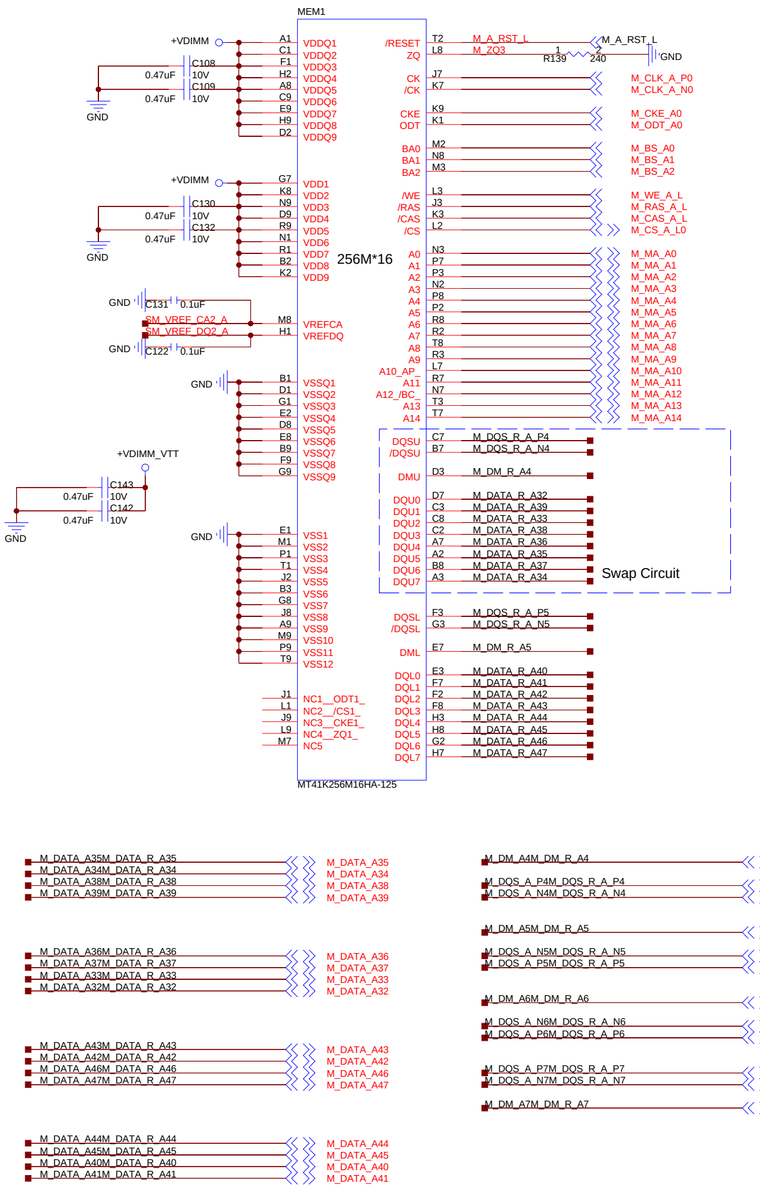

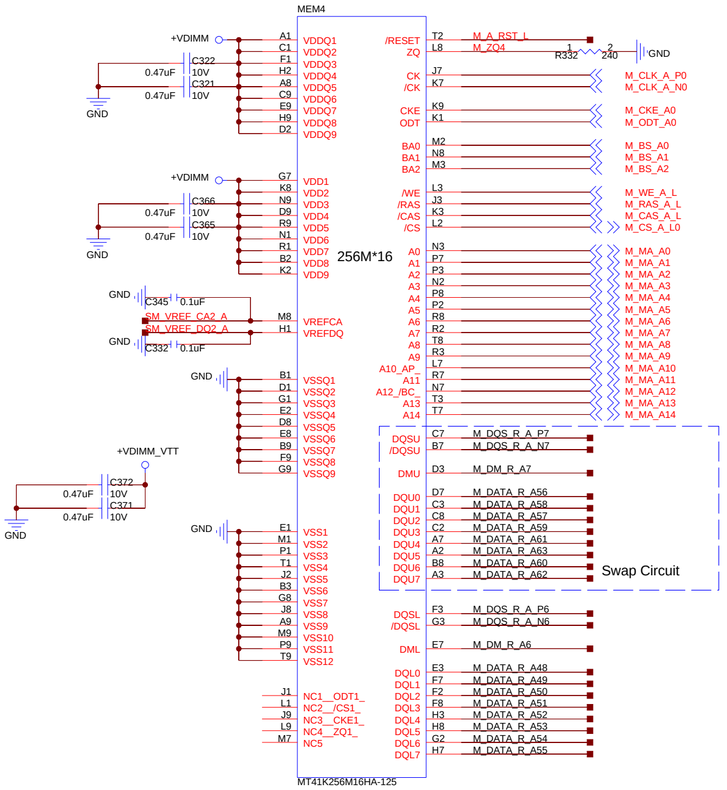

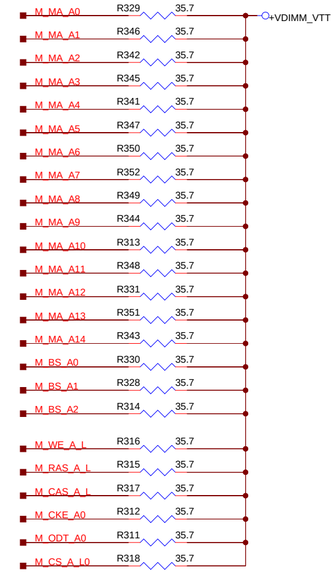

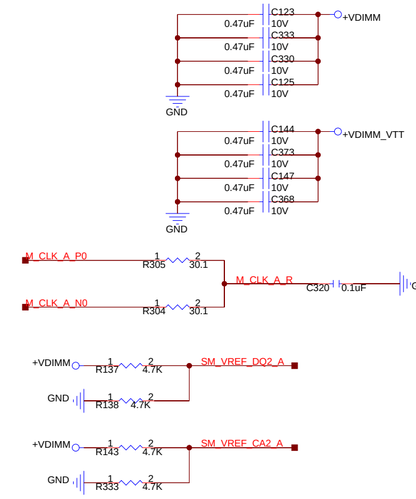

NOTE: COMPATIBLE DDR3L MEMORIES
FOR THE MINNOWMAX
ARE THE FOLLOWING:
MICRON MT41K128M16HA-125:D,
MICRON MT41K256M16HA-125:E,
MICRON MT41K512M16TNA-125:X

Memory_CHA-2

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
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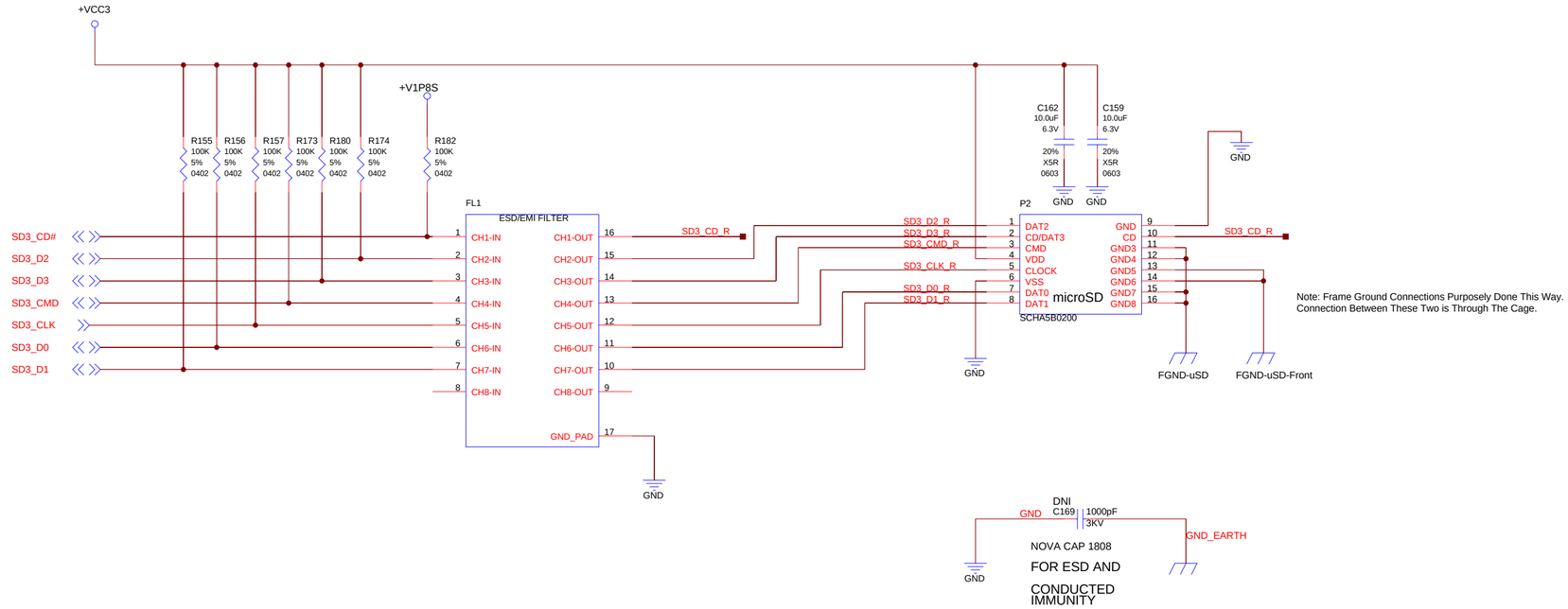
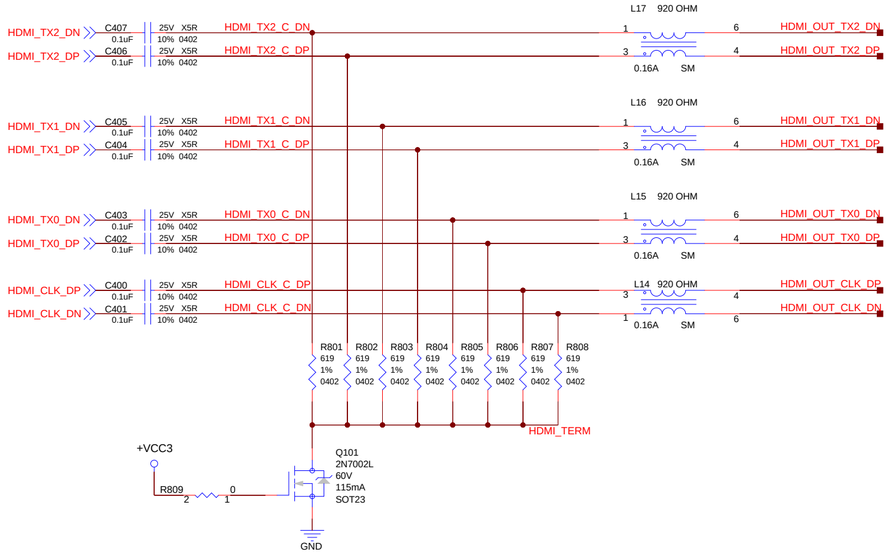
REV: R200	
DATE: 12/16/2016	SHEET 13 of 30

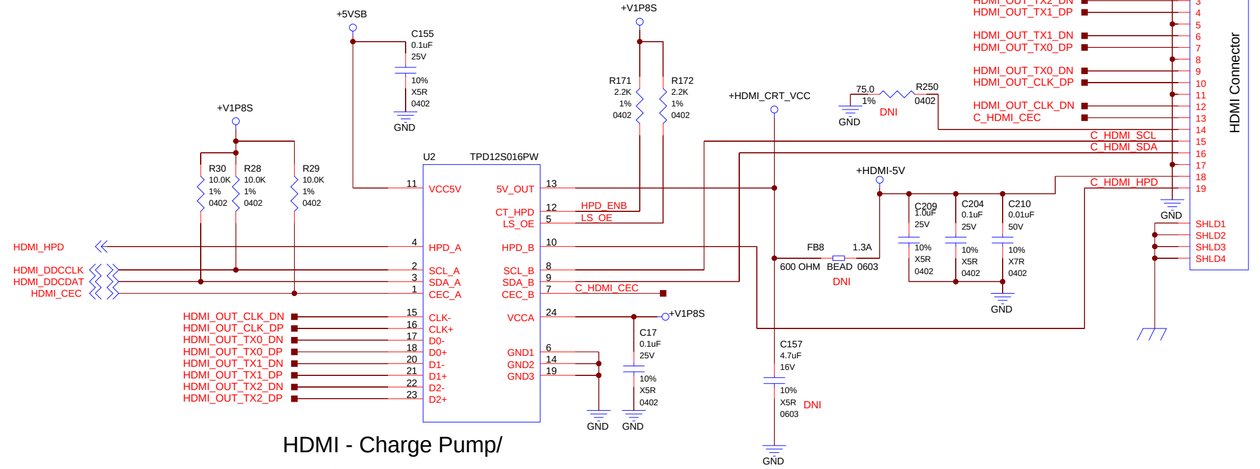


uSD CARD CAGE

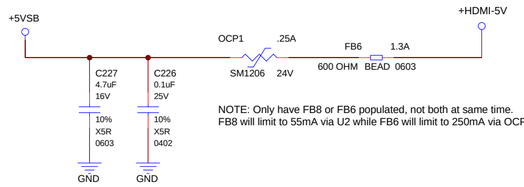
Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE C	DWG NO 80200-0141-G01
REV	R200
DATE 12/16/2016	SHEET 14 of 30

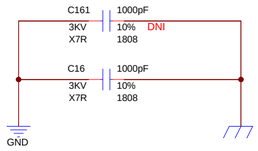
HDMI_TXn_DP/N should be longer than HDMI_CLK_DN/P





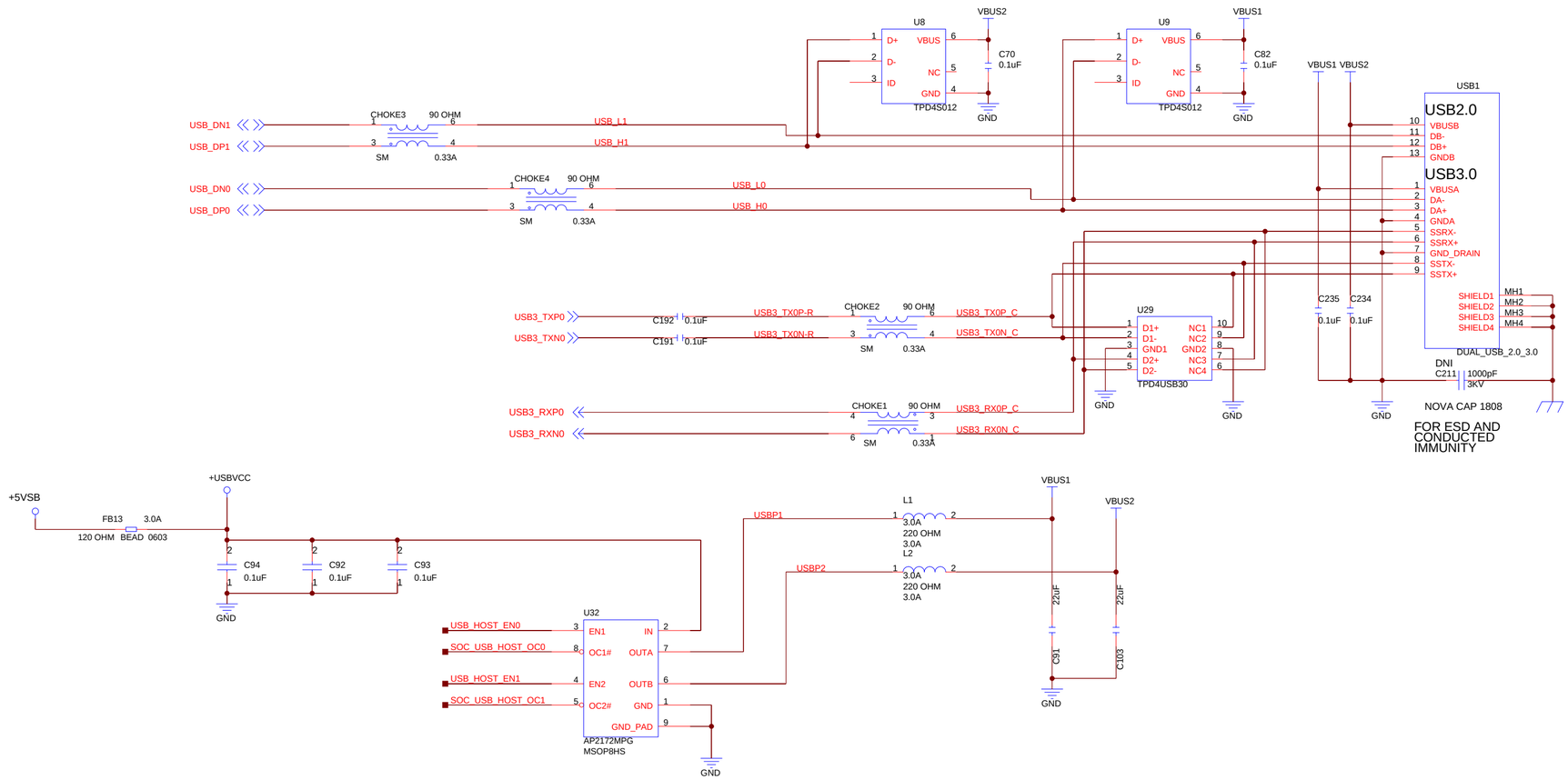
HDMI - Charge Pump/ ESD/Level Translator





HDMI

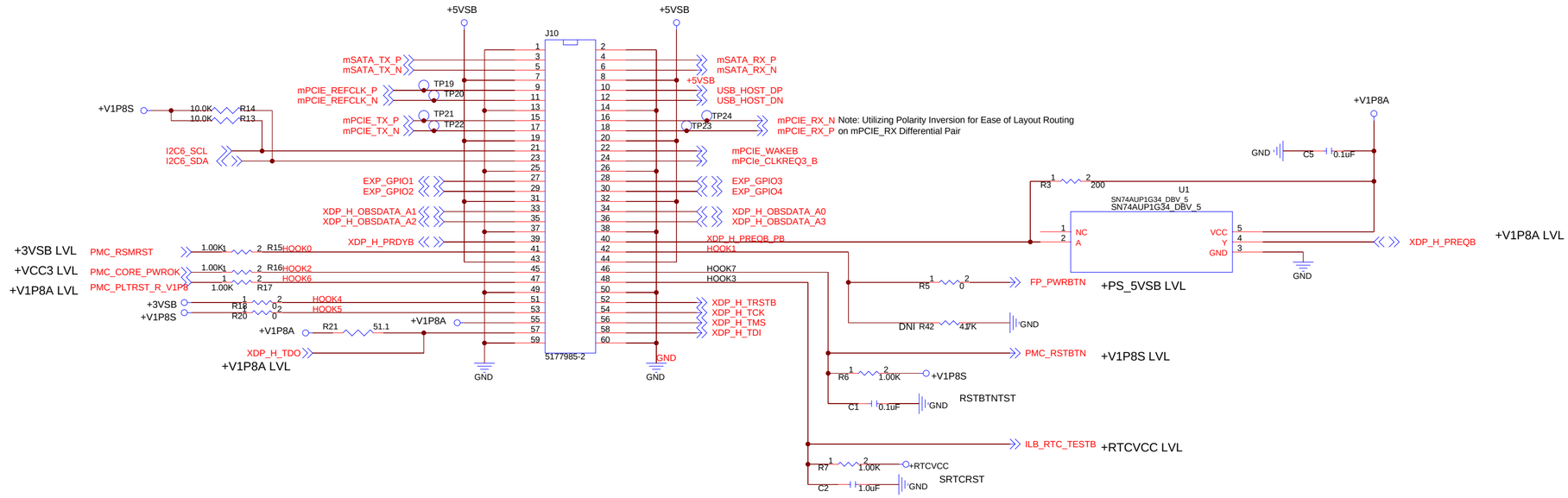
Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE C	DWG NO 80200-0141-G01
REV	R200
DATE	12/16/2016
SHEET	15 of 30



USB3+USB2

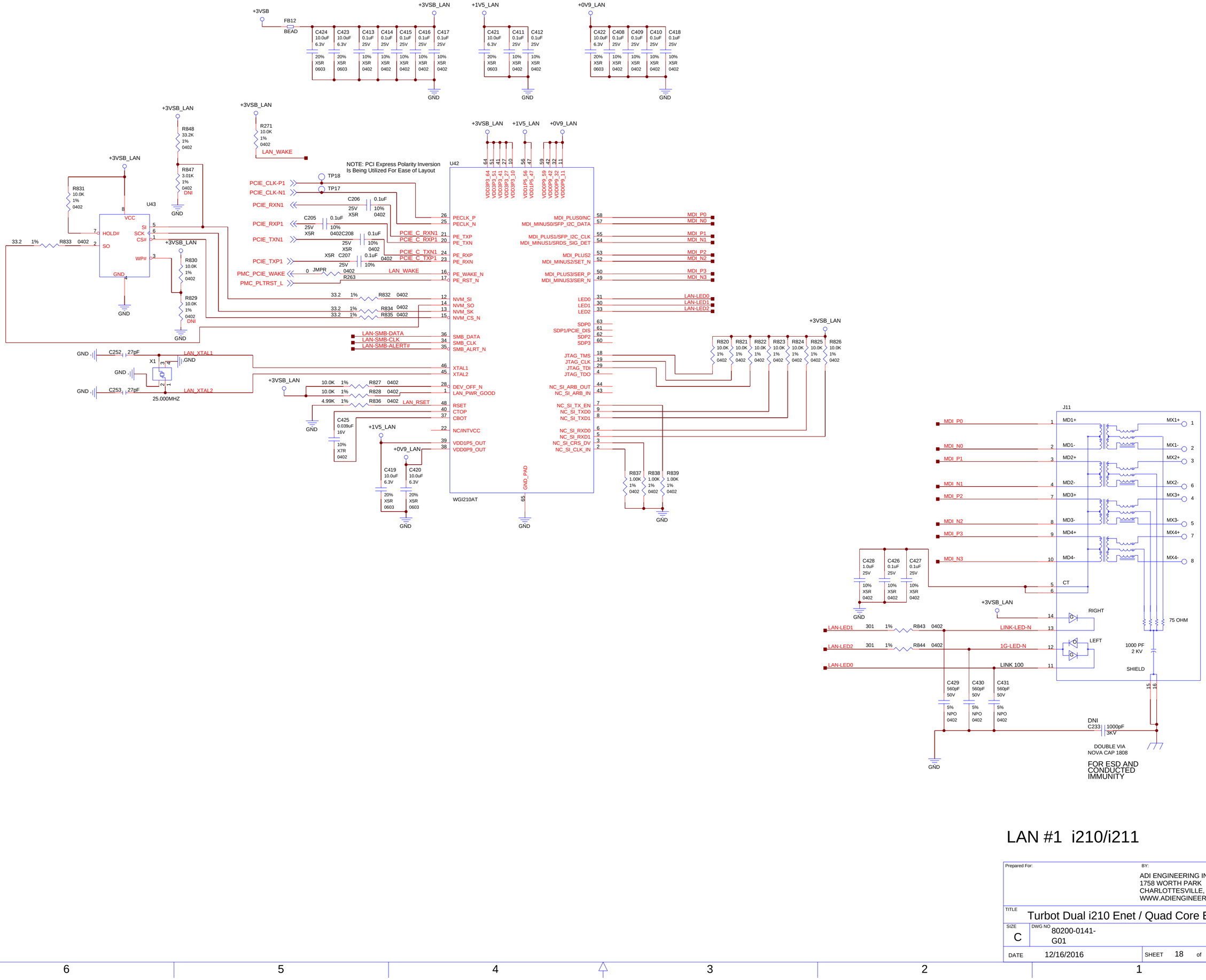
Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE: C	DWG NO: 80200-0141-G01
REV: R200	
DATE: 12/16/2016	SHEET 16 of 30

EXPANSION HS CONNECTOR WITH
mPCIE, mSATA, I2S AUDIO, GPIO, and XDP I/O



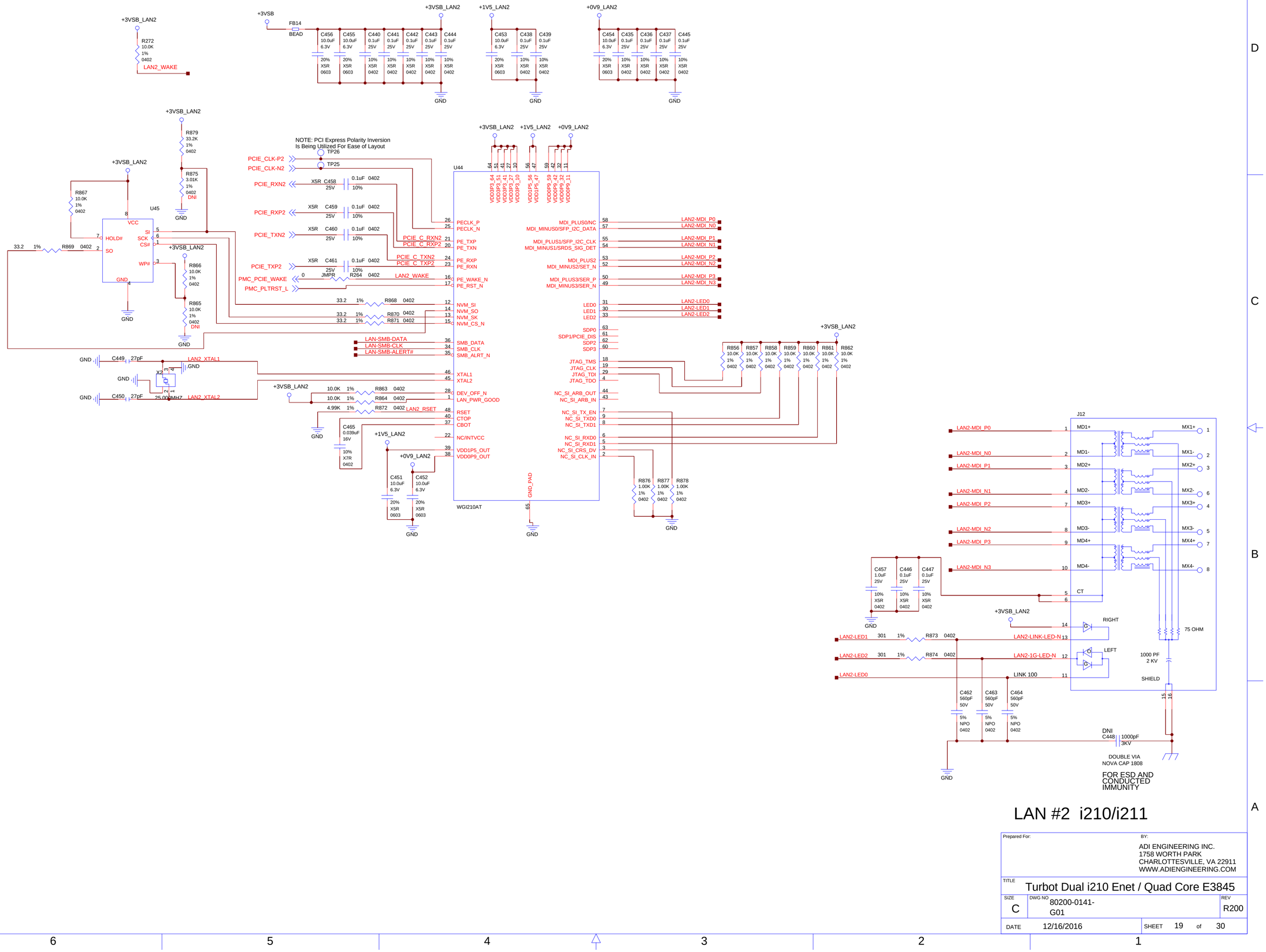
EXPANSION CONNECTOR I/O

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE C	DWG NO 80200-0141-G01
REV	R200
DATE 12/16/2016	SHEET 17 of 30



LAN #1 i210/i211

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE: C	DWG NO: 80200-0141-G01
REV: R200	
DATE: 12/16/2016	SHEET 18 of 30



LAN #2 i210/i211

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE: C	DWG NO: 80200-0141-G01
REV	R200
DATE	12/16/2016
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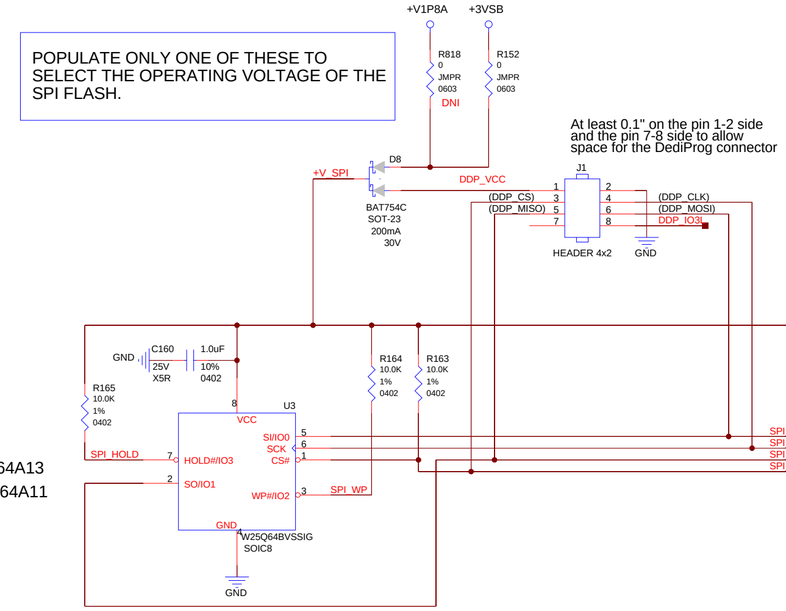
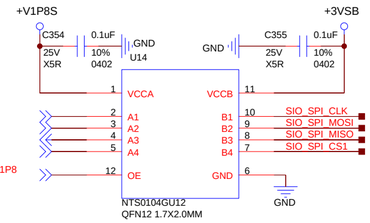
POPULATE ONLY ONE OF THESE TO SELECT THE OPERATING VOLTAGE OF THE SPI FLASH.

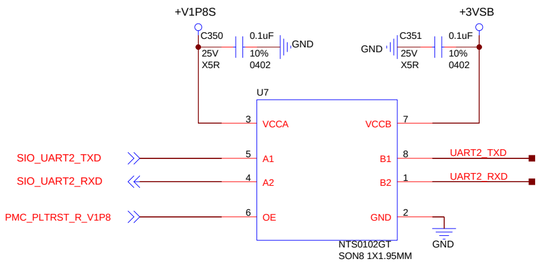


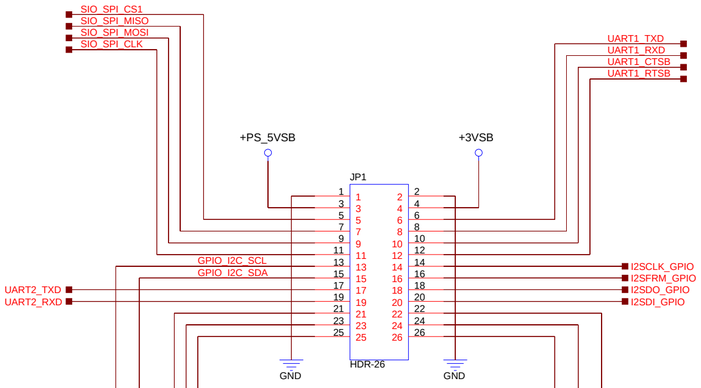
NOTE: COMPATIBLE U3 SPI ROM PARTS ARE THE FOLLOWING:

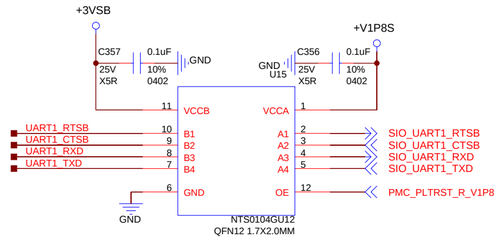
3.3V: WINBOND W25Q64BVSSIG, MICRON N25Q064A13

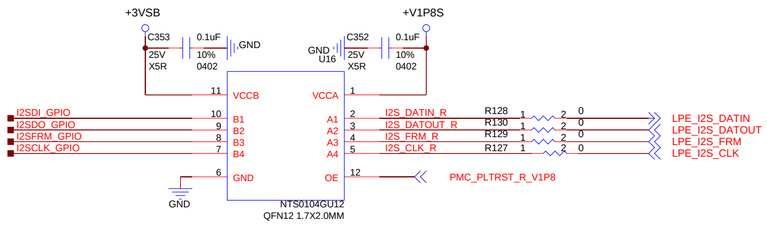
1.8V: WINBOND W25Q64FWSSIG, MICRON N25Q064A11

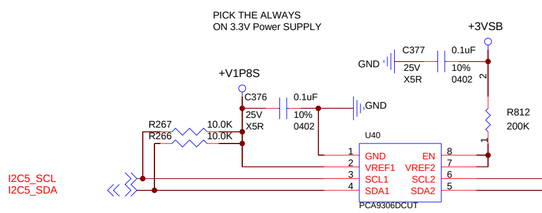


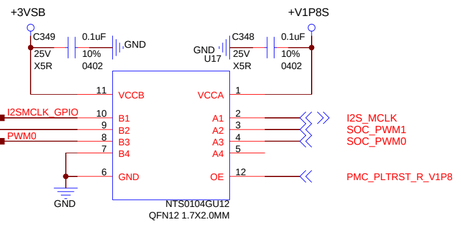


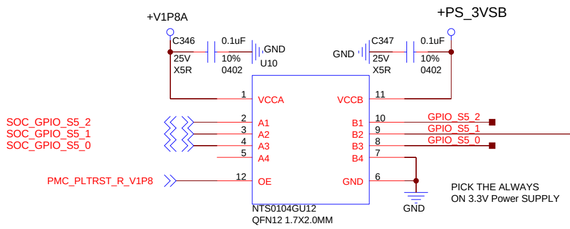










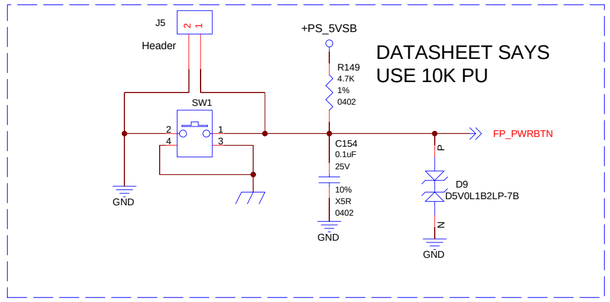


SPI PROM/LSS HEADER

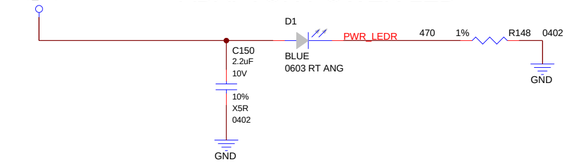
Prepared For:

BY:
ADI ENGINEERING INC.
1758 WORTH PARK
CHARLOTTESVILLE, VA 22911
WWW.ADIENGINEERING.COM

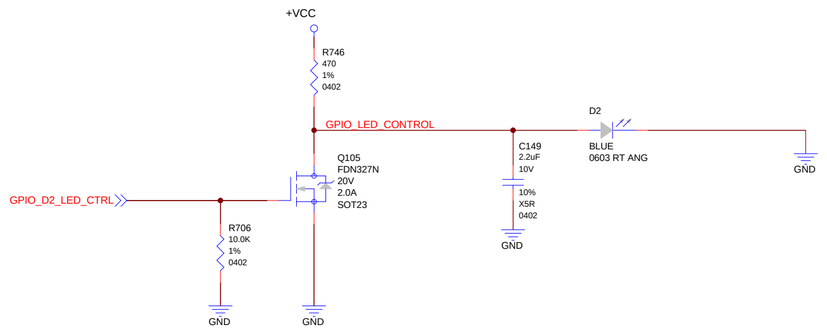
TITLE	Turbot Dual i210 Enet / Quad Core E3845		
SIZE C	DWG NO 80200-0141-G01		REV R200
DATE 12/16/2016	SHEET 20 of 30		



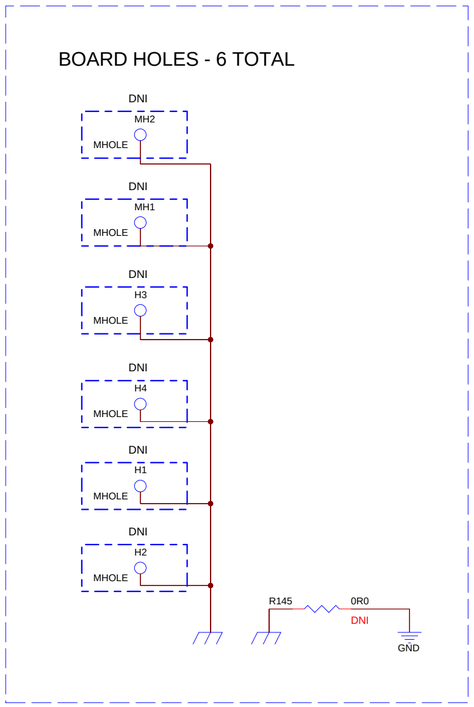
DATASHEET SAYS USE 10K PU



ADAPTOR POWER LED



SYSTEM POWER LED - GPIO CONTROLLED

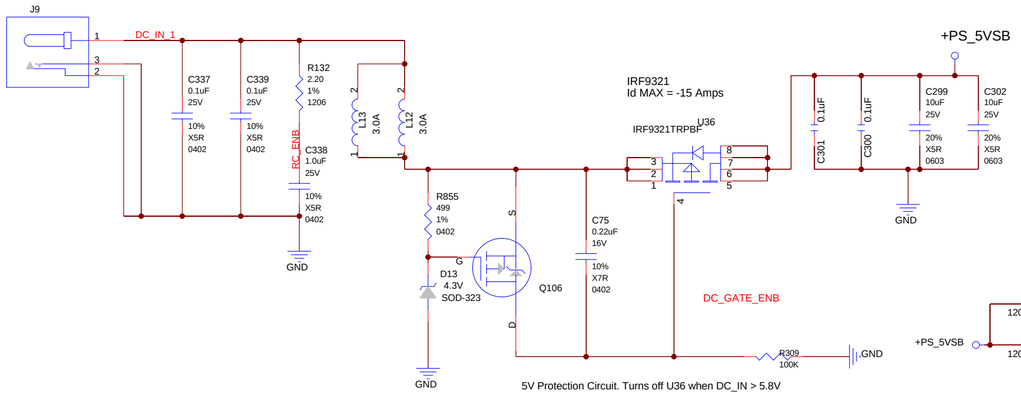


BOARD HOLES - 6 TOTAL

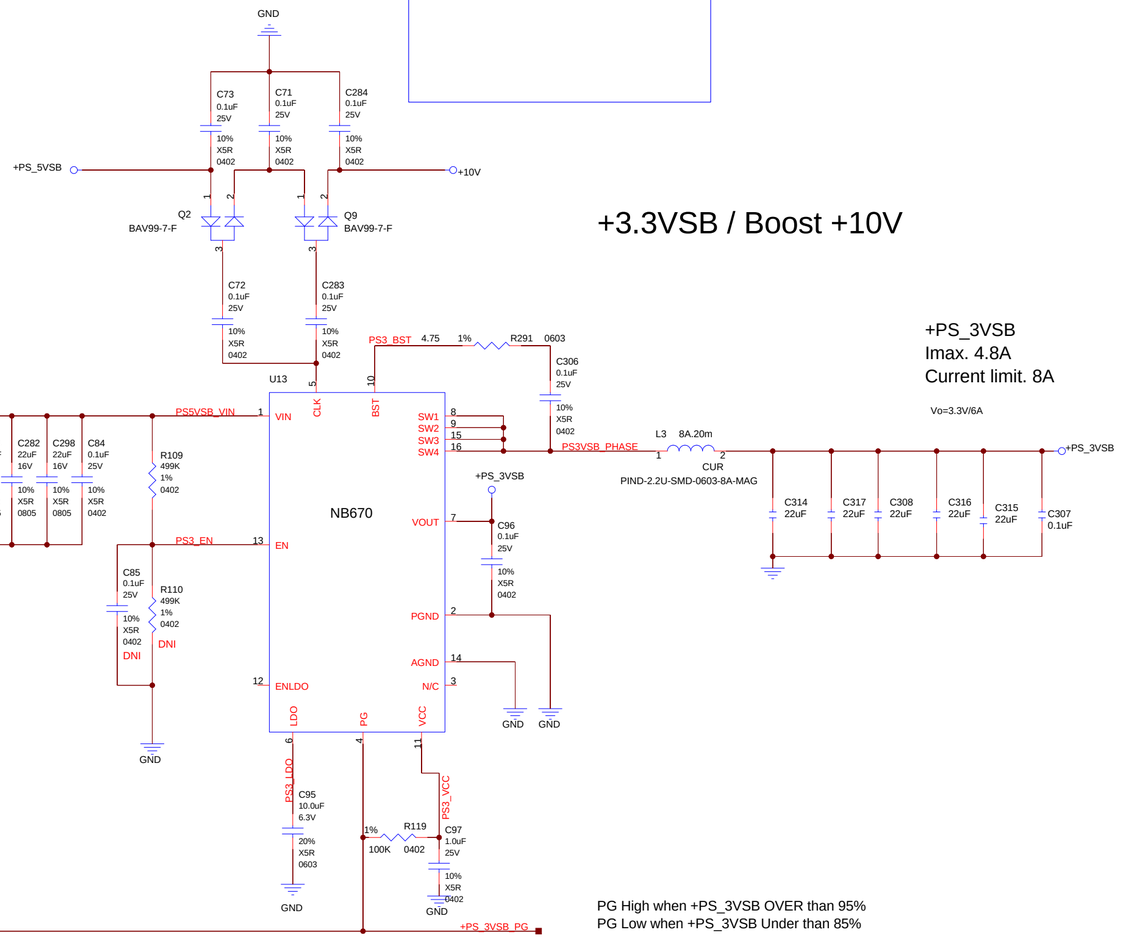
PWR BTN / LED / HOLES

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE C	DWG NO 80200-0141-G01
REV	R200
DATE 12/16/2016	SHEET 21 of 30

DC_IN 5V



+3.3VSB / Boost +10V



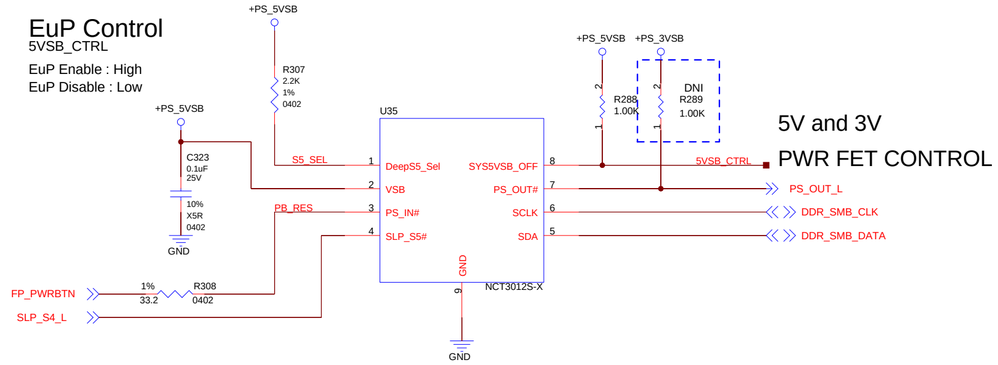
PG High when +PS_3VSB OVER than 95%
PG Low when +PS_3VSB Under than 85%

EuP Control

5VSB_CTRL

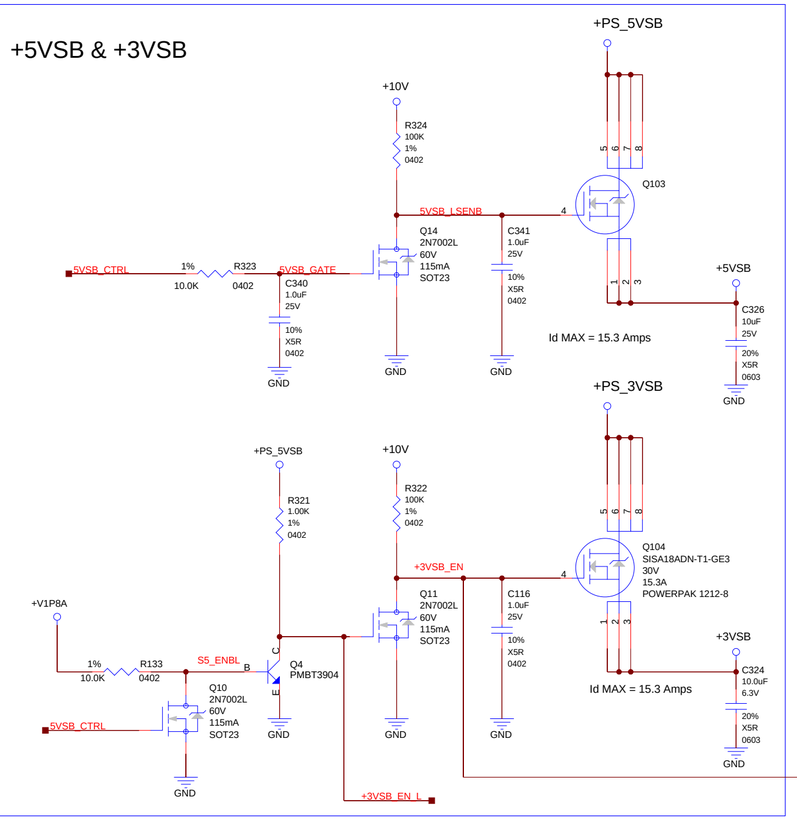
EuP Enable : High

EuP Disable : Low

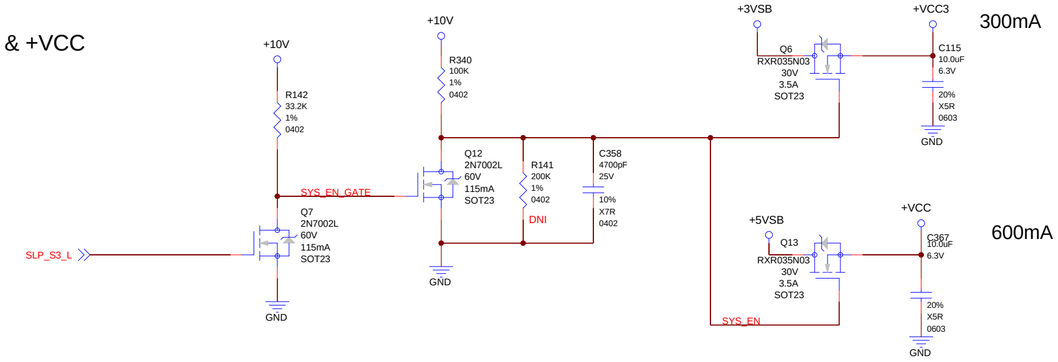


5V and 3V PWR FET CONTROL

+5VSB & +3VSB



+VCC3 & +VCC



+5V

+3.3V

D6 BAT54ALT1G

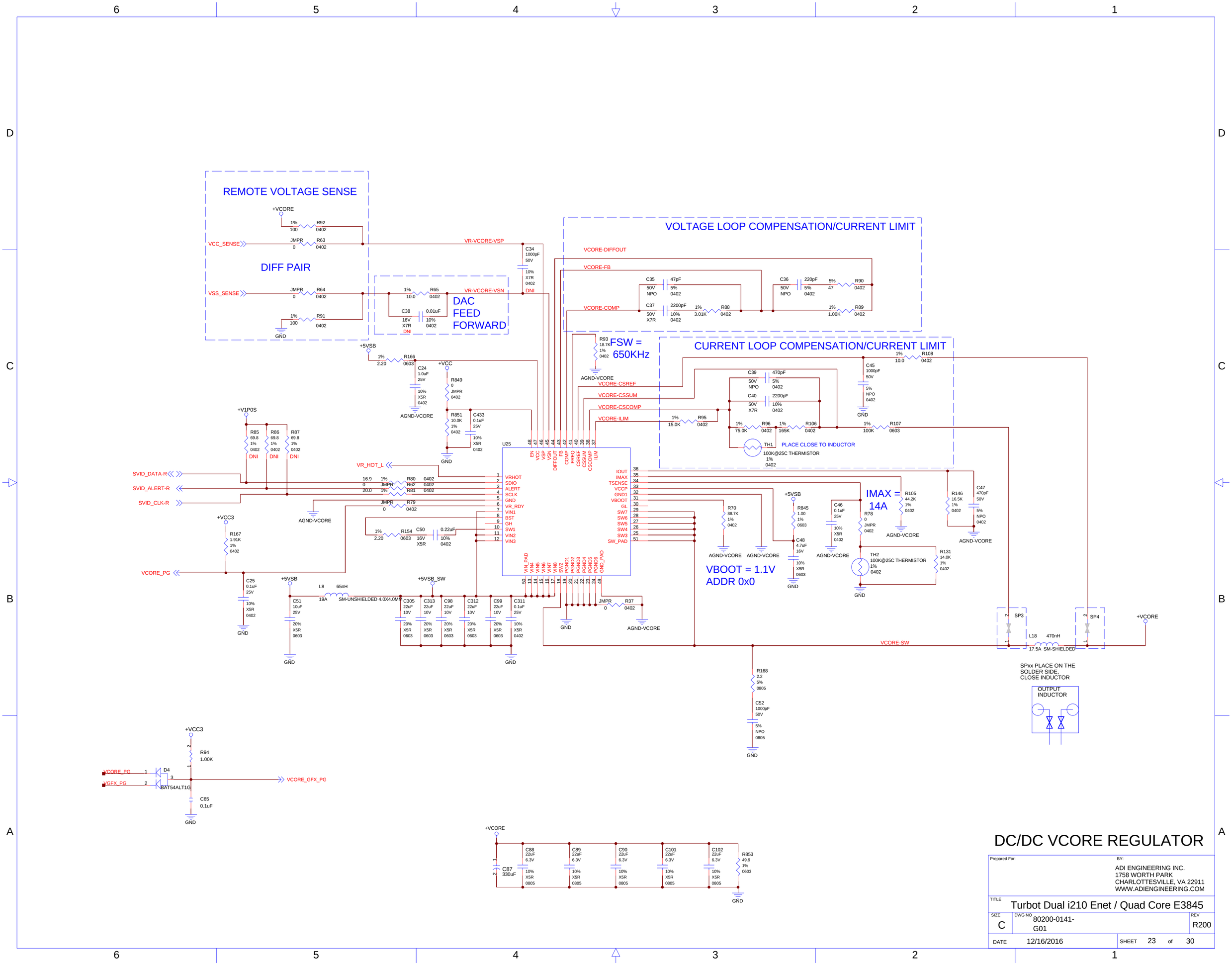
PMC_RSMRST

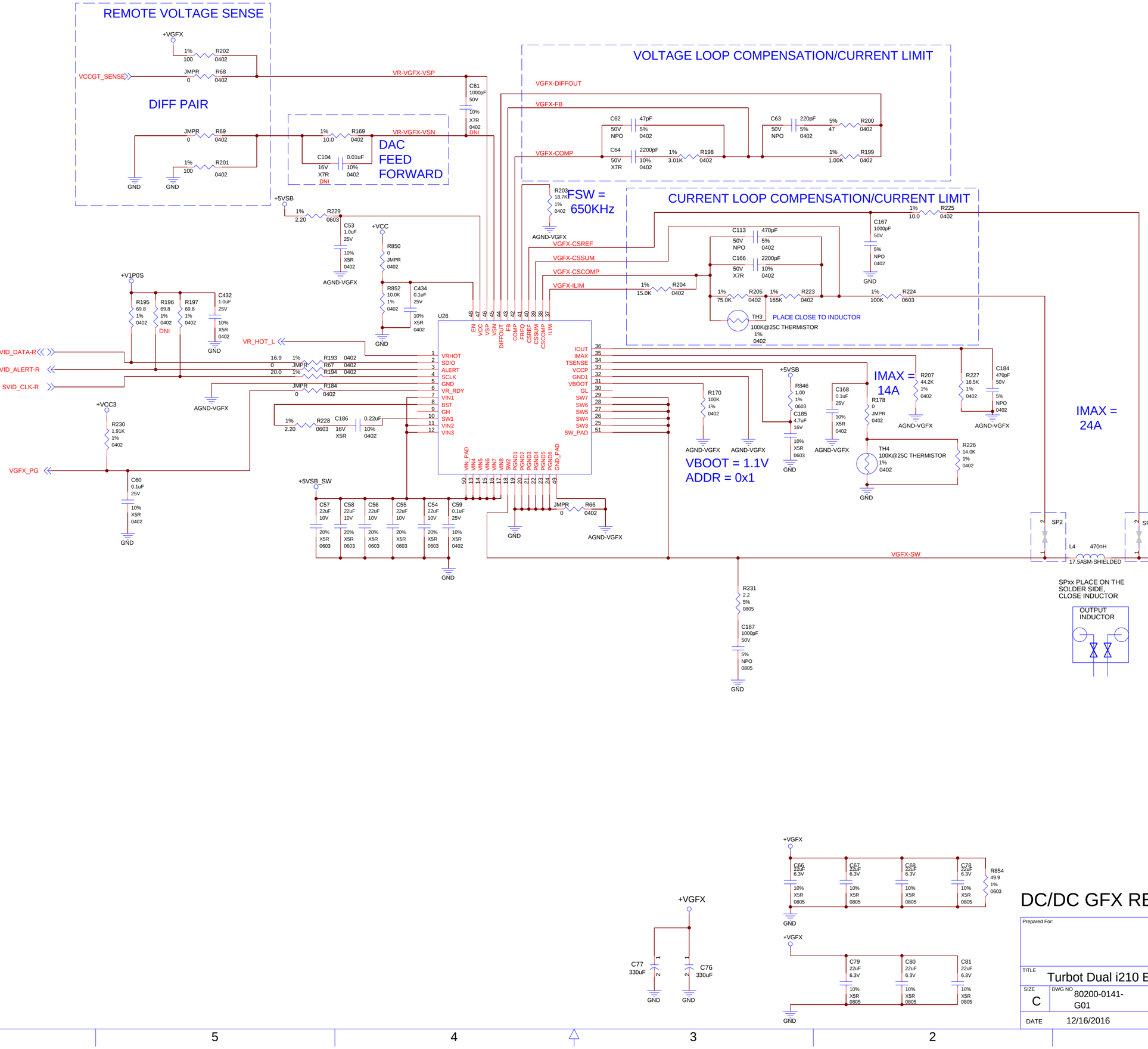
+10V

VRTC LEVEL (+3VSB)

DC-5VSB/3VSB / VCC / VCC3

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE C	DWG NO 80200-0141-G01
REV	R200
DATE 12/16/2016	SHEET 22 of 30


REMOTE VOLTAGE SENSE
+VCORE
VCC_SENSE
VSS_SENSE
DIFF PAIR
GND
DAC FEED FORWARD
VOLTAGE LOOP COMPENSATION/CURRENT LIMIT
VCORE-DIFFOUT
VCORE-FB
VCORE-COMP
FSW = 650KHz
AGND-VCORE
CURRENT LOOP COMPENSATION/CURRENT LIMIT
VCORE-CSREF
VCORE-CSSUM
VCORE-CSCOMP
VCORE-ILIM
TH1
PLACE CLOSE TO INDUCTOR
100K@25C THERMISTOR
+5VSB
+VCC
+V1P0S
AGND-VCORE
U25
SVID_DATA-R
SVID_ALERT-R
SVID_CLK-R
VR_HOT_L
VRHOT
SDIO
ALERT
SCLK
GND
VR_RDY
VIN1
BST
GH
SW1
VIN2
VIN3
+VCC3
VCORE_PG
+5VSB_SW
L8 65nH
19A SM-UNSHIELDED 4.0X4.0MM
IOUT
IMAX
TSENSE
VCCP
GND1
VBOOT
GL
SW7
SW6
SW5
SW4
SW3
SW_PAD
IMAX = 14A
VBOOT = 1.1V
ADDR 0x0
TH2
100K@25C THERMISTOR
VCORE-SW
SP3
SP4
L18 470nH 17.5A SM-SHIELDED
+VCORE
SPxx PLACE ON THE SOLDER SIDE, CLOSE INDUCTOR
OUTPUT INDUCTOR
D4
BAT54ALT1G
VGFX_PG
VCORE_GFX_PG
+VCORE
DC/DC VCORE REGULATOR
ADI ENGINEERING INC.
1758 WORTH PARK
CHARLOTTESVILLE, VA 22911
WWW.ADIENGINEERING.COM
Turbot Dual i210 Enet / Quad Core E3845
SIZE C
DWG NO 80200-0141-G01
REV R200
DATE 12/16/2016
SHEET 23 of 30


REMOTE VOLTAGE SENSE
DIFF PAIR
VCCGT_SENSE
VR-VGFX-VSP
VR-VGFX-VSN
DAC FEED FORWARD
VOLTAGE LOOP COMPENSATION/CURRENT LIMIT
VGFX-DIFFOUT
VGFX-FB
VGFX-COMP
FSW = 650KHz
CURRENT LOOP COMPENSATION/CURRENT LIMIT
VGFX-CSREF
VGFX-CSSUM
VGFX-CSCOMP
VGFX-ILIM
PLACE CLOSE TO INDUCTOR
100K@25C THERMISTOR
IMAX = 14A
IMAX = 24A
VBOOT = 1.1V
ADDR = 0x1
SVID_DATA-R
SVID_ALERT-R
SVID_CLK-R
VR_HOT_L
VGFX_PG
VGFX-SW
SPxx PLACE ON THE SOLDER SIDE. CLOSE INDUCTOR
OUTPUT INDUCTOR
DC/DC GFX REGULATOR
ADI ENGINEERING INC.
1758 WORTH PARK
CHARLOTTESVILLE, VA 22911
WWW.ADIENGINEERING.COM
Turbot Dual i210 Enet / Quad Core E3845
80200-0141-G01
R200
12/16/2016
24 of 30

VDIMM

F= (Vin - 0.5) / 3.85p*Vin*Rton
Rton=806K , F=285KHz

Rton

RT8207M S3 and S5 truth table

STATE	S3	S5	VDDQ	VTTREF	VTT
S0	Hi	Hi	on		on
S3	Lo	Hi	on		Off(Hi-Z)
S4/S5	Lo	Lo	Off Discharge	Off Discharge	Off Discharge

+VDIMM
+5VSB
R124 10.0K
R816 464K 1% 0402
R810 10.0K
R813 2.20
R817 3.83K 1% 0402
C381 DNI 1000pF
C380 1.0uF
C379 1.0uF
GND
U41
CS
VDD
VDDP
DRAM_S4_PWROK
R293 0
DRAM_PWROK
PGOOD
SLP_S4_L
R300 0
TON
EN_VDDQ
S5
SLP_S3_L
R302 0
EN_VTT
S3
MODE
DEM
VTT
VTTSNS
VTTREF
BOOT
UGATE
PHASE
LGATE
FB
VDDQ
VLDOIN
GND
VTTGND
PGND
GND_PAD
RT8207
QFN24HS
R298 4.75
DDR_BST
C309 0.1uF
DDR_PHASE
Q102
FDMS3604S
30V
13A/23A
MLP10 5X6MM
L5 3.0A
L6 3.0A
DDR3L_VIN
C126 22uF
C328 22uF
C127 22uF
C128 22uF
C327 0.1uF
DCR=10mohm
Idc= 11A
L11
CUR
C137 22uF
C140 22uF
C141 22uF
C136 0.1uF
C138 0.1uF
C129 330uF 2.0V
1.35V
Imax. 7.1A
OCP. 11A
C114 DNI 0.1uF
C112 DNI 0.1uF
C378 DNI 0.1uF
R811 DNI 10.0K
C342 0.22uF
C359 10.0uF 6.3V 20% X5R 0603
R814 8.06K 1% 0402
C382 22pF 50V 2% NPO 0402
R815 10.0K 1% 0402
Close to Pin5
C139 0.1uF

+VDIMM_VTT

Imax:0.6A

+VDIMM_VTT
C361 10.0uF 6.3V 20% X5R 0603
C362 10.0uF 6.3V 20% X5R 0603
C343 0.1uF

DC/DC-DIMM/DDR_VTT

Prepared For:

BY:
ADI ENGINEERING INC.
1758 WORTH PARK
CHARLOTTESVILLE, VA 22911
WWW.ADIENGINEERING.COM

TITLE: Turbot Dual i210 Enet / Quad Core E3845

SIZE: C
DWG NO: 80200-0141-G01
REV: R200

DATE: 12/16/2016
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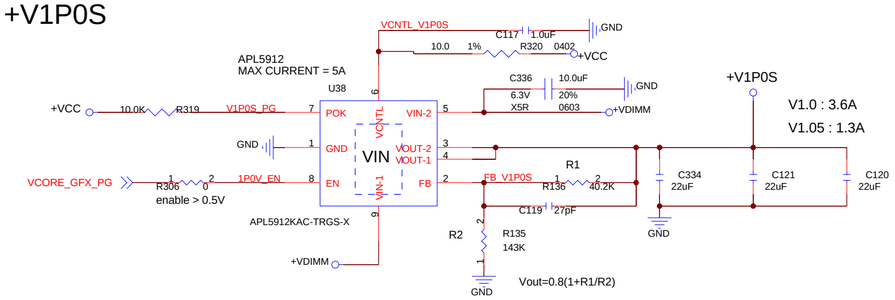
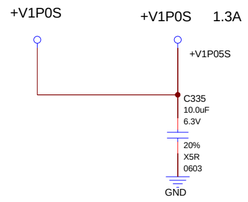
+V1P0S



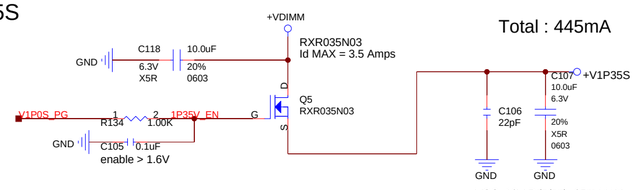
+V1P05S

Combine +V1P0S and +V1P05S



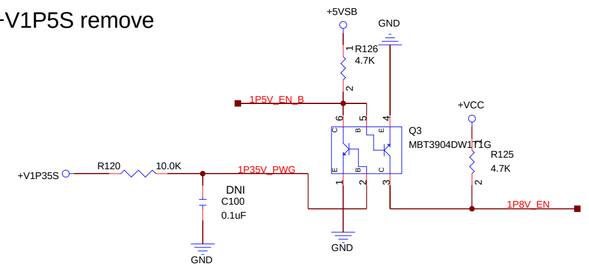
+V1P35S

Total : 445mA

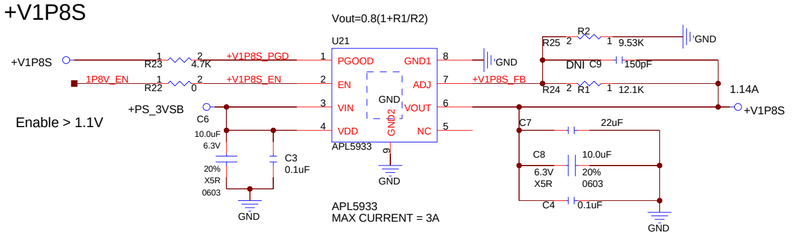


2013/7/31

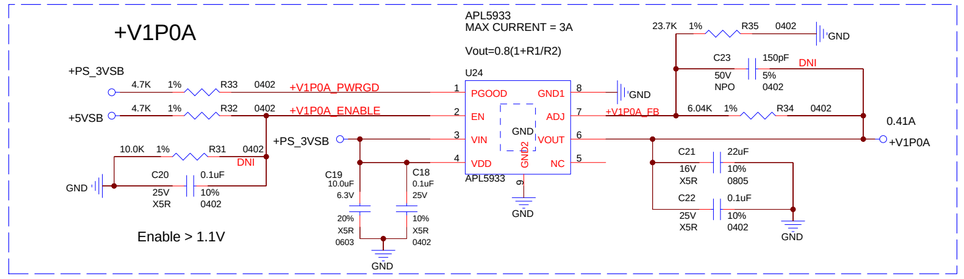
+V1P5S remove



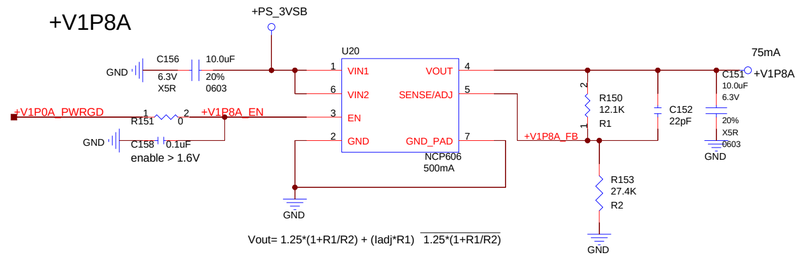
+V1P8S



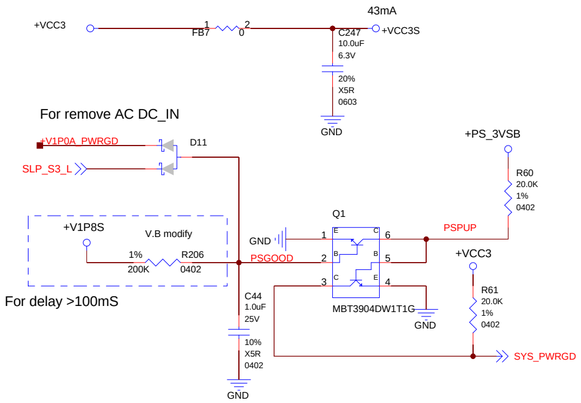
+V1P0A



+V1P8A

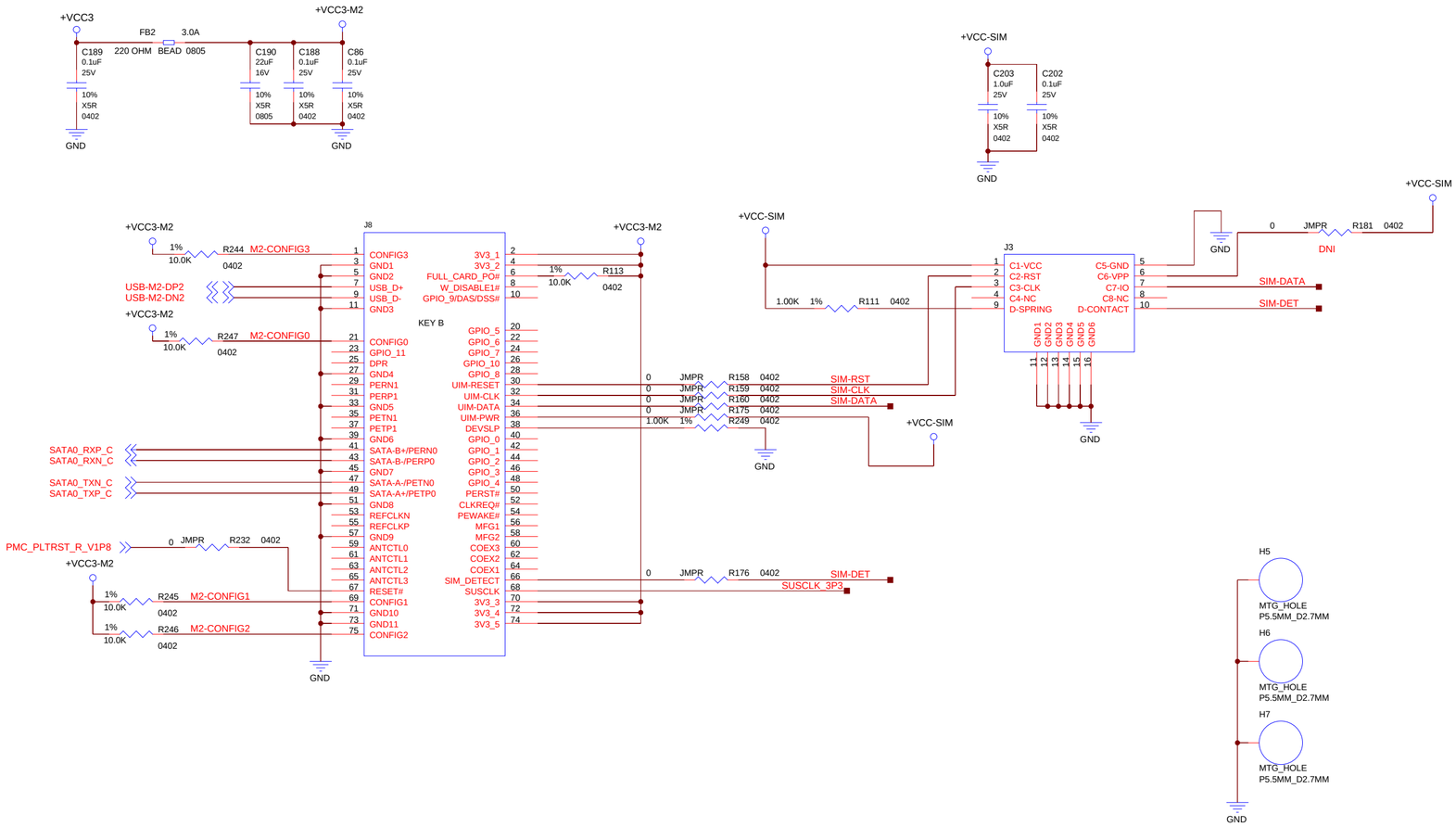


+VCC3S(For CPU)



DC-DC VOLTAGE

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE C	DWG NO 80200-0141-G01
REV	R200
DATE 12/16/2016	SHEET 26 of 30



M.2

Prepared For:	BY: ADI ENGINEERING INC. 1758 WORTH PARK CHARLOTTESVILLE, VA 22911 WWW.ADIENGINEERING.COM
TITLE	Turbot Dual i210 Enet / Quad Core E3845
SIZE: C	DWG NO: 80200-0141-G01
REV: R200	
DATE: 12/16/2016	SHEET 27 of 30

PCH-GPIO function

Pin Name	Power Well	Usage	Boot Set
GPIO_S5[00]	1P8VSB, 20k,H	SOC_GPIO_S5_0 (LSS CONN)	GPO
GPIO_S5[01]	1P8VSB, 20k,H	SOC_GPIO_S5_1 (LSS CONN)	GPO
GPIO_S5[02]	1P8VSB, 20k,H	SOC_GPIO_S5_2 (LSS CONN)	GPO
GPIO_S5[03]	1P8VSB, 20k,H	mPCIE_WAKEB	GPI
GPIO_S5[04]	1P8VSB, 20k,L	OPEN	GPO
GPIO_S5[05]	1P8VSB, 20k,L	BOM OPTION	GPI
GPIO_S5[06]	1P8VSB, 20k,L	BOM OPTION	GPI
GPIO_S5[07]	1P8VSB, 20k,L	BOM OPTION	GPI
GPIO_S5[08]	1P8VSB, 20k,H	HDMI_DC_DC ENABLE	GPO
GPIO_S5[09]	1P8VSB, 20k,H	HDMI LD SWITCH ENABLE	GPO
GPIO_S5[10]	1P8VSB, 20k,H	TXE UNLOCK control	GPO
GPIO_S0_SC[022]	1P8V, 20k,H	OPEN	GPO
GPIO_S0_SC[023]	1P8V, 20k,H	XDP_H_OBSDATA_A0	GPO
GPIO_S0_SC[024]	1P8V, 20k,H	XDP_H_OBSDATA_A1	GPO
GPIO_S0_SC[025]	1P8V, 20k,H	XDP_H_OBSDATA_A2	GPO
GPIO_S0_SC[026]	1P8V, 20k,H	XDP_H_OBSDATA_A3	GPO
GPIO_S0_SC[027]	1P8V, 20k,H	EXPANSION_BUS GPIO1	GPO
GPIO_S0_SC[028]	1P8V, 20k,H	EXPANSION_BUS GPIO2	GPO
GPIO_S0_SC[029]	1P8V, 20k,H	EXPANSION_BUS GPIO3	GPO
GPIO_S0_SC[030]	1P8V, 20k,H	EXPANSION_BUS GPIO4	GPO
GPIO_S0_SC[058]	1P8V, 20k,L	GPIO reserved	GPO
GPIO_S0_SC[059]	1P8V, 20k,L	GPIO reserved	GPO
GPIO_S0_SC[060]	1P8V, 20k,L	GPIO reserved	GPO
GPIO_S0_SC[057]	1P8V, 20k,H	Debug Port UART3 TXD	UART
GPIO_S0_SC[061]	1P8V, 20k,H	Debug Port UART3 RXD	UART

Interrupt mapping

Function	INT# port	PCIe*1 port	Device
LAN	INTC#	port 2	Intel i210/211

GPIO/HW MAPPING

Prepared For:

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1758 WORTH PARK
CHARLOTTESVILLE, VA 22911
WWW.ADIENGINEERING.COM

TITLE		
Turbot Dual i210 Enet / Quad Core E3845		
SIZE: C	DWG NO: 80200-0141-G01	REV: R200
DATE: 12/16/2016	SHEET 28 of 30	

DC-IN: +5V

+PS_5VSB

EuP

N-MOS

Switching

7.5W max

+5VSB
8A max

Switching

+10V (VOLTAGE DBLR)

+PS_3VSB
4.8A max

+3VSB

N-MOS

DDR3L 1066MHz (SDRAM x4)	
+VDIMM	1.5A max
+VTT_DDR	0.5A max

0.27W*4 = 1.18W

+VTT_DDR:0.675V

LDO

N-MOS

1.917A max

Switching

1.35V 7.1A max

0.075A @V1P8A
1.14A @V1P8S

LDO

1.8V 0.075A max

1.8V

0.3A max
+VCC3

0.6A max
+VCC

N-MOS

N-MOS

LDO

1.8V 1.14A max

0.055A max

0.033A max

0.41A max

LDO

1.0V 410mA max

LDO

1.0V

2.75A max

LDO

1.05V

1.0A max

LDO

??? A max

0.75A max

1A max

0.2A max

0.07A max

??A max

1.4A max

		Bay Trail - M	Bay Trail - I
VCORE	SVID	13A	
VNN	SVID	15A	
V1P35S	1.35V	1.3A	
V1P8A	1.8V	65mA	
V1P8S	1.8V	10mA	
V1P5S	1.8V	N/A	
V3P3A	3.3V	50mA	
V3P3S	3.3V	33mA	
V1P0A	1.0V	325mA	
V1P0S	1.0V	2.75A	
V1P05S	1.05V	1.0A	
V1P2A	N/A	N/A	
V1P2S	1.2V	21.3mA	0 mA
VRTC	RTC	160uA	

Can be grounded if MIPI CSI not used.

Battery
3V

ALC282		
AVDD	5.0V	N/A
DVDD	3.3V	N/A
PVDD	1.8V	N/A

LAN i210/211		
VDD3P3	3.3V	370 mA
VDD1P0	1.0V	300mA

eMMC		
VCC	3.3V	200mA
VCCQ	1.8V	150mA

CSI Connector	
3.3V	70mA

EXPANSION SLOT	
+3.3V_AUX	??A

FRONT USB3 * 1PCS	
5V	0.9A

FRONT USB2 * 1PCS	
5V	0.5A

POWER DELIVERY

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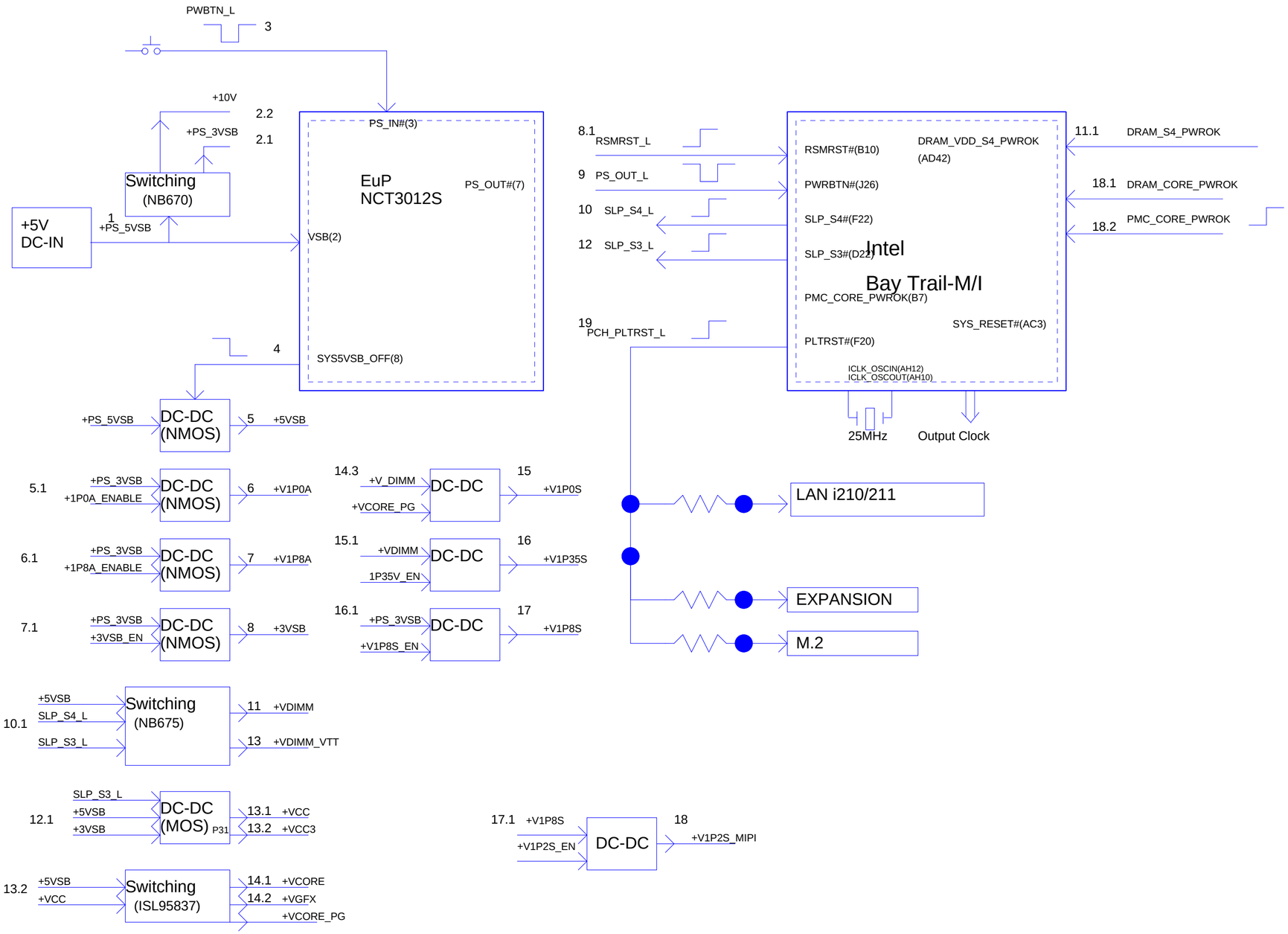
TITLE: Turbot Dual i210 Enet / Quad Core E3845

SIZE: C | DWG NO: 80200-0141-G01 | REV: R200

DATE: 12/16/2016 | SHEET 29 of 30

PWR Sequence & RST Diagram



POWER SEQUENCE

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