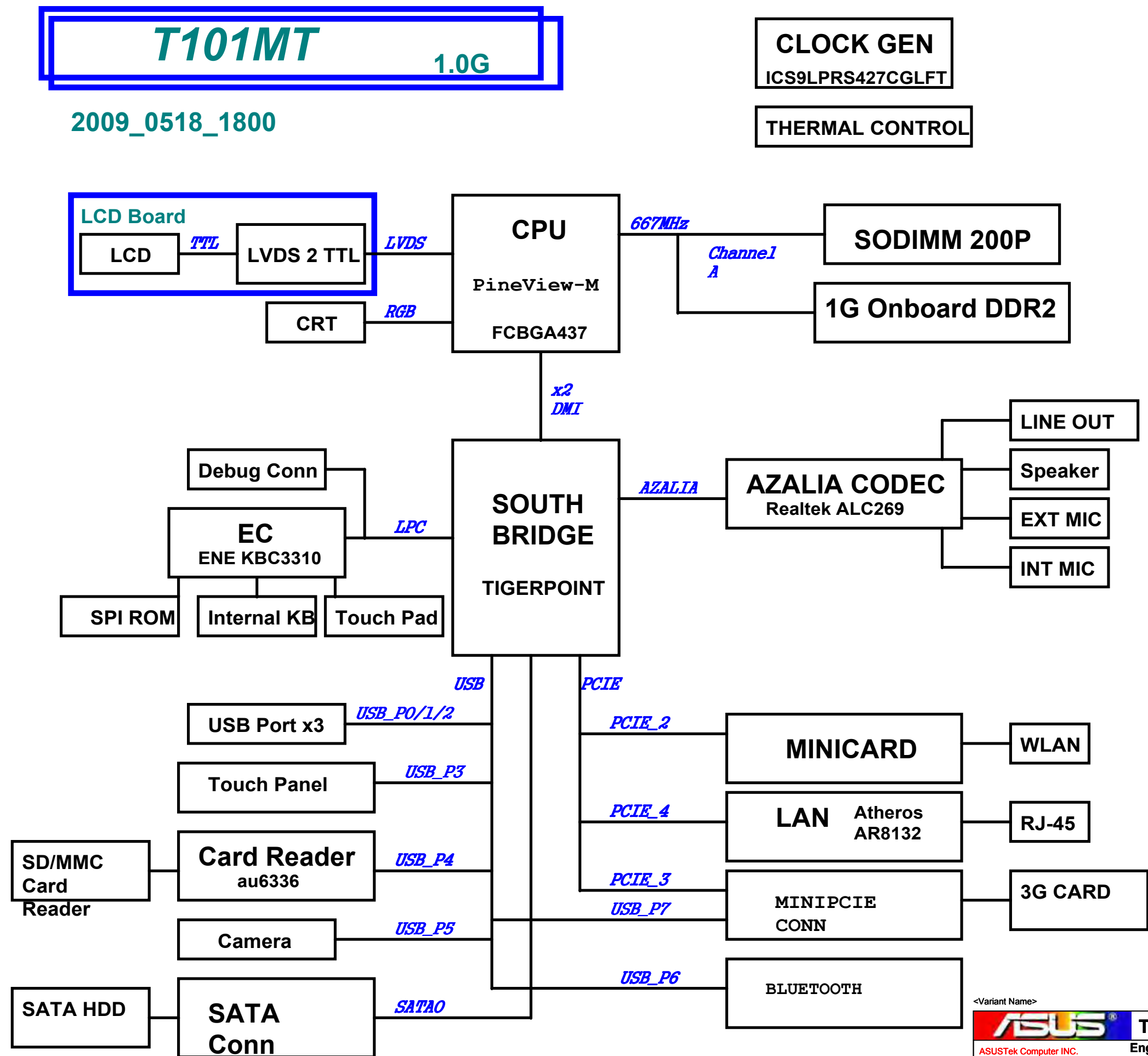
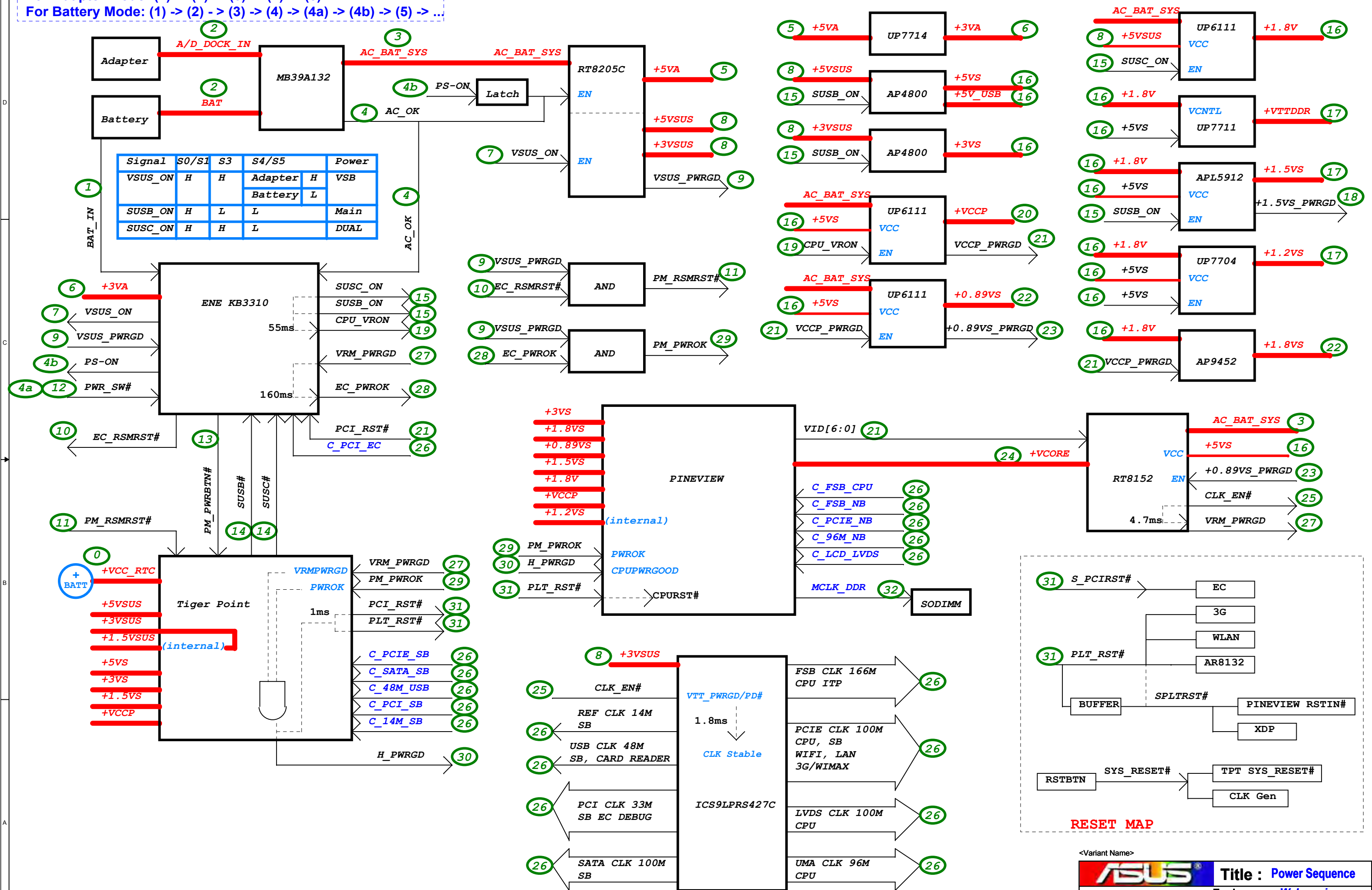
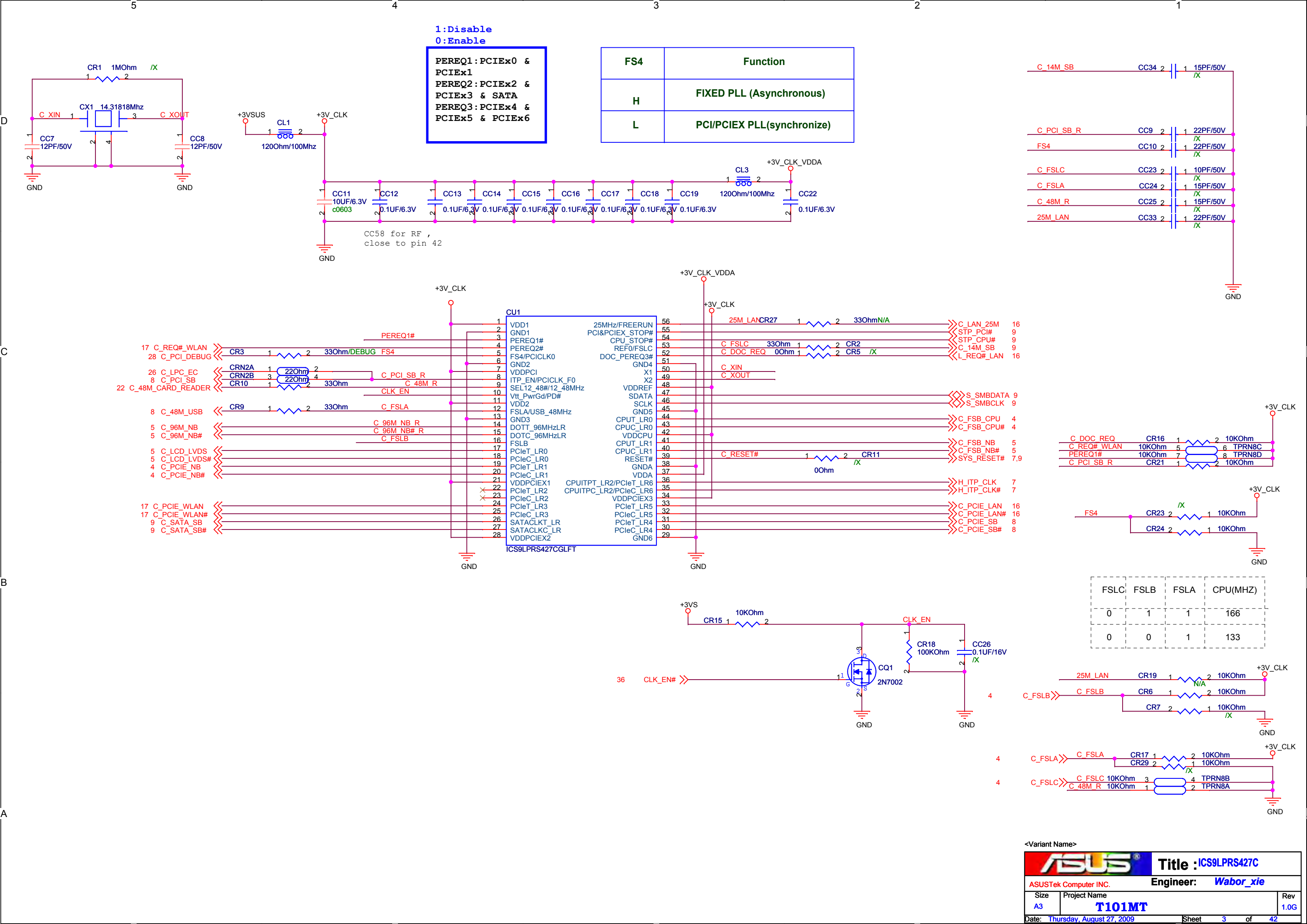


- 01_Block Diagram
- 02_Power Sequence
- 03_Clock Gen_ICS9LPRS427C
- 04.PineView-M_1 (LVDS_DMI_CPU)
- 05.PineView-M_2 (DDR2_XDP_CRT)
- 06.PineView-M_3 (PWR&GND)
- 07.XDP
- 08.Tigerpoint_DMI_USB
- 09.Tigerpoint_SYS
- 10.Tigerpoint_PWR
- 11.DDR2 SODIMM
- 12.Onboard DDR2
- 13.DDR2-Termination
- 14.Onboard VGA
- 15.LCD Conn_LID
- 16.LAN_AR8132
- 17.WLAN&3G
- 18.ALC269-1
- 19.ALC269-2(I/O)
- 20.Bluetooth
- 21.CAMERA CON
- 22.CardReader CON
- 23.HOTKEY CON
- 24.USB Port
- 25.KB_TP
- 26.EC_ENE KB3310
- 27.G_Senser
- 28.Fan_debug
- 29.HDD CON
- 30.SPI_ROM
- 31.PWR Jack
- 32.USB CON
- 33.Screw Hole
- 34.EMI
- 35_Power Flow
- 36_Charger_Support JEITA
- 37_VCORE_RT8152 Solution
- 38_Power System
- 39_Power_+1.8V&VTTDDR&+1.8VS
- 40_Power_VCCP_Converter
- 41_+0.89VS_Converter
- 42_Power_+1.5VS
- 43_Power Latch



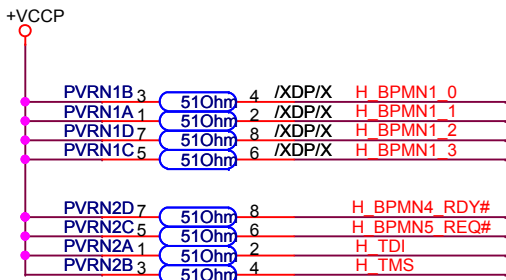
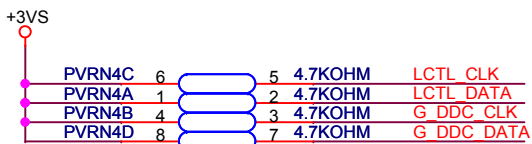
For Adapter Mode: (1) -> (2) -> (3) -> (4) -> (5) -> ...
For Battery Mode: (1) -> (2) -> (3) -> (4) -> (4a) -> (4b) -> (5) -> ...



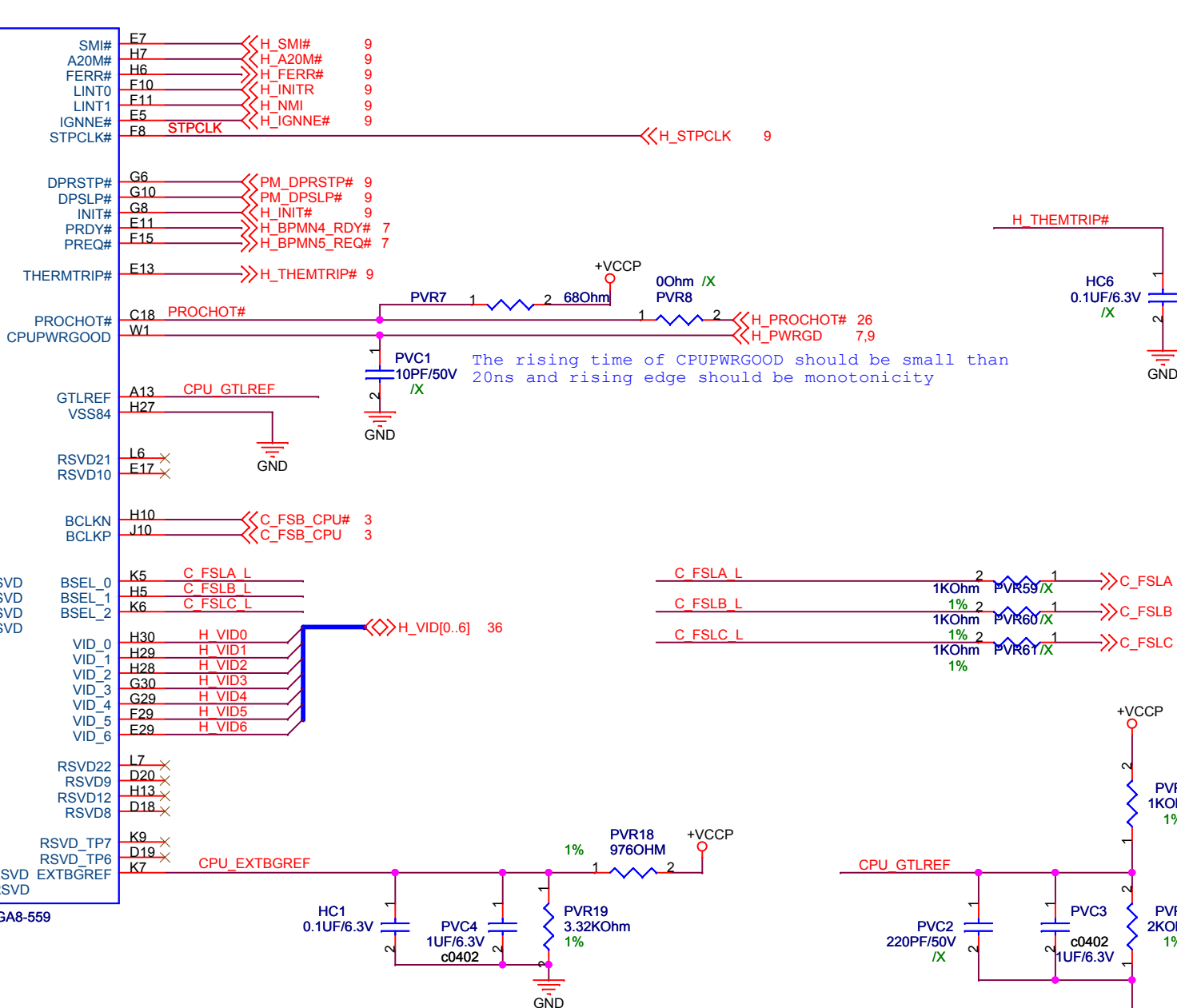
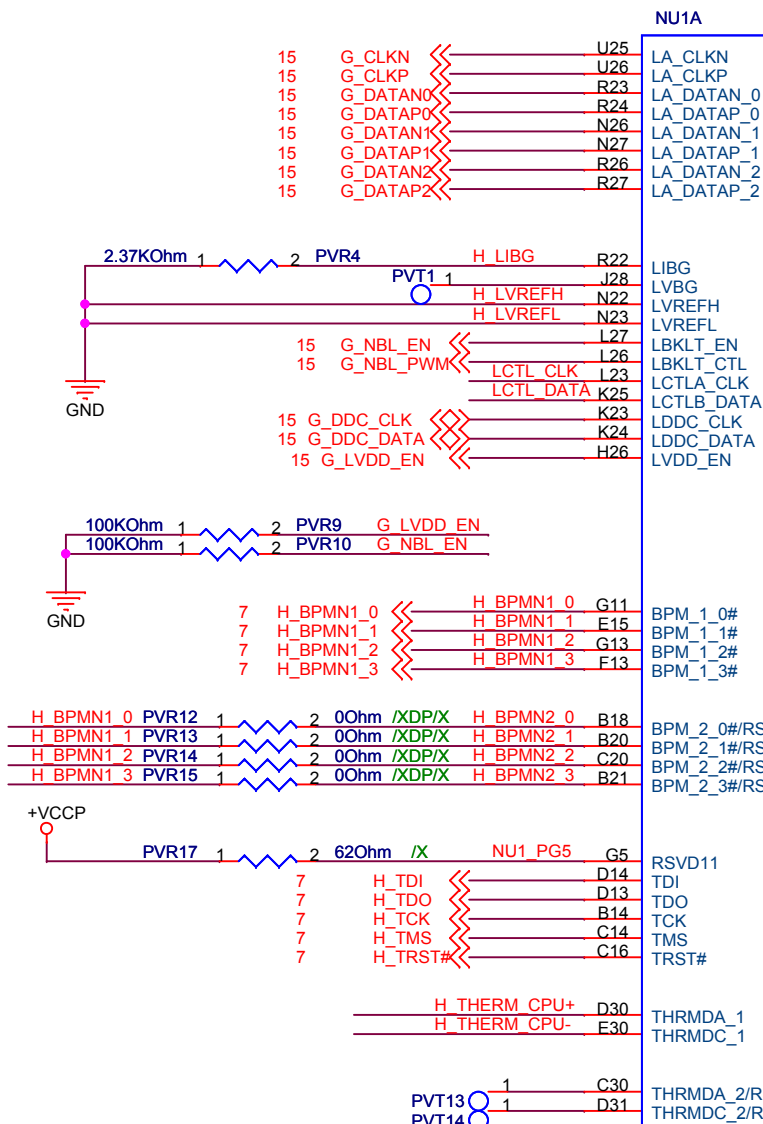
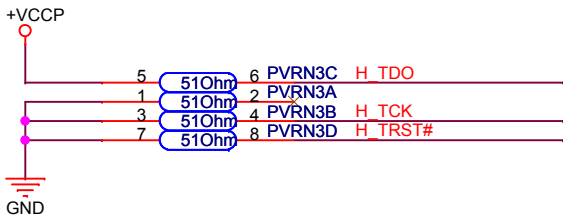


I2C to control LCD backlight, Type I/O.

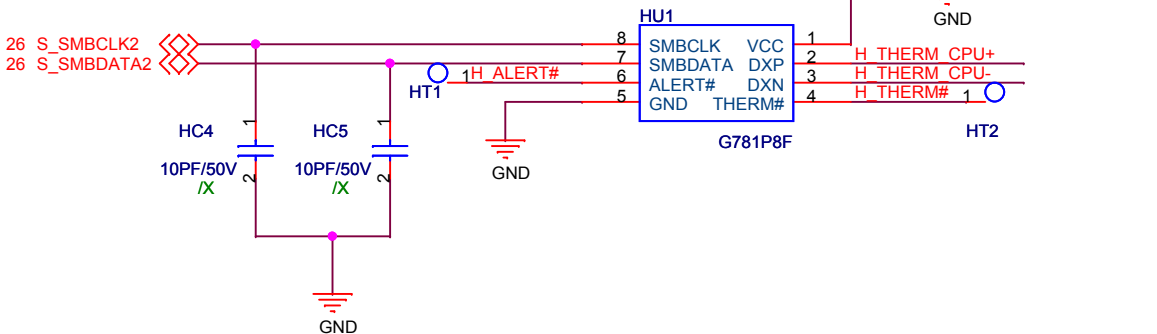
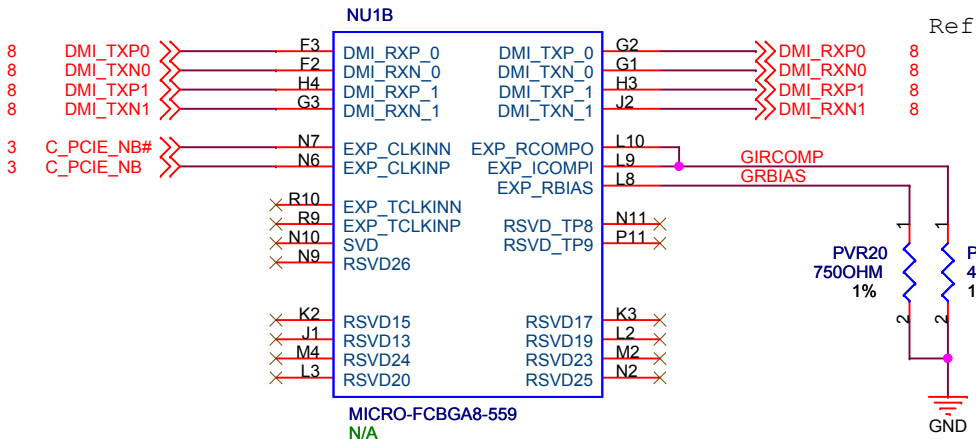
Reserved for debug



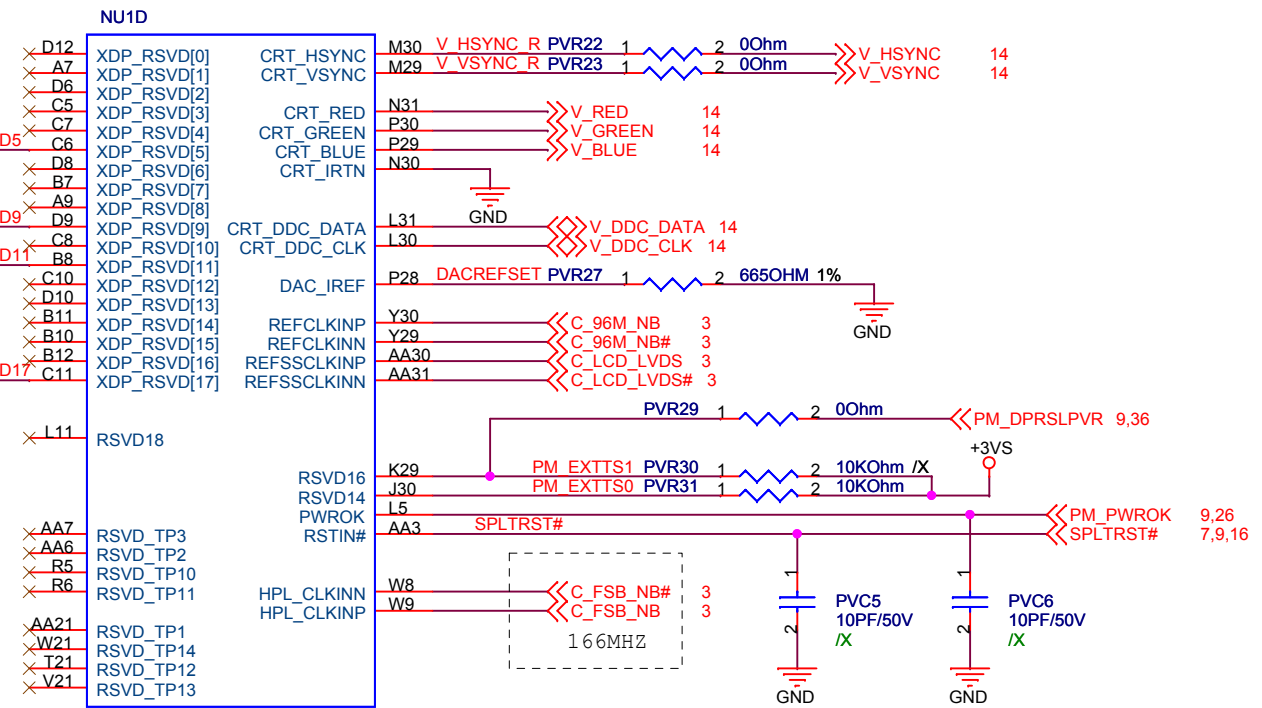
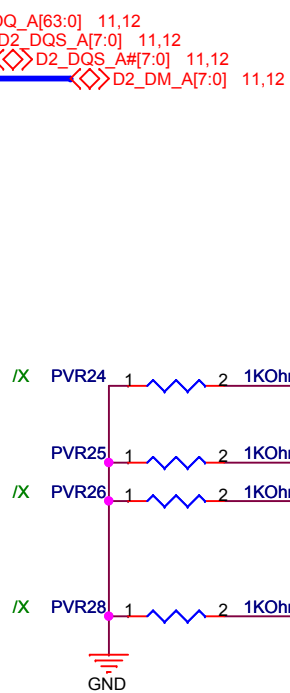
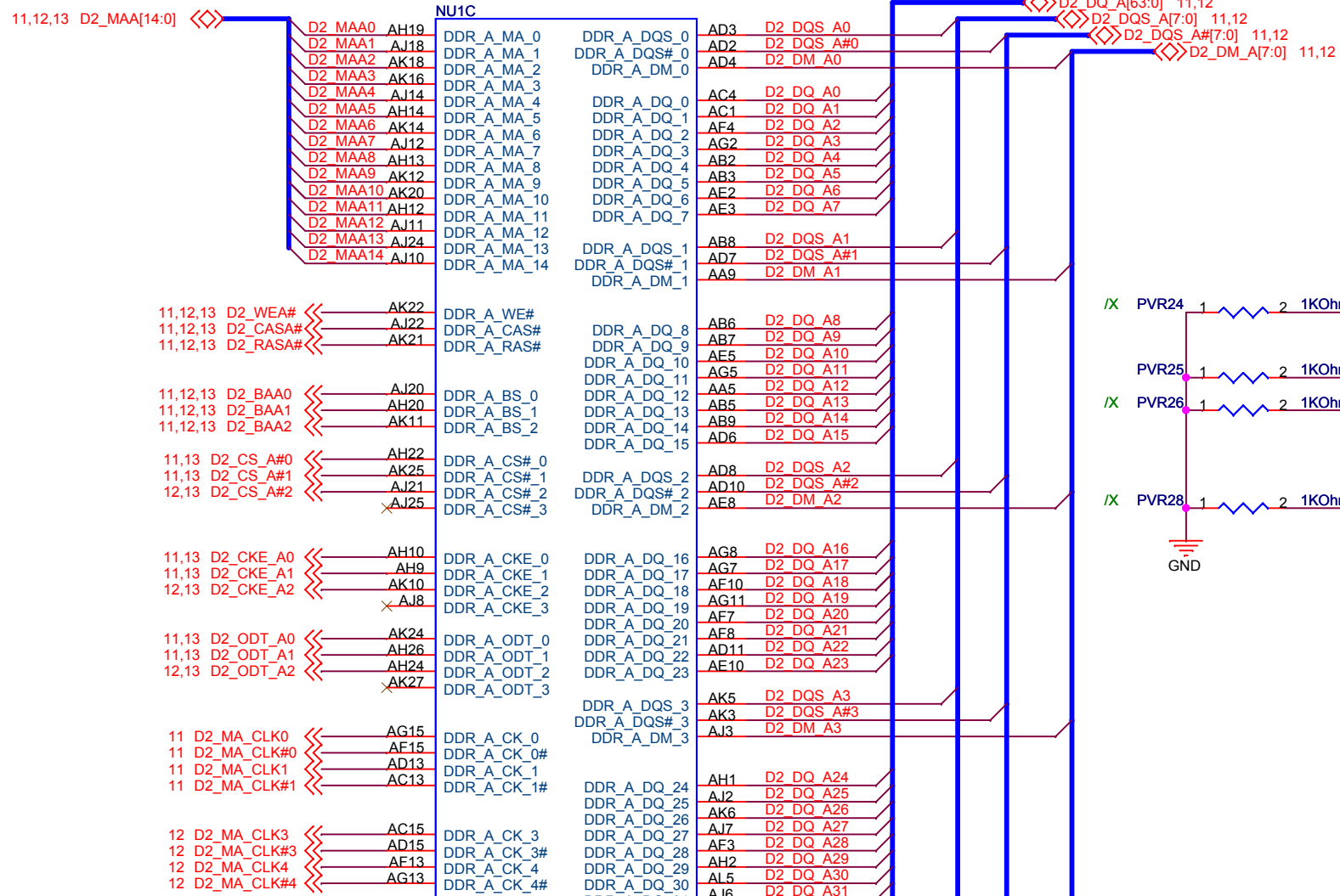
Place
Near CPU



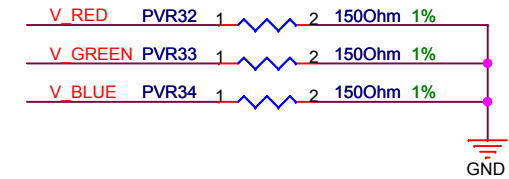
Reference voltage.Near PVN side.



<Variant Name>

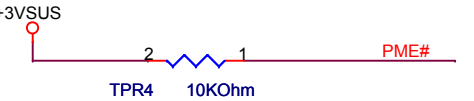
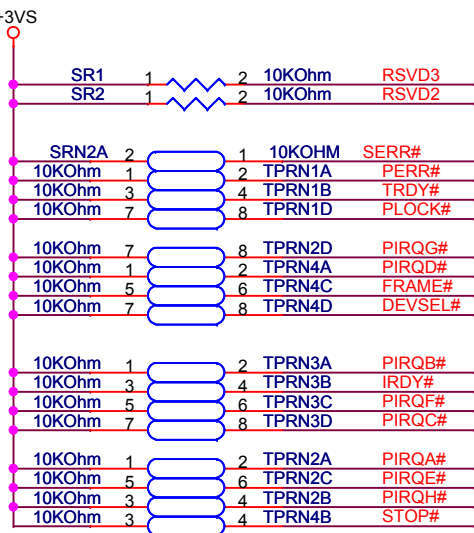


DDC CLK&DATA need 2.2K Pull up to +3VS(Or may we can use 4.7K);connector side has pull-up resistor.

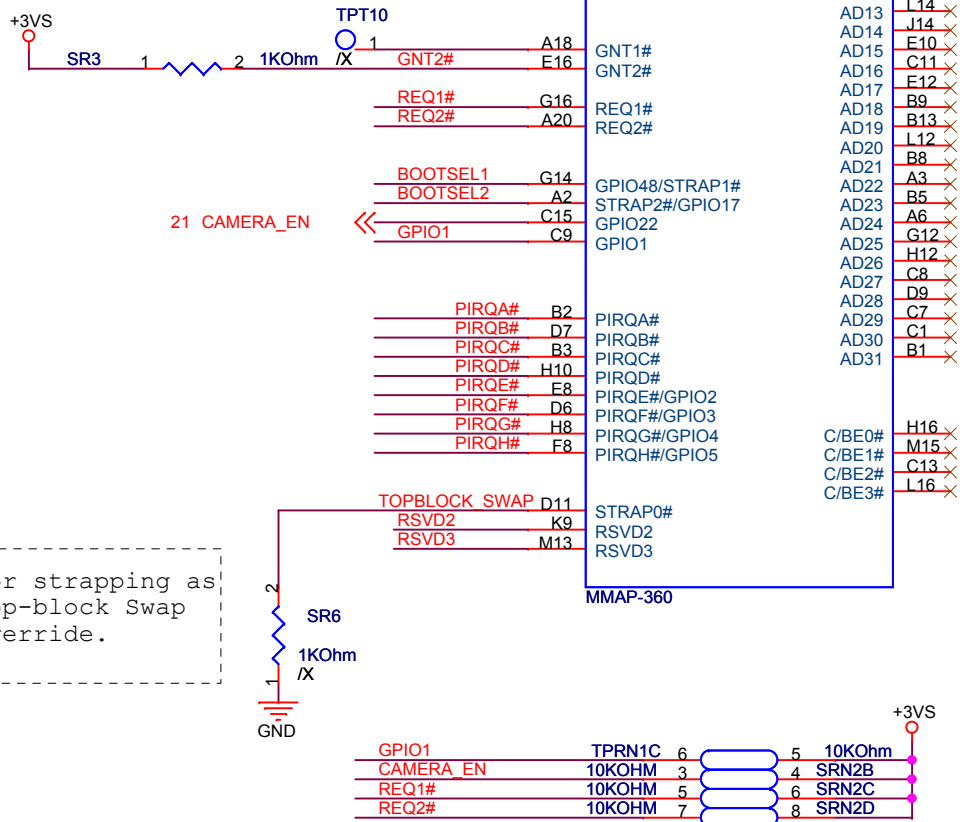


Intel confirm only RSVD9 need stuff 1K resistor.

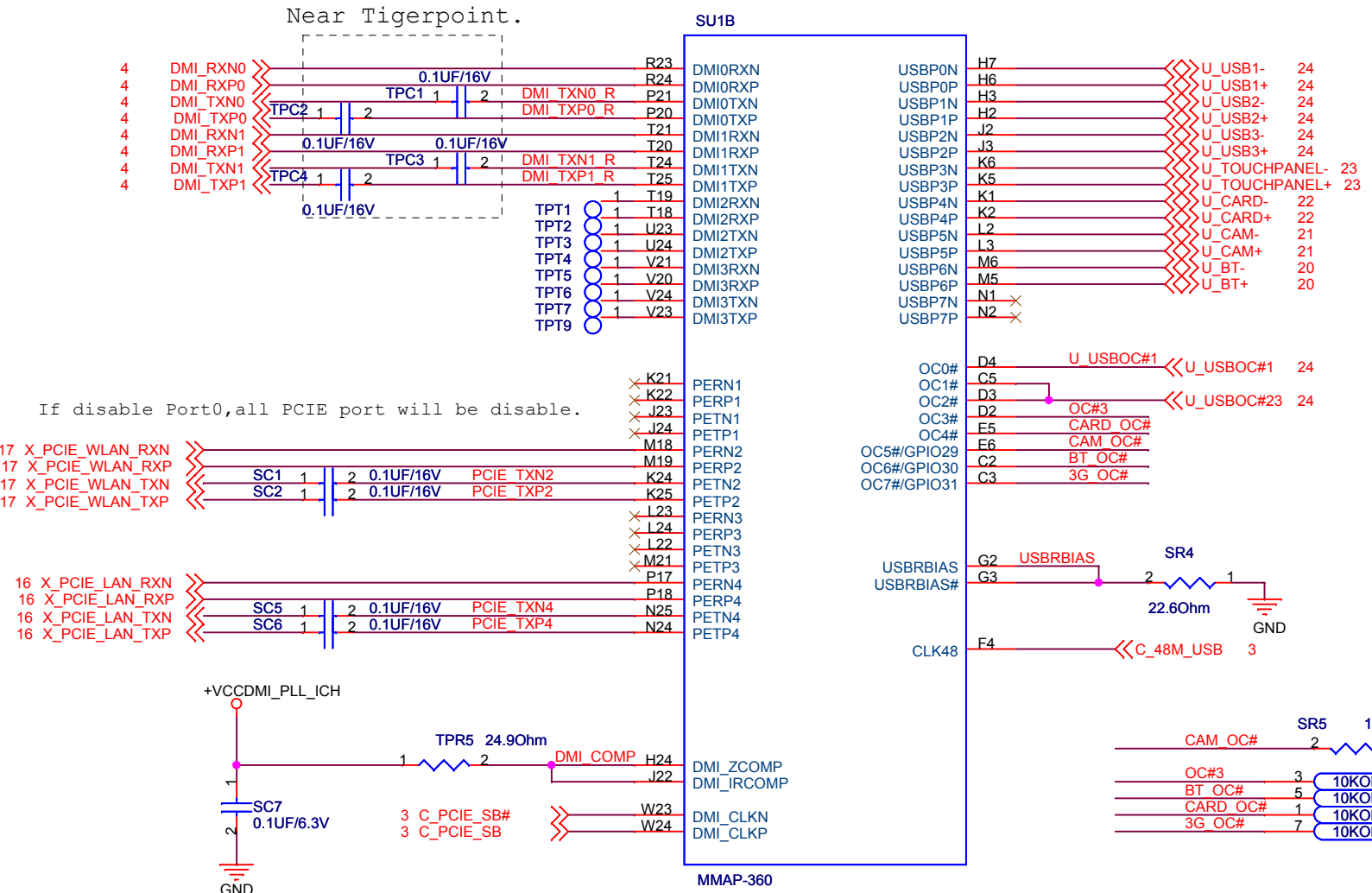
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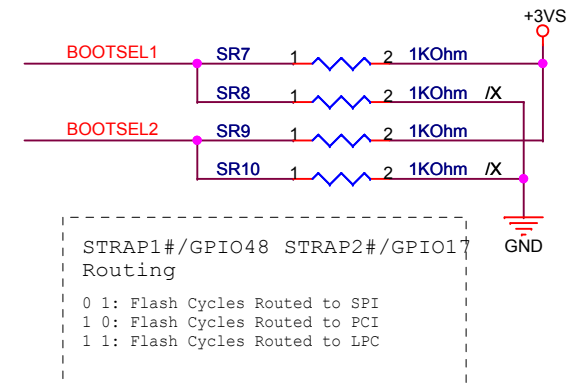
Remain
PCICLK



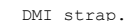
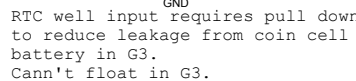
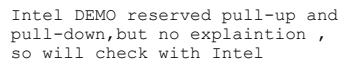
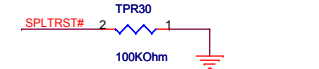
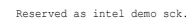
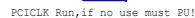
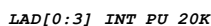
For strapping as
Top-block Swap
override.



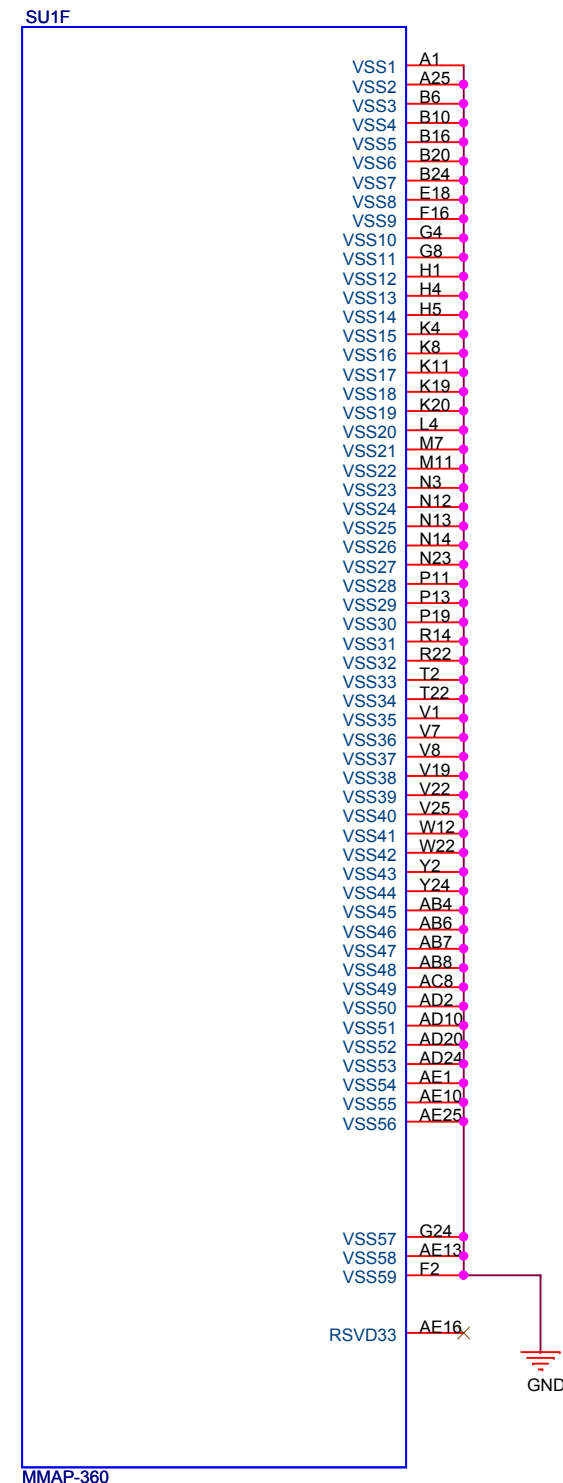
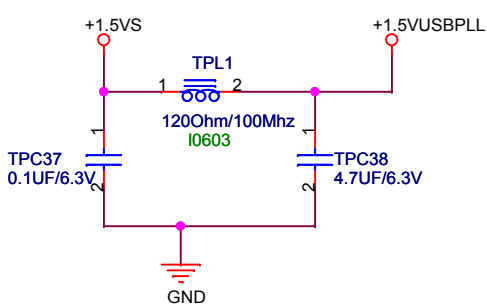
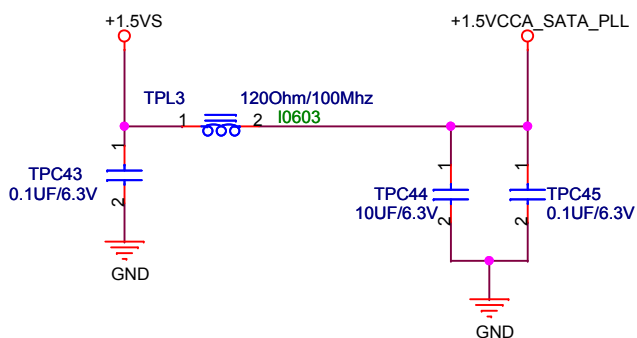
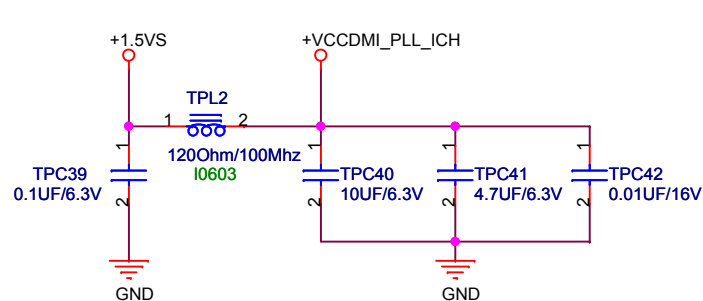
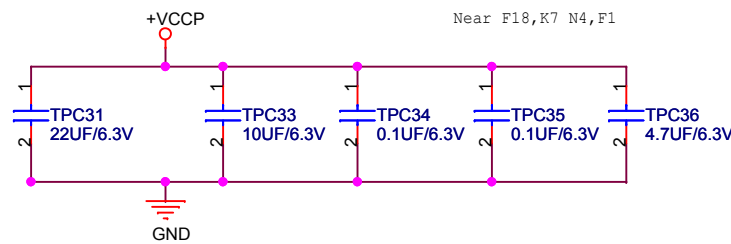
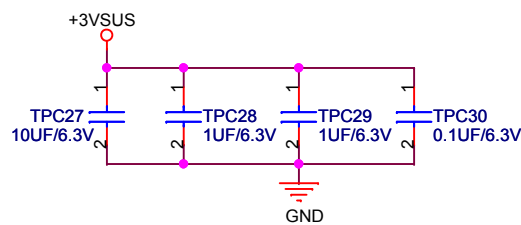
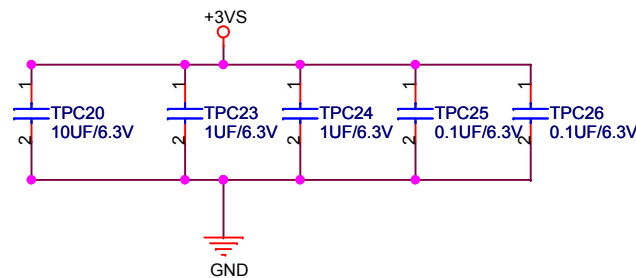
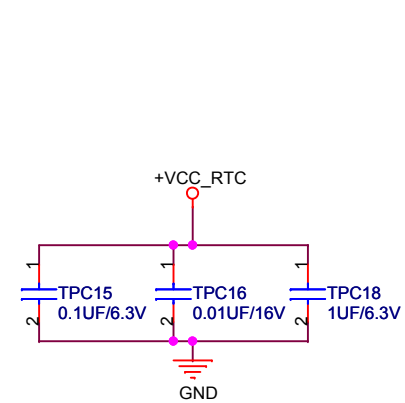
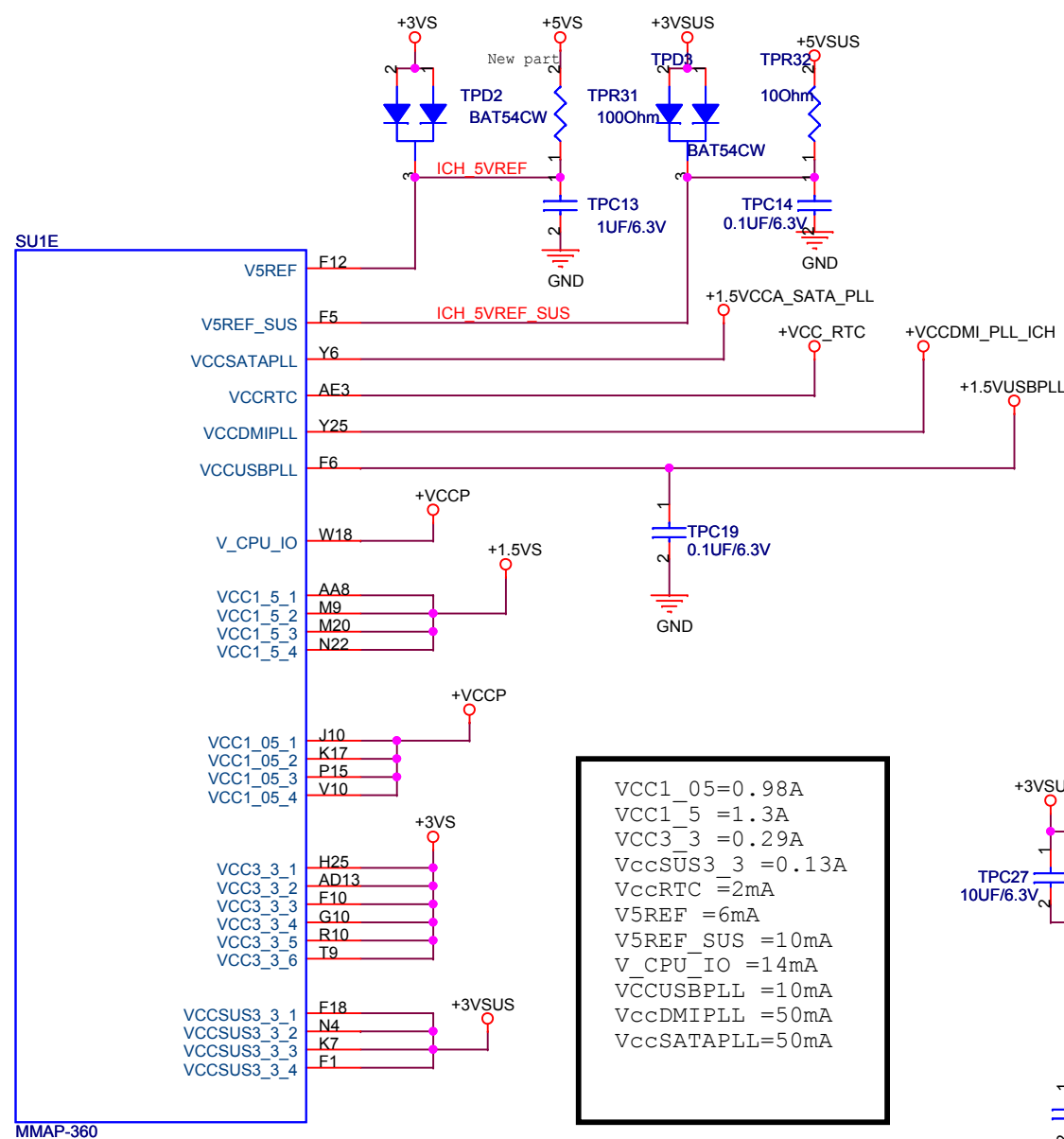
If disable Port0,all PCIE port will be disable.

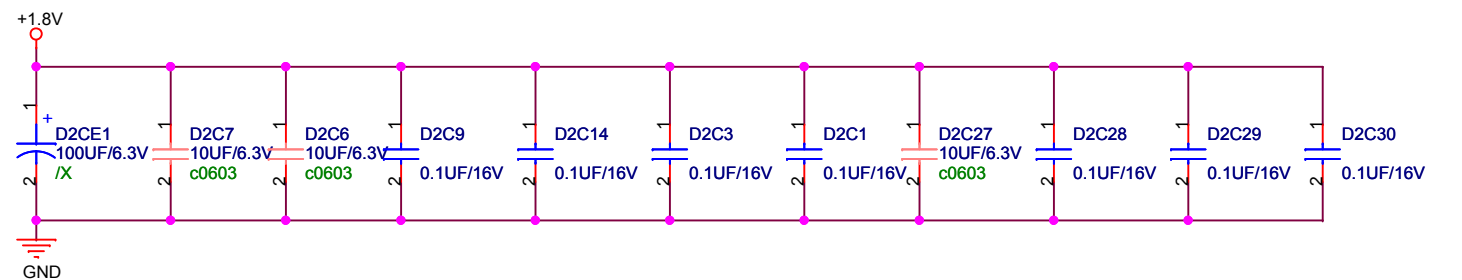
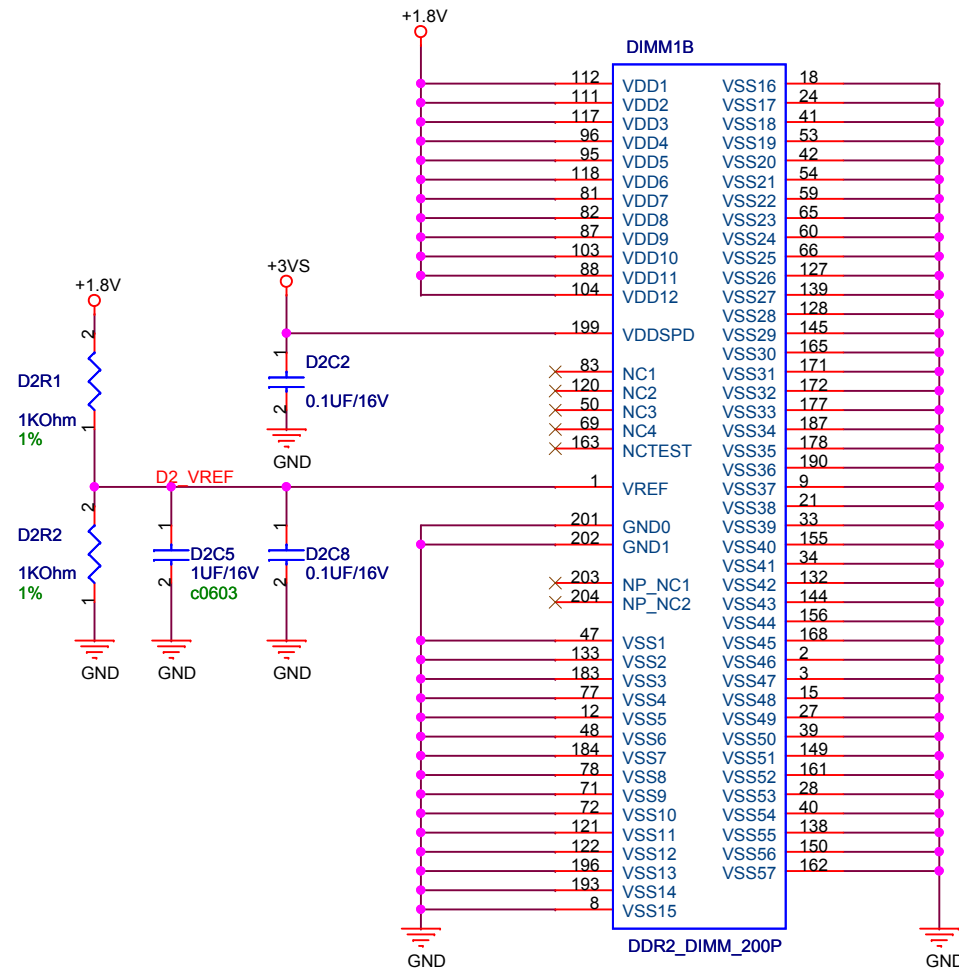
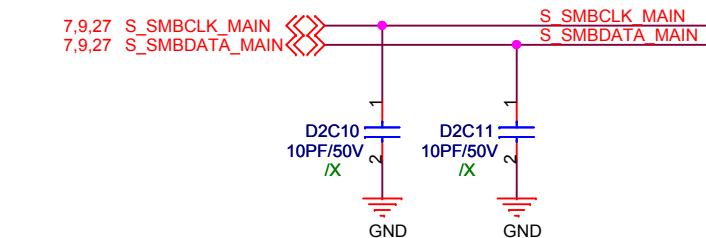
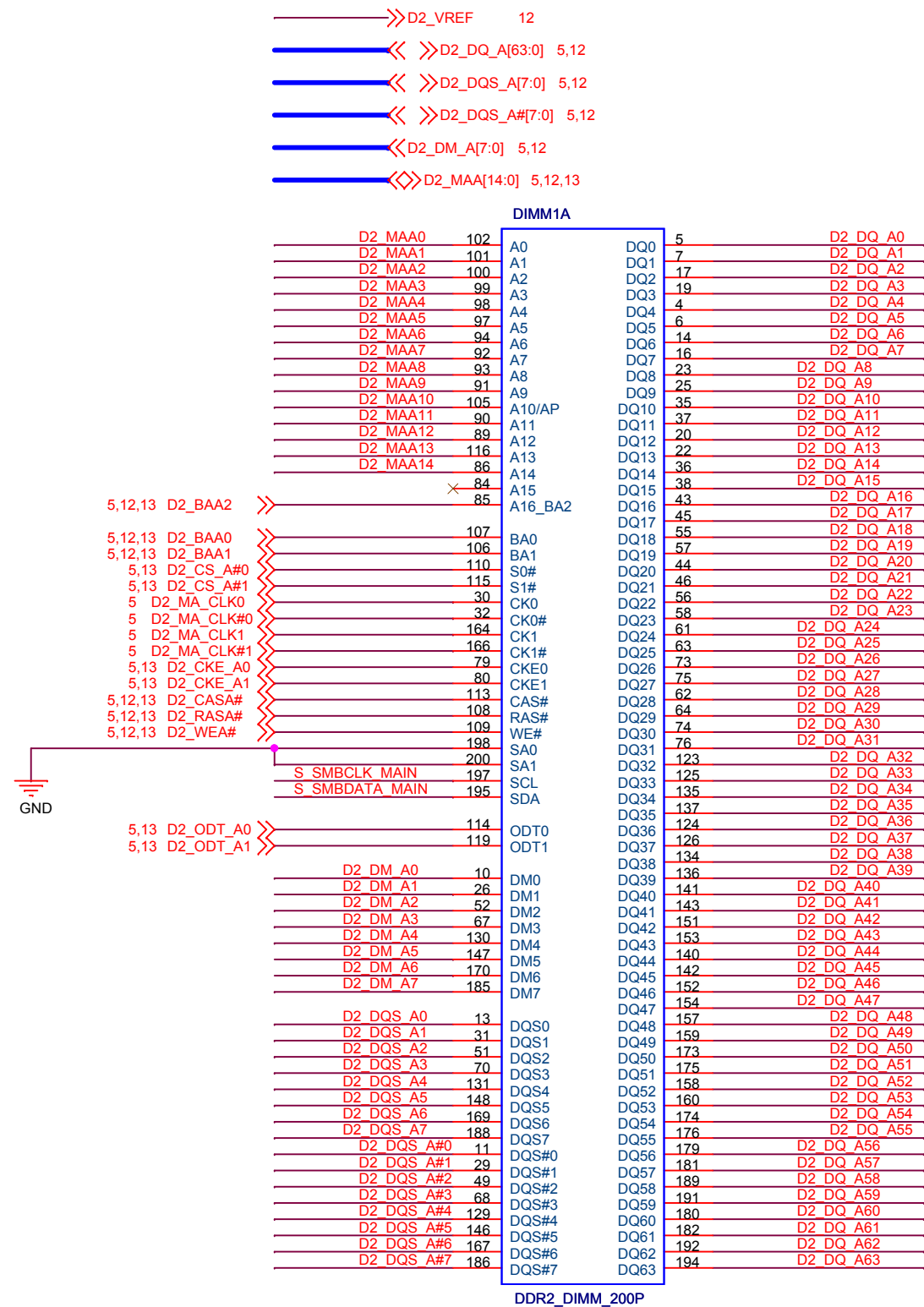


SATA RX,TX all need AC couple and place near Connector side for signal quality.And Traces to them should match length. ICH7M need pull down RX, if no use.

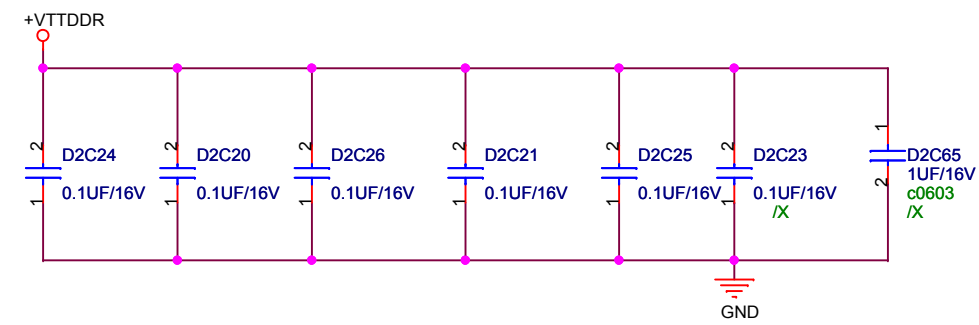
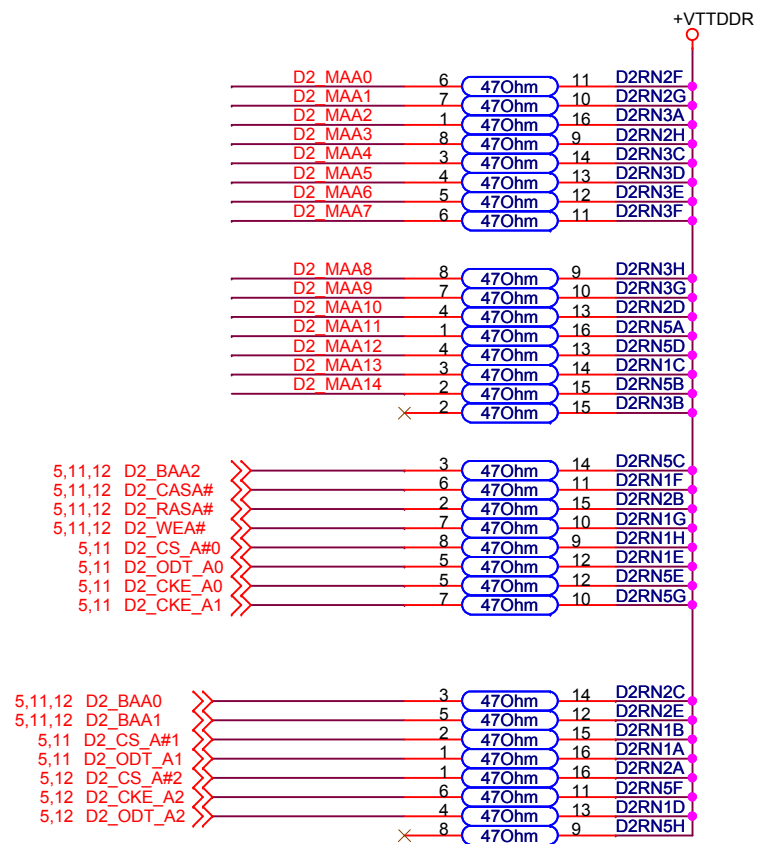


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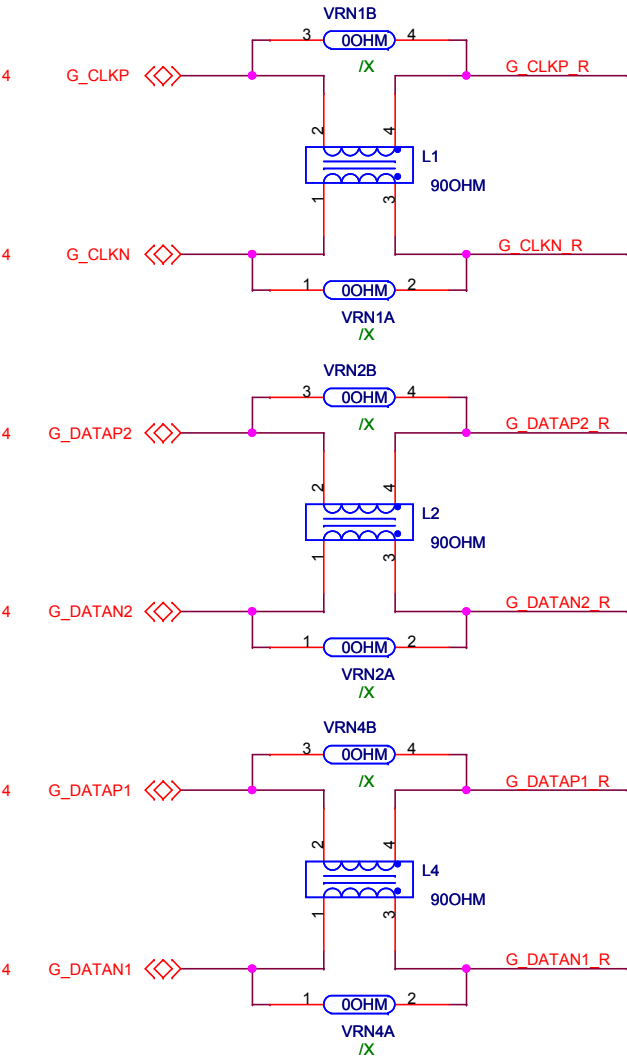
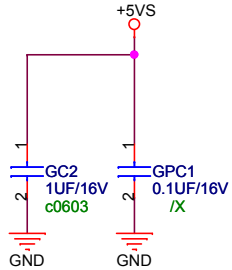
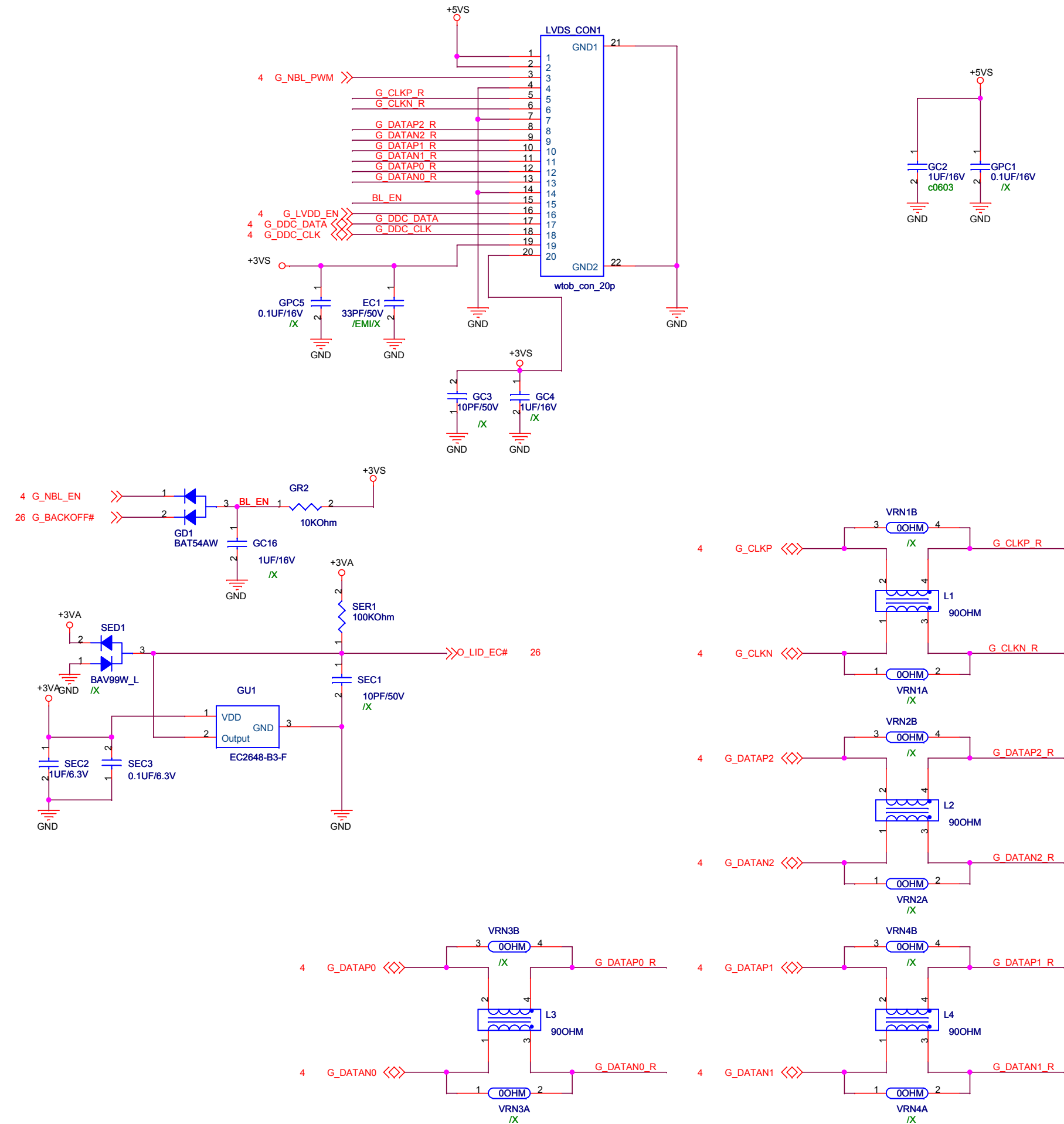




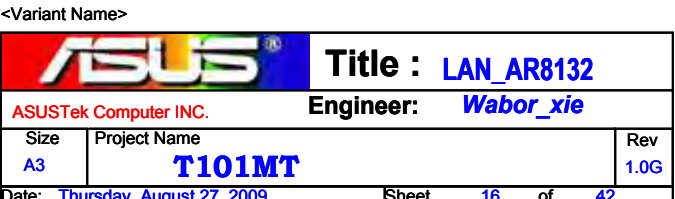




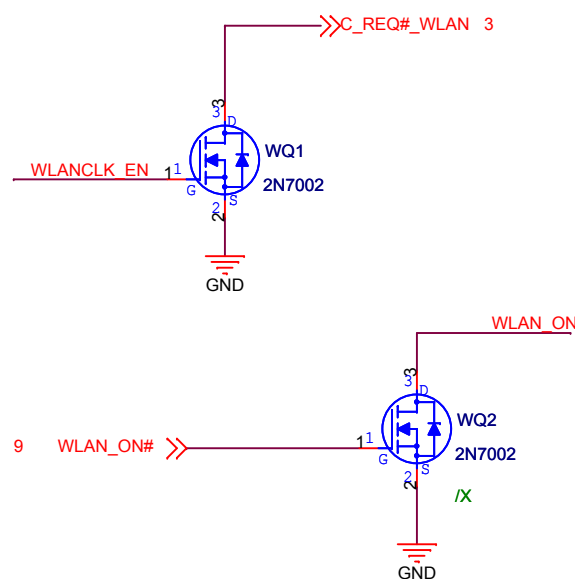
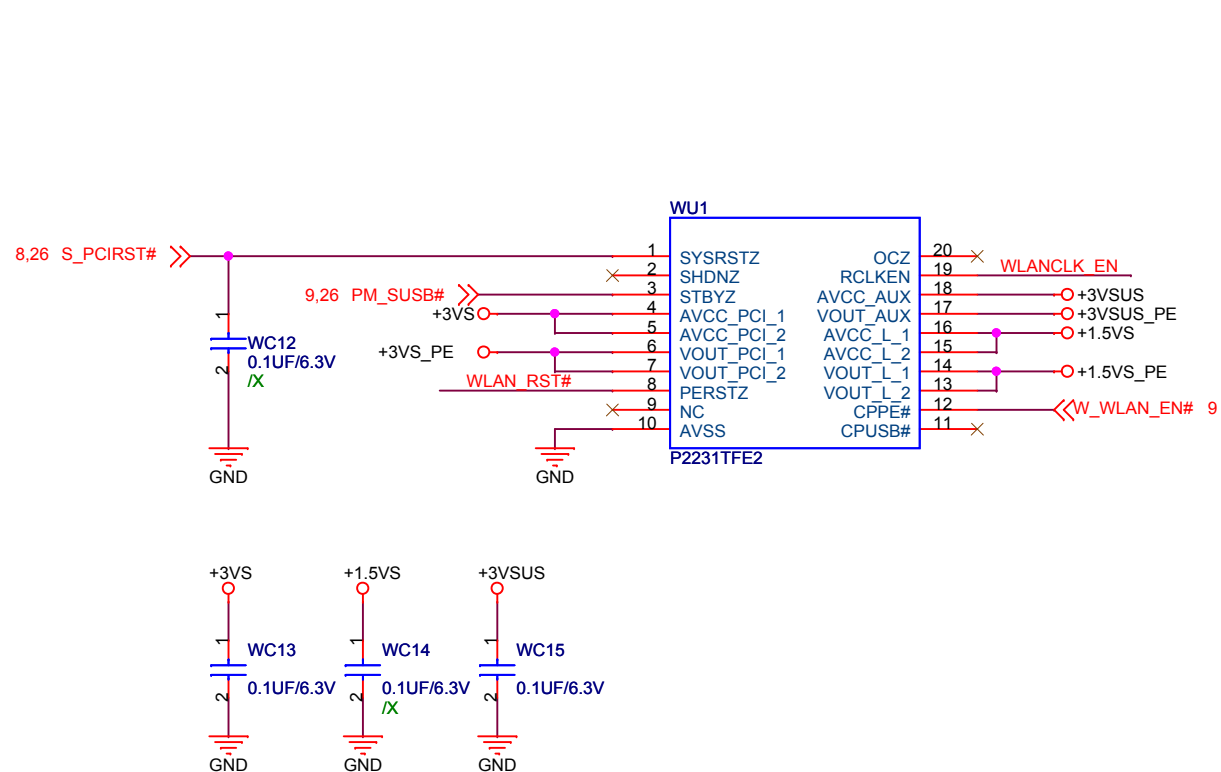
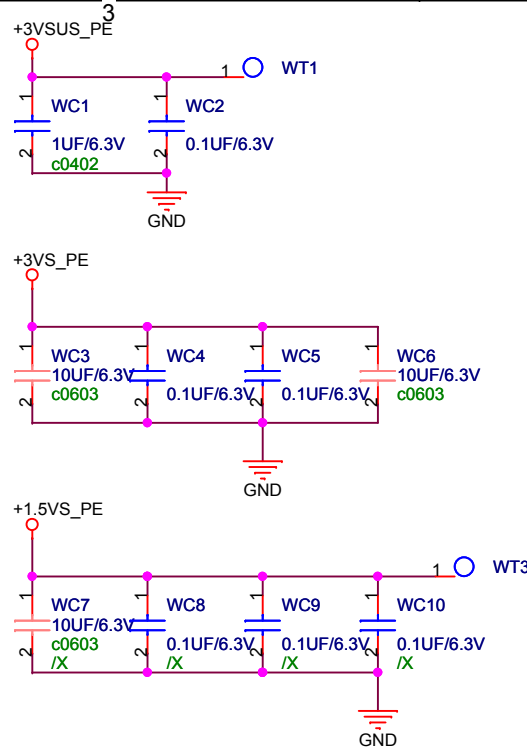
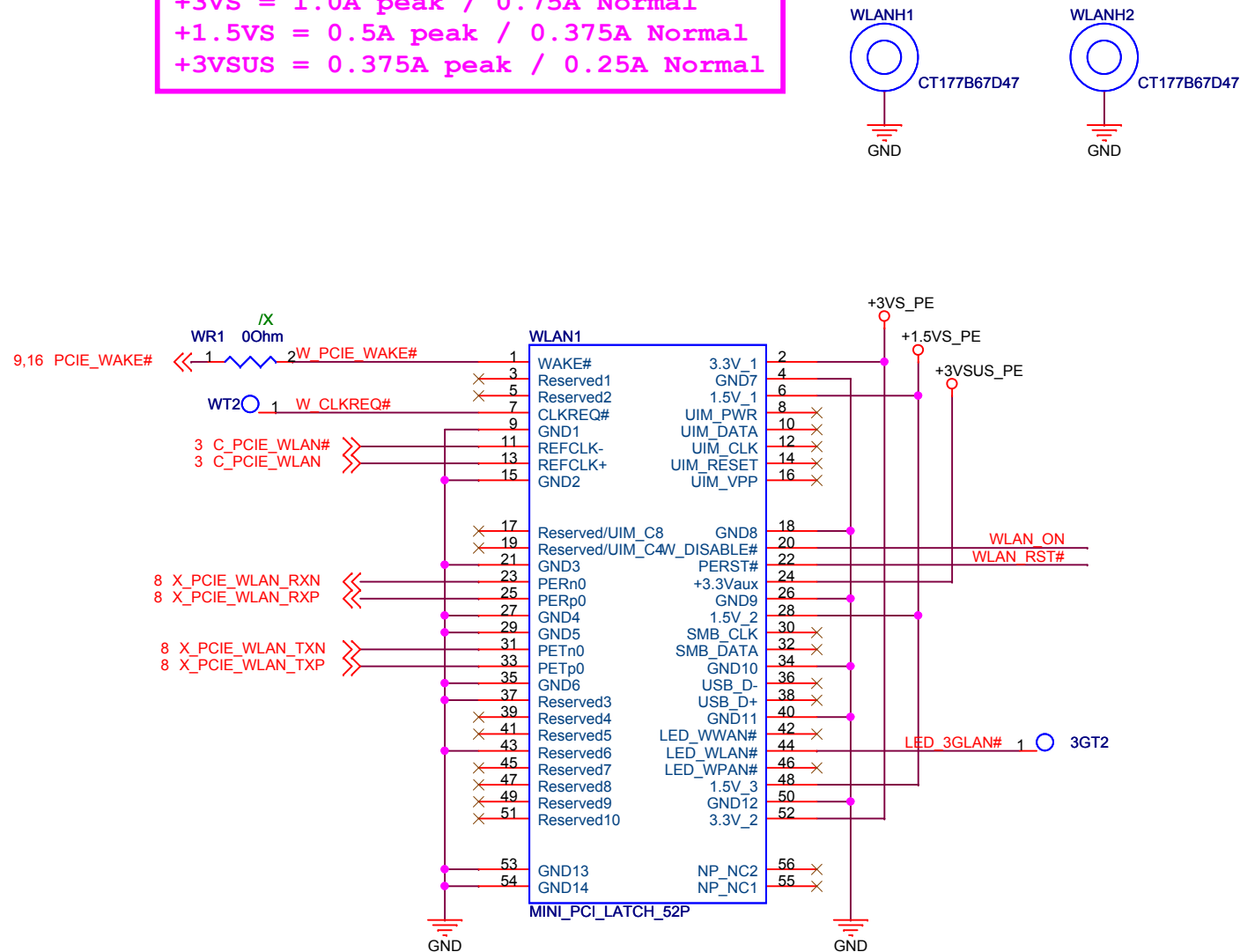
Sheet 14 of 42



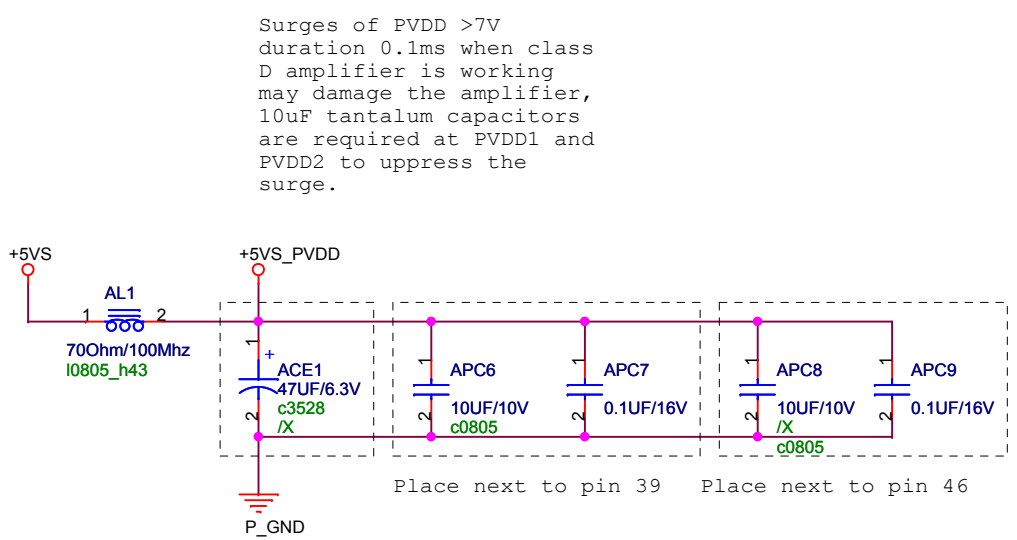
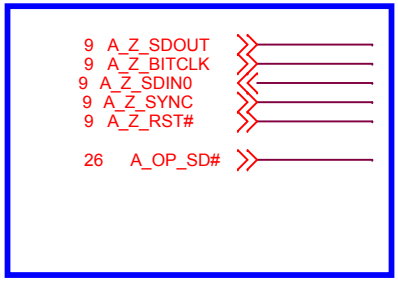
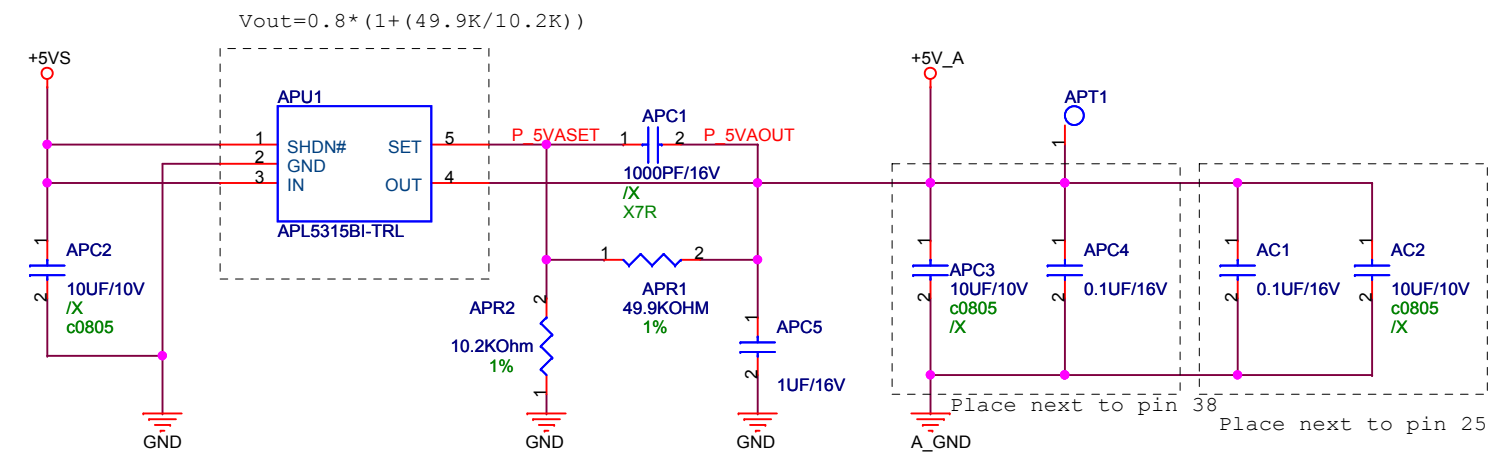
	LR2
Normal	N/A
Overclocking	/X



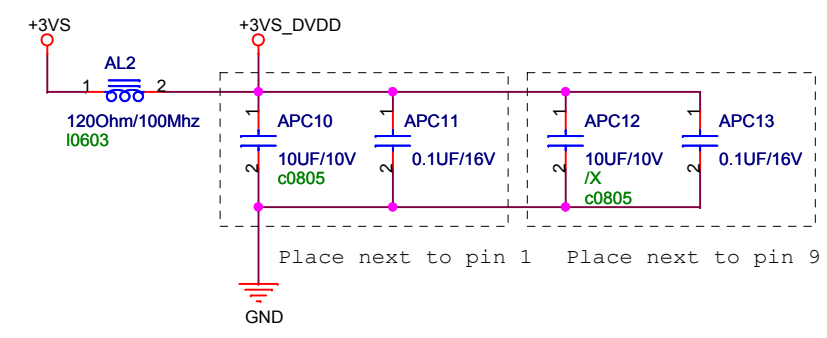
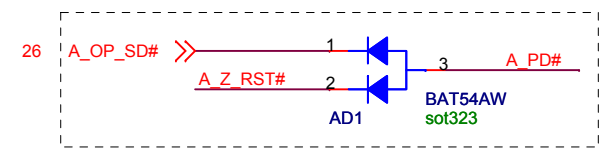
WIFI use PCIE 1.1 Spec
+3VS = 1.0A peak / 0.75A Normal
+1.5VS = 0.5A peak / 0.375A Normal
+3VSUS = 0.375A peak / 0.25A Normal



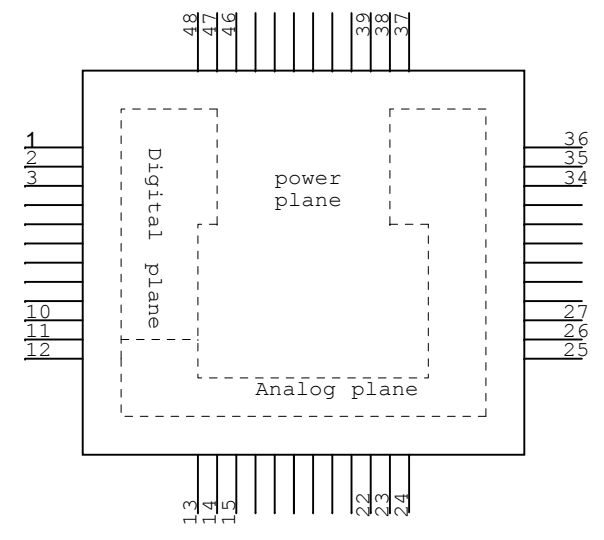
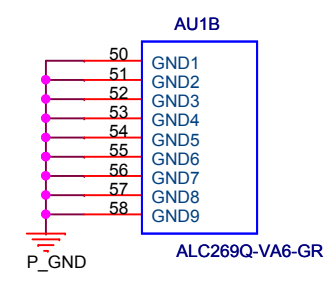
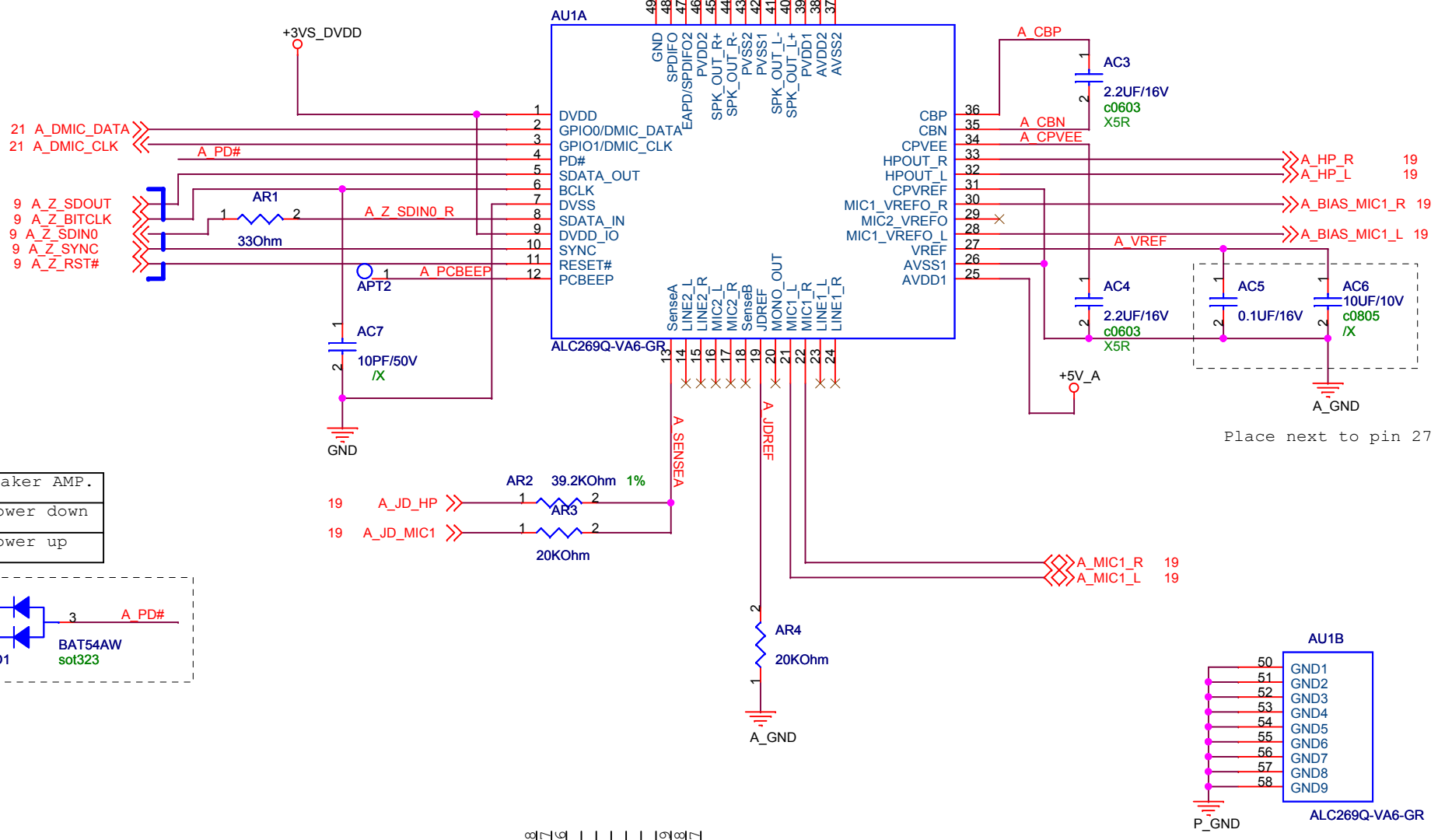
<Variant Name>



A_PD#	speaker AMP.
H	power down
L	power up



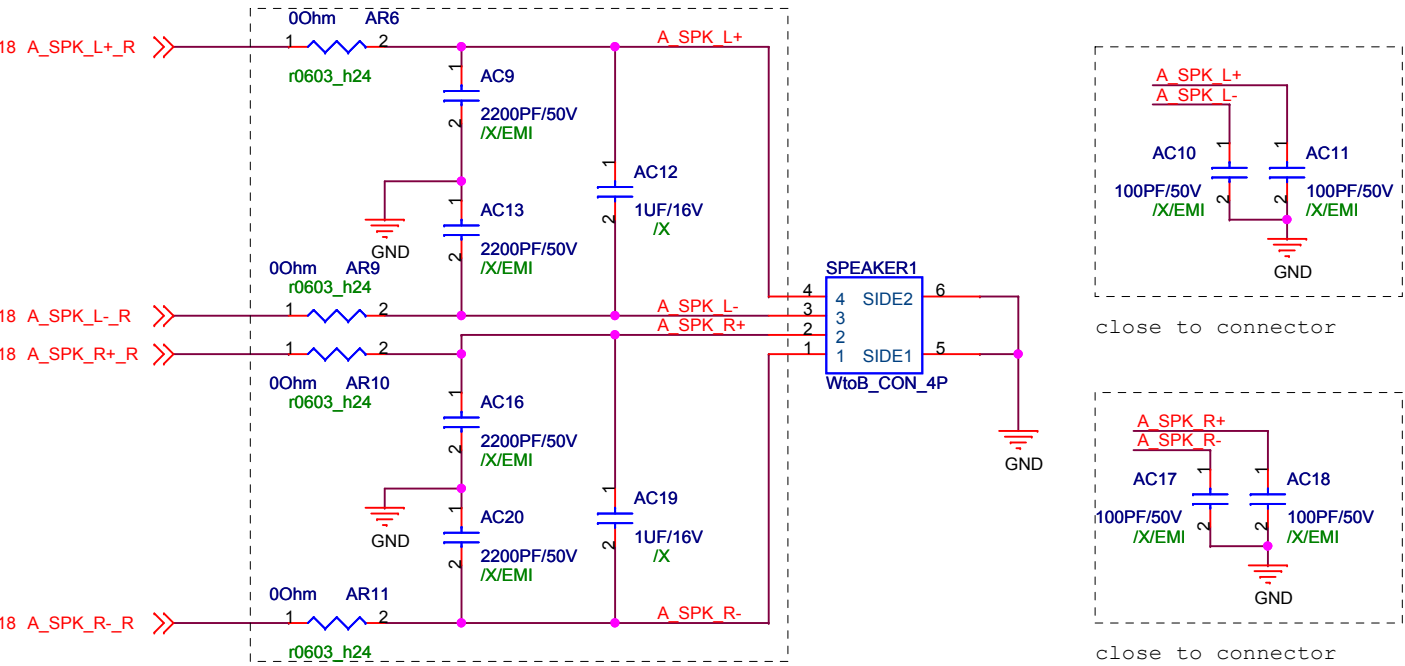
If not use pcbeep
function, please left pin
pcbeep (pin 12) NC.



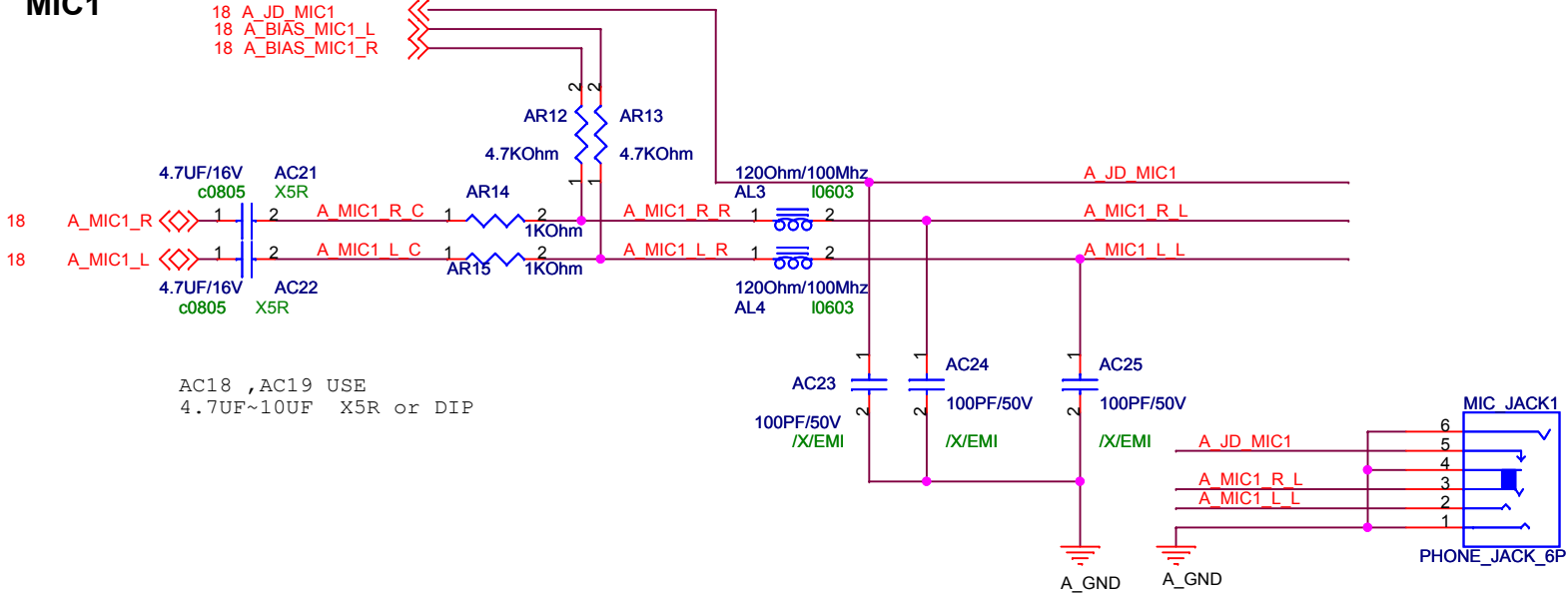
SPEAKER

<<Attention>>
you can use LC filter (AR9,AR14,AR15,AR16
mount 8.2uH L ;and mount AC10,AC13) to
eliminate the EMI (please don't use
general beads,because they may influence
the THD+N quality) , AC9/AC11/AC12/AC14
are used for EMI fine-tune ; For EMI
issue, All L and C should near to codec

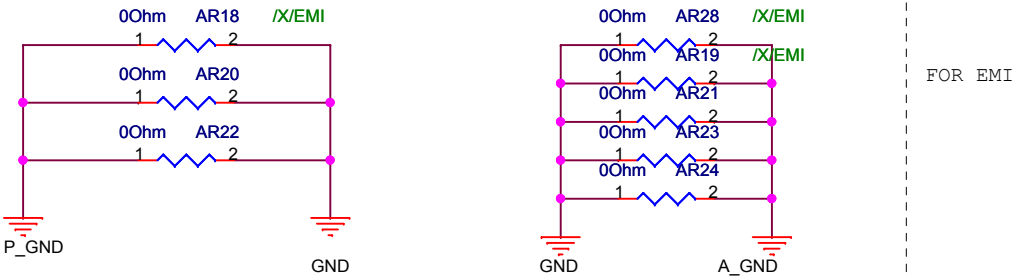
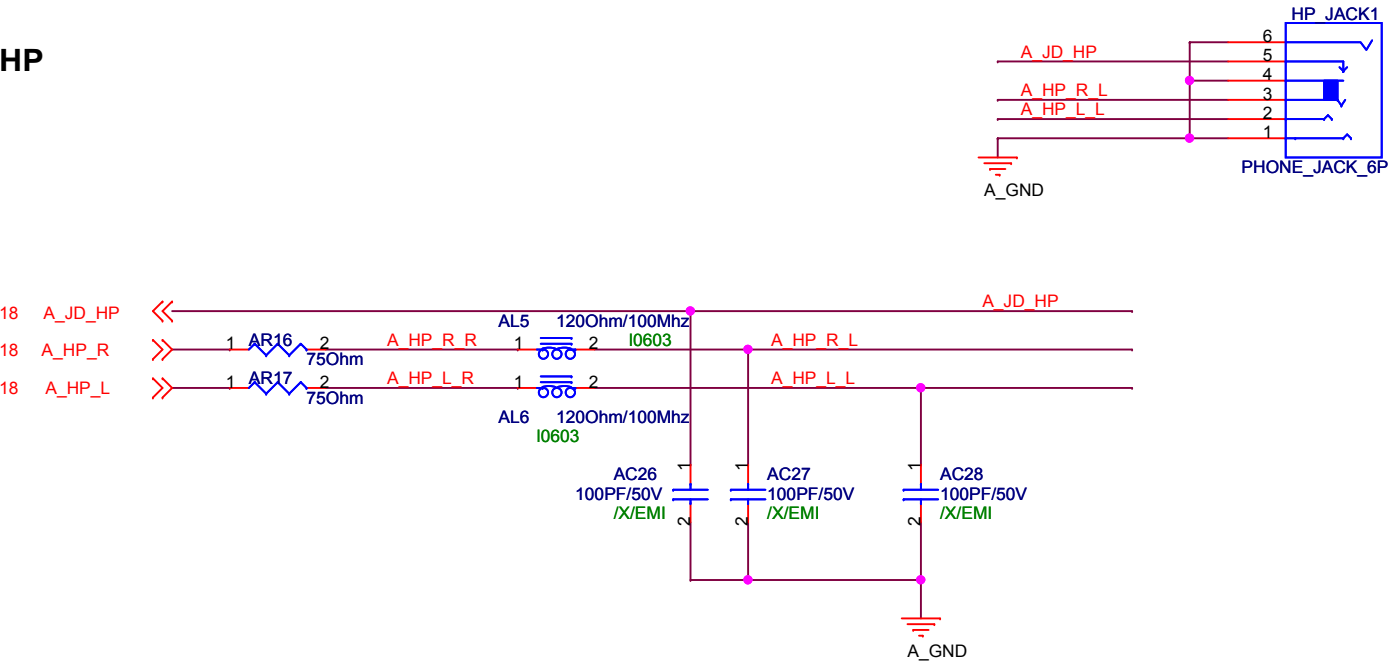
Demodulation Filter
Placement near
Audio Codec

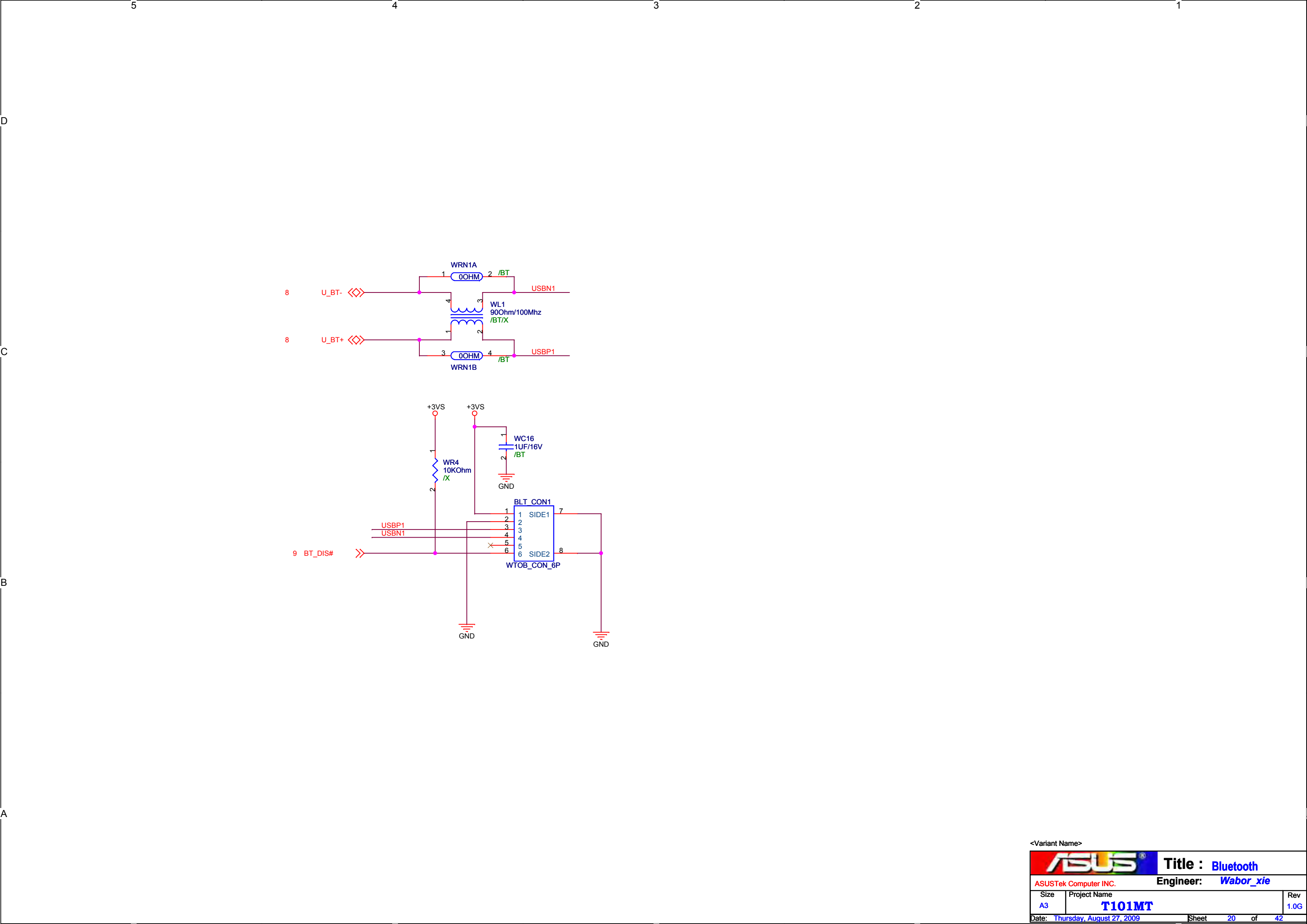


MIC1

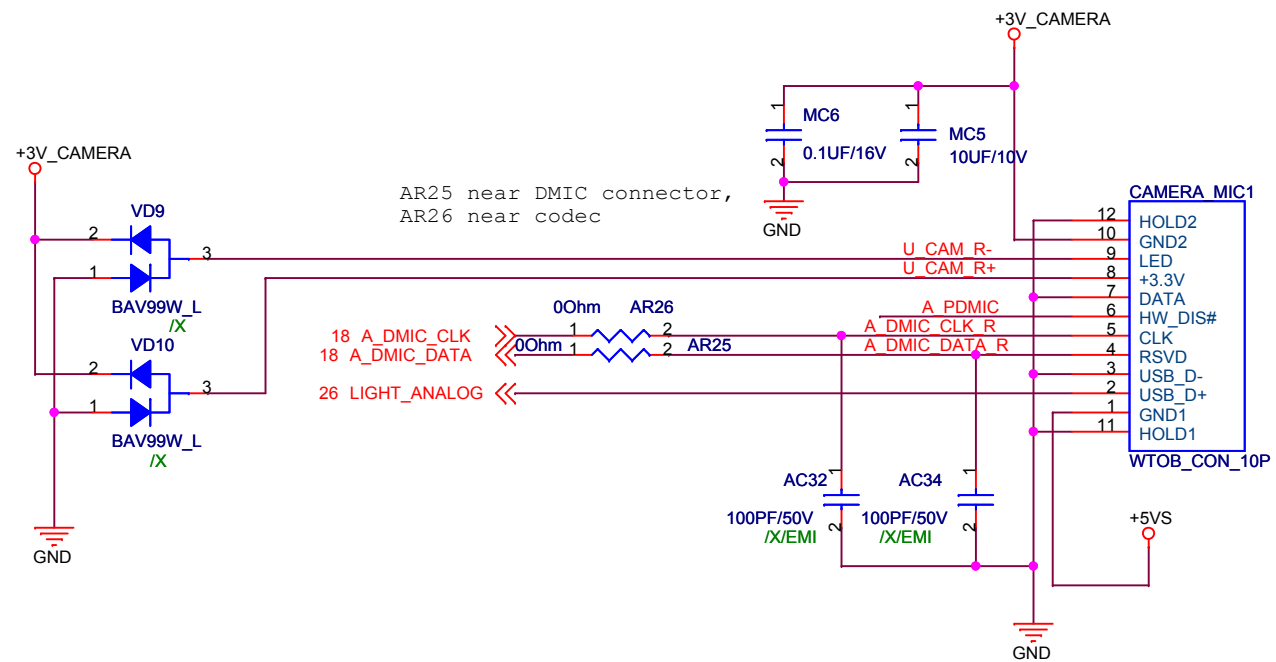
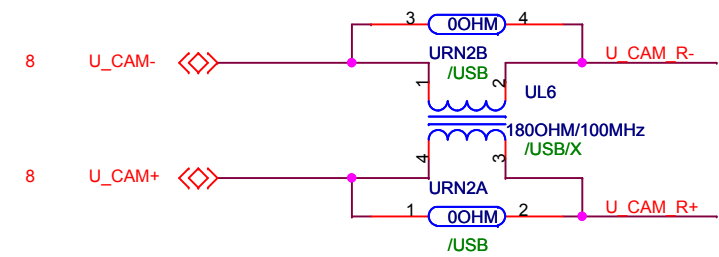
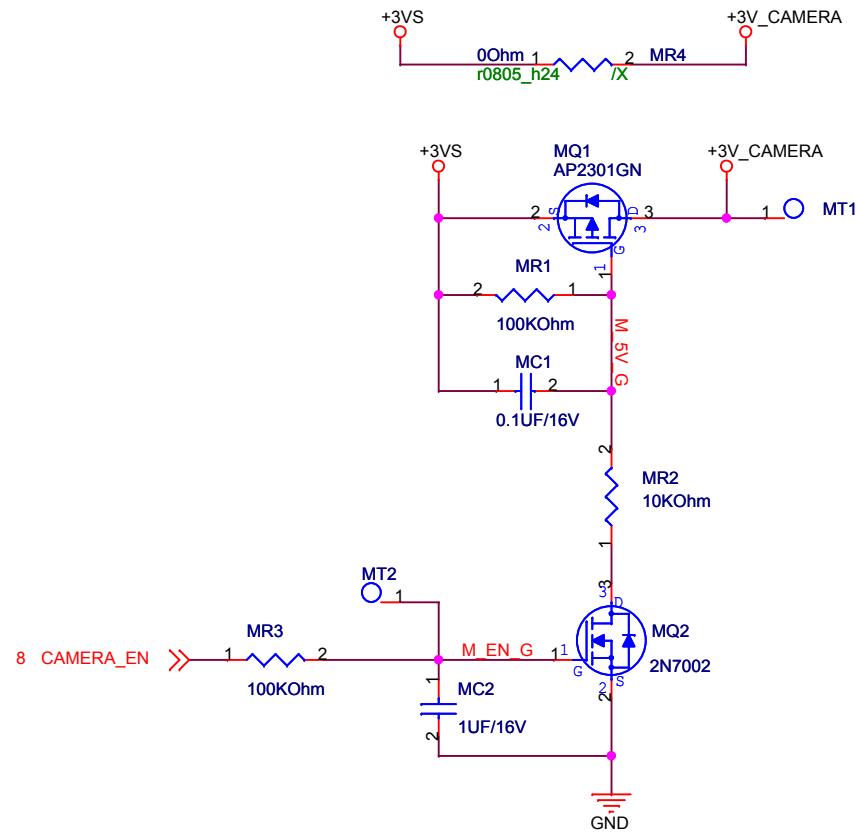
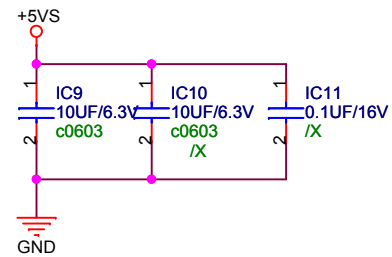


HP

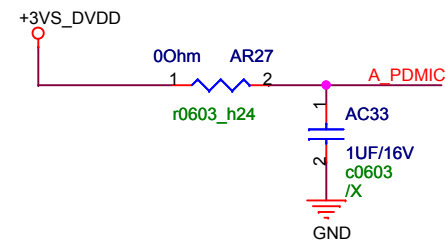




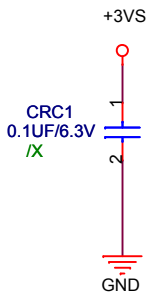
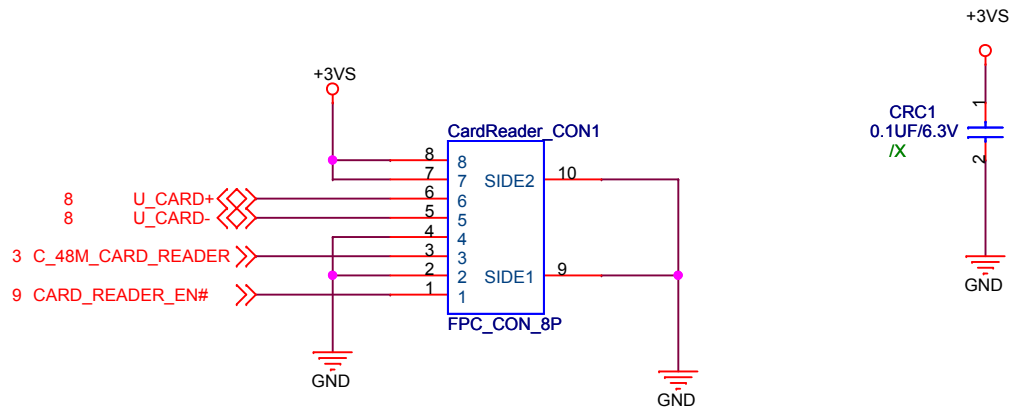
D
C
B
A



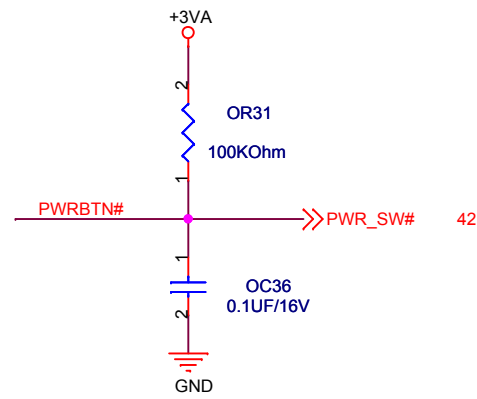
Digital Mic Interface



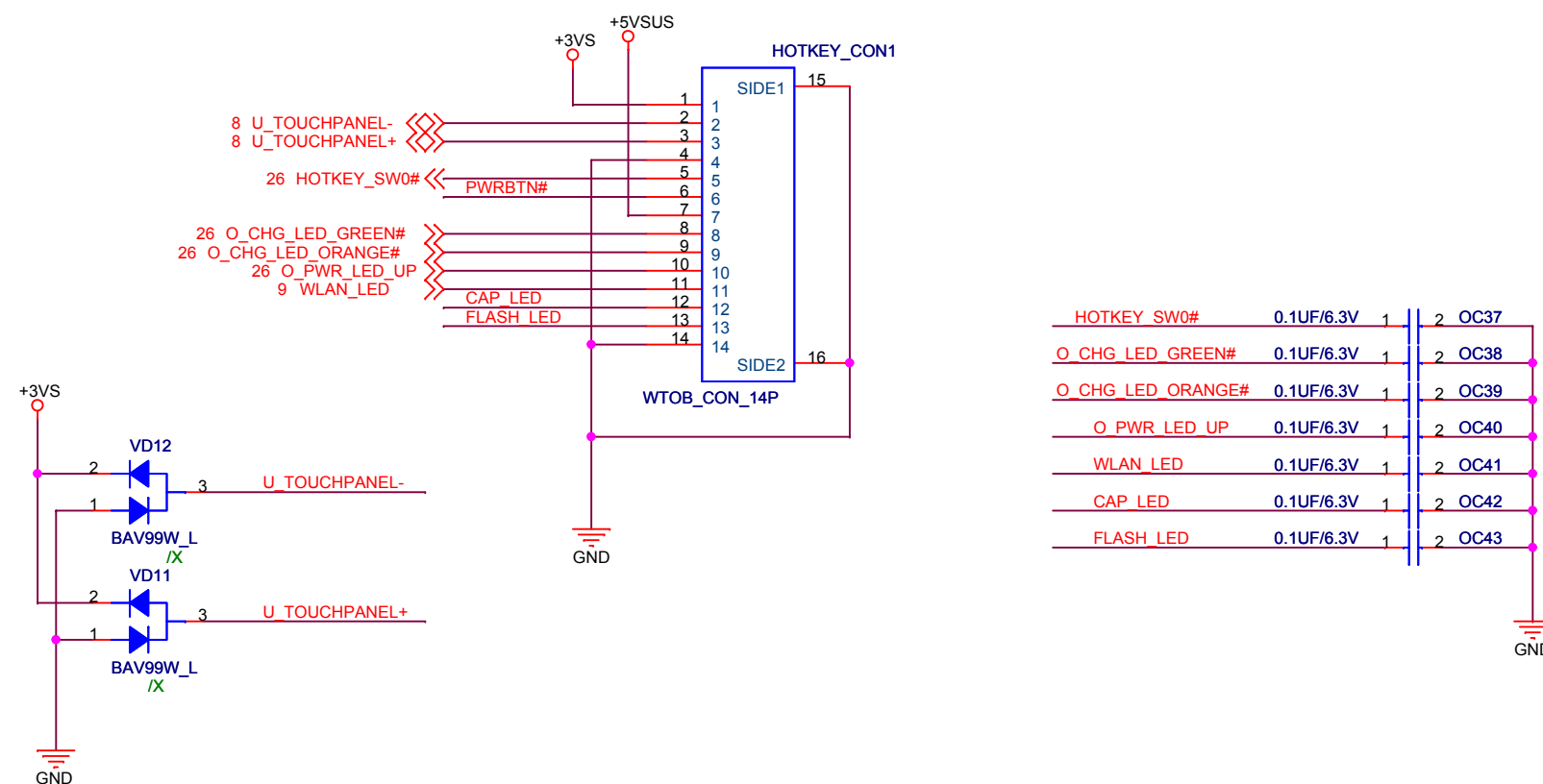
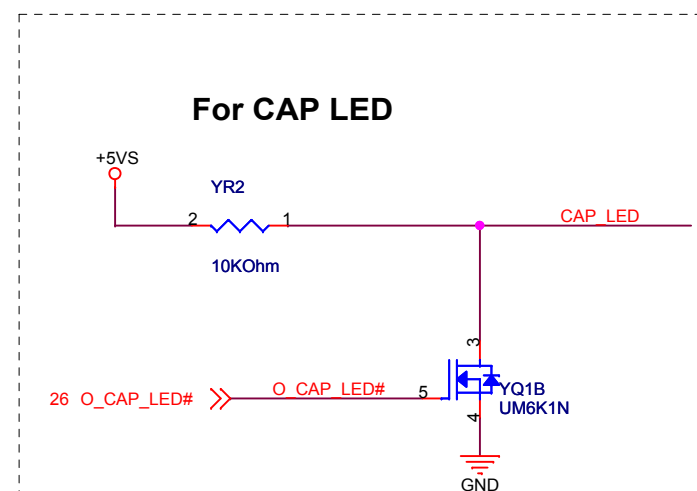
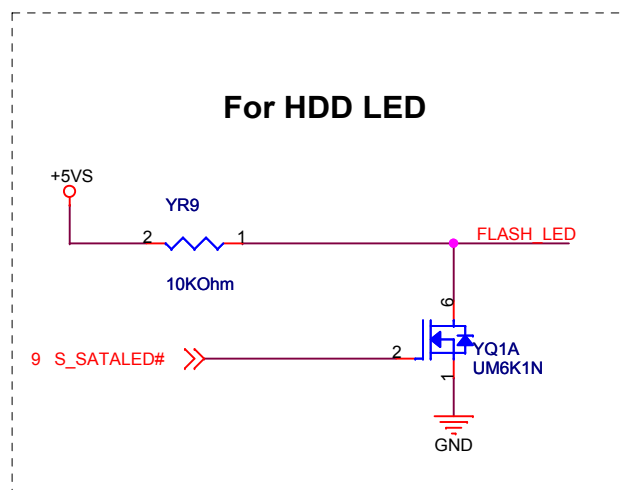
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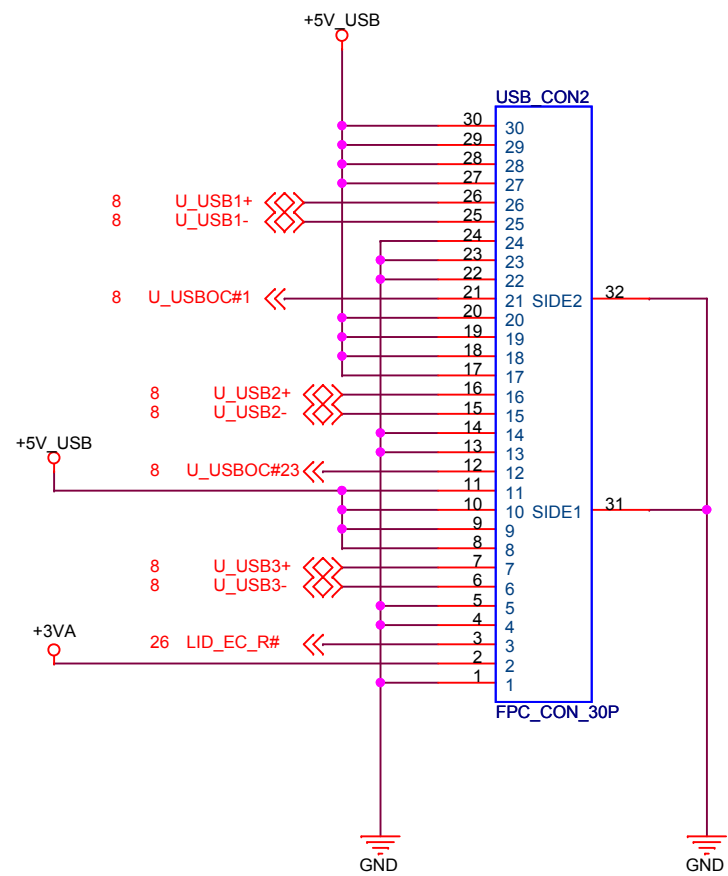


<Variant Name>



Mode Scenario	Adapater Mode	Battery Mode
Battery power is between 100%~40%	Orange ON	Green ON
Battery power is between 40%~10%	Orange Blinking Slowly	Green Blinking Slowly
Battery power is less than 10%	Orange Blinking Quickly	OFF
S3/S5 Mode	Scenario the same as above	

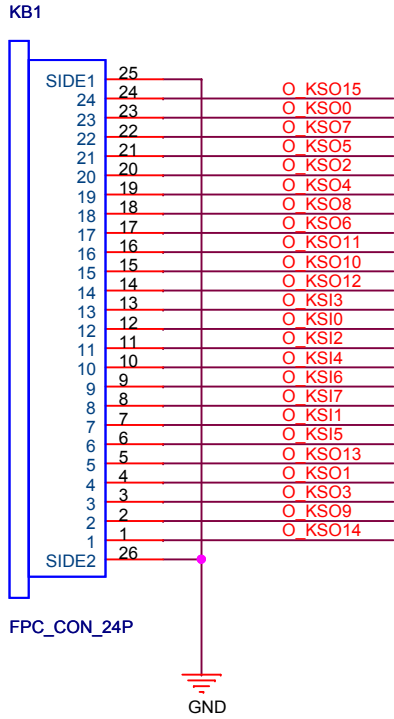




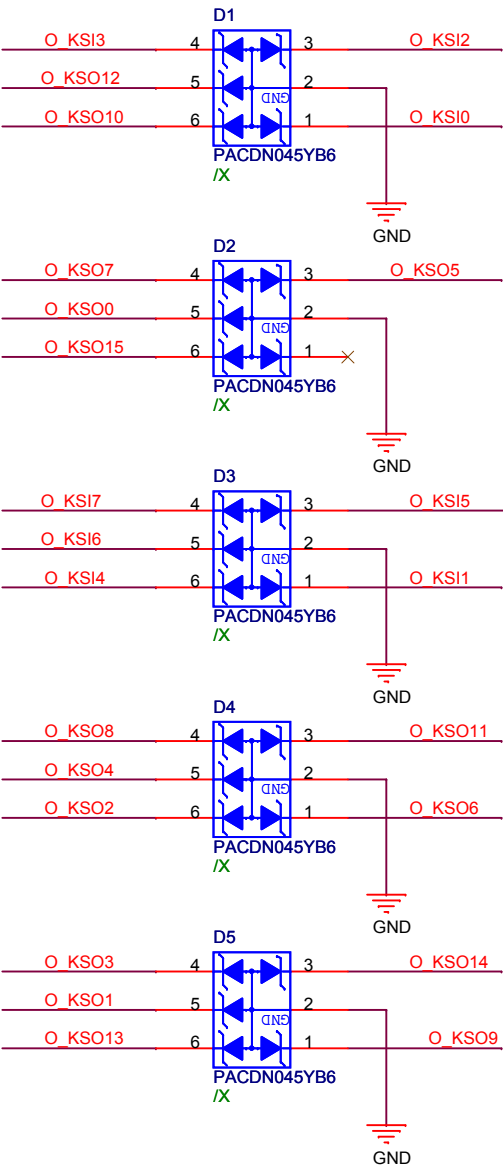
<Variant Name>

		Title : USB CON	
ASUSTek Computer INC.		Engineer: Wabor_Xie	
Size	Project Name		Rev
A3	T101MT		1.0G
Date: Thursday, August 27, 2009		Sheet	24 of 42

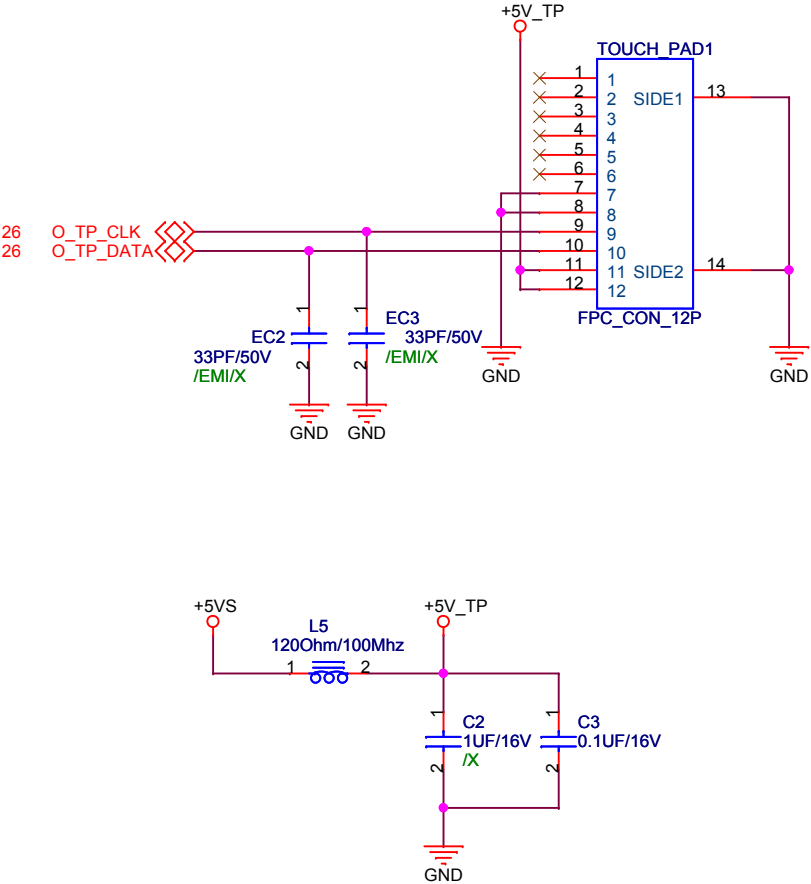
For Keyboard Connector

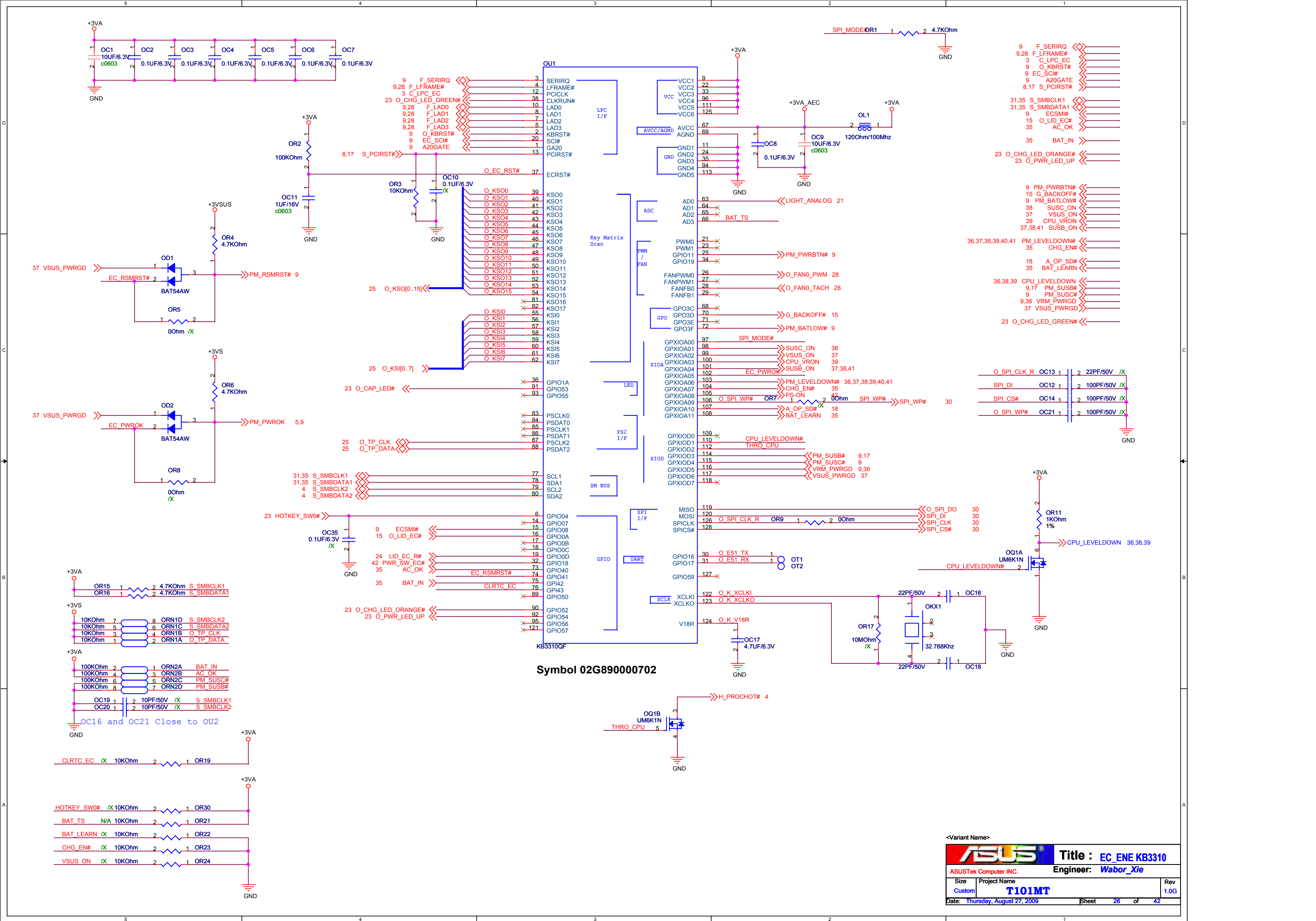


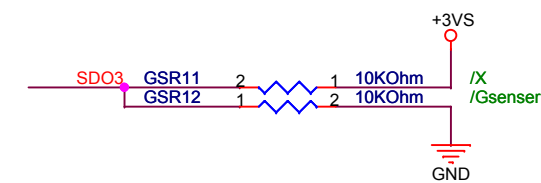
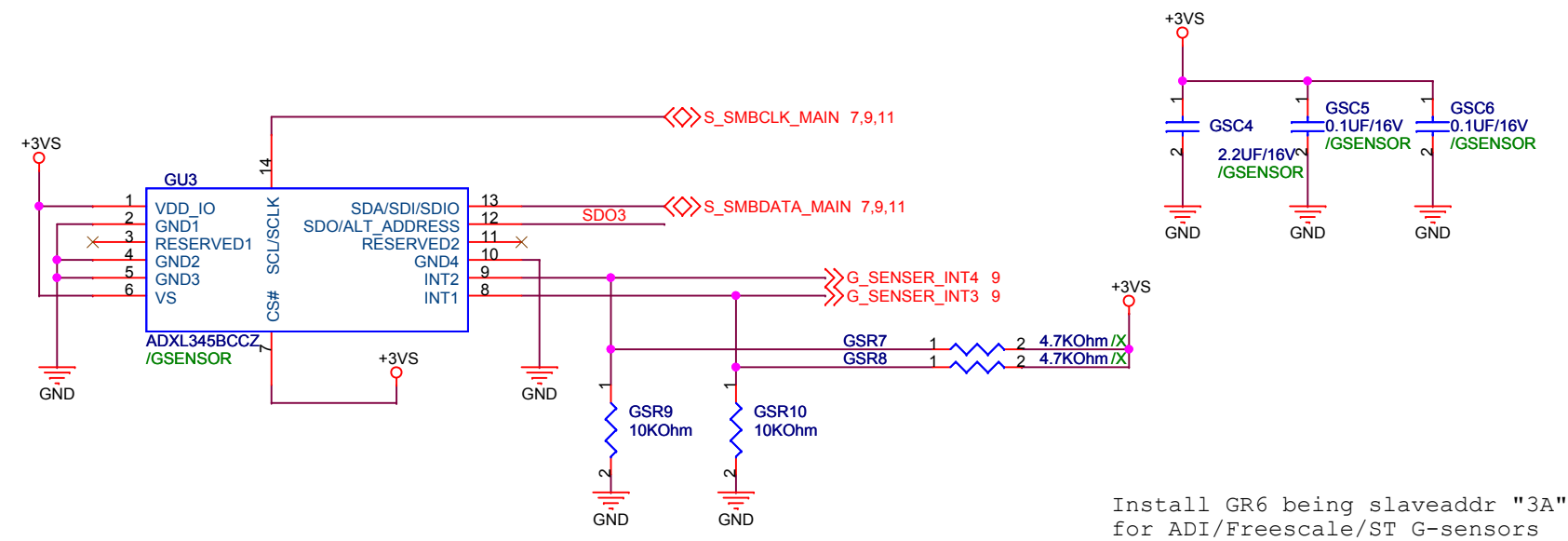
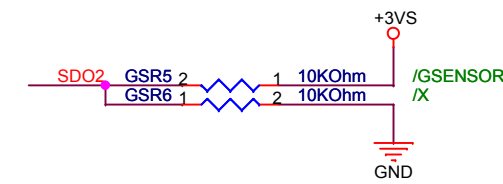
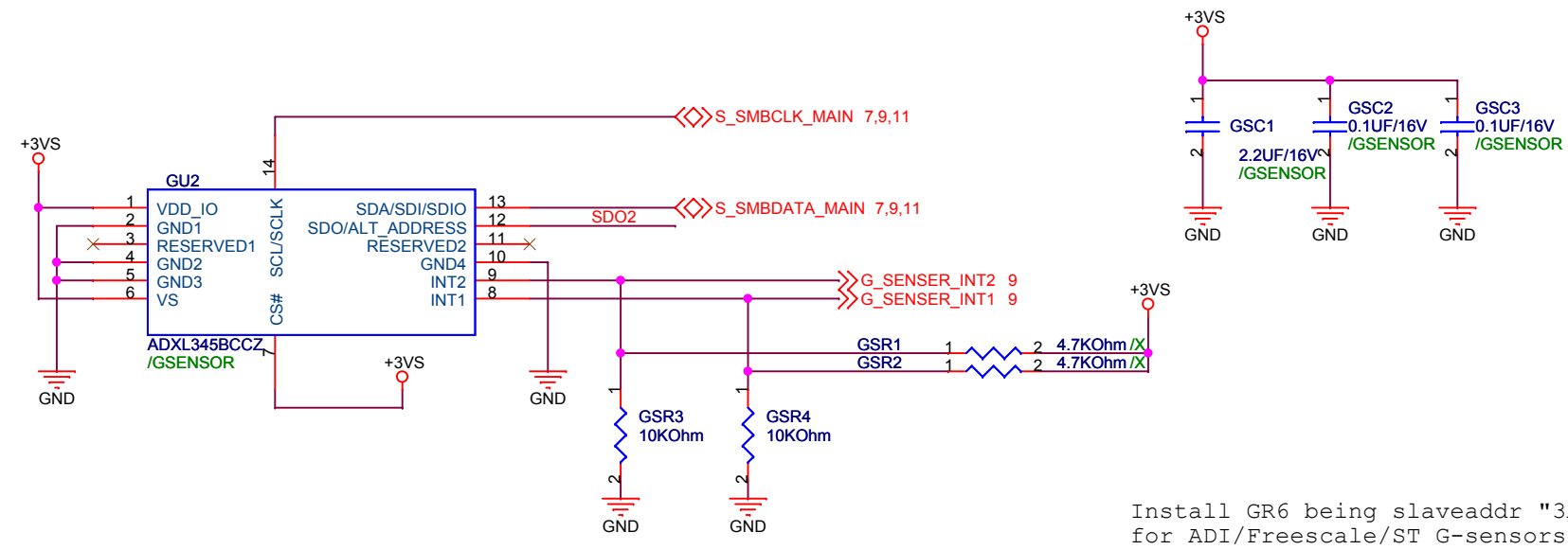
26 O_KSO[0..15] <<<
26 O_KSI[0..7] >>>

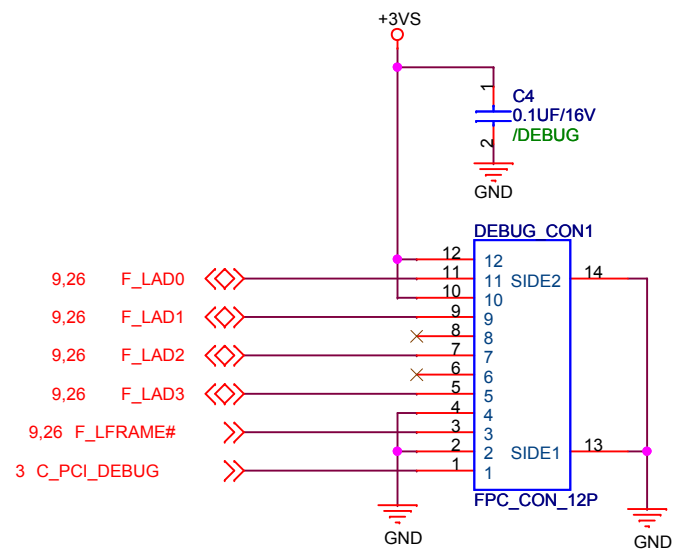
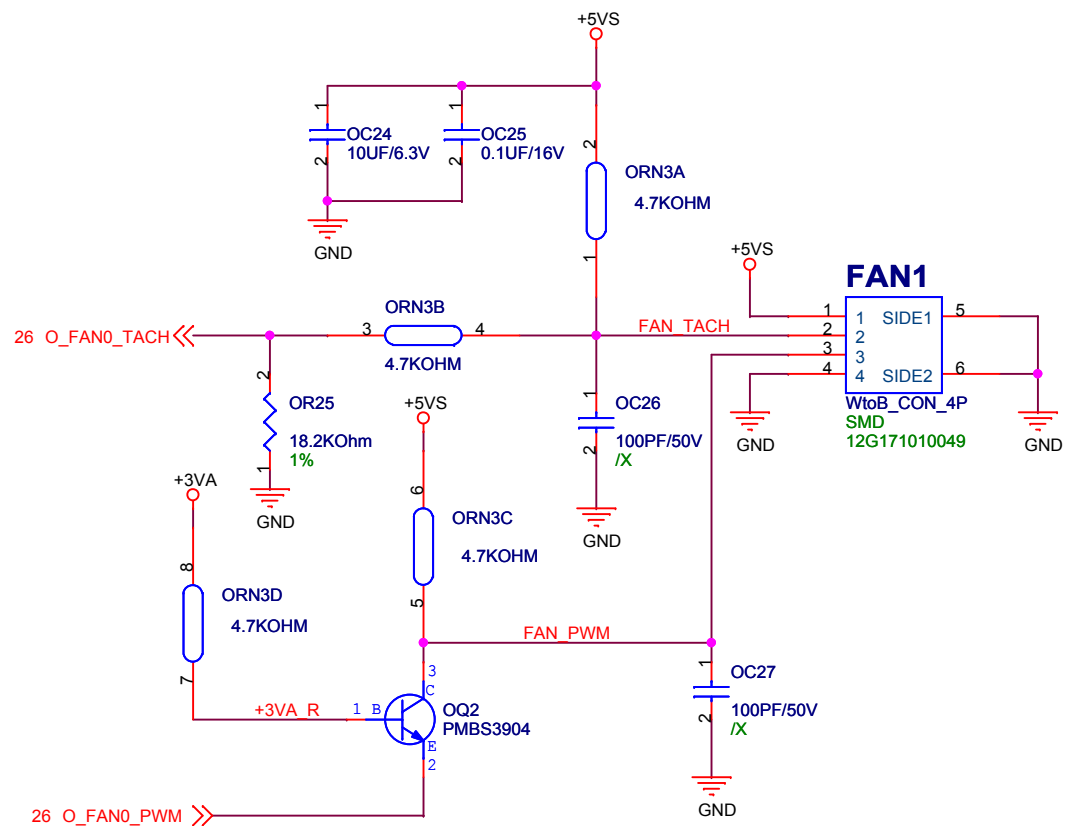


For Touch-Pad



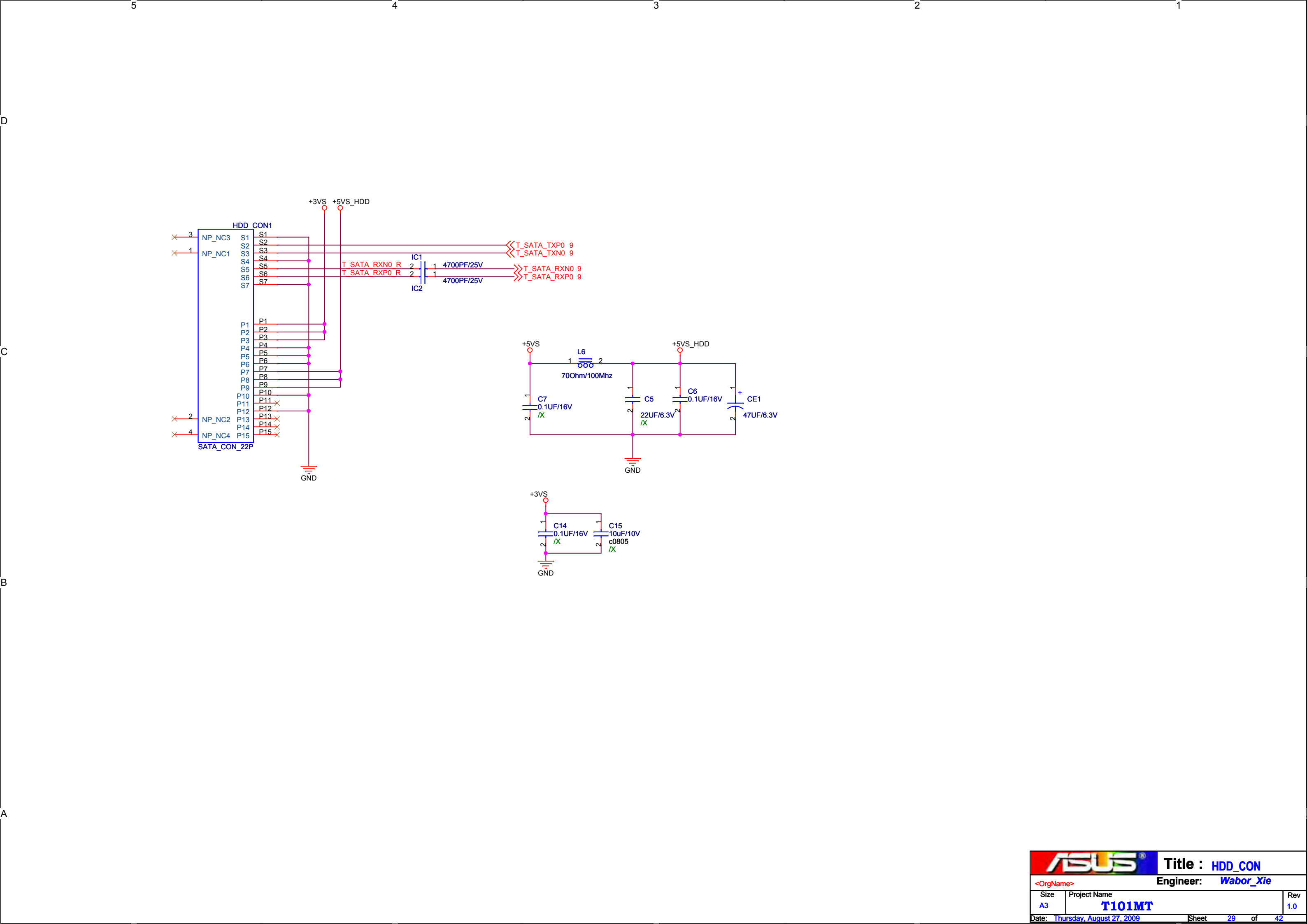






<Variant Name>

		Title : Fan_Debug	
ASUSTek Computer INC.		Engineer: Wabor_Xie	
Size	Project Name	Rev	
A3	T101MT	1.0G	
Date: Thursday, August 27, 2009		Sheet	28 of 42

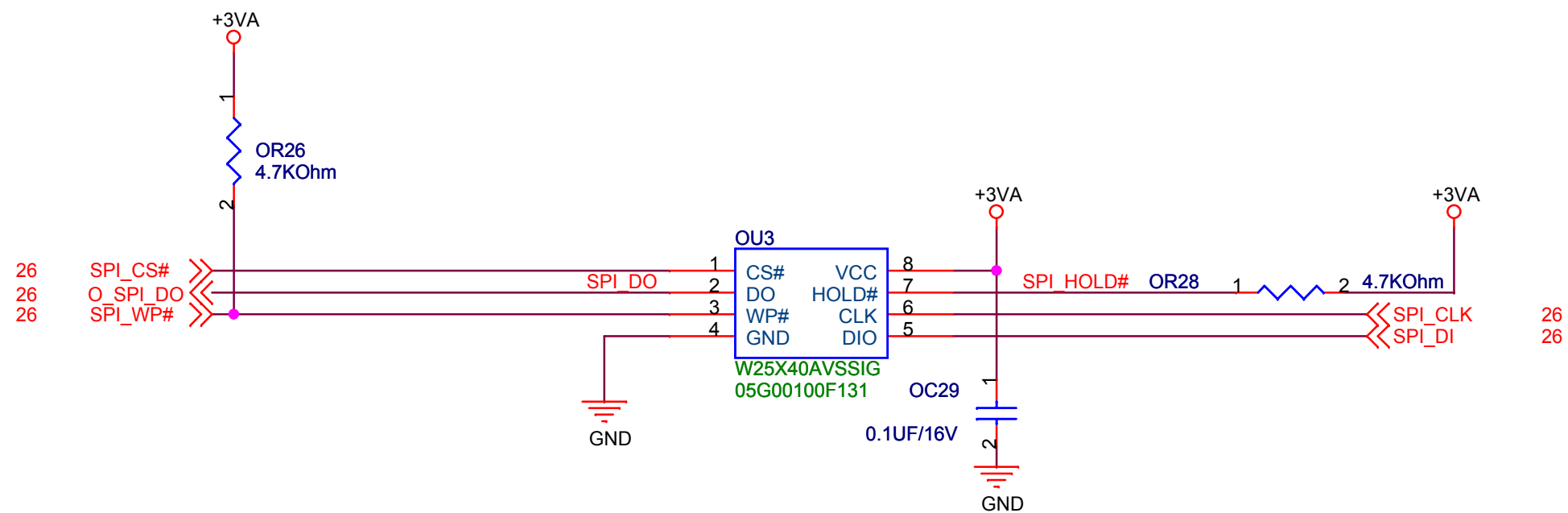


Title : HDD_CON

Engineer: Wabor_Xie

Size	Project Name	Rev
A3	T101MT	1.0

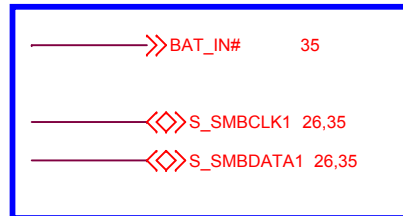
Date: Thursday, August 27, 2009 Sheet 29 of 42



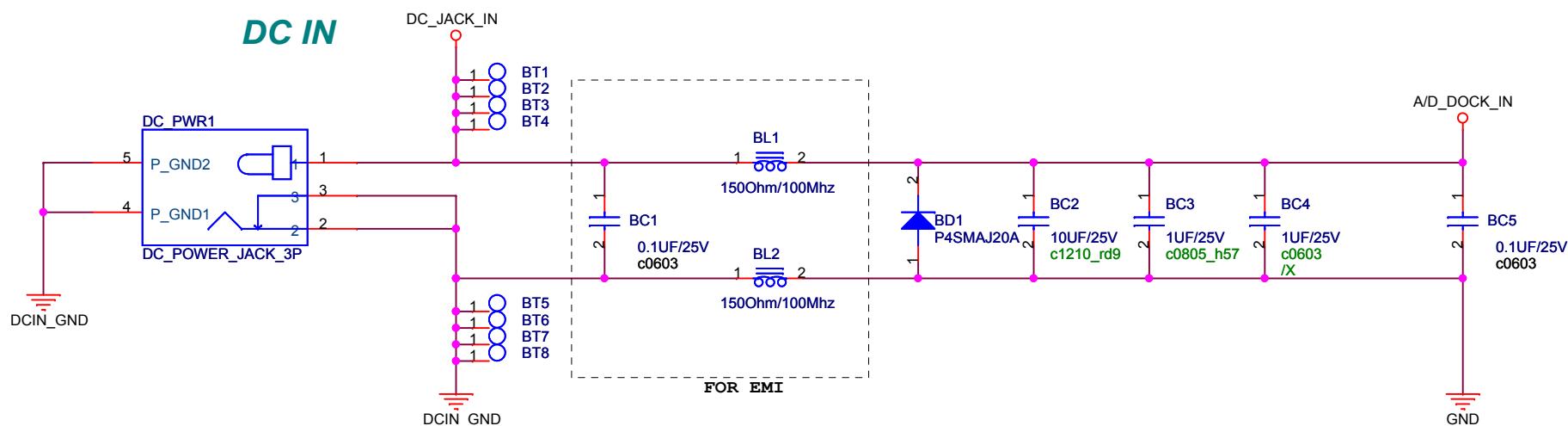
<Variant Name>

ASUS®		Title : SPI_ROM	
ASUSTek Computer INC.		Engineer: Wabor_Xie	
Size A4	Project Name T101MT		Rev 1.0G
Date: Thursday, August 27, 2009		Sheet 30	of 42

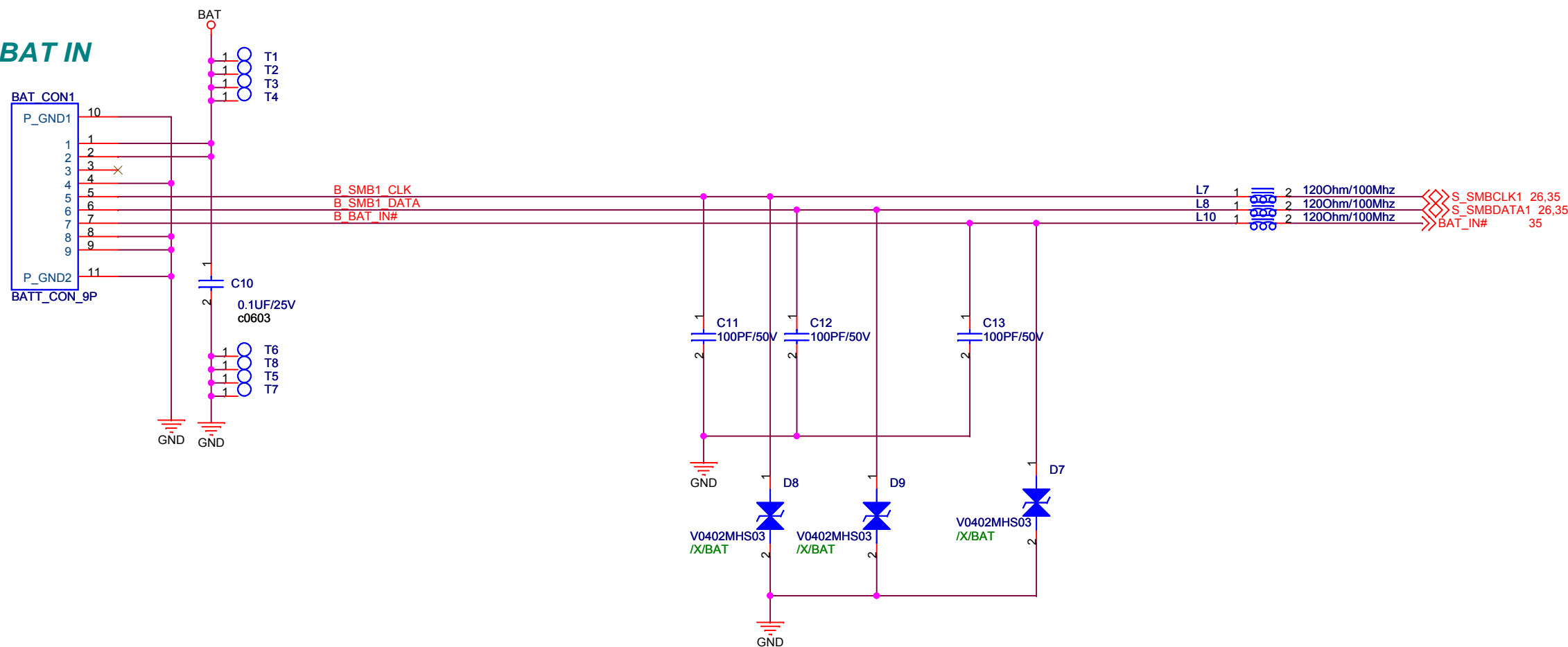
0.1B Beta



DC IN

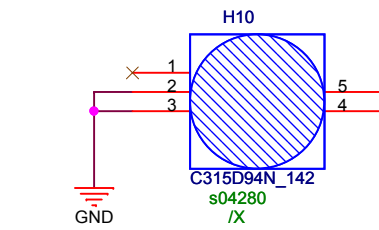
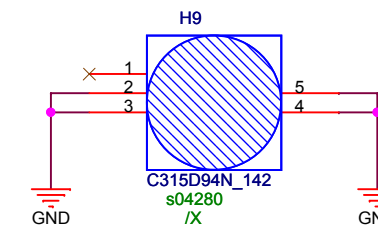
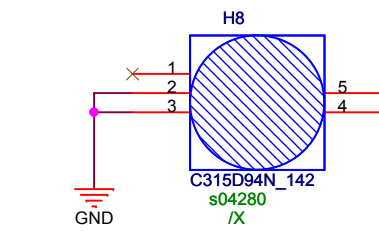
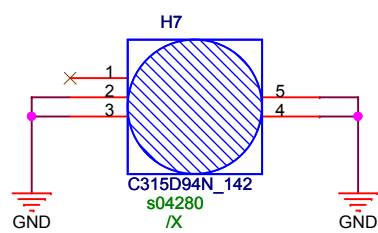
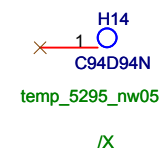
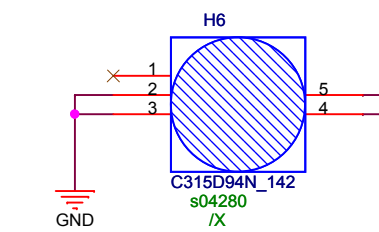
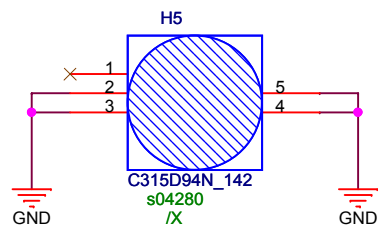
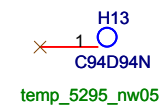
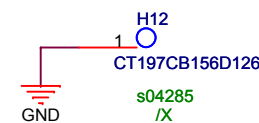
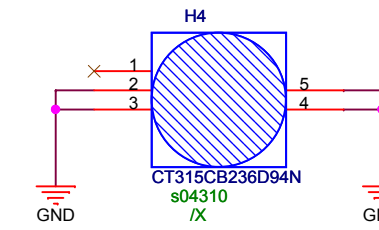
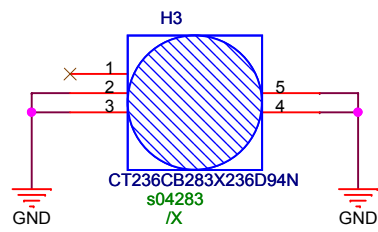
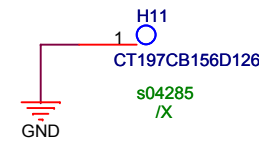
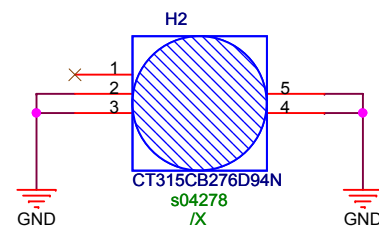
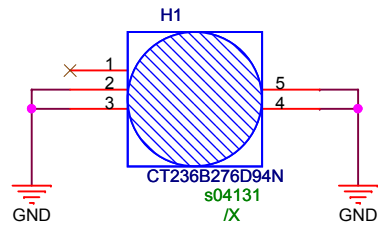


BAT IN



<Variant Name>

		Title : PWR Jack	
ASUSTek Computer INC.		Engineer: Wabor_Xie	
Size A3	Project Name T101MT		Rev 1.0
Date: Thursday, August 27, 2009		Sheet 31	of 42



<Variant Name>

		Title : Srew Hole	
ASUSTek Computer INC.		Engineer: Wabor_Xie	
Size A3	Project Name T101MT		Rev 1.0G
Date: Thursday, August 27, 2009		Sheet	32 of 42

D

C

B

A

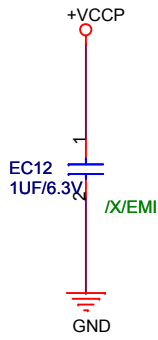
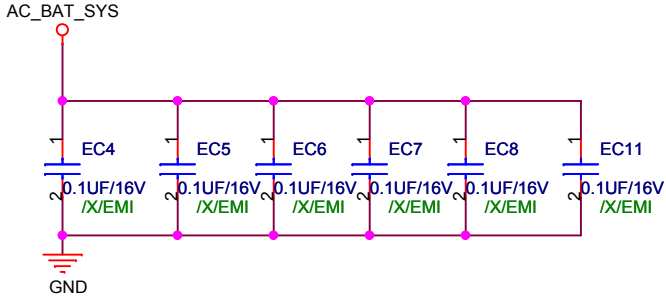
5

4

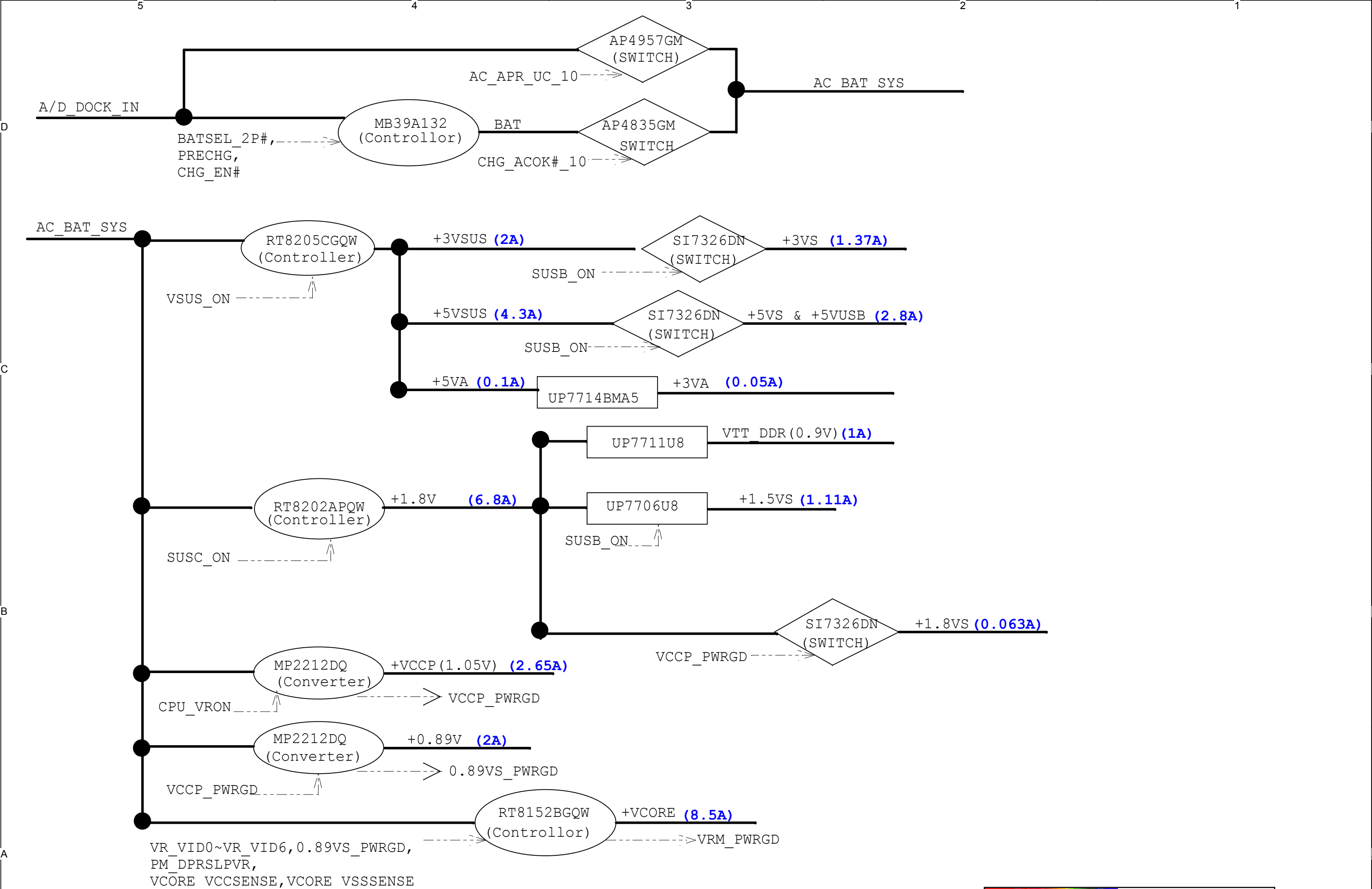
3

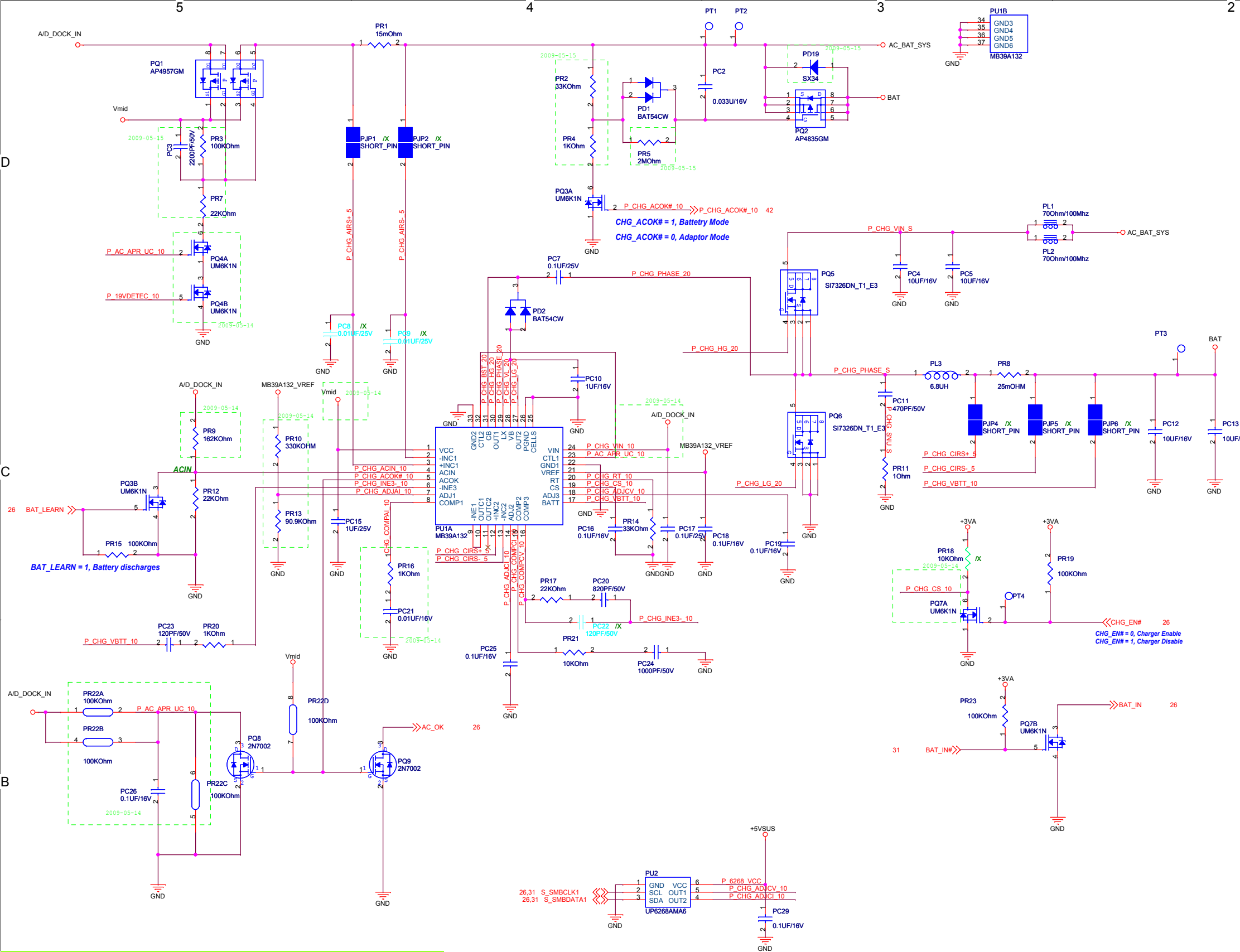
2

1



<Variant Name>





Power stage

1. I/P Current:

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

2. Ripple Current:

$$I_{rip} = 1.18A$$
$$I_{spec} = 2A \text{ @ } 1 \text{ pcs}$$

3. Inductor Spec:

$$I_{sat} = 10A$$
$$I_{dc} = 5.5A$$
$$DCR = 37m\Omega$$

4. MOSFET Spec:

H-side MOSFET: SI7326DN_T1_E3

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

L-side MOSFET: SI7326DN_T1_E3

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

Controller

1. Voltage & Current:

$$+12.6V @ 2.5A$$

2. Frequency:

$$PR122 = 33K\Omega$$
$$F_{osc} = 515KHz$$

3. OCP:

4. POR:

$$POR \text{ Hysteresis} = 0.1V$$
$$V_{on} = 7.5V$$

5. Enable Voltage:

$$V = 2.9V$$

6. Soft start time:

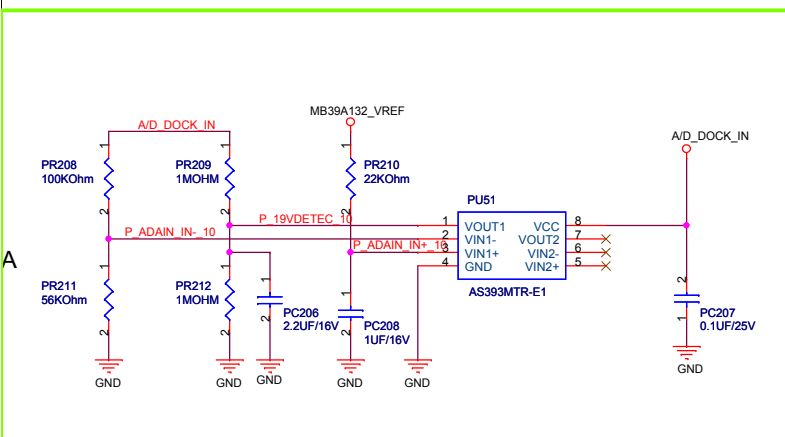
$$T_{ss} = 23ms$$

7. Phase selection:

N/A

8. Inrush Current:

$$C_{total} = 20\mu F$$
$$I_{inrush} = 0.01A$$



Battery Charging Current :

$$4.4V > V_{adj2} \geq 0V \Rightarrow$$
$$I_{chg} = (V_{adj2} - 0.075) / (25 \cdot R_s)$$

Input Max. Current Limit :

$$PR13 = 330K\Omega$$
$$PR16 = 90.9K\Omega \Rightarrow$$
$$I_{limit} = 2.679A$$

Pre-Charging Mode :

$$\text{Precharging current} = 149.2mA$$
$$V_{adj2} = 168mV$$

ACIN Threshold = 1.25V

Adaptor > 10.45V, System Powered by Adaptor

Adaptor < 10.45V, System Powered by Battery

Battery Charging Voltage :

$$V_{adj3} : V_{REF} \Rightarrow V_{bat} = 4.2V / \text{cell}$$
$$3.9V > V_{adj3} > 2.4V \Rightarrow V_{bat} = 4.35V / \text{cell}$$
$$V_{adj3} : GND \Rightarrow V_{bat} = 4.0V / \text{cell}$$
$$2.2V > V_{adj3} > 1.1V \Rightarrow V_{bat} = 2 \cdot V_{adj3}$$

Battery Cell Selection :

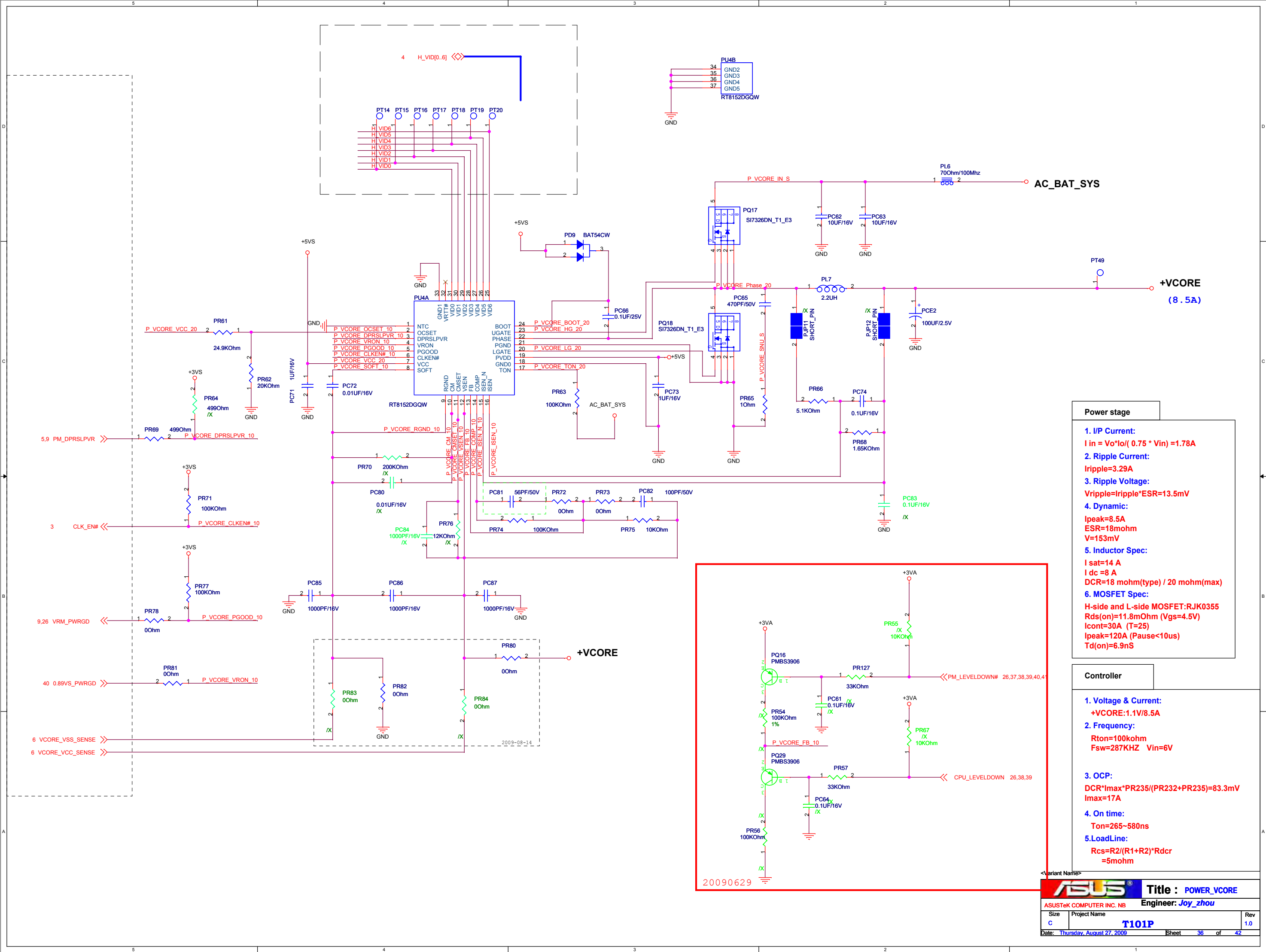
CELLS: VREF $\Rightarrow$ 4 Cells;

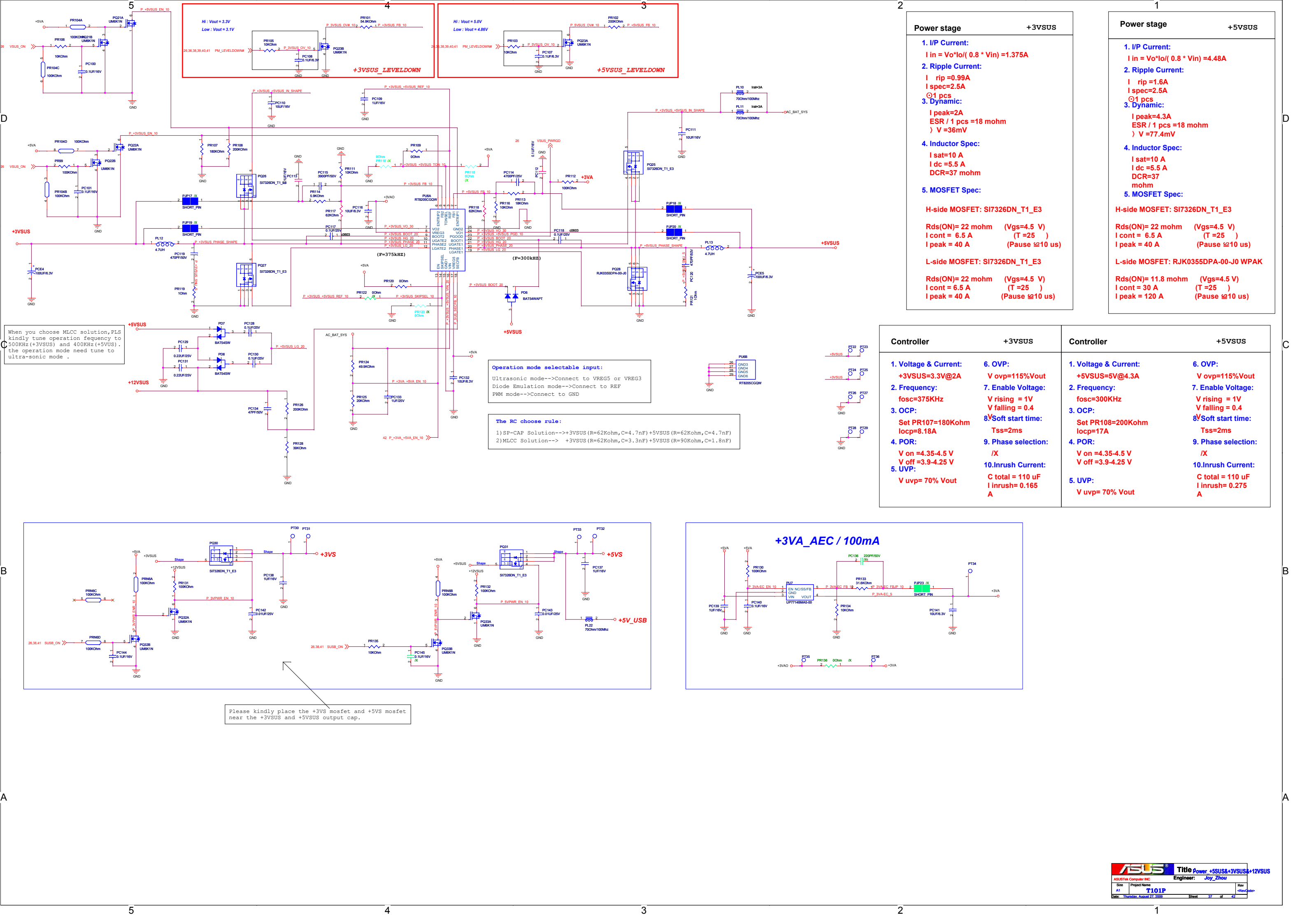
CELLS: OPEN $\Rightarrow$ 3 Cells;

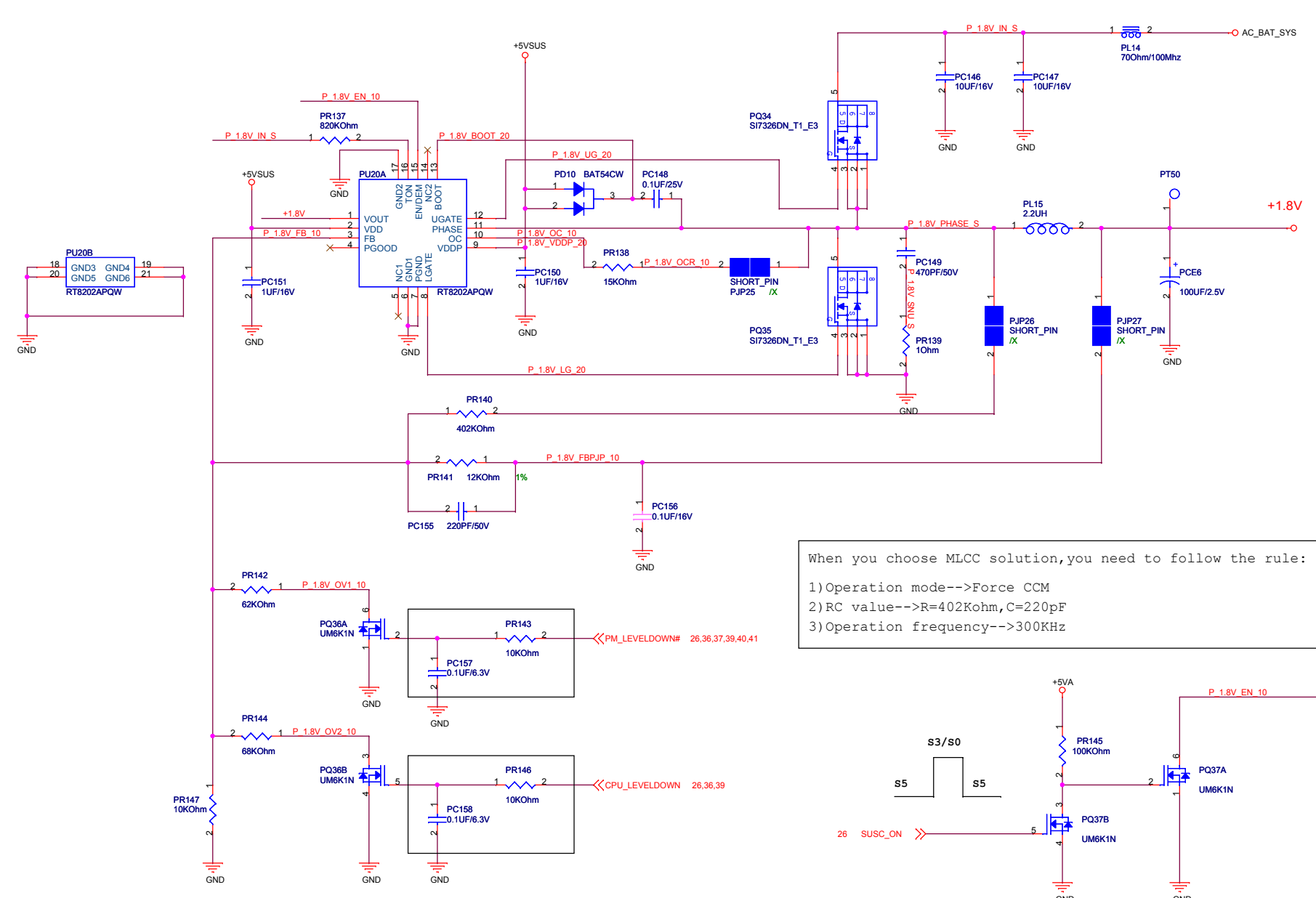
CELLS: GND $\Rightarrow$ 2 Cells;

VREF = 5.0V

$$f_{osc}(KHz) = 17000 / RT(K\Omega)$$
$$\text{Soft start: } t_s(s) = 0.13 \cdot CS(\mu F)$$







PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
L	L	H	1.650V	Power Saving
H	L	H	1.803V	Normal
H	H	L	1.931V	Performance
L	H	L	1.778V	N/A

0.9VS@1A

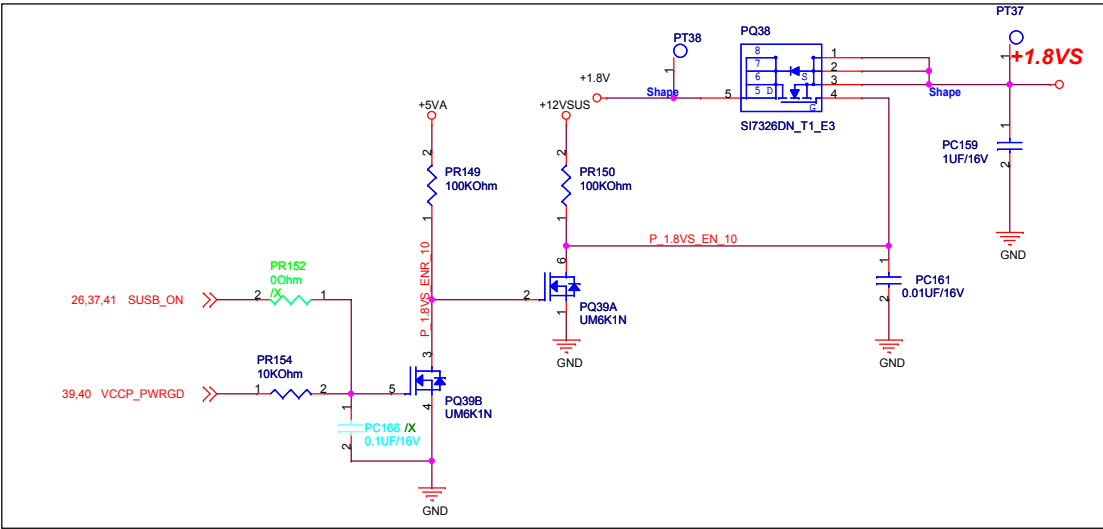
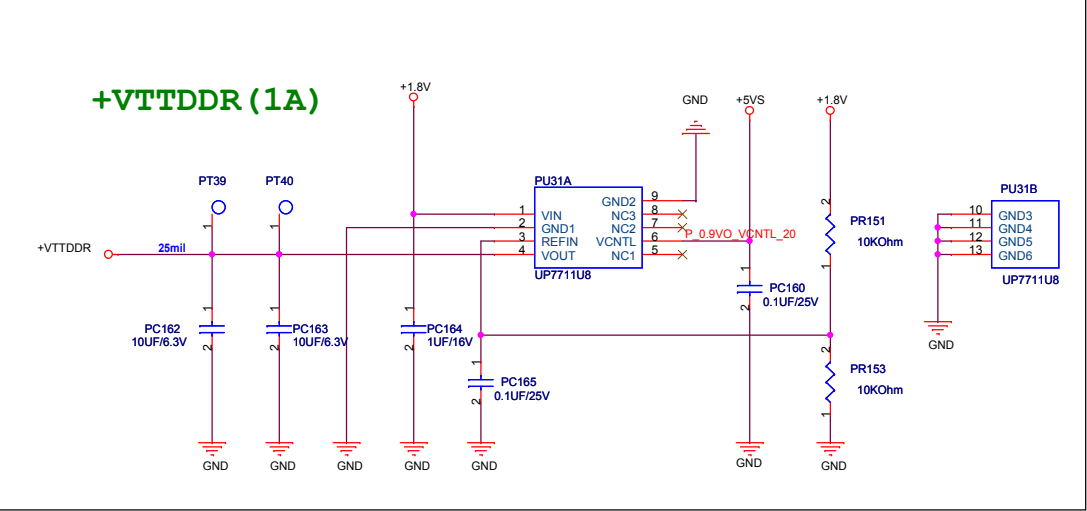
1. Dropout Voltage: V = 0.3V (Io = 2 A)	5. EN Voltage: Ven = 1.4V Vsd = 0.8 V
2. Current Limit: I limit = 4 A	6. Supply Voltage: Vcc = 5 V
3. Continue Current: I cont = 3 A	7. Inrush current: Tss = 5 ms C total = 10 uF I inrush = 3 mA
4. Power Dissipation: Rthjc = 52 /W Pd = 1.9 W	

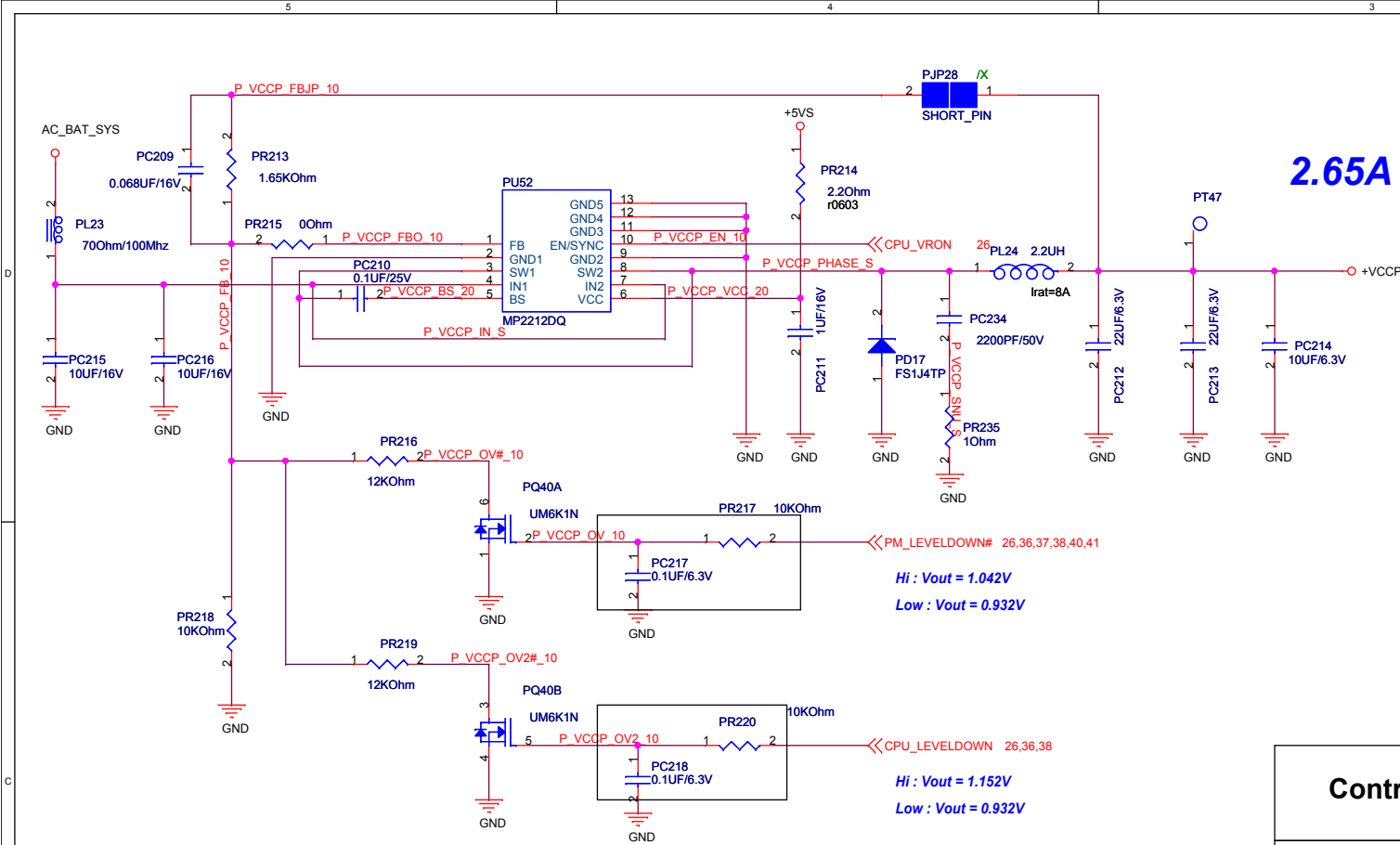
Power stage

- I/P Current:**
 $I_{in} = V_o \cdot I_o / (0.8 \cdot V_{in})$
 $I_{in} = 2.55A$
- Ripple Current:**
 $I_{rip} = 3.12A$
 $I_{spec} = 2.5A$
- Dynamic:**
 $I_{peak} = 6.8A$
 $ESR / 1 pcs = 18 mohm$
 $V = 122.4mV$
- Inductor Spec:**
 $I_{sat} = 14 A$
 $I_{dc} = 8 A$
 $DCR = 18 mohm$
- MOSFET Spec:**
H-side MOSFET: SI7326DN_T1_E3
 $R_{ds(ON)} = 22 mohm$ (Vgs=4.5 V)
 $I_{cont} = 6.5 A$ (T=25)
 $I_{peak} = 40 A$ (Pause $\geq 10 us$)
L-side MOSFET: SI7326DN_T1_E3
 $R_{ds(ON)} = 22 mohm$ (Vgs=4.5 V)
 $I_{cont} = 6.5 A$ (T=25)
 $I_{peak} = 40 A$ (Pause $\geq 10 us$)

Controller

1. Voltage & Current: +1.8V@6.8A	6. OVP: Vout*115%
2. Frequency: PR137=845K ohm Fosc=300KHz	7. Enable Voltage: V = 2.9V
3. POR: PR138=15K ohm -> 13.6A	8. Soft start time: Tss=1.2 ms
4. UVP: Vccrth = 3.7~4.1V Vcchys=0.2V	9. Phase selection: /X
5. UVP: Vout*70%	10. Inrush Current: C total = 100 uF I inrush= 0.15 A





Power stage

1. I/P Current:

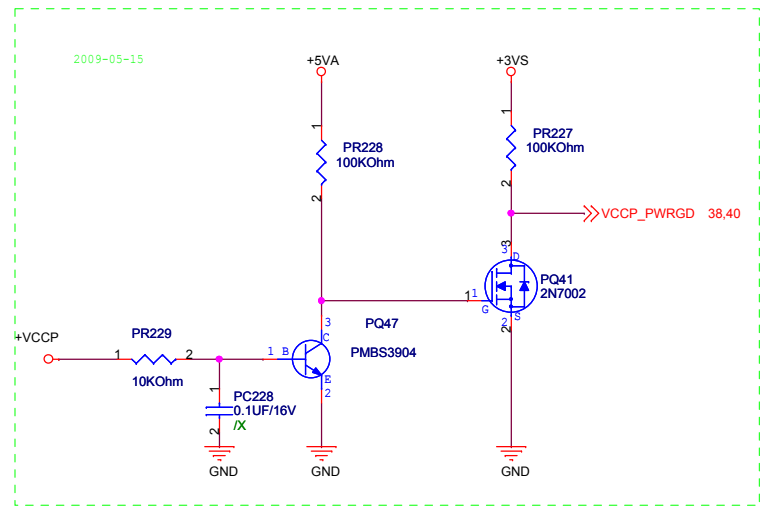
$I_{in} = V_o \cdot I_o / (0.8 \cdot V_{in}) = 0.7A$

2. Ripple Current:

$I_{rip} = 1.08A$
 $I_{spec} = 2.5A$
⊙1 pcs

3. Inductor Spec:

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



Controller

1. Voltage & Current:

$+VCCP@2.65A$

2. Frequency:

$F_{osc} = 600KHz$

3. Current Limit:

6A

4. Continue Current:

3.75A

5. POR:

POR Hysteresis = 0.2V
V on = 2.8V

6. Enable Voltage:

$V = 1.6V$

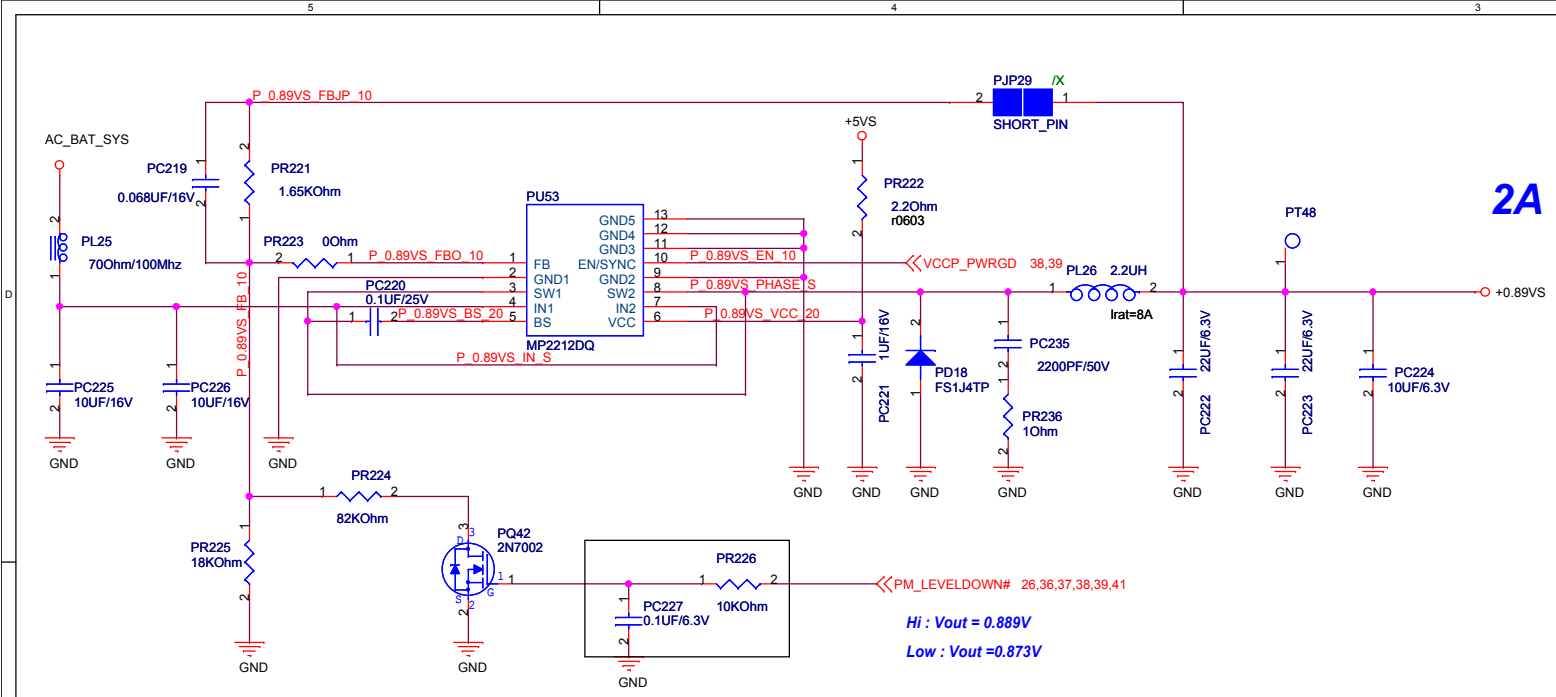
7. Soft start time:

$T_{ss} = 120us$

8. Inrush Current:

$C_{total} = 54 uF$
 $I_{inrush} = 0.473A$

PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
L	L	H	0.932V	Power Saving
H	L	H	1.042V	Normal
H	H	L	1.152V	Performance
L	H	L	1.042V	N/A

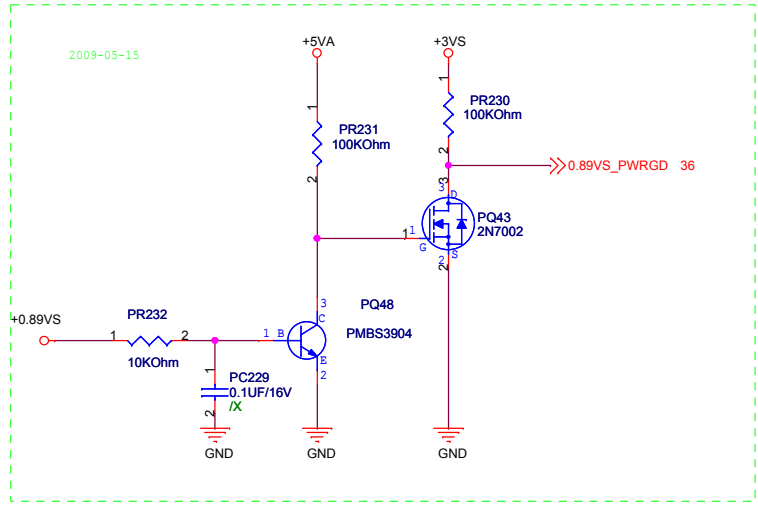


Power stage

1. I/P Current:
 $I_{in} = V_o * I_o / (0.8 * V_{in}) = 0.445A$

2. Ripple Current:
 $I_{rip} = 0.32A$
 $I_{spec} = 2.5A$
 $\odot 1\text{ pcs}$

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



PM_LEVELDOWN#	Voltage	Status
L	0.873V	Power Saving
H	0.889V	Normal

Controller

1. Voltage & Current:
 $+0.89V@2A$

2. Frequency:
 $F_{osc} = 600KHz$

3. Current Limit:
 $6A$

4.Continue Current:
 $3.75A$

5. POR:
 $POR\ Hysteresis = 0.2V$
 $V_{on} = 2.8V$

6. Enable Voltage:
 $V = 1.6V$

7. Soft start time:
 $T_{ss} = 120us$

8.Inrush Current:
 $C_{total} = 54\text{ uF}$
 $I_{inrush} = 0.4A$

