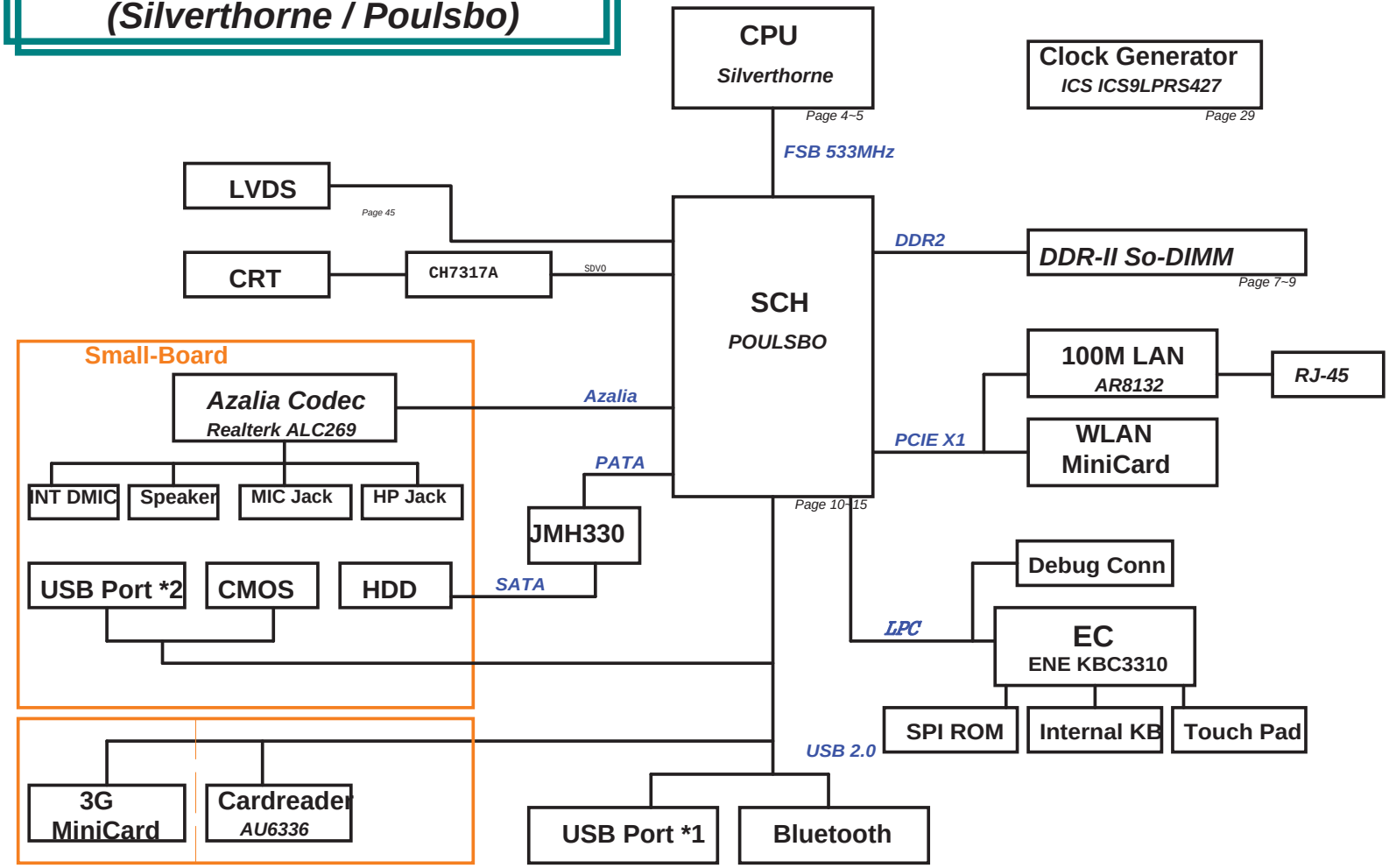
1101HA Block Diagram (Silverthorne / Poulsbo)



<Variant Name>

ASUSTeK COMPUTER INC

Title : Block Diagram

Engineer: N/A

Size	Project Name	Rev
Custom	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 1 of 50

SCH GPIO SETTING

Pin	Pin Name	Connect to	Type	Power Well	S3	S4/ S5	Input/Output Set
U41	GPIOSUS0	PM_LEVELDOWN#	I/O CMOS3.3	Sus	VIX-unknown	OFF	Output
N43	GPIOSUS1	CPU_LEVELDOWN	I/O CMOS3.3	Sus	VIX-unknown	OFF	Output
N45	GPIOSUS2	PM_PWRBTN#	I/O CMOS3.3	Sus	VIX-unknown	OFF	Input
R41	GPIOSUS3/ 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/SCL1	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/SCL2	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/SCRLED	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>

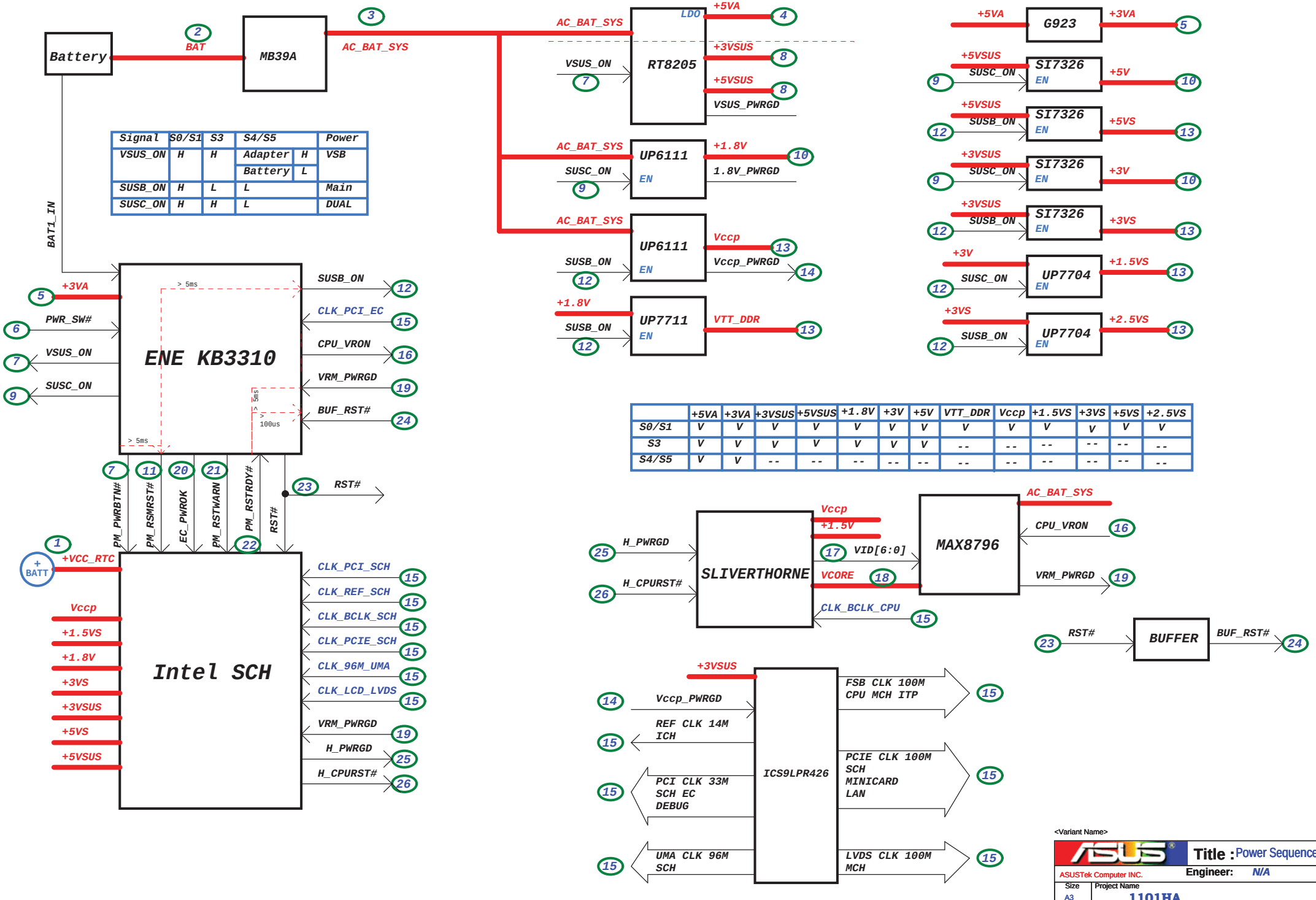
ASUSTek Computer INC.

Title : EC Pin Define

Engineer: N/A

Size	Project Name	Rev
A3	1101HA	1.2

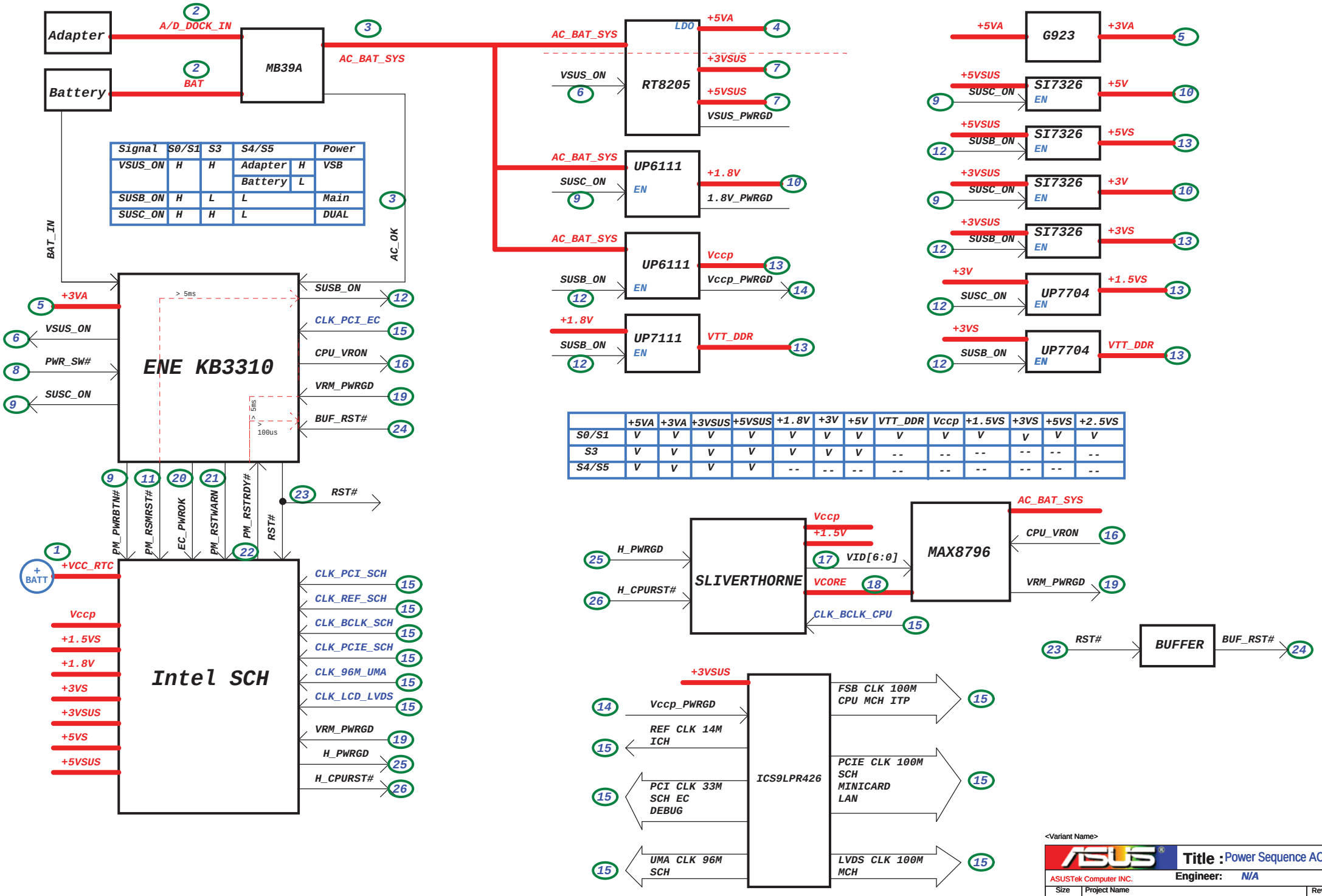
Date: Tuesday, July 21, 2009 Sheet 3 of 50



Signal	S0/S1	S3	S4/S5		Power
VSUS_ON	H	H	Adapter	H	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	--	--	--	--	--	--
S4/S5	V	V	--	--	--	--	--	--	--	--	--	--	--

<Variant Name>
ASUSTek Computer INC.
Title : Power Sequence DC
Engineer: N/A
Size A3 | Project Name 1101HA | Rev 1.2
Date: Tuesday, July 21, 2009 | Sheet 4 of 50



Signal	S0/S1	S3	S4/S5		Power
VSUS_ON	H	H	Adapter	H	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	--	--	--	--	--	--
S4/S5	V	V	V	V	--	--	--	--	--	--	--	--	--

<Variant Name>

ASUSTek Computer INC.

Title : Power Sequence AC

Engineer: N/A

Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 5 of 50

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.

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.

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.

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.

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.

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.

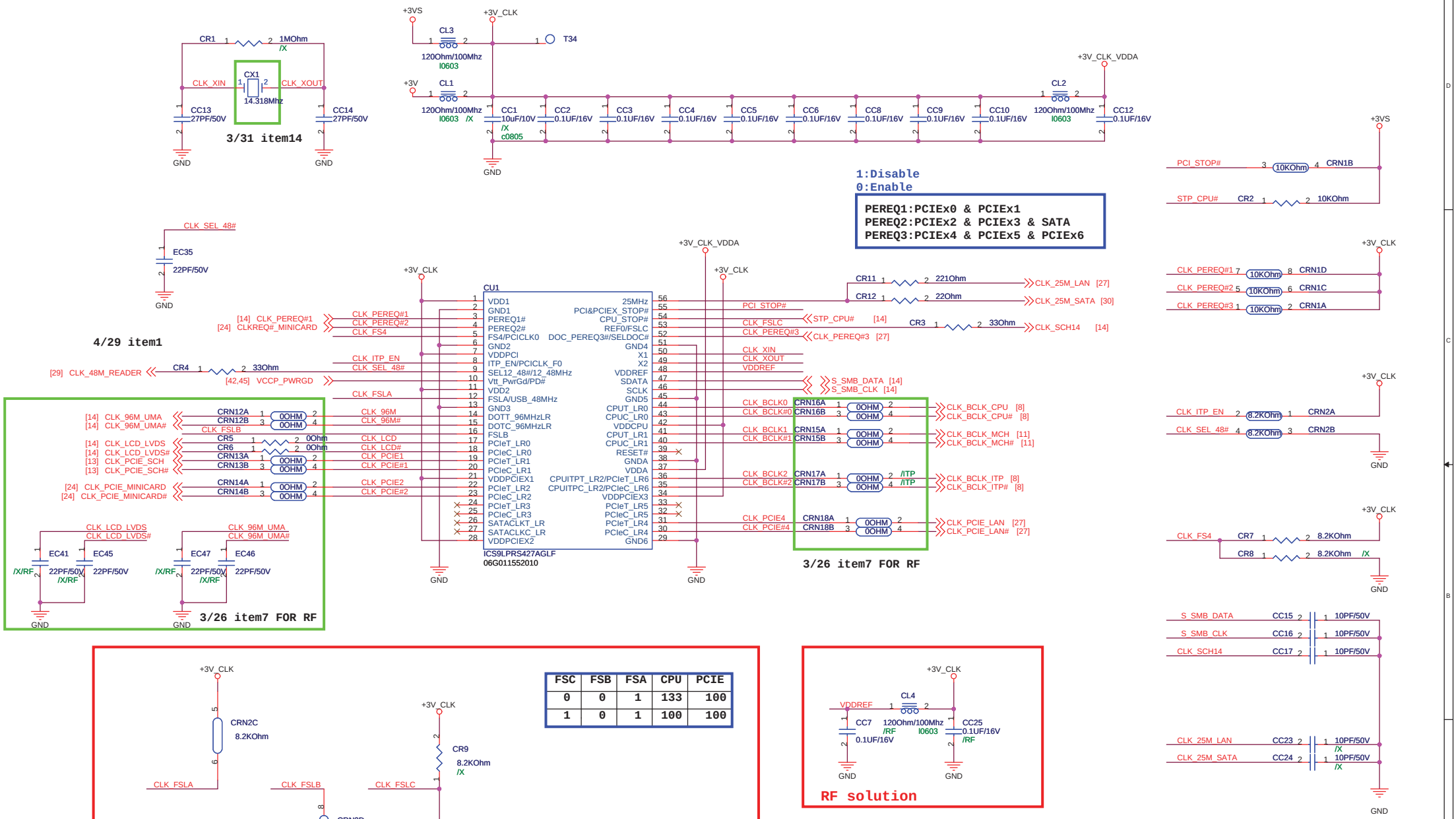
3.EC asserts RESET# to SCH after asserts RSTWARN.

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.



<Variant Name>

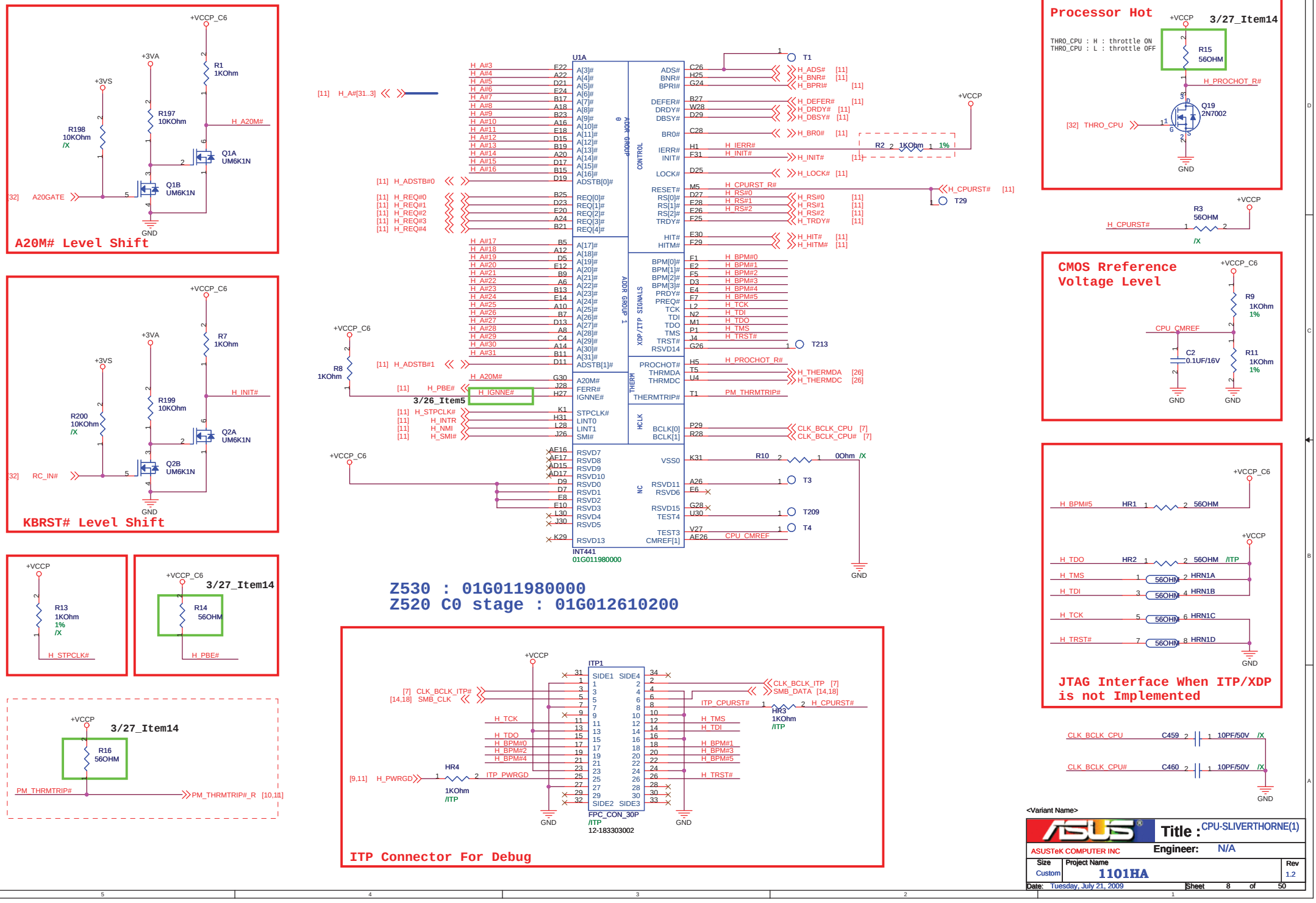
ASUSTek Computer INC.

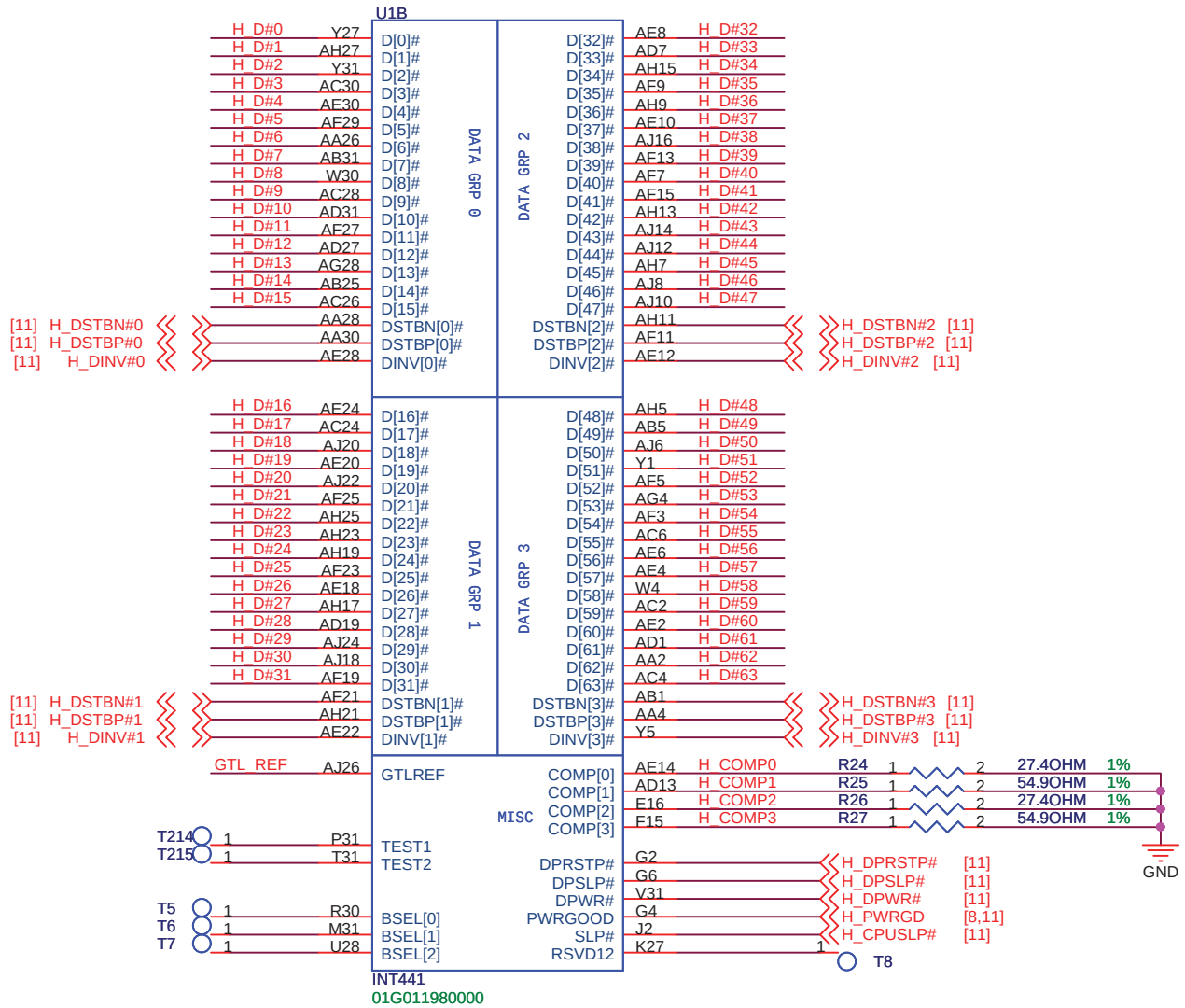
Title : Clock Gen_ICS9LPRS427

Engineer: N/A

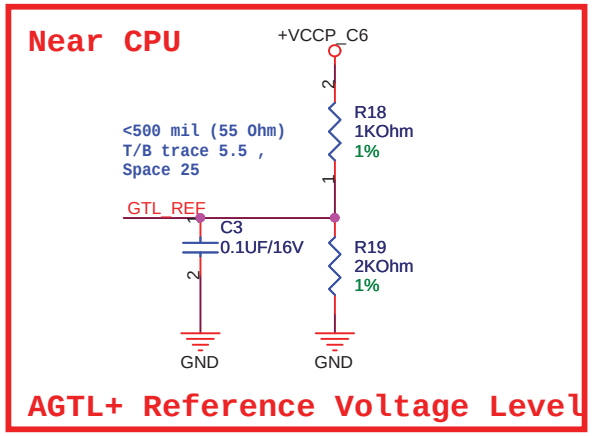
Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 7 of 50


A20M# Level Shift
KBRST# Level Shift
Processor Hot
THRO_CPU : H : throttle ON
THRO_CPU : L : throttle OFF
3/27_Item14
CMOS Rreference Voltage Level
JTAG Interface When ITP/XDP is not Implemented
ITP Connector For Debug
3/26_Item5
Z530 : 01G011980000
Z520 C0 stage : 01G012610200
INT441
01G011980000
FPC_CON_30P
12-183303002
<Variant Name>
Title : CPU-SLIVERTHORNE(1)
ASUSTeK COMPUTER INC
Engineer: N/A
Project Name 1101HA
Rev 1.2
Date: Tuesday, July 21, 2009
Sheet 8 of 50



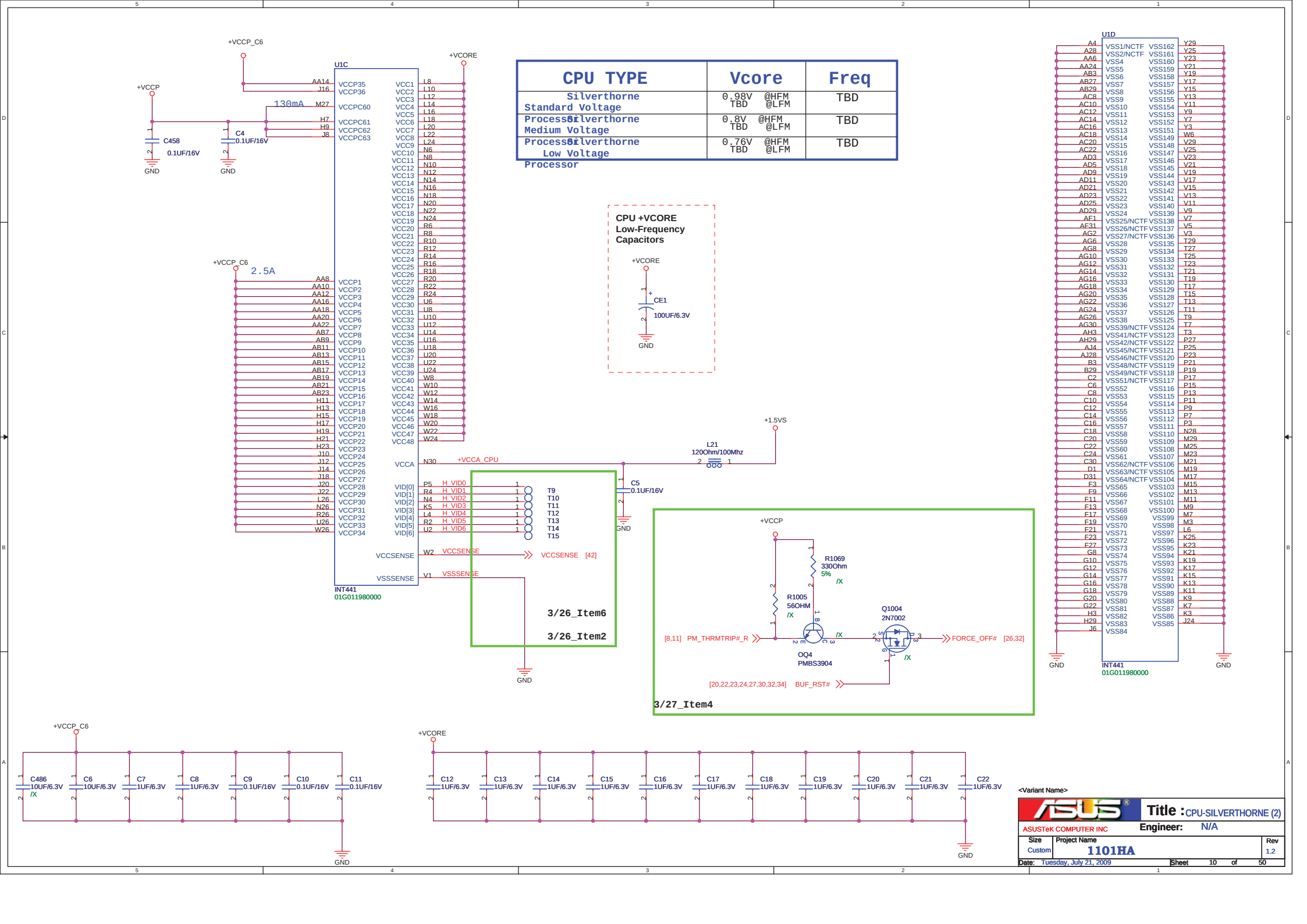
H_D#[63:0] H_D#[63:0] [11]

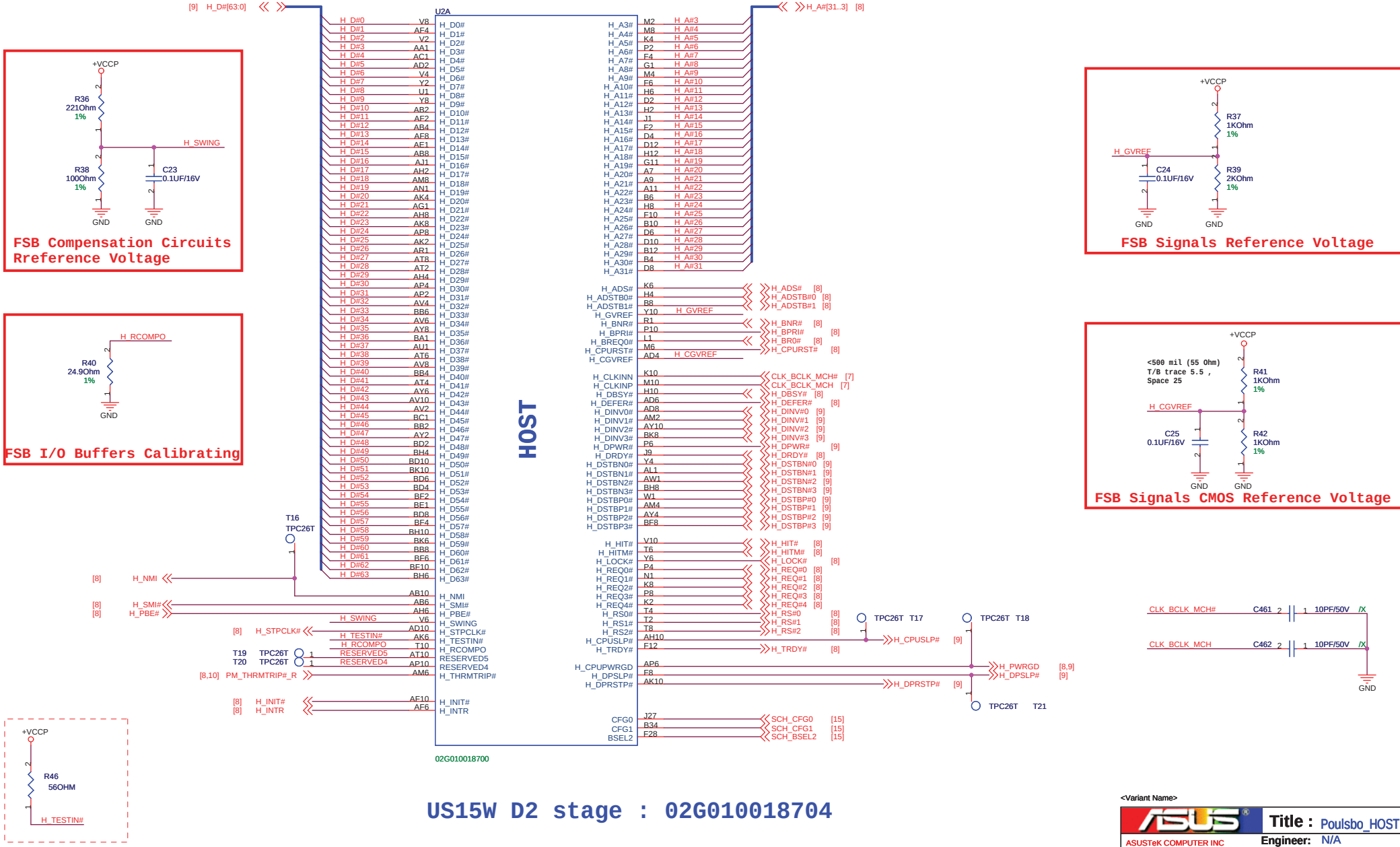


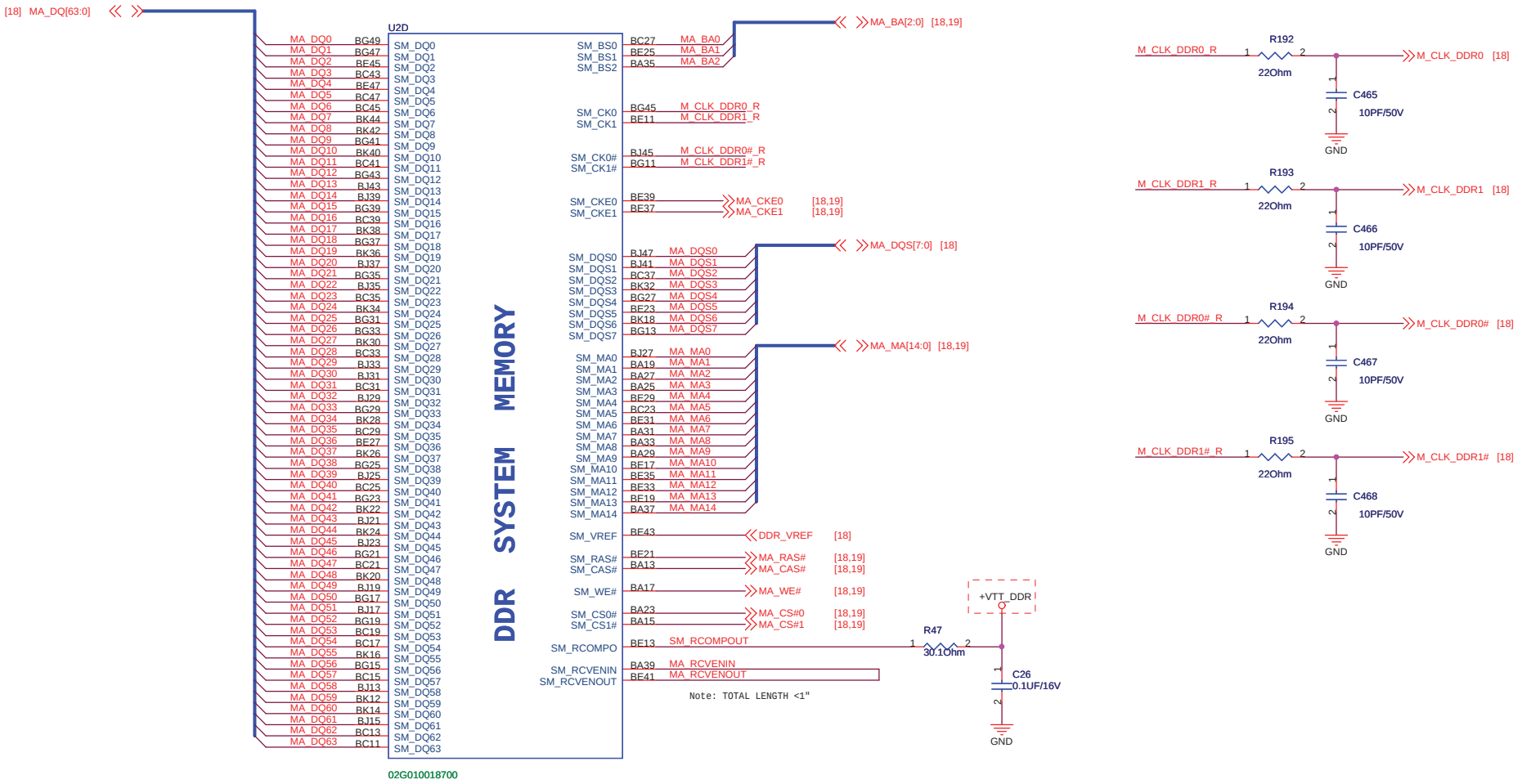
Layout Note
COMP 0 2 connect with Z0=27.4 ohm,L<0.5"
COMP 1 3 connect with Z0=55 ohm,L<0.5"

<Variant Name>

ASUSTeK COMPUTER INC	Title : CPU-SLIVERTHORNE(1)	
	Engineer: N/A	
Size: A4	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 9 of 50	


CPU TYPE
Vcore
Freq
Silverthorne Standard Voltage Processor
0.98V @HFM TBD @LFM
TBD
Silverthorne Medium Voltage Processor
0.8V @HFM TBD @LFM
TBD
Silverthorne Low Voltage Processor
0.76V @HFM TBD @LFM
TBD
U1C
U1D
INT441
01G011980000
CPU +VCORE Low-Frequency Capacitors
CE1
100UF/6.3V
C458
0.1UF/16V
C4
0.1UF/16V
C5
0.1UF/16V
L21
120Ohm/100Mhz
R1069
330Ohm
5%
R1005
56OHM
Q1004
2N7002
OQ4
PMBS3904
130mA
2.5A
+VCCP_C6
+VCCP
+VCORE
+1.5VS
+VCCA_CPU
GND
3/26_Item6
3/26_Item2
3/27_Item4
VCCSENSE [42]
VSSSENSE
PM_THRMTRIP#_R [8,11]
FORCE_OFF# [26,32]
BUF_RST# [20,22,23,24,27,30,32,34]
C486 10UF/6.3V /X
C6 10UF/6.3V
C7 1UF/6.3V
C8 1UF/6.3V
C9 0.1UF/16V
C10 0.1UF/16V
C11 0.1UF/16V
C12 1UF/6.3V
C13 1UF/6.3V
C14 1UF/6.3V
C15 1UF/6.3V
C16 1UF/6.3V
C17 1UF/6.3V
C18 1UF/6.3V
C19 1UF/6.3V
C20 1UF/6.3V
C21 1UF/6.3V
C22 1UF/6.3V
<Variant Name>
Title : CPU-SILVERTHORNE (2)
ASUSTeK COMPUTER INC
Engineer: N/A
Size Custom
Project Name 1101HA
Rev 1.2
Date: Tuesday, July 21, 2009
Sheet 10 of 50


FSB Compensation Circuits
Rreference Voltage
FSB I/O Buffers Calibrating
FSB Signals Reference Voltage
FSB Signals CMOS Reference Voltage
HOST
U2A
02G010018700
US15W D2 stage : 02G010018704
<Variant Name>
Title : Poulsbo_HOST (1)
ASUSTeK COMPUTER INC
Engineer: N/A
Size Custom
Project Name 1101HA
Rev 1.2
Date: Tuesday, July 21, 2009
Sheet 11 of 50



<Variant Name>

ASUSTek Computer INC.

Title : Poulsbo_DDR2 (2)

Engineer: N/A

Size	Project Name	Rev
Custom	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 12 of 50

3/26_Item6 Modify RTC circuit

RTC Battery & RTC Reset

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

3/29 item5

3/31 item14

RTC Crystal

SCH_INTVRMEN	
Enable (default)	1
Disable	0

SCH internal VR enable strap for +V1.5 & +V1.05 VRs

Internal VRM Enable Strap

LPC pulled-up for EC

NOTE:L_BKLTEN AND L_VDDEN PULL DOWN IN CONNECTOR SHEET

LVDS pull-up

02G010018700

<Variant Name>

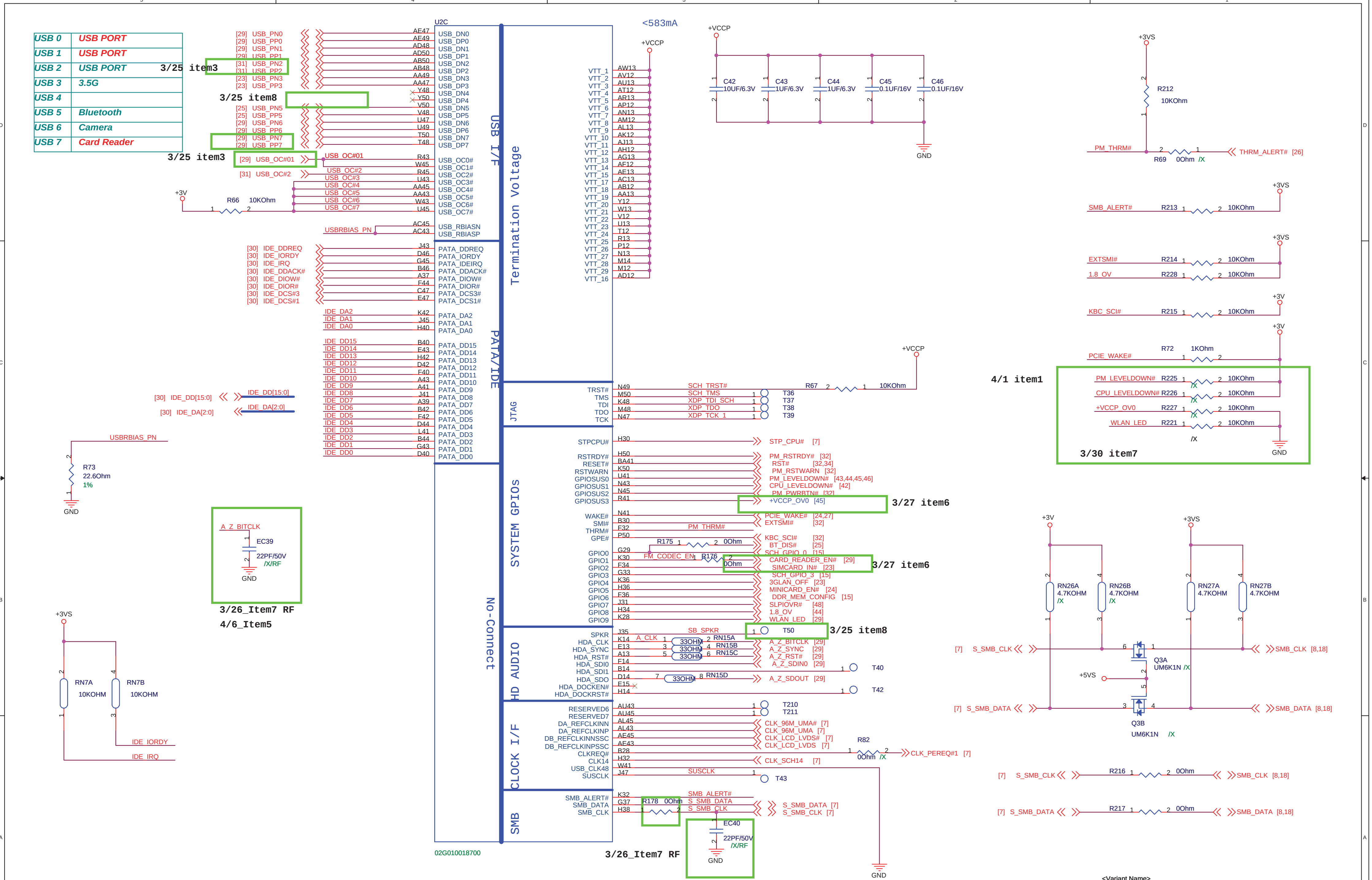
ASUSTeK COMPUTER INC

Title : Poulsbo_LVDS/SDVO

Engineer: N/A

Size	Project Name	Rev
Custom	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 13 of 50



<Variant Name>

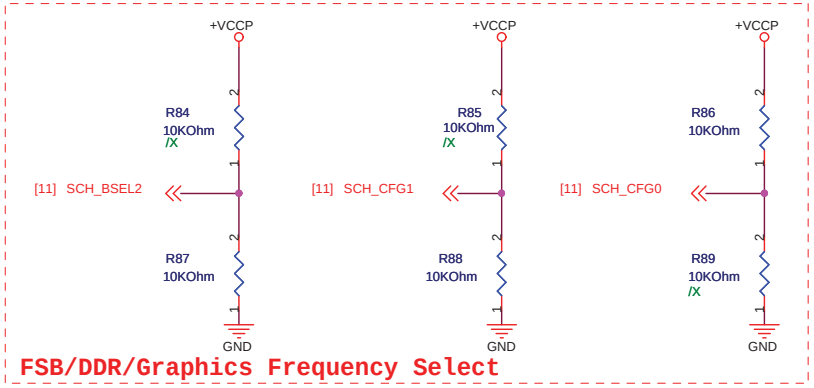
Title : SCH_Poulsbo_PM/USB/IDE/AZ(4)

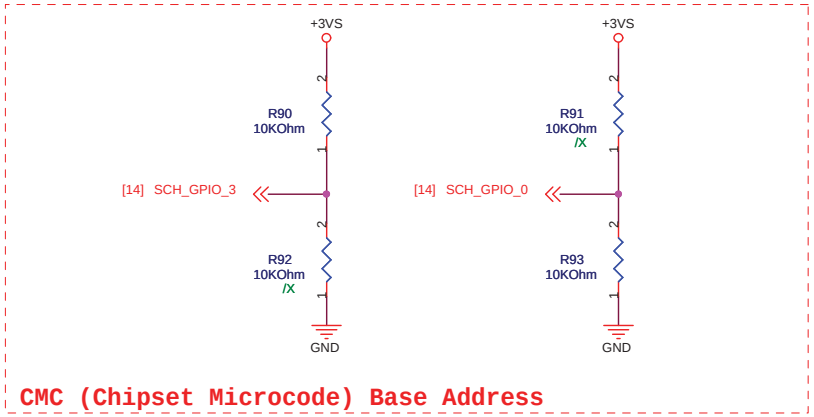
ASUSTeK COMPUTER INC

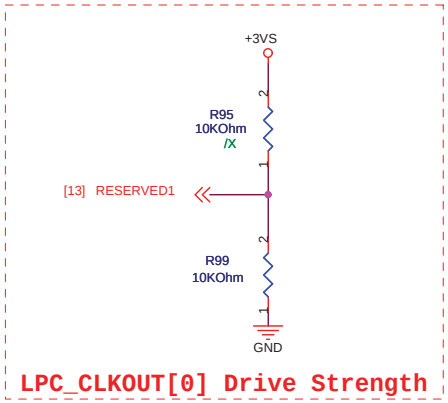
Engineer: N/A

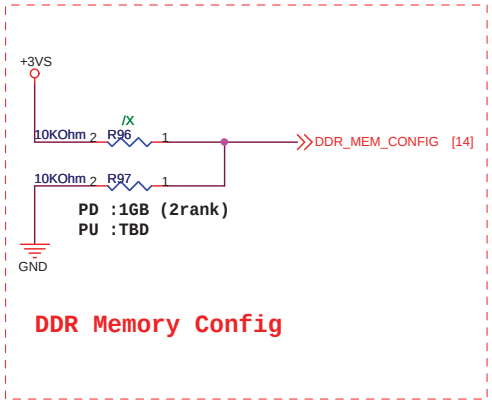
Size	Project Name	Rev
Custom	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 14 of 50









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	0xFFFB0000	
	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	

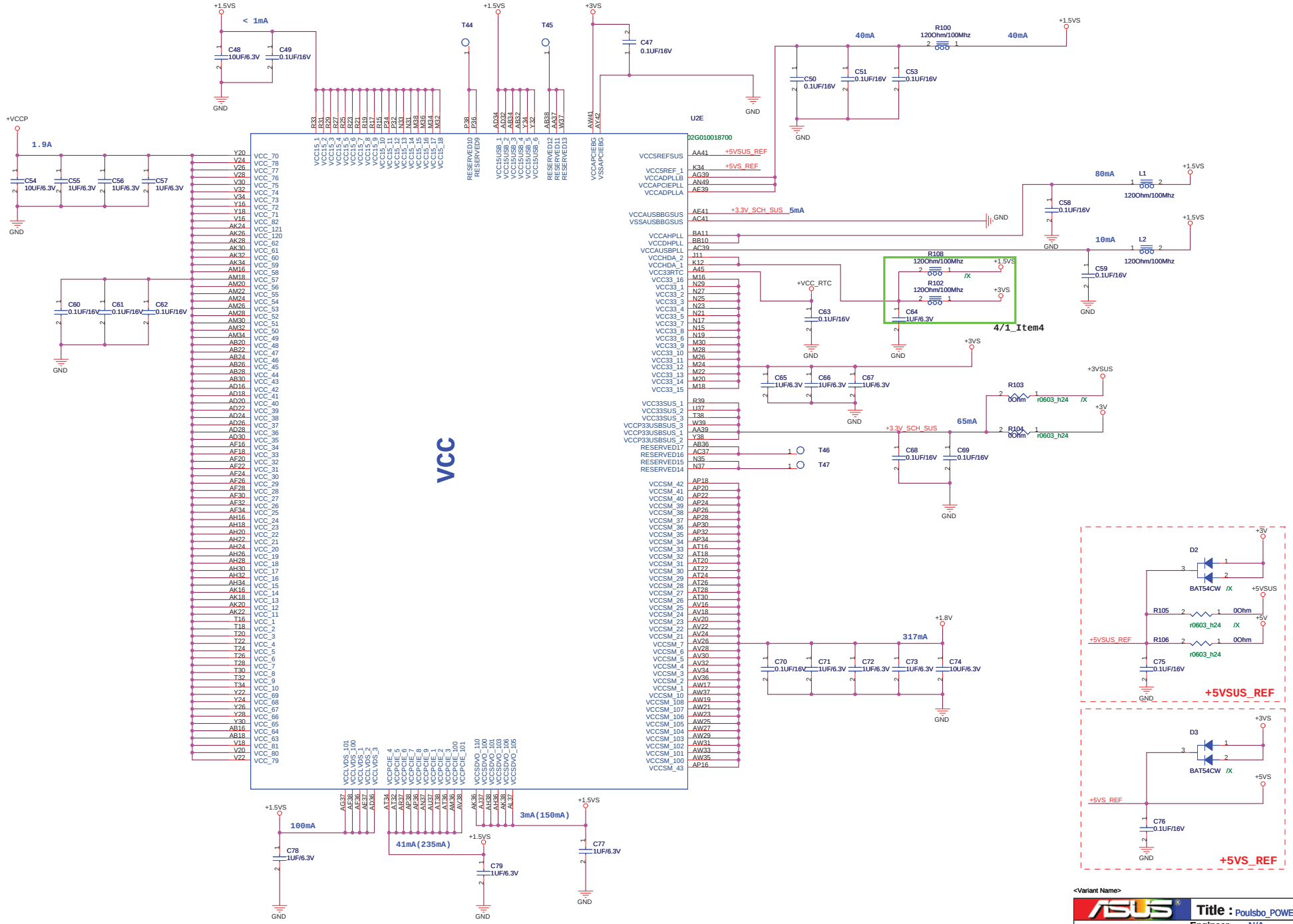
<Variant Name>

Title : POULSBO_STRAP(5)

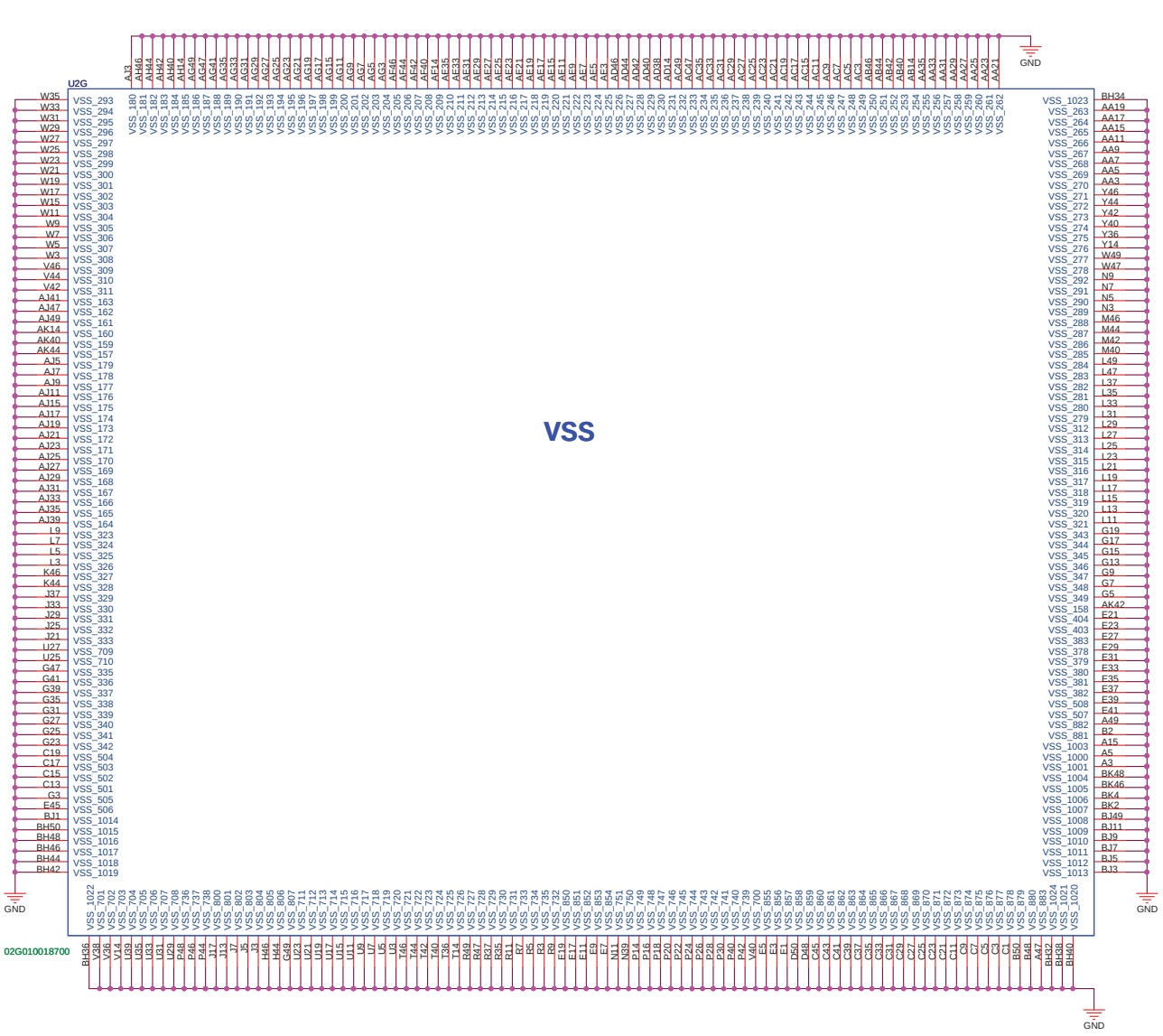
ASUSTek Computer INC. Engineer: N/A

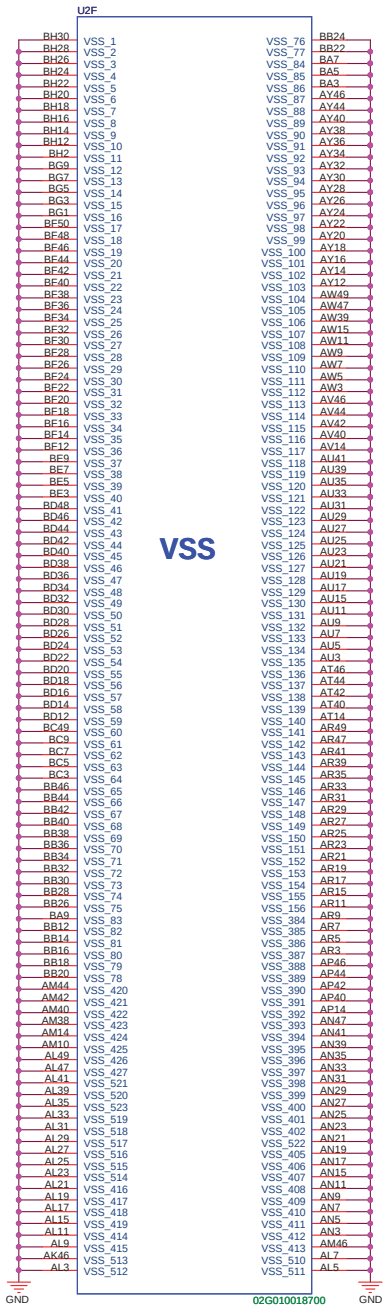
Size	Project Name	Rev
B	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 15 of 50



<Variant Name>	
ASUSTeK COMPUTER INC	Title : Poulsbo_POWER (5)
	Engineer: N/A
Size: Custom	Project Name: 1101HA
Rev: 1.2	
Date: Tuesday, July 21, 2009	Sheet 16 of 50

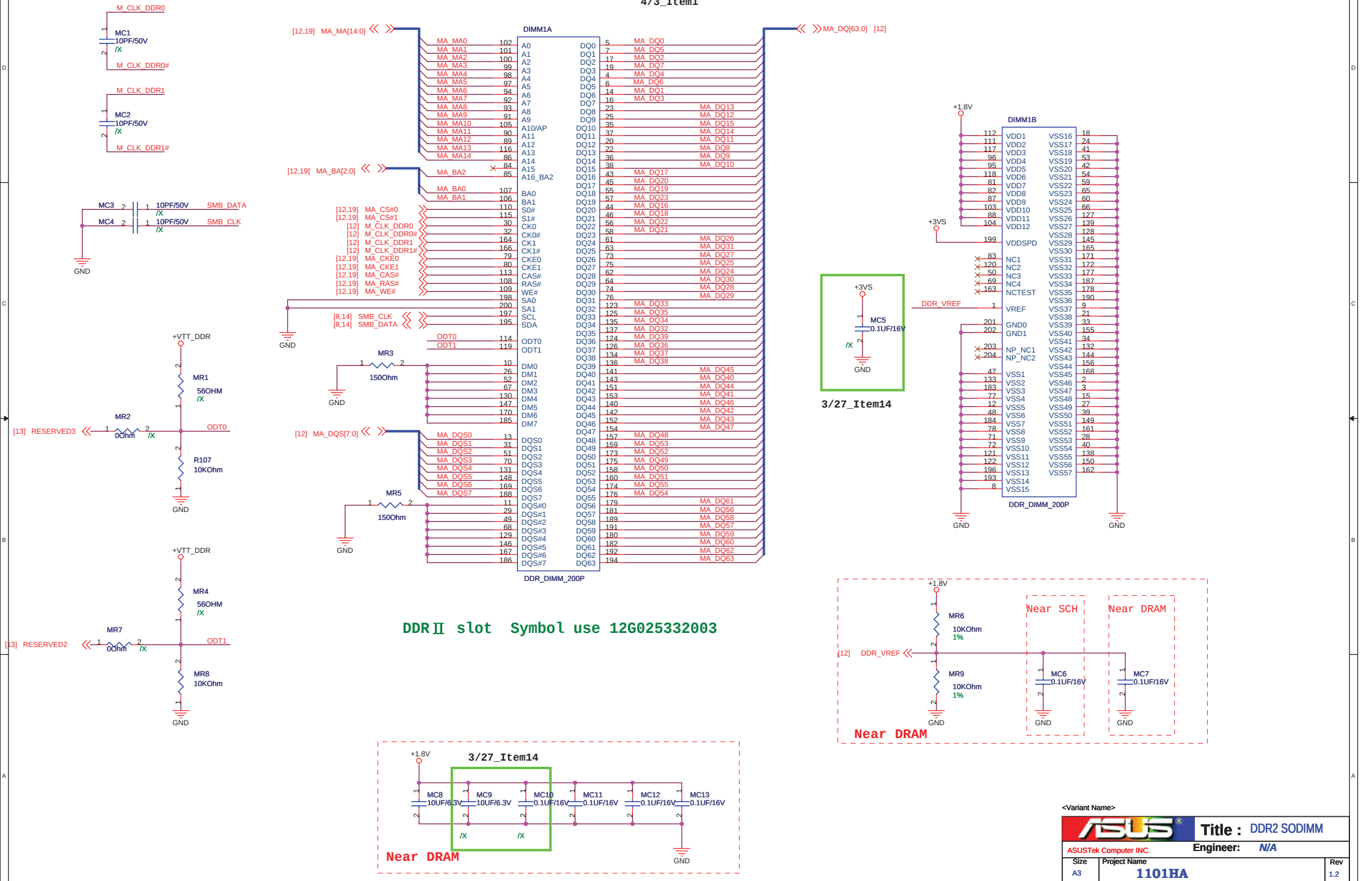




<variant_name>

ASUSTeK COMPUTER INC	Title : POULSBO_GND (6)	
	Engineer: N/A	
Size: Custom	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 17 of 50	

4/3_Item1



<variant_name>

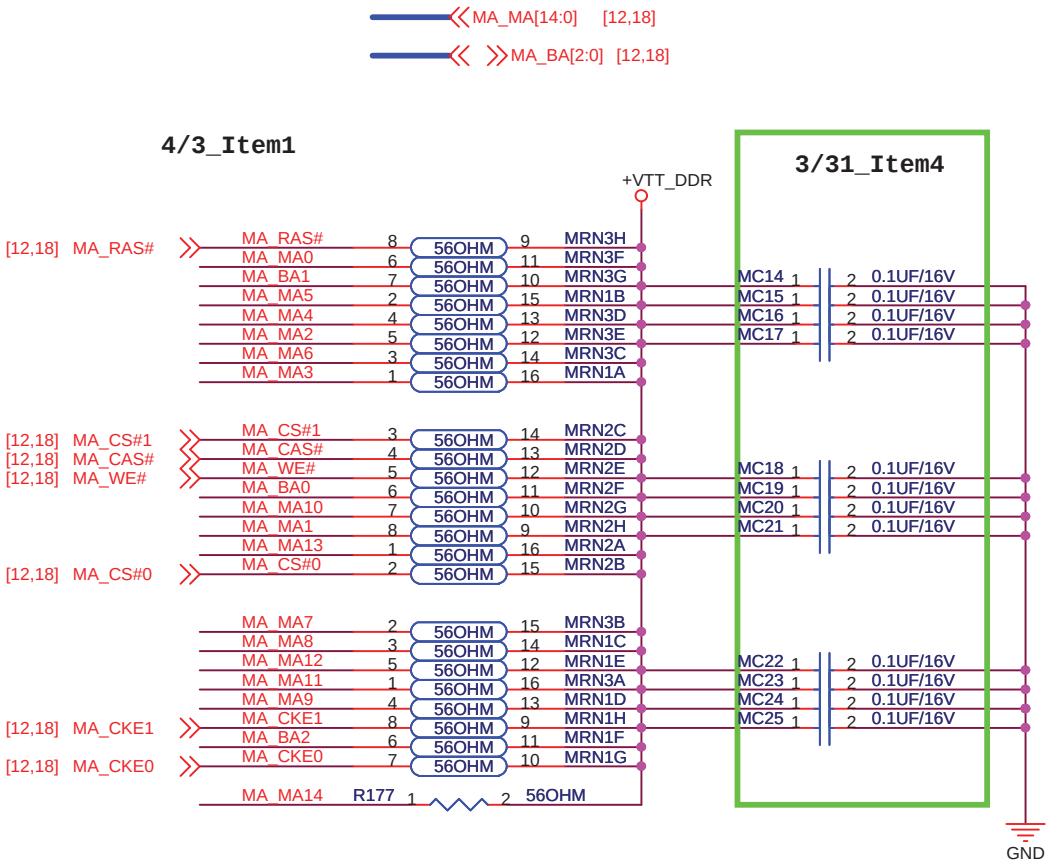
ASUSTek Computer INC.

Title : DDR2 SODIMM

Engineer: N/A

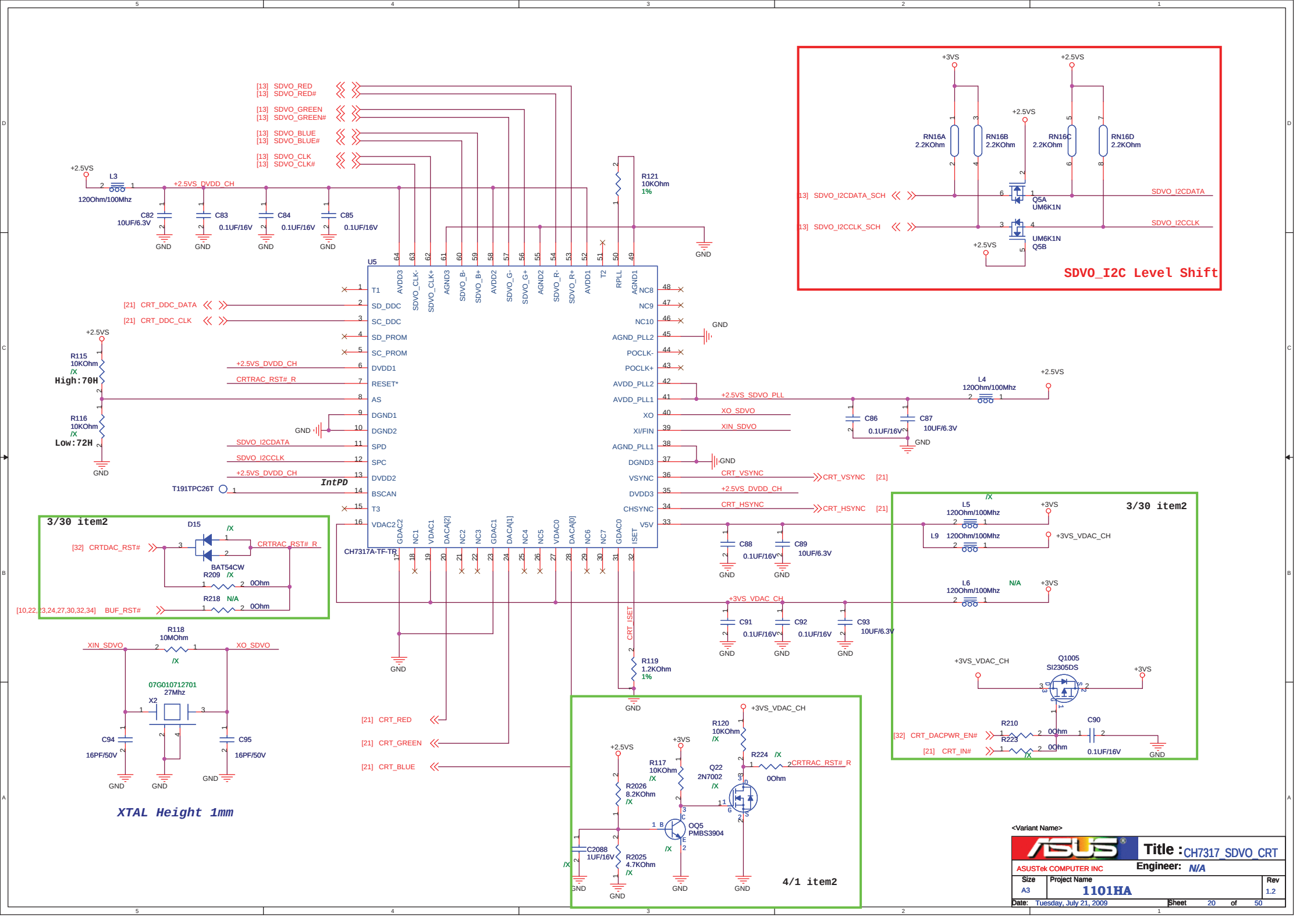
Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 18 of 50



<Variant Name>

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



<Variant Name>

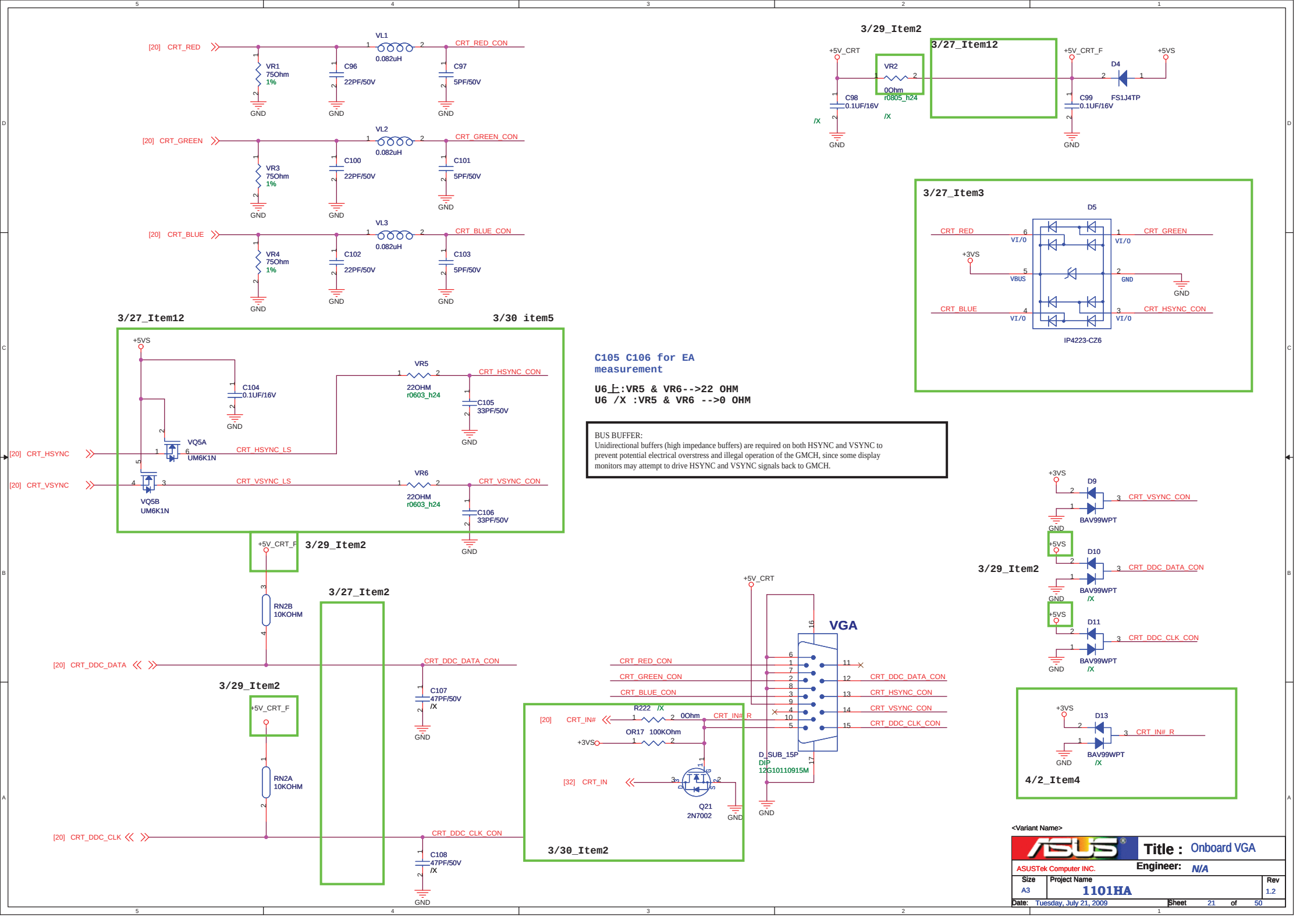
ASUSTek COMPUTER INC

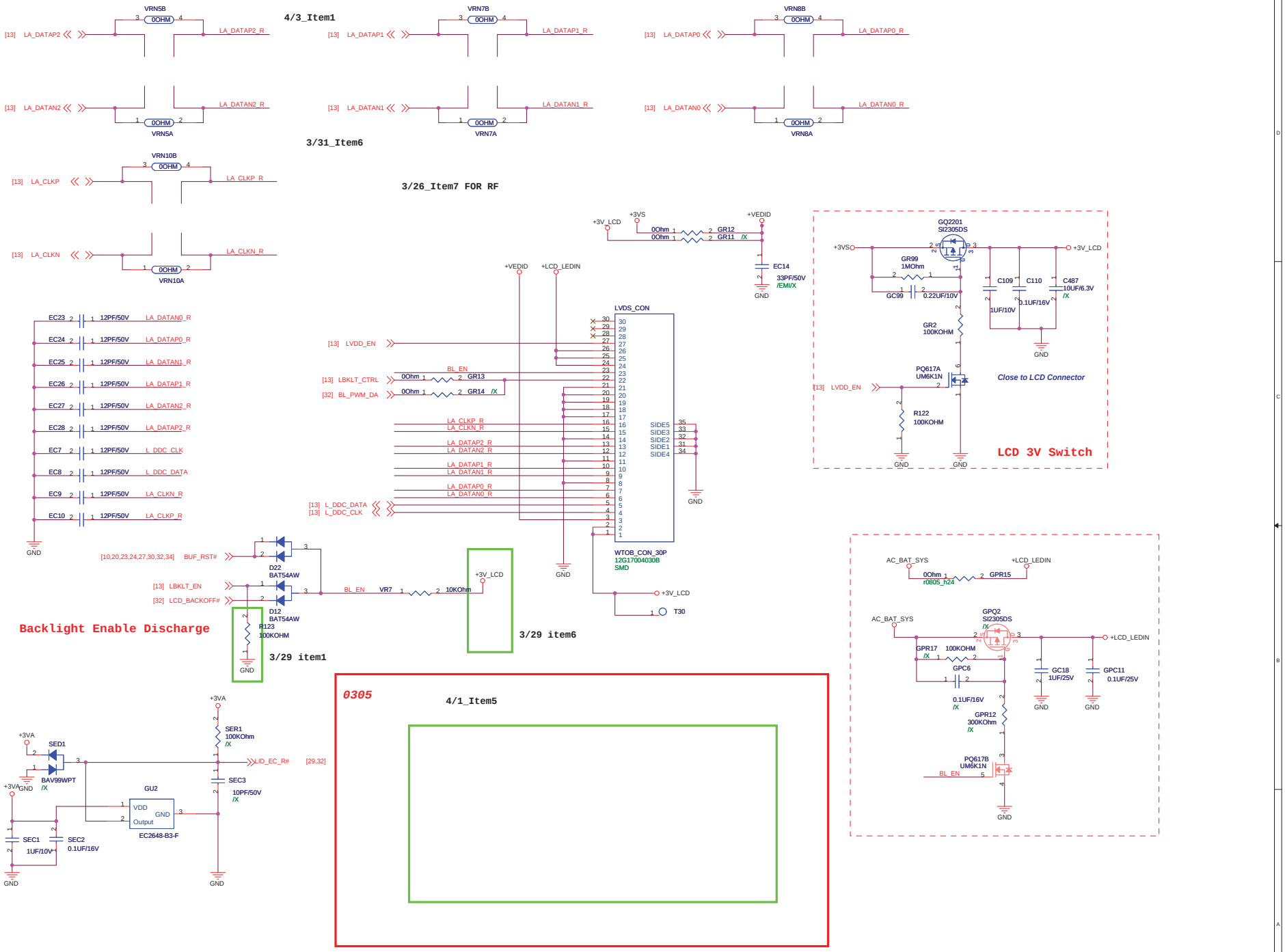
Title : CH7317_SDVO_CRT

Engineer: N/A

Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 20 of 50


[20] CRT_RED
VL1
0.082uH
CRT_RED_CON
VR1
75Ohm
1%
C96
22PF/50V
C97
5PF/50V
GND
[20] CRT_GREEN
VL2
0.082uH
CRT_GREEN_CON
VR3
75Ohm
1%
C100
22PF/50V
C101
5PF/50V
[20] CRT_BLUE
VL3
0.082uH
CRT_BLUE_CON
VR4
75Ohm
1%
C102
22PF/50V
C103
5PF/50V
3/29_Item2
+5V_CRT
VR2
0Ohm
r0805_h24
C98
0.1UF/16V
/X
3/27_Item12
+5V_CRT_F
D4
FS1J4TP
+5VS
C99
0.1UF/16V
3/27_Item3
D5
CRT_RED
CRT_GREEN
+3VS
VBUS
CRT_BLUE
CRT_HSYNC_CON
VI/O
IP4223-CZ6
3/27_Item12
3/30 item5
+5VS
C104
0.1UF/16V
VR5
22OHM
r0603_h24
CRT_HSYNC_CON
C105
33PF/50V
[20] CRT_HSYNC
VQ5A
UM6K1N
CRT_HSYNC_LS
[20] CRT_VSYNC
VQ5B
UM6K1N
CRT_VSYNC_LS
VR6
22OHM
r0603_h24
CRT_VSYNC_CON
C106
33PF/50V
C105 C106 for EA measurement
U6上:VR5 & VR6-->22 OHM
U6 /X :VR5 & VR6 -->0 OHM
BUS BUFFER:
Unidirectional buffers (high impedance buffers) are required on both HSYNC and VSYNC to prevent potential electrical overstress and illegal operation of the GMCH, since some display monitors may attempt to drive HSYNC and VSYNC signals back to GMCH.
3/29_Item2
+5V_CRT_F
3/27_Item2
RN2B
10KOHM
[20] CRT_DDC_DATA
CRT_DDC_DATA_CON
C107
47PF/50V
/X
3/29_Item2
+5V_CRT_F
RN2A
10KOHM
[20] CRT_DDC_CLK
CRT_DDC_CLK_CON
C108
47PF/50V
/X
+5V_CRT
VGA
CRT_RED_CON
CRT_GREEN_CON
CRT_BLUE_CON
CRT_DDC_DATA_CON
CRT_HSYNC_CON
CRT_VSYNC_CON
CRT_DDC_CLK_CON
D_SUB_15P
DIP
12G10110915M
[20] CRT_IN#
R222 /X
0Ohm
CRT_IN#_R
OR17 100KOhm
+3VS
[32] CRT_IN
Q21
2N7002
3/30_Item2
3/29_Item2
+3VS
D9
BAV99WPT
CRT_VSYNC_CON
+5VS
D10
CRT_DDC_DATA_CON
/X
D11
CRT_DDC_CLK_CON
4/2_Item4
D13
CRT_IN#_R
<Variant Name>
Title : Onboard VGA
ASUSTek Computer INC.
Engineer: N/A
Size A3
Project Name 1101HA
Rev 1.2
Date: Tuesday, July 21, 2009
Sheet 21 of 50

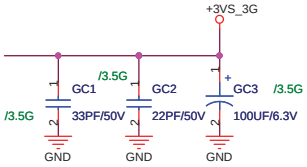


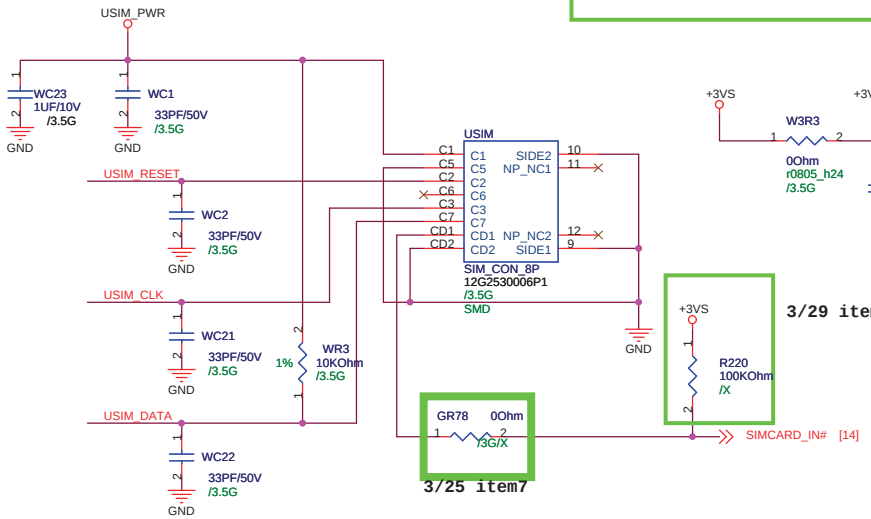
<variant_name>

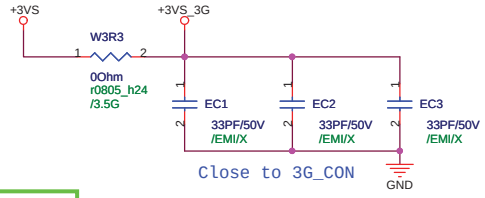
ASUSTek Computer INC.	Title : LVDS Conn	
	Engineer: N/A	
Size: Custom	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 22 of 50	

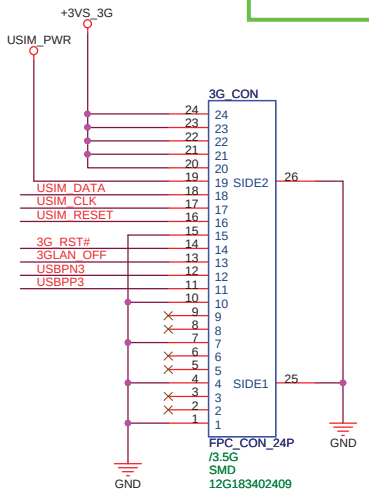
3/29 item4

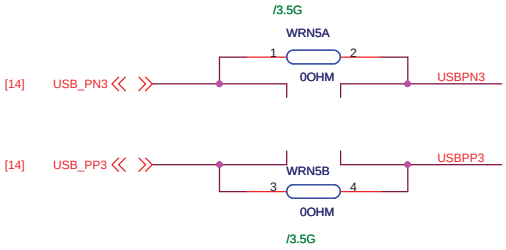
3/29 item4

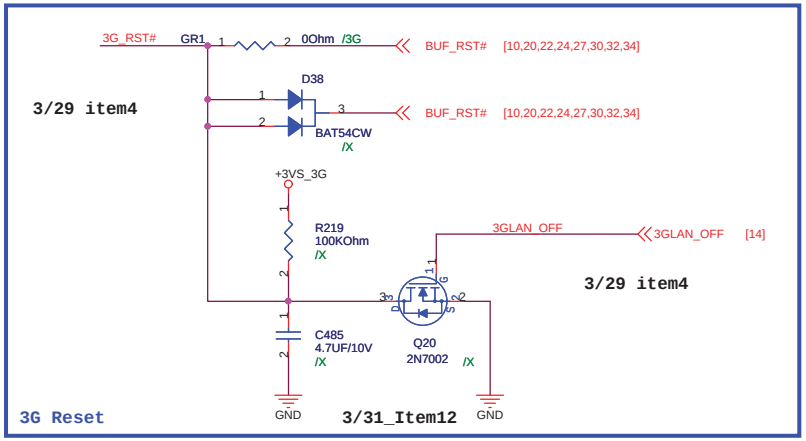












<variant_name>

3.5G Module & External Antenna

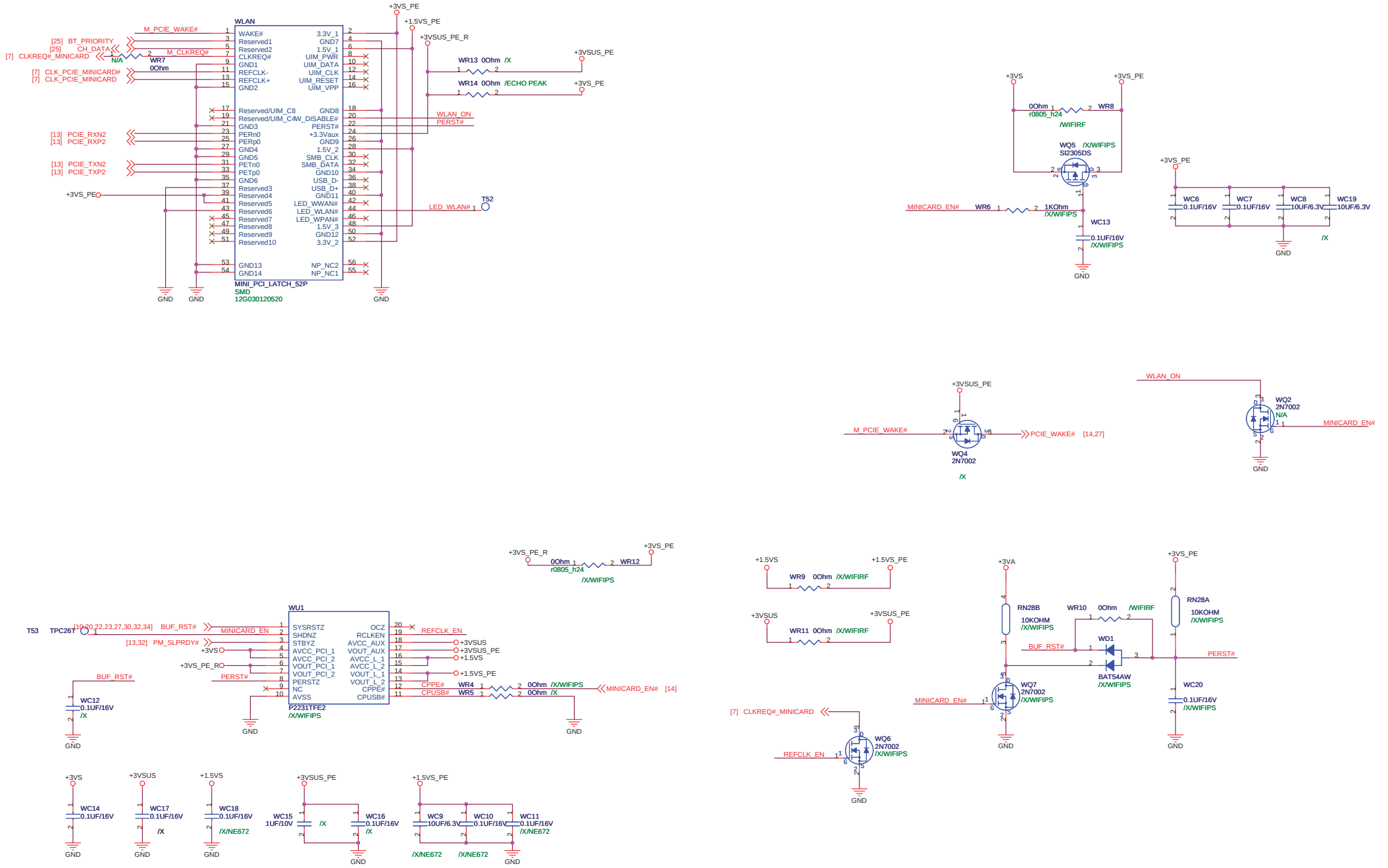
ASUSTek Computer INC.

Title :

Engineer: N/A

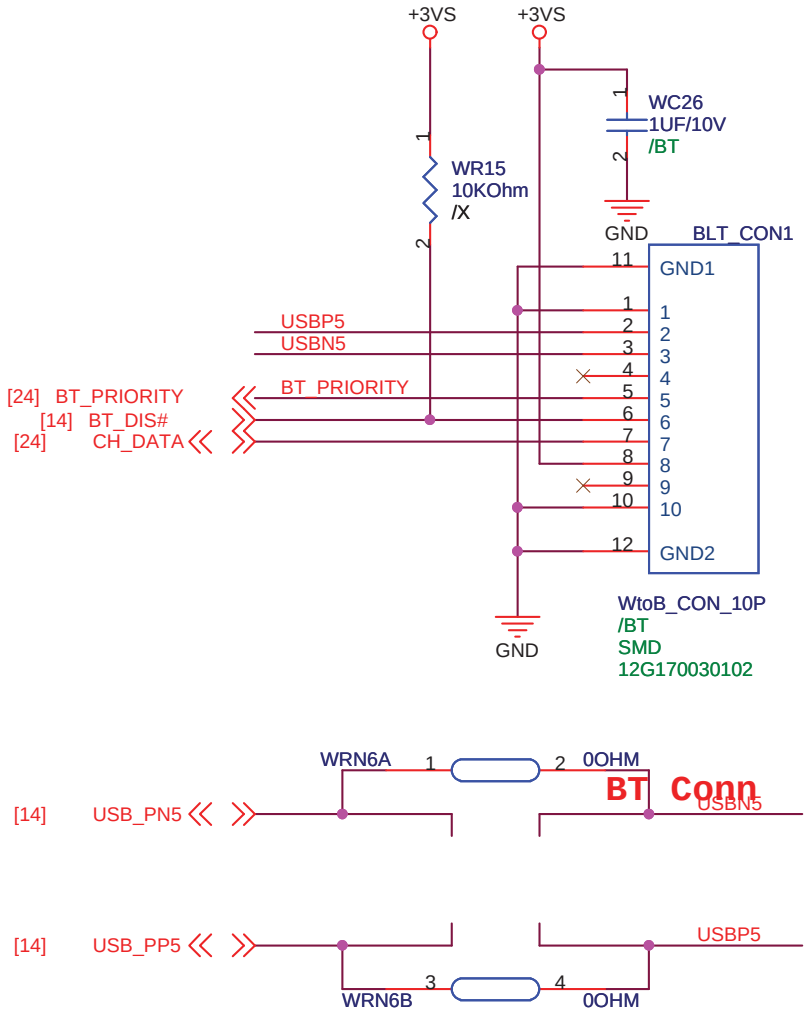
Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 23 of 50



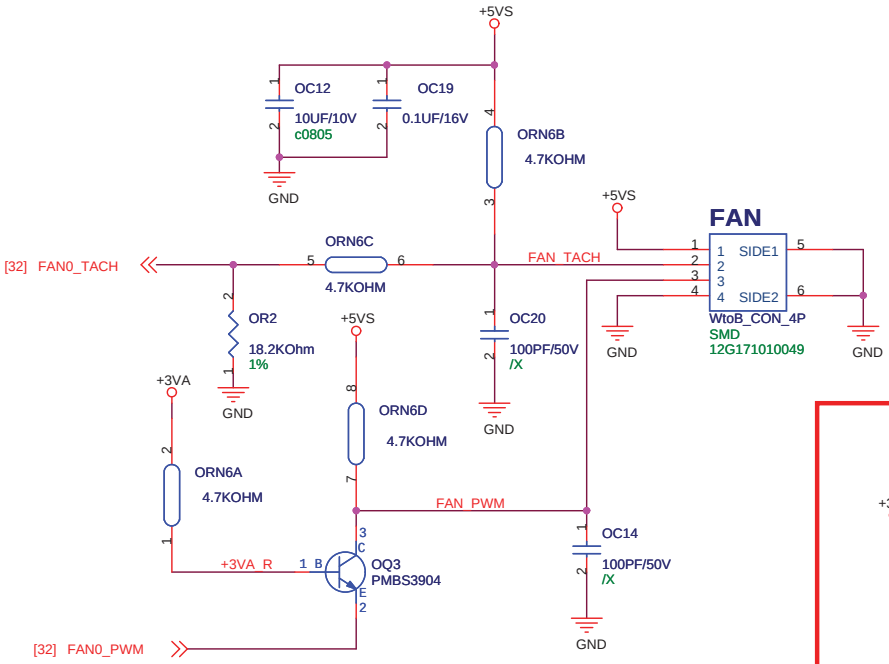
<variant_name>

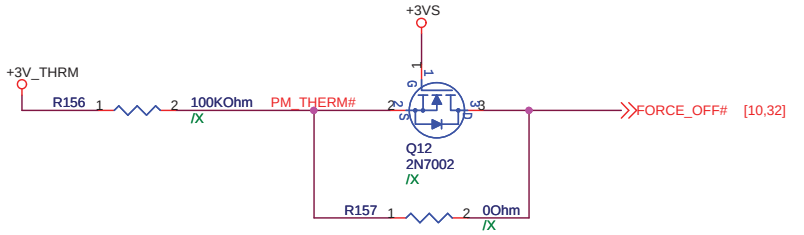
ASUSTek Computer INC.	Title : Mini WIFI	
	Engineer: N/A	
Size: Custom	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 24 of 50	

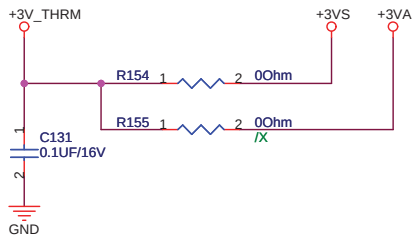


<Variant Name>

ASUSTek Computer INC.	Title : Bluetooth	
	Engineer: N/A	
Size: A	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 25 of 50	

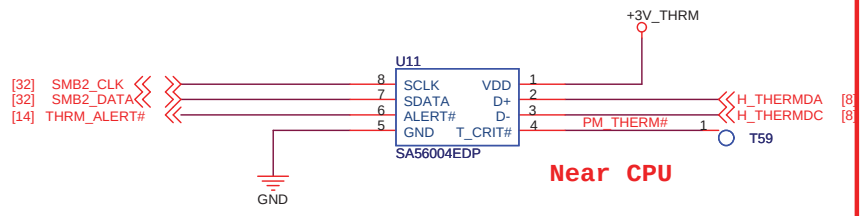






Thermal Sensor Power Supply

Thermal Sensor

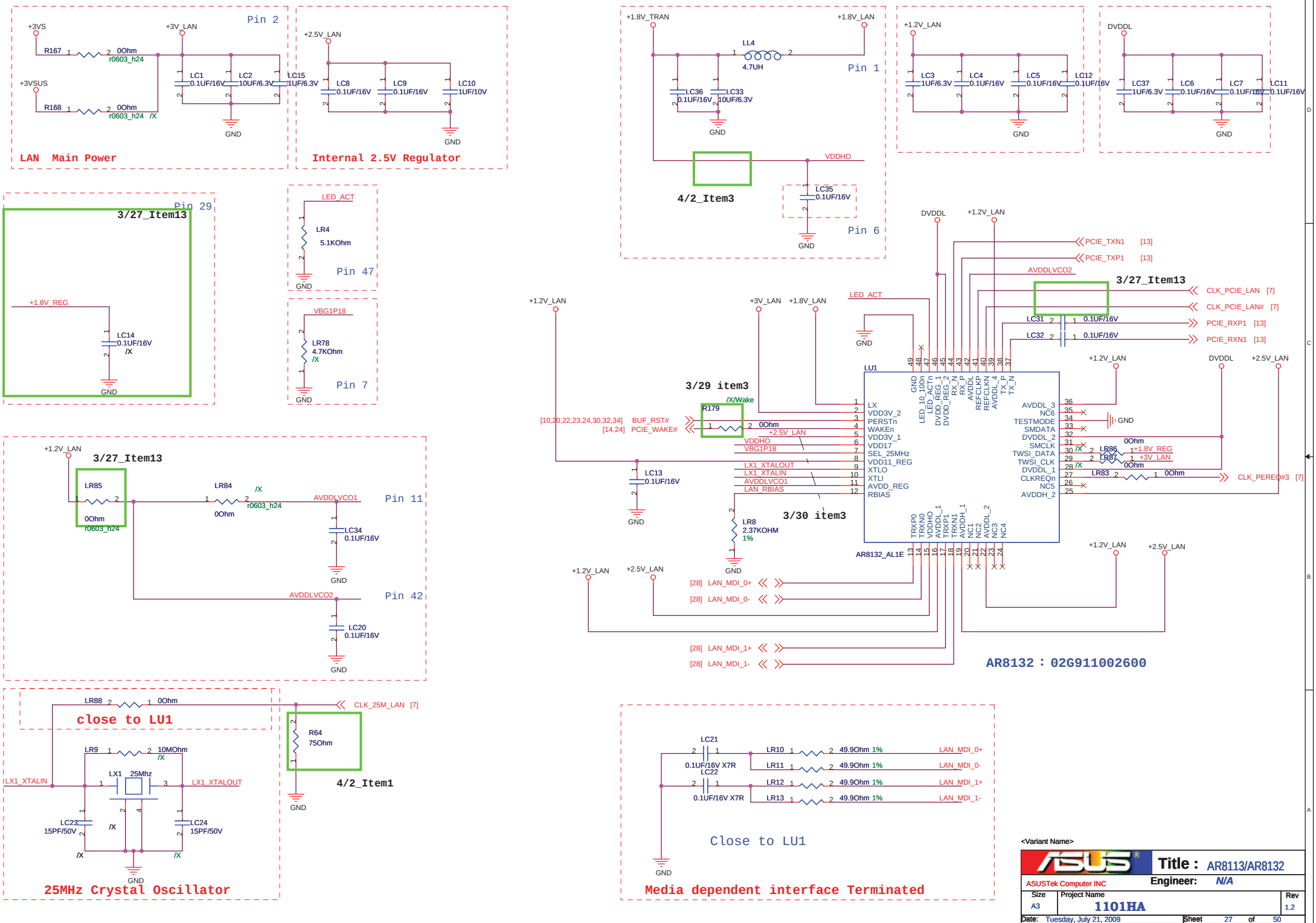


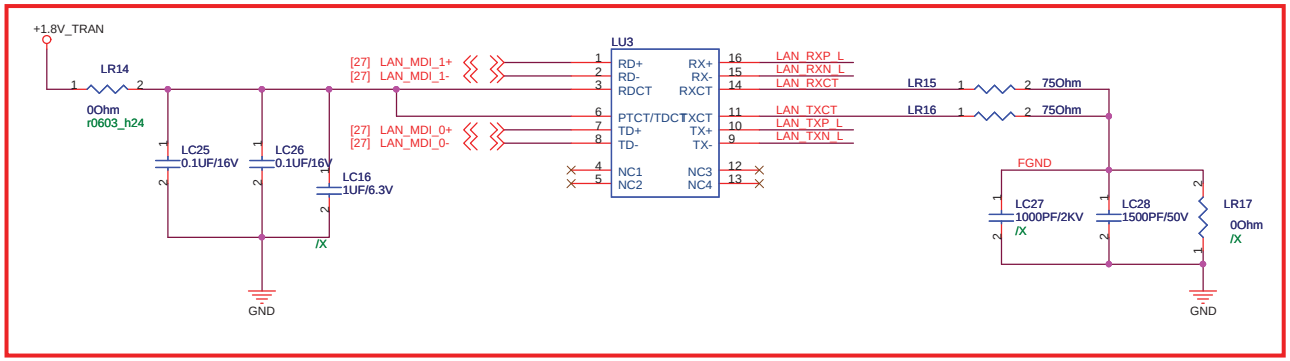
Near CPU

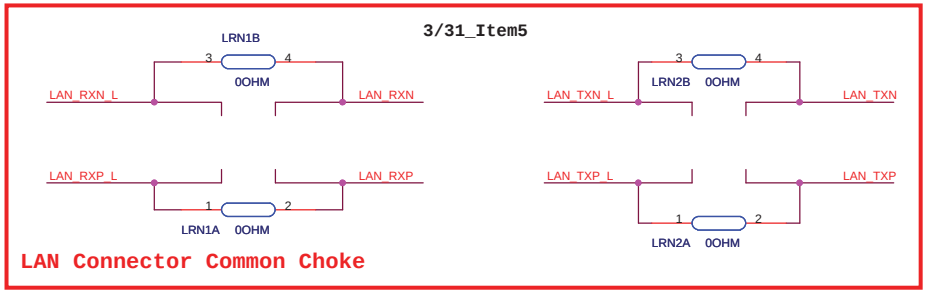
U11 use 06G023044020,
second source 06G023055010

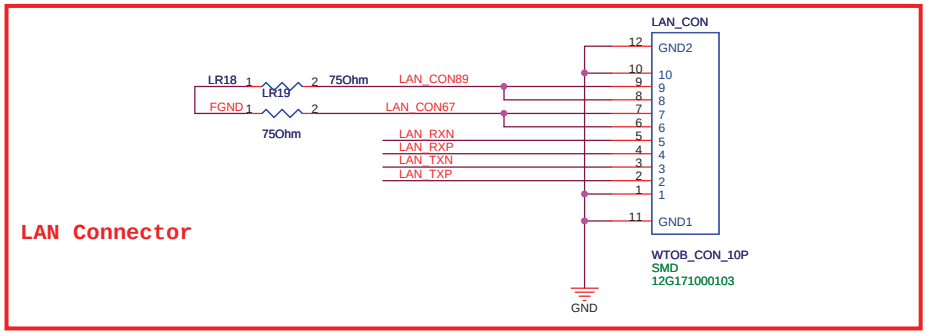
<Variant Name>

ASUSTek Computer INC.	Title : FAN_THERMAL SENSOR	
	Engineer: N/A	
Size: Custom	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 26 of 50	


LAN Main Power
Pin 2
+3VS
+3V_LAN
R167 0Ohm r0603_h24
+3VSUS
R168 0Ohm r0603_h24 /X
LC1 0.1UF/16V
LC2 10UF/6.3V
LC15 1UF/6.3V
GND
Internal 2.5V Regulator
+2.5V_LAN
LC8 0.1UF/16V
LC9 0.1UF/16V
LC10 1UF/10V
GND
+1.8V_TRAN
+1.8V_LAN
LL4 4.7UH
Pin 1
LC36 0.1UF/16V
LC33 10UF/6.3V
GND
4/2_Item3
VDDHO
LC35 0.1UF/16V
Pin 6
GND
+1.2V_LAN
LC3 1UF/6.3V
LC4 0.1UF/16V
LC5 0.1UF/16V
LC12 0.1UF/16V
GND
DVDDL
LC37 1UF/6.3V
LC6 0.1UF/16V
LC7 0.1UF/16V
LC11 0.1UF/16V
GND
Pin 29
3/27_Item13
+1.8V_REG
LC14 0.1UF/16V /X
GND
LED_ACT
LR4 5.1KOhm
Pin 47
GND
VBG1P18
LR78 4.7KOhm /X
Pin 7
GND
+1.2V_LAN
3/27_Item13
LR85 0Ohm r0603_h24
LR84 0Ohm /X r0603_h24
AVDDLVCO1
Pin 11
LC34 0.1UF/16V
GND
AVDDLVCO2
Pin 42
LC20 0.1UF/16V
GND
close to LU1
LR88 0Ohm
LR9 10MOhm /X
LX1_XTALIN
LX1_XTALOUT
LX1 25Mhz
LC23 15PF/50V /X
LC24 15PF/50V /X
GND
25MHz Crystal Oscillator
CLK_25M_LAN [7]
R64 75Ohm
4/2_Item1
GND
3/29 item3
/X/Wake
R179 0Ohm
[10,20,22,23,24,30,32,34] BUF_RST#
[14,24] PCIE_WAKE#
+2.5V_LAN
VDDHO
VBG1P18
LX1_XTALOUT
LX1_XTALIN
AVDDLVCO1
LAN_RBIAS
LC13 0.1UF/16V
LR8 2.37KOHM 1%
3/30 item3
LU1
LX
VDD3V_2
PERSTn
WAKEn
VDD3V_1
VDD17
SEL_25MHz
VDD11_REG
XTLO
XTLI
AVDD_REG
RBIAS
GND
LED_10_100n
LED_ACTn
DVDD_REG_1
DVDD_REG_2
RX_N
RX_P
AVDDL
REFCLKP
REFCLKN
AVDDL_4
TX_P
TX_N
AVDDL_3
NC6
TESTMODE
SMDATA
DVDDL_2
SMCLK
TWSI_DATA
TWSI_CLK
DVDDL_1
CLKREQn
NC5
AVDDH_2
LR86 0Ohm
LR87 0Ohm
LR83 0Ohm
+1.8V_REG
+3V_LAN
CLK_PEREQ#3 [7]
TRXP0
TRXN0
VDDHO
AVDDL_1
TRXP1
TRXN1
AVDDH_1
NC1
NC2
AVDDL_2
NC3
NC4
AR8132_AL1E
[28] LAN_MDI_0+
[28] LAN_MDI_0-
[28] LAN_MDI_1+
[28] LAN_MDI_1-
PCIE_TXN1 [13]
PCIE_TXP1 [13]
AVDDLVCO2
3/27_Item13
CLK_PCIE_LAN [7]
CLK_PCIE_LAN# [7]
LC31 0.1UF/16V
LC32 0.1UF/16V
PCIE_RXP1 [13]
PCIE_RXN1 [13]
AR8132 : 02G911002600
LC21
LC22
0.1UF/16V X7R
LR10 49.9Ohm 1%
LR11 49.9Ohm 1%
LR12 49.9Ohm 1%
LR13 49.9Ohm 1%
LAN_MDI_0+
LAN_MDI_0-
LAN_MDI_1+
LAN_MDI_1-
Close to LU1
Media dependent interface Terminated
<Variant Name>
Title : AR8113/AR8132
ASUSTek Computer INC
Engineer: N/A
Size A3
Project Name 1101HA
Rev 1.2
Date: Tuesday, July 21, 2009
Sheet 27 of 50







<Variant Name>

ASUSTek Computer INC.	Title : RJ45	
	Engineer: N/A	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 28 of 50	

3/31 item7

3/25 item4

3/31 item9

Camera USB Common Choke

IDE_PCSEL#1 H: Slave
L: Master

IDE Master/ Slave Setting

3/26 item11

Diag Strapping

3/30 item6

4/6_Item6

3/27 item8

3/26 item7 FOR RF

4/1_Item4

3/25 item3

3/25 item2

3/27 item1

3/31 item15

RD debug only

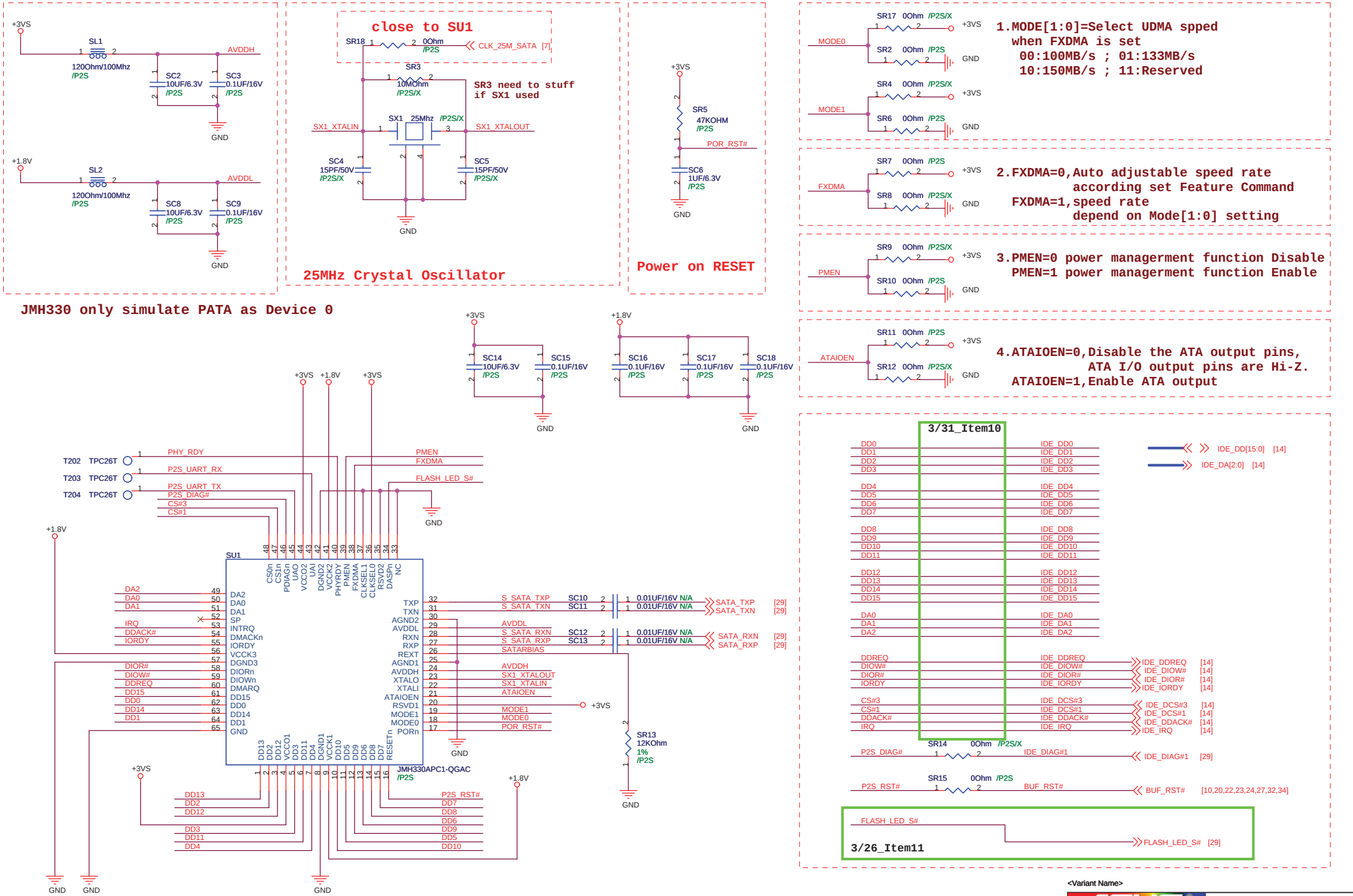
Flash LED

3/26 item11

3/25 item3

<Variant Name>

Title : Flash Conn		
ASUSTek Computer INC.	Engineer: N/A	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 29 of 50	



<Variant Name>

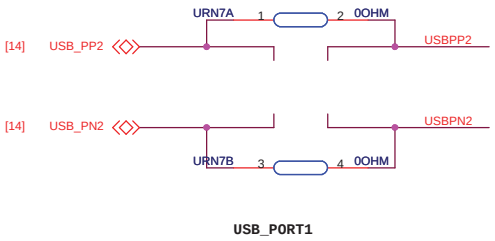
ASUSTek Computer INC.

Title : PATA TO SATA

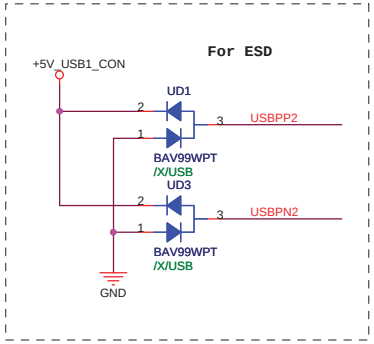
Engineer: N/A

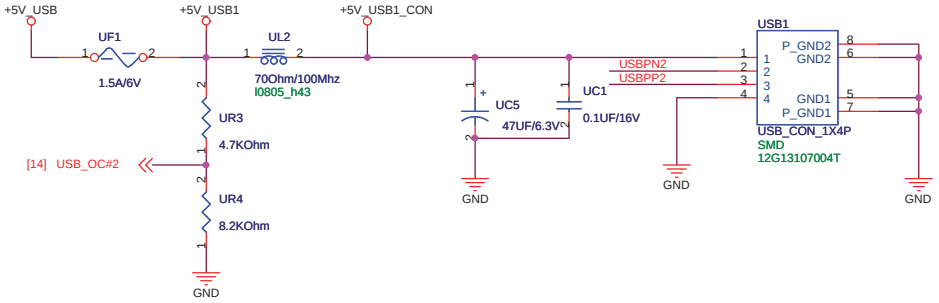
Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 30 of 50



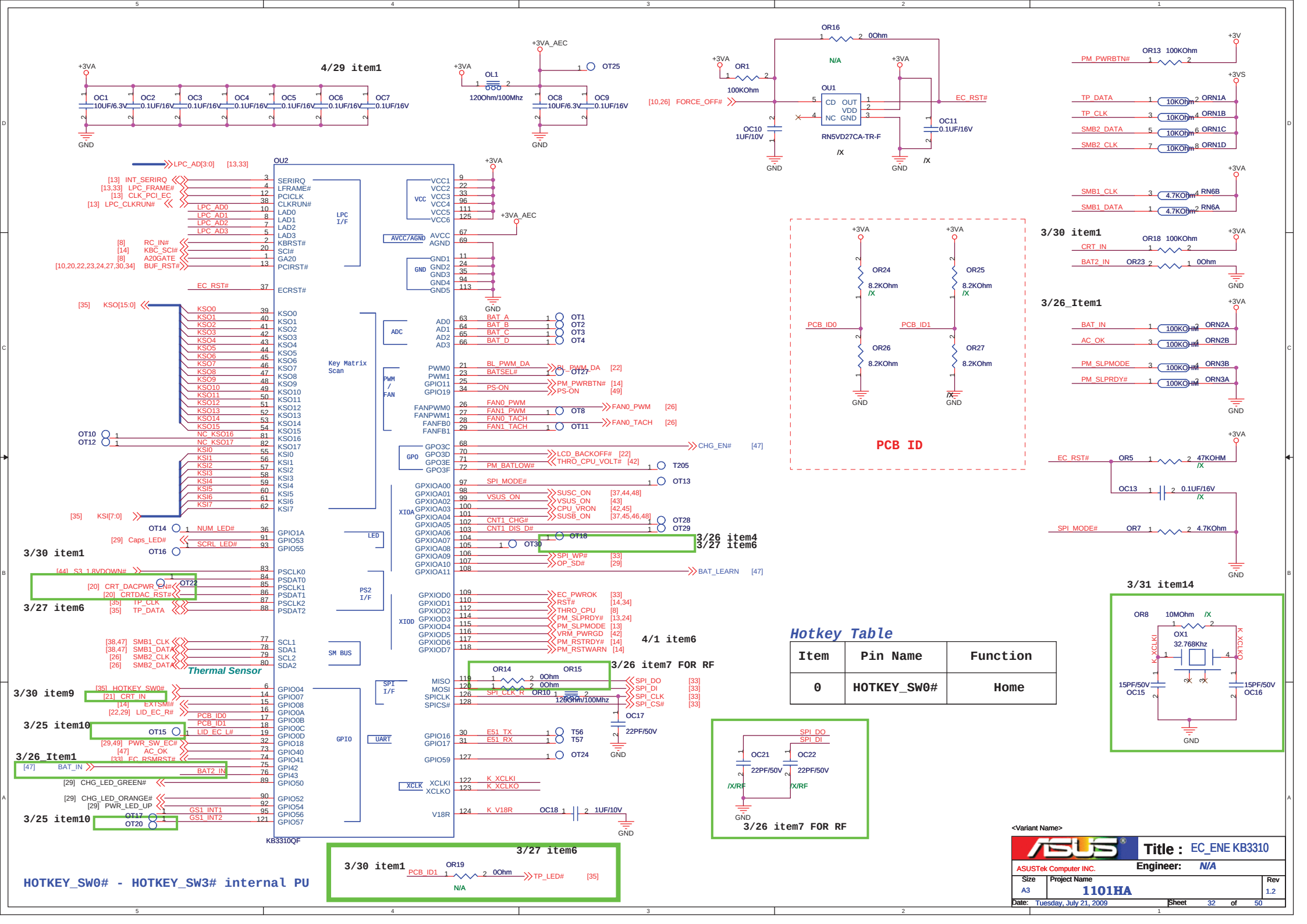
USB_PORT1



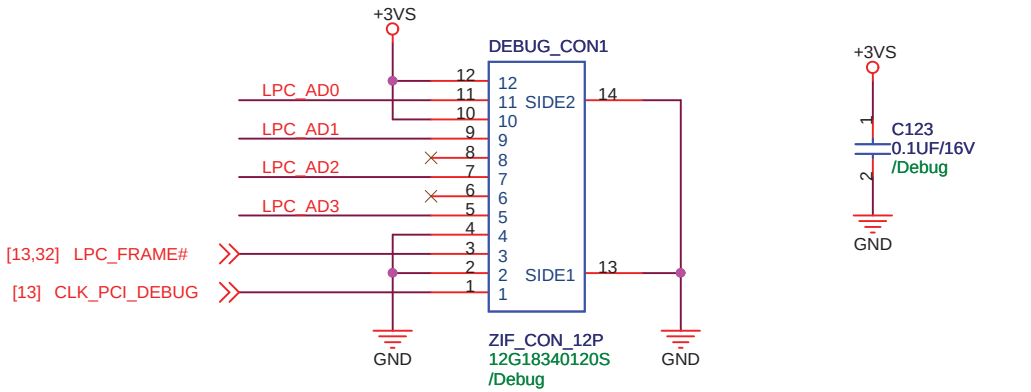


<Variant Name>

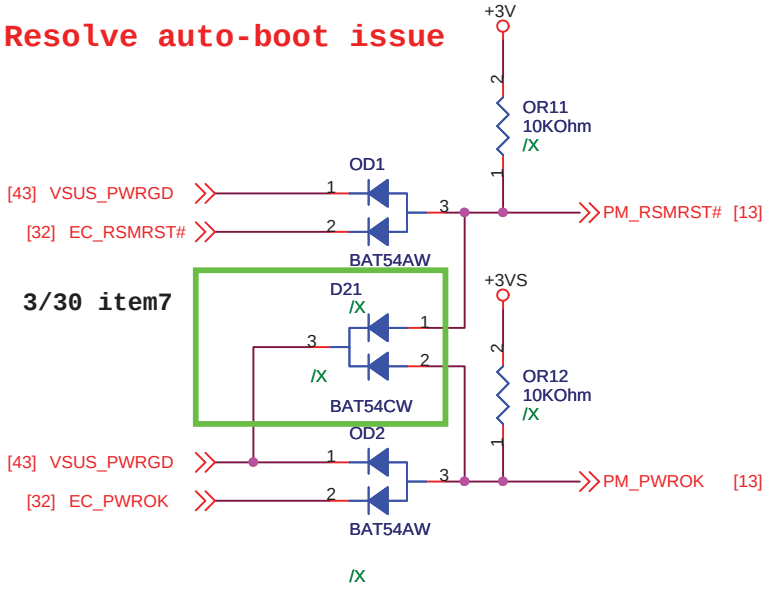
ASUSTek Computer INC.	Title : USB Port	
	Engineer: N/A	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 31 of 50	


4/29 item1
OC1 10UF/6.3V
OC2 0.1UF/16V
OC3 0.1UF/16V
OC4 0.1UF/16V
OC5 0.1UF/16V
OC6 0.1UF/16V
OC7 0.1UF/16V
OL1 120Ohm/100Mhz
OC8 10UF/6.3V
OC9 0.1UF/16V
OT25
OR16 0Ohm
N/A
OR1 100KOhm
OU1
RN5VD27CA-TR-F
OC10 1UF/10V
OC11 0.1UF/16V
[10,26] FORCE_OFF#
EC_RST#
OR13 100KOhm
PM_PWRBTN#
TP_DATA
TP_CLK
SMB2_DATA
SMB2_CLK
ORN1A
ORN1B
ORN1C
ORN1D
SMB1_CLK
SMB1_DATA
RN6B
RN6A
3/30 item1
CRT_IN
BAT2_IN
OR18 100KOhm
OR23 0Ohm
3/26_Item1
BAT_IN
AC_OK
PM_SLPMODE
PM_SLPRDY#
ORN2A
ORN2B
ORN3B
ORN3A
OR24 8.2KOhm /X
OR25 8.2KOhm /X
OR26 8.2KOhm
OR27 8.2KOhm
PCB_ID0
PCB_ID1
PCB ID
OR5 47KOHM /X
OC13 0.1UF/16V /X
SPI_MODE#
OR7 4.7KOhm
3/31 item14
OR8 10MOhm /X
OX1 32.768Khz
K_XCLKI
K_XCLKO
15PF/50V OC15
15PF/50V OC16
OU2
KB3310QF
LPC_AD[3:0] [13,33]
[13] INT_SERIRQ
[13,33] LPC_FRAME#
[13] CLK_PCI_EC
[13] LPC_CLKRUN#
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
[8] RC_IN#
[14] KBC_SCI#
[8] A20GATE
[10,20,22,23,24,27,30,34] BUF_RST#
LPC I/F
VCC
AVCC/AGND
GND
ADC
Key Matrix Scan
PWM / FAN
GPO
XIOA
XIOD
LED
PS2 I/F
SM BUS
SPI I/F
UART
XCLK
GPIO
[35] KSO[15:0]
[35] KSI[7:0]
OT10
OT12
NC_KSO16
NC_KSO17
OT14
OT16
[29] Caps_LED#
NUM_LED#
SCRL_LED#
3/30 item1
[44] S3_1.8VDOWN#
[20] CRT_DACPWR_EN#
[20] CRTDAC_RST#
OT22
[35] TP_CLK
[35] TP_DATA
3/27 item6
[38,47] SMB1_CLK
[38,47] SMB1_DATA
[26] SMB2_CLK
[26] SMB2_DATA
Thermal Sensor
3/30 item9
[35] HOTKEY_SW0#
[21] CRT_IN
[14] EXTSMI#
[22,29] LID_EC_R#
3/25 item10
OT15
LID_EC_L#
PCB_ID0
PCB_ID1
3/26_Item1
[29,49] PWR_SW_EC#
[47] AC_OK
[33] EC_RSMRST#
[47] BAT_IN
BAT2_IN
[29] CHG_LED_GREEN#
[29] CHG_LED_ORANGE#
[29] PWR_LED_UP
GS1_INT1
GS1_INT2
3/25 item10
OT17
OT20
3/26 item4
3/27 item6
4/1 item6
3/26 item7 FOR RF
OR14 0Ohm
OR15 0Ohm
SPI_CLK_R
OR10 120Ohm/100Mhz
OC17 22PF/50V
SPI_DO
SPI_DI
SPI_CLK
SPI_CS#
OC21 22PF/50V /X/RF
OC22 22PF/50V /X/RF
3/26 item7 FOR RF
3/27 item6
3/30 item1
OR19 0Ohm N/A
PCB_ID1
TP_LED#
HOTKEY_SW0# - HOTKEY_SW3# internal PU
Hotkey Table
Item
Pin Name
Function
0
HOTKEY_SW0#
Home
<Variant Name>
Title : EC_ENE KB3310
ASUSTek Computer INC.
Engineer: N/A
Size A3
Project Name 1101HA
Rev 1.2
Date: Tuesday, July 21, 2009
Sheet 32 of 50

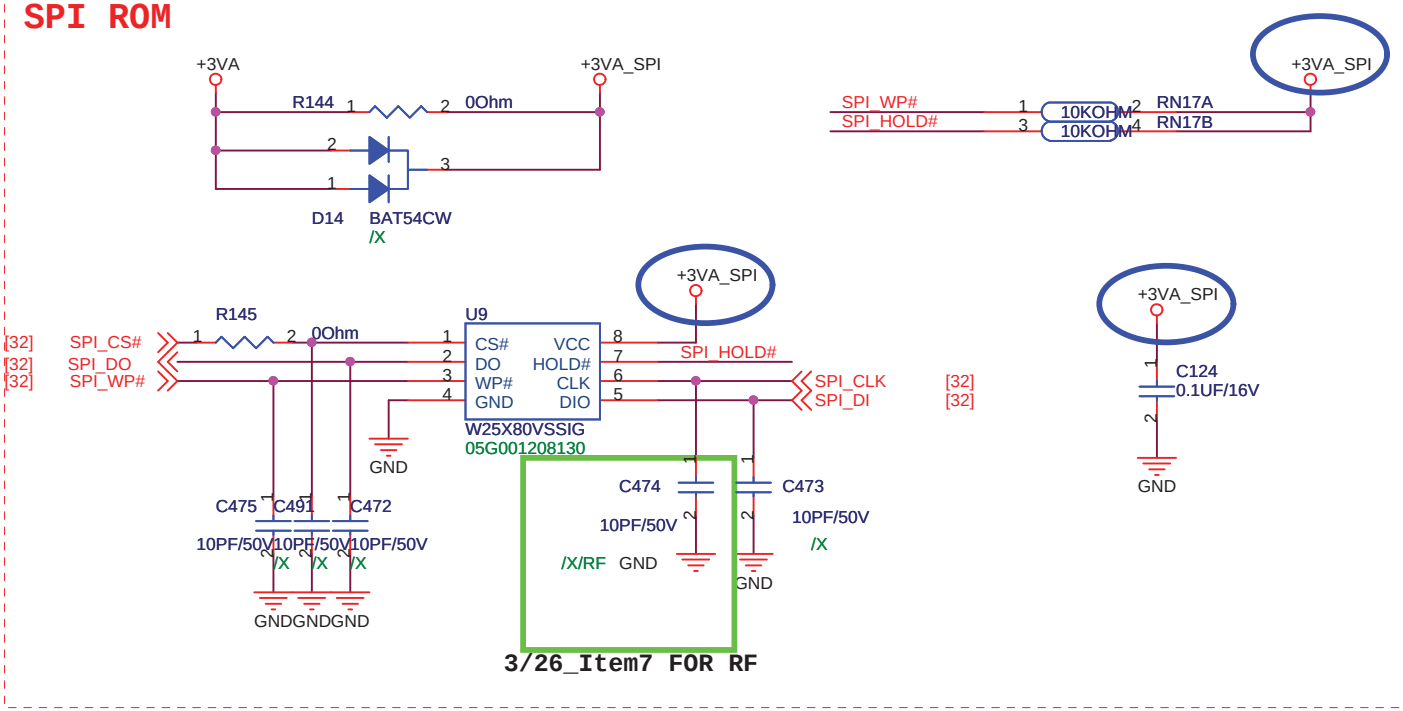
For Debug



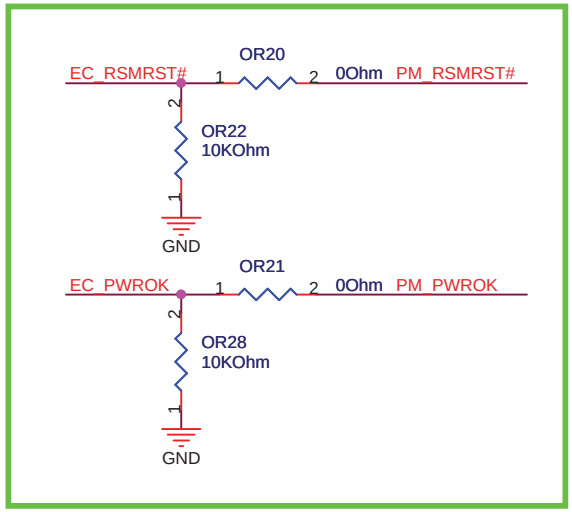
Resolve auto-boot issue



SPI ROM

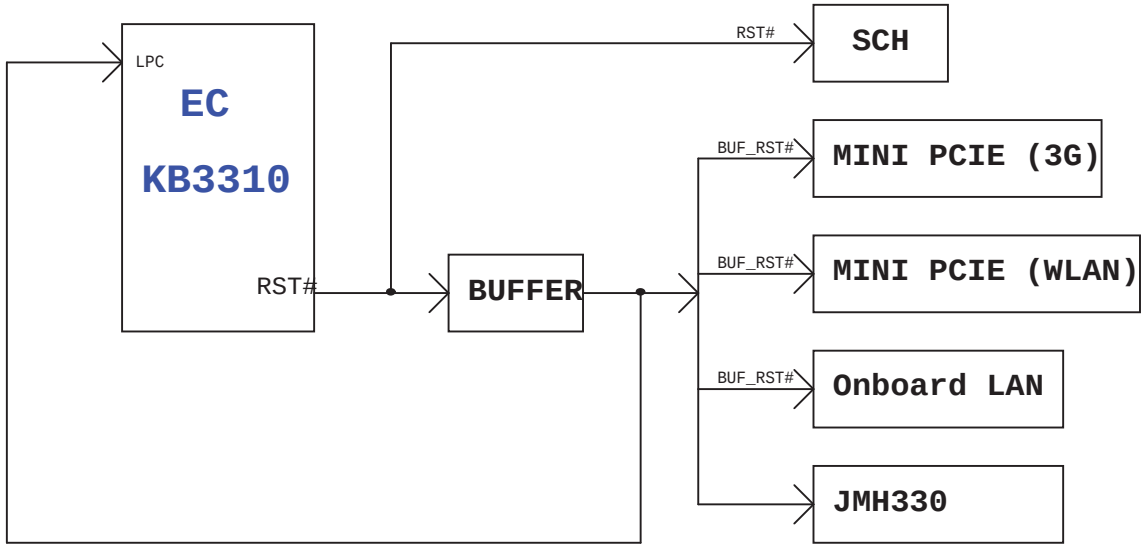


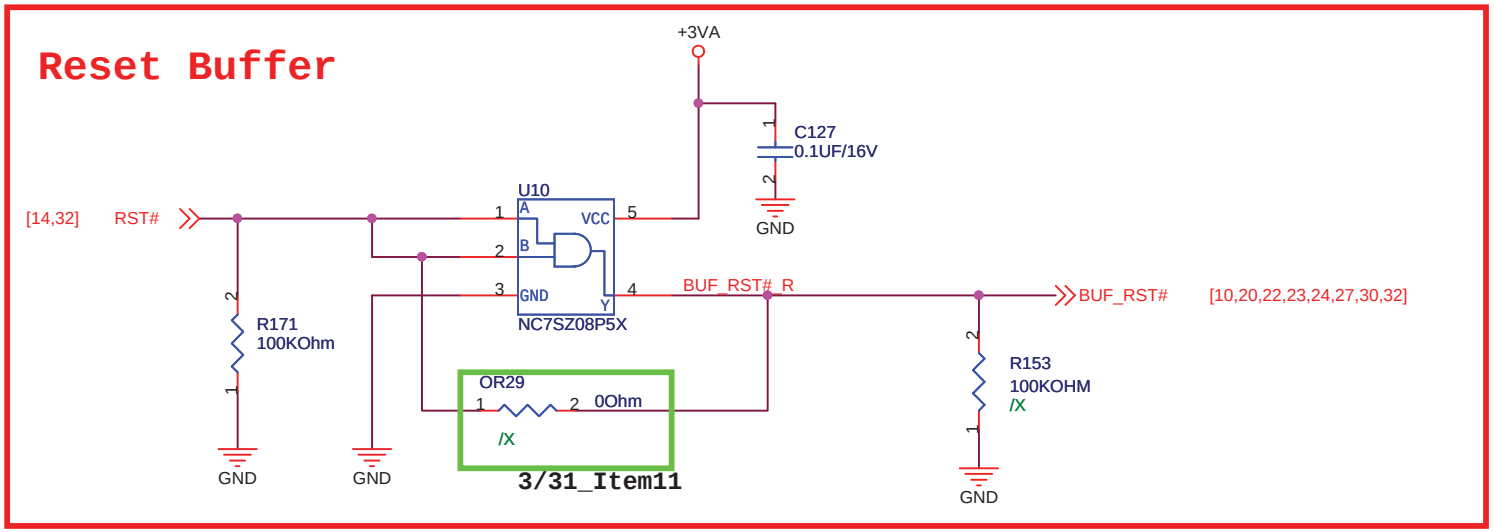
3/30 item7



<Variant Name>

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





<Variant Name>

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

For Touch-Pad

4/3_Item1

KB
FPC_CON_24P
12G182002408
SMD

KSO[15:0] [32]
KSI[7:0] [32]

For Keyboard Connector

3/26_Item7 FOR RF

Keyboard ESD Protect

D16 D17 D18 D19 D20
PACDN045YB6
/X

L26
120Ohm/100Mhz
C196 1UF/10V /X
C80 0.1UF/16V

TOUCH_PAD
FPC_CON_12P
SMD
12G183401223
P/N:12G183401225

EC21 33PF/50V /EMI/1002
EC22 33PF/50V /EMI/1002

3/27_Item9
R203 10KOhm
D3824
BAT54CW
/X

CR13 0Ohm N/A
TOFFPBTN
TP_SWITCH_4P
12G091031041
SMD
EC37 33PF/50V /X

3/27_Item7
R202 10KOhm
C153 0.1UF/16V

TPR2 330Ohm N/A
TPR3 10KOhm N/A
r0603_h24
TP_LED BLUE N/A
TPQ1B UM6K1N N/A
TPQ1A UM6K1N N/A
EC38 33PF/50V N/A

3/27_Item1

<Variant Name>

ASUSTek Computer INC.

Title : KB_Touch Pad

Engineer: N/A

Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 35 of 50

<Variant Name>

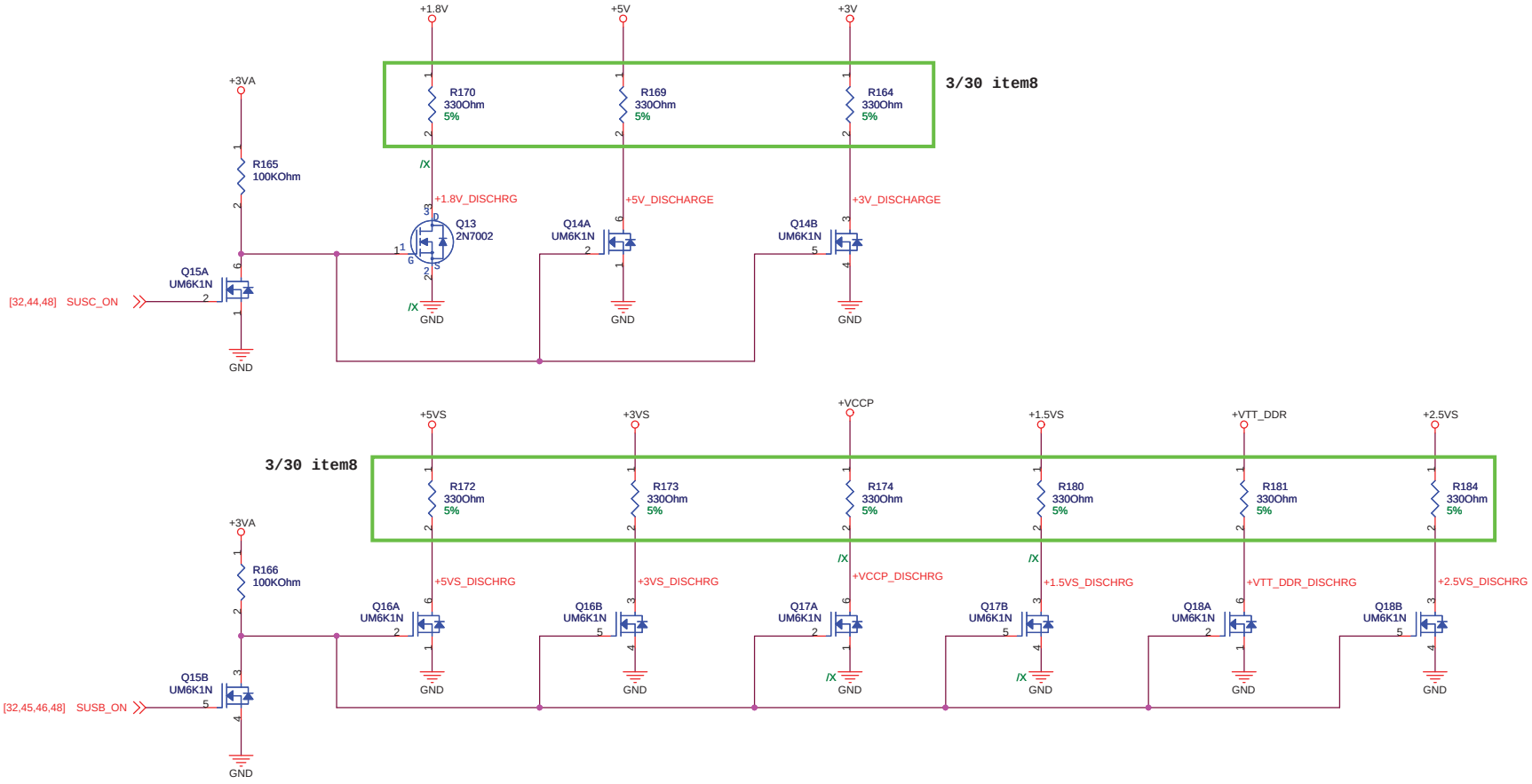
Title : G-Sensor

ASUSTek Computer INC.

Engineer: N/A

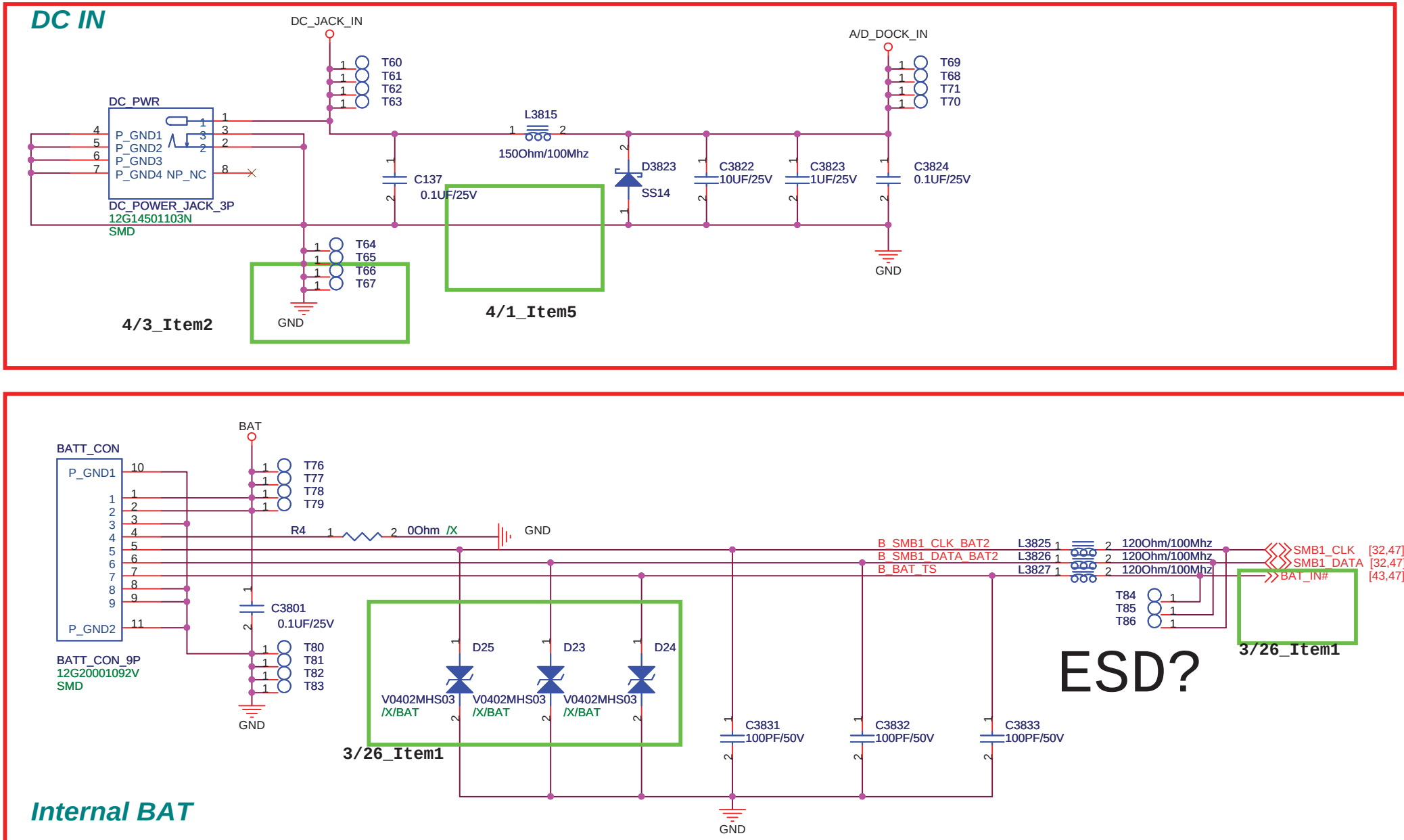
Size	Project Name	Rev
A4	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 36 of 50



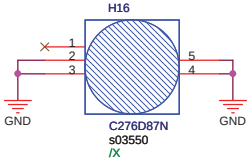
<Variant Name>

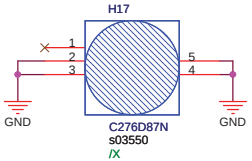
ASUSTek Computer INC.	Title : Discharge	
	Engineer: N/A	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 37 of 50	



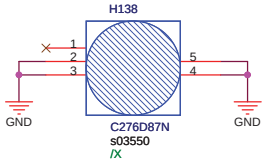
<Variant Name>

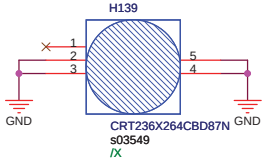
ASUSTek Computer INC.	Title : PWR Jack	
	Engineer: N/A	
Size: A4	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 38 of 50	



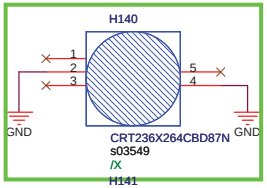


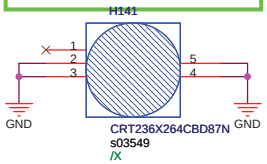
3/27_Item15



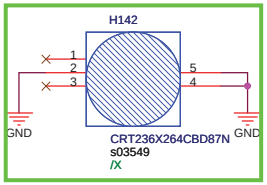


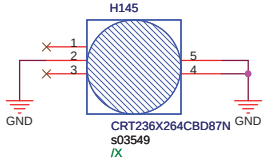
4/3_Item3

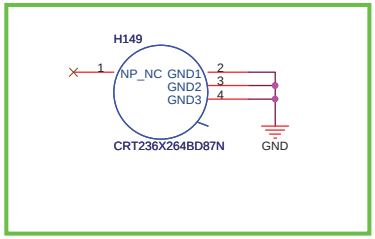




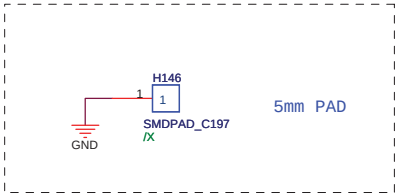
4/8_Item1

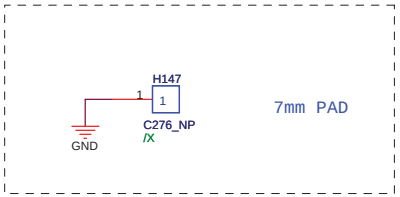


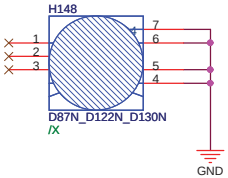




4/6_Item4

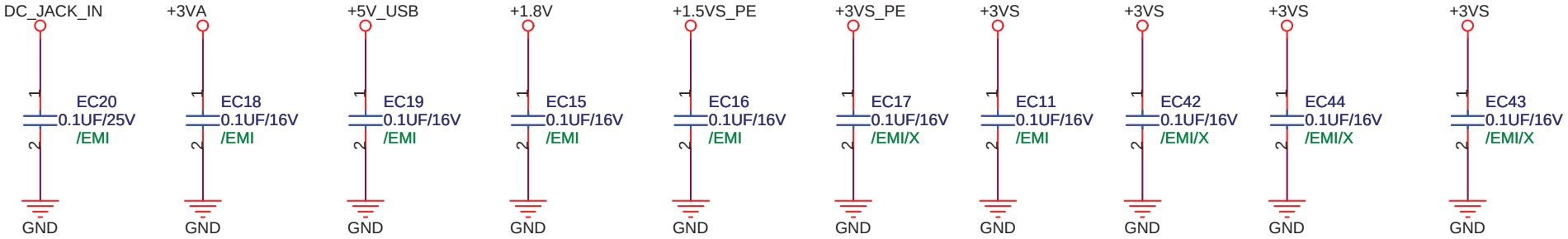


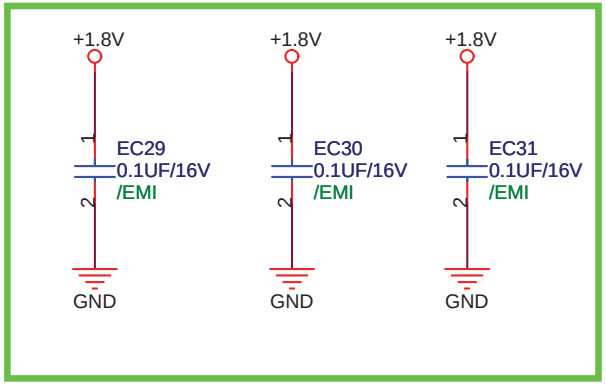




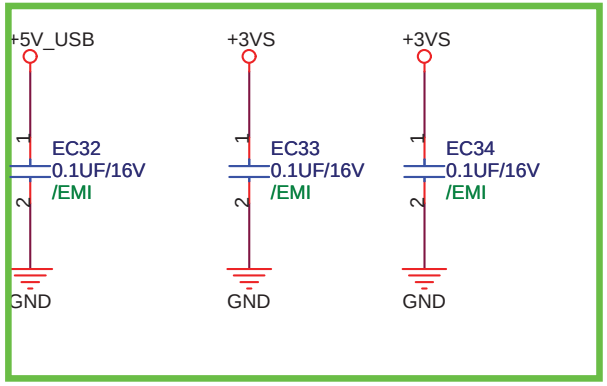
<variant_name>

ASUSTek Computer INC.	Title : Screw Hole	
	Engineer: N/A	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 39 of 50	

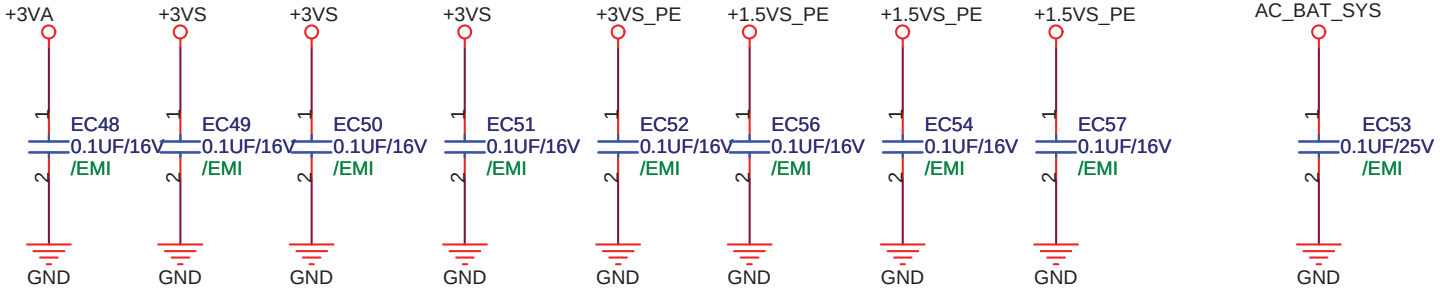




4/6_Item1



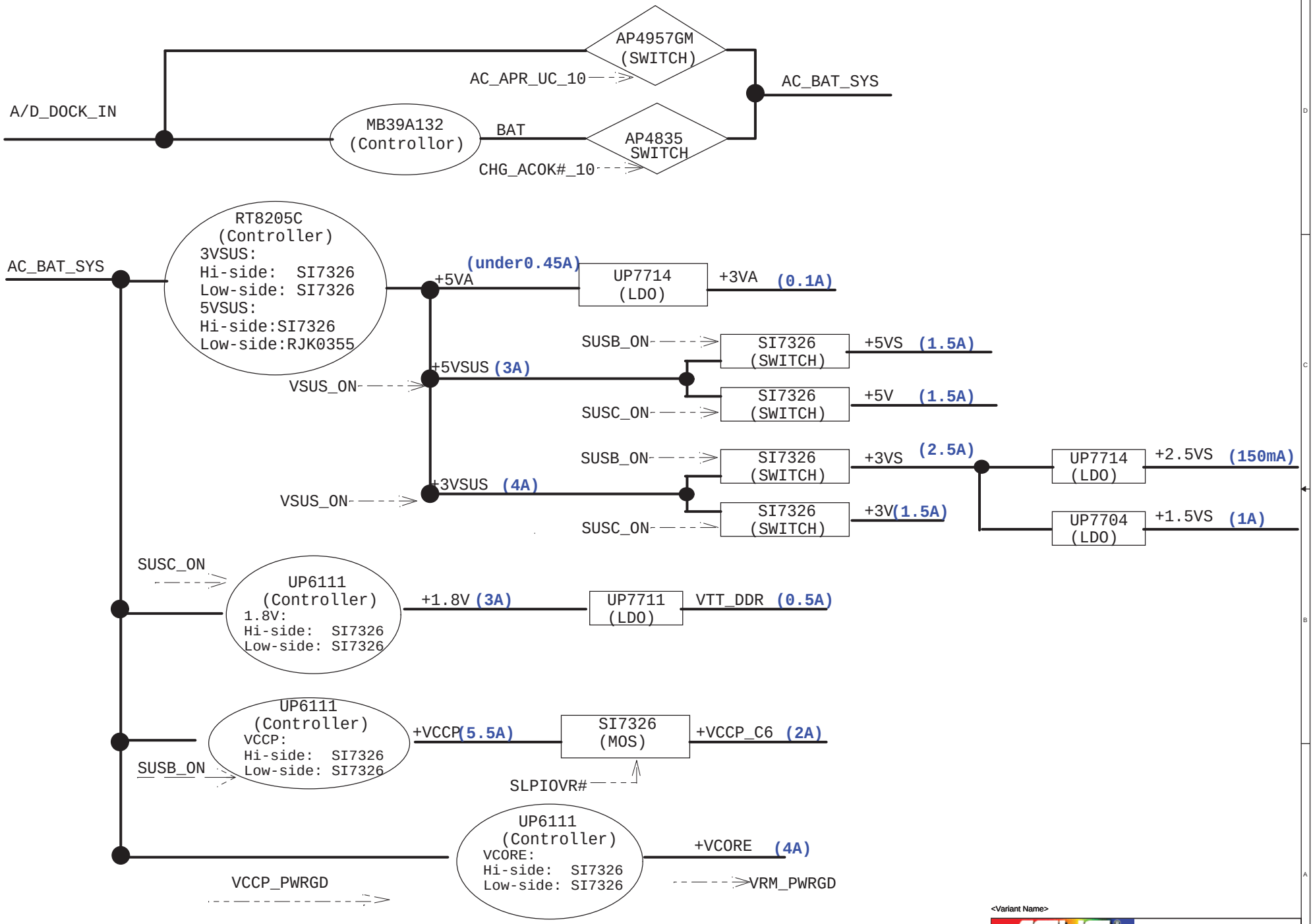
4/6_Item2



4/8_Item2

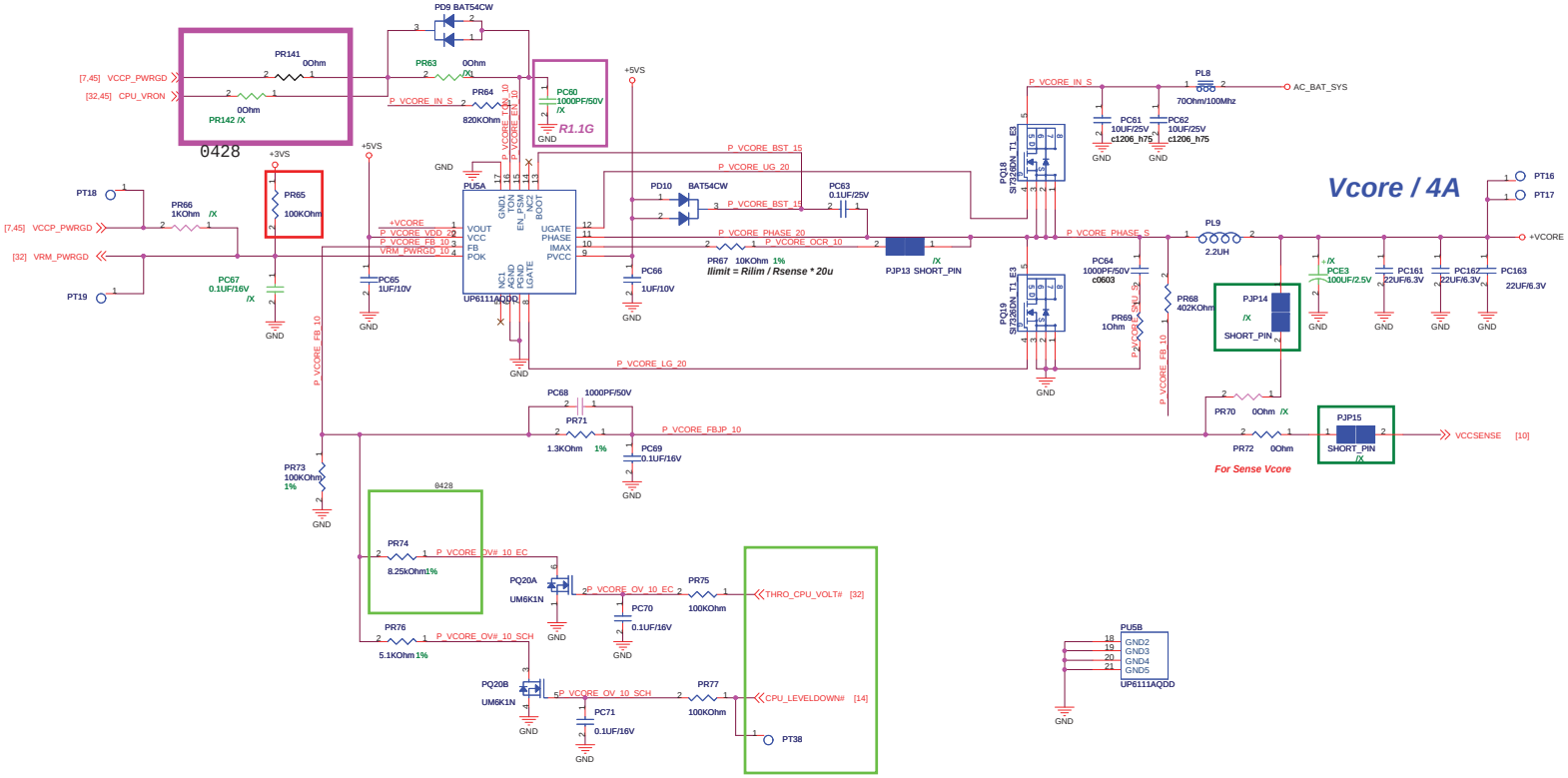
<Variant Name>

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



<Variant Name>

ASUSTek Computer INC.	Title : Power Flow	
	Engineer: Jerry Liu	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 41 of 50	



Power stage

1. I/P Current:
   I in = Vo*Io/(0.8 * Vin) =0.47A
2. Ripple Current:
   I rip =1.28A
   I spec=2.5A *2 pcs
3. Dynamic:
   I peak=4A
   ESR / 1 pcs =18 mohm
   △V =72mV
4. Inductor Spec:
   I sat=14 A
   I dc =8 A
   DCR=18 mohm
5. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

L-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

R1.2G

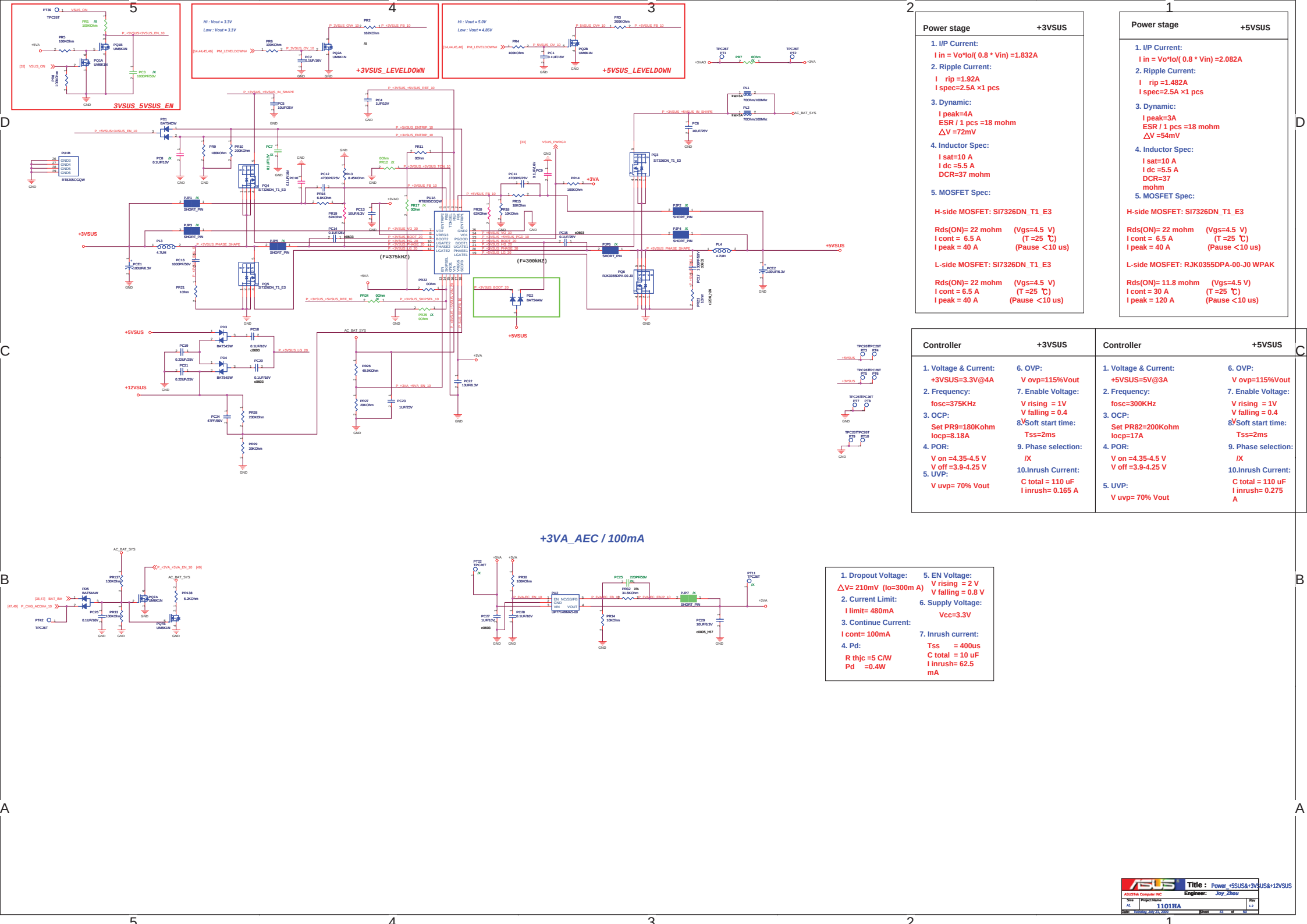
	Status			
THRO_CPU_VOLT#	H	L	H	L
CPU_LEVELDOWN#	H	H	L	L
Voltage	1.068V	0.9502V	0.8775V	0.7597V
	Normal	Normal + Throttle	Power Saving	Power Saving + Throttle

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 = 2.9 V
8. Soft start time:
   Tss=1.2 ms
9. Phase selection:
   N/A
10. Inrush Current:
    C total = 100 uF
    I inrush= 0.088 A

<Variant Name>

ASUSTek Computer INC.
Title : Vcore
Engineer: Joy_Zhou
Size A2 | Project Name 1101HA | Rev 1.2
Date: Tuesday, July 21, 2009 | Sheet 42 of 50



Power stage +3VSUS

1. I/P Current:
   I in = Vo*Io/(0.8 * Vin) =1.832A
2. Ripple Current:
   I rip =1.92A
   I spec=2.5A ×1 pcs
3. Dynamic:
   I peak=4A
   ESR / 1 pcs =18 mohm
   △V =72mV
4. Inductor Spec:
   I sat=10 A
   I dc =5.5 A
   DCR=37 mohm
5. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

L-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

Power stage +5VSUS

1. I/P Current:
   I in = Vo*Io/(0.8 * Vin) =2.082A
2. Ripple Current:
   I rip =1.482A
   I spec=2.5A ×1 pcs
3. Dynamic:
   I peak=3A
   ESR / 1 pcs =18 mohm
   △V =54mV
4. Inductor Spec:
   I sat=10 A
   I dc =5.5 A
   DCR=37 mohm
5. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

L-side MOSFET: RJK0355DPA-00-J0 WPAK

Rds(ON)= 11.8 mohm (Vgs=4.5 V)
I cont = 30 A (T =25 ℃)
I peak = 120 A (Pause <10 us)

Controller +3VSUS

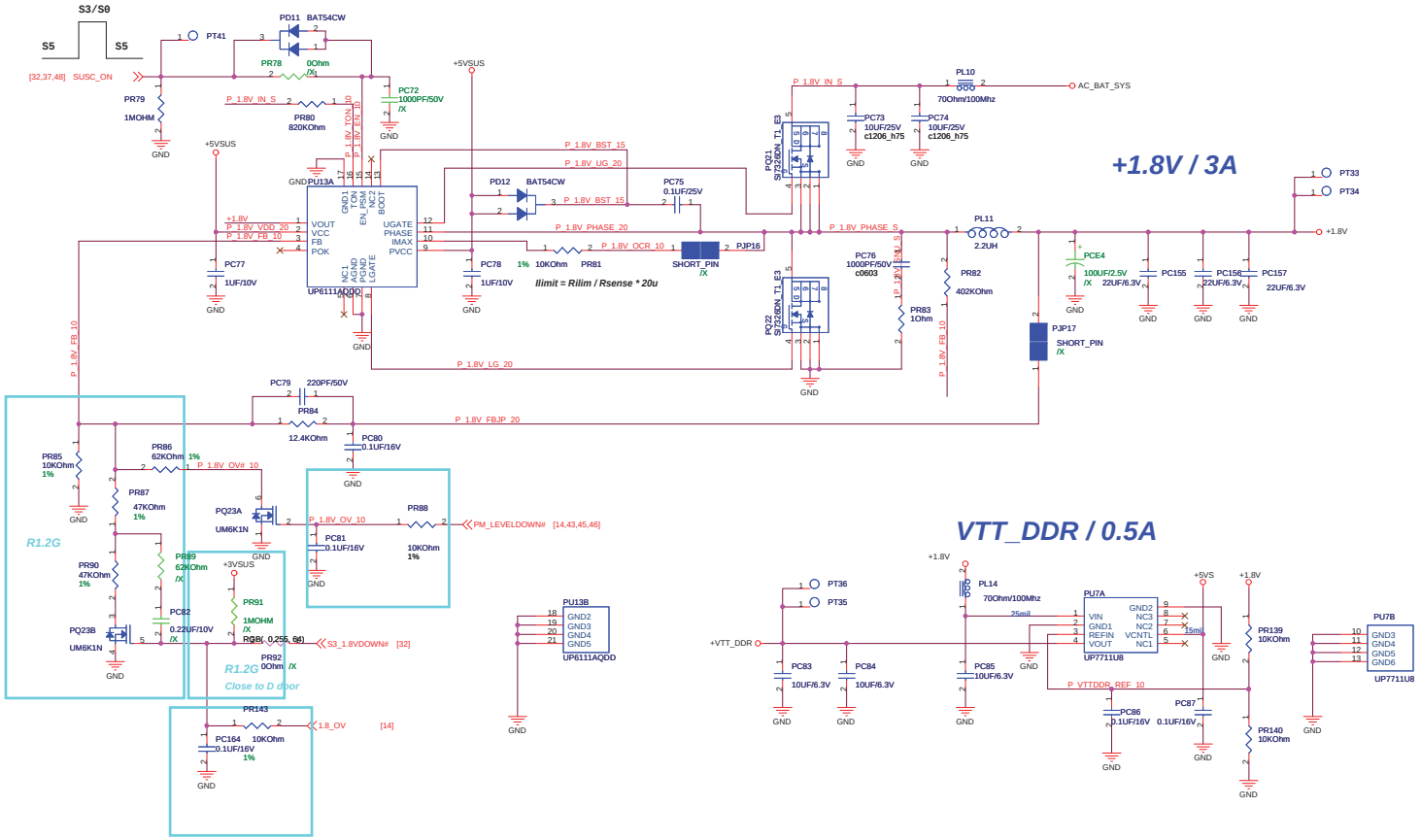
1. Voltage & Current:
   +3VSUS=3.3V@4A
2. Frequency:
   fosc=375KHz
3. OCP:
   Set PR9=180Kohm
   Iocp=8.18A
4. POR:
   V on =4.35-4.5 V
   V off =3.9-4.25 V
5. UVP:
   V uvp= 70% Vout
6. OVP:
   V ovp=115%Vout
7. Enable Voltage:
   V rising = 1V
   V falling = 0.4 V
8. Soft start time:
   Tss=2ms
9. Phase selection:
   /X
10. Inrush Current:
    C total = 110 uF
    I inrush= 0.165 A

Controller +5VSUS

1. Voltage & Current:
   +5VSUS=5V@3A
2. Frequency:
   fosc=300KHz
3. OCP:
   Set PR82=200Kohm
   Iocp=17A
4. POR:
   V on =4.35-4.5 V
   V off =3.9-4.25 V
5. UVP:
   V uvp= 70% Vout
6. OVP:
   V ovp=115%Vout
7. Enable Voltage:
   V rising = 1V
   V falling = 0.4 V
8. Soft start time:
   Tss=2ms
9. Phase selection:
   /X
10. Inrush Current:
    C total = 110 uF
    I inrush= 0.275 A

1. Dropout Voltage:
   △V= 210mV (Io=300m A)
2. Current Limit:
   I limit= 480mA
3. Continue Current:
   I cont= 100mA
4. Pd:
   R thjc =5 C/W
   Pd =0.4W
5. EN Voltage:
   V rising = 2 V
   V falling = 0.8 V
6. Supply Voltage:
   Vcc=3.3V
7. Inrush current:
   Tss = 400us
   C total = 10 uF
   I inrush= 62.5 mA

Title :	Power_+5SUS&+3VSUS&+12VSUS
Engineer:	Joy_Zhou
Size	A1
Project Name	1101HA
Rev	1.2
Date:	Tuesday, July 29, 2008
Sheet	43 of 50



Power stage

1. I/P Current:
   - I in = Vo*Io/(0.8 * Vin) =0.75A
2. Ripple Current:
   - I rip =1.2A
   - I spec=2.5A *1 pcs
3. Dynamic:
   - I peak=3A
   - ESR / 1 pcs =18 mohm
   - △V =54mV
4. Inductor Spec:
   - I sat=14 A
   - I dc =8 A
   - DCR=18 mohm
5. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

L-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

Controller

1. Voltage & Current:
   - +1.8V@3A
2. Frequency:
   - PR80=820K ohm
   - Fosc=300KHz
3. OCP:
   - PR184=10K ohm -> 9A
4. POR:
   - Vccrth =3.7~4.1V
   - Vcchys=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

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	

+VTTDDR@1 A

1. Dropout Voltage:
   - △V = 0.3V (Io = 2 A)
2. Current Limit:
   - I limit = 4 A
3. Continue Current:
   - I cont = 3 A
4. Power Dissipation:
   - Rthjc = 52 ℃/W
   - Pd = 1.9 W
5. EN Voltage:
   - V en = 1.4V
   - V sd = 0.8 V
6. Supply Voltage:
   - Vcc = 5 V
7. Inrush current:
   - T ss = 5 ms
   - C total = 20 uF
   - I inrush =3.6 mA

<Variant Name>

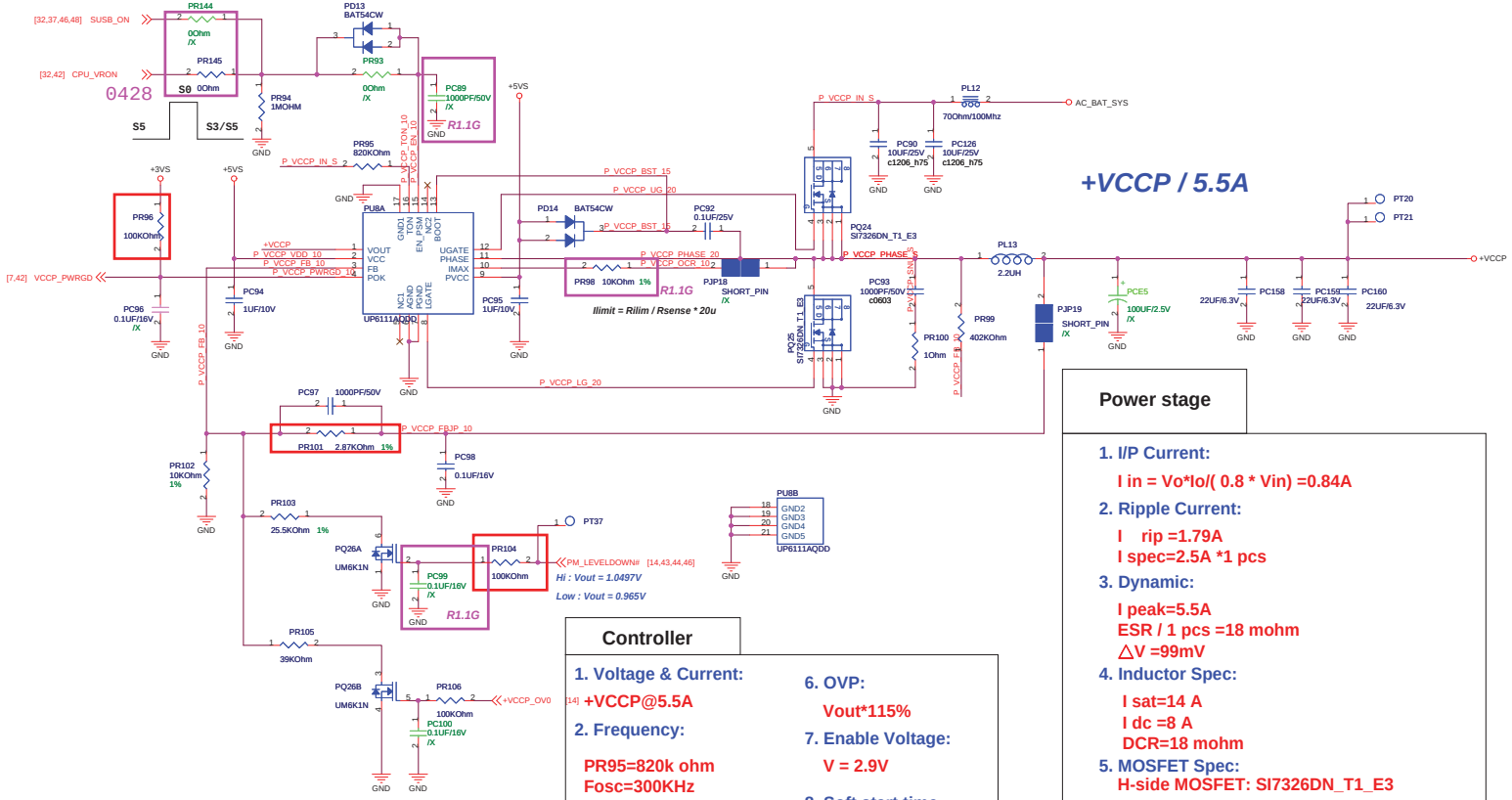
ASUSTek Computer INC.

Title : +1.8V & VTTDDR

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
   Vcchys=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

Power stage

1. I/P Current:
   I in = Vo*Io/(0.8 * Vin) =0.84A
2. Ripple Current:
   I rip =1.79A
   I spec=2.5A *1 pcs
3. Dynamic:
   I peak=5.5A
   ESR / 1 pcs =18 mohm
   △V =99mV
4. Inductor Spec:
   I sat=14 A
   I dc =8 A
   DCR=18 mohm
5. MOSFET Spec:
   H-side MOSFET: SI7326DN_T1_E3
   Rds(ON)= 22 mohm (Vgs=4.5 V)
   I cont = 6.5 A (T =25 ℃)
   I peak = 40 A (Pause ＜10 us)
   L-side MOSFET: SI7326DN_T1_E3
   Rds(ON)= 22 mohm (Vgs=4.5 V)
   I cont = 6.5 A (T =25 ℃)
   I peak = 40 A (Pause ＜10 us)

<Variant Name>

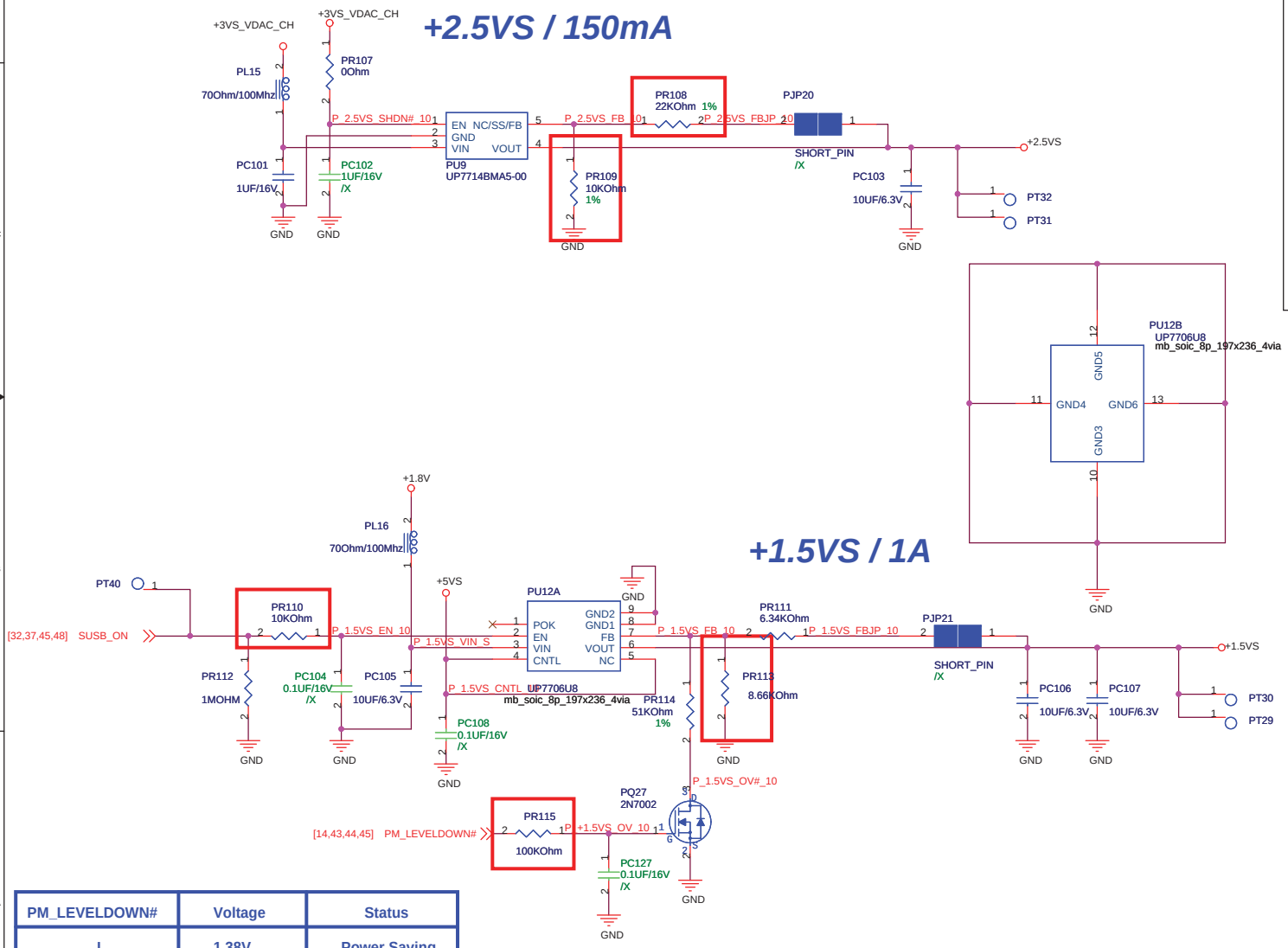
ASUSTek Computer INC.

Title : VCCP

Engineer: Joy_Zhou

Size	Project Name	Rev
A2	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 45 of 50



PM_LEVELDOWN#	Voltage	Status
L	1.38V	Power Saving
H	1.48V	Normal

1. Dropout Voltage:
△V= 210mV (Io=300m A)
2. Current Limit:
I limit= 480mA
3. Continue Current:
I cont= 150mA
4. Pd:
R thjc =5 C/W
Pd =0.4W
5. EN Voltage:
V rising = 2 V
V falling = 0.8 V
6. Supply Voltage:
Vcc=3.3V
7. Inrush current:
Tss = 400us
C total = 10 uF
I inrush= 62.5 mA

1. Dropout Voltage:
△ V= 300 mV (Io=2 A)
2. Current Limit:
I limit= 2.8 A
3. Continue Current:
I cont= 1A
4. Pd:
R thjc =5 C/W
Pd =1.9W
5. EN Voltage:
V rising = 1.4 V
V falling = 0.4 V
6. Supply Voltage:
Vcc=5V
7. Inrush current:
Tss = 4 ms
C total = 20 uF
I inrush= 7.5mA

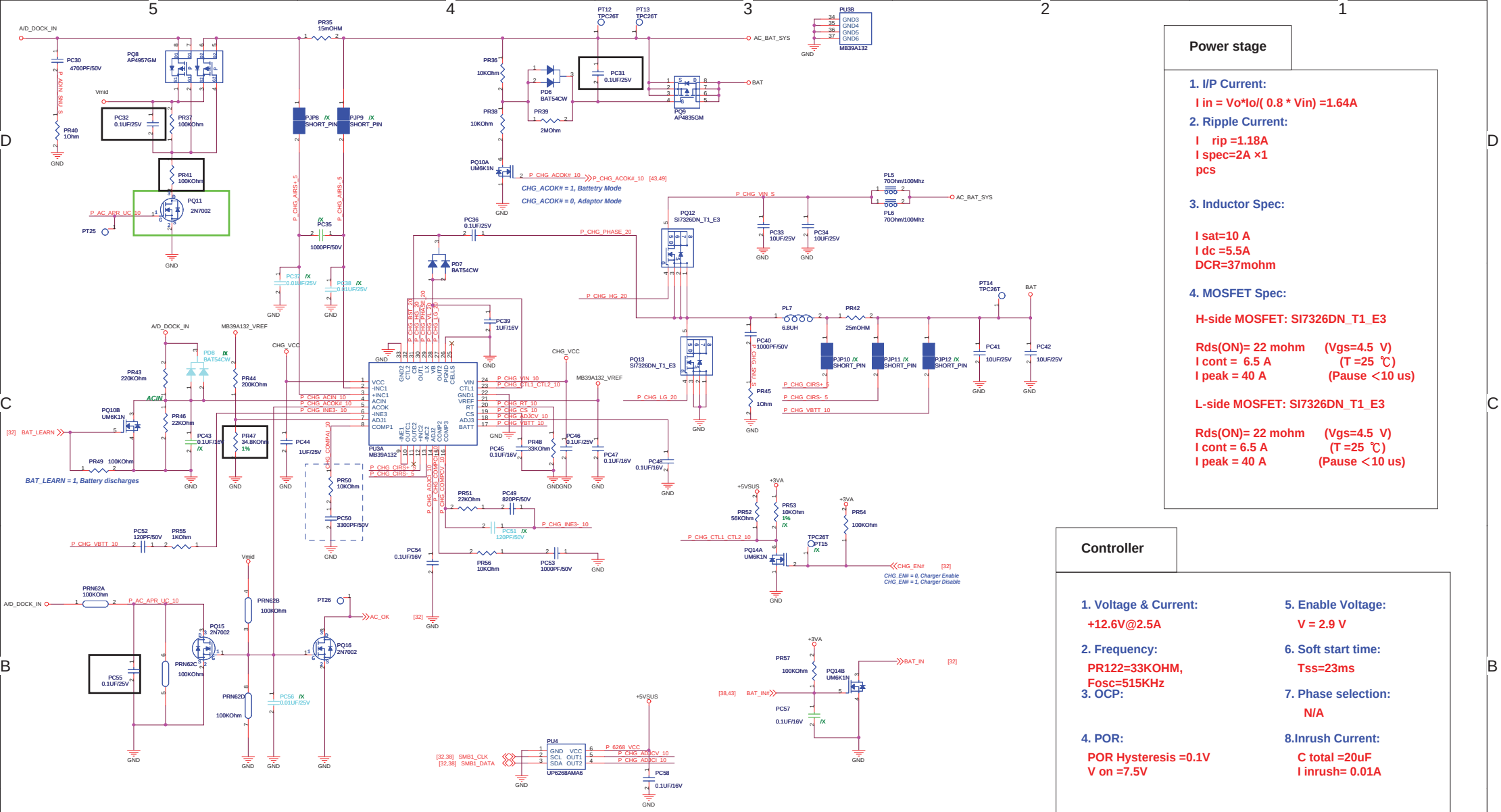
<Variant Name>

Title : +1.5VS & +2.5VS

ASUSTek Computer INC. Engineer: Joy_Zhou

Size	Project Name	Rev
A3	1101HA	1.2

Date: Tuesday, July 21, 2009 Sheet 46 of 50



Power stage

1. I/P Current:
   I in = Vo*Io/(0.8 * Vin) =1.64A
2. Ripple Current:
   I rip =1.18A
   I spec=2A ×1
   pcs
3. Inductor Spec:
   I sat=10 A
   I dc =5.5A
   DCR=37mohm
4. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

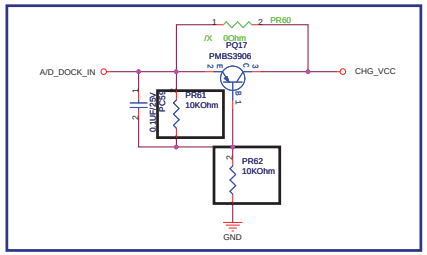
Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

L-side MOSFET: SI7326DN_T1_E3

Rds(ON)= 22 mohm (Vgs=4.5 V)
I cont = 6.5 A (T =25 ℃)
I peak = 40 A (Pause <10 us)

Controller

1. Voltage & Current:
   +12.6V@2.5A
2. Frequency:
   PR122=33KOHM,
   Fosc=515KHz
3. OCP:
4. POR:
   POR Hysteresis =0.1V
   V on =7.5V
5. Enable Voltage:
   V = 2.9 V
6. Soft start time:
   Tss=23ms
7. Phase selection:
   N/A
8. Inrush Current:
   C total =20uF
   I inrush= 0.01A



Battery Charging Current :

4.4V > Vadj2 >= 0V ==>
Ichg =
(Vadj2-0.075)/(25*Rs)
BATSEL_2P# = 1, Ich=1.49A
BATSEL_2P# = 0, Ich=2.62A

Input Adaptor Max. Current Limit :

Ilimit_current = (Vadj1-0.075) / (25*Rs)=1.90A

Pre-Charging Mode :

Precharging current = 149.2mA

Vadj2 = 168mV

ACIN Threshold = 1.25V

Adaptor > 13.75V, System Powered by Adaptor
Adaptor <13.75V, System Powered by Battery

Battery Charging Voltage :

Vadj3 :VREF ==> Vbat = 4.2V /cell
3.9V>Vadj3>2.4V ==> Vbat = 4.35V/cell
Vadj3 :GND ==> Vbat = 4.0V /cell
2.2V>Vadj3>1.1V ==> Vbat = 2*Vadj3 /cell

Battery Cell Selection :

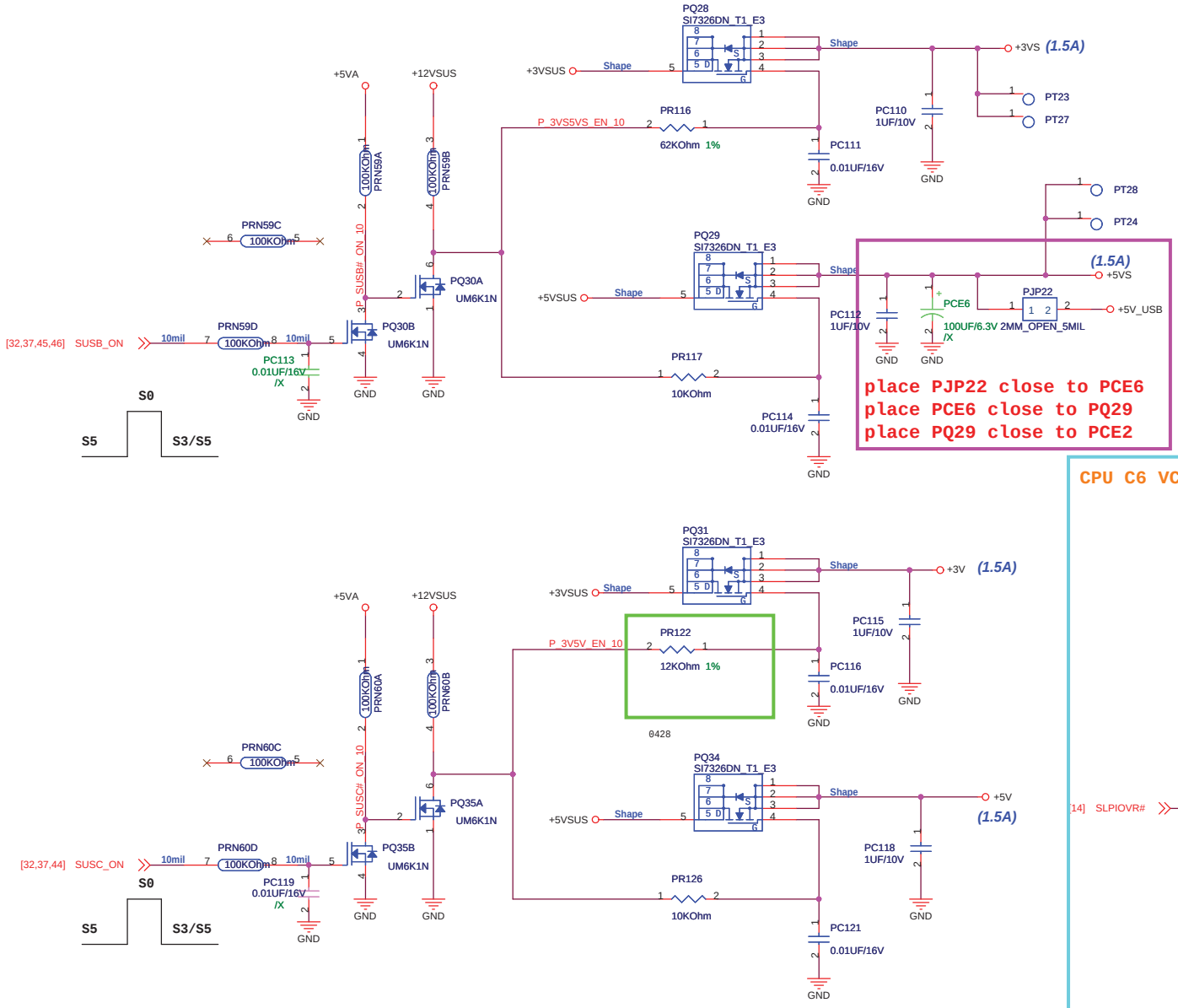
CELLS: VREF ==> 4 Cells;
CELLS: OPEN ==> 3 Cells;
CELLS: GND ==> 2 Cells;

VREF = 5.0V

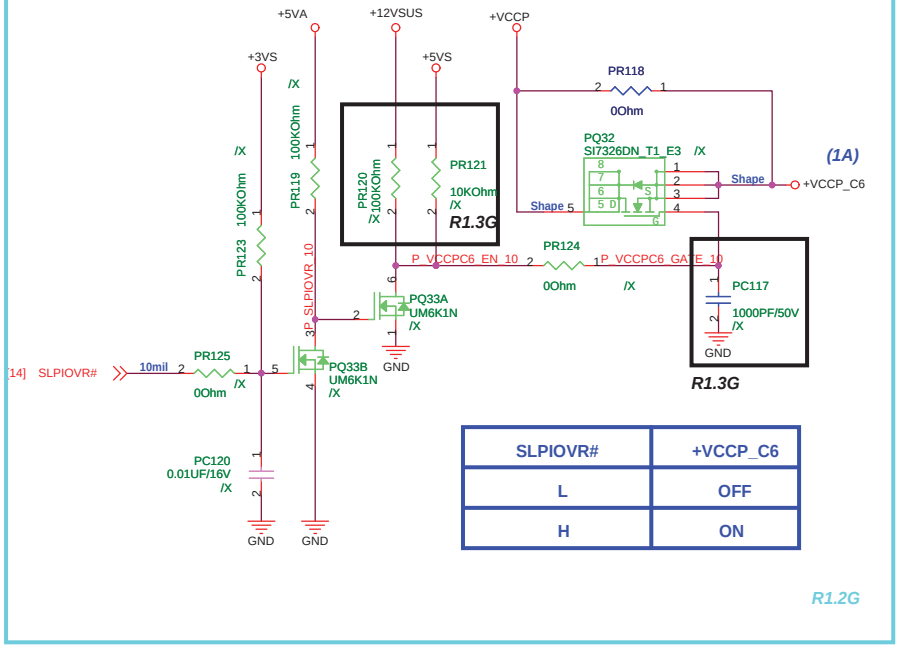
fosc(KHz) = 17000 / RT (KOhm)

*Soft start: ts(s) = 0.13 * CS (uF)*

ASUS	Title : Charger		
ASUSTeK Computer INC	Engineer: Joy_Zhou		
Size A2	Project Name 1101HA		Rev 1.2
Date: Tuesday, July 21, 2009	Sheet 47 of 50		



CPU C6 VCCP Switch

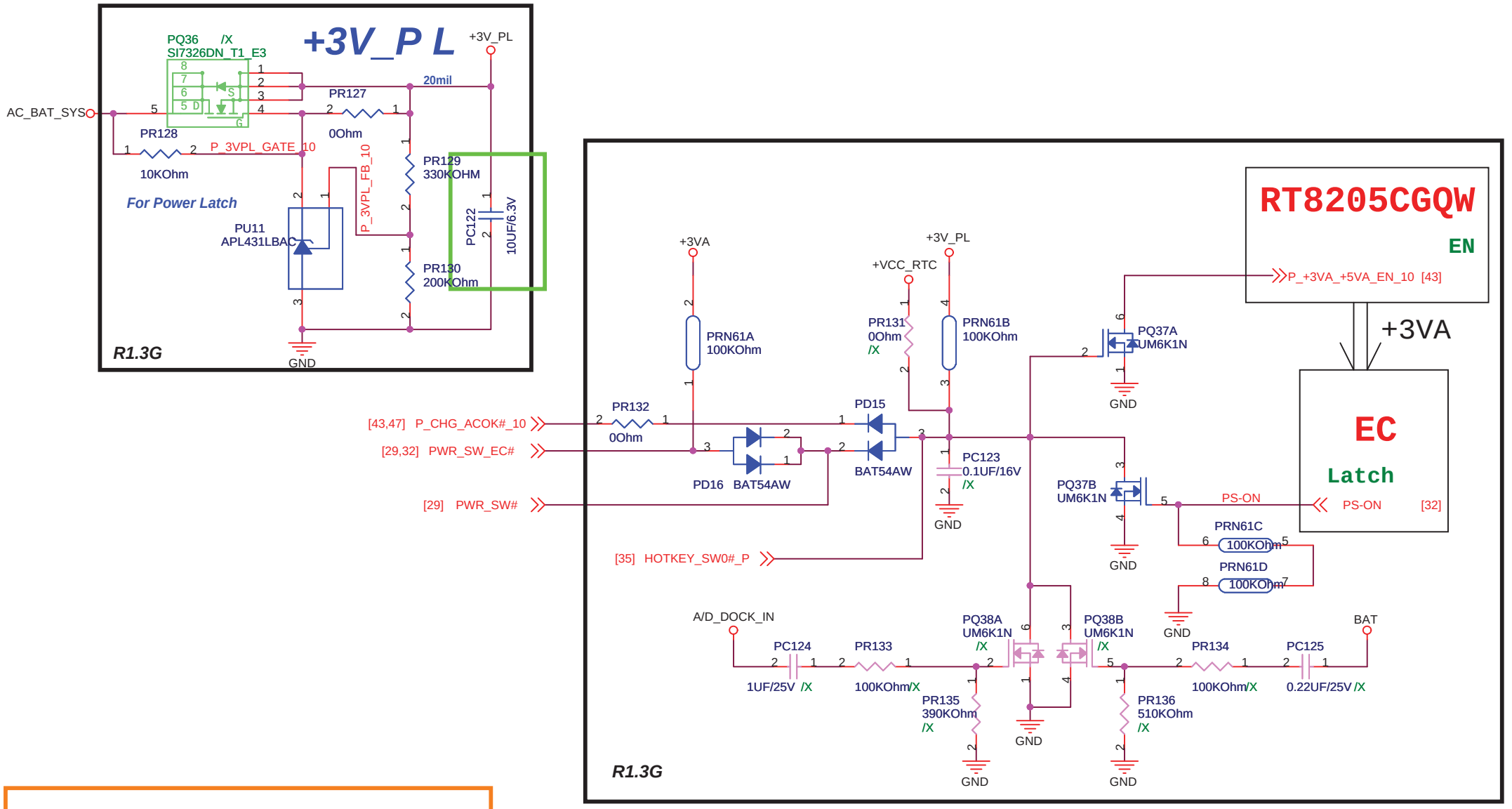


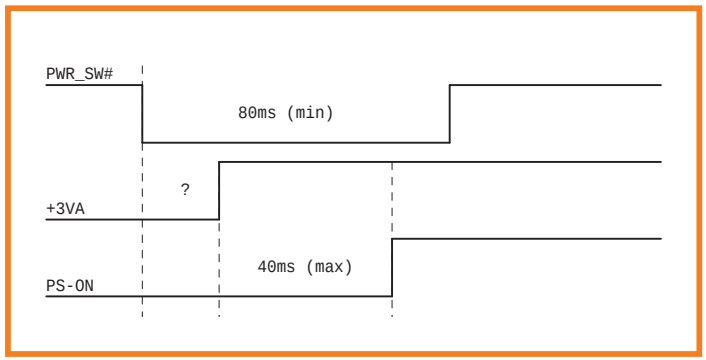
SLPIOVR#	+VCCP_C6
L	OFF
H	ON

R1.2G

<Variant Name>

ASUSTek Computer INC.	Title : Power_Load Switch	
	Engineer: Joy_Zhou	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 48 of 50	





<Variant Name>

ASUSTek Computer INC.	Title : Power Latch	
	Engineer: Jerry Liu	
Size: A4	Project Name: 1101HA	Rev: 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 GPIOSUS3
P32 TP_LED# changed from EC pin14 to EC pin85
P14 CARD_READER_EN# changed from SCH GPIOSUS3 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_CRT -->+5V_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 Resitor 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_OV0
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 resistors 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

Title : HISTORY		
<OrgName>	Engineer: <OrgAddr1>	
Size: A3	Project Name: 1101HA	Rev: 1.2
Date: Tuesday, July 21, 2009	Sheet 50 of 50	