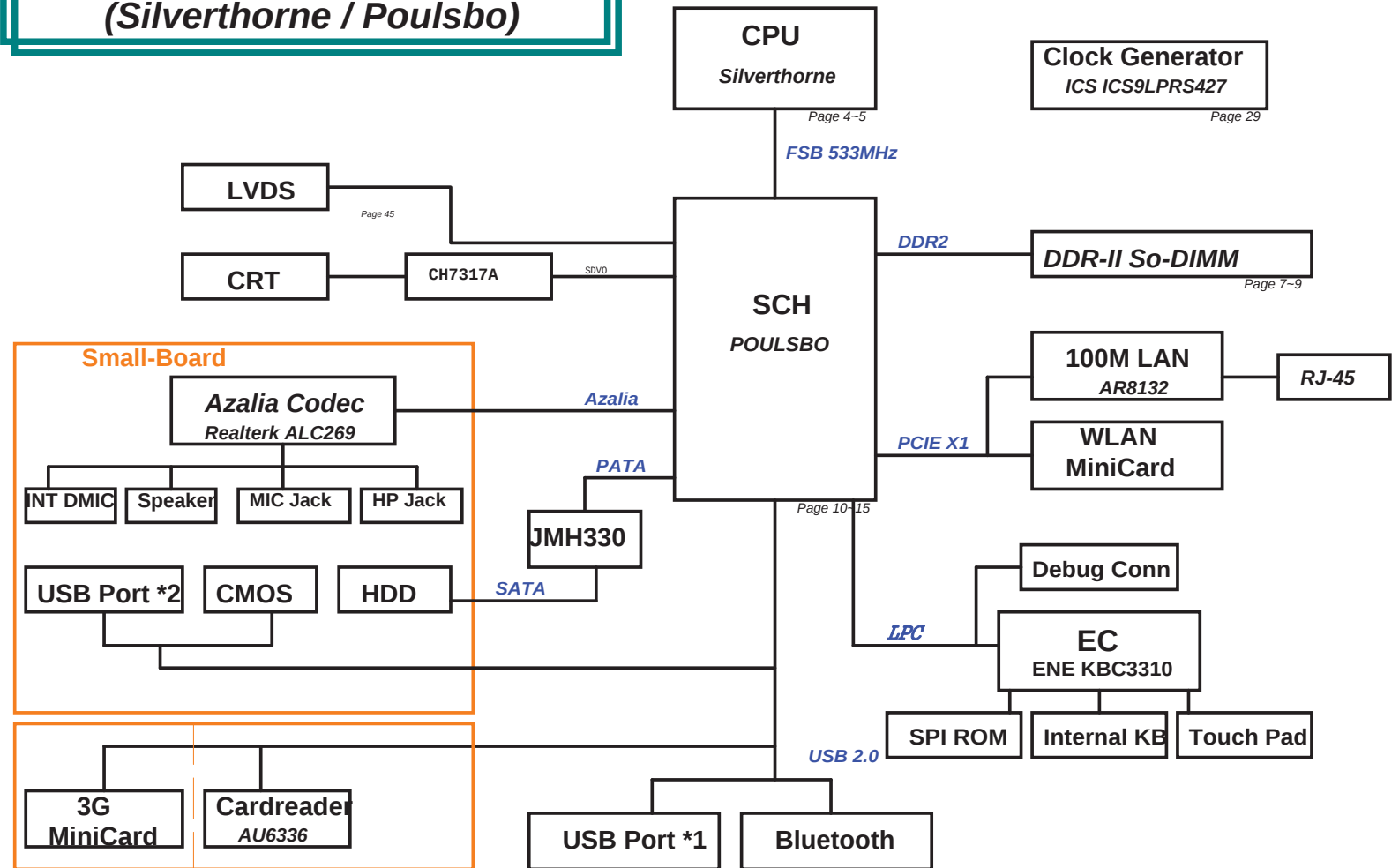


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03_EC Pin Define
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18_DDR2_SODIMM
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45_Power_VCCP
46_Power_+1.5VS & +2.5VS
47_Charger
48_Power_Load Switch
49_Power Latch
50_HISTORY

1101HA Block Diagram (Silverthorne / Poulsbo)



SCH GPIO SETTING

Pin	Pin Name	Connect to	Type	Power Well	S3	S4/ S5	Input/Output Set
U41	GPIOUS0	PM_LEVELDOWN#	I/O CMOS3.3	Sus	VIX-unknown	OFF	Output
N43	GPIOUS1	CPU_LEVELDOWN	I/O CMOS3.3	Sus	VIX-unknown	OFF	Output
N45	GPIOUS2	PM_PWRBTN#	I/O CMOS3.3	Sus	VIX-unknown	OFF	Input
R41	GPIOUS3/ USBCC	+VCCP_OV0	I/O CMOS3.3	Sus	VIX-unknown	OFF	output
G29	GPIO0	Strap CMC/ BT_Disable	I/O CMOS3.3	Core	OFF	OFF	Input
K30	GPIO1	CARD_READER_EN#	I/O CMOS3.3	Core	OFF	OFF	Output
F34	GPIO2	SIMCARD_IN#	I/O CMOS3.3	Core	OFF	OFF	iutput
G33	GPIO3	Strap CMC	I/O CMOS3.3	Core	OFF	OFF	Input
K36	GPIO4	3GLAN_OFF	I/O CMOS3.3	Core	OFF	OFF	Output
H36	GPIO5	MINICARD_EN#	I/O CMOS3.3	Core	OFF	OFF	Output
F36	GPIO6	DDR_MEM_CONFIG	I/O CMOS3.3	Core	OFF	OFF	Input
J31	GPIO7/ SLPIOVR#	SLPIOVR#	I/O CMOS3.3	Core	OFF	OFF	Output
H34	GPIO8/ PROCHOT#	CAMERA_EN	I/O CMOS3.3/ OD	Core	OFF	OFF	Output
K28	GPIO9/ EXTTS1#	WLAN_LED	I/O CMOS3.3	Core	OFF	OFF	Output

EC KB3310 GPIO SETTING

Pin	Pin Name	Signal Name	Type	Note
1	GPIO00/GA20	A20GATE	O	
2	GPIO01/KBRST#	RC_IN#	O	
6	GPIO04	HOTKEY_SW0#	I	Internal pull high
13	GPIO05/PCIRST#	BUF_RST#	I	
14	GPIO07	HOTKEY_SW1#(no use)		
15	GPIO08	EXT_SMI#	OD	10K pull high to +3VSB
16	GPIO0A	LID_EC_R#	I	Internal pull high
17	GPIO0B/ESB_CLK	PCB_ID0	I	
18	GPIO0C/ESB_DAT	PCB_ID1	I	
19	GPIO0D	LID_EC_L#(no use)	I	Internal pull high
20	GPIO0E/SCI#	KBC_SCI#	O	10K pull high to +3VSB
21	GPIO0F/PWM0	BL_PWM_DA	O	
23	GPIO10/PWM1	BATSEL#	I	Battery critical capacity
25	GPIO11/PWM2	PM_PWRBTN#	OD	Internal pull high in ICH
26	GPIO12/FANPWM1	FAN0_PWM	O	CPU Fan
27	GPIO13/FANPWM2	FAN1_PWM	O	VGA Fan
28	GPIO14/FANFB1	FAN0_TACH	I	CPU FanTach
29	GPIO15/FANFB2	FAN1_TACH	I	VGA FanTach
30	GPIO16/E51_TX	E51_TX	O	RS232 debug port
31	GPIO17/E51_RX	E51_RX	I	RS232 debug port
32	GPIO18	PWR_SW#	I	Internal pull high
34	GPIO19/PWM3	PS-ON	O	latch power
36	GPIO1A/NUMLED	NUM_LED#	O	
38	GPIO1D/CLKRUN#	LPC_CLKRUN#	O	
39	GPIO20/KSO0/TP_TEST	KSO0	O	
40	GPIO21/KSO1/TP_PLL	KSO1	O	
41	GPIO22/KSO2	KSO2	O	
42	GPIO23/KSO3	KSO3	O	
43	GPIO24/KSO4	KSO4	O	
44	GPIO25/KSO5	KSO5	O	
45	GPIO26/KSO6	KSO6	O	
46	GPIO27/KSO7	KSO7	O	
47	GPIO28/KSO8	KSO8	O	
48	GPIO29/KSO9	KSO9	O	
49	GPIO2A/KSO10	KSO10	O	
50	GPIO2B/KSO11	KSO11	O	
51	GPIO2C/KSO12	KSO12	O	
52	GPIO2D/KSO13	KSO13	O	
53	GPIO2E/KSO14	KSO14	O	
54	GPIO2F/KSO15	KSO15	O	
55	GPIO30/KSI0	KSI0	I	Internal pull high
56	GPIO31/KSI1	KSI1	I	Internal pull high
57	GPIO32/KSI2	KSI2	I	Internal pull high
58	GPIO33/KSI3	KSI3	I	Internal pull high
59	GPIO34/KSI4	KSI4	I	Internal pull high
60	GPIO35/KSI5	KSI5	I	Internal pull high
61	GPIO36/KSI6	KSI6	I	Internal pull high
62	GPIO37/KSI7	KSI7	I	Internal pull high
63	GPI38/AD0	BAT_A	I	
64	GPI39/AD1	BAT_B	I	
65	GPIO3A/AD2	BAT_C	I	
66	GPIO3B/AD3	BAT_D	I	
68	GPO3C/DA0	CHG_EN#	O	battery charger enabled

Pin	Pin Name	Signal Name	Type	Note
70	GPO3D/DA1	LCD_BACKOFF#	O	
71	GPO3E/DA2	THRO_CPU_VOLT#	O	
72	GPO3F/DA3	BAT_LL#	O	Battery Low Low
73	GPIO40	AC_OK	I	AC Adaptor Plug in
74	GPIO41	PM_RSMRST#	O	10K pull down to GND
75	GPI42	BAT_IN	I	Batt1 (Small/Internal): 1-present, 0-absent
76	GPI43	BAT2_IN	I	Batt2 (Small/Internal): 1-present, 0-absent
77	GPIO44/SC1	SMB0_CLK	I/OD	4.7K pull high to +3VA_EC
78	GPIO45/SDA1	SMB0_DAT	I/OD	4.7K pull high to +3VA_EC
79	GPIO46/SC2	SMB1_CLK	I/OD	10K pull high to +3V
80	GPIO47/SDA2	SMB1_DAT	I/OD	10K pull high to +3V
81	GPIO48/KSO16	KB_ID0	I	for KB type detection
82	GPIO49/KSO17	KB_ID1	I	for KB type detection
83	GPIO4A/PSCLK1	N.C.	O	
84	GPIO4B/PSDAT1	CRT_IN	I	
85	GPIO4C/PSCLK2	CRT_DACPWR_EN#	O	
86	GPIO4D/PSDAT2	CRTDAC_RST#	O	
87	GPIO4E/PSCLK3	TP_CLK	I/OD	10K pull high to +3V
88	GPIO4F/PSDAT3	TP_DAT	I/OD	10K pull high to +3V
89	GPIO50/SELIO#	CHG_LED_GREEN#	O	Green charger LED
90	GPIO52/E51_CS#	CHG_LED_UP#	O	Orange charger LED
91	GPIO53/CAPLED	CAP_LED#	O	
92	GPIO54	PWR_LED_UP	O	
93	GPIO55/SCRLLED	SCRL_LED#	O	
95	GPIO56	GS1_INT1(no use)	I	Internal pull high
97	GPXOA00/SDICS#	SPI_MODE#	O	4.7K pull down to GND
98	GPXOA01/SDICLK	SUSC_ON	O	
99	GPXOA02/SDIDO	VSUS_ON	O	
100	GPXOA03	CPU_VRON	O	
101	GPXOA04	SUSB_ON	O	
102	GPXOA05	CNT1_CHG#	O	batt1 (Big/External) charging enabled. Batt1 is discharging priority in AC mode.
103	GPXOA06	CNT1_DIS#	O	batt1 discharging enabled
104	GPXOA07	CNT2_CHG#	O	batt2 (Big/External) charging enabled. Batt2 is discharging priority in AC mode.
105	GPXOA08	CNT2_CHG#	O	batt2 discharging enabled
106	GPXOA09	SPI_WP#	O	
107	GPX0A10	OP_SD#	O	Audio OP
108	GPXOA11	BAT_LEARN	O	
109	GPXID0/SDIDI	PM_PWROK	O	Battery parallel, H:1P, L:2P~3P
110	GPXID1	RST#	O	
112	GPXID2	THRO_CPU	O	Active if CPU temperature over spec
114	GPXID3	PM_SLPRDY#	I	SLPRDY#,100K pull down to GND
115	GPXID4	SLPMODE	I	SUSC#,100K pull down to GND
116	GPXID5	VRM_PWRGD	I	Pull high to +3V
117	GPXID6	PM_RSTRDY#	I	
118	GPXID7	RSTWARN	O	
121	GPIO57	GS1_INT2(no use)	I	Internal pull high
126	GPIO58/SPICLK	SPI_CLK	O	
127	GPIO59/TEST_CLK	GS2_INT1(no use)	O	

EC KB3310 Other Pin SETTING

Pin	Pin Name	Signal Name	Type	Note
3	SERIRQ	INT_SERIRQ	I/OD	10K pull high to +3V
4	LFRAME#	LPC_FRAME#	I	
5	LAD3	LPC_AD3	I/O	
7	LAD2	LPC_AD2	I/O	
8	LAD1	LPC_AD1	I/O	
9	VCC	+3VA	P	
10	LAD0	LPC_AD0	I/O	
11	GND	GND	P	
12	PCICLK	CLK_PCI_EC	I	
22	VCC	+3VA	P	
24	GND	GND	P	
33	VCC	+3VA	P	
35	GND	GND	P	
37	ECRST#	EC_RST#	I	100K pull high to +3VA_EC
67	AVCC	+3VA_AEC	P	
69	AGND	AGND	P	
94	GND	GND	P	
96	VCC	+3VA	P	
111	VCC	+3VA	P	
113	GND	GND	P	
119	RD#/SPIDI	SPI_SO	I	
120	WR#/SPIDO	SPI_SI	O	
122	XCLKI	K_XCLKI	I	
123	XCLKO	K_XCLKO	O	
124	V18R	V18R	P	Reserved 1uF to GND
125	VCC	+3VA	P	
128	SPICS#/SELMEM#	SPI_CS#	O	

<Variant Name>



Title : EC Pin Define

ASUSTek Computer INC.

Engineer: N/A

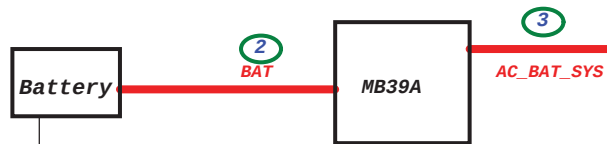
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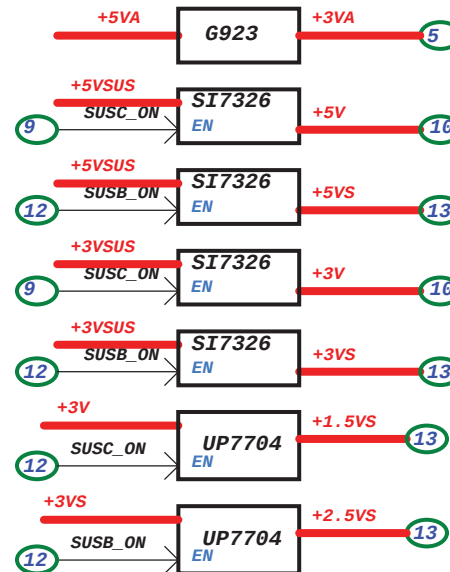
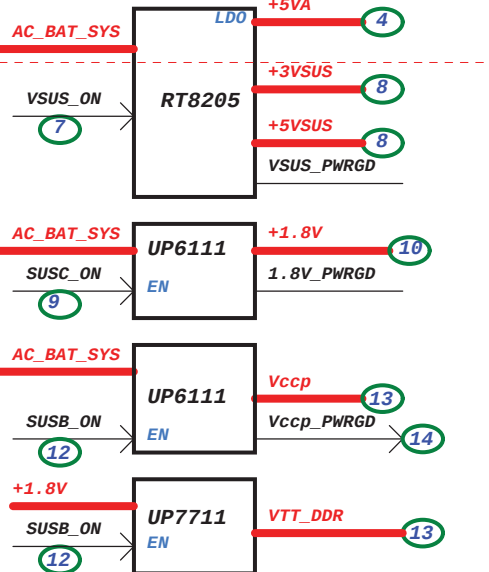
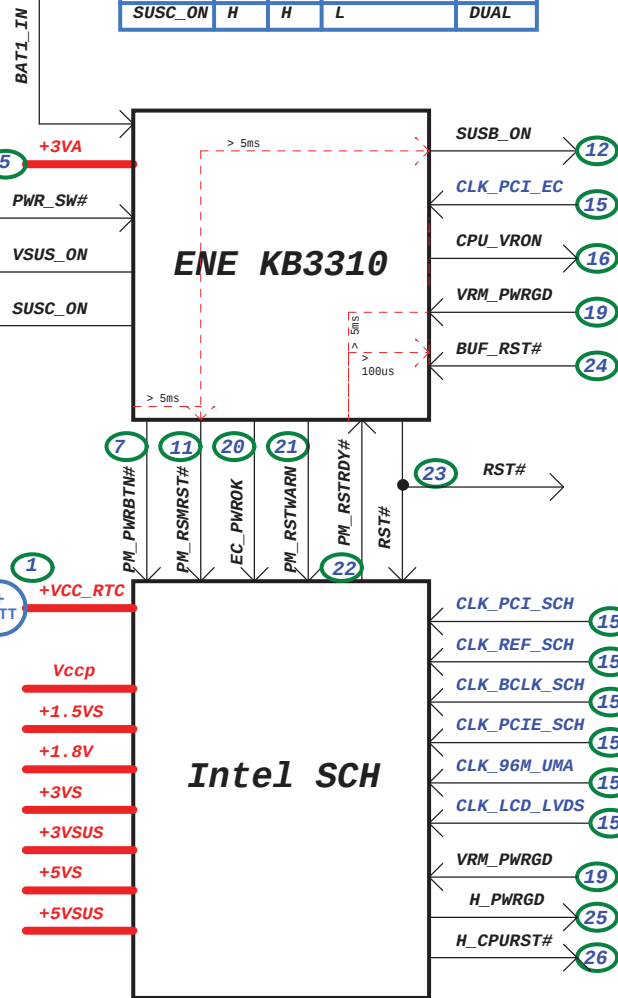
Rev 1.2

Date: Tuesday, July 21, 2009

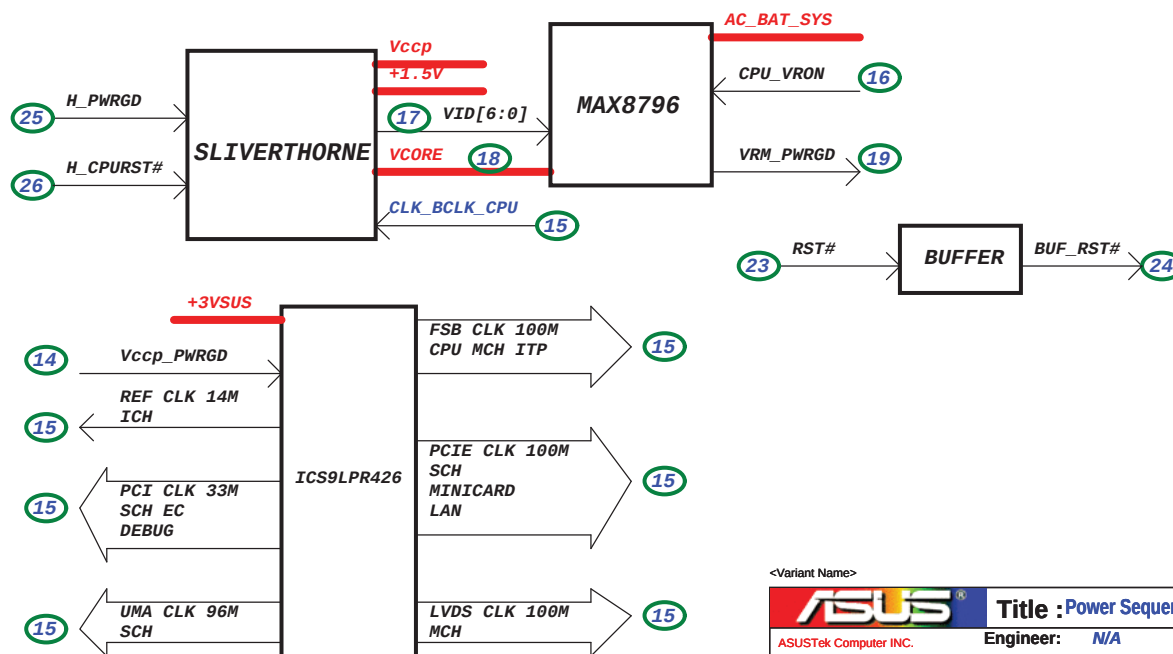
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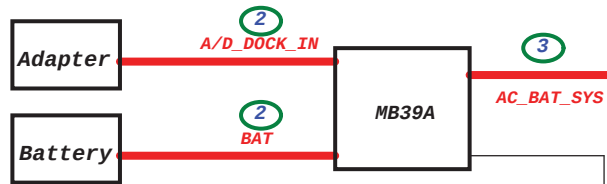


Signal	S0/S1	S3	S4/S5	Power
VSUS_ON	H	H	Adapter Battery	VSB
SUSB_ON	H	L	L	Main
SUSC_ON	H	H	L	DUAL

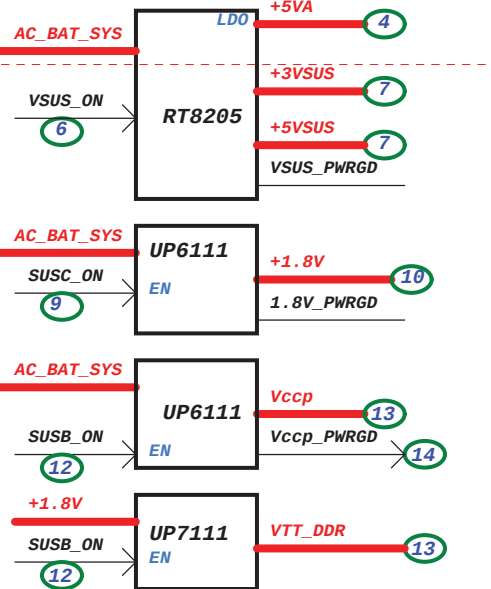
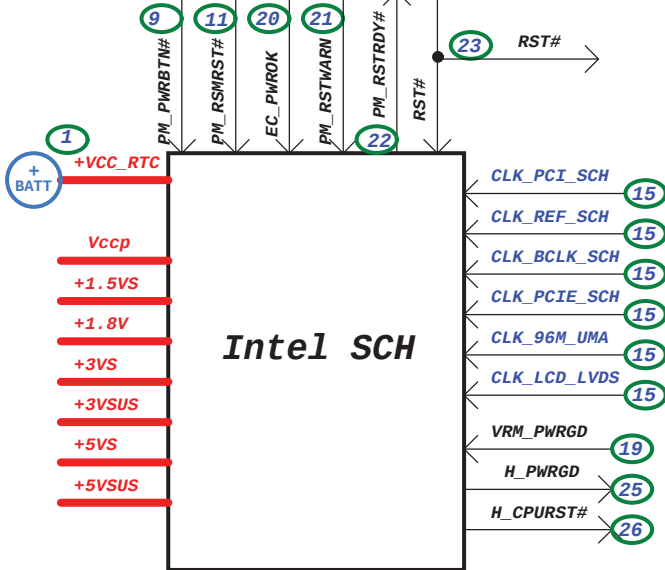
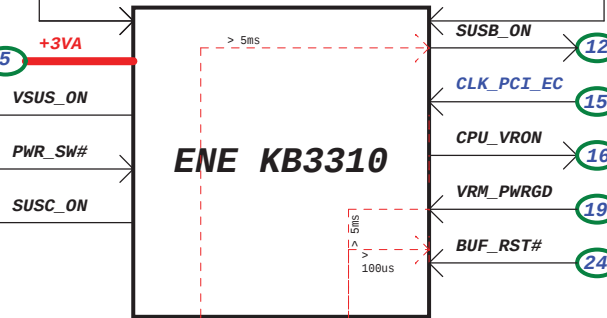


	+5VA	+3VA	+3VSUS	+5VSUS	+1.8V	+3V	+5V	VTT_DDR	Vccp	+1.5VS	+3VS	+5VS	+2.5VS
S0/S1	V	V	V	V	V	V	V	V	V	V	V	V	V
S3	V	V	V	V	V	V	V	--	--	--	--	--	--
S4/S5	V	V	--	--	--	--	--	--	--	--	--	--	--

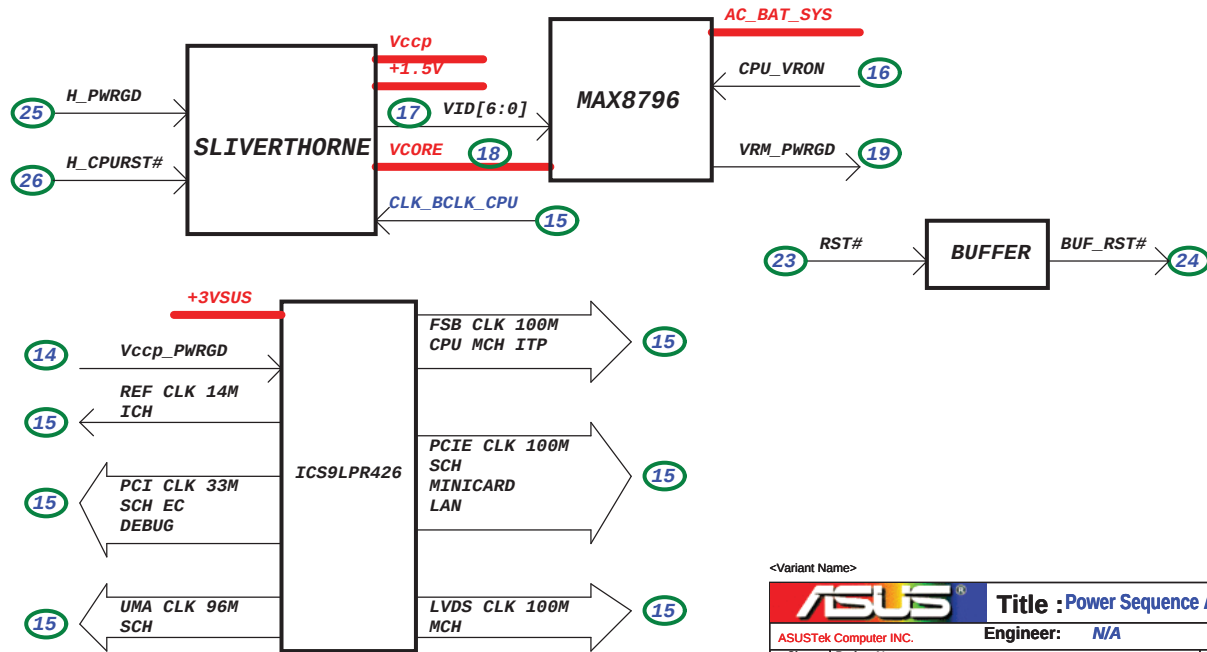
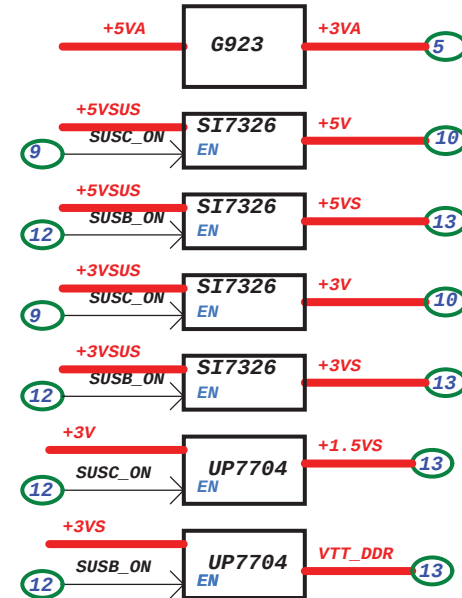




Signal	S0/S1	S3	S4/S5	Power
VSUS_ON	H	H	Adapter	VSB
			Battery	L
SUSB_ON	H	L	L	Main
SUSC_ON	H	H	L	DUAL



	+5VA	+3VA	+3VSUS	+5VSUS	+1.8V	+3V	+5V	VTT_DDR	Vccp	+1.5VS	+3VS	+5VS	+2.5VS
S0/S1	V	V	V	V	V	V	V	V	V	V	V	V	V
S3	V	V	V	V	V	V	V	V	--	--	--	--	--
S4/S5	V	V	V	V	--	--	--	--	--	--	--	--	--



S4/S5 to S0(Adapter Mode)

This sequence will occur whenever the system is in S4/S5 and the EC initiates a sleep exit sequence from S4/S5 to S0.

Initial EC state: VSUS_ON=0, SUSB_ON=0, SUSC_ON=0, A20GA=X, KBRST=X, CPU_VRON=0, ICH_PWROK=0, RSTWARN=0, and PM_RSMRST#=0, RESET#=0.

- 1.Waiting for AC_OK until adaptor power is good, then
- 2.At least 5mS after AC_OK is asserted, EC asserts VSUS_ON to enable VSUS power.
- 3.At least 20mS after VSUS power is stable, waiting for PWR_SW# until user is pressed. (Or waiting for SCH deasserted SLPRDY#, too?)
- 4.EC asserts RSTWARN.
- 5.SUSC_ON is asserted at least 20mS (de-bounce) after receiving PWR_SW#.
- 6.PM_RSMRST# is deasserted at least 5mS after SUSC power is stable.
- 7.At least 5mS after PM_RSMRST# is deasserted, SUSB_ON is enabled.
- 8.CPU_VRON is deasserted at least 100mS after SUSB power is stable.
- 9.Waiting for CPUPWR_GD (VRM_PWRGD) until CPU_VRON power is stable.
- 10.At least 10mS after receiving CPUPWR_GD, PM_PWROK is asserted, and then deasserts RSTWARN.
- 11.Waiting for RSTRDY# until deasserted by SCH.
- 12.RESET# can be deasserted at lease 100uS after PM_PWROK is asserted.

Power Sequence Description: S3 to S0

This sequence will occur in S3, and wake event is detected by EC or SCH.

Initial EC state: SUSB_ON=0, CPU_VRON=0, ICH_PWROK=0, PM_RSMRST#=1, PM_PWRBTN#=1, and VSUS_ON=1, RSTWARN=1, SUSC_ON=1, RESET#=0.

- 1.For internal wake event, SCH deasserts SLPRDY# to EC, than 4.
- 2.For external wake event (PWR_SW#, keyboard wake up), then
- 3.EC asserts PM_PWRBTN# at least 50mS to wake SCH, and waiting for SLPRDY# until SCH deasserted.
- 4.EC asserts SUSB_ON to enable SUSB power.
- 5.CPU_VRON is deasserted at least 100mS after SUSB power is stable.
- 6.Waiting for CPUPWR_GD (VRM_PWRGD) until CPU_VRON power is stable.
- 7.At least 5mS after receiving CPUPWR_GD, ICH_PWROK is asserted.
- 8.Deasserts RSTWARN after ICH_PWROK is asserted.
- 9.RESET# can be deasserted 100uS after RSTWARN is deasserted.

S4/S5 to S0(Battery Mode)

This sequence will occur whenever the system is in S4/S5 and the EC initiates a sleep exit sequence from S4/S5 to S0.

Initial EC state: VSUS_ON=0, SUSB_ON=0, SUSC_ON=0, A20GA=X, KBRST=X, CPU_VRON=0, ICH_PWROK=0, RSTWARN=0, and PM_RSMRST#=0, RESET#=0.

- 1.Waiting for BAT_IN until battery power is good, then
- 2.Waiting for PWR_SW# until user is pressed.
- 3.EC asserts VSUS_ON to enable VSUS power.
- 4.At least 20mS after VSUS power is stable.
- 5.EC asserts RSTWARN.
- 6.SUSC_ON is asserted at least 20mS (de-bounce) after receiving PWR_SW#.
- 7.PM_RSMRST# is deasserted at least 5mS after SUSC power is stable.
- 8.At least 5mS after PM_RSMRST# is deasserted, SUSB_ON is enabled.
- 9.CPU_VRON is deasserted at least 10mS after SUSB power is stable.
- 10.Waiting for CPUPWR_GD (VRM_PWRGD) until CPU_VRON power is stable.
- 11.At least 10mS after receiving CPUPWR_GD, PM_PWROK is asserted, and then deasserts RSTWARN.
- 12.Waiting for RSTRDY# until deasserted by SCH.
- 13.RESET# can be deasserted at lease 100uS after ICH_PWROK is asserted.

Warm Reset (SLPMODE=1)

The warm reset sequence results in reset without remove any power supplies.

Initial EC state: SUSB_ON=1, CPU_VRON=1, ICH_PWROK=1, PM_RSMRST#=1, PM_PWRBTN#=1, and VSUS_ON=1, RSTWARN=1, SUSC_ON=1, RESET#=1.

- 1.SCH asserts RSTRDY# at the same time as driving SLPMODE=1 to EC.
- 2.EC asserts RSTWARN to SCH.
- 3.EC asserts RESET# for 1200mS to SCH after asserts RSTWARN.
- 4.EC deasserts RSTWARN.
- 5.EC deasserts RESET# after at least 100uS delay from RSTWARN.

S0 to S3/S4/S5

This sequence will occur when system entry to sleep states, or all power planes are shut down.

Initial EC state: VSUS_ON=1, SUSB_ON=1, SUSC_ON=1, CPU_VRON=1, ICH_PWROK=1, and PM_RSMRST#=1, RESET#=1, RSTWARN=0, PM_PWRBTN#=1.

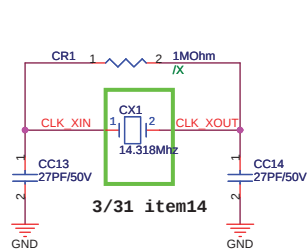
- 1.Waiting for PWR_SW# until user is pressed (go to 2), or waiting for SLPRDY# is asserted (go to 3).
- 2.At least 20mS after PWR_SW# is asserted, EC asserts PM_PWRBTN# (50mS width) to SCH.
- 3.Waiting for SLPRDY# until has been asserted.
- 4.EC asserts RSTWARN to SCH to begin internal sequence.
- 5.SCH asserts RSTRDY# to EC to indicate all outstanding transactions are completed.
- 6.EC asserts RESET# after detecting RSTRDY# asserted.
- 7.EC deasserts ICH_PWROK.
- 8.EC deasserts SUSB_ON and CPU_VRON to turn off power planes.
- This completes the entry to S3 (SLPMODE=1).**
- If SLPMODE=0, this indicates S4/S5 was the desired state, EC takes additional actions:
- 9.EC asserts PM_RSMRST#.
- 10.EC deasserts SUSC_ON to turn off the other power planes.
- 11.EC deasserts VSUS_ON if in battery mode.
- 12.EC deasserts RSTWARN to save more power.

Cold Reset (SLPMODE=0)

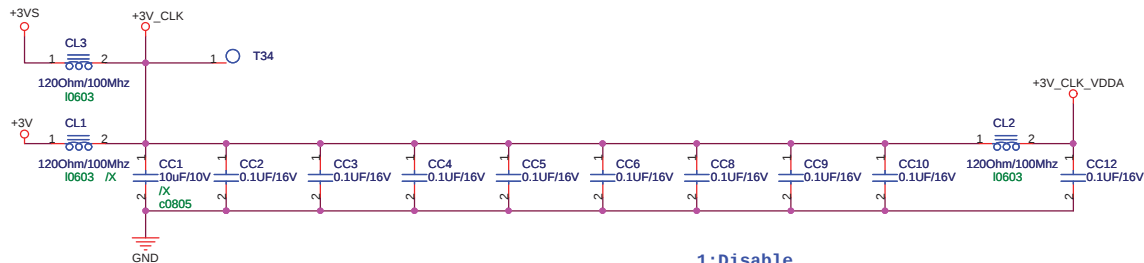
The cold reset sequence results in a power cycling of all but the RTC power well.

Initial EC state: SUSB_ON=1, CPU_VRON=1, ICH_PWROK=1, PM_RSMRST#=1, PM_PWRBTN#=1, and VSUS_ON=1, RSTWARN=1, SUSC_ON=1, RESET#=1.

- 1.SCH asserts RSTRDY# at the same time as driving SLPMODE=0 to EC.
- 2.EC asserts RSTWARN to SCH.
- 3.EC asserts RESET# to SCH after asserts RSTWARN.
- 4.EC deasserts PM_PWROK and disables SUSB_ON and CPU_VRON power.
- 5.EC asserts PM_RSMRST# after CPU_VRON power is off.
- 6.EC disables SUSC_ON power for 3~5 seconds.
- 7.S4/S5 to S0 sequence is automatically followed to bring the system back to S0 when SUSC_ON power is enable.

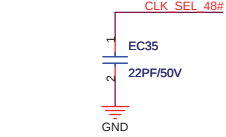
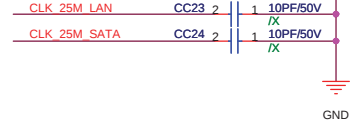
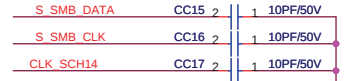
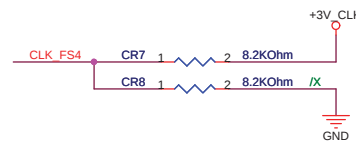
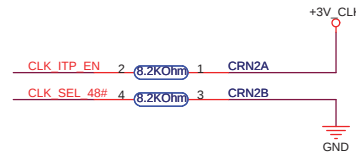
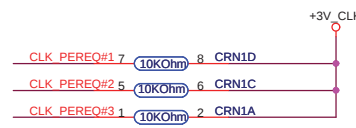
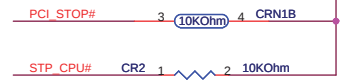


3/31 item14

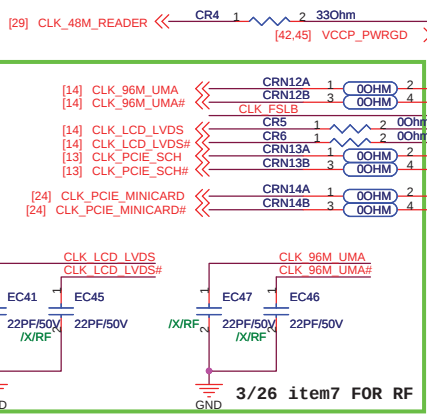


1:Disable
0:Enable

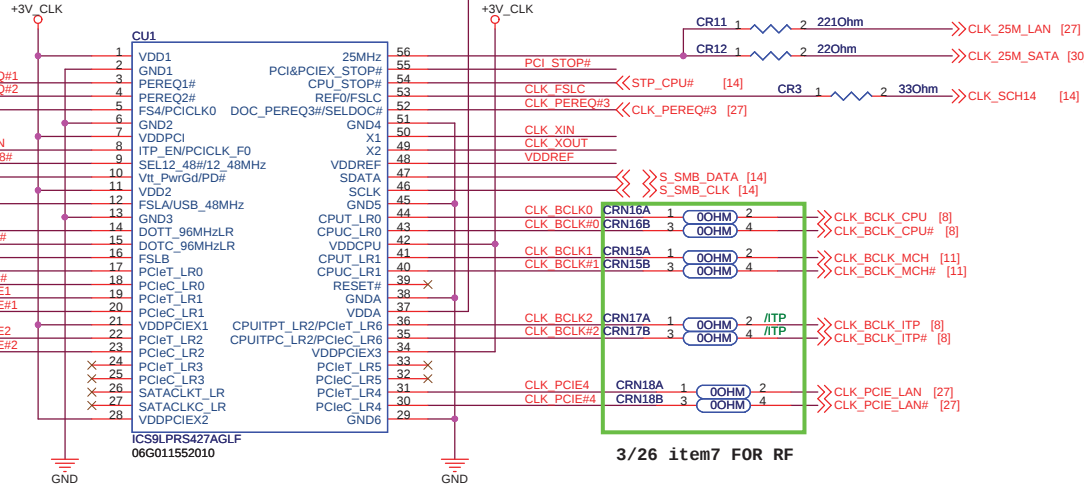
PEREQ1:PCIEx0 & PCIEx1
PEREQ2:PCIEx2 & PCIEx3 & SATA
PEREQ3:PCIEx4 & PCIEx5 & PCIEx6



4/29 item1

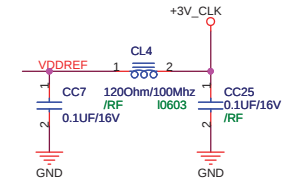


3/26 item7 FOR RF



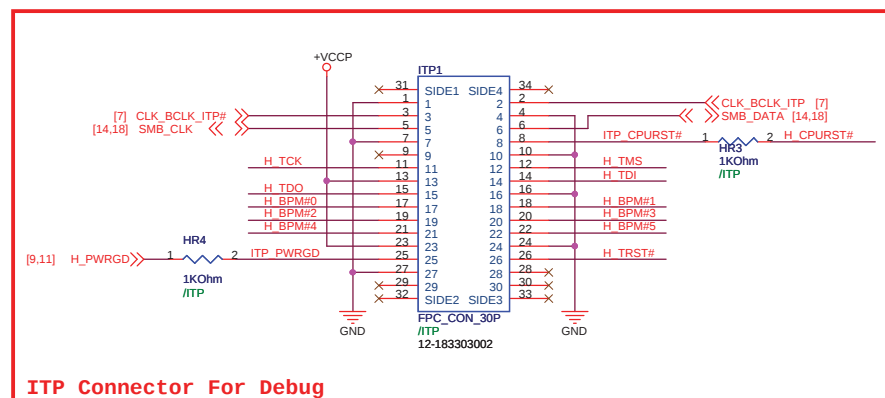
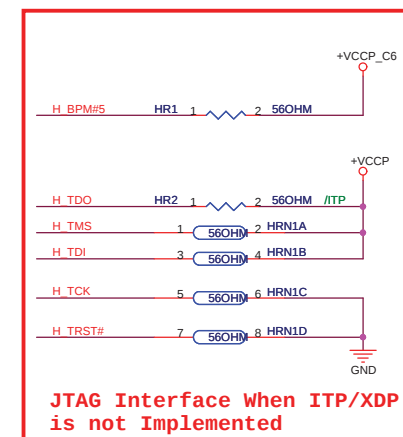
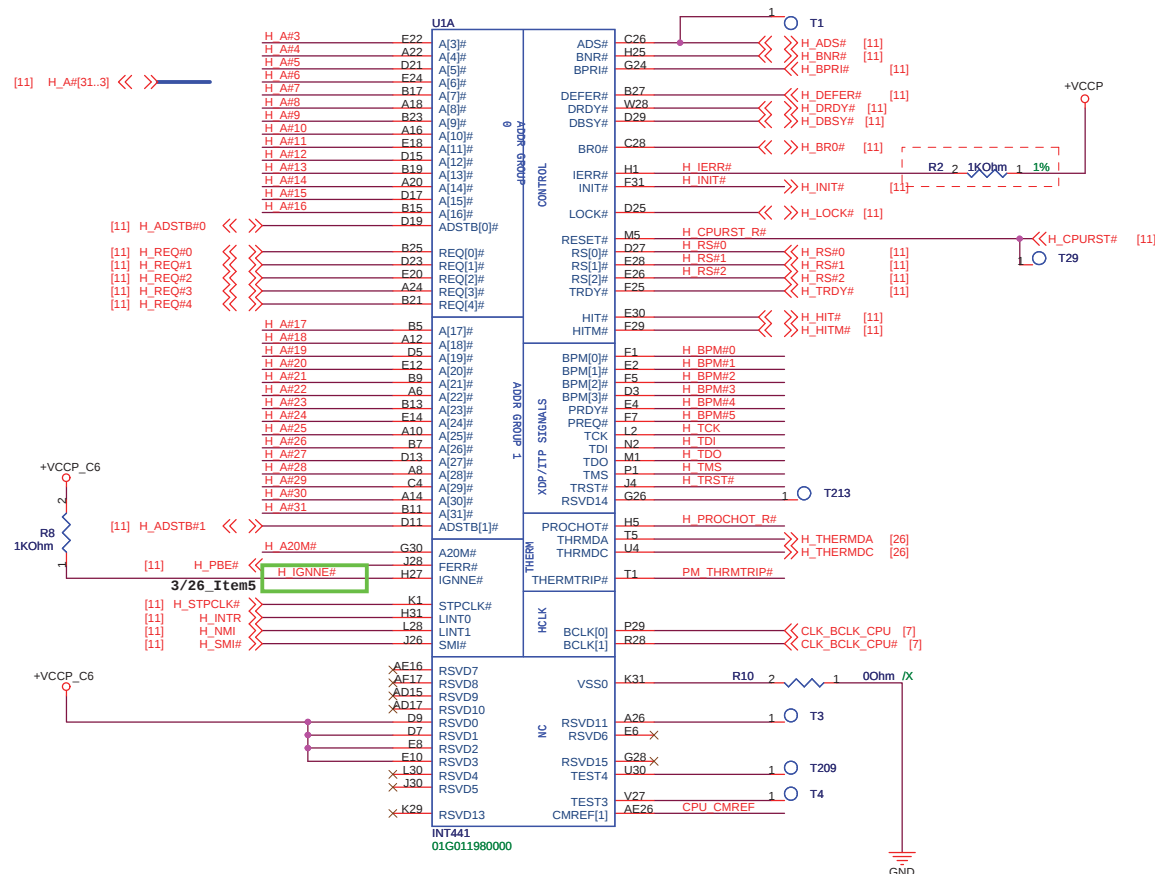
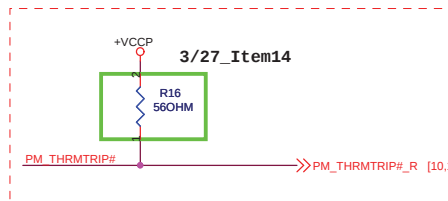
3/26 item7 FOR RF

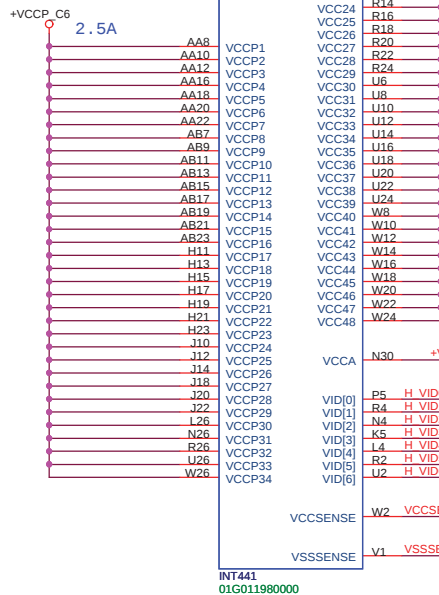
FSC	FSB	FSA	CPU	PCIE
0	0	1	133	100
1	0	1	100	100



RF solution

<Variant Name>





CPU +VCORE
Low-Frequency
Capacitors

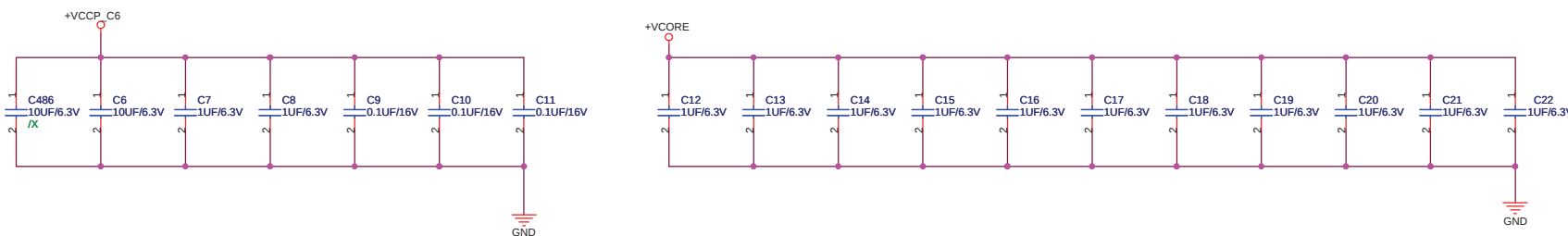
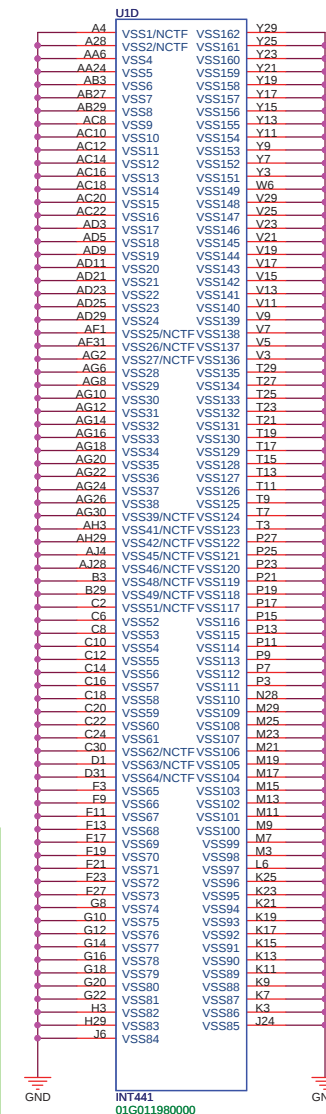
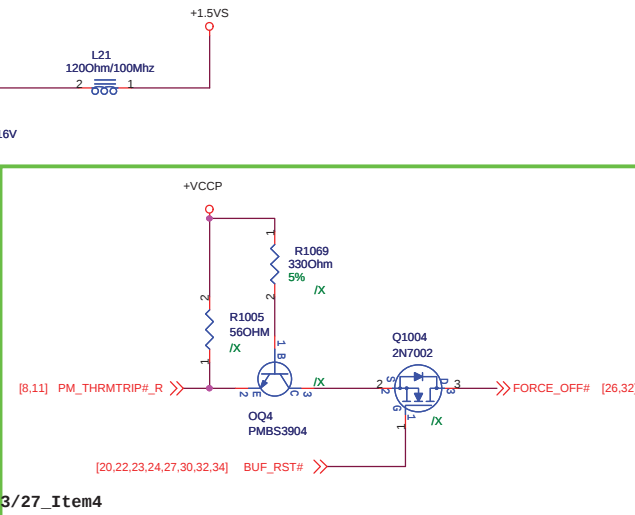
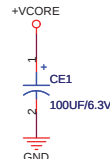


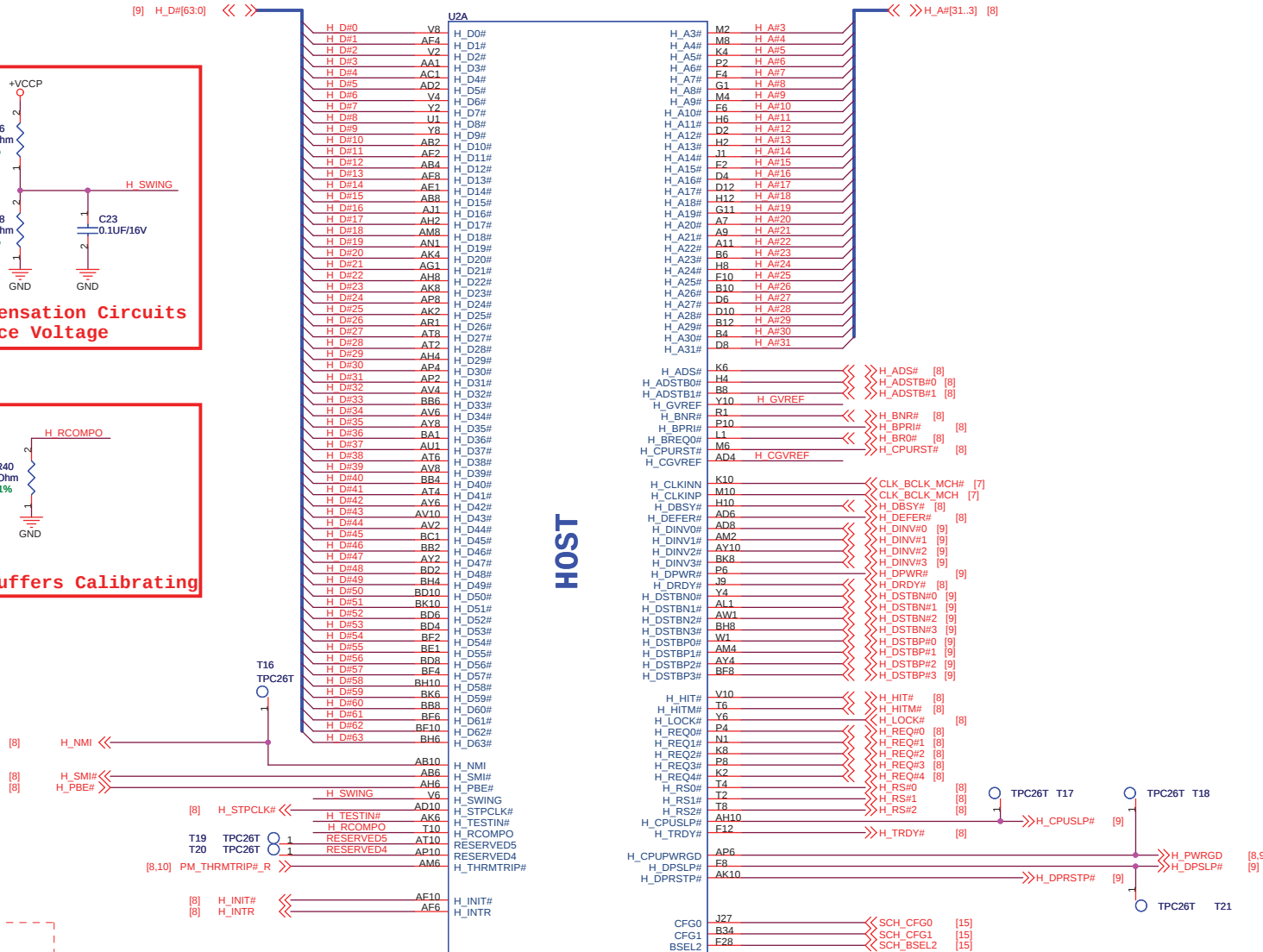
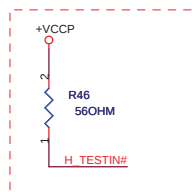
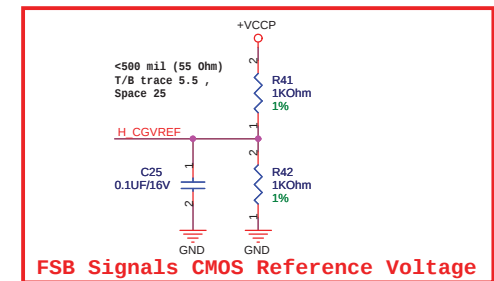
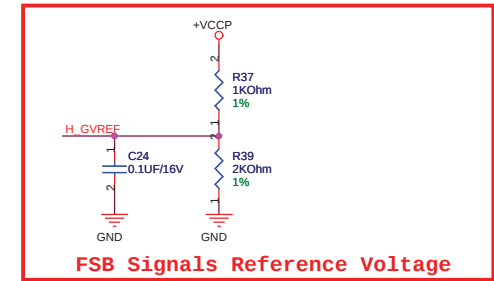
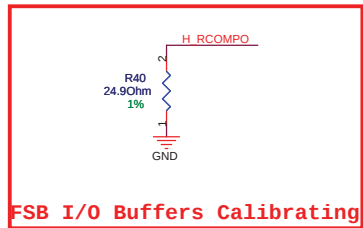
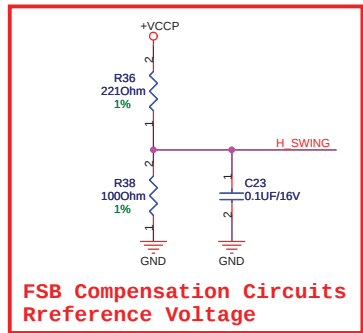
+VCORE

CE1

100UF/6.3V

GND





[18] MA_DQ[63:0] << >>

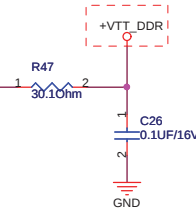
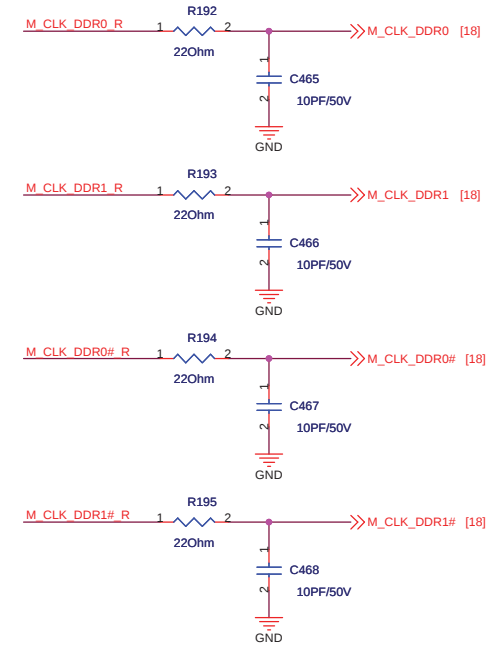
MA_DQ0	BG49	SM_DQ0
MA_DQ1	BG47	SM_DQ1
MA_DQ2	BE45	SM_DQ2
MA_DQ3	BC43	SM_DQ3
MA_DQ4	BE47	SM_DQ4
MA_DQ5	BC47	SM_DQ5
MA_DQ6	BC45	SM_DQ6
MA_DQ7	BK44	SM_DQ7
MA_DQ8	BK42	SM_DQ8
MA_DQ9	BG41	SM_DQ9
MA_DQ10	BK40	SM_DQ10
MA_DQ11	BC41	SM_DQ11
MA_DQ12	BG43	SM_DQ12
MA_DQ13	BJ43	SM_DQ13
MA_DQ14	BJ39	SM_DQ14
MA_DQ15	BG39	SM_DQ15
MA_DQ16	BC39	SM_DQ16
MA_DQ17	BK38	SM_DQ17
MA_DQ18	BG37	SM_DQ18
MA_DQ19	BK36	SM_DQ19
MA_DQ20	BJ37	SM_DQ20
MA_DQ21	BG35	SM_DQ21
MA_DQ22	BJ35	SM_DQ22
MA_DQ23	BC35	SM_DQ23
MA_DQ24	BK34	SM_DQ24
MA_DQ25	BG31	SM_DQ25
MA_DQ26	BG33	SM_DQ26
MA_DQ27	BK30	SM_DQ27
MA_DQ28	BC33	SM_DQ28
MA_DQ29	BJ31	SM_DQ29
MA_DQ30	BC31	SM_DQ30
MA_DQ31	BJ29	SM_DQ31
MA_DQ32	BJ29	SM_DQ32
MA_DQ33	BG29	SM_DQ33
MA_DQ34	BK28	SM_DQ34
MA_DQ35	BC29	SM_DQ35
MA_DQ36	BE27	SM_DQ36
MA_DQ37	BK26	SM_DQ37
MA_DQ38	BG25	SM_DQ38
MA_DQ39	BJ25	SM_DQ39
MA_DQ40	BC25	SM_DQ40
MA_DQ41	BG23	SM_DQ41
MA_DQ42	BK22	SM_DQ42
MA_DQ43	BJ21	SM_DQ43
MA_DQ44	BK24	SM_DQ44
MA_DQ45	BJ23	SM_DQ45
MA_DQ46	BG21	SM_DQ46
MA_DQ47	BC21	SM_DQ47
MA_DQ48	BK20	SM_DQ48
MA_DQ49	BJ19	SM_DQ49
MA_DQ50	BG17	SM_DQ50
MA_DQ51	BJ17	SM_DQ51
MA_DQ52	BG19	SM_DQ52
MA_DQ53	BC19	SM_DQ53
MA_DQ54	BC17	SM_DQ54
MA_DQ55	BK16	SM_DQ55
MA_DQ56	BG15	SM_DQ56
MA_DQ57	BC15	SM_DQ57
MA_DQ58	BJ13	SM_DQ58
MA_DQ59	BK12	SM_DQ59
MA_DQ60	BK14	SM_DQ60
MA_DQ61	BJ15	SM_DQ61
MA_DQ62	BC13	SM_DQ62
MA_DQ63	BC11	SM_DQ63

02G010018700

DDR SYSTEM MEMORY

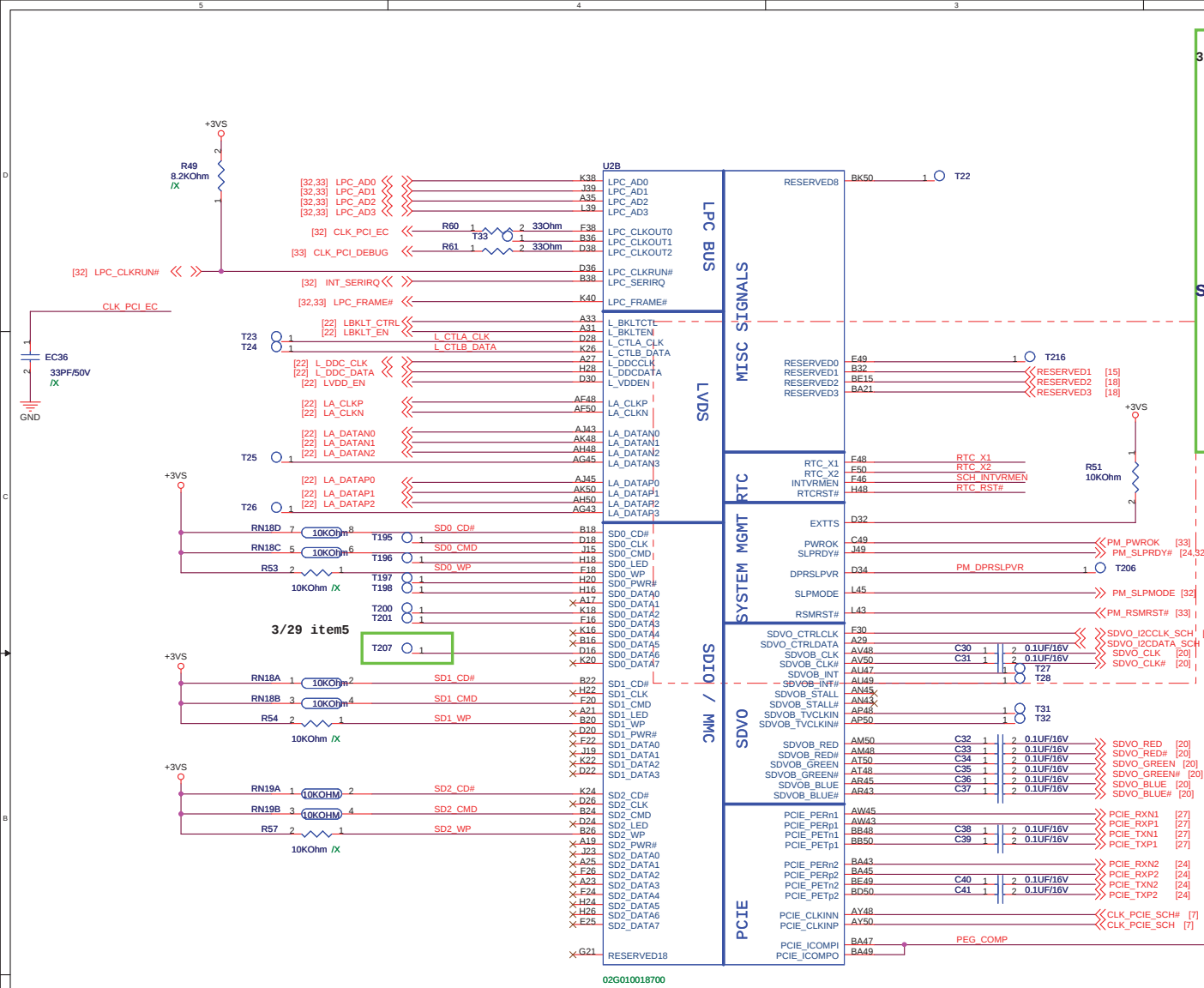
SM_BS0	BC27	MA_BA0	<< >>MA_BA[2:0] [18,19]
SM_BS1	BE25	MA_BA1	
SM_BS2	BA35	MA_BA2	
SM_CK0	BG45	M_CLK_DDR0_R	
SM_CK1	BE11	M_CLK_DDR1_R	
SM_CK0#	BJ45	M_CLK_DDR0#_R	
SM_CK1#	BG11	M_CLK_DDR1#_R	
SM_CKE0	BE39	>>>MA_CKE0 [18,19]	
SM_CKE1	BE37	>>>MA_CKE1 [18,19]	
SM_DQS0	BJ47	MA_DQS0	<< >>MA_DQS[7:0] [18]
SM_DQS1	BJ41	MA_DQS1	
SM_DQS2	BC37	MA_DQS2	
SM_DQS3	BK32	MA_DQS3	
SM_DQS4	BG27	MA_DQS4	
SM_DQS5	BE23	MA_DQS5	
SM_DQS6	BK18	MA_DQS6	
SM_DQS7	BG13	MA_DQS7	
SM_MA0	BJ27	MA_MA0	<< >>MA_MA[14:0] [18,19]
SM_MA1	BA19	MA_MA1	
SM_MA2	BA27	MA_MA2	
SM_MA3	BA25	MA_MA3	
SM_MA4	BE29	MA_MA4	
SM_MA5	BC23	MA_MA5	
SM_MA6	BE31	MA_MA6	
SM_MA7	BA31	MA_MA7	
SM_MA8	BA33	MA_MA8	
SM_MA9	BA29	MA_MA9	
SM_MA10	BE17	MA_MA10	
SM_MA11	BE35	MA_MA11	
SM_MA12	BE33	MA_MA12	
SM_MA13	BE19	MA_MA13	
SM_MA14	BA37	MA_MA14	
SM_VREF	BE43	<<DDR_VREF [18]	
SM_RAS#	BE21	>>>MA_RAS# [18,19]	
SM_CAS#	BA13	>>>MA_CAS# [18,19]	
SM_WE#	BA17	>>>MA_WE# [18,19]	
SM_CS0#	BA23	>>>MA_CS#0 [18,19]	
SM_CS1#	BA15	>>>MA_CS#1 [18,19]	
SM_RCOMP0	BE13	SM_RCOMP0UT	
SM_RCVENIN	BA39	MA_RCVENIN	
SM_RCVENOUT	BE41	MA_RCVENOUT	

Note: TOTAL LENGTH <1"

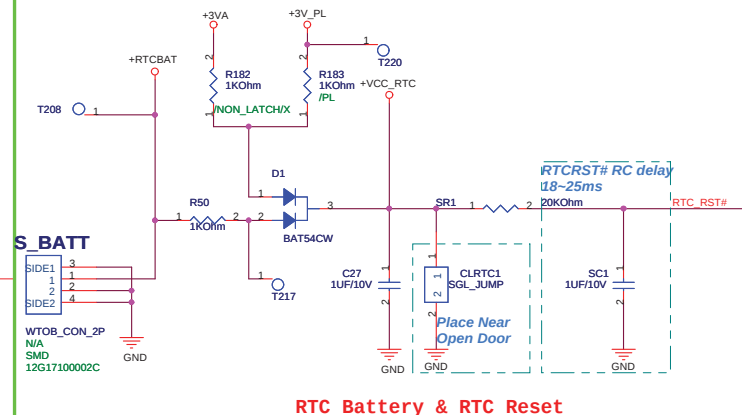


<Variant Name>

ASUS		Title : Poulsbo_DDR2 (2)	
ASUSTek Computer INC.		Engineer: N/A	
Size Custom	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009		Sheet 12 of 50	

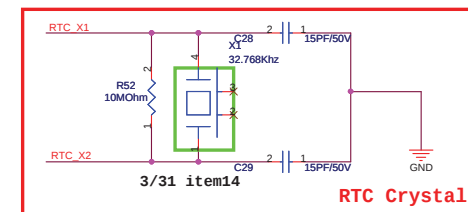


3/26_Item6 Modify RTC circuit

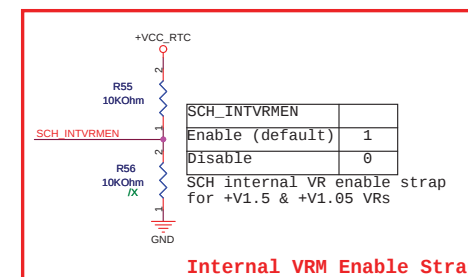


RTC Battery & RTC Reset

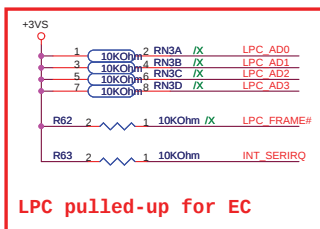
PM_SLPDRY#	PM_SLPMODE	System Behavior
0	1	SCH ready to enter S3
0	0	SCH ready to enter S4/S5



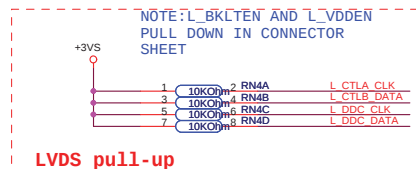
RTC Crystal



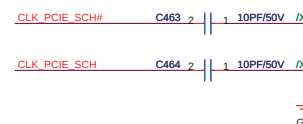
Internal VRM Enable Strap



LPC pulled-up for EC



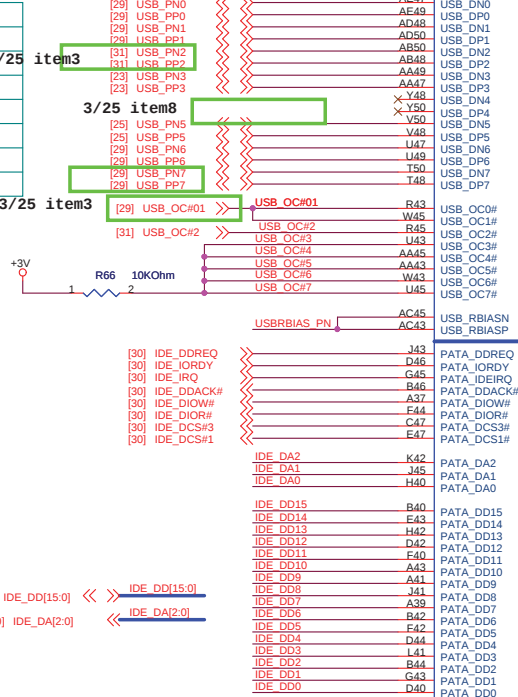
LVDS pull-up



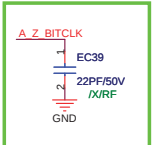
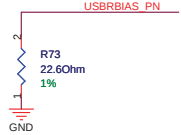
<Variant Name>

ASUS		Title: Pwlsbo LVDS/SDVO	
ASUSTek COMPUTER INC		Engineer: N/A	
Size	Project Name	Rev	
Custom	1101HA	1.2	
Date: Tuesday, July 21, 2009		Sheet 13 of 50	

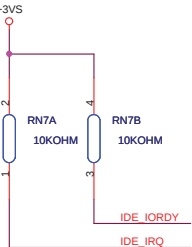
USB 0	USB PORT
USB 1	USB PORT
USB 2	USB PORT
USB 3	3.5G
USB 4	
USB 5	Bluetooth
USB 6	Camera
USB 7	Card Reader



[30] IDE_DD[15:0] << IDE_DD[15:0]
[30] IDE_DA[2:0] << IDE_DA[2:0]



3/26_Item7 RF
4/6_Item5



Termination Voltage

PATA/IDE

JTAG

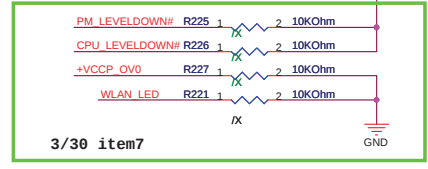
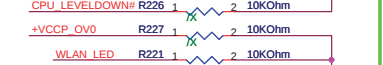
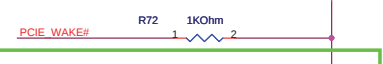
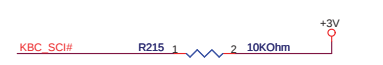
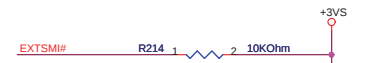
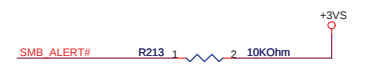
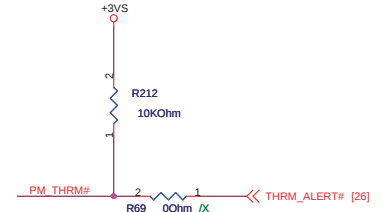
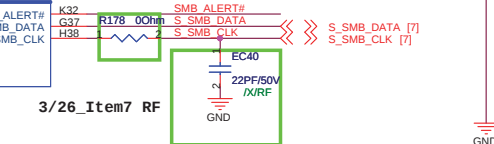
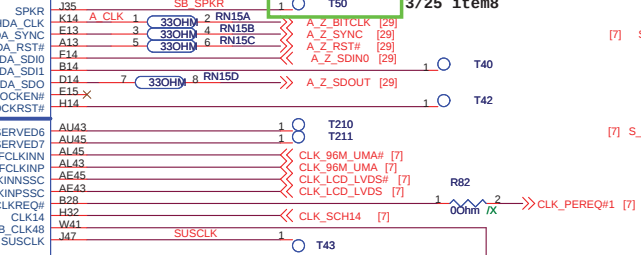
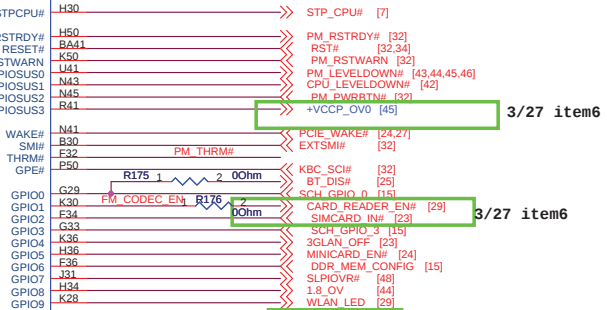
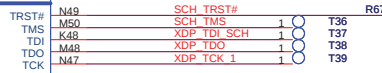
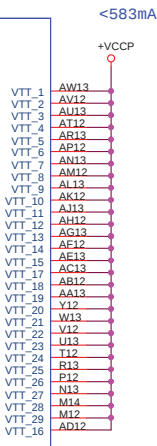
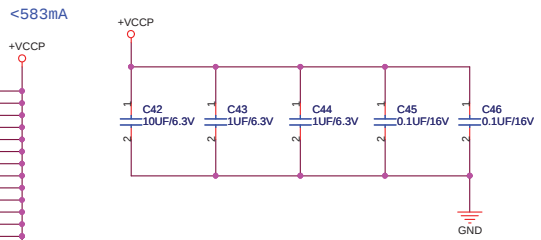
SYSTEM GPIOs

No-Connect

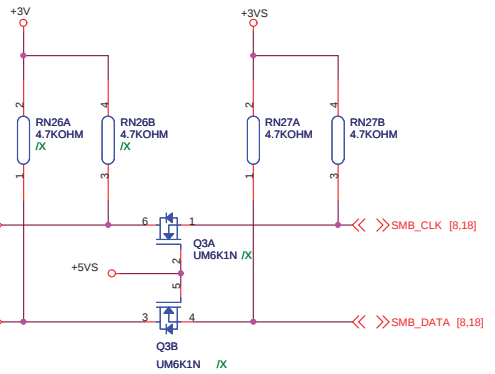
HD AUDIO

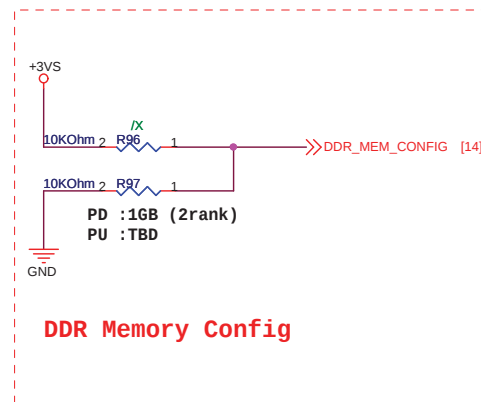
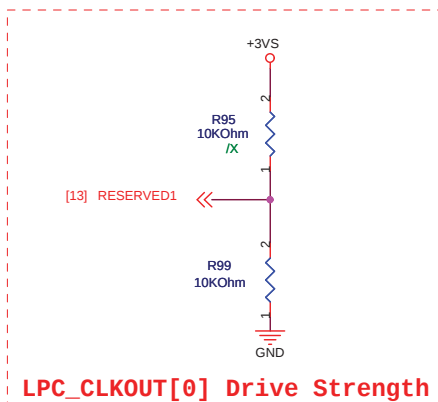
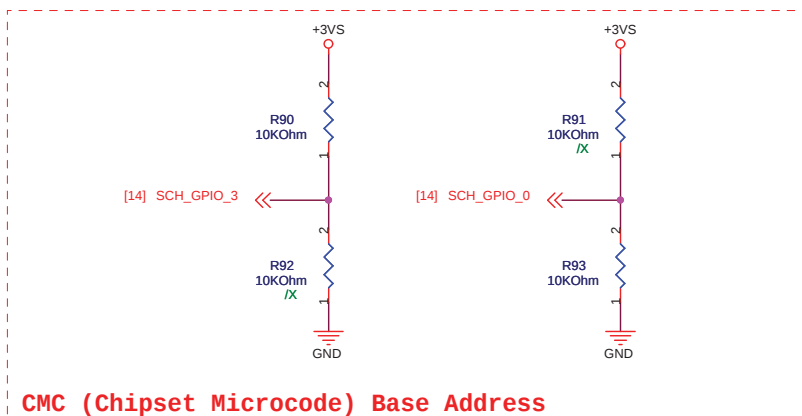
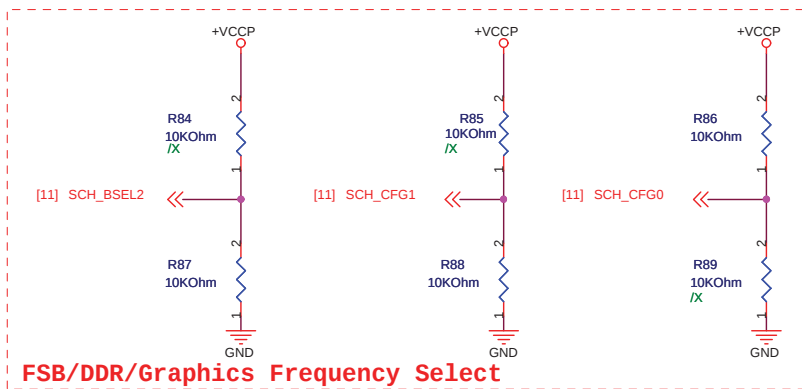
CLOCK I/F

SMB



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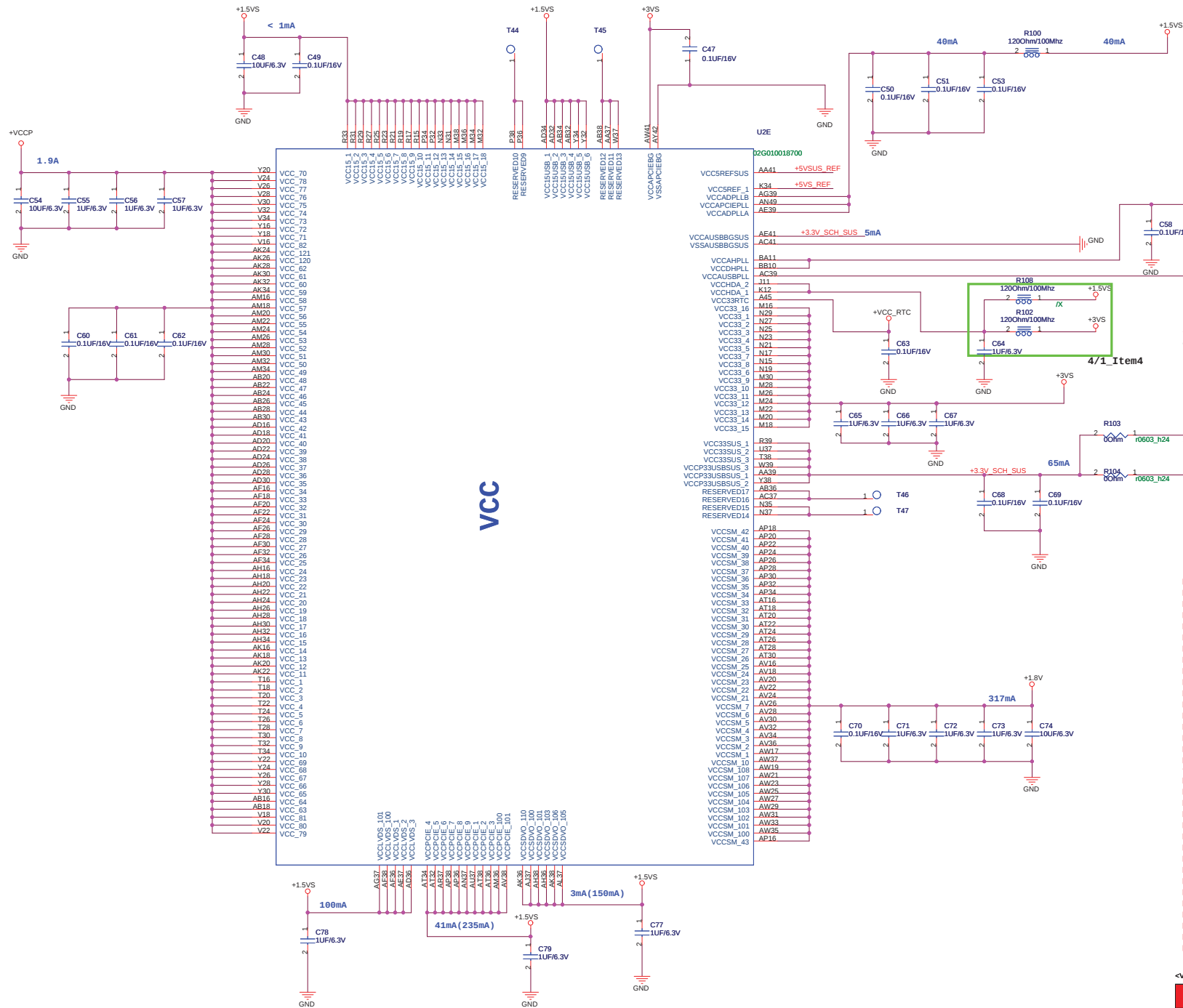




Strap Function	Singal Name			Strap		Comment	
FSB/DDR Frequency Select Graphics Frequency Select	SCH_BSEL2	SCH_CFG1	SCH_CFG0	Gfx_Freq	FSB	Note: Clock Frequencies are in Mhz Default Frequency determined by FSB speed	
	0	0	0	200	400		
	0	0	1	200	533		
CMC (Chipset Microcode) Base Address	GPIO3		GPIO0		Address		Selects the starting address that the CMC will use to start fetching code. (GPIO3 is the most significant)
	0		0		0xFFFFB0000		
	0		1		0xFFFC0000		
	1		0		0xFFFD0000 (default)		
	1		1		0xFFFE0000		
LPC_CLKOUT[0] Buffer Strength	RESERVED1			Value		Selects the drive strength of the LPC_CLKOUT[0] clock.	
	0			Reserved			
	0			1 Load (Default)			
	1			Reserved			
	1			2 Loads			

<Variant Name>

		Title :POULSBO_STRAP(5)	
ASUSTek Computer INC.		Engineer: N/A	
Size B	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009	Sheet	15	of 50

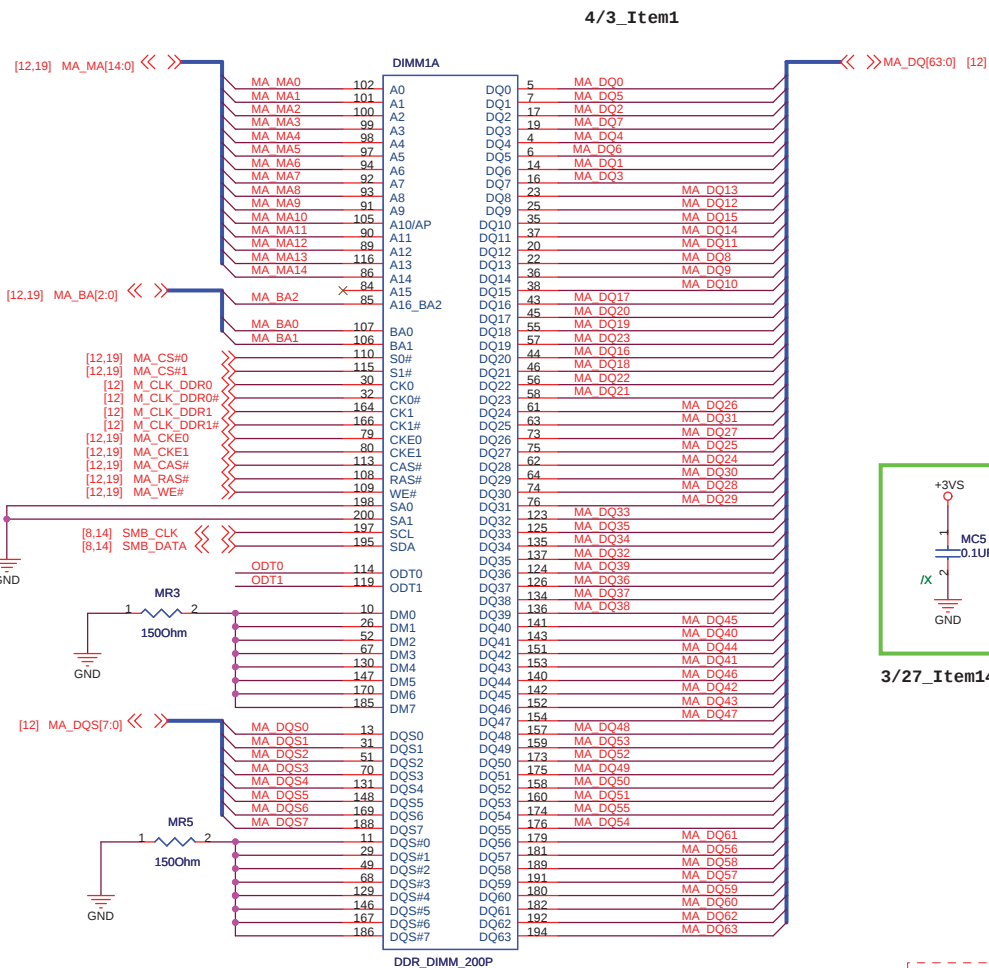


VSS

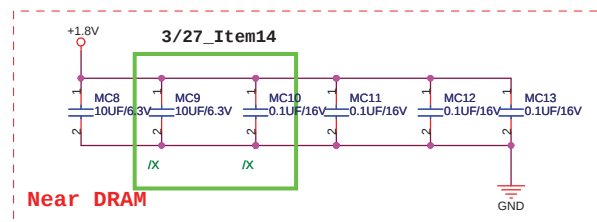
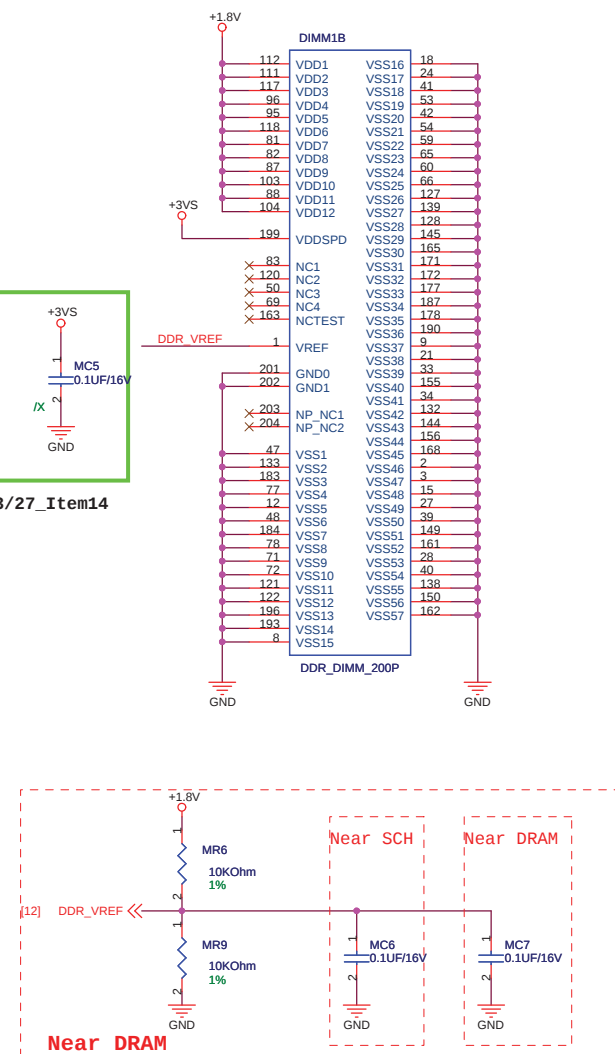
VSS

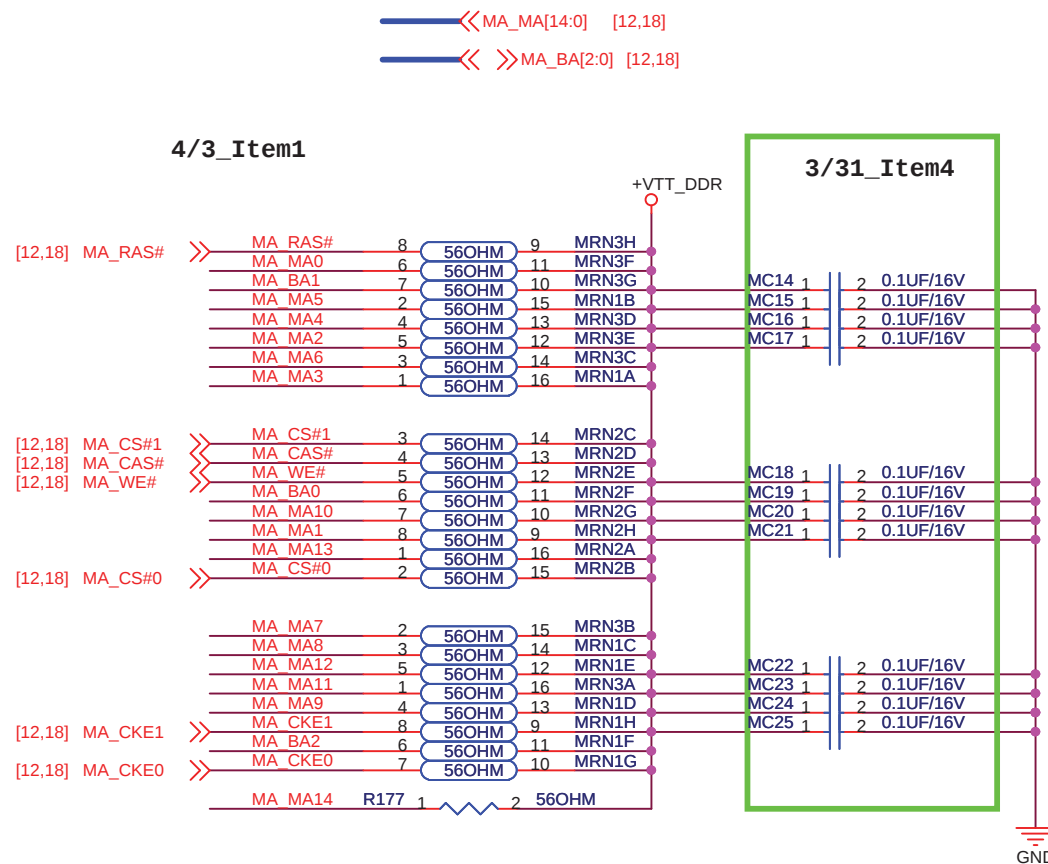
U2F

<Variant Name>



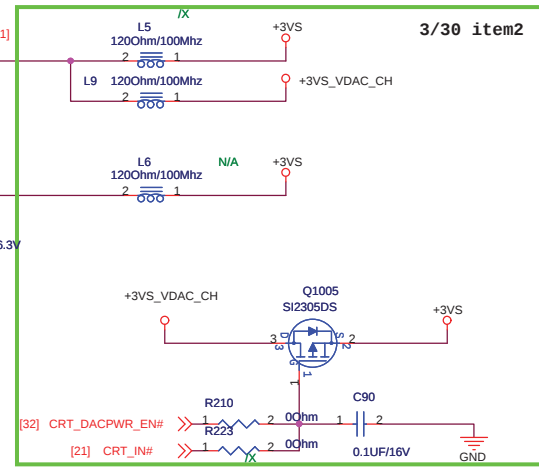
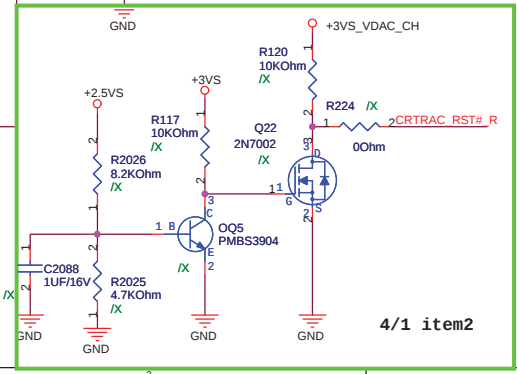
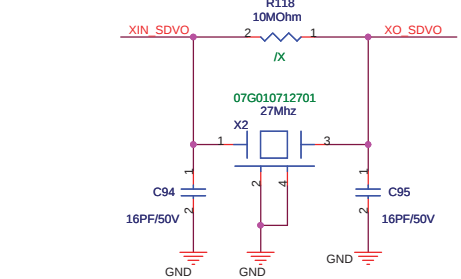
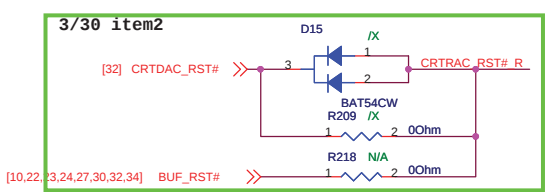
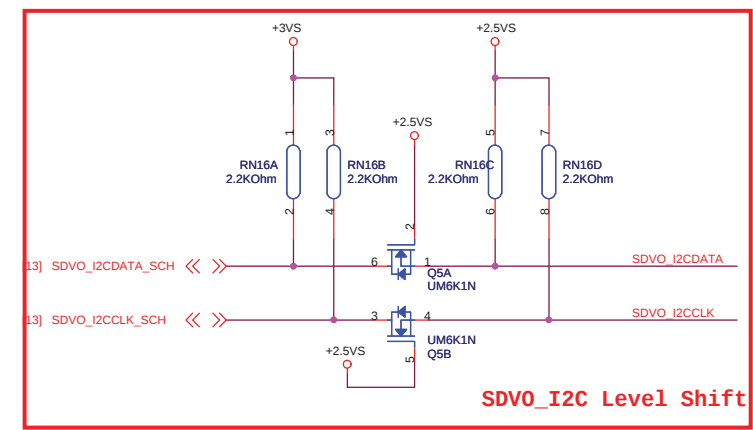
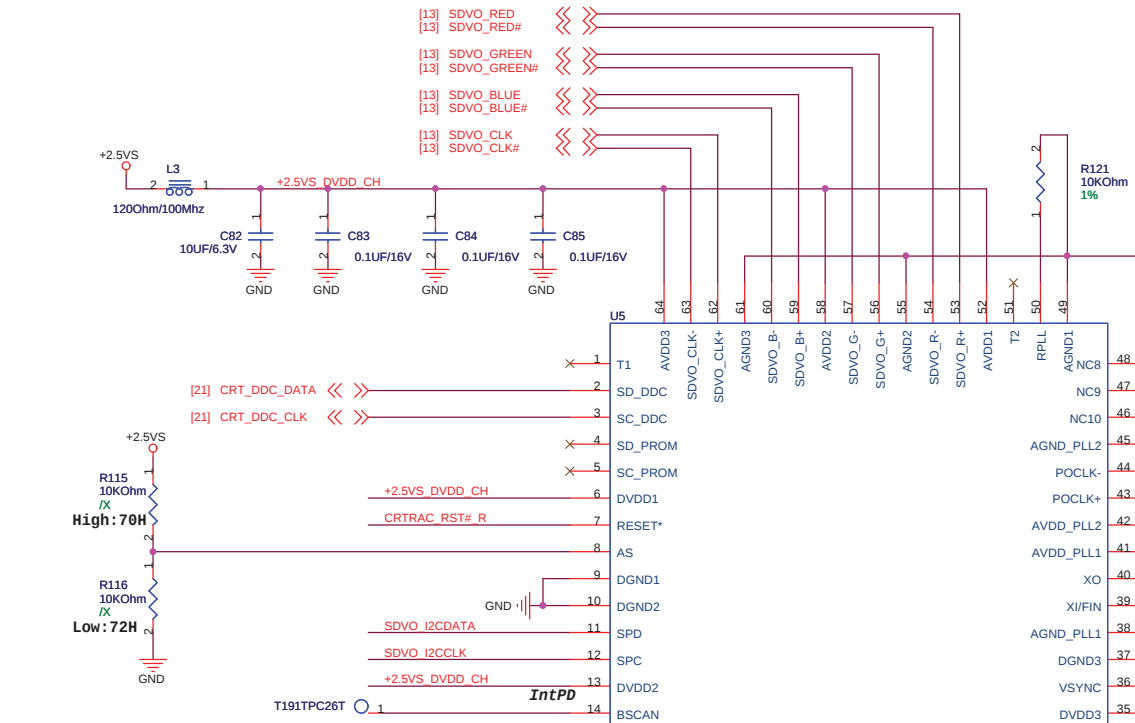
3/27 Item14

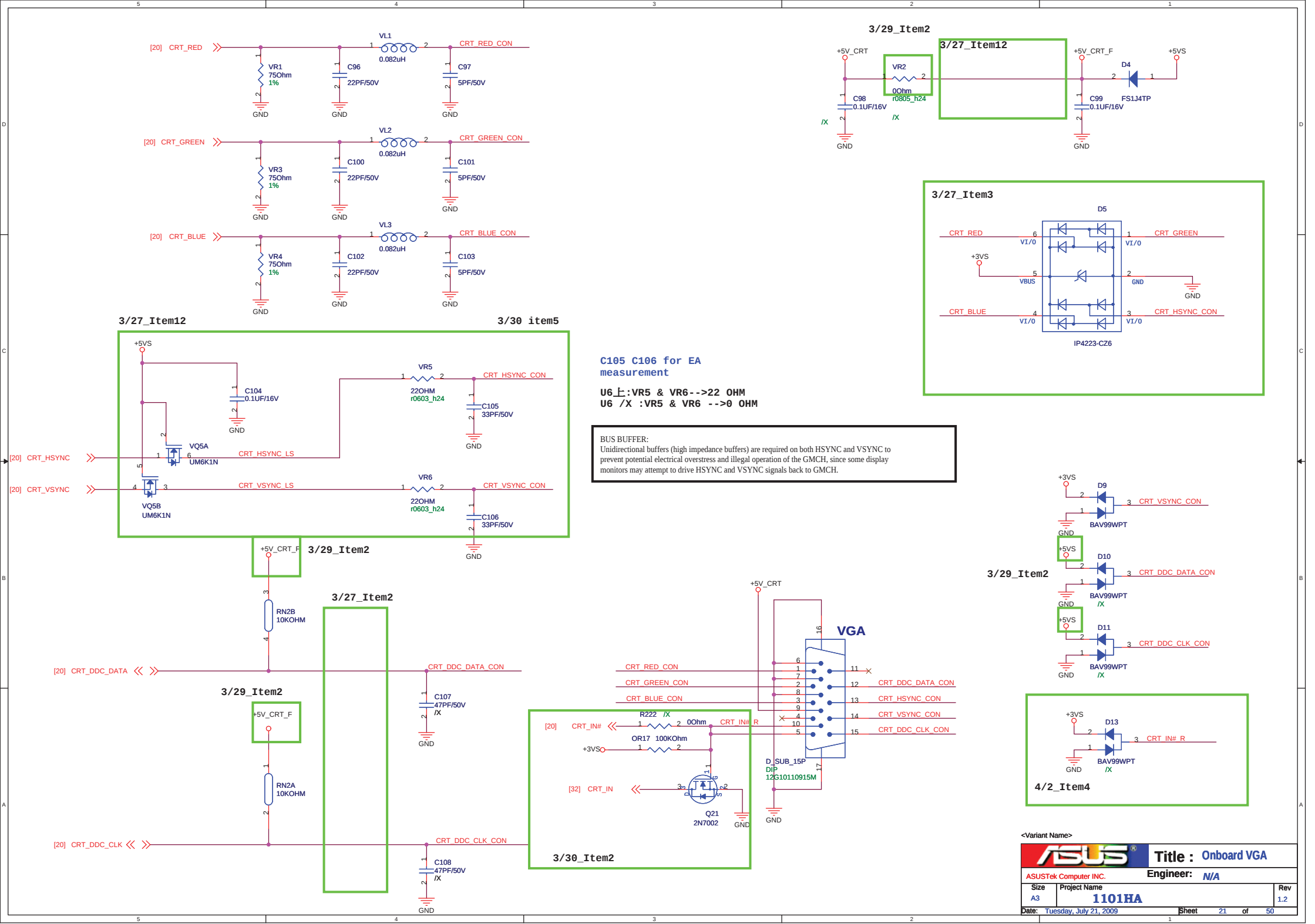


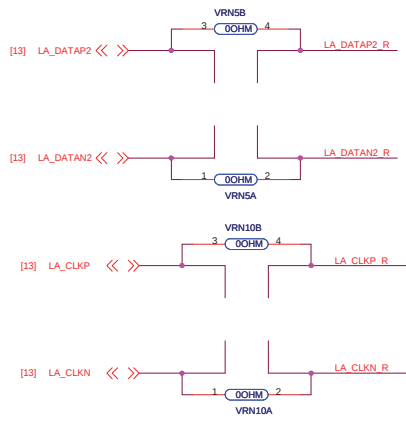


<Variant Name>

ASUS		Title : DDR2_Termination	
ASUSTek Computer INC.		Engineer: N/A	
Size A4	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009		Sheet	19 of 50

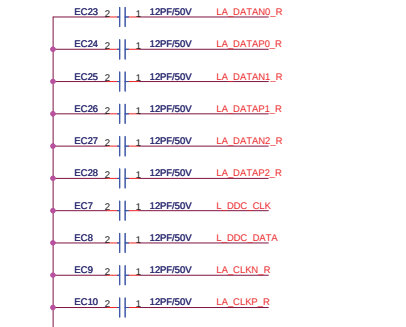




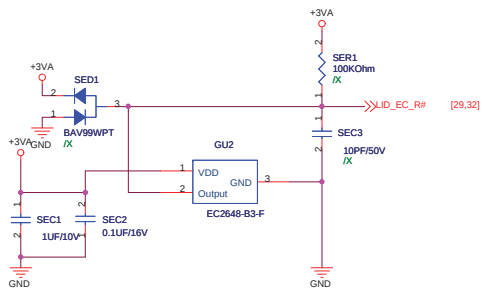


3/31_Item6

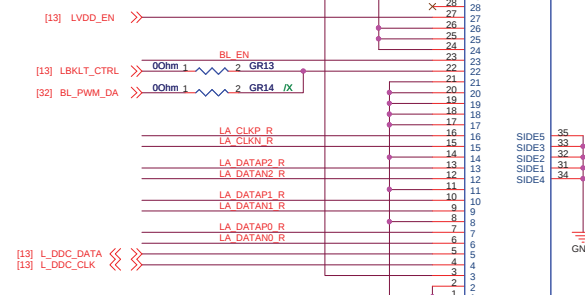
3/26_Item7 FOR RF



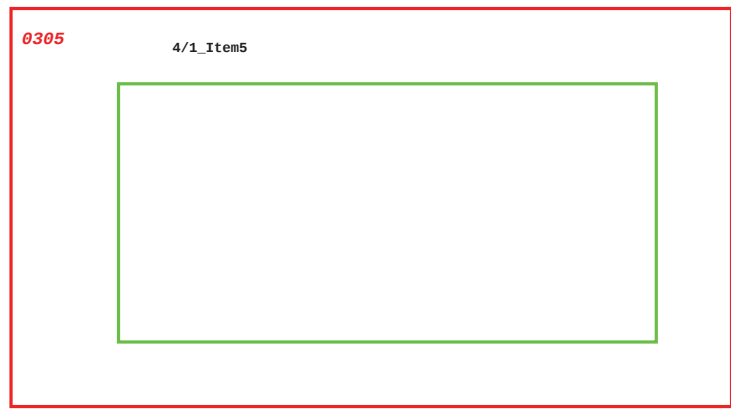
Backlight Enable Discharge



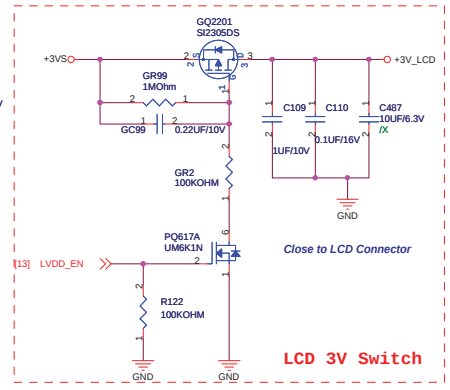
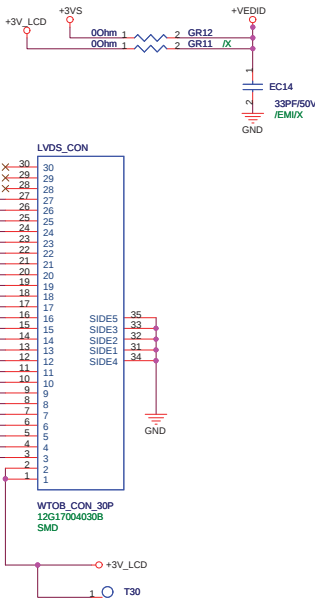
3/29 item1



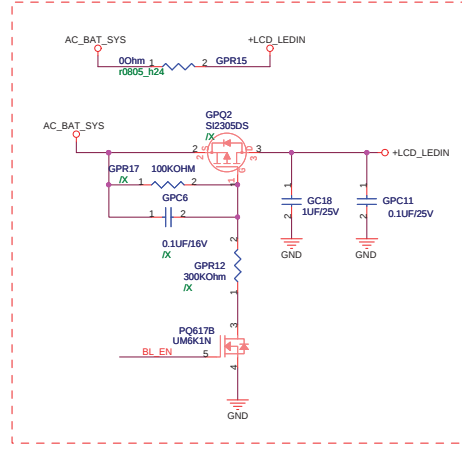
3/29 item6



4/1_Item5



LCD 3V Switch

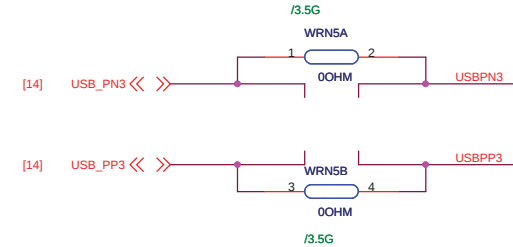
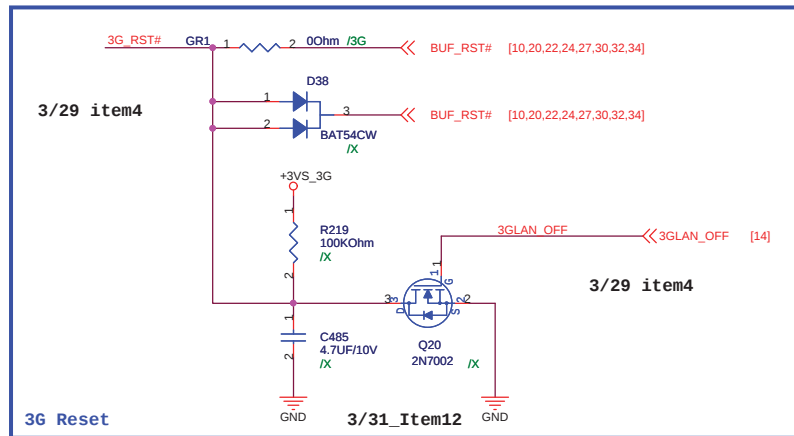
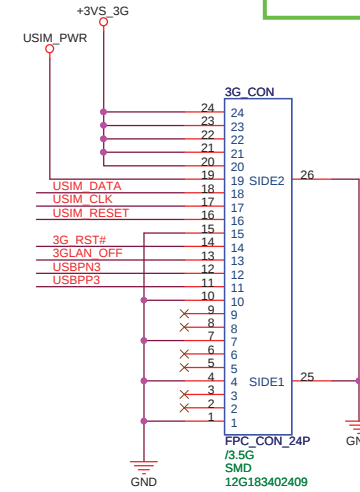
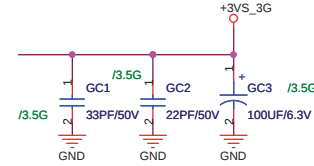
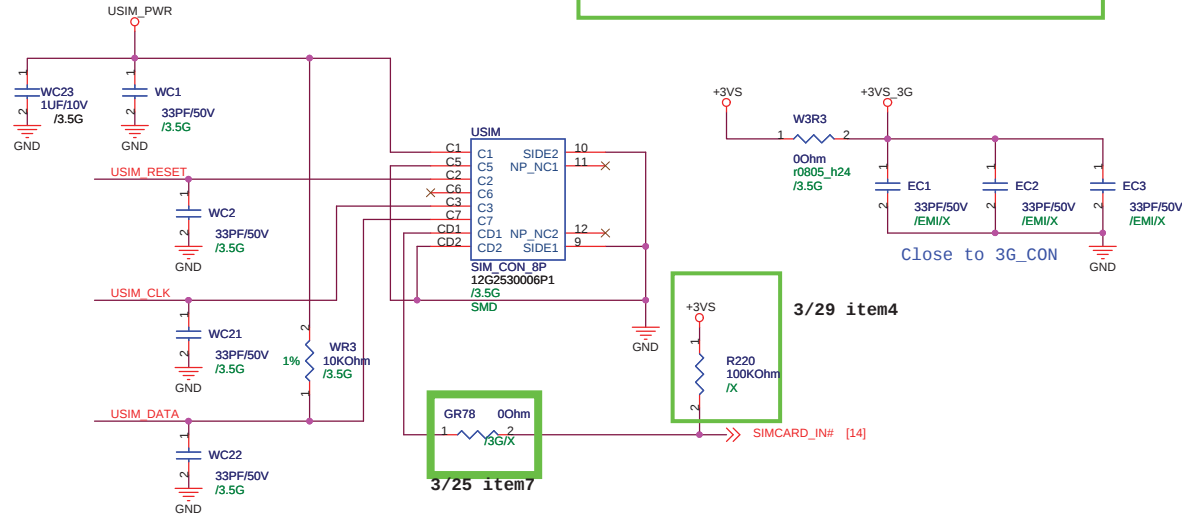


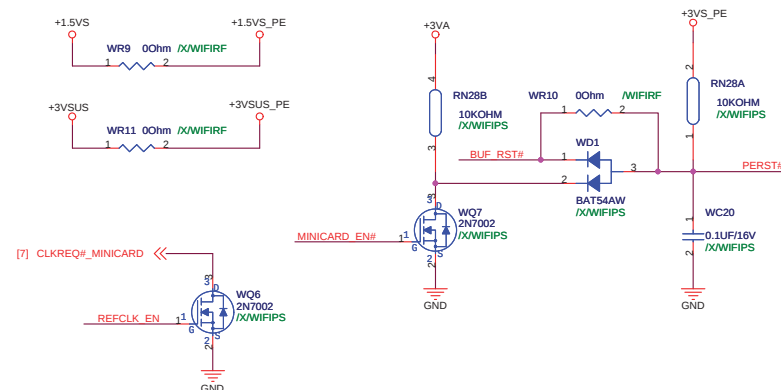
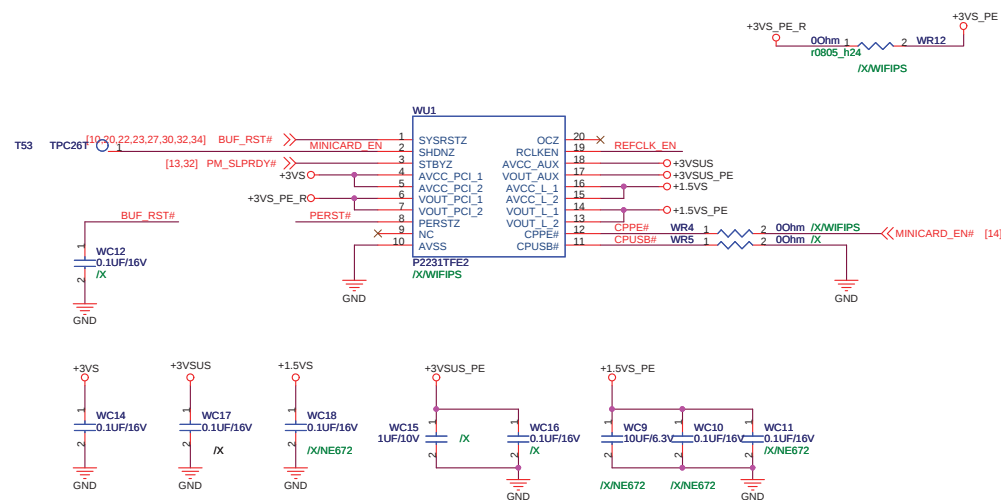
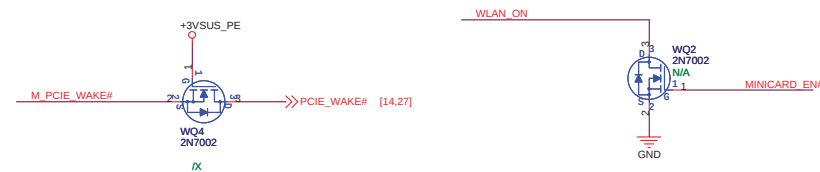
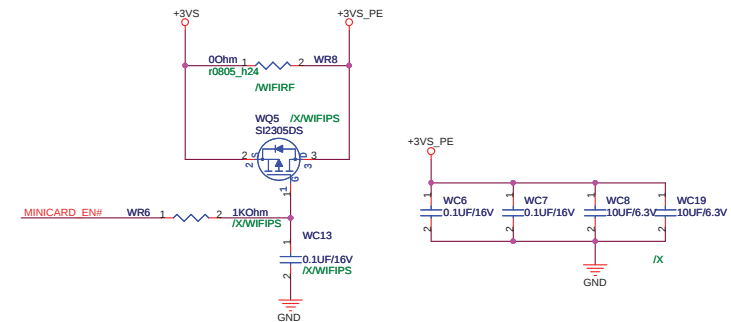
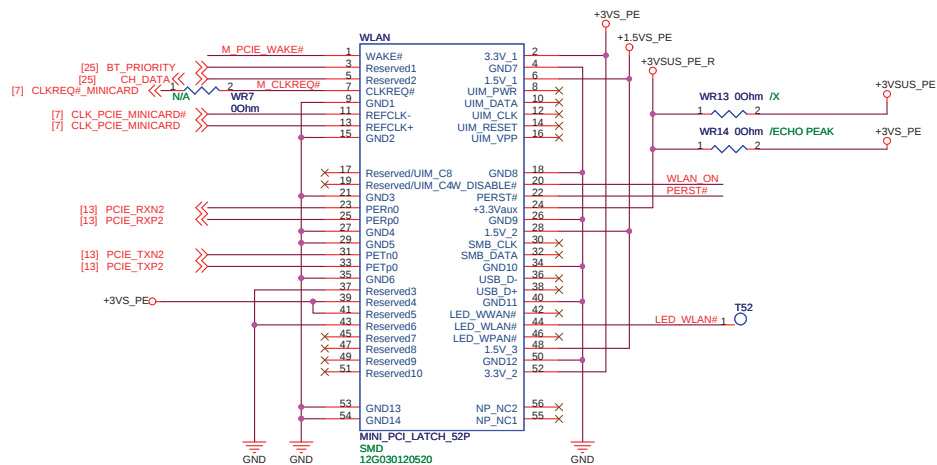
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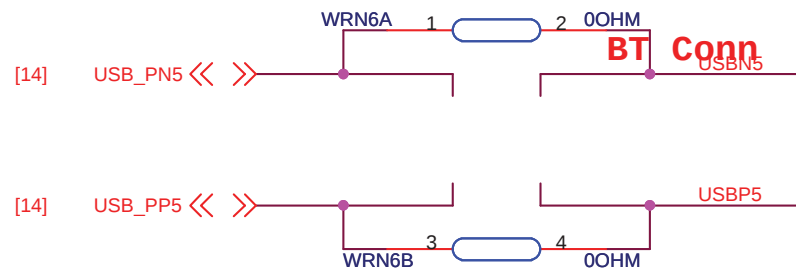
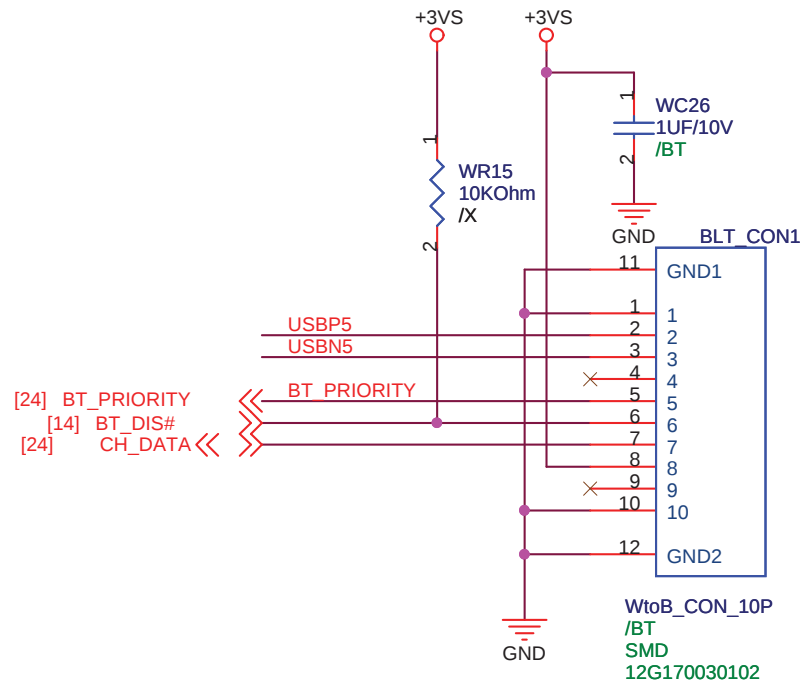
ASUS		Title : LVDS Conn	
ASUSTek Computer INC.		Engineer: N/A	
Size	Project Name	Rev	
Custom	1101HA	1.2	
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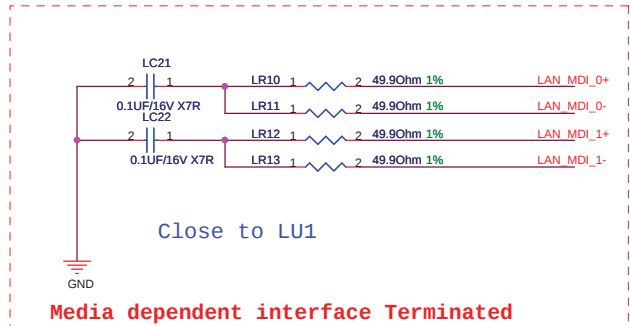
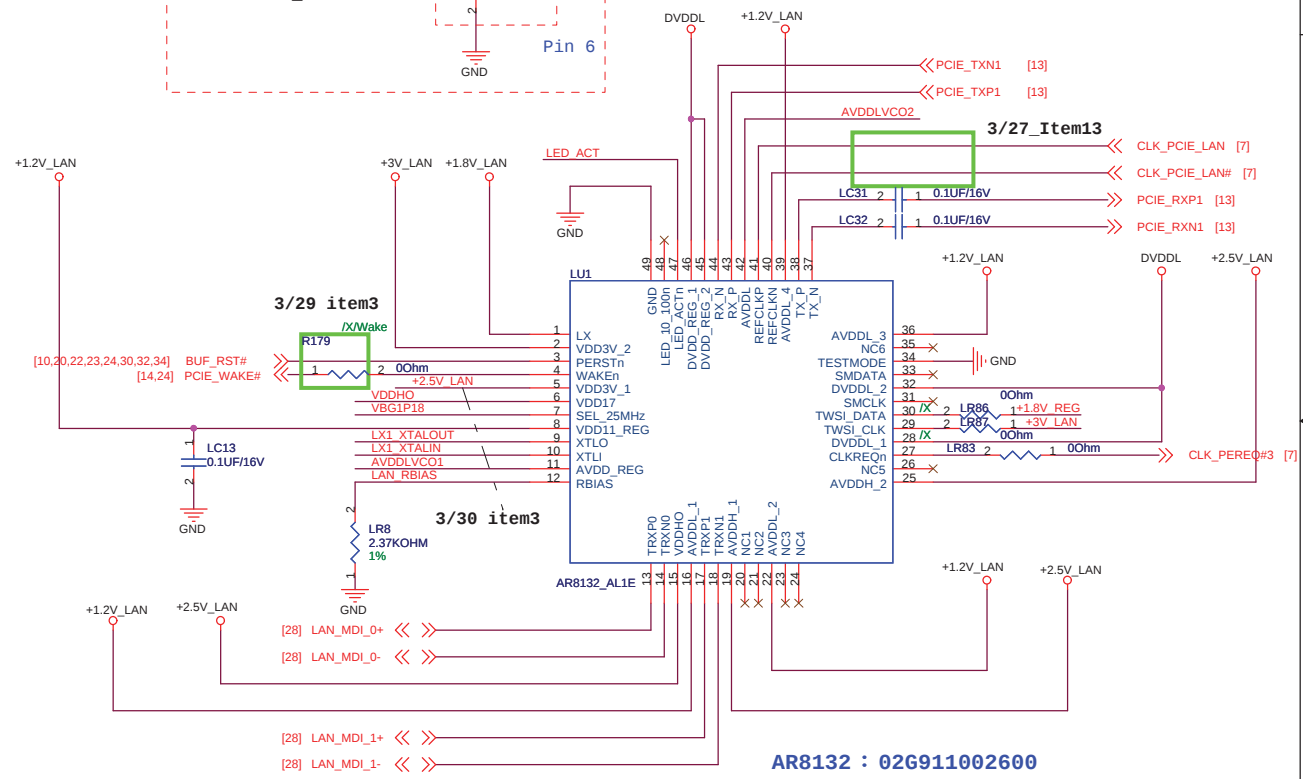
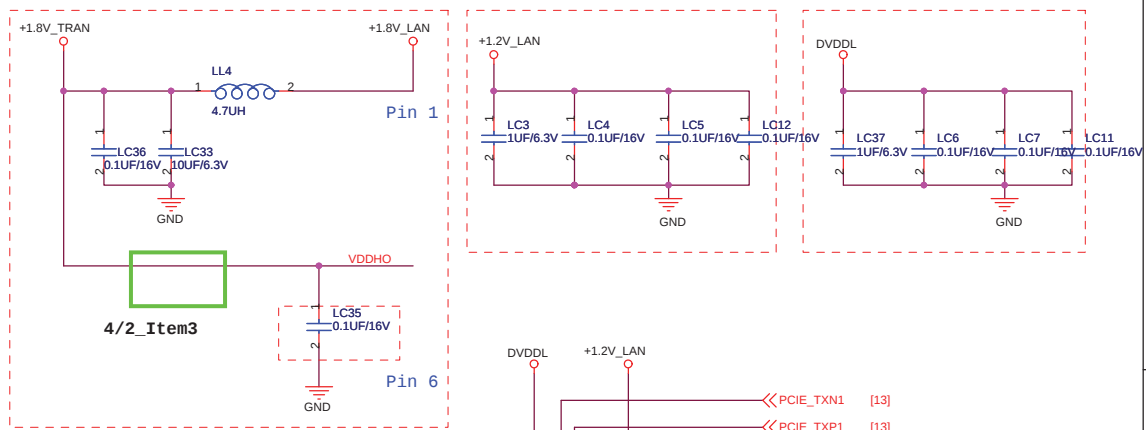
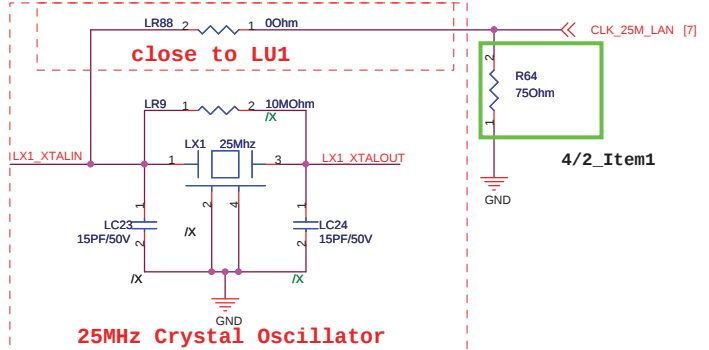
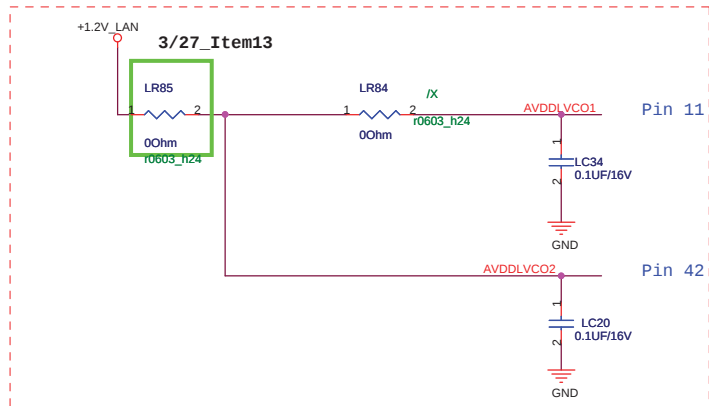
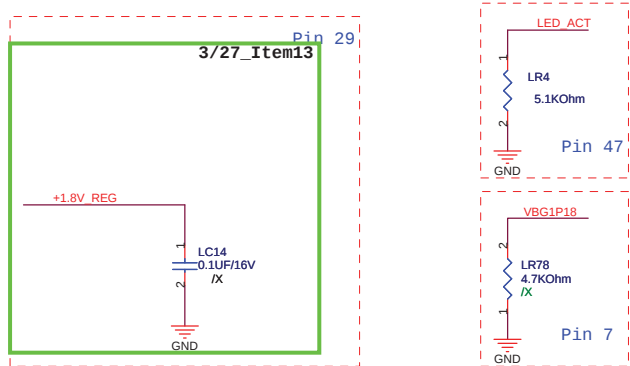
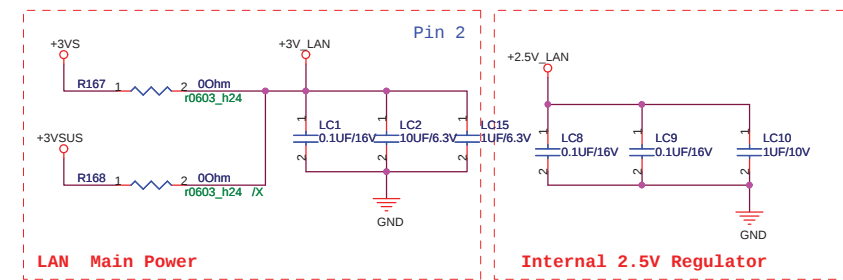


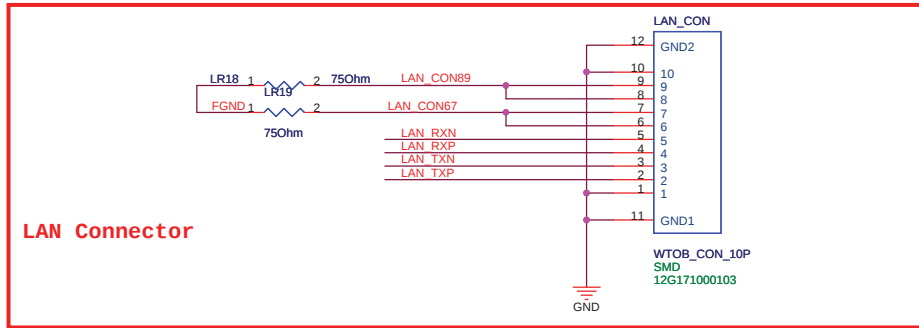
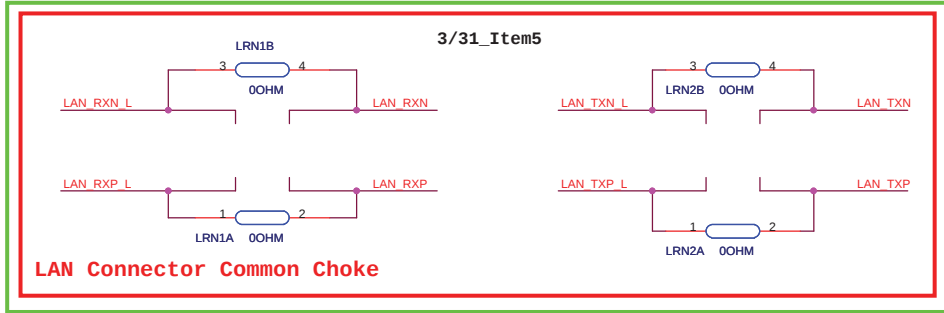
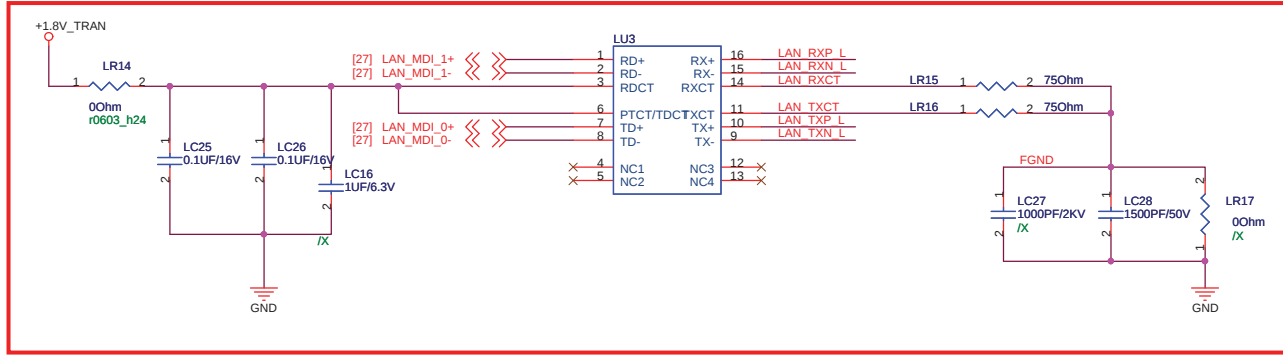




<Variant Name>

ASUS		Title : Bluetooth	
ASUSTek Computer INC.		Engineer: N/A	
Size A	Project Name 1101HA		Rev 1.2
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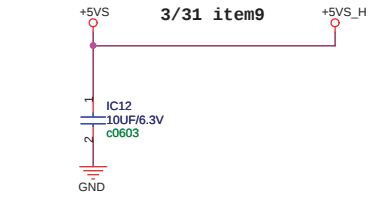


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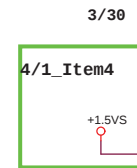
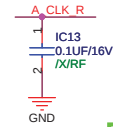
3/25 item4

Camera USB Common Choke

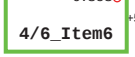


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3/26 item7 FOR RF



3/30 item6



3/25 item3

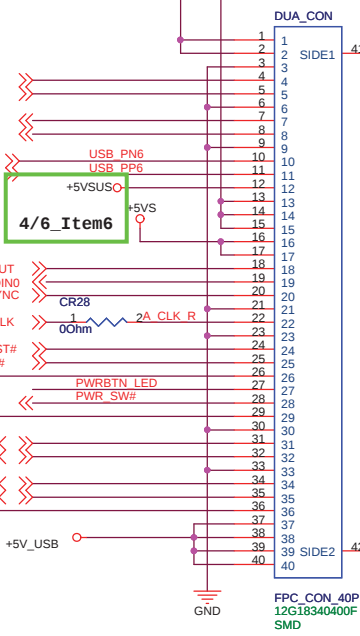
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[30] SATA_TXP
[30] SATA_TXN
[30] SATA_RXN
[30] SATA_RXP
[14] USB_PN6
[14] USB_PP6

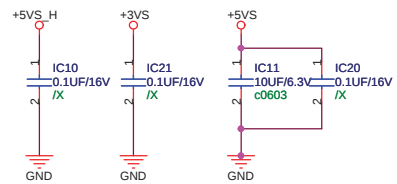
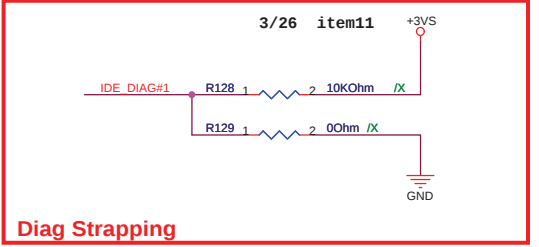
[14] A_Z_SDOUT
[14] A_Z_SDINO
[14] A_Z_SYNC
[14] A_Z_BITCLK
[14] A_Z_RST#
[32] OP_SD#

[49] PWR_SW#

[14] USB_PN0
[14] USB_PP0
[14] USB_PN1
[14] USB_PP1

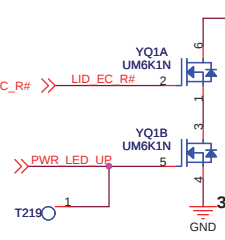


IDE_PCSEL#1 H: Slave
L: Master
IDE Master/ Slave Setting



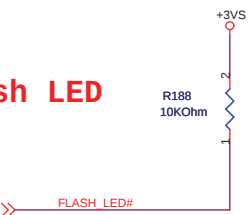
[22,32] LID_EC_R#

[32] PWR_LED_UP

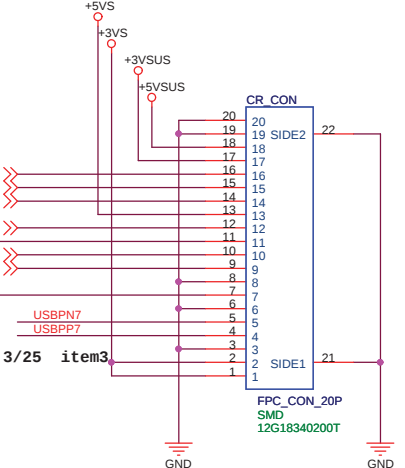
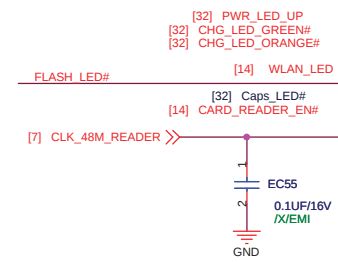


Flash LED

[30] FLASH_LED_S#

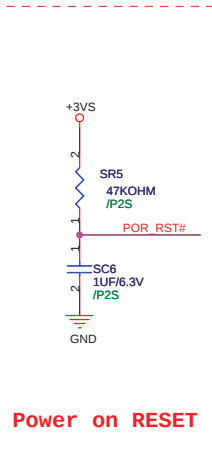
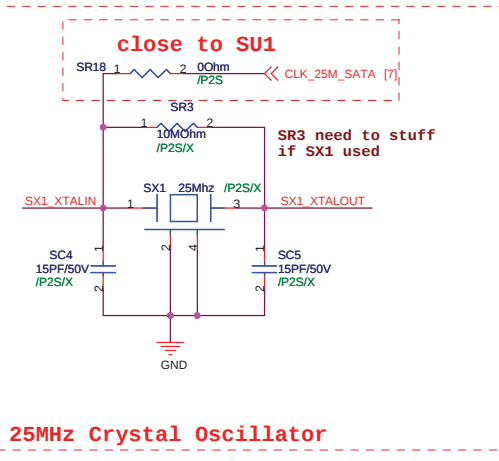
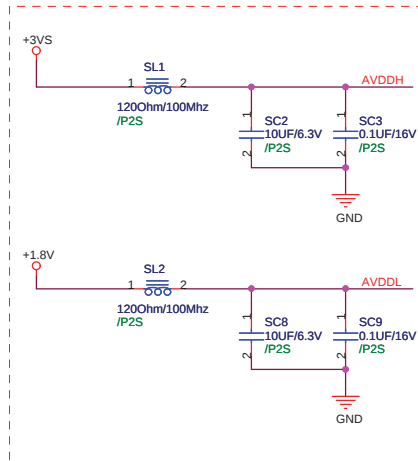


3/25 item2

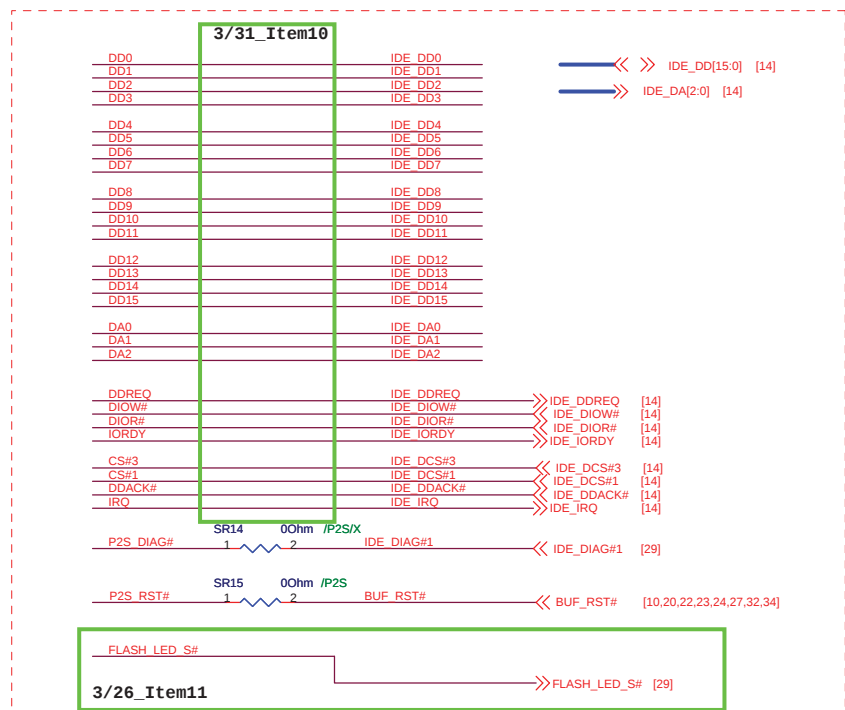
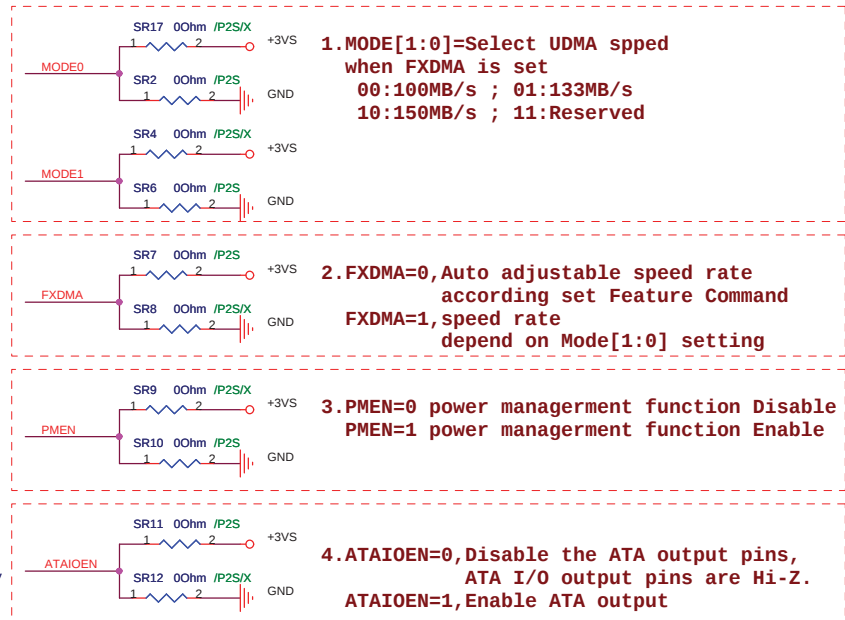
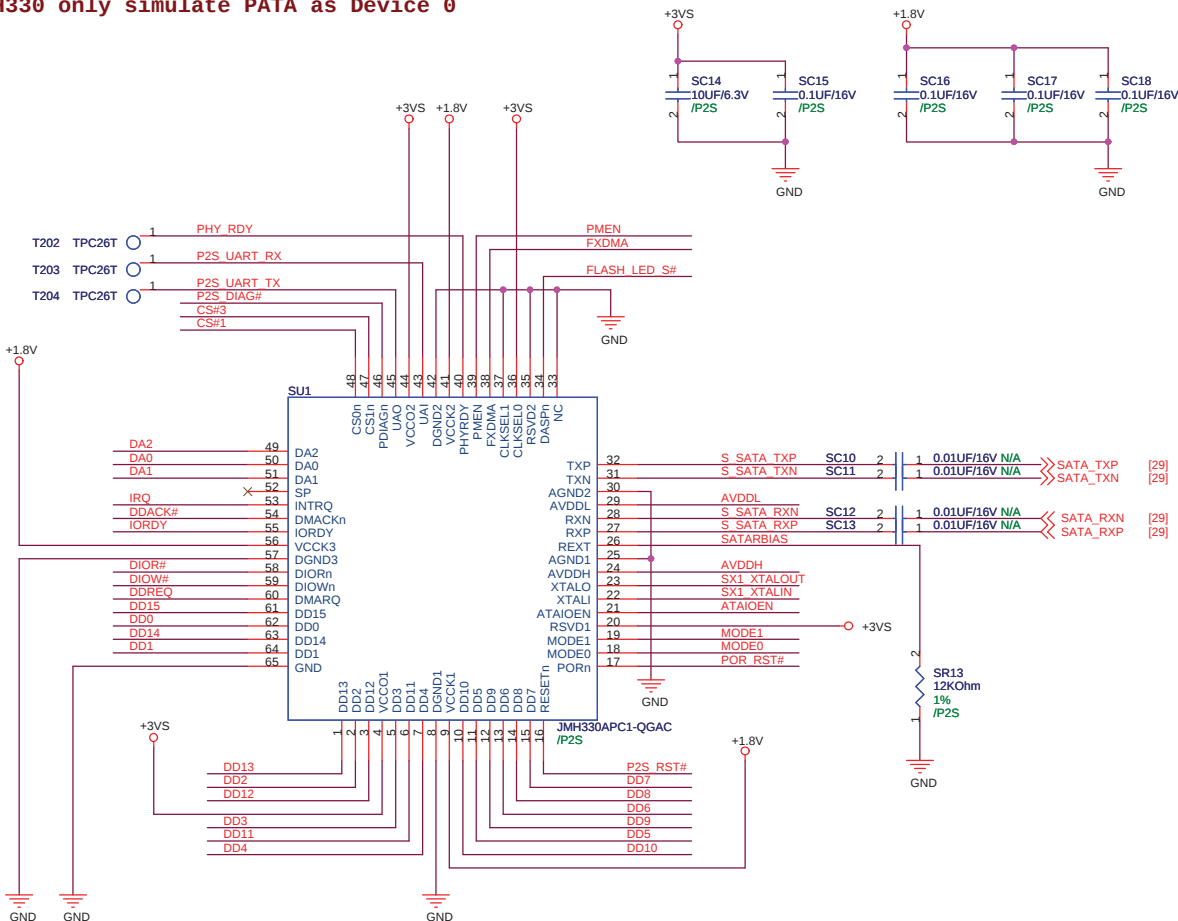


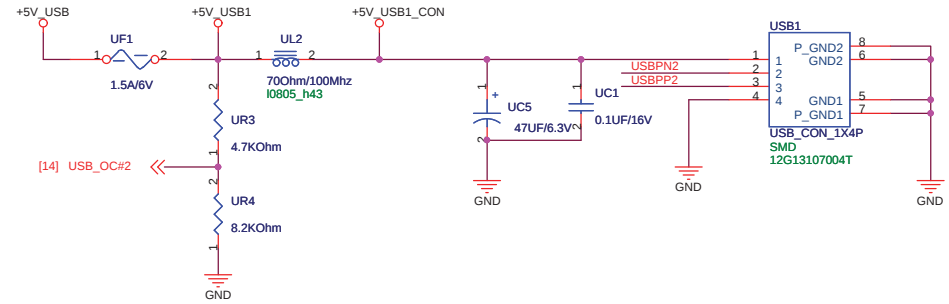
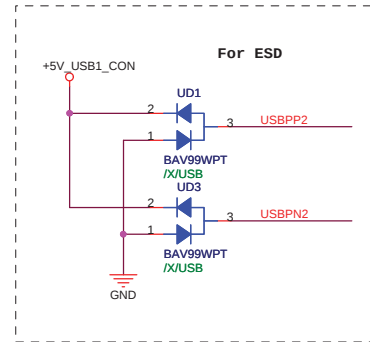
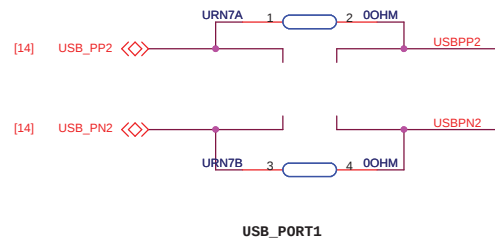
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ASUSTek Computer INC.		Engineer: N/A	
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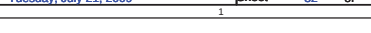
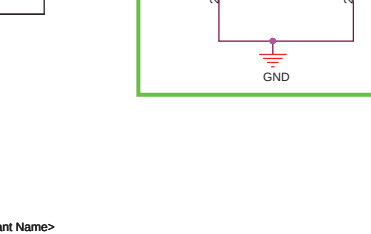
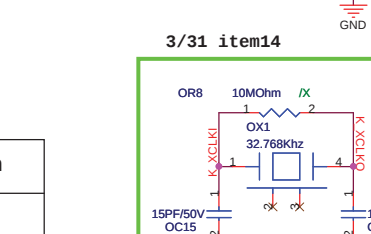
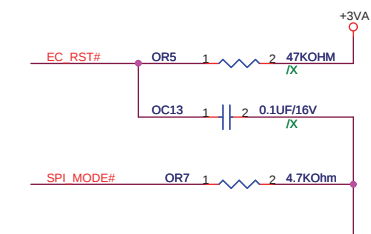
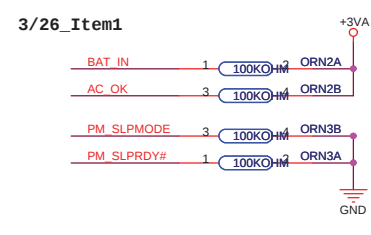
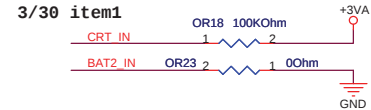
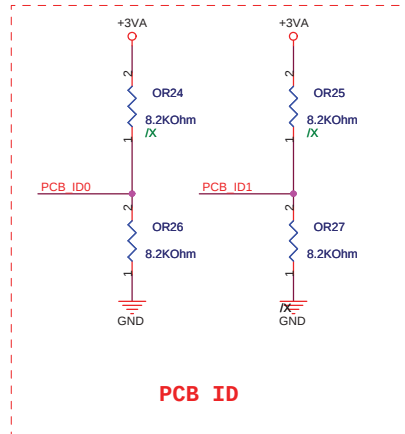
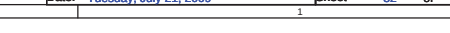
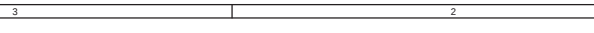
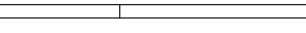
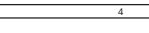
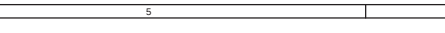
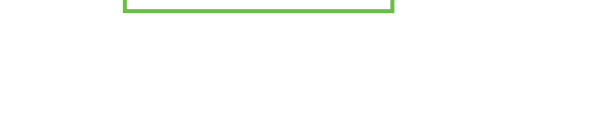
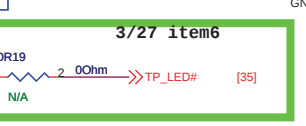
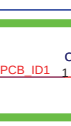
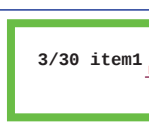
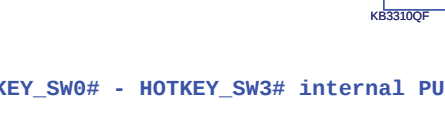
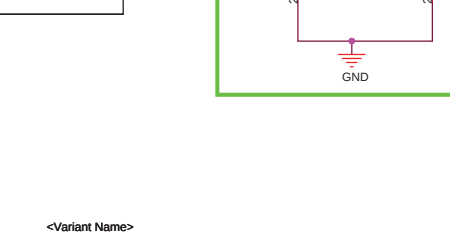
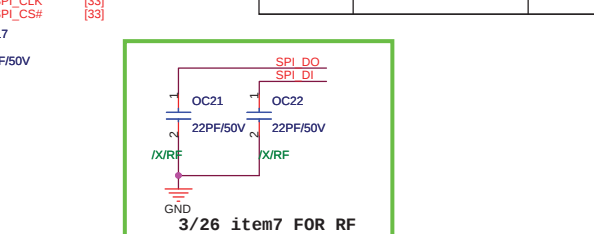
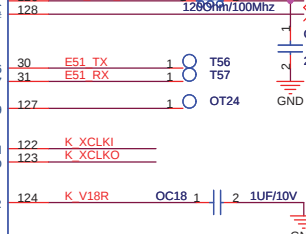
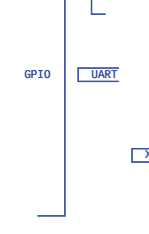
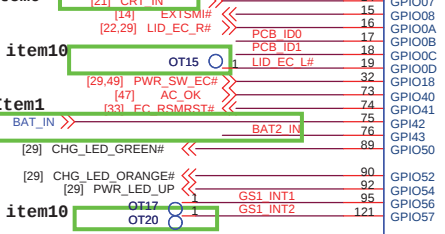
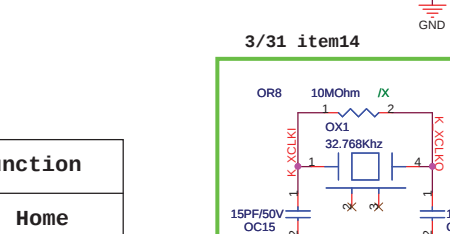
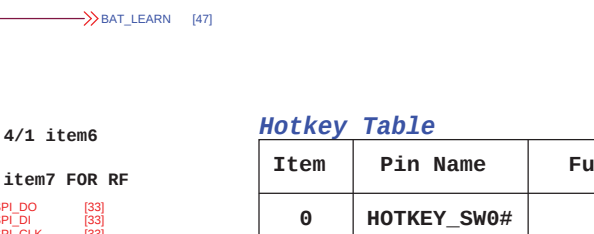
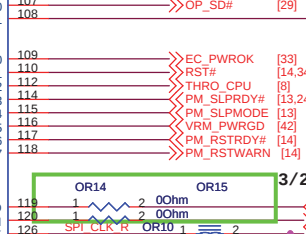
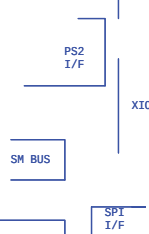
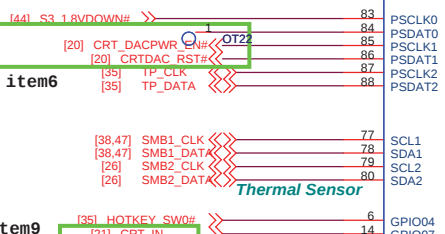
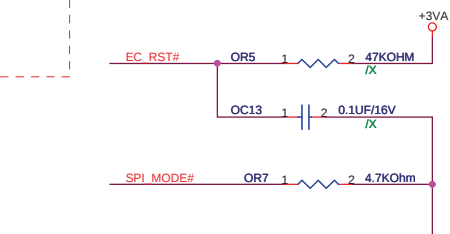
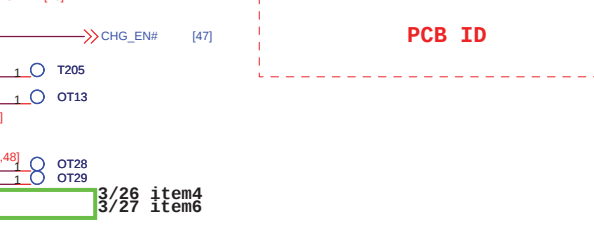
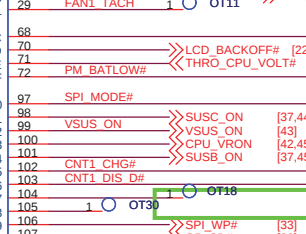
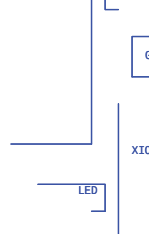
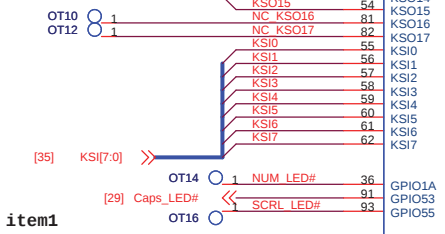
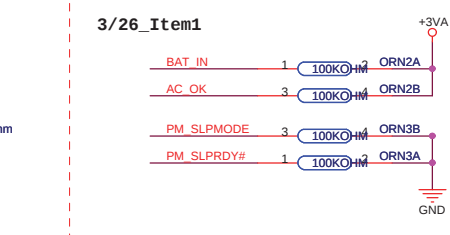
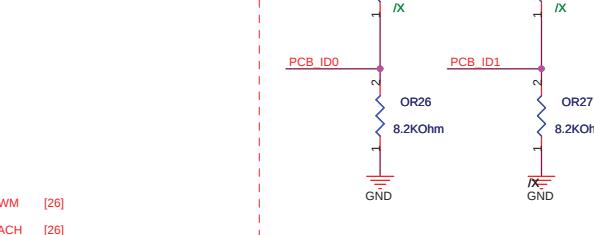
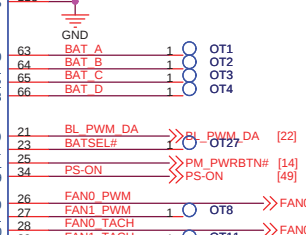
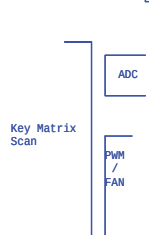
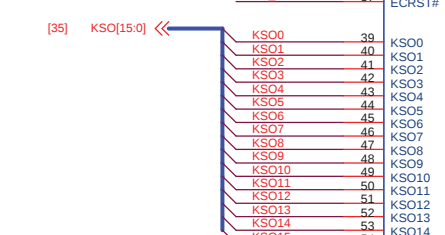
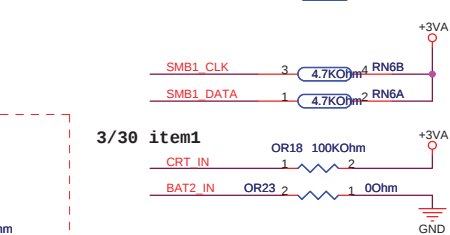
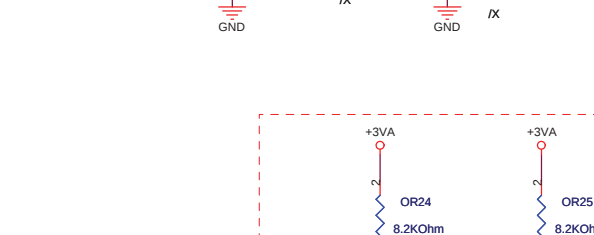
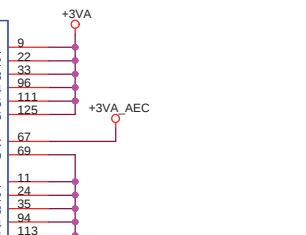
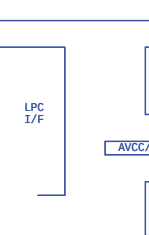
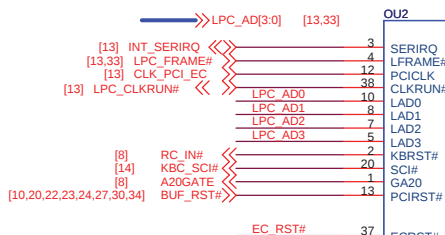
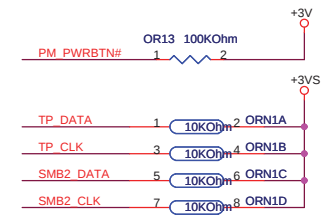
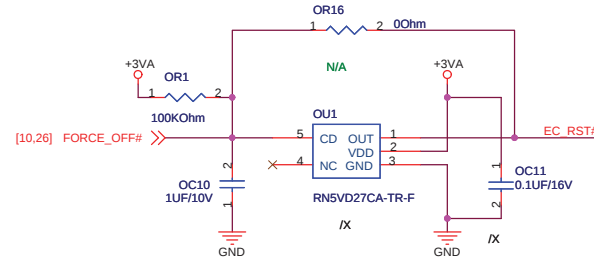
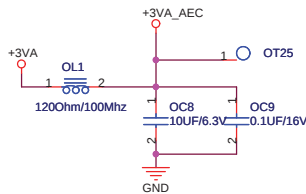
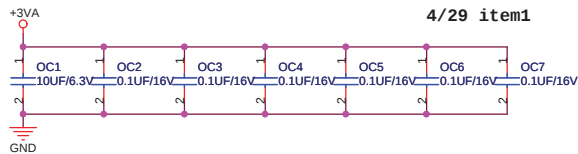


JMH330 only simulate PATA as Device 0



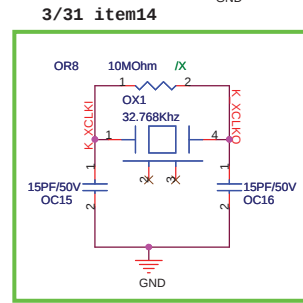
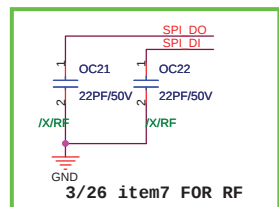


<Variant Name>



Hotkey Table

Item	Pin Name	Function
0	HOTKEY_SW0#	Home



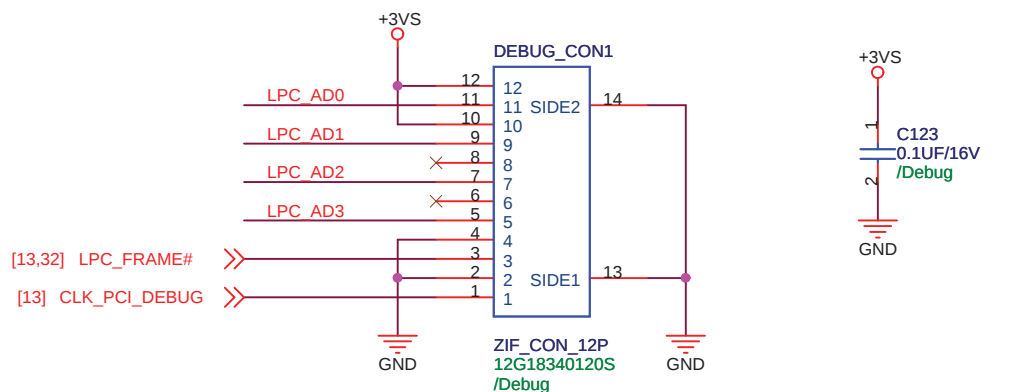
<Variant Name>

ASUS		Title : EC_ENE KB3310	
ASUSTek Computer INC.		Engineer: N/A	
Size	A3	Project Name	1101HA
Date	Tuesday, July 21, 2009	Sheet	32 of 50

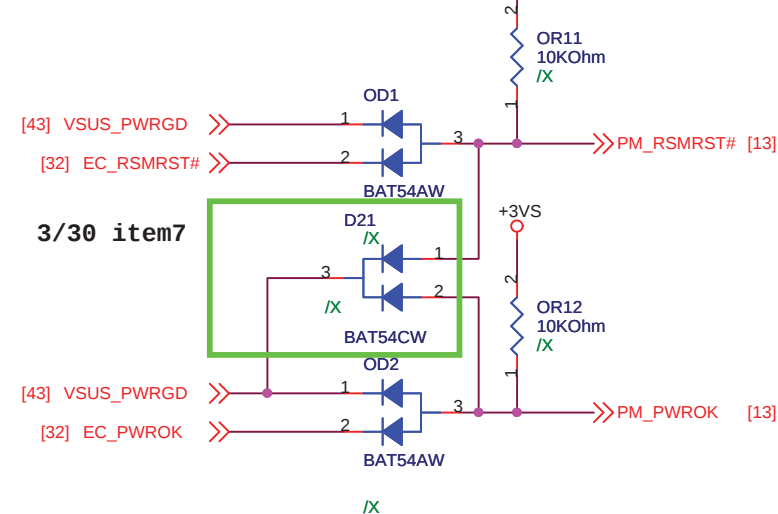
HOTKEY_SW0# - HOTKEY_SW3# internal PU

3/30 item1 PCB ID1 1 2 00hm N/A TP_LED# [35]

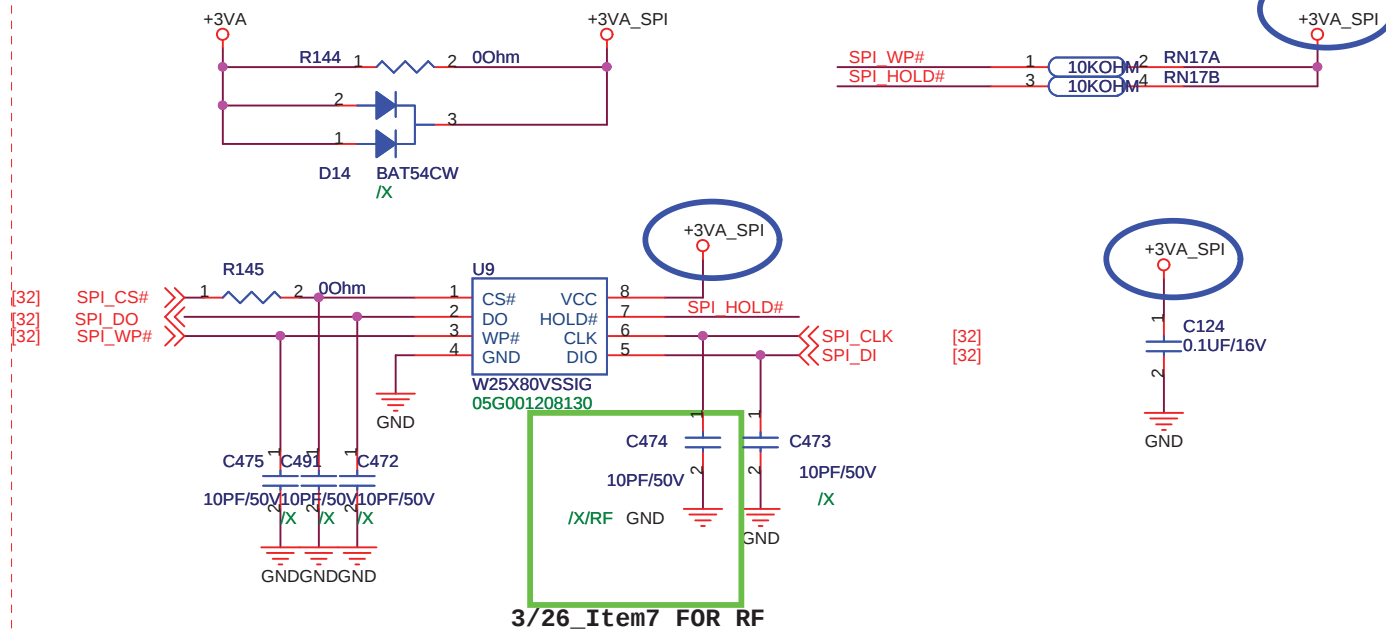
For Debug



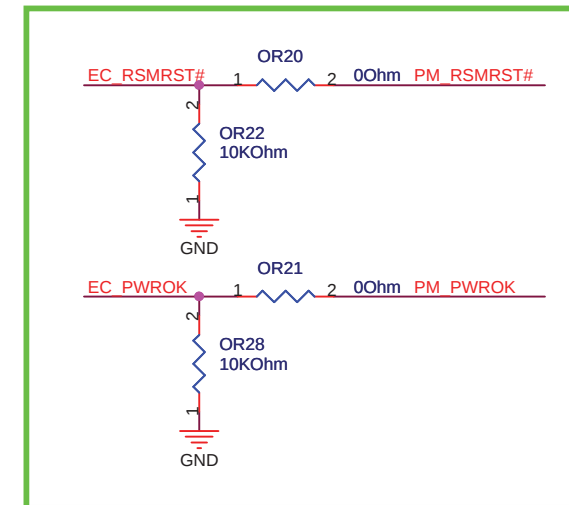
Resolve auto-boot issue



SPI ROM

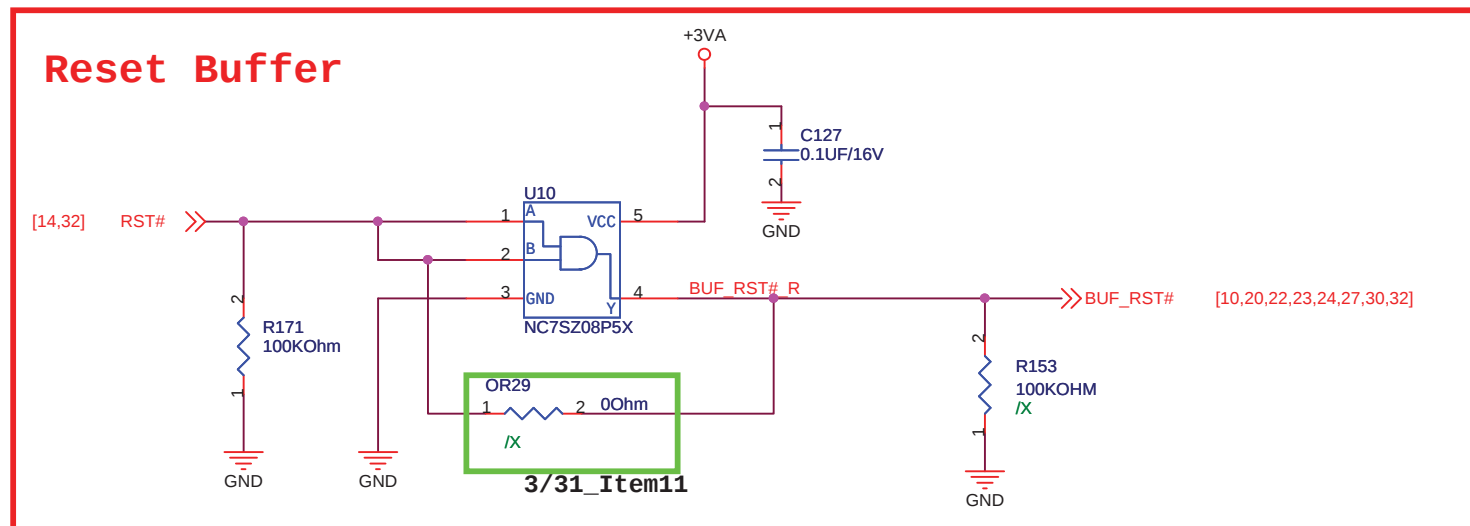
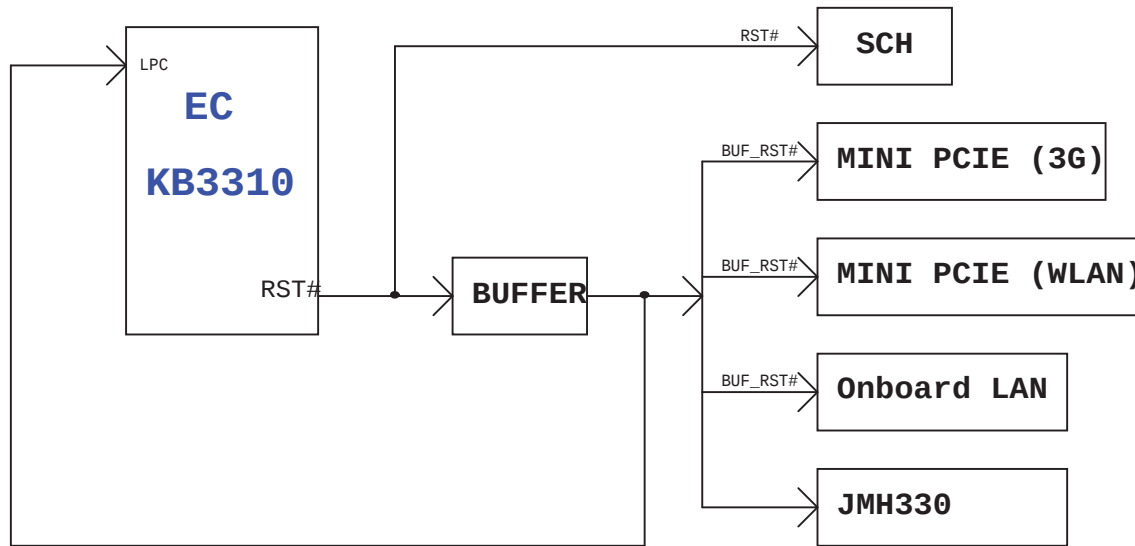


3/30 item7



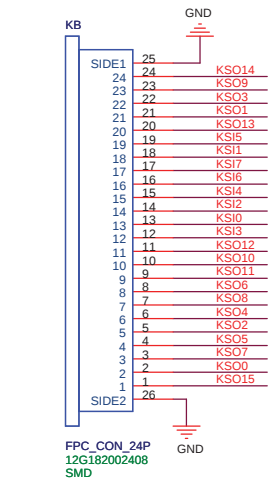
<Variant Name>

ASUS		Title : SPI ROM/ Debug	
ASUSTek Computer INC.		Engineer: N/A	
Size A4	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009	Sheet 33 of 50		

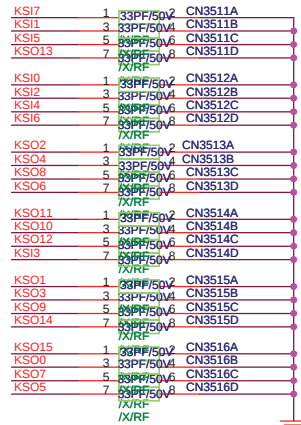


<Variant Name>

ASUS		Title : Reset Map	
ASUSTeK COMPUTER INC		Engineer: N/A	
Size A4	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009		Sheet	34 of 50

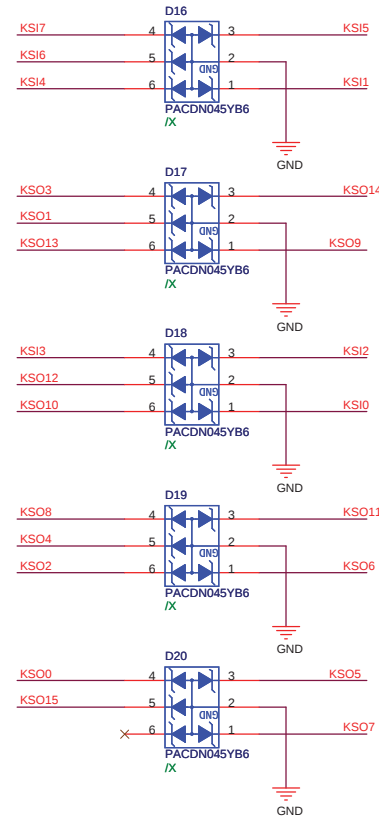


For Keyboard Connector



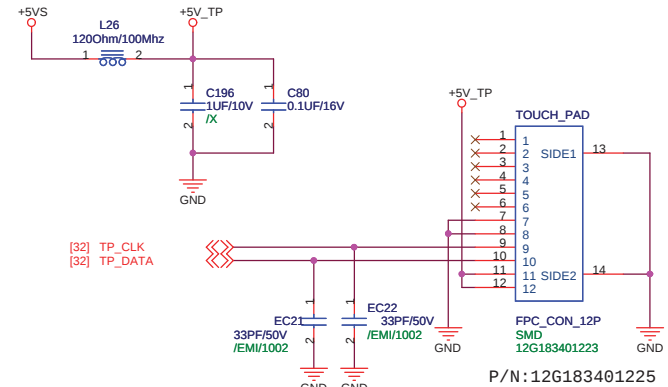
3/26_Item7 FOR RF

4/3_Item1

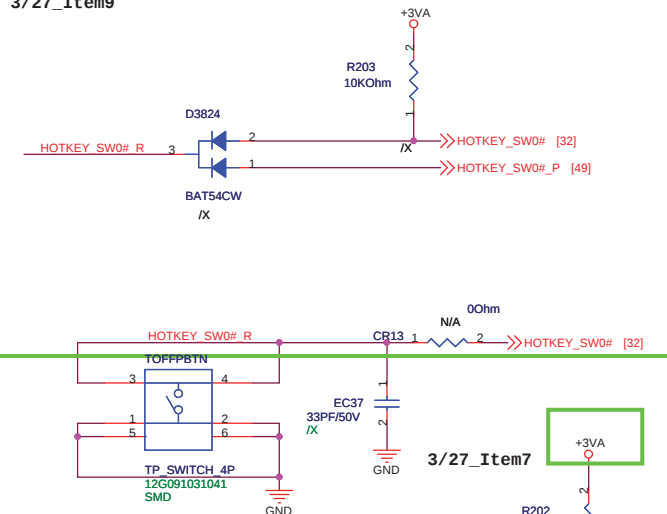


Keyboard ESD Protect

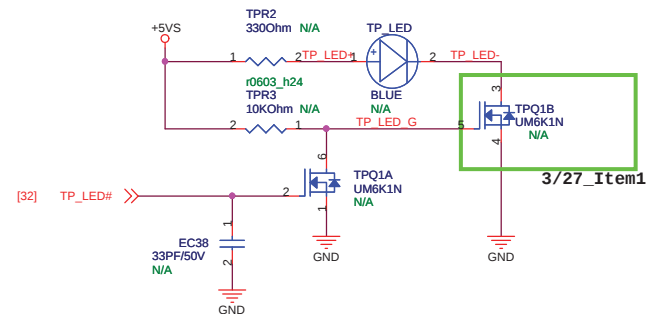
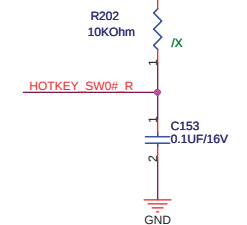
For Touch-Pad



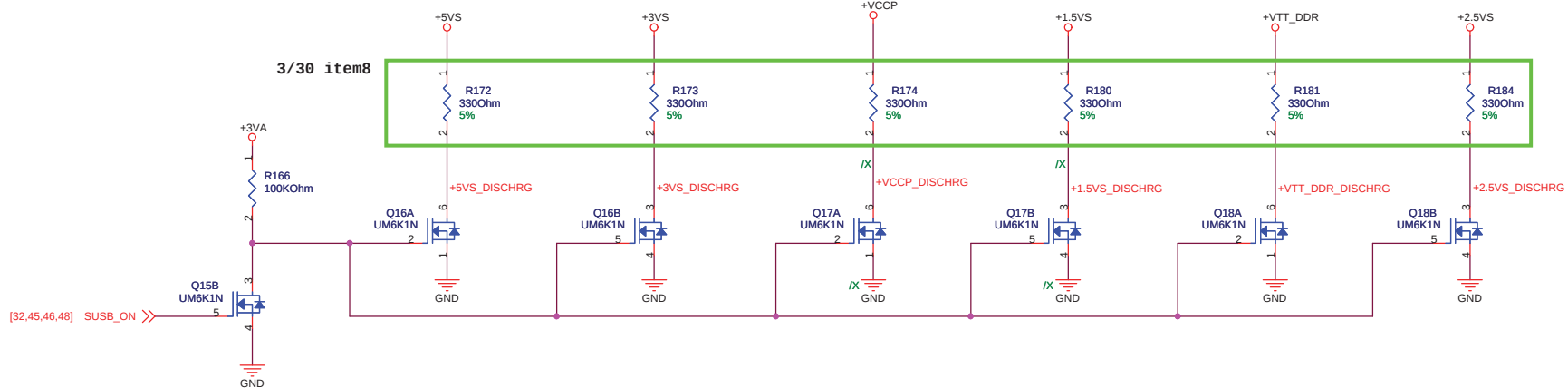
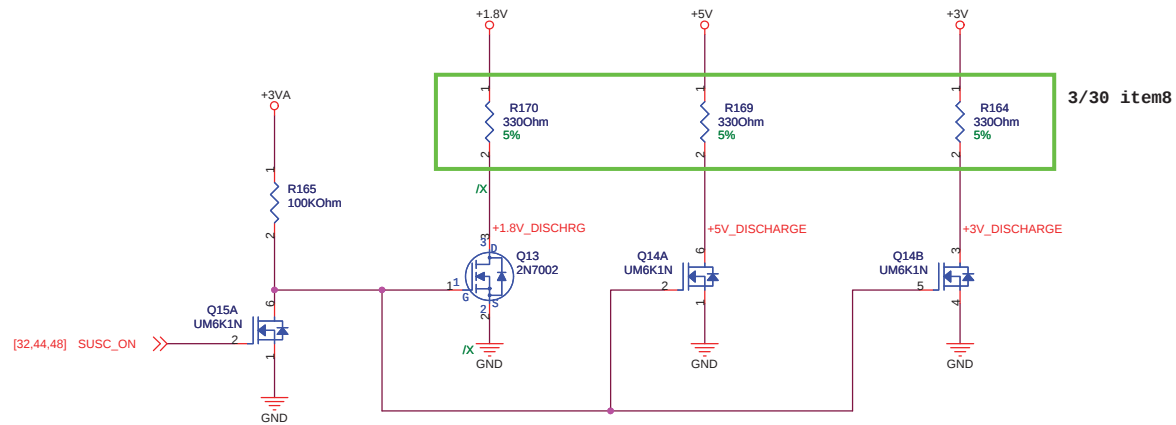
3/27_Item9



3/27_Item7



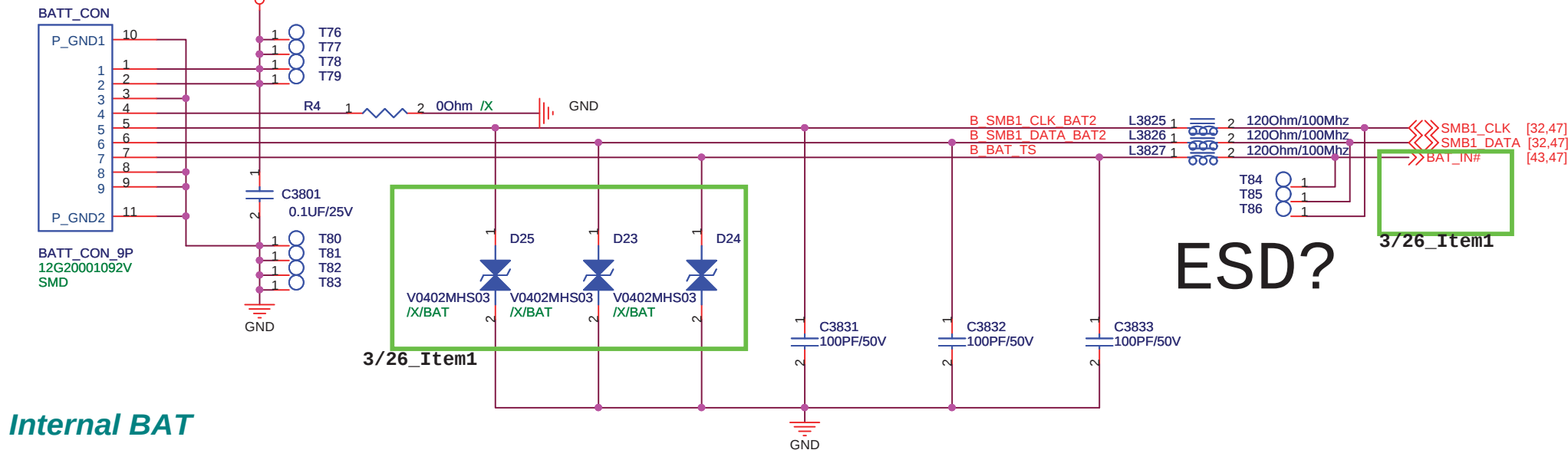
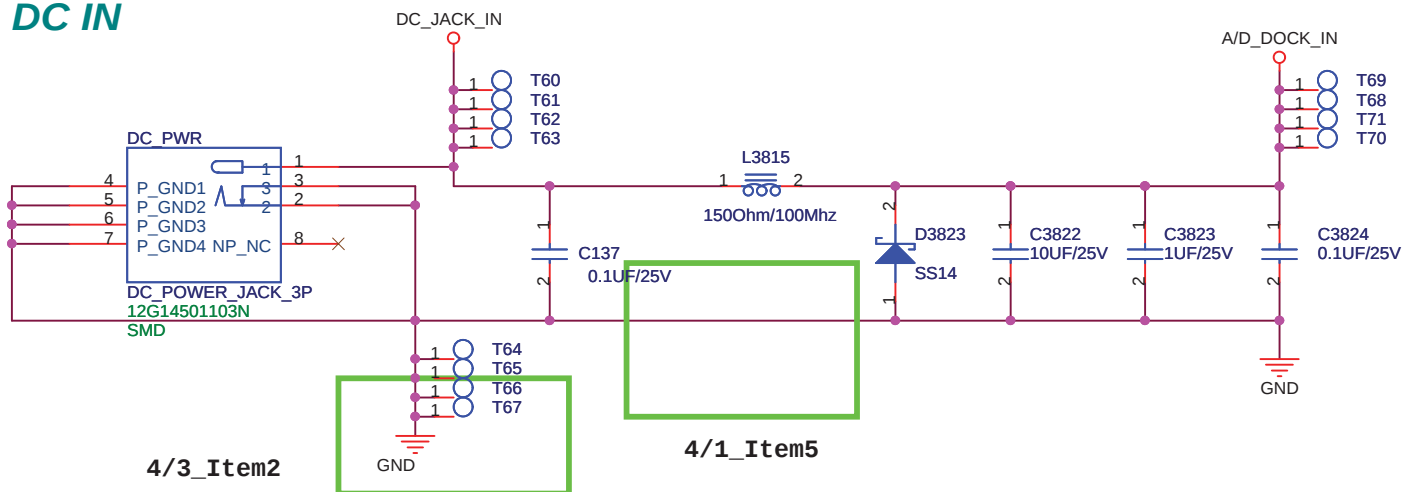
<Variant Name>



<Variant Name>

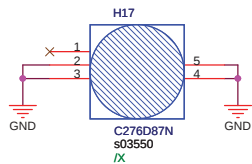
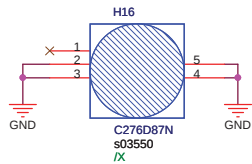
ASUS®		Title : Discharge	
ASUSTek Computer INC.		Engineer: N/A	
Size A3	Project Name 1101HA	Rev 1.2	
Date: Tuesday, July 21, 2009		Sheet 37 of 50	

DC IN

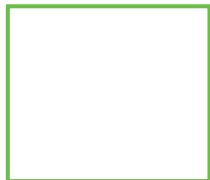


<Variant Name>

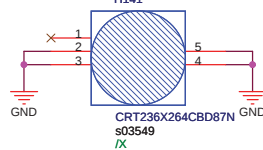
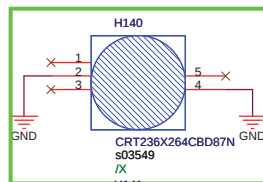
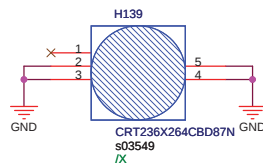
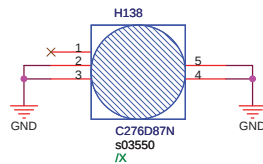
ASUS		Title : PWR Jack	
ASUSTek Computer INC.		Engineer: N/A	
Size	Project Name		Rev
A4	1101HA		1.2
Date: Tuesday, July 21, 2009		Sheet	38 of 50



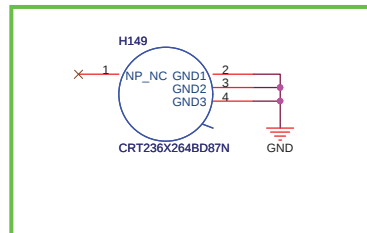
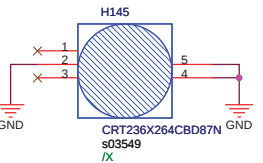
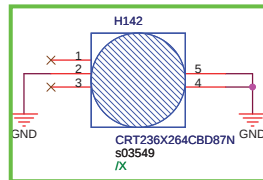
3/27_Item15



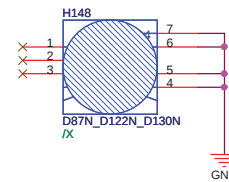
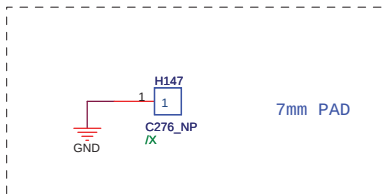
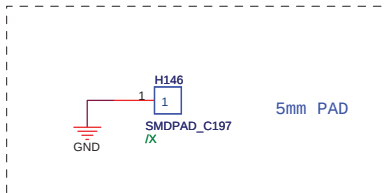
4/3_Item3



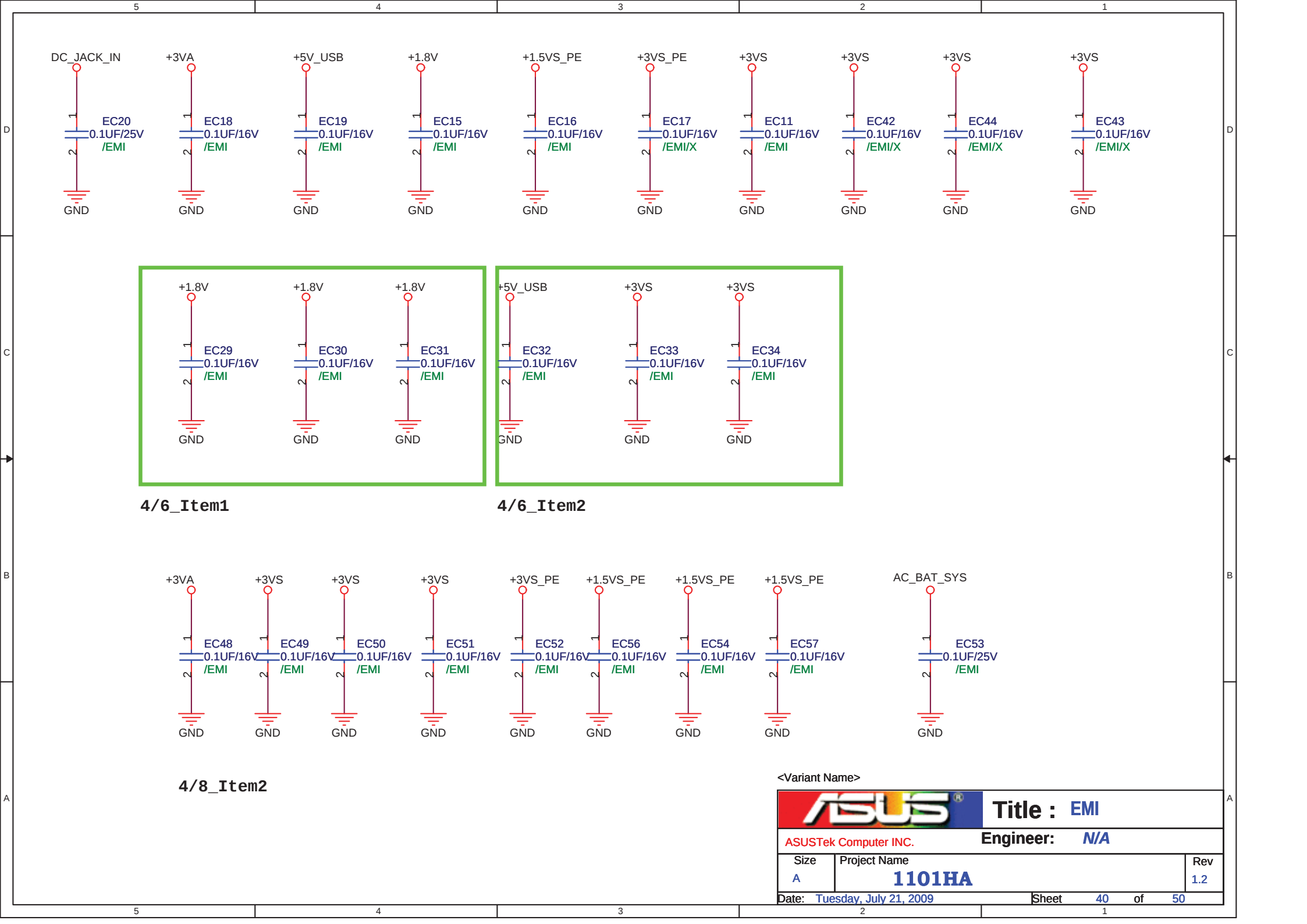
4/8_Item1



4/6_Item4



<Variant Name>



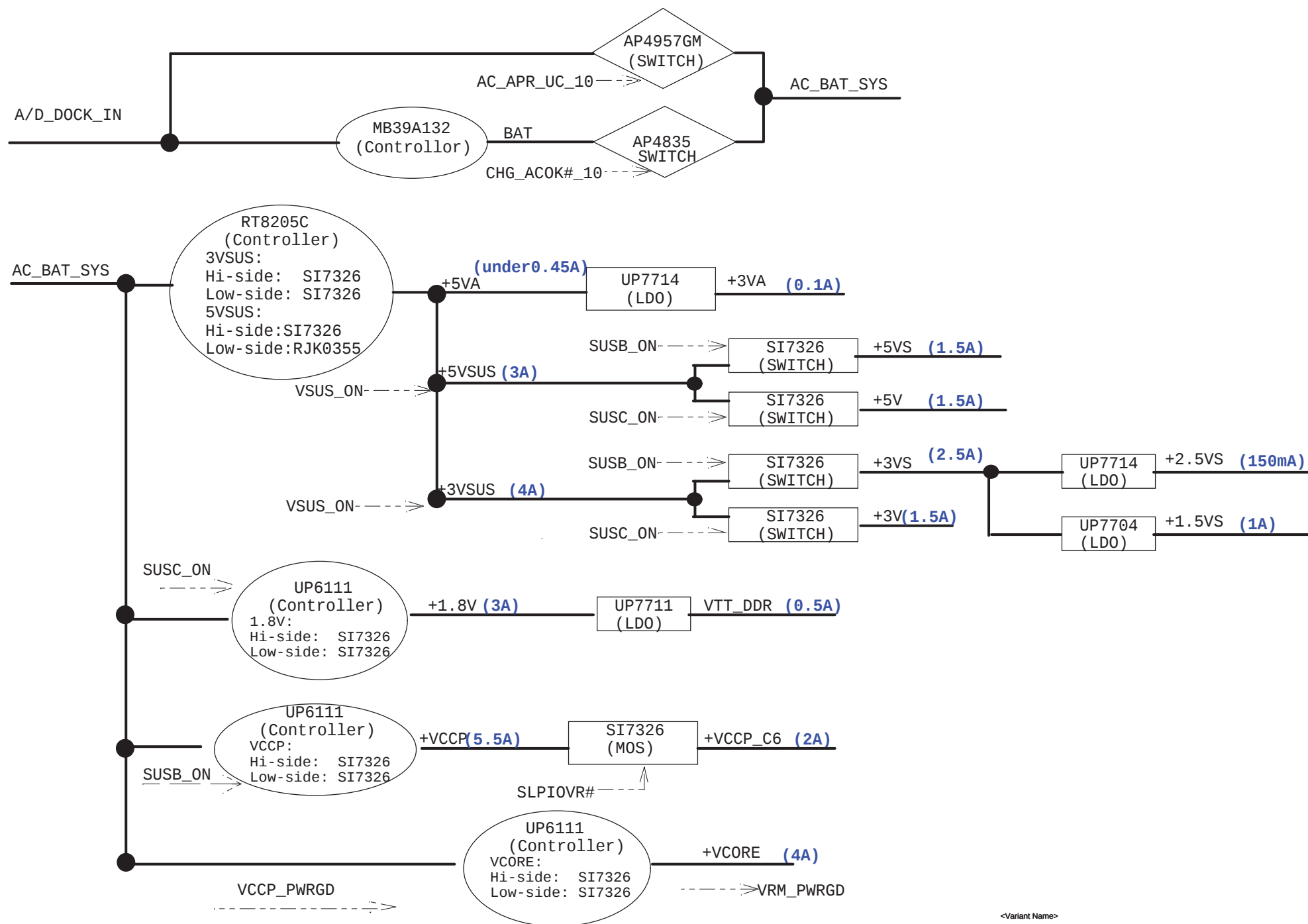
4/6_Item1

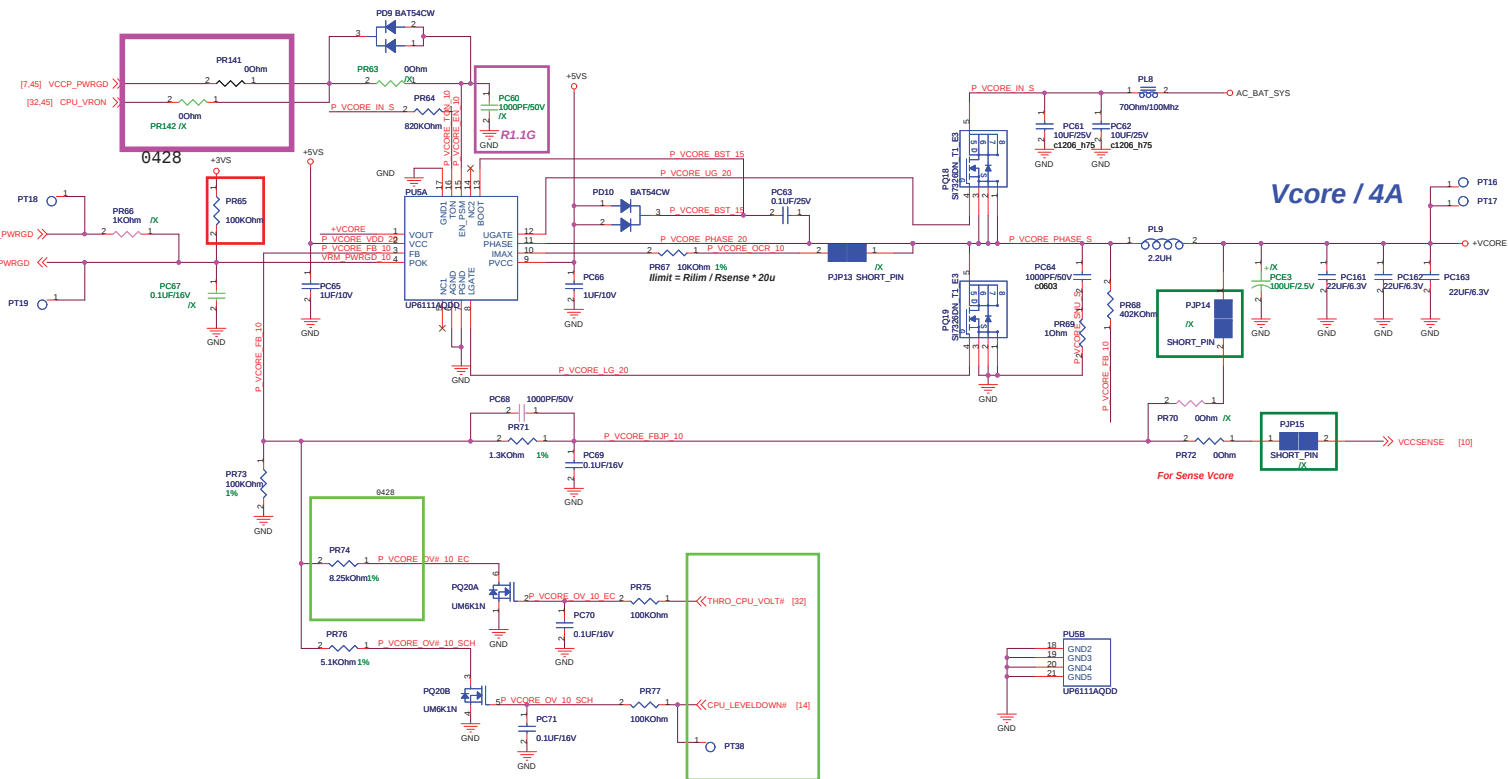
4/6_Item2

4/8_Item2

<Variant Name>

		Title : EMI	
ASUSTek Computer INC.		Engineer: N/A	
Size A	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009		Sheet 40 of 50	





R1.2G

	Status			
THRO_CPU_VOLT#	H	L	H	L
CPU_LEVELDOWN#	H	H	L	L
Voltage	1.068V	0.9502V	0.8775V	0.7597V
	Normal	Normal + Throttle	Power Saving	Power Saving + Throttle

Vcore / 4A

Power stage

1. I/P Current:
 $I_{in} = V_o \cdot I_o / (0.8 \cdot V_{in}) = 0.47A$

2. Ripple Current:
 $I_{rip} = 1.28A$
 $I_{spec} = 2.5A \cdot 2 \text{ pcs}$

3. Dynamic:
 $I_{peak} = 4A$
 $ESR / 1 \text{ pcs} = 18 \text{ mohm}$
 $\Delta V = 72mV$

4. Inductor Spec:
 $I_{sat} = 14A$
 $I_{dc} = 8A$
 $DCR = 18 \text{ mohm}$

5. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

$R_{ds(ON)} = 22 \text{ mohm}$ ($V_{gs} = 4.5V$)
 $I_{cont} = 6.5A$ ($T = 25^\circ C$)
 $I_{peak} = 40A$ (Pause $< 10 \mu s$)

L-side MOSFET: SI7326DN_T1_E3

$R_{ds(ON)} = 22 \text{ mohm}$ ($V_{gs} = 4.5V$)
 $I_{cont} = 6.5A$ ($T = 25^\circ C$)
 $I_{peak} = 40A$ (Pause $< 10 \mu s$)

Controller

1. Voltage & Current:

+0.7598~1.048V@4A

2. Frequency:

PR7=1M ohm Fosc=250KHz

3. OCP:

PR13=10K ohm -> 9.09A

4. POR:

POR Hysteresis = 0.2V
V on = 3.9V

5. UVP:

Vout*70%

6. OVP:

Vout*115%

7. Enable Voltage:

V = 2.9V

8. Soft start time:

Tss=1.2ms

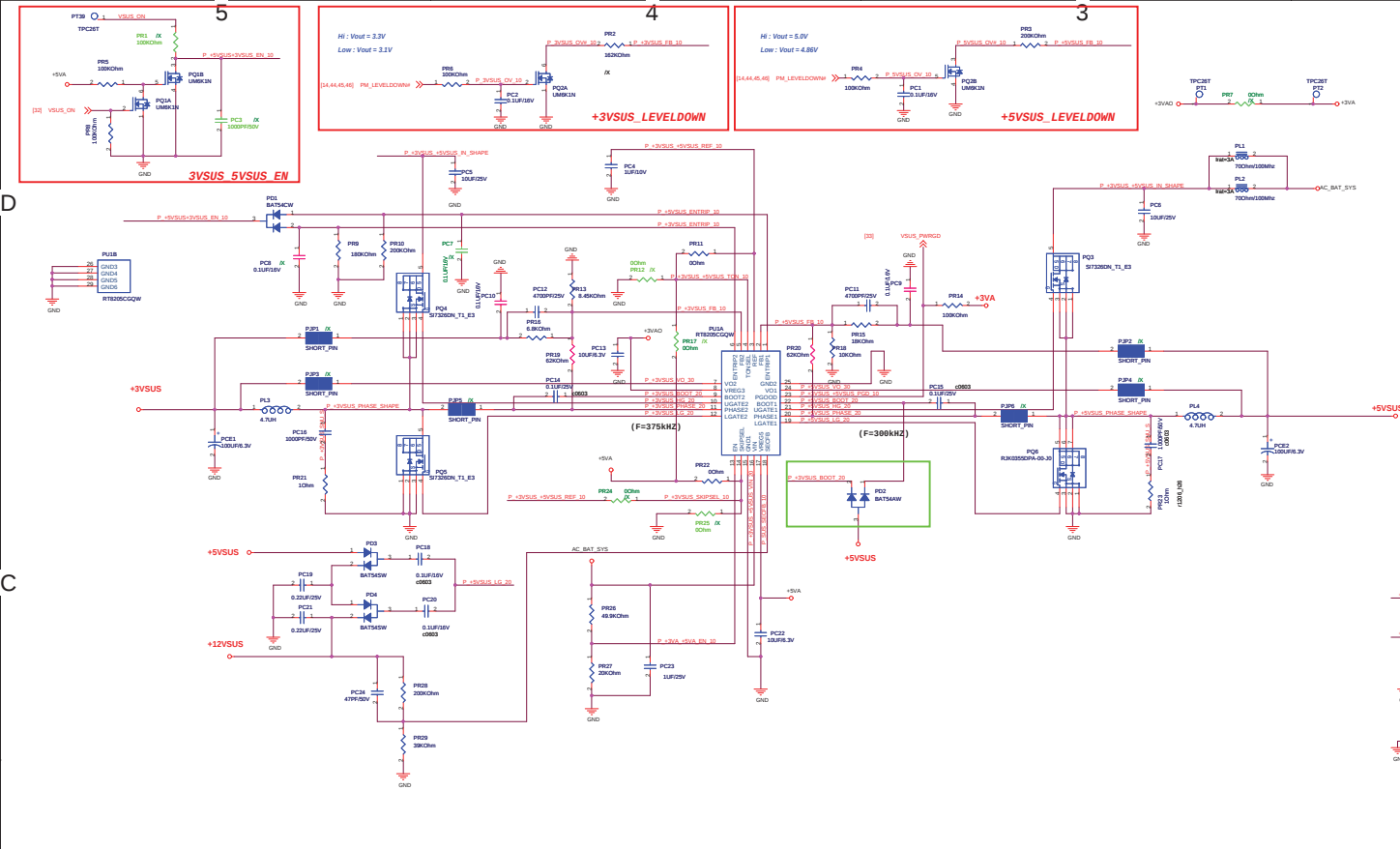
9. Phase selection:

N/A

10. Inrush Current:

C total = 100 uF
I inrush= 0.088A

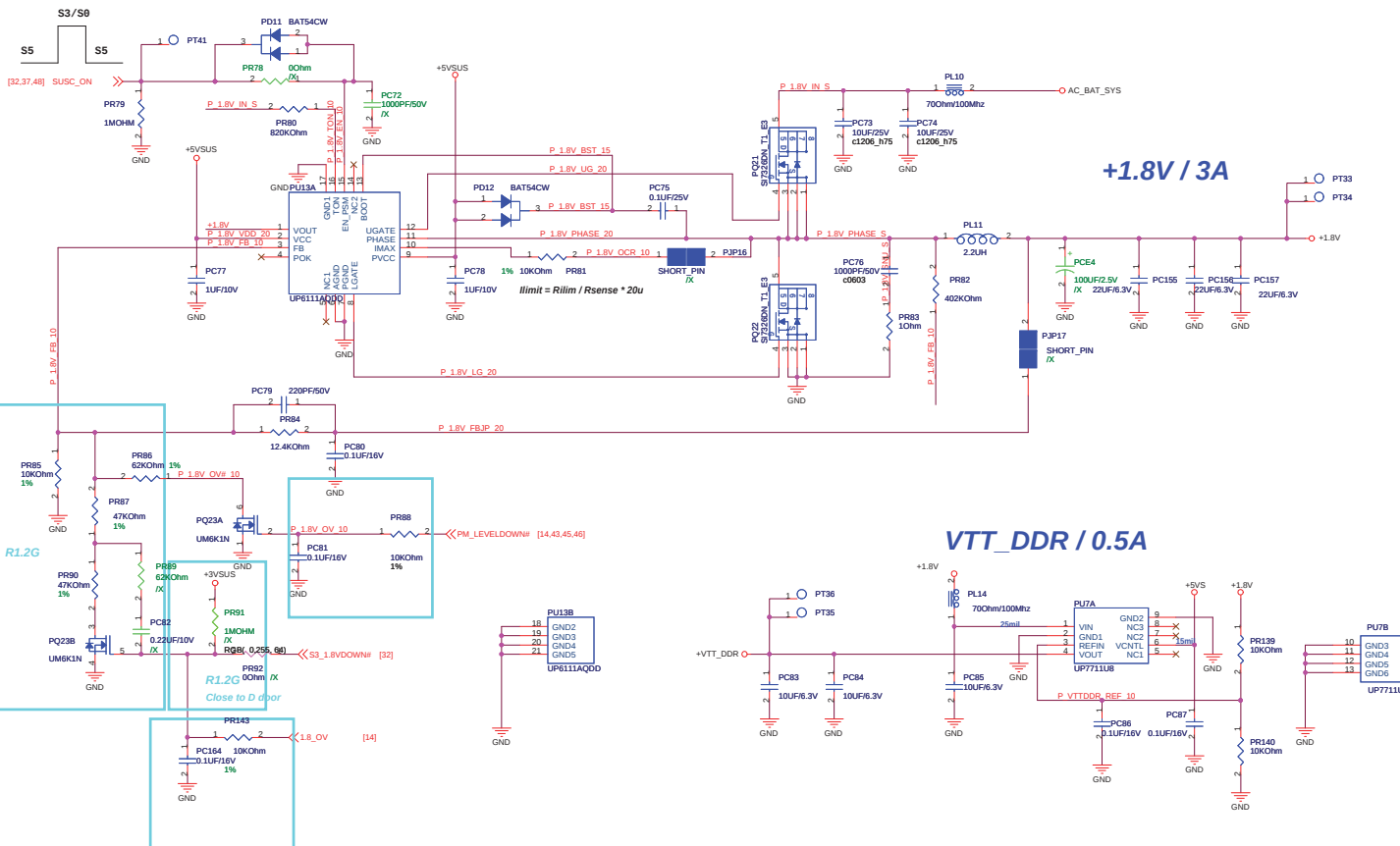
<Variant Name>



Power stage	+3VSUS	Power stage	+5VSUS
1. I/P Current: $I_{in} = V_o I_o / (0.8 \cdot V_{in}) = 1.832A$		1. I/P Current: $I_{in} = V_o I_o / (0.8 \cdot V_{in}) = 2.082A$	
2. Ripple Current: $I_{rip} = 1.92A$ $I_{spec} = 2.5A \times 1\text{ pcs}$		2. Ripple Current: $I_{rip} = 1.482A$ $I_{spec} = 2.5A \times 1\text{ pcs}$	
3. Dynamic: $I_{peak} = 4A$ $ESR / 1\text{ pcs} = 18\text{ mohm}$ $\Delta V = 72mV$		3. Dynamic: $I_{peak} = 3A$ $ESR / 1\text{ pcs} = 18\text{ mohm}$ $\Delta V = 54mV$	
4. Inductor Spec: $I_{sat} = 10A$ $I_{dc} = 5.5A$ $DCR = 37\text{ mohm}$		4. Inductor Spec: $I_{sat} = 10A$ $I_{dc} = 5.5A$ $DCR = 37\text{ mohm}$	
5. MOSFET Spec: H-side MOSFET: SI7326DN_T1_E3 $R_{ds(ON)} = 22\text{ mohm}$ ($V_{gs} = 4.5V$) $I_{cont} = 6.5A$ ($T = 25^\circ C$) $I_{peak} = 40A$ (Pause <10 us) L-side MOSFET: SI7326DN_T1_E3 $R_{ds(ON)} = 22\text{ mohm}$ ($V_{gs} = 4.5V$) $I_{cont} = 6.5A$ ($T = 25^\circ C$) $I_{peak} = 40A$ (Pause <10 us)		5. MOSFET Spec: H-side MOSFET: SI7326DN_T1_E3 $R_{ds(ON)} = 22\text{ mohm}$ ($V_{gs} = 4.5V$) $I_{cont} = 6.5A$ ($T = 25^\circ C$) $I_{peak} = 40A$ (Pause <10 us) L-side MOSFET: RJK0355DPA-00-J0 WPAK $R_{ds(ON)} = 11.8\text{ mohm}$ ($V_{gs} = 4.5V$) $I_{cont} = 30A$ ($T = 25^\circ C$) $I_{peak} = 120A$ (Pause <10 us)	

Controller	+3VSUS	Controller	+5VSUS
1. Voltage & Current: $+3VSUS = 3.3V @ 4A$	6. OVP: $V_{ovp} = 115\% V_{out}$	1. Voltage & Current: $+5VSUS = 5V @ 3A$	6. OVP: $V_{ovp} = 115\% V_{out}$
2. Frequency: $f_{osc} = 375KHz$	7. Enable Voltage: $V_{rising} = 1V$ $V_{falling} = 0.4V$	2. Frequency: $f_{osc} = 300KHz$	7. Enable Voltage: $V_{rising} = 1V$ $V_{falling} = 0.4V$
3. OCP: Set $PR8 = 180Kohm$ $I_{ocp} = 8.18A$	8. Soft start time: $T_{ss} = 2ms$	3. OCP: Set $PR82 = 200Kohm$ $I_{ocp} = 17A$	8. Soft start time: $T_{ss} = 2ms$
4. POR: $V_{on} = 4.35 - 4.5V$ $V_{off} = 3.9 - 4.25V$	9. Phase selection: I/X	4. POR: $V_{on} = 4.35 - 4.5V$ $V_{off} = 3.9 - 4.25V$	9. Phase selection: I/X
5. UVP: $V_{uvp} = 70\% V_{out}$	10. Inrush Current: $C_{total} = 110\text{ uF}$ $I_{inrush} = 0.165A$	5. UVP: $V_{uvp} = 70\% V_{out}$	10. Inrush Current: $C_{total} = 110\text{ uF}$ $I_{inrush} = 0.275A$

1. Dropout Voltage: $\Delta V = 210\text{mV}$ ($I_o = 300\text{mA}$) 2. Current Limit: $I_{\text{limit}} = 480\text{mA}$ 3. Continue Current: $I_{\text{cont}} = 100\text{mA}$ 4. Pd: $R_{\text{thjc}} = 5\text{ }^\circ\text{C/W}$ $P_d = 0.4\text{W}$	5. EN Voltage: $V_{\text{rising}} = 2\text{V}$ $V_{\text{falling}} = 0.8\text{V}$ 6. Supply Voltage: $V_{\text{cc}} = 3.3\text{V}$ 7. Inrush current: $T_{\text{ss}} = 400\mu\text{s}$ $C_{\text{total}} = 10\text{ }\mu\text{F}$ $I_{\text{inrush}} = 62.5\text{ mA}$
--	---



Power stage

1. I/P Current:
 $I_{in} = V_o \cdot I_o / (0.8 \cdot V_{in}) = 0.75A$

2. Ripple Current:
 $I_{rip} = 1.2A$
 $I_{spec} = 2.5A \cdot 1 \text{ pcs}$

3. Dynamic:
 $I_{peak} = 3A$
 $ESR / 1 \text{ pcs} = 18 \text{ mohm}$
 $\Delta V = 54mV$

4. Inductor Spec:

$I_{sat} = 14A$
 $I_{dc} = 8A$
 $DCR = 18 \text{ mohm}$

5. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

$R_{ds(ON)} = 22 \text{ mohm}$ ($V_{gs} = 4.5V$)
 $I_{cont} = 6.5A$ ($T = 25^\circ C$)
 $I_{peak} = 40A$ (Pause $< 10 \mu s$)

L-side MOSFET: SI7326DN_T1_E3

$R_{ds(ON)} = 22 \text{ mohm}$ ($V_{gs} = 4.5V$)
 $I_{cont} = 6.5A$ ($T = 25^\circ C$)
 $I_{peak} = 40A$ (Pause $< 10 \mu s$)

Controller

1. Voltage & Current:

$+1.8V @ 3A$

2. Frequency:

$PR80 = 820K \text{ ohm}$
 $F_{osc} = 300KHz$

3. OCP:

$PR184 = 10K \text{ ohm} \rightarrow 9A$

4. POR:

$V_{ccrth} = 3.7 \sim 4.1V$
 $V_{cchys} = 0.2V$

5. UVP:

$V_{out} * 70\%$

6. OVP:

$V_{out} * 115\%$

7. Enable Voltage:

$V = 2.9V$

8. Soft start time:

$T_{ss} = 1.2 \text{ ms}$

9. Phase selection:

$/X$

10. Inrush Current:

$C_{total} = 100 \mu F$
 $I_{inrush} = 0.15A$

$+VTTDDR @ 1A$

1. Dropout Voltage:

$\Delta V = 0.3V$ ($I_o = 2A$)

2. Current Limit:

$I_{limit} = 4A$

3. Continue Current:

$I_{cont} = 3A$

4. Power Dissipation:

$R_{thjc} = 52^\circ C/W$
 $P_d = 1.9W$

5. EN Voltage:

$V_{en} = 1.4V$

$V_{sd} = 0.8V$

6. Supply Voltage:

$V_{cc} = 5V$

7. Inrush current:

$T_{ss} = 5ms$

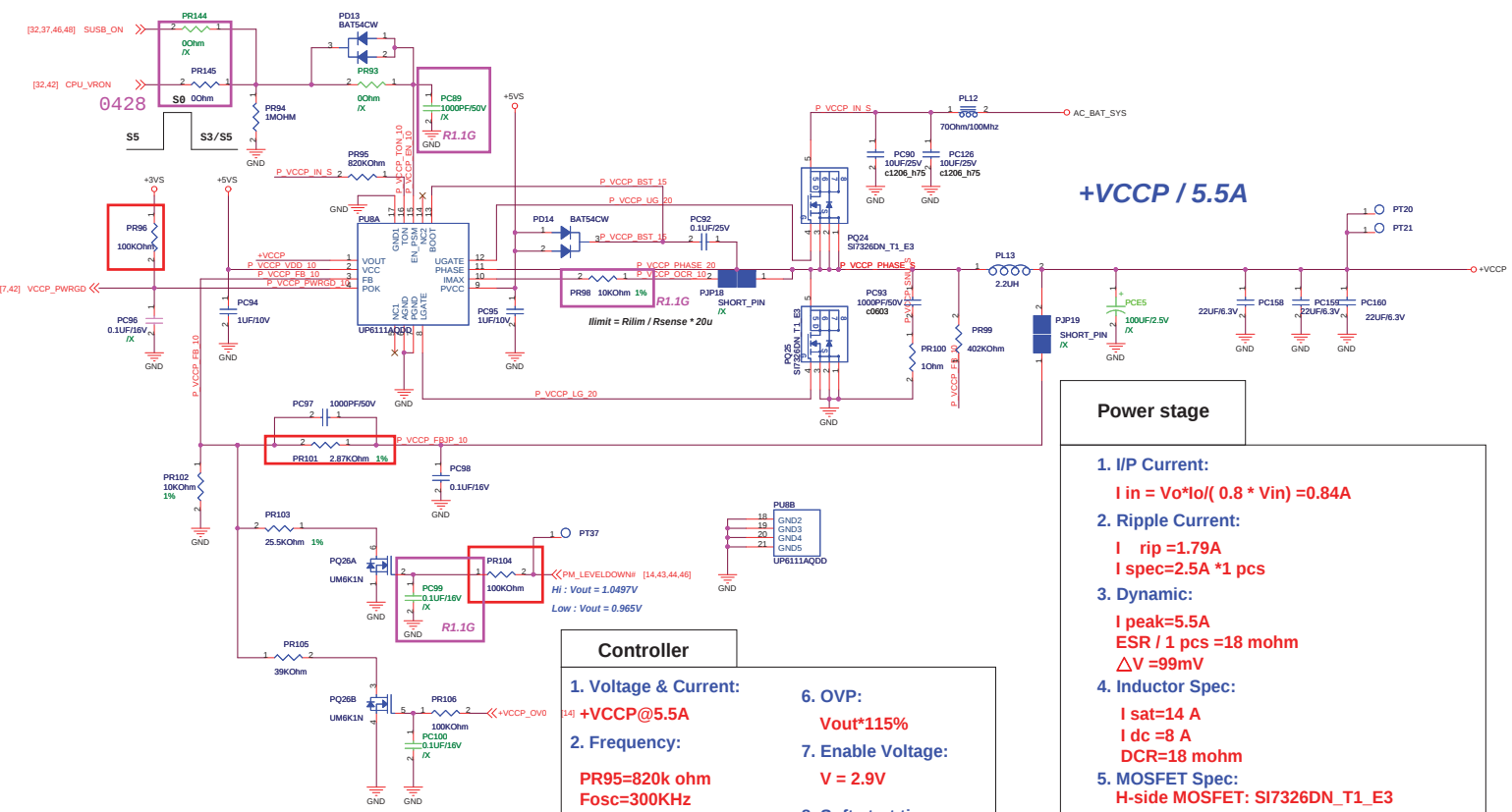
$C_{total} = 20 \mu F$

$I_{inrush} = 3.6mA$

1.8_OV	PM_LEVELDOWN#	Voltage	Status
L	L	1.65V	Power Saving
L	H	1.795V	Normal
H	H	1.89V	Super performance
H	L	1.746V	

<Variant Name>

ASUS		Title : +1.8V & VTTDDR	
ASUSTek Computer INC.		Engineer: Joy_Zhou	
Size	Project Name	Rev	
A2	1101HA	1.2	
Date: Tuesday, July 21, 2009		Sheet 44 of 50	



+VCCP_OV0	PM_LEVELDOWN#	Voltage	Status
L	L	0.965V	Power Saving
L	H	1.0497V	Normal
H	L	1.02V	/X
H	H	1.102V	Performance

Controller

1. Voltage & Current:
+VCCP@5.5A

2. Frequency:
PR95=820k ohm
Fosc=300KHz

3. OCP:
PR98=10K ohm -> 9A

4. POR:
Vccrth =3.7~4.1V
Vchys=0.2V

5. UVP:
Vout*70%

6. OVP:
Vout*115%

7. Enable Voltage:
V = 2.9V

8. Soft start time:
Tss=1.2 ms

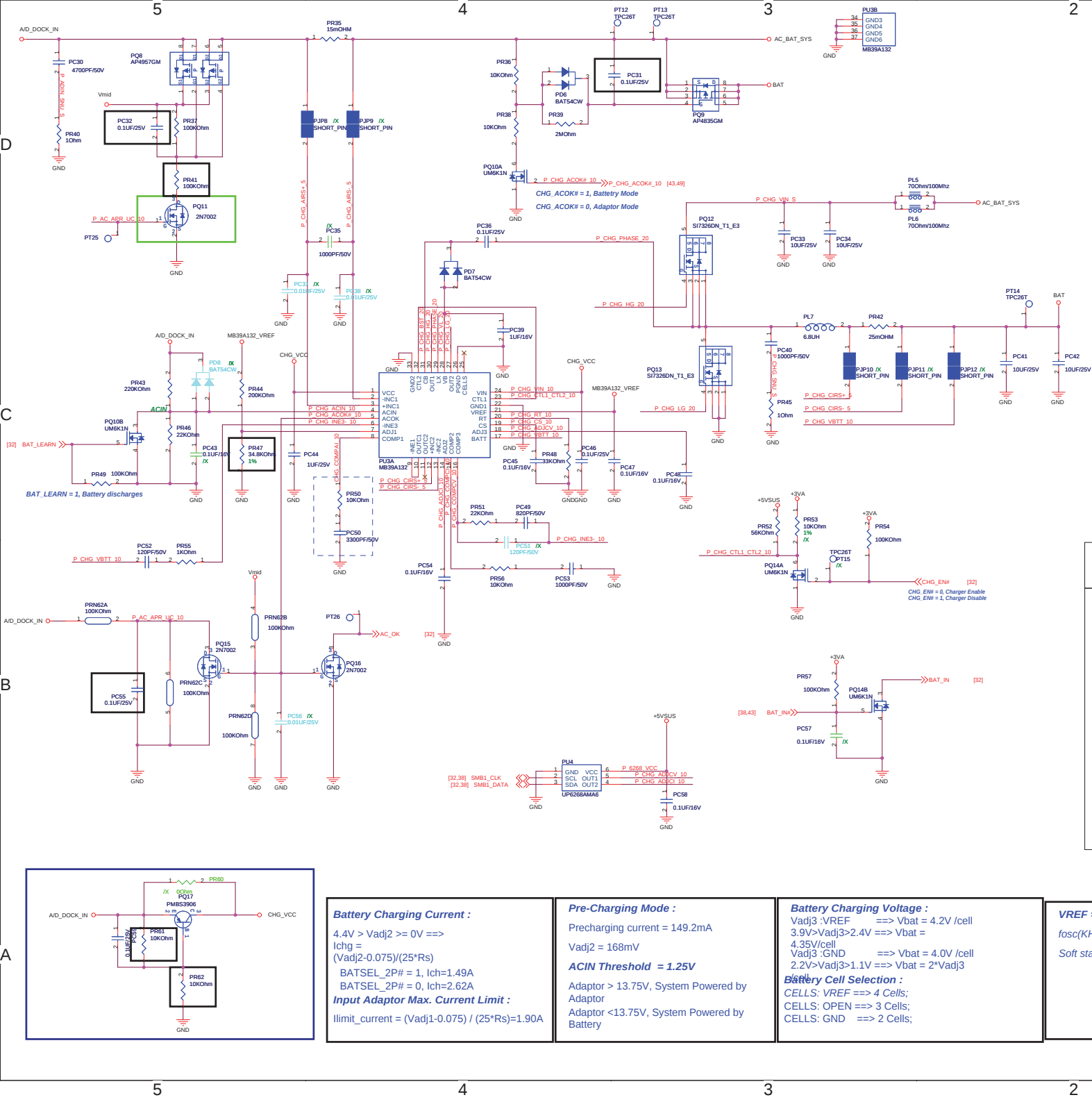
9. Phase selection:
/X

10.Inrush Current:
C total = 100 uF
I inrush= 0.15 A

+VCCP / 5.5A

Power stage

- I/P Current:
 $I_{in} = V_o * I_o / (0.8 * V_{in}) = 0.84A$
- Ripple Current:
 $I_{rip} = 1.79A$
 $I_{spec} = 2.5A * 1 pcs$
- Dynamic:
 $I_{peak} = 5.5A$
 $ESR / 1 pcs = 18 mohm$
 $\Delta V = 99mV$
- Inductor Spec:
 $I_{sat} = 14 A$
 $I_{dc} = 8 A$
 $DCR = 18 mohm$
- MOSFET Spec:
H-side MOSFET: SI7326DN_T1_E3
 $R_{ds(ON)} = 22 mohm$ ($V_{gs} = 4.5 V$)
 $I_{cont} = 6.5 A$ ($T = 25 ^\circ C$)
 $I_{peak} = 40 A$ (Pause < 10 us)
L-side MOSFET: SI7326DN_T1_E3
 $R_{ds(ON)} = 22 mohm$ ($V_{gs} = 4.5 V$)
 $I_{cont} = 6.5 A$ ($T = 25 ^\circ C$)
 $I_{peak} = 40 A$ (Pause < 10 us)



Power stage

1. I/P Current:

$$I_{in} = V_o \cdot I_o / (0.8 \cdot V_{in}) = 1.64A$$

2. Ripple Current:

$$I_{rip} = 1.18A$$

$$I_{spec} = 2A \times 1$$

pcs

3. Inductor Spec:

$$I_{sat} = 10A$$

$$I_{dc} = 5.5A$$

$$DCR = 37m\Omega$$

4. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

$$R_{ds(ON)} = 22m\Omega$$

$$I_{cont} = 6.5A$$

$$I_{peak} = 40A$$

$$V_{gs} = 4.5V$$

$$T = 25^\circ C$$

$$(Pause < 10\mu s)$$

L-side MOSFET: SI7326DN_T1_E3

$$R_{ds(ON)} = 22m\Omega$$

$$I_{cont} = 6.5A$$

$$I_{peak} = 40A$$

$$V_{gs} = 4.5V$$

$$T = 25^\circ C$$

$$(Pause < 10\mu s)$$

Controller

1. Voltage & Current:

$$+12.6V @ 2.5A$$

2. Frequency:

$$PR122 = 33K\Omega$$

$$f_{osc} = 515KHz$$

3. OCP:

4. POR:

$$POR \text{ Hysteresis} = 0.1V$$

$$V_{on} = 7.5V$$

5. Enable Voltage:

$$V = 2.9V$$

6. Soft start time:

$$T_{ss} = 23ms$$

7. Phase selection:

N/A

8. Inrush Current:

$$C_{total} = 20\mu F$$

$$I_{inrush} = 0.01A$$

$$V_{REF} = 5.0V$$

$$f_{osc}(KHz) = 17000 / RT(K\Omega)$$

$$\text{Soft start: } ts(s) = 0.13 \cdot CS(\mu F)$$

Battery Charging Current :

$$4.4V > V_{adj2} \Rightarrow 0V \Rightarrow$$

$$I_{chg} =$$

$$(V_{adj2} - 0.075) / (25 \cdot R_s)$$

$$BATSEL_2P\# = 1, I_{ch} = 1.49A$$

$$BATSEL_2P\# = 0, I_{ch} = 2.62A$$

Input Adaptor Max. Current Limit :

$$I_{limit_current} = (V_{adj1} - 0.075) / (25 \cdot R_s) = 1.90A$$

Pre-Charging Mode :

$$\text{Precharging current} = 149.2mA$$

$$V_{adj2} = 168mV$$

ACIN Threshold = 1.25V

$$\text{Adaptor} > 13.75V, \text{ System Powered by}$$

$$\text{Adaptor}$$

$$\text{Adaptor} < 13.75V, \text{ System Powered by}$$

$$\text{Battery}$$

Battery Charging Voltage :

$$V_{adj3} : V_{REF} \Rightarrow V_{bat} = 4.2V / cell$$

$$3.9V > V_{adj3} > 2.4V \Rightarrow V_{bat} =$$

$$4.35V / cell$$

$$V_{adj3} : GND \Rightarrow V_{bat} = 4.0V / cell$$

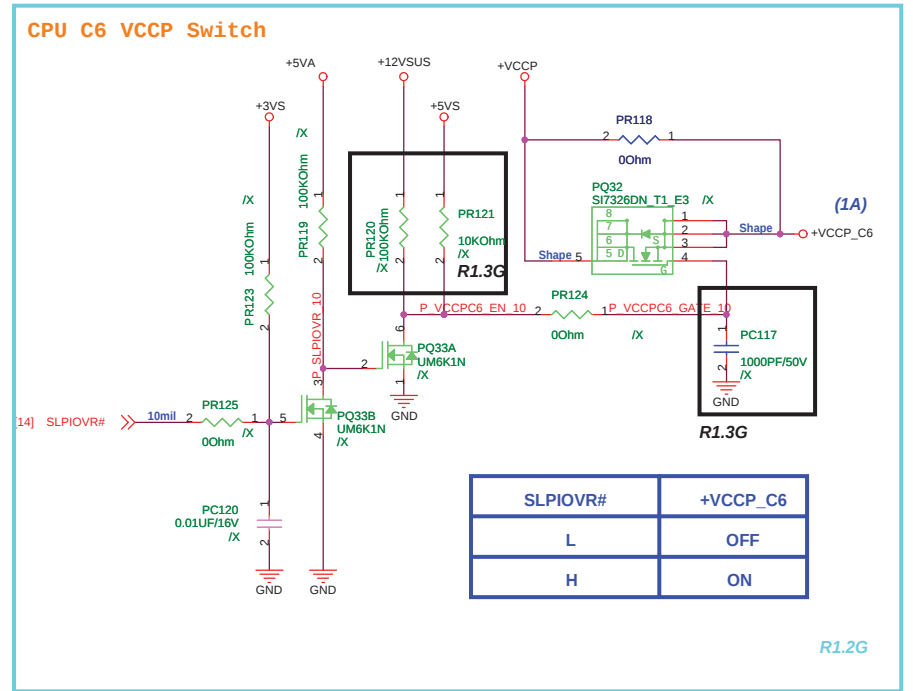
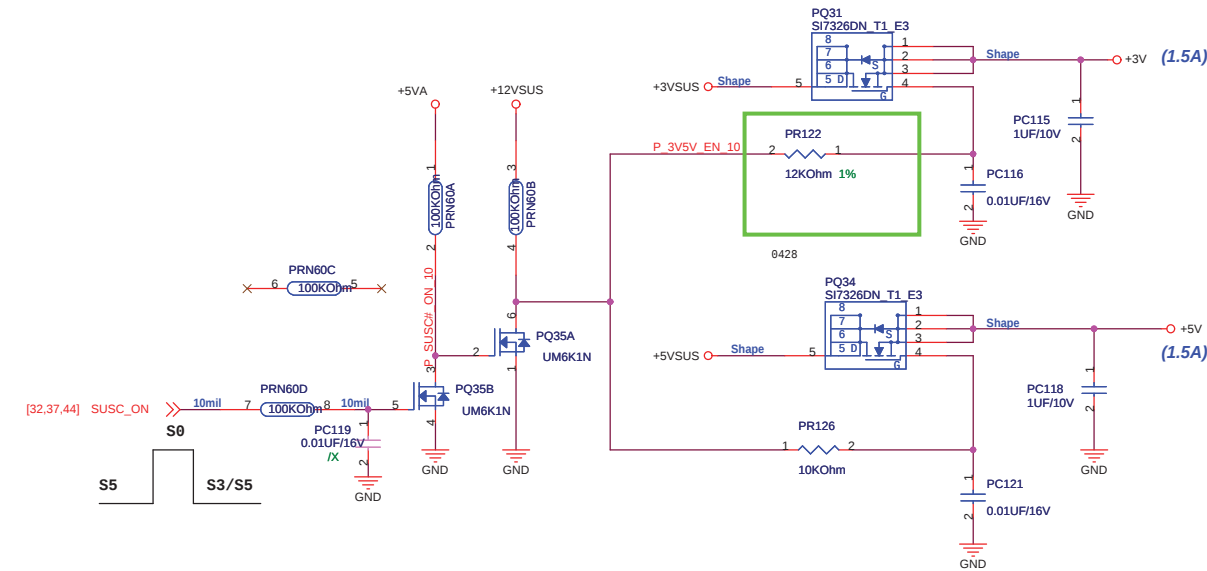
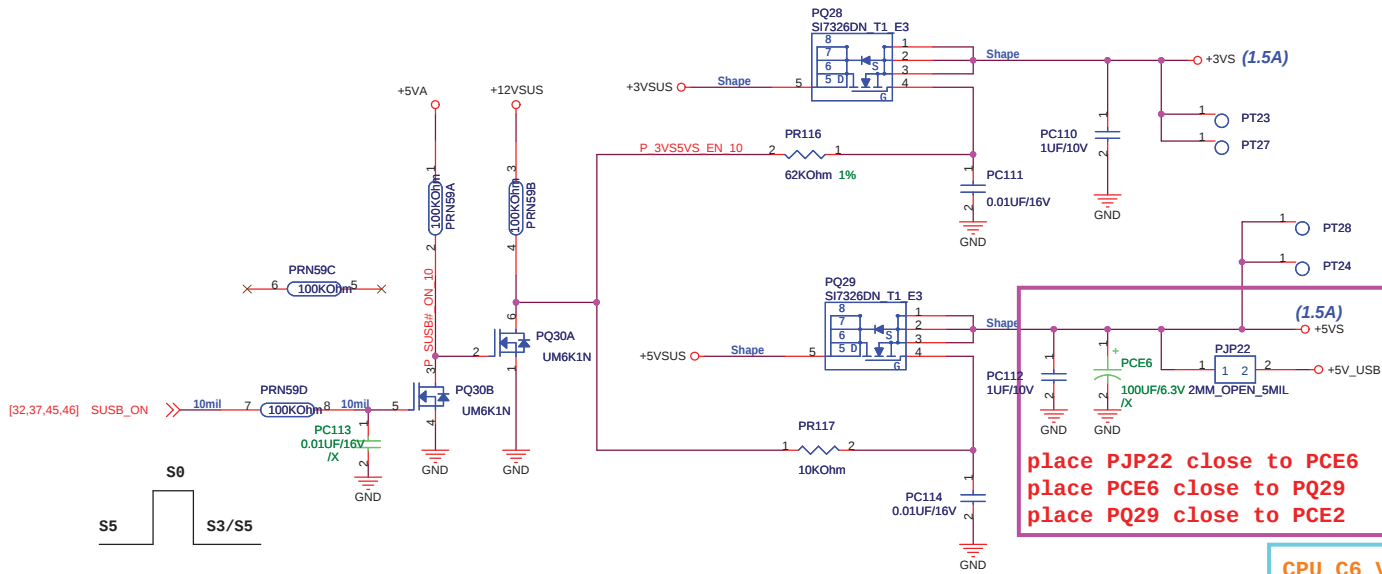
$$2.2V > V_{adj3} > 1.1V \Rightarrow V_{bat} = 2 \cdot V_{adj3}$$

Battery Cell Selection :

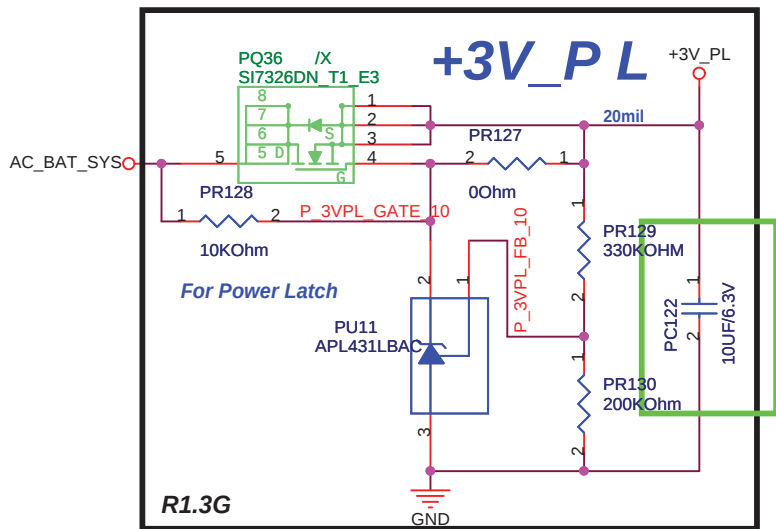
$$CELLS : V_{REF} \Rightarrow 4 \text{ Cells;}$$

$$CELLS : OPEN \Rightarrow 3 \text{ Cells;}$$

$$CELLS : GND \Rightarrow 2 \text{ Cells;}$$



<Variant Name>

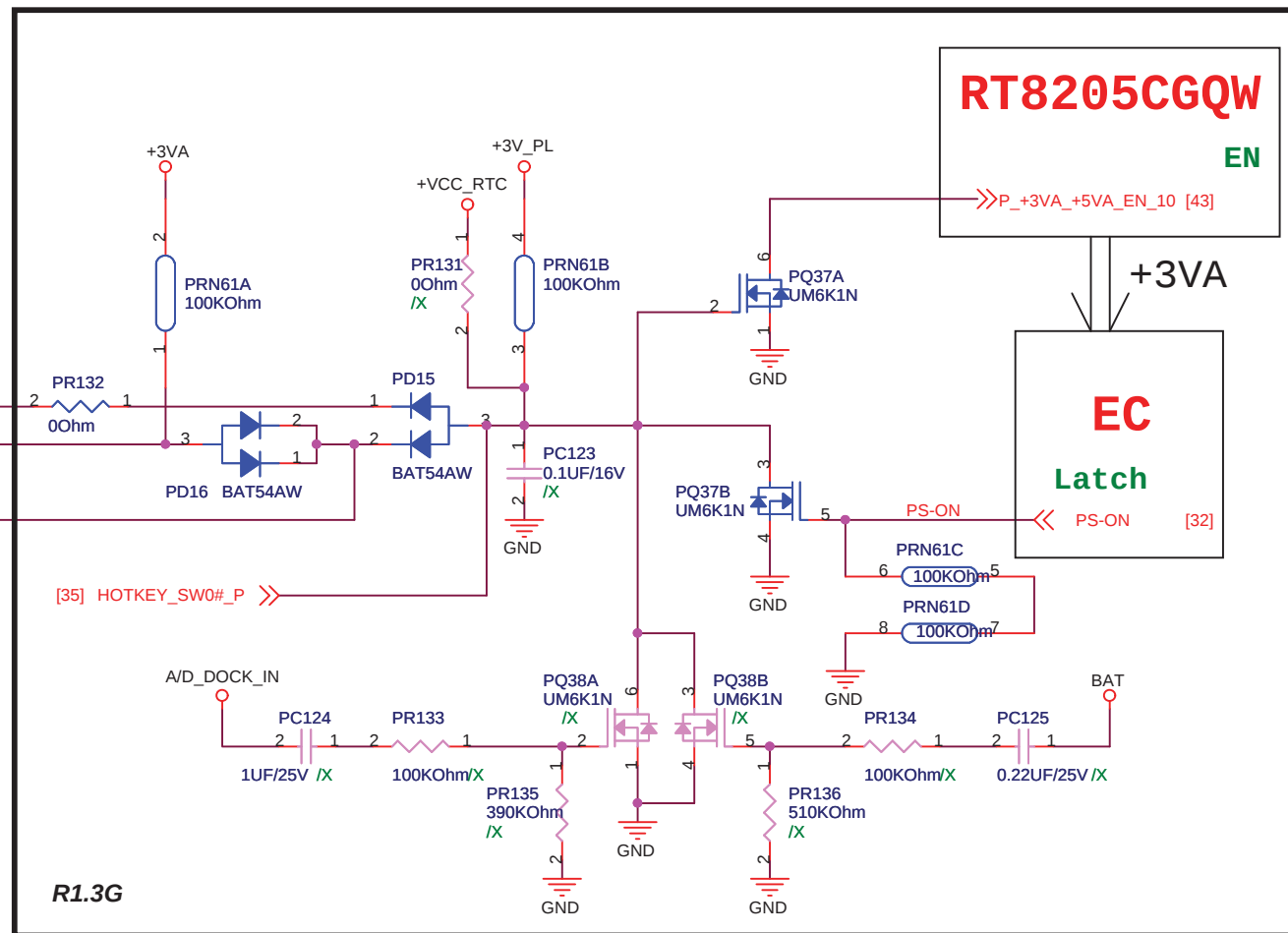


[43,47] P_CHG_ACOK#_10 >>

[29,32] PWR_SW_EC# >>

[29] PWR_SW# >>

R1.3G



RT8205CGQW

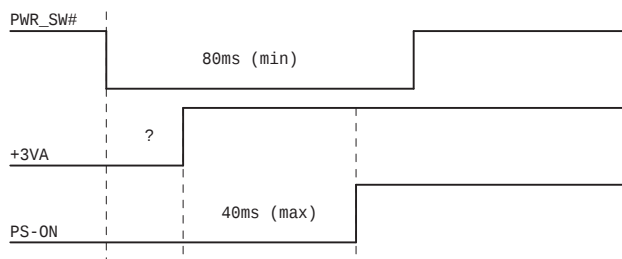
EN

+3VA

EC

Latch

PS-ON [32]



<Variant Name>

ASUS		Title : Power Latch	
ASUSTek Computer INC.		Engineer: Jerry Liu	
Size	Project Name		Rev
A4	1101HA		1.2
Date: Tuesday, July 21, 2009		Sheet	49 of 50

DATE
3/25_Item1 Page30 del IDE_PCSEL#1 circuit 3/25_Item2 Page30 change S_SATALED# to FLASH_LED# 3/25_Item3 Page14 USB_OC#0&USB_OC#1 combine to USB_OC#01 Page30 USB_OC#0 change to USB_OC#01 Page14/30/32 exchange USB port2 /port7 net name 3/25_Item4 Page34 circuit move to Page30 3/25_Item5 Page37 EC pin14 use as TP_LED# 3/25_Item6 Page13 del R196& CLK_PCI_UART 3/25_Item7 Page14 SCH GPIO2--> SIMCARD_IN#;GPIO1 -->HDD_ON Page23 add GR2 3/25_Item8 Page14 add Test point for USB port4&SB_SPKR 3/25_Item9 Page7 del EC34,CLK_48M_READER2 3/25_Item10 Page37 add TP for LID_EC_L#, CNT2_CHG#, CNT2_DIS#, GS1_INT1, GS1_INT2 3/25_Item11 Page32 add +5V_USB source(+5VS&JP3201)
3/26_Item0 DEL unused page& rename page No. 3/26_Item1 P38 BAT2_IN#-->BAT_IN#; Reserve ESD Diode for SMB&BAT_IN# P32 BAT1_IN# -->BAT_IN ;Del BAT2_IN off-page 3/26_Item2 P10-Add VID & VSSSENCE for OC/UC Go back T91 solution 3/26_Item3 P31 Add JP3101 for +5VS /+5V_USB 3/26_Item4 P32 Define EC pin102-->CPU_OV0; pin103-->CPU_OV1 Define EC pin104 -->+VCCP_OV0; pin105-->+VCCP_OV1 Define EC pin85-->DDR_OV0; pin86-->DDR_OV1 3/26_Item5 P08 Add net name H_IGNNE# 3/26_Item6 P13 Modify RTC circuit 3/26_Item7 P07,P14,P22,P32,P33,P35 Add RF optional circuit 3/26_Item8 P39 correct screw hole 3/26_Item9 P24 add short point for intel Echo peak pin define; ADD optinal 0 ohm for Echo peak and NE672 Aux power pin define 3/26_Item10 P27 Decrease component for LAN circuit 3/26_Item11 P29 Del D36 & FLASH_LED_P# & R123; Add CSL2; +VCC_FLASH change to +3VS P30 Del FLASH_LED_P# & SR16 3/26_Item12 P41--P49 add power new schematic 3/26_Item13 P31 del JP3201 (power page has this JP)
3/27_Item1 P29 YQ2B-->YQ1B; P35 TPQ2B-->TPQ1B 3/27_Item2 P21 VR8,VR9 Change to short JP 3/27_Item3 P21 Costdown RGB ESD Diode 3/27_Item4 P10 ADD optional Thermtrip# circuit 3/27_Item5 P41-P49 ADD power new circuit 3/27_Item6 P32 +VCCP_OV0 changed from EC pin104 to SCH GPIOUS3 P32 TP_LED# changed from EC pin14 to EC pin85 P14 CARD_READER_EN# changed from SCH GPIOUS3 to SCH GPIO1 3/27_Item7 P35 HOTKEY_SW0# Pull up change to +3VA 3/27_Item8 P29 Del HDD_ON CIRCUIT 3/27_Item9 P35 add CIRCUIT for EXPRESS GATE 3/27_Item10 P41-P49 add power new circuit 3/27_Item11 P18 change DIMM con to STD Type 3/27_Item12 P21 cost down U6, Del F1 Fuse 3/27_Item13 P27 LAN chip change to 02G911002601,modify LAN circuit (need check pin define) 3/27_Item14 P08 R14,R16 120 -->56 OHM; R15 68-->56OHM P18 MC5, MC9, MC10 -->X P19 Cap Change to Array Cap for Costdown 3/27_Item15 P39 del H143,H144 for ME change

3/29_Item1	P22 add pull down 100K for LBKLT_EN
3/29_Item2	model name change to N12L
3/29_Item3	P21+5V_V_CRT -->+5V_V_CRT_F_VR2 --> /X
3/29_Item4	P23 del power control circuit, add pull up for SIMCARD_IN#, 3G reset circuit-->/X
3/29_Item5	P13 add Test point T207 (strap pin)
3/29_Item6	P22 +3VS --> +3V_LCD
3/29_Item7	P27 add R179 -->/X (no WOL function)
3/30_Item1	P32 EC pin32 -->CRT_IN (pull up); pin85-->CRT_DACPWR_EN#; pin86 -->CRTDAC_RST# ; TP_LED#--> Pin18
3/30_Item2	P20 add CRT DAC power control circuit & CRT reset circuit P21 add CRT conn in circuit
3/30_Item3	P27 LAN pin5 connect to pin15 (not +3V_LAN)
3/30_Item4	P18 go back to STD. DIMM Conn
3/30_Item5	P21 correct Vsync & Hsync
3/30_Item6	P29 Re-define +5VSUS for I/O Brd pin 21 for PWR Led
3/30_Item7	P14 add pull down for WLAN_LED; P33 add cost down solution for Auto-boot circuit
3/30_Item8	P37 Array Resistor change to single type for future cost down
3/30_Item9	P32 CRT_IN change to EC pin14 (hot key 1)
3/31_Item1	P39 Add screw hole H149
3/31_Item2	P41-P49 add power new circuit
3/31_Item3	P24 WR9,WR11,WR13,WR14 Change to 0603 type
3/31_Item4	P19 change array cap to single type
3/31_Item5	P28 change 4R8p 0ohm to 2R4p type
3/31_Item6	P22 L84,L85,L86,L87 change to low cost part
3/31_Item7	P29 del camera USB common chock and 0 ohm (I/O brd already has)
3/31_Item8	All Colay 0 OHM Change to array type
3/31_Item9	P29 del IR3 (I/O brd already has a bead)
3/31_Item10	P30 del SRN1--SRN7 for costdown&layout
3/31_Item11	P34 Reserve OR29 for cost down
3/31_Item12	P23 Q20 change to 2N7002
3/31_Item13	P22 chage the RF Cap position for LVDS signals
3/31_Item14	P7,P13,P32 chage the crystal to low cost part
3/31 item15	Reserve CR29 for future cost down power latch circuit
4/1 item1	P14 add Pull up for PM_LEVELDOWN#/CPU_LEVELDOWN#,Pull down for +VCCP_
4/1 item2	P20,21 add back up CRT DAC Reset&Power control solution
4/1 item3	P24 WU1 change to 06G030057013
4/1 item4	P16 Reserve HDA I/O power to +1.5VS ,P29 Camera_EN to +1.5VS P14 del CAMERA_EN
4/1 item5	P22 del GU13(+3V_LCD circuit) , P38 Del L3816 for Layout placement space
4/1 item6	P32 add OSL5,OSL6 for PM_RSTRDY#&PM_RSTWARN (debug)
4/2 item1	P27 swap LAN pin29/30 net name(add LR86,LR87 for 8132), add R64 for clock Voltage swing,add LC11,12,13,15 decoupling
4/2 item2	P32 modify BAT_IN2 pull down,BAT_IN pull High
4/2 item3	P27 del LR80 ,P28 add LC18 (/X)
4/2 item4	P21 reserve D13 for ESD
4/3 item1	P18/19/22/35 swap memory data/address/command, common choke, Keyboard I/O chip capacitors.
4/3 item2	P38 change DCIN_GND to GND.
4/3 item3	P39 change H140 pin 3&5 from GND to NC.
4/3 item4	P32 OR10 change to 0603 size
4/3 item5	P20 R209-->/X,R218,L6-->N/A (for Pre-ER)
4/5 item1	P24 del WLAN SMB for layout routing
4/5 item2	P40 add EMI cap
4/5 item3	swap for DIMM & chip registers of clock Gen

4/6	item1	P40 add EC29-EC31 as stitched CAPs.
4/6	item2	P40 add EC32-EC34 for EMI needed.
4/6	item3	swap RN6/RN18.
4/6	item4	P39 change H149 from s03549 to s04146.
4/6	item5	P14 change EC39 PIN1 definition from A_CLK to A_Z_BITCLK for EMI
4/6	item6	P29 exchange DUA_CON PIN 12&21 definition for EMI which was found problem in 1005.
4/7	item1	P39 change H142 pin 3 from GND to NC.
4/7	item2	P40 add CAPs for EMI request.
4/28	item1	P22 GC99 change to 0.22UF
4/28	item2	P24 add WC19,unstuff cut off power circuit
4/28	item3	P14 SCH GPIO8 use as +1.8V OV, and add pull up R228
4/28	item4	P41~P49add power circuit
4/28	item5	P37 /X Q13,Q17,R170,R174,R180 (costdown)
4/28	item6	P22 reserve EC back light control ,reserve C487 for +3V_LCD,reserve D22 for BL_EN control
4/29	item1	P7,P32 reserve PCI_CLK for EC for OC consideration
4/29	item2	P7 CR14 change from 10 to 30 ohm,add CC7 for VDDREF power noise
4/29	item3	P27 C457 change to 0 ohm
5/4	item1	add R145 & C475 for RF request.
5/4	item2	delete SL & JP for factory request.
5/6		VGA connector P/N change to 12G10110915M
5/7		Touchpad connector P/N change to 12G183401225