

# ZA1 SYSTEM BLOCK DIAGRAM

PWR\_SRC Primary DC system power supply  
 3VSUS 3.3V switched power rail ( off in S4-S5 )  
 +3V 3.3V switched power rail ( off in S3-S5 )  
 3VPCU 3V always on power rail  
 5VSUS 5V switched power rail ( off in S4-S5 )  
 +5V 5V switched power rail ( off in S3-S5 )  
 5VPCU 5V always on power rail

---

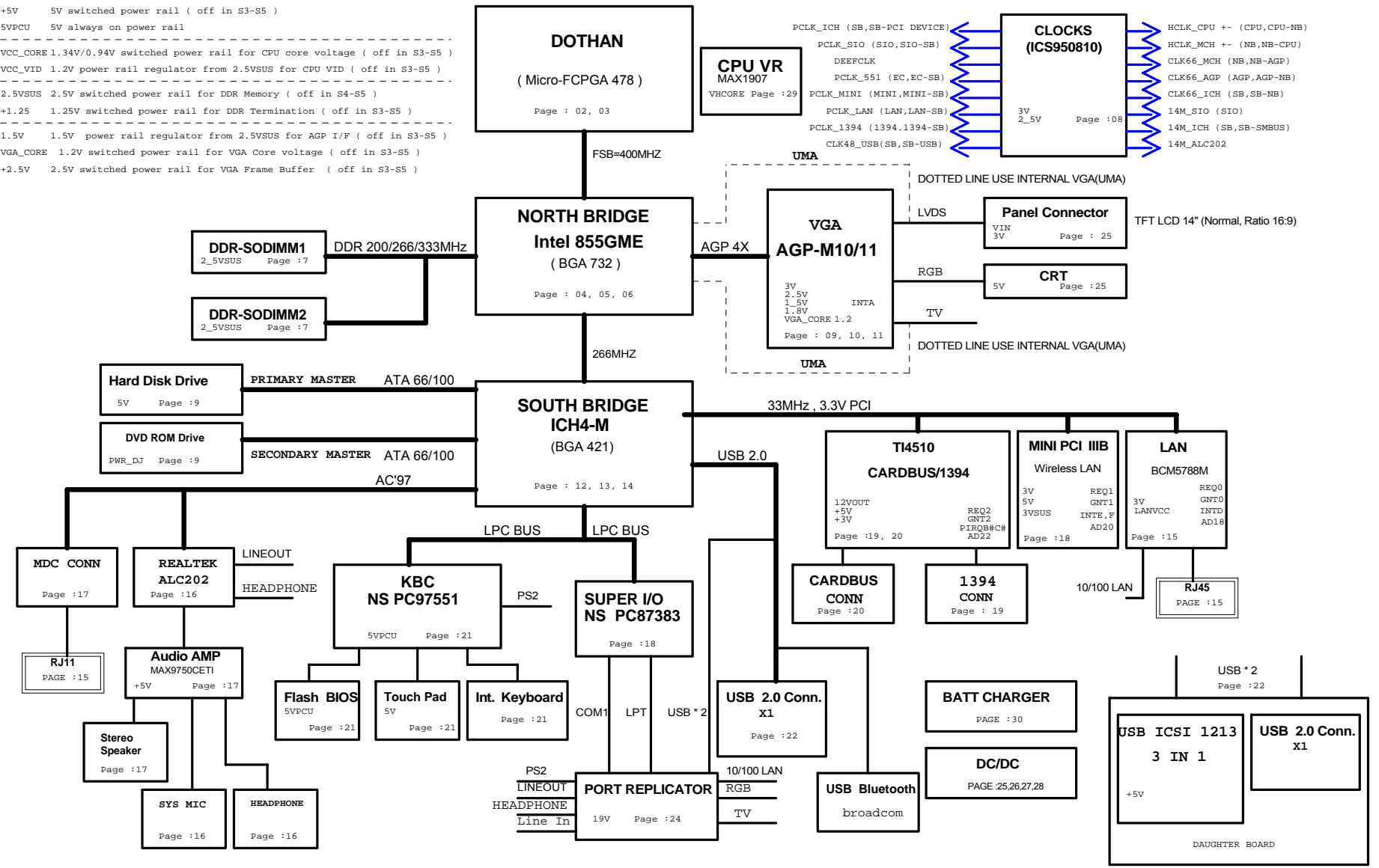
VCC\_CORE 1.34V/0.94V switched power rail for CPU core voltage ( off in S3-S5 )  
 VCC\_VID 1.2V power rail regulator from 2.5VSUS for CPU VID ( off in S3-S5 )

---

2.5VSUS 2.5V switched power rail for DDR Memory ( off in S4-S5 )  
 +1.25 1.25V switched power rail for DDR Termination ( off in S3-S5 )

---

1.5V 1.5V power rail regulator from 2.5VSUS for AGP I/F ( off in S3-S5 )  
 VGA\_CORE 1.2V switched power rail for VGA Core voltage ( off in S3-S5 )  
 +2.5V 2.5V switched power rail for VGA Frame Buffer ( off in S3-S5 )



# DOTHAN

1 OF 3

REQUEST  
PHASE  
SIGNALS

ERROR  
SIGNALS

ARBITRATION  
PHASE  
SIGNALS

RESPONSE  
PHASE  
SIGNALS

PC  
COMPATIBILITY  
SIGNALS

DIAGNOSTIC  
& TEST  
SIGNALS

EXECUTION  
CONTROL  
SIGNALS

THERMAL DIODE

DOTHAN PROCESSOR

D0#	A19	HD#0
D1#	A25	HD#1
D2#	A22	HD#2
D3#	B21	HD#3
D4#	A24	HD#4
D5#	B26	HD#5
D6#	A21	HD#6
D7#	B20	HD#7
D8#	C20	HD#8
D9#	B24	HD#9
D10#	D24	HD#10
D11#	E24	HD#11
D12#	C26	HD#12
D13#	B23	HD#13
D14#	E23	HD#14
D15#	C25	HD#15
D16#	H23	HD#16
D17#	G25	HD#17
D18#	L23	HD#18
D19#	M26	HD#19
D20#	H24	HD#20
D21#	F25	HD#21
D22#	G24	HD#22
D23#	J23	HD#23
D24#	M23	HD#24
D25#	J25	HD#25
D26#	L26	HD#26
D27#	N24	HD#27
D28#	M25	HD#28
D29#	H26	HD#29
D30#	N25	HD#30
D31#	K25	HD#31
D32#	Y26	HD#32
D33#	AA24	HD#33
D34#	U23	HD#34
D35#	V23	HD#35
D36#	R24	HD#37
D37#	R26	HD#38
D38#	R23	HD#39
D39#	AA23	HD#40
D40#	U26	HD#41
D41#	V24	HD#42
D42#	U25	HD#43
D43#	V26	HD#44
D44#	Y23	HD#45
D45#	AA26	HD#46
D46#	Y25	HD#47
D47#	AB25	HD#48
D48#	AC23	HD#49
D49#	AB24	HD#50
D50#	AC20	HD#51
D51#	AC22	HD#52
D52#	AC25	HD#53
D53#	AD23	HD#54
D54#	AE22	HD#55
D55#	AE23	HD#56
D56#	AD24	HD#57
D57#	AE20	HD#58
D58#	AE21	HD#59
D59#	AD21	HD#60
D60#	AE25	HD#61
D61#	AE22	HD#62
D62#	AE26	HD#63
D63#		

DSTBN0#	C23	HDSTBN0# [4]
DSTBP0#	C22	HDSTBP0# [4]
DSTBN1#	K24	HDSTBN1# [4]
DSTBP1#	L24	HDSTBP1# [4]
DSTBN2#	W25	HDSTBN2# [4]
DSTBP2#	W24	HDSTBP2# [4]
DSTBN3#	AE24	HDSTBN3# [4]
DSTBP3#	AE25	HDSTBP3# [4]

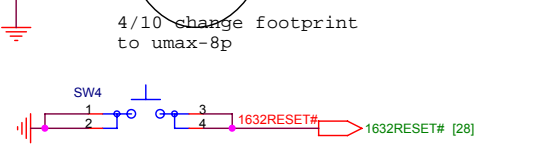
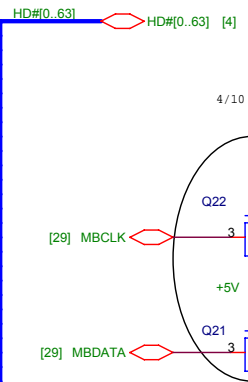
DBI0#	D25	HDBI0# [4]
DBI1#	J26	HDBI1# [4]
DBI2#	T24	HDBI2# [4]
DBI3#	AD20	HDBI3# [4]

DBSY#	M2	DBSY# [4]
DRDY#	H2	DRDY# [4]

BCLK1	B14	HCLK_CPU# [8]
BCLK0	B15	HCLK_CPU# [8]

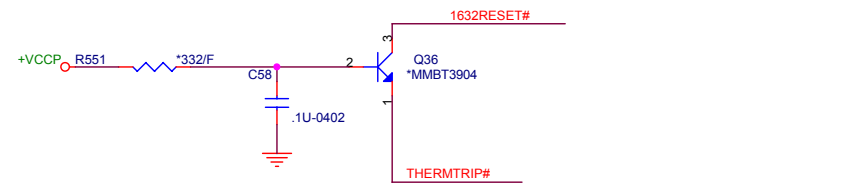
INIT#	B5	CPUINIT# [12]
RESET#	B11	CPURST# [4]

DPWR#	C19	DPWR# [4]
-------	-----	-----------

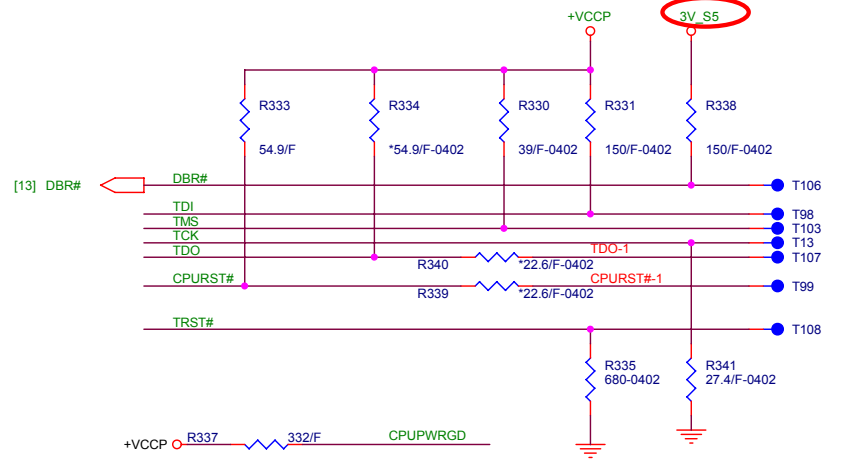


Add for reset function

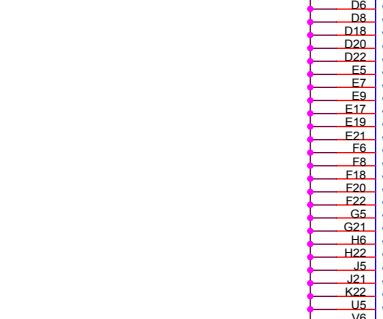
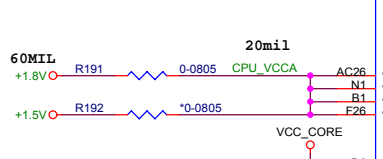
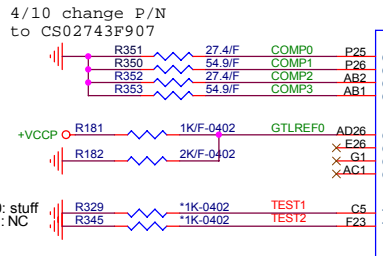
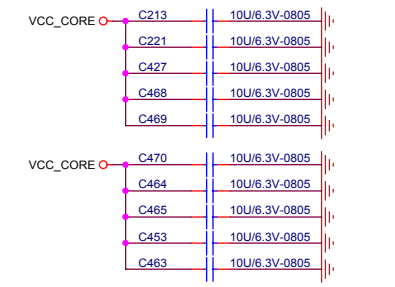
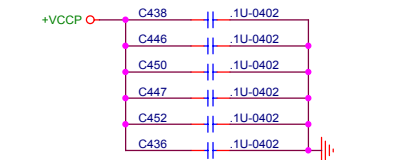
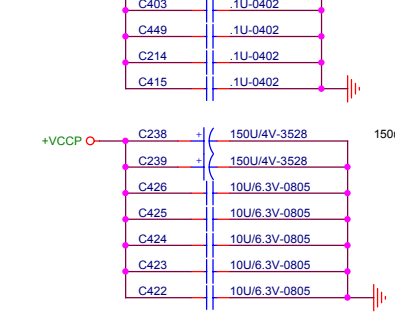
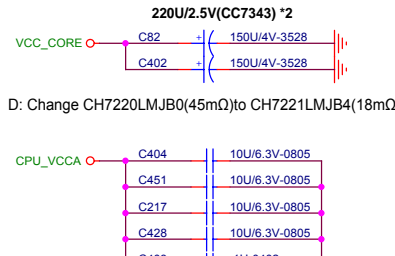
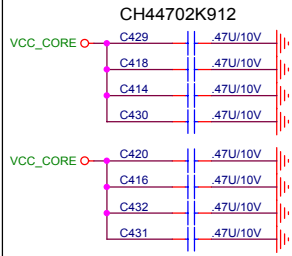
ok



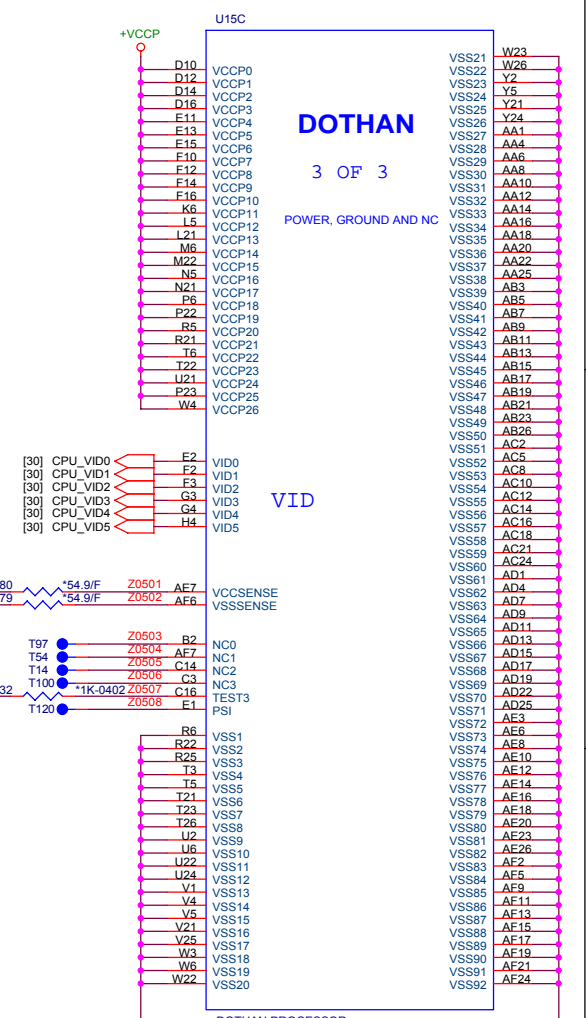
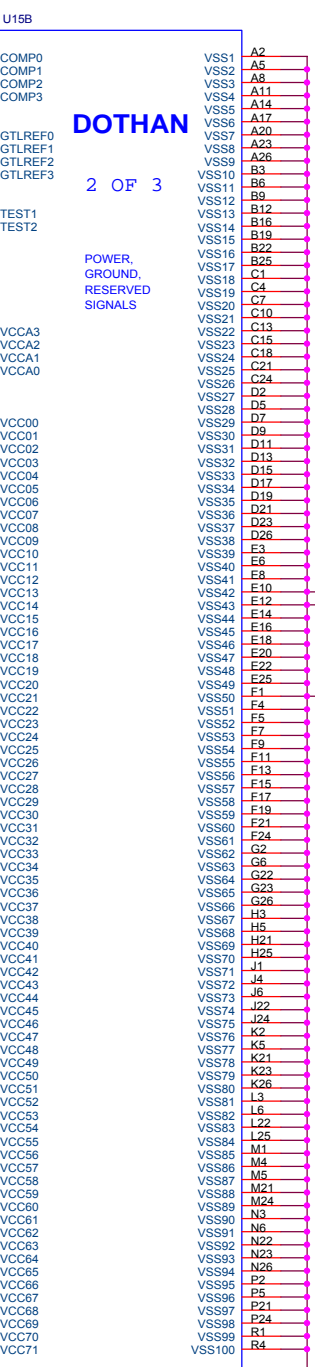
modify 1/2



**PROJECT : ZA1**  
**Quanta Computer Inc.**



VCC\_CORE [30]  
+VCCP [2,4,6,12,27,30]



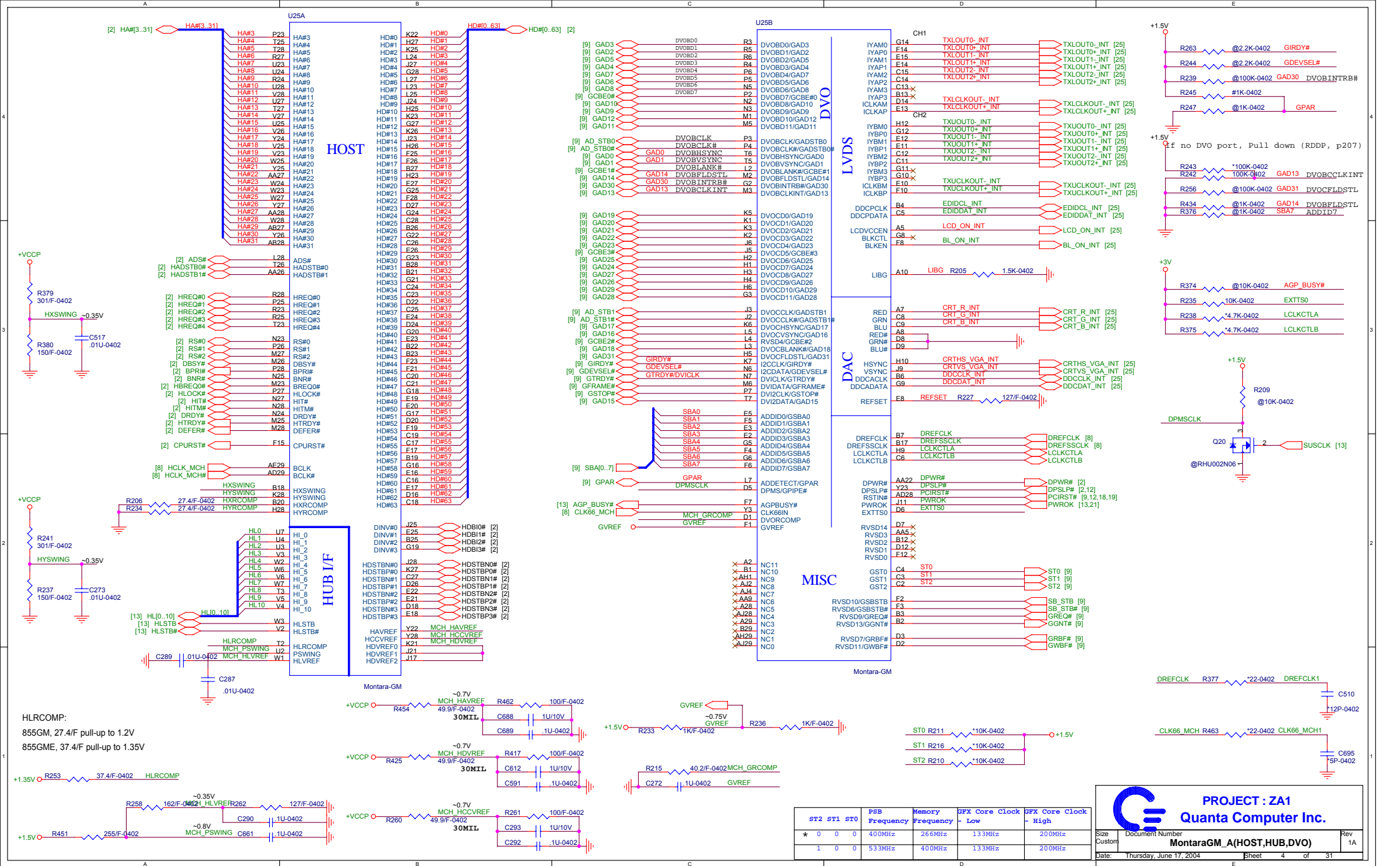
VCC\_CORE: 1.356V-0.844V  
, 0.748V(Deeper sleep)

VCCP : 1.05V

VCCA : 1.8V

**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size B	Doc Number	Rev 1A
<b>CPU DOTHAN (POWER/NC)-B</b>		
Date: Tuesday, July 06, 2004	Sheet 3 of 31	

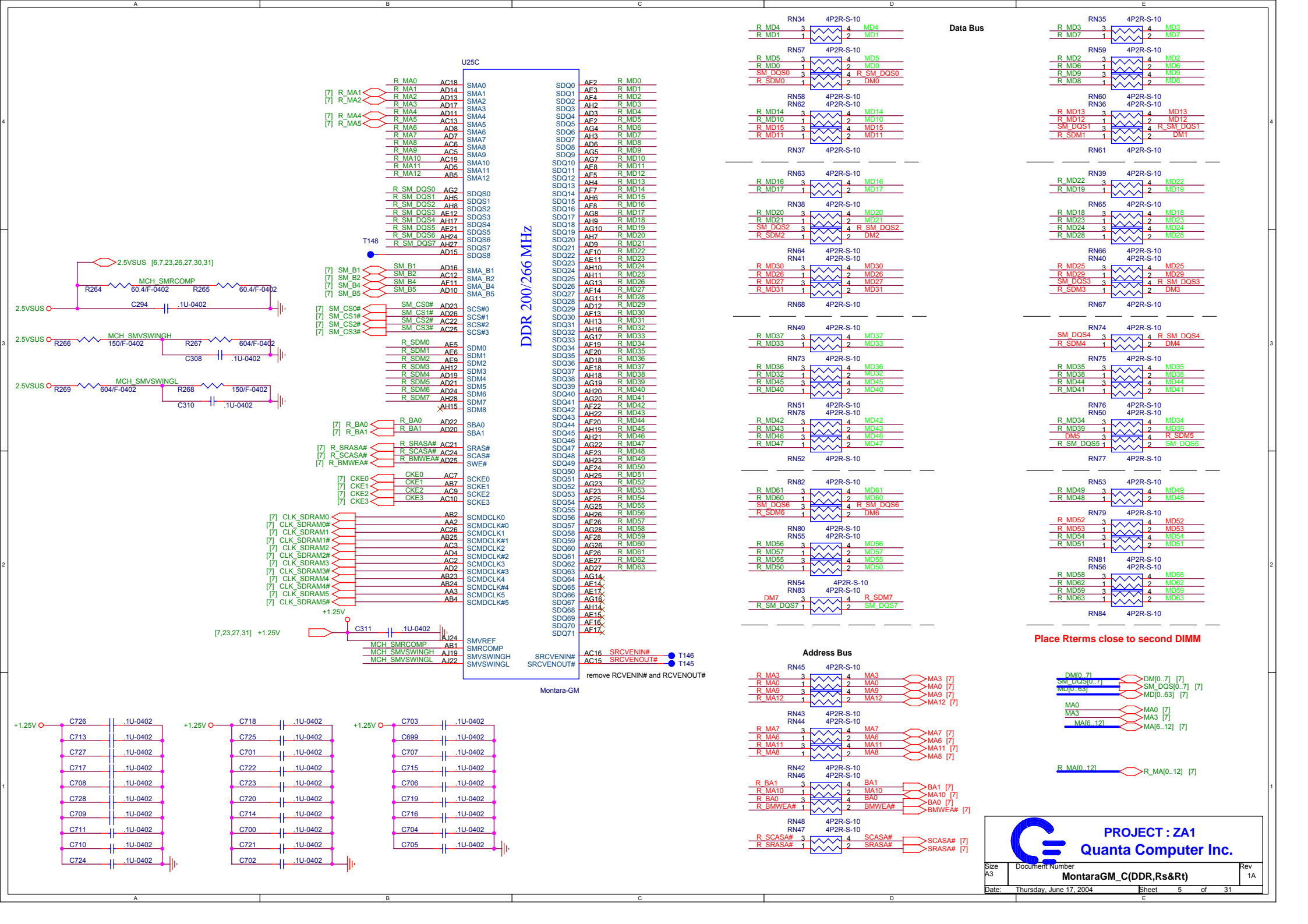


HLRCOMP:  
855GM, 27.4F pull-up to 1.2V  
855GME, 37.4F pull-up to 1.35V

ST2	ST1	ST0	PSB Frequency	Memory Frequency	SFX Core Clock - Low	SFX Core Clock - High
0	0	0	400MHz	266MHz	1.33MHz	200MHz
1	0	0	533MHz	400MHz	1.33MHz	200MHz

**PROJECT : ZA1**  
**Quanta Computer Inc.**

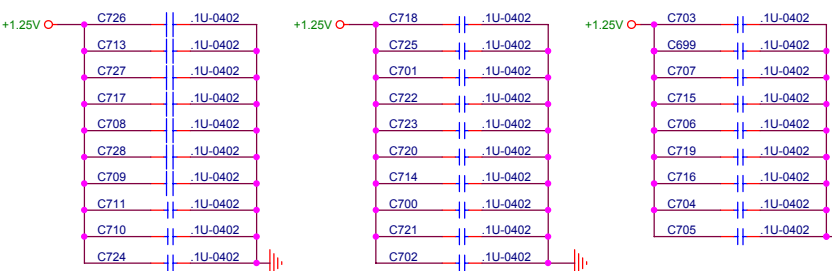
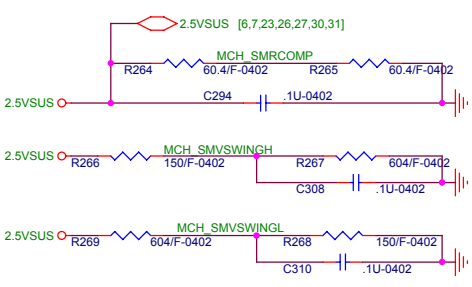
Size Custom	Document Number	Rev 1A
<b>MontaraGM_A(HOST,HUB,DVO)</b>		
Date: Thursday, June 17, 2004	Sheet 4	of 31



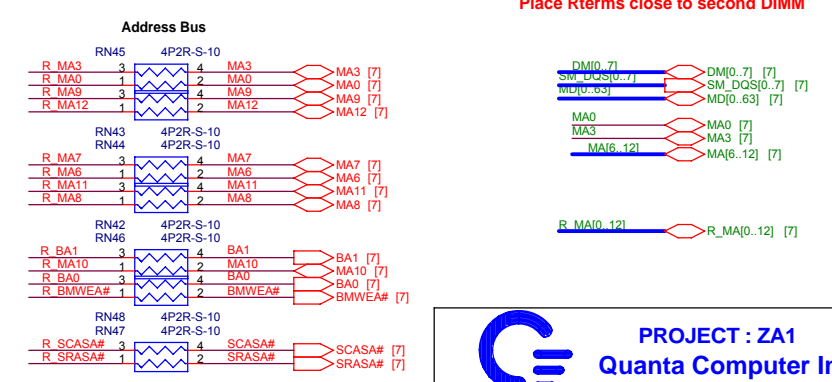
**U25C**

[7] R_MA1	R MA0	AC18	SMA0	SDQ0	AF2	R MD0
[7] R_MA2	R MA1	AD14	SMA1	SDQ1	AE3	R MD1
	R MA2	AD13	SMA2	SDQ2	AF4	R MD2
	R MA3	AD17	SMA3	SDQ3	AH2	R MD3
	R MA4	AD11	SMA4	SDQ4	AD3	R MD4
[7] R_MA4	R MA5	AC13	SMA5	SDQ5	AE2	R MD5
	R MA6	AD8	SMA5	SDQ6	AG4	R MD6
	R MA7	AD7	SMA6	SDQ6	AH3	R MD7
	R MA8	AC6	SMA7	SDQ7	AD6	R MD8
	R MA9	AC5	SMA8	SDQ8	AG5	R MD9
	R MA10	AC19	SMA10	SDQ9	AG7	R MD10
	R MA11	AD5	SMA11	SDQ10	AE8	R MD11
	R MA12	AB5	SMA12	SDQ11	AE6	R MD12
				SDQ12	AH4	R MD13
				SDQ13	AF7	R MD14
				SDQ14	AH6	R MD15
				SDQ15	AF8	R MD16
				SDQ16	AH10	R MD18
				SDQ17	AG10	R MD19
				SDQ18	AH7	R MD20
				SDQ19	AD9	R MD21
				SDQ20	AF10	R MD22
				SDQ21	AH11	R MD23
				SDQ22	AF11	R MD24
				SDQ23	AH11	R MD25
				SDQ24	AG13	R MD26
				SDQ25	AD12	R MD29
				SDQ26	AH16	R MD32
				SDQ27	AG17	R MD33
				SDQ28	AF19	R MD34
				SDQ29	AD18	R MD35
				SDQ30	AE18	R MD36
				SDQ31	AH18	R MD38
				SDQ32	AG22	R MD48
				SDQ33	AH23	R MD49
				SDQ34	AE24	R MD50
				SDQ35	AH25	R MD51
				SDQ36	AG23	R MD52
				SDQ37	AF23	R MD53
				SDQ38	AF25	R MD54
				SDQ39	AG25	R MD55
				SDQ40	AH26	R MD56
				SDQ41	AE26	R MD57
				SDQ42	AG28	R MD58
				SDQ43	AF28	R MD59
				SDQ44	AG26	R MD60
				SDQ45	AF26	R MD61
				SDQ46	AE27	R MD62
				SDQ47	AD27	R MD63
				SDQ48	AG14	
				SDQ49	AE14	
				SDQ50	AF17	
				SDQ51	AG16	
				SDQ52	AH14	
				SDQ53	AE15	
				SDQ54	AF16	
				SDQ55	AF17	
				SDQ56		
				SDQ57		
				SDQ58		

DDR 200/266 MHz



Place Rterms close to second DIMM

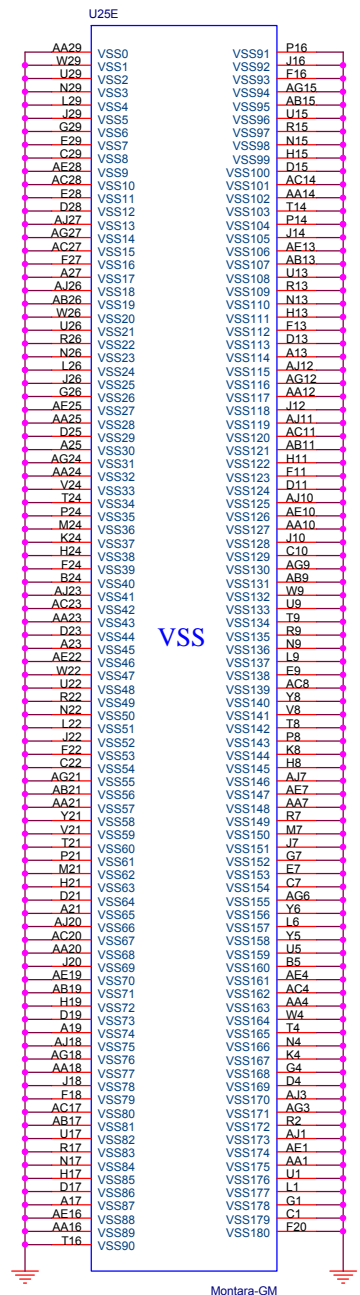
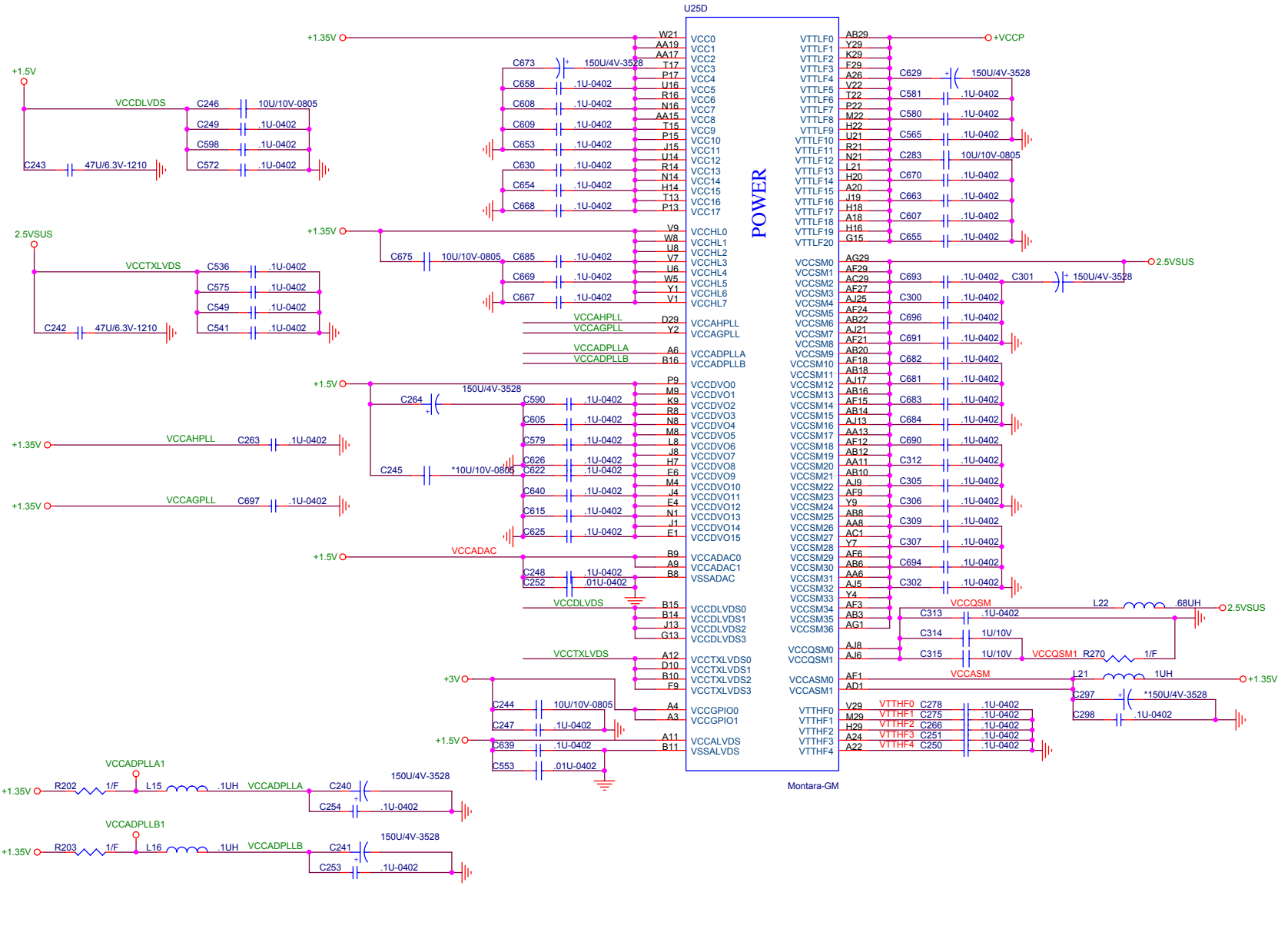


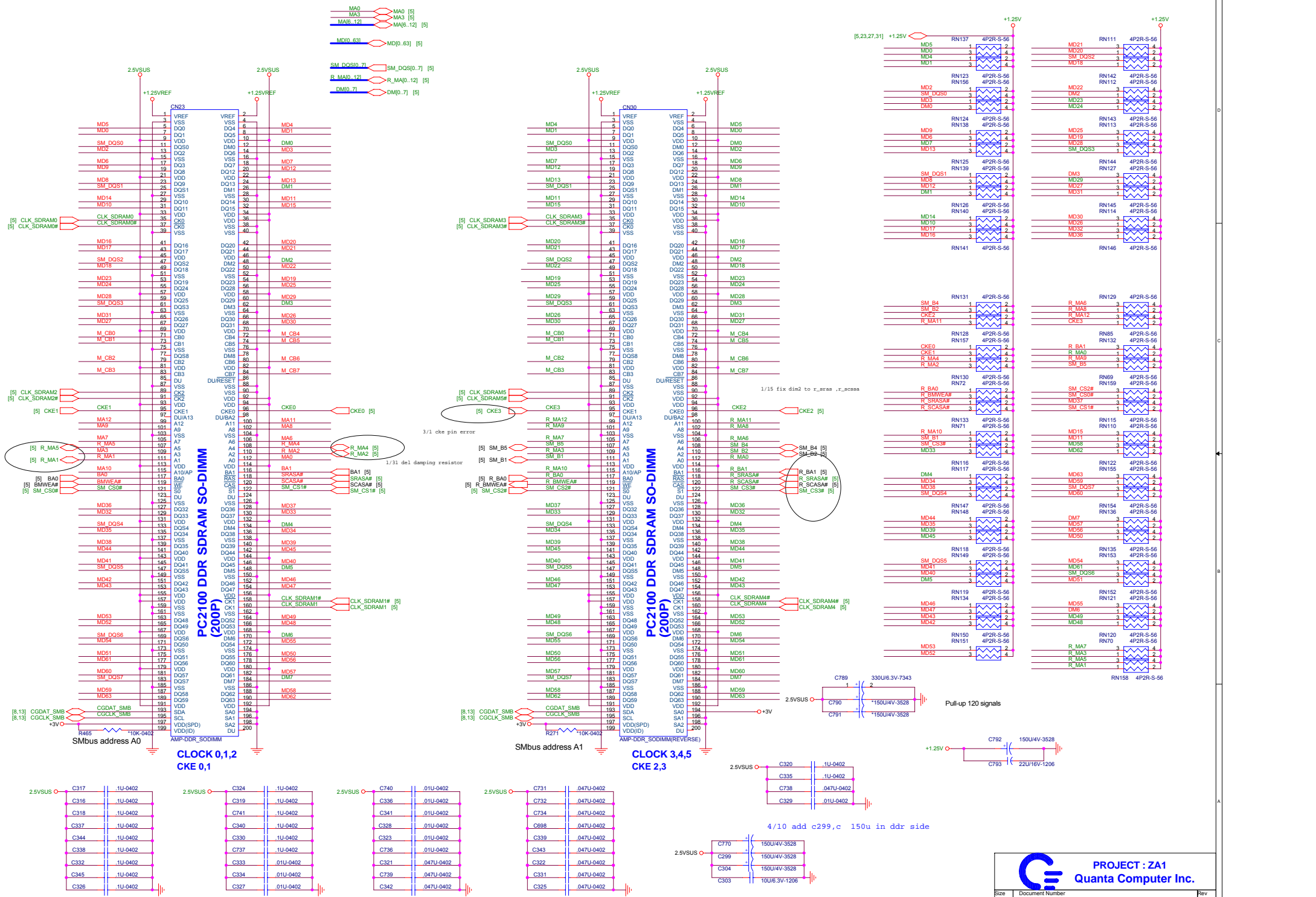
**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size A3	Document Number <b>MontaraGM_C(DDR,RS&amp;Rt)</b>	Rev 1A
Date: Thursday, June 17, 2004		Sheet 5 of 31

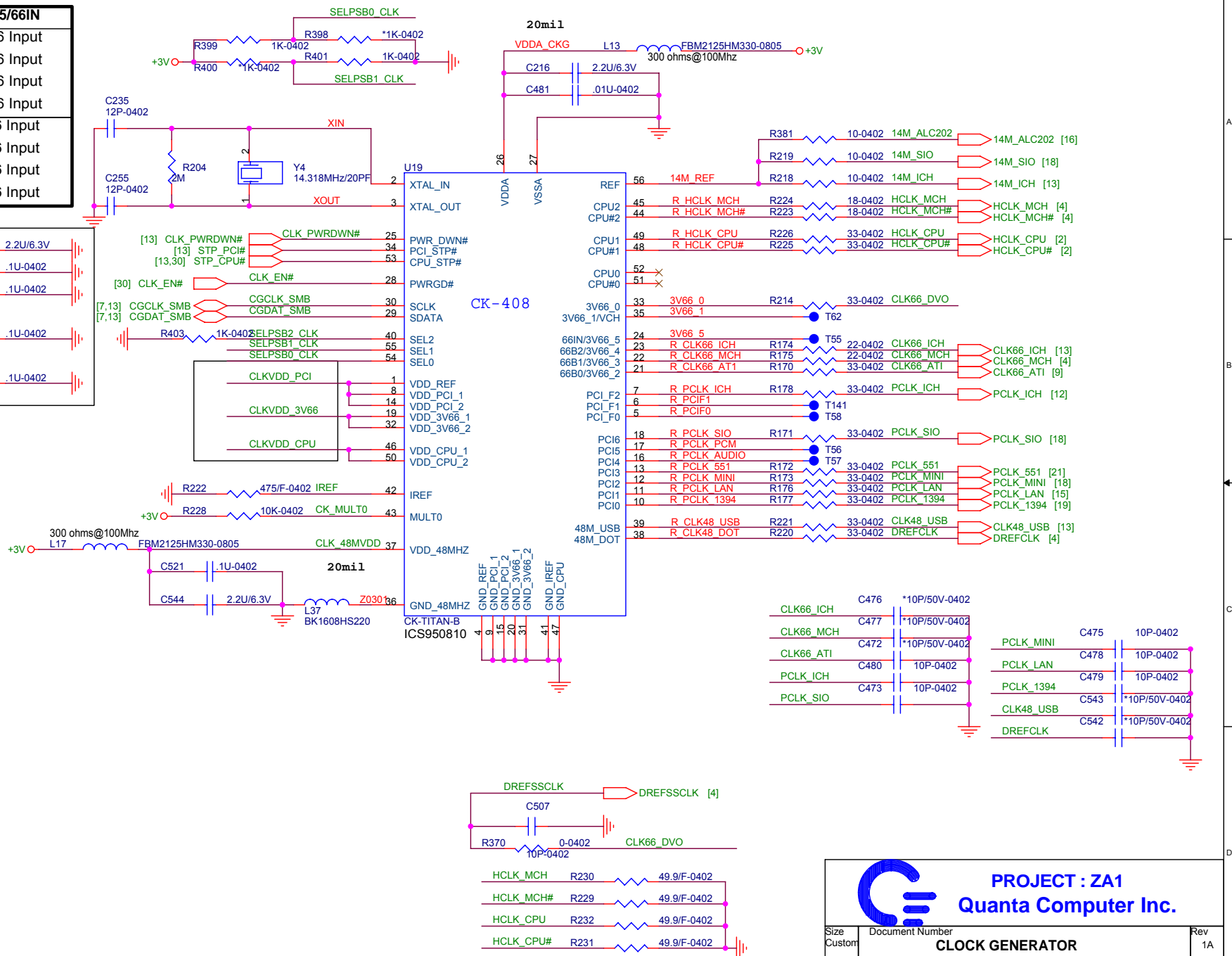
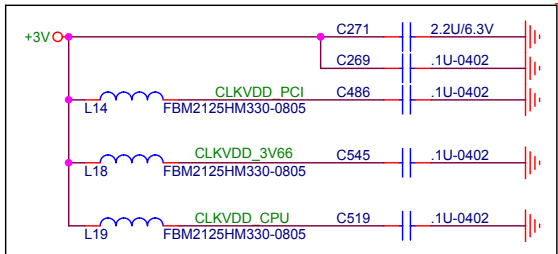


NB:+1.5V 60MIL  
NB:+1.35V 60MIL



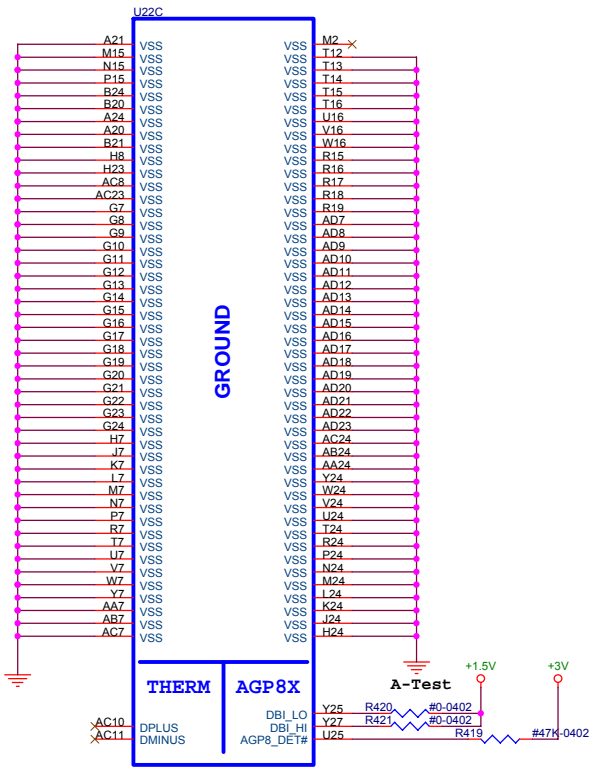
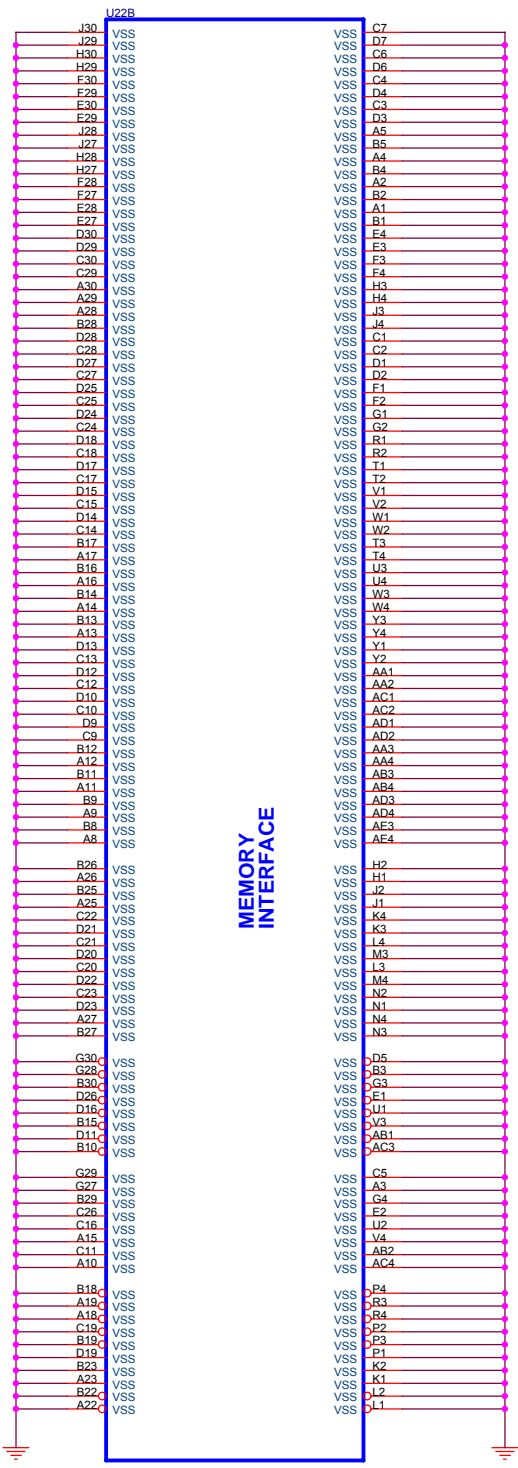


S2	S1	S0	CPU	3V66[0..4]	3V66_5/66IN
1	0	0	66	66IN	66 Input
1	0	1	100	66IN	66 Input
1	1	0	200	66IN	66 Input
1	1	1	133	66IN	66 Input
0	0	0	66	66	66 Input
0	0	1	100	66	66 Input
0	1	0	200	66	66 Input
0	1	1	133	66	66 Input





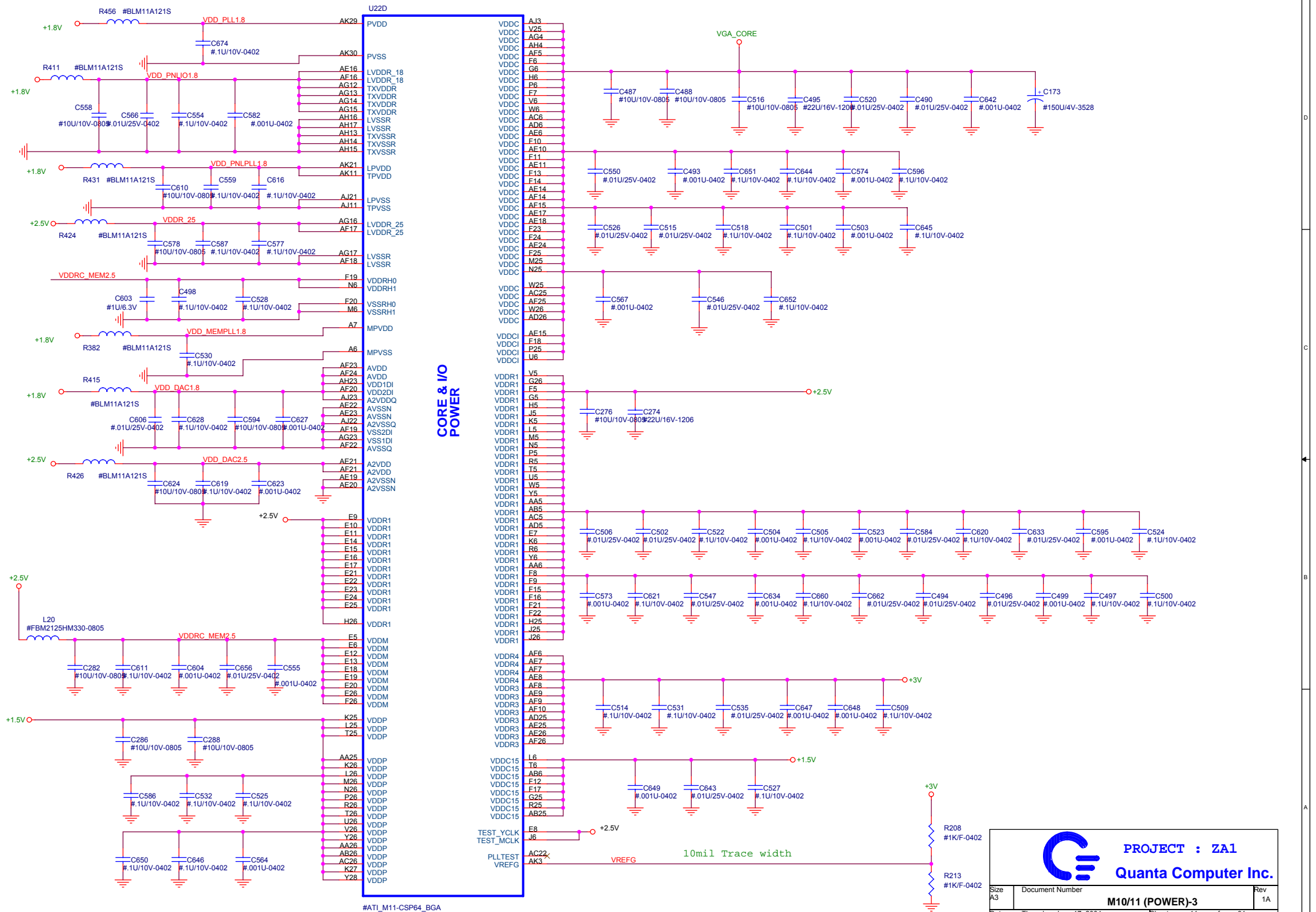





#ATI\_M11-CSP64\_BGA

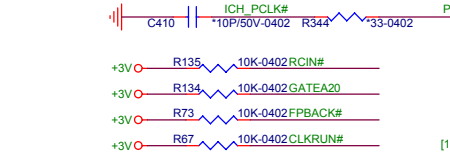
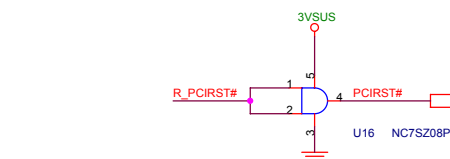
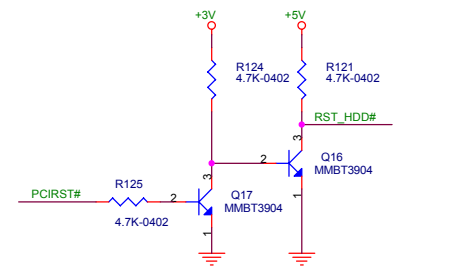
**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size	Document Number	Rev
Custom	M10/11 (MEMORY) & SS-2	1A
Date:	Thursday, June 17, 2004	Sheet 10 of 31



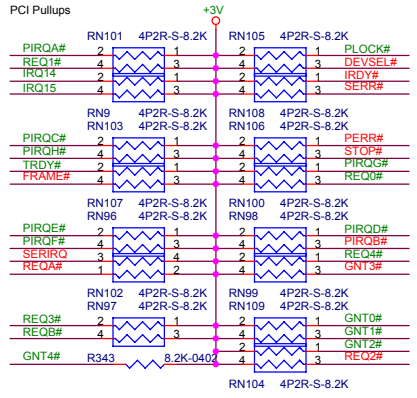
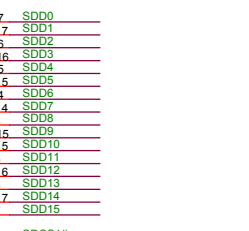
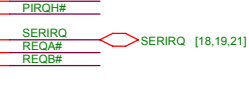
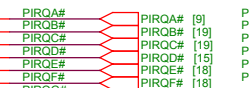
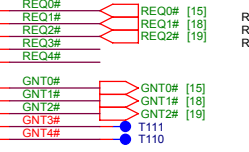
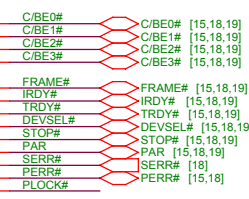
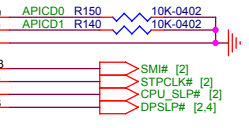
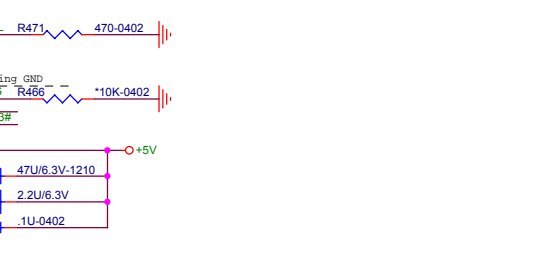
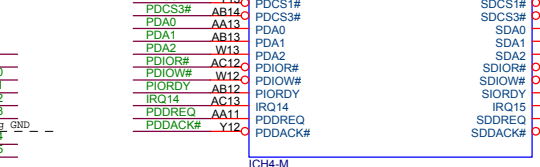
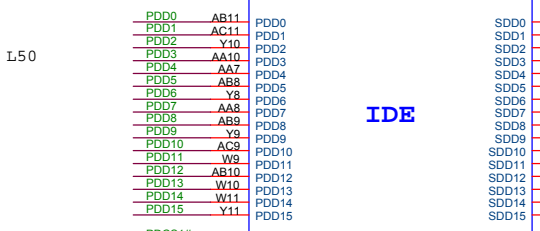
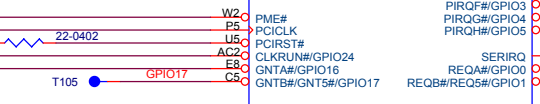
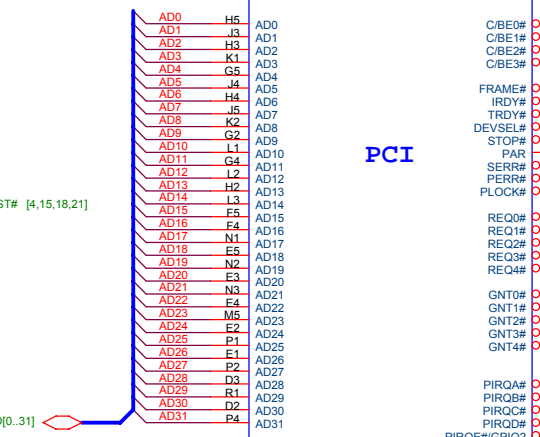
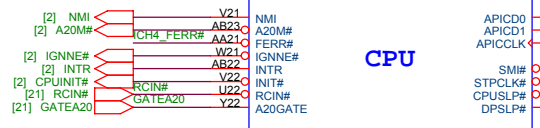
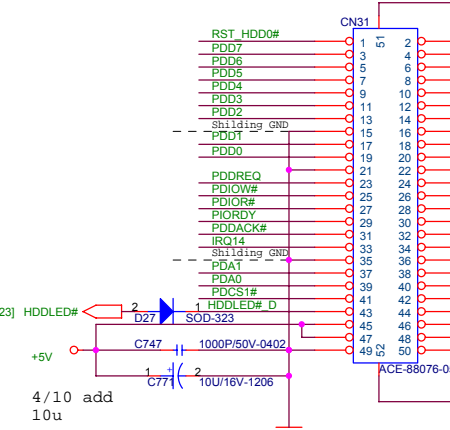
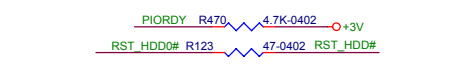
 <b>PROJECT : ZA1</b> <b>Quanta Computer Inc.</b>		Size	Document Number	Rev
		A3	M10/11 (POWER)-3	1A
Date: Thursday, June 17, 2004		Sheet 11 of 31		

# ICH HUB



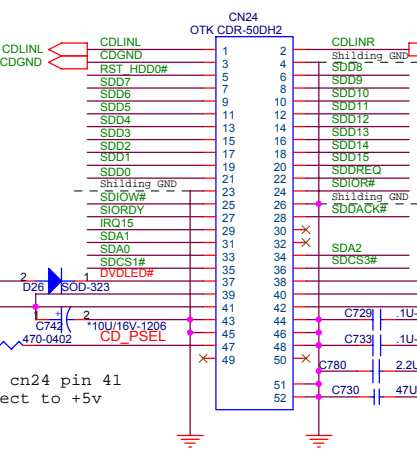
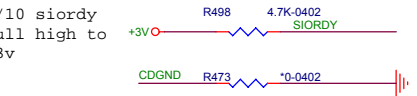
## HDD CONNECTOR

150MIL 4/10 del L50

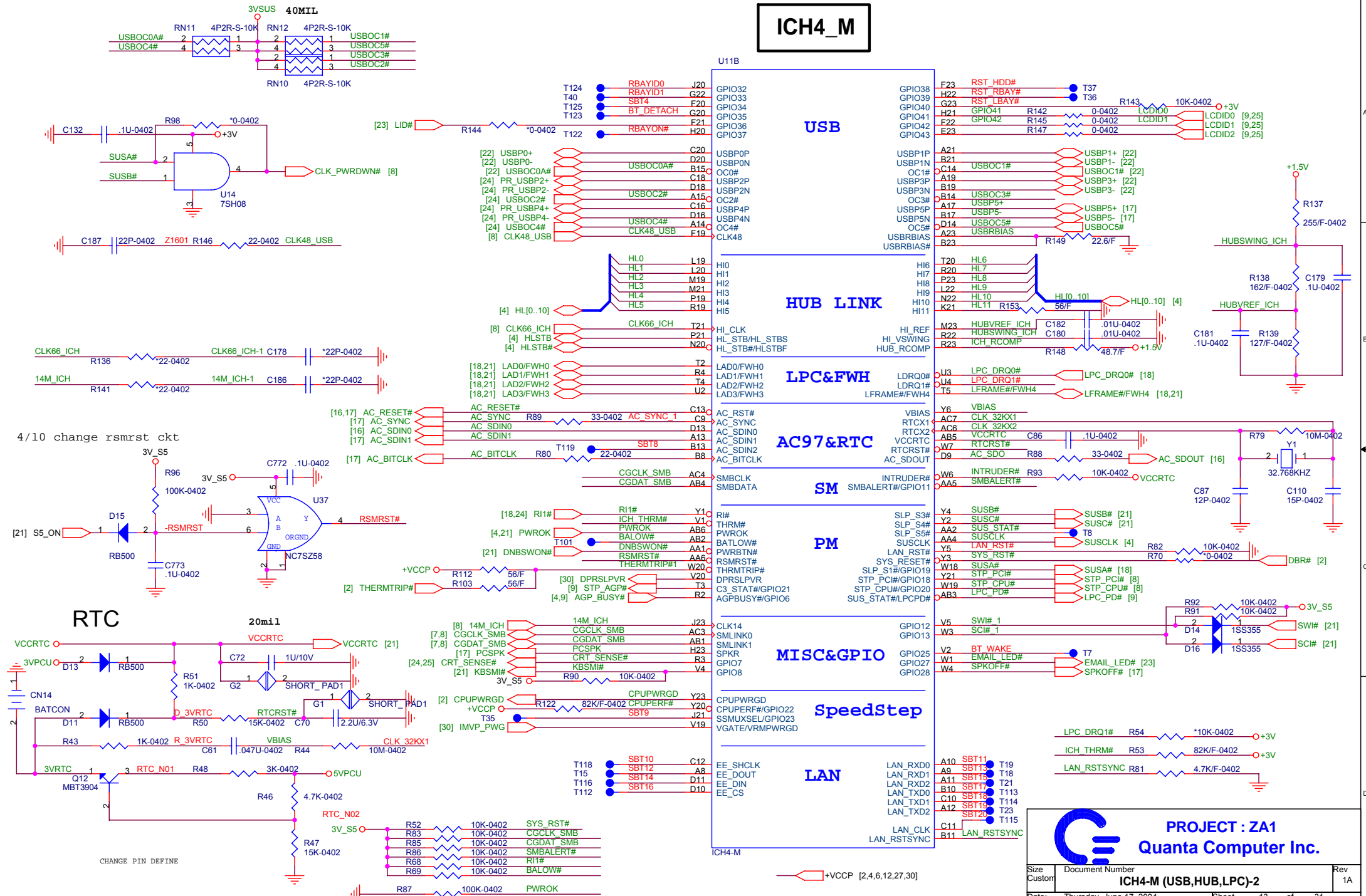


## CD-ROM CONNECTOR

4/10 del L49



# ICH4\_M



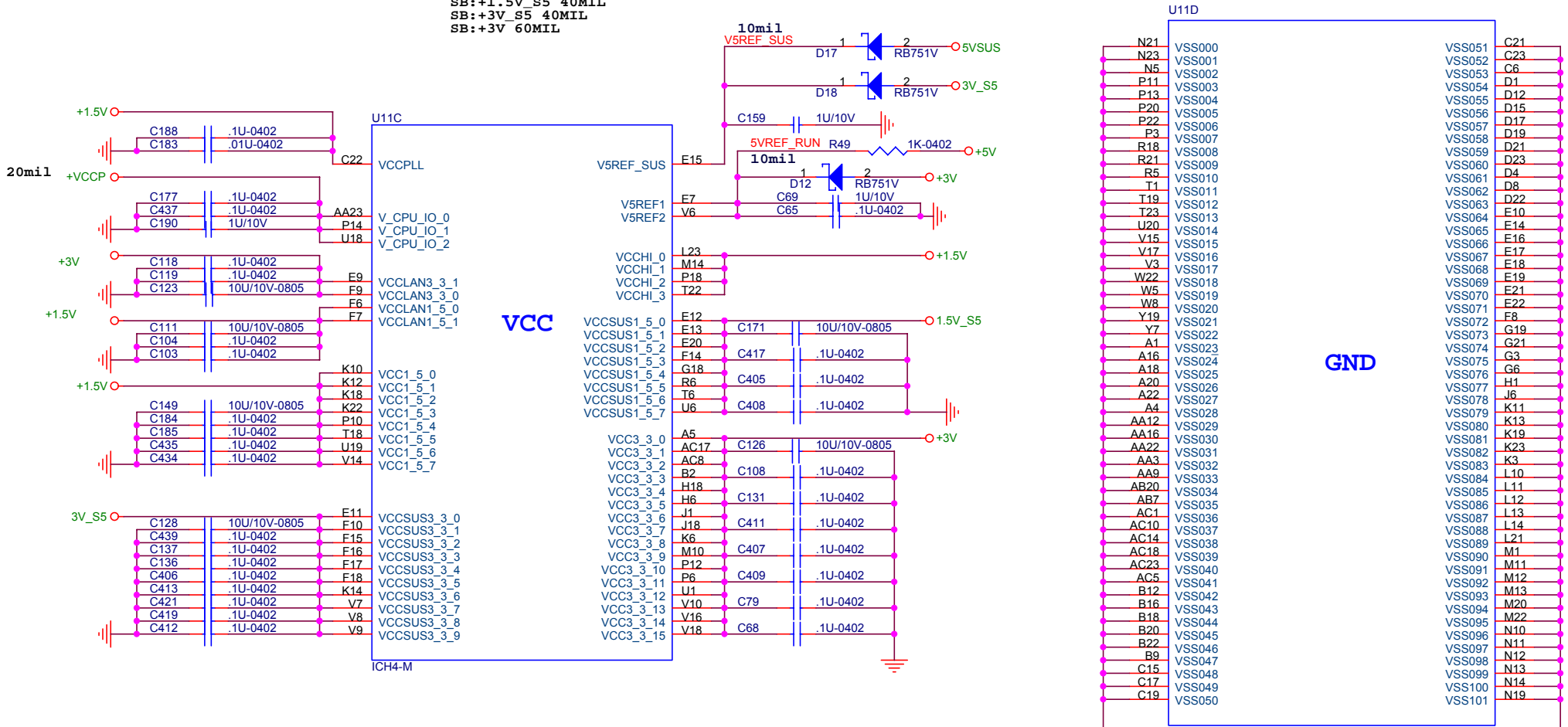
**PROJECT : ZA1**

**Quanta Computer Inc.**

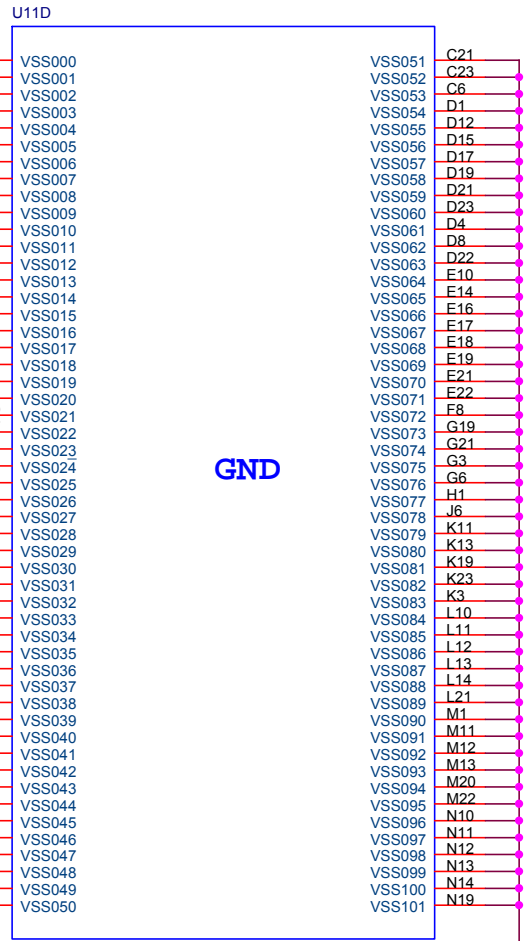
Size	Document Number	Rev
Custom	ICH4-M (USB,HUB,LPC)-2	1A
Date:	Thursday, June 17, 2004	Sheet 13 of 31



SB:+1.5V 40MIL  
 SB:+1.5V\_S5 40MIL  
 SB:+3V\_S5 40MIL  
 SB:+3V 60MIL



- +5V [12,17,18,20,21,22,24,25,26,27,28,31]
- +3V [2,4,6,7,8,9,10,11,12,13,15,16,17,18,19,20,21,22,23,24,25,27,28,30]
- 3V\_S5 [2,13,27,28]
- 1.5V\_S5 [26,27]
- +1.5V [3,4,6,9,10,11,13,26,27]
- +VCCP [2,4,6,12,27,30]

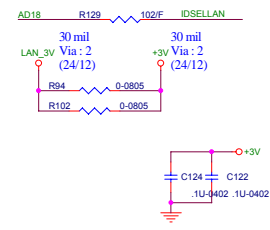


**PROJECT : ZA1**  
**Quanta Computer Inc.**

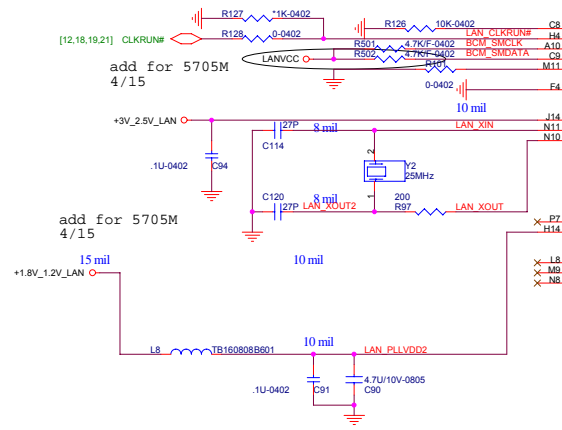
Size Custom	Document Number <b>ICH4-M (POWER&amp;GND)</b>	Rev 1A
Date:	Thursday, June 17, 2004	Sheet 14 of 31

# LAN (Boardcom BCM5705M)

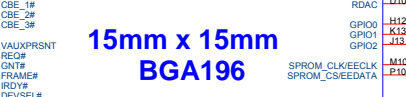
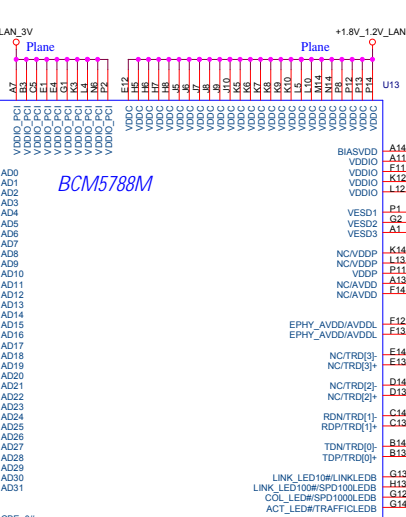
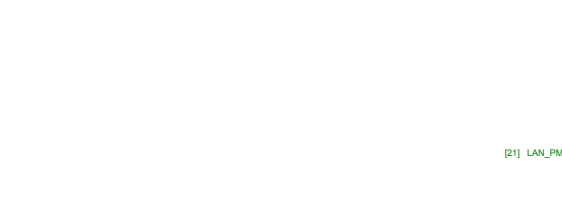
**ID Select** : AD18  
**Interrupt Pin** : PIRQB#  
**Request indicates** : REQ0#  
**Grant indicates** : GNT0#



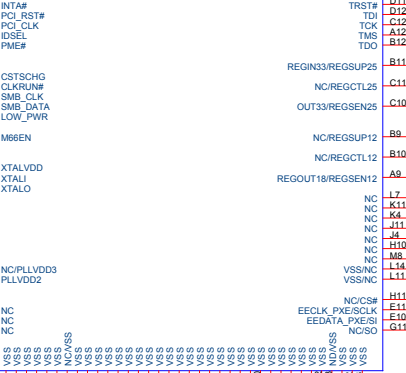
4/10: If use CLKRUN# mount R128  
 If not use CLKRUN# mount R127



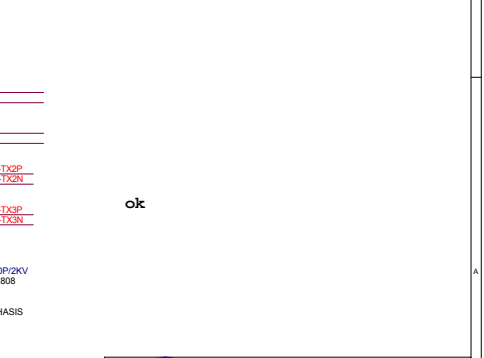
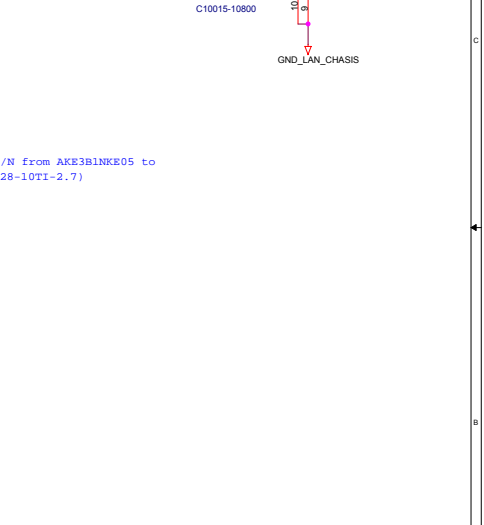
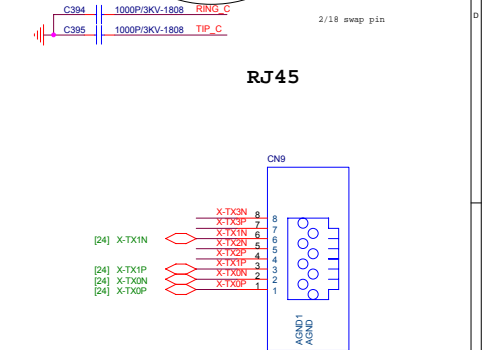
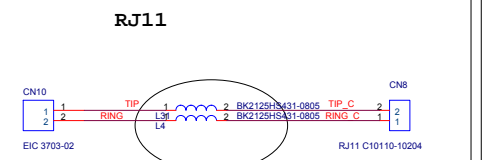
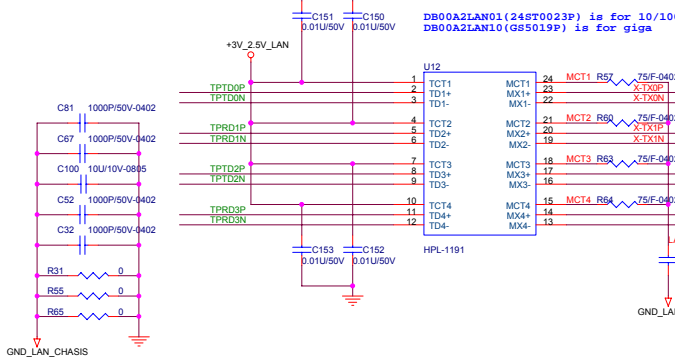
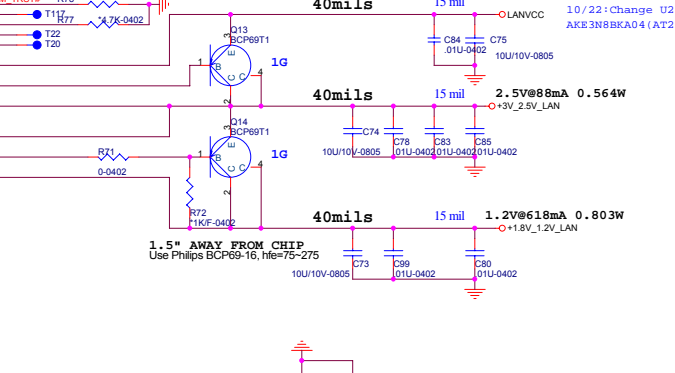
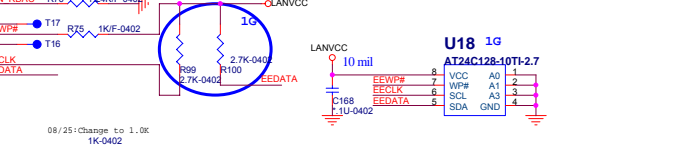
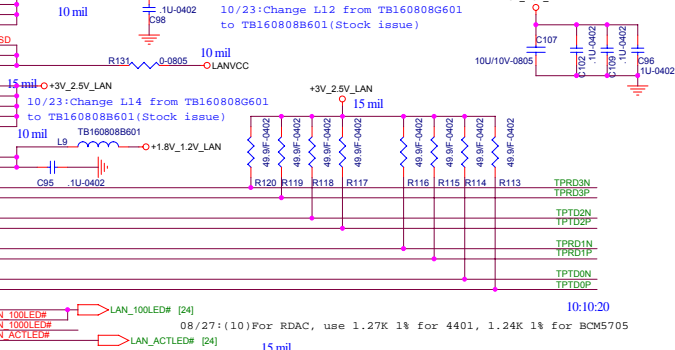
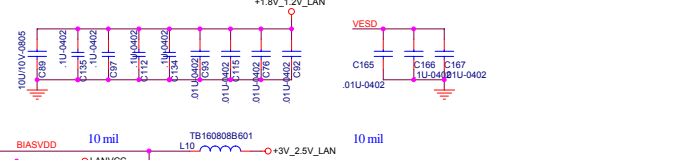
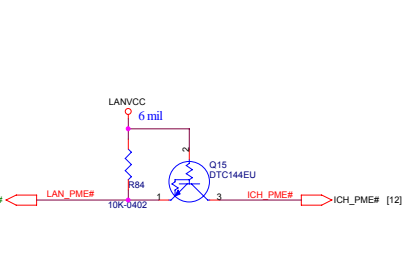
10/23: Change L13 from TB160808G601 to TB160808B601 (Stock issue)



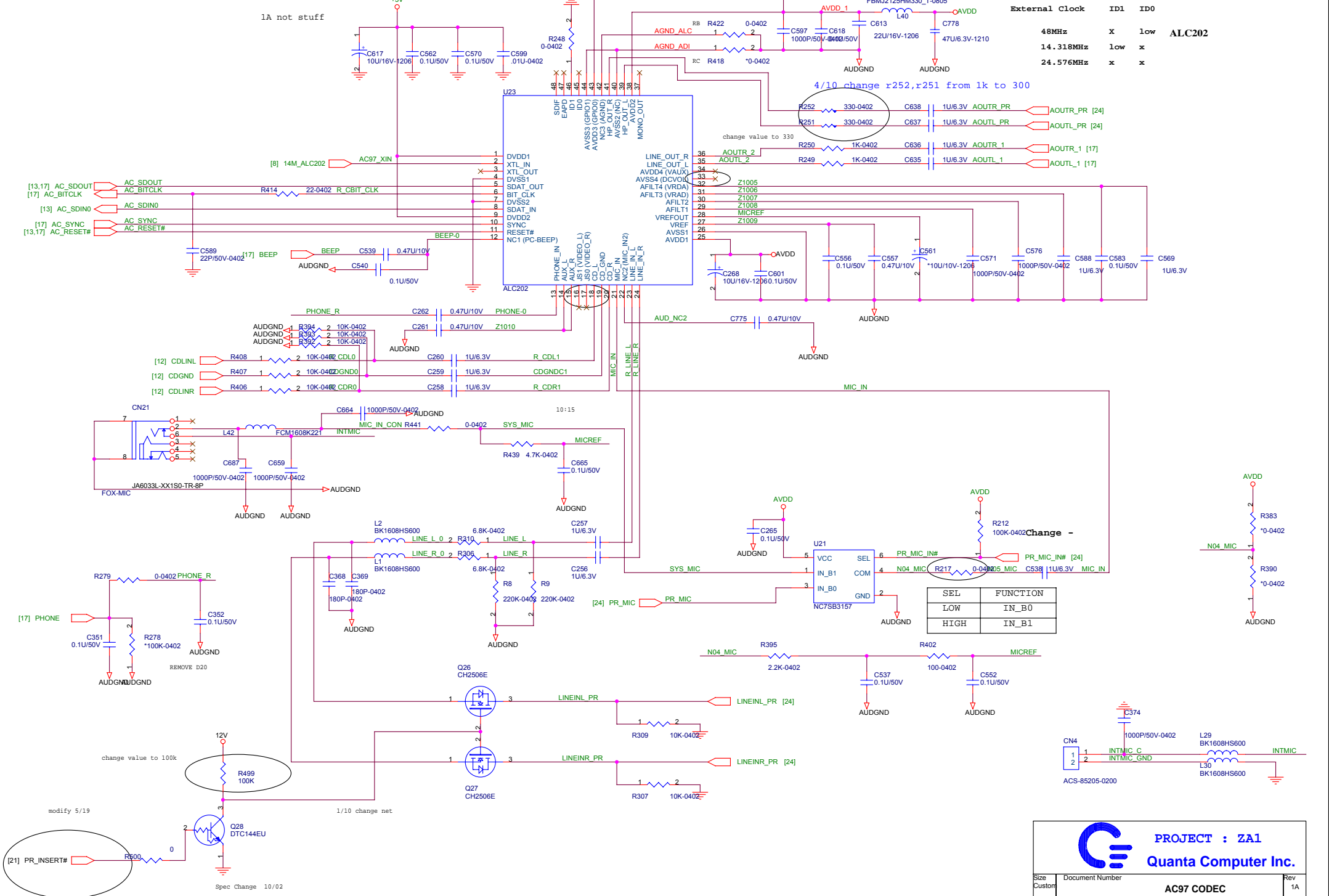
08/27: (10) For RDAC, use 1.27K 1% for 4401, 1.24K 1% for BCM5705



BCM4401 is for 10/100(1.8)  
 BCM5702 is for giga  
 BCM5705M is for giga cost-down(12)




# AC97 CODEC



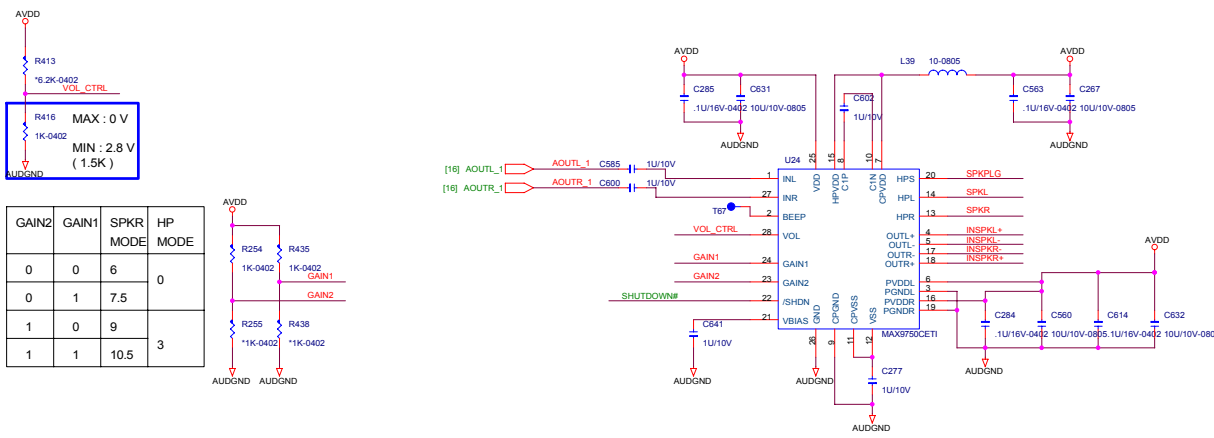
External Clock

External Clock	ID1	ID0	ALC202
48MHz	X	low	ALC202
14.318MHz	low	X	
24.576MHz	X	X	



**PROJECT : ZA1**  
**Quanta Computer Inc.**

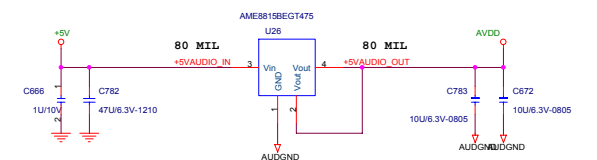
Size	Document Number	<b>AC97 CODEC</b>	Rev
	Date: Thursday, June 17, 2004	Sheet 16 of 31	1A



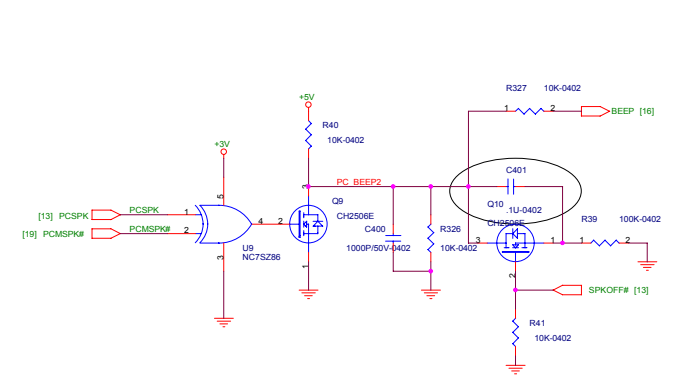
GAIN2	GAIN1	SPKR MODE	HP MODE
0	0	6	0
0	1	7.5	0
1	0	9	3
1	1	10.5	3

MAX	MIN
0 V	2.8 V (1.5K)

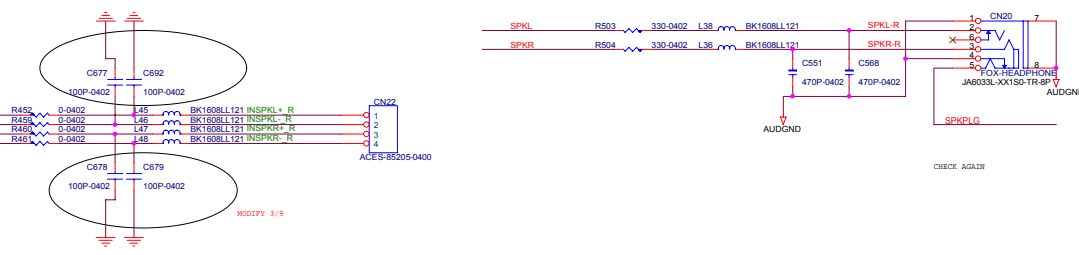
### AUDIO POWER



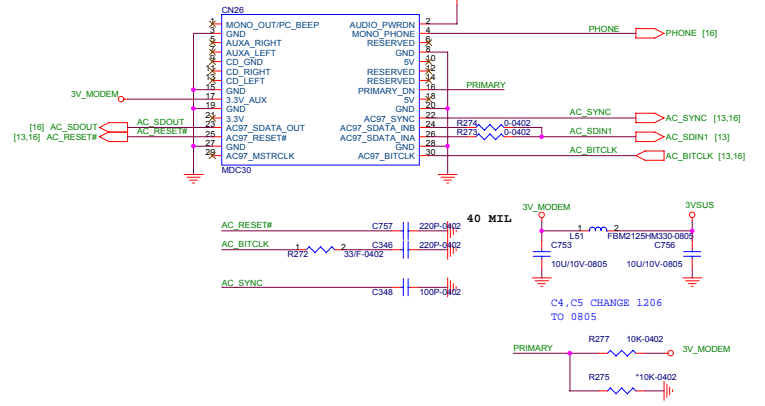
### AUDIO BEEP



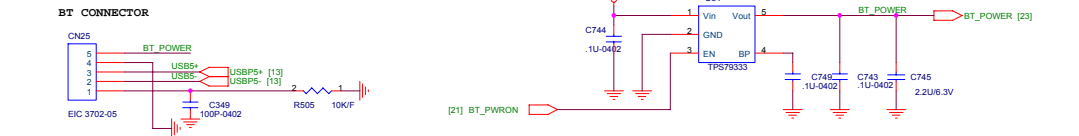
### HEADPHONE OUT



### MDC



### BLUETOOTH



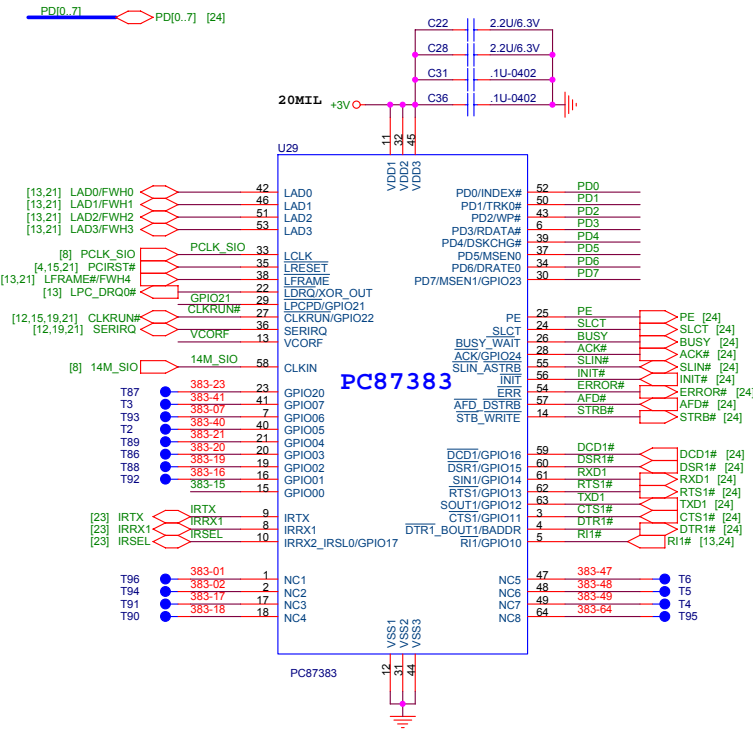
**PROJECT : ZA1**  
**Quanta Computer Inc.**

Document Number: **AUDIO AMP,MDC,PWR & BEEP**

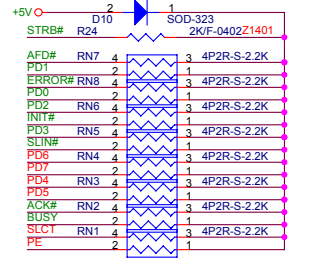
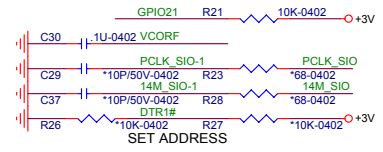
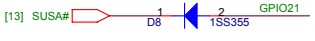
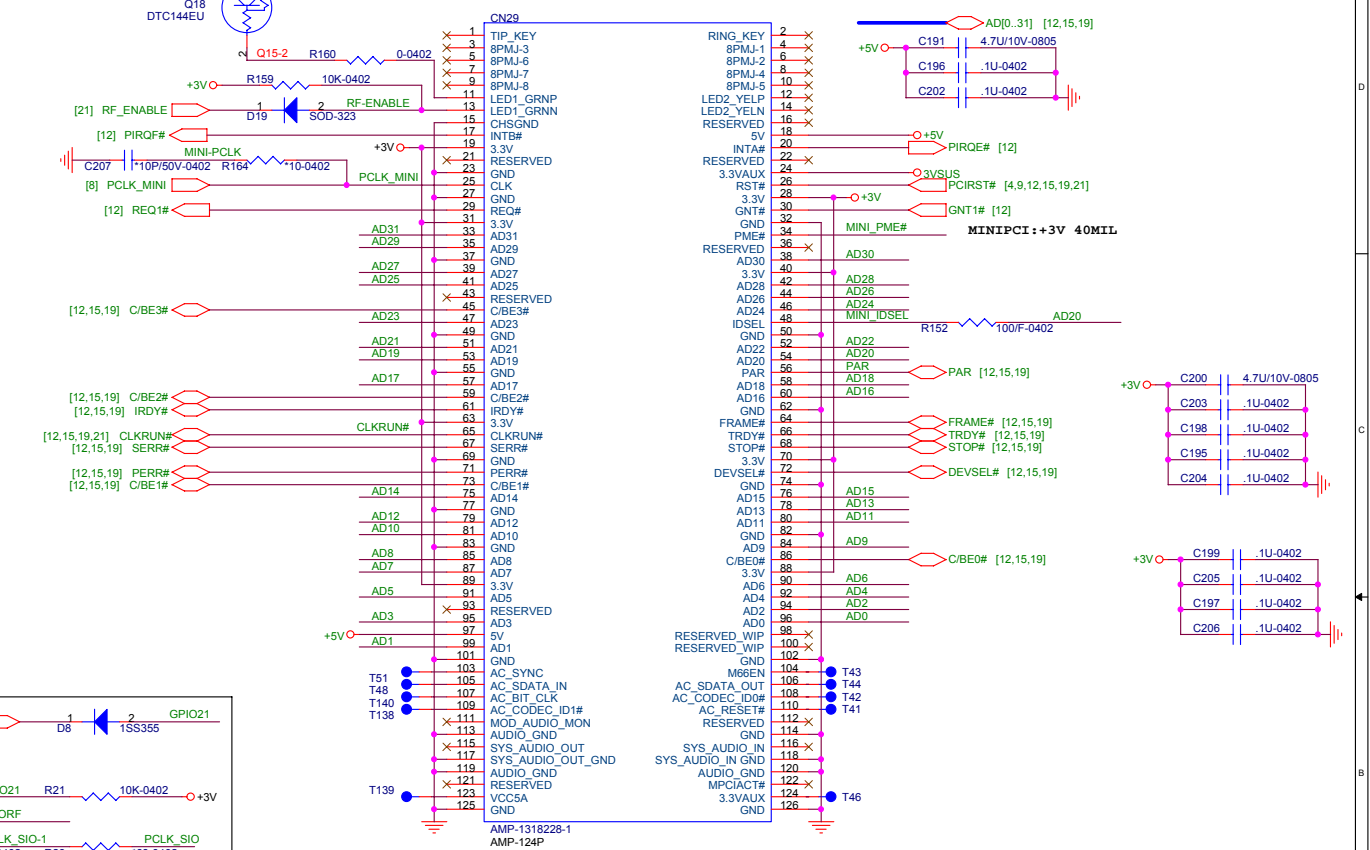
Rev: 1A

Thursday, June 17, 2004

# Super I/O



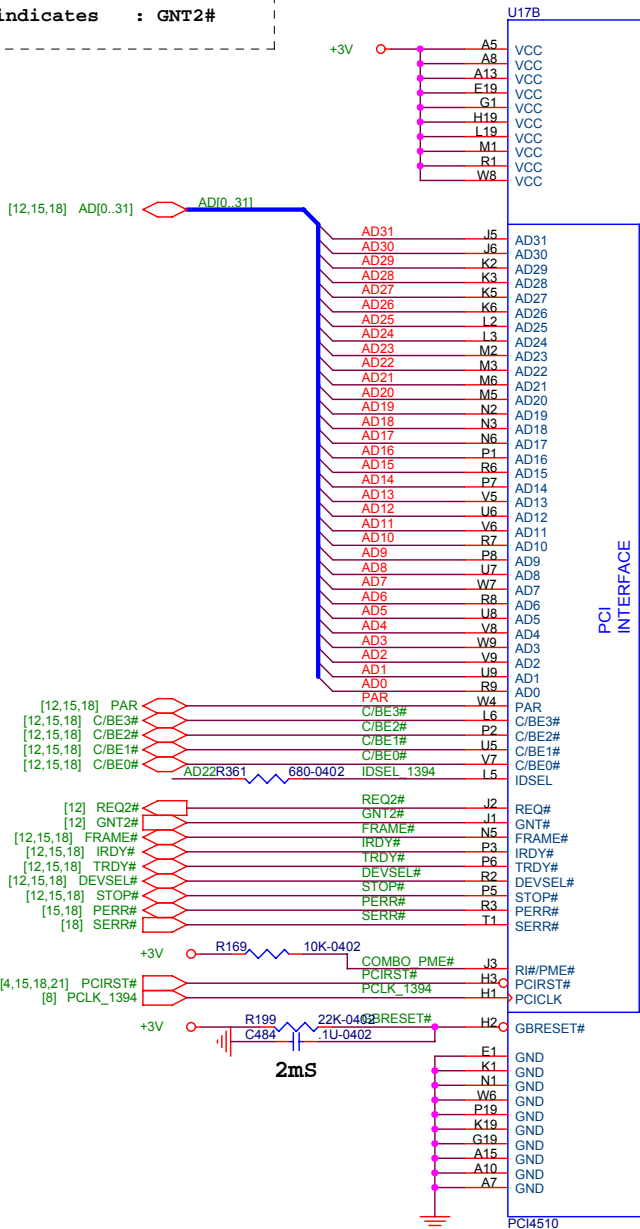
# TYPE III MINI PCI SOCKET



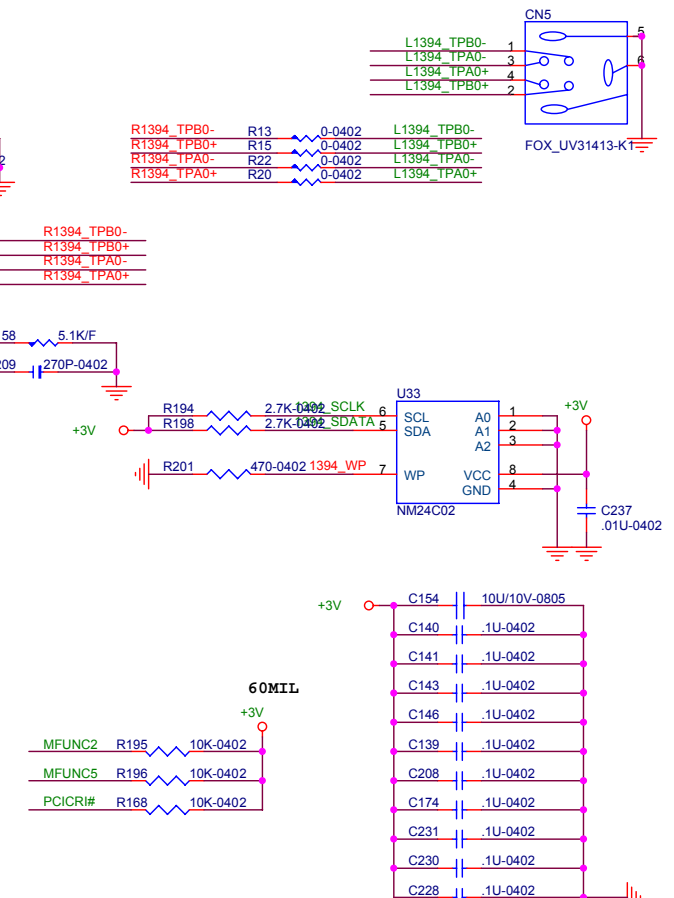
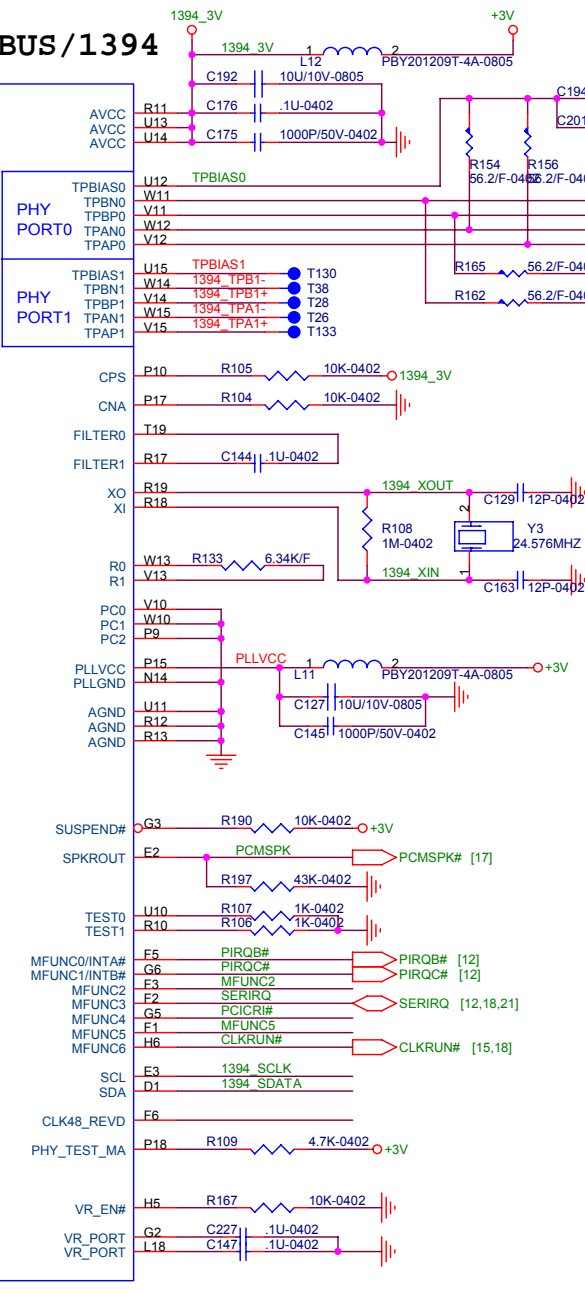


ID Select : AD22  
 Interrupt Pin : PIRQ B,C#  
 Request indicates : REQ2#  
 Grant indicates : GNT2#

# CARDBUS/1394

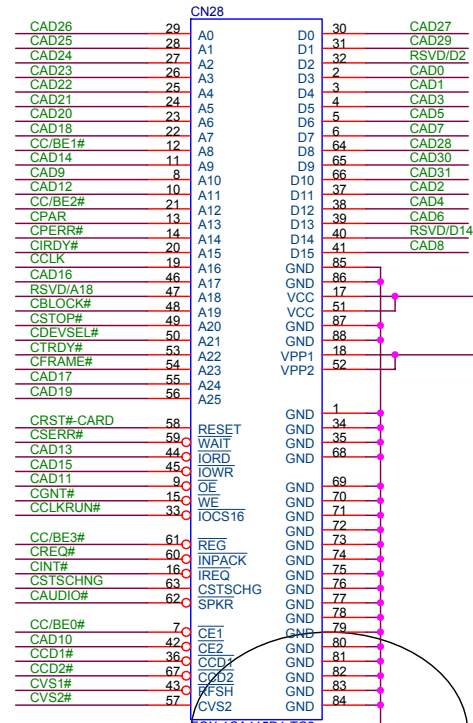
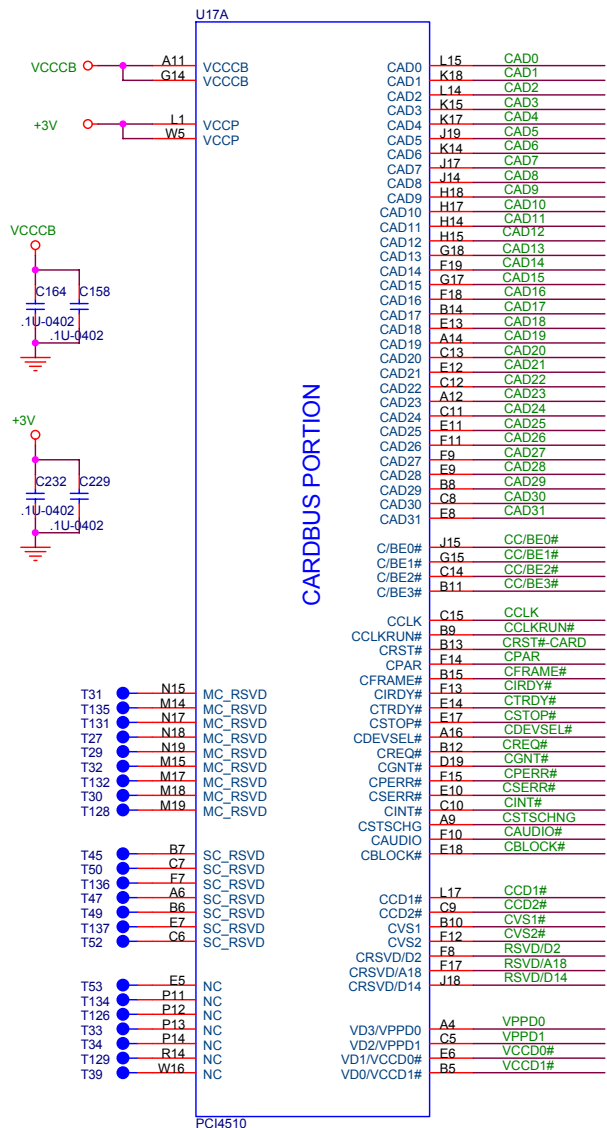


## PCI/1394 OHCI PORTION

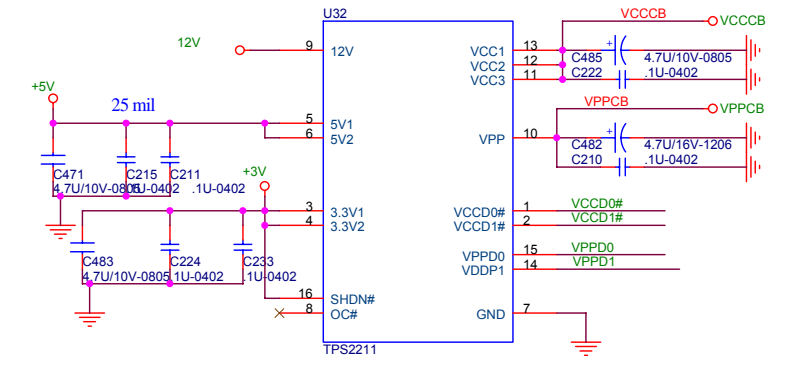
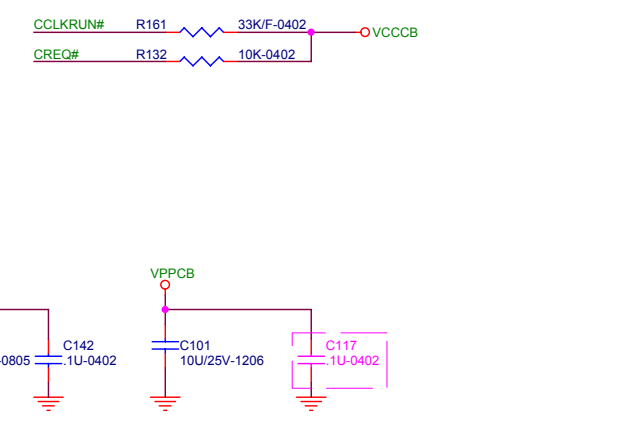



**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size B	Document Number	Rev 1A
TI-PCI4510-1394		
Date:	Thursday, June 17, 2004	Sheet 19 of 31



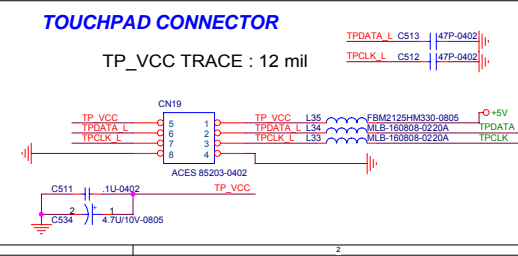
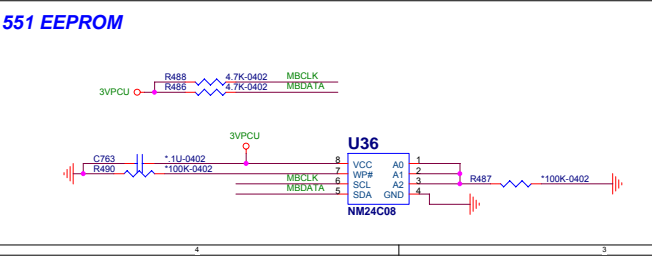
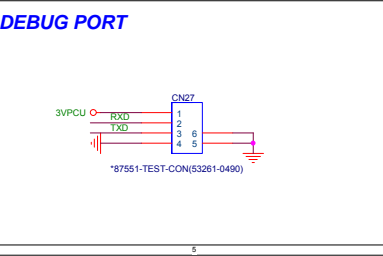
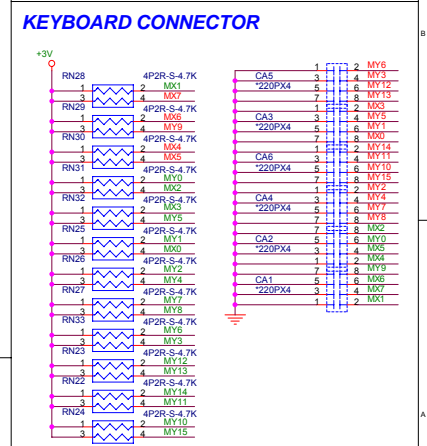
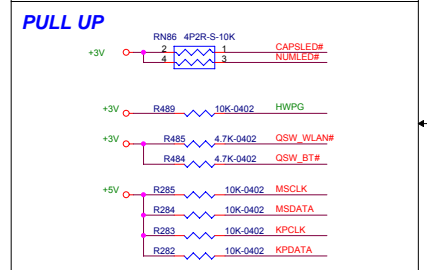
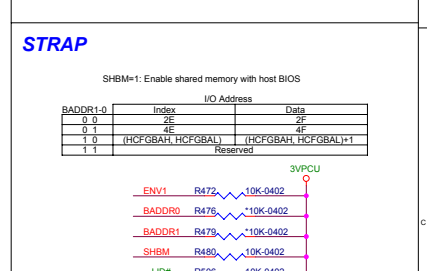
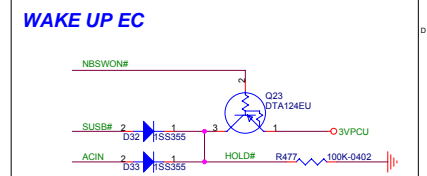
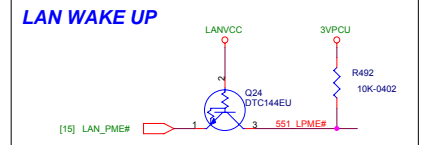
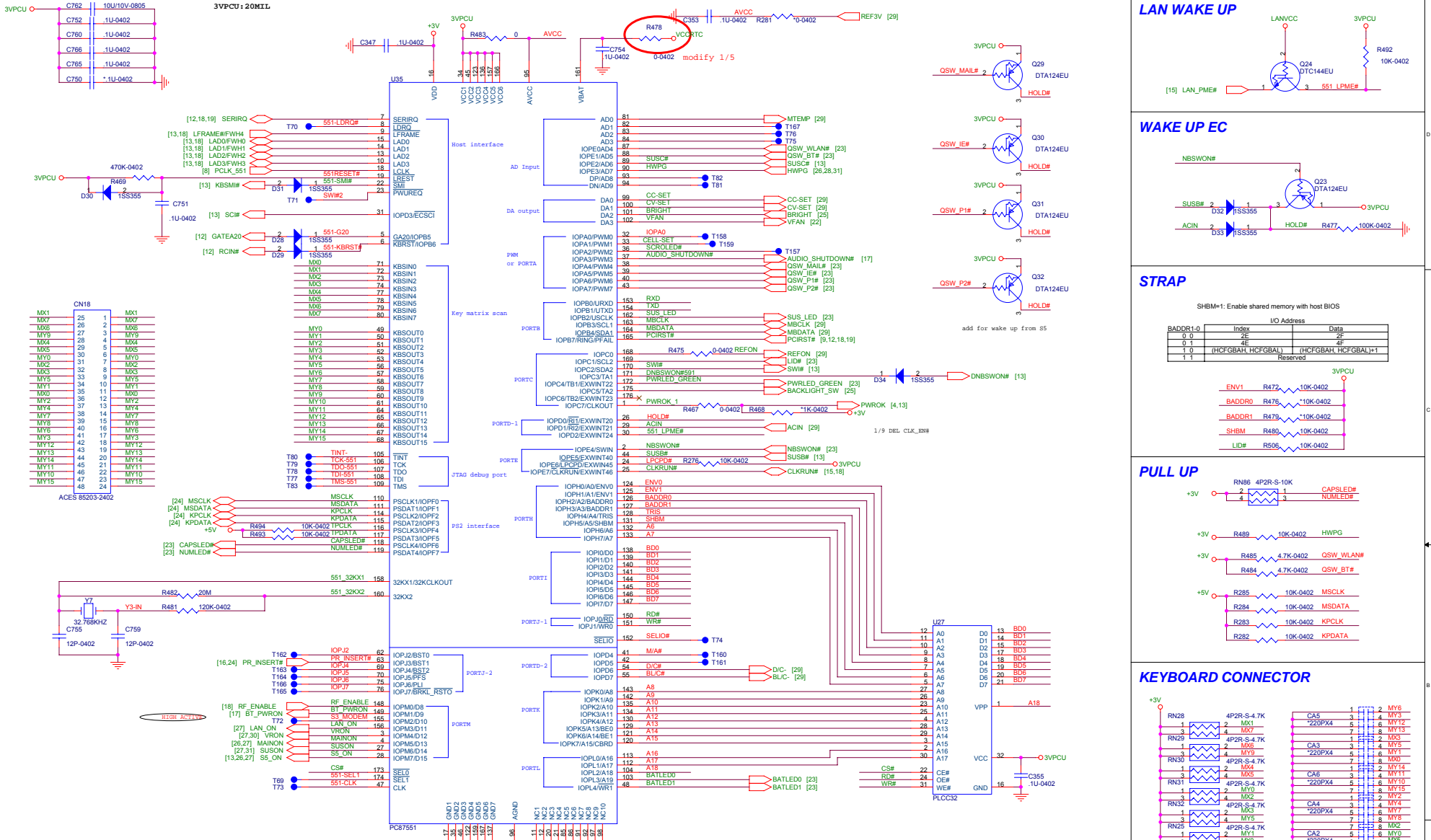
1/12 change footprint to 1CA4C502-TC-84P

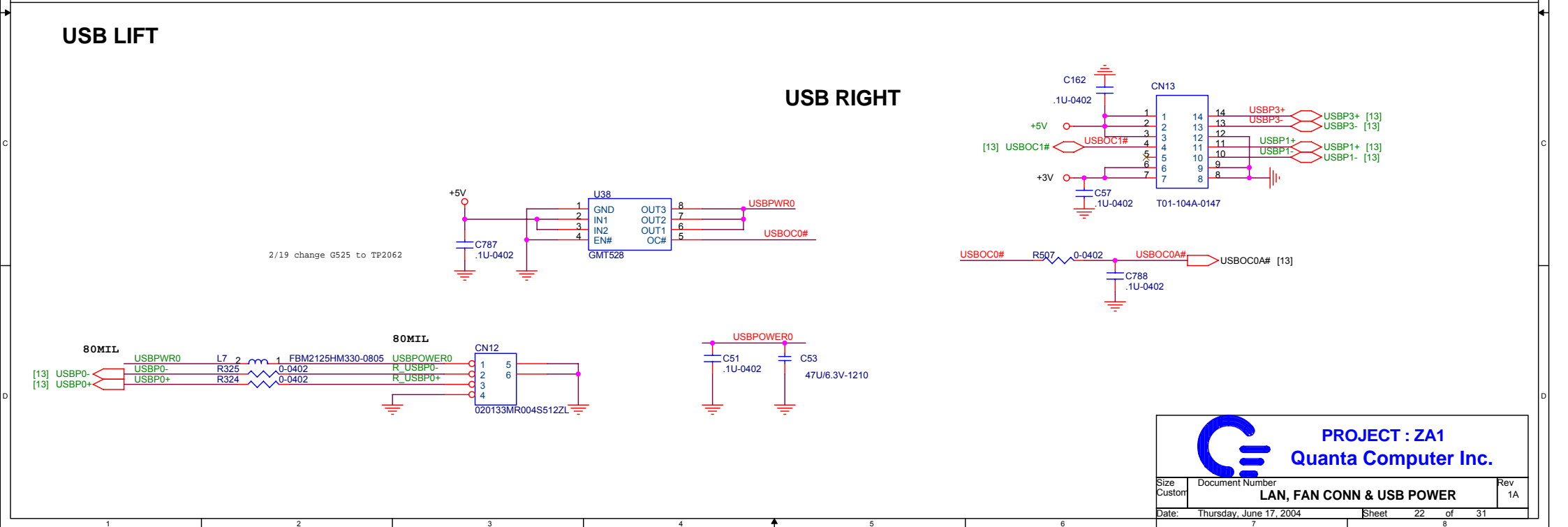
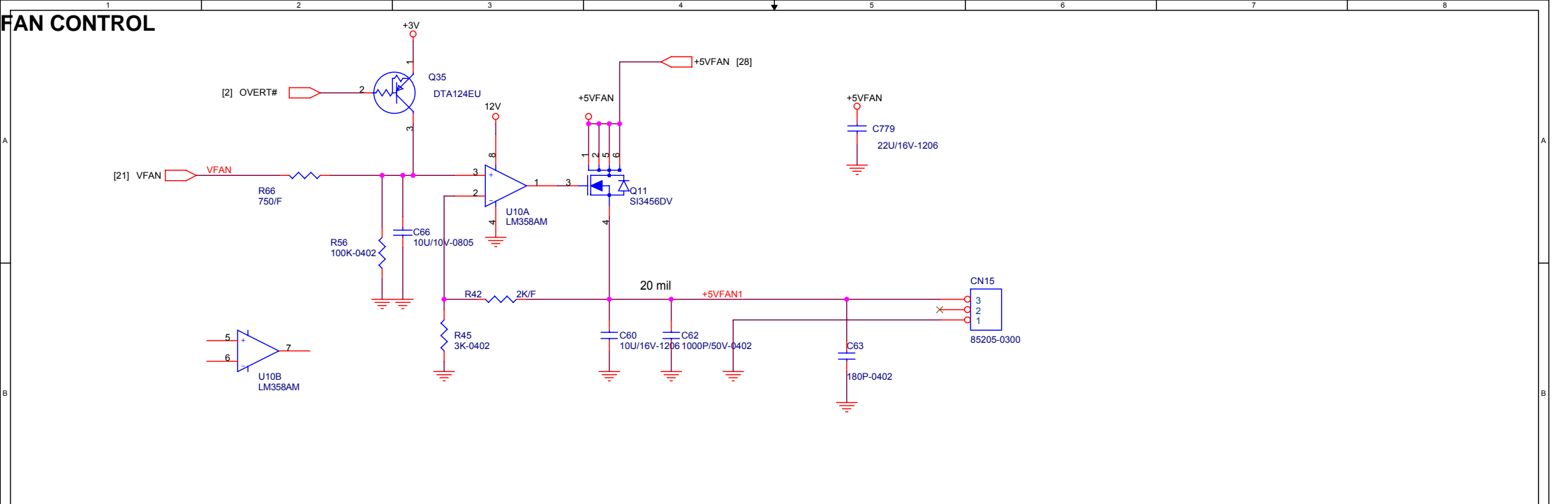




**PROJECT : ZA1**  
**Quanta Computer Inc.**

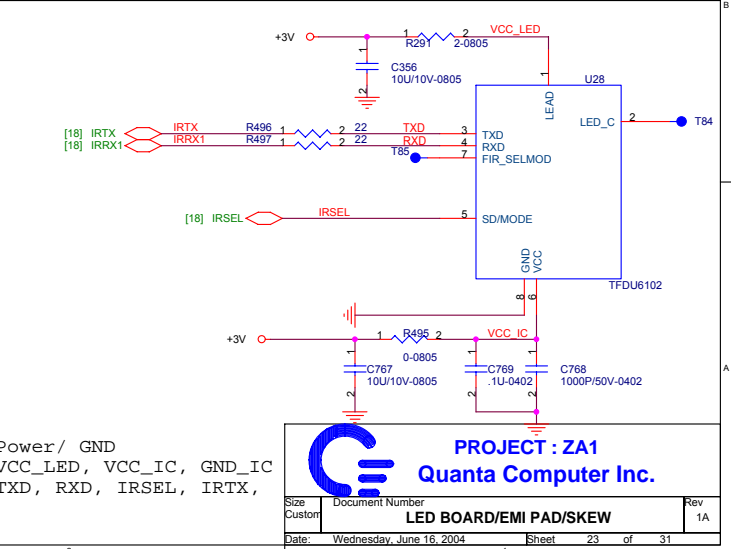
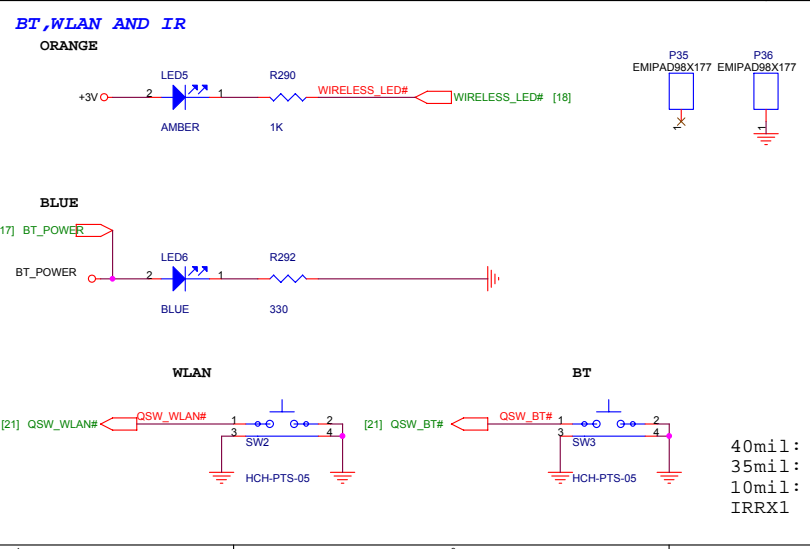
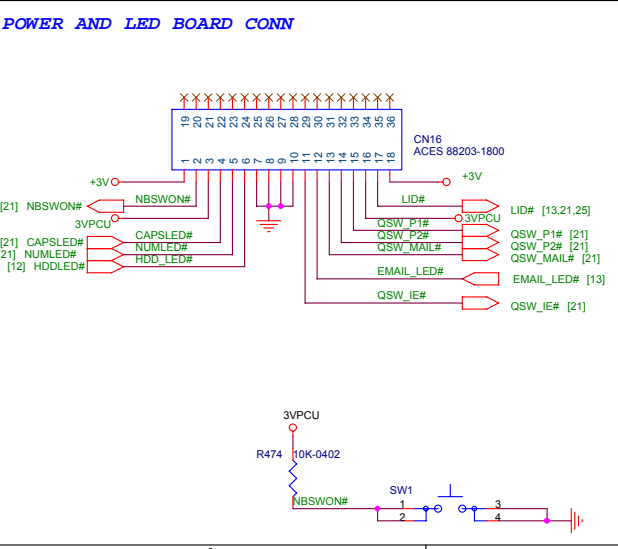
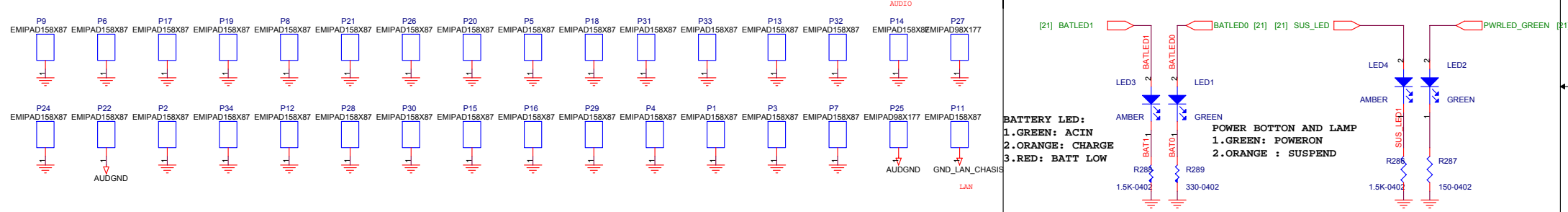
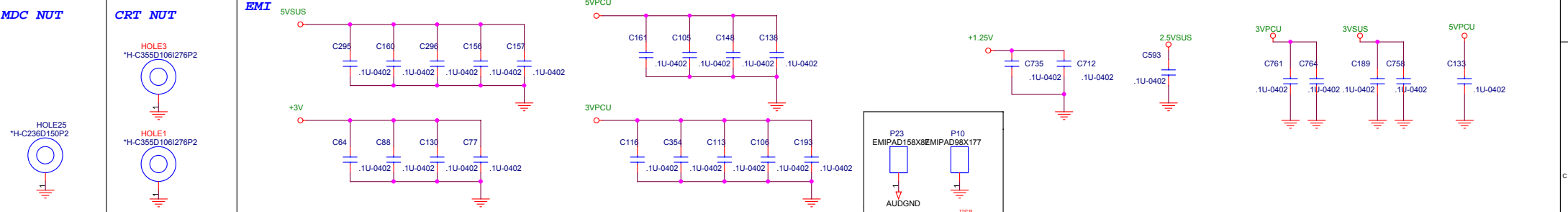
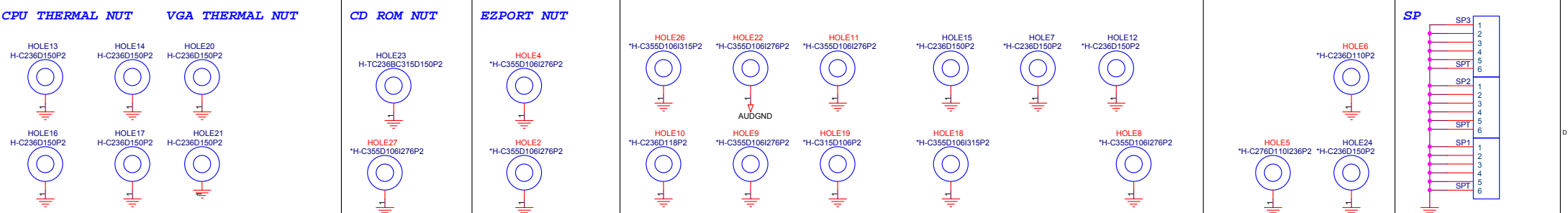
Size B	Document Number <b>TI-PCI4510-1394</b>	Rev 1A
Date:	Thursday, June 17, 2004	Sheet 20 of 31





**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size Custom	Document Number <b>LAN, FAN CONN &amp; USB POWER</b>	Rev 1A
Date:	Thursday, June 17, 2004	Sheet 22 of 31



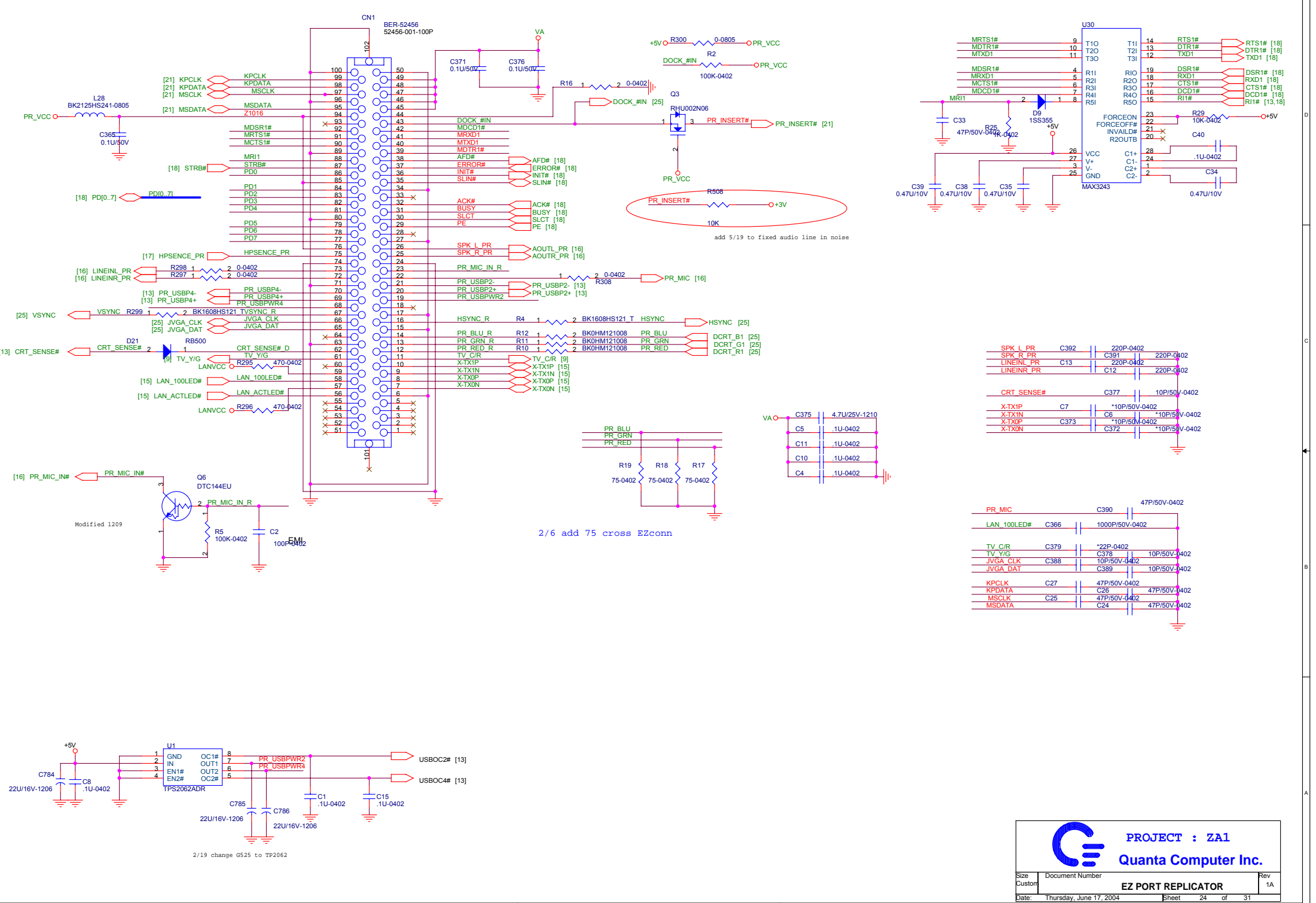
40mil: Power/ GND  
 35mil: VCC\_LED, VCC\_IC, GND\_IC  
 10mil: TXD, RXD, IRSEL, IRTX, IRRX1

**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size Custom Document Number  
**LED BOARD/EMI PAD/SKEW** Rev 1A

Date: Wednesday, June 16, 2004 Sheet 23 of 31





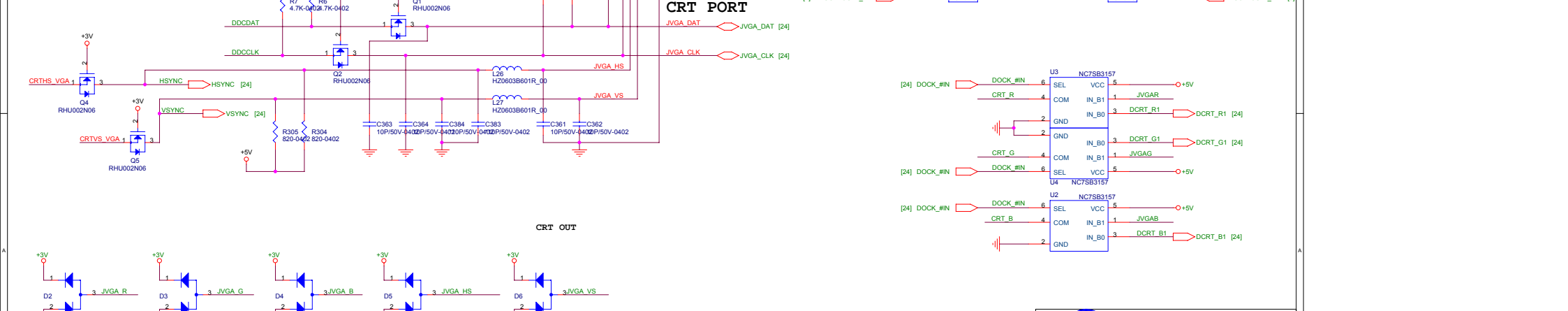
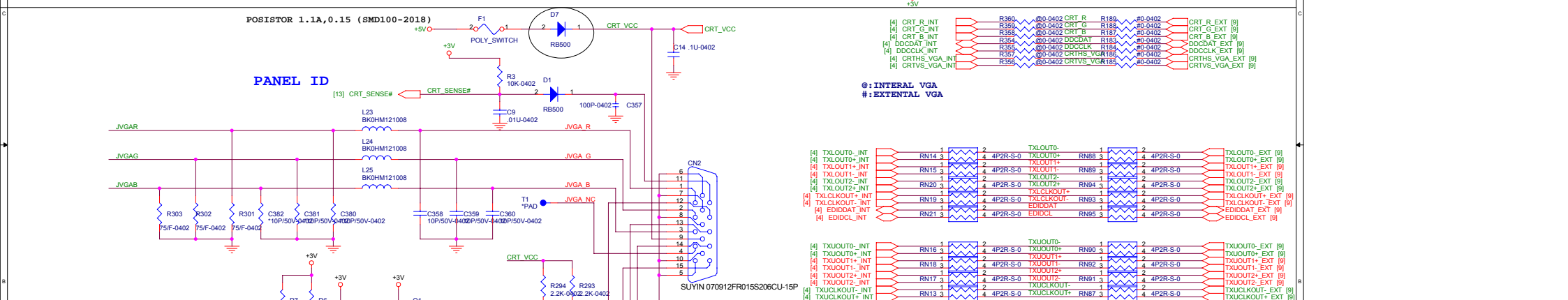
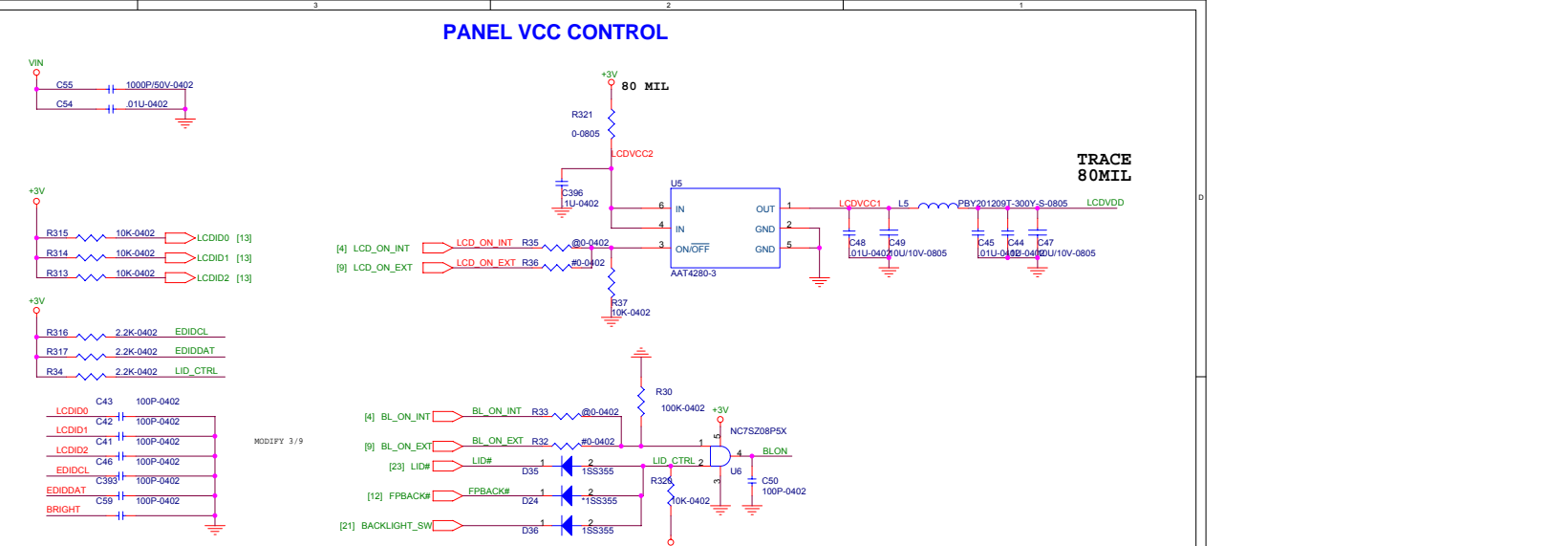
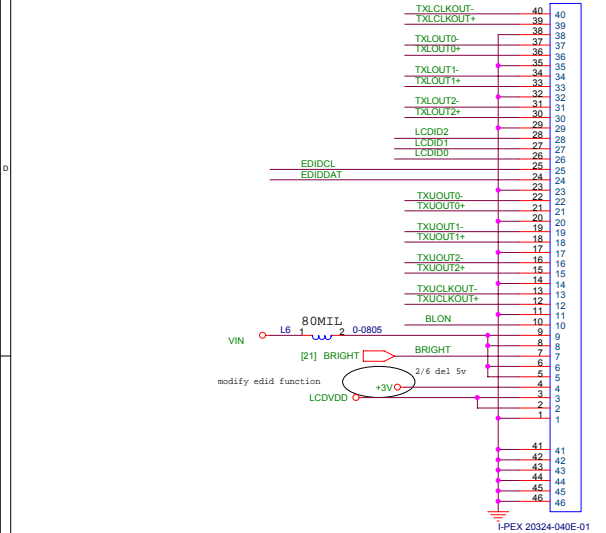
2/19 change G525 to TP2062

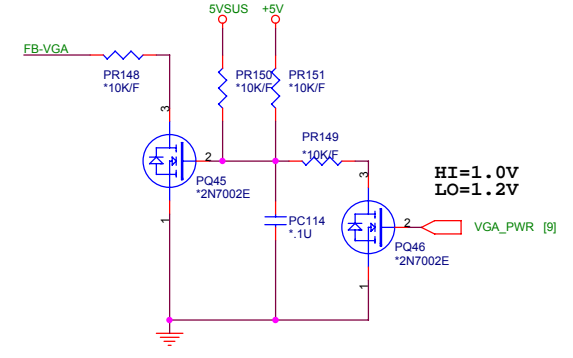
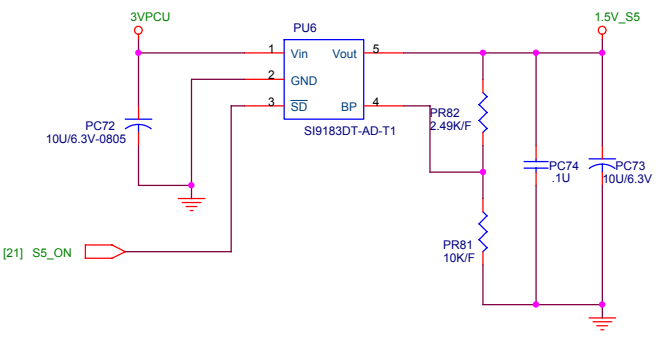
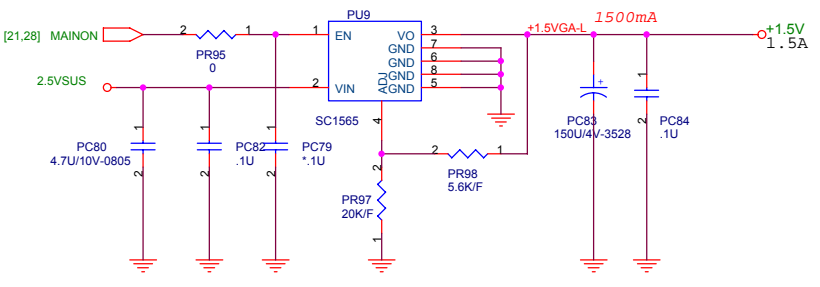
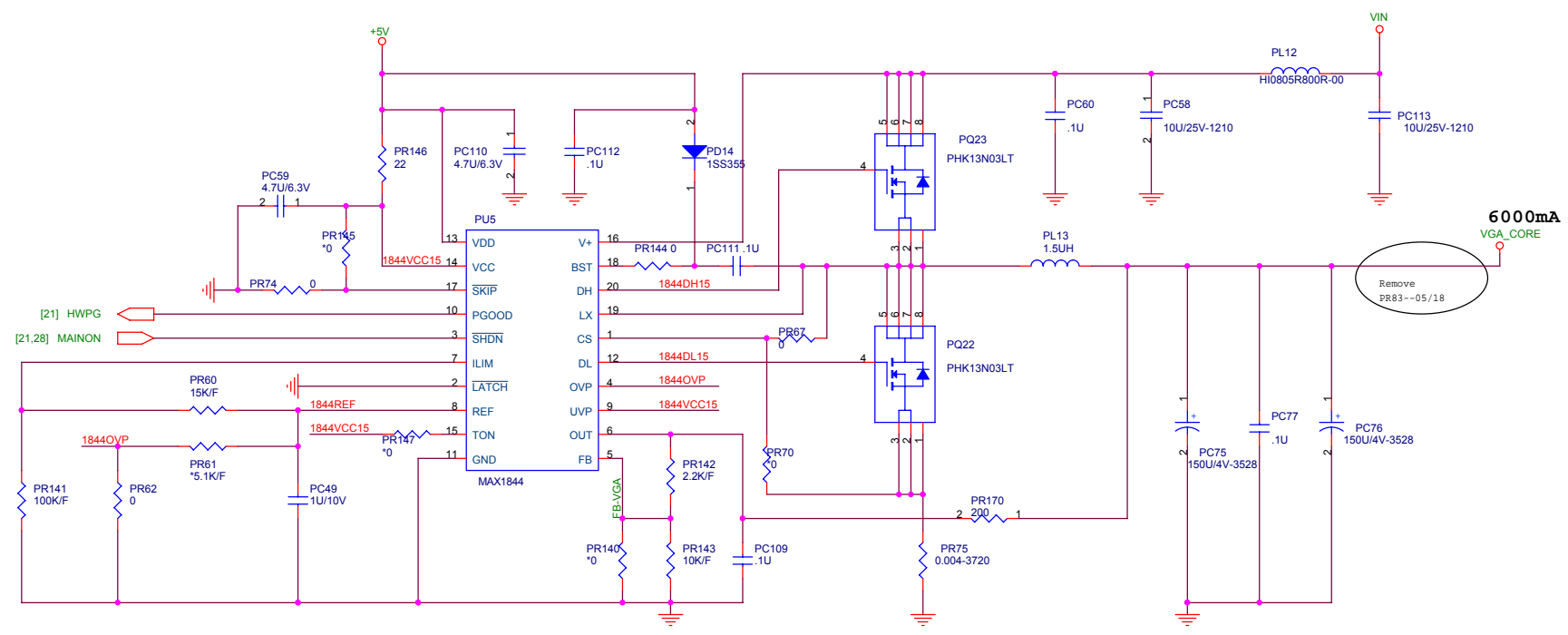
2/6 add 75 cross EZconn

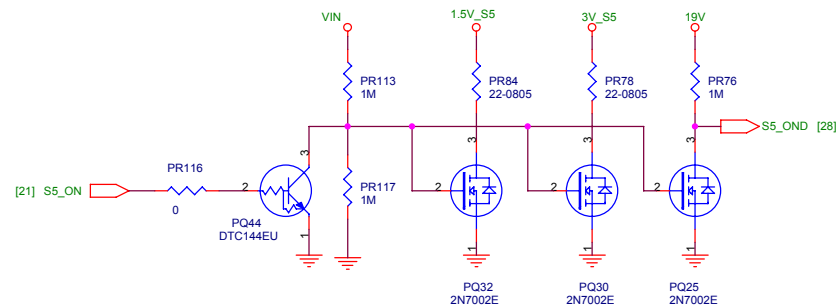
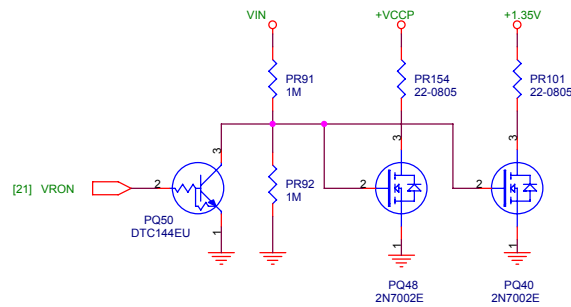
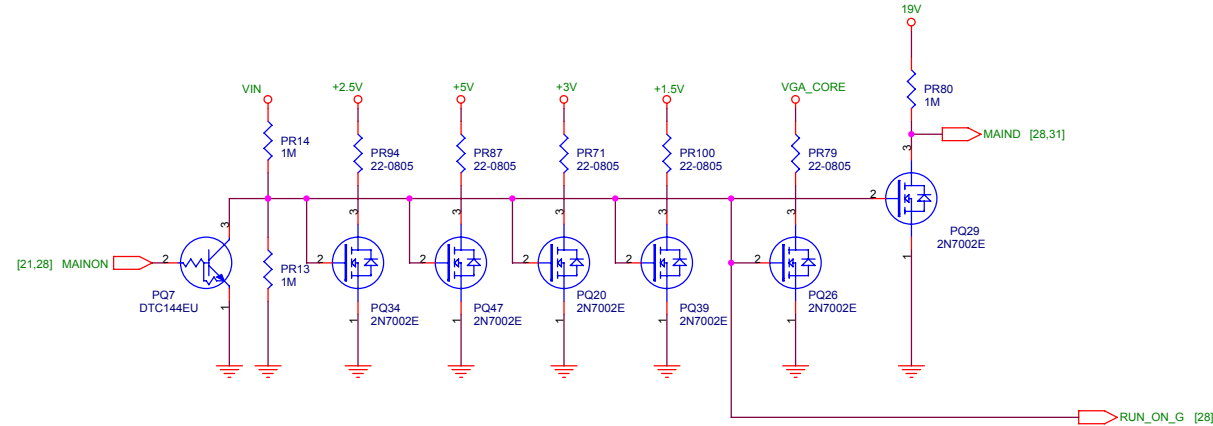
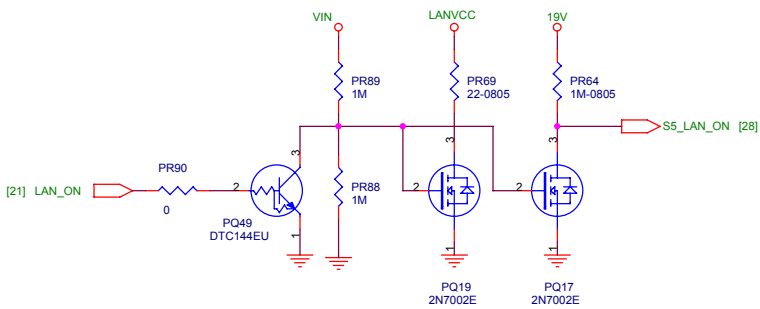
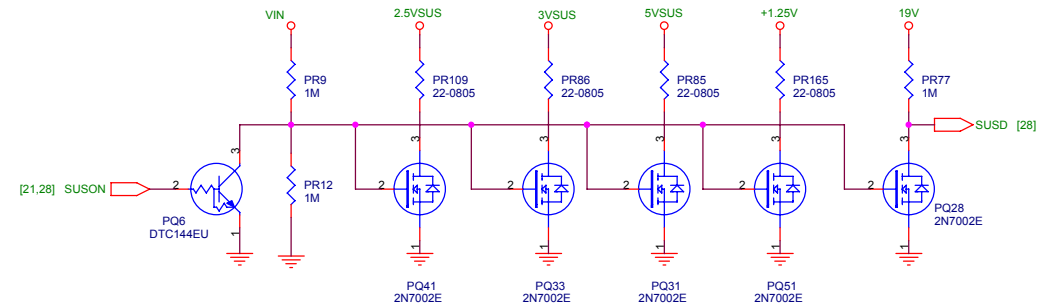
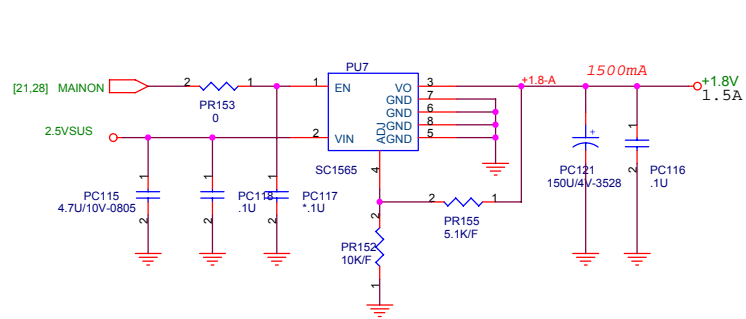
add 5/19 to fixed audio line in noise

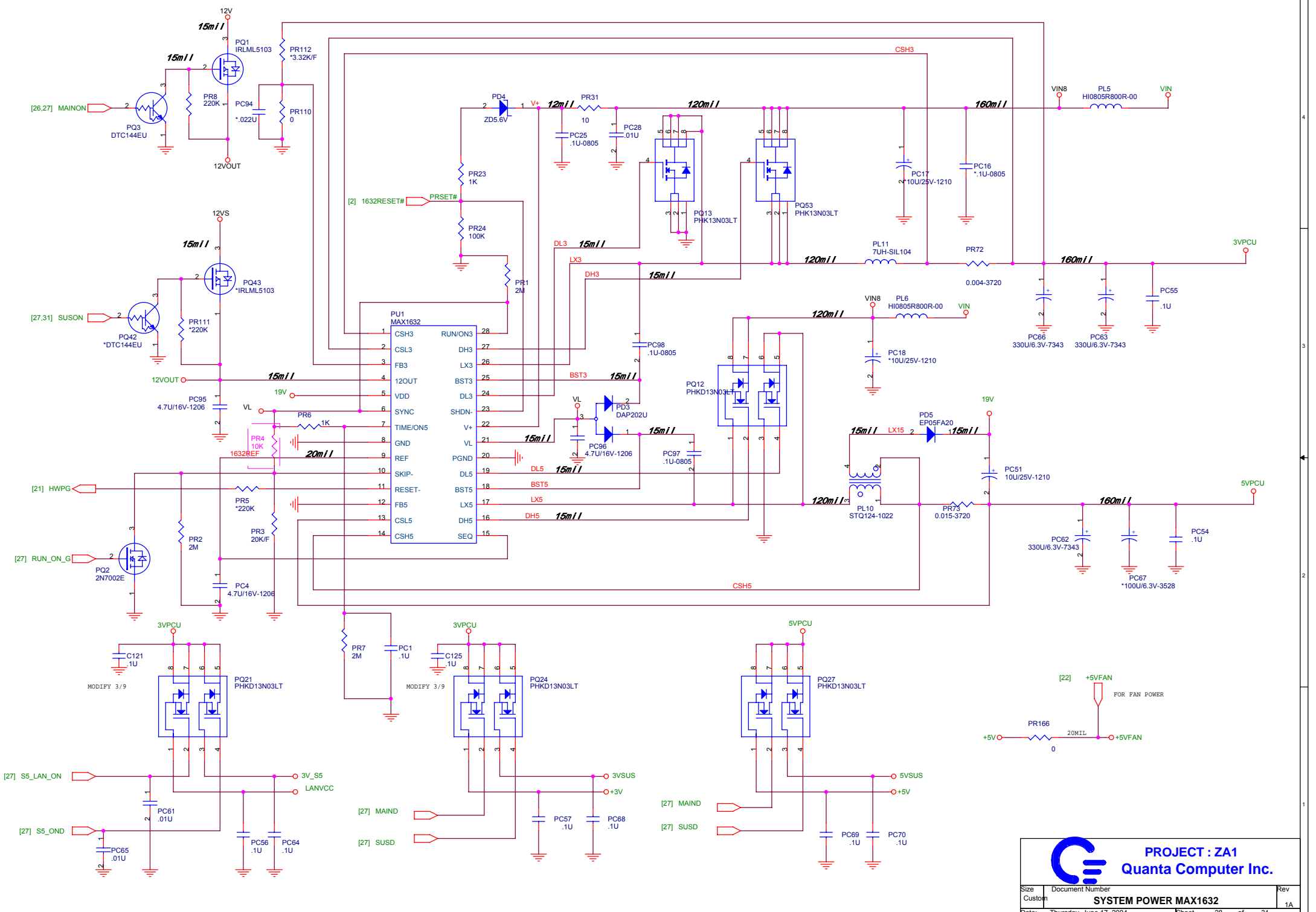
5 4 3 2 1

**PANEL CONNECTOR**

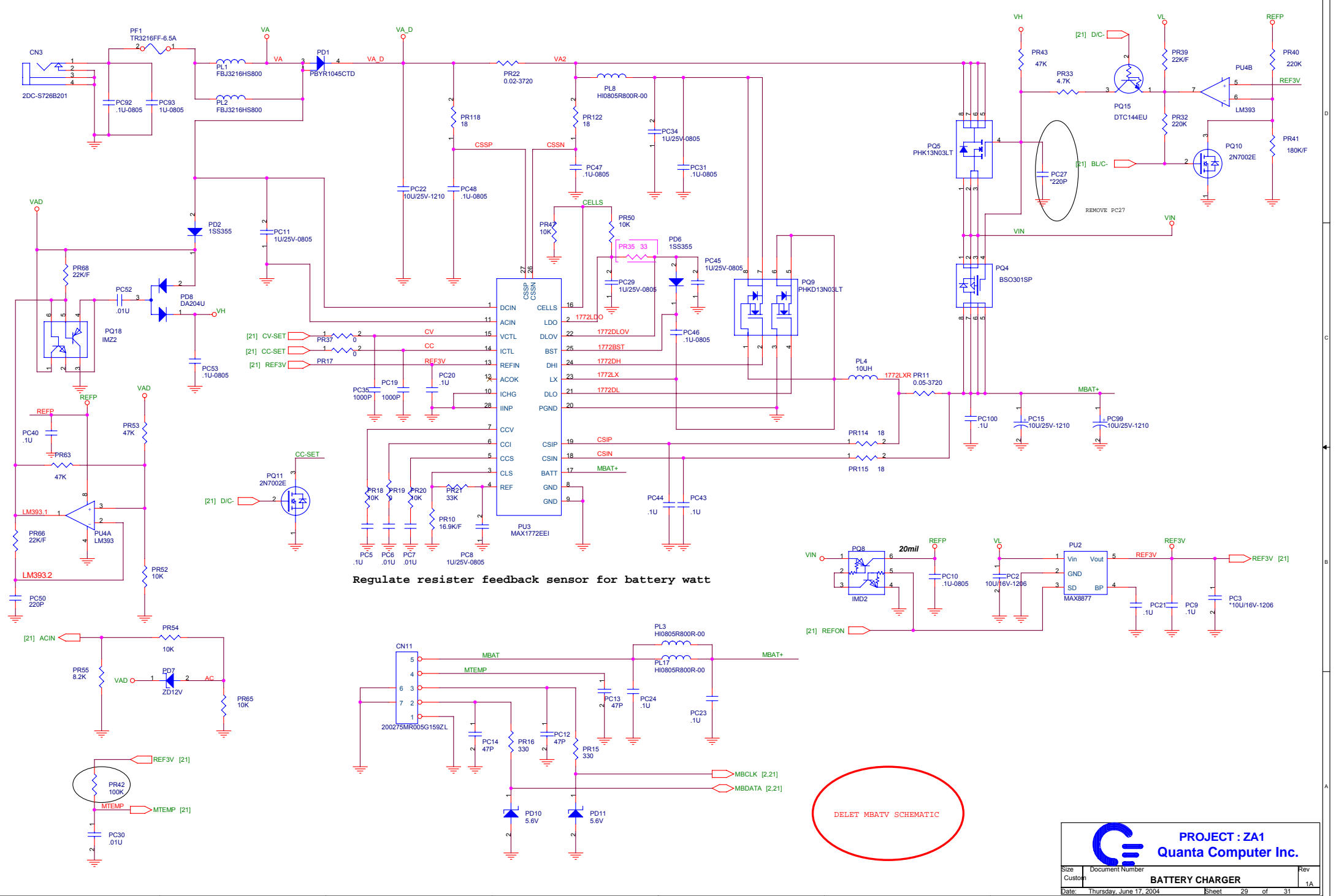









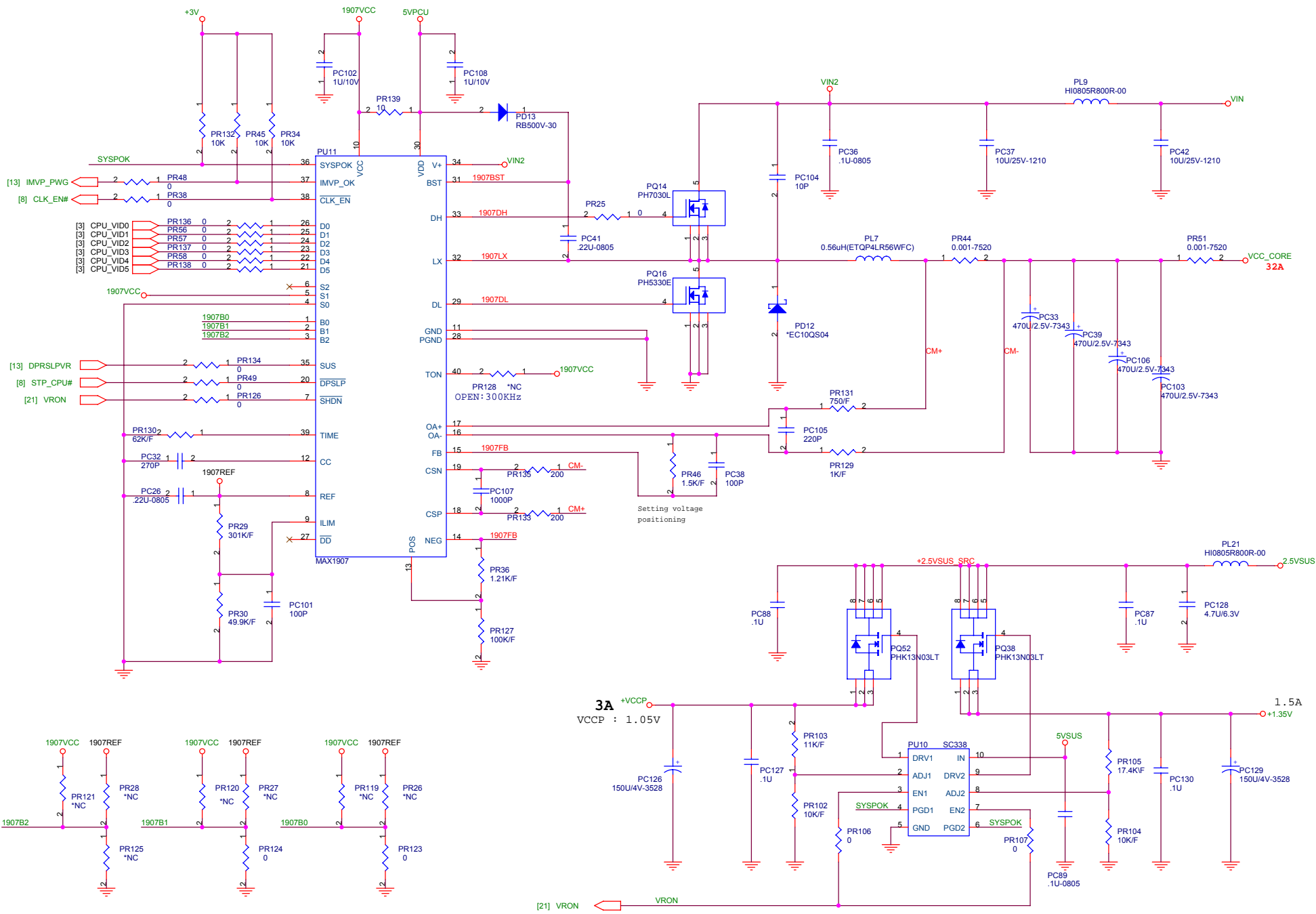





Regulate resistor feedback sensor for battery watt

DELET MBATV SCHEMATIC


**PROJECT : ZA1**  
**Quanta Computer Inc.**  
 Size: Custom Document Number  
**BATTERY CHARGER**  
 Date: Thursday, June 17, 2004 Sheet 29 of 31 Rev 1A

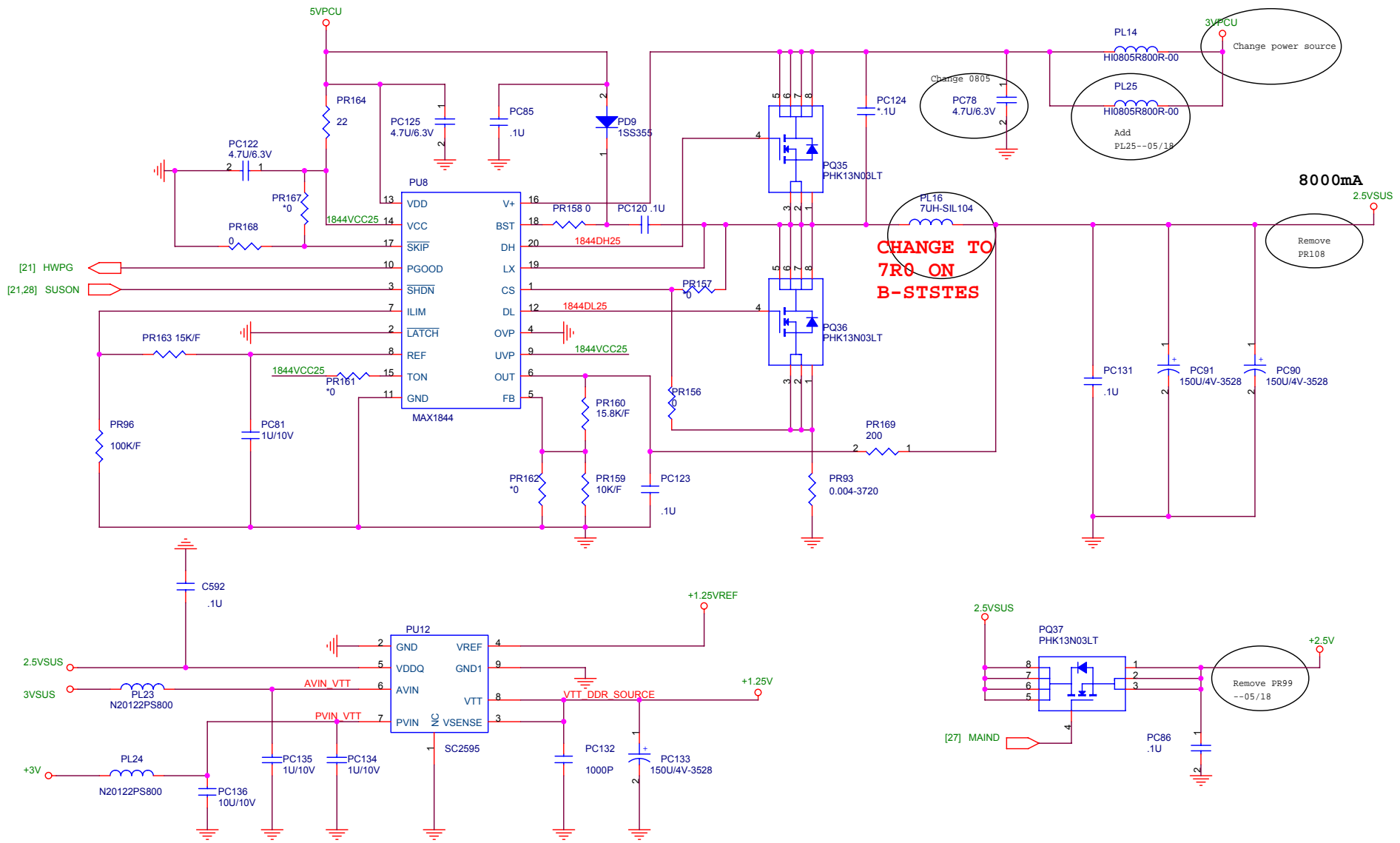



Setting boot voltage=1.2V



**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size	Document Number	Rev
Custom	<b>CPU CORE</b>	1A
Date:	Thursday, June 17, 2004	Sheet 30 of 31




**PROJECT : ZA1**  
**Quanta Computer Inc.**

Size B	Document Number <b>2.5V-DDR&amp;VTERM</b>	Rev 1A
Date: Wednesday, June 16, 2004		Sheet 31 of 31