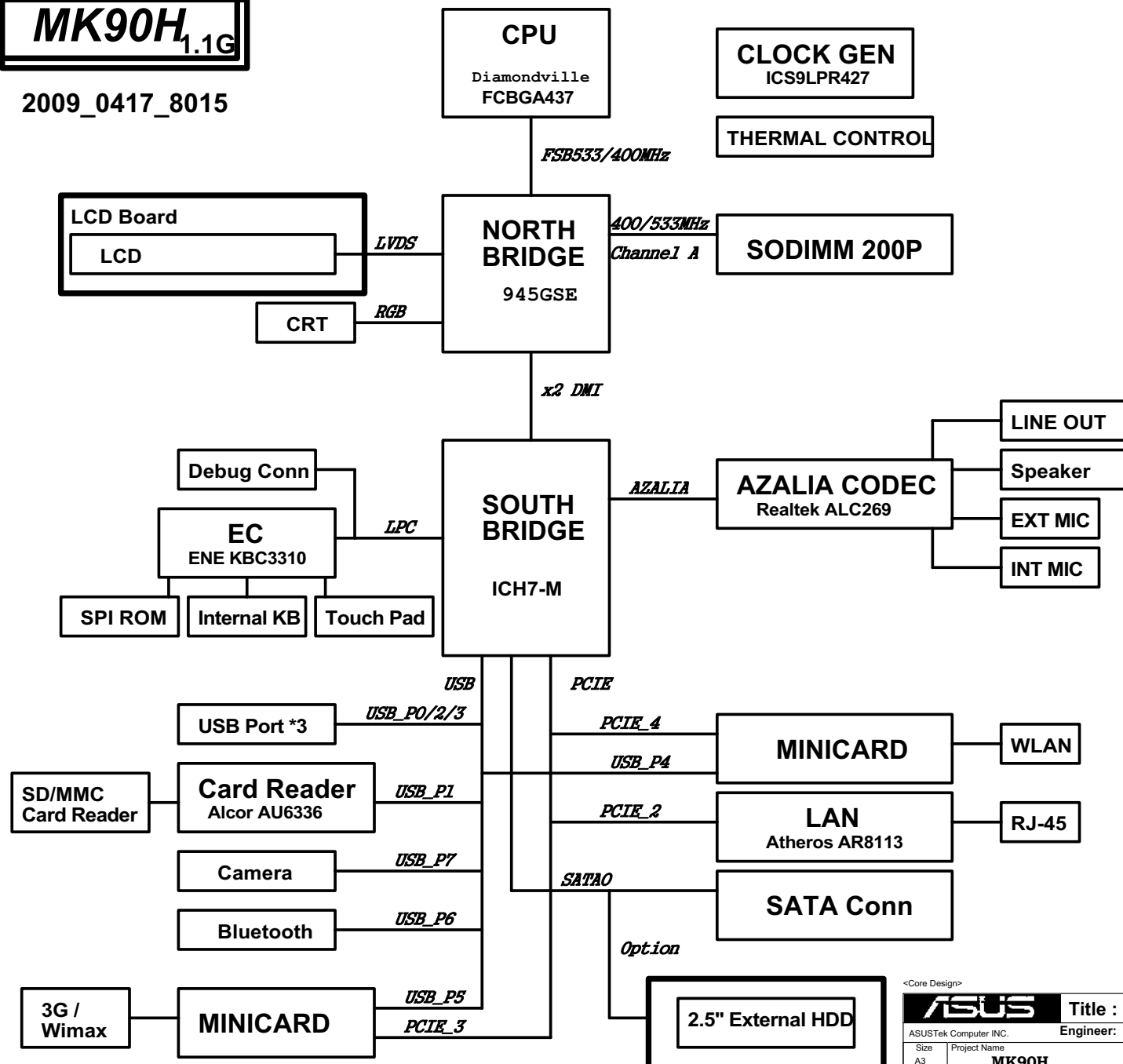



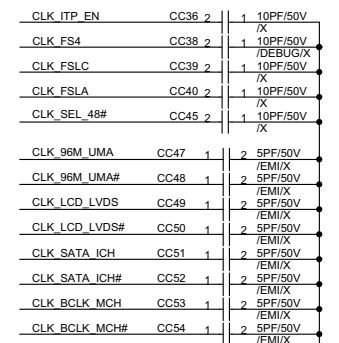
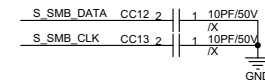
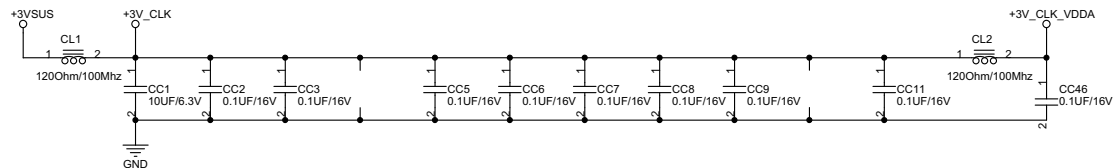
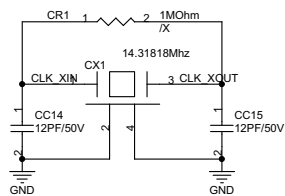
01\_Block Diagram  
 02\_System Setting  
 03\_Power Sequence  
 04\_Clock Gen\_ICS9LPR426  
 05\_Diamondville\_BUS  
 06\_Diamondville\_PWR  
 07\_NB-945GMS(HOST)  
 08\_NB-945GMS(DMI)  
 09\_NB-945GMS(GRAPHIC)  
 10\_NB-945GMS(DDR2)  
 11\_NB-945GMS(PWR)  
 12\_NB-945GMS(PWR2)  
 13\_NB-945GMS(GND)  
 14\_SB-ICH7M(PWR)  
 15\_SB-ICH7M(1)  
 16\_SB-ICH7M(2)  
 17\_SB-ICH7M(3)  
 18\_DDR2 SODIMM  
 19\_DDR2\_Termination  
 20\_B to B connector  
 21\_Onboard VGA  
 22\_LCD Conn\_LID  
 23\_PCIEx 3.5G & Ext. Antenna  
 24\_Mini WiFi+ BT  
 25\_SATA HDD  
 26\_USB Port  
 27\_Camera Conn  
 28\_Card Reader\_AU6336C52  
 29\_EC\_ENE KB3310  
 30\_G-Sensor  
 31\_Switch\_SPI ROM\_Debug Conn  
 32\_Thermal Sensor\_FAN  
 33\_KB\_Touch Pad  
 34\_LED\_THERMTRIP  
 35\_Discharge  
 36\_PWR Jack  
 37\_Srew Hole  
 38\_EMI  
 39\_POWER FLOW  
 40\_Vcore  
 41\_Power System  
 42\_Power\_+1.8V & VTDDR  
 43\_Power\_VCCP  
 44\_Power\_+1.5VS & +2.5VS  
 45\_Power\_Charger  
 46\_+3VS\_3G  
 47\_Power Latch  
 48\_EC Pin Define  
 49\_History

**MK90H<sub>1.1G</sub>**

2009\_0417\_8015



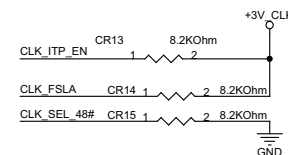
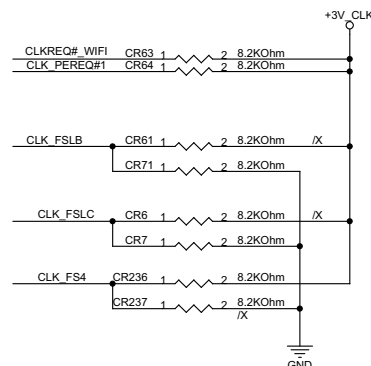
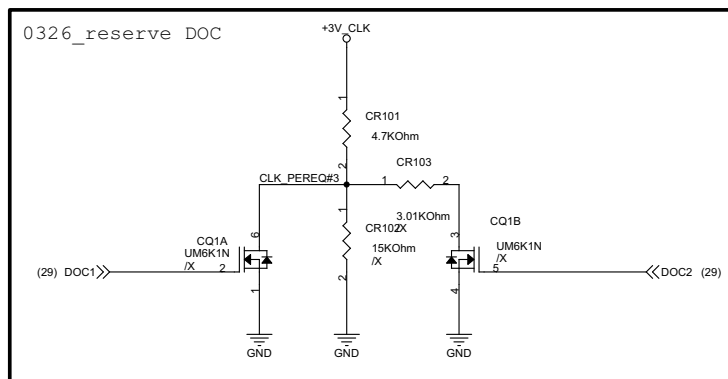
<Core Design>				
		Title : Block Diagram		
ASUSTek Computer INC.		Engineer: <i>Regin Chiang</i>		
Size A3	Project Name <b>MK90H</b>		Rev 1.10	
Date: Friday, April 17, 2009		Sheet 1 of 49		



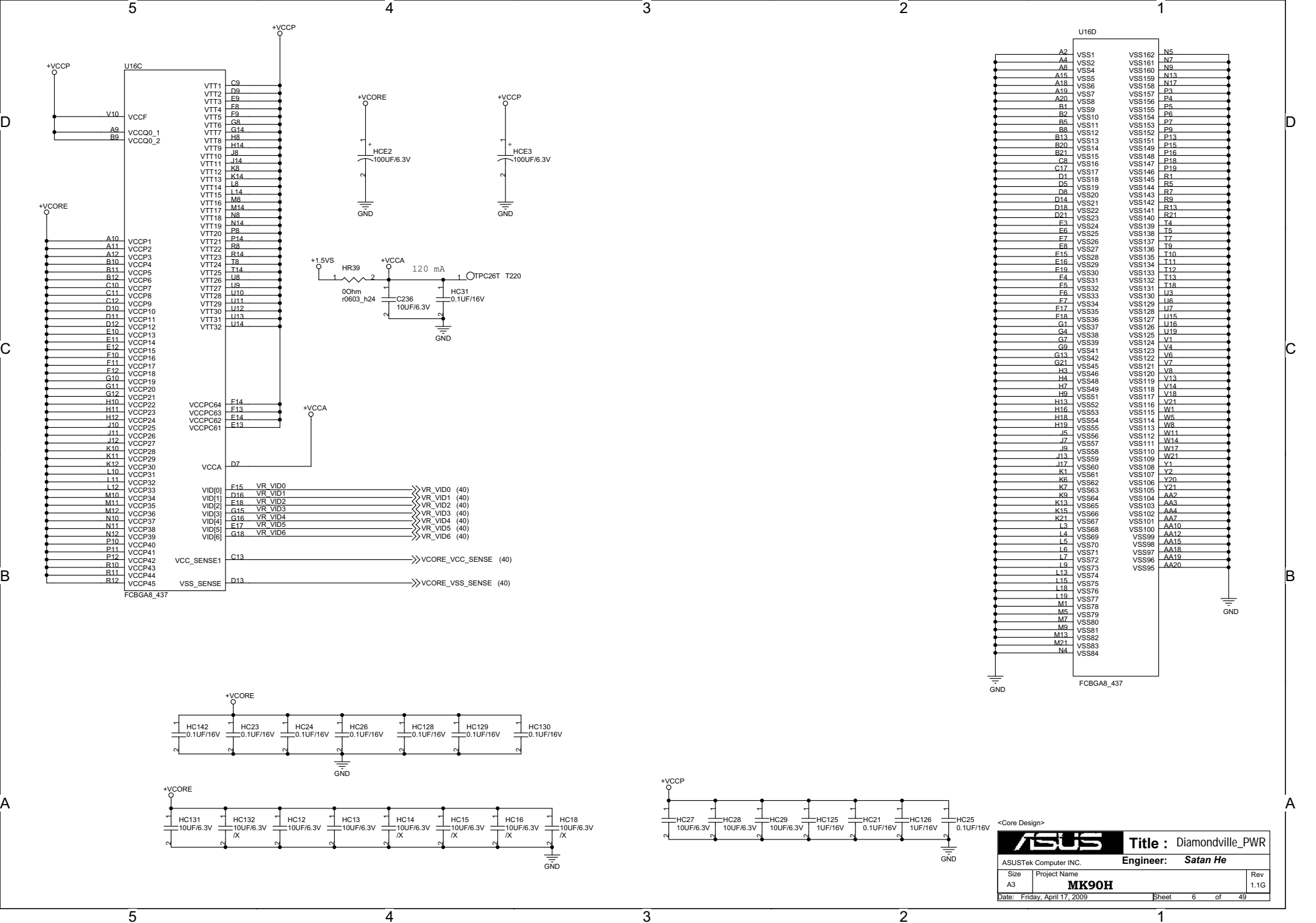
1:Disable  
0:Enable

PEREQ1:PCIEx0 & PCIe1  
PEREQ2:PCIEx2 & PCIe3 & SATA  
PEREQ3:PCIEx4 & PCIe5 & PCIe6

FSC	FSB	FSA	CPU	PCIE	SATA
0	0	1	133	100	100
1	0	1	100	100	100
0	1	1	166	100	100



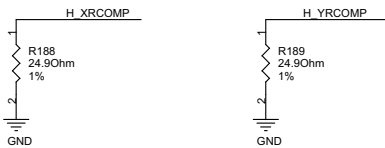




Power :  
+VCCP

### RCOMP

For Calibrating the FSB I/O Buffer



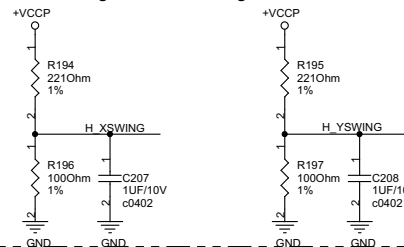
### SCOMP

For Slew Rate Compensation on the FSB



### Voltage Swing

For Providing a Reference Voltage to The FSB RCOMP circuits



Signal voltage level =  
0.3125\*VCCP  
Trace should be 10 mil wide  
with 20 mil spacing

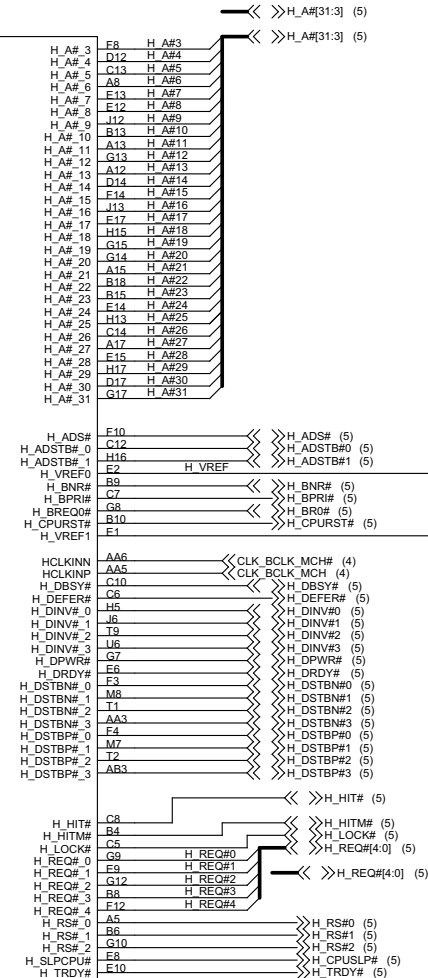
(5) H\_D#[63:0] << >>  
(5) H\_D#[63:0] << >>

H_D#0	C4	H_D#_0
H_D#1	F6	H_D#_1
H_D#2	H9	H_D#_2
H_D#3	H6	H_D#_3
H_D#4	E7	H_D#_4
H_D#5	E3	H_D#_5
H_D#6	C2	H_D#_6
H_D#7	C3	H_D#_7
H_D#8	K9	H_D#_8
H_D#9	F5	H_D#_9
H_D#10	V7	H_D#_10
H_D#11	K7	H_D#_11
H_D#12	H8	H_D#_12
H_D#13	E5	H_D#_13
H_D#14	K3	H_D#_14
H_D#15	J8	H_D#_15
H_D#16	J2	H_D#_16
H_D#17	J3	H_D#_17
H_D#18	M1	H_D#_18
H_D#19	M5	H_D#_19
H_D#20	K5	H_D#_20
H_D#21	J5	H_D#_21
H_D#22	H3	H_D#_22
H_D#23	L4	H_D#_23
H_D#24	N3	H_D#_24
H_D#25	M4	H_D#_25
H_D#26	M3	H_D#_26
H_D#27	N8	H_D#_27
H_D#28	N6	H_D#_28
H_D#29	K3	H_D#_29
H_D#30	N9	H_D#_30
H_D#31	M1	H_D#_31
H_D#32	V8	H_D#_32
H_D#33	V9	H_D#_33
H_D#34	R6	H_D#_34
H_D#35	T8	H_D#_35
H_D#36	R2	H_D#_36
H_D#37	N5	H_D#_37
H_D#38	N2	H_D#_38
H_D#39	R5	H_D#_39
H_D#40	U7	H_D#_40
H_D#41	R8	H_D#_41
H_D#42	T4	H_D#_42
H_D#43	T7	H_D#_43
H_D#44	R3	H_D#_44
H_D#45	J5	H_D#_45
H_D#46	V6	H_D#_46
H_D#47	V3	H_D#_47
H_D#48	W2	H_D#_48
H_D#49	W1	H_D#_49
H_D#50	V2	H_D#_50
H_D#51	W4	H_D#_51
H_D#52	W7	H_D#_52
H_D#53	W5	H_D#_53
H_D#54	V5	H_D#_54
H_D#55	AB4	H_D#_55
H_D#56	AB8	H_D#_56
H_D#57	W8	H_D#_57
H_D#58	AA9	H_D#_58
H_D#59	AA8	H_D#_59
H_D#60	AB1	H_D#_60
H_D#61	AB7	H_D#_61
H_D#62	AA2	H_D#_62
H_D#63	AB5	H_D#_63

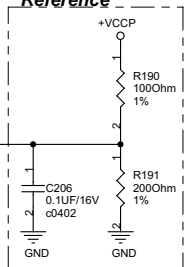
H_XRCOMP	A10	H_XRCOMP
H_XSWING	A6	H_XSWING
H_YRCOMP	C15	H_YRCOMP
H_YSCOMP	K1	H_YSCOMP
H_XSWING	H1	H_XSWING

945GMS

HOST



### AGTL+ I/O Voltage Reference

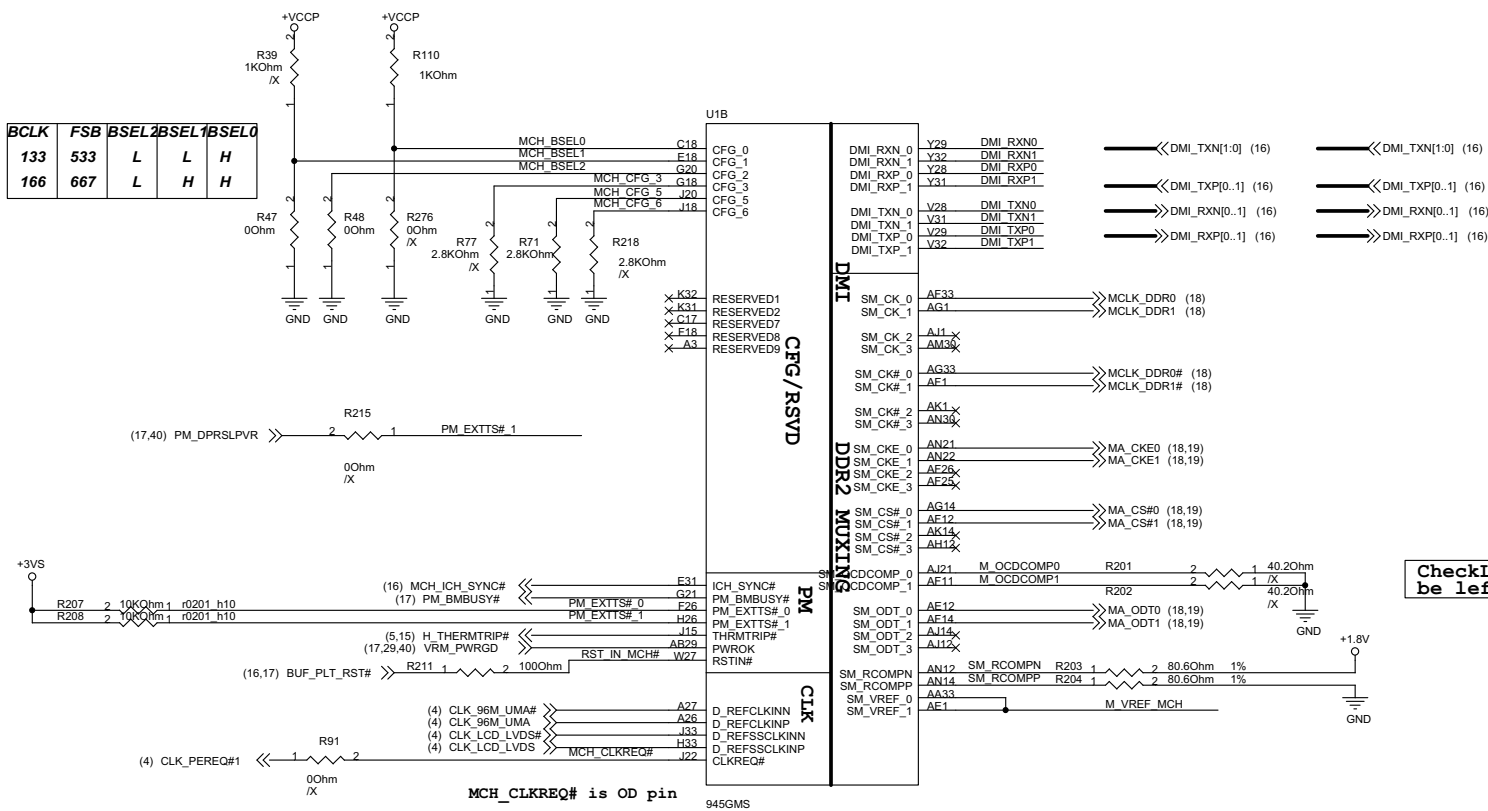


Layout Note:  
0.1uF should be placed 100mils or  
less from GMCH pin.

<Core Design>

<b>ASUS</b>		Title : NB-945GMS(HOST)	
ASUSTeK COMPUTER INC.		Engineer: Satan He	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009	Sheet 7	of 49	

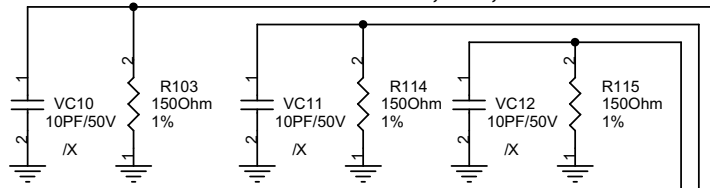
BCLK	FSB	BSEL2	BSEL1	BSEL0
133	533	L	L	H
166	667	L	H	H



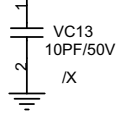
CheckList notes : Can be left as NC

<Core Design>		ASUS		Title : NB-945GMS(DMI & CFG)	
ASUSTeK COMPUTER INC.		Engineer: Satan He			
Size	A3	Project Name	MK90H		Rev
Date: Friday, April 17, 2009		Sheet	8	of	49

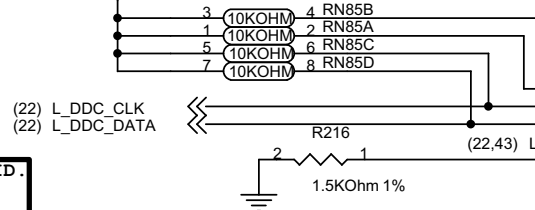
**Close to GMCH  
R103,R114,R115**



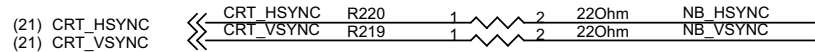
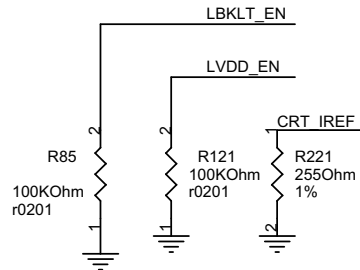
LBKLT\_CTRL



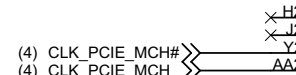
+3VS



**IF USE NB READ EDID,  
MUST CONNECT  
L\_DDC\_CLK&DATA**



**Close to GMCH**



(21) CRT\_BLUE

(21) CRT\_GREEN

(21) CRT\_RED

(22) LBKLT\_CTRL

(22) LBKLT\_EN

(22) LA\_CLKN

(22) LA\_CLKP

(22) LA\_DATAN0

(22) LA\_DATAN1

(22) LA\_DATAN2

(22) LA\_DATAP0

(22) LA\_DATAP1

(22) LA\_DATAP2

U1F

SDVO\_CTRLDATA  
SDVO\_CTRLCLK  
G\_CLKINN  
G\_CLKINP

**MISC**

CRT\_DDC\_CLK  
CRT\_DDC\_DATA  
CRT\_BLUE  
CRT\_BLUE#  
CRT\_GREEN  
CRT\_GREEN#  
CRT\_RED  
CRT\_RED#  
CRT\_VSYNC  
CRT\_VSYNC#  
CRT\_HSYNC  
CRT\_HSYNC#  
CRT\_IREF

**VGA**

L\_BKLTCTL  
L\_BKLTEN  
L\_CLKCTLA  
L\_CTLBDATA  
L\_DDC\_CLK  
L\_DDC\_DATA  
L\_VDDEN  
L\_IBG  
L\_VBG  
L\_VREFH  
L\_VREFL

**LVDS**

LA\_CLKN  
LA\_CLKP  
LB\_CLKN  
LB\_CLKP

LA\_DATAN\_0  
LA\_DATAN\_1  
LA\_DATAN\_2

LA\_DATAP\_0  
LA\_DATAP\_1  
LA\_DATAP\_2

LB\_DATAN\_0  
LB\_DATAN\_1  
LB\_DATAN\_2

LB\_DATAP\_0  
LB\_DATAP\_1  
LB\_DATAP\_2

**SDVO**

SDVO\_RED#  
SDVO\_GREEN#  
SDVO\_BLUE#  
SDVO\_CLKN

SDVO\_RED  
SDVO\_GREEN  
SDVO\_BLUE  
SDVO\_CLKP

**TV**

TV\_DACA\_OUT  
TV\_DACB\_OUT  
TV\_DACC\_OUT  
TV\_IREF  
TV\_IRTNA  
TV\_IRTNB  
TV\_IRTNC

TV\_DCONSEL0  
TV\_DCONSEL1

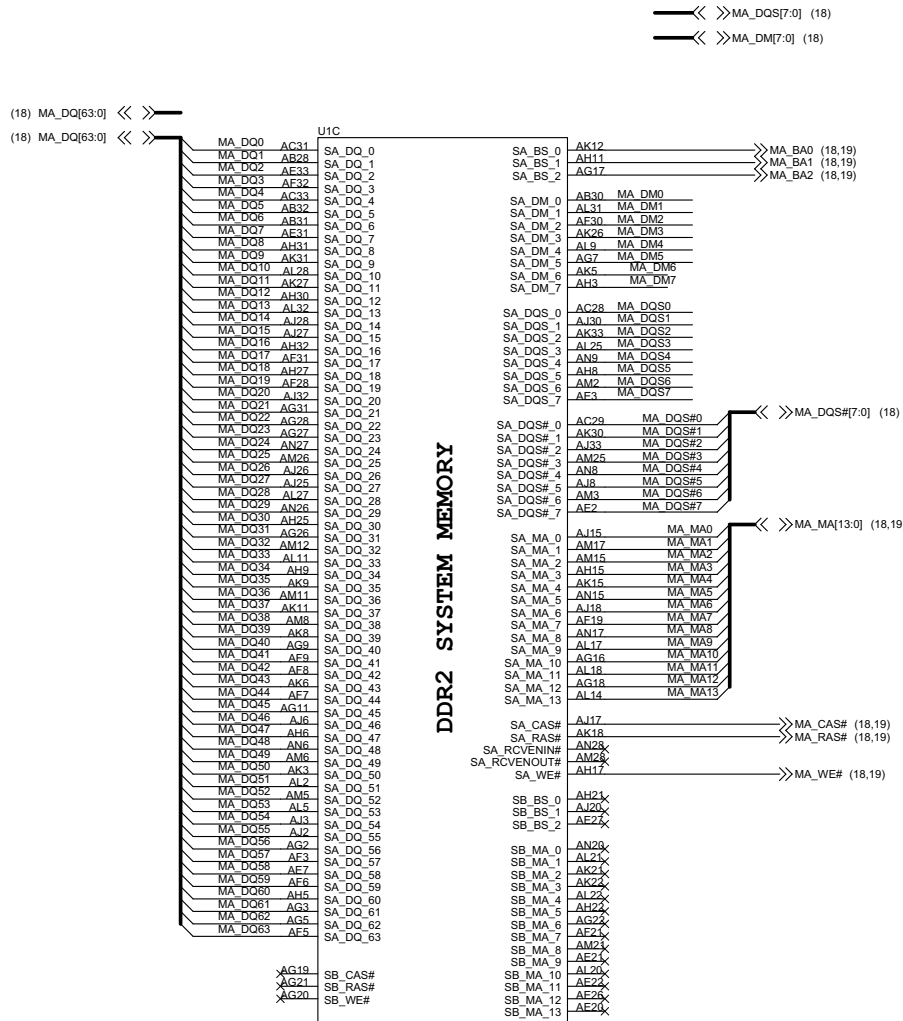
+1.5VS\_PCIE

+1.5VS

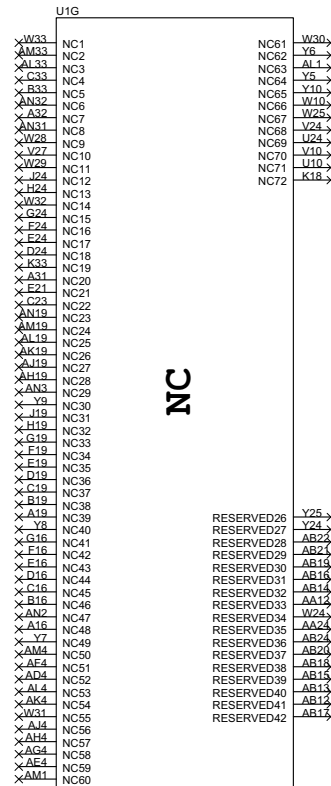
945GMS

<Core Design>

<b>ASUS</b>		<b>Title :</b> NB-945GMS(GRAPHIC)	
ASUSTeK COMPUTER INC.		<b>Engineer:</b> Satan_He	
Size A4	Project Name <b>MK90H</b>		Rev 1.1G
Date: Friday, April 17, 2009		Sheet	9 of 49



945GMS



NC

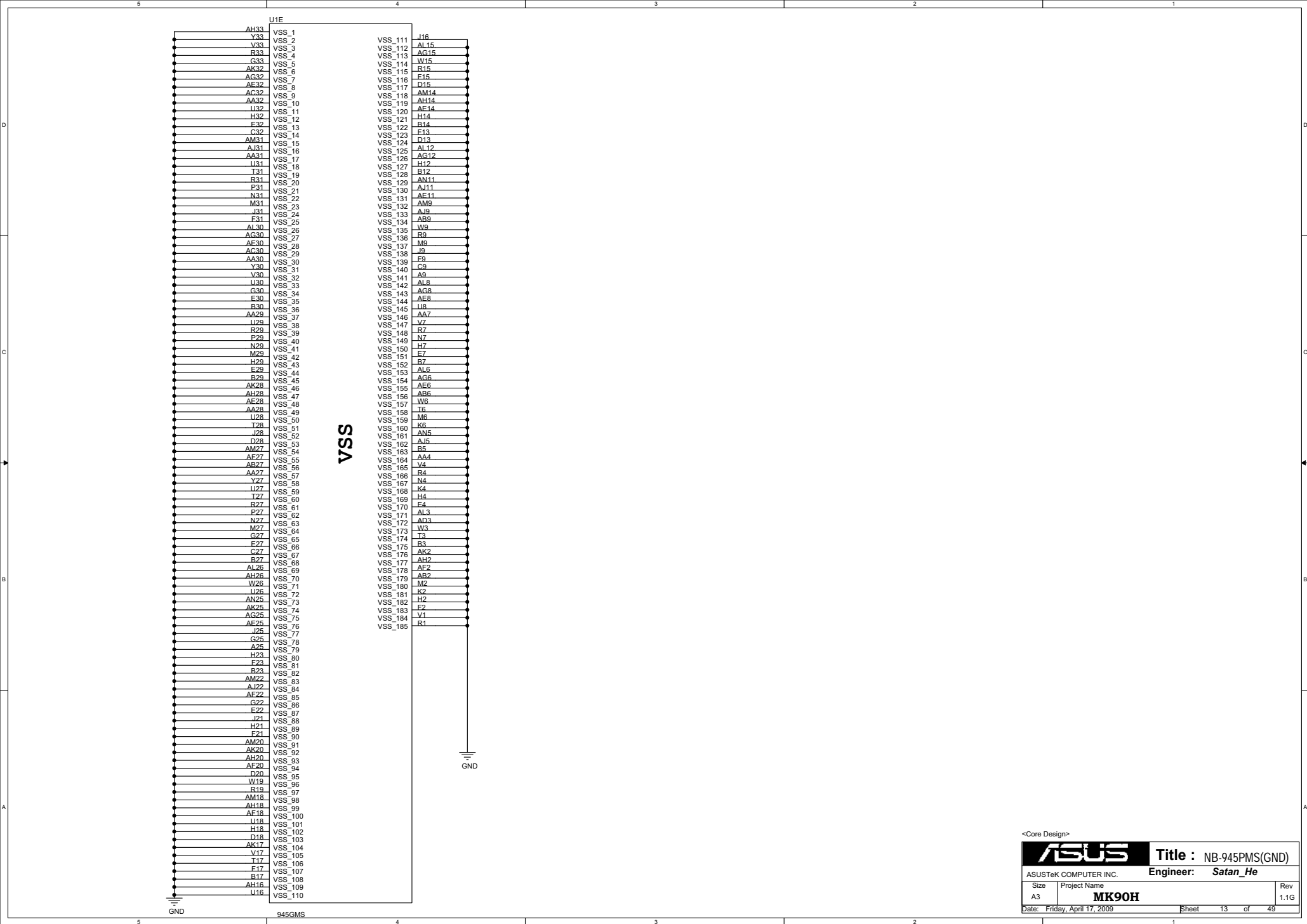
<Core Design>

<b>ASUS</b>		<b>Title : NB-945GMS(DDR2)</b>	
ASUSTeK COMPUTER INC.		Engineer: <b>Satan He</b>	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009		Sheet 10 of 49	

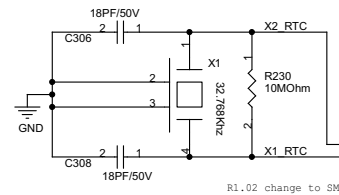


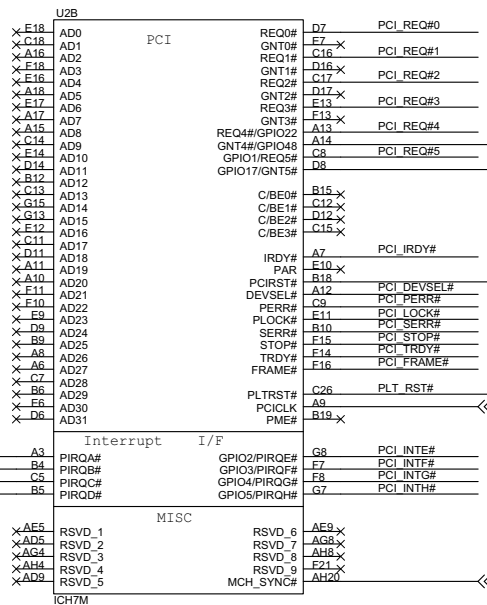






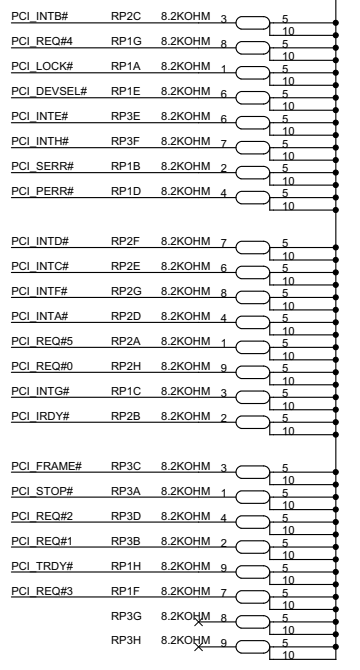
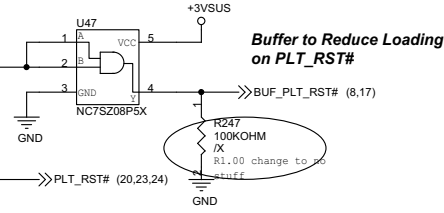






**ICH7 Boot BIOS Select**

	GNT#5	GNT#4
LPC	H	H
PCI	H	L
SPI	L	H

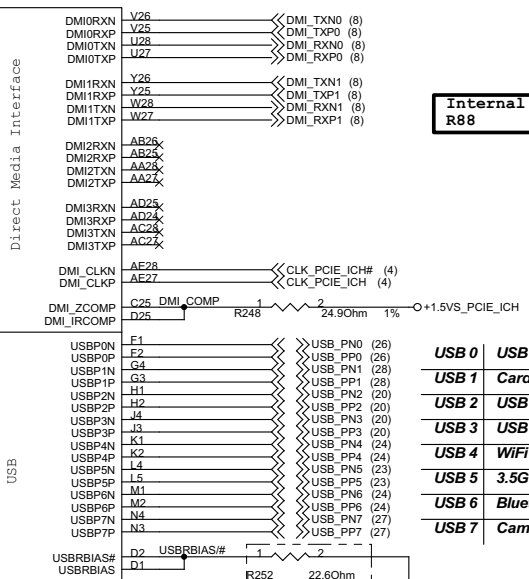
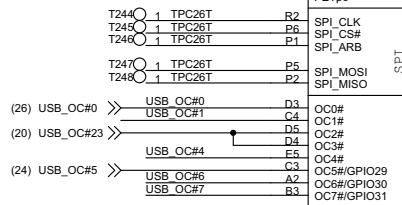
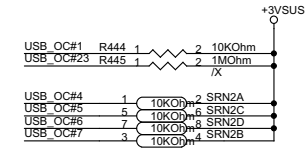


When disable port 1, all port will be disabled.

LAN AR8113 IC

3.5G, Wimax

WIFI PCIExpress Card



Internal Pull-Up R88

- USB 0 USB Conn
- USB 1 Card Reader
- USB 2 USB Conn
- USB 3 USB Conn
- USB 4 WiFi
- USB 5 3.5G
- USB 6 Bluetooth
- USB 7 Camera

CRB & Checklist

<Core Design>

**ASUS** Title : SB-ICH7M(2)

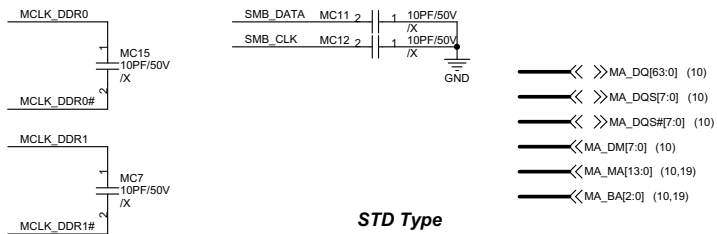
ASUSTek COMPUTER INC. Engineer: Satan He

Size	Project Name	Rev
Custom	<b>MK90H</b>	1.1G

Date: Friday, April 17, 2009 Sheet 16 of 49





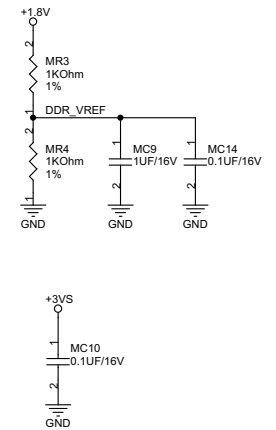
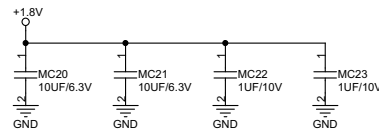
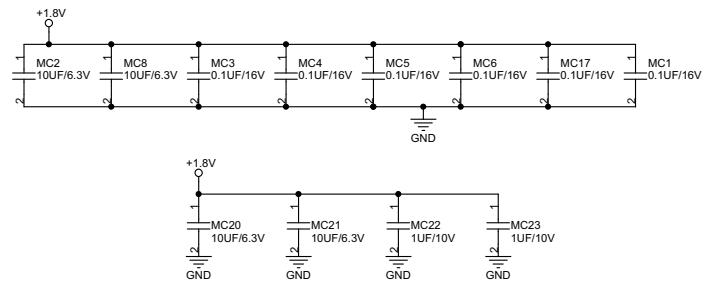


# STD Type

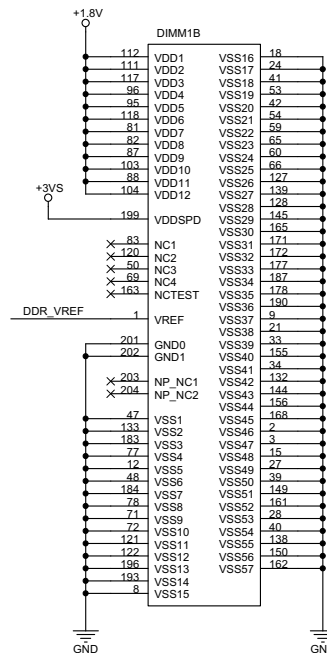
## DIMM1A

MA_MA0	102	A0	DO0	5	MA_DO0
MA_MA1	101	A1	DO1	7	MA_DO1
MA_MA2	100	A2	DO2	17	MA_DO2
MA_MA3	98	A3	DO3	19	MA_DO3
MA_MA4	98	A4	DO4	4	MA_DO4
MA_MA5	97	A5	DO5	6	MA_DO5
MA_MA6	94	A6	DO6	14	MA_DO6
MA_MA7	93	A7	DO7	16	MA_DO7
MA_MA8	91	A8	DO8	23	MA_DO8
MA_MA9	91	A9	DO9	25	MA_DO9
MA_MA10	105	A10/AP	DO10	35	MA_DO10
MA_MA11	90	A11	DO11	37	MA_DO11
MA_MA12	89	A12	DO12	20	MA_DO12
MA_MA13	118	A13	DO13	22	MA_DO13
	X 86	A14	DO14	36	MA_DO14
	X 84	A15	DO15	38	MA_DO15
	X 85	A16_BA2	DO16	43	MA_DO16
MA_BA0	107	BA0	DO17	45	MA_DO17
MA_BA1	106	BA1	DO18	55	MA_DO18
	110	DO19	DO19	57	MA_DO19
(8,19) MA_CS#0	X 30	DO20	DO20	44	MA_DO20
(8,19) MA_CS#1	X 31	DO21	DO21	56	MA_DO21
(8) MCLK_DDR0	X 32	DO22	DO22	58	MA_DO22
(8) MCLK_DDR0#	X 164	DO23	DO23	61	MA_DO23
(8) MCLK_DDR1	X 166	DO24	DO24	63	MA_DO24
(8,19) MA_CKE0	X 79	DO25	DO25	73	MA_DO25
(8,19) MA_CKE1	X 80	DO26	DO26	75	MA_DO26
(10,19) MA_CAS#	X 113	DO27	DO27	76	MA_DO27
(10,19) MA_RAS#	X 108	DO28	DO28	62	MA_DO28
(10,19) MA_WE#	X 109	DO29	DO29	64	MA_DO29
	X 198	DO30	DO30	74	MA_DO30
	X 200	DO31	DO31	76	MA_DO31
(5,17,23,24,30) SMB_CLK	X 197	DO32	DO32	123	MA_DO32
(5,17,23,24,30) SMB_DATA	X 195	DO33	DO33	125	MA_DO33
	X 135	DO34	DO34	135	MA_DO34
	X 137	DO35	DO35	137	MA_DO35
(8,19) MA_ODT0	X 114	DO36	DO36	124	MA_DO36
(8,19) MA_ODT1	X 119	DO37	DO37	126	MA_DO37
	X 134	DO38	DO38	134	MA_DO38
	X 136	DO39	DO39	136	MA_DO39
MA_DM0	10	DM0	DO40	141	MA_DO40
MA_DM1	26	DM1	DO41	143	MA_DO41
MA_DM2	52	DM2	DO42	151	MA_DO42
MA_DM3	67	DM3	DO43	153	MA_DO43
MA_DM4	130	DM4	DO44	140	MA_DO44
MA_DM5	147	DM5	DO45	142	MA_DO45
MA_DM6	170	DM6	DO46	152	MA_DO46
MA_DM7	185	DM7	DO47	154	MA_DO47
	X 157	DO48	DO48	157	MA_DO48
	X 159	DO49	DO49	159	MA_DO49
	X 173	DO50	DO50	173	MA_DO50
	X 175	DO51	DO51	175	MA_DO51
	X 158	DO52	DO52	158	MA_DO52
	X 160	DO53	DO53	160	MA_DO53
	X 174	DO54	DO54	174	MA_DO54
	X 176	DO55	DO55	176	MA_DO55
	X 179	DO56	DO56	179	MA_DO56
	X 181	DO57	DO57	181	MA_DO57
	X 183	DO58	DO58	183	MA_DO58
	X 191	DO59	DO59	191	MA_DO59
	X 180	DO60	DO60	180	MA_DO60
	X 182	DO61	DO61	182	MA_DO61
	X 192	DO62	DO62	192	MA_DO62
	X 194	DO63	DO63	194	MA_DO63

## DDR\_DIMM\_200P



GROUP1  
GROUP2  
SWAP



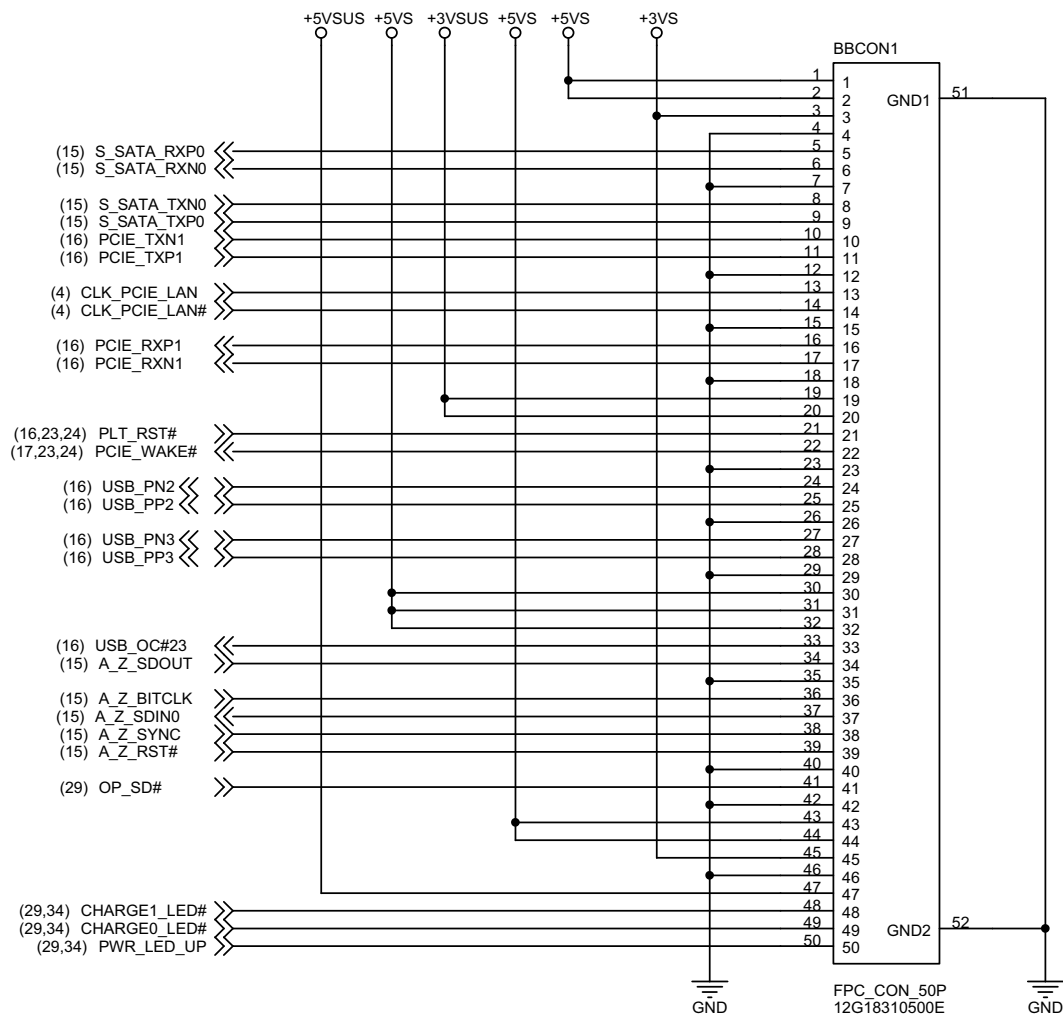
## DDR\_DIMM\_200P

<Core Design>

<b>ASUS</b>		<b>Title : DDR2 SODIMM</b>	
ASUSTek Computer INC.		Engineer: <b>Kell_Huang</b>	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009		Sheet 18 of 47	

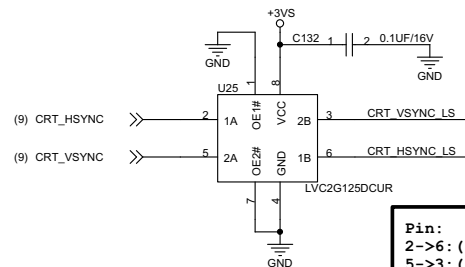
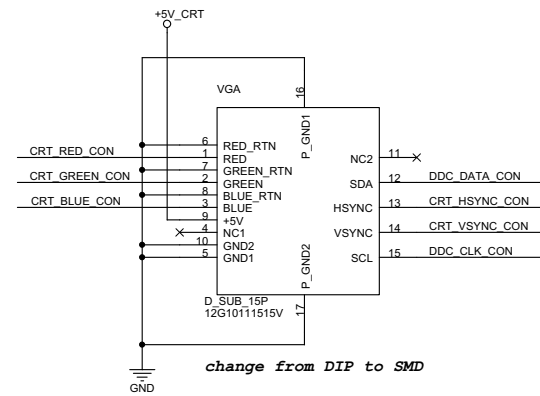
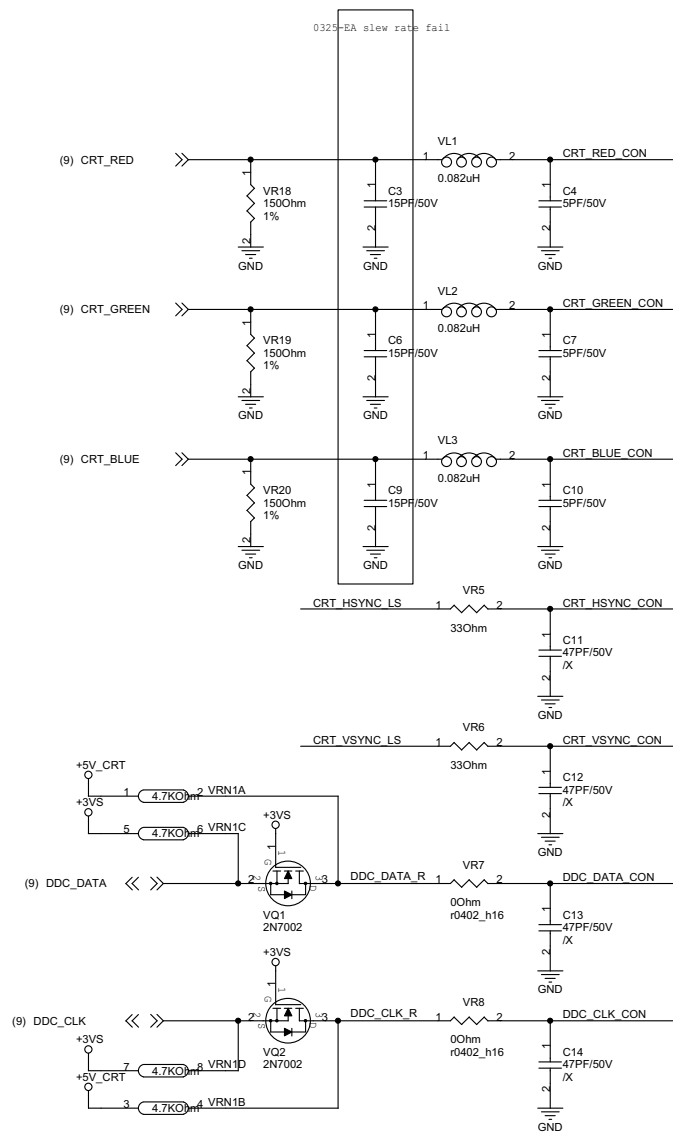




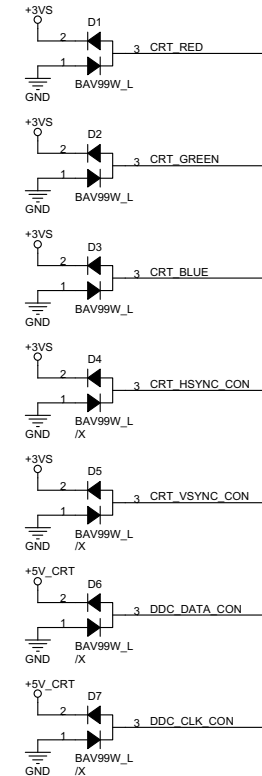
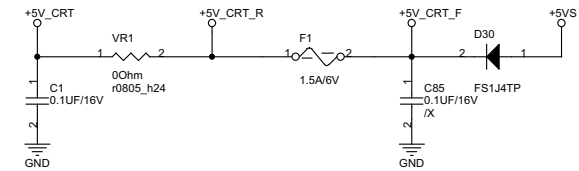


<Core Design>

<b>ASUS</b>		Title : B to B connector	
ASUSTek Computer INC.		Engineer: <i>Boison_Hung</i>	
Size A4	Project Name <b>MK90H</b>		Rev 1.1G
Date: Friday, April 17, 2009		Sheet	20 of 49

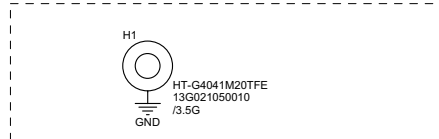
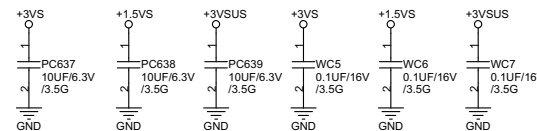
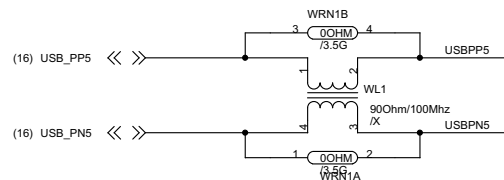


Pin:  
2->6: (1A->1B)  
5->3: (2A->2B)

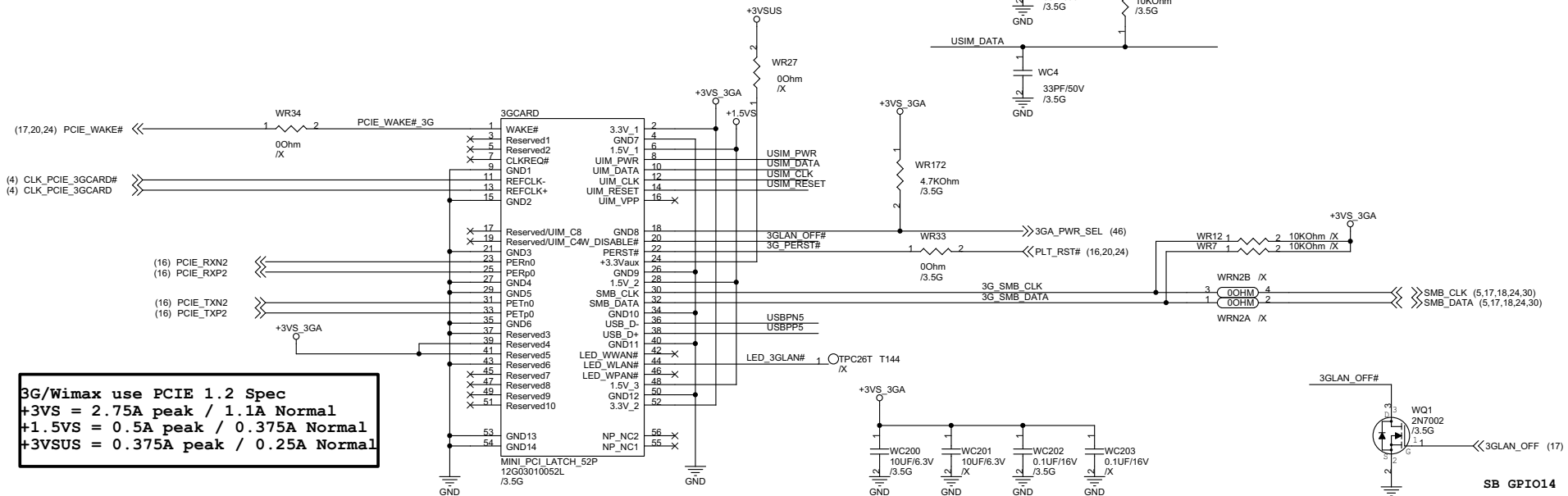
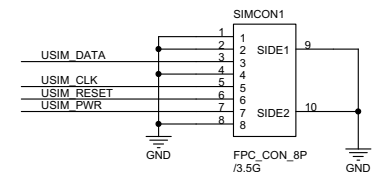
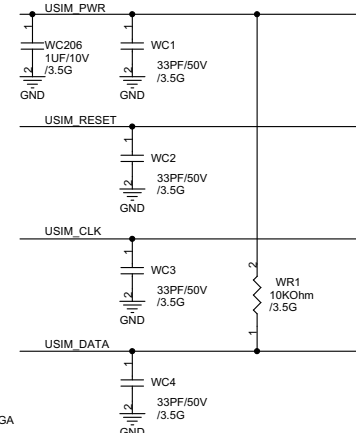


<Core Design>		Title : Onboard VGA	
ASUSTek Computer INC.		Engineer: Kell_Huang	
Size	Project Name		Rev
A3	MK90H		1.1G
Date: Friday, April 17, 2009	Sheet	21	of 49





## CAP Near SIM Socket



3G/Wimax use PCIE 1.2 Spec  
+3VS = 2.75A peak / 1.1A Normal  
+1.5VS = 0.5A peak / 0.375A Normal  
+3VSUS = 0.375A peak / 0.25A Normal

MINICARD use 12G03010052L

<Core Design>

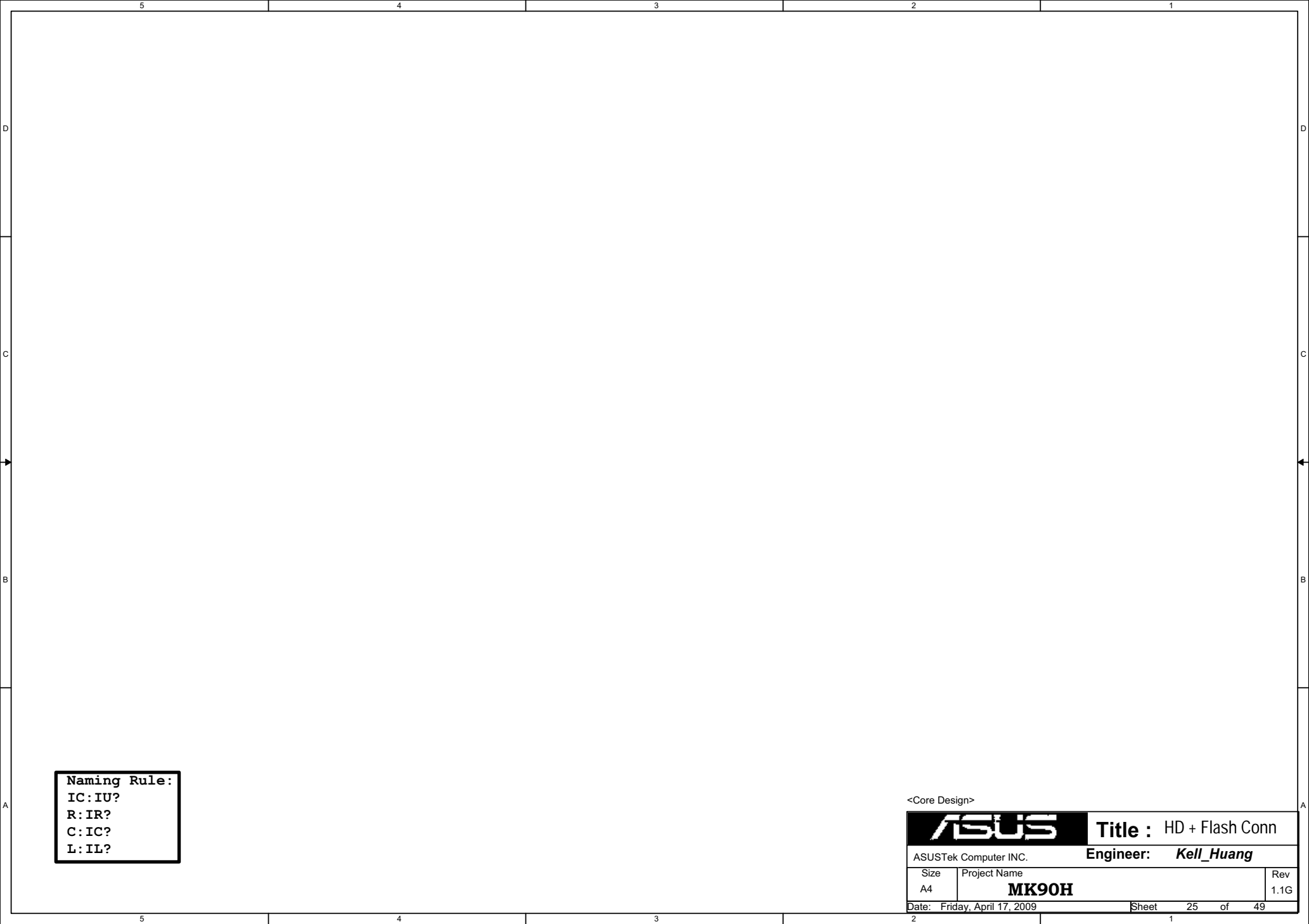
**ASUS** Title :

ASUSTek Computer Inc. Engineer: Kell Huang

Size A3 Project Name MK90H Rev 1.1G


Date: Friday, April 17, 2009 Sheet 23 of 49

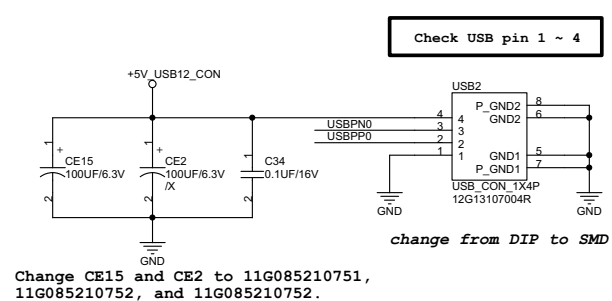
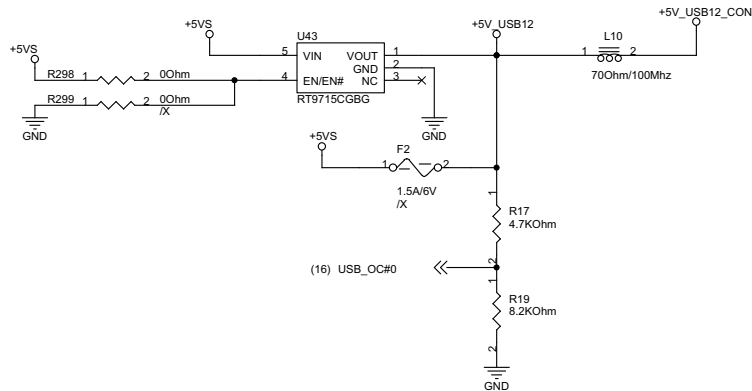
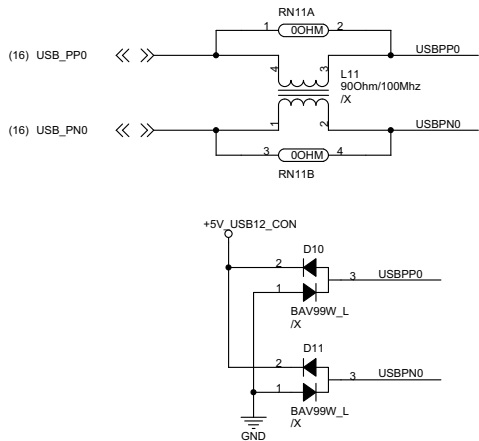




**Naming Rule:**  
IC: IU?  
R: IR?  
C: IC?  
L: IL?

<Core Design>

		<b>Title :</b> HD + Flash Conn	
ASUSTek Computer INC.		<b>Engineer:</b> <i>Kell_Huang</i>	
Size A4	Project Name <b>MK90H</b>		Rev 1.1G
Date: Friday, April 17, 2009		Sheet	25 of 49



Internal USB port 0

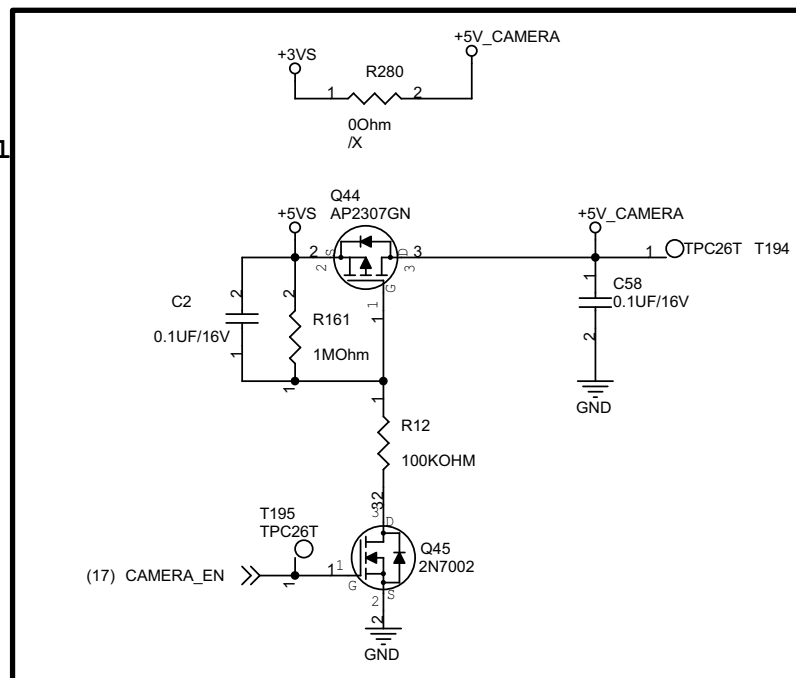
External USB port 2,3

<Core Design>

<b>ASUS</b>		Title : USB Port	
ASUSTek Computer Inc.		Engineer: Kell Huang	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009	Sheet 26	of 49	

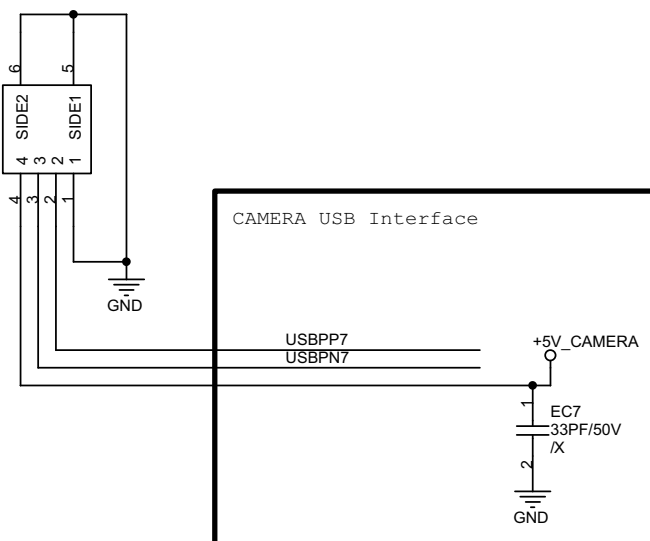


## Power Control



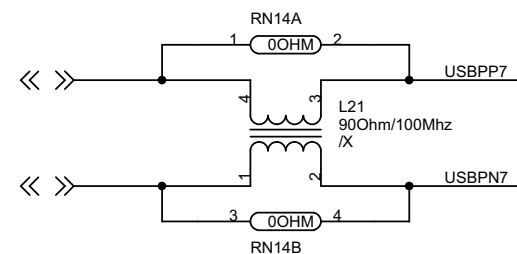
CAMERA  
WTOB\_CON\_4P  
12G171030040

Check



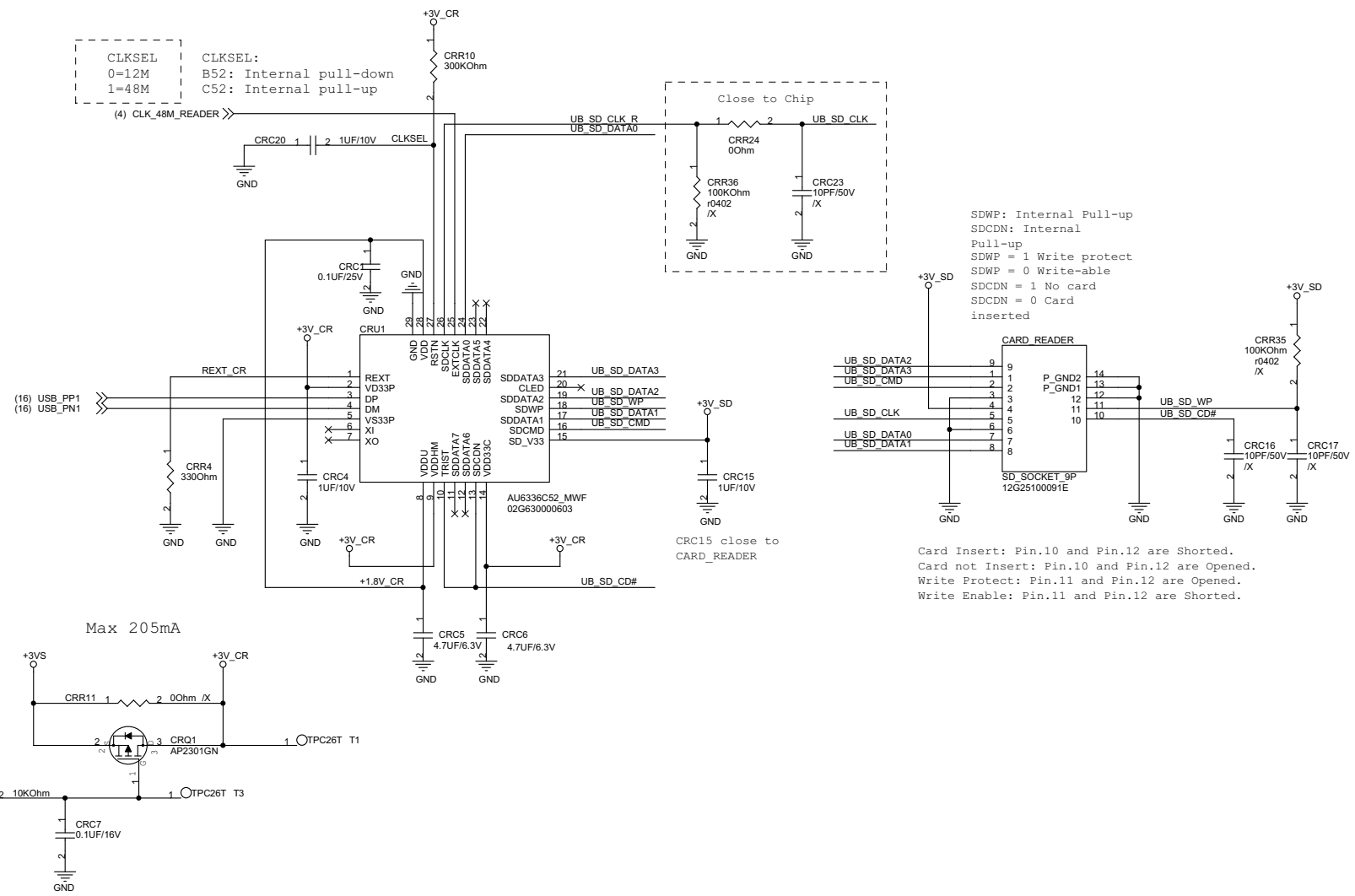
(16) USB\_PP7

(16) USB\_PN7



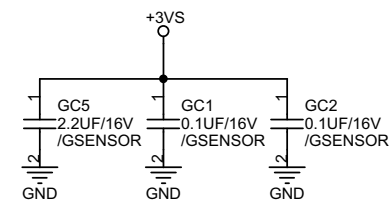
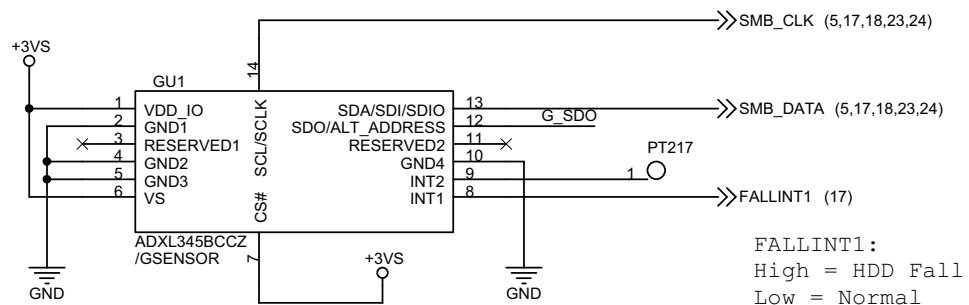
<Core Design>

<b>ASUS</b>		Title : Camera Power	
ASUSTek Computer Inc.		Engineer: Kell_Huang	
Size A4	Project Name <b>MK90H</b>		Rev 1.1G
Date: Friday, April 17, 2009		Sheet 27 of 49	

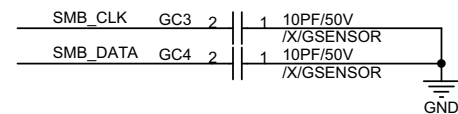
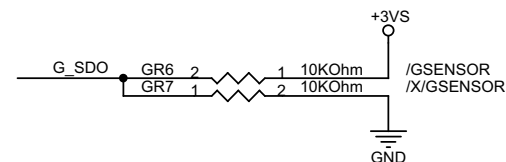


<Core Design>			
<b>ASUS</b>		Title : AU6336-C52	
ASUSTek Computer Inc.		Engineer: Boison Hung	
Size A3	Project Name MK90H	Rev 1.1G	
Date: Friday, April 17, 2009	Sheet 28	of 49	



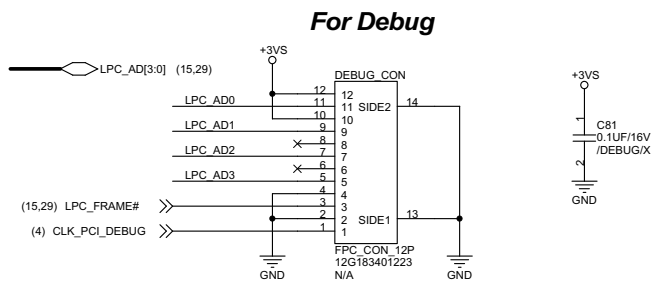
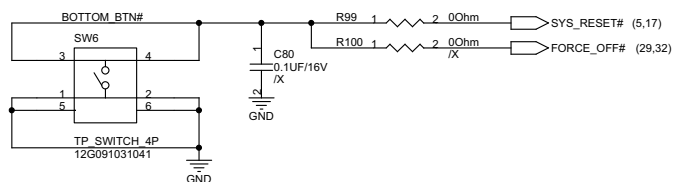
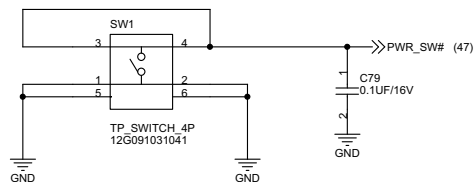


Install GR6 being slaveaddr "3A"  
for ADI/Freescale/ST G-sensors

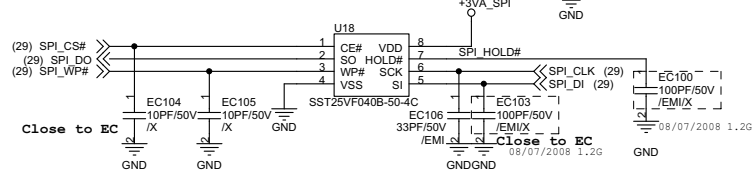
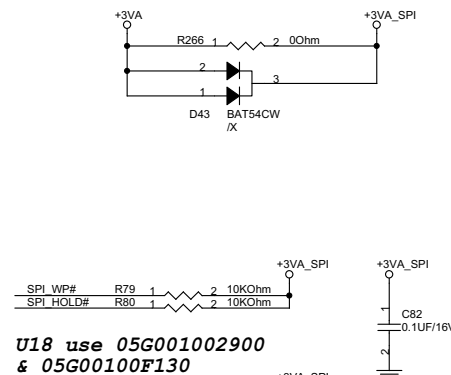


<Core Design>

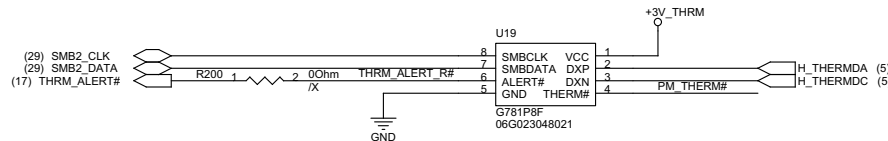
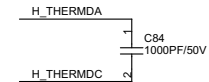
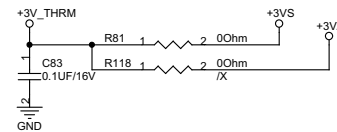
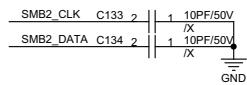
<b>ASUS</b>		<b>Title : G-Sensor</b>	
ASUSTek Computer INC.		Engineer: <b>Kell_Huang</b>	
Size A4	Project Name <b>MK90H</b>		Rev 1.1G
Date: Friday, April 17, 2009		Sheet	30 of 49



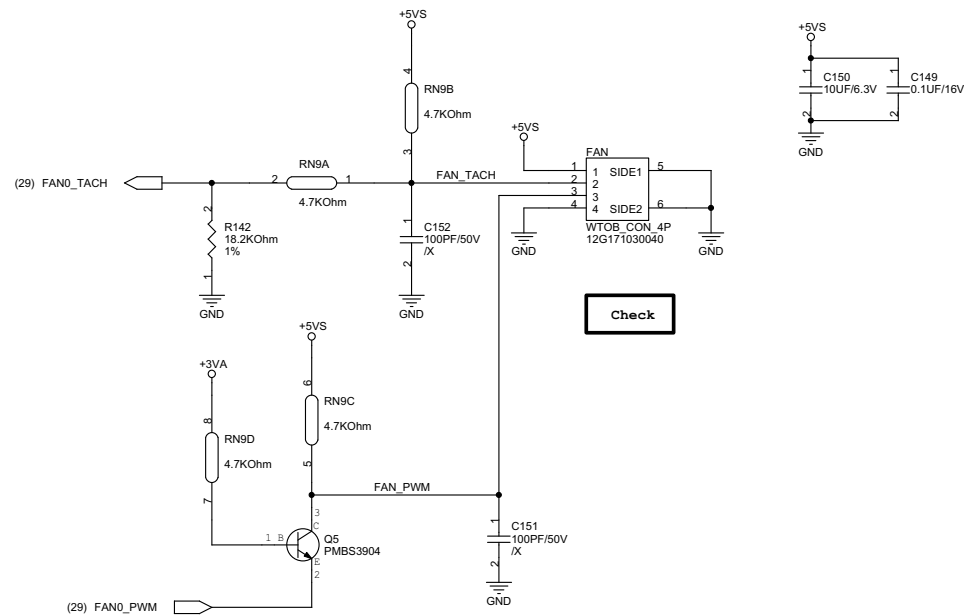
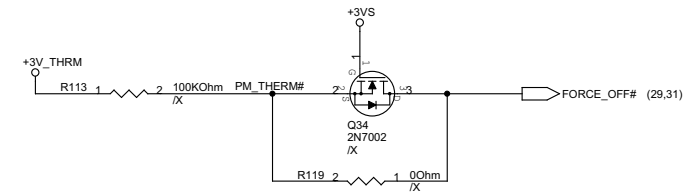
Debug Card cable use Z96 Touch Pad cable, P/N:  
14G124110126, 14G124110120, 14G124110121  
14G124110124, 14G124110125



<Core Design>		Switch_SPIROM_Debug	
<b>ASUS</b>		Title :	
ASUSTek Computer Inc.		Engineer: Kell Huang	
Size	Project Name	MK90H	
A3			Rev 1.1G
Date: Friday, April 17, 2009		Sheet	31 of 49

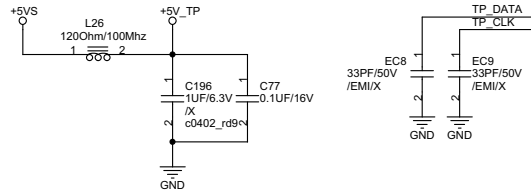
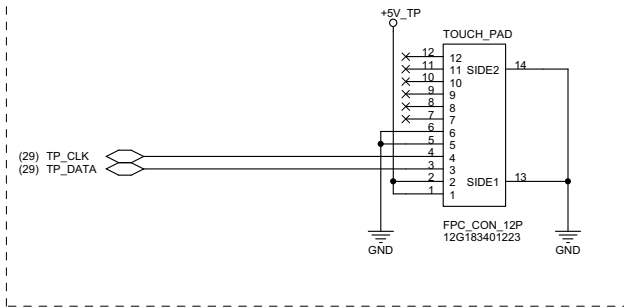


U19 use 06G023048021

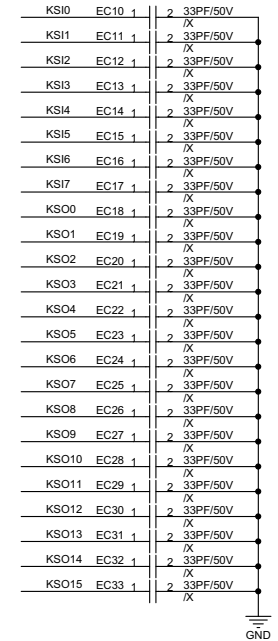
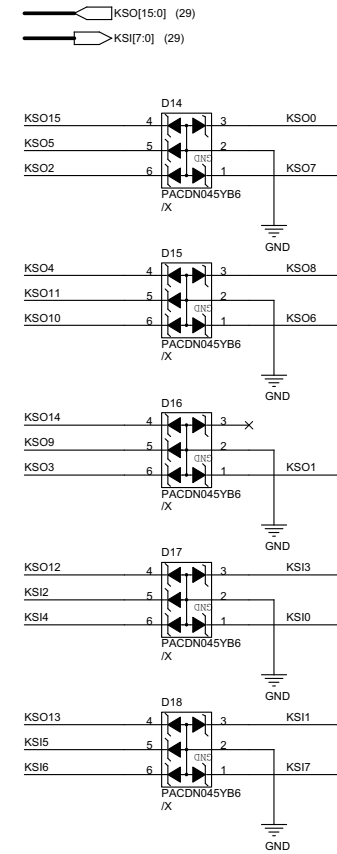
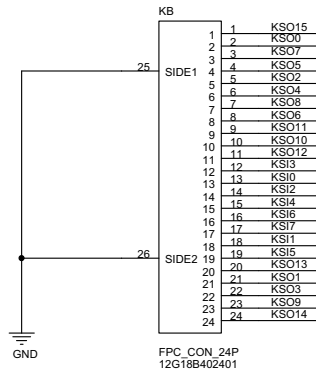


<Core Design>		Thermal Sensor_FAN	
<b>ASUS</b>		Title :	
ASUSTek Computer Inc.		Engineer: Kell Huang	
Size	Project Name	Rev	
A3	MK90H	1.1G	
Date: Friday, April 17, 2009	Sheet	32	of 49

## For Touch-Pad



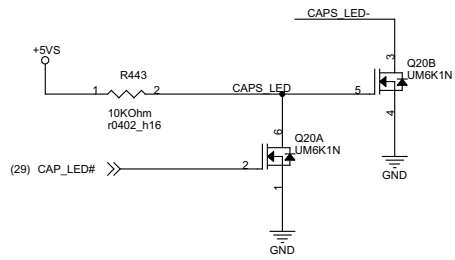
## For Keyboard Connector



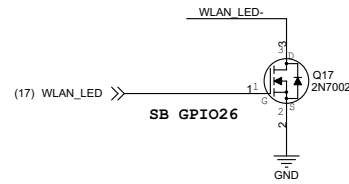
<Core Design>

<b>ASUS</b>		Title : KB_Touch Pad	
ASUSTek Computer Inc.		Engineer: Kell Huang	
Size A3	Project Name MK90H	Rev 1.1G	
Date: Friday, April 17, 2009		Sheet 33	of 49

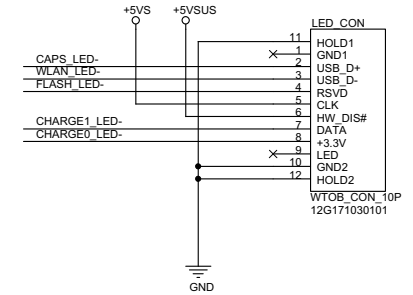
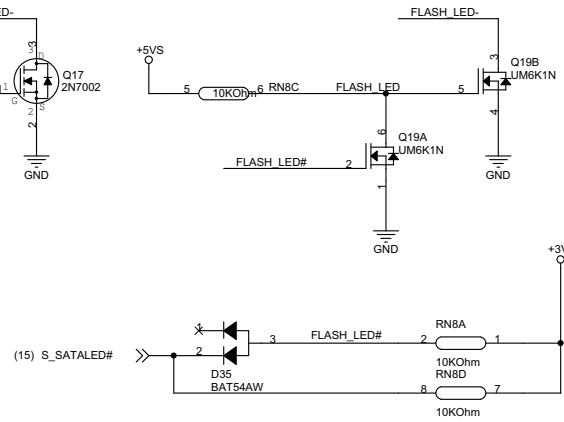
### for CAPLOCK LED



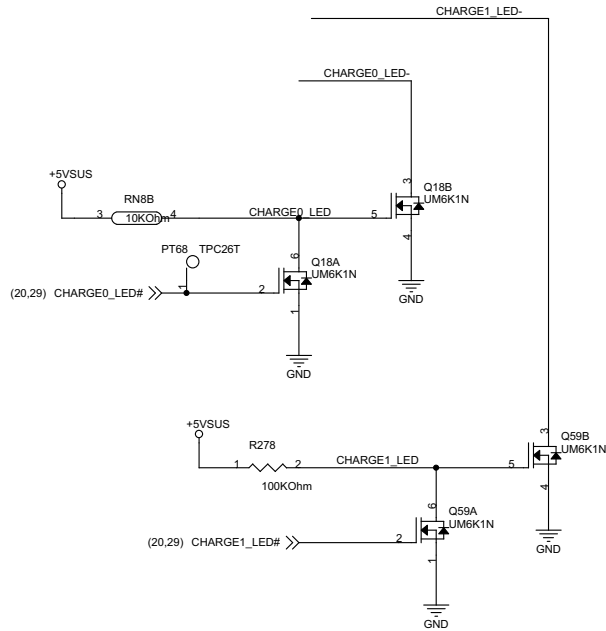
### for WLAN/BlueTooth LED



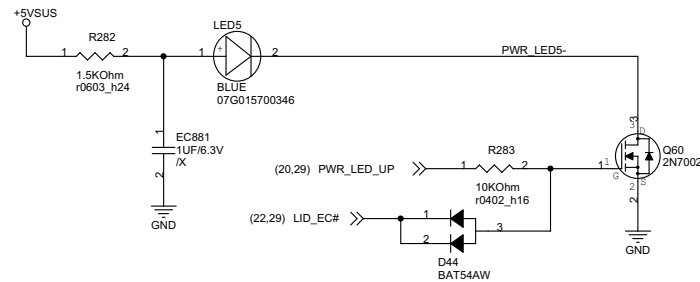
### for FLASH LED



### for CHARGE LED



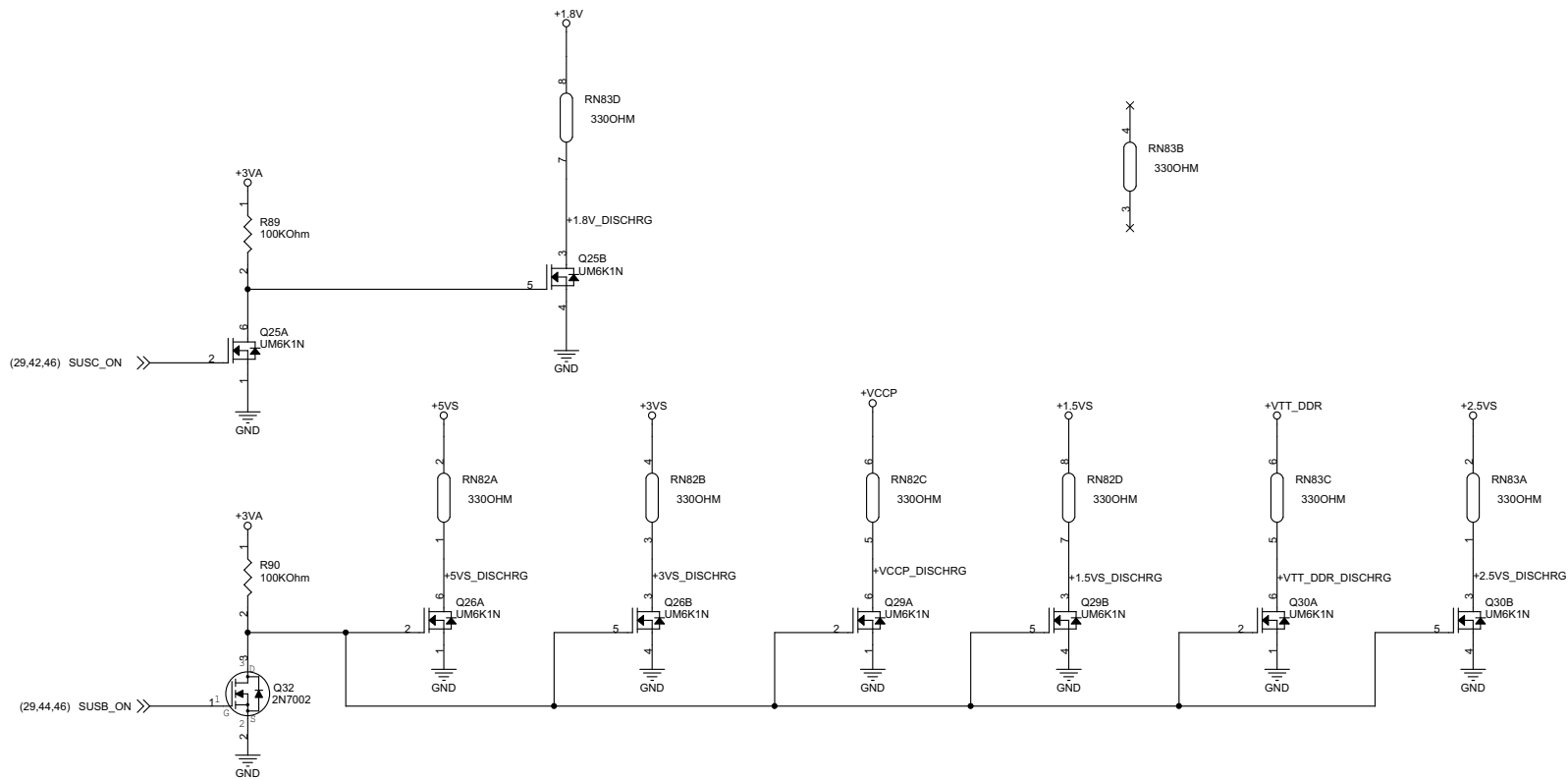
### for POWER BOTTOM LED



<Core Design>

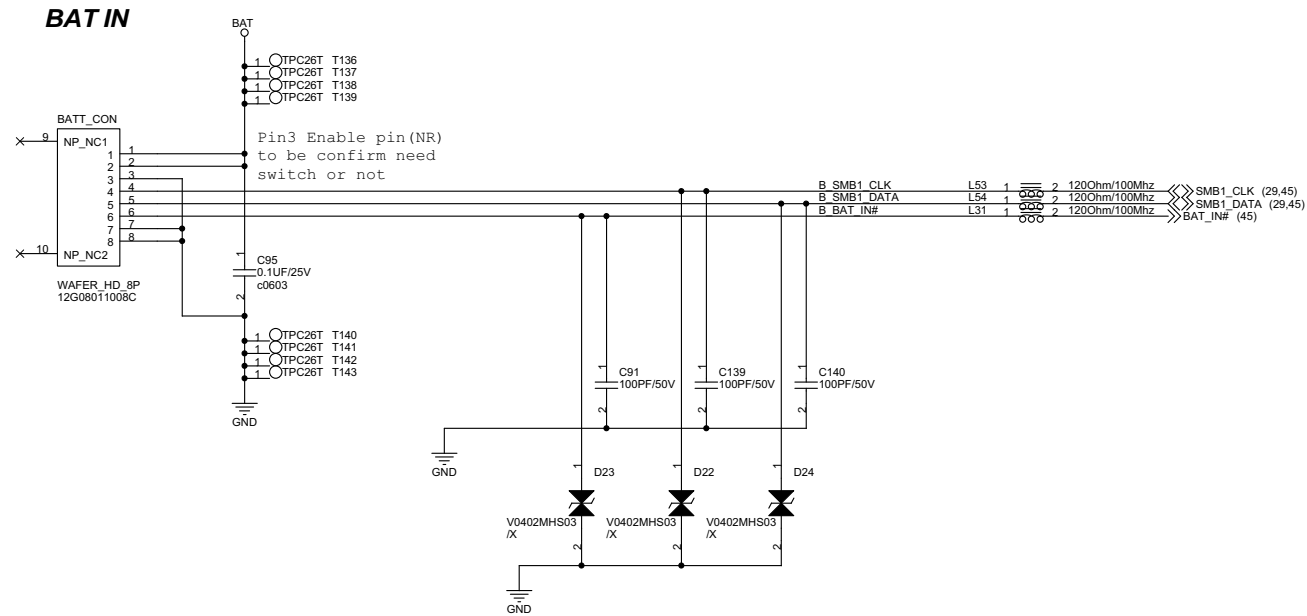
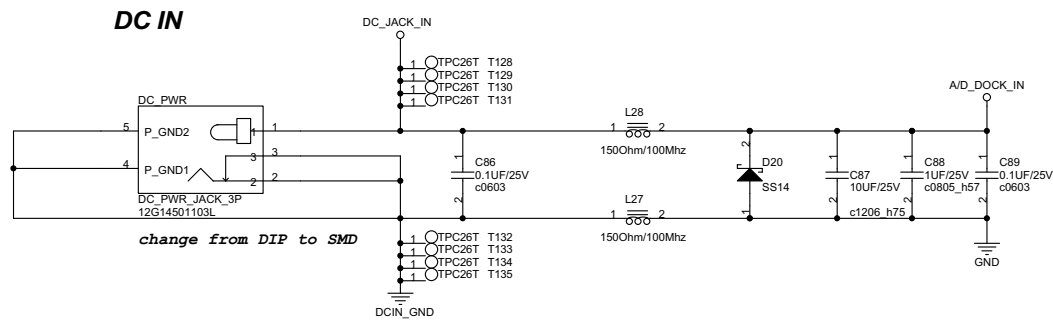
<b>ASUS</b>		Title : LED	
ASUSTek Computer Inc.		Engineer: Kell Huang	
Size A3	Project Name MK90H	Rev 1.1G	
Date: Friday, April 17, 2009		Sheet 34 of 49	





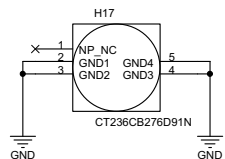
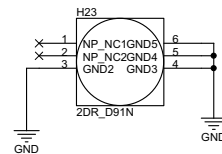
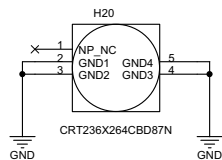
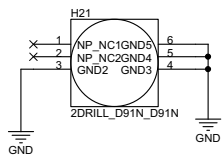
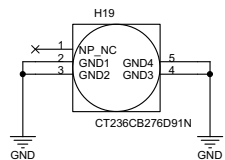
<Core Design>

<b>ASUS</b>		<b>Title : Discharge</b>	
ASUSTek Computer Inc.		Engineer: <b>Kell Huang</b>	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009	Sheet	35	of 49

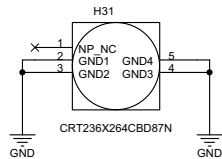


<Core Design>

<b>ASUS</b>		<b>Title : PWR Jack</b>	
ASUSTek Computer Inc.		Engineer: <b>Kell Huang</b>	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009	Sheet 36 of 49		



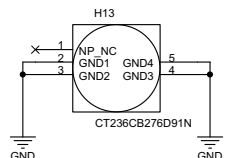
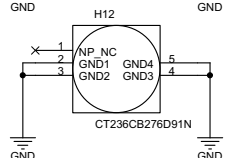
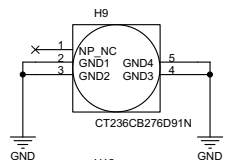
Top side : C size  
Bottom side : E size



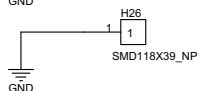
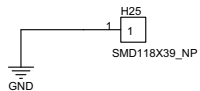
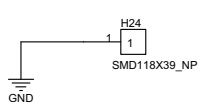
Top side : B size  
Bottom side : E size

直径2.3mm  
Tooling hole

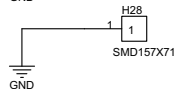
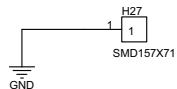
Top side : H size  
Bottom side : E size



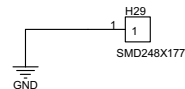
Top side : A size  
Bottom side : E size



Size: I copper Pad



Size: F copper Pad



Size: J copper Pad

<Core Design>

<b>ASUS</b>		Title : Srew Hole	
ASUSTek Computer Inc.		Engineer: Kell Huang	
Size A3	Project Name <b>MK90H</b>	Rev 1.1G	
Date: Friday, April 17, 2009	Sheet 37	of 49	

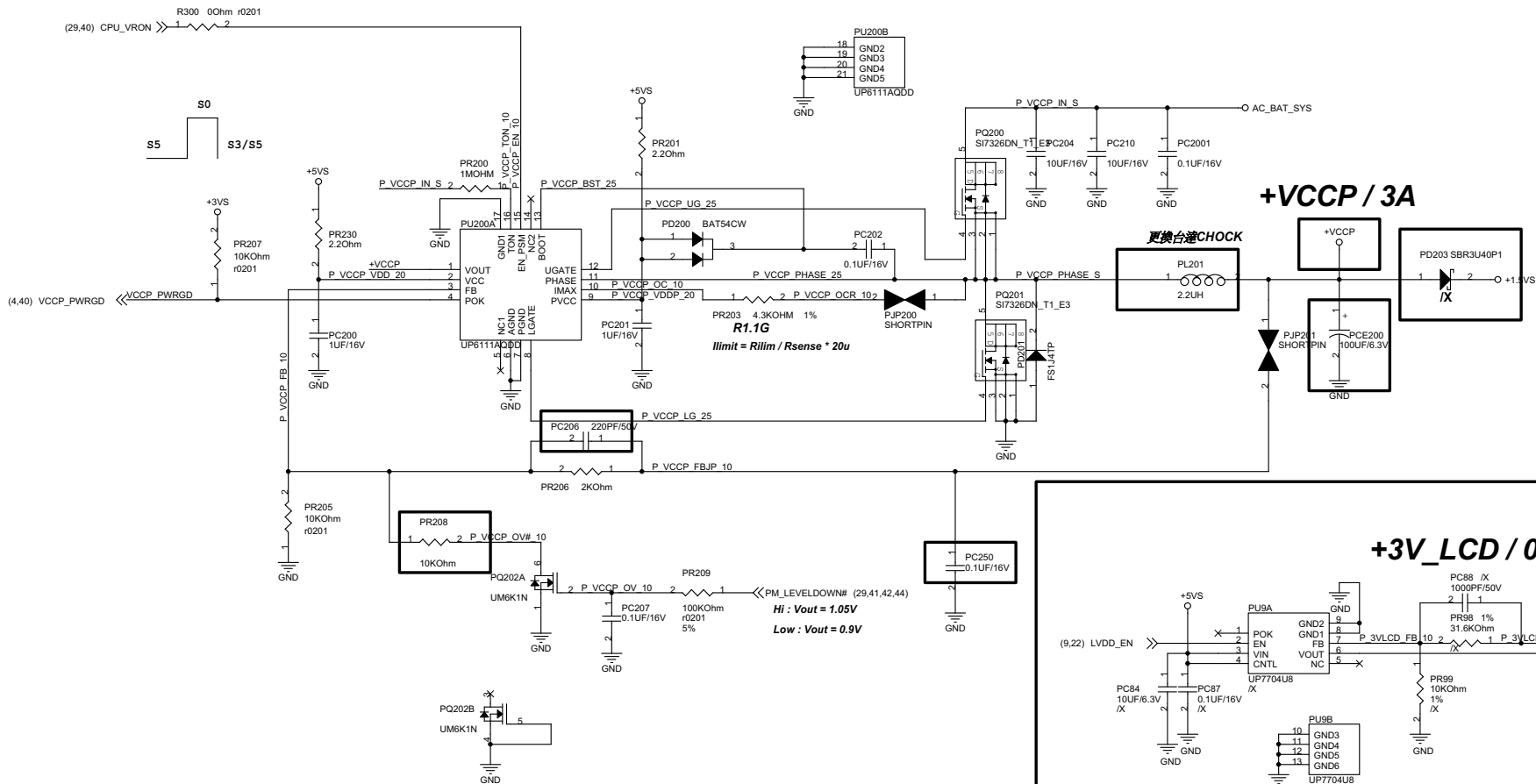








# 1.1G change Enable signal from CPU\_VRON



PM_LEVELDOWN#	CPU_LEVELDOWN	CPU_LEVELDOWN#	Voltage	Status
L	L	H	0.9V	Power Saving
H	L	H	1.05V	Normal
H	H	L	1.157V	Performance
L	H	L	1.072V	N/A

<Core Design>

<b>ASUS</b>		Title : VCCP	
ASUSTek Computer INC.		Engineer: Joy_Zhou	
Size	Project Name	Rev	
Custom	MK90H	1.1G	
Date: Friday, April 17, 2009		Sheet 43 of 49	





