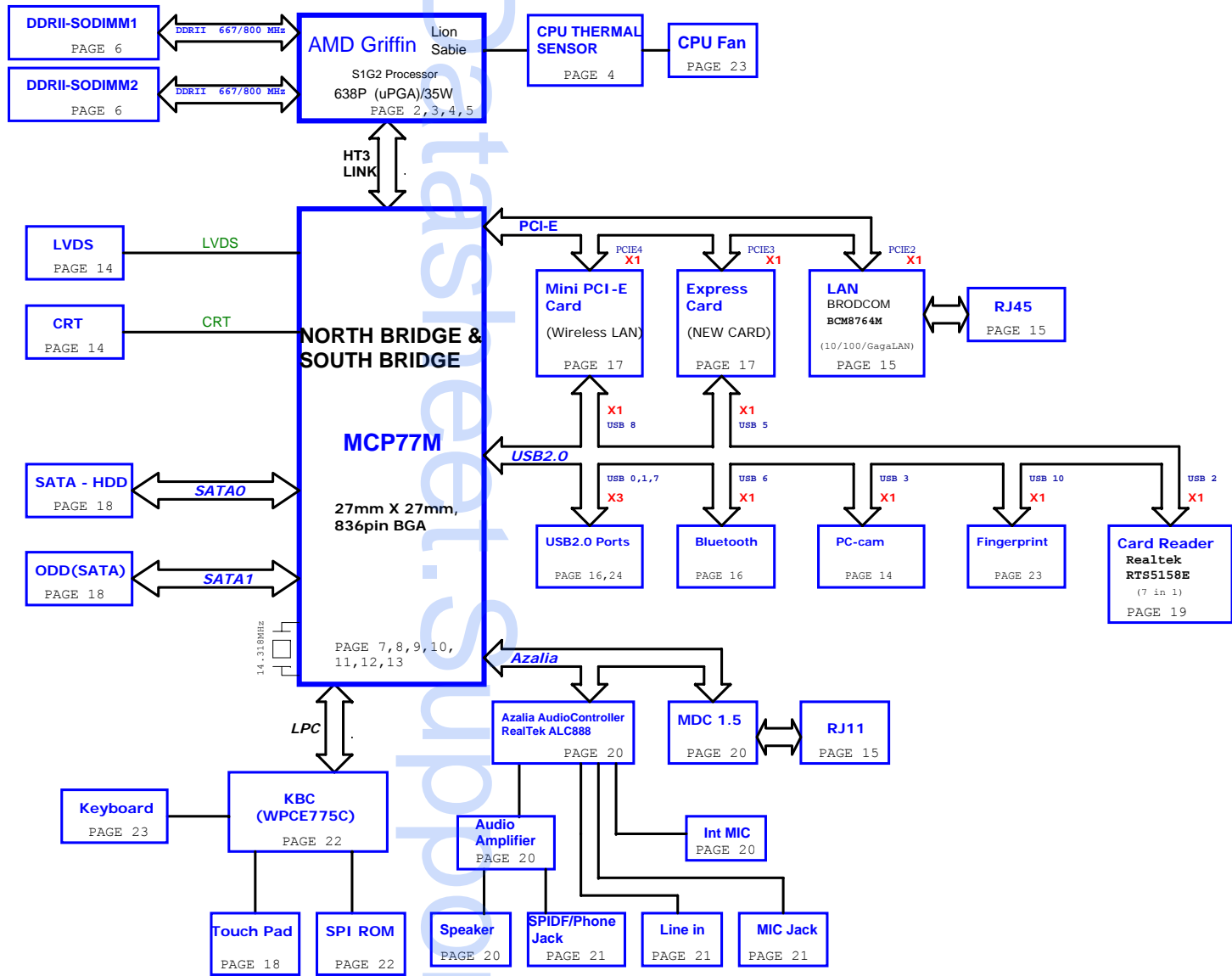


Z05 SYSTEM BLOCK DIAGRAM



- CPU CORE / VDDNB (ISL6265A) PAGE 26
- NB_CORE +1.1V (RT8202) PAGE 28
- +1.1V_NB (RT8202) PAGE 27
- DDR II SMDR_VTERM 1.8VSUS(TPS51116REGR) PAGE 29
- SYSTEM POWER (ISL6237) PAGE 25
- SYSTEM CHARGER (ISL6251A) PAGE 24



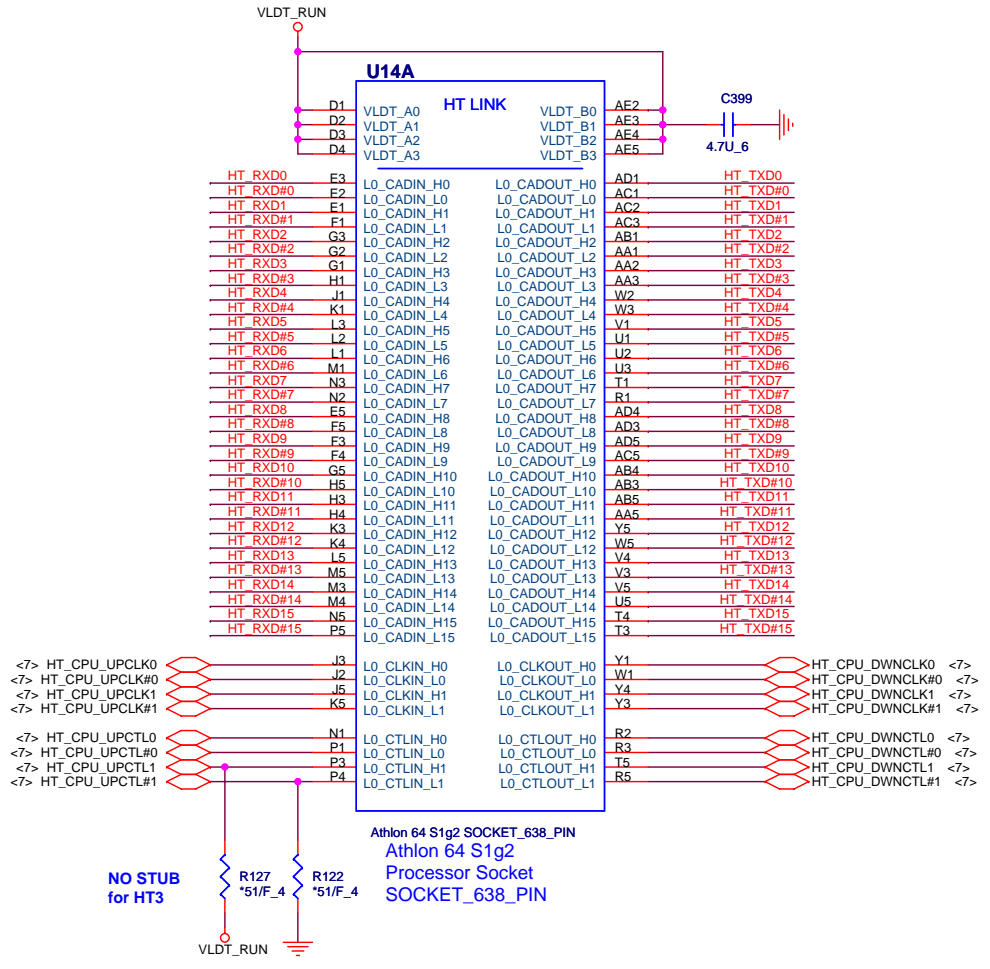
PCB STACK UP

- LAYER 1 : TOP
- LAYER 2 : GND
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : VCC
- LAYER 6 : BOT

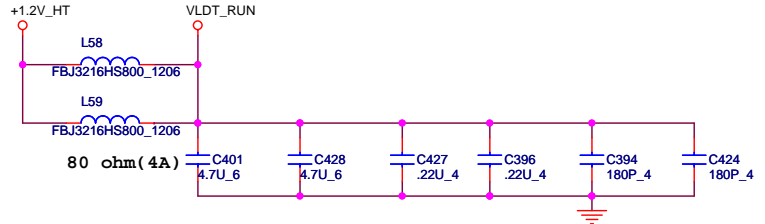


PROCESSOR HYPERTRANSPORT INTERFACE

VLDT_Ax AND VLDT_Bx ARE CONNECTED TO THE LDT_RUN POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE



Note: on MCP77, (HT=+1.1V) and CPU (HT=+1.2V) and therefore cannot be connected to the same HT power rail.



LAYOUT: Place bypass cap on topside of board

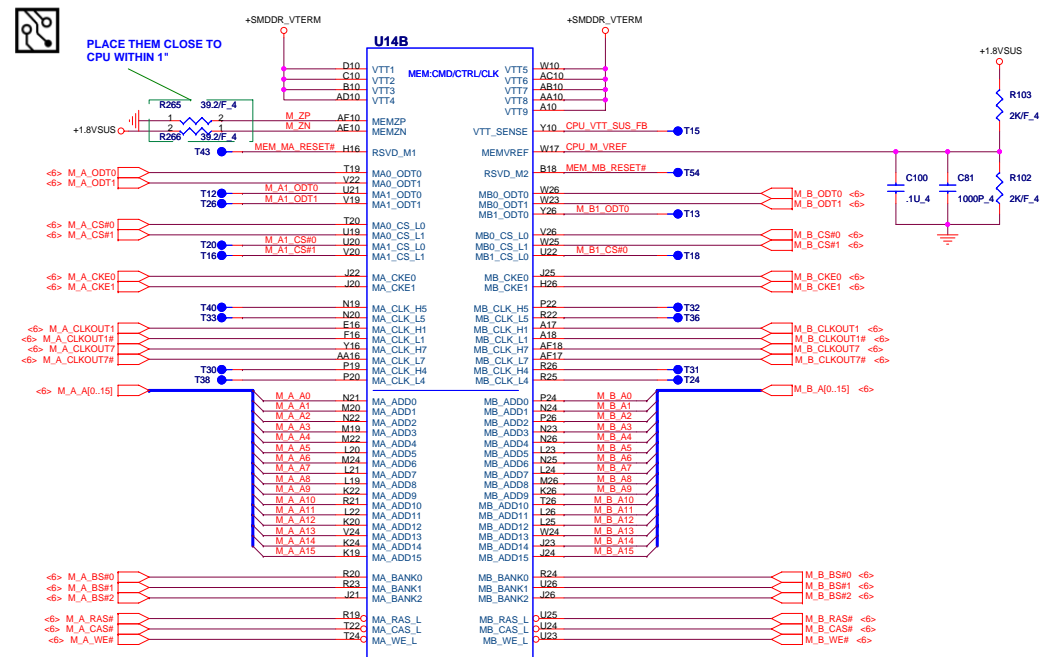
NEAR HT POWER PINS THAT ARE NOT CONNECTED DIRECTLY TO DOWNSTREAM HT DEVICE, BUT CONNECTED INTERNALLY TO OTHER HT POWER PINS
PLACE CLOSE TO VLDT0 POWER PINS

Quanta Computer Inc.

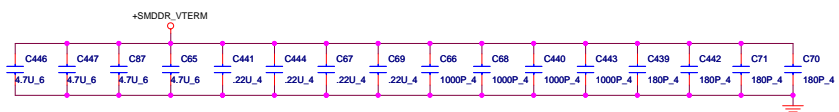
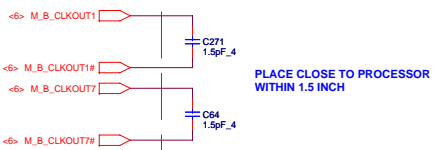
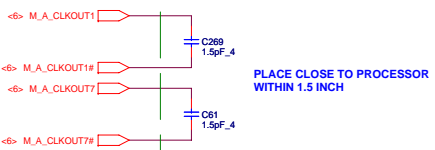
PROJECT : Z05

Size	Document Number	Rev
		1D
AMD Griffin HT I/F		
Date:	Friday, April 18, 2008	Sheet 2 of 35

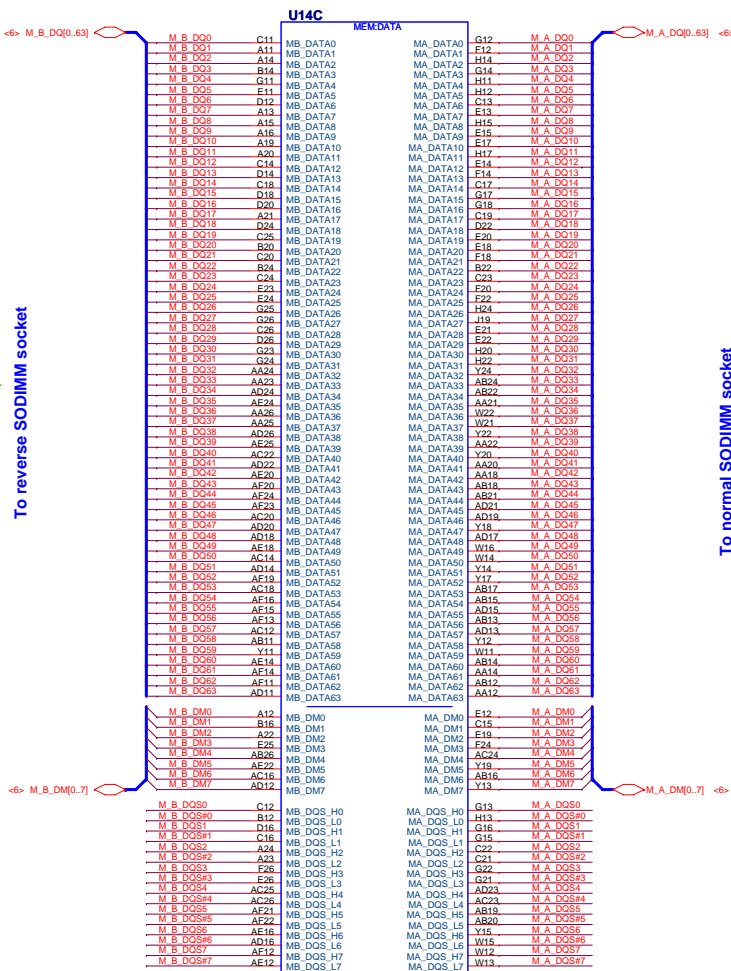
VDD_VTT_SUS_CPU IS CONNECTED TO THE VDD_VTT_SUS POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE



Athlon 64 S1g2 SOCKET_638_PIN
 Athlon 64 S1g2
 Processor Socket
 SOCKET_638_PIN



Processor DDR2 Memory Interface

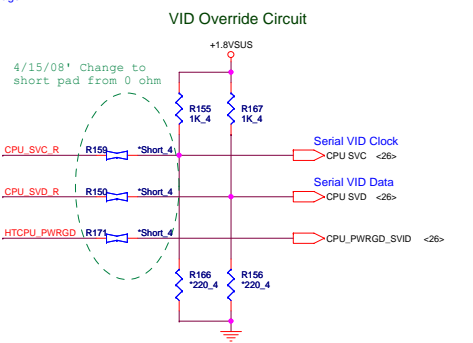
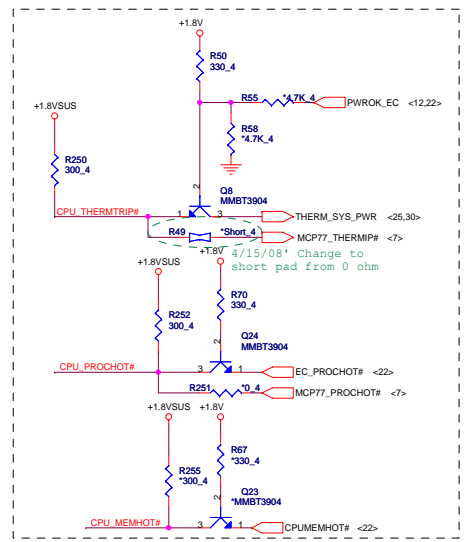
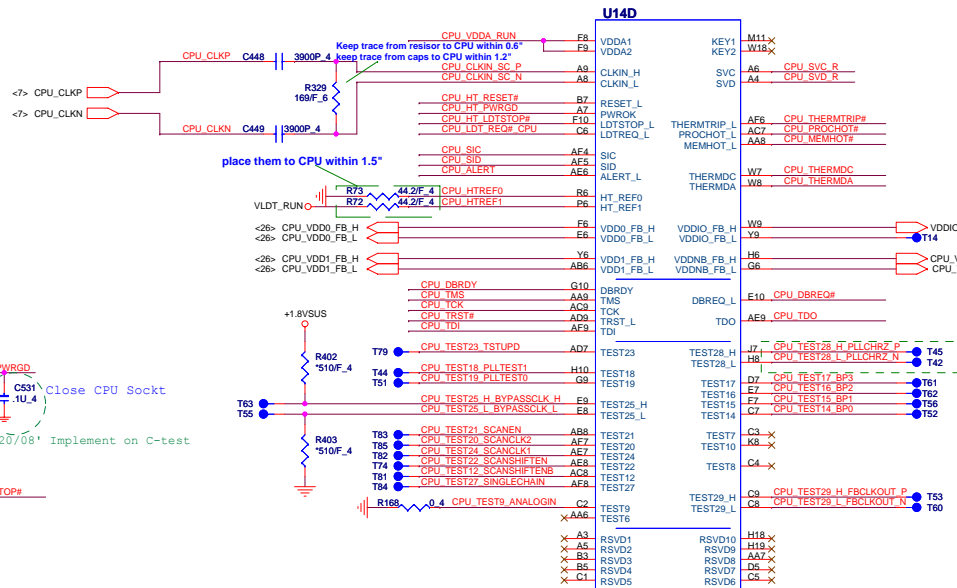
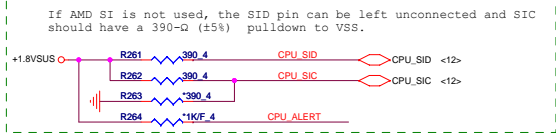
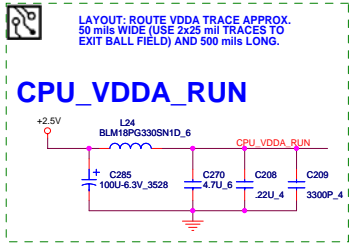


To reverse SODIMM socket

To normal SODIMM socket

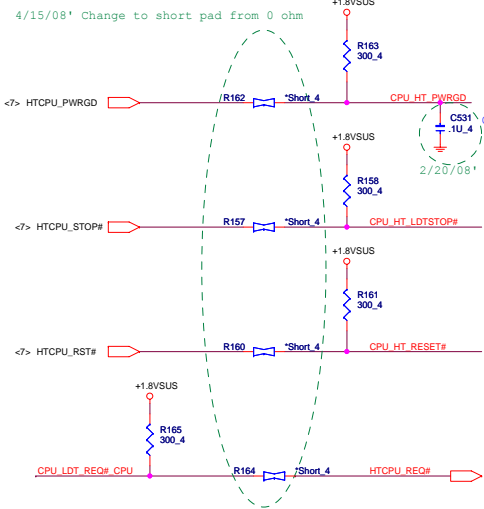


ATHLON Control and Debug

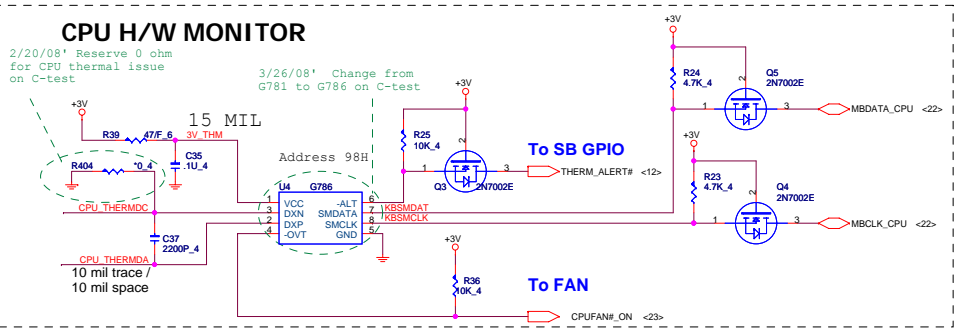
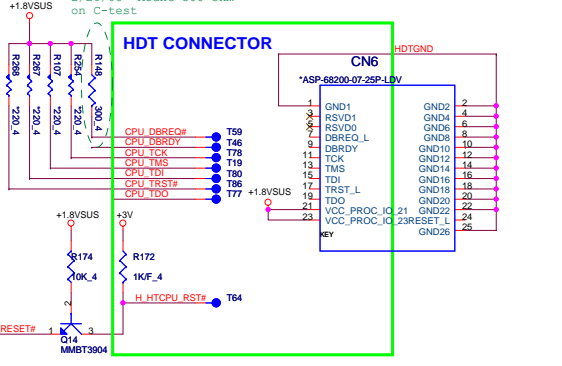
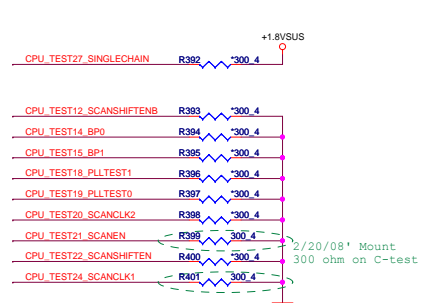


VFIX MODE

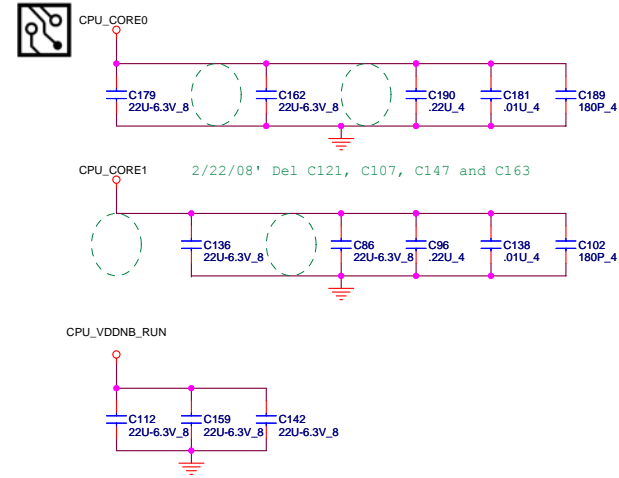
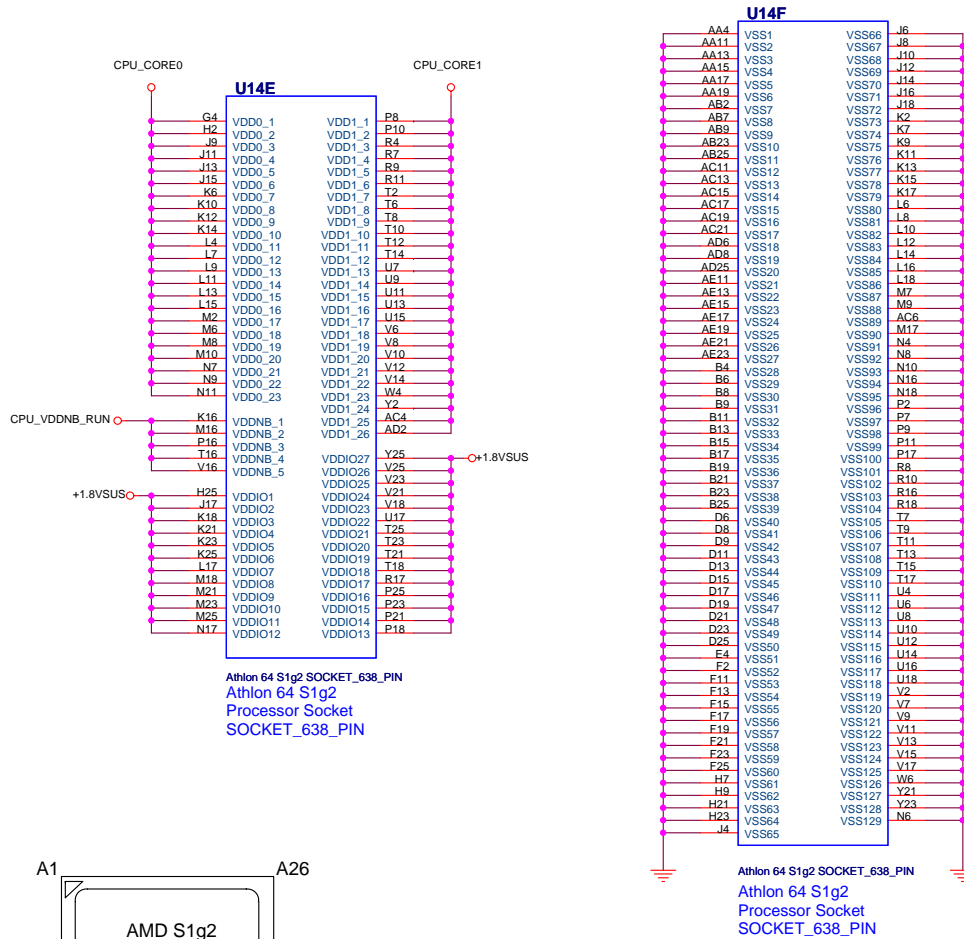
SVC	SVD	Voltage Output(CPU Power)
0	0	1.4V
0	1	1.2V
1	0	1.0V
1	1	0.8V



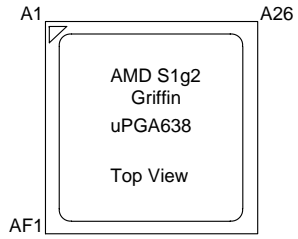
route as differential as short as possible testpoint under package

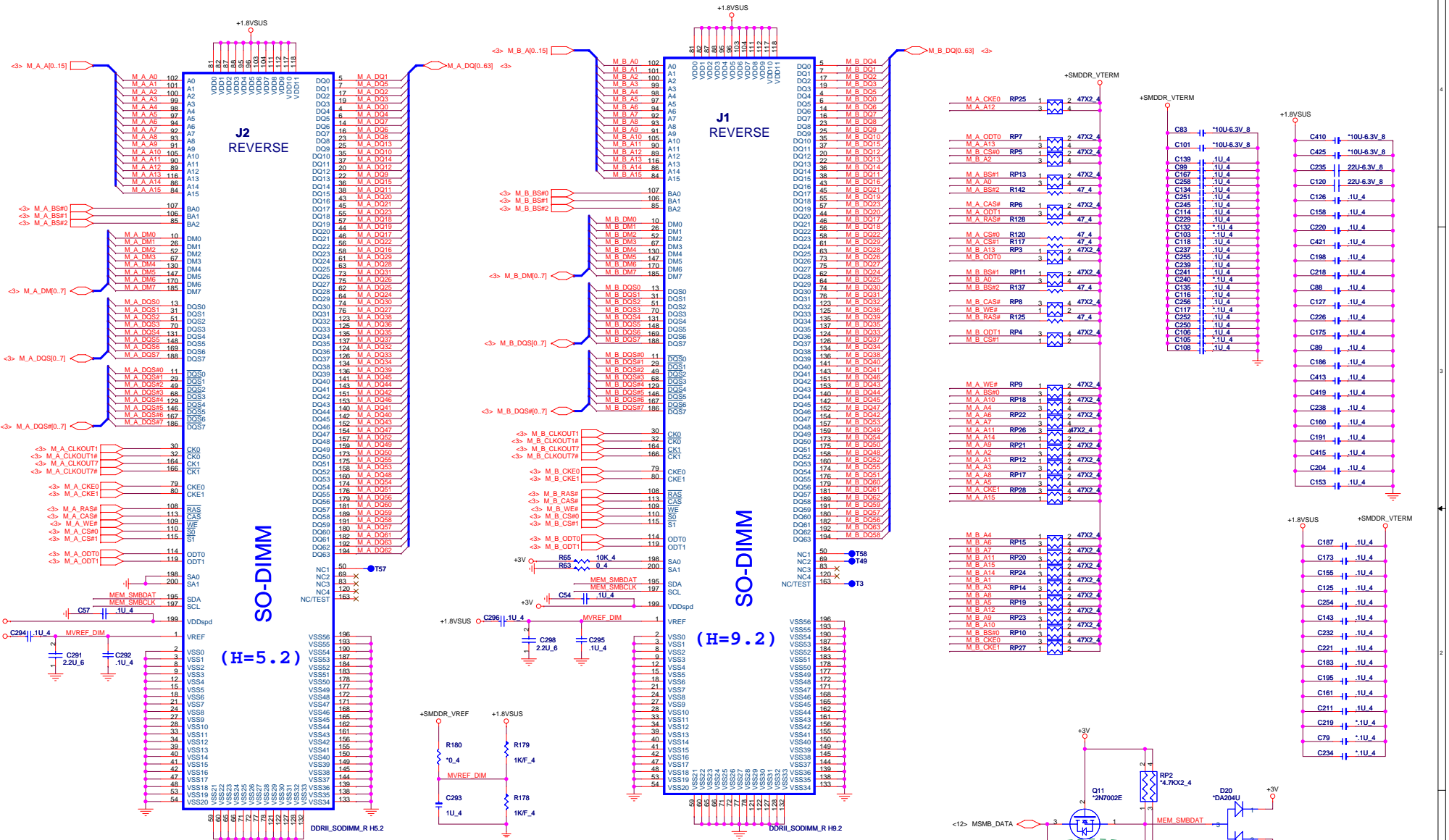


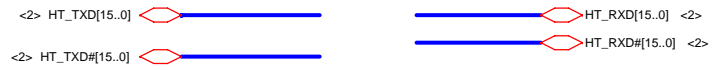
PROCESSOR POWER AND GROUND



**DECOUPLING BETWEEN PROCESSOR AND DIMMs
PLACE CLOSE TO PROCESSOR AS POSSIBLE**



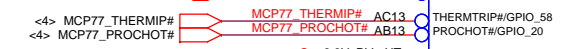
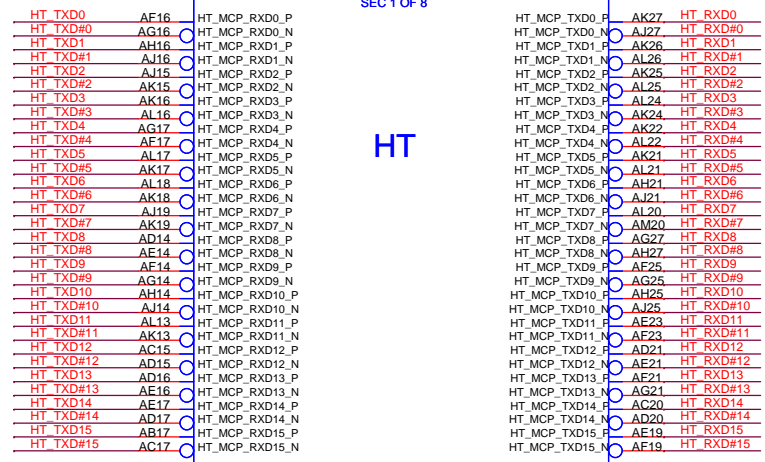




U15A
 FCBGA836-NVIDIA-MCP67 **AJMCP770T02**

SEC 1 OF 8

HT

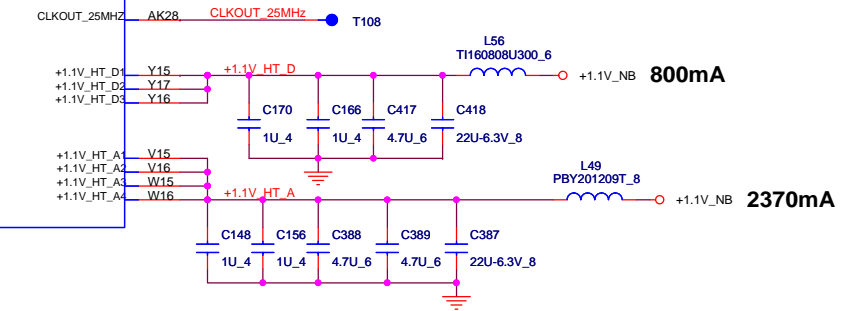
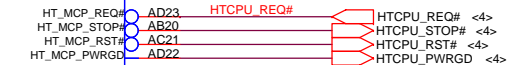
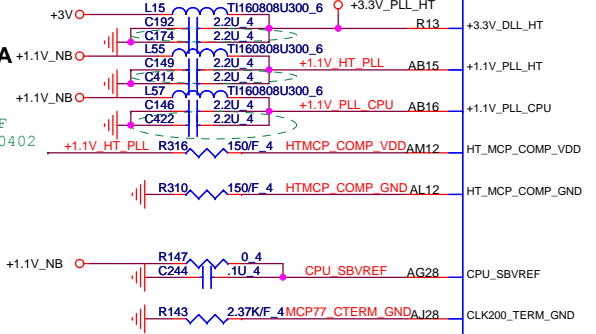


70mA

128mA

17mA

C174, C414, C422:
 3/26/08' Change from 4.7UF to 2.2UF
 4/09/08' Change footprint from to 0402



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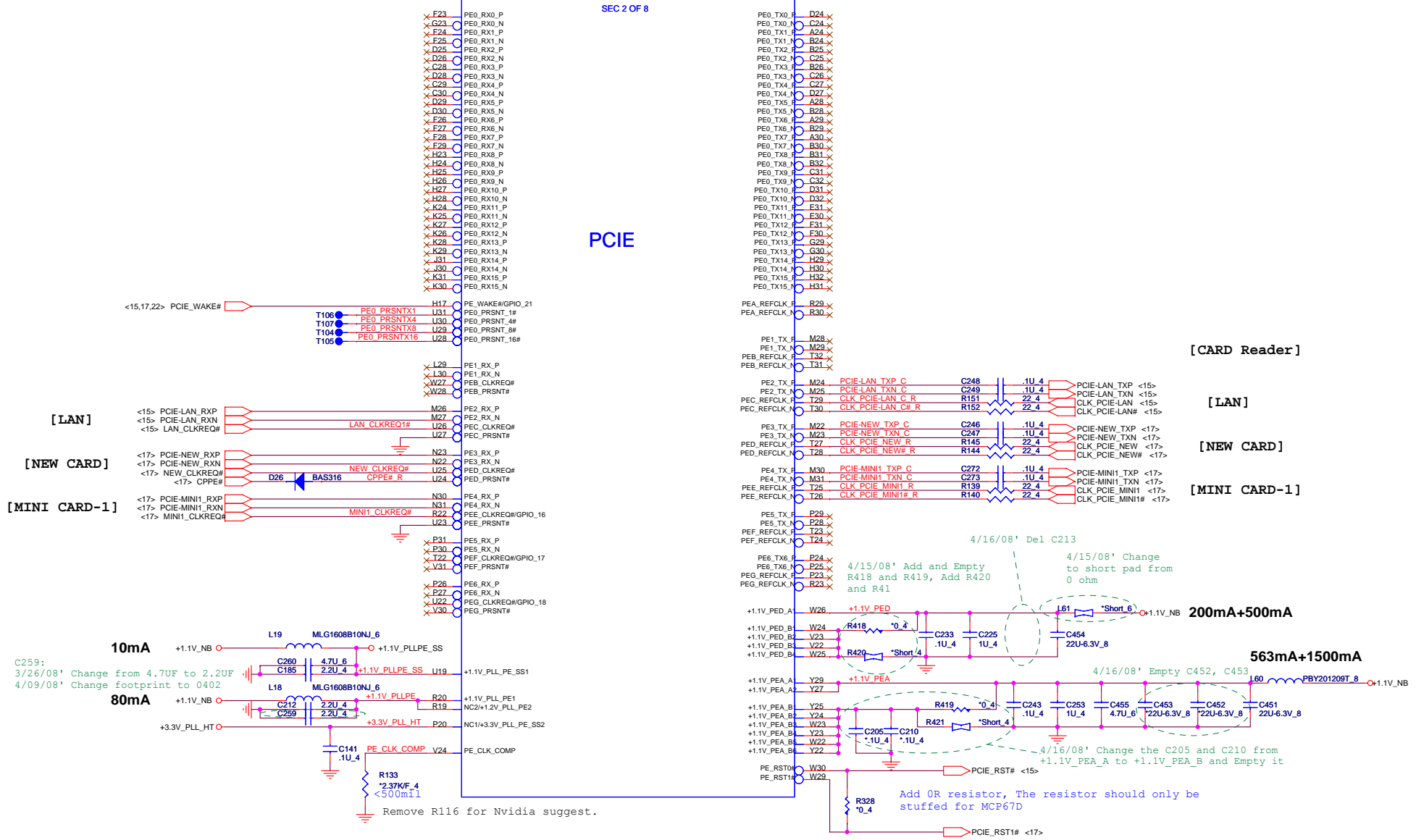
PROJECT : Z05

Size	Document Number	Rev
MCP77 HyperTransport Bus		1D
Date:	Friday, April 18, 2008	Sheet 7 of 35

U15B
FCBG836-NVIDIA-MCP67

SEC 2 OF 8

PCIE



[CARD Reader]

[LAN]

[NEW CARD]

[MINI CARD-1]

[LAN]

[NEW CARD]

[MINI CARD-1]

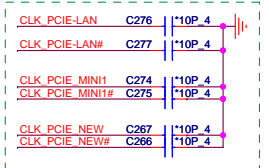
10mA

80mA

200mA+500mA

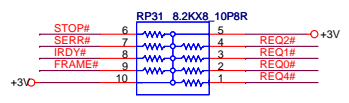
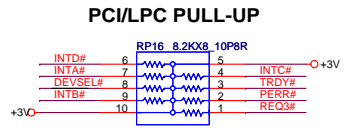
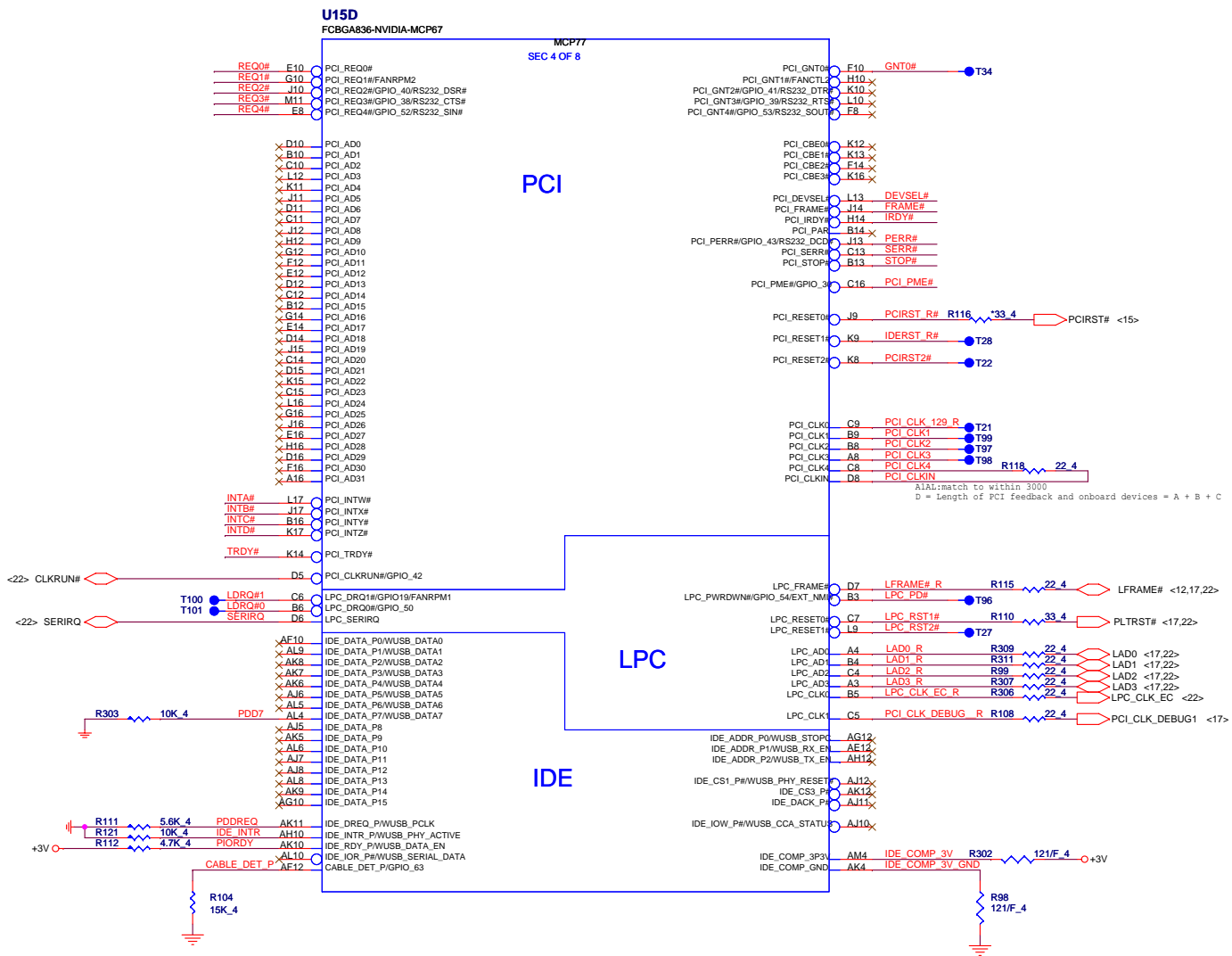
563mA+1500mA

For EMI

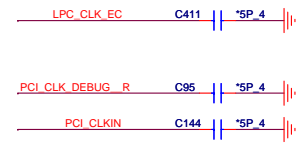


Quanta Computer Inc.
PROJECT : Z05

Size	Document Number	Rev
MCP77 PCI-Express Bus		ID
Date: Friday, April 18, 2008	Sheet	8 of 35



CLOCK BYPASS



QUANTA Computer Inc.
PROJECT : Z05

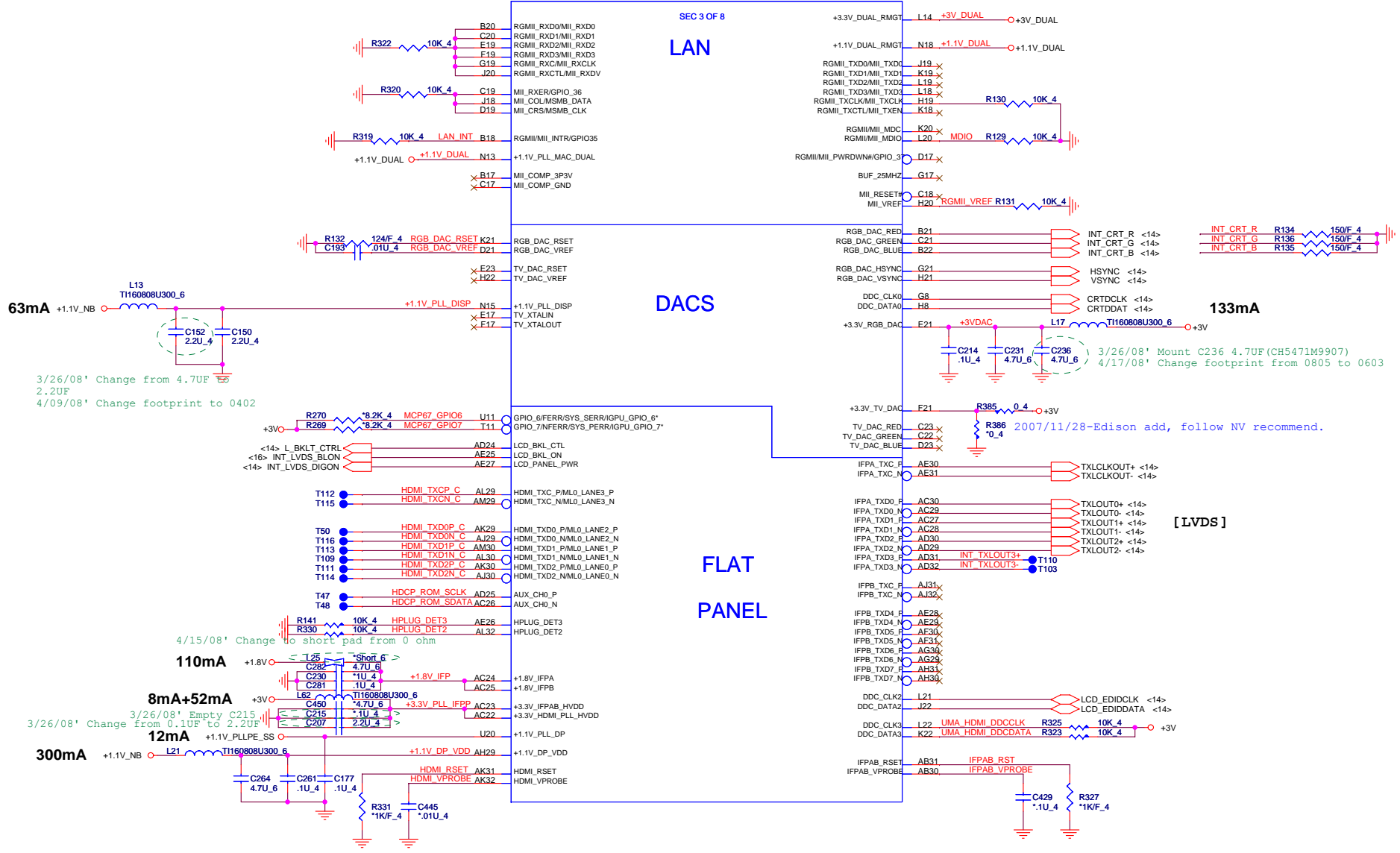
Size	Document Number	Rev
	MCP77 PCI/LPC/IDE	ID
Date: Friday, April 18, 2008		Sheet 9 of 35

U15C
FCBG836-NVIDIA-MCP67

LAN

DACS

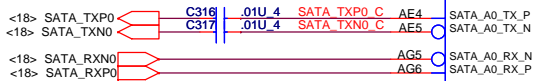
**FLAT
PANEL**



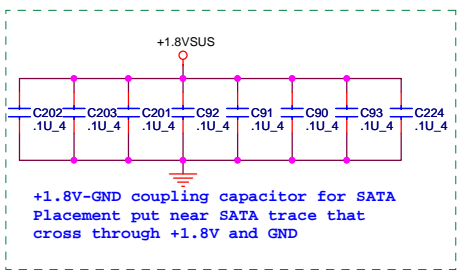
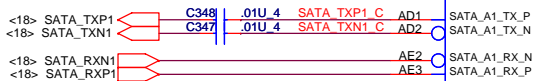
U15E
FCBGA836-NVIDIA-MCP67

SEC 5 OF 8

[SATA HDD]

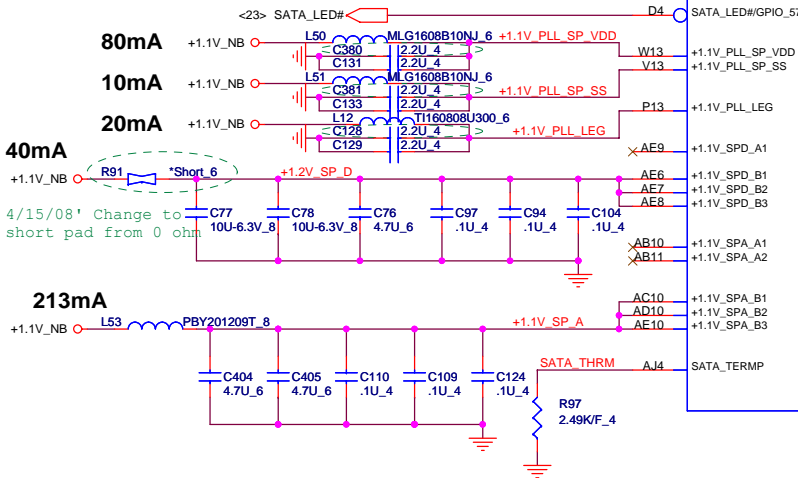


[SATA ODD]



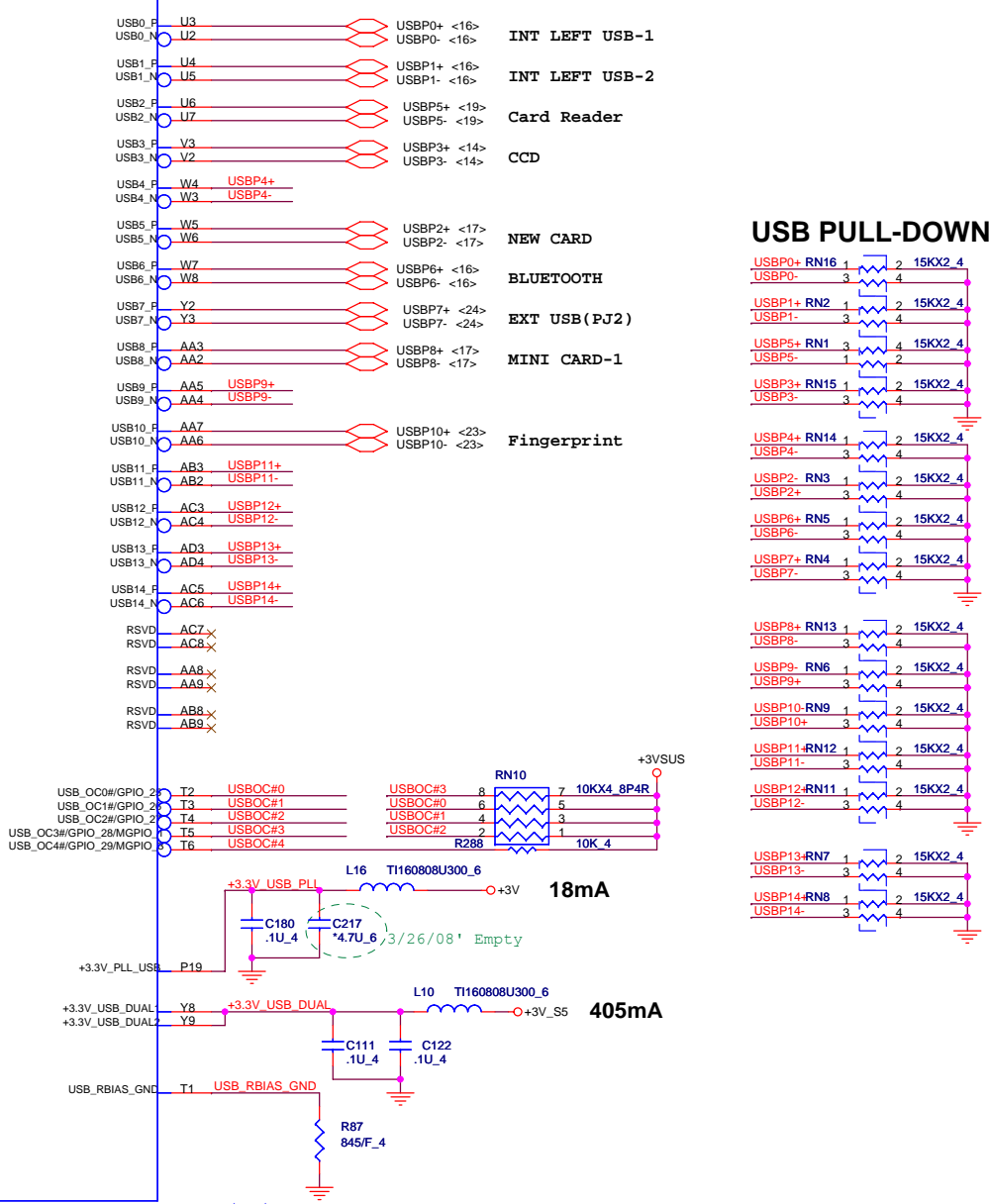
+1.8V-GND coupling capacitor for SATA
Placement put near SATA trace that
cross through +1.8V and GND

C380, C381, C128:
3/26/08' Change to 2.2UF
4/09/08' Change footprint to 0402

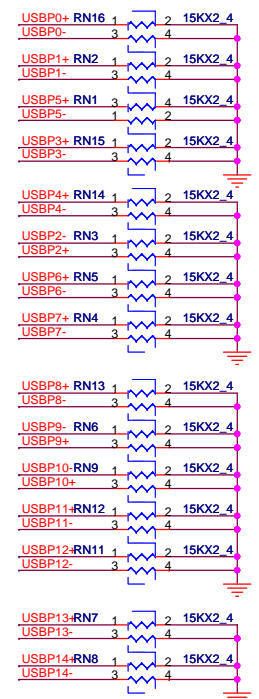


SATA

USB



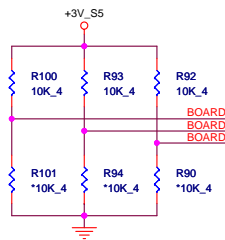
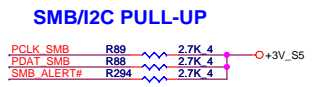
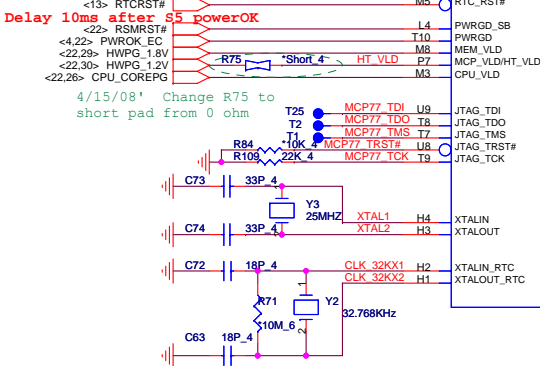
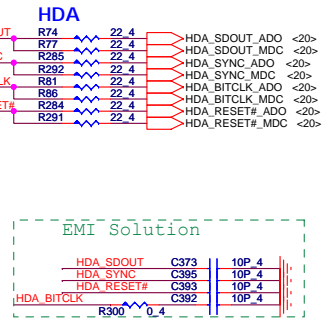
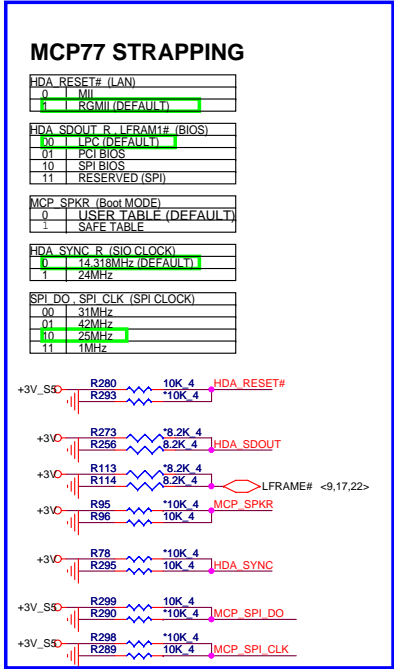
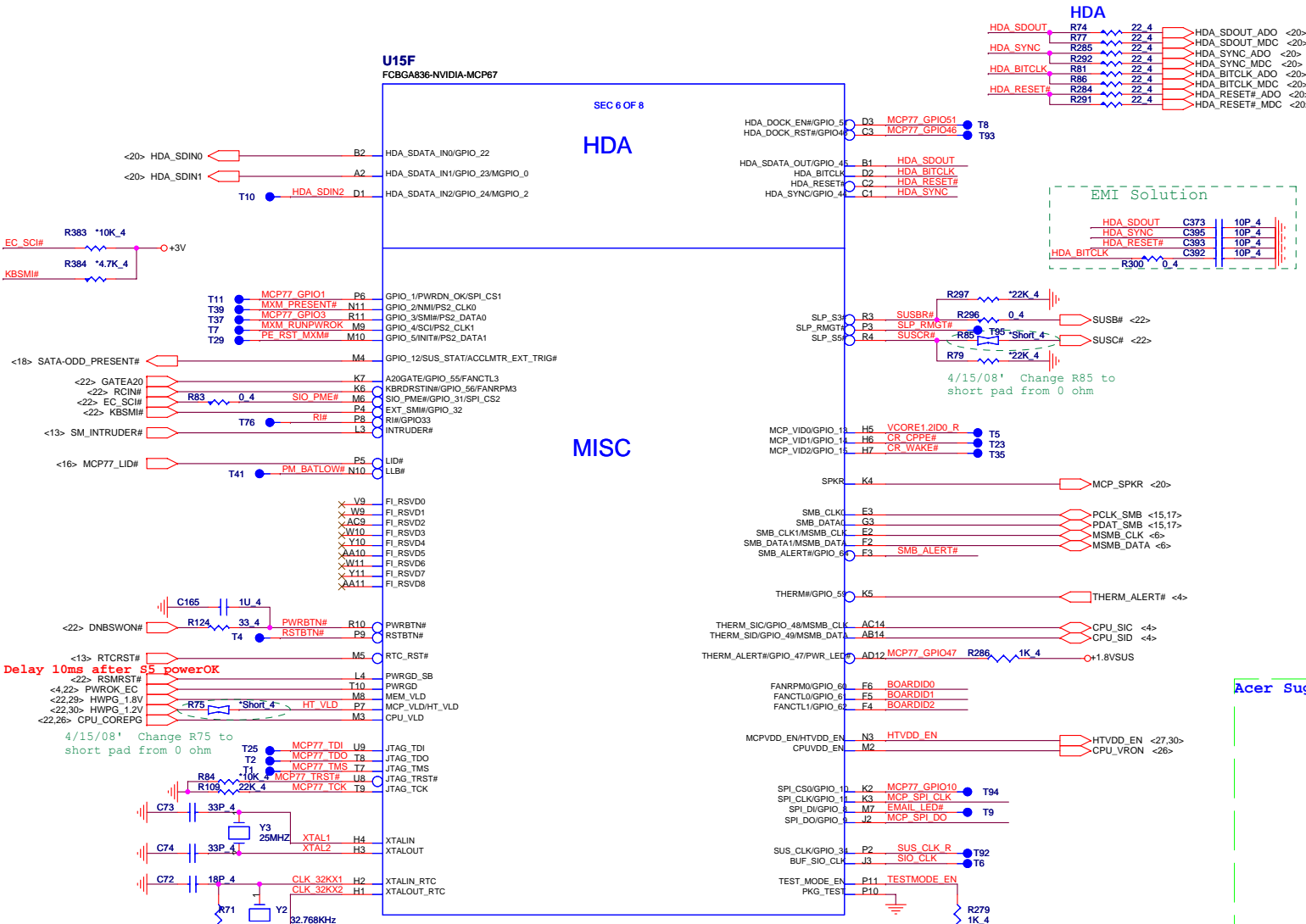
USB PULL-DOWN



2007/11/29: Page11 the resistor R87 from 909ohm change to 845ohm(follow NV suggest)

Quanta Computer Inc.
PROJECT : Z05

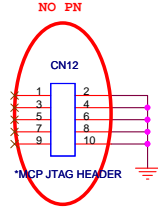
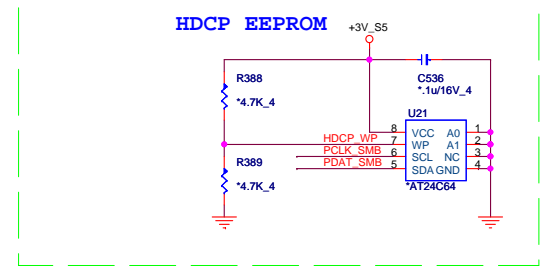
Size	Document Number	Rev ID
	MCP77 SATA and USB	
Date: Friday, April 18, 2008	Sheet 11 of 35	



M/B ID for 14"/17"

ID0	ID1	ID2	M/B
0	0	0	17" D
0	0	1	X
0	1	0	15" D
1	0	0	15" U
1	0	1	14" Dual Core CPU & MXM
1	1	0	14" Dual Core CPU & UMA
1	1	1	14" Single Core CPU & UMA

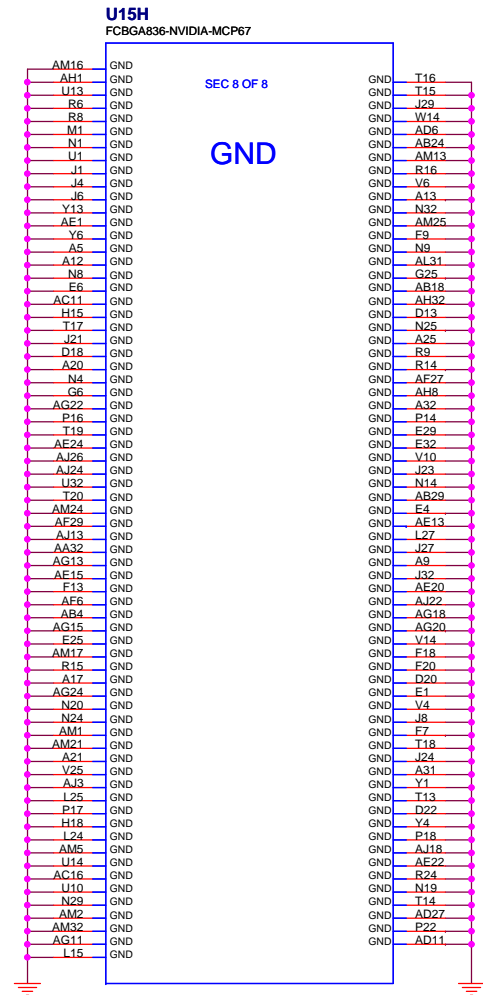
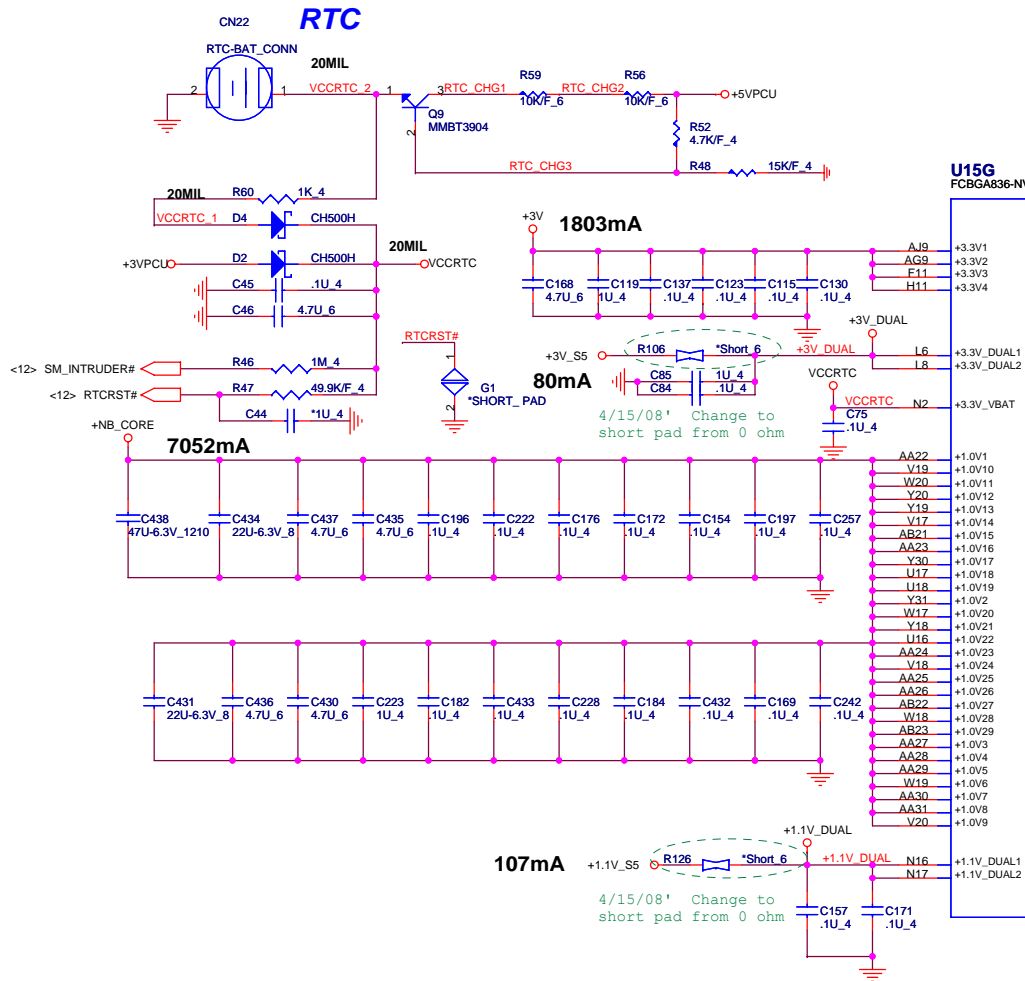
Acer Suggest Reserve HDCP EEPROM 2007/12/05



2007/11/28-Edison: Removethese part R315, R317, R326, R324, C423, Q28, Q29

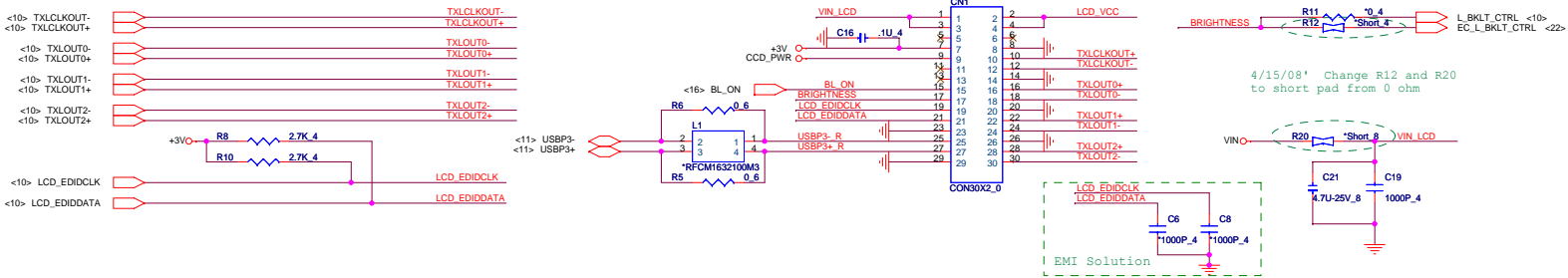
PROJECT : Z05

MCP77 POWER PLANE/GND & BYPASS

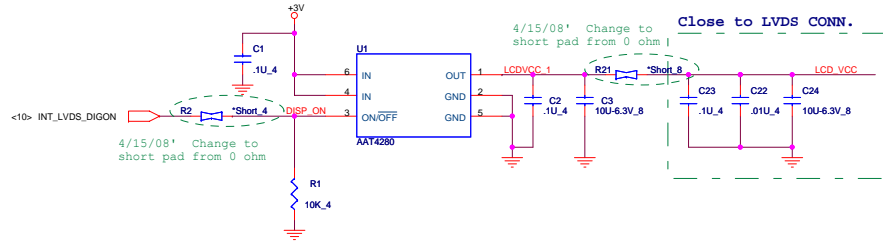


LVDS

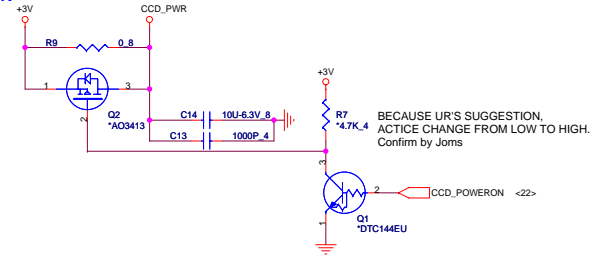
SINGLE_CH



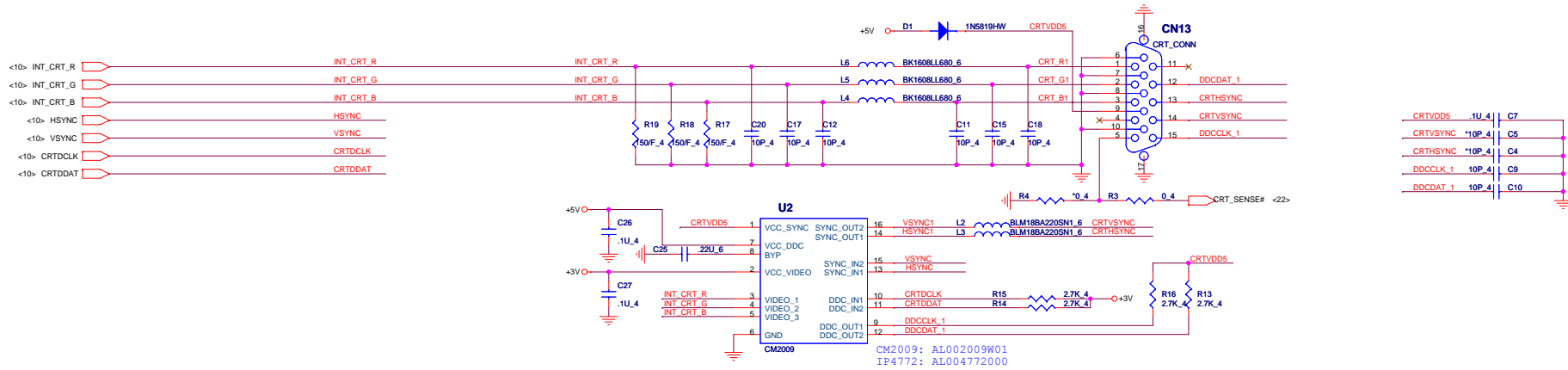
LCD POWER



CAMERA MODULE POWER



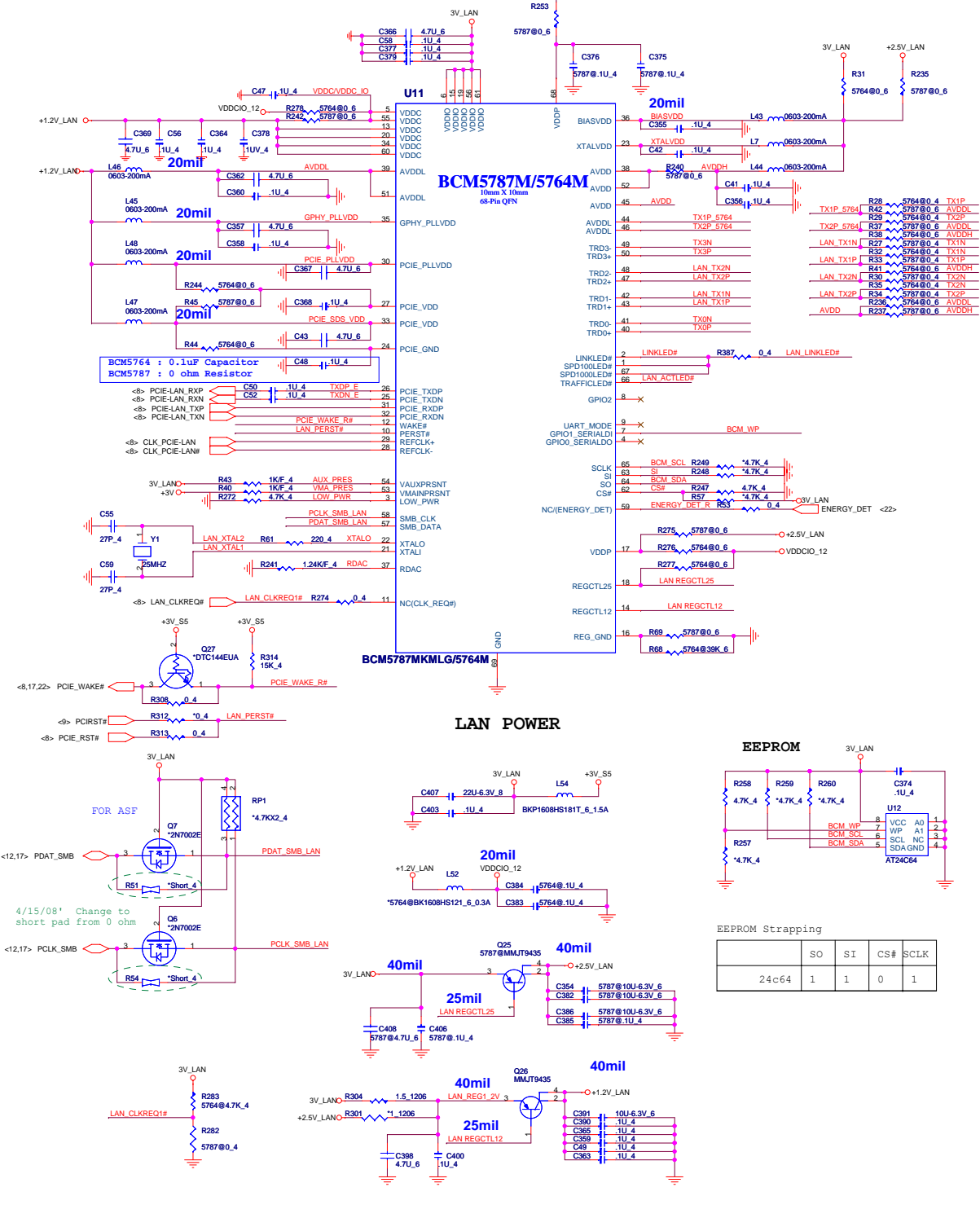
CRT



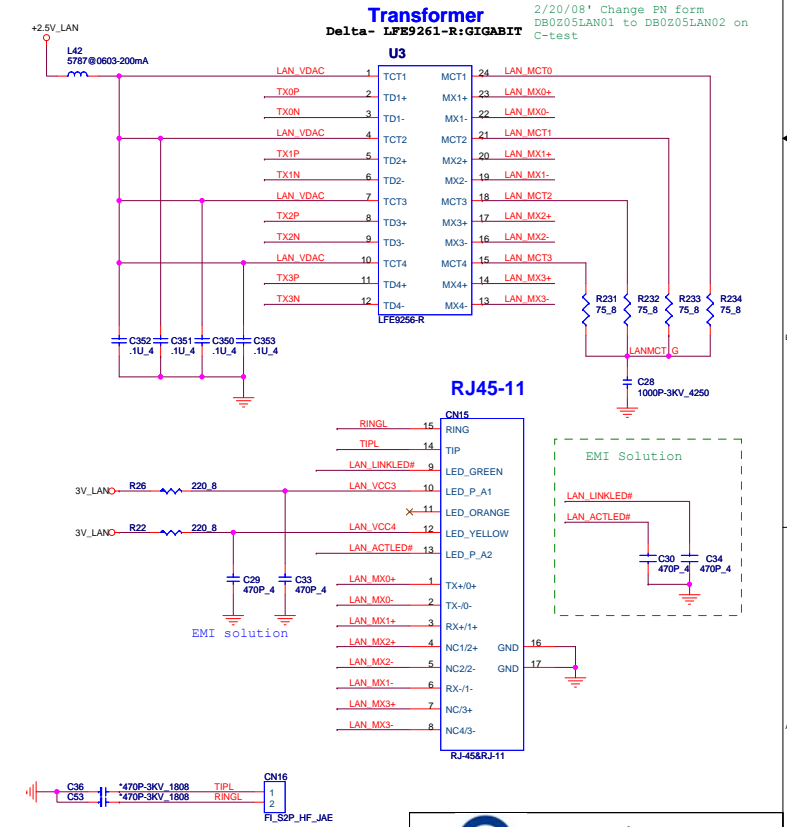
TV Out (SVHS) MiniDIN 7-pin

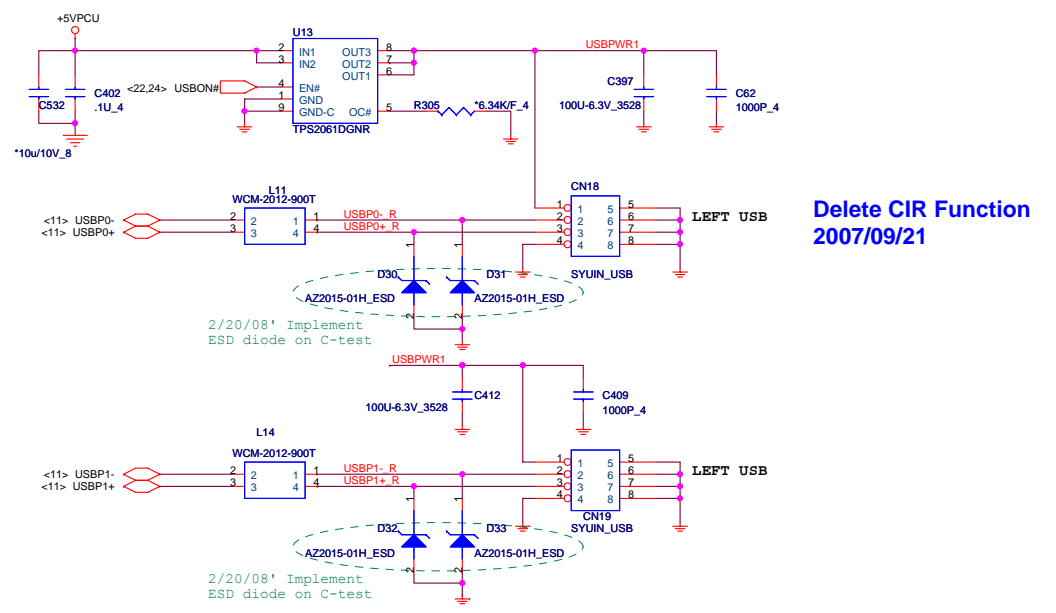
Delete TVOUT MiniDIN

Giga LAN BCM5787M/5764M

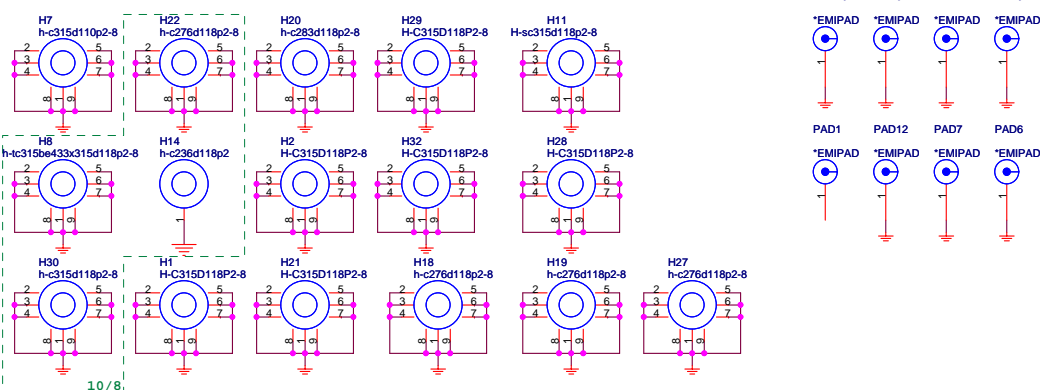
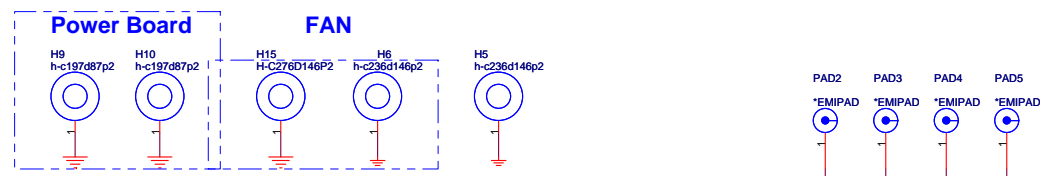
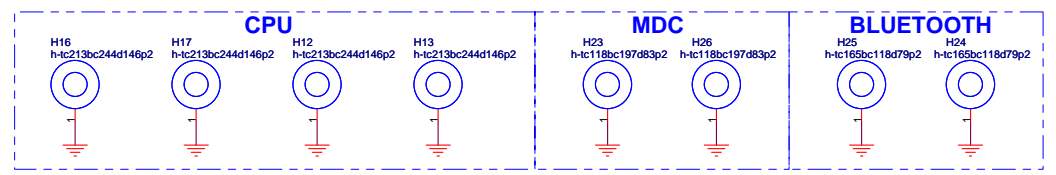
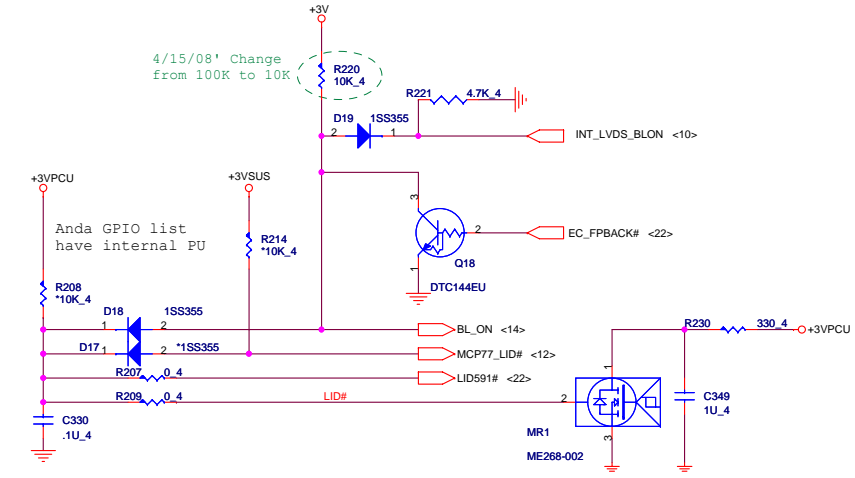


Delete LAN within DOCK Selector

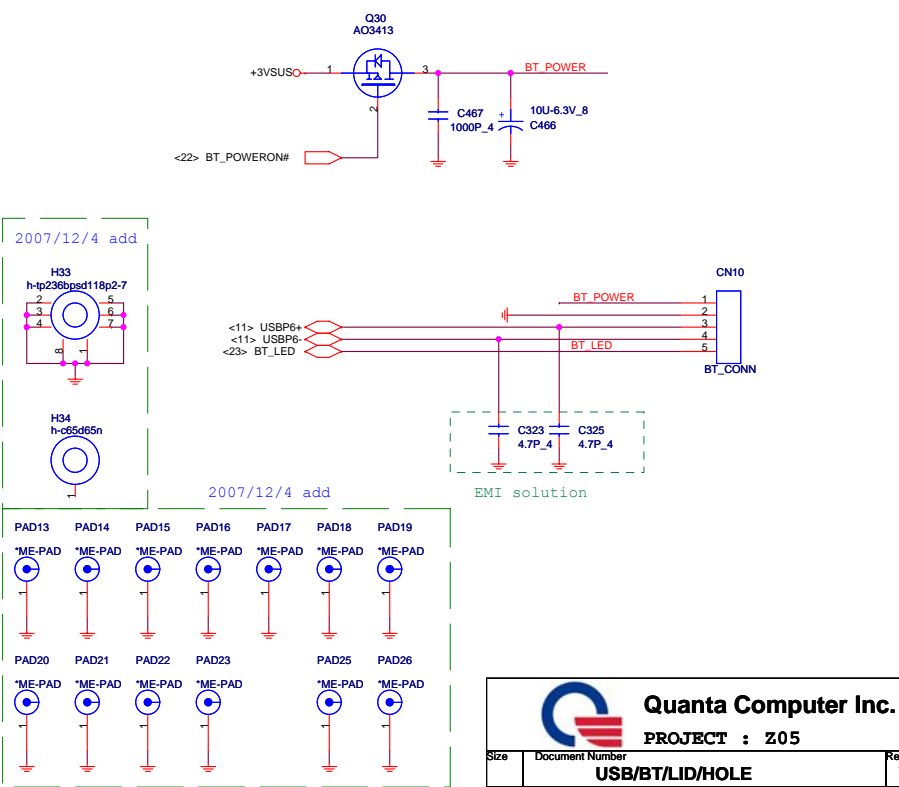




LID SWITCH



BLUETOOTH MODULE CONNECTOR



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 PROJECT : Z05

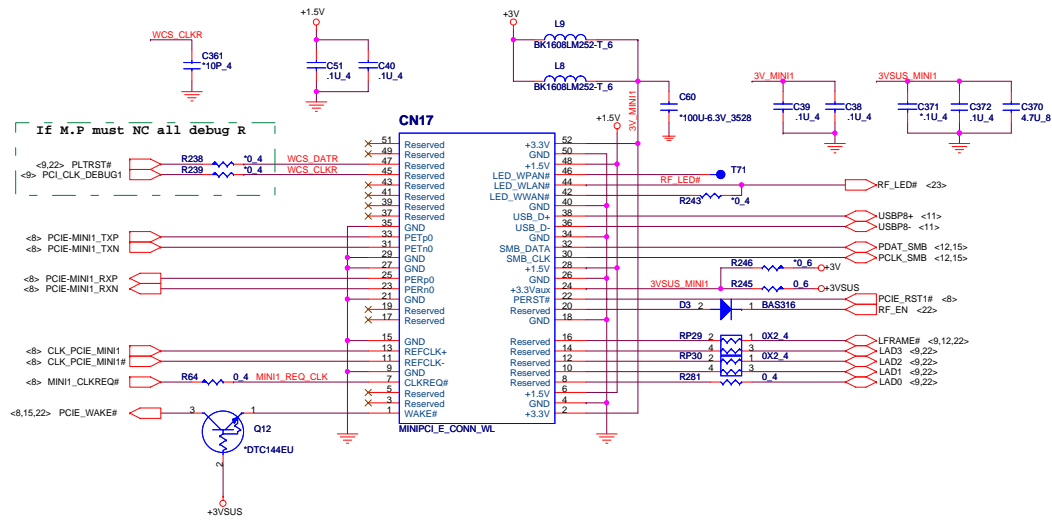
Size	Document Number	Rev
		1D

USB/BT/LID/HOLE

Date: Friday, April 18, 2008 Sheet 16 of 35

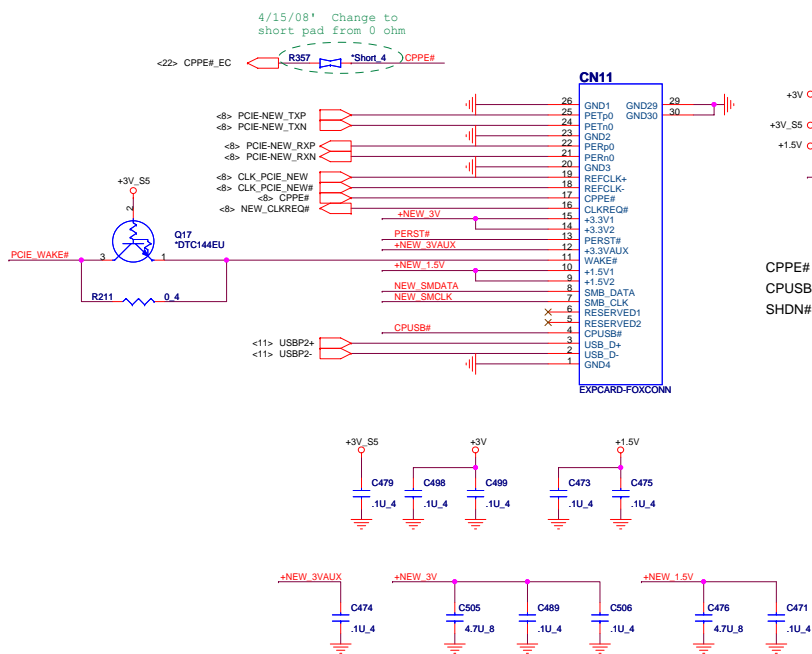
MINI-Card

MINI-Card Port-1

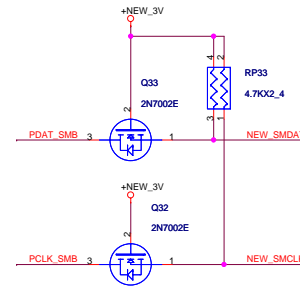
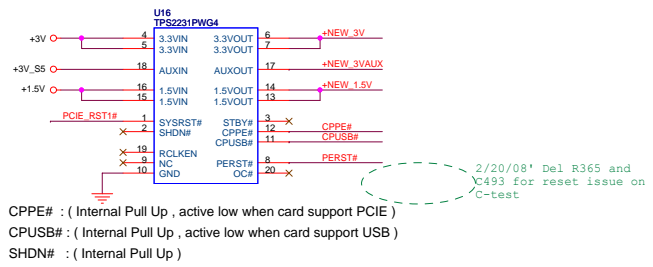


Delete MINI-Card Port-2

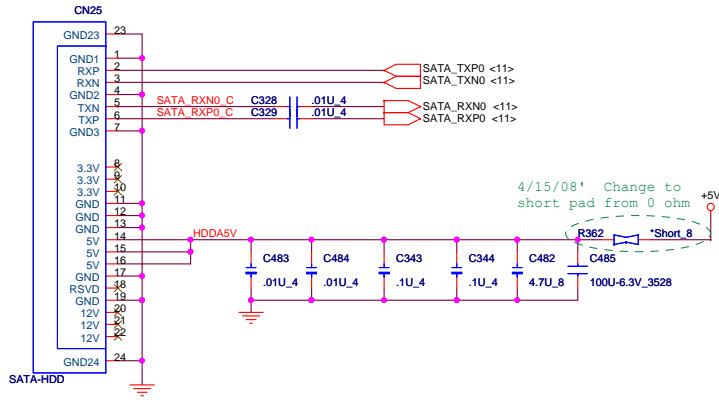
New card



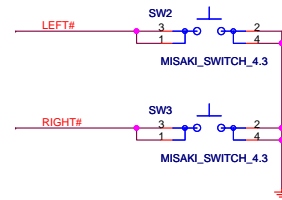
NEW CARD'S POWER SWITCH



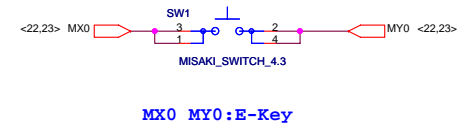
SATA HDD



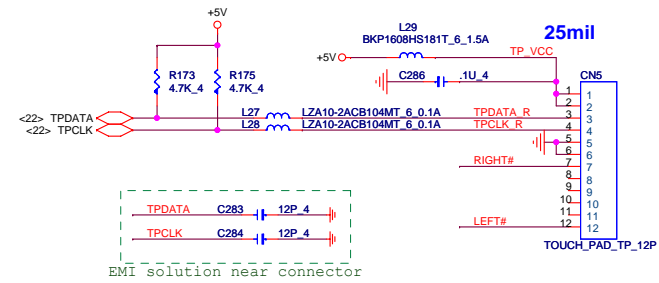
TP SWITCH



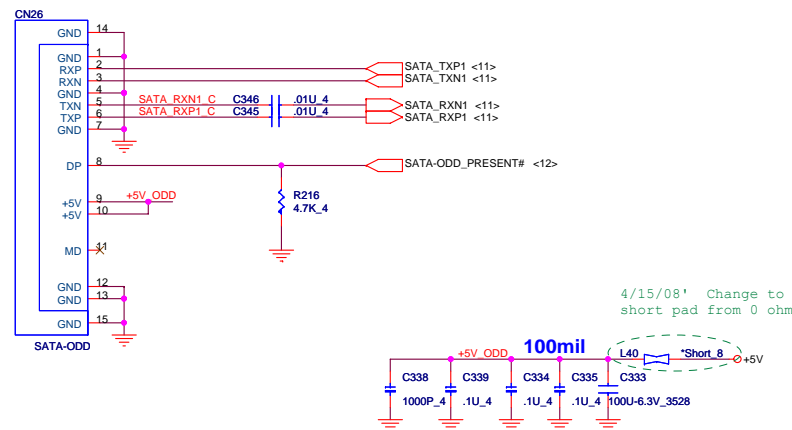
E-KEY

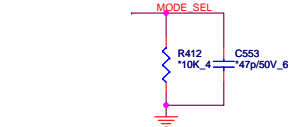
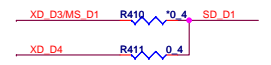
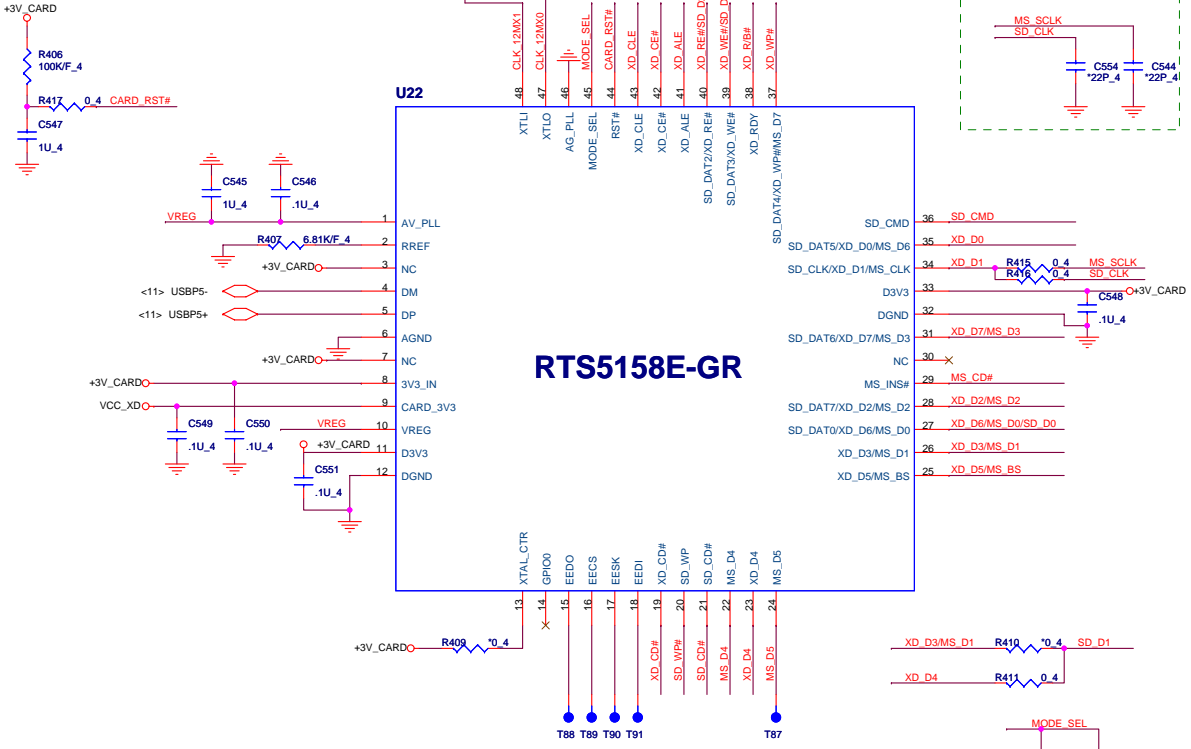
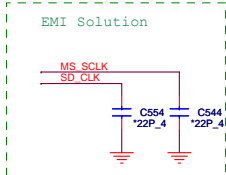
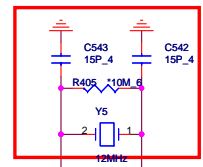
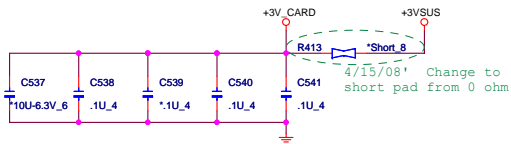


TP CONN



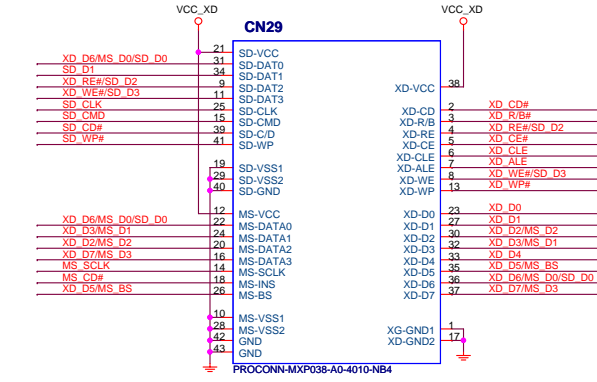
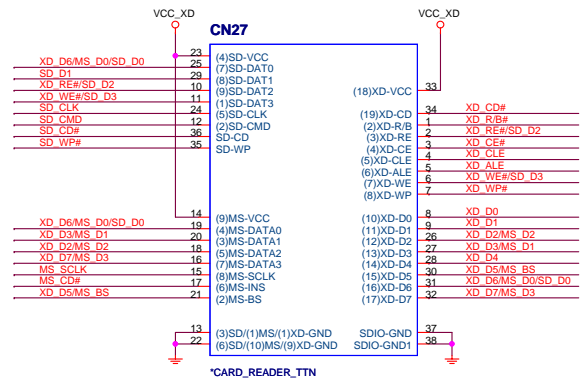
ODD (SATA)



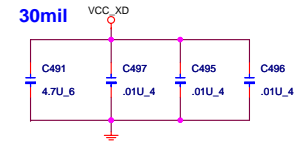


R412/C553 = 10K/47pF => R410 Reside
 R412/C553 = NC / NC => R411 Reside

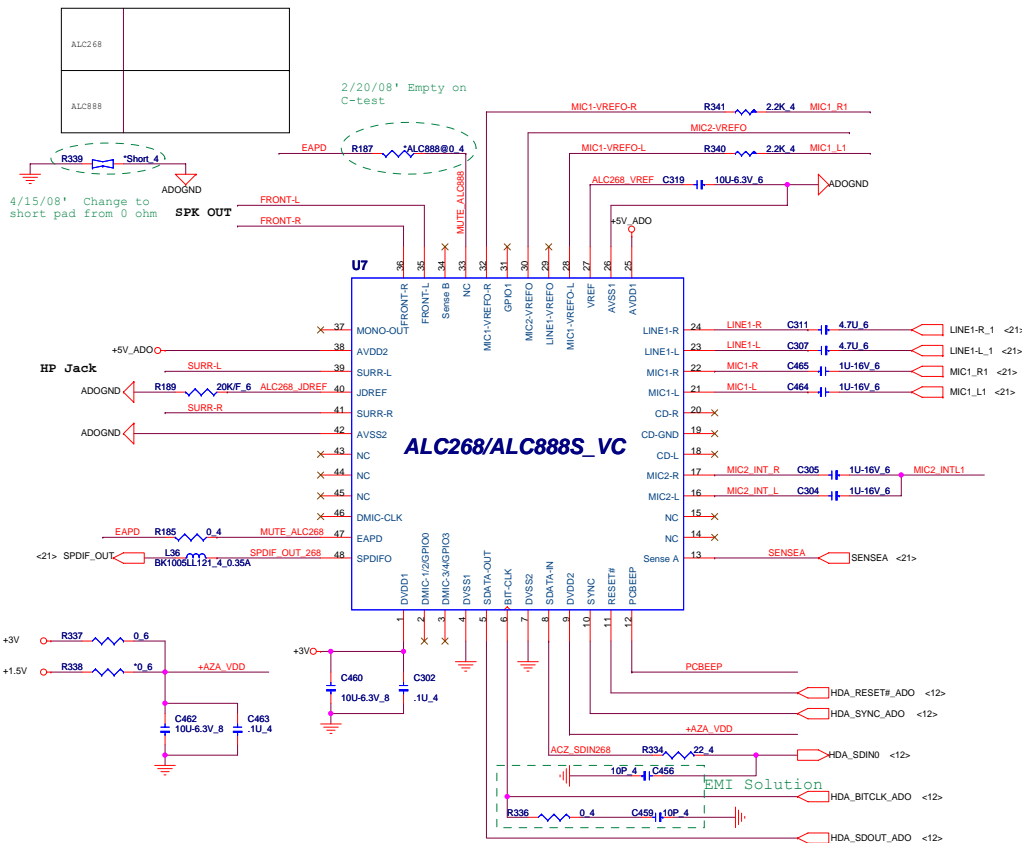
7 IN 1 CARD READER



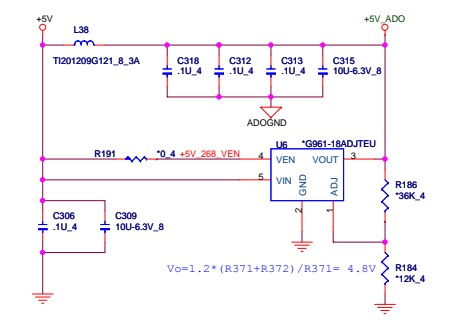
CARDREADER POWER



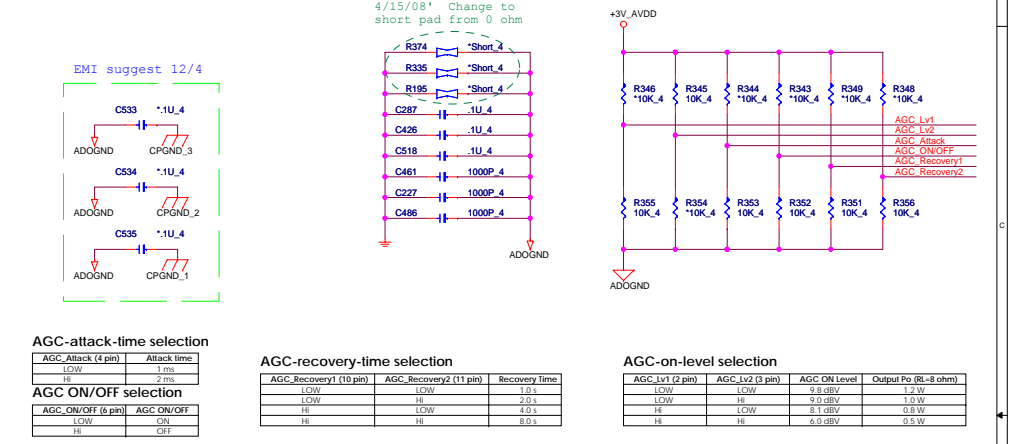
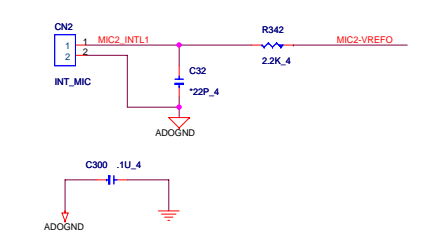
CODEC (ALC268 / ALC888S-VC)



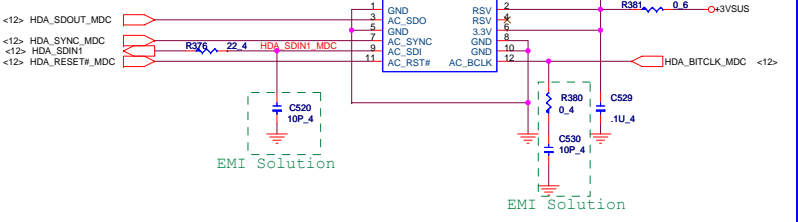
CODEC (ALC268) Power



INT MIC array



MDC

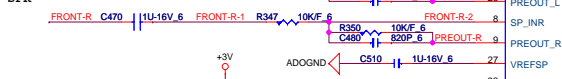


SP_STBY ON/OFF & HP_STBY ON/OFF

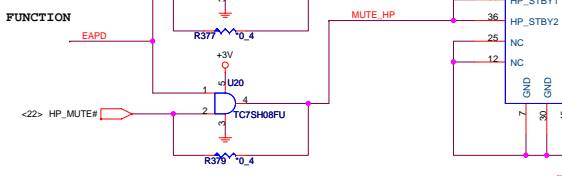
SP_STBY1 (33 pin)	SP_STBY2 (34 pin)	SP_STBY ON/OFF
LOW	LOW	ON
LOW	HI	OFF
HI	LOW	OFF
HI	HI	OFF

HP_STBY1 (35 pin)	HP_STBY2 (36 pin)	HP_STBY ON/OFF
LOW	LOW	ON
LOW	HI	OFF
HI	LOW	OFF
HI	HI	OFF

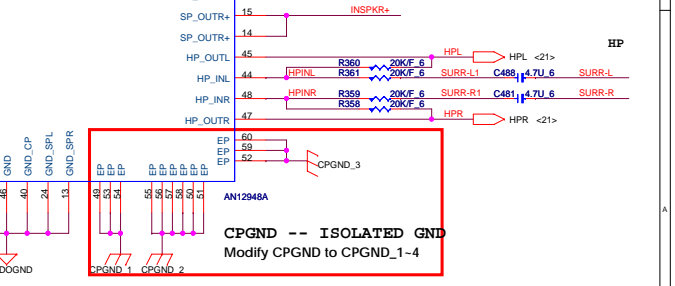
SPK



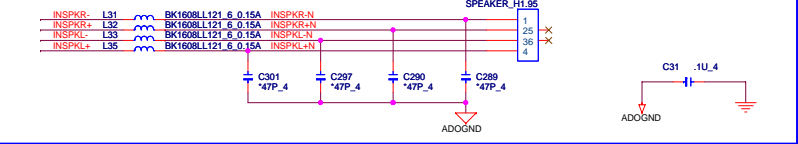
MUTE FUNCTION



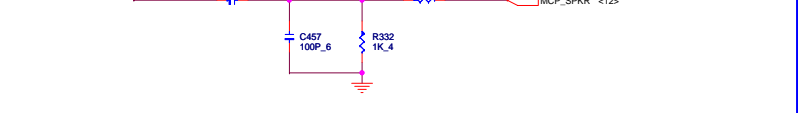
Panasonic AN12948A



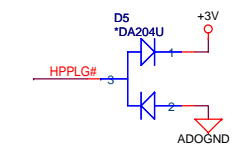
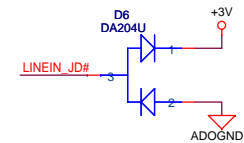
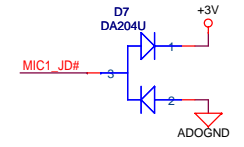
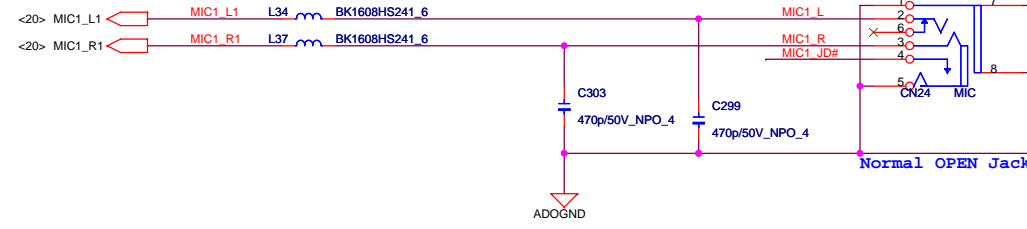
SPK



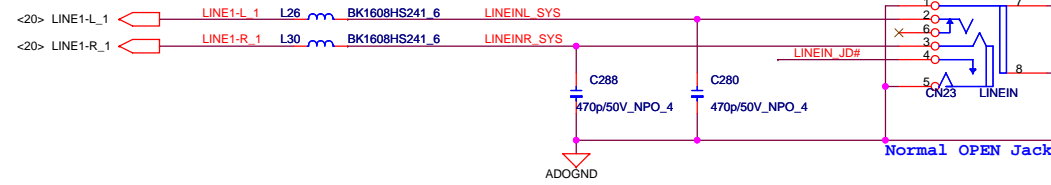
Beep



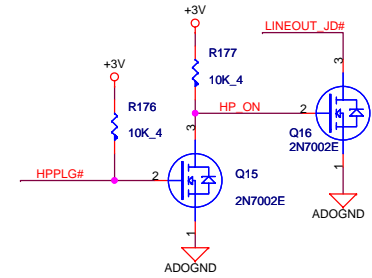
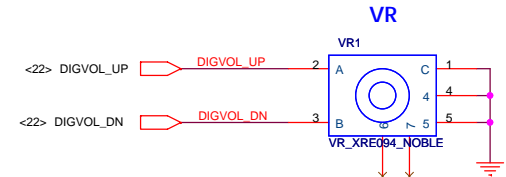
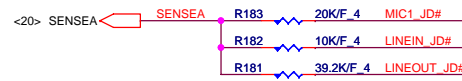
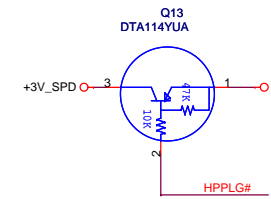
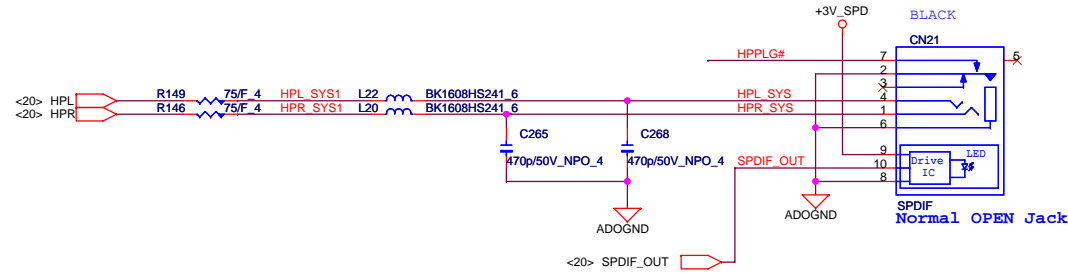
MIC



LINE IN

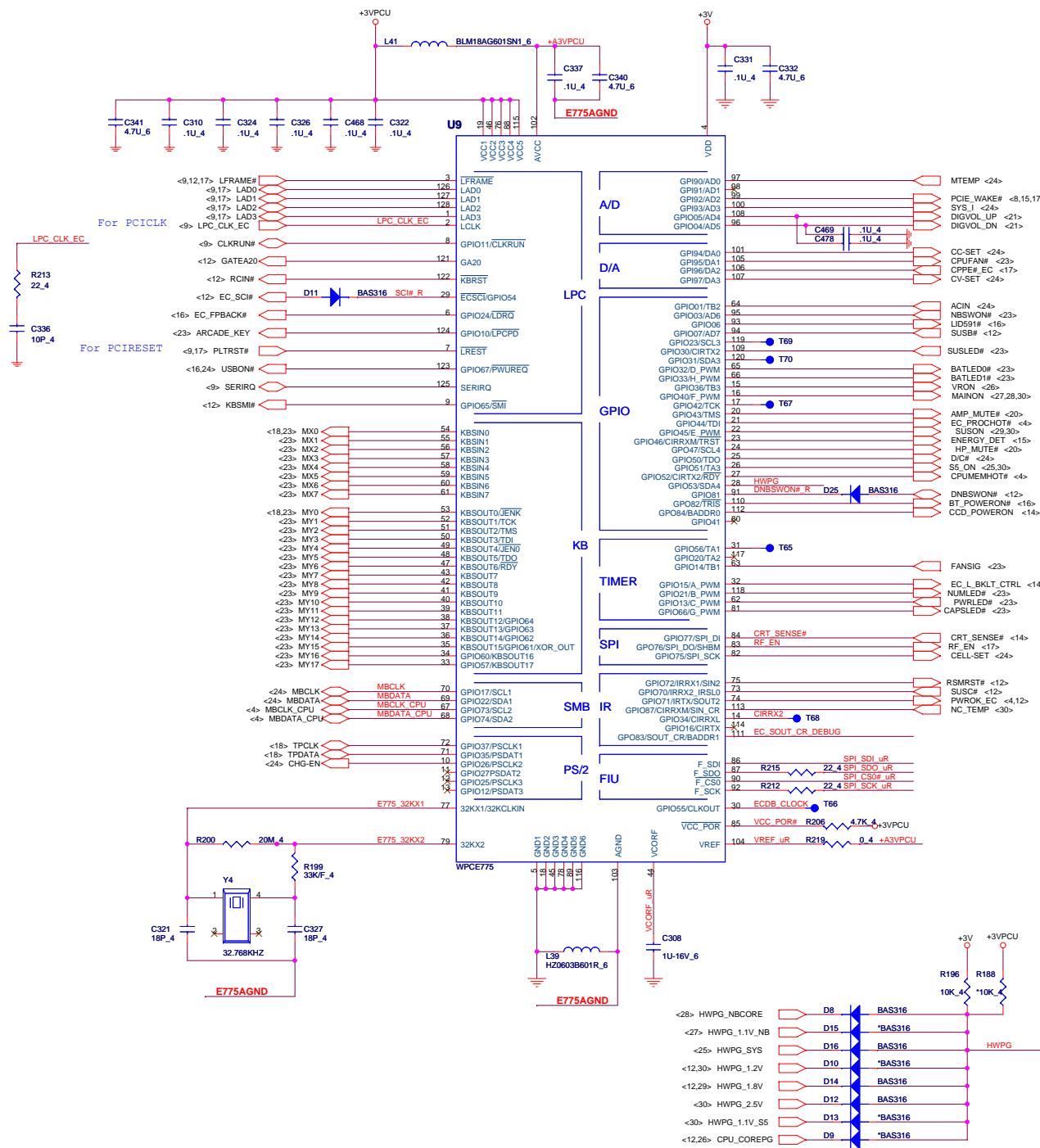


HeadPhone OUT/SPDIF



Quanta Computer Inc.
PROJECT : Z05

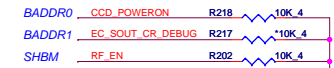
Size	Document Number	Rev 1D
Audio Jack		
Date: Friday, April 18, 2008	Sheet 21 of 35	



I/O ADDRESS SETTING

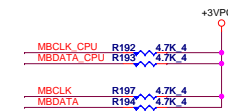
I/O Address		
BADDR1-0	Index	Data
0 0		XOR TREE TEST MODE
0 1		CORE DEFINED
1 0	2Eh	2Fh
1 1	164Eh	164Fh

SHBM=0: Enable shared memory with host BIOS

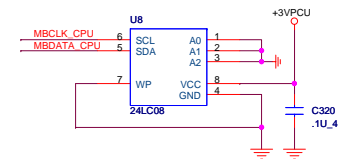


Disabled (*1) if using FWH device on LPC.
Enabled (0) if using SPI flash for both system BIOS and EC firmware

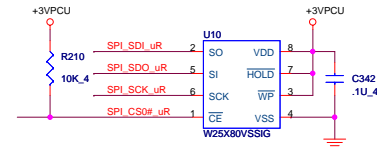
SMBUS PULL-UP



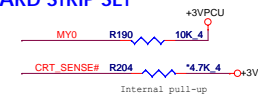
ACER ID



SPI FLASH



INTERNAL KEYBOARD STRIP SET

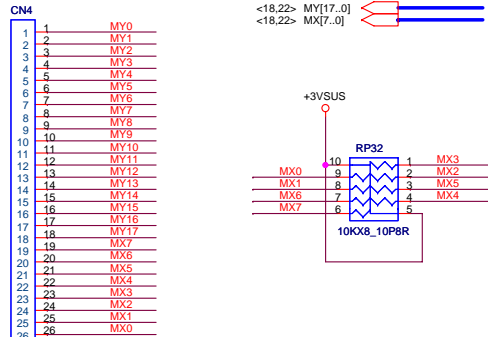


Quanta Computer Inc.
PROJECT : Z05

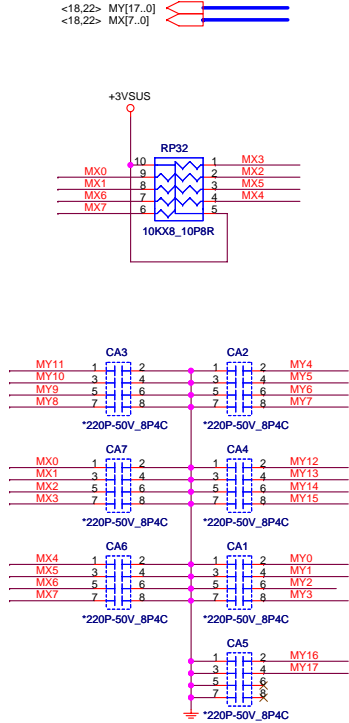
Size	Document Number	Rev
	EC WPCE775C_ODG & SPI	10

Date: Friday, April 18, 2008 Sheet 22 of 35

INT K/B



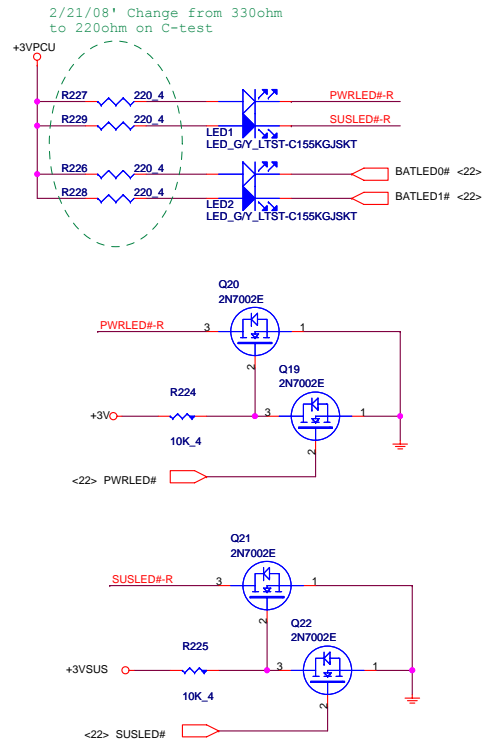
FFC_26P_KB



Debug

Delete Debug Port(PCI & IDE)

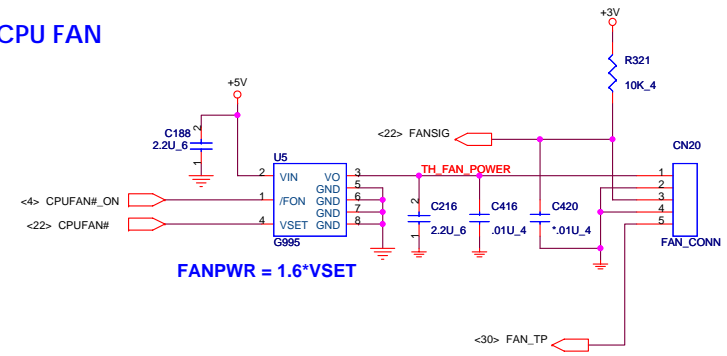
LED



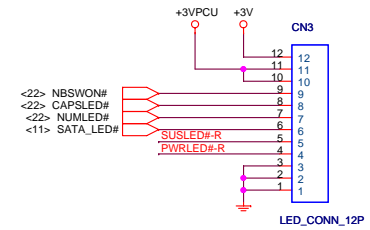
Fingerprint BOARD CONN.



CPU FAN



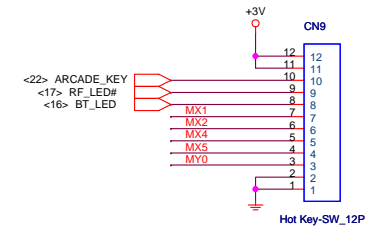
LED BOARD CONN.

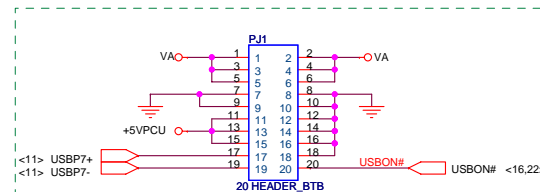
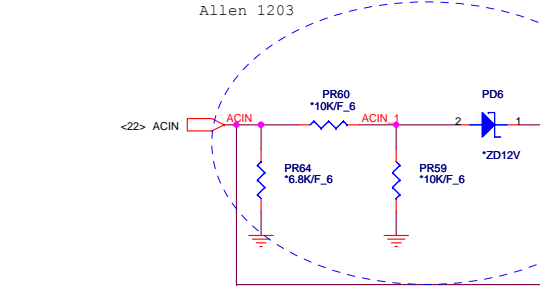
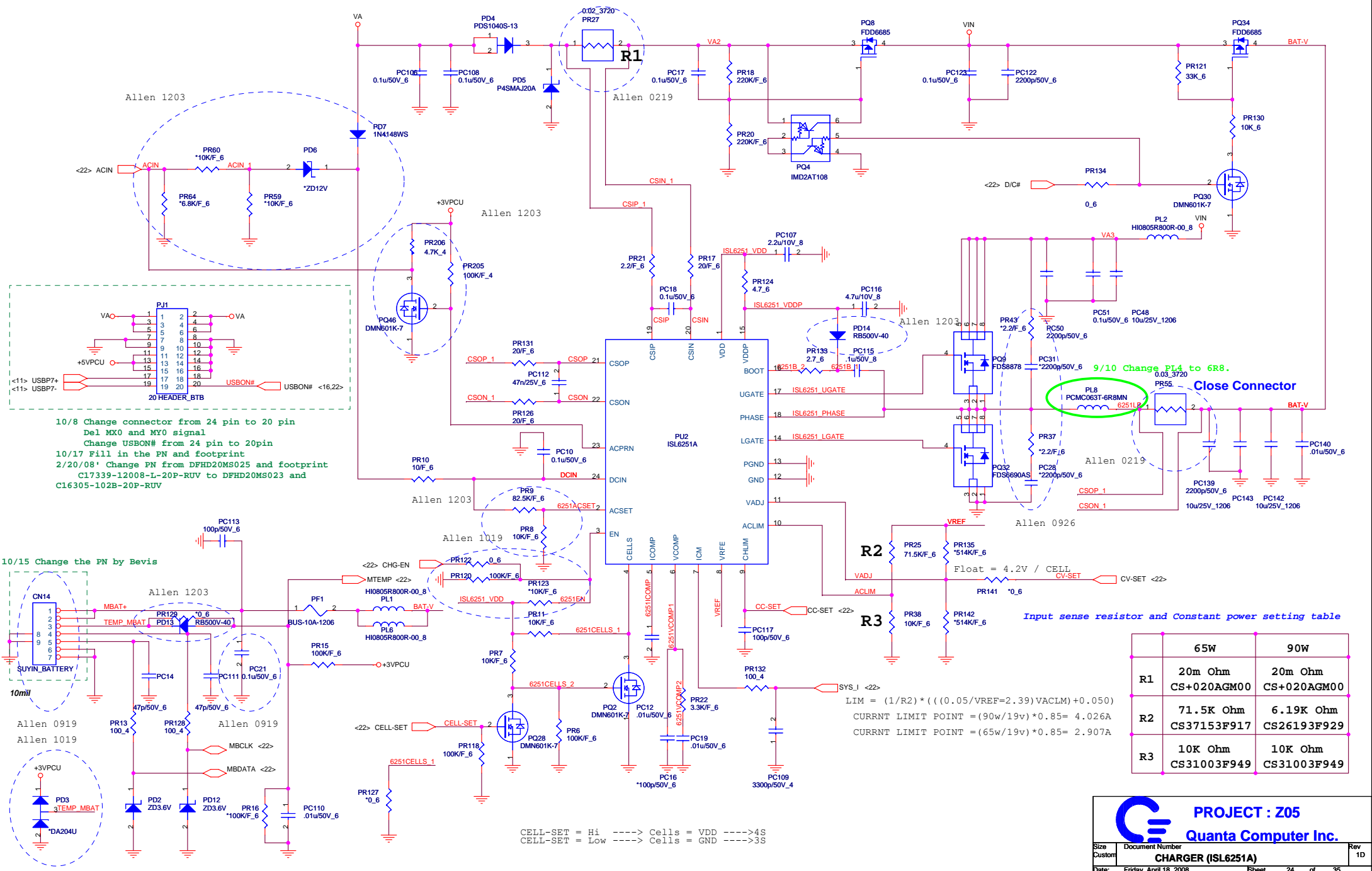


Button BOARD CONN.

BUTTON MATRIX

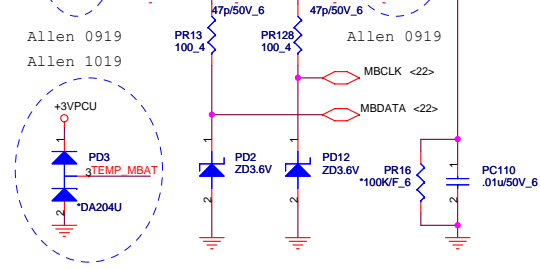
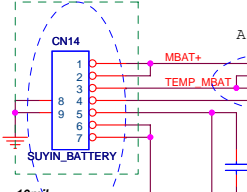
	MY0
MX1	MAIL
MX2	WWW
MX4	WIRELESS
MX5	BLUETOOTH





10/8 Change connector from 24 pin to 20 pin
 Del MX0 and MY0 signal
 Change USBON# from 24 pin to 20pin
 10/17 Fill in the PN and footprint
 2/20/08 Change PN from DFHD20MS025 and footprint
 C17339-12008-L-20P-RUV to DFHD20MS023 and
 C16305-102B-20P-RUV

10/15 Change the PN by Bevis



CELL-SET = Hi -----> Cells = VDD ----->4S
 CELL-SET = Low -----> Cells = GND ----->3S

9/10 Change PL4 to 6R8.
 Close Connector

Input sense resistor and Constant power setting table

	65W	90W
R1	20m Ohm CS+020AGM00	20m Ohm CS+020AGM00
R2	71.5K Ohm CS37153F917	6.19K Ohm CS26193F929
R3	10K Ohm CS31003F949	10K Ohm CS31003F949

$$LIM = (1/R2) * (((0.05/VREF=2.39) VACLIM) + 0.050)$$

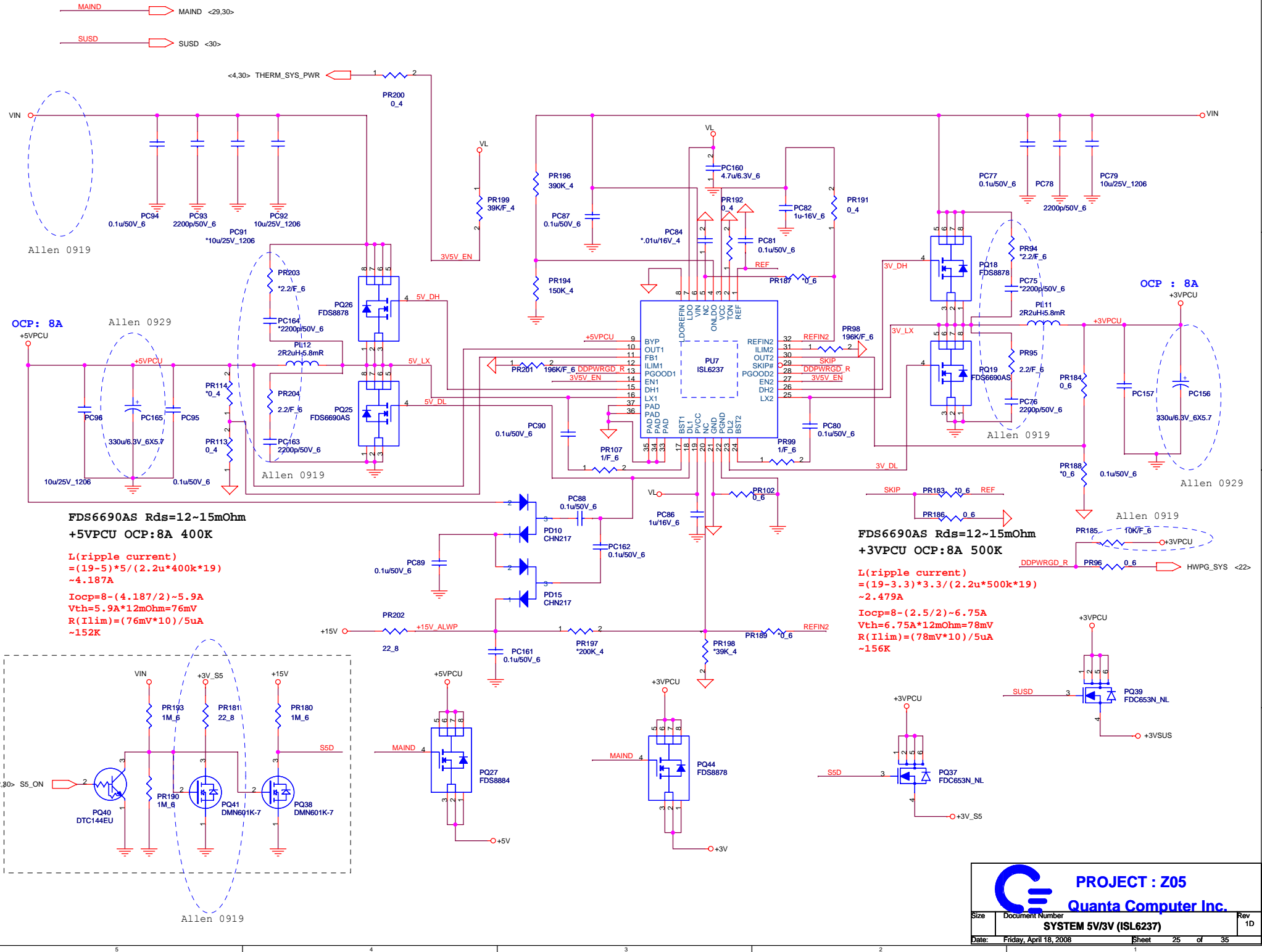
$$CURRNT LIMIT POINT = (90w/19v) * 0.85 = 4.026A$$

$$CURRNT LIMIT POINT = (65w/19v) * 0.85 = 2.907A$$

PROJECT : Z05
Quanta Computer Inc.

Size Custom Document Number
CHARGER (ISL6251A) Rev 1D

Date: Friday, April 18, 2008 Sheet 24 of 35



OCP: 8A

+5VPCU

Allen 0929

+5VPCU

330u/6.3V_6X5.7

10u/25V_1206

0.1u/50V_6

FDS6690AS Rds=12~15mOhm

+5VPCU OCP:8A 400K

L(ripple current)
 $= (19-5) * 5 / (2.2u * 400k * 19)$
 $\sim 4.187A$

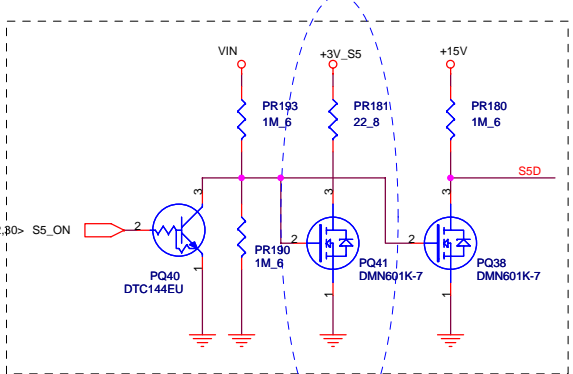
Iocp=8 - (4.187/2) ~ 5.9A
 $V_{th} = 5.9A * 12mOhm = 76mV$
 $R(Ilim) = (76mV * 10) / 5uA$
 $\sim 152K$

FDS6690AS Rds=12~15mOhm

+3VPCU OCP:8A 500K

L(ripple current)
 $= (19-3.3) * 3.3 / (2.2u * 500k * 19)$
 $\sim 2.479A$

Iocp=8 - (2.5/2) ~ 6.75A
 $V_{th} = 6.75A * 12mOhm = 78mV$
 $R(Ilim) = (78mV * 10) / 5uA$
 $\sim 156K$



Allen 0919

PROJECT : Z05
Quanta Computer Inc.

Size	Document Number	Rev
SYSTEM 5V/3V (ISL6237)		1D
Date:	Friday, April 18, 2008	Sheet 25 of 35

OFS/VFIXEN	Offset & Droop	SVC	VFIX
GND	0	O	X
+3.3V	X	X	O
+5V	X	O	X

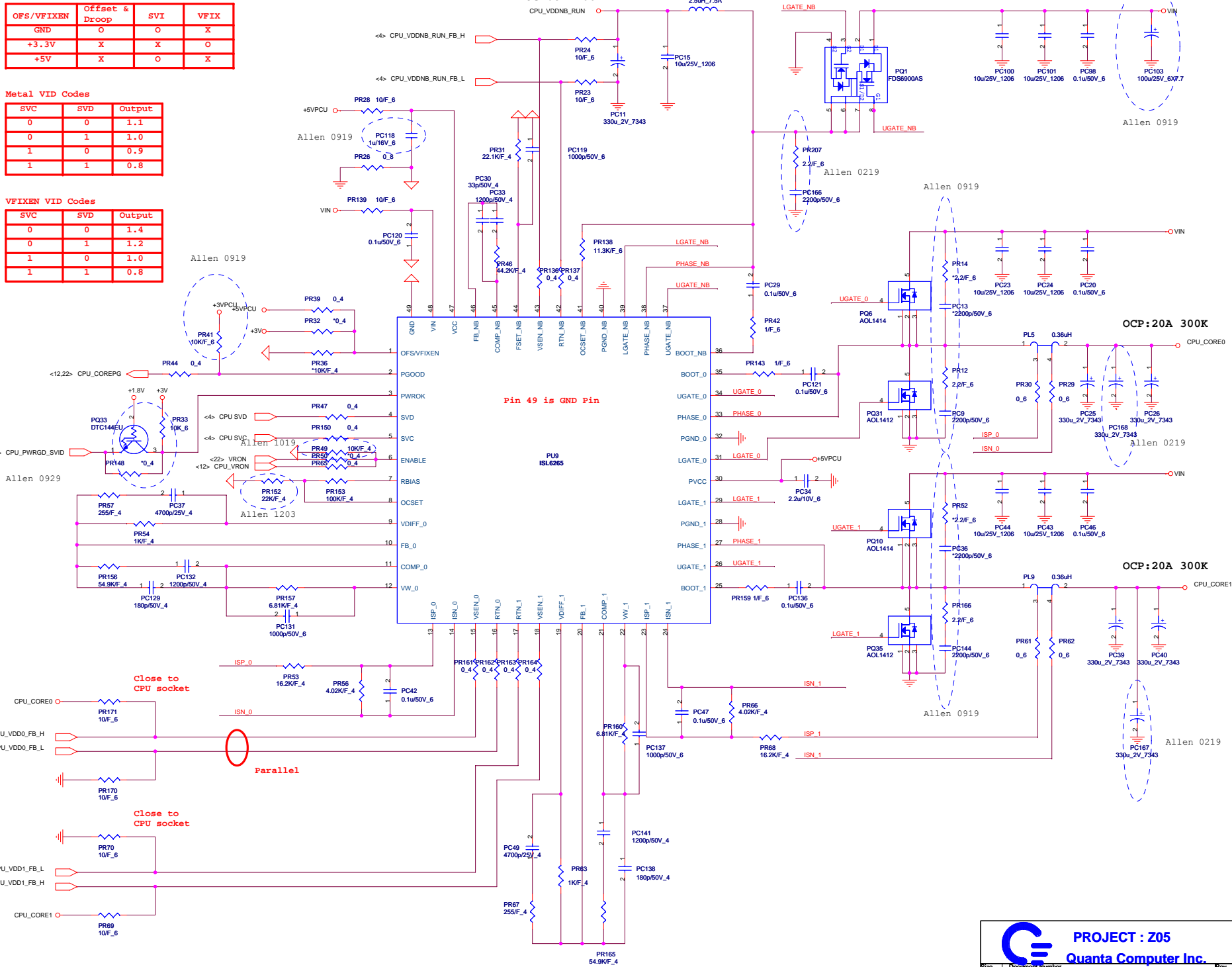
Metal VID Codes

SVC	SVD	Output
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

VFIXEN VID Codes

SVC	SVD	Output
0	0	1.4
0	1	1.2
1	0	1.0
1	1	0.8

OCP:3A 260K



Pin 49 is GND Pin

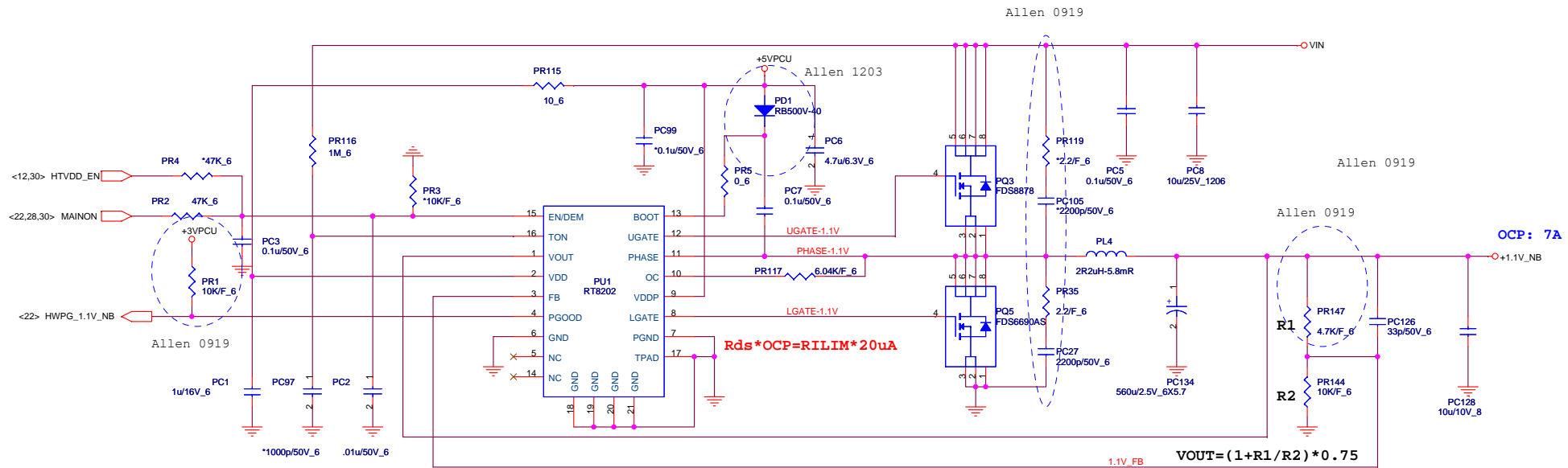
PU9 ISL6265

Parallel

Close to CPU socket

Close to CPU socket

PROJECT : Z05
Quanta Computer Inc.
 Document Number: **AMD Griffin (ISL6265)**
 Date: Friday, April 18, 2008
 Sheet 26 of 35



$$TON = 3.85p * RTON * Vout / (Vin - 0.5)$$

$$Frequency = Vout / (Vin * TON)$$

$$TON = 3.85p * 1M * 1 / (Vin - 0.5)$$

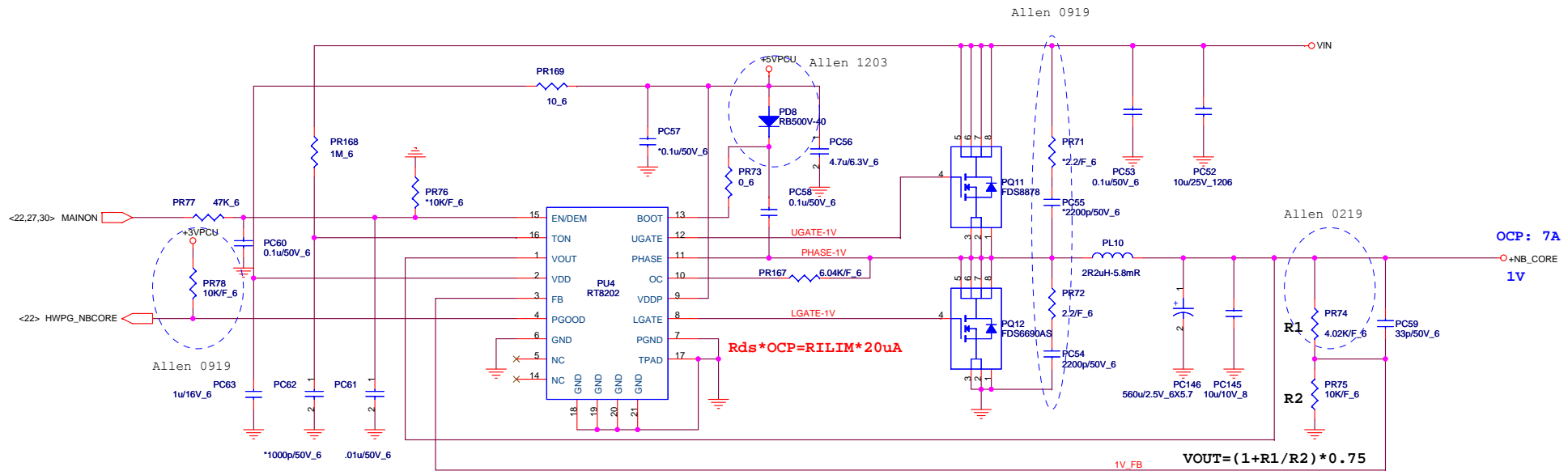
$$Frequency = 1 / (0.0036767) = 272K$$

FDS6690AS Rds=12~15mOhm
OCP=7~0.8A

L(ripple current)
= (19-1) * 1 / (2.2u * 272k * 19)
~1.58A

12m * 6 = RILIM * 20uA

RILIM = 3.6K (2.5~8K)



$TON = 3.85p * RTON * Vout / (Vin - 0.5)$
 $Frequency = Vout / (Vin * TON)$
 $TON = 3.85p * 1M * 1 / (Vin - 0.5)$
 $Frequency = 1 / (0.0036767) = 272K$

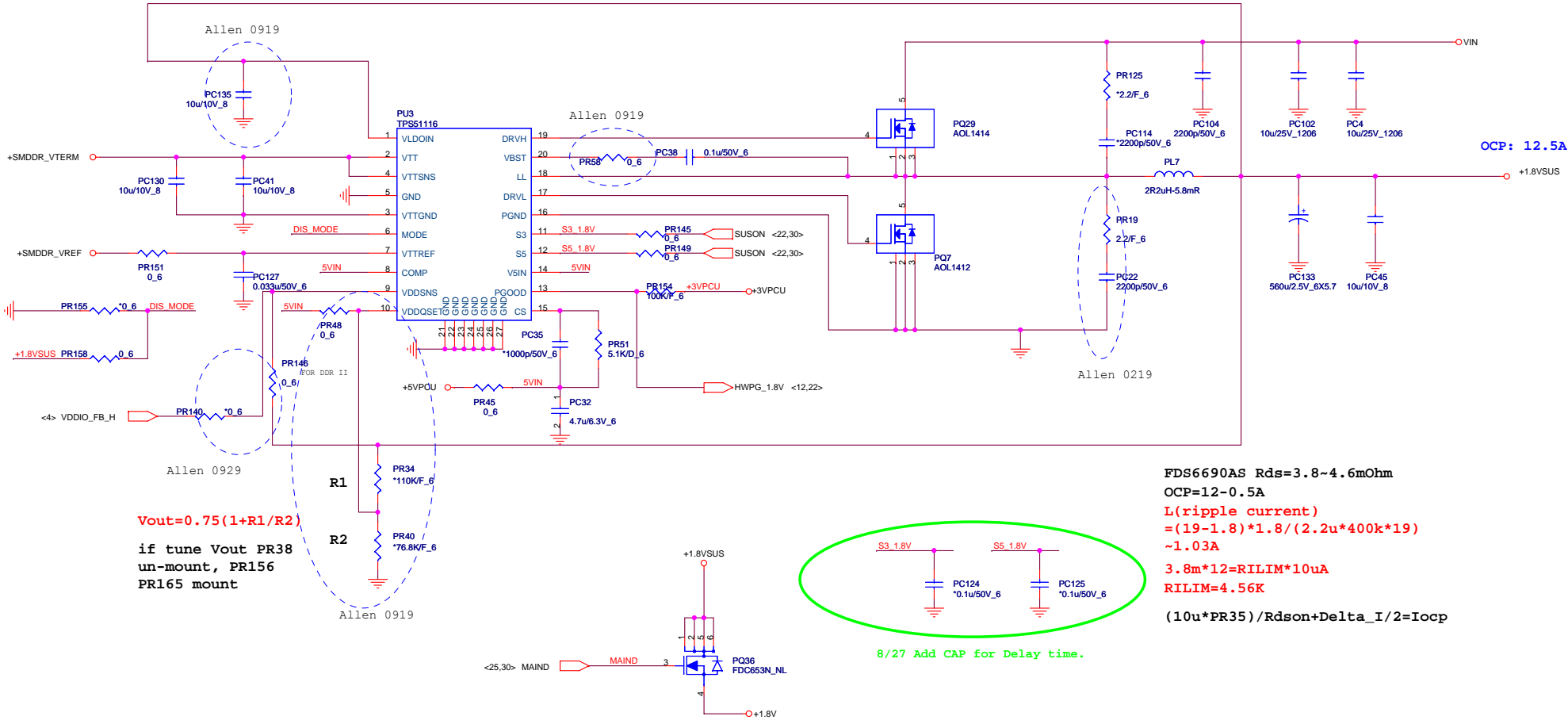
FDS6690AS $R_{ds} = 12-15m\Omega$
 $OCP = 7-0.8A$
 I (ripple current)
 $= (19-1) * 1 / (2.2u * 272k * 19)$
 $\sim 1.58A$
 $12m * 6 = RILIM * 20uA$
 $RILIM = 3.6K (2.5 \sim 8K)$

$V_{OUT} = (1 + R1 / R2) * 0.75$



PROJECT : Z05
Quanta Computer Inc.

Size	Document Number	Rev
	NB_VCC (RT8202)	1D
Date:	Friday, April 18, 2008	Sheet 28 of 35

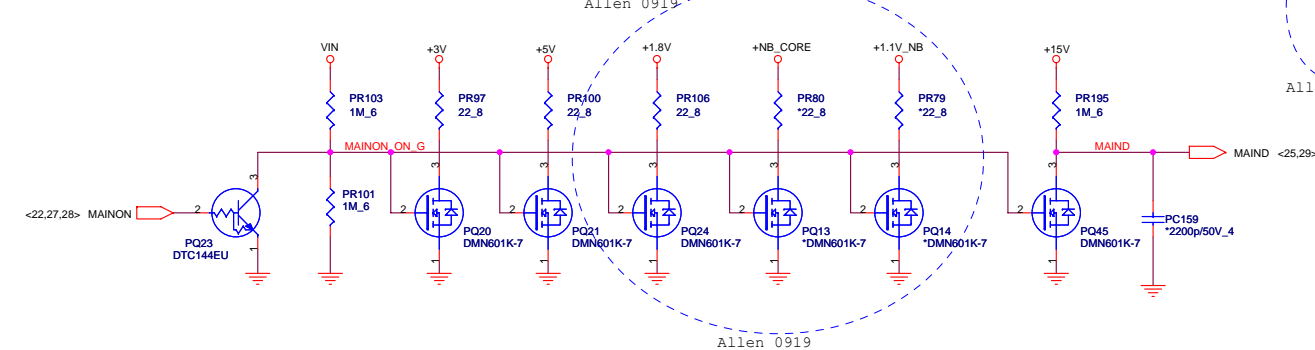
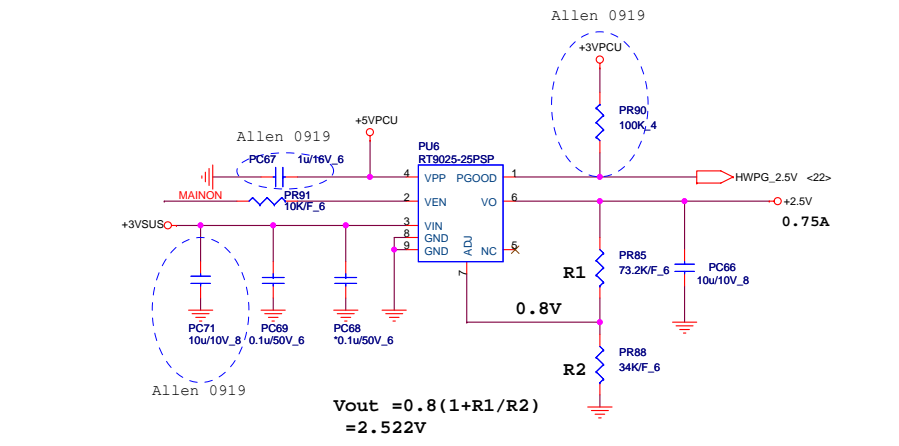
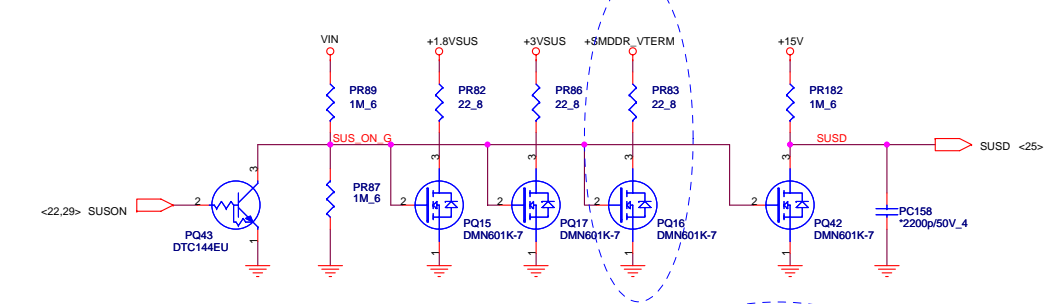
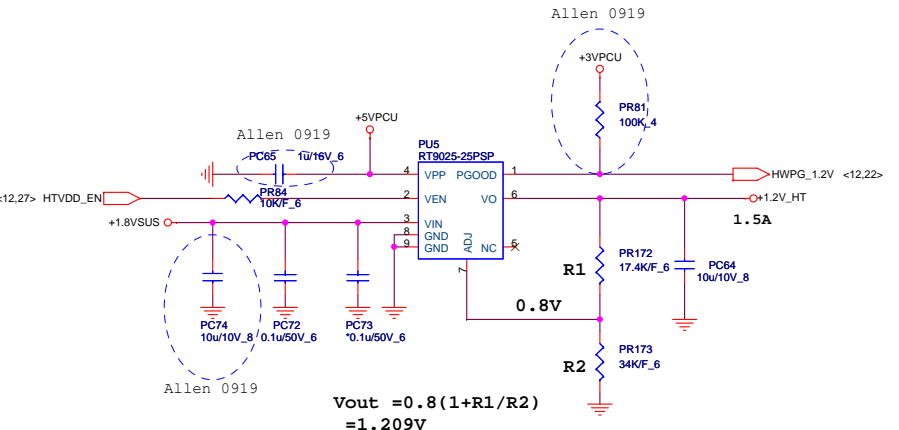
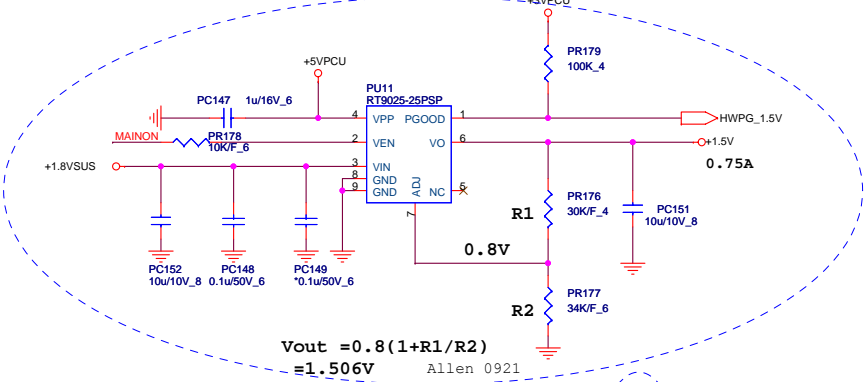
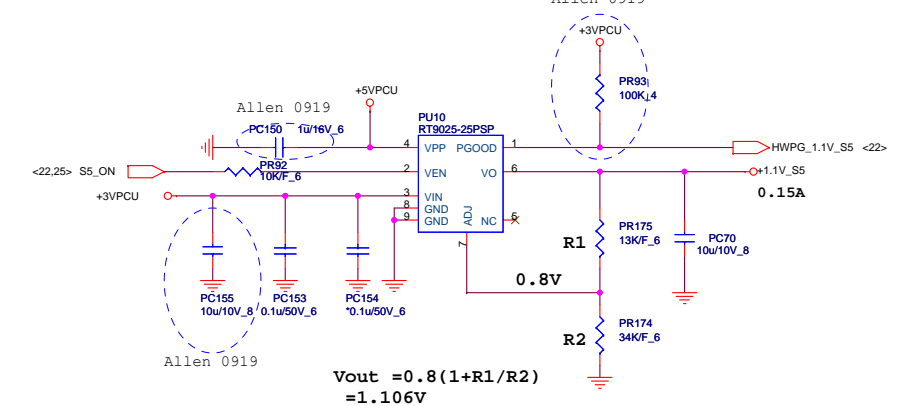
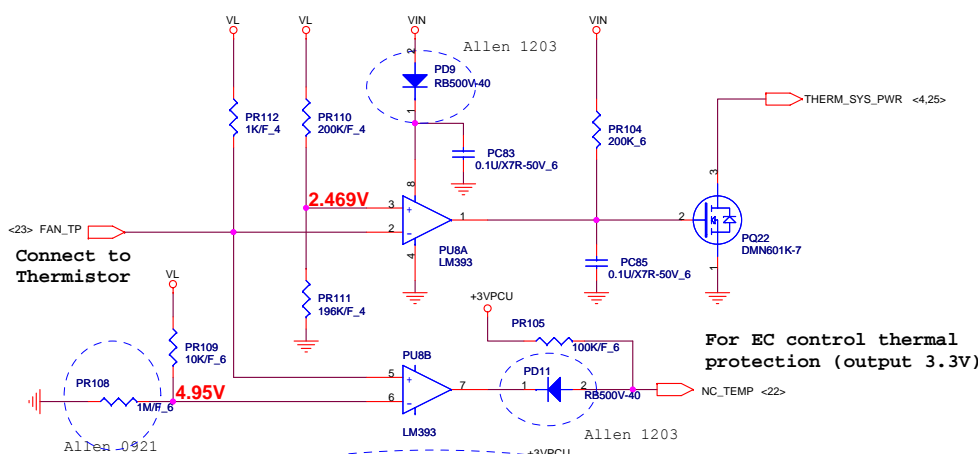


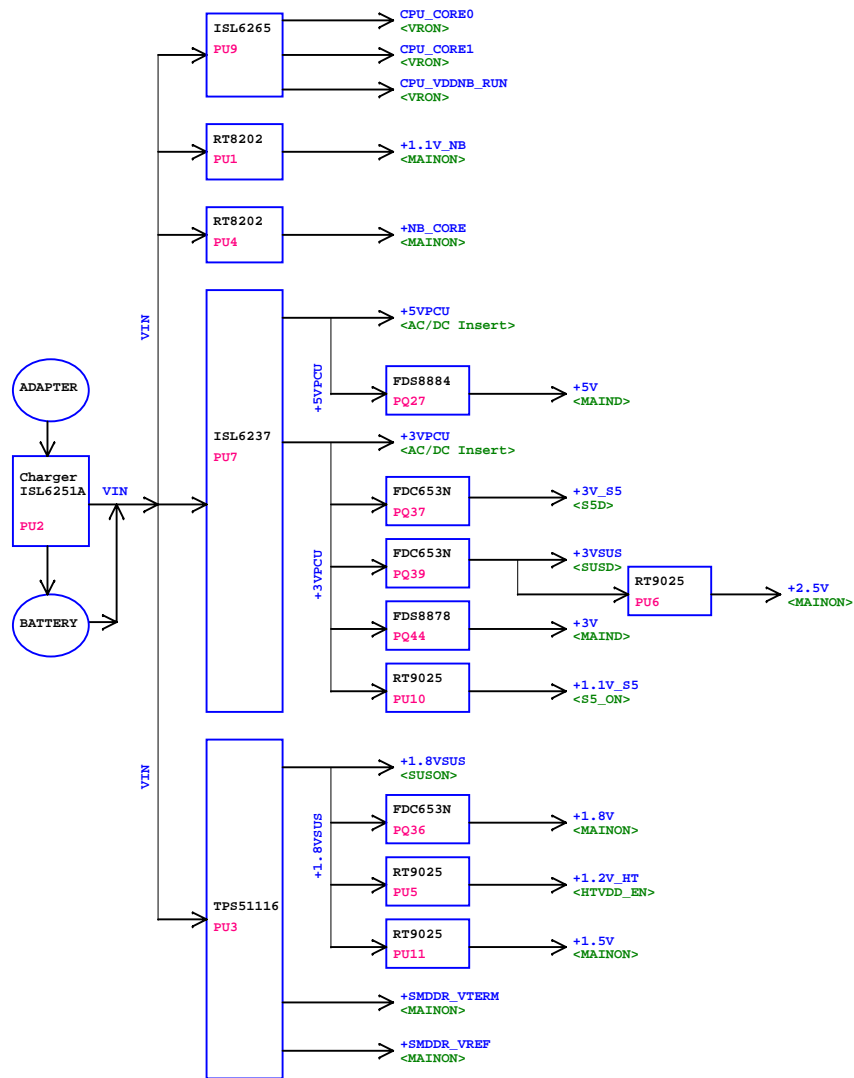
$V_{out} = 0.75(1 + R1/R2)$

if tune Vout PR38
un-mount, PR156
PR165 mount

FDS6690AS Rds=3.8~4.6mOhm
OCP=12-0.5A
L(ripple current)
=(19-1.8)*1.8/(2.2u*400k*19)
~1.03A
3.8m*12=RILIM*10uA
RILIM=4.56K
(10u*PR35)/Rdson+Delta_I/2=Iocp

8/27 Add CAP for Delay time.





1. +1.1V_S5MCP77M Power(+1.1V_DUAL)
2. +5VPCUPower IC VCC, USB PORT POWER(S3 control)
3. +5VAudio, FAN, Touch pad, SATA HDD, ODD, CRT
4. +3V_S5MCP77M, New Card, LAN Power
5. +3VPCUKBC WPCE755C, SPI ROM, LED, LID Switch, Fingerprint Module
6. +3VSUSBluetooth, Mini Card, MDC
7. +3VCPU Thermal Sense, MCP77M, System Memory, LCD Panel, PC Camera, Mini card, New Card, Audio, Codec, Card Reader, KBC WPCE775C, LED
8. +2.5VCPU VDDA
9. +3V_LANLAN Power(BCM5764M)
10. +1.2V_LANLAN Power(BCM5764M)
11. +2.5V_LANLAN Power(BCM5787M)
12. +1.5VMini Card, New Card
13. +1.8VSUSCPU VDD I/O, System Memory
14. SMDDR VTEMCPU Memory Interface , SYSTEM DDR DIMM Memory Termination
15. +1.8VMCP77M LCD Interface
16. +1.1V_NBMCP77M (HT Interface, PCI-E Interface, I/O Power, SATA Interface)
17. +NB_COREMCP77M Core Power
18. +1.2V_HTCPU HT Power
19. CPU_CORE0 CPU Power
20. CPU_CORE1 CPU Power
21. CPU_VDDNB_RUNCPU NB Power
- 22.