P67H2-A3

Rev : 1.0

ECS CONFIDENTIAL

TABLE OF CONTENTS

REVISION HISTORY:

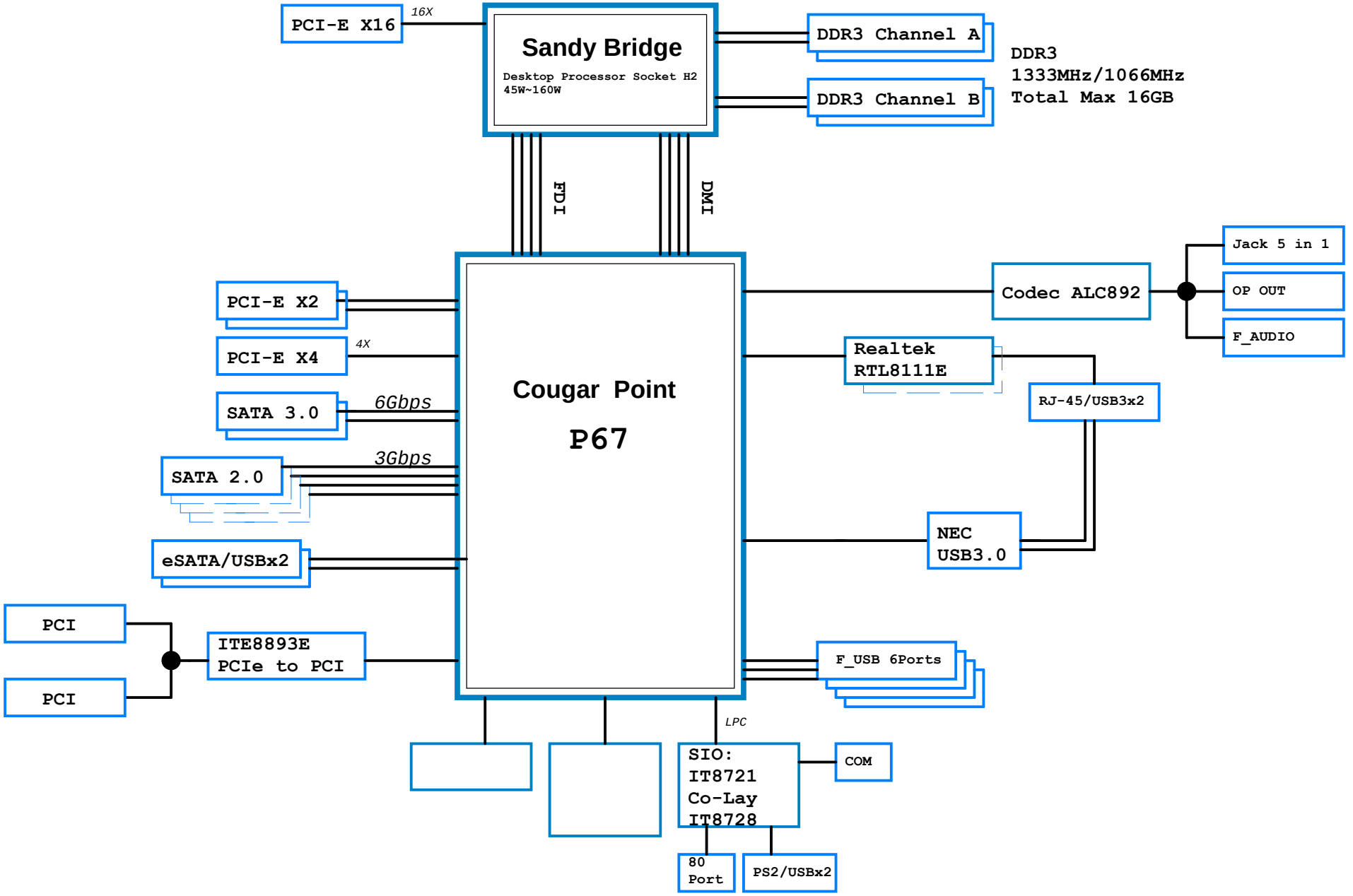
Rev	Date	Notes
V.A	2010/04/16	Initial version
V.B	2010/06/22	
V.1.0	2010/08/09	

NOTE:

Design by 428971_428971_Sugar_Bay_and_BromolowWS_PDG_Rev_0_8.pdf,
428880_428880_Cougar_Point_Desktop_Ballout_Mech_Package_Rev1p0.zip

Elitegroup Computer Systems

Title	Cover Page	
Size: Custom	Document Number: P67H2-A3	Rev: 1.0
Date: Monday, September 13, 2010	Sheet 1 of 37	



Elitegroup Computer Systems

Title	BLOCK DIAGRAM	
Size: Custom	Document Number: P67H2-A3	Rev: 1.0
Date: Monday, August 30, 2010	Sheet 2 of 37	

GPIO function

Pin Name	Power Well	Usage	Default Status
GPIO0	VCC3	FP_AUD_DETECT	GPI
GPIO1	VCC3	GP1_BOMDET2	GPI
GPIO6	VCC3	GP6_BOMDET3	GPI
GPIO7	VCC3	GP6_BOMDET4	GPI
GPIO9	3VSB	USB_OC_L5	Native
GPIO10	3VSB	USB_OC_L6	Native
GPIO11	3VSB	GP6_BOMDET4	Native
GPIO12	3VSB	GP6_BOMDET4	Native
GPIO13	3VSB	GP6_BOMDET4	GPI
GPIO14	3VSB	USB_OC_L7	Native
GPIO16	VCC3	Reserve for TPM	GPI
GPIO17	VCC3	GP17_BOMDET1	GPI
GPIO21	VCC3	GPIO21_COM2_DET	GPI
GPIO22	VCC3	CLR_CMOS_GP22	GPI
GPIO24	3VSB	PCH_SKTOCC_L	GPO
GPIO34	VCC3	GPIO34_TCM_PST_L	GPI
GPIO38	VCC3	GPIO38_TCM	GPI
GPIO39	VCC3	GPIO39_CASE0	GPI
GPIO40	3VSB	USB_OC_L1	Native
GPIO41	3VSB	USB_OC_L2	Native
GPIO42	3VSB	USB_OC_L3	Native
GPIO43	3VSB	USB_OC_L4	Native
GPIO48	VCC3	GPIO48_CASE1	GPI
GPIO49	VCC3	Reserve for TPM	GPI
GPIO59	3VSB	USB_OC_L0	Native
GPIO68	VCC3	GPIO68_USBDET1	GPI
GPIO69	VCC3	GPIO69_USBDET2	GPI
GPIO70	VCC3	GPIO70_USBDET3	Native
GPIO71	VCC3	Reserve for TPM	Native
GPIO72	3VSB	GPIO72_BOMDET5	Native

SIO-GPIO function

Pin Name	Power Well	Usage	Default Status
GP16		SIO_BEEP	
GP23		Power LED	
GP22		Power LED	
GP52		FAN_TAC2	
GP51		FAN_CTL2	
GP37		FAN_TAC3	
GP36		FAN_CTL3	
GP30		8723_ATXPWRGD	
GP26		COM	
GP27		COM	
GP24		COM	
GP25		COM	
GP21		COM	
GP20		COM	
GP17		COM	
GP12		SIO_PCIRST1_L	
GP11		SIO_PCIRST2_L	
GP14		PWRGD1	
GP62		KBRST_L	
GP44		SIO_PWRBTN_L	
GP54		LPC_PME_L	
GP43		FP_PWRBTN_L	
GP42		SIO_PSON_L	
GP17		COM	
GP56		MCLK	
GP57		MDATA	
GP60		KCLK	
GP61		KDATA	
GP10		SIO_PCIRST3_L	
GP55		RSMRST_R_L	

PCH Strap Pin

Pin Name	Usage	Default Status
SPKR	No Reboot	20K internal pull-down，No Reboot Mode with TCO Disabled:
INIT3_3V#	Reserved	20K internal pull-up，intend for Firmware Hub.
GNT[3]#/GPIO[55]	Disable Top-Block Swap	20K internal pull-up，“topblock swap” mode Disable
INTVRMEN	Enable Integrated 1.05V VRM	Need External Pull-up，Integrated 1.05V VRM Enable
GNT1# /GPIO51	Boot BIOS Strap bit [1] BBS[1]	20K internal pull-up，The default flash selection is the SPI flash.All
SATA1GP / GPIO19	Boot BIOS Strap bit[0] BBS[0]	20K internal pull-up，The default flash selection is the SPI flash.All
HDA_SDO	Flash Descriptor Security Override/ ME	Internal pull-down. The security measures defined in the Flash Descriptor will be in effect(default)
DF_TVS	Enable DMI termination voltage	This signal has a weak internal pull-down.
GPIO28	Eable On-Die PLL Voltage Regulator	The On-Die PLL voltage regulator is enabled
HDA_SYNC	On-Die PLL Voltage Regulator Voltage Select 1.8V	20K internal pull-down.On Die PLL VR is supplied by 1.5 V when sampled high, 1.8 V when sampled low.
GPIO15	Enable TLS Confidentiality	Intel Management Engine Crypto Transport Layer Security (TLS) cipher suite with no confidentiality.

Table 7-1. Power On Strapping Options

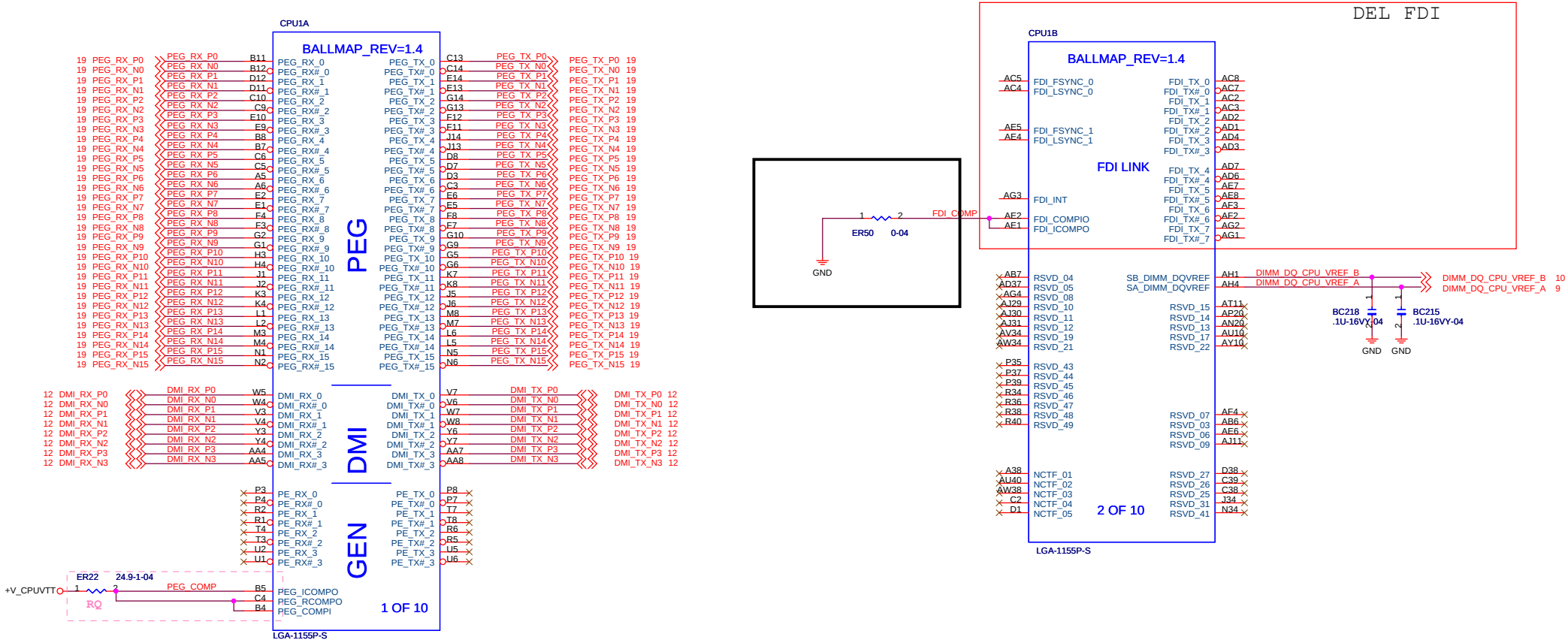
	Symbol	Strapping Event	Value	Description
JP2 Pin 122	Flashseg1_EN	Internal VCC-OK/ LRESET#	1	Disable
			0	Enable Flash I/F Address Segment FFF8_0000 ~ FFFF_FFFF & 000E_0000 ~ 000F_FFFF
JP4 Pin 126	K8PWR_EN	Internal VCC-OK	1	Disable K8 power sequence function
			0	Enable K8 power sequence function
[JP3,JP5] Pin 124 & Pin 46	FAN_CTL_SEL	Internal VCC-OK	11	The default value of EC Index 63h/6Bh/73h is 80h.
			10	The default value of EC Index 63h/6Bh/73h is FFh.
			01	The default value of EC Index 63h/6Bh/73h is 00h.
			00	The default value of EC Index 63h/6Bh/73h is 40h.

Elitegroup Computer Systems

Title: 30-GPIO Function Map

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Monday, August 30, 2010 | Sheet 3 of 37



Elitegroup Computer Systems

Title	CPU - DMI/FDI/PEG	
Size: Custom	Document Number: P67H2-A3	Rev: 1.0
Date: Tuesday, September 07, 2010	Sheet 4 of 37	

+V_1P8_SFR
from V_1P8_SFR
R104 2.2K-04
PROC_SEL
PROC_SEL
BC146 .1U-16VY-04
GND

DMI/FDI TERMINATION VOLTAGE
DC COUPLED: TX/RX TO VCC ISF SAMPLED HIGH
DC COUPLED: TX/RX TO VSS IF SAMPLED LOW
AC COUPLED: TX SET TO VCC/2, RX SET TO VSS REGARDLESS OF THIS STRAP

+V_CPUVTT
ER28 90.9-1-04-O
SVID_CK
ER35 110-1-04
SVID_DATAOUT
SVID_ALERT_L
ER37 75-1-04
Close to CPU

33 VR_SVID_CK
33 VR_SVID_DATAOUT
33 VR_SVID_ALERT_L
VR_SVID_CK
VR_SVID_DATAOUT
VR_SVID_ALERT_L

33 VR_HOT_L
14 CPU_PWROK
8 CPU_RST_L
14 DRAM_PWROK
VR_HOT_L
CPU_PWROK
CPU_RST_L
DRAM_PWROK R180 120-04
PROCHOT_L
CPU_PWROK_RC
CPU_RST_L_RC
DRAM_PWROK_RC
BC184 .1U-16VY-04-O
BC165 .1U-16VY-04-O
BC203 .1U-16VY-04-O
GND GND GND

CPU1E
BALLMAP_REV=1.4

15 CK_CPU_100M_P
15 CK_CPU_100M_N
CK_CPU_100M_P W2
CK_CPU_100M_N W1
BCLK_0
BCLK#_0

SVID_CK C37
SVID_DATAOUT B37
SVID_ALERT_L A37
VIDSCLK
VIDSOUT
VIDALERT#
R136 44.2-1-04
VIDALERT_R_L

CPU_PWROK_RC J40
DRAM_PWROK_RC AJ19
CPU_RST_L_RC F36
UNCOREPWRGOOD
SM_DRAMPWROK
RESET#

13 PM_SYNC
29 PECI
PM_SYNC E38
PECI J35
CATERR_L F37
PROCHOT_L H34
CPU_THERMTRIP_L G35
PM_SYNC
PECI
CATERR#
PROCHOT#
THERMTRIP#

13 CPU_THERMTRIP_L

29,33 H_SKTOCC_L
16 PROC_SEL
H_SKTOCC_L AJ33
PROC_SEL K32
SKTOCC#
PROC_SEL

DIMM_VREF_CPU AJ22
SM_VREF

RN8 1K-8P4R-06-O
CFG_0 H36
CFG_1 J36
CFG_2 J37
CFG_3 K36
CFG_4 L36
CFG_5 N35
CFG_6 L37
CFG_7 M36
CFG_8 J38
CFG_9 L35
RN13 1K-8P4R-06-O
CFG_10 M38
CFG_11 N36
RN11 1K-8P4R-06-O
CFG_12 N38
CFG_13 N39
RN12 1K-8P4R-06-O
CFG_14 N37
CFG_15 N40
R134 1K-04-O
CFG_16 G37
R122 1K-04-O
CFG_17 G36
CFG_0
CFG_1
CFG_2
CFG_3
CFG_4
CFG_5
CFG_6
CFG_7
CFG_8
CFG_9
CFG_10
CFG_11
CFG_12
CFG_13
CFG_14
CFG_15
CFG_16
CFG_17

AT14
RSVD_016
AY3
RSVD_023
H7
H8
RSVD_028
RSVD_029

VCCP_SELECT P33
VCCSA_VID P34
VCCSA_SENSE T2
VTT_SEL
VCCSA_VID 8
VCCSA_SEN 8

VCC_SENSE A36
VSS_SENSE B36
VCC_SEN 33
VSS_SEN 33

VCCIO_SENSE AB4
VSSIO_SENSE AB3
VCCIO_SEN 32
VSSIO_SEN 32

VCCAXG_SENSE L32
VSSAXG_SENSE M32
VCCAXG_SEN
VSSAXG_SEN
STP15
STP16

TDO L39
TDI L40
TCK M40
TMS L38
TRST# J39
PRDY# K38
PREQ# K40
DBR# E39
H_TDO
H_TDI
H_TCK
H_TMS
H_TRST_L
H_PRDY_L
H_PREQ_L
TP8
STP14
STP13
TP7
TP4
STP12
STP11

RSVD_001 C40
RSVD_002 D40
XDP_H_CLK_DP
XDP_H_CLK_DN
STP2
STP1

BPM#_0 H40
BPM#_1 H38
BPM#_2 G38
BPM#_3 G40
BPM#_4 G39
BPM#_5 F38
BPM#_6 E40
BPM#_7 E40
STP5
STP8
STP7
STP6
STP4
STP9
STP3
STP10

RSVD_024 B39
RSVD_030 J33
RSVD_037 L34
RSVD_036 L33
RSVD_033 K34
RSVD_040 N33
RSVD_039 M34
RSVD_018 AV1
RSVD_020 AW2
RSVD_038 L9
RSVD_032 J9
RSVD_034 K9
RSVD_035 L31
RSVD_050 J31
RSVD_053 K31
RSVD_051 AD34
RSVD_052 AD35

5 OF 10
LGA-1155P-S

+VCC
R174 10K-04
VTT_SEL 32
R173 4.7K-04
GND

+3VSB
R126 220-04-O
FP_RST_L
FP_RST_L 14,15,31

+V_CPUVTT
RN10 51-8P4R-06
H_TRST_L
H_TMS
H_TDI
H_TCK
H_TDO
R161 51-04
GND

+V_CPUVTT
CPU_PWROK R147 51.1-04-O
PECI R114 1K-04-O
CATERR_L R121 1K-04-O
PROCHOT_L R106 51-04
CPU_THERMTRIP_L R111 51-04-O
CATERR_L, CPU_THERMTRIP_L Pull Up Resistor 2010 MoW05 Remove

+3VSB
R149 10K-04
R118 10K-04
SLP3_L
QN2 2N3904-S
GND
8,14,15,21,29 SLP3_L
R189 1K-04 QN1 2N3904-S
C48 2.2U-6VY-06-O
VR_EN
VR_EN 33
TO VRD FOR S0->S5
R182 100-04
VR_READY
VR_READY 14,15,33
FROM VRD
R190 1K-04 QN3 2N3904-S
R141 100-04-O
CPU_PWROK
CPU_PWROK 14
R135 1K-04
R144 1K-04-O QN6 2N3904-S-O

Power Down Sequencing Circuit

Pcpu
+V_1P5_SM
ER49 100-1-04
ER52 100-1-04
DIMM_VREF_CPU
BC209 .1U-16VY-04
GND
Place Pcpu in Socket Cavity.

PECI
R115 0-04-O
PECI_PCH
PECI_PCH 13

CFG	H	L	DESCRIPTION
0	reserved	reserved	reserved
1	reserved	reserved	reserved
2	NORMAL	REVERSE	PEGLANE REVERSAL[0], X16
3	reserved	reserved	reserved
4	reserved	reserved	reserved
5	*	*	PEOFGSEL[0]
6	*	*	PEOFGSEL[1]
7	reserved	reserved	reserved
8	reserved	reserved	reserved
9	reserved	reserved	reserved
10	reserved	reserved	reserved
11	reserved	reserved	reserved
12	reserved	reserved	reserved
13	reserved	reserved	reserved
14	reserved	reserved	reserved
15	reserved	reserved	reserved

CFG_[0..17] HAVE INTERNAL PULL-UPS

PCIE CONFIG	SEL0	SEL1
1 X 16	1	1
2 X 8	0	1

*

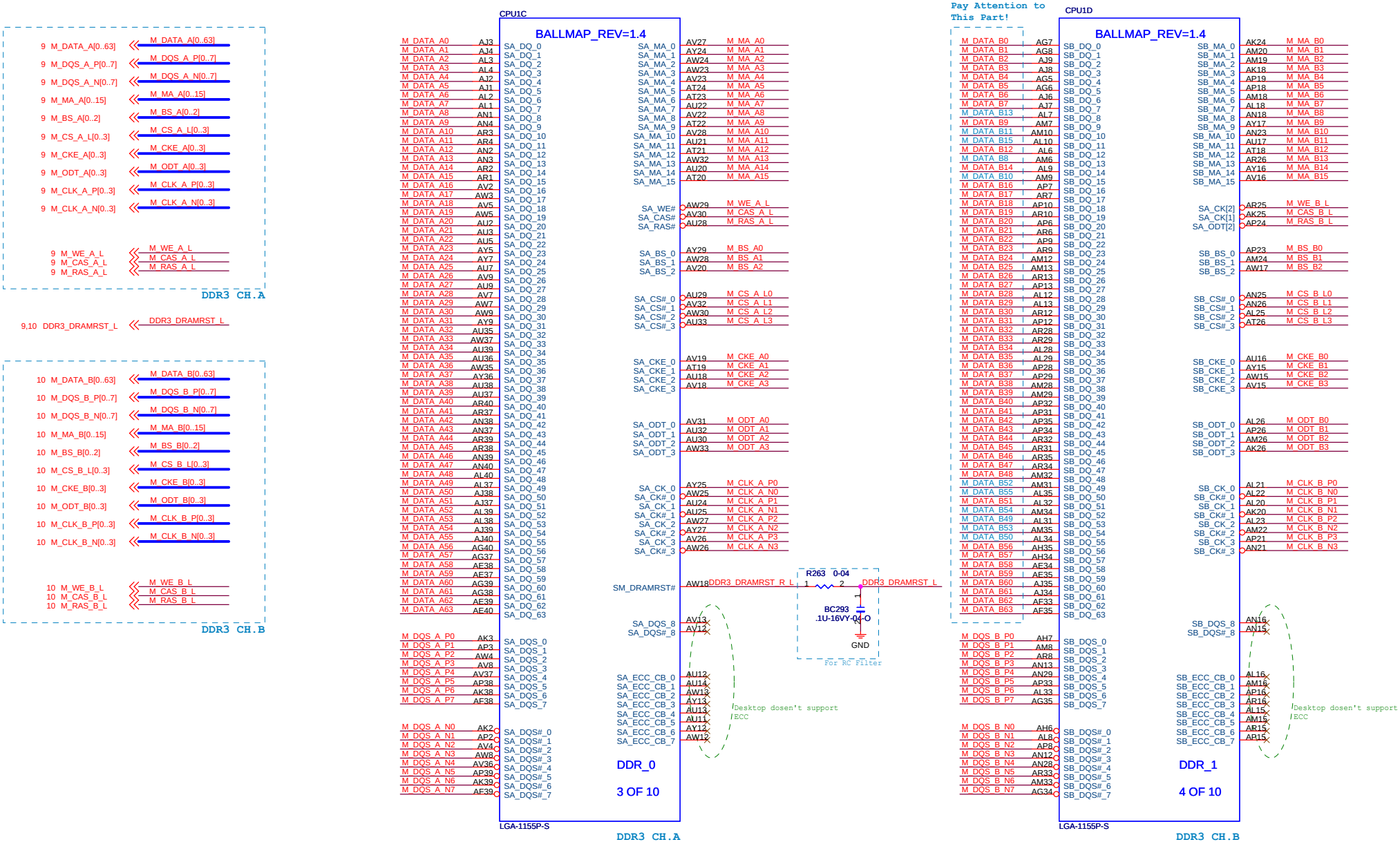
CFG[5:6]:
11=DEFAULT X16,
01=2X8,
10=RESERVED,
00=X8,X4,X4

Elitegroup Computer Systems

Title: CPU - MISC

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Thursday, September 16, 2010 | Sheet 5 of 37

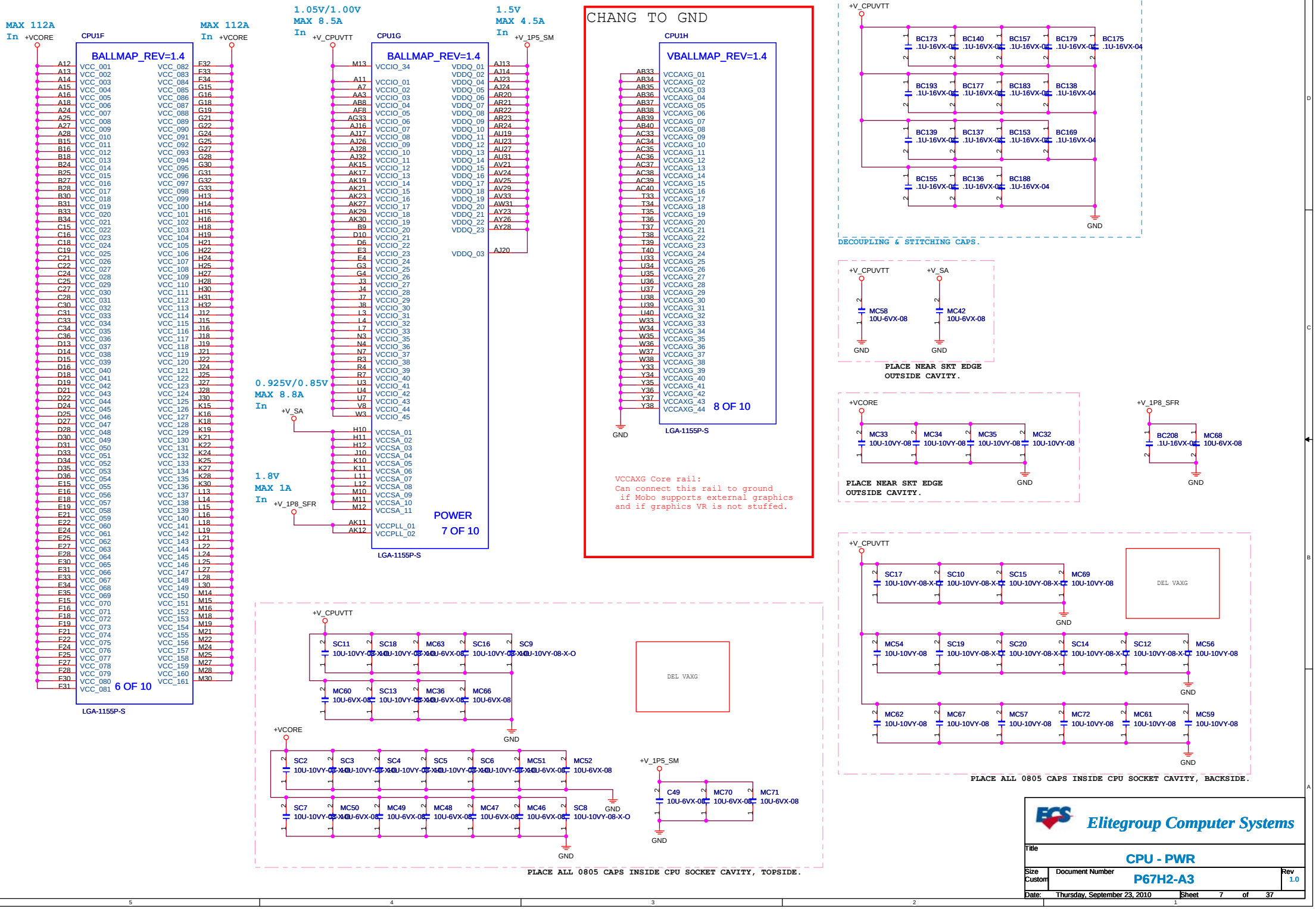


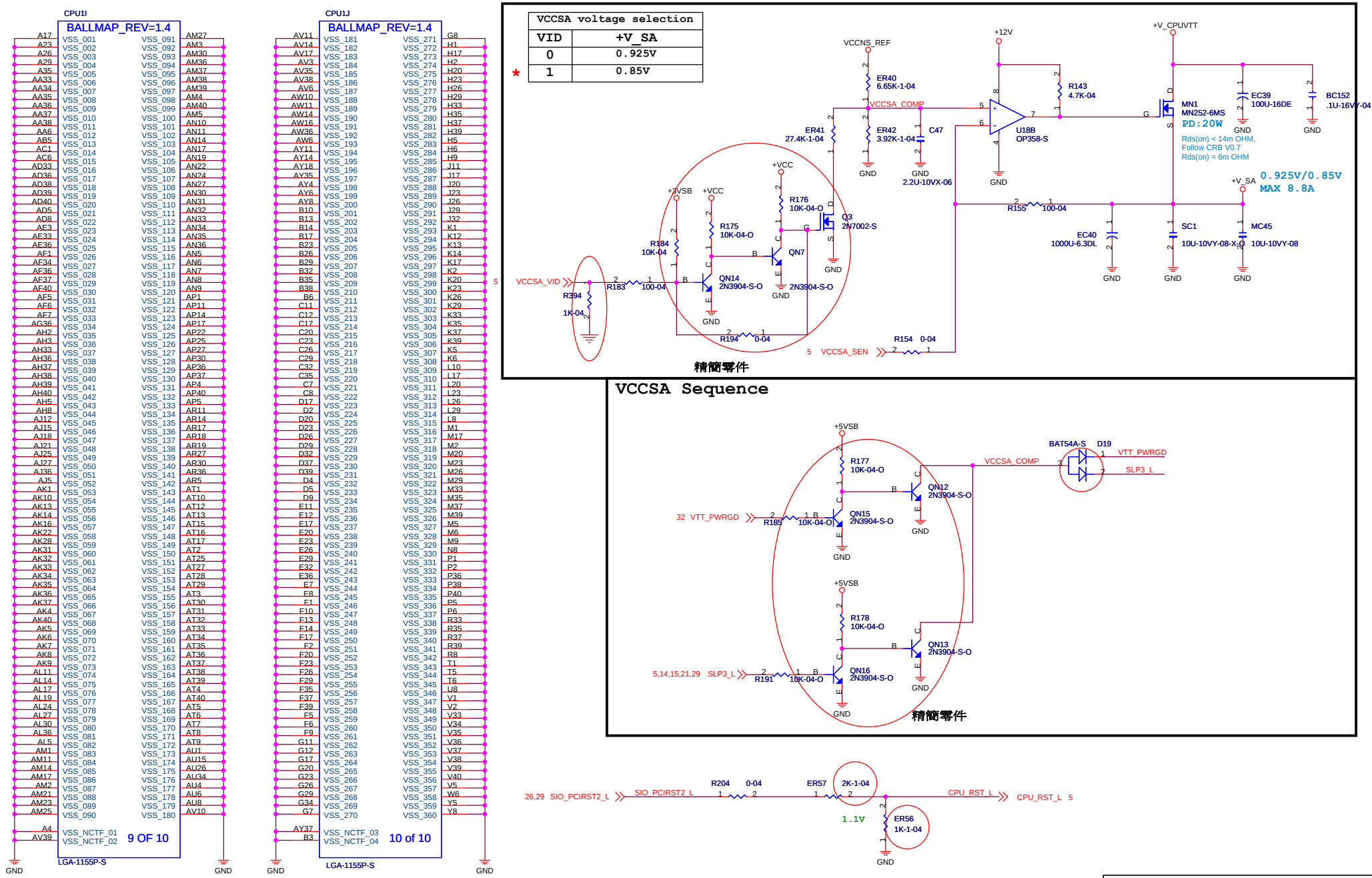
Elitegroup Computer Systems

Title: CPU - DDR3

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Tuesday, September 07, 2010 | Sheet 6 of 37


MAX 112A
In +VCORE
CPU1F
BALLMAP_REV=1.4
6 OF 10
LGA-1155P-S
MAX 112A
In +VCORE
1.05V/1.00V
MAX 8.5A
In +V_CPUVTT
CPU1G
BALLMAP_REV=1.4
0.925V/0.85V
MAX 8.8A
In +V_SA
1.8V
MAX 1A
In +V_1P8_SFR
1.5V
MAX 4.5A
In +V_1P5_SM
POWER
7 OF 10
LGA-1155P-S
CHANG TO GND
CPU1H
VBALLMAP_REV=1.4
8 OF 10
LGA-1155P-S
VCCAXG Core rail:
Can connect this rail to ground
if Mobo supports external graphics
and if graphics VR is not stuffed.
+V_CPUVTT
BC173 .1U-16VX-04
BC140 .1U-16VX-04
BC157 .1U-16VX-04
BC179 .1U-16VX-04
BC175 .1U-16VX-04
BC193 .1U-16VX-04
BC177 .1U-16VX-04
BC183 .1U-16VX-04
BC138 .1U-16VX-04
BC139 .1U-16VX-04
BC137 .1U-16VX-04
BC153 .1U-16VX-04
BC169 .1U-16VX-04
BC155 .1U-16VX-04
BC136 .1U-16VX-04
BC188 .1U-16VX-04
GND
DECOUPLING & STITCHING CAPS.
+V_CPUVTT
+V_SA
MC58 10U-6VX-08
MC42 10U-6VX-08
GND
PLACE NEAR SKT EDGE
OUTSIDE CAVITY.
+VCORE
MC33 10U-10VY-08
MC34 10U-10VY-08
MC35 10U-10VY-08
MC32 10U-10VY-08
GND
PLACE NEAR SKT EDGE
OUTSIDE CAVITY.
+V_1P8_SFR
BC208 .1U-16VX-04
MC68 10U-6VX-08
GND
+V_CPUVTT
SC11 10U-10VY-08-X-O
SC18 10U-10VY-08-X-O
MC63 10U-6VX-08
SC16 10U-10VY-08-X-O
SC9 10U-10VY-08-X-O
MC60 10U-6VX-08
SC13 10U-10VY-08-X-O
MC36 10U-6VX-08
MC66 10U-6VX-08
GND
DEL VAXG
+VCORE
SC2 10U-10VY-08-X-O
SC3 10U-10VY-08-X-O
SC4 10U-10VY-08-X-O
SC5 10U-10VY-08-X-O
SC6 10U-10VY-08-X-O
MC51 10U-6VX-08
MC52 10U-6VX-08
SC7 10U-10VY-08-X-O
MC50 10U-6VX-08
MC49 10U-6VX-08
MC48 10U-6VX-08
MC47 10U-6VX-08
MC46 10U-6VX-08
SC8 10U-10VY-08-X-O
GND
+V_1P5_SM
C49 10U-6VX-08
MC70 10U-6VX-08
MC71 10U-6VX-08
GND
PLACE ALL 0805 CAPS INSIDE CPU SOCKET CAVITY, TOPSIDE.
+V_CPUVTT
SC17 10U-10VY-08-X-O
SC10 10U-10VY-08-X-O
SC15 10U-10VY-08-X-O
MC69 10U-10VY-08
GND
DEL VAXG
MC54 10U-10VY-08
SC19 10U-10VY-08-X-O
SC20 10U-10VY-08-X-O
SC14 10U-10VY-08-X-O
SC12 10U-10VY-08-X-O
MC56 10U-10VY-08
GND
MC62 10U-10VY-08
MC67 10U-10VY-08
MC57 10U-10VY-08
MC72 10U-10VY-08
MC61 10U-10VY-08
MC59 10U-10VY-08
GND
PLACE ALL 0805 CAPS INSIDE CPU SOCKET CAVITY, BACKSIDE.
Elitegroup Computer Systems
Title
CPU - PWR
Size Custom
Document Number
P67H2-A3
Rev 1.0
Date: Thursday, September 23, 2010
Sheet 7 of 37


CPU1I
BALLMAP_REV=1.4
9 OF 10
LGA-1155P-S
CPU1J
BALLMAP_REV=1.4
10 of 10
LGA-1155P-S
VCCSA voltage selection
VID
+V_SA
0
0.925V
1
0.85V
VCCSA_VID
VCCSA_SEN
VCCSA_COMP
VCCNS_REF
+12V
+V_CPUVTT
+V_SA
0.925V/0.85V
MAX 8.8A
PD:20W
Rds(on) < 14m OHM,
Follow CRB V0.7
Rds(on) = 6m OHM
精簡零件
VCCSA Sequence
+5VSB
+3VSB
+VCC
VTT_PWRGD
SLP3_L
SIO_PCIRST2_L
CPU_RST_L
1.1V
Elitegroup Computer Systems
CPU - GND, CPU_RST_L
P67H2-A3
Thursday, September 23, 2010

CHANNEL A DIMMs

The processor memory controller does not have any DDR3 Data Mask (DM) signals for either channel. As a result the DM[8:0] pins of each DDR3 DIMM connector must be tied directly to ground.

Desktop dosen't support ECC

CH.A	SA1	SA0
DIMM0	L	L
DIMM1	L	H

0.75V
MAX 1A

1.5V
MAX 15A
S3 1.0A

精簡零件

Title	DDR3 - CH_A_DIMM1/2
Size: Custom	Document Number: P67H2-A3
Rev	1.0
Date: Thursday, September 16, 2010	Sheet 9 of 37

Elitegroup Computer Systems

CHANNEL B DIMMs

The processor memory controller does not have any DDR3 Data Mask (DM) signals for either channel. As a result the DM[8:0] pins of each DDR3 DIMM connector must be tied directly to ground.

Desktop dosen't support ECC

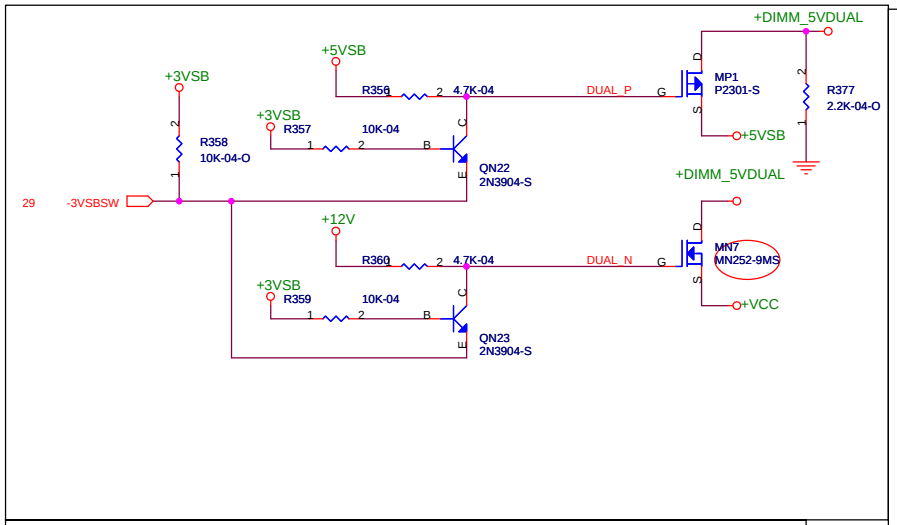
CH.B	SA1	SA0
DIMM0	H	L
DIMM1	H	H

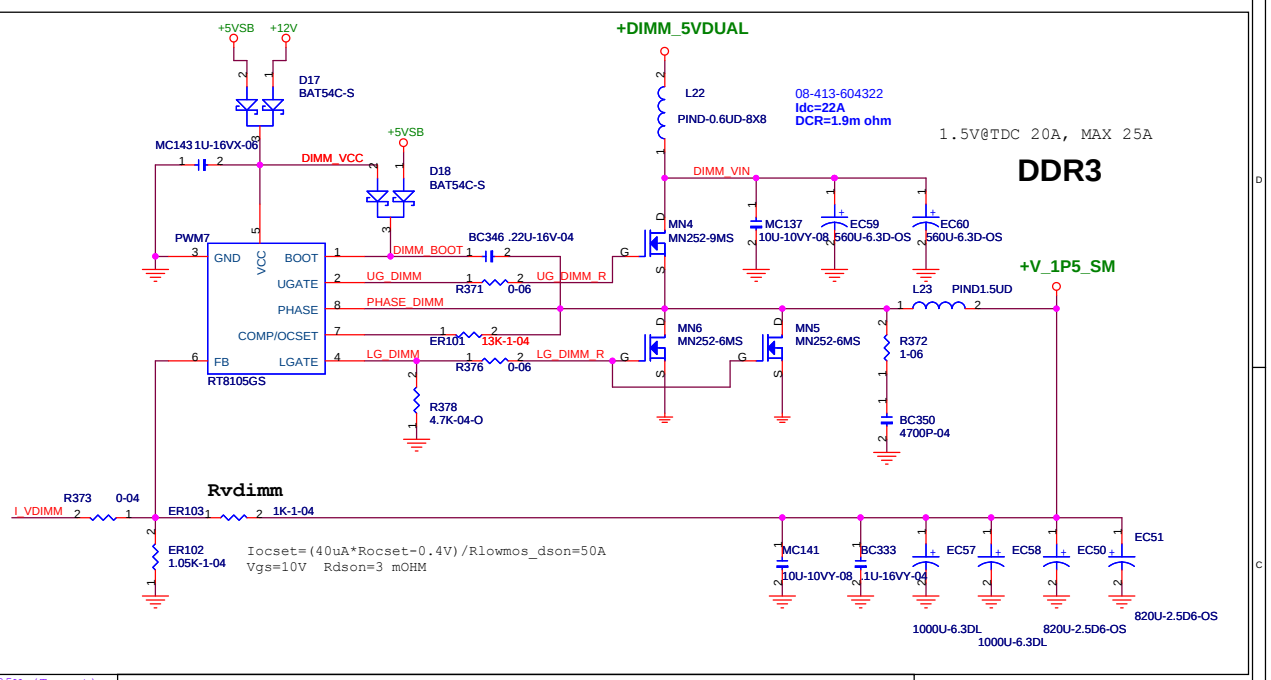
0.75V
MAX 1A

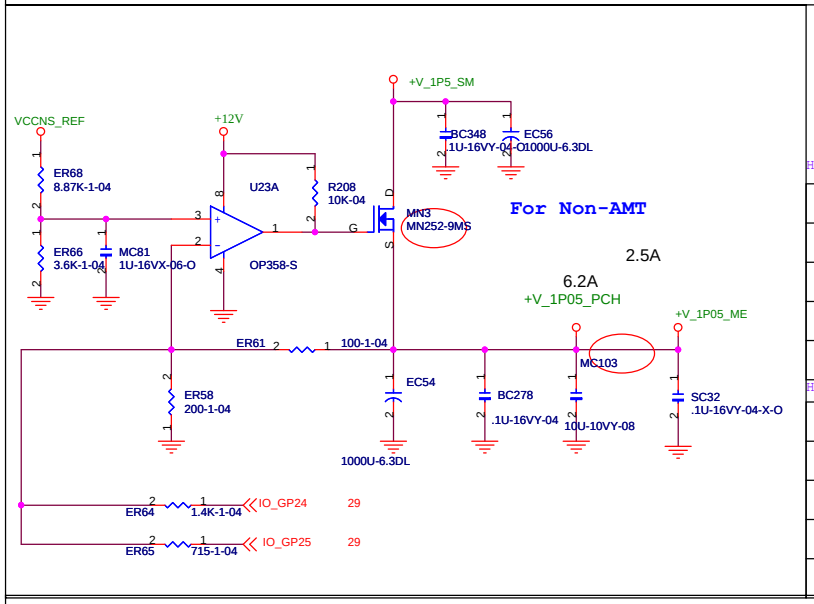
1.5V
MAX 15A
S3 1.0A

Title	DDR3 - CH_B_DIMM3/4
Size: Custom	Document Number: P67H2-A3
Rev	1.0
Date:	Tuesday, September 14, 2010
Sheet	10 of 37

Elitegroup Computer Systems





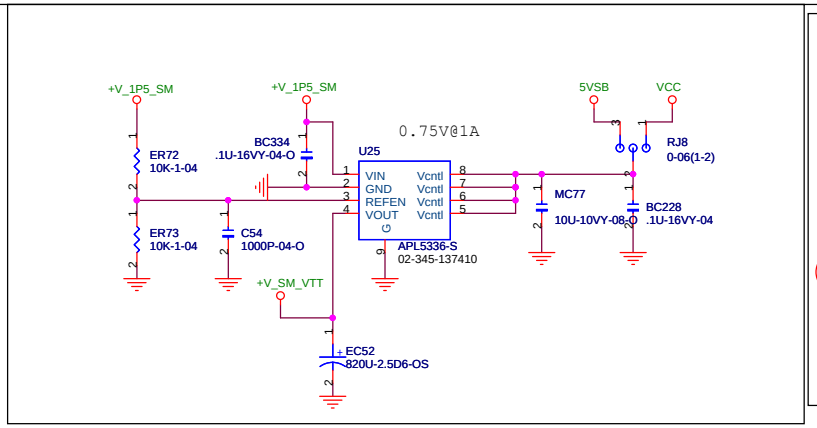


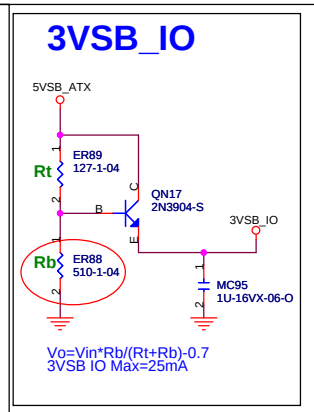
H/W Monitor :1.05V (Traget)

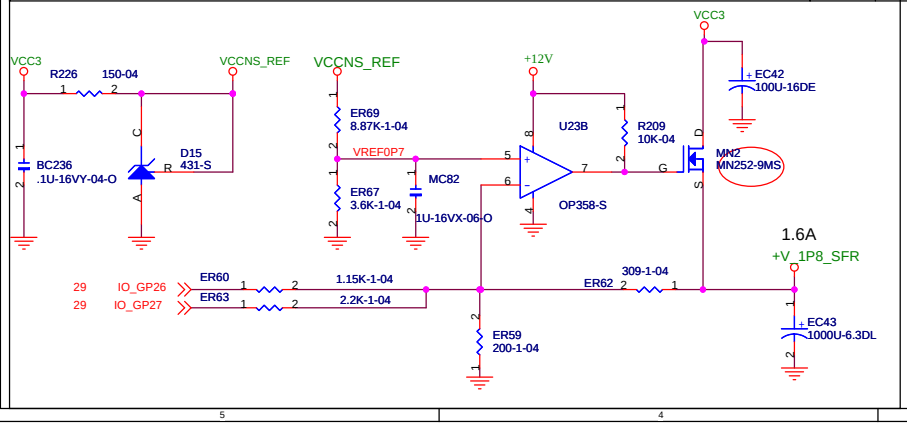
GP24	GP25	PCH
1	1	1.08V
0	1	1.13V
1	0	1.18V
0	0	1.23V

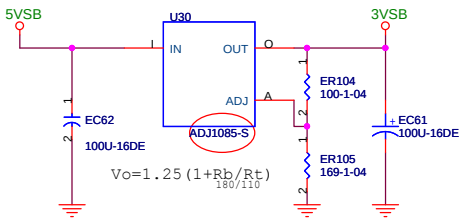
H/W Monitor :1.8V (Traget)

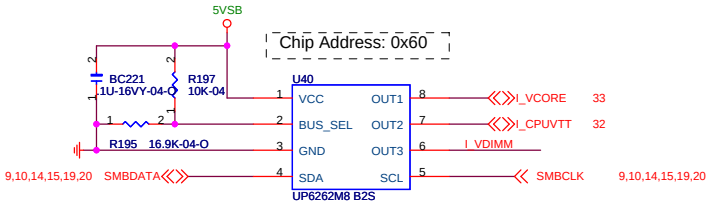
GP26	GP27	PLL
1	1	1.83V
0	1	1.93V
1	0	2.02V
0	0	2.13V









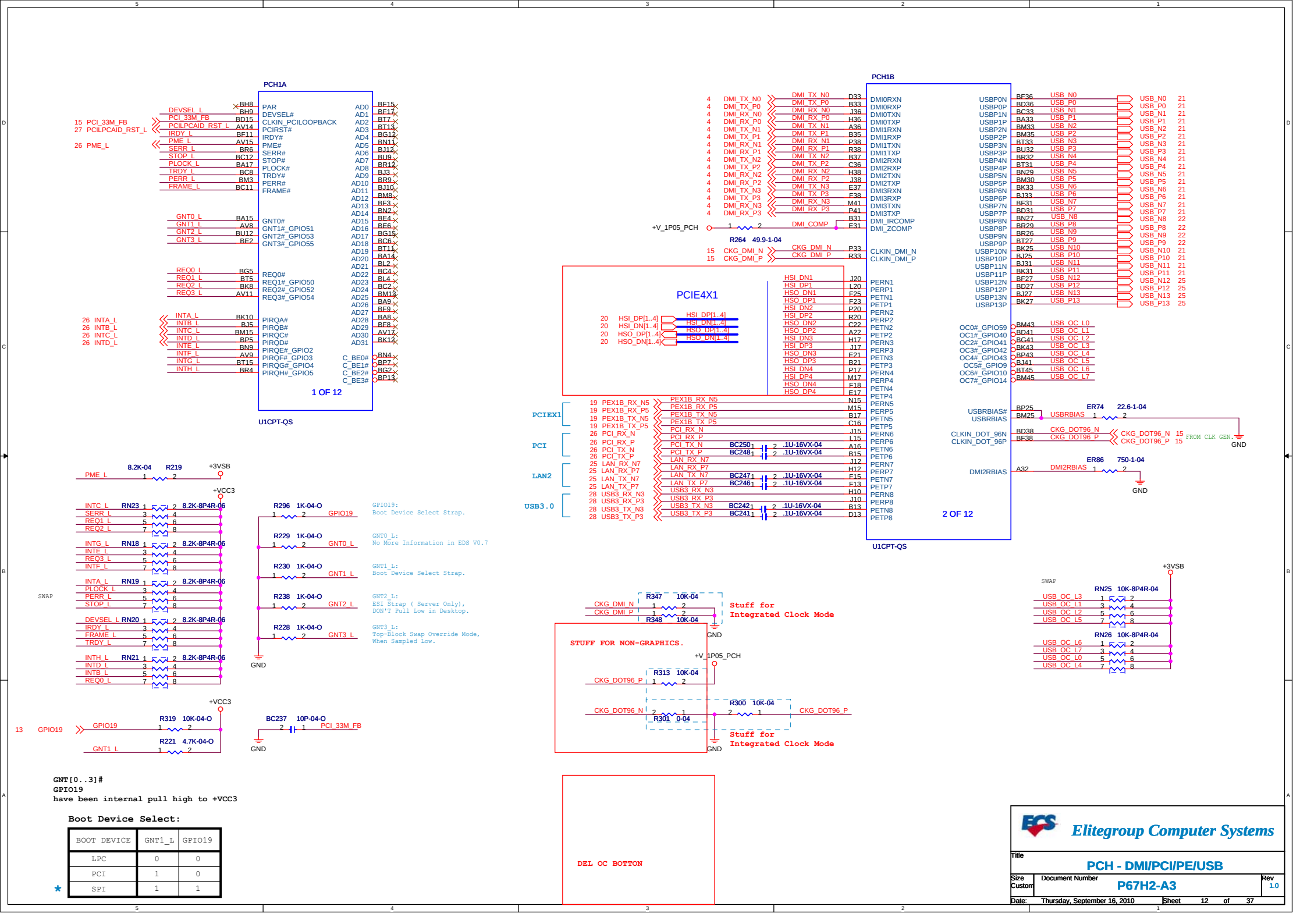


Elitegroup Computer Systems

Title: DC/DC VDIMM/DDR_VTT/5VDUAL

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Sunday, September 19, 2010 | Sheet 11 of 37


PCH1A
PCH1B
PCIE4X1
1 OF 12
2 OF 12
U1CPT-QS
SWAP
Boot Device Select:
GNT[0..3]#
GPIO19
have been internal pull high to +VCC3
DEL OC BOTTON
STUFF FOR NON-GRAPHICS.
Stuff for Integrated Clock Mode
Elitegroup Computer Systems
PCH - DMI/PCI/PE/USB
P67H2-A3
Thursday, September 16, 2010

MOBILE ONLY,
NOT FOR DESKTOP.

ONLY SATA PORT0 & PORT1 SUPPORT SATA3.0,
ALSO SUPPORT SATA2.0, SATA1.0.

PCH1C

STP30 1 PCH_CL_CLK1 BA50
STP34 1 PCH_CL_DATA1 BE50
STP31 1 PCH_CL_RST1_L BF49
14 PCH_MEPWROK_R PCH_MEPWROK_R BC46
BN21 PWM0
BT21 PWM1
BM20 PWM2
BN19 PWM3
GP17_BOMDET1 BT17
GP1_BOMDET2 BR19
GP6_BOMDET3 BA22
GP7_BOMDET4 BR16
GPIO68_USBDET1 BU16
GPIO69_USBDET2 BM18
GPIO70_USBDET3 BN17
29 THERMAL ALERT THERMAL_ALERT BP15
29 SST_CTL SST_CTL BC43
GP22 BA53
GPIO38_KMDET BE54
GPIO39_CASE0 BE55
GPIO48_CASE1 AW53
AY20 NC_1

CL_CLK1
CL_DATA1
CL_RST1#
APWROK
PWM0
PWM1
PWM2
PWM3
TACH0_GPIO17
TACH1_GPIO1
TACH2_GPIO6
TACH3_GPIO7
TACH4_GPIO68
TACH5_GPIO69
TACH6_GPIO70
TACH7_GPIO71
SST
SCLOCK_GPIO22
SLOAD_GPIO38
SDATAOUT0_GPIO39
SDATAOUT1_GPIO48
NC_1

SATA0RXN AC56 SATA_RX_N0
SATA0RXP AB55 SATA_RX_P0
SATA0TXN AE46 SATA_TX_N0
SATA0TXP AE44 SATA_TX_P0
SATA1RXN AA53 SATA_RX_N1
SATA1RXP AA56 SATA_RX_P1
SATA1TXN AG49 SATA_TX_N1
SATA1TXP AG47 SATA_TX_P1
SATA2RXN AL50 SATA_RX_N2
SATA2RXP AL49 SATA_RX_P2
SATA2TXN AL56 SATA_TX_N2
SATA2TXP AL53 SATA_TX_P2
SATA3RXN AN46 SATA_RX_N3
SATA3RXP AN44 SATA_RX_P3
SATA3TXN AN56 SATA_TX_N3
SATA3TXP AM55 SATA_TX_P3
SATA4RXN AN49 SATA_RX_N4
SATA4RXP AN50 SATA_RX_P4
SATA4TXN AT50 SATA_TX_N4
SATA4TXP AT49 SATA_TX_P4
SATA5RXN AT46 SATA_RX_N5
SATA5RXP AT44 SATA_RX_P5
SATA5TXN AV50 SATA_TX_N5
SATA5TXP AV49 SATA_TX_P5

CLKIN_SATA_N AF55 CKG_SATA_N → CKG_SATA_N 15
CLKIN_SATA_P AG56 CKG_SATA_P → CKG_SATA_P 15
SATALED# BF57 SATALED_L → SATALED_L 31
SATAICOMPI AJ55
SATAICOMPO AJ53 SATA1RCOMP — 1 2 ER91 37.4-1-04 — +V_1P05_PCH

SATA0GP_GPIO21 BC54 GPIO21_COM2_DET
SATA1GP_GPIO19 AY52 GPIO19 → GPIO19 12
SATA2GP_GPIO36 BB55 GPIO36_TCM_PST_L
SATA3GP_GPIO37 BG53 GPIO37_TCM
SATA4GP_GPIO16 AU56 GPIO16
SATA5GP_GPIO49 BA56 GPIO49

SATA3COMPI AE54
SATA3RCOMPO AE52 SATA3RCOMP — 1 2 R299 49.9-1-04 — +V_1P05_PCH
TP16 AE50 PCH_TP16 — 1 STP29
SATA3RBIAS AC52 SATA3RBIAS — 1 2 ER92 750-1-04 — GND

A20GATE BB57 A20GATE → A20GATE 29
INIT3_3V# BN56 INIT3_3V_L
RCIN# BG56 KBRST_L → KBRST_L 29
SERIRQ AV52 SER_IRQ → SER_IRQ 29
THRMTRIP# E56 CPU_THERMTRIP_L → CPU_THERMTRIP_L 5
PECI H48 PECI_PCH → PECI_PCH 5
PMSYNCH F55 PM_SYNC → PM_SYNC 5

3 OF 12

U1CPT-QS

Default GPI set to Pull Up:

GPIO36_TCM_PST_L, GPIO37_TCM:
TCM Header In Eanble TCM,
Disable TPM.

GPIO16, GPIO49:
Reserve for TPM.

Reserve for BOM Detect.

+VCC3
GP17_BOMDET1 R243 10K-04
GP1_BOMDET2 R247 10K-04
GP6_BOMDET3 R244 10K-04
GP7_BOMDET4 R240 10K-04

RN24 10K-8P4R-06
SWAP
GPIO70_USBDET3
GPIO69_USBDET2
GPIO68_USBDET1
THERMAL ALERT

RN33 10K-8P4R-06
A20GATE
GPIO21_COM2_DET
GPIO38_KMDET

RN30 10K-8P4R-06
GPIO16
SER_IRQ
GPIO48_CASE1
GPIO49

+VCC3
RN32 10K-8P4R-06
SATALED_L
GPIO39_CASE0
KBRST_L
GP22
R328 1K-04-O

Reserve for BOM Detect.
GP17_BOMDET1 R245 10K-04-O
GP1_BOMDET2 R248 10K-04-O
GP6_BOMDET3 R241 10K-04-O
GP7_BOMDET4 R242 10K-04-O
INIT3_3V_L R317 1K-04-O
GPIO37_TCM R308 10K-04-O
GPIO36_TCM_PST_L R327 10K-04-O
GND

R343 10K-04
CKG_SATA_N
CKG_SATA_P
R337 10K-04
GND

Stuff for
Integrated Clock Mode

SATA2
SATA1
SATA3
SATA4
SATA5
SATA6

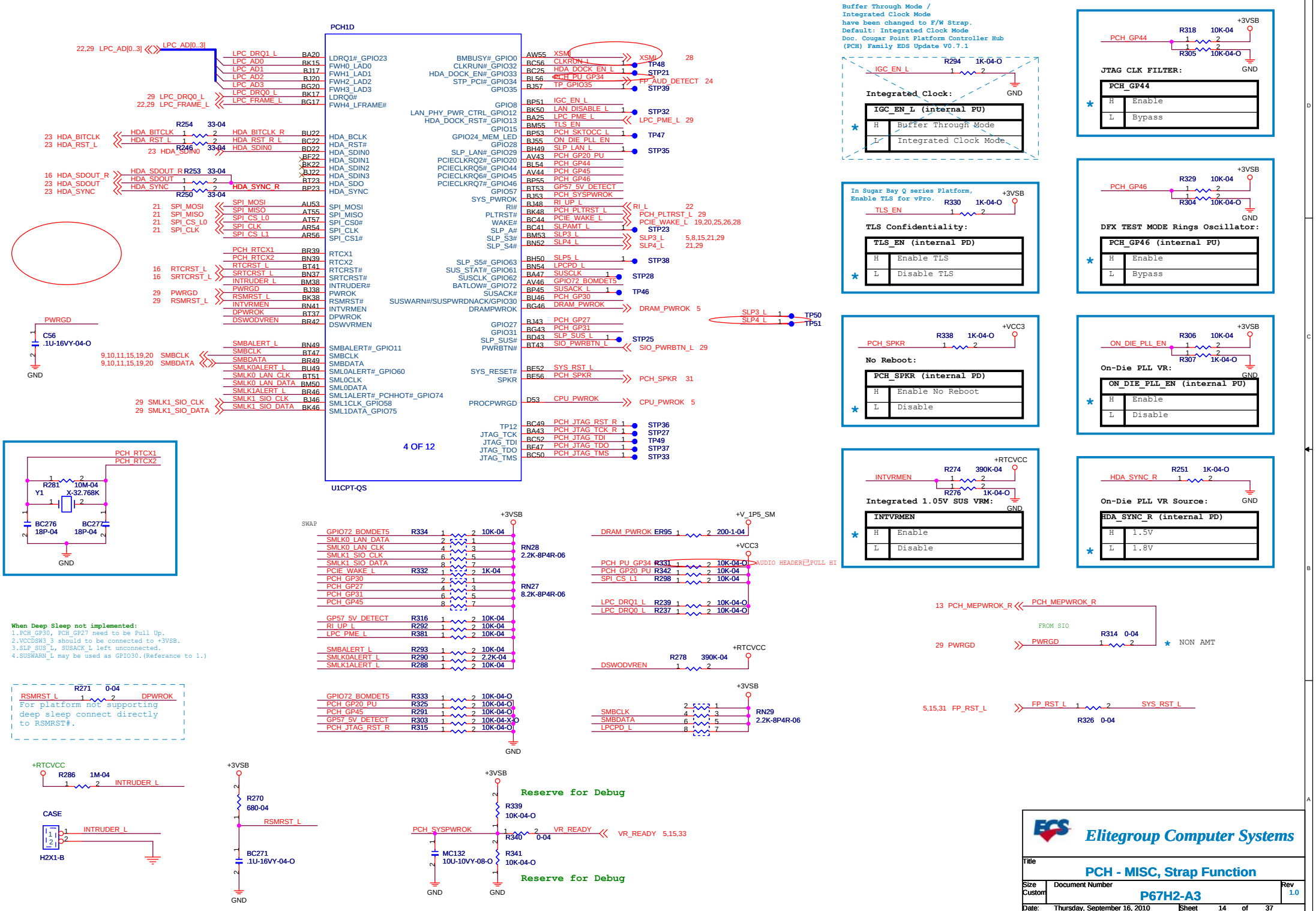
GND GND1 GND2 TXP TXN RXN RXP HOLD1 HOLD2
SATA3-7P2R-GY
SATA-7P2R-W

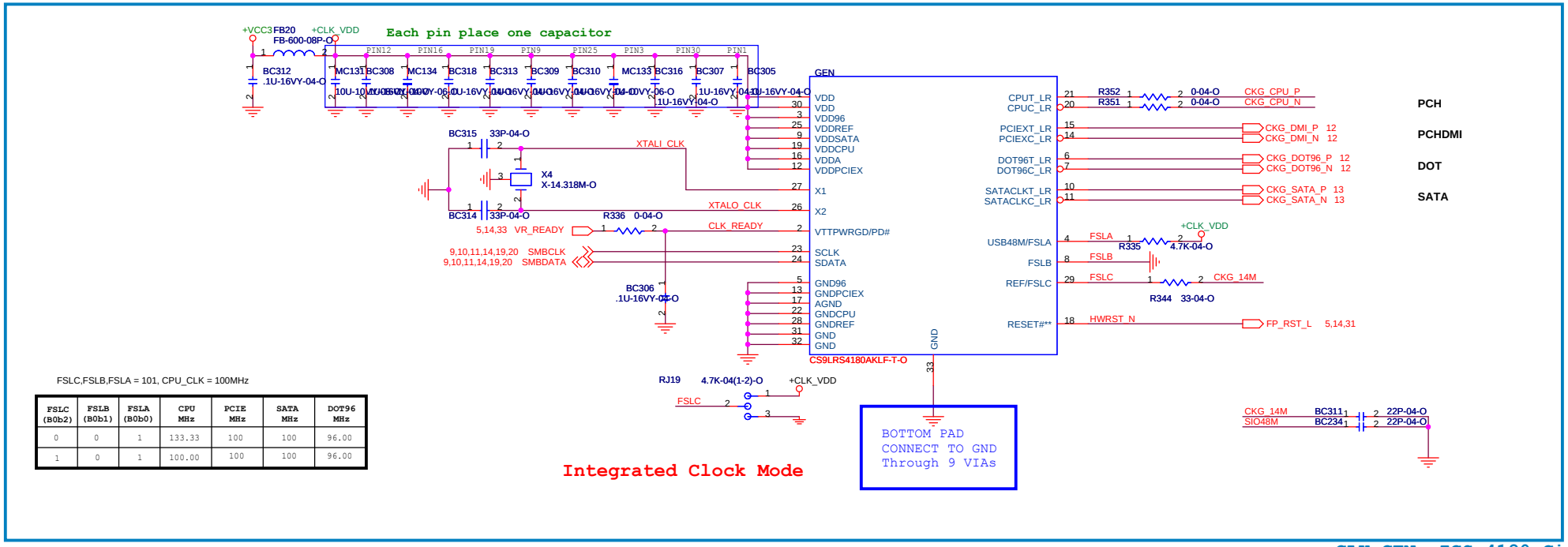
SATA_TX_P0_C → C75 .01U-25VX-04 → SATA_TX_P0
SATA_TX_N0_C → C69 .01U-25VX-04 → SATA_TX_N0
SATA_RX_N0_C → C63 .01U-25VX-04 → SATA_RX_N0
SATA_RX_P0_C → C57 .01U-25VX-04 → SATA_RX_P0
SATA_TX_P1_C → C76 .01U-25VX-04 → SATA_TX_P1
SATA_TX_N1_C → C70 .01U-25VX-04 → SATA_TX_N1
SATA_RX_N1_C → C64 .01U-25VX-04 → SATA_RX_N1
SATA_RX_P1_C → C58 .01U-25VX-04 → SATA_RX_P1
SATA_TX_P2_C → C80 .01U-25VX-04 → SATA_TX_P2
SATA_TX_N2_C → C74 .01U-25VX-04 → SATA_TX_N2
SATA_RX_N2_C → C68 .01U-25VX-04 → SATA_RX_N2
SATA_RX_P2_C → C62 .01U-25VX-04 → SATA_RX_P2
SATA_TX_P3_C → C79 .01U-25VX-04 → SATA_TX_P3
SATA_TX_N3_C → C73 .01U-25VX-04 → SATA_TX_N3
SATA_RX_N3_C → C67 .01U-25VX-04 → SATA_RX_N3
SATA_RX_P3_C → C61 .01U-25VX-04 → SATA_RX_P3
SATA_TX_P4_C → C78 .01U-25VX-04 → SATA_TX_P4
SATA_TX_N4_C → C72 .01U-25VX-04 → SATA_TX_N4
SATA_RX_N4_C → C66 .01U-25VX-04 → SATA_RX_N4
SATA_RX_P4_C → C60 .01U-25VX-04 → SATA_RX_P4
SATA_TX_P5_C → C77 .01U-25VX-04 → SATA_TX_P5
SATA_TX_N5_C → C71 .01U-25VX-04 → SATA_TX_N5
SATA_RX_N5_C → C65 .01U-25VX-04 → SATA_RX_N5
SATA_RX_P5_C → C59 .01U-25VX-04 → SATA_RX_P5

Layout Note:
SATA3.0 4.5/7.5/20 in 90 Ω ±17.5%
SATA2.0 4.5/7.5/15 in 90 Ω ±17.5%

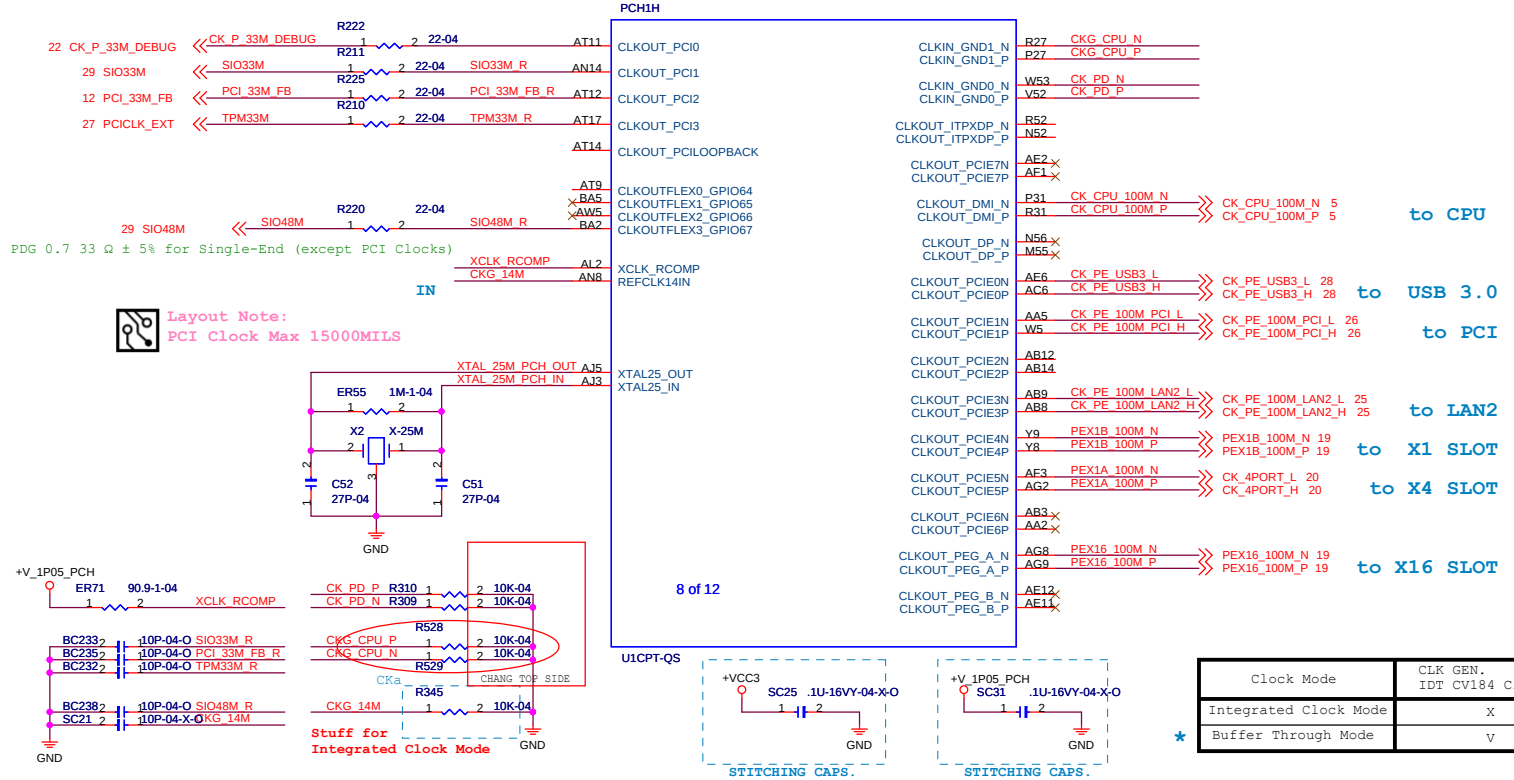
Elitegroup Computer Systems

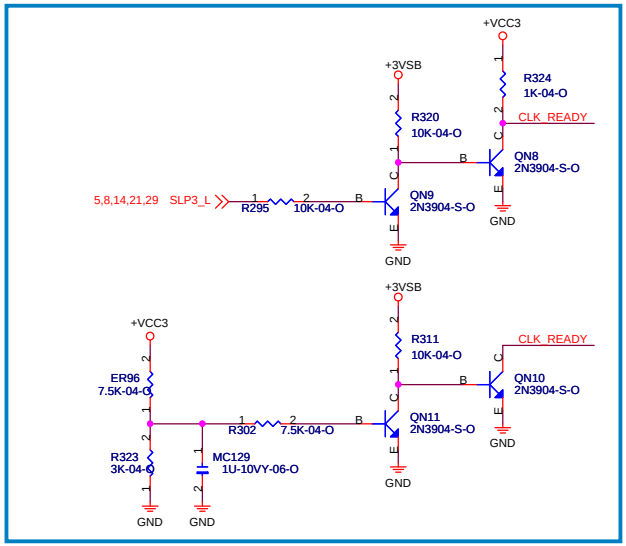
Title: PCH - SATA, SATA CONN
Size: Custom
Document Number: P67H2-A3
Rev: 1.0
Date: Monday, September 20, 2010
Sheet 13 of 37


PCH1D
U1CPT-QS
4 OF 12
Buffer Through Mode / Integrated Clock Mode have been changed to F/W Strap. Default: Integrated Clock Mode Doc. Cougar Point Platform Controller Hub (PCH) Family EDS Update V0.7.1
Integrated Clock:
IGC_EN_L (internal PU)
H Buffer Through Mode
L Integrated Clock Mode
In Sugar Bay Q series Platform, Enable TLS for vPro.
TLS Confidentiality:
TLS_EN (internal PD)
H Enable TLS
L Disable TLS
No Reboot:
PCH_SPKR (internal PD)
H Enable No Reboot
L Disable
Integrated 1.05V SUS VRM:
INTVRMEN
H Enable
L Disable
JTAG CLK FILTER:
PCH_GP44
H Enable
L Bypass
DFX TEST MODE Rings Oscillator:
PCH_GP46 (internal PU)
H Enable
L Bypass
On-Die PLL VR:
ON_DIE_PLL_EN (internal PU)
H Enable
L Disable
On-Die PLL VR Source:
HDA_SYNC_R (internal PD)
H 1.5V
L 1.8V
When Deep Sleep not implemented:
1.PCH_GP10, PCH_GP27 need to be Pull Up.
2.VCCDSW3_3 should to be connected to +3VSB.
3.SLP_SUS_L, SUSACK_L left unconnected.
4.SUSWARN_L may be used as GPIO30.(Referance to 1.)
For platform not supporting deep sleep connect directly to RSMRST#.
Reserve for Debug
Reserve for Debug
Elitegroup Computer Systems
PCH - MISC, Strap Function
P67H2-A3
Thursday, September 16, 2010



CLK GEN. ICS 4180 Circuit.





CLK_READY Control Circuit

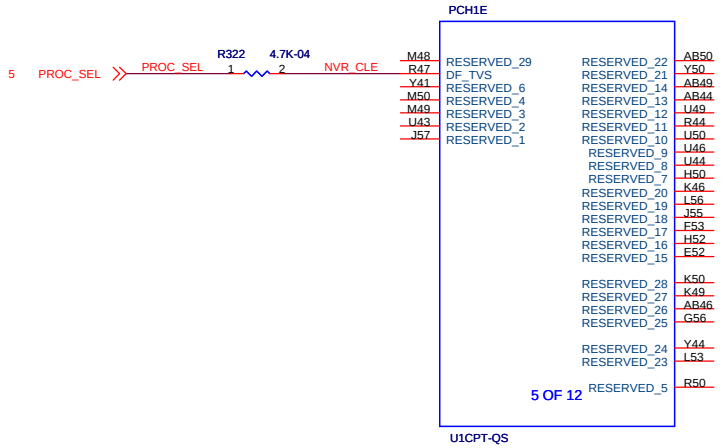
Clock Mode	CLK GEN. IDT CV184 Circuit.	CKa
Integrated Clock Mode	X	V
Buffer Through Mode	V	X

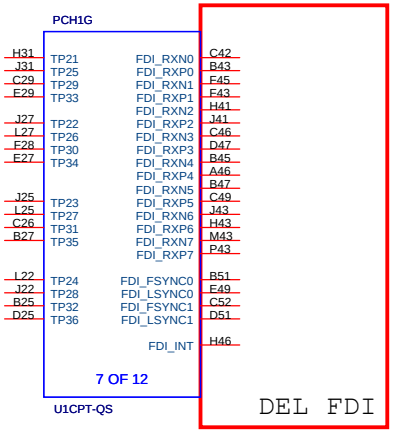
Elitegroup Computer Systems

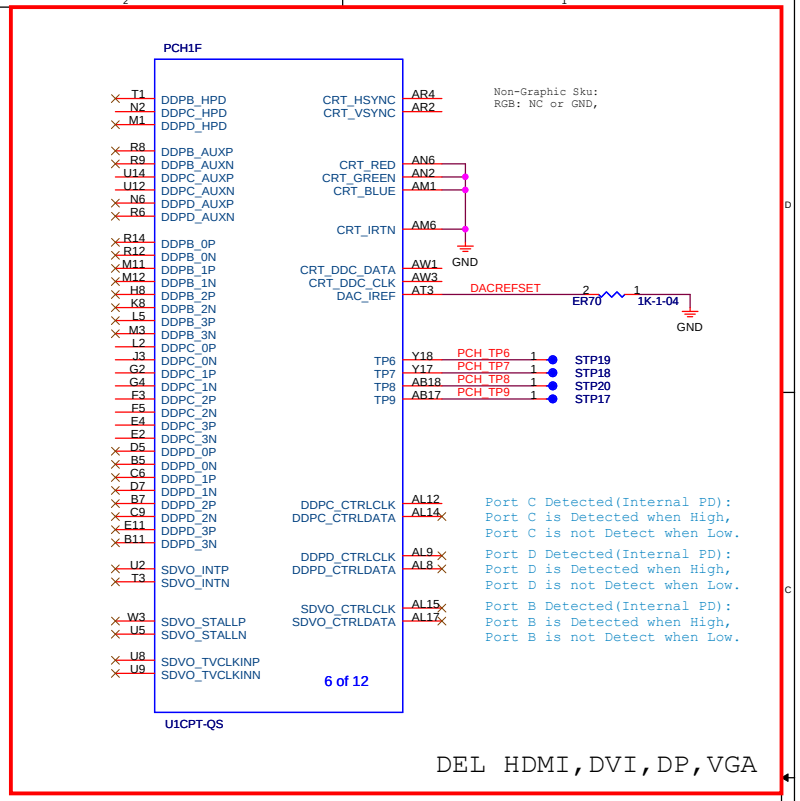
Title: PCH - CLK IO, CKG - ICS4180

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Thursday, September 16, 2010 | Sheet 15 of 37







091222 Update!
Terminating unused DC NAND interface:

If not implemented, the dual channel NAND interface signals, including NV_RCOMP, can be left as No Connect.

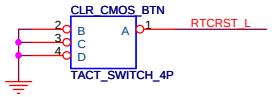
Note:

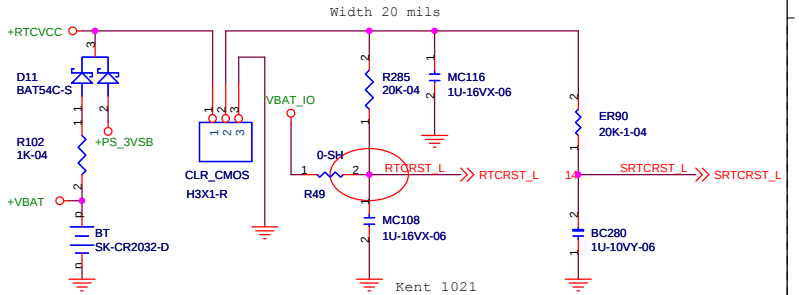
VCCPNAND which power the DC NAND interface must be powered even if dual channel NAND interface is not connected since it also supplies power to other functions inside PCH.

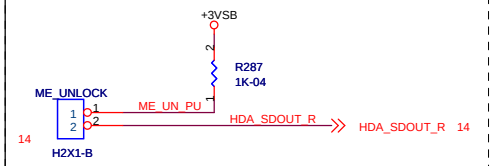
100120 Update!
428880_428880_Cougar_Point_Desktop_Ballout_Mech_Package_Rev1p0.zip:

Renamed NV_WE#_CK[0:1], NV_RE#_WRB[0:1], NV_RCOMP, NV_RB#, NV_DQ9 / NV_IO[0:15], NV_DQS[0:1], NV_CE#[0:3], and NV_ALE to Reserved(RSVD).
Renamed NV_CLE to DF_TVS.

CLR_CMOS







ME Enable/Disable

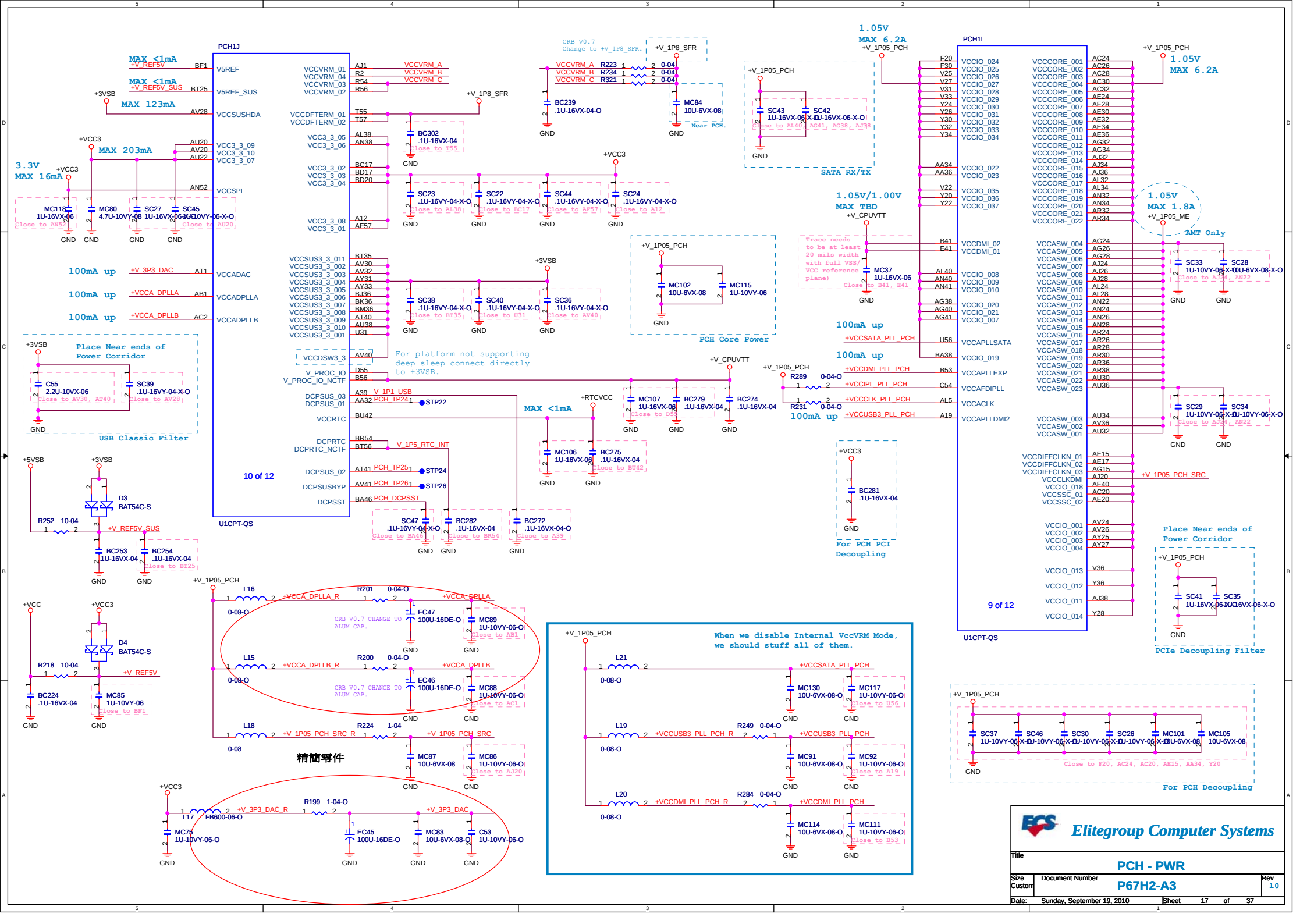
	ME_UNLOCK
1-2	UNLOCK
Float	LOCK

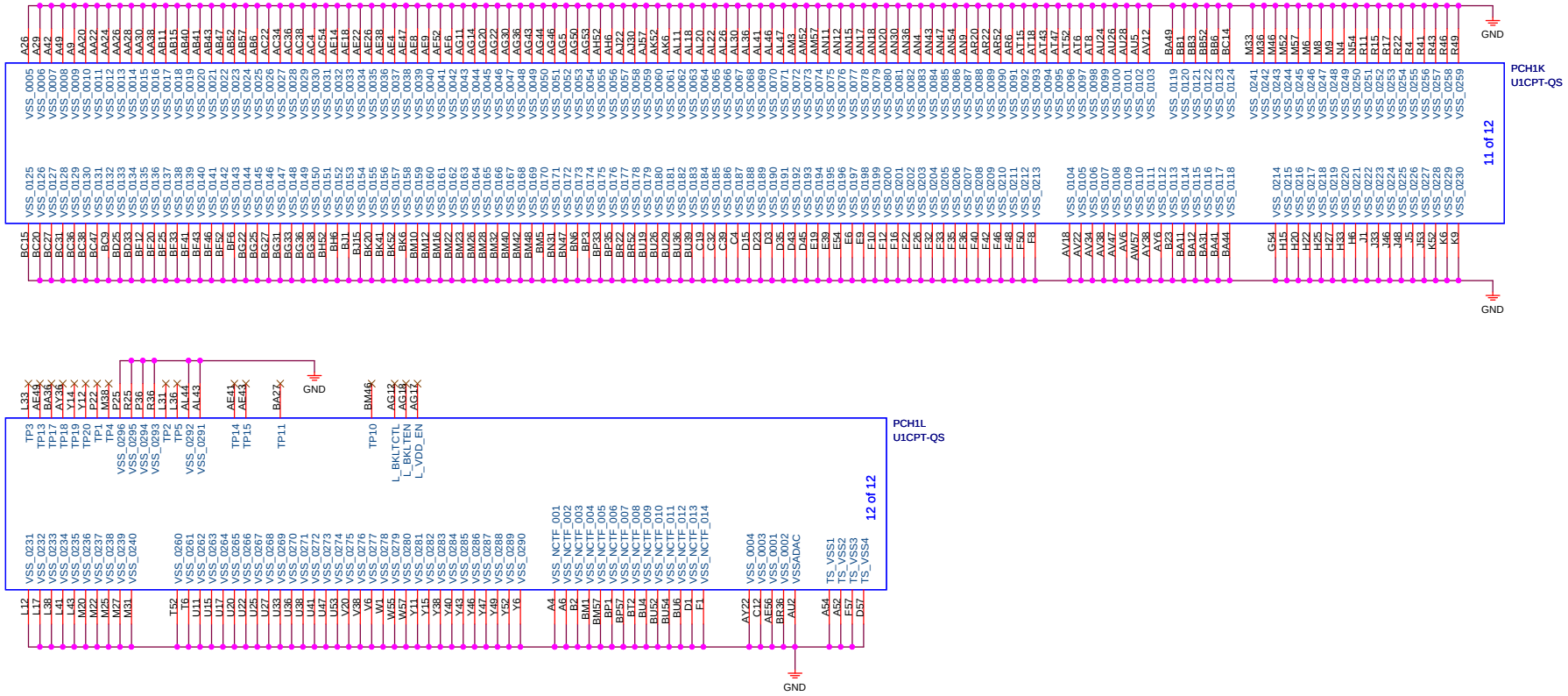
Elitegroup Computer Systems

Title: PCH - FDI, CLR_CMOS

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Thursday, September 16, 2010 | Sheet 16 of 37


PCH1J
U1CPT-QS
10 of 12
PCH1I
U1CPT-QS
9 of 12
MAX <1mA
MAX 123mA
MAX 203mA
3.3V
MAX 16mA
100mA up
Place Near ends of Power Corridor
USB Classic Filter
For platform not supporting deep sleep connect directly to +3VSB.
MAX <1mA
1.05V
MAX 6.2A
SATA RX/TX
1.05V/1.00V
MAX TBD
Trace needs to be at least 20 mils width with full VSS/VCC reference plane)
PCH Core Power
1.05V
MAX 1.8A
AMT Only
For PCH PCI Decoupling
When we disable Internal VccVRM Mode, we should stuff all of them.
精簡零件
PCIe Decoupling Filter
For PCH Decoupling
Elitegroup Computer Systems
PCH - PWR
P67H2-A3
Sunday, September 19, 2010



Elitegroup Computer Systems

Title: PCH - GND, VGA CONN

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Wednesday, September 15, 2010 | Sheet 18 of 37

PCI-E X16 Slot SPEC.:
+VCC3/S0/3A
+V12/S0/5.5A
+3VSB/0.375A

PCIEX16

PCIEX16-GY

DEL PCI-E X1

PCI-E X1 A Decoupling Cap.

PCI-E X1 Slot SPEC.:
+VCC3/S0/3A
+V12/S0/0.5A
+3VSB/0.375A

PCIE

PCIEX1-W

PCI-E X1 B

Between PEX16 & PEX1B

Title	Slot - PCI-EX16/PCI-EX1
Size: Custom	Document Number: P67H2-A3
Rev: 1.0	
Date: Friday, September 17, 2010	Sheet 19 of 37

Elitegroup Computer Systems

External Connection

12 HSI_DP[1..4] — HSI_DP[1..4]
12 HSI_DN[1..4] — HSI_DN[1..4]
12 HSO_DP[1..4] — HSO_DP[1..4]
12 HSO_DN[1..4] — HSO_DN[1..4]

19,29 SIO_PCIRST1_L — -PCI_RSTY
14,19,25,26,28 PCIE_WAKE_L — PCIE_WAKE_L
9,10,11,14,15,19 SMBCLK — SMBCLK
9,10,11,14,15,19 SMBDATA — SMBDATA

15 CK_4PORT_H — CK_4PORT_H
15 CK_4PORT_L — CK_4PORT_L

HSO_DN1	C37	1U-16VX-04	HSO_DN1_C
HSO_DP1	C38	1U-16VX-04	HSO_DP1_C
HSO_DN2	C41	1U-16VX-04	HSO_DN2_C
HSO_DP2	C40	1U-16VX-04	HSO_DP2_C
HSO_DN3	C43	1U-16VX-04	HSO_DN3_C
HSO_DP3	C42	1U-16VX-04	HSO_DP3_C
HSO_DN4	C45	1U-16VX-04	HSO_DN4_C
HSO_DP4	C44	1U-16VX-04	HSO_DP4_C

Near chipset

3VSB VCC3 +12V — +12V VCC3

PCIEX16_T

B1	12V_A	PRSNT1*	A1
B2	12V_B	12V_C	A2
B3	12V_D	12V_E	A3
B4	GND1	GND2	A4
B5	SMCLK	JTAG2	A5
B6	SMDAT	JTAG3	A6
B7	GND3	JTAG4	A7
B8	3.3V_A	JTAG5	A8
B9	JTAG1	3.3V_B	A9
B10	3.3VAUX	3.3V_C	A10
B11	WAKE#	PWRGD	A11
	KEY		
B12	RSVD_A	GND4	A12
B13	GND5	REFCLK+_H	A13
B14	HSOP0_H	REFCLK-_L	A14
B15	HSON0_L	GND6	A15
B16	GND7	HSIP0_H	A16
B17	PRSNT2#1	HSIN0_L	A17
B18	GND8	GND9	A18
B19	HSOP1_H	RSVD_B	A19
B20	HSON1_L	GND10	A20
B21	GND11	HSIP1_H	A21
B22	GND12	HSIN1_L	A22
B23	HSOP2_H	GND13	A23
B24	HSON2_L	GND14	A24
B25	GND15	HSIP2_H	A25
B26	GND16	HSIN2_L	A26
B27	HSOP3_H	GND17	A27
B28	HSON3_L	GND18	A28
B29	GND19	HSIP3_H	A29
B30	RSVD_C	HSIN3_L	A30
B31	PRSNT2#2	GND20	A31
B32	GND21	RSVD_D	A32
B33	HSOP4_H	RSVD_E	A33
B34	HSON4_L	GND22	A34
B35	GND23	HSIP4_H	A35
B36	GND24	HSIN4_L	A36
B37	HSOP5_H	GND25	A37
B38	HSON5_L	GND26	A38
B39	GND27	HSIP5_H	A39
B40	GND28	HSIN5_L	A40
B41	HSOP6_H	GND29	A41
B42	HSON6_L	GND30	A42
B43	GND31	HSIP6_H	A43
B44	GND32	HSIN6_L	A44
B45	HSOP7_H	GND33	A45
B46	HSON7_L	GND34	A46
B47	GND35	HSIP7_H	A47
B48	PRSNT2#3	HSIN7_L	A48
B49	GND36	GND37	A49
B50	HSOP8_H	RSVD_F	A50
B51	HSON8_L	GND38	A51
B52	GND39	HSIP8_H	A52
B53	GND40	HSIN8_L	A53
B54	HSOP9_H	GND41	A54
B55	HSON9_L	GND42	A55
B56	GND43	HSIP9_H	A56
B57	GND44	HSIN9_L	A57
B58	HSOP10_H	GND45	A58
B59	HSON10_L	GND46	A59
B60	GND47	HSIP10_H	A60
B61	GND48	HSIN10_L	A61
B62	HSOP11_H	GND49	A62
B63	HSON11_L	GND50	A63
B64	GND51	HSIP11_H	A64
B65	GND52	HSIN11_L	A65
B66	HSOP12_H	GND53	A66
B67	HSON12_L	GND54	A67
B68	GND55	HSIP12_H	A68
B69	GND56	HSIN12_L	A69
B70	HSOP13_H	GND57	A70
B71	HSON13_L	GND58	A71
B72	GND59	HSIP13_H	A72
B73	GND60	HSIN13_L	A73
B74	HSOP14_H	GND61	A74
B75	HSON14_L	GND62	A75
B76	GND63	HSIP14_H	A76
B77	GND64	HSIN14_L	A77
B78	HSOP15_H	GND65	A78
B79	HSON15_L	GND66	A79
B80	GND67	HSIP15_H	A80
B81	PRSNT2#4	HSIN15_L	A81
B82	RSVD_G	GND68	A82

PCIEX16-B

SMBCLK
SMBDATA
PCIE_WAKE_L
HSO_DP1_C
HSO_DN1_C
HSO_DP2_C
HSO_DN2_C
HSO_DP3_C
HSO_DN3_C
HSO_DP4_C
HSO_DN4_C

R63 1 2 0-04-O

C36 1 2 47P-04-O

-PCI_RSTY
CK_4PORT_H
CK_4PORT_L
HSI_DP1
HSI_DN1
HSI_DP2
HSI_DN2
HSI_DP3
HSI_DN3
HSI_DP4
HSI_DN4

10-010-004081

+12V — ATX4P — PW-4P1R

MC29 1 2 4.7U-16VY-08

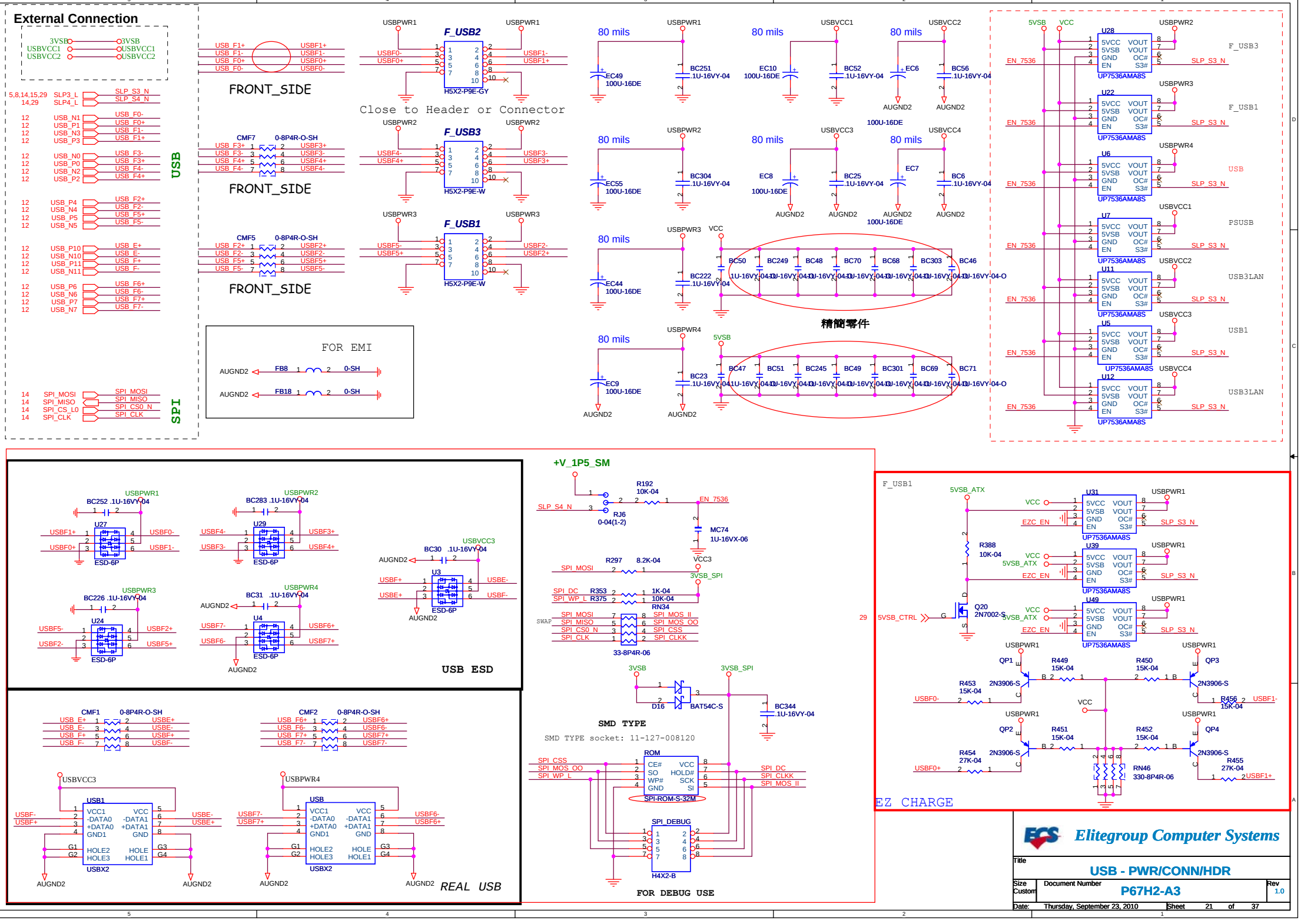
+12V — EC22 470U-16DE — GND
VCC3 — EC25 1000U-6.3DL — GND

+12V — BC82 1 2 .1U-16VY-04
3VSB — BC105 1 2 .1U-16VY-04

VCC3 — BC101 2 1 .1U-16VY-04
BC100 2 1 .1U-16VY-04
BC108 2 1 .1U-16VY-04
BC90 2 1 .1U-16VY-04

Elitegroup Computer Systems

Title	Slot - PCI-EX16-2	
Size: Custom	Document Number: P67H2-A3	Rev: 1.0
Date: Friday, September 17, 2010	Sheet 20 of 37	


External Connection
3VSB
USBVCC1
USBVCC2
USB
SPI
FRONT_SIDE
Close to Header or Connector
F_USB2
F_USB3
F_USB1
FOR EMI
精簡零件
USB ESD
REAL USB
SMD TYPE
SMD TYPE socket: 11-127-008120
FOR DEBUG USE
EZ CHARGE
Elitegroup Computer Systems
USB - PWR/CONN/HDR
P67H2-A3
Thursday, September 23, 2010

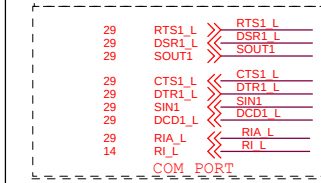
External Connection

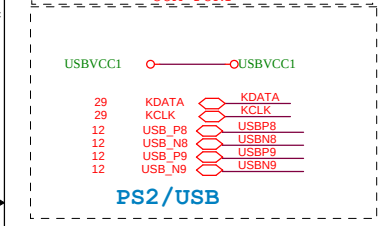
del debug card

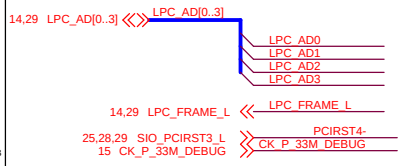
Debug Card

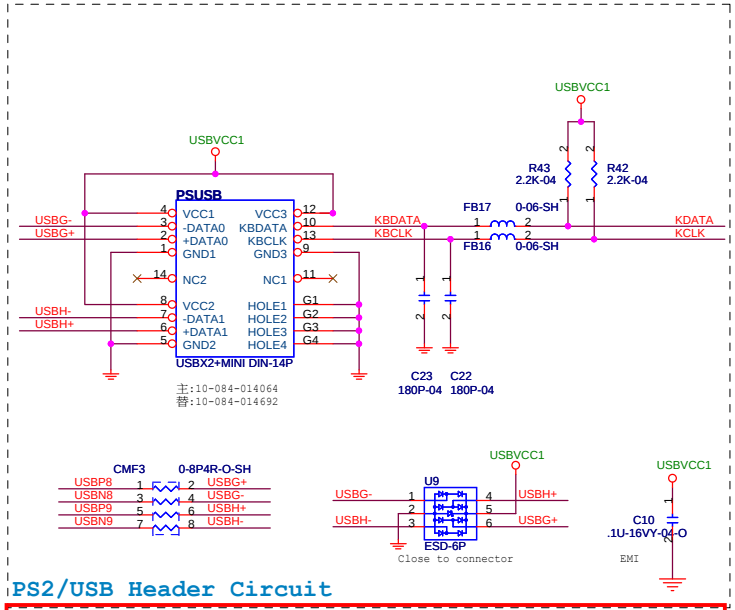
Debug Card

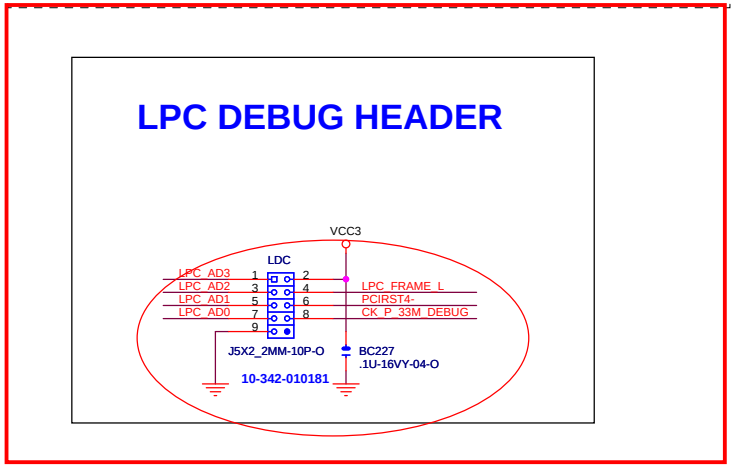
del debug card

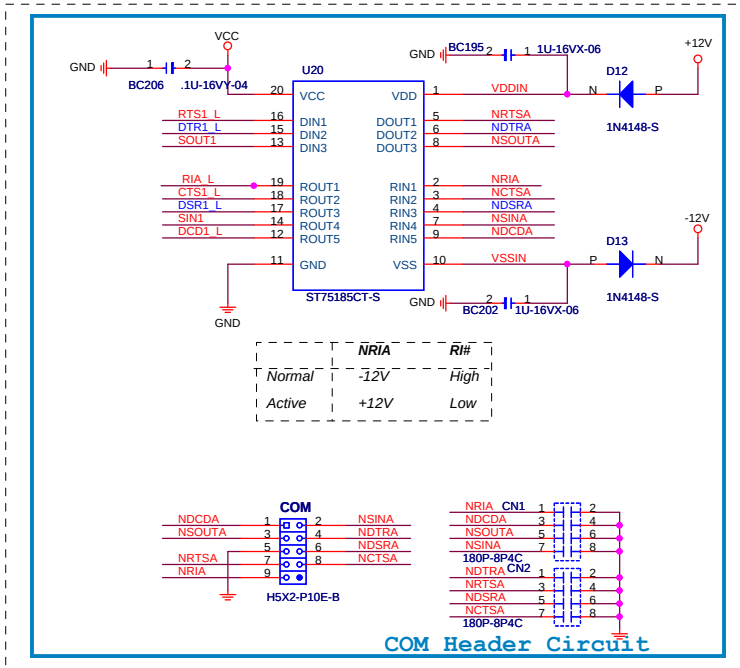


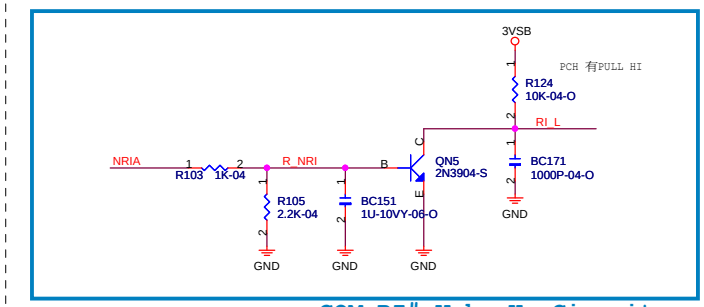












Elitegroup Computer Systems			
Title: FAN, COM, PSUSB, BUZ			
Size: Custom	Document Number: P67H2-A3		Rev: 1.0
Date: Tuesday, September 21, 2010	Sheet 22 of 37		

External Connection

+5VSB → +5VSB

14 HDA_RST_L → AZ_RST
14 HDA_BITCLK → AZ_BIT_CLK
14 HDA_SYNC → AZ_SYNC
14 HDA_SDIN0 → AZ_SDATA_IN
14 HDA_SDOUT → AZ_SDATA_OUT

Verfout bias for stereo microphone.

MIC1_VREFO_R — R15 2.2K-04 — MIC1_R
MIC1_VREFO_L — R14 2.2K-04 — MIC1_L
LINE2_VREFO — D1 BAT54A-S — R2 4.7K-04 — LINE2_R; R1 4.7K-04 — LINE2_L
MIC2_VREFO — D2 BAT54A-S — R4 4.7K-04 — MIC2_R; R3 4.7K-04 — MIC2_L

+5VSB — AZ2015-01H-S DZ1 — MC2 10U-6VX-08 — AUGND
R48 0-SH — AUGND
R22 0-SH — AUGND
near chips 背面
SFB1 0-SH — AUGND

FRONT_R → FRONT_R 24
FRONT_L → FRONT_L 24
MIC1_VREFO_R
LINE2_VREFO
MIC2_VREFO
MIC1_VREFO_L

R515 75-04
R514 75-04
EC5 100U-16DE
EC15 100U-16DE
MC3 10U-10VY-08 — AUGND
+5VA
MC4 10U-10VY-08
BC26 .1U-16VY-04 — AUGND
NetB

Resistors Networks

Place near codec

NetA
ER12 5.1K-1-04 — FRONT_JD → FRONT_JD 24
ER13 10K-1-04 — LINE1_JD → LINE1_JD 24
ER10 20K-1-04 — MIC1_JD → MIC1_JD 24
ER11 39.2K-1-04 — SURR_JD → SURR_JD 24

CODEC ALC892

CODEC

PORT-D_R, PORT-D_L, SENSE B, Sense-C, MIC1-VREF-R, Line2-VREFO, MIC2-VREFO, LINE1-VREF/LDOVDD*, MIC1-VREF-L, VREF, AVSS1, AVDD1

VREF-R, AVDD2, SURR-OUT-L, JDREF, SURR-OUT-R, AVSS2, CEN-PORT-G_L, LFE-PORT-G_R, SIDESURR-OUT-L, SIDESURR-OUT-R, S/PDIF IN / EAPD, S/PDIF-OUT

LINE1-R, LINE1-L, MIC1-R, MIC1-L, CD-R, CD-G, CD-L, MIC2-R, MIC2-L, LINE2-R, LINE2-L, SENSE A

DVDD_CORE, GPIO0/SPDIFO2, GPIO1, DVSS, SDO, BCLK, DVSS, SDI, DVDD-IO, SYNC, RESET#, PC_BEEP

ALC892

AUGND
BC14 .1U-16VY-04 — VREF-R
MC5 10U-10VY-08 — +5VA — AVDD2
SURR_L → SURR_L — R512 75-04 — EC63 10U-25DE — SURR-OUT-L
AUGND — ER6 20K-1-04 — VOHR — JDREF
SURR_R → SURR_R — R513 75-04 — EC64 10U-25DE — SURR-OUT-R
AUGND — AVSS2
CEN-OUT → CEN-OUT — R508 75-04 — EC65 10U-25DE — CEN-PORT-G_L
LFE-OUT → LFE-OUT — R509 75-04 — EC66 10U-25DE — LFE-PORT-G_R
SIDE_SURR_L — R510 75-04 — EC67 10U-25DE — SIDESURR-OUT-L
SIDE_SURR_R — R511 75-04 — EC68 10U-25DE — SIDESURR-OUT-R
CHANG EC 10UF
S/PDIF IN / EAPD
SPDIF_OUT → SPDIF_OUT — C32 100P-04 — S/PDIF-OUT

MC6 4.7U-X5R-08
MC8 4.7U-X5R-08 — R504 75-04 — LINE1_R → LINE1_R 24
MC9 4.7U-X5R-08 — R505 75-04 — LINE1_L → LINE1_L 24
MC10 4.7U-X5R-08 — R506 75-04 — MIC1_R → MIC1_R 24
R507 75-04 — MIC1_L → MIC1_L 24
CHANG SMD

EC3 100U-16DE — R500 75-04 — MIC2_R → MIC2_R 24
EC4 100U-16DE — R501 75-04 — MIC2_L → MIC2_L 24
EC14 100U-16DE — R502 75-04 — LINE2_R → LINE2_R 24
EC13 100U-16DE — R503 75-04 — LINE2_L → LINE2_L 24
NetA

AGND
GND
If have HDA link support scalable I/O, need be separated.

+VCC3
02-301-892690
MC16 10U-10VY-08
BC59 1U-16VY-04
R44 0-04-O
MC17 10U-10VY-08
BC57 .1U-16VY-04
BC58 22P-04-O
R516 22-04
R45 33-04
TP1
TP2
SPDIF_OUT2
AZ_SDATA_OUT
AZ_RST
AZ_SYNC
AZ_SDATA_IN
AZ_BIT_CLK

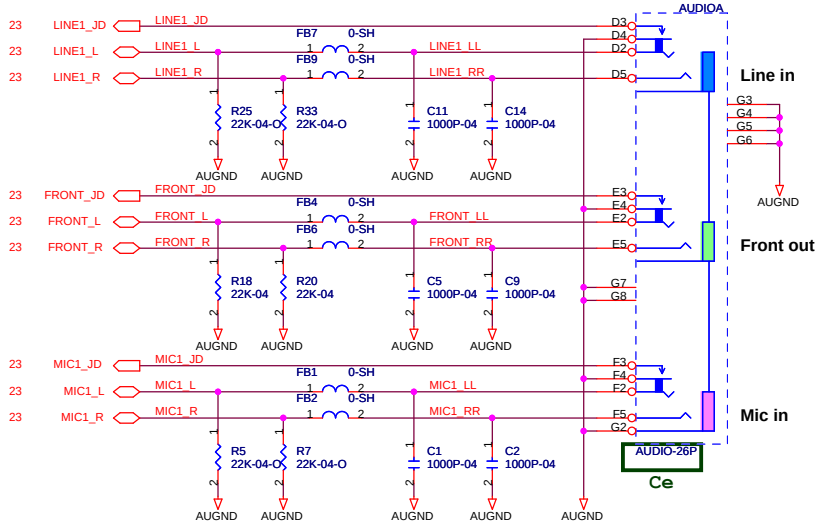
Resistors Networks

NetB
ER1 10K-1-04 — CEN_JD → CEN_JD 24
ER2 20K-1-04 — MIC2_JD → MIC2_JD 24
ER3 39.2K-1-04 — LINE2_JD → LINE2_JD 24
ER4 47-1-04-O — F_SENSE → F_SENSE 24
AER1 5.1K-1-04 — SIDESURR_JD → SIDESURR_JD 24

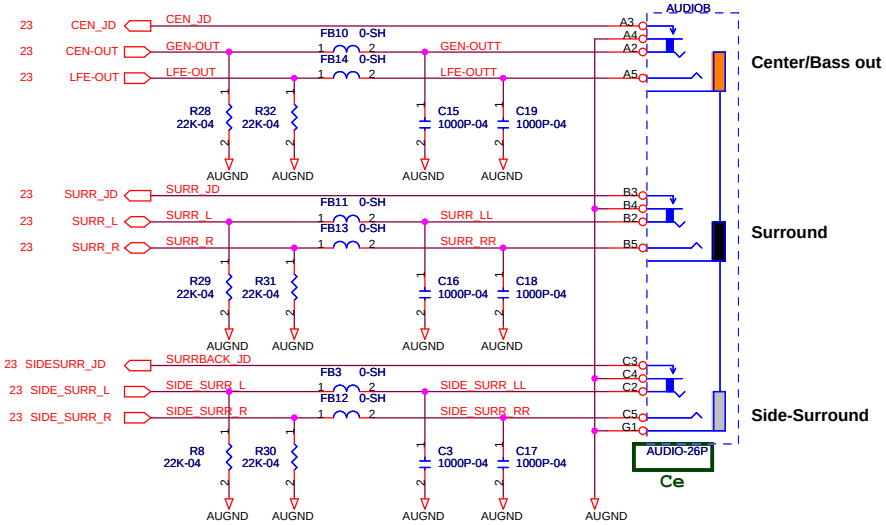
Elitegroup Computer Systems

Title: Audio - ALC892
Size: Custom
Document Number: P67H2-A3
Rev: 1.0
Date: Friday, September 17, 2010
Sheet 23 of 37

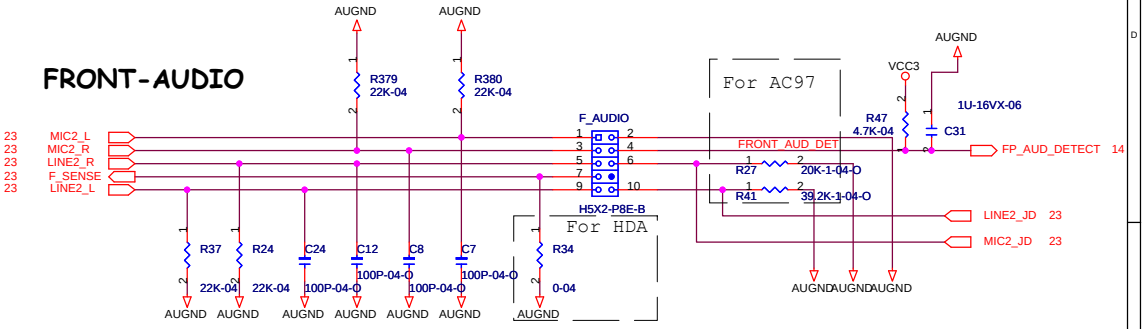
REAR-AUDIO



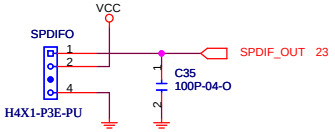
Cd

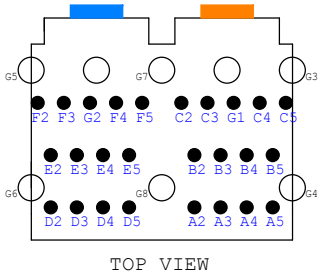


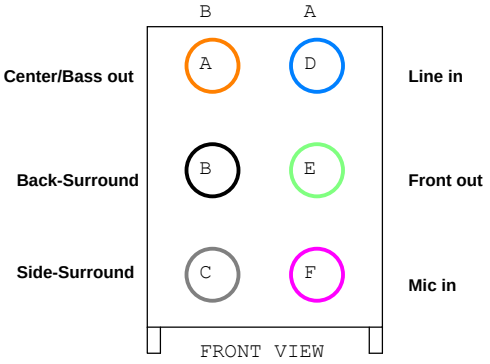
FRONT-AUDIO



SPDIF-OUT



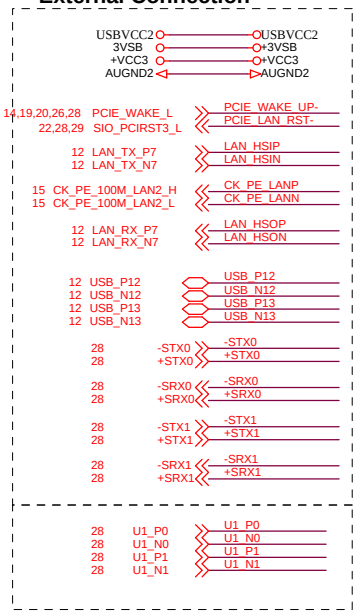




Elitegroup Computer Systems

Title	AUDIO ALC892(PANEL)		
Size: Custom	Document Number: P67H2-A3		Rev: 1.0
Date: Thursday, September 23, 2010		Sheet 24 of 37	

External Connection

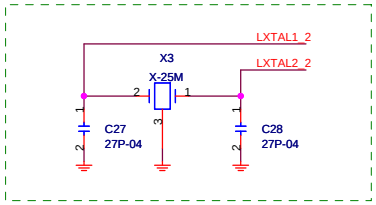


新手提醒:

LAN_HSOP/N請接到SB的PCIE RX端

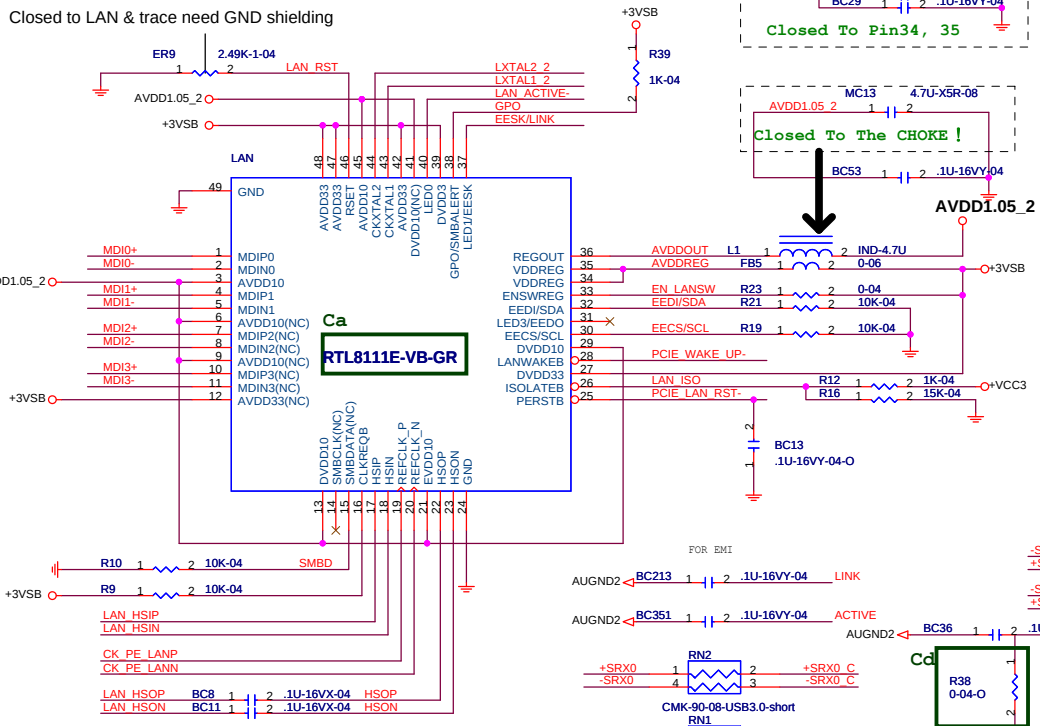
LAN_HSIP/N請接到SB的PCIE TX端

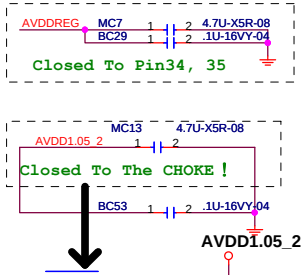
LAN_HSIP/N在SB的PCIE TX端要記得放AC coupling cap

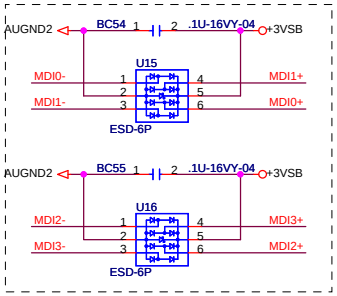


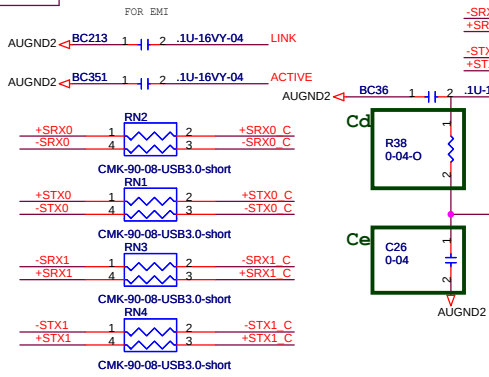
BOM Difference

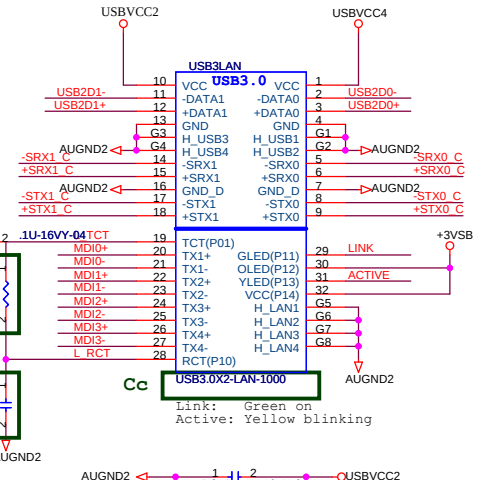
	RTL8111E-GR 1000M	RTL8105E-GR 10/100M
Ca	RTL8111E-GR	RTL8105E-GR
Cb	V	X decide by layout position
Cc	USBX2-LAN-1000	USBX2-LAN-100
Cd	X	V
Ce	0-04	.01U-04
Cf		
Cg		

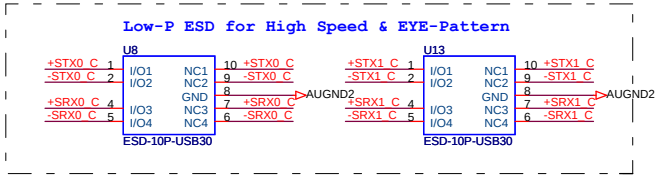


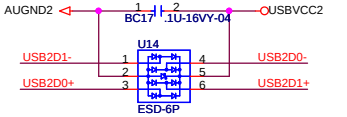


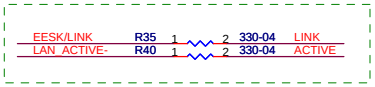


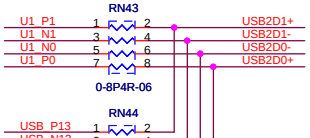


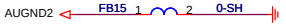




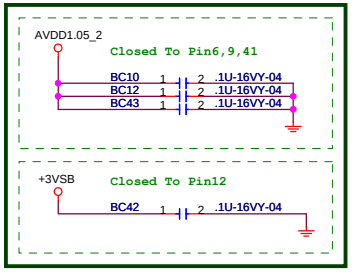


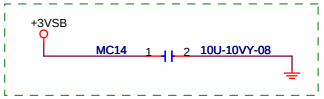


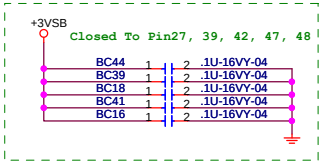


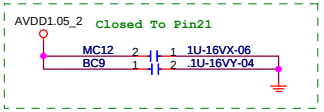


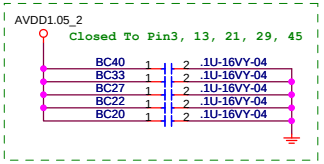
Cb









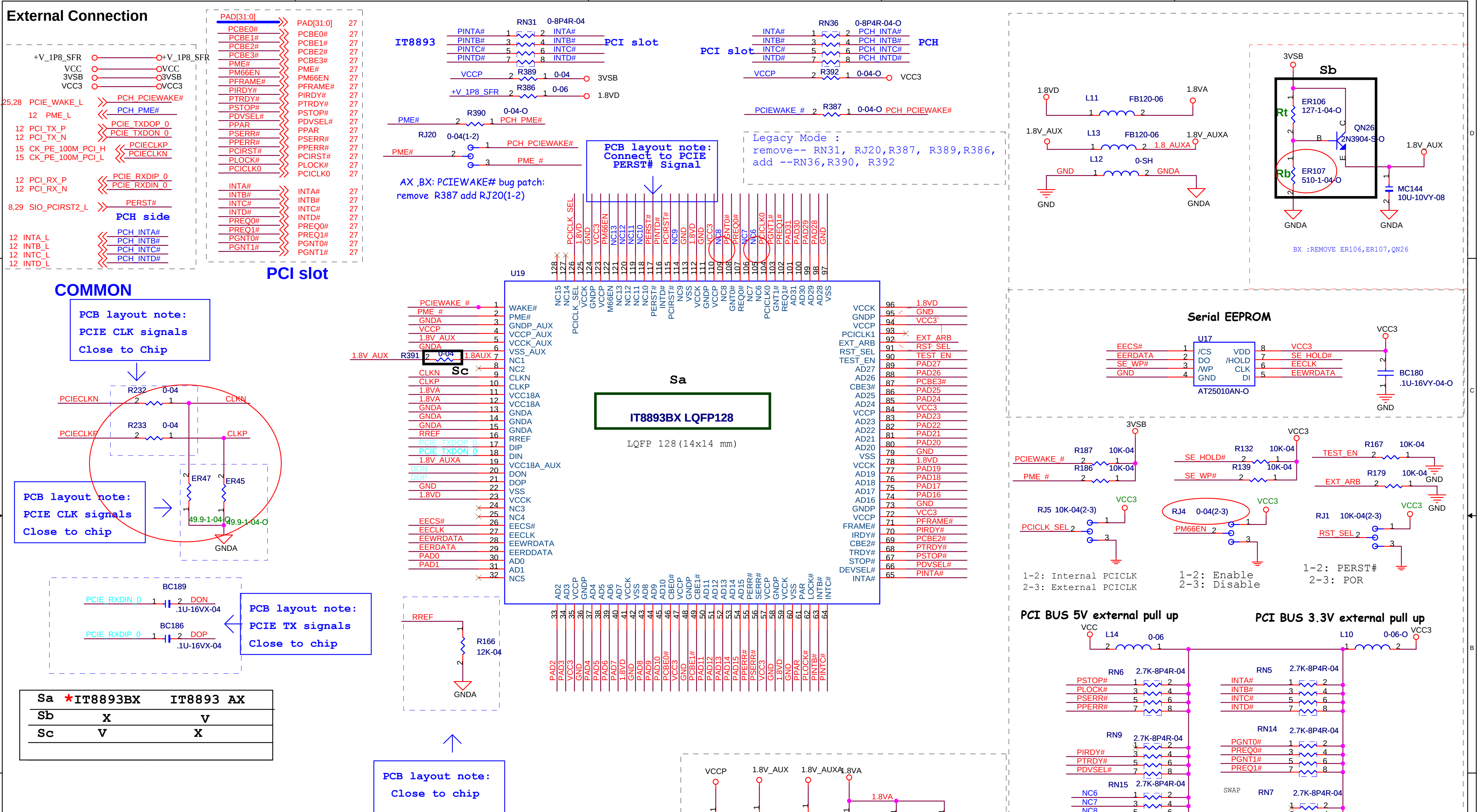


Elitegroup Computer Systems

Title: PCIE LAN2 RTL8111E/8105E

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Thursday, September 16, 2010 | Sheet 25 of 37



PCIE DIP;DIN;DOP;DON PCB layout note:
To meet Differential Impedance :85 ohm +/- 15%
To meet Single-ended Impedance :50 ohm +/- 15%
PCIE DIP and DIN trace width:9.5 mils
PCIE DOP and DON trace width:9.5 mils
Space between DIP/DIN and DOP/DON:14.5 mils
L1 & L2 height:5 mils
The signal traces Number of vias: 2 (Max.)
The signal trace above analog GND plane
Spacing from other groups:>25 mils
Total trace length: 12 inchs (Max.)

PCIE CLK PCB layout note:
To meet Differential Impedance :100 ohm +/- 15%
To meet Single-ended Impedance :50 ohm +/- 15%
CLKP and CLKN trace width:7 mils
Space between CLKP and CLKN:14 mils
L1 & L2 height:5 mils
The signal traces Number of vias: 4 (Max.)
The signal trace above analog GND plane
Spacing from other groups:>25 mils
Total trace length: 12 inchs (Max.)

Elitegroup Computer Systems

Title	IT8893(PCIE TO PCI)	
Size Custom	Document Number P67H2-A3	Rev 1.0
Date: Thursday, September 16, 2010	Sheet 26 of 37	

External Connection

VCC, 3VSB, VCC3, -12V, +12V

PCICLK_EXT → PCICLK1

PCILPCAID_RST_L → PCIRST#1

COMMON

PAD[31:0]

PCIRST# PCBE0# PCBE1# PCBE2# PCBE3# PME# PM66EN PFRAME# PIRDY# PTRDY# PSTOP# PDVSEL# PPAR PSERR# PERR# PCICLK0 PLOCK# INTA# INTB# INTC# INTD# PREQ0# PREQ1# PGNT0# PGNT1#

PCI CHIP

RJ2 0-04(1-2) PCICLK0 PCICLK1

1-2: Internal PCICLK
2-3: External PCICLK

RJ3 0-04(1-2) PCIRST# PCIRST#1

1-2: Internal PCIRST
2-3: External PCIRST

R153 22-04 PAD16

R160 22-04 PAD17

R93 22-04 PCI_CLK0

R92 22-04 PCI_CLK0

R123 10K-04 SMBCLK1

R133 10K-04 SMBDAT1

CC1 10P-04-O PCI_CLK0

C50 10P-04-O PCI_RST

RN17 8.2K-8P4R-06 REQ64B- ACK64B- REQ64A- ACK64A-

0406 calvin

PCI1:REQ0;GNT0 IDSEL:16 INT:ABCD
PCI2:REQ1;GNT1 IDSEL:17 INT:BCDA

精簡零件

CHANG 3VSB

EC30 100U-16DE BC168 .1U-16VY-04

EC21 100U-16DE-O MC23 4.7U-16VY-08-O MC21 4.7U-16VY-08 BC77 .1U-16VY-04-O

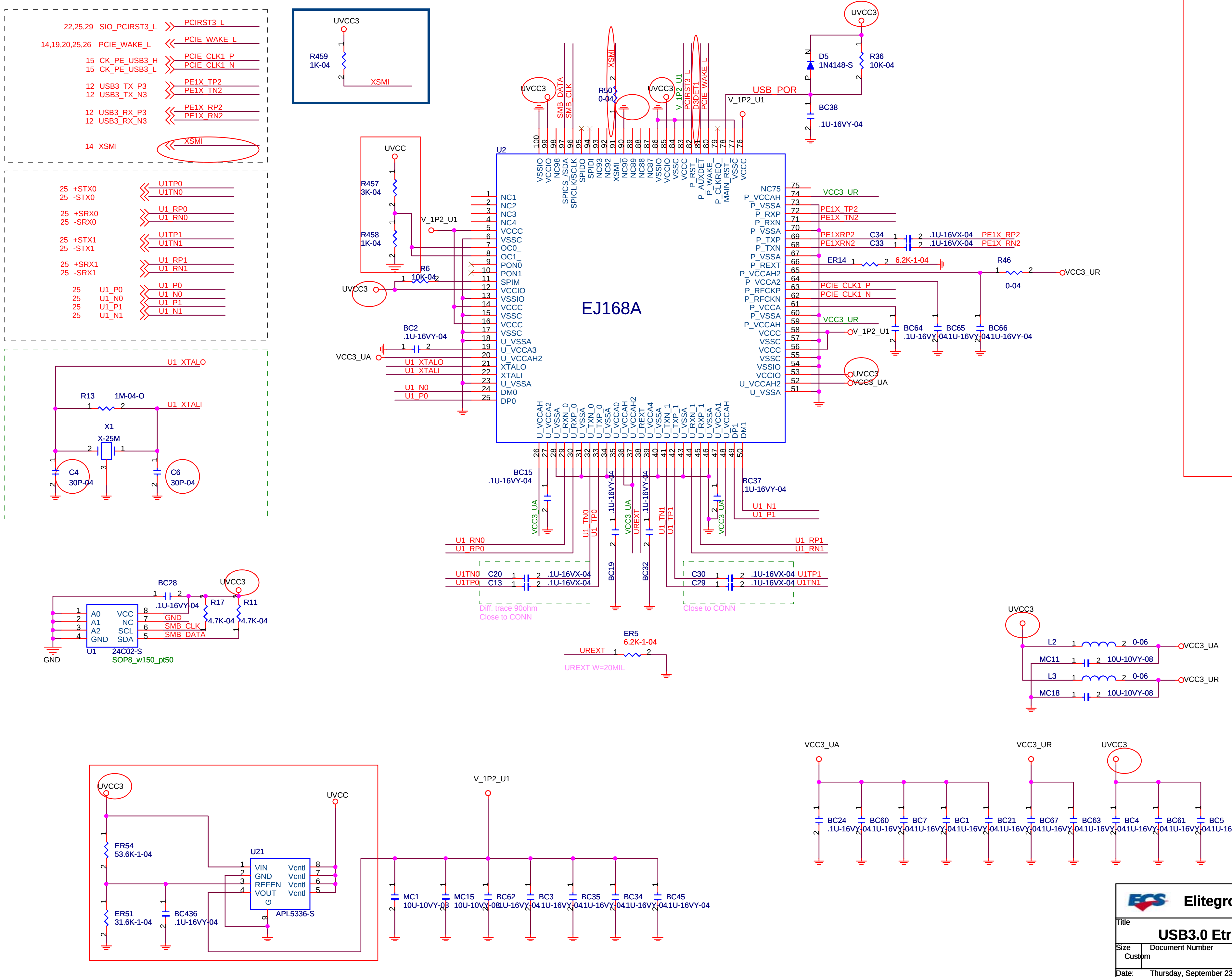
4.7U-16VY-08-O BC347 MC22 .1U-16VY-04

EC29 100U-16DE-O BC144 .1U-16VY-04-O BC134 .1U-16VY-04-O BC170 .1U-16VY-04

EC24 100U-16DE BC89 .1U-16VY-04-O BC88 .1U-16VY-04-O BC111 .1U-16VY-04

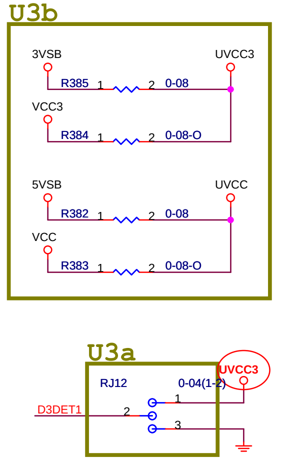
Elitegroup Computer Systems	
Title	IT8893(PCI SLOT x2)
Size: Custom	Document Number: P67H2-A3
Rev	1.0
Date: Friday, September 17, 2010	Sheet 27 of 37

External Connection



BOM Difference

	Wake up	No Wake up
U3a	RJ12 (1-2)	RJ12 (2-3)
U3b	R385,R382	R383,R384



Elitegroup Computer Systems

Title: USB3.0 Etron EJ168 CONN

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Thursday, September 23, 2010 | Sheet 28 of 37

External Connection

LPC
14 LPC_PME_L — LPCPME_L
14 LPC_DRQ0_L — -LPC_DRQ0
14,22 LPC_FRAME_L — -LPC_FRAME
14,22 LPC_AD[0..3] — L_AD[0..3]

14 RSMRST_L — RSMRST_N
31 FP_PWRBTN_L — -PWRBTN
14 SIO_PWRBTN_L — -PWRON
5,8,14,15,21 SLP3_L — -SLP3
14,21 SLP4_L — SLP4_L

31 PSON_L — -ATX_PSON_SIO
31 ATX_PWRGD — ATX_PWRGD
14 PWRGD — PWROK
14 PCH_PLTRST_L — PLTRST_L
19,20 SIO_PCIRST1_L — -PCI_RSTY
8,26 SIO_PCIRST2_L — -PCIE_RSTY
22,25,28 SIO_PCIRST3_L — -PCIE_RSTY3_L
13 KBRST_L — -KB_RST
13 A20GATE — A20GATE_L
13 SER_IRQ — SERIRQ
11 -3VSBSW — -3VSBSW
5 PECI — PECI
31 CFAN_TAC1 — CFAN_TAC1
31 CFAN_PWM1 — CFAN_PWM1
31 SFAN_TAC2 — SFAN_TAC2
31 SFAN_PWM2 — SFAN_PWM2
31 G_LED1 — G_LED1
31 G_LED2 — G_LED2

13 SST_CTL — SST_CTL
15 SIO33M — SIO_PCLK
15 SIO48M — SIO_CLK48

5,33 H_SKTOCC_L — H_SKTOCC_N
14 SMLK1_SIO_CLK — SML1CLK
14 SMLK1_SIO_DATA — SML1DATA
13 THERMAL ALERT — PCH_THRM_L

11 IO_GP24 — GP24
11 IO_GP25 — GP25
11 IO_GP26 — GP26
11 IO_GP27 — GP27

COM PORT
22 RTS1_L — -RTSA
22 DSR1_L — -DSRA
22 SOUT1 — TXDA
22 SIN1 — RXDA
22 DTR1_L — -DTRA
22 DCD1_L — -DCDA
22 RIA_L — -RIA
22 CTS1_L — -CTSA

KB
22 KCLK — KCLK
22 KDATA — KDATA

21 5VSB_CTRL — 5VSB_CTRL

del debug card

80-Port
CFAN_TAC1 BC230 470P-04-O
SFAN_TAC2 BC229 470P-04-O
SIO_PCLK BC240 10P-04-O
SIO_CLK48 BC243 10P-04-O

5VSB_ATX
+PS_3VSB — 3VSB_IO
VCC — VCC
5VSB — 5VSB
VCC3 — VCC3
VBAT_IO — VBAT_IO
+V_1P5_SM — V_DIMM
+VCORE — VCORE
+V_1P05_PCH — V_1P05_PCH
+V_CPUVTT — CPUVTT

COM PORT
-RTSA
-DSRA
TXDA
RXDA
-DTRA
-DCDA
-RIA

del debug card

3VSB_IO
VBAT_IO
VCC3

CLOSE TO PIN69
MC93 1 2 1U-16VX-06

CLOSE TO PIN99
BC257 1 2 .1U-16VY-04
MC94 1 2 1U-16VX-06-O

BC255 1 2 .1U-16VY-04
BC231 1 2 .1U-16VY-04

CLOSE TO PIN67
MC78 1 2 1U-16VX-06
MC99 1 2 10U-10VY-08

SIO

IT8728F-BX

CTS1#
FAN_CTL5/CIRRX2/GP16
PCIRSTIN#/CIRTX2/GP15
3VSB
VCORE_EN/GP64
VCORE_GOOD/GP63
FAN_TAC1
FAN_CTL1
FAN_TAC2/GP52
FAN_CTL2/GP51
FAN_TAC3/GP37
FAN_CTL3/GP36
GP35
GP34
GNDD
5VSB_CTRL
5VAUX_SW
PWRGD2_50ms
GP30
SIN2/GP27
SOUT2/GP26
FAN_TAC4/DSR2#/GP25
FAN_TAC5/RTS2#/GP24
GP23/SI
GP22/SCK
DCD2#/GP21
CTS2#/GP20
RI2#/GP17
DTR2#
CE_N/RESETCON#/CIRTX
PECI_RQT/GP14
PWRGD1_30ms
PCIRST1#/GP12
PCIRST2#/GP11
3VSB
VCORE
LRESET#
LDRQ#/JP1

BUSY/GP82
PE/GP81
SLCT/GP80
AVCC3
VIN0
VIN1
VIN2
VIN3/ATXPG
VIN4/VLDT_12
VIN5/VDDA_25
VIN6/VDIMM_STR
VREF
TMPIN1
TMPIN2
TMPIN3
TS_D-
GNDA
RSMRST#/CIRRX1/GP55
PCIRST3#/GP10/VDIMM_STR_EN
MCLK/GP56
MDAT/GP57
KCLK/GP60
KDAT/GP61
3VSBSW#/GP40
PWRGD3_150ms
SUSC#/GP53
PSON#/GP42
PANSHW#/GP43
GNDD
PME#/GP54
PWRON#/GP44
SUSB#
SYS_3VSB
VBAT
COPEN#
3VSB
GP47
DSKCHG#

-CTSA
PLTRST_L
CFAN_TAC1
CFAN_PWM1
SFAN_TAC2
SFAN_PWM2
PCH_THRM_L
GP35
GP34
5VSB_CTRL
ATX_PWRGD
GP27
GP26
GP25
GP24
G_LED2
G_LED1
-DTRB
-RESETCON
R215
PWROK 2 0-04-O 1
-PCI_RSTY
-PCIE_RSTY
-LPCPD
PLTRST_L
-LPC_DRQ0
MC79 .022U-04

HM_VIN0
HM_VIN1
HM_VIN2
HM_VIN3
HM_VIN4
HM_VIN5
HM_VIN6
HM_VREF MC98 1 2 1U-16VX-06
TMP_SYS
HM_AGND
R262 1 2 0-04 RSMRST_N
-PCIE_RSTY3_L
MCLK
MDATA
KCLK
KDATA
-3VSBSW 0-04
R259 2 1 PWROK
SLP4_L
-ATX_PSON_SIO
R266 1 2 1K-04
-PWRBTN
R258 1 2 1K-04
LPCPME_L
-PWRON
-SLP3
-CASE_OPEN
GP47

SERIRQ
-LPC_FRAME
L_AD0
L_AD1
L_AD2
L_AD3
-KB_RST
A20GATE_L
SIO_PCLK
SIO_CLK48

PECI
R312 0-04-O
SST_CTL

3VSB R256 2 4.7K-04 GP47

VCC3 R213 1 2 0-04-O -LPCPD

R282 100-04-O
Q9 2N7002-S-O
-ATX_PSON_SIO G

FB19 0-SH

JP1 -LPC_DRQ0 R212 1K-04
JP3 -DTRA RN22 8x5 1K-8P4R-06
JP2 TXDA
JP4 -RTSA
JP5 A20GATE_L R227 1K-04-O
JP6 -DTRB R216 1K-04
-CASE_OPEN R257 1M-04

-PCIE_RSTY3 R26 1K-04
-PCIE_RSTY R214 1K-04
-PCI_RSTY R205 1K-04
PWROK R206 1K-04

-RESETCON R207 1K-04
RSMRST_N R268 560-04-O

+5VSB
PWROK
R280 4.7K-04
Q8 2N7002-S
H_SKTOCC_N
MC100 1U-16VX-06-O
Kent 1201

SML1CLK
SML1DATA
SML1CLK_28
SML1DATA_28

CONNETER 已經有PULL HI
MCLK R261 1K-04
MDATA R273 1K-04
KCLK R267 1K-04-O
KDATA R260 1K-04-O

HW STRAPPING

JP1	Pin 38	Flashseg1_EN	1	Disabled.
			0	Flash I/F Address Segment 1 is enabled
JP2	Pin 122	VIDO_EN	1	Disable VID output pins
			0	Enable VID output pins
JP3	Pin 124	CHIP_SEL	1	Chip selection in Configuration
JP4	Pin 126	K8PWR_EN	1	K8 power sequence function is disabled
			0	K8 power sequence function is enabled
JP3	Pin 124	FAN_CTL_SEL	11	The default value of EC Index 15h/16h/17h is 00h
JP5	Pin 46		10	The default value of EC Index 15h/16h/17h is 40h
			01	The default value of EC Index 15h/16h/17h is 20h
			00	The default value of EC Index 15h/16h/17h is 7Fh
JP5	Pin46	WDT_EN	1	Disable WDT to rest PWROK
			0	Enable WDT to rest PWROK
JP6	Pin29	SVID_EN	1	Disable SVID Function
			0	Enable SVID Function

Thermal and Voltage Monitor

HM_AGND
RT1 NTC-10K-1-06
BC256 .1U-16VY-04
TMP_SYS
ER76 10K-1-04
HM_VREF
HM_VIN2 ER85 31.6K-1-04 +12V
BC270 .1U-16VY-04 ER82 10K-1-04 HM_AGND
ER87
HM_VIN3 7.15K-1-04 VCC
BC273 .1U-16VY-04 ER81 10K-1-04 HM_AGND
HM_VIN0 ER84 10K-1-04 VCORE
HM_VIN1 ER83 10K-1-04 +V_1P8_SFR
HM_VIN4 ER78 10K-1-04 CPUVTT
HM_VIN5 ER80 10K-1-04 V_DIMM
HM_VIN6 ER77 10K-1-04 V_1P05_PCH

* HM_VIN2 for VCORE
* HM_VIN5 for V_DIMM
* HM_VIN4 for CPUVTT
* HM_VIN6 for V_1P05_PCH

BIOS SELECTION

BIOS SELECTION HI: LO: RJ101K-04(2-3)-O VCC3 GP35
BIOS SELECTION HI: LO: RJ9 1K-04(2-3)-O VCC3 GP34

EuP

3VSB R275 0-06-O 3VSB_IO
5VSB R361 0-08-O 5VSB_ATX
Option

5VSB_ATX R411 10K-04 5VSB
5VSB_CTRL R447 10K-04
MC158 1U-16VX-06
5VSB_ATX
MS1 AO4609-S

Ted 20100712

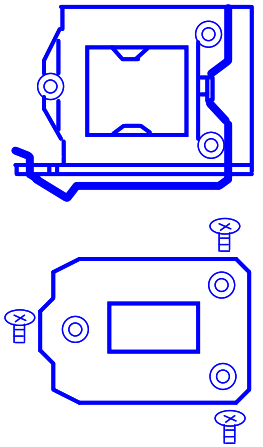
Elitegroup Computer Systems

Title: SIO-ITE8721/8728 Co-Lay
Size: Custom
Document Number: P67H2-A3
Rev: 1.0
Date: Thursday, September 16, 2010
Sheet 29 of 37

11-018-115021 CPU SMD SOCKET
SOCKET.CPU..LGA 1155P SMD.BLACK.PE115527-4041-01F.
LEAD-FREE.FOXCONN

20-800-004711 CPU SOCKET STEEL
SUBASSY.STEEL.LGA 1156P.W/
BACK PLATE.PT44A11-6401.LEAD-FREE(RoHS).FOXCONN

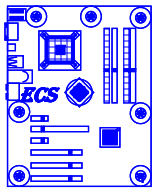
CPU1(104)
CPU_SUBASSY_STEEL



01D201-000060 PCH ES0

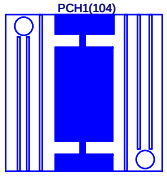
20-120-012343
MOS_HK
MOSFET HEATSINK

PCB



PCB-4layer

PCH1(104)



20-120-010851

PN:20-120-010851

CLR_CMOS(1-2)

JP-R

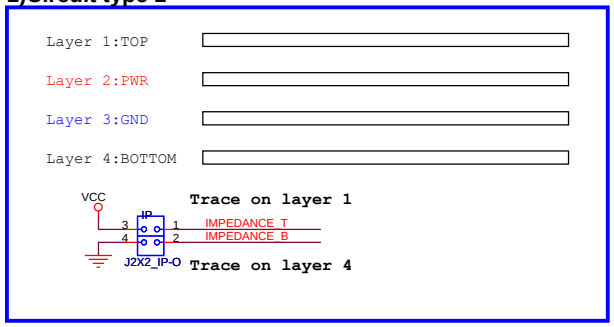
BT(104)

CR2032

Y1(wire)

JP-WI-P6.25

1)Circuit type 1



PCB STACK: **L1:TOP**
L2:PWR
L3:GND
L4:BOTTOM

Elitegroup Computer Systems

Title		
Size: Custom	Document Number: P67H2-A3	Rev: 1.0
Date: Thursday, September 23, 2010	Sheet 30 of 37	

External Connection

13 SATALED_L — SATA_LED1-
5,14,15 FP_RST_L — HWRST_L
29 FP_PWRBTN_L — -PWRBTN
29 G_LED1 — G_LED1
29 G_LED2 — G_LED2
14 PCH_SPKR — PCH_SPKR

PWR_BTN: TACT-4P-R — PWRBTN — 11-251-004815
RST_BTN: TACT-4P-Y — RSTSW- — 11-251-004814

FRONT PANEL

F_PANEL: +HDDLED, RST, +MSGLED, PWR

+DIMM_5VDUAL
VCC3, VCC
R366 1K-04
R349 180-04
RN35 330-8P4R-06
+HDD_LED
SATA_LED1-
HWRST_L
R395 33-04
RSTSW-
PWRBTN
R365 100-04
G_LED1X
G_LED2X
-PWRBTN
MC139 1U-16VX-06
BC317 .1U-16VY-04-O
H5X2-P10E-B
MC138 1U-16VX-06

	S0	S1	S3	S4	S5
G_LED1	L	B	B	L	L
G_LED2	H	H	L	L	L
	G	GB	YB	OFF	OFF

B:Blinking

5VSB
R355 4.7K-04
G_LED1
QN20 2N3904-S
R364 4.7K-04
G_LED2
QN21 2N3904-S

VCC
SPK
R367 100-04
SPKOUT
PCH_SPKR
R368 1K-04
BC345 .1U-16VY-04-O
QN24 2N3904-S
H4X1-P2E-B

POWER CONNECTOR

External Connection

+PS_5VSB — 5VSB_ATX
+VCC3 — VCC3
-12V — -12V
+5VSB — 5VSB
+VCC — VCC
+12V — +12V
29 PSON_L — -ATX_PSON_SIO
29 ATX_PWRGD — ATX_PWRGD

-12V, VCC, VCC3
VCC3, VCC, +12V, 5VSB_ATX
ATX_POWER
-ATX_PSON_SIO
ATX_PWRGD
R362 10K-04
BC341 .1U-16VY-04-O
ATX-PW-24P2R-W

5VSB: R346 330-04 — STBY — LED_Red_S
VCC: R350 330-04 — PWR — LED_Green_S
Kent 1016

VCC: BC339 .1U-16VY-04-O
VCC: BC342 .1U-16VY-04-O
VCC: BC338 .1U-16VY-04-O
VCC3: BC337 .1U-16VY-04-O
VCC: BC340 .1U-16VY-04-O
+12V: BC343 .1U-16VY-04-O
5VSB: BC212 .1U-16VY-04-O
VCC: BC85 .1U-16VY-04-O
VCC: BC349 .1U-16VY-04-O
For EMI.

FAN

External Connection

+12V — +12V
+VCC — VCC
29 CFAN_PWM1 — CFAN_PWM1
29 CFAN_TAC1 — CFAN_TAC1
29 SFAN_PWM2 — SFAN_PWM2
29 SFAN_TAC2 — SFAN_TAC2

+12V, VCC3, VCC
RJ7 4.7K-04(1-2)
Top Veiw
D14 1N4148-S
R196 4.7K-04
R198 27K-04
R202 10K-04
CFAN_TAC1
CFAN_PWM1
R203 100-04
CFAN_PWM1_R
CPU_FAN: GPO, SENSE, +12V, GND — H4X1-P-W
EC48 100U-16DE
MC76 1U-16VX-06-O

VCC3, VCC
RJ11 4.7K-04(1-2)-O
BC181 .1U-16VY-04-O
U18A
R131 15K-04-O
SFAN_PWM2
R87 470-04-O
R82 1K-04-O
1.4W
Q1 772-D-O
R77 0-08
OP358-S
C46 10U-10VY-08-O
R156 36K-04-O
R148 22K-04-O
精簡零件
SYS_FAN: SENSE, +12V, GND — H3X1-P-W
R99 4.7K-04
D10 1N4148-S
R100 27K-04
SFAN_TAC2
R101 10K-04
BC115 1U-16VY-04-O
EC28 100U-16DE

+12V
EC53 100U-16DE
PWR_FAN: SENSE, +12V, GND — H3X1-P-W

H5 TH8
H4 TH8
H2 TH8
H1 TH8
H3 TH8
H6 TH8
AUGND
AUGND

Elitegroup Computer Systems

Title: Front Panel,FAN,PowerConn

Size	Document Number	Rev
Custom	P67H2-A3	1.0

Date: Sunday, September 19, 2010 Sheet 31 of 37

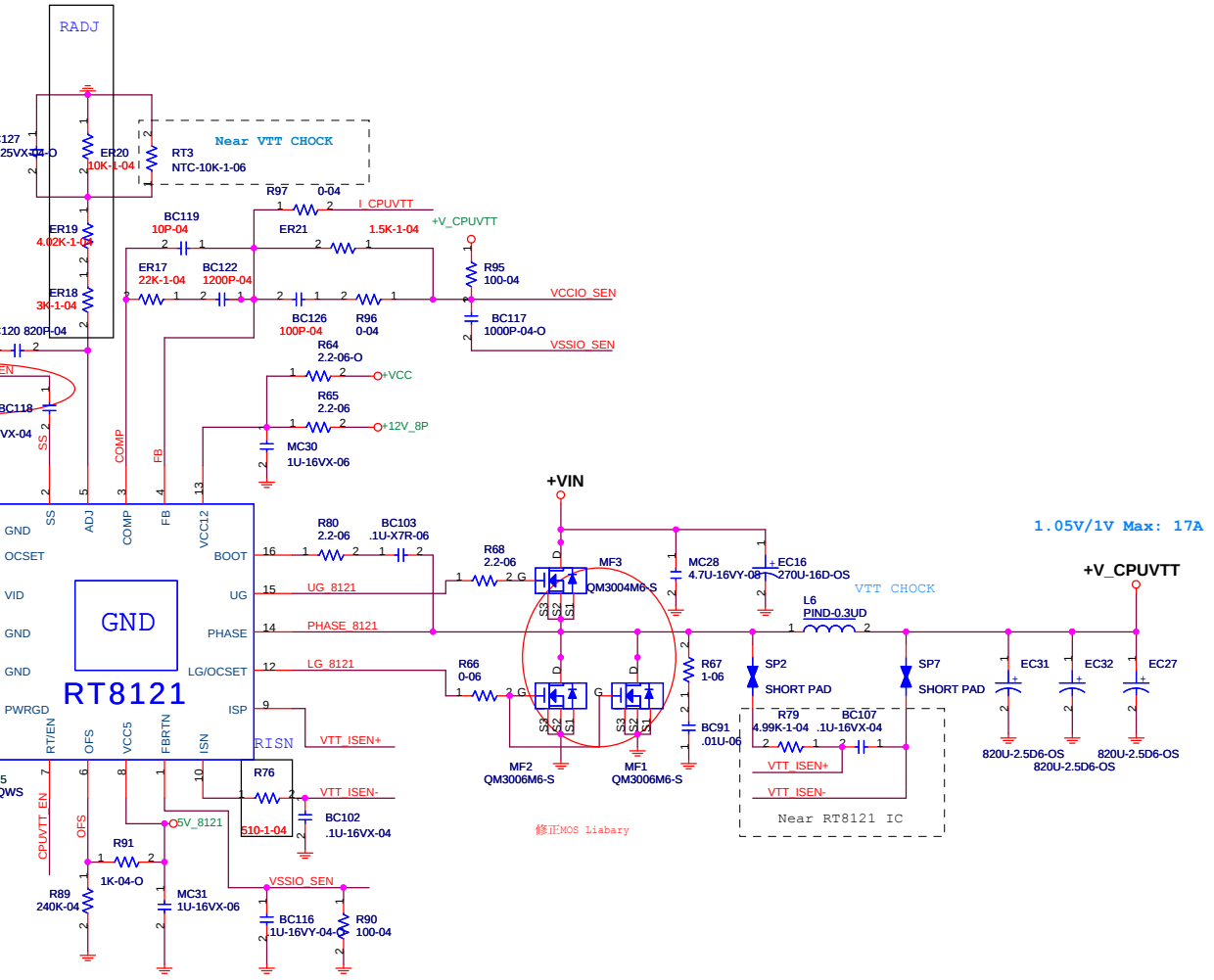
External Connection

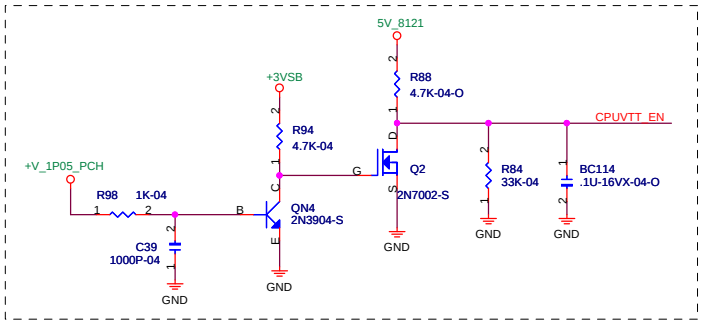
+VCC, +12V_8P, +3VSB, +5VSB, +V_1P05_PCH, +V_CPUVTT

VTT_SEL, VTT_PWRGD, VCCIO_SEN, VSSIO_SEN, I_CPUVTT

VCCIO voltage selection	
VTT_SEL	V_CPUVTT
low	1V
high	1.05V

VADJ = LL X IOUT = DCR X RADJ / 20 X RISN X IOUT
OCP設定方式就是VADJ > VOCSET 時保護,





Elitegroup Computer Systems

Title: DC/DC V_CPUVTT RT8859A

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Thursday, September 23, 2010 | Sheet 32 of 37

External Connection

+VCC, +VCORE, +V_CPUVTT, +12V_8P, +VCC3, +VIN, +5VSB

5 VR_EN
5 VR_SVID_ALERT_L
5 VR_SVID_DATAOUT
5 VR_SVID_CK
5 VR_HOT_L
34 AU1_PWM[1..4]

34 AU1_ISEN1P
34 AU1_ISEN1N
34 AU1_ISEN2P
34 AU1_ISEN2N
34 AU1_ISEN3P
34 AU1_ISEN3N
34 AU1_ISEN4P
34 AU1_ISEN4N
5 VCC_SEN
5 VSS_SEN
5,14,15 VR_READY

DEL VAXG

11 I_VCORE
5,29 H_SKTOCC_L

BOM Difference

	RT8859A	RT8859M
Ca	X	V
Cb	X	V
Cc	X	V
Cd	402-1-04	1k-1-04

Ca: C81 1U-16VX-06-O; ER111 1k-1-04-O
Cb: ER109 1k-1-04-O; C82 1U-16VX-06-O; BC159 .1U-16VX-04; ER108 1k-1-04-O; BC394 .1U-04-O; BC160 .1U-16VX-04; R526 100K-1-04-O; R527 100K-1-04-O; BC158 .1U-16VX-04; ER110 1k-1-04-O; BC395 .1U-04-O; BC162 .1U-16VX-04
Cc: R525 100K-1-04-O
Cd: BC156 .1U-16VX-04; R527 402-1-04

AU1_OFS — R112 0-04 — I_VCORE

GND

RT8859A

PWM6 RT8859AGQWS

ATX12V — ATX-PW-8P2R-W — +12V_8P — BC113 .01U-25VX-04

08-413-604322
Idc=22A
DCR=1.9m ohm

+12V_8P — L4 PIND-0.6UD-8X8 — +VIN

EC18 270U-16D-OS; EC19 270U-16D-OS; EC17 270U-16D-OS; EC20 270U-16D-OS; MC26 4.7U-16VY-08; MC24 4.7U-16VY-08; MC25 4.7U-16VY-08; MC27 4.7U-16VY-08

For VR_READY Power On Sequence

+VCC3 — ER48 1K-1-04 — VR_READY — Q7 2N7002-S-O — MN28_G — +5VSB — ER53 4.7K-1-04-O — Q6 2N7002-S-O — MN29_G — BC199 .1U-16VY-04-O — R181 10K-04-O — VRA_RDY — R169 0-04-O

Elitegroup Computer Systems

Title: DC/DC VCORE/VAXG RT8859A
Size: Custom
Document Number: P67H2-A3
Rev: 1.0
Date: Thursday, September 16, 2010
Sheet 33 of 37

External Connection

+VCC +VCC
+VCORE +VCORE
+V_CPUVTT AVTT
+12V_8P +12V_8P
+VCC3 +VCC3
+VIN +VIN

33 AU1_PWM[1..4] AU1_PWM[1..4]

33 AU1_ISEN1P AU1_ISEN1P
33 AU1_ISEN1N AU1_ISEN1N

33 AU1_ISEN2P AU1_ISEN2P
33 AU1_ISEN2N AU1_ISEN2N

33 AU1_ISEN3P AU1_ISEN3P
33 AU1_ISEN3N AU1_ISEN3N

33 AU1_ISEN4P AU1_ISEN4P
33 AU1_ISEN4N AU1_ISEN4N
5,33 VCC_SEN VCC_SEN
5,33 VSS_SEN VSS_SEN

DEL VAXG

R56 2.2-06 BC78 .1U-X7R-06
PWM1 RT9619
BAT54A-S D6
AU1_PWM1
+12V_8P R51 2.2-06
BC73 .1U-16VY-04 RT9619APSS
BOOT UGATE PWM PHASE NC PGND VCC LGATE
HG1 PHASE1 LG1

R58 2.2-06 BC79 .1U-X7R-06
PWM2 RT9619
BAT54A-S D8
AU1_PWM2
+12V_8P R54 2.2-06
BC74 .1U-16VY-04 RT9619APSS
HG2 PHASE2 LG2

R60 2.2-06 BC80 .1U-X7R-06
PWM3 RT9619
BAT54A-S D7
AU1_PWM3
+12V_8P R52 2.2-06
BC75 .1U-16VY-04 RT9619APSS
HG3 PHASE3 LG3

R62 2.2-06 BC81 .1U-X7R-06
PWM4 RT9619
BAT54A-S D9
AU1_PWM4
+12V_8P R53 2.2-06
BC76 .1U-16VY-04 RT9619APSS
HG4 PHASE4 LG4

+VIN

R70 0-06 MF6 QM3004M6-S
R55 0-06 MF5 QM3006M6-S
MF4 QM3006M6-S
R69 1-06 BC92 .01U-06
L5 PIND-0.3UD
SP4 SHORT PAD SP8 SHORT PAD
ER31 383-1-04 MC38 1U-16VX-06
AU1_ISEN1P AU1_ISEN1N

R72 0-06 MF9 QM3004M6-S
R57 0-06 MF7 QM3006M6-S
MF8 QM3006M6-S
R71 1-06 BC93 .01U-06
L7 PIND-0.3UD
SP1 SHORT PAD SP6 SHORT PAD
ER32 383-1-04 MC39 1U-16VX-06
AU1_ISEN2P AU1_ISEN2N

R74 0-06 MF12 QM3004M6-S
R59 0-06 MF11 QM3006M6-S
MF10 QM3006M6-S
R73 1-06 BC94 .01U-06
L8 PIND-0.3UD
SP3 SHORT PAD SP9 SHORT PAD
ER30 383-1-04 MC41 1U-16VX-06
AU1_ISEN3P AU1_ISEN3N

R78 0-06 MF15 QM3004M6-S
R61 0-06 MF13 QM3006M6-S
MF14 QM3006M6-S
R75 1-06 BC95 .01U-06
L9 PIND-0.3UD
SP5 SHORT PAD SP10 SHORT PAD
ER25 383-1-04 MC40 1U-16VX-06
AU1_ISEN4P AU1_ISEN4N

修正MOS Liabary

+VCORE +VCORE
EC37 EC33 EC35 EC34 EC38 EC36
820U-2.5D6-OS 820U-2.5D6-OS 820U-2.5D6-OS 820U-2.5D6-OS 820U-2.5D6-OS 820U-2.5D6-OS

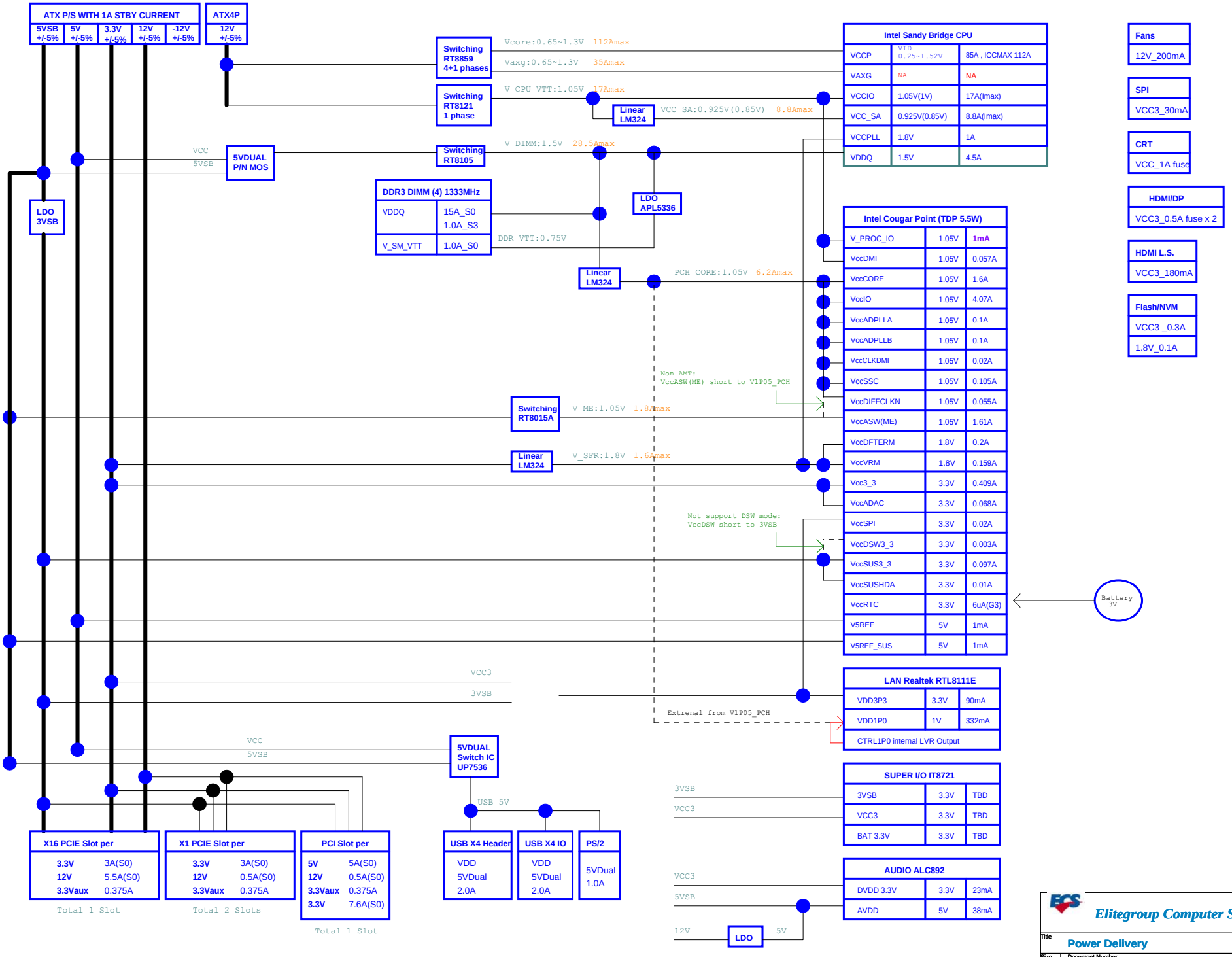
DEL VAXG

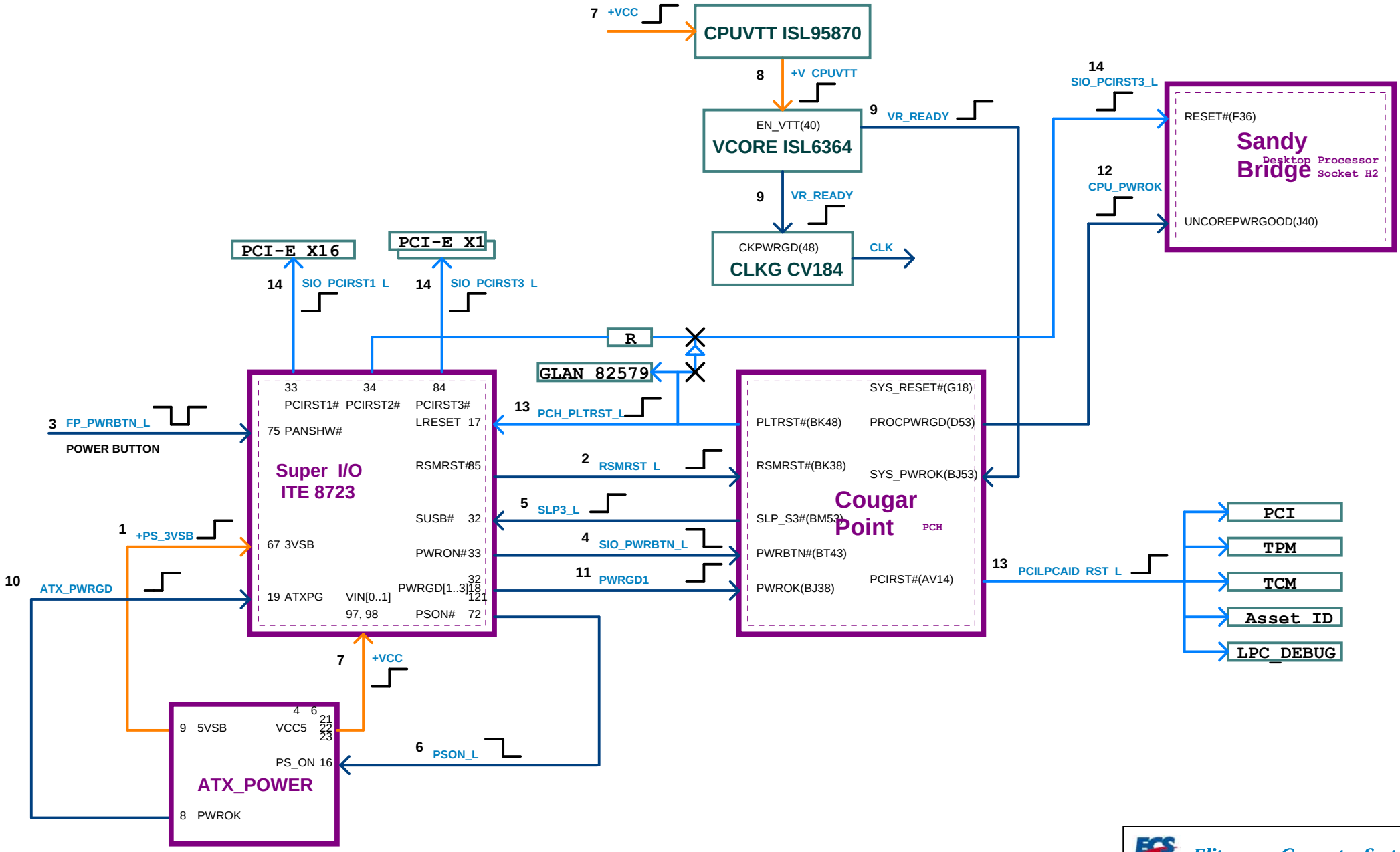
Elitegroup Computer Systems

Title: DC/DC VCORE/VAXG RT9619

Size	Document Number	Rev
Custom	P67H2-A3	1.0

Date: Tuesday, September 21, 2010 Sheet 34 of 37


ATX P/S WITH 1A STBY CURRENT
5VSB +/-5%
5V +/-5%
3.3V +/-5%
12V +/-5%
-12V +/-5%
ATX4P
12V +/-5%
Switching RT8859 4+1 phases
Vcore:0.65~1.3V 112Amax
Vaxg:0.65~1.3V 35Amax
Switching RT8121 1 phase
V_CPU_VTT:1.05V 17Amax
Linear LM324
VCC_SA:0.925V(0.85V) 8.8Amax
Intel Sandy Bridge CPU
VCCP VID 0.25~1.52V 85A , ICCMAX 112A
VAXG NA NA
VCCIO 1.05V(1V) 17A(Imax)
VCC_SA 0.925V(0.85V) 8.8A(Imax)
VCCPLL 1.8V 1A
VDDQ 1.5V 4.5A
Fans
12V_200mA
SPI
VCC3_30mA
CRT
VCC_1A fuse
HDMI/DP
VCC3_0.5A fuse x 2
HDMI L.S.
VCC3_180mA
Flash/NVM
VCC3 _0.3A
1.8V_0.1A
VCC
5VSB
5VDUAL P/N MOS
Switching RT8105
V_DIMM:1.5V 28.5Amax
DDR3 DIMM (4) 1333MHz
VDDQ 15A_S0 1.0A_S3
V_SM_VTT 1.0A_S0
DDR_VTT:0.75V
LDO APL5336
LDO 3VSB
Linear LM324
PCH_CORE:1.05V 6.2Amax
Intel Cougar Point (TDP 5.5W)
V_PROC_IO 1.05V 1mA
VccDMI 1.05V 0.057A
VccCORE 1.05V 1.6A
VccIO 1.05V 4.07A
VccADPLLA 1.05V 0.1A
VccADPLLB 1.05V 0.1A
VccCLKDMI 1.05V 0.02A
VccSSC 1.05V 0.105A
VccDIFFCLKN 1.05V 0.055A
VccASW(ME) 1.05V 1.61A
VccDFTERM 1.8V 0.2A
VccVRM 1.8V 0.159A
Vcc3_3 3.3V 0.409A
VccADAC 3.3V 0.068A
VccSPI 3.3V 0.02A
VccDSW3_3 3.3V 0.003A
VccSUS3_3 3.3V 0.097A
VccSUSHDA 3.3V 0.01A
VccRTC 3.3V 6uA(G3)
V5REF 5V 1mA
V5REF_SUS 5V 1mA
Non AMT:
VccASW(ME) short to V1P05_PCH
Switching RT8015A
V_ME:1.05V 1.8Amax
Linear LM324
V_SFR:1.8V 1.6Amax
Not support DSW mode:
VccDSW short to 3VSB
Battery 3V
VCC3
3VSB
Extrenal from V1P05_PCH
LAN Realtek RTL8111E
VDD3P3 3.3V 90mA
VDD1P0 1V 332mA
CTRL1P0 internal LVR Output
VCC
5VSB
5VDUAL Switch IC UP7536
USB_5V
SUPER I/O IT8721
3VSB 3.3V TBD
VCC3 3.3V TBD
BAT 3.3V 3.3V TBD
X16 PCIE Slot per
3.3V 3A(S0)
12V 5.5A(S0)
3.3Vaux 0.375A
Total 1 Slot
X1 PCIE Slot per
3.3V 3A(S0)
12V 0.5A(S0)
3.3Vaux 0.375A
Total 2 Slots
PCI Slot per
5V 5A(S0)
12V 0.5A(S0)
3.3Vaux 0.375A
3.3V 7.6A(S0)
Total 1 Slot
USB X4 Header
VDD
5VDual
2.0A
USB X4 IO
VDD
5VDual
2.0A
PS/2
5VDual
1.0A
AUDIO ALC892
DVDD 3.3V 3.3V 23mA
AVDD 5V 38mA
VCC3
5VSB
12V
LDO
5V
Elitegroup Computer Systems
Title
Power Delivery
Size C
Document Number
P67H2-A3
Rev 1.0
Date: Monday, August 30, 2010
Sheet 35 of 37



Elitegroup Computer Systems

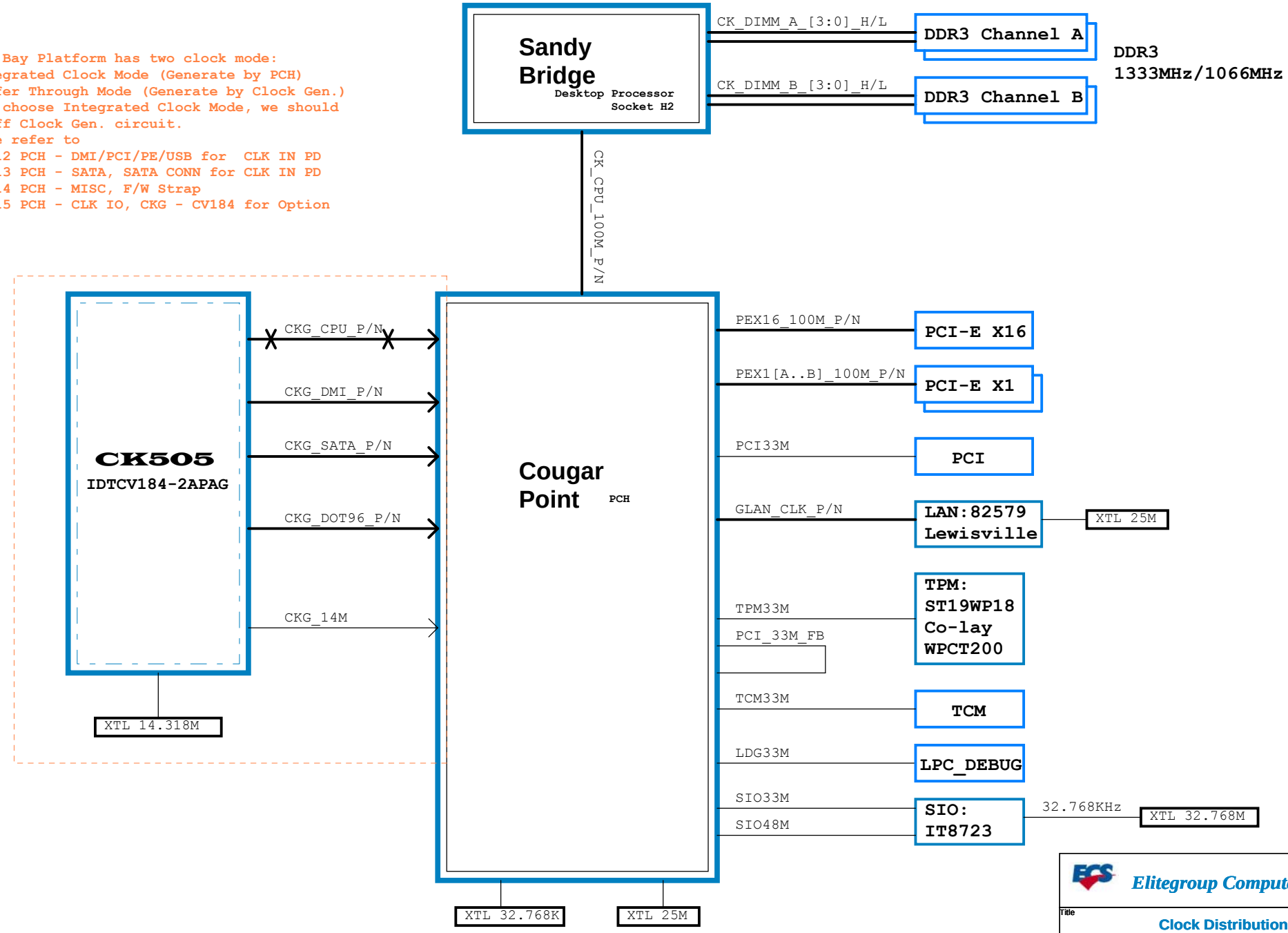
Title: Power Sequence, Reset Diagram

Size: Custom | Document Number: P67H2-A3 | Rev: 1.0

Date: Monday, August 30, 2010 | Sheet 36 of 37

NOTE:

Sugar Bay Platform has two clock mode:
1.Integrated Clock Mode (Generate by PCH)
2.Buffer Through Mode (Generate by Clock Gen.)
If we choose Integrated Clock Mode, we should unstuff Clock Gen. circuit.
Please refer to
Page.12 PCH - DMI/PCI/PE/USB for CLK IN PD
Page.13 PCH - SATA, SATA CONN for CLK IN PD
Page.14 PCH - MISC, F/W Strap
Page.15 PCH - CLK IO, CKG - CV184 for Option



Elitegroup Computer Systems

Title	Clock Distribution	
Size: Custom	Document Number: P67H2-A3	Rev: 1.0
Date: Monday, August 30, 2010	Sheet 37 of 37	