K7S8X

Revision: 1.02 12/25

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DDR CLK BUF. PAGE:7

CPU AMD K7 SOCKET A 462P PAGE: 8,9

HOST BUS

DDR x3 PAGE: 14,15,16

MEM BUS

North Bridge SiS746 PAGES 10,11,12,13

AGP BUS

AGP Slot PAGE:17

V-Link BUS

South Bridge SiS963 PAGE:18,19,20,21,21

PCI BUS

PCI Slot * 6 PAGE: 22,23

Primary/Secondary IDE PAGE:25

1394 Interface PAGE:34

6 USB1.1 PAGE:28

MII

PHY RTL8201 PAGE:24

AC-LINK

AMR for Modem PAGE:34

AC97 Codec PAGE:26

MIC

Line In

Line Out

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SMBUS

LPC

PS/2 KB,Mouse PAGE:30

Parallel Port PAGE:30

Serial Port * 1 PAGE:30

FDD PAGE:30

Super I/O Winbond 83697 PAGE:29

JoyStick PAGE:27

S3/Power On Logic PAGE:31, 32

Flash/Panel FAN PAGE:33

ATX Power

+5VSB	+12V
+3.3V	-5V
+5V	-12V

PAGE:3,4

CPU DC/DC

ST 6917B

INPUT	OUTPUT
+12V	+1.85V~1.1V

PAGE:5

System Regulator

INPUT	OUTPUT
+5VSB	+3VSB
+3V	
+3V	VDDQ
+3V_DUAL	+2.5V_DUAL
+2.5V_DUAL	VTT_DDR

PAGE:4

PCB LAYER

L1 : Component (S1)
L2 : GND
L3 : VCC
L4 : Component (S4)

0830a

ASUS

Title : BLOCK

Asustek Computer INC. Engineer: Jason Chou

Size	Project Name	Rev
A4	K7S8X	1.02

Date: Wednesday, December 25, 2002 Sheet 1 of 35

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1	BLOCK	ARCHITECTURE BLOCK DIAGRAM
2	HISTORY	HISTORY OF MAIN BOARD VERSION
3	ATXPWR-1	ATX Power Conn(+3.3V, +5V, +12V)
4	ATXPWR_2	ATX POWER Conn
5	CPUPWR	DC/DC FOR CPU
6	CLOCK	CLOCK GENERATOR (MAIN CLOCK)
7	CLOCK BUFFER	DDR CLOCK BUFFER
8	CPU_1	CPU (AMD SOCKET 462)
9	CPU_2	CPU (AMD SOCKET 462)
10	SIS746_HOST AGP	
11	SIS746_MEMORY	
12	SIS746-MULTI-IO	
13	SIS746-POWER	
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15	DDR DIMM	DDR DIMM1,2
16	DDR DIMM	DDR DIMM3
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19	SIS746-MISC	
20	SIS746-USB	
21	SIS746-POWER	
22	PCI SLOT 1,2,3	PCI SLOT 1,2,3
23	PCI SLOT 4,5,6	PCI SLOT 4,5,6
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26	AC97	AUDIO CODEC
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28	USB PORT	USB PORT 2&3, 4&5
29	W83697HF	SIO-W83697HF
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31	POWER ON/S3	
32	ROM/PANEL	
33	AMR	AMR SLOT
34	1394 PHY	1394 PHY INTERFACE
35	SCREW	ATX SCREW

Revision History

Date	Version	Change Note
08/28		AFTER SWAPPING ADD HAINCLK# LCL CHANGE CN TO C0603

0830a

Asustek Computer INC.

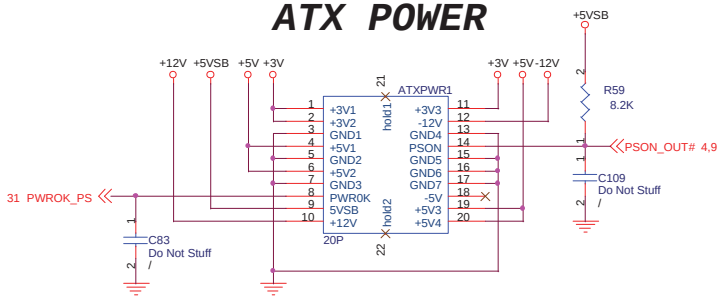
Title : HISTORY

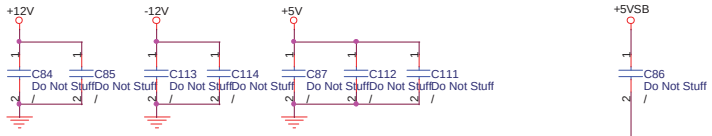
Engineer: Jason Chou

Size	Project Name	Rev
A3	K7S46	1.00

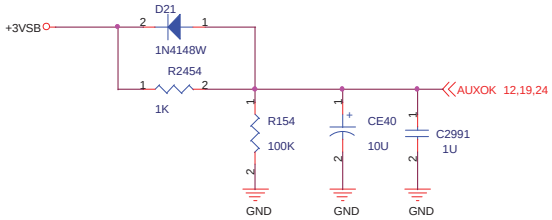
Date: Wednesday, December 25, 2002 Sheet 2 of 35

ATX POWER

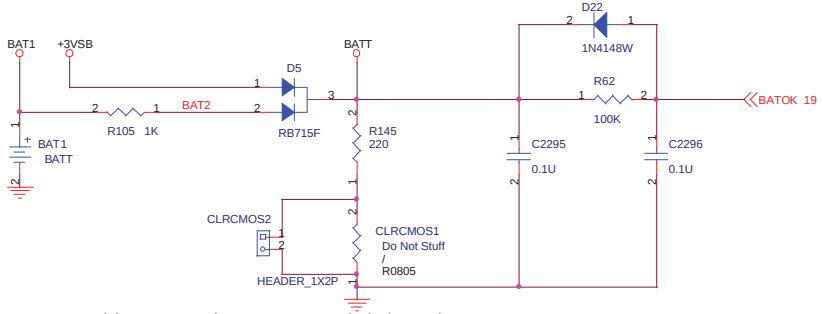




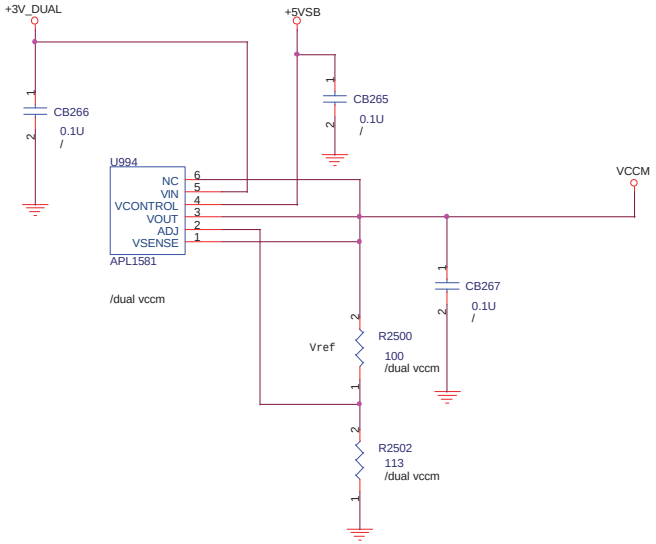
Around the ATX Power Connector



BATT

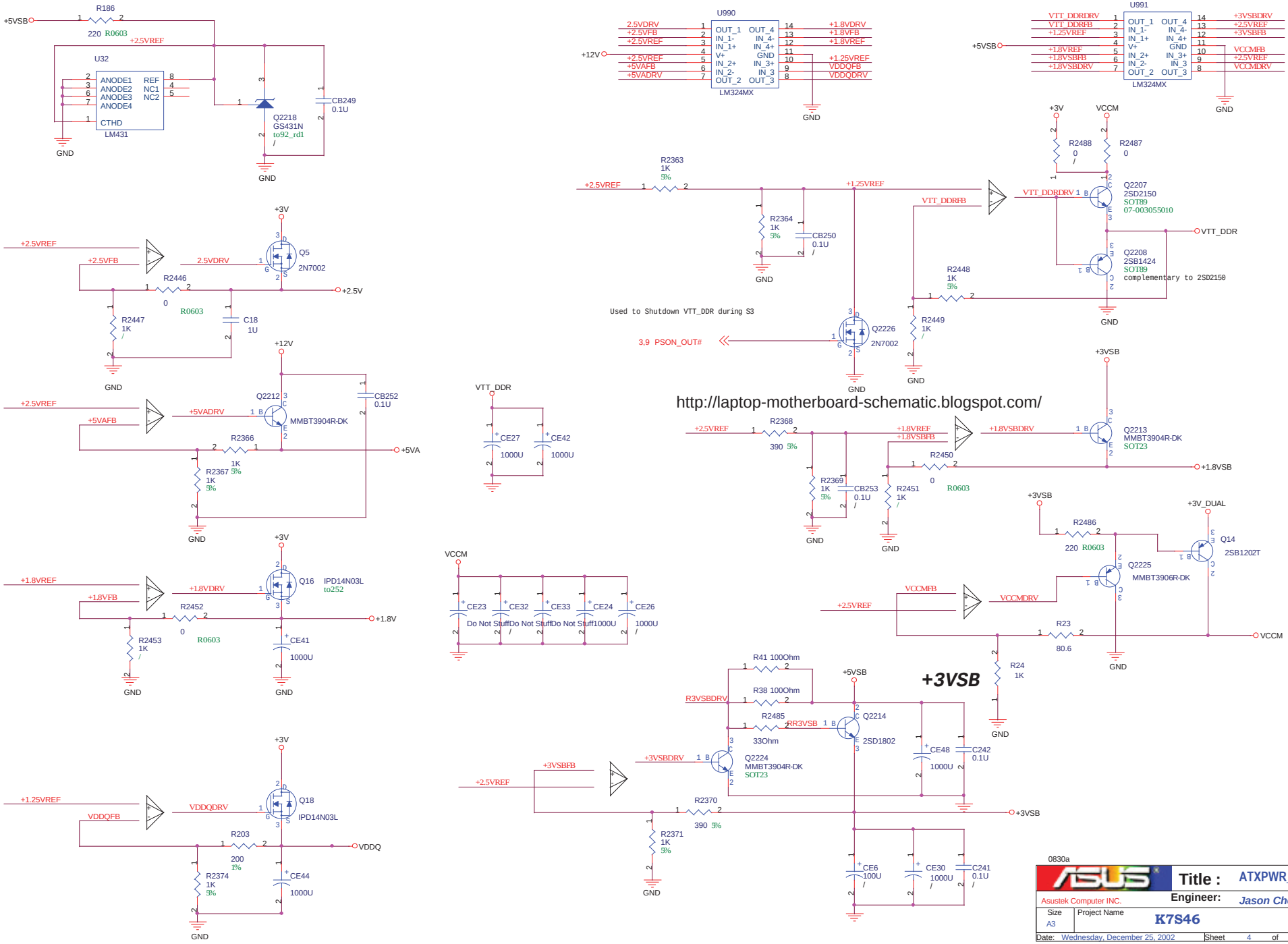


This 220 OHM is to prevent Diode burn when clear CMOS. The resulted Low is low enough or not should be calculated.

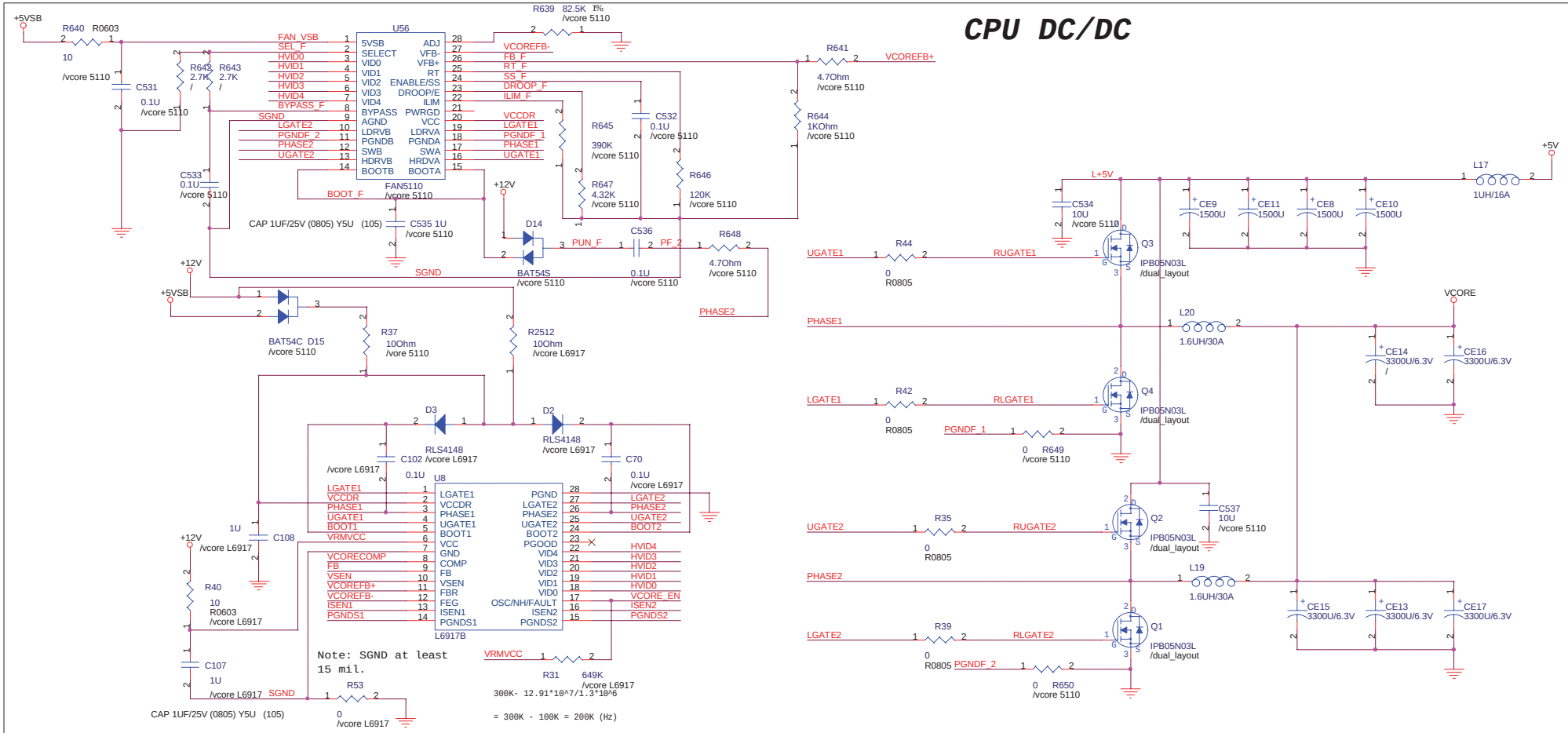


0830a

ASUSTeK Computer INC.	Title : ATXPWR_1	
	Engineer: Jason Chou	
Size: A3	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 3 of 35	


R186
220 R0603
+5VSB
+2.5VREF
U32
ANODE1
ANODE2
ANODE3
ANODE4
CTHD
REF
NC1
NC2
LM431
Q2218
GS431N
to92_rd1
CB249
0.1U
GND
U990
OUT_1
IN_1-
IN_1+
V+
IN_2+
IN_2-
OUT_2
OUT_4
IN_4-
IN_4+
GND
IN_3+
IN_3
OUT_3
LM324MX
2.5VDRV
+2.5VFB
+5VADRV
+1.8VDRV
+1.8VFB
+1.8VREF
+1.25VREF
VDDQFB
VDDQDRV
+12V
U991
VTT_DDRDRV
VTT_DDRFB
+1.25VREF
+1.8VSBFB
+1.8VSBDRV
+3VSBDRV
+2.5VREF
+3VSBFB
VCCMFB
VCCMDRV
+3V
VCCM
R2488
0
R2487
0
R2363
1K
5%
R2364
1K
5%
CB250
0.1U
Q2207
2SD2150
SOT89
07-003055010
VTT_DDR
Q2208
2SB1424
SOT89
complementary to 2SD2150
R2448
1K
5%
R2449
1K
Used to Shutdown VTT_DDR during S3
3,9 PSON_OUT#
Q2226
2N7002
Q5
2N7002
R2446
0
R0603
+2.5V
R2447
1K
C18
1U
Q2212
MMBT3904R-DK
CB252
0.1U
+5VA
R2366
1K
5%
R2367
1K
5%
CE27
1000U
CE42
1000U
http://laptop-motherboard-schematic.blogspot.com/
R2368
390 5%
R2369
1K
5%
CB253
0.1U
R2450
0
R0603
R2451
1K
Q2213
MMBT3904R-DK
SOT23
+1.8VSB
R2486
220 R0603
+3V_DUAL
Q14
2SB1202T
Q2225
MMBT3906R-DK
R23
80.6
R24
1K
VCCM
CE23
CE32
CE33
CE24
CE26
Do Not Stuff
Do Not Stuff
Do Not Stuff
1000U
Q16
IPD14N03L
to252
+1.8V
R2452
0
R0603
R2453
1K
CE41
1000U
R41 100Ohm
R38 100Ohm
R3VSBDRV
R2485
33Ohm
RR3VSB
Q2214
2SD1802
Q2224
MMBT3904R-DK
SOT23
CE48
1000U
C242
0.1U
+3VSB
R2370
390 5%
R2371
1K
5%
CE6
100U
CE30
1000U
C241
0.1U
Q18
IPD14N03L
R203
200
1%
VDDQ
R2374
1K
5%
CE44
1000U
0830a
Title : ATXPWR_2
Asustek Computer INC.
Engineer: Jason Chou
Size A3
Project Name K7S46
Rev 1.00
Date: Wednesday, December 25, 2002
Sheet 4 of 35

CPU DC/DC



http://laptop-motherboard-schematic.blogspot.com/

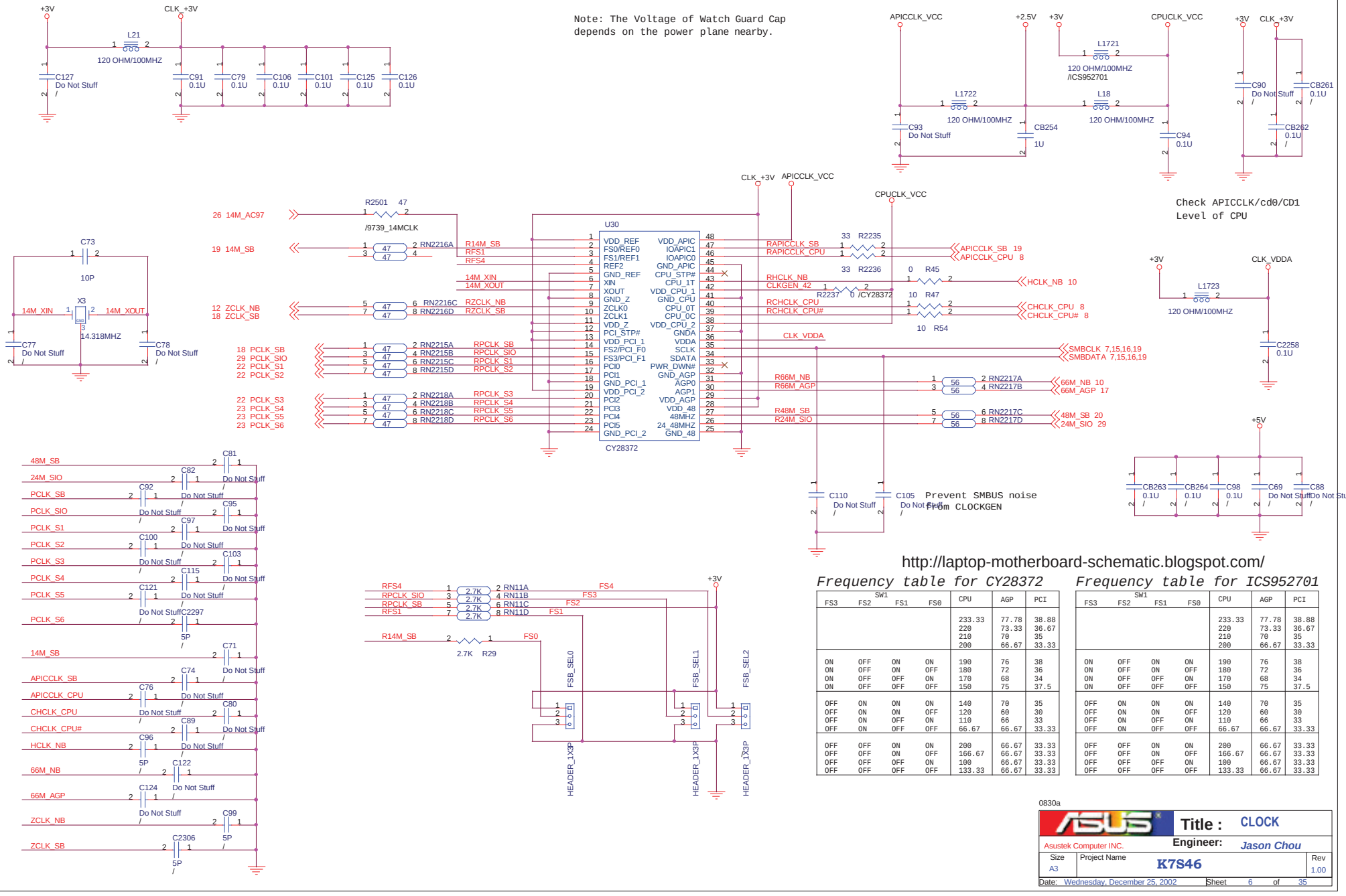
0830a

ASUS	Title :	CPUPWR
<OrgName>	Engineer:	Jason Chou
Size: A3	Project Name: K7S46	Rev: 101
Date: Wednesday, December 25, 2002	Sheet 5 of 35	

CY28372/ICS952701

CLOCK Generator

Note: The Voltage of Watch Guard Cap depends on the power plane nearby.



http://laptop-motherboard-schematic.blogspot.com/

Frequency table for CY28372

SW1 FS3	FS2	FS1	FS0	CPU	AGP	PCI
				233.33	77.78	38.88
				220	73.33	36.67
				210	70	35
				200	66.67	33.33
ON	OFF	ON	ON	190	76	38
ON	OFF	ON	OFF	180	72	36
ON	OFF	OFF	ON	170	68	34
ON	OFF	OFF	OFF	150	75	37.5
OFF	ON	ON	ON	140	70	35
OFF	ON	ON	OFF	120	60	30
OFF	ON	OFF	ON	110	66	33
OFF	ON	OFF	OFF	66.67	66.67	33.33
OFF	OFF	ON	ON	200	66.67	33.33
OFF	OFF	ON	OFF	166.67	66.67	33.33
OFF	OFF	OFF	ON	100	66.67	33.33
OFF	OFF	OFF	OFF	133.33	66.67	33.33

Frequency table for ICS952701

SW1 FS3	FS2	FS1	FS0	CPU	AGP	PCI
				233.33	77.78	38.88
				220	73.33	36.67
				210	70	35
				200	66.67	33.33
ON	OFF	ON	ON	190	76	38
ON	OFF	ON	OFF	180	72	36
ON	OFF	OFF	ON	170	68	34
ON	OFF	OFF	OFF	150	75	37.5
OFF	ON	ON	ON	140	70	35
OFF	ON	ON	OFF	120	60	30
OFF	ON	OFF	ON	110	66	33
OFF	ON	OFF	OFF	66.67	66.67	33.33
OFF	OFF	ON	ON	200	66.67	33.33
OFF	OFF	ON	OFF	166.67	66.67	33.33
OFF	OFF	OFF	ON	100	66.67	33.33
OFF	OFF	OFF	OFF	133.33	66.67	33.33

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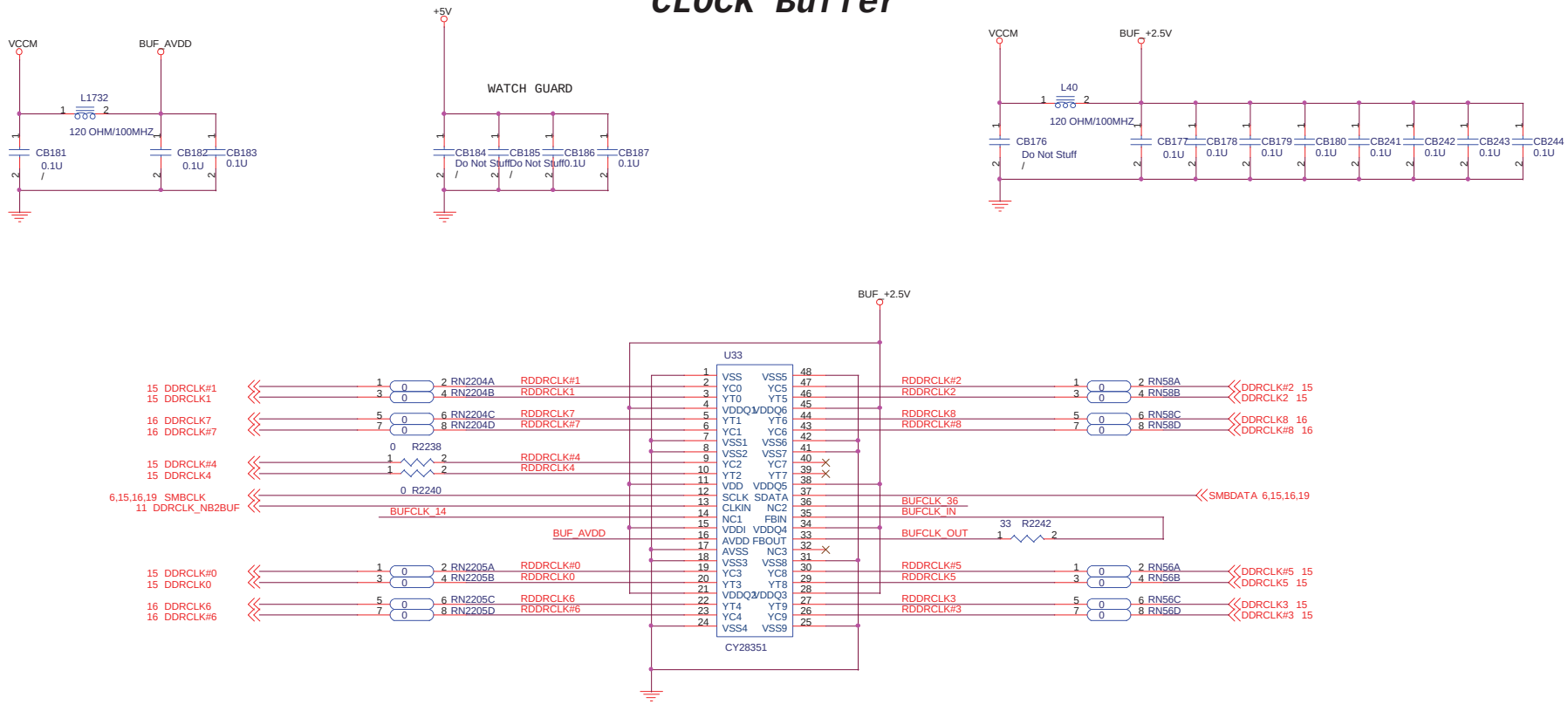
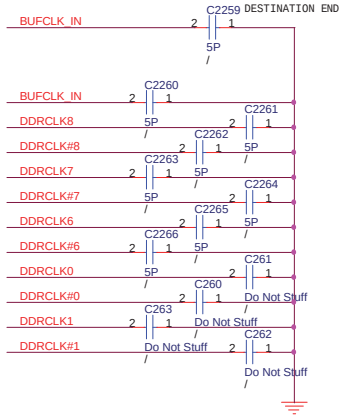
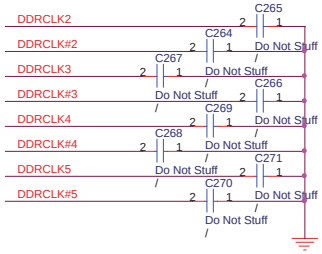
ASUS	Title : CLOCK	
Asustek Computer INC.	Engineer: Jason Chou	
Size A3	Project Name K7S46	Rev 1.00
Date: Wednesday, December 25, 2002	Sheet 6 of 35	

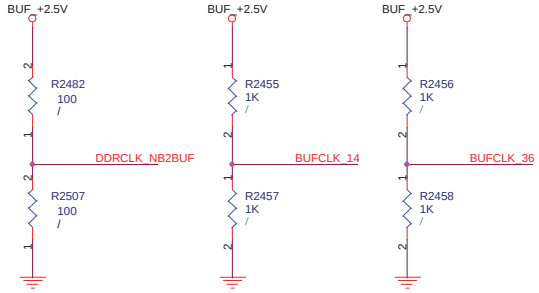
CLOCK Buffer





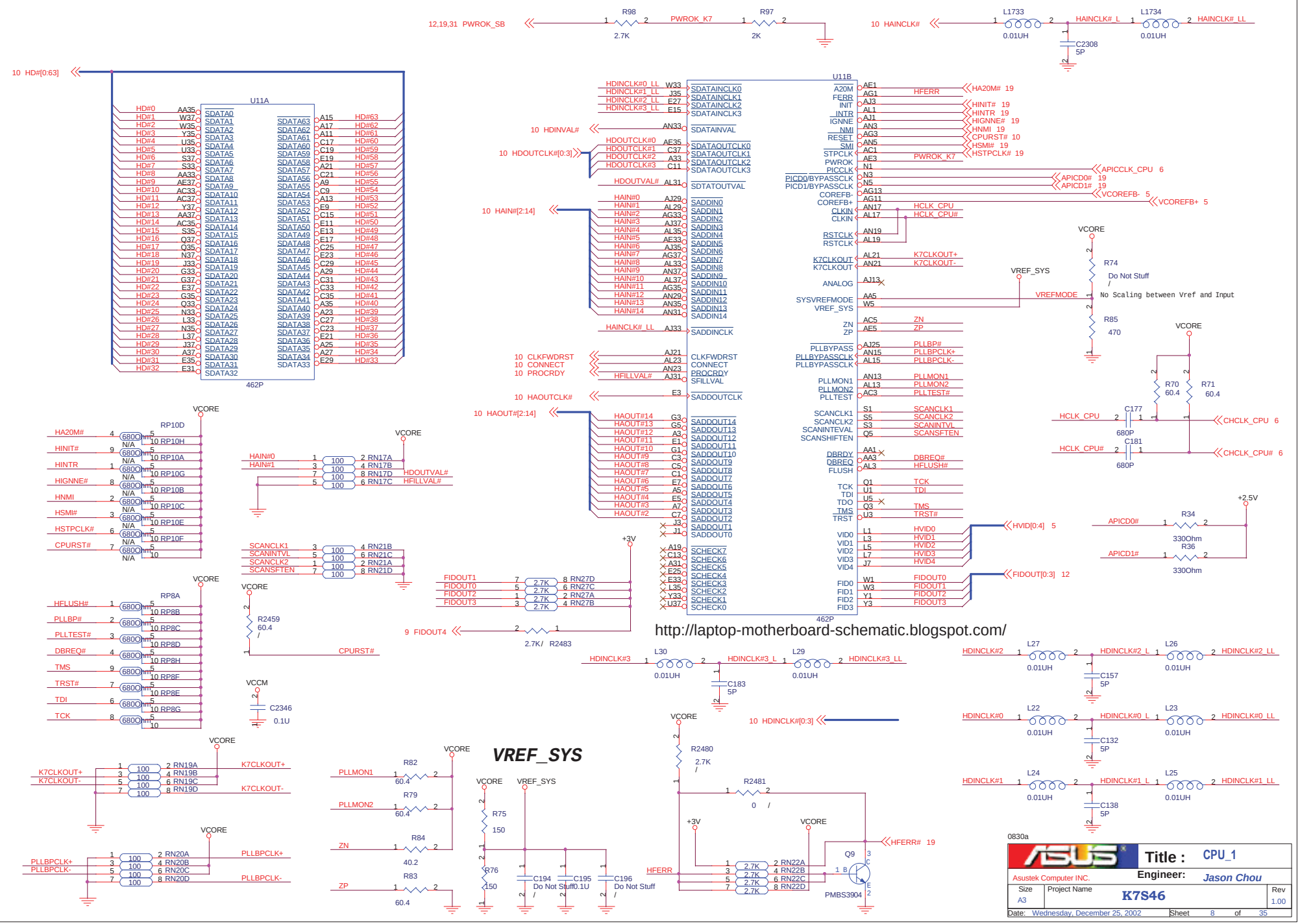
http://laptop-motherboard-schematic.blogspot.com/

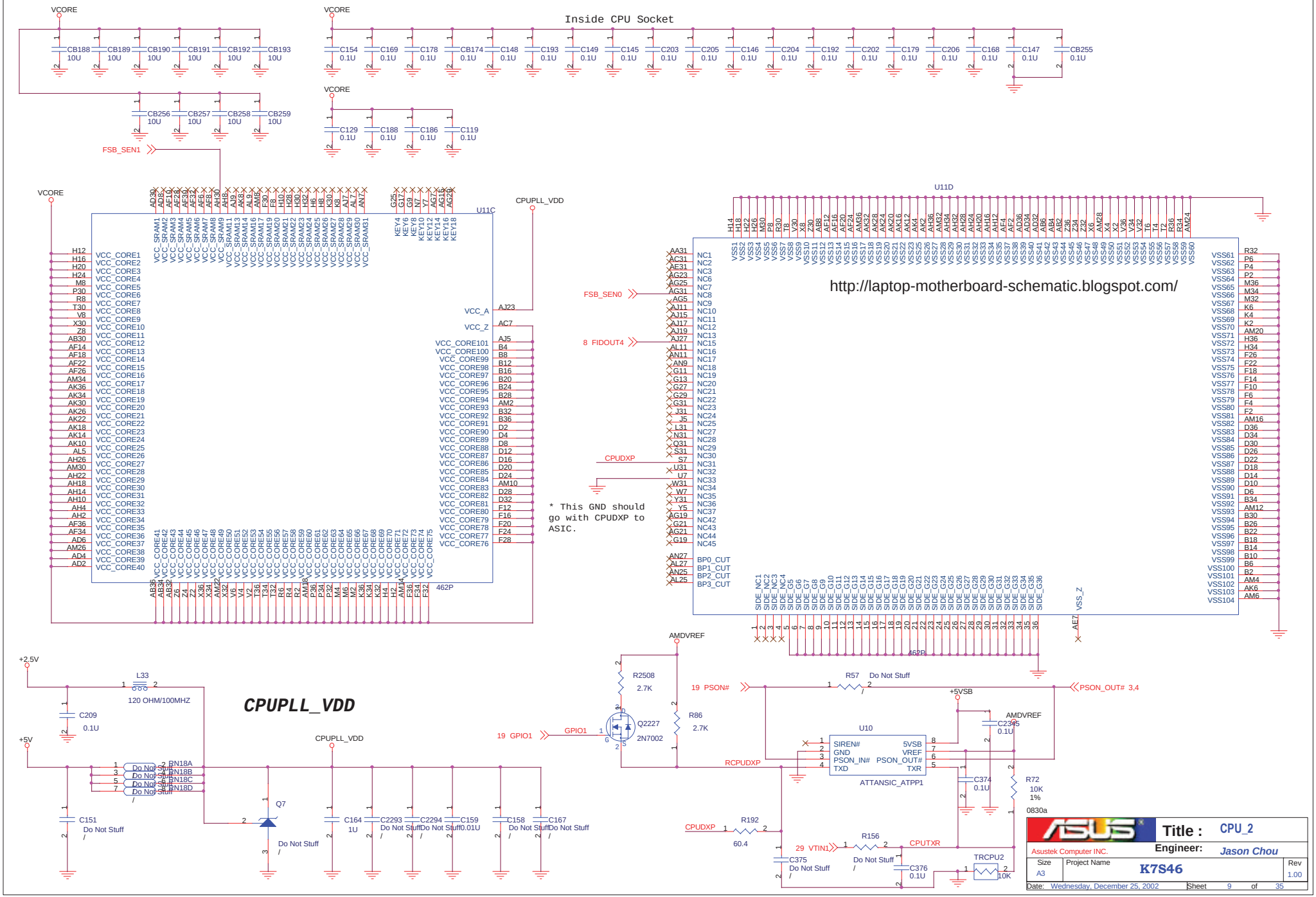


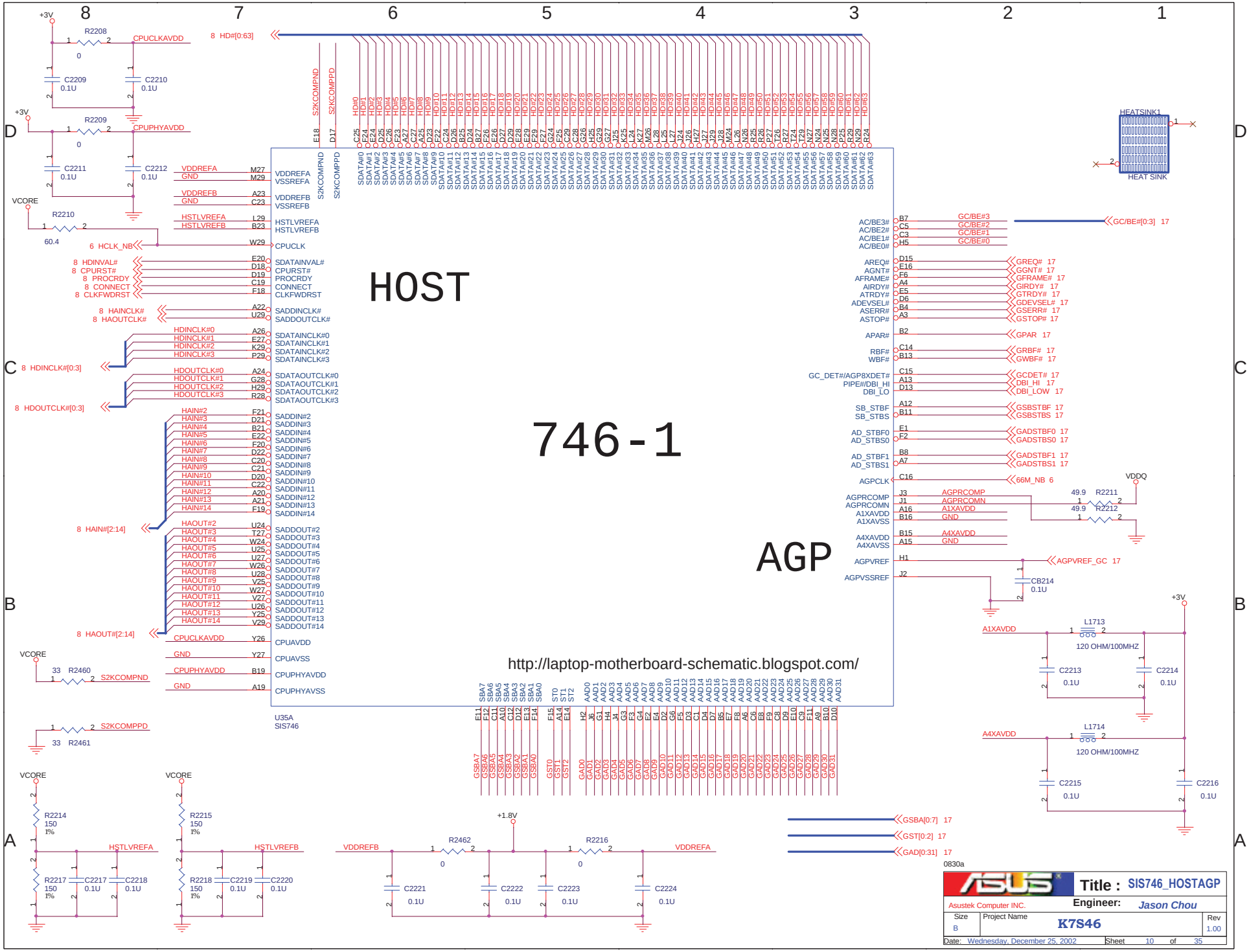


0830a

ASUSTeK Computer INC.	Title : CLOCK_BUF	
	Engineer: Jason Chou	
Size: A3	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 7 of 35	


12,19,31 PWROK_SB
R98
2.7K
PWROK_K7
R97
2K
10 HAINCLK#
L1733
0.01UH
HAINCLK# L
L1734
0.01UH
HAINCLK# LL
C2308
5P
10 HD#[0:63]
U11A
462P
U11B
462P
10 HDINVAL#
10 HDOUTCLK#[0:3]
10 HAIN#[2:14]
10 CLKFWDRST
10 CONNECT
10 PROCRDY
10 HAOUTCLK#
10 HAOUT#[2:14]
HDINCLK#0 LL
HDINCLK#1 LL
HDINCLK#2 LL
HDINCLK#3 LL
HAIN#0
HAIN#1
HAIN#2
HAIN#3
HAIN#4
HAIN#5
HAIN#6
HAIN#7
HAIN#8
HAIN#9
HAIN#10
HAIN#11
HAIN#12
HAIN#13
HAIN#14
HAINCLK# LL
HAOUT#14
HAOUT#13
HAOUT#12
HAOUT#11
HAOUT#10
HAOUT#9
HAOUT#8
HAOUT#7
HAOUT#6
HAOUT#5
HAOUT#4
HAOUT#3
HAOUT#2
HFILLVAL#
HDOUTVAL#
A20M
FERR
INIT
INTR
IGNNE
NMI
RESET
SMI
STPCLK
PWROK
PICCLK
PICD0/BYPASSCLK
PICD1/BYPASSCLK
COREFB-
COREFB+
CLKIN
RSTCLK
K7CLKOUT
ANALOG
SYSVREFMODE
VREF_SYS
ZN
ZP
PLLBYPASS
PLLBYPASSCLK
PLLMON1
PLLMON2
PLLTEST
SCANCLK1
SCANCLK2
SCANINTEVAL
SCANSHIFTEN
DBRDY
DBREQ
FLUSH
TCK
TDI
TDO
TMS
TRST
VID0
VID1
VID2
VID3
VID4
FID0
FID1
FID2
FID3
HA20M# 19
HFERR
HINIT# 19
HINTR 19
HIGNNE# 19
HNMI 19
CPURST# 10
HSMI# 19
HSTPCLK# 19
PWROK_K7
APICCLK_CPU 6
APICD0# 19
APICD1# 19
VCOREFB- 5
VCOREFB+ 5
HCLK_CPU
HCLK_CPU#
K7CLKOUT+
K7CLKOUT-
VREFMODE
ZN
ZP
PLLBP#
PLLBPCLK+
PLLBPCLK-
PLLMON1
PLLMON2
PLLTEST#
SCANCLK1
SCANCLK2
SCANINTVL
SCANSFTEN
DBREQ#
HFLUSH#
TCK
TDI
TMS
TRST#
HVID0
HVID1
HVID2
HVID3
HVID4
FIDOUT0
FIDOUT1
FIDOUT2
FIDOUT3
HVID[0:4] 5
FIDOUT[0:3] 12
SADDINCLK0
SADDINCLK1
SADDINCLK2
SADDINCLK3
SDATAINVAL
SDATAOUTCLK0
SDATAOUTCLK1
SDATAOUTCLK2
SDATAOUTCLK3
SDTATOUTVAL
SADDIN0
SADDIN1
SADDIN2
SADDIN3
SADDIN4
SADDIN5
SADDIN6
SADDIN7
SADDIN8
SADDIN9
SADDIN10
SADDIN11
SADDIN12
SADDIN13
SADDIN14
SADDINCLK
CLKFWDRST
CONNECT
PROCRDY
SFILLVAL
SADDOUTCLK
SADDOUT14
SADDOUT13
SADDOUT12
SADDOUT11
SADDOUT10
SADDOUT9
SADDOUT8
SADDOUT7
SADDOUT6
SADDOUT5
SADDOUT4
SADDOUT3
SADDOUT2
SADDOUT1
SADDOUT0
SCHECK7
SCHECK6
SCHECK5
SCHECK4
SCHECK3
SCHECK2
SCHECK1
SCHECK0
VCORE
+3V
+2.5V
VCCM
RP10D
RP8A
RP10H
RP10A
RP10G
RP10B
RP10C
RP10E
RP10F
RP8B
RP8C
RP8D
RP8H
RP8F
RP8E
RP8G
RN17A
RN17B
RN17D
RN17C
RN21B
RN21C
RN21A
RN21D
RN27D
RN27C
RN27A
RN27B
RN19A
RN19B
RN19C
RN19D
RN20A
RN20B
RN20C
RN20D
R74
Do Not Stuff
No Scaling between Vref and Input
R85
470
R70
60.4
R71
60.4
C177
680P
C181
680P
CHCLK_CPU 6
CHCLK_CPU# 6
R34
330Ohm
R36
330Ohm
APICD0#
APICD1#
R2459
60.4
CPURST#
C2346
0.1U
R82
60.4
R79
60.4
R84
40.2
R83
60.4
R75
150
R76
150
C194
Do Not Stuff
0.1U
C195
C196
Do Not Stuff
R2480
2.7K
R2481
0
Q9
PMBS3904
HFERR# 19
R2483
2.7K
9 FIDOUT4
L30
0.01UH
HDINCLK3_L
L29
0.01UH
HDINCLK3_LL
C183
5P
10 HDINCLK#[0:3]
L27
0.01UH
HDINCLK2_L
L26
0.01UH
HDINCLK2_LL
C157
5P
L22
0.01UH
HDINCLK0_L
L23
0.01UH
HDINCLK0_LL
C132
5P
L24
0.01UH
HDINCLK1_L
L25
0.01UH
HDINCLK1_LL
C138
5P
VREF_SYS
http://laptop-motherboard-schematic.blogspot.com/
0830a
Title : CPU_1
Asustek Computer INC.
Engineer: Jason Chou
Size A3
Project Name K7S46
Rev 1.00
Date: Wednesday, December 25, 2002
Sheet 8 of 35


Inside CPU Socket
VCORE
CB188 10U
CB189 10U
CB190 10U
CB191 10U
CB192 10U
CB193 10U
CB256 10U
CB257 10U
CB258 10U
CB259 10U
C154 0.1U
C169 0.1U
C178 0.1U
CB174 0.1U
C148 0.1U
C193 0.1U
C149 0.1U
C145 0.1U
C203 0.1U
C205 0.1U
C146 0.1U
C204 0.1U
C192 0.1U
C202 0.1U
C179 0.1U
C206 0.1U
C168 0.1U
C147 0.1U
CB255 0.1U
C129 0.1U
C188 0.1U
C186 0.1U
C119 0.1U
FSB_SEN1
U11C
462P
CPUPLL_VDD
VCC_A
VCC_Z
U11D
FSB_SEN0
8 FIDOUT4
CPUDXP
* This GND should go with CPUDXP to ASIC.
http://laptop-motherboard-schematic.blogspot.com/
AMDVREF
R2508 2.7K
R86 2.7K
19 GPIO1
GPIO1
Q2227 2N7002
19 PSON#
R57 Do Not Stuff
+5VSB
PSON_OUT# 3,4
U10
SIREN#
GND
PSON_IN#
TXD
5VSB
VREF
PSON_OUT#
TXR
ATTANSIC_ATPP1
RCPUDXP
C2395 0.1U
C374 0.1U
R72 10K 1%
0830a
CPUDXP
R192 60.4
29 VTIN1
R156 Do Not Stuff
CPUTXR
C375 Do Not Stuff
C376 0.1U
TRCPU2 10K
+2.5V
L33 120 OHM/100MHZ
C209 0.1U
+5V
RN18A Do Not Stuff
RN18B Do Not Stuff
RN18C Do Not Stuff
RN18D Do Not Stuff
C151 Do Not Stuff
Q7 Do Not Stuff
C164 1U
C2293 Do Not Stuff
C2294 Do Not Stuff
C159 0.01U
C158 Do Not Stuff
C167 Do Not Stuff
CPUPLL_VDD
Title : CPU_2
Asustek Computer INC.
Engineer: Jason Chou
Size A3
Project Name K7S46
Rev 1.00
Date: Wednesday, December 25, 2002
Sheet 9 of 35


HOST
746-1
AGP
U35A
SIS746
http://laptop-motherboard-schematic.blogspot.com/
HEATSINK1
HEAT SINK
Title : SIS746_HOSTAGP
Asustek Computer INC.
Engineer: Jason Chou
Size B
Project Name K7S46
Rev 1.00
Date: Wednesday, December 25, 2002
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0830a

RMD[0:63] 14
RDQM[0:7] 14
RDQS[0:7] 14

U35B

RMD0	AD25	MD0	
RMD1	AH28	MD1	
RMD2	AD24	MD2	
RMD3	AH26	MD3	
RMD4	AE27	MD4	
RMD5	AG25	MD5	
RMD6	AE26	MD6	
RMD7	AG27	MD7	
RDQM0	AJ26	DQM0	
RDQS0	AJ27	CSB#0/DQS0	
RMD8	AE25	MD8	
RMD9	AE23	MD9	
RMD10	AG24	MD10	
RMD11	AH23	MD11	
RMD12	AE24	MD12	
RMD13	AH25	MD13	
RMD14	AE22	MD14	
RMD15	AD21	MD15	
RDQM1	AD22	DQM1	
RDQS1	AJ24	CSB#1/DQS1	
RMD16	AH22	MD16	
RMD17	AG22	MD17	
RMD18	AF20	MD18	
RMD19	AH20	MD19	
RMD20	AE20	MD20	
RMD21	AE21	MD21	
RMD22	AE19	MD22	
RMD23	AJ20	MD23	
RDQM2	AG21	DQM2	
RDQS2	AJ21	CSB#2/DQS2	
RMD24	AE16	MD24	
RMD25	AH17	MD25	
RMD26	AF15	MD26	
RMD27	AJ15	MD27	
RMD28	AF17	MD28	
RMD29	AD16	MD29	
RMD30	AG15	MD30	
RMD31	AH16	MD31	
RDQM3	AG16	DQM3	
RDQS3	AJ17	CSB#3/DQS3	
RMD32	AJ12	MD32	
RMD33	AF12	MD33	
RMD34	AG10	MD34	
RMD35	AE11	MD35	
RMD36	AG12	MD36	
RMD37	AD12	MD37	
RMD38	AE11	MD38	
RMD39	AH10	MD39	
RDQM4	AH11	DQM4	
RDQS4	AJ11	CSB#4/DQS4	
RMD40	AJ6	MD40	
RMD41	AF6	MD41	
RMD42	AE7	MD42	
RMD43	AH4	MD43	
RMD44	AH7	MD44	
RMD45	AG7	MD45	
RMD46	AG6	MD46	
RMD47	AF5	MD47	
RDQM5	AJ5	DQM5	
RDQS5	AH5	CSB#5/DQS5	
RMD48	AD7	MD48	
RMD49	AE5	MD49	
RMD50	AE4	MD50	
RMD51	AF2	MD51	
RMD52	AG4	MD52	
RMD53	AF3	MD53	
RMD54	AG3	MD54	
RMD55	AD6	MD55	
RDQM6	AH2	DQM6	
RDQS6	AG1	CSB#6/DQS6	
RMD56	AC2	MD56	
RMD57	AE1	MD57	
RMD58	AB3	MD58	
RMD59	AD3	MD59	
RMD60	AE2	MD60	
RMD61	AC6	MD61	
RMD62	AD5	MD62	
RMD63	AC4	MD63	
RDQM7	AB5	DQM7	
RDQS7	AD1	CSB#7/DQS7	

746-2

SIS746

MAA0	AE13	MAA0	
MAA1	AJ14	MAA1	
MAA2	AH14	MAA2	
MAA3	AE14	MAA3	
MAA4	AD15	MAA4	
MAA5	AD18	MAA5	
MAA6	AJ18	MAA6	
MAA7	AF18	MAA7	
MAA8	AG18	MAA8	
MAA9	AH19	MAA9	
MAA10	AF14	MAA10	
MAA11	AE10	MAA11	
MAA12	AD13	MAA12	
MAA13	AG19	MAA13	
MAA14	AD19	MAA14	
MAA15	AF23		

MAA[0:14] 15,16

RAMRWA#	AF9	SWEA#	SWEA# 15,16
SRASA#	AG9	SRASA#	SRASA# 15,16
SCASA#	AJ9	SCASA#	SCASA# 15,16

Reserved AE17

VCCM

R2224 140Ohm

C2226 0.1U

C2228 0.1U

R2226 150 1%

DDRVREFA
(10-mil trace)
25-mil clearance
or shielded by
VSS trace and
VDD trace

VCCM

R2225 140Ohm

C2227 0.1U

C2229 0.1U

R2227 150 1%

DDRVREFB
(10-mil trace)
25-mil clearance
or shielded by
VSS trace and
VDD trace

CS0#	AD9	CS#0	
CS1#	AD10	CS#1	
CS2#	AJ8	CS#2	
CS3#	AE8	CS#3	
CS4#	AF8	CS#4	
CS5#	AH8	CS#5	

CS#[0:3] 15,16

CS#[4:5] 16

DDRVREFA	AJ23	DDRVREFA	
DDRVREFB	AJ3	DDRVREFB	
DLLAVDD	AA29	DLLAVDD	
DLLAVSS	AA28	GND	
SDRCLKI	AG13		
FWDSDCLKO	AH13	RDDRCLK_NB2BUF	
DDRAVDD	Y29	DDRAVDD	
DDRAVSS	Y28	GND	

Put near 746 chip.

R2223 10

DDRCLK_NB2BUF 7

C2225 10P

CKE0	AA6	CKE0	15
CKE1	AB6	CKE1	15
CKE2	AA5	CKE2	15
CKE3	AA3	CKE3	15
CKE4	AB4	CKE4	16
CKE5	AA4	CKE5	16
S3AUXSW#	Y6	S3AUXSW#	31
DDRCOMP	AB2	DDRCOMP	
DDRCOMN	AB1	DDRCOMN	

DDRCOMN
DDRCOMP

40.2 R2220

40.2 R2221

VCCM

DDRAVDD

+3V

L1715 120 OHM/100MHZ

C2230 0.1U

C2231 0.1U

C2232 0.1U

DLLAVDD

+3V

L1716 120 OHM/100MHZ

C2233 0.1U

C2234 0.1U

C2235 0.1U

0830a

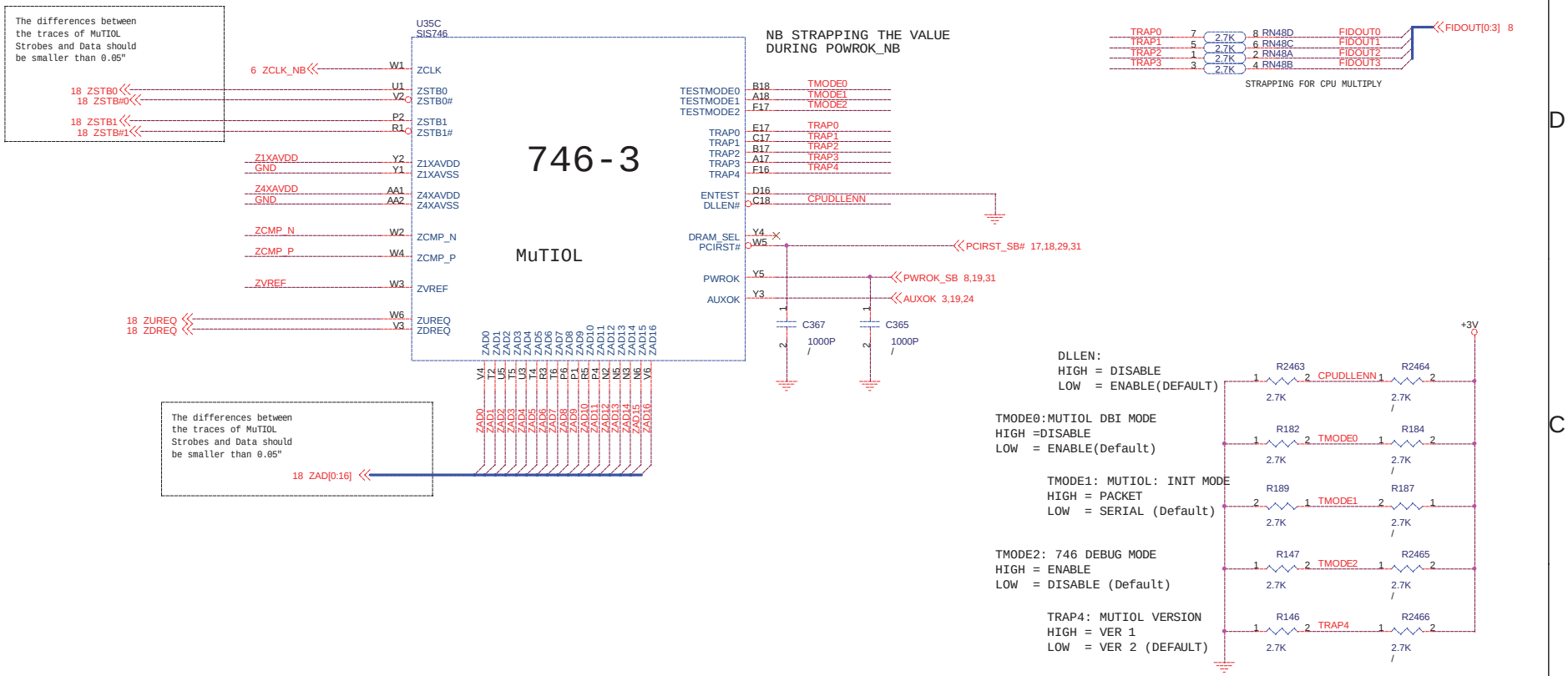
Title : SIS746_MEMORY

Asustek Computer INC.

Engineer: Jason Chou

Size	Project Name	Rev
B	K7S46	1.00

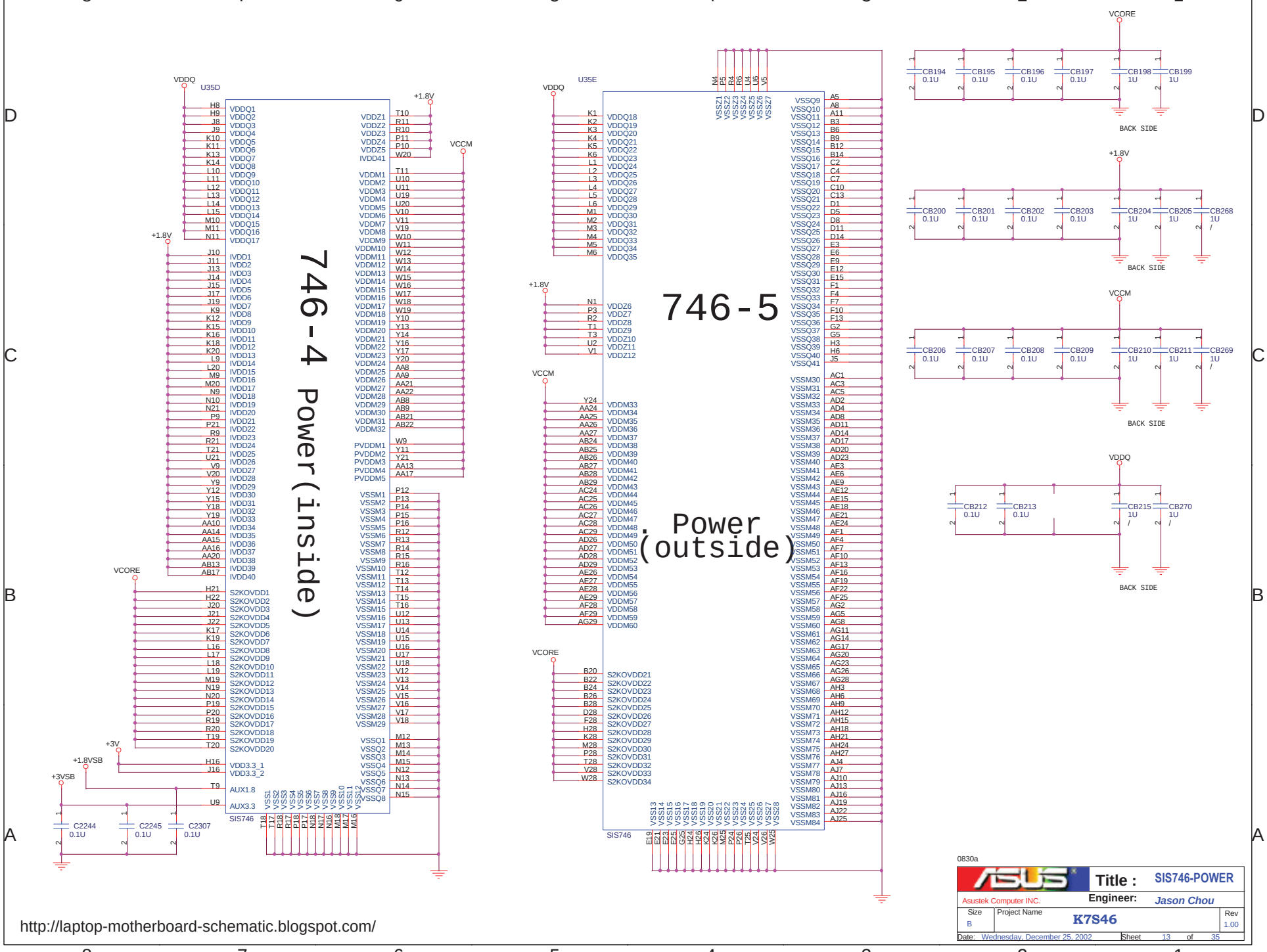
Date: Wednesday, December 25, 2002 Sheet 11 of 35



http://laptop-motherboard-schematic.blogspot.com/

0830a

ASUS	Title :	SIS746-MULTI-IO
Asustek Computer INC.	Engineer:	Jason Chou
Size: B	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 12 of 35	



http://laptop-motherboard-schematic.blogspot.com/

0830a

ASUS	Title :	SIS746-POWER	
Asustek Computer INC.	Engineer:	Jason Chou	
Size: B	Project Name: K7S46		Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 13 of 35		

DDR Damping Resistor

11 RMD[0:63]
11 RDQS[0:7]
11 RDQM[0:7]

MD[0:63] 15,16
DQS[0:7] 15,16
DQM[0:7] 15,16

RMD4 RMD0 RMD5 RMD1 — RN34A RN34B RN34C RN34D — MD4 MD0 MD5 MD1
RMD6 RMD2 RMD7 RMD3 — RN35B RN35A RN35C RN35D — MD6 MD2 MD7 MD3
RMD8 RMD12 RMD9 RMD13 — RN36A RN36B RN36C RN36D — MD8 MD12 MD9 MD13
RMD14 RMD15 RMD10 RMD11 — RN37A RN37B RN37C RN37D — MD14 MD15 MD10 MD11
RMD20 RMD16 RMD17 RMD21 — RN38A RN38C RN38B RN38D — MD20 MD16 MD17 MD21
RMD18 RMD22 RMD23 RMD19 — RN39A RN39B RN39C RN39D — MD18 MD22 MD23 MD19
RMD24 RMD28 RMD25 RMD29 — RN40A RN40B RN40C RN40D — MD24 MD28 MD25 MD29
RMD26 RMD31 RMD30 RMD27 — RN41A RN41B RN41C RN41D — MD26 MD31 MD30 MD27

RMD32 RMD36 RMD33 RMD37 — RN42A RN42B RN42C RN42D — MD32 MD36 MD33 MD37
RMD34 RMD38 RMD39 RMD35 — RN43A RN43B RN43C RN43D — MD34 MD38 MD39 MD35
RMD44 RMD45 RMD40 RMD41 — RN44A RN44B RN44C RN44D — MD44 MD45 MD40 MD41
RMD42 RMD43 RMD46 RMD47 — RN45A RN45B RN45C RN45D — MD42 MD43 MD46 MD47
RMD48 RMD49 RMD52 RMD53 — RN46A RN46B RN46C RN46D — MD48 MD49 MD52 MD53
RMD54 RMD50 RMD55 RMD51 — RN32A RN32B RN32C RN32D — MD54 MD50 MD55 MD51
RMD60 RMD56 RMD61 RMD57 — RN47A RN47B RN47C RN47D — MD60 MD56 MD61 MD57
RMD62 RMD58 RMD63 RMD59 — RN33A RN33B RN33C RN33D — MD62 MD58 MD63 MD59

VTT_DDR

C314 C326 C359 C338 C344 C348 C350 C330 C334 C358 C343 — 0.1U
C315 C327 C360 C339 C345 C312 C351 C362 C331 C335 C341 C319 — 0.1U
C346 C310 C311 C332 C336 C363 C353 — 0.1U
C325 C357 C337 C352 C347 C318 C329 C333 C356 C342 C349 — 0.1U

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RDQM0 R125 DQM0
RDQM1 R127 DQM1
RDQM2 R129 DQM2
RDQM3 R131 DQM3
RDQM4 R132 DQM4
RDQM5 R133 DQM5
RDQM6 R121 DQM6
RDQM7 R134 DQM7

RDQS0 R124 DQS0
RDQS1 R126 DQS1
RDQS2 R128 DQS2
RDQS3 R130 DQS3
RDQS4 R135 DQS4
RDQS5 R136 DQS5
RDQS6 R122 DQS6
RDQS7 R123 DQS7

10

VCCM

C316 C340 C355 C317 C328 — 0.1U

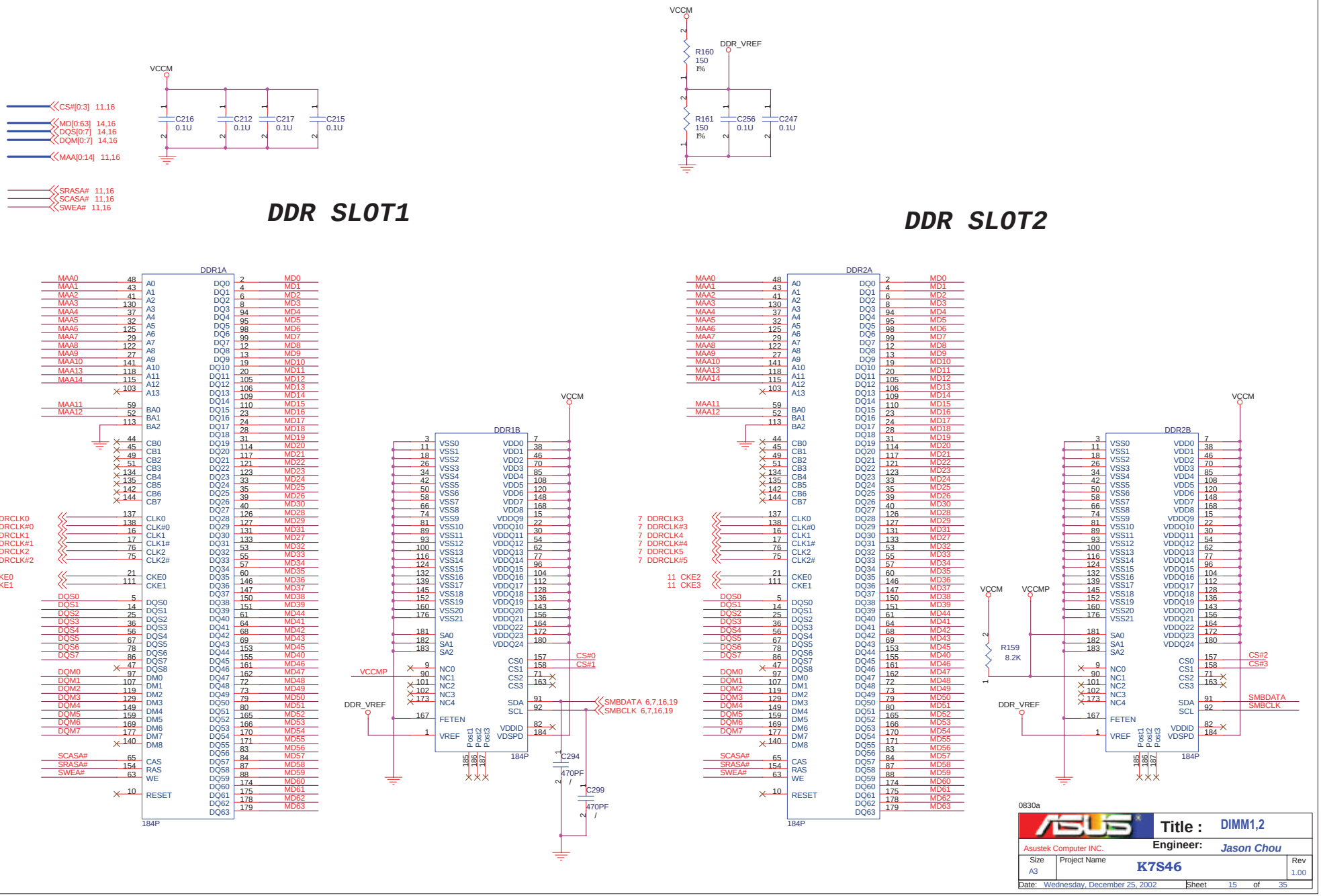
0830a

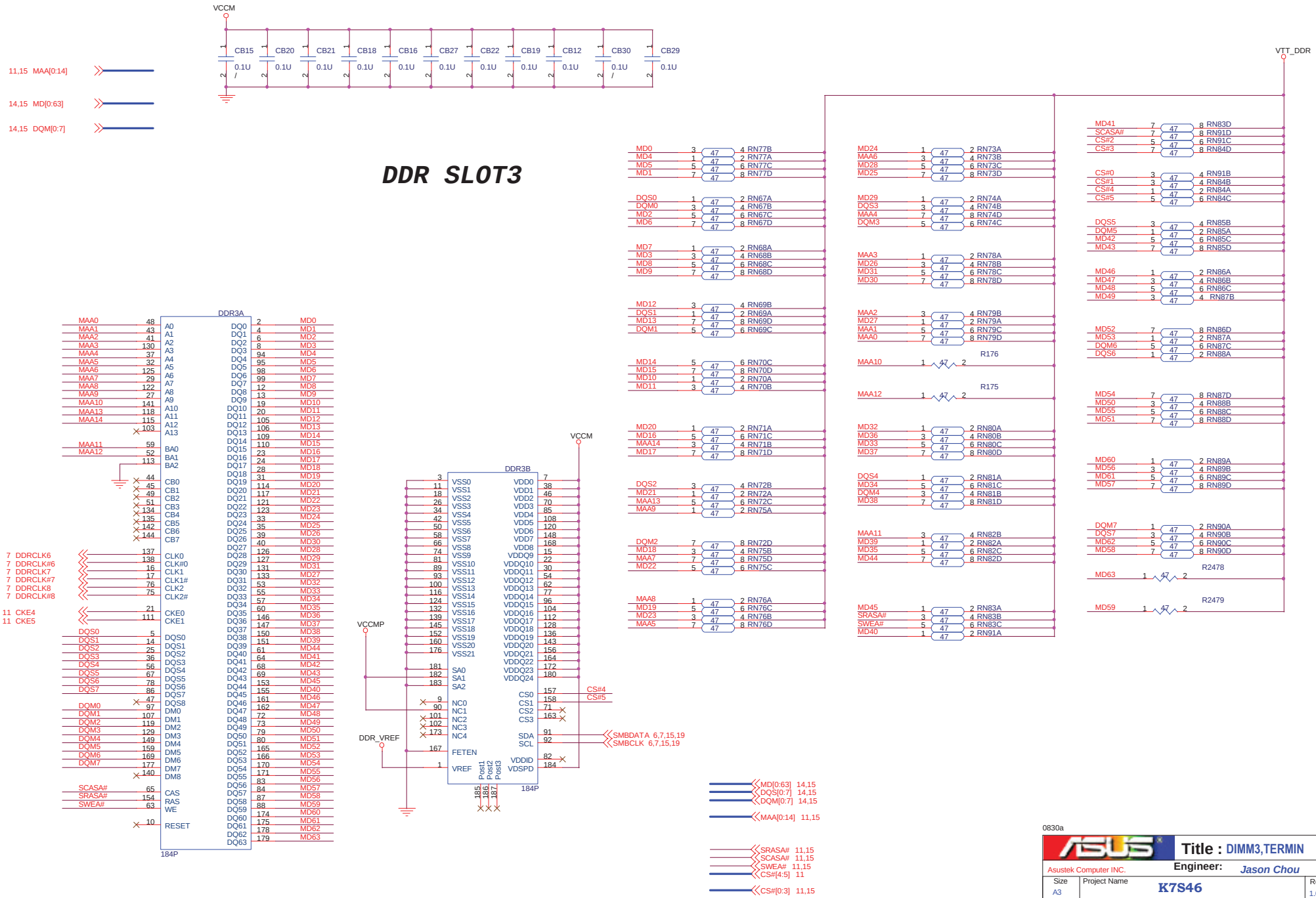
ASUSTeK Computer INC.

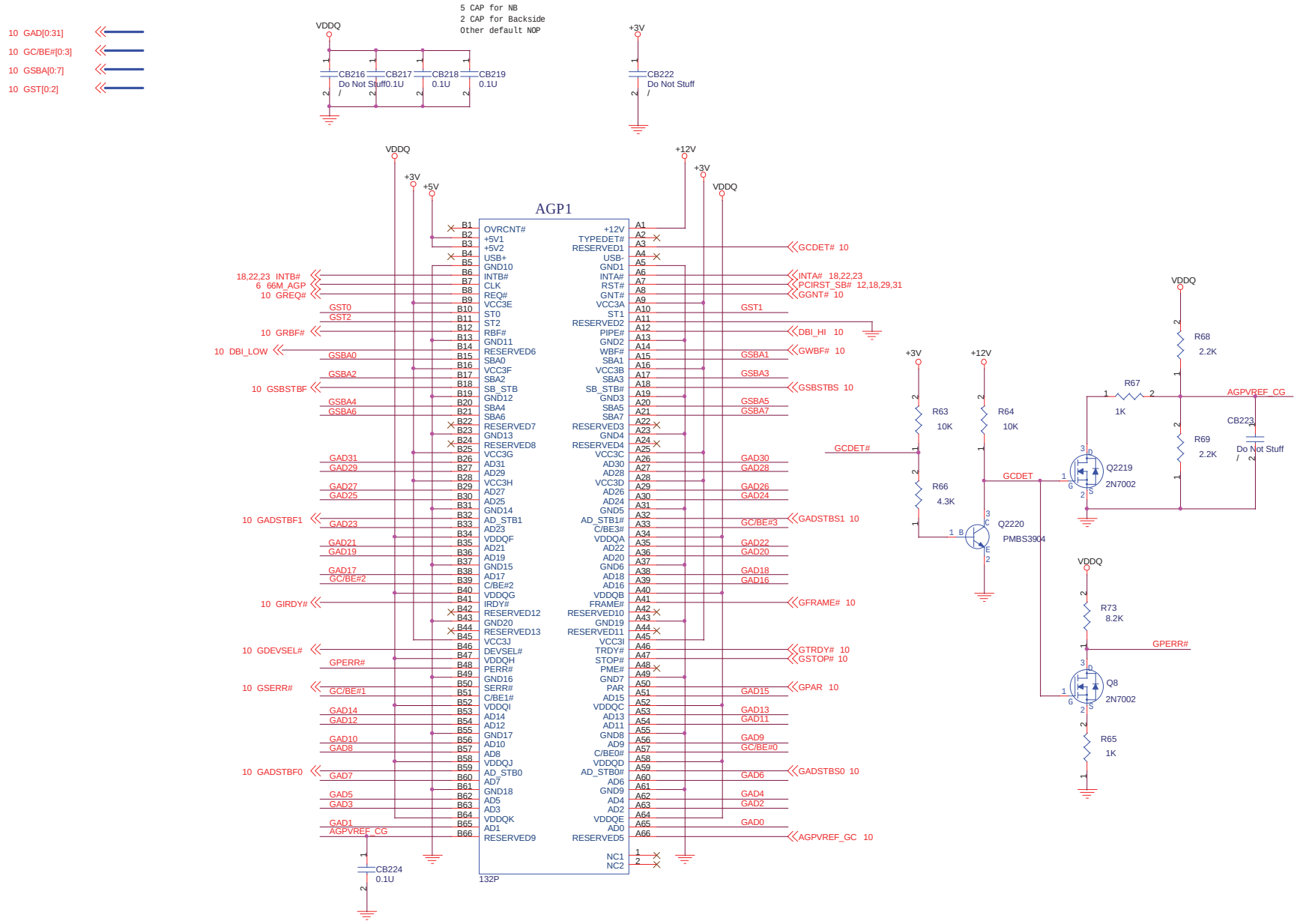
Title : DDR-DAMPING
Engineer: Jason Chou

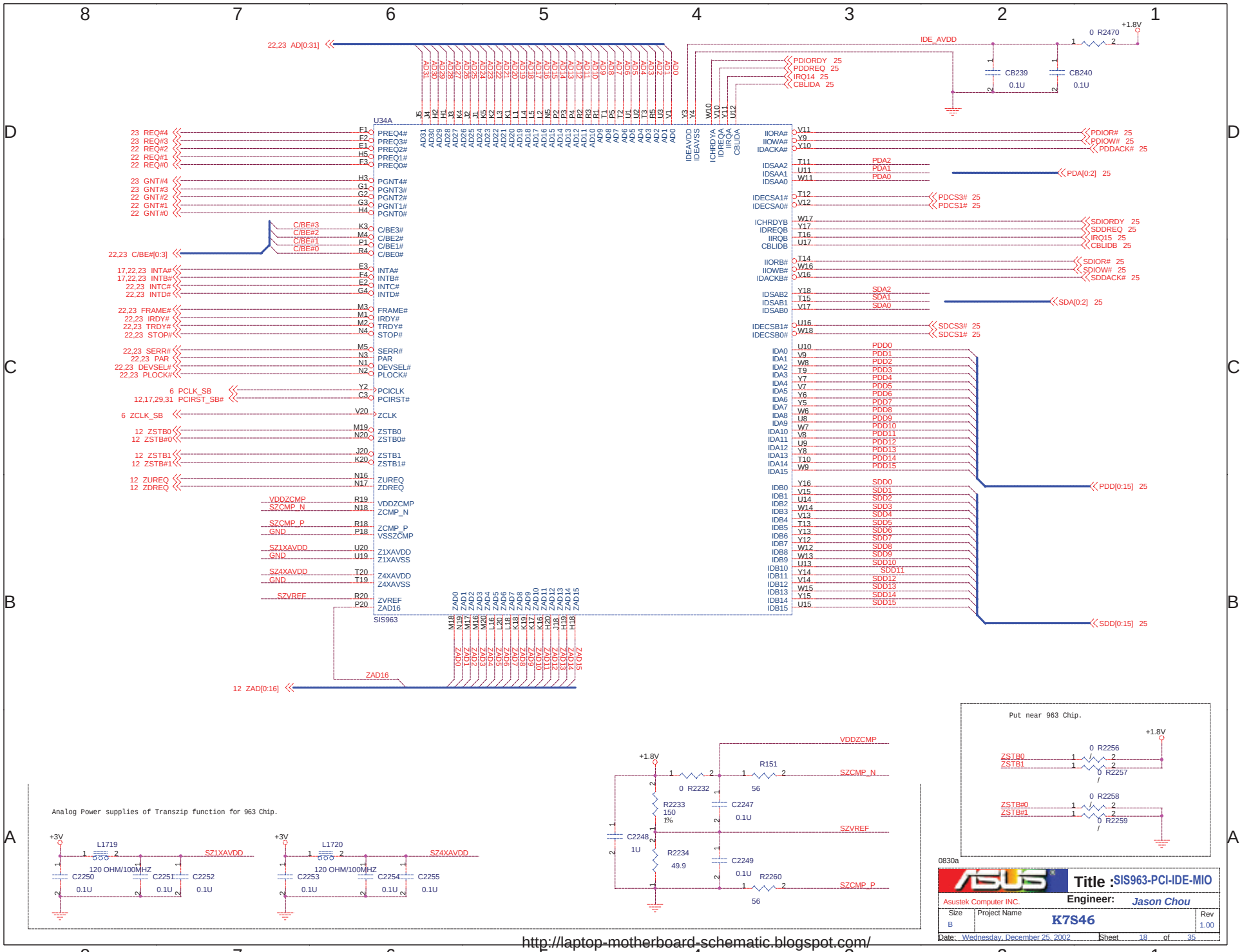
Size	Project Name	Rev
A3	K7S46	1.00

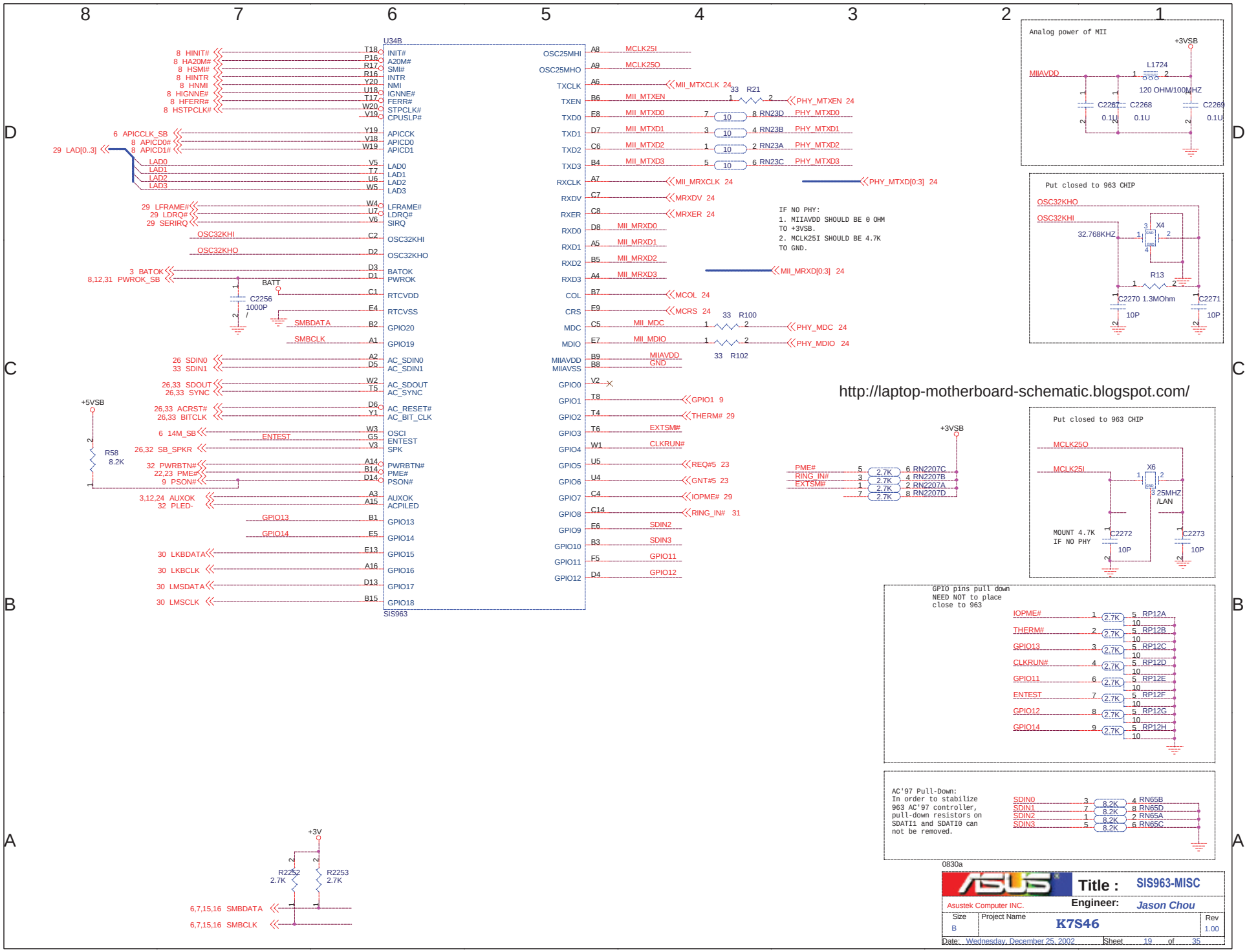
Date: Wednesday, December 25, 2002 Sheet 14 of 35

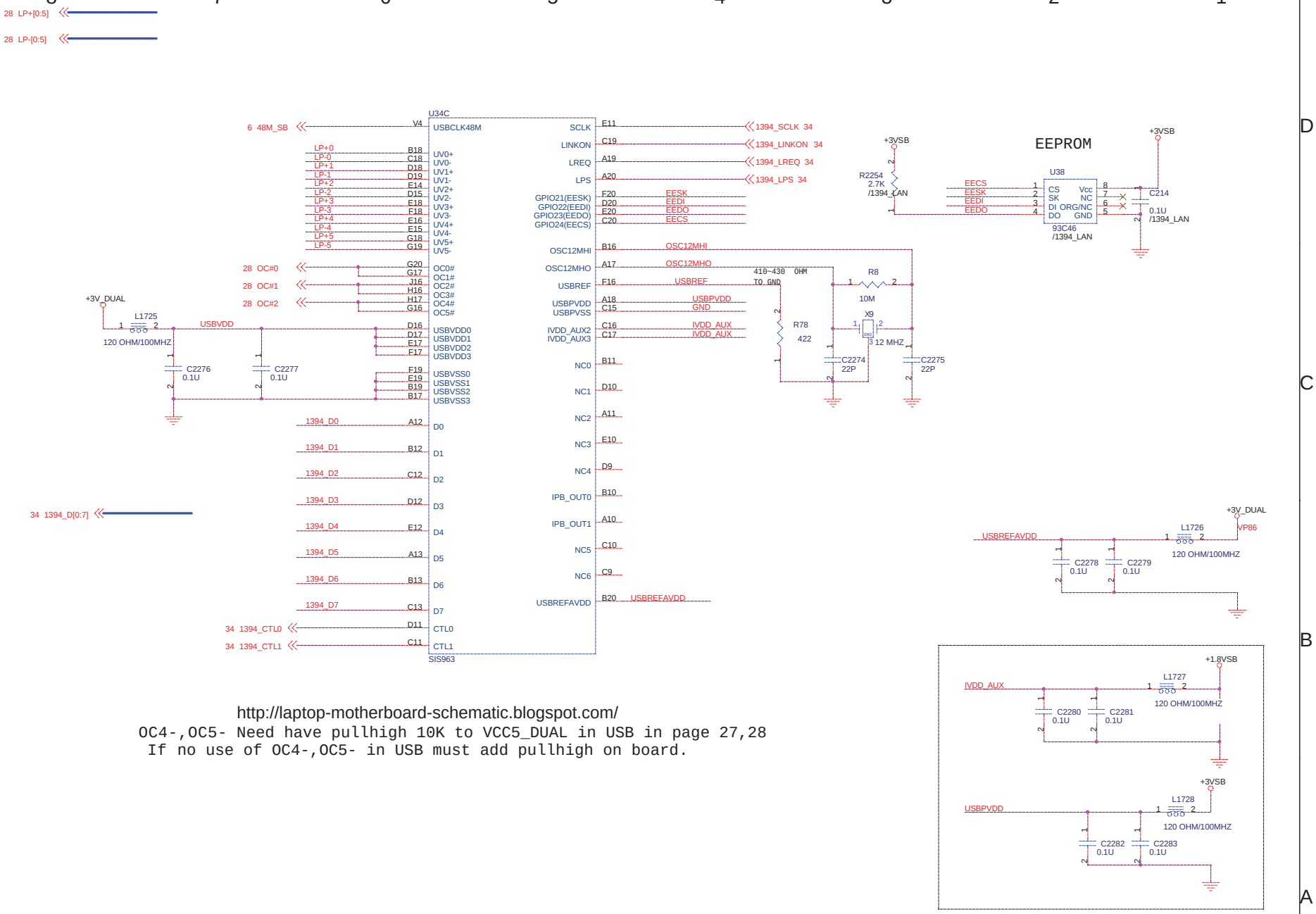









U34B
SIS963
8 HINIT#
8 HA20M#
8 HSMI#
8 HINTR
8 HNMI
8 HIGNNE#
8 HFERR#
8 HSTPCLK#
6 APICCLK_SB
8 APICD0#
8 APICD1#
29 LAD[0..3]
29 LFRAME#
29 LDRQ#
29 SERIRQ
3 BATOK
8,12,31 PWROK_SB
BATT
C2256
1000P
SMBDATA
SMBCLK
26 SDIN0
33 SDIN1
26,33 SDOUT
26,33 SYNC
26,33 ACRST#
26,33 BITCLK
6 14M_SB
ENTEST
26,32 SB_SPKR
32 PWRBTN#
22,23 PME#
9 PSON#
3,12,24 AUXOK
32 PLED-
GPIO13
GPIO14
30 LKBDATA
30 LKBCLK
30 LMSDATA
30 LMSCLK
+5VSB
R58
8.2K
MII_MTXCLK 24
MII_MTXEN
MII_MTXD0
MII_MTXD1
MII_MTXD2
MII_MTXD3
MII_MRXCLK 24
MRXDV 24
MRXER 24
MII_MRXD0
MII_MRXD1
MII_MRXD2
MII_MRXD3
MCOL 24
MCRS 24
MII_MDC
MII_MDIO
MIIAVDD
GND
MCLK25I
MCLK25O
R21
R23D
R23B
R23A
R23C
R100
R102
PHY_MTXEN 24
PHY_MTXD0
PHY_MTXD1
PHY_MTXD2
PHY_MTXD3
PHY_MTXD[0:3] 24
MII_MRXD[0:3] 24
PHY_MDC 24
PHY_MDIO 24
GPIO1 9
THERM# 29
EXTSMI#
CLKRUN#
REQ#5 23
GNT#5 23
IOPME# 29
RING_IN# 31
SDIN2
SDIN3
GPIO11
GPIO12
IF NO PHY:
1. MIIAVDD SHOULD BE 0 OHM
TO +3VSB.
2. MCLK25I SHOULD BE 4.7K
TO GND.
Analog power of MII
+3VSB
MIIAVDD
L1724
120 OHM/100MHZ
C2267
C2268
C2269
0.1U
Put closed to 963 CHIP
OSC32KHO
OSC32KHI
32.768KHZ
X4
R13
C2270 1.3MOhm
C2271
10P
http://laptop-motherboard-schematic.blogspot.com/
PME#
RING_IN#
EXTSMI#
2.7K
RN2207C
RN2207B
RN2207A
RN2207D
MCLK25O
X6
25MHZ
/LAN
MOUNT 4.7K
IF NO PHY
C2272
C2273
GPIO pins pull down
NEED NOT to place
close to 963
IOPME#
THERM#
GPIO13
CLKRUN#
GPIO11
ENTEST
GPIO12
GPIO14
RP12A
RP12B
RP12C
RP12D
RP12E
RP12F
RP12G
RP12H
AC'97 Pull-Down:
In order to stabilize
963 AC'97 controller,
pull-down resistors on
SDATI1 and SDATI0 can
not be removed.
SDIN0
SDIN1
SDIN2
SDIN3
8.2K
RN65B
RN65D
RN65A
RN65C
+3V
R2252
2.7K
R2253
2.7K
6,7,15,16 SMBDATA
6,7,15,16 SMBCLK
0830a
Title : SIS963-MISC
Asustek Computer INC.
Engineer: Jason Chou
Size B
Project Name K7S46
Rev 1.00
Date: Wednesday, December 25, 2002
Sheet 19 of 35

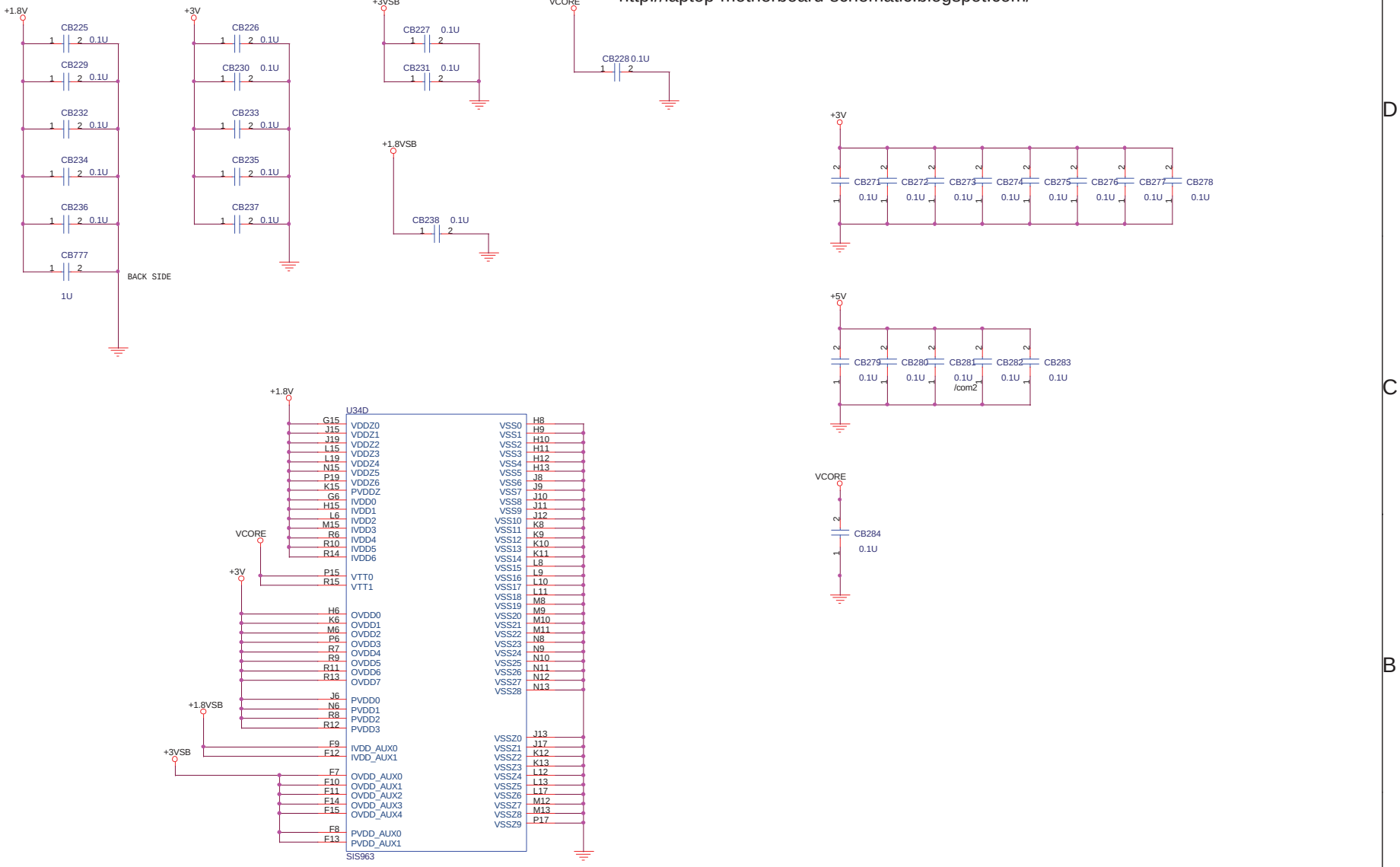


http://laptop-motherboard-schematic.blogspot.com/

OC4-,OC5- Need have pullhigh 10K to VCC5_DUAL in USB in page 27,28
If no use of OC4-,OC5- in USB must add pullhigh on board.

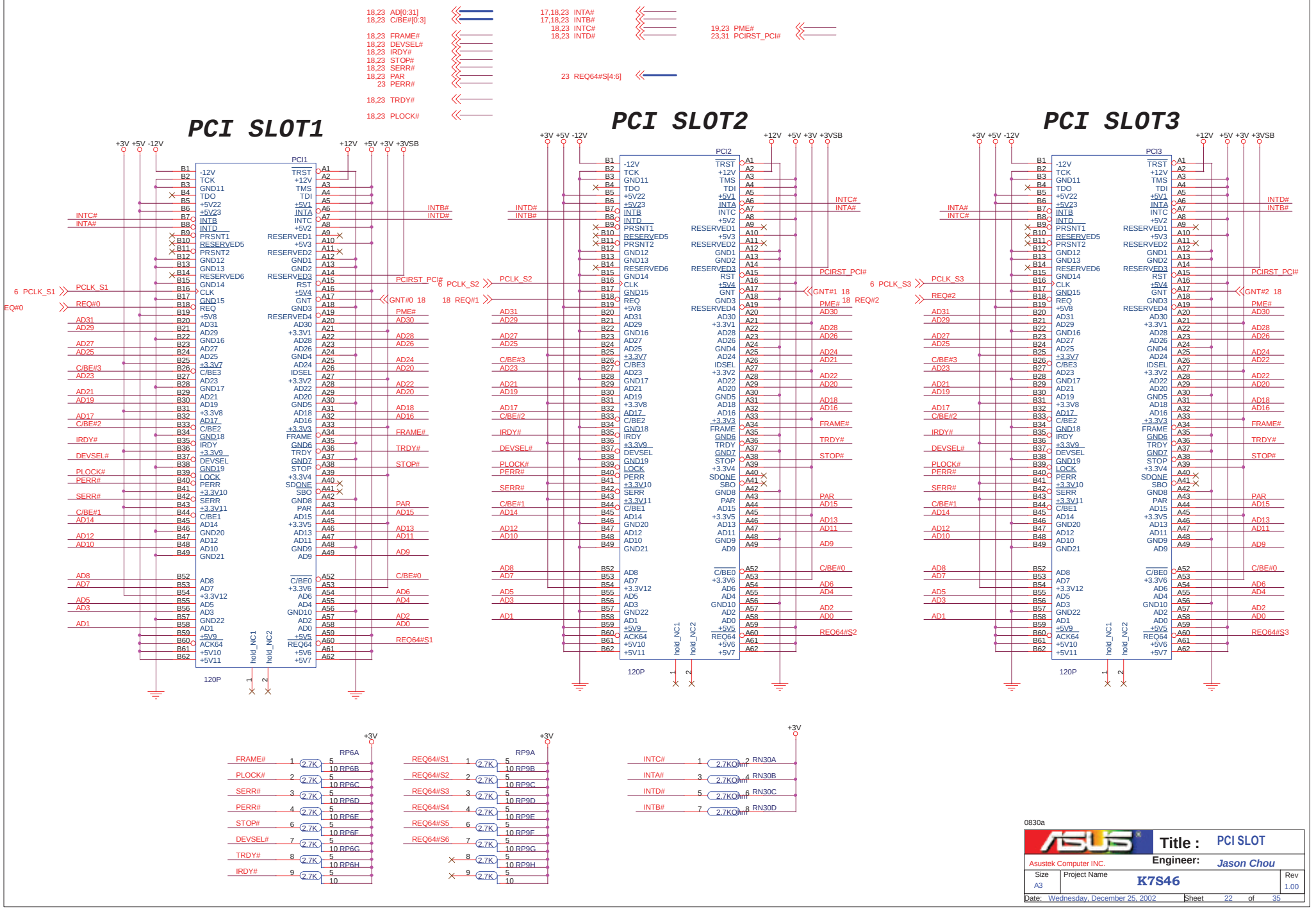
0830a

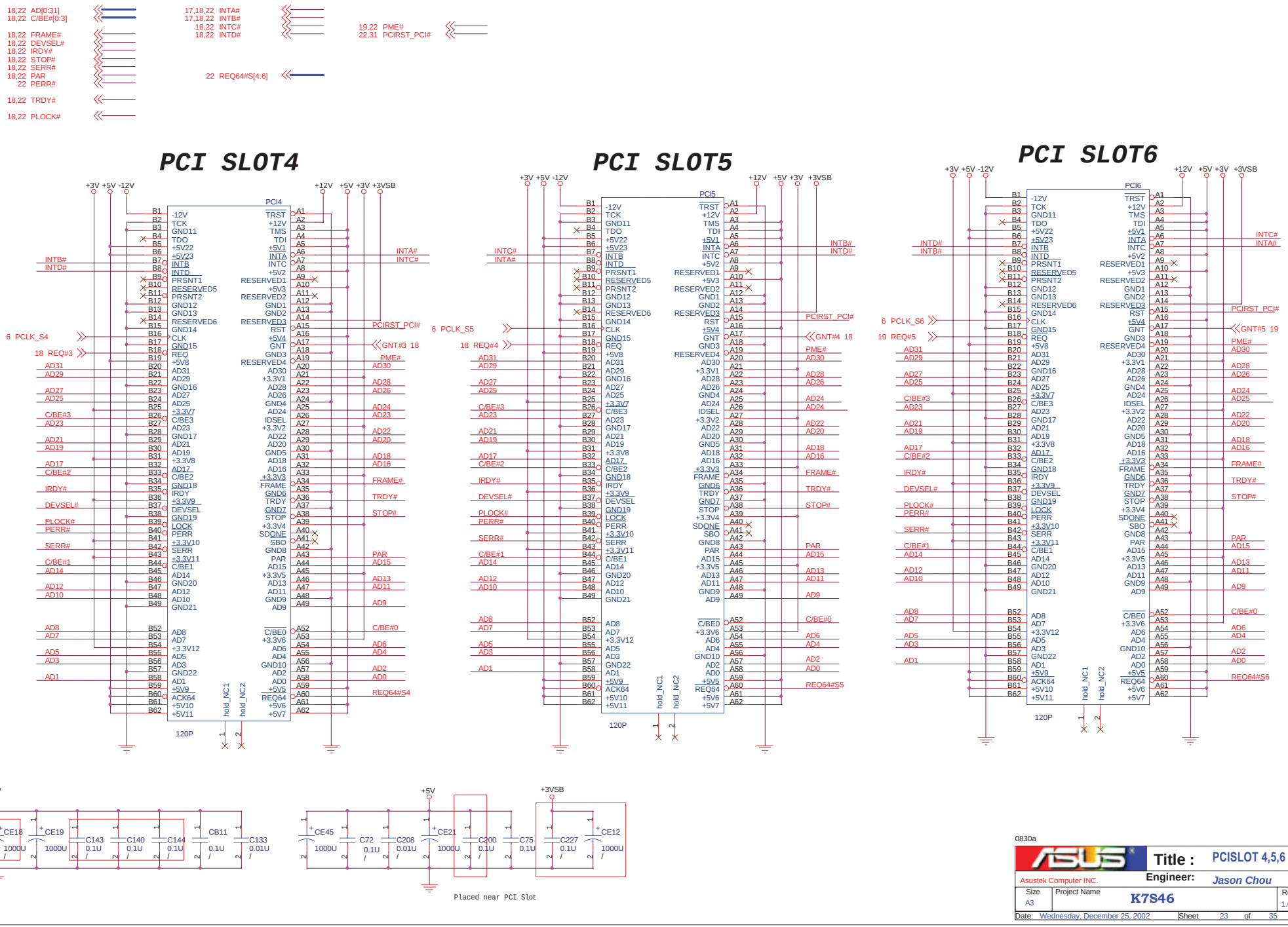
Asustek Computer INC.	Title : SIS963-USB	
	Engineer: Jason Chou	
Size: B	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 20 of 35	

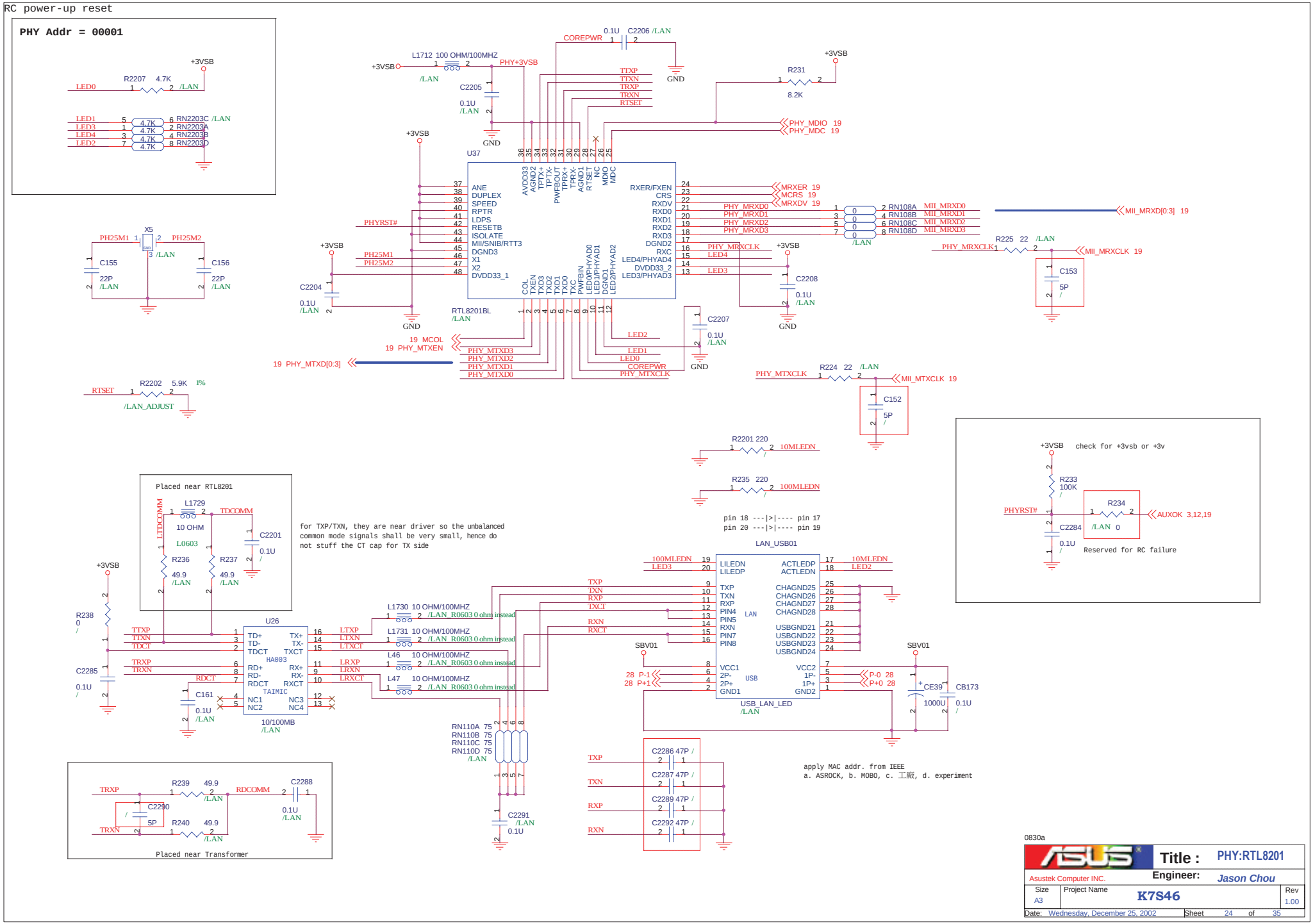


0830a

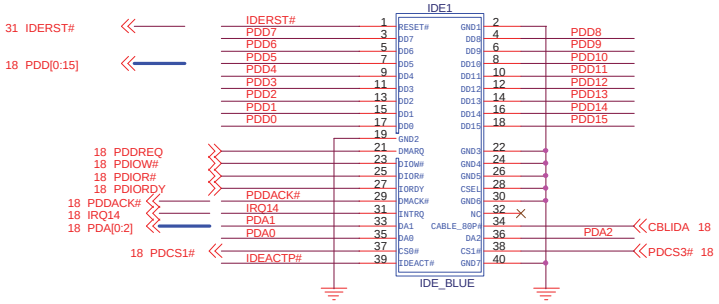
ASUS	Title :	SIS963-POWER
Asustek Computer INC.	Engineer:	Jason Chou
Size: B	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 21 of 35	



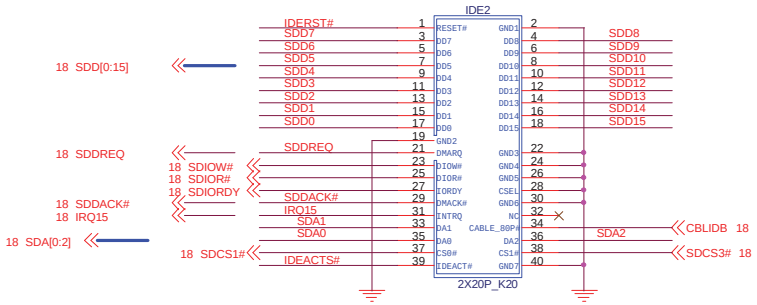


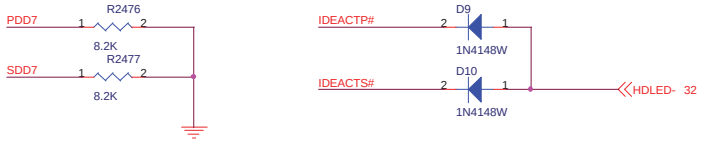


IDE1



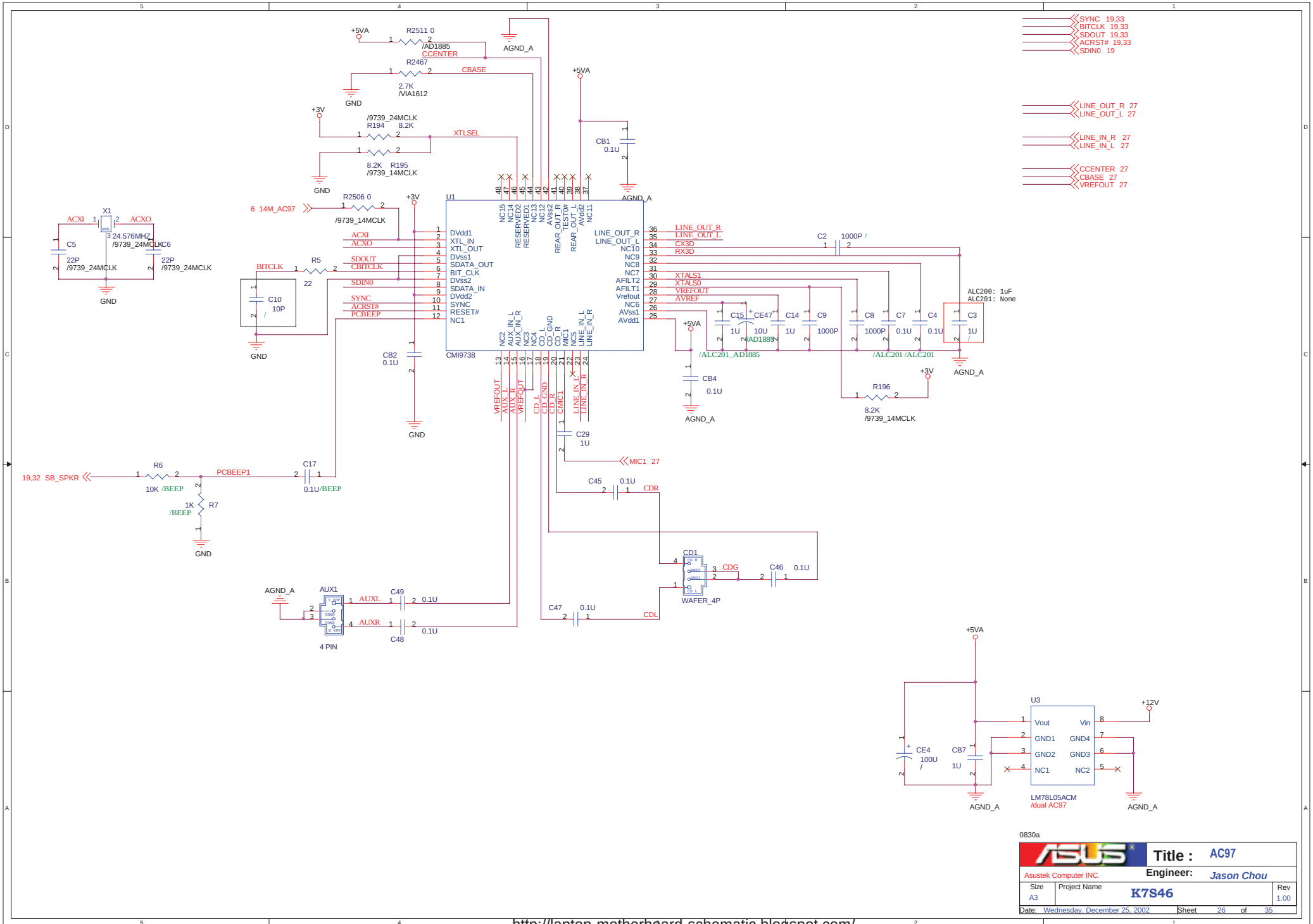
IDE2





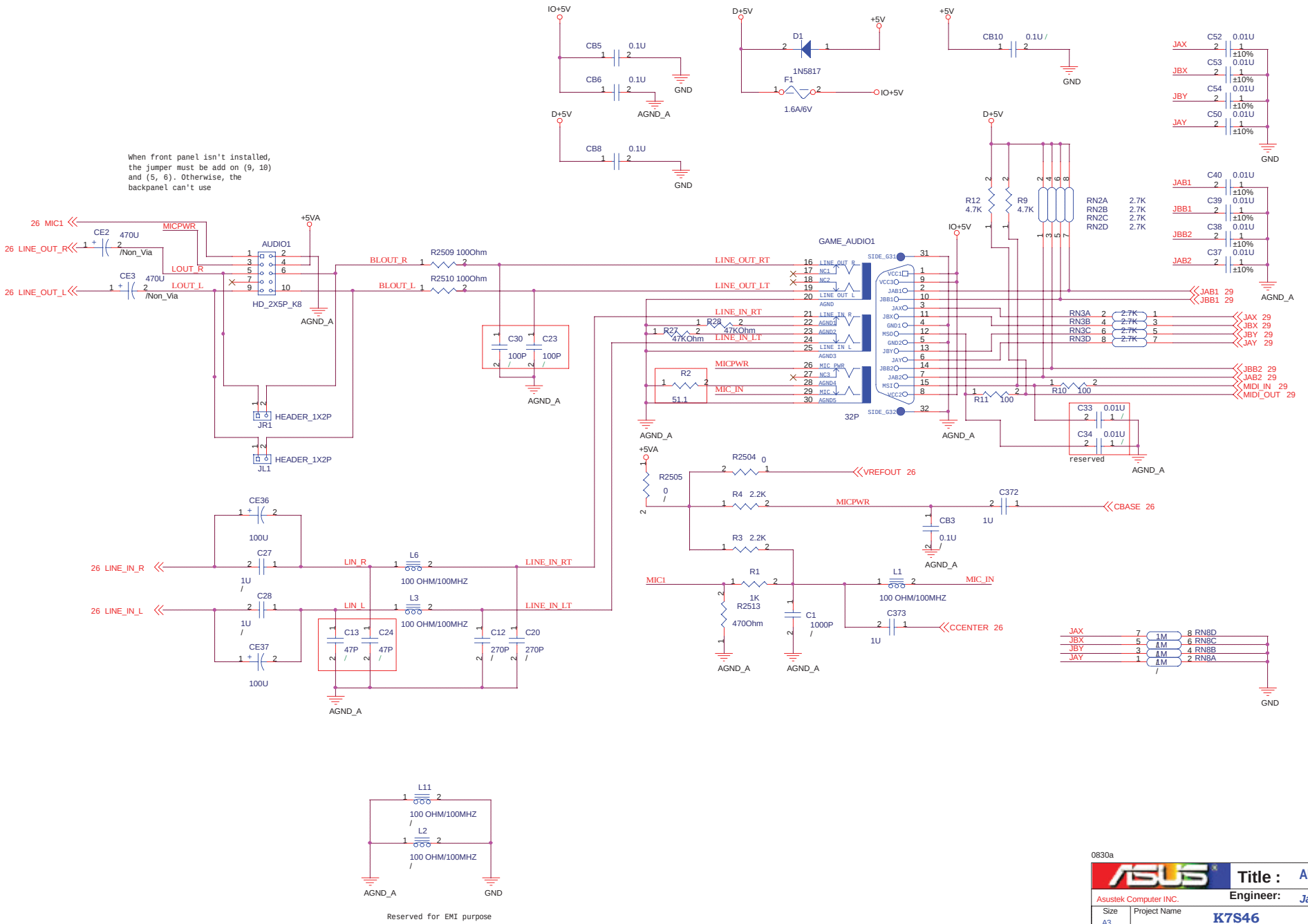
0830a

ASUS	Title : IDE	
Asustek Computer INC.	Engineer: Jason Chou	
Size: A3	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 25 of 35	



0830a

ASUS	Title :	AC97
Asustek Computer INC.	Engineer:	Jason Chou
Size: A3	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 26 of 35	



0830a

ASUS	Title : AUDIO-CON	
Asustek Computer INC.	Engineer: Jason Chou	
Size: A3	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 27 of 35	

PREVENT +5VSB NOT ENOUGH DURING S0

20 LP+[0:5]
20 LP-[0:5]

+5VSB
+5V
D23
1N5817

PS2/USB+5V
PS2_USB_PW
+5V
+5VSB
DEFAULT IS [1-2]
HEADER_1X3P

SBV01
F3
USB01F_+5V
1.6A/6V
L1739
70Ohm/100Mhz
/R0805 0ohm instead
R25
4.7K
OC#0 20
R26
5.6K

SBV45
F4
USB45F_+5V
1.6A/6V
L1740
70Ohm/100Mhz
/R0805 0ohm instead
R155
4.7K
OC#2 20
R150
5.6K

SBV23
F5
USB23F_+5V
1.6A/6V
L1741
70Ohm/100Mhz
/R0805 0ohm instead
R167
4.7K
OC#1 20
R165
5.6K

R18
LP+0
LP-0
LP+1
LP-1
0OHM R2489
0OHM R2490
0OHM R2491
0OHM
P+0 24
P-0 24
P+1 24
P-1 24
C16 33P
C11 33P
C26 33P
C21 33P

R2492
LP+4
LP-4
LP+5
LP-5
0OHM R2493
0OHM R2494
0OHM R2495
0OHM
P+4
P-4
P+5
P-5
C254 33P
C257 33P
C259 33P
C273 33P

R2496
LP+2
LP-2
LP+3
LP-3
0OHM R2497
0OHM R2498
0OHM R2499
0OHM
P+2
P-2
P+3
P-3
C283 33P
C289 33P
C291 33P
C300 33P

USB 4,5

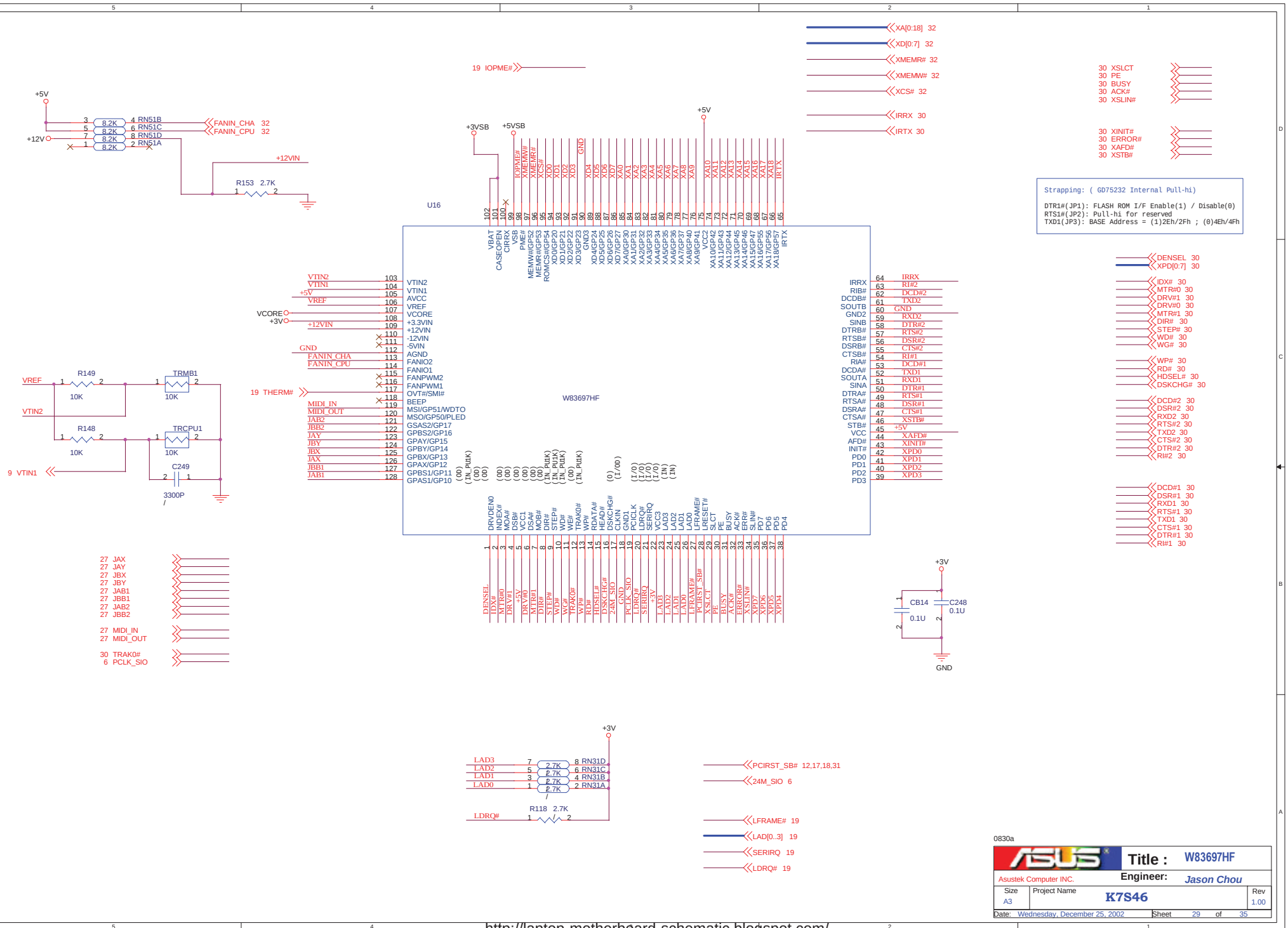
SBV45
CE29 100U
C250 0.1U
USB45
P-4
P+4
P-5
P+5
USB_BLUE

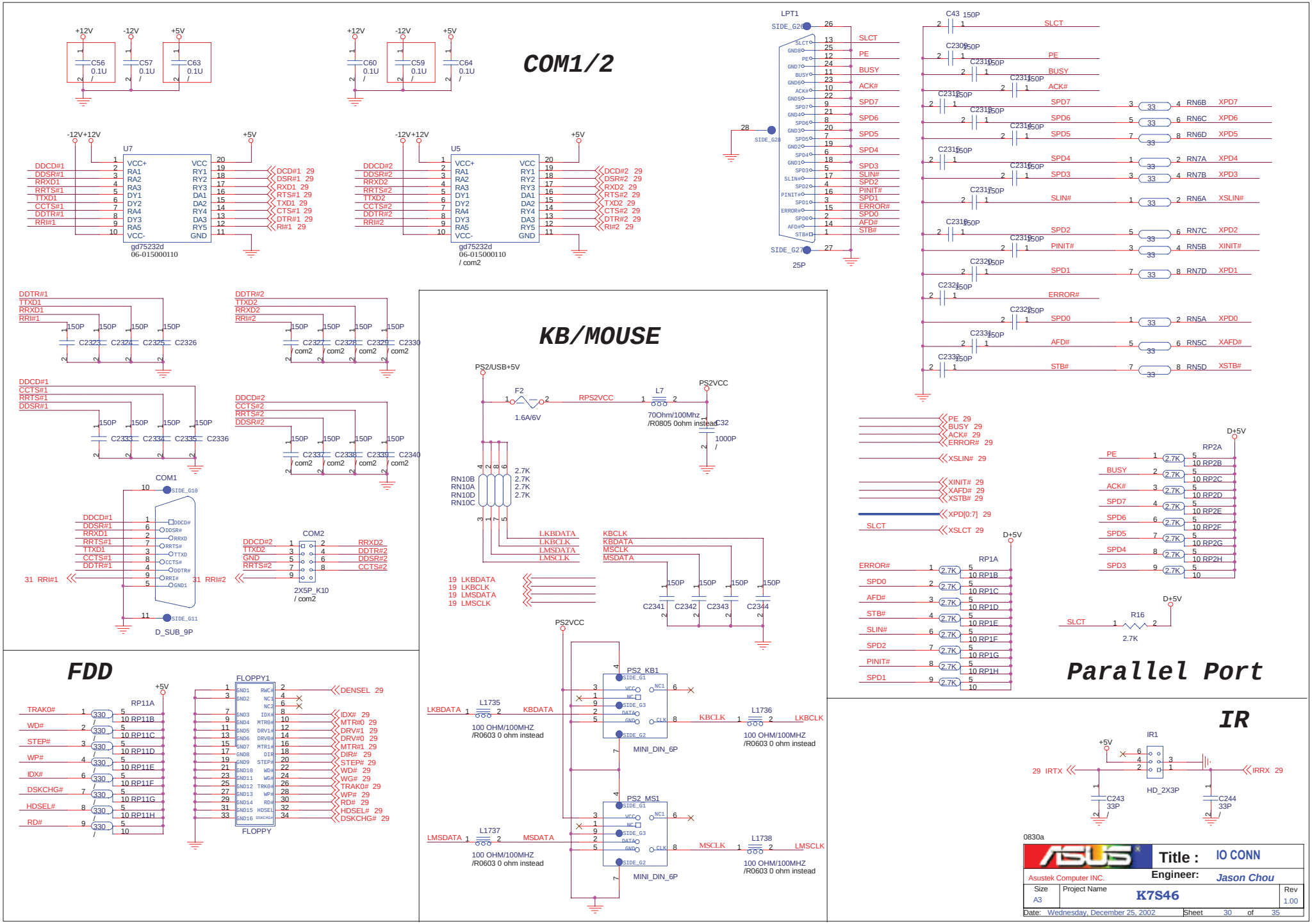
USB 2,3

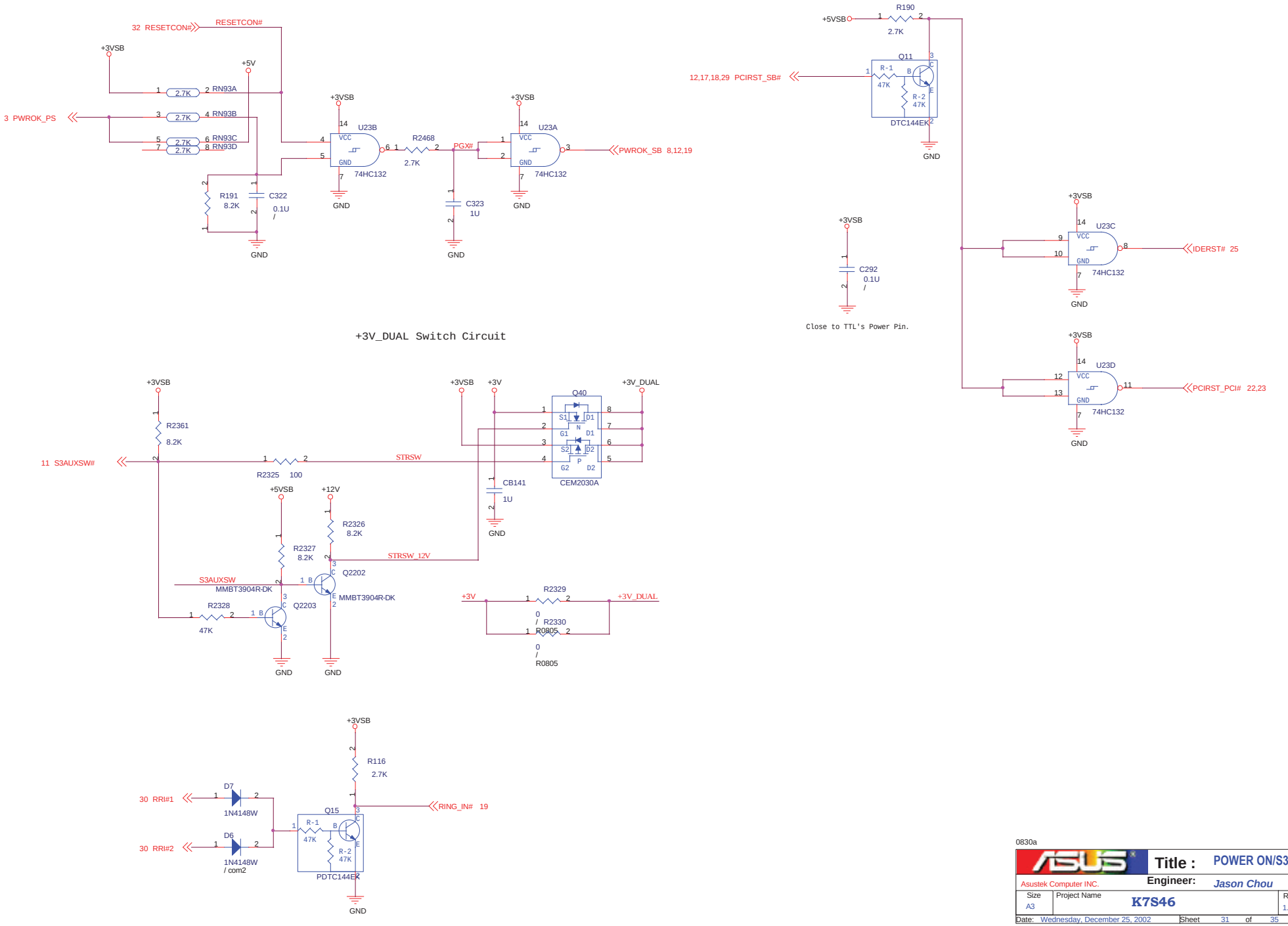
USB23
SBV23
CE31 100U
C281 0.1U
P-3
P-2
P+3
P+2
SIDE_G11
SIDE_G9
SIDE_G12
SIDE_G10
USB_2X4P

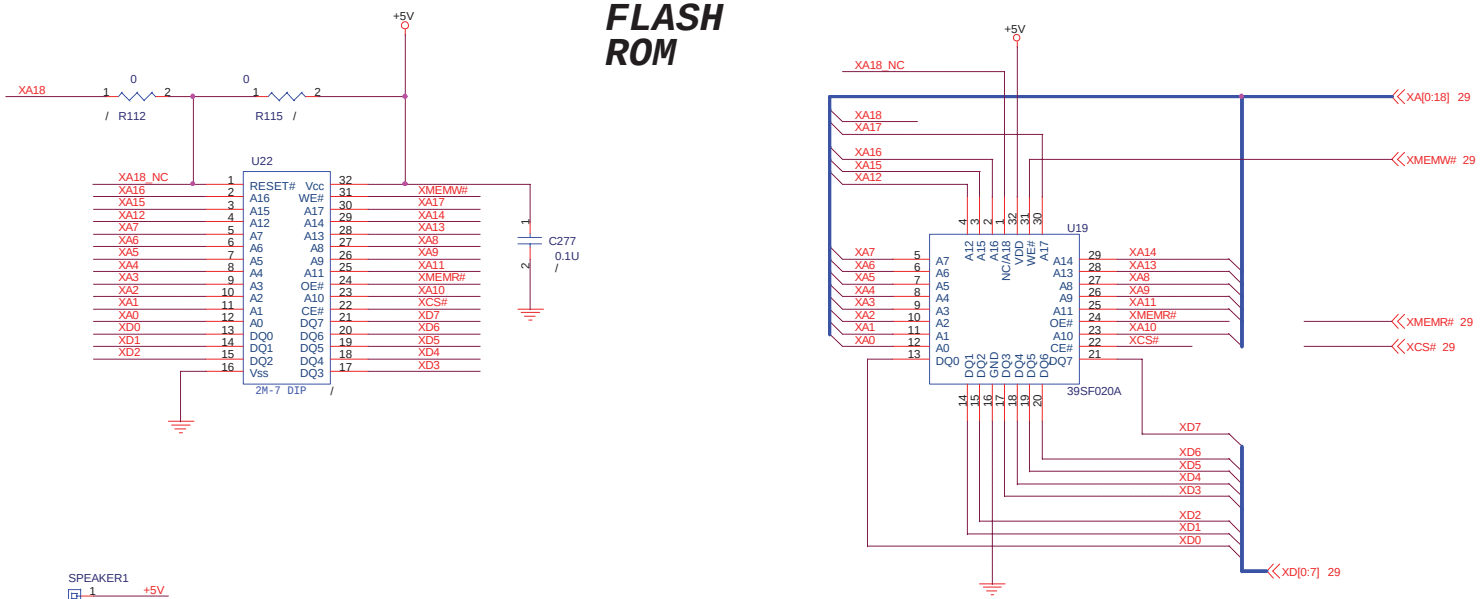
0830a

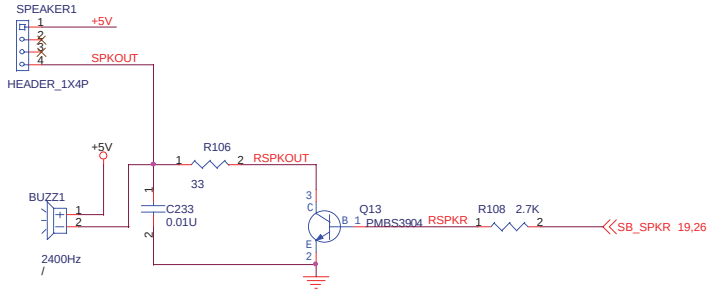
Asustek Computer INC.	Title : USB PORT	
	Engineer: Jason Chou	
Size: A3	Project Name: K7S46	Rev: 1.00
Date: Wednesday, December 25, 2002	Sheet 28 of 35	

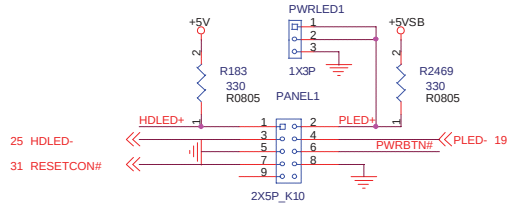


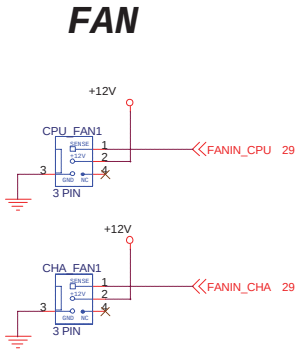


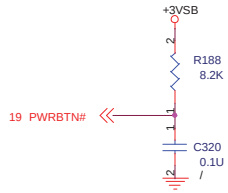


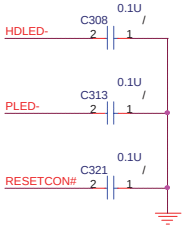












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Asustek Computer INC.	Title : ROM/PANEL	
	Engineer: Jason Chou	
Size: A3	Project Name: K7S46	Rev: 1.00
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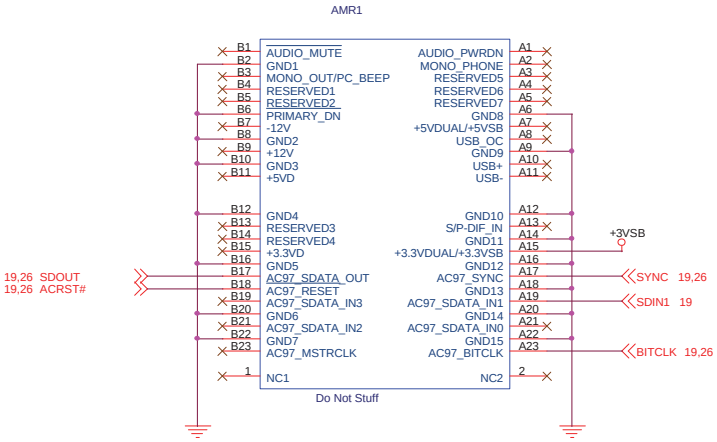
AMR SLOT



Note: This AMR Slot only support MODEM

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Asustek Computer INC.	Title : AMR		
	Engineer: Jason Chou		
Size: A3	Project Name: K7S46		Rev: 1.00
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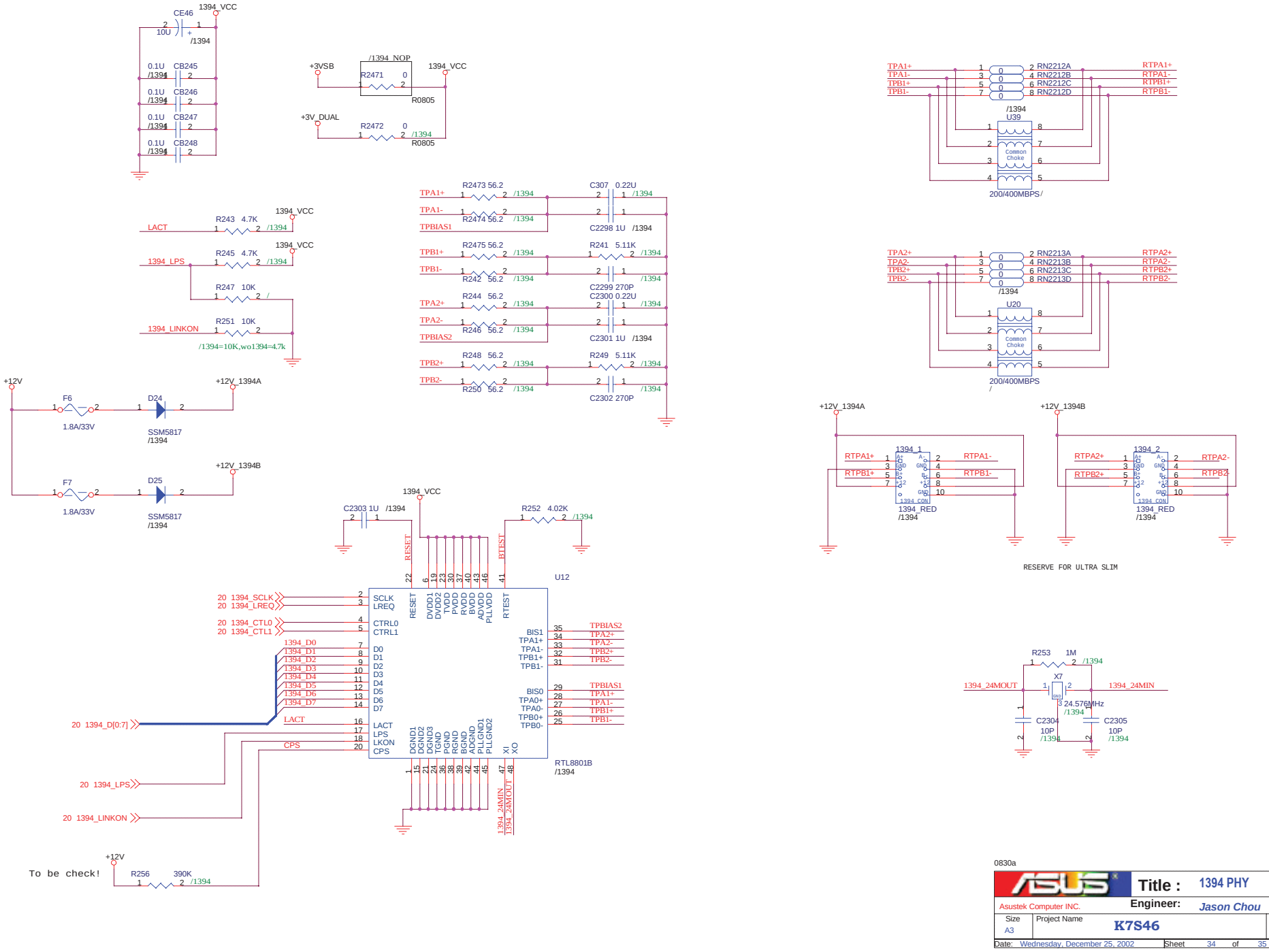

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ASUS	Title :	1394 PHY
Asustek Computer INC.	Engineer:	Jason Chou
Size: A3	Project Name: K7S46	Rev: 1.00
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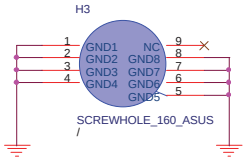
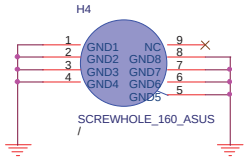
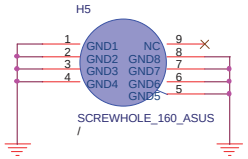
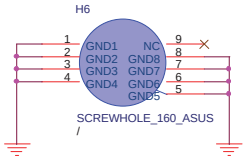
ATX Board Screw Holes

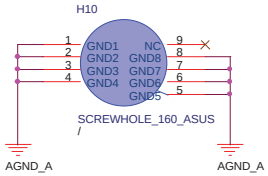
EXTERNAL IO

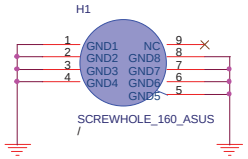


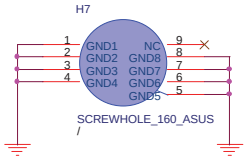


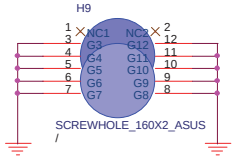


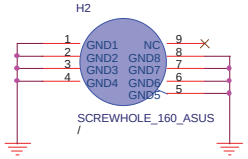


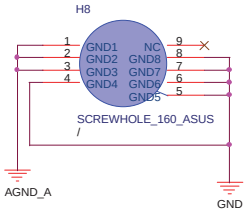












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Asustek Computer INC.	Title : SCREW		
	Engineer: Jason Chou		
Size: A3	Project Name: K7S46		Rev: 1.00
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