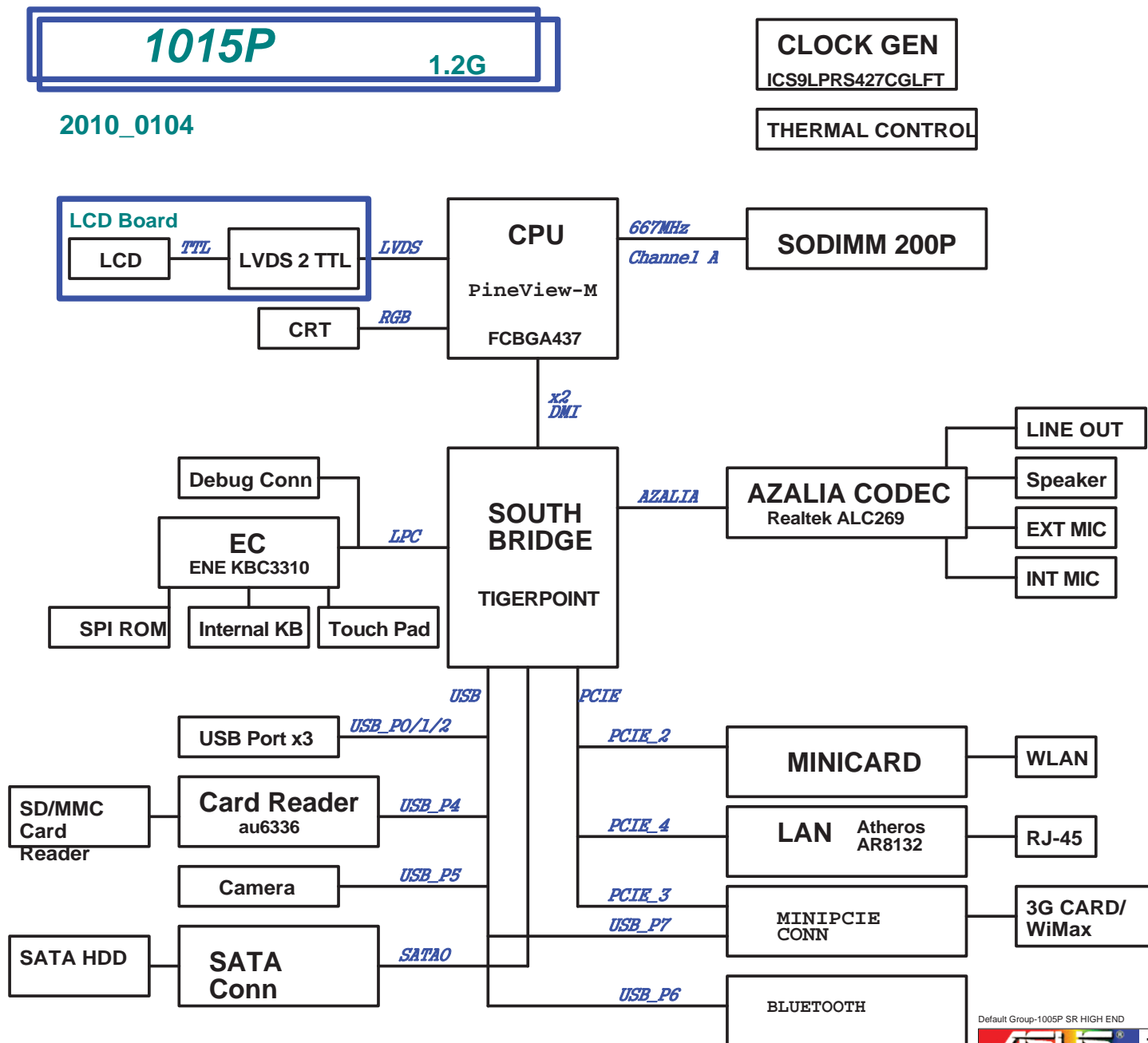


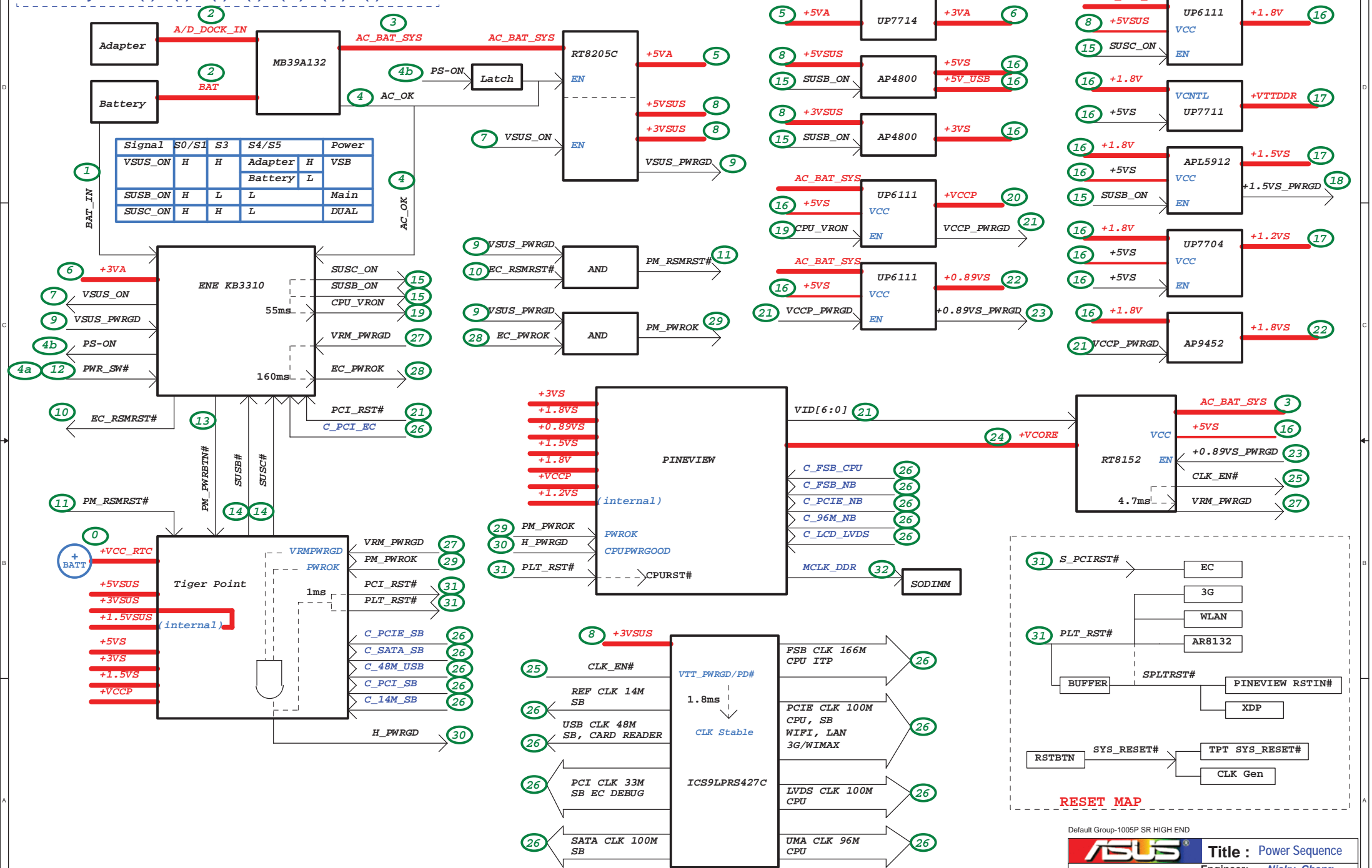
01.Block Diagram
02.Power Sequence
03.Clock Gen_ICS9LPRS427C
04.PineView-M_1 (LVDS_DMI_CPU)
05.PineView-M_2 (DDR2_XDP_CRT)
06.PineView-M_3 (PWR&GND)
07.XDP
08.Tigerpoint_DMI_USB
09.Tigerpoint_SYS
10.Tigerpoint_PWR
11.DDR2 SODIMM
12.DDR2-Termination
13.Onboard VGA
14.LCD Conn_LID
15.WIFI&SMART33SW
16.LAN_AR8132
17.WLAN
18.USIN&3G_CON
19.Bluetooth
20.HDD_CON
21.
22.
23.USB Port1
24.EC_ENE KB3310
25.KB_TP
26.Fan_debug
27.SPI_ROM
28.DUA_CON
29.PWR Jack
30_Discharge
31.
32.Srew Hole&EMI
33.Power Flow
34.Power_Charger
35.Vcore
36.Power_+1.8V&VTDDR&+1.8VS
37.Power_VCCP
38.Power_+0.89VS
39.Power_+1.5VS
40.Power Latch
41.Power System
42.power switch

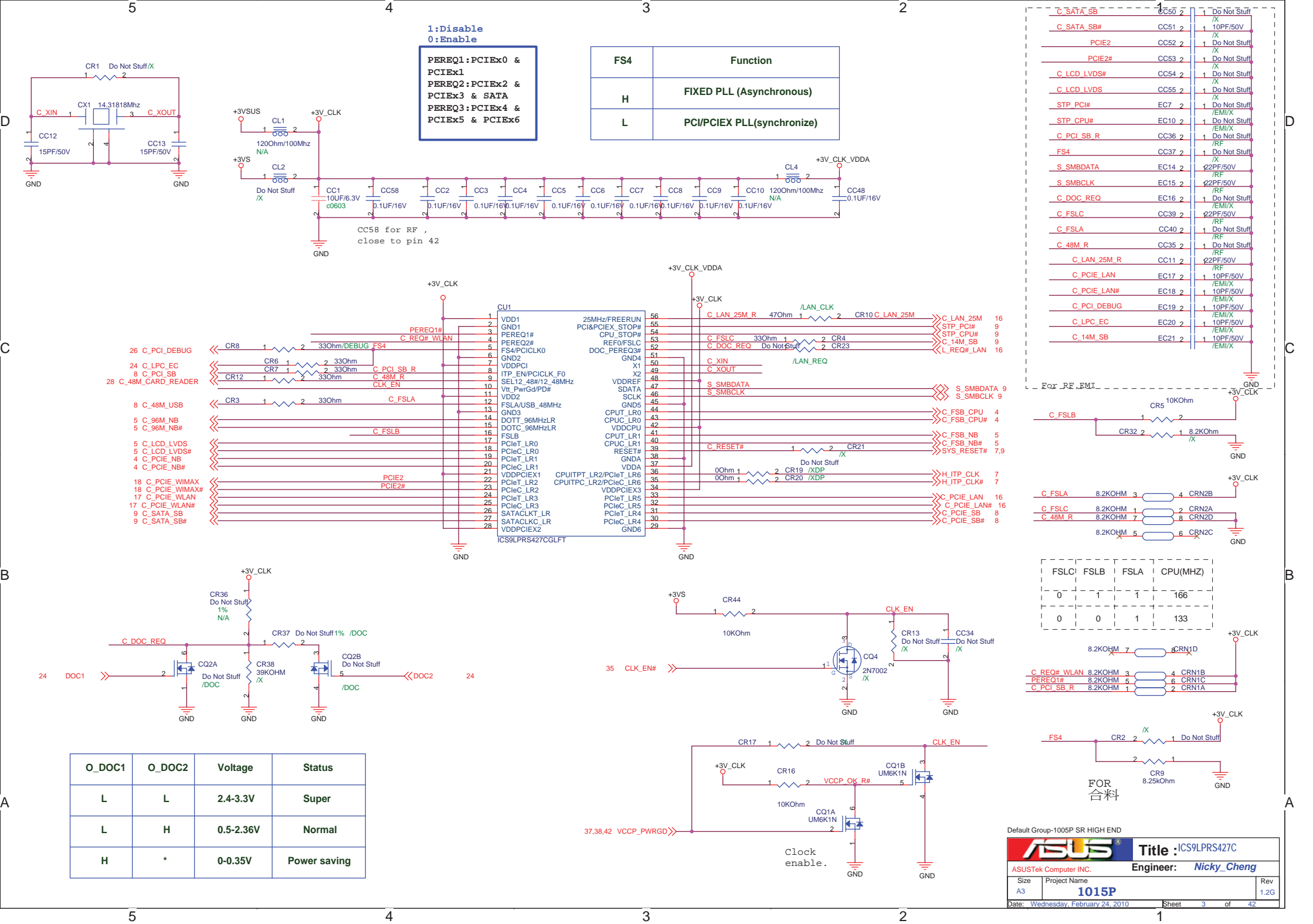


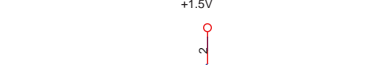
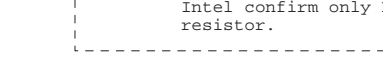
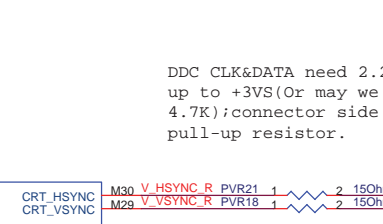
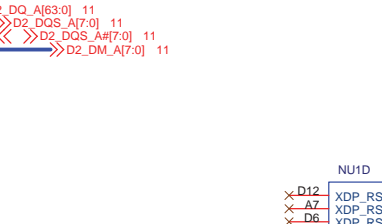
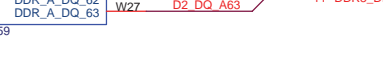
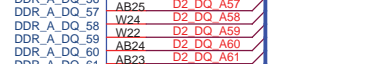
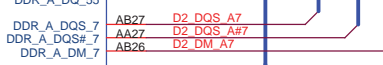
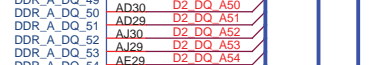
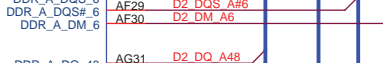
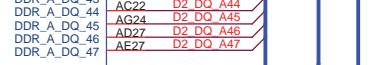
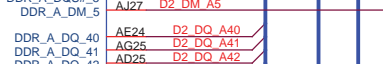
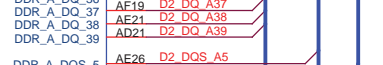
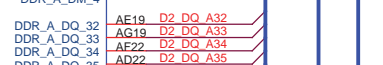
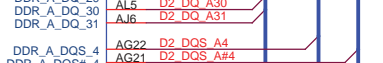
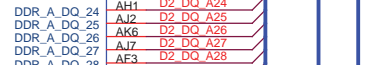
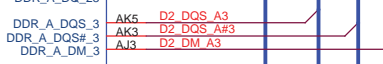
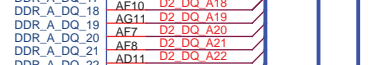
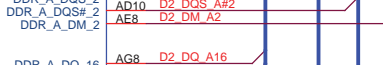
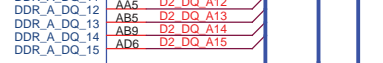
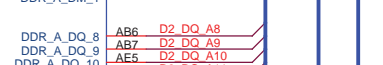
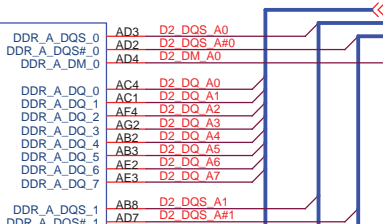
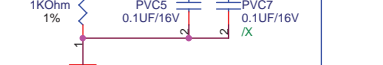
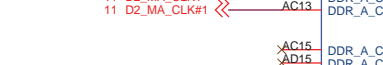
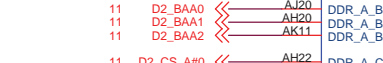
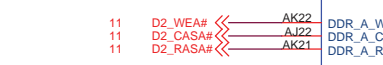
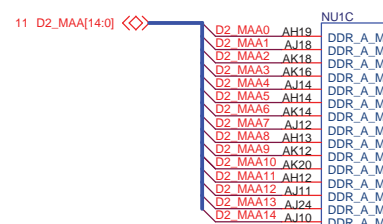
Default Group-1005P SR HIGH END

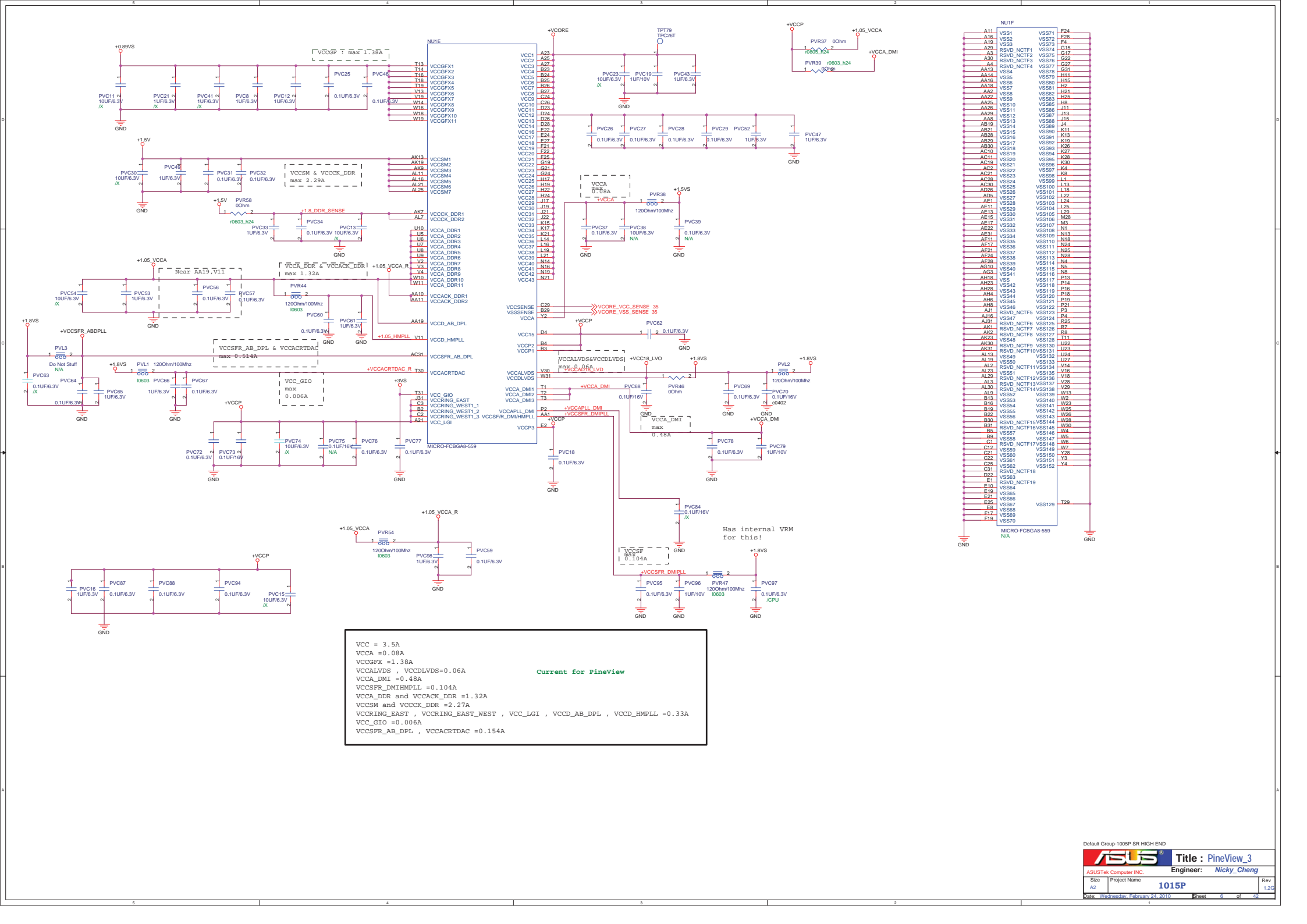
ASUS		Title : Block Diagram	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size Custom	Project Name 1015P	Rev 1.2G	
Date: Wednesday, February 24, 2010		Sheet 1 of 42	

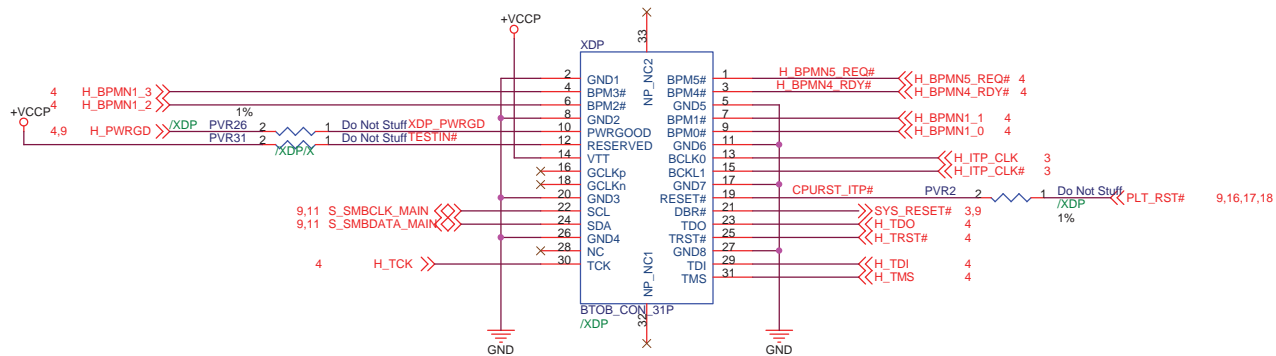
For Adapter Mode: (1) -> (2) -> (3) -> (4) -> (5) -> ...
For Battery Mode: (1) -> (2) -> (3) -> (4) -> (4a) -> (4b) -> (5) -> ...











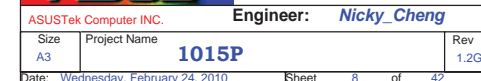
Change Device and PCB footprint of XDP1 to nomask footprint - nomask solution

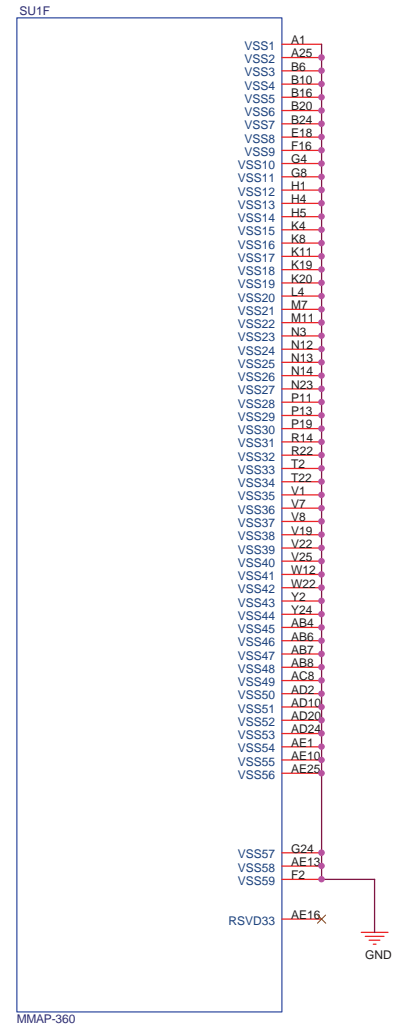
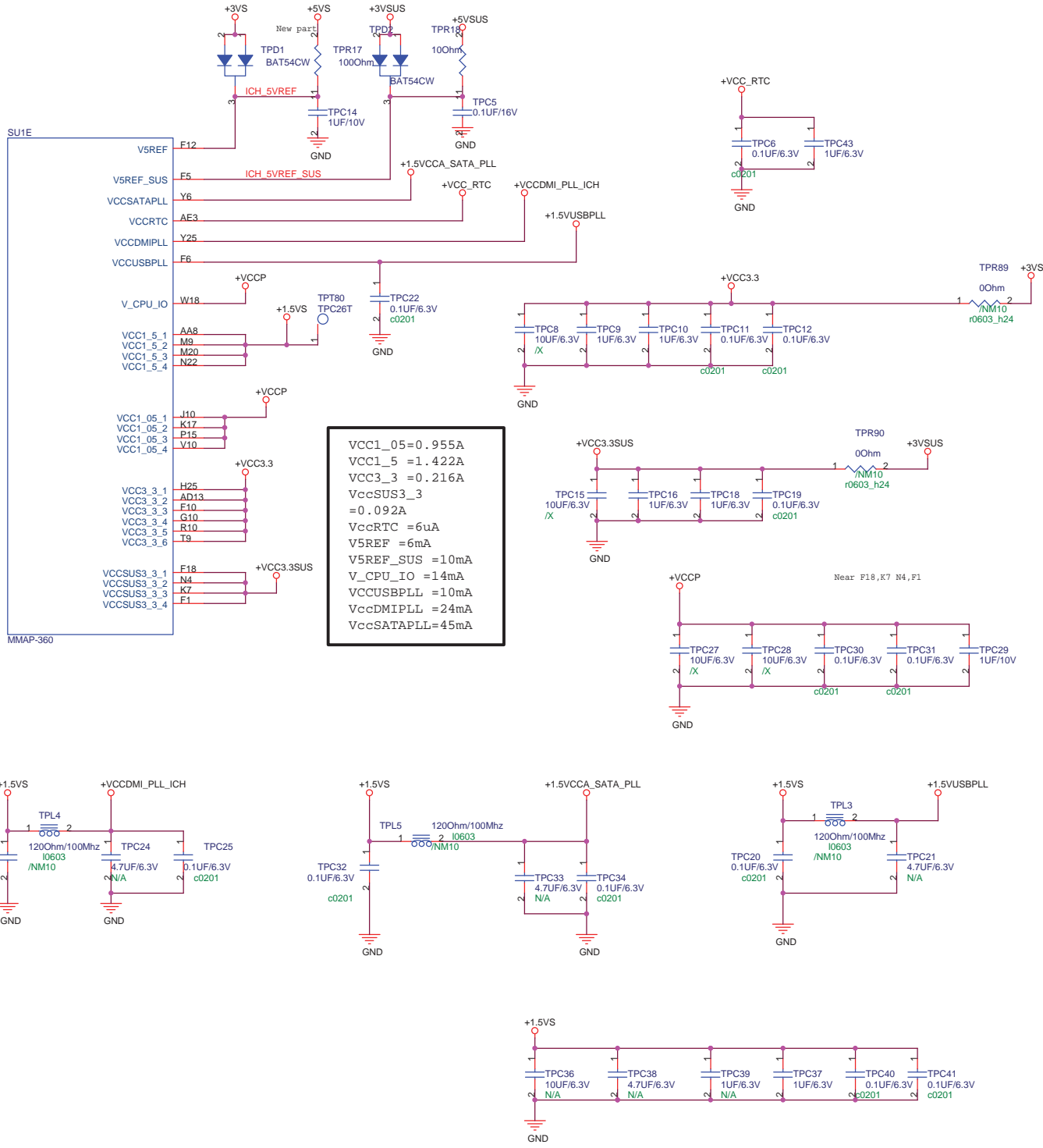
新 Layout 機種請 XDP Connector 請畫 12G161300311 (w/ 2 through holes)。

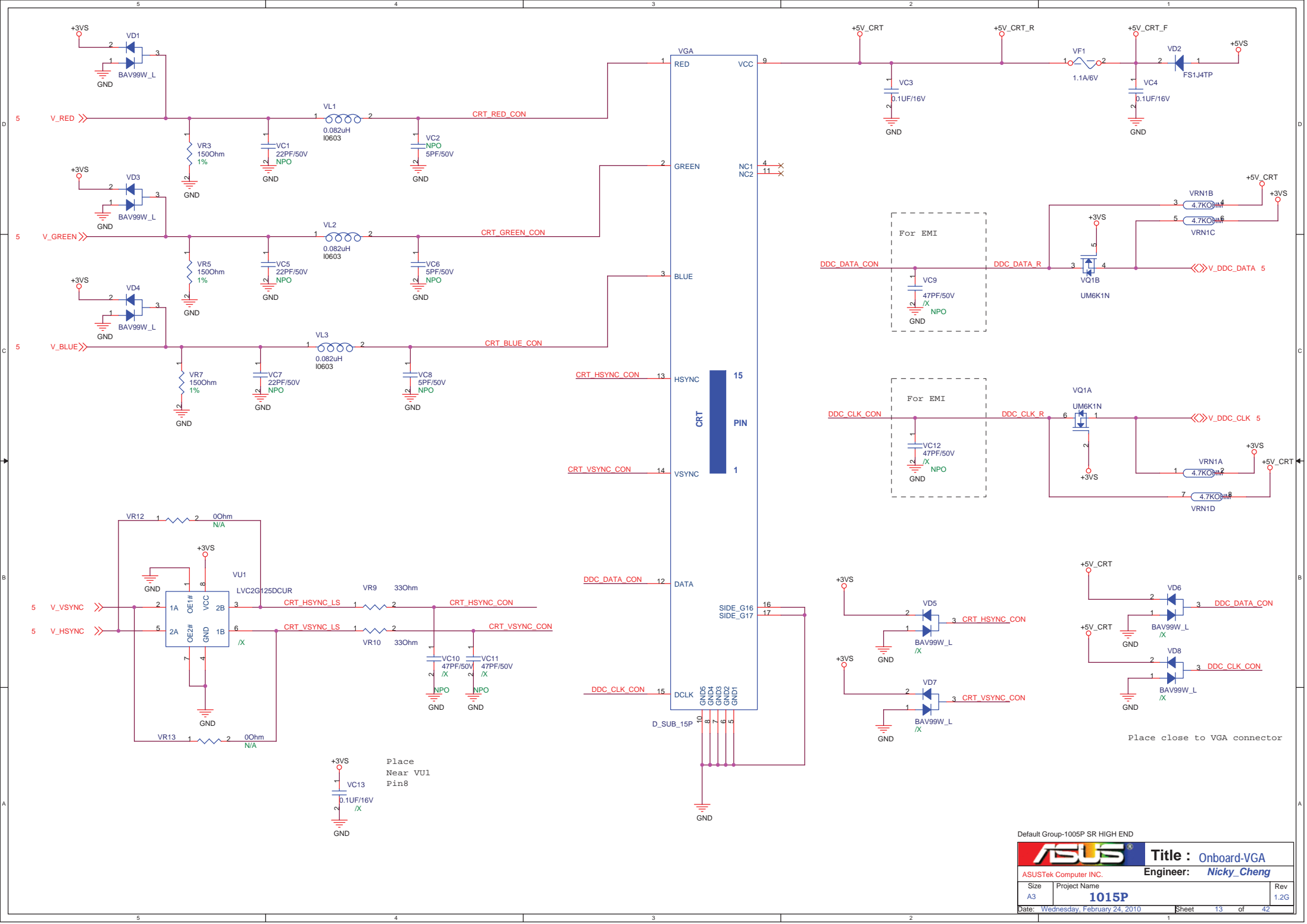


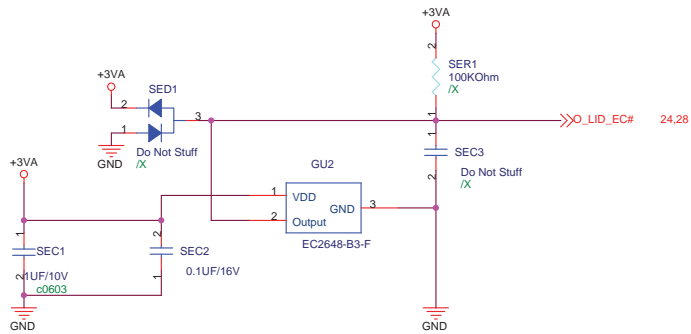
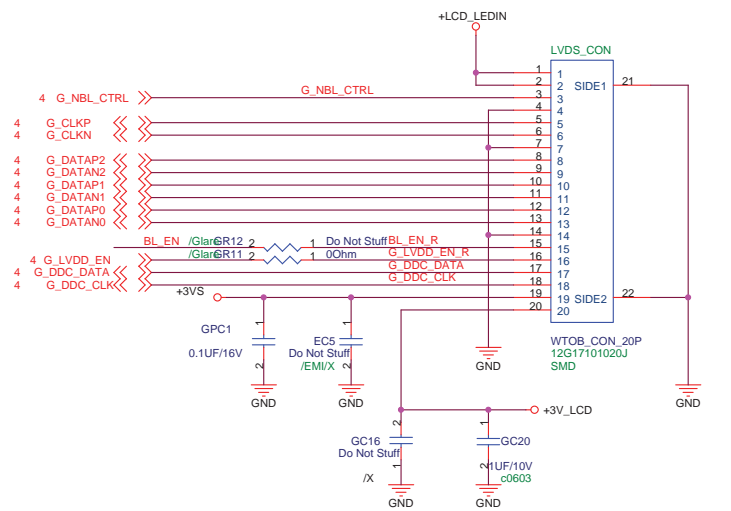
Default Group-1005P SR HIGH END

ASUS		Title : XDP	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size	Project Name	Rev	
A3	1015P	1.2G	
Date: Wednesday, February 24, 2010	Sheet	7 of 42	

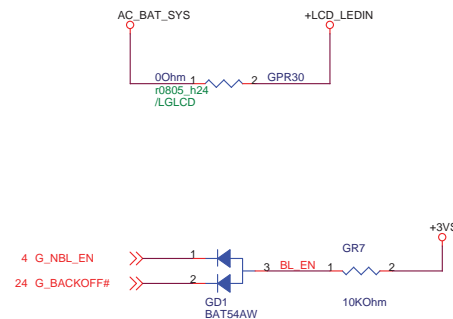
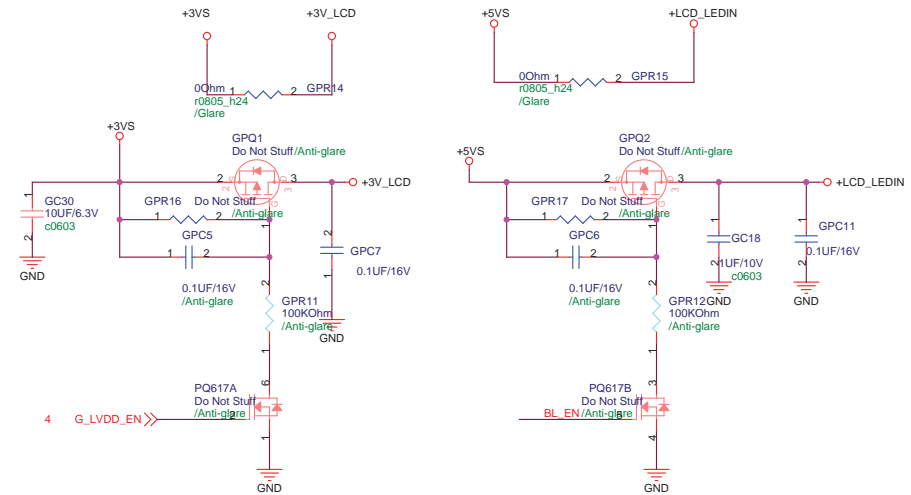






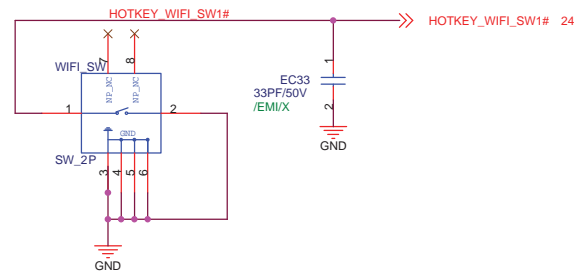
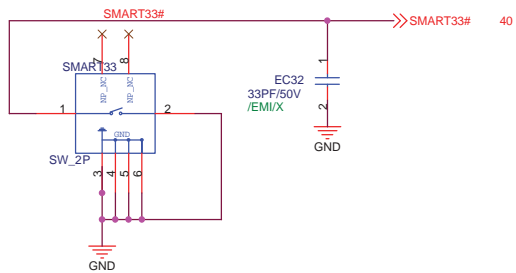


G_DDC_CLK	GC1	2	1	Do Not Stuff/X
G_DDC_DATA	GC2	2	1	Do Not Stuff/X
G_CLKP	GC3	2	1	10PF/50V EMI
G_CLKN	GC4	2	1	10PF/50V EMI
G_DATAP2	GC5	2	1	10PF/50V EMI
G_DATAN2	GC6	2	1	10PF/50V EMI
G_DATAP1	GC7	2	1	10PF/50V EMI
G_DATAN1	GC8	2	1	10PF/50V EMI
G_DATAP0	GC9	2	1	10PF/50V EMI
G_DATAN0	GC10	2	1	10PF/50V EMI
G_NBL_CTRL	GC12	2	1	Do Not Stuff/X
BL_EN	EC11	2	1	Do Not Stuff/EMI/X
G_LVDD_EN	EC12	2	1	Do Not Stuff/EMI/X




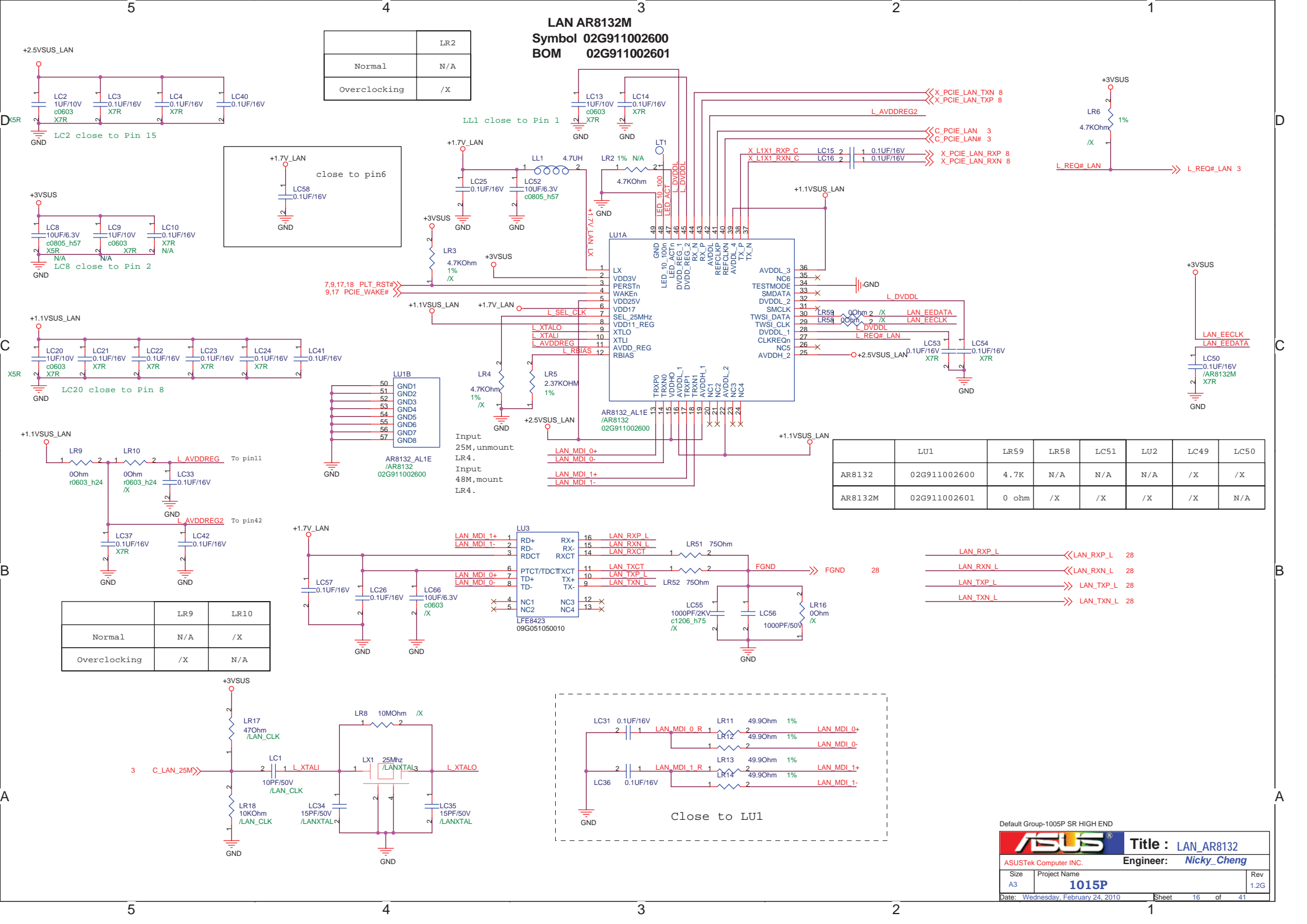
Default Group-1005P SR HIGH END

ASUS		Title : LVDS Conn_LID	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size	Project Name	Rev	
Custom	1015P	1.2G	
Date: Wednesday, February 24, 2010	Sheet	14	of 42

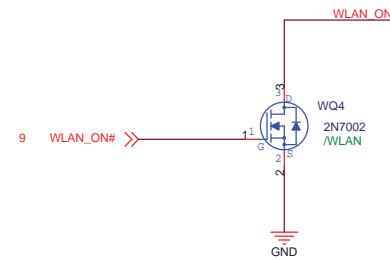
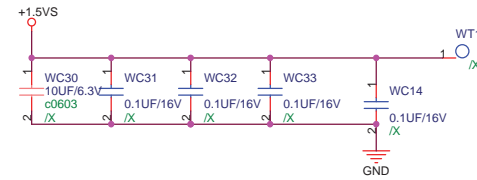
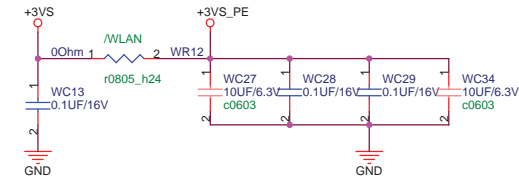
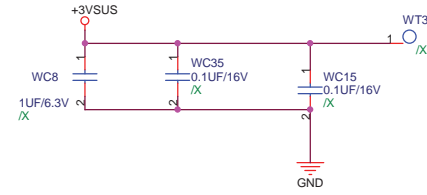
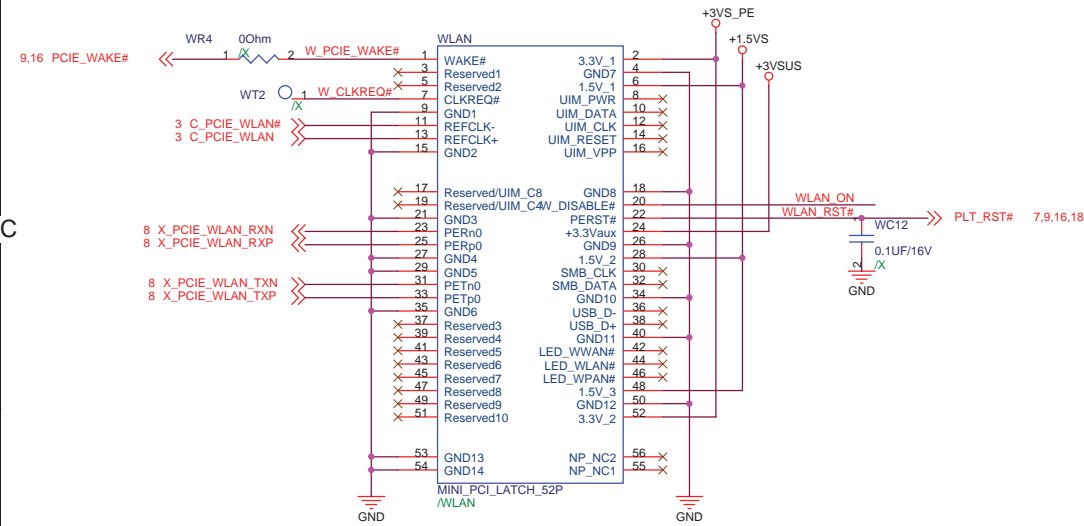


Default Group-1005P SR HIGH END

		Title : <u>WIFI_SAMRT33</u>	
ASUSTek Computer INC.		Engineer: <u>Nicky_Cheng</u>	
Size A3	Project Name 1015P		Rev 1.2G
Date: <u>Wednesday, February 24, 2010</u>		Sheet	15 of 42

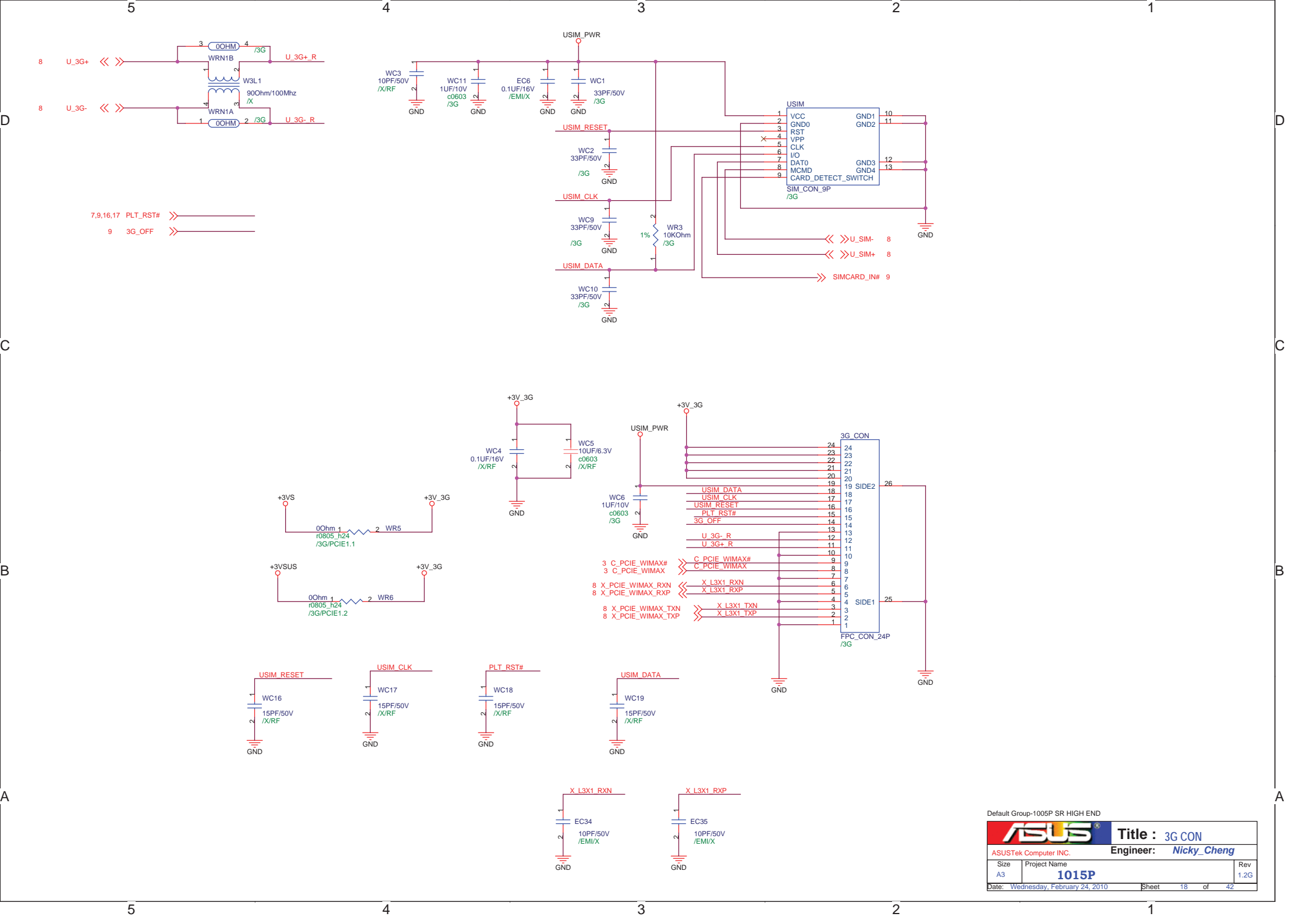


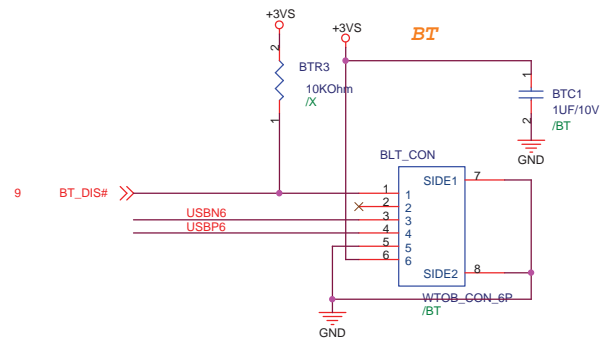
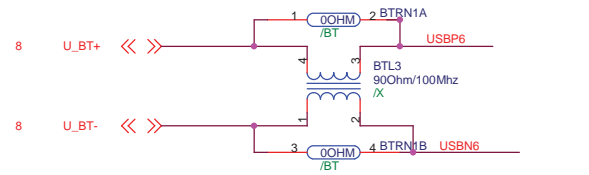
WIFI use PCIE 1.1 Spec
+3VS = 1.0A peak / 0.75A Normal
+1.5VS = 0.5A peak / 0.375A Normal
+3VSUS = 0.375A peak / 0.25A
Normal



Default Group-1005P SR HIGH END

ASUS®		Title : WLAN	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size A3	Project Name 1015P	Rev 1.2G	
Date: Wednesday, February 24, 2010		Sheet 17 of 42	

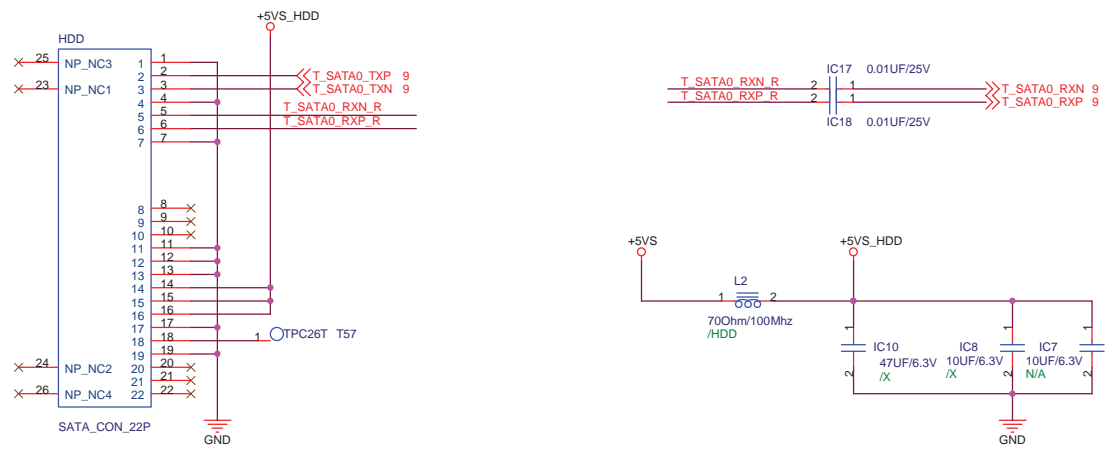


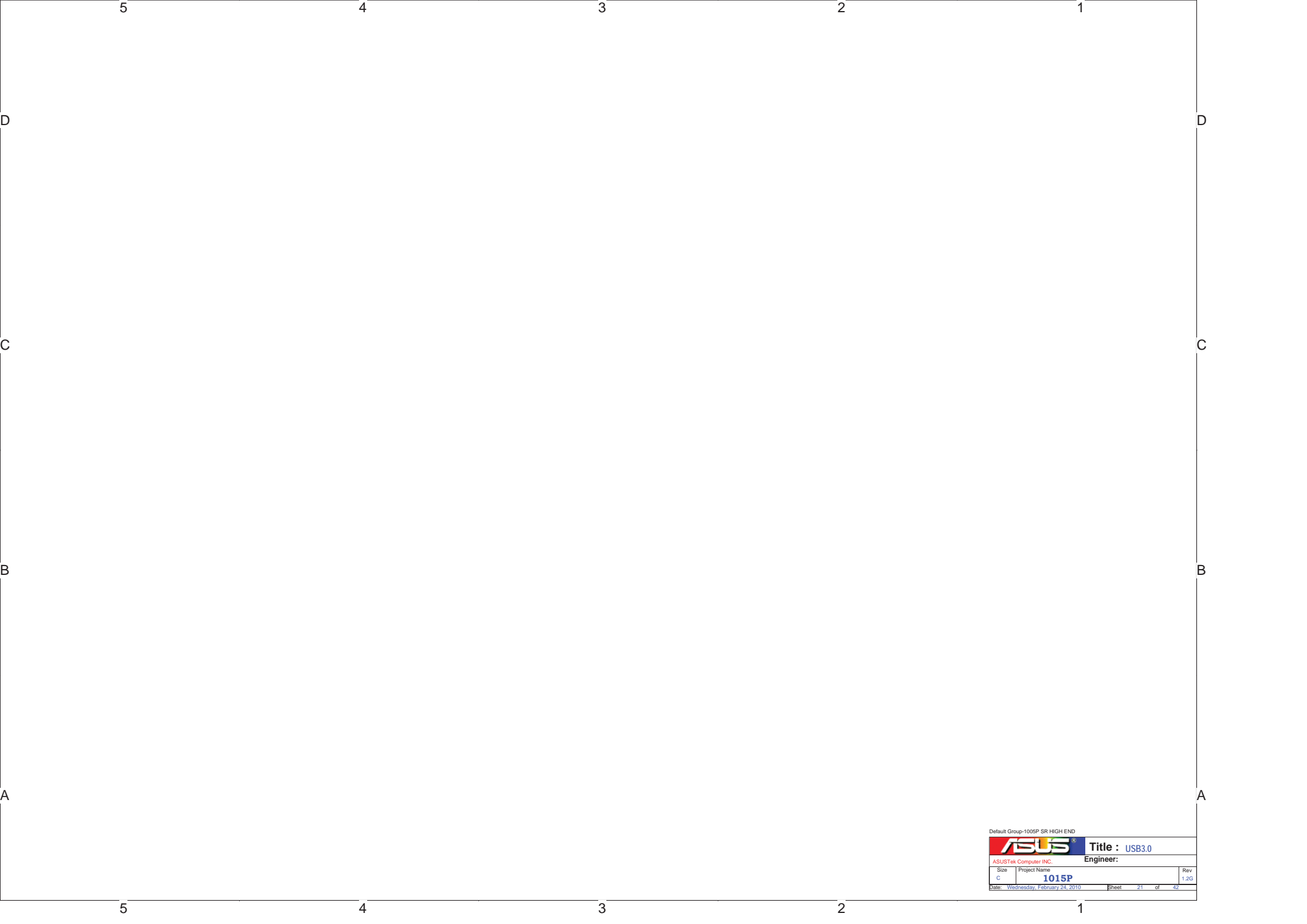



Default Group-1005P SR HIGH END

ASUS		Title : Bluetooth	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size A3	Project Name 1015P	Rev 1.2G	
Date: Wednesday, February 24, 2010		Sheet	19 of 42

SATA HDD Connector



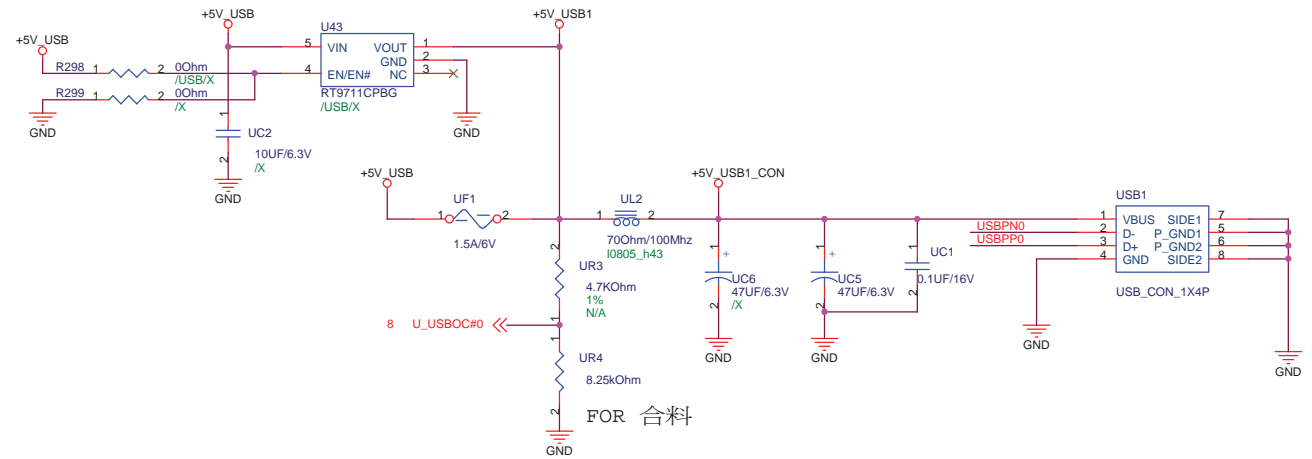
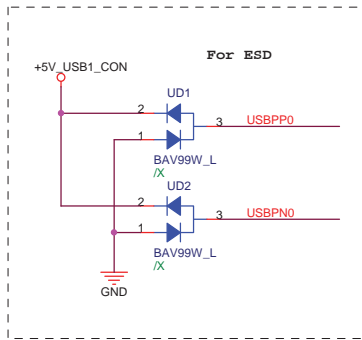


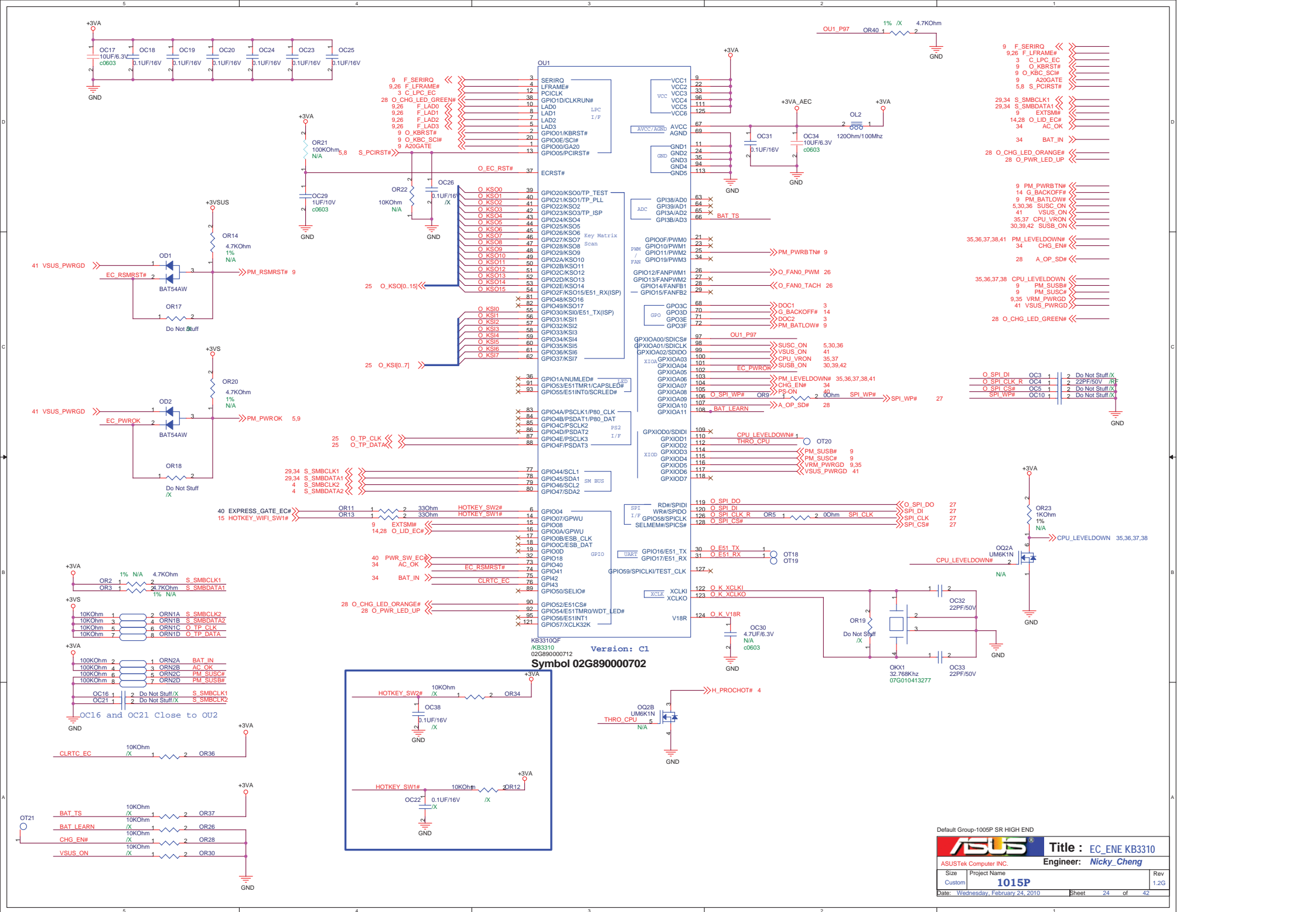
Default Group-1005P SR HIGH END			
		Title : USB3.0	
ASUSTek Computer INC.		Engineer:	
Size	Project Name		Rev
C	1015P		1.2G
Date: Wednesday, February 24, 2010		Sheet	21 of 42



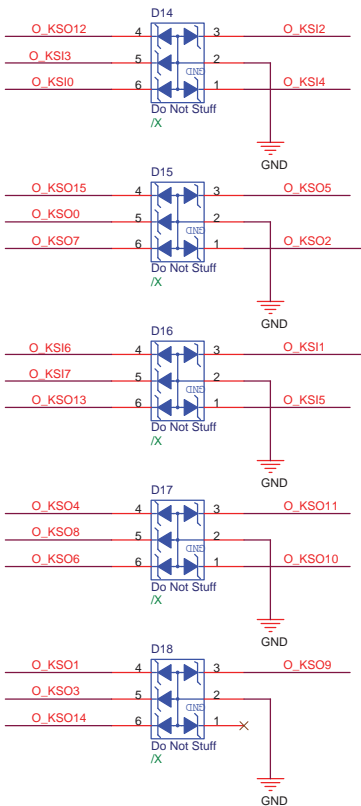
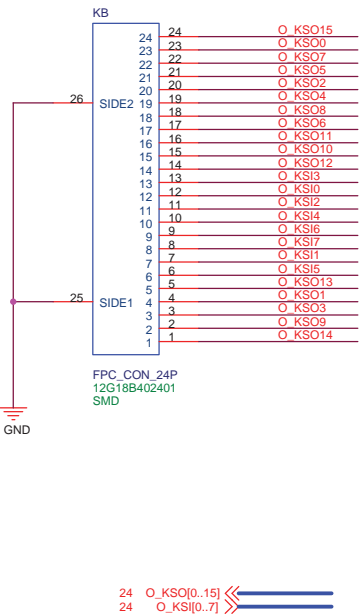
Default Group-1005P SR HIGH END

		Title : USB 3.0	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size A3	Project Name 1015P		Rev 1.2G
Date: Wednesday, February 24, 2010		Sheet 22 of 42	

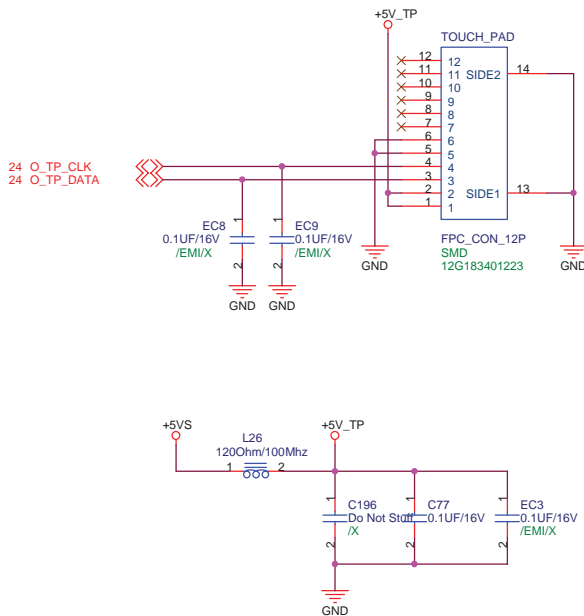


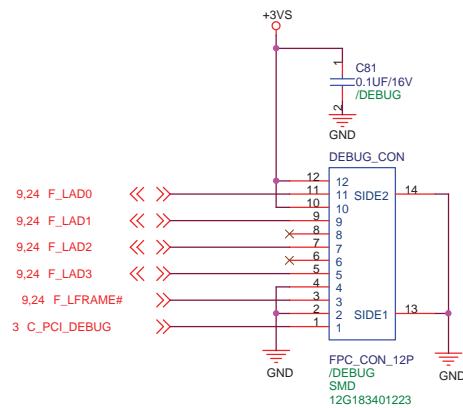
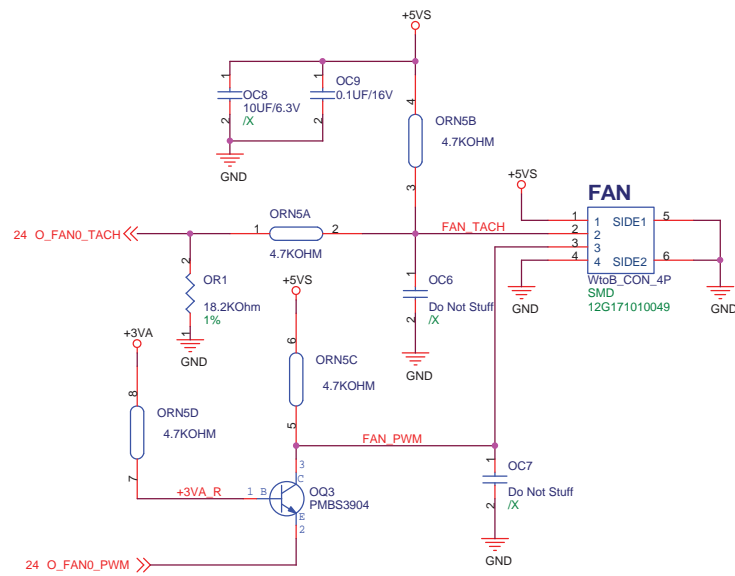


For Keyboard Connector



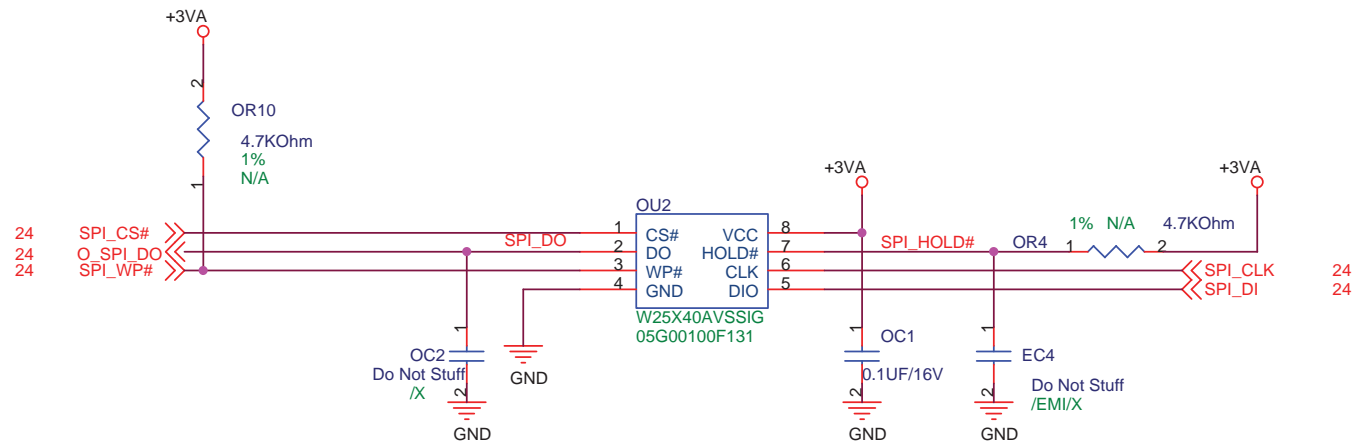
For Touch-Pad





Default Group-1005P SR HIGH END

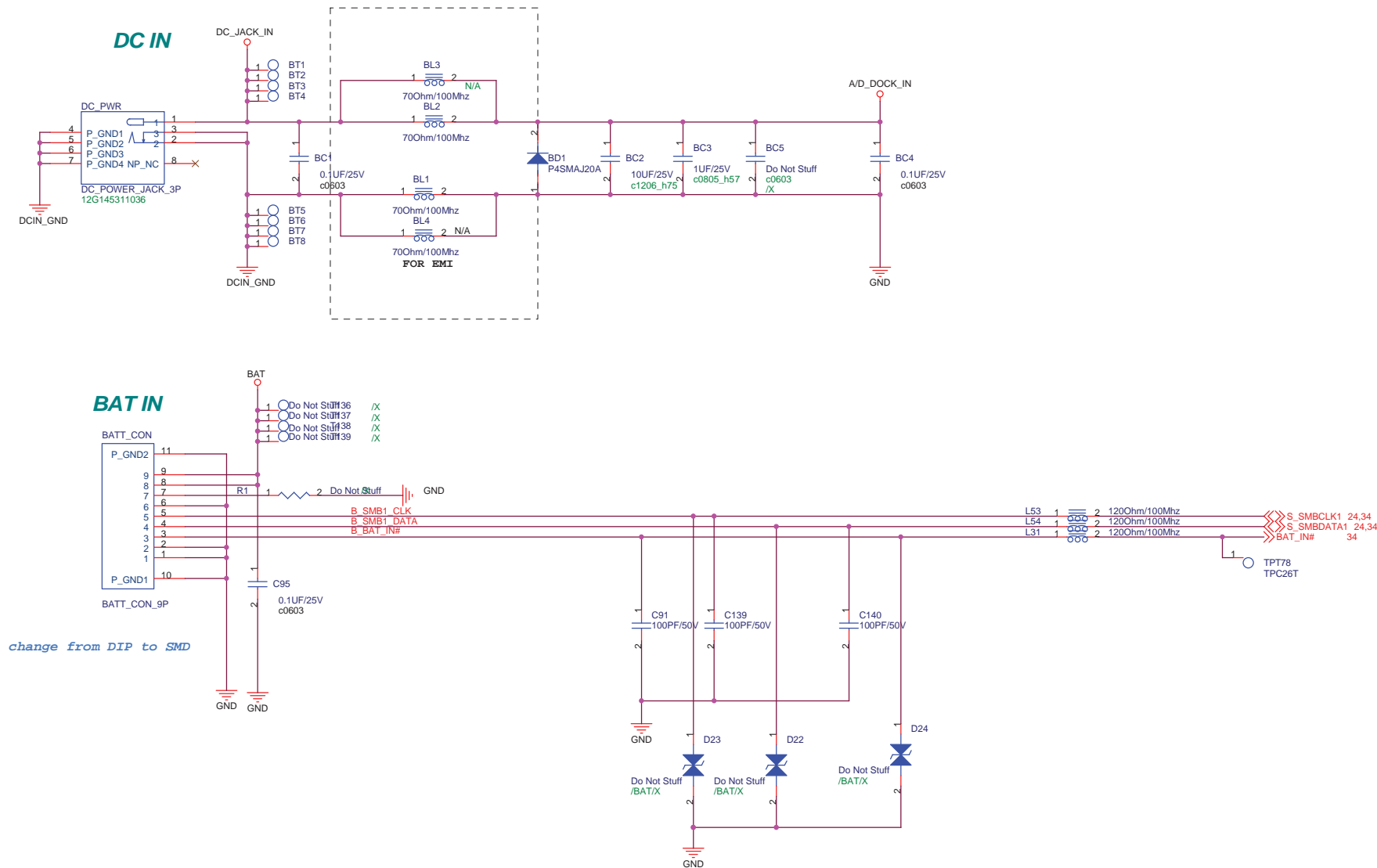
ASUS		Title : Fan_Debug	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size	Project Name	Rev	
A3	1015P	1.2G	
Date: Wednesday, February 24, 2010	Sheet	26	of 42



Default Group-1005P SR HIGH END

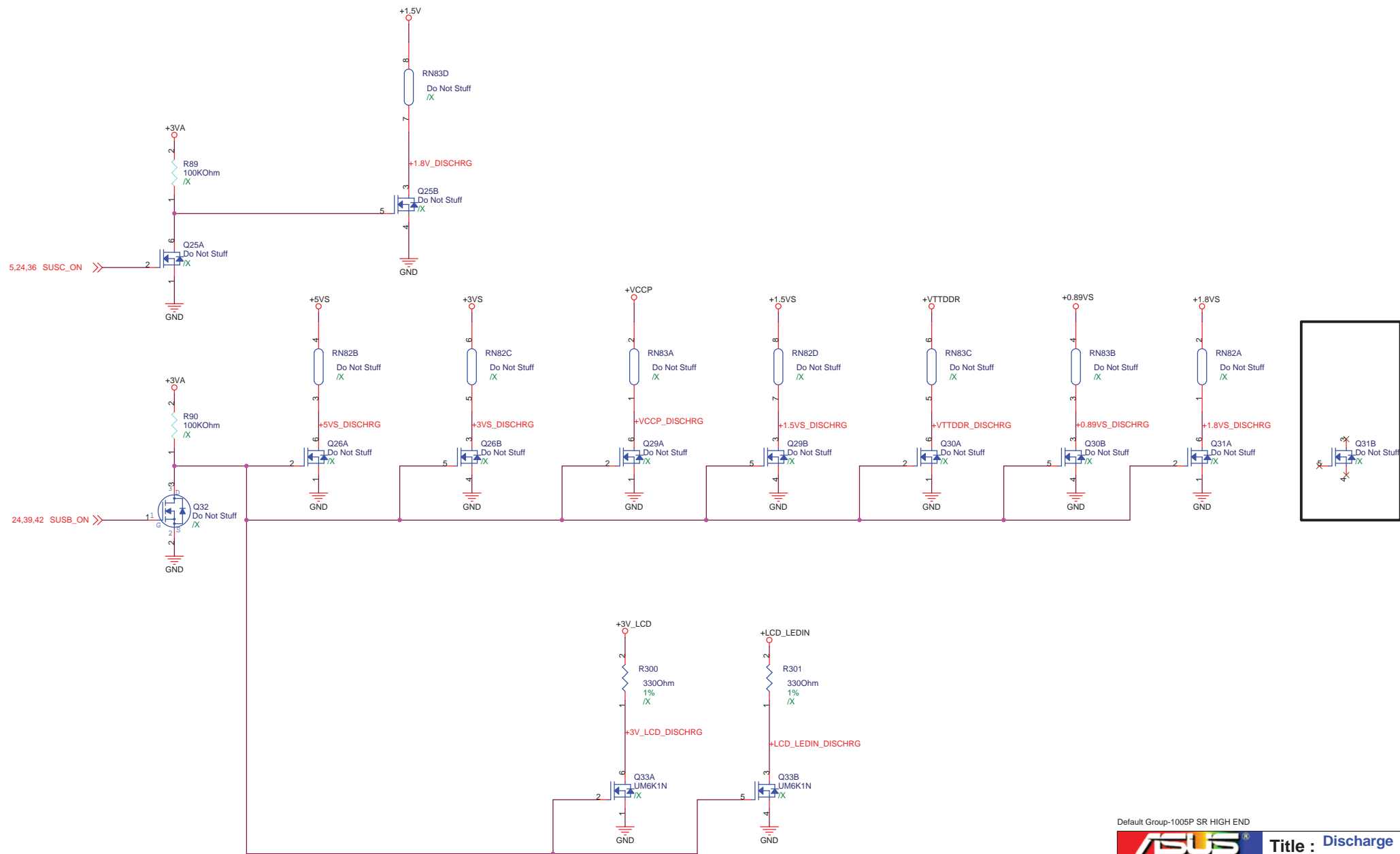
		Title : SPI_ROM	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size A4	Project Name 1015P		Rev 1.2G
Date: Wednesday, February 24, 2010		Sheet	27 of 42

0.1B Beta




Default Group-1005P SR HIGH END

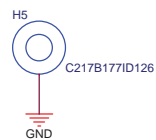
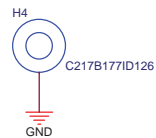
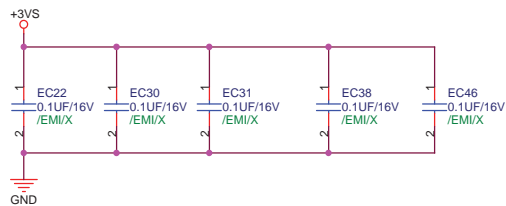
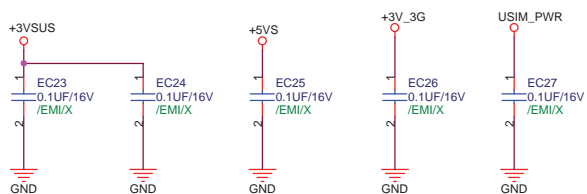
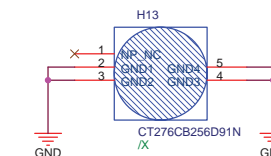
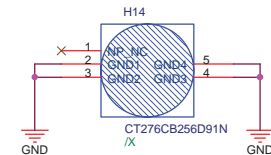
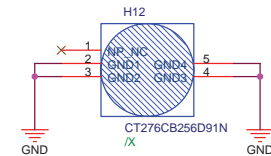
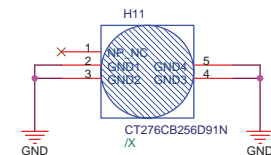
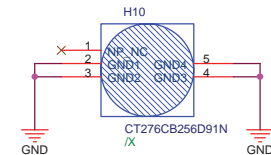
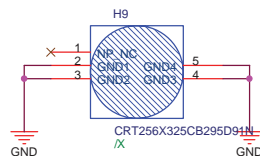
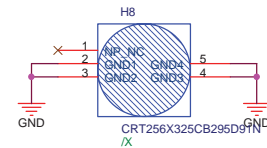
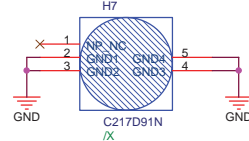
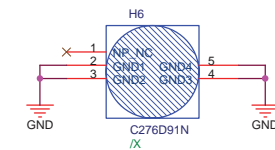
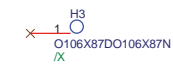
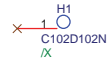
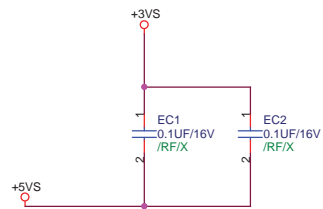
		Title : PWR Jack	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size A3	Project Name 1015P		Rev 1.2
Date: Wednesday, February 24, 2010	Sheet	29 of 42	





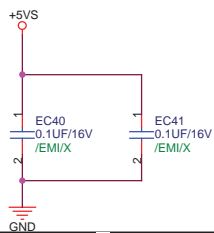
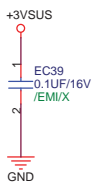
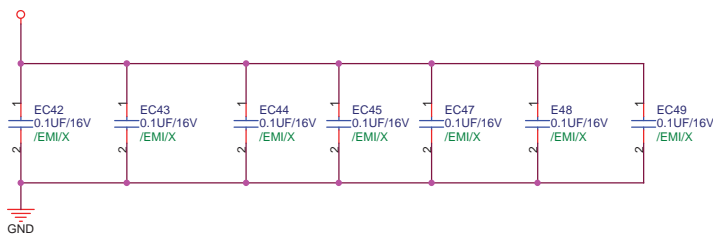
Default Group-1005P SR HIGH END

		Title : SD_CON	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size	Project Name		Rev
A3	1015P		1.2G
Date: Wednesday, February 24, 2010		Sheet	31 of 42



CPU Thermal HOLD

AC_BAT_SYS



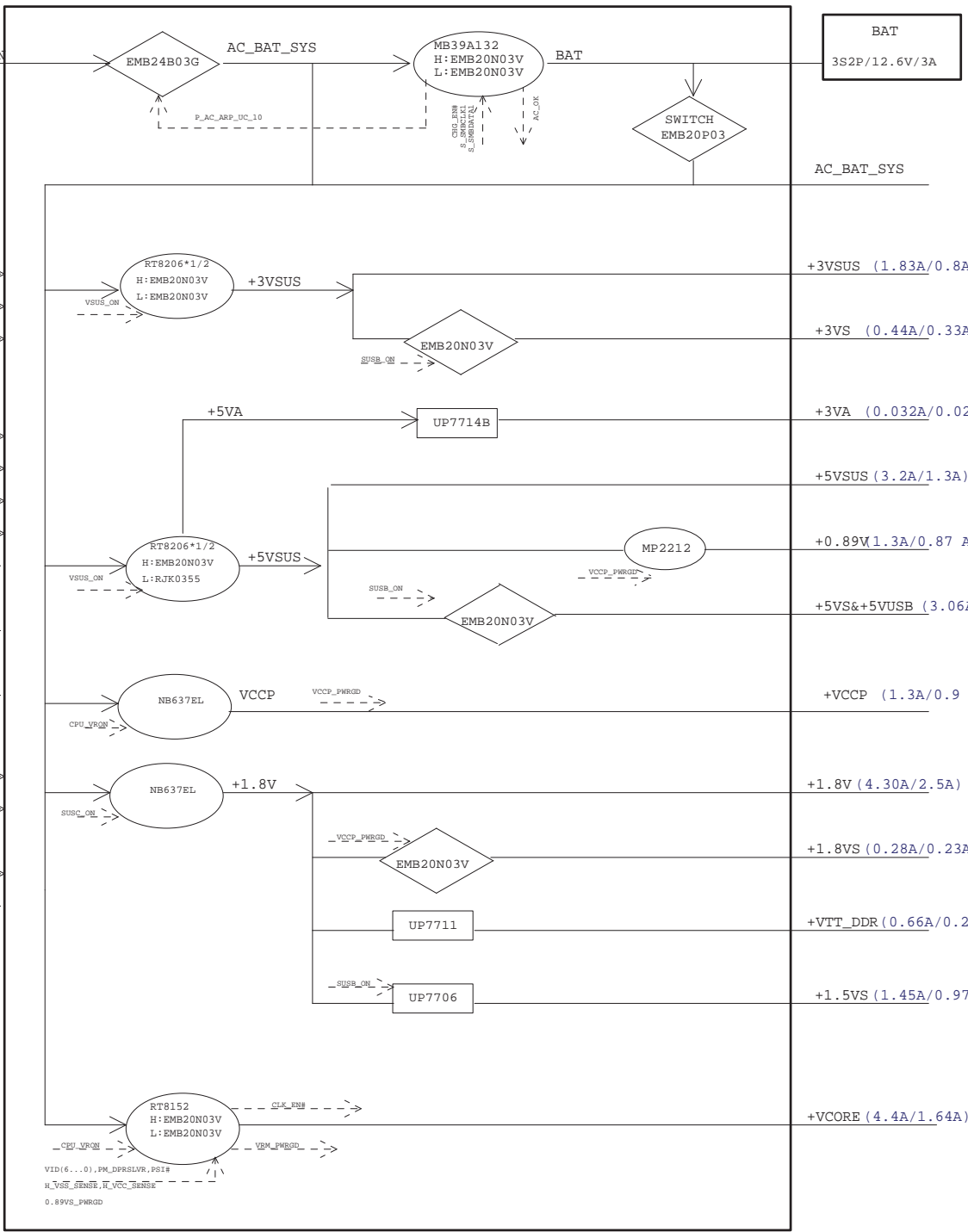
Default Group-1005P SR HIGH END

ASUS		Title : SREW HOLE&EMI	
ASUSTek Computer INC.		Engineer: Nicky_Cheng	
Size A3	Project Name 1015P	Rev 1.2G	
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Adaptor
40W(19V/2.1A)

EC

CPU



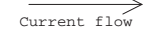
Switching



Switch



Linear



Current flow

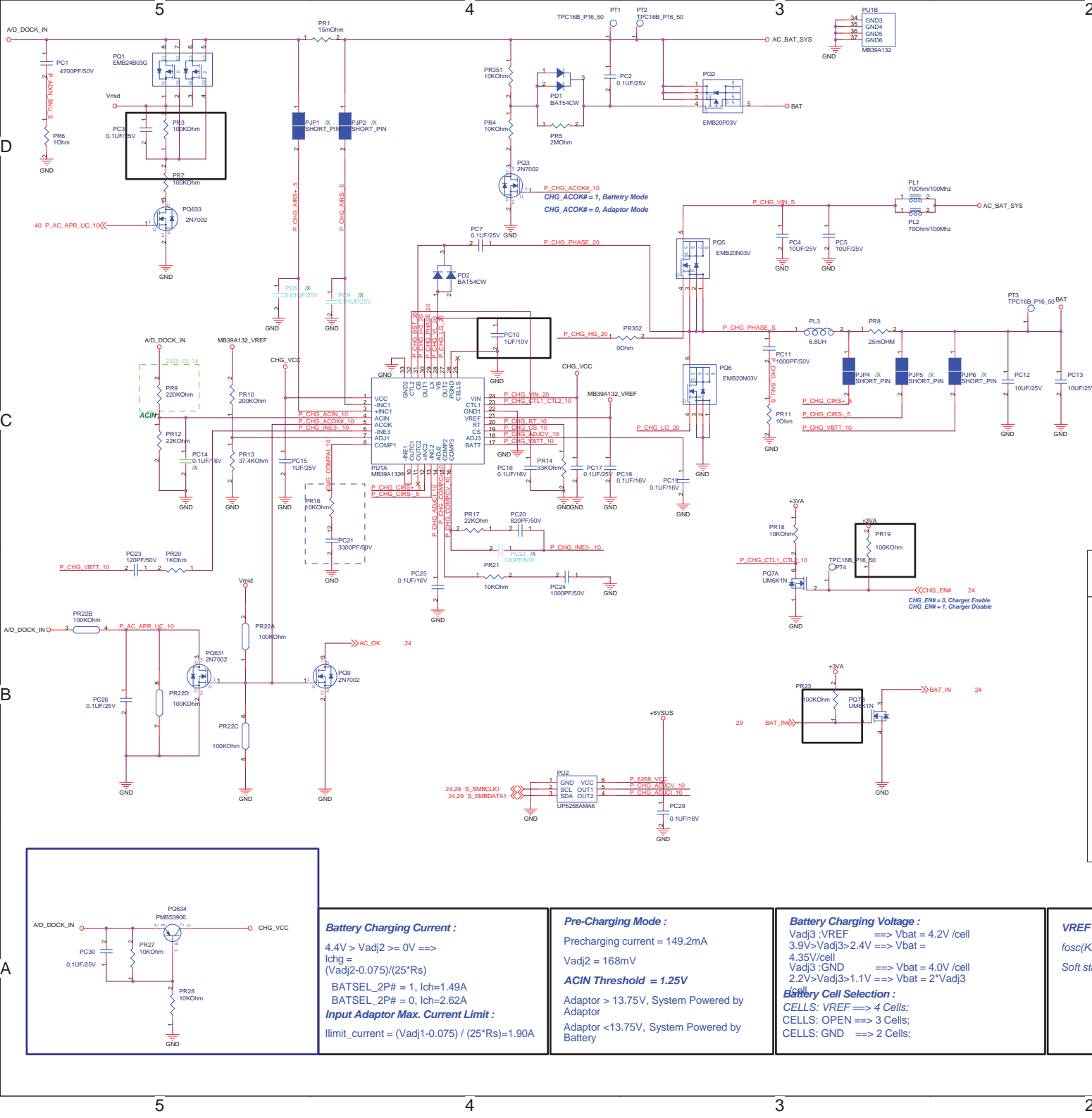


Signal



Device

STD version :1.02G(09/12/2)



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

$$R_{ds(ON)} = 22m\Omega \quad (V_{gs} = 4.5V)$$

$$I_{cont} = 6.5A \quad (T = 25^\circ C)$$

$$I_{peak} = 40A \quad (\text{Pause} < 10\mu s)$$

L-side MOSFET: SI7326DN_T1_E3

$$R_{ds(ON)} = 22m\Omega \quad (V_{gs} = 4.5V)$$

$$I_{cont} = 6.5A \quad (T = 25^\circ C)$$

$$I_{peak} = 40A \quad (\text{Pause} < 10\mu s)$$

Controller

1. Voltage & Current:

$$+12.6V @ 2.5A$$

2. Frequency:

$$PR122 = 33K\Omega, Fosc = 515KHz$$

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:

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

$$I_{inrush} = 0.01A$$

Battery Charging Current :

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

$$I_{chg} =$$

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

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

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

Input Adaptor Max. Current Limit :

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

Pre-Charging Mode :

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

$$V_{adj2} = 168mV$$

$$ACIN \text{ Threshold} = 1.25V$$

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

$$\text{Adaptor}$$

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

$$\text{Battery}$$

Battery Charging Voltage :

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

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

$$4.35V / \text{cell}$$

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

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

Battery Cell Selection :

$$CELLS : VREF \Rightarrow 4 \text{ Cells;}$$

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

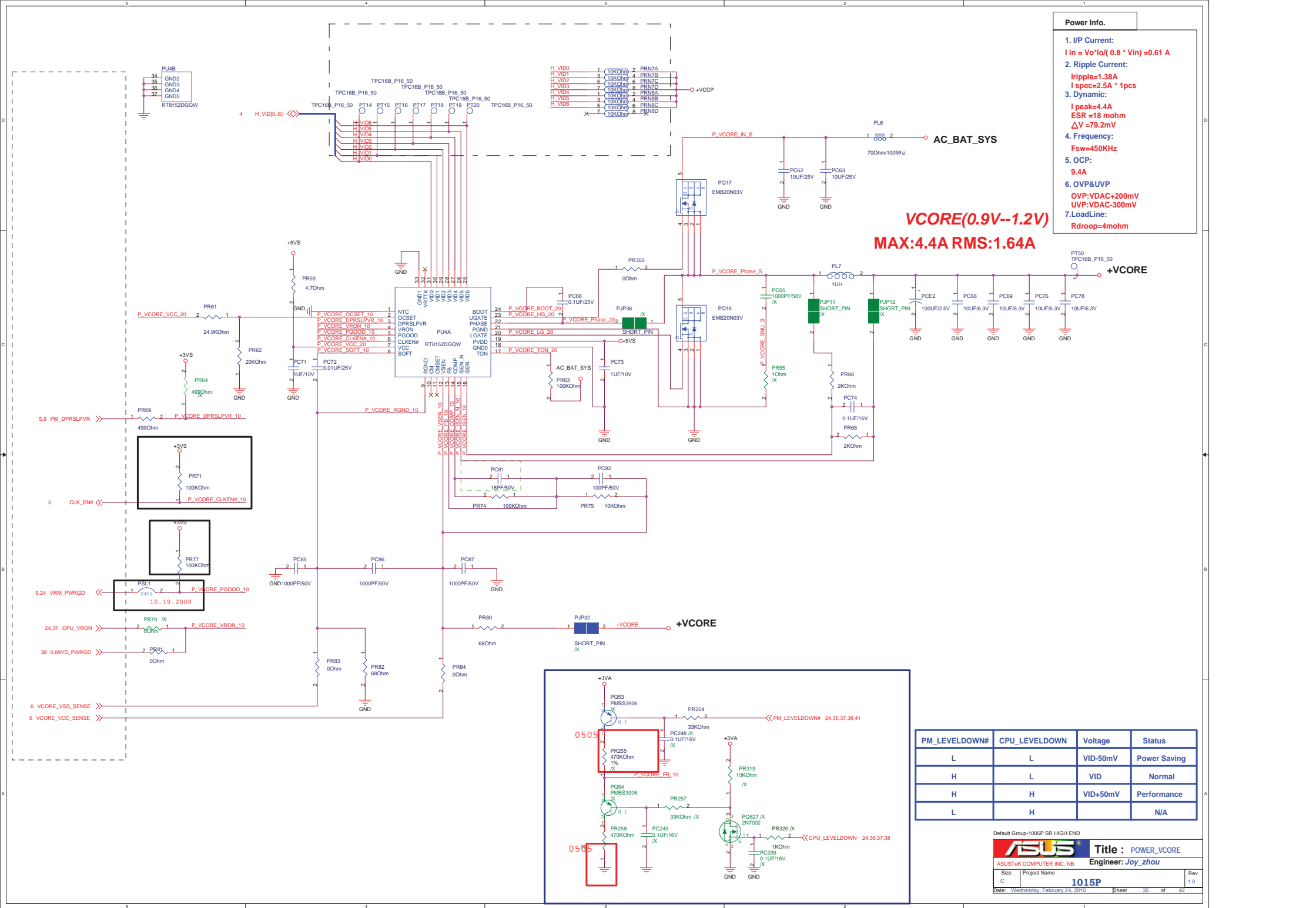
$$CELLS : GND \Rightarrow 2 \text{ Cells;}$$

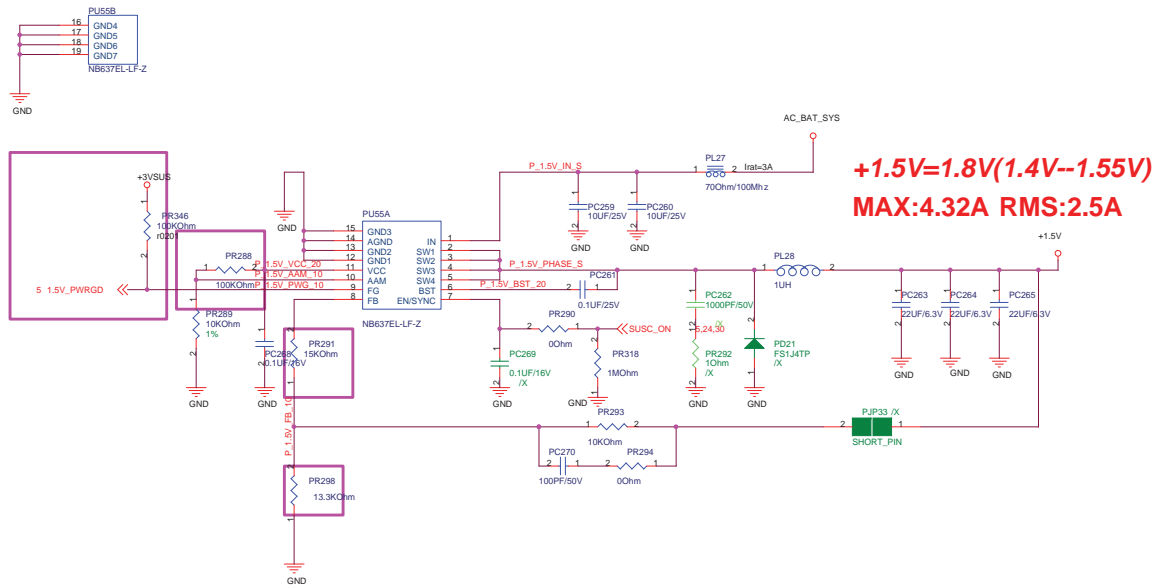
$$VREF = 5.0V$$

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

$$\text{Soft start: } t_s(s) = 0.13 \cdot C_{UF} (uF)$$

Default Group:1005P SR HIGH END





Power Info.

- I/P Current:**
 $I_{in} = V_o \cdot I_o / (0.8 \cdot V_{in}) = 1.08A$
- Ripple Current:**
 $I_{rip} = 1A$
- Frequency:**
 $F_{osc} = 600KHz$
- Current Limit:**
6A

0.9VS@1A

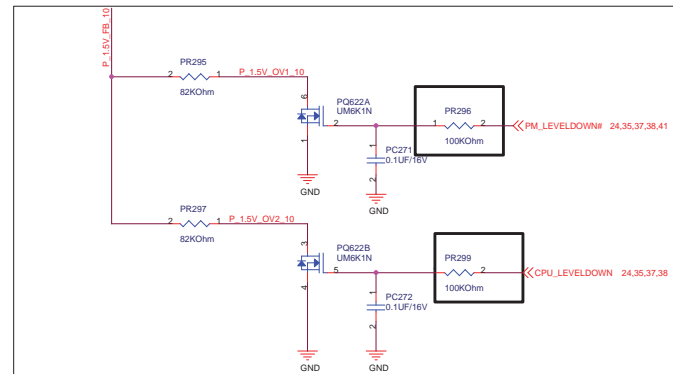
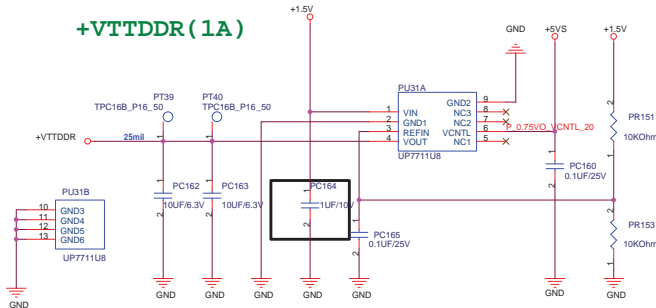
- Dropout Voltage:**
 $\Delta V = 0.3V \quad (I_o = 2A)$
- Current Limit:**
 $I_{limit} = 4A$
- Continue Current:**
 $I_{cont} = 3A$
- Power Dissipation:**
 $R_{thjc} = 52 \text{ } ^\circ C/W$
 $P_d = 1.9W$

2009.11.27

<<SUSC_ON 5.24.30
 <<PM_LEVELDOWN# 24.35.37.38.41
 <<CPU_LEVELDOWN 24.35.37.38

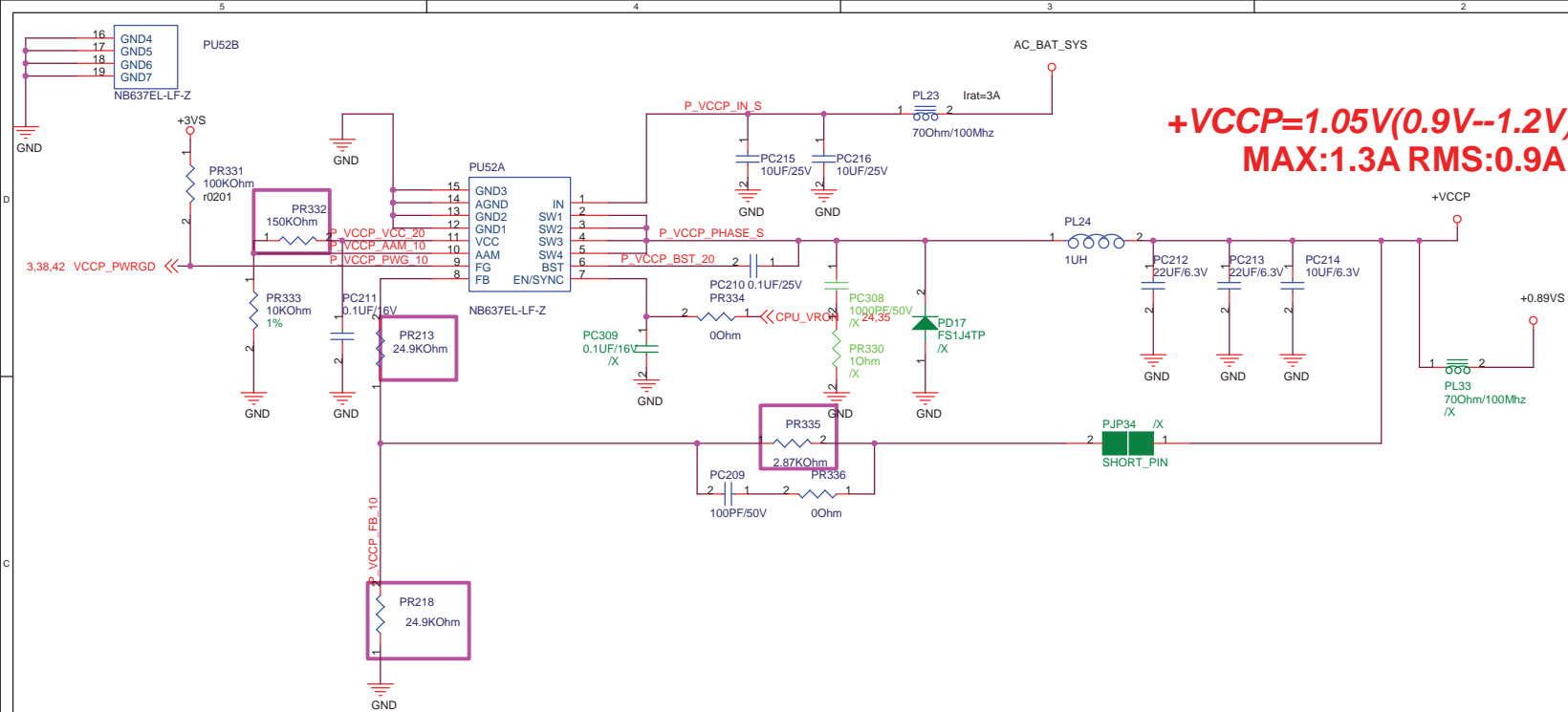
PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
L	L	H	1.670V	Power Saving
H	L	H	1.800V	Normal
H	H	L	1.912V	Performance
L	H	L		

+VTTDDR (1A)



Default Group-1005P SR HIGH END

		Title : +1.8V&VTTDDR	
ASUSTek Computer INC		Engineer: Joy_Zhou	
Size Custom	Project Name 1015P		Rev 1
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Power Info.

1. I/P Current:

$$I_{in} = V_o * I_o / (0.8 * V_{in}) = 0.7A$$

2. Ripple Current:

$$I_{rip} = 1.08A$$

$$I_{spec} = 2.5A \times 1 \text{ pcs}$$

3. Frequency:

$$F_{osc} = 600KHz$$

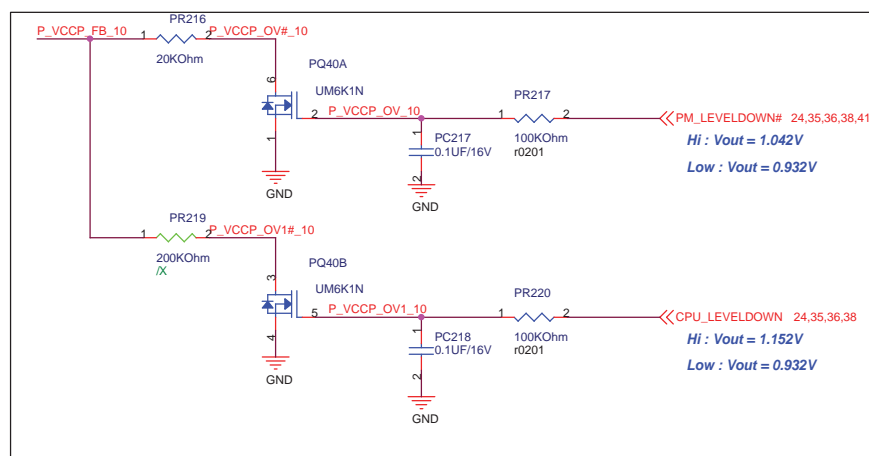
4. Current Limit:

$$6A$$

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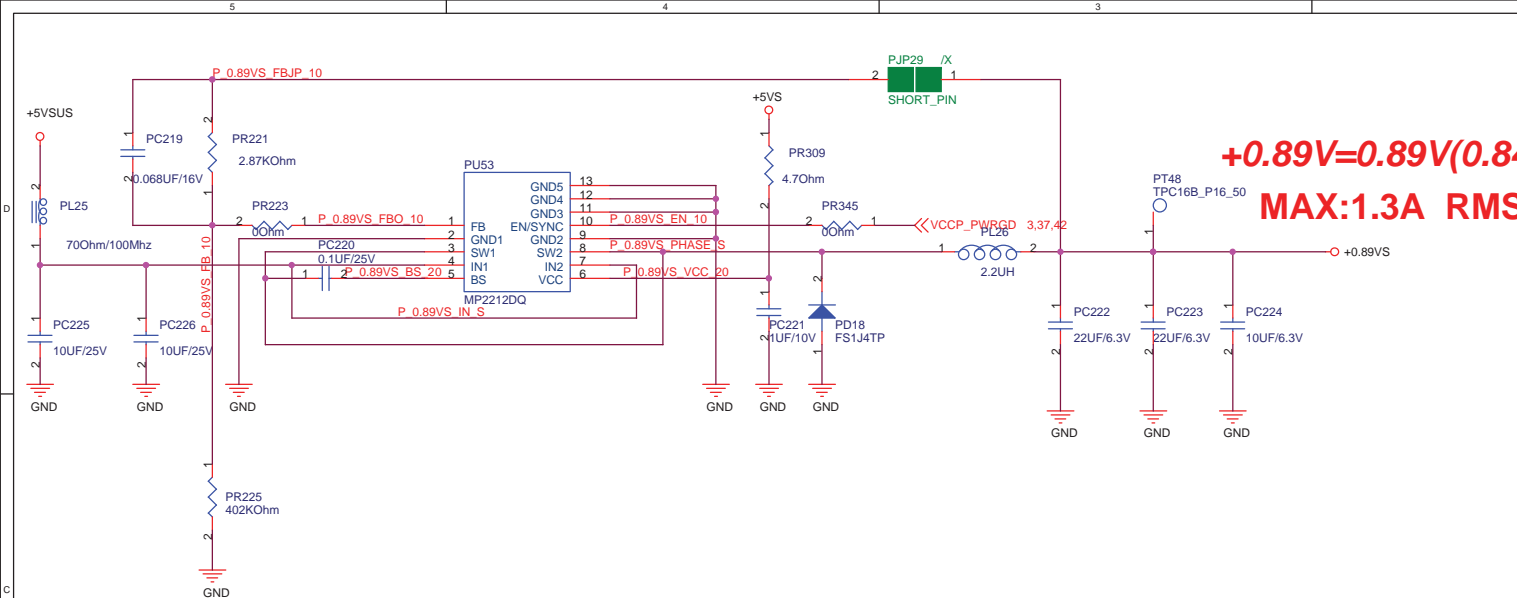
CPU_VRON 24,35
 PM_LEVELDOWN# 24,35,36,38,41
 CPU_LEVELDOWN 24,35,36,38

PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
L	L	H	0.932V	Power Saving
H	L	H	1.042V	Normal
H	H	L	1.127V	Performance
L	H	L		N/A



Default Group-1005P SR HIGH END

ASUS		Title : +1.5VS & +2.5VS	
ASUSTek Computer INC		Engineer: Joy_Zhou	
Size A3	Project Name 1015P	Rev 1.0	
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Power Info.

1. I/P Current:

$$I_{in} = V_o * I_o / (0.8 * V_{in}) = 0.36A$$

2. Ripple Current:

$$I_{rip} = 0.61A$$

$$I_{spec} = 2.5A * 1pc$$

3. Dynamic:

$$I_{peak} = 1.6A$$

$$ESR = 18 \text{ mohm}$$

$$\Delta V = 28.8mV$$

4. Frequency:

$$F_{osc} = 600KHz$$

5. Current Limit:

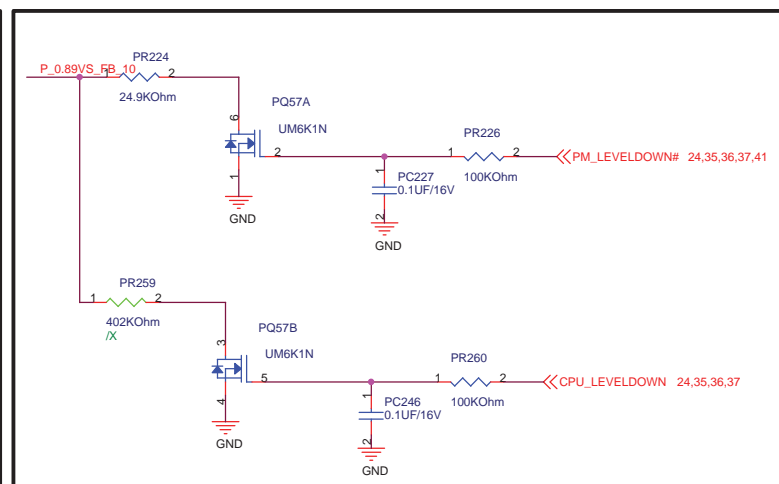
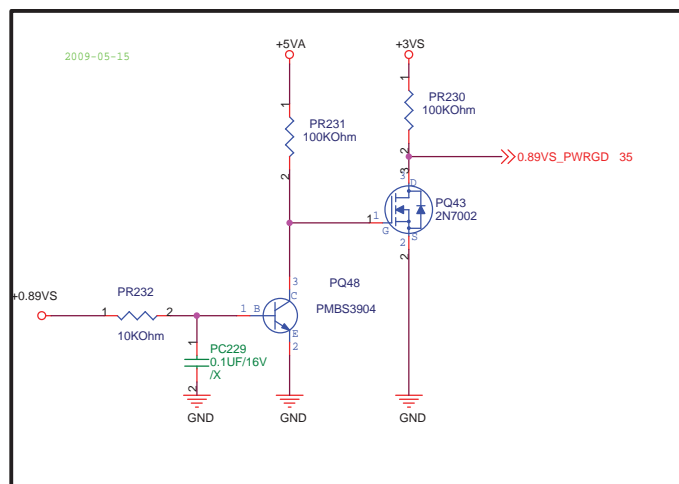
$$6A$$

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——— VCCP_PWRGD 3,37,42

——— PM_LEVELDOWN# 24,35,36,37,41

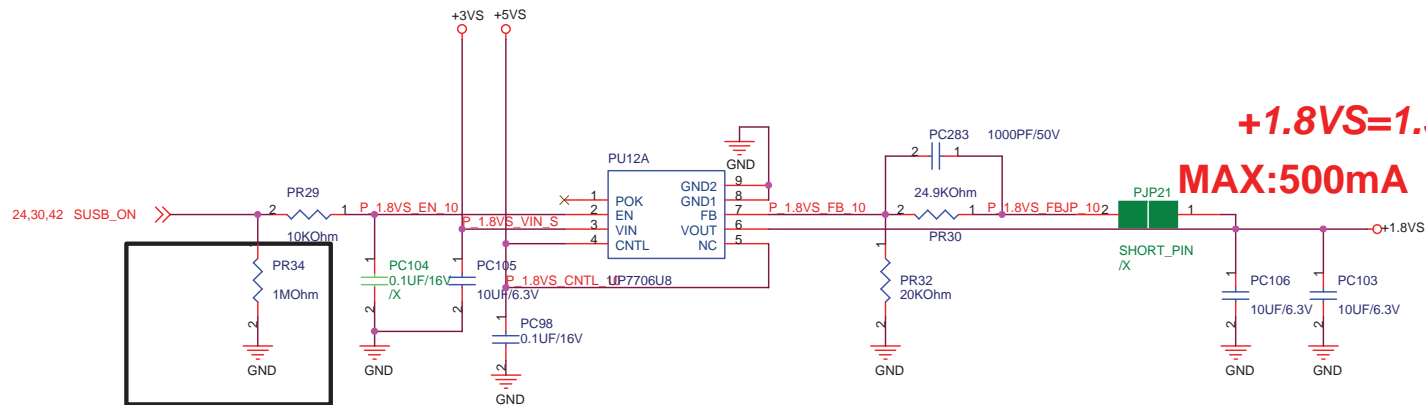
——— CPU_LEVELDOWN 24,35,36,37



PM_LEVELDOWN#	CPU_LEVELDOWN	Voltage	Status
L	L	0.844V	Power Saving
H	L	0.897V	Normal
H	H	0.950V	Performance
L	H		N/A

Default Group-1005P SR HIGH END

ASUS		Title : +1.5VS & +2.5VS	
ASUSTek Computer INC		Engineer: Joy_Zhou	
Size A3	Project Name 1015P	Rev 1.0	
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1. Dropout Voltage:

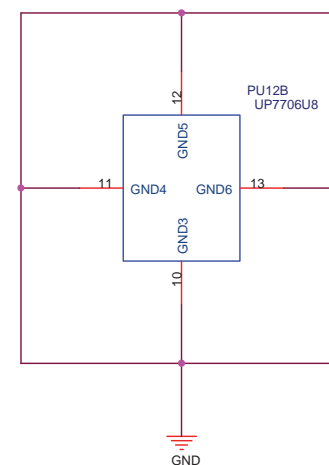
$V = 300 \text{ mV}$ ($I_o = 2A$)

2. Current Limit:


$I_{\text{limit}} = 2.8A$

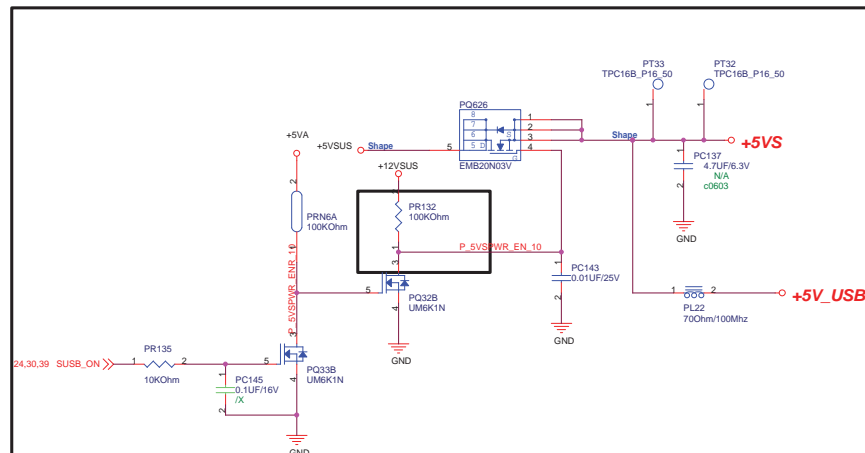
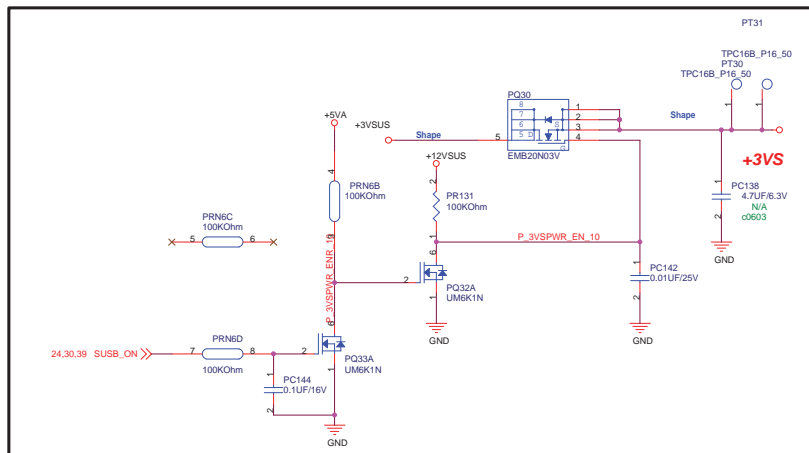
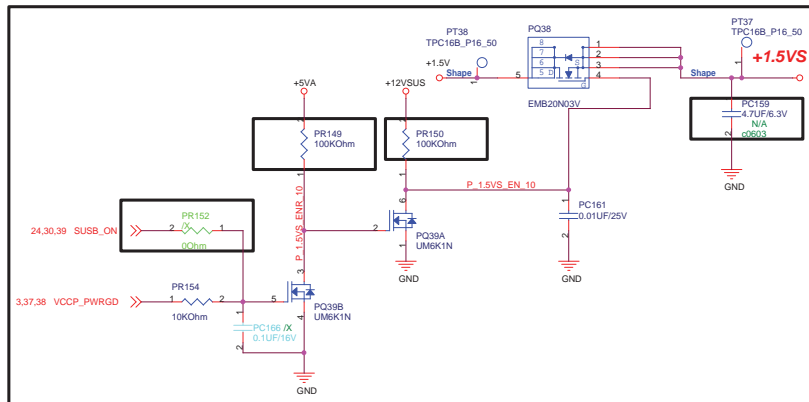
3. Pd:

$R_{\text{thjc}} = 5 \text{ C/W}$
 $P_d = 1.9W$



Default Group-1005P SR HIGH END

		Title : +1.5VS & +2.5VS	
ASUSTek Computer INC		Engineer: Joy_Zhou	
Size B	Project Name 1015P		Rev 1.0
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2009.11.27

SUSB_ON 24,30,39

VCCP_PWRGD 3,37,38

Default Group-1005P SR HIGH END

ASUS		Title : load switch	
ASUSTek Computer INC		Engineer: Joy_Zhou	
Size	Project Name	Rev	
C	1015P	1.0	
Date: Wednesday, February 24, 2010		Sheet	42 of 42