NM70-I V:1.0

SCHEMATICS TABLE:

REVISION HISTORY:

Rev	Date	Notes
A	06-04-2012	INITIAL RELEASE Modify form CDC-I
B	08-10-2012	1) 導入5VDUAL取代5VSB 2) Del D3 改MN13 3)SIO#85 POWER 為VBAT 4))修正SATA4 (Port0 TX NP接反) 5)Page28 RT8121更換成RT8140 6) reanme ER14->R21 ME_LOCK1->ME_LOCK BT1->BT CODEC1 7)SATA1->SATA3;SATA2->SATA4;SATA3->SATA2;SATA4->SATA1

PCB	15-ES1-010010
NM70	01-201-070091
847	01-152-110021
807	01-149-150092
VT1705CF	02-301-705622
NCT3914	02-415-941900
LVDS	10-262-030132
	10-262-030331
RTL8105E-VL-CG	01-267-105352
RTL8111E-VL-CG	01-267-111357
RT8167AGQW	02-437-167790
PCIEX16	10-455-164030
SPI ROM SOCKET	11-127-008120
DIMM	11-025-204123
220P-VPORT	04-140-221005

待改

IMPORTANT NOTES ABOUT THIS SCHEMATIC

DESIGN NOTE: Example text for the design note to show the note inside the colored box.

1) DESIGN NOTES in grey are information notes.

DESIGN NOTE: Example text for the design note to show the note inside the colored box.

2) DESIGN NOTES in yellow are notes of caution.

DESIGN NOTE: Example text for the design note to show the note inside the colored box.

3) DESIGN NOTES in red are critical, and must be understood and followed.

PCB : 170 x 170 mm ; 4 layers
PCB STACK:
L1:TOP
L2:PWR
L3:GND
L4:BOTTOM

Elitegroup Computer Systems

Title: Cover Page

Size: Custom | Document Number: NM70-I | Rev: 1.0

Date: Tuesday, August 21, 2012 | Sheet 1 of 30

VCORE POWER
PWM
VRD12/IMVP7
(RT8167)
21

DDR3:1066/1333MHz

INTEL
Sandy-Bridge Mobile
BGA1023
TDP17W
3,4,5,6,7

Channel A

SO DIMM0: DDR3 Socket
8

PCIEx16 Slot
25

BW : MB/s @Freq : MHz

FDI X8

X4 DMI

VGA CONN
12

LVDS Header
12

LVDS

DVI/HDMI CONN
16

DDPB

INTEL
NM70
11,12

PCIE Port1

PCIE-LAN
RTL8105E
18

Azalia I/F

VIA Audio Codec
VT1705CF
19

Line in
Line out
Mic in
20

SPI

Flash Bios
12

USB2.0

USB_0
USB_REAL

USB_1
USB_REAL

USB_2
USBLAN

USB_3
USBLAN

USB_11
F_USB

USB_10
F_USB

USB_9
F_USB

USB_8
F_USB

13,18

SATAII/SATAIII

LPC bus

SATA1
Gen3/Port0

SATA3
Gen2/Port2

SATA2
Gen2/Port4

SATA4
Gen2/Port5

9,16

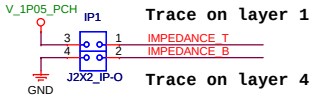
Super I/O
F71869E
128pin LQFP
17

PCB Impedance control

Impedance (OHM)	Trace Width (mil)	(S/W/S)	Trace Length (inch)	Pre-preg
50	4	(50/4/50)	6	1080

PCB STACK:

Layer 1:TOP
Layer 2:PWR
Layer 3:GND
Layer 4:BOTTOM



Trace on layer 1

Trace on layer 4

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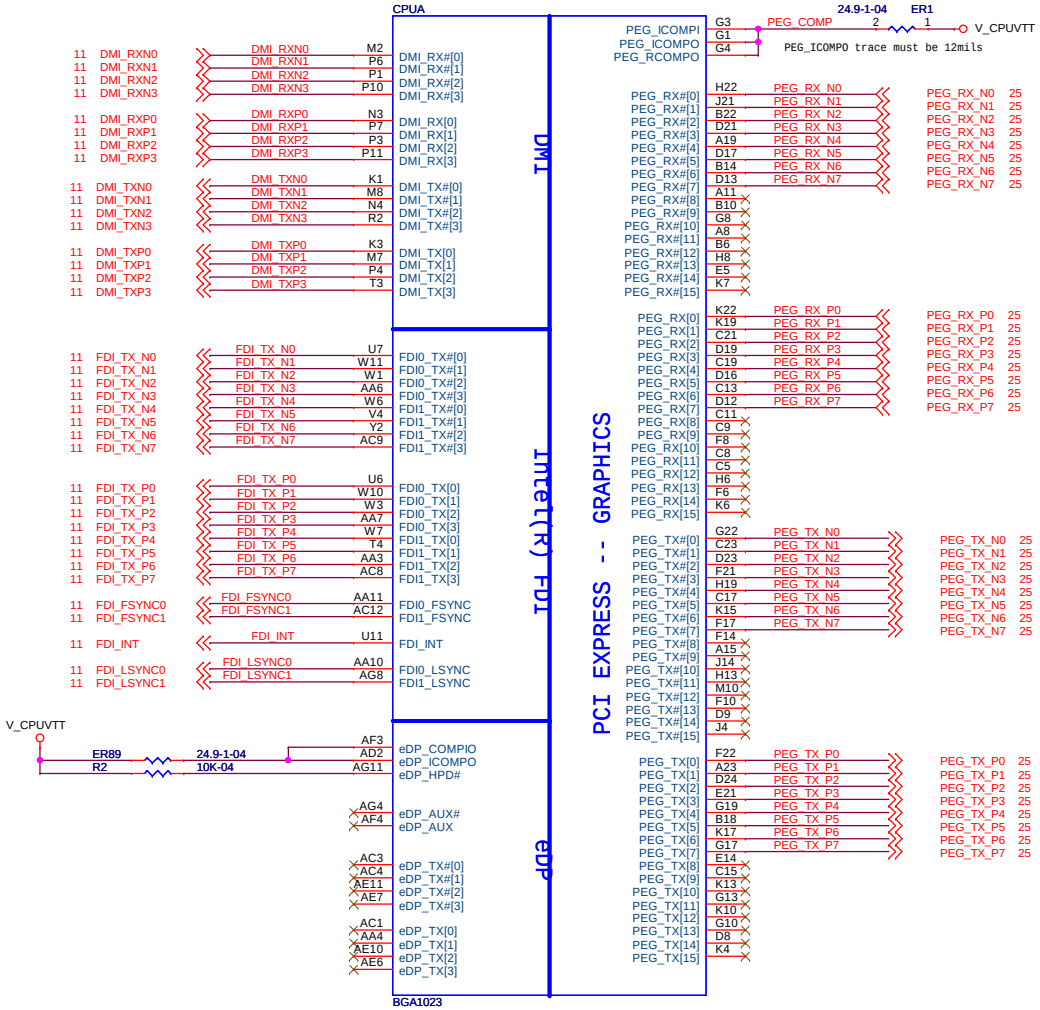
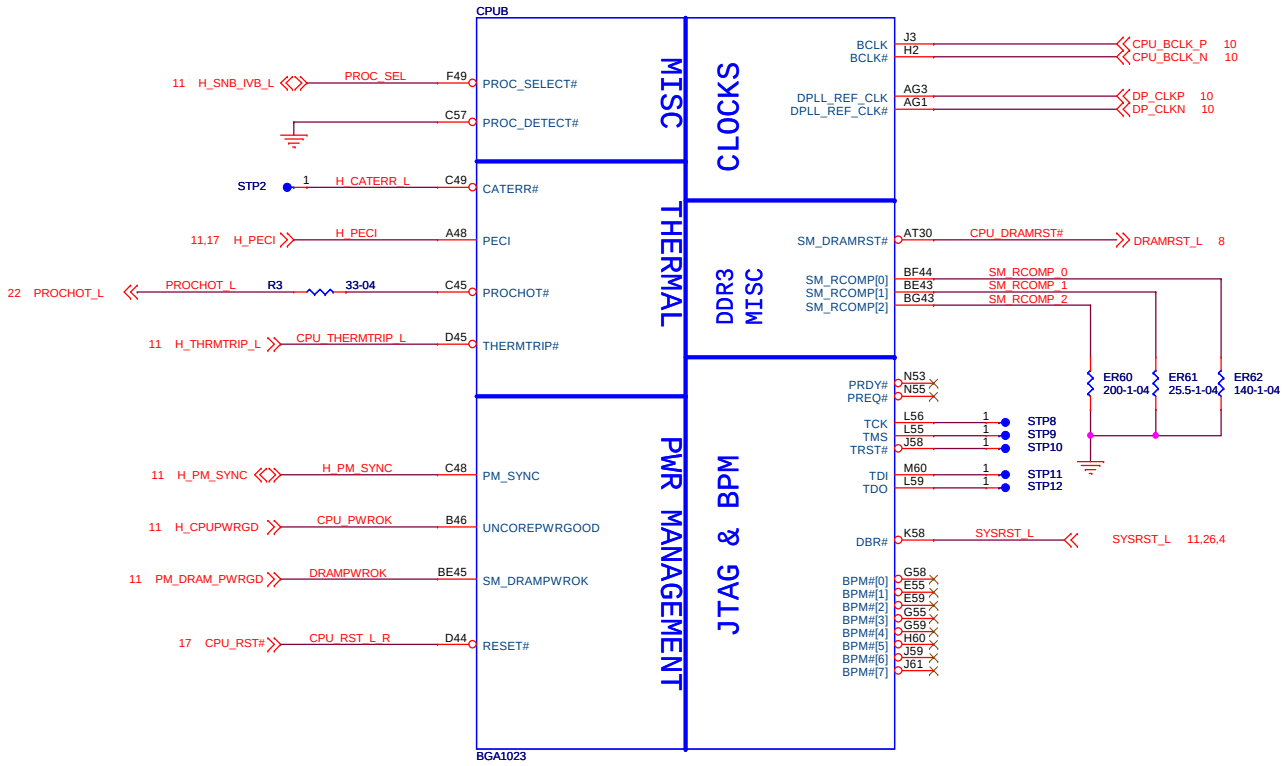
Title: Block Diagram

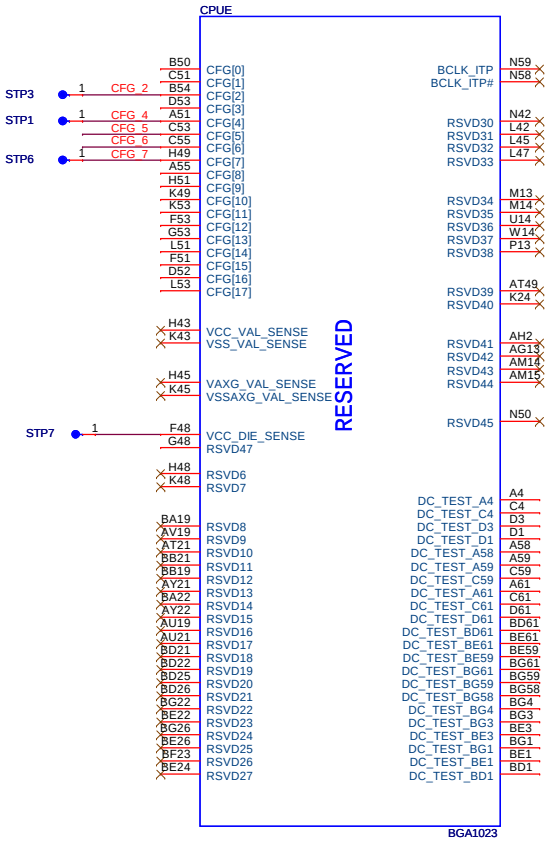
Size: Custom | Document Number: NM70-I | Rev: 1.0

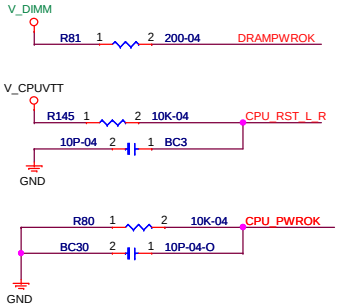
Date: Tuesday, August 21, 2012 | Sheet 2 of 30



Company	Elitegroup Computer Systems
Title	CPU DMI/FDI/PEG
Size	Custom
Document Number	NM70-I
Rev	1.0
Date	Tuesday, August 21, 2012
Sheet	3 of 30

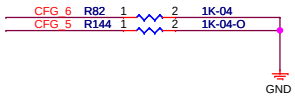






CFG[0..17] have internal Pull-High

	CFG	Stauts	DESCRIPTION
PCI Express Reversal	2	1	Normal *
		0	reversed
EDP Enable	4	1	Disable *
		0	Enable
PCI Express Bifurcation	5 6	1 1	x16 *1
		1 0	x8*2 *

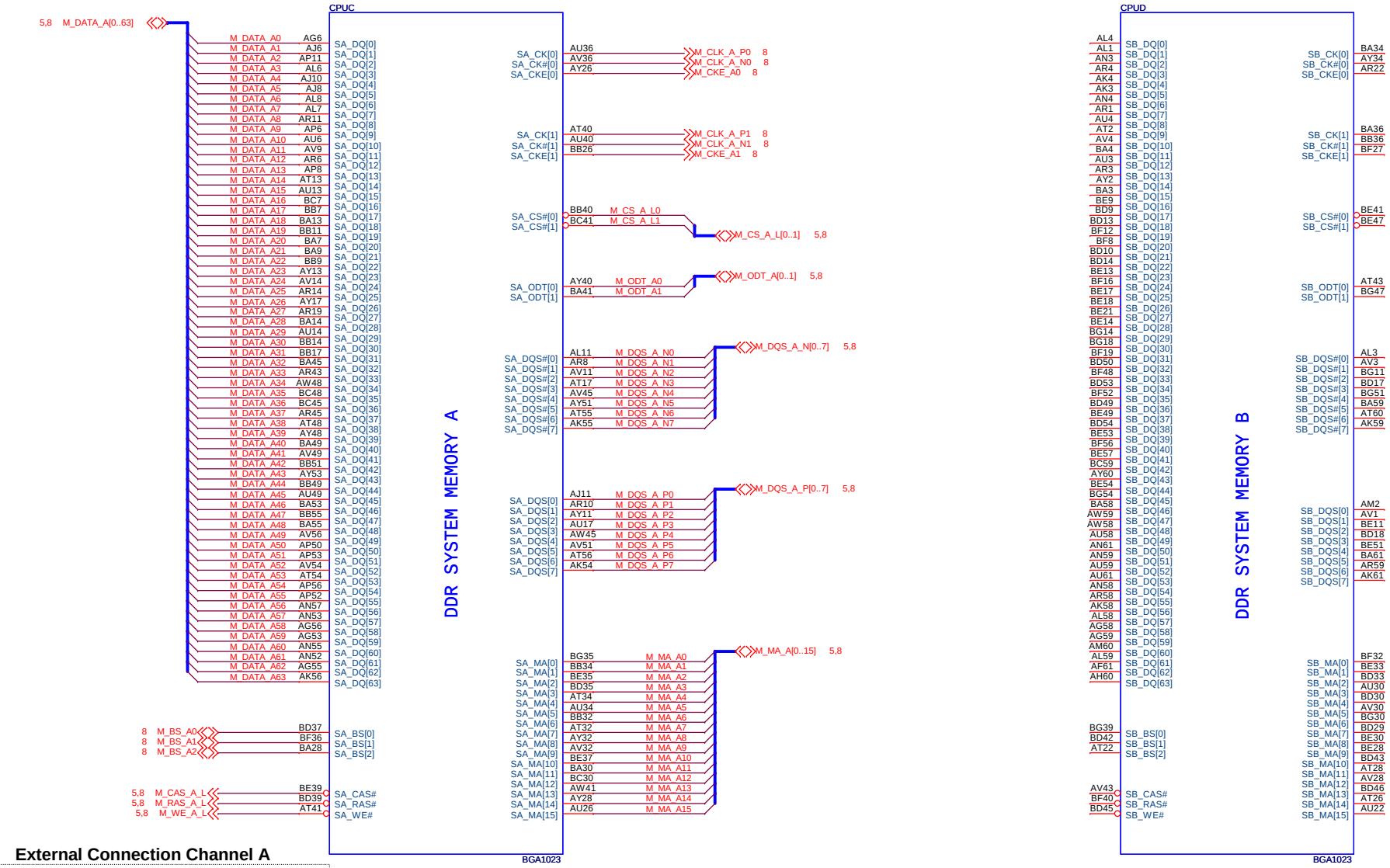


<OrgAddr1> Elitegroup Computer Systems

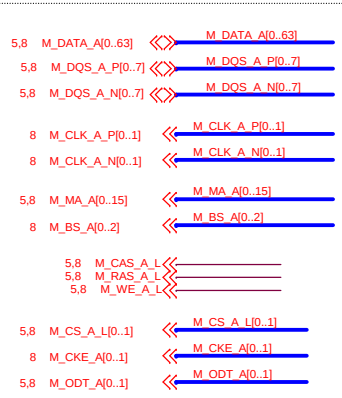
Title: CPU CLK/MISC/JTAG

Size	Document Number	Rev
Custom	NM70-I	1.0

Date: Tuesday, August 21, 2012 Sheet 4 of 30



External Connection Channel A



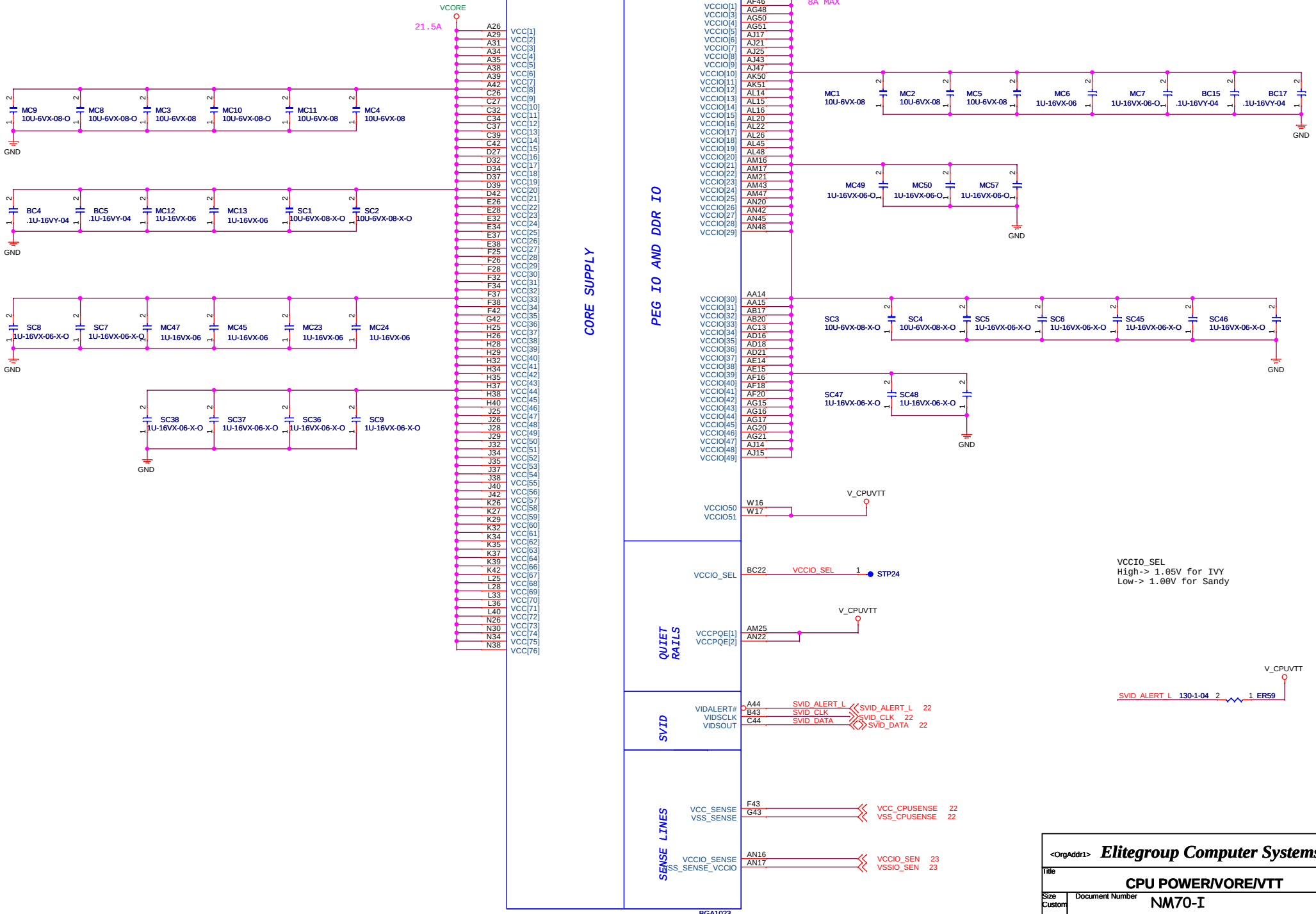
<OrgAddr1> Elitegroup Computer Systems

Title: CPU DDR3/SODIMM

Size: Custom | Document Number: NM70-I | Rev: 1.0

Date: Tuesday, August 21, 2012 | Sheet 5 of 30

POWER



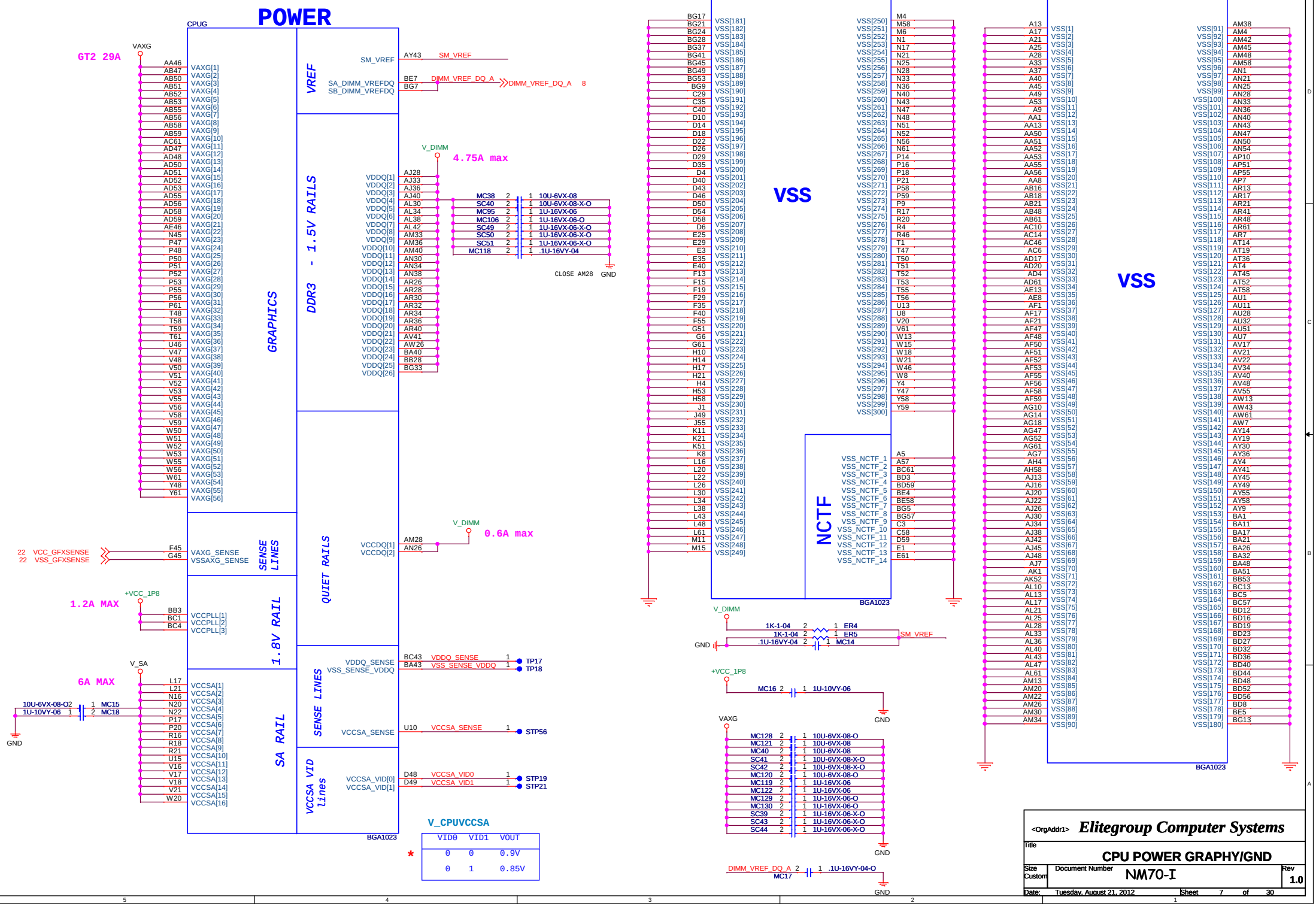
<OrgAddr1> Elitegroup Computer Systems

Title: CPU POWER/VORE/VTT

Size	Document Number	Rev
Custom	NM70-I	1.0

Date: Tuesday, August 21, 2012 Sheet 6 of 30

POWER



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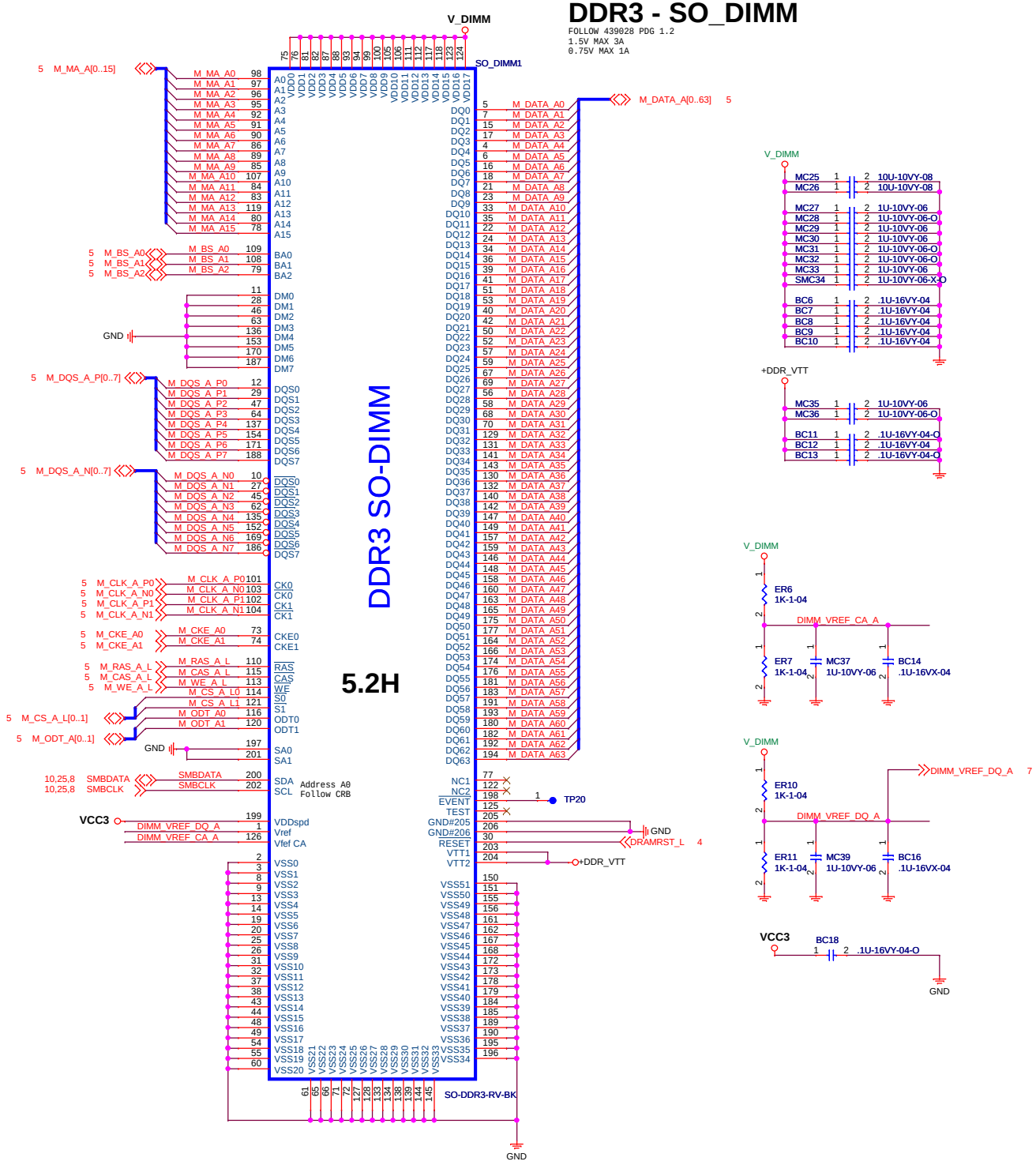
Title	CPU POWER GRAPHY/GND
Size: Custom	Document Number: NM70-I
Rev	1.0
Date:	Tuesday, August 21, 2012
Sheet	7 of 30

DDR3 - SO_DIMM

FOLLOW 439028 PDG 1.2
1.5V MAX 3A
0.75V MAX 1A



Del Channel B and Change DIMM1 Higeht 5.2mm

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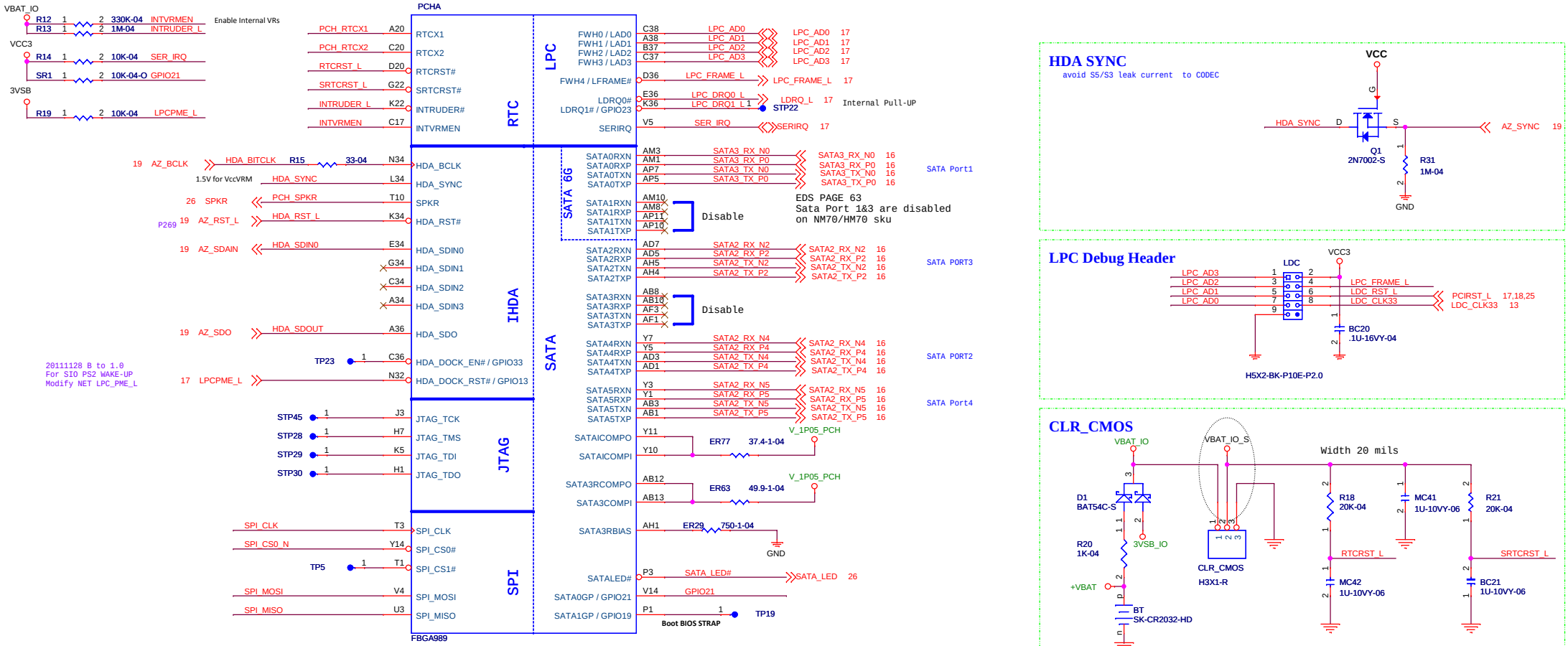
Title	DDR3 SODIMM	
Size: Custom	Document Number: NM70-I	Rev: 1.0
Date: Tuesday, August 21, 2012	Sheet 8 of 30	



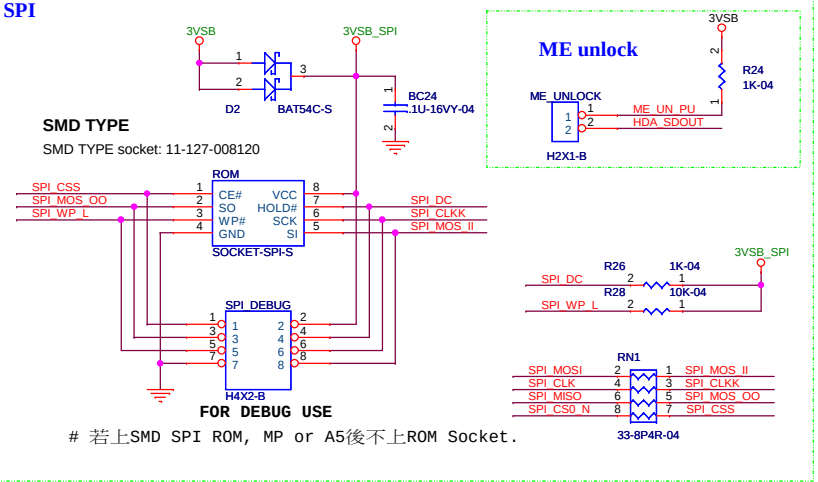
HDA SYNC

avoid S5/S3 leak current to CODEC

LPC Debug Header

CLR_CMOS

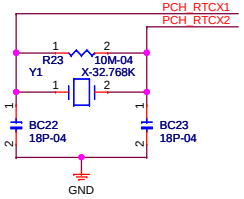
SPI



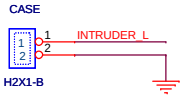
PCH strap pin table

PIN	SYMBOL	VAULE	Description		strapped by	
SPKR	No Reboot	HI	Enable		PWROK	internal PD
		LO	Disable	*		
INVRMEM	Integrated 1.05V VRM	HI	Enable Internal VRs	*	Always	
		LOW	Enable External VRs			
GNT1# SATA1GP	Boot BIOS STRAP	1 1	SPI ROM	*	PWROK	internal PH
		00	LPC ROM			
HDA_SDO	ME unlock	HI	unLock		RSMRST#	internal PD
		LO	Lock	*		
GPIO28	on-die PLL Voltage Regulator	HI	Enable Regulator	*	RSMRST#	internal PH
		LO	Disable Regulator			
HDA_SYNC	on-die PLL Voltage Select	HI	1.5V for VccVRM		RSMRST#	internal PD
		LO	1.8V for VccVRM	*		
GPIO15	TLS EN	HI	confidentiality		RSMRST#	internal PD
		LO	no confidentiality	*		
GNT3	Top-Block Swap Override	HI		*	PWROK	internal PH
		LO	Enable			
INIT3_3#	Reserved	HI	不要pull-low	*	PWROK	internal PH
GNT2/GPIO53	ESI strap	HI	不要pull-low	*	PWROK	internal PH
DF_TVS	DMI/FDI termination voltage	LO		*		internal PD
DSWVREM	DSW on die VR	HI	Enable Regulator	*	Always	自行pull-high
SATA3GP	Reserved	LO	不要pull-High	*	PWROK	internal PD

RTC



CASE OPEN



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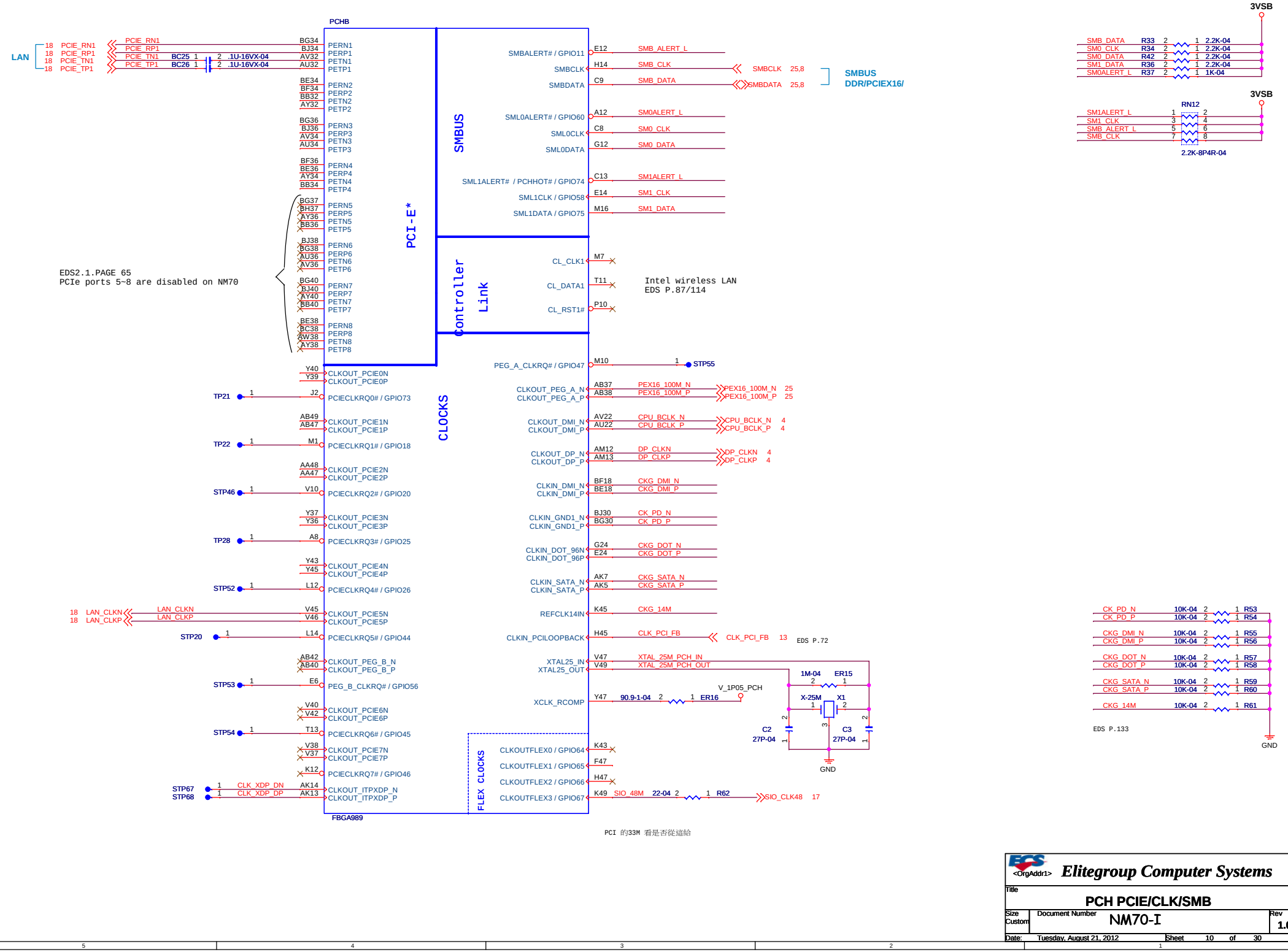
Title	PCH - HDA/JTAG/SPI/SATA	
Size: Custom	Document Number: NM70-I	Rev: 1.0
Date: Tuesday, August 21, 2012	Sheet 9 of 30	



<OrgAddr1> Elitegroup Computer Systems			
Title: PCH PCIE/CLK/SMB			
Size: Custom	Document Number: NM70-I		Rev: 1.0
Date: Tuesday, August 21, 2012		Sheet 10 of 30	

注意TX/RX的關係。
CPU為Host

PCHC

DMI_TXN0 BC24
DMI_TXN1 BE20
DMI_TXN2 BG18
DMI_TXN3 BG20
DMI_TXP0 BE24
DMI_TXP1 BC20
DMI_TXP2 BJ18
DMI_TXP3 BJ20
DMI_RXN0 AW24
DMI_RXN1 AW20
DMI_RXN2 BB18
DMI_RXN3 AV18
DMI_RXP0 AY24
DMI_RXP1 AY20
DMI_RXP2 AY18
DMI_RXP3 AU18

DMI0RXN DMI1RXN DMI2RXN DMI3RXN
DMI0RXP DMI1RXP DMI2RXP DMI3RXP
DMI0TXN DMI1TXN DMI2TXN DMI3TXN
DMI0TXP DMI1TXP DMI2TXP DMI3TXP

DMI

FDI_RXN0 BJ14 FDI_TX_N0 → FDI_TX_N0 3
FDI_RXN1 AY14 FDI_TX_N1 → FDI_TX_N1 3
FDI_RXN2 BE14 FDI_TX_N2 → FDI_TX_N2 3
FDI_RXN3 BH13 FDI_TX_N3 → FDI_TX_N3 3
FDI_RXN4 BC12 FDI_TX_N4 → FDI_TX_N4 3
FDI_RXN5 BJ12 FDI_TX_N5 → FDI_TX_N5 3
FDI_RXN6 BG10 FDI_TX_N6 → FDI_TX_N6 3
FDI_RXN7 BG9 FDI_TX_N7 → FDI_TX_N7 3
FDI_RXP0 BG14 FDI_TX_P0 → FDI_TX_P0 3
FDI_RXP1 BB14 FDI_TX_P1 → FDI_TX_P1 3
FDI_RXP2 BF14 FDI_TX_P2 → FDI_TX_P2 3
FDI_RXP3 BG13 FDI_TX_P3 → FDI_TX_P3 3
FDI_RXP4 BE12 FDI_TX_P4 → FDI_TX_P4 3
FDI_RXP5 BG12 FDI_TX_P5 → FDI_TX_P5 3
FDI_RXP6 BJ10 FDI_TX_P6 → FDI_TX_P6 3
FDI_RXP7 BH9 FDI_TX_P7 → FDI_TX_P7 3

FDI

FDI_INT AW16 FDI_INT → FDI_INT 3
FDI_FSYNC0 AV12 FDI_FSYNC0 → FDI_FSYNC0 3
FDI_FSYNC1 BC10 FDI_FSYNC1 → FDI_FSYNC1 3
FDI_LSYNC0 AV14 FDI_LSYNC0 → FDI_LSYNC0 3
FDI_LSYNC1 BB10 FDI_LSYNC1 → FDI_LSYNC1 3

V_1P05_PCH
49.9-1-04 2 1 ER18 DMI_COMP BG25 DMI_ZCOMP
750-1-04 2 1 ER19 DMI2RBIAS BH21 DMI_IRCOMP
BJ24 DMI_ZCOMP
DMI2RBIAS
GND

System Power Management

TP8 1 SUSACK# C12 SUSACK#
26,4 SYSRST_L SYSRST_L K3 SYS_RESET#
22 VR_READY VR_READY P12 SYS_PWROK
17 PWROK PWROK L22 PWROK
L10 APWROK
4 PM_DRAM_PWRGD DRAMPWROK B13 DRAMPWROK
17 RSMRST_L RSMRST_L C21 RSMRST#
STP60 1 SUSWARN# K16 SUSWARN#/SUSPWRDNACK/GPIO30
17 PWRBTN_L PWRBTN_L E20 PWRBTN#
Internal Pull-up
STP58 1 ACPRESENT H20 ACPRESENT / GPIO31
STP59 1 BATERRYLOW# E10 BATLOW# / GPIO72
21 RI_L RI# A10 RI#

DSWVRMEN A18 DSWODVREN
DPWROK E22 RSMRST_L
WAKE# B9 PCIE_WAKE → PCIE_WAKE_L 18,25
CLKRUN# / GPIO32 N3 PCI_CLKRUN#
SUS_STAT# / GPIO61 G8 SUS_STAT# 1 STP31
SUSCLK / GPIO62 N14 SUSCLK# 1 STP32
SLP_S5# / GPIO63 D10 SLP_S5# 1 STP33
SLP_S4# H4 SLP_S4# 1 STP69 → SLP4_L 17
SLP_S3# F4 SLP_S3# 1 STP61 → SLP3_L 17,22,23
SLP_A# G10 1 STP34
SLP_SUS# G16 1 STP35
PMSYNCH AP14 H_PM_SYNC → H_PM_SYNC 4
SLP_LAN# / GPIO29 K14 1 STP57

This signal provides state information from the PCH to the processor.

FBGA989

PCHF

20 AZ_DET_L AZ_DET_L T7 BMBUSY# / GPIO0
GP1_BOMDET1 A42 TACH1 / GPIO1
GP6_BOMDET2 H36 TACH2 / GPIO6
GPIO7 E38 TACH3 / GPIO7
C10 GPIO8
STP49 1 LAN_EN C4 LAN_PHY_PWR_CTRL / GPIO12
TLS_EN G2 GPIO15
12 PCH_BKLCTL PCH_BKLCTL U2 SATA4GP / GPIO16
GP17_BOMDET3 D40 TACH0 / GPIO17
GP22_BOMDET4 T5 SCLOCK / GPIO22
STP50 1 GPIO24 E8 GPIO24 / MEM_LED
E16 GPIO27
STP47 1 VRM_EN P8 GPIO28
GP34_BOMDET5 K1 STP_PCI# / GPIO34
K4 GPIO35
V8 SATA2GP / GPIO36
M5 SATA3GP / GPIO37
N2 SLOAD / GPIO38
M3 SDATAOUT0 / GPIO39
V13 SDATAOUT1 / GPIO48
V3 SATA5GP / GPIO49
D6 GPIO57

GPIO

TACH4 / GPIO68 C40
TACH5 / GPIO69 B41
TACH6 / GPIO70 C41
TACH7 / GPIO71 A40

(TACH* signals used on Server/ Workstation Only)

CPU/MISC

A20GATE P4 SIO已pull-high → A20GATE 17
PECI AU16 PCH_PECI
RCIN# P5 KBRST_L → KBRST_L 17
PROCPWRGD AY11 CPU_PWROK → H_CPUPWRGD 4
THRMTRIP# AY10 CPU_THERMTRIP#
INIT3_3V# T14 INT3P3 1 STP48 不要pull-low
DF_TVS AY1 NV_CLE 2 R64 1K-04 1 PROC_SEL → H_SNB_IVB_L 4
TS_VSS1 AH8
TS_VSS2 AK11
TS_VSS3 AH10
TS_VSS4 AK10
GND
NC_1 P37

NCTF

VSS_NCTF_1 A4
VSS_NCTF_2 A44
VSS_NCTF_3 A45
VSS_NCTF_4 A46
VSS_NCTF_5 A5
VSS_NCTF_6 A6
VSS_NCTF_7 B3
VSS_NCTF_8 B47
VSS_NCTF_9 BD1
VSS_NCTF_10 BD49
VSS_NCTF_11 BE1
VSS_NCTF_12 BE49
VSS_NCTF_13 BF1
VSS_NCTF_14 BF49

VSS_NCTF_15 BG2
VSS_NCTF_16 BG48
VSS_NCTF_17 BH3
VSS_NCTF_18 BH47
VSS_NCTF_19 BJ4
VSS_NCTF_20 BJ44
VSS_NCTF_21 BJ45
VSS_NCTF_22 BJ46
VSS_NCTF_23 BJ5
VSS_NCTF_24 BJ6
VSS_NCTF_25 C2
VSS_NCTF_26 C48
VSS_NCTF_27 D1
VSS_NCTF_28 D49
VSS_NCTF_29 E1
VSS_NCTF_30 E49
VSS_NCTF_31 F1
VSS_NCTF_32 F49

FBGA989

DGPU_PWOK
0 = dGPU power is not stable. Keep clock disabled and reset asserted.
1 = dGPU power is stable. Clock can be enabled; reset can be deasserted.

GPIO24 configuration register bits are cleared by RSMRST# and not cleared by CF9h reset event.

3VSB
R70 1 2 10K-04 RI#
R71 1 2 10K-04 PCIE_WAKE
R182 1 2 10K-04 RSMRST_L
R213 1 2 10K-04-O TLS_EN
TLS EN

VCC3
R115 1 2 10K-04 AZ_DET_L
R264 1 2 1K-04 PWROK
R242 1 2 1K-04 SYSRST_L

VCC3
RN11
1 2 VR_READY
3 4 PCI_CLKRUN#
5 6 SATA_LED#
7 8 KBRST_L
SATA_LED 9
10K-8P4R-04

VBAT_IO
R76 2 1 330K-04 DSWODVREN
ENABLE DSW

BOM DET

Lb

LVDS
HI: with LVDS
LO: without LVDS
GP1_BOMDET1 RJ8 10K-04(1-2) VCC3 GND

TBD
HI:
LOW:
GP34_BOMDET5 RJ11 10K-04(1-2) VCC3 GND

TBD
HI:
LOW:
GP22_BOMDET4 RJ10 10K-04(1-2) VCC3 GND

DVI/HDMI
HI: without HDMI
LOW:with HDMI
GP6_BOMDET2 RJ7 10K-04(1-2) VCC3 GND

LAN
HI: 10/100M LAN
LOW:GIGA LAN
GP17_BOMDET3 RJ6 10K-04(1-2) VCC3 GND

CPU_THERMTRIP# ER17 1 2 390-1-04 H_THERMTRIP# → H_THRMTRIP_L 4
GPIO7 R66 1 2 0-04-O THRM_L → THRM_L 17
PCH_PECI R65 1 2 0-04-O H_PECI → H_PECI 17,4
+VCC_1P8
PROC_SEL R73 2 1 2.2K-04
NV_CLE R141 2 1 1K-04-O
refer PDG P.477

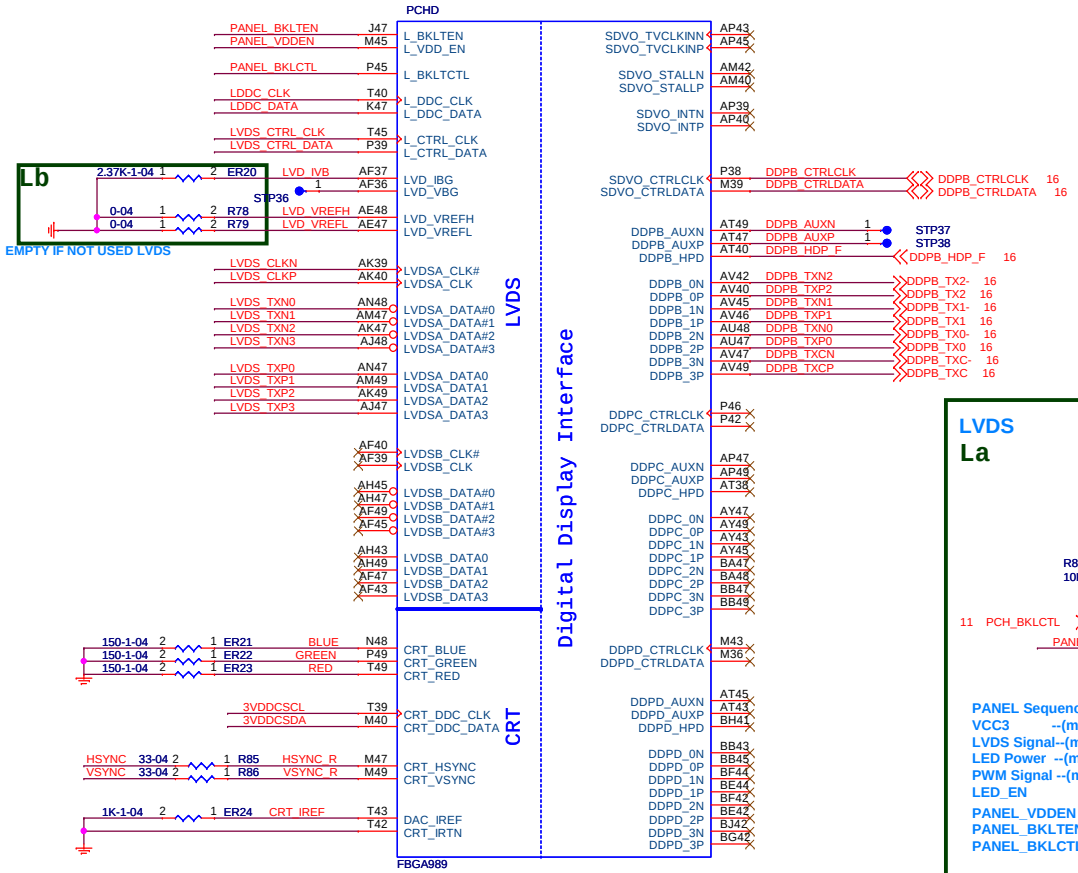
<OrgAddr1> Elitegroup Computer Systems

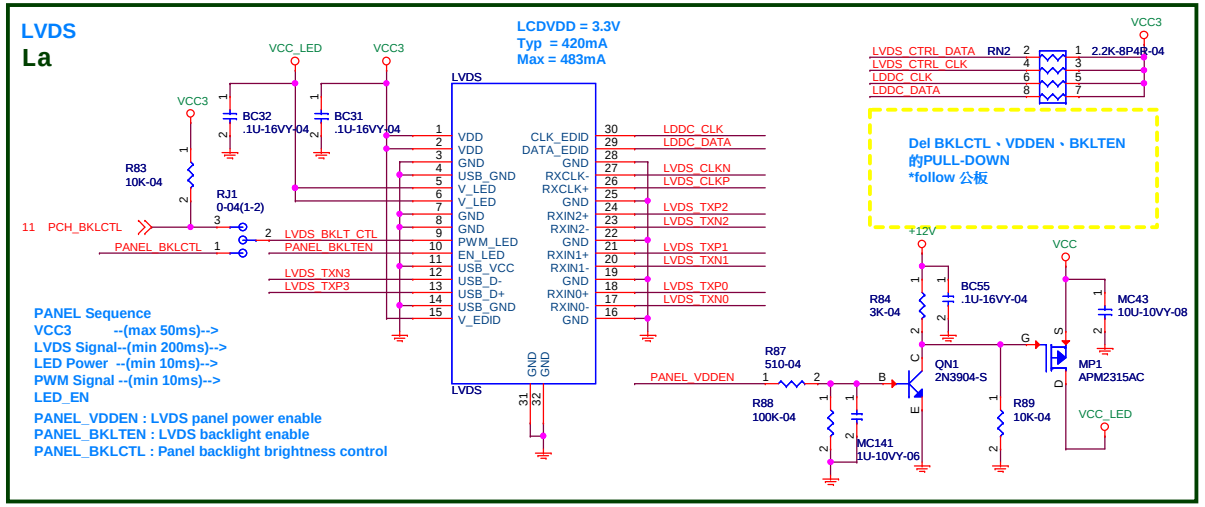
Title: PCH DMI/FDI/GPIO/MISC
Size: Custom
Document Number: NM70-I
Rev: 1.0
Date: Tuesday, August 21, 2012
Sheet 11 of 30

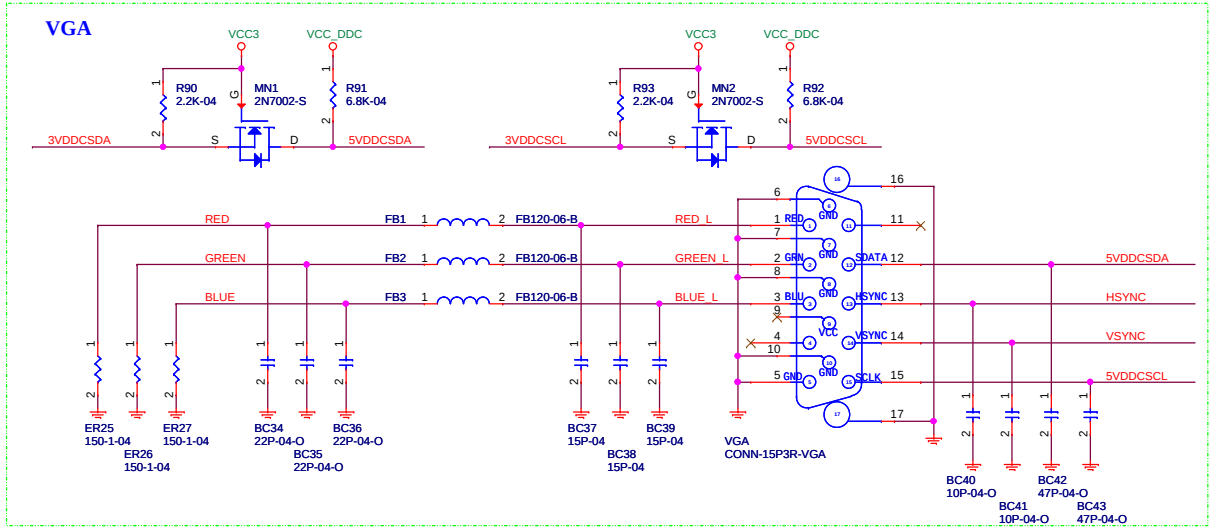
Port	Strap	How to Enable Port?	How to Disable Port?
Port B	SDVO_CTRLDATA	PU to 3.3V with 2.2K ohm	No Connect
Port C	DDPC_CTRLDATA	PU to 3.3V with 2.2K ohm	No Connect
Port D	DDPD_CTRLDATA	PU to 3.3V with 2.2K ohm	No Connect

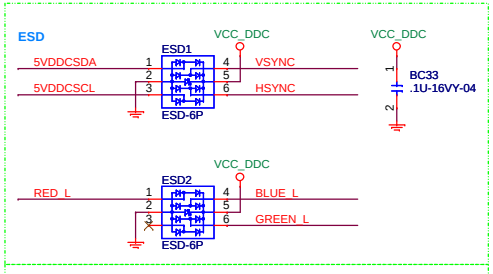
LVDS BOM Difference

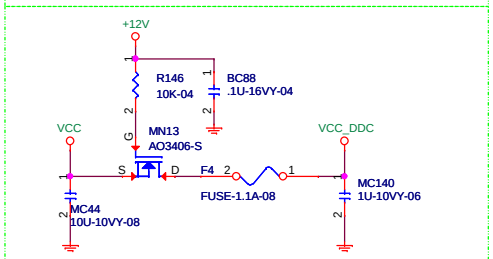
	W/ LVDS	W/O LVDS
La	V	X
Lb	V	X
Lc Page14	FB19:FB600-06 BC120:.1U-16VY-04	BC120:0-04
Ld Page12	10K-04(1-2)	10K-04(2-3)









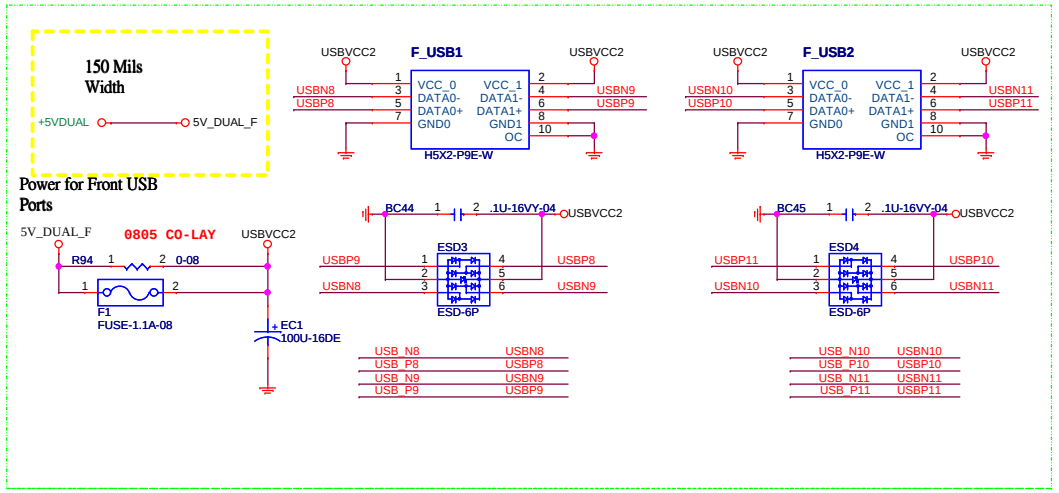


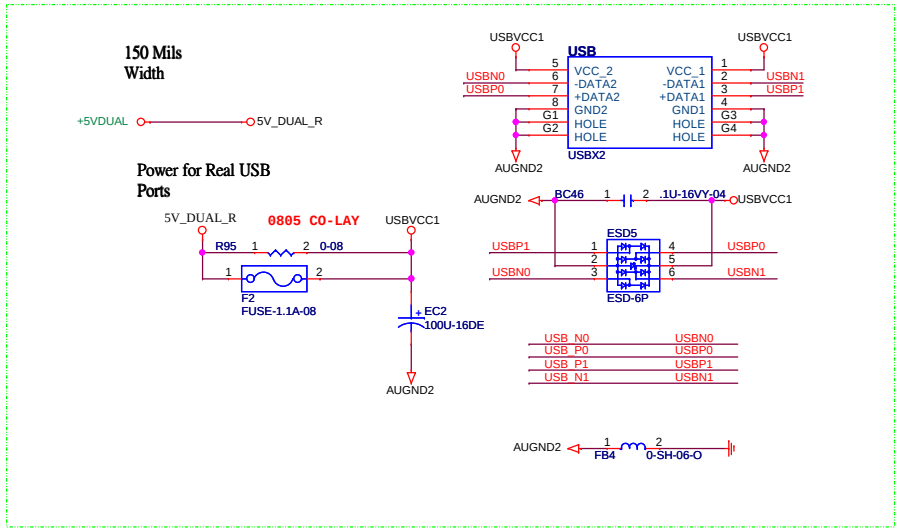
Elitegroup Computer Systems

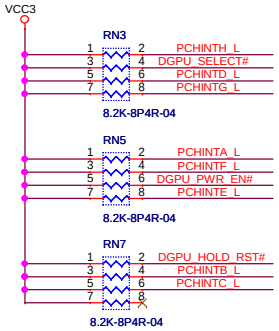
Title: PCH VGA/LVDS/Display Port

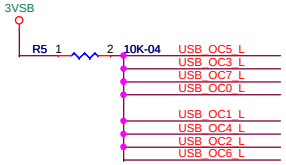
Size	Document Number	Rev
Custom	NM70-I	1.0

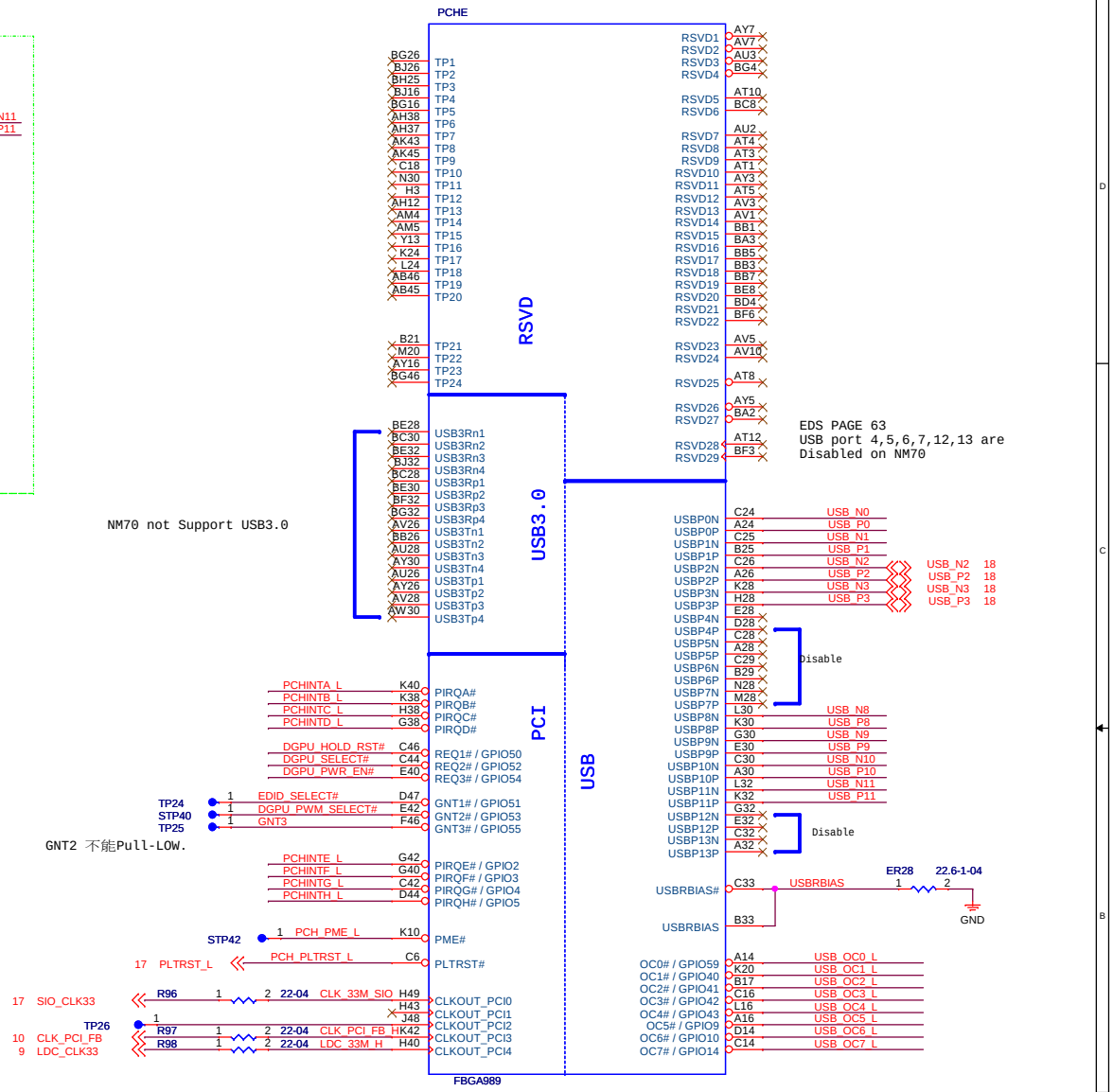
Date: Tuesday, August 21, 2012 Sheet 12 of 30



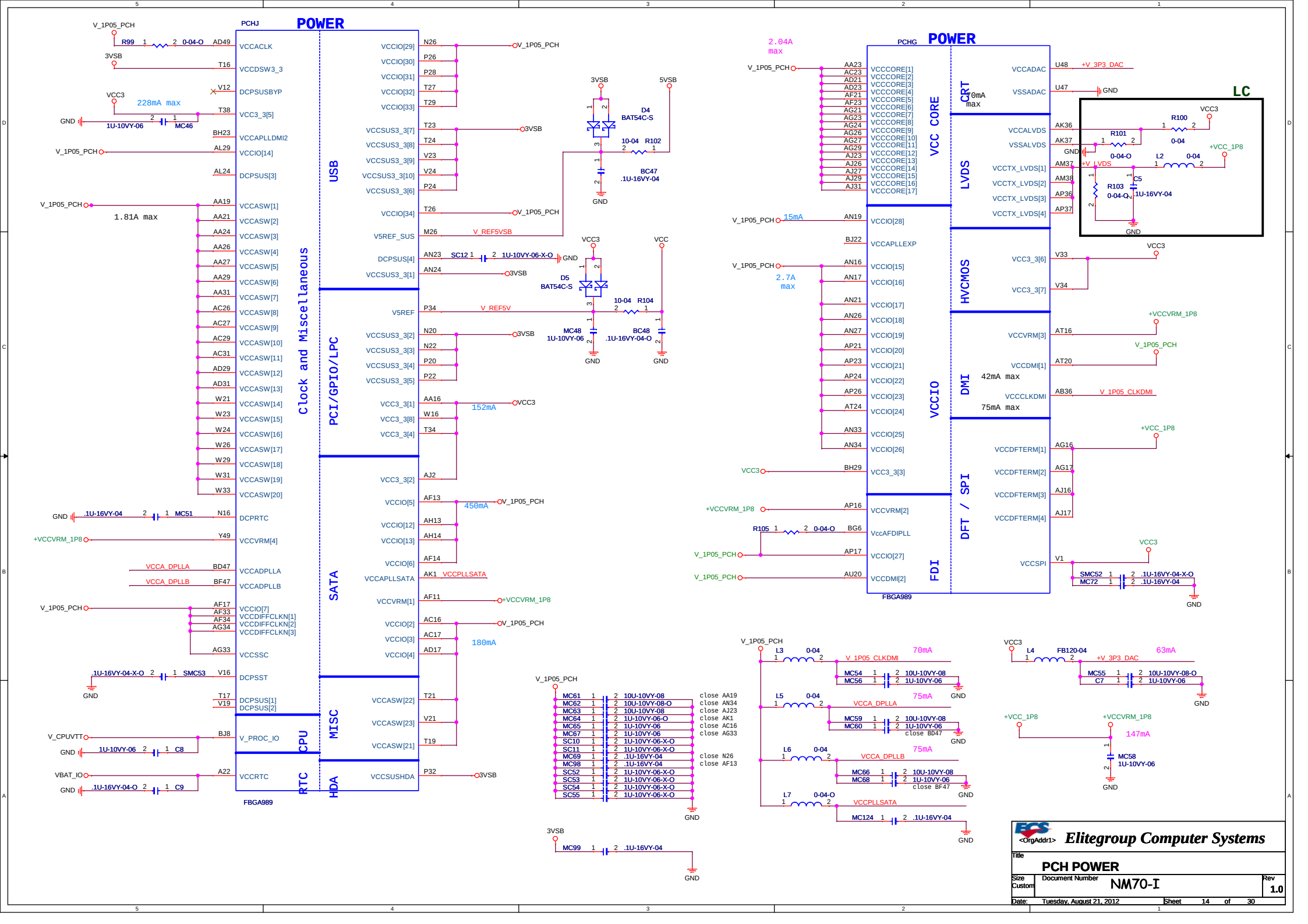




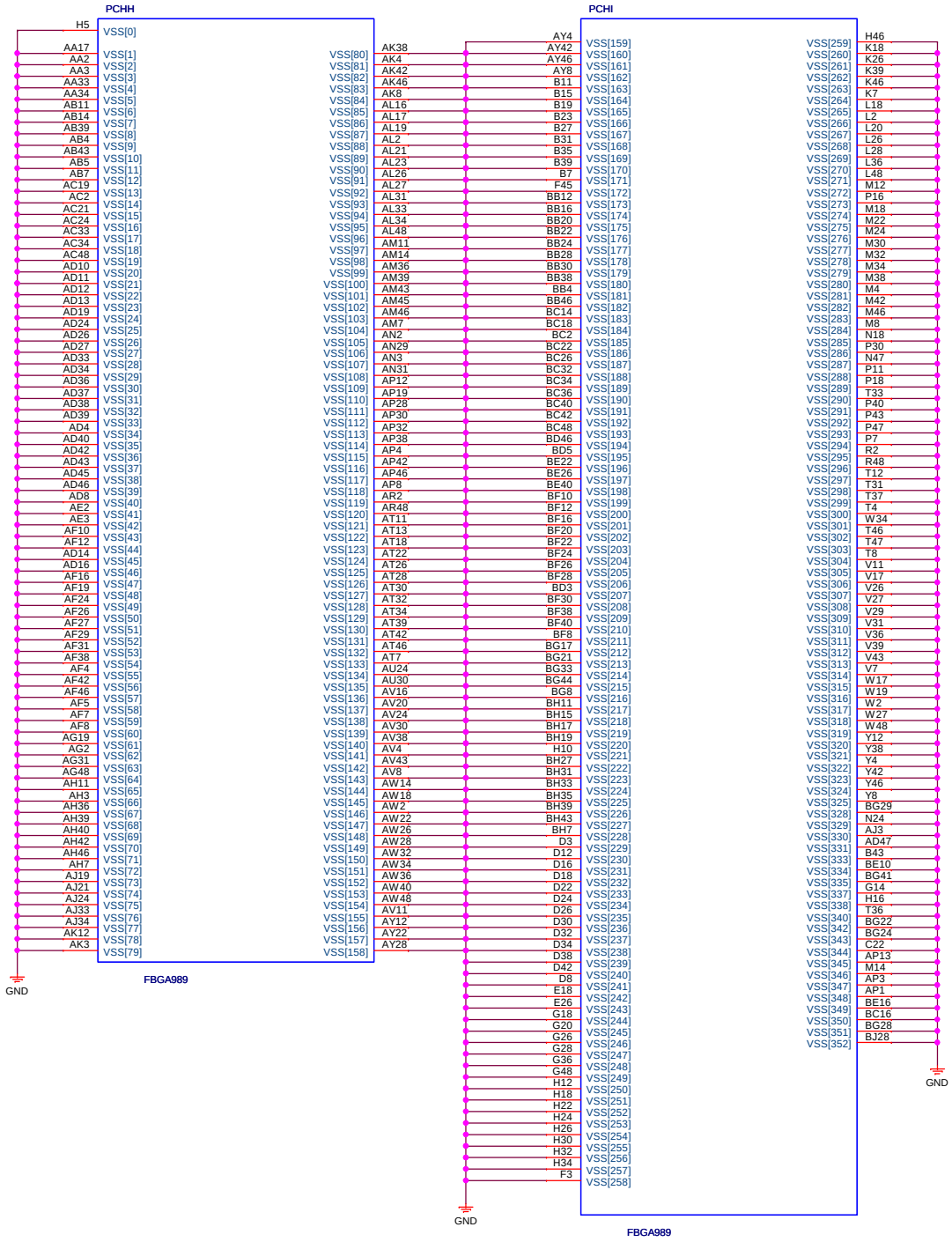




Elitegroup Computer Systems			
Title: PCH USB/PCI			
Size: Custom	Document Number: NM70-I		Rev: 1.0
Date: Tuesday, August 21, 2012		Sheet 13 of 30	



Company	Elitegroup Computer Systems
Title	PCH POWER
Size	Custom
Document Number	NM70-I
Rev	1.0
Date	Tuesday, August 21, 2012
Sheet	14 of 30

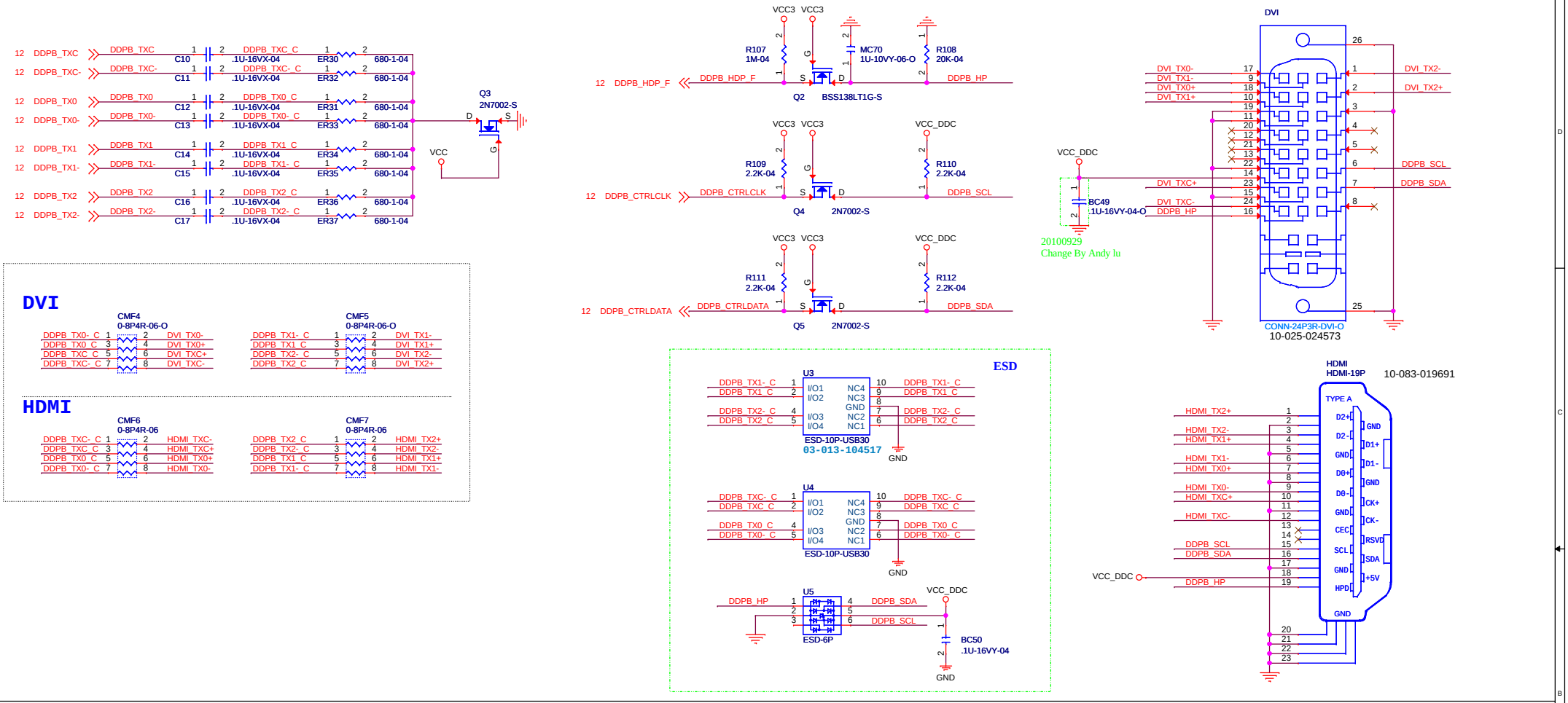


<OrgAddr1> Elitegroup Computer Systems

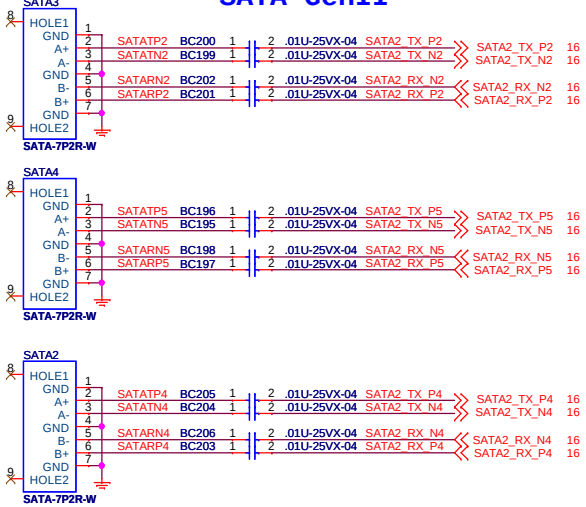
Title
PCH GND

Size	Document Number	Rev
Custom	NM70-I	1.0

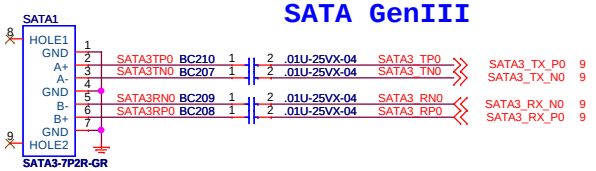
Date: Tuesday, August 21, 2012 Sheet 15 of 30



SATA GenII



SATA GenIII

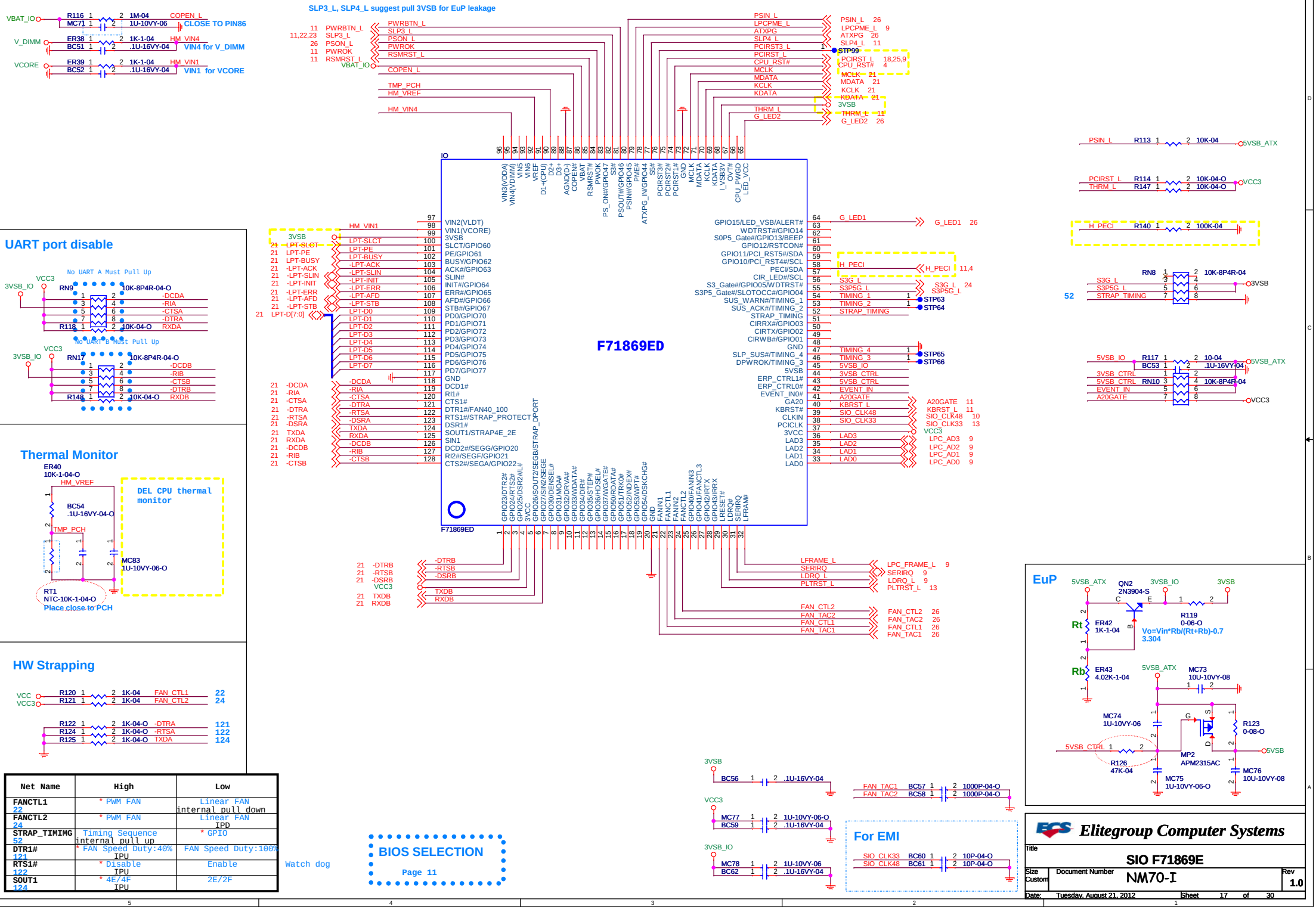


<OrgAddr1> Elitegroup Computer Systems

Title: CONN HDMI/DVI/SATA

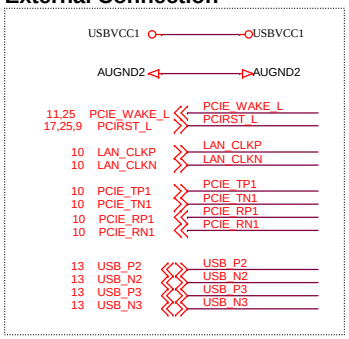
Size: Custom | Document Number: NM70-I | Rev: 1.0

Date: Tuesday, August 21, 2012 | Sheet 16 of 30

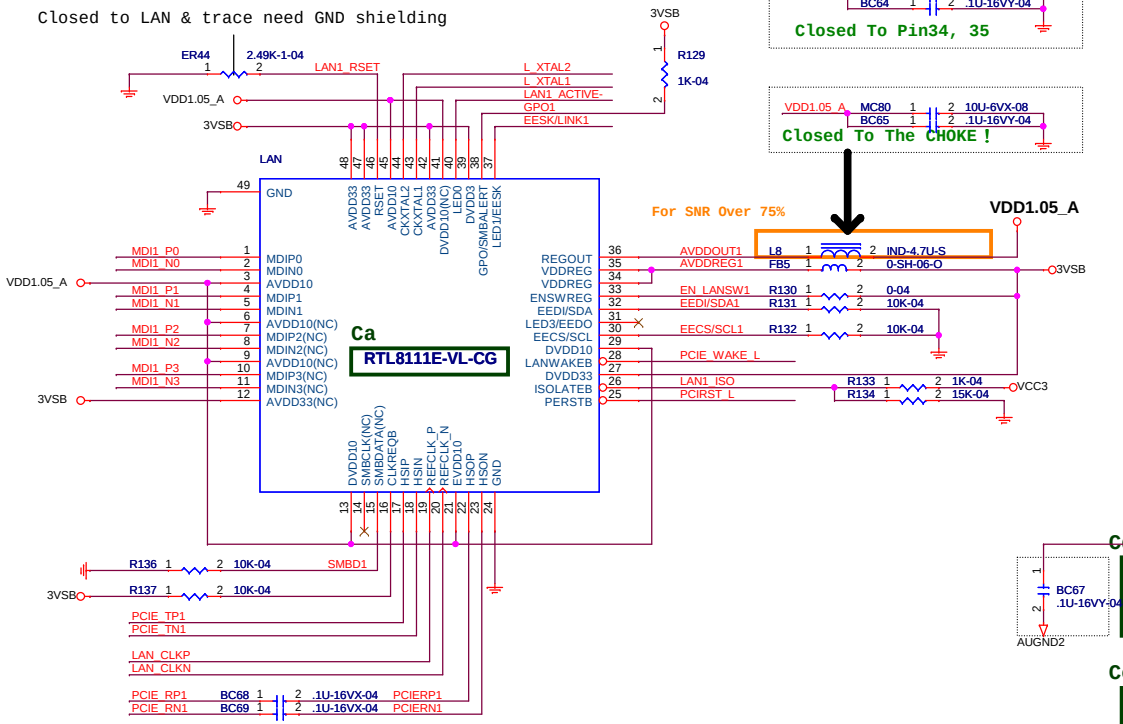


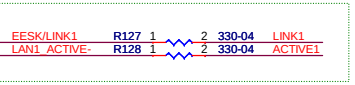
Net Name	High	Low
FANCTL1 22	* PWM FAN	Linear FAN internal pull down
FANCTL2 24	* PWM FAN	Linear FAN IPD
STRAP_TIMIMG 52	Timing Sequence internal pull up	* GPIO
DTR1# 121	* FAN Speed Duty:40%	FAN Speed Duty:100%
RTS1# 122	* Disable IPU	Enable
SOUT1 124	* 4E/4F IPU	2E/2F

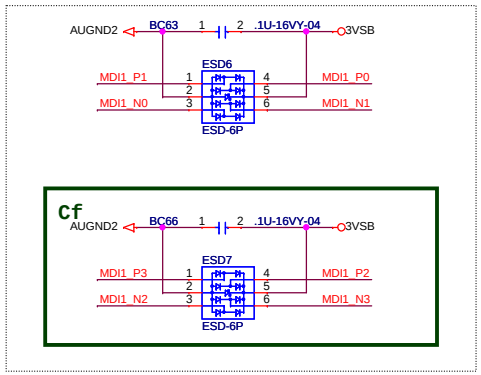
External Connection

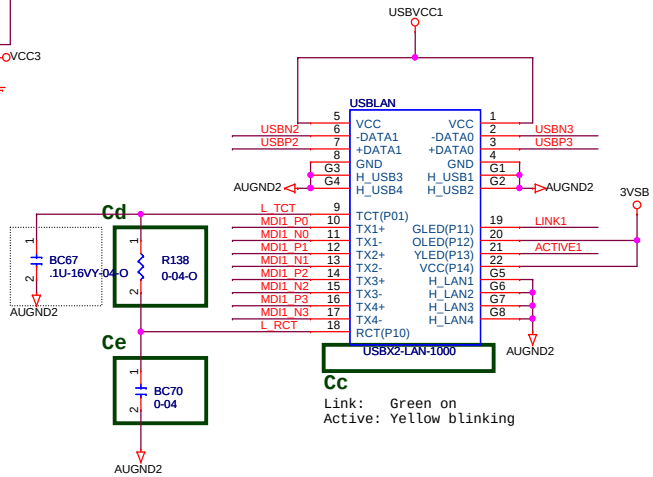


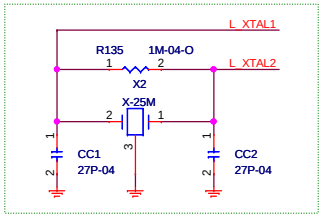
Closed to LAN & trace need GND shielding



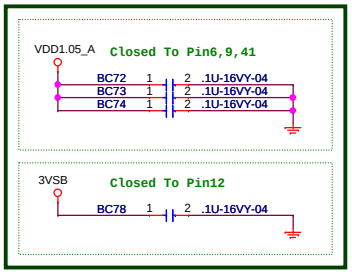


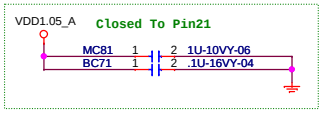


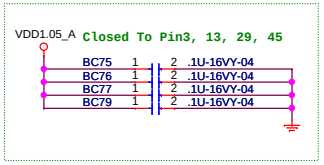


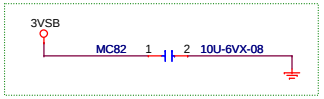


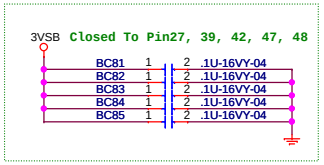
Cb

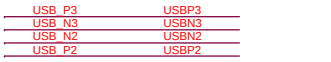


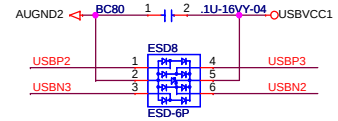


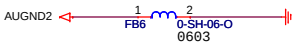










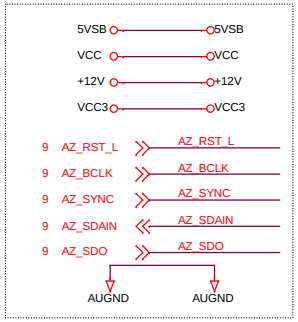


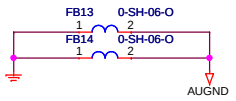
BOM Difference

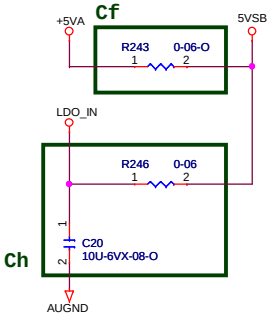
	RTL8111E-GR 1000M	RTL8105E-GR 10/100M
Ca	RTL8111E-VB-GR	RTL8105E-GR
Cb	V	X
Cc	USBX2-LAN-1000	USBX2-LAN-100
Cd	X	V
Ce	0-04	.01U-25VX-04
Cf	V	X

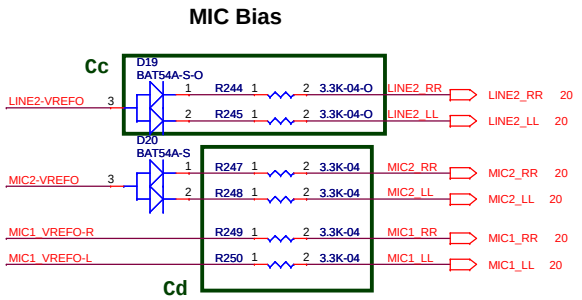
Elitegroup Computer Systems		
Title	PCIE LAN - RTL8105E/8111E	
Size: Custom	Document Number: NM70-I	Rev: 1.0
Date: Tuesday, August 21, 2012	Sheet 18 of 30	

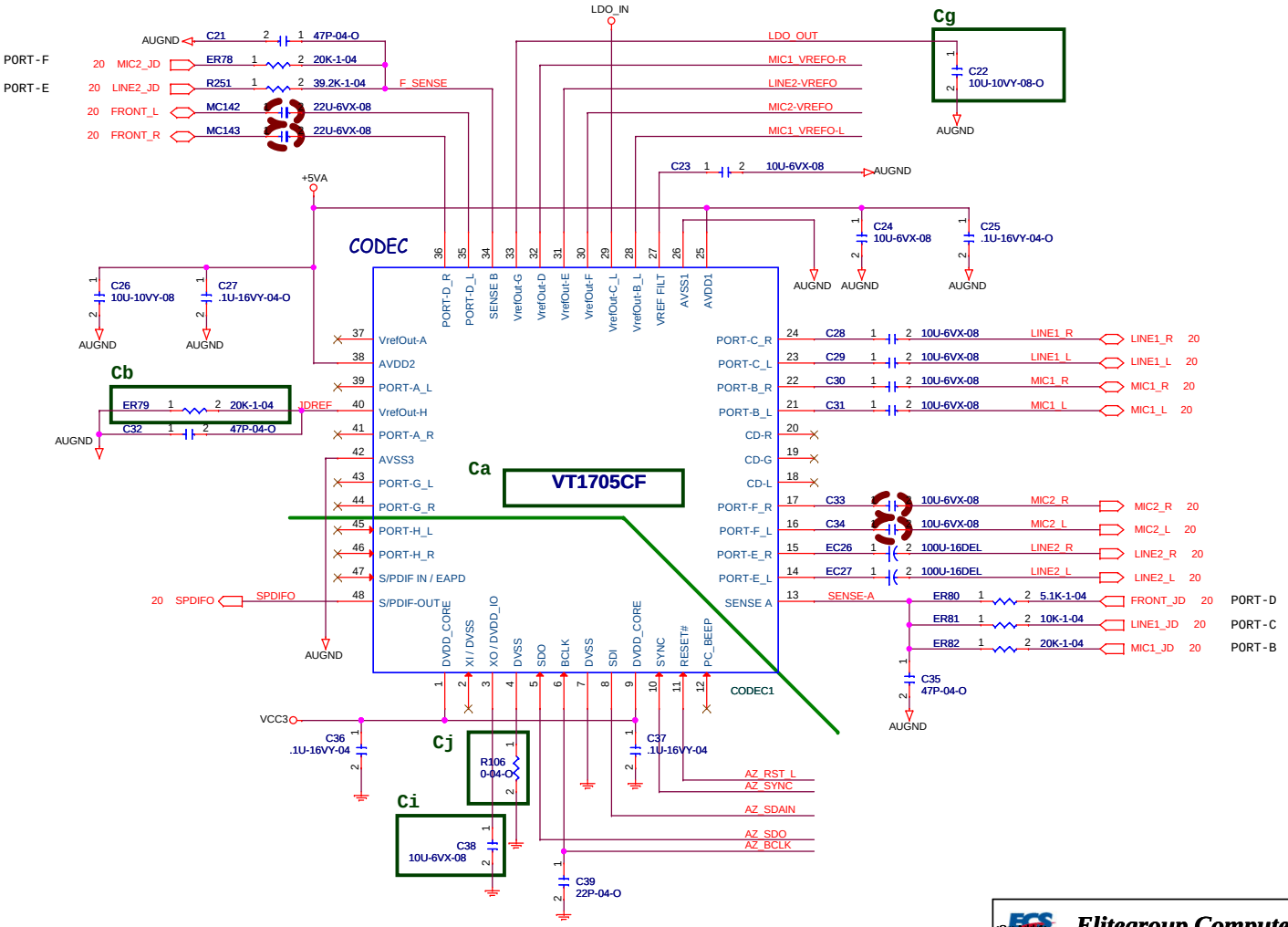
External Connection











Pin Difference

Pin	ALC662VD	VT1705CE	VT1705CF
2	GPIO0	GPIO0/SPDIF_TX1	GPIO0/SPDIF_TX1/ DMIC_CLK
3	REG VREF	GPIO1	REGREF
4	GPIO1	DVSS	GPIO1/DMIC_DATA
25	LDO OUTPUT	LDO VIN	LDO_OUT1
29	LDO VIN	OPTION CAP	LDO_IN
33	LINE1 VREF	LDO OUTPUT	SENSE_C
37	FRONT VREF ?	NC	VREFOUT_C
38	LDO OUTPUT	LDO VIN	LDO_OUT2
45	DMIC DATA	NC	NC
46	DMIC CLK	NC	NC
47	EADP	EADP	EADP/SPIDF_RX

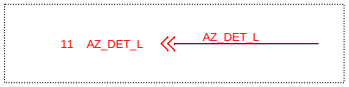
BOM Difference

Location	ALC662VD	VT1705CE	VT1705CF
Ca	ALC662-VD0-GR	VT1705CE	VT1705CF
Cb	20K-1-04	5.1K-1-04	20K-1-04
Cc	V	X	X
Cd	2.2K-04	3.3K-04	3.3K-04
Ce	75-04	16-04	32-04
Cf	X	V	X
Cg	X	V	X
Ch	V	X	V
Ci	V	X	V
Cj	X	V	X

When you change BOM, remember change GPI to inform BIOS use different Verb-Table.

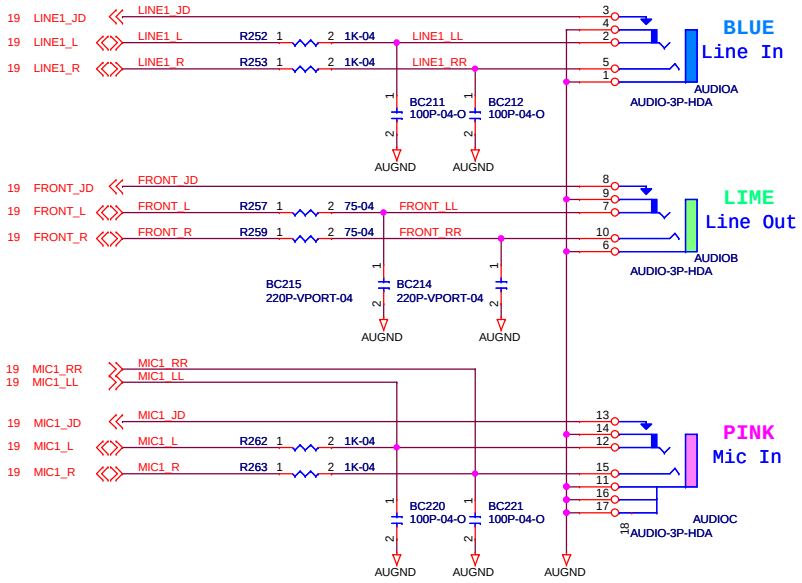
<OrgAddr1>	Elitegroup Computer Systems	
Title	AUDIO VT1705/ALC662 (CHIP)	
Size: Custom	Document Number: NM70-I	Rev: 1.0
Date: Tuesday, August 21, 2012	Sheet 19 of 30	

External Connection

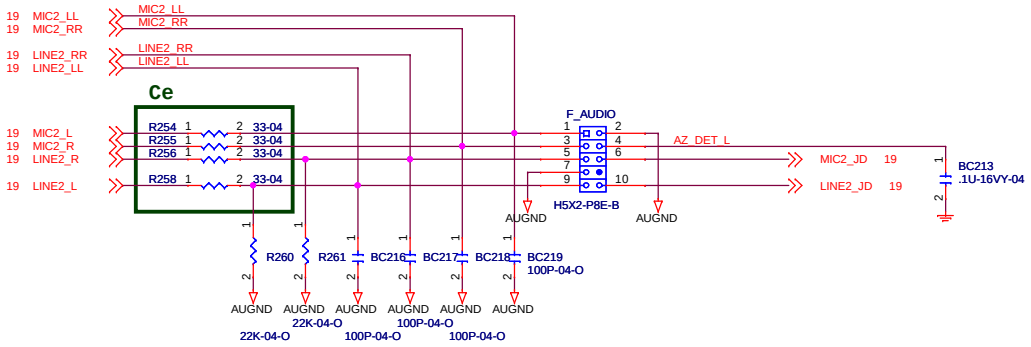


* AZ_DET_L connect to PCH GPIO 0
for AC97 Panel support

REAR-AUDIO



FRONT-AUDIO



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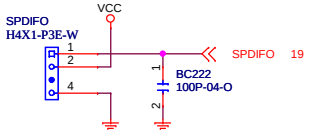
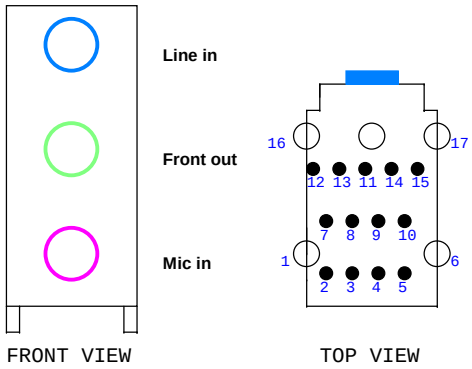
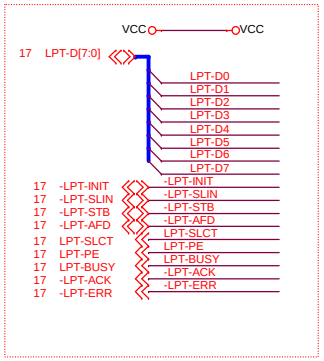
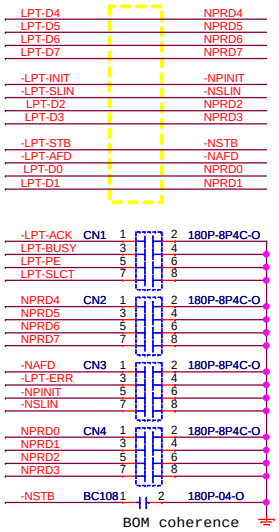


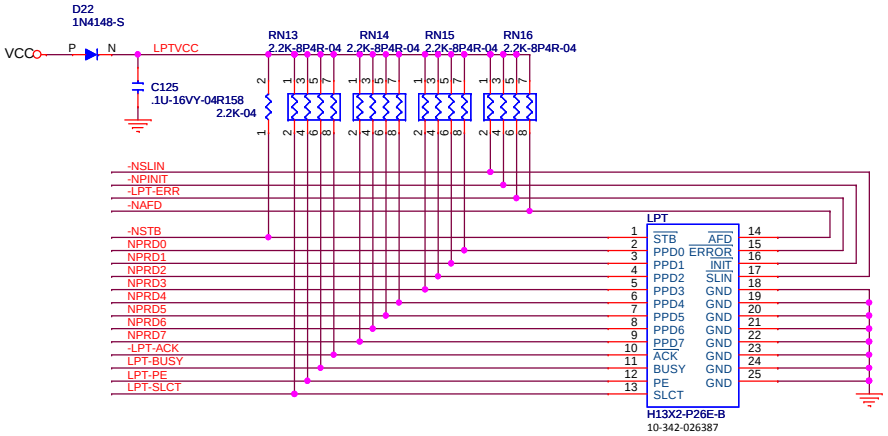


Elitegroup Computer Systems	
Title	AUDIO VT1705/ALC662 (PANEL)
Size: Custom	Document Number: NM70-I
Rev	1.0
Date: Tuesday, August 21, 2012	Sheet 20 of 30

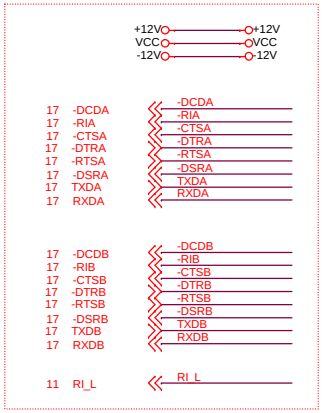
LPT
External Connection



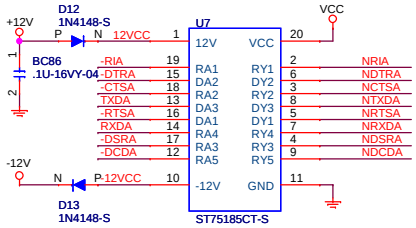




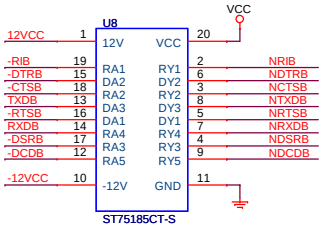
COM Ports
External Connection

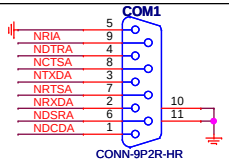


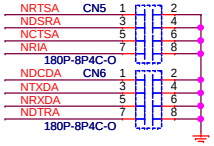
COM 1

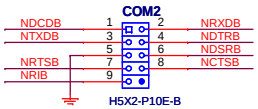


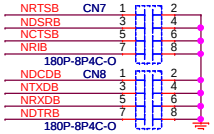
COM 2



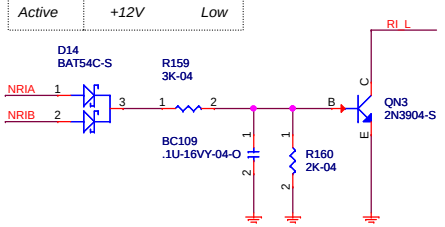




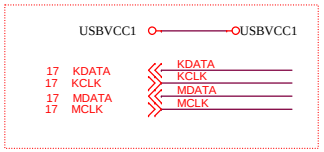


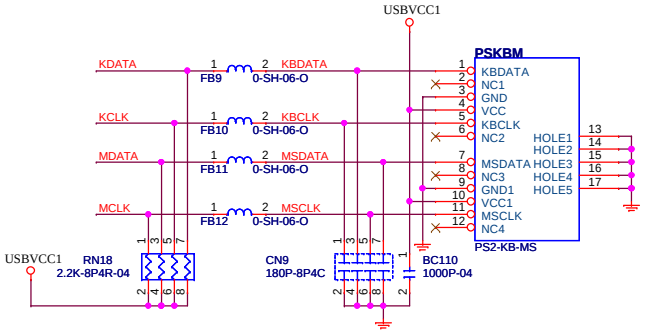


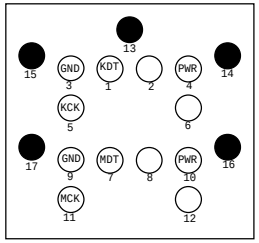
	NRIA	RI#
Normal	-12V	High
Active	+12V	Low



PSKBM
External Connection





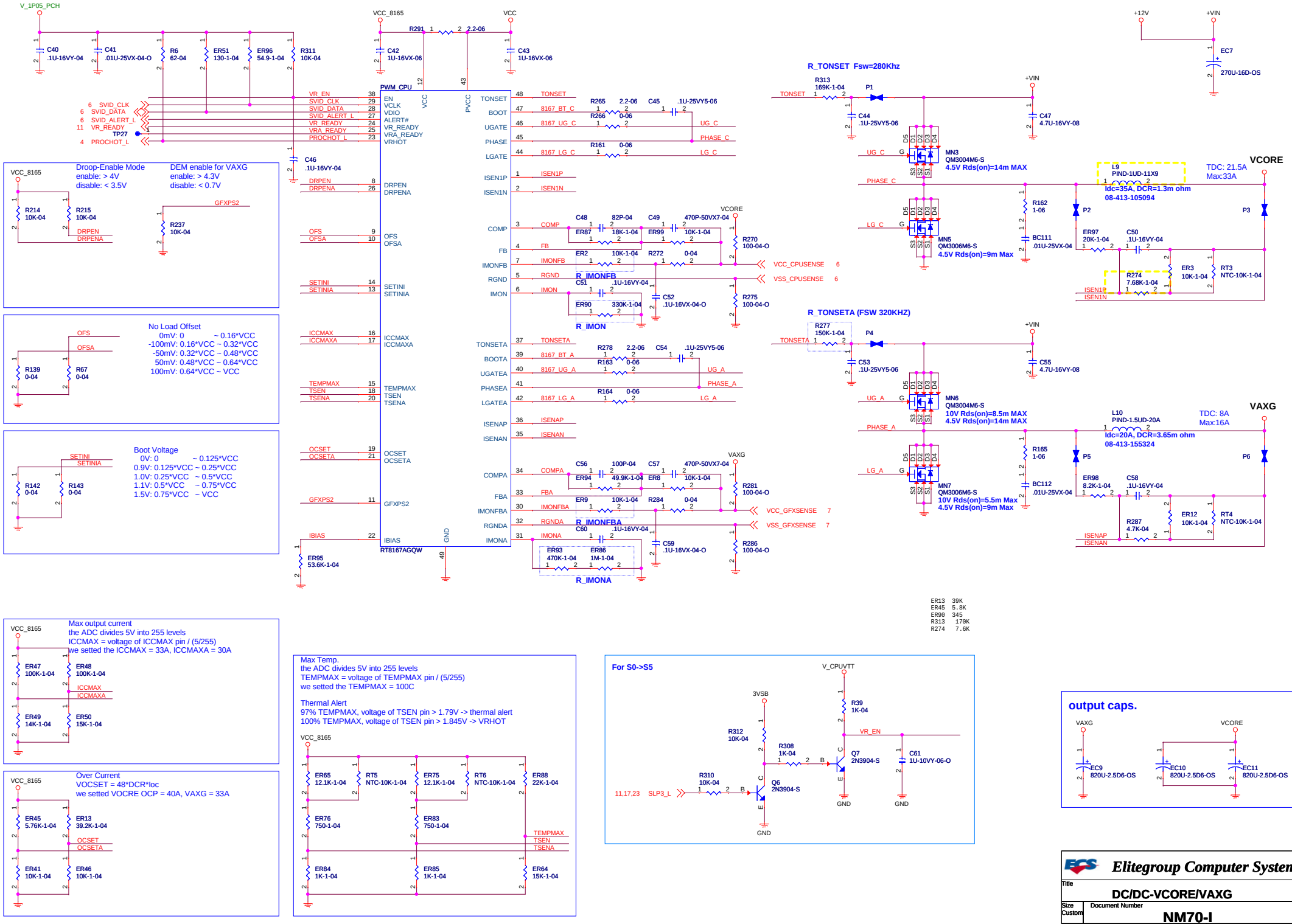


Elitegroup Computer Systems

Title: CONN LPT / COM / PSKBM

Size: Custom | Document Number: NM70-I | Rev: 1.0

Date: Tuesday, August 21, 2012 | Sheet 21 of 30



Elitegroup Computer Systems

Title: DC/DC-VCORE/VAXG

Size: Custom | Document Number: NM70-I | Rev: 1.0

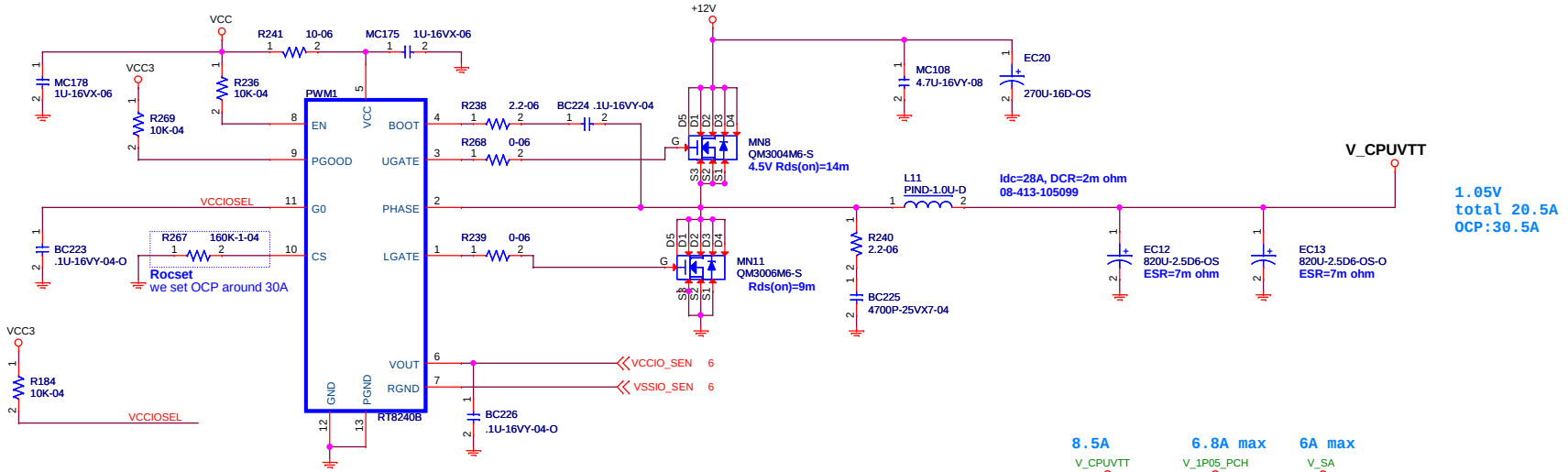
Date: Tuesday, August 21, 2012 | Sheet 22 of 30

External Connection

VCC — VCC
3VSB — 3VSB
5VSB — 5VSB
V_1P05_PCH — V_1P05_PCH
V_CPUVTT — V_CPUVTT

VCCIO voltage selection	
VTT_SEL	V_CPUVTT
low	1V
high	1.05V *

OCP=
2*Vocset* R176 * 1/DCR * 1/Radj



Elitegroup Computer Systems

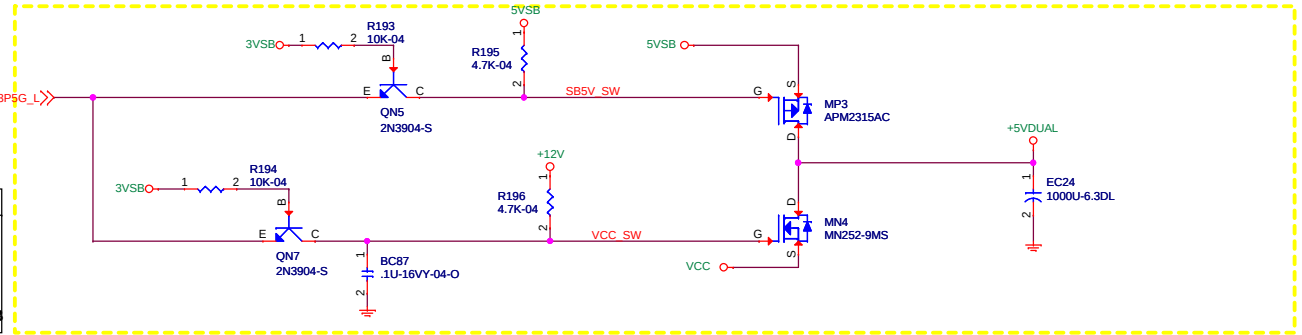
Title: DC/DC CPUVTT/ VCCSA/1.05V

Size: Custom | Document Number: NM70-I | Rev: 1.0

Date: Tuesday, August 21, 2012 | Sheet 23 of 30

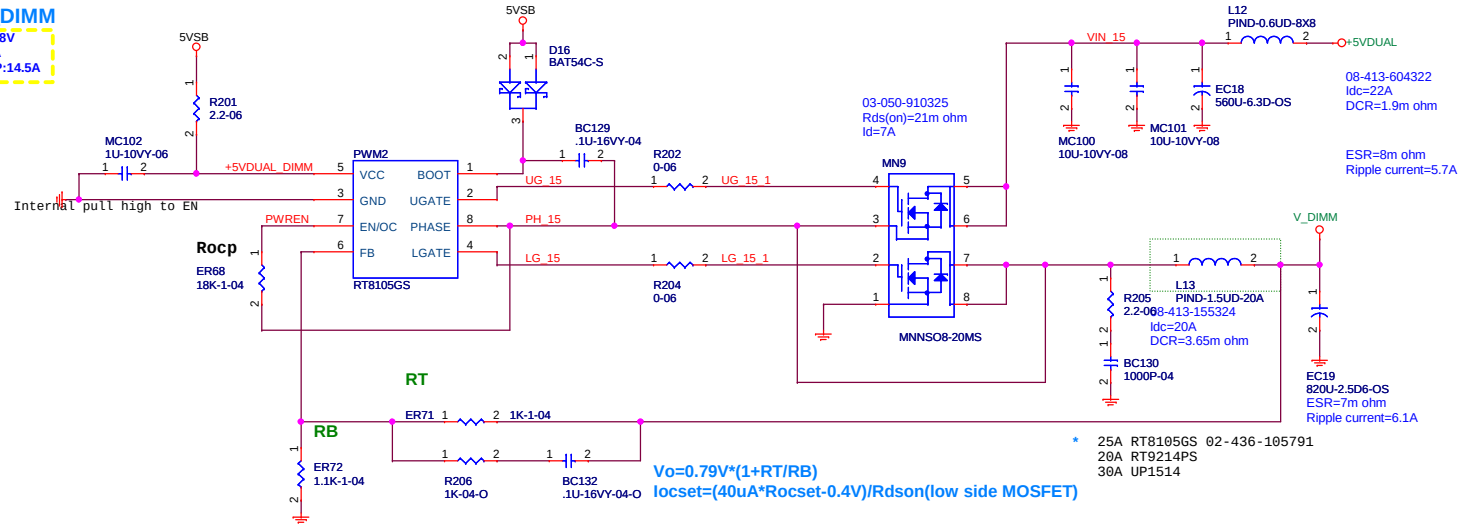
5VDUAL

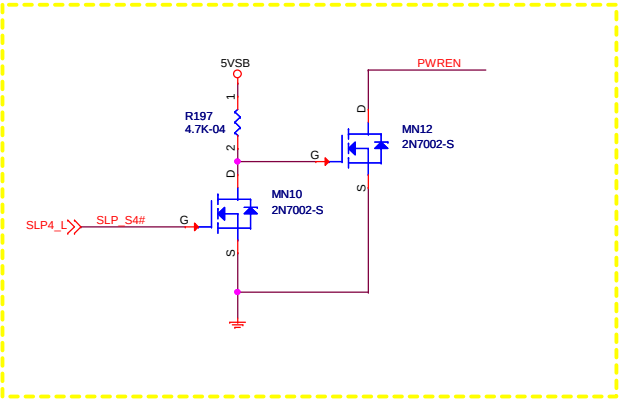
	S0	S3	S5
S3P5G_L	1	o	0
U-P	X	o	0
U-N	o	X	X
5VDUAL	VCC	5VSB	5VSB



V_DIMM

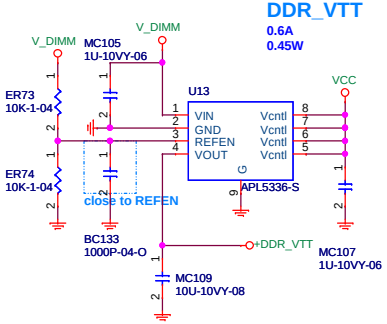
1.508V
8.3A
OCP:14.5A





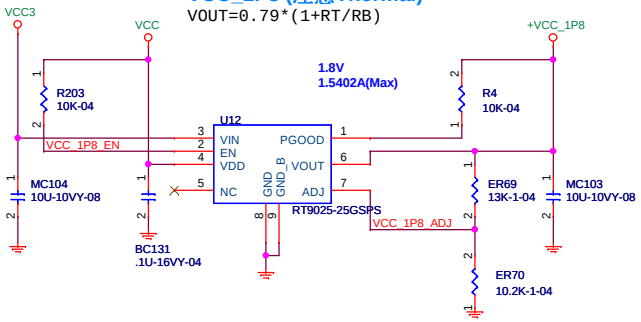
DDR_VTT

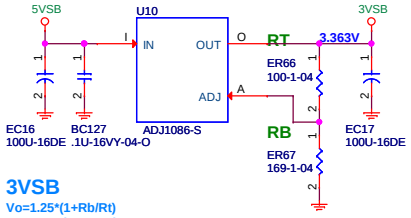
0.6A
0.45W



VCC_1P8 (注意Thermal)

VOUT=0.79*(1+RT/RB)





3VSB

Vo=1.25*(1+Rb/Rt)
AMS1086(SOT223)=1.5A

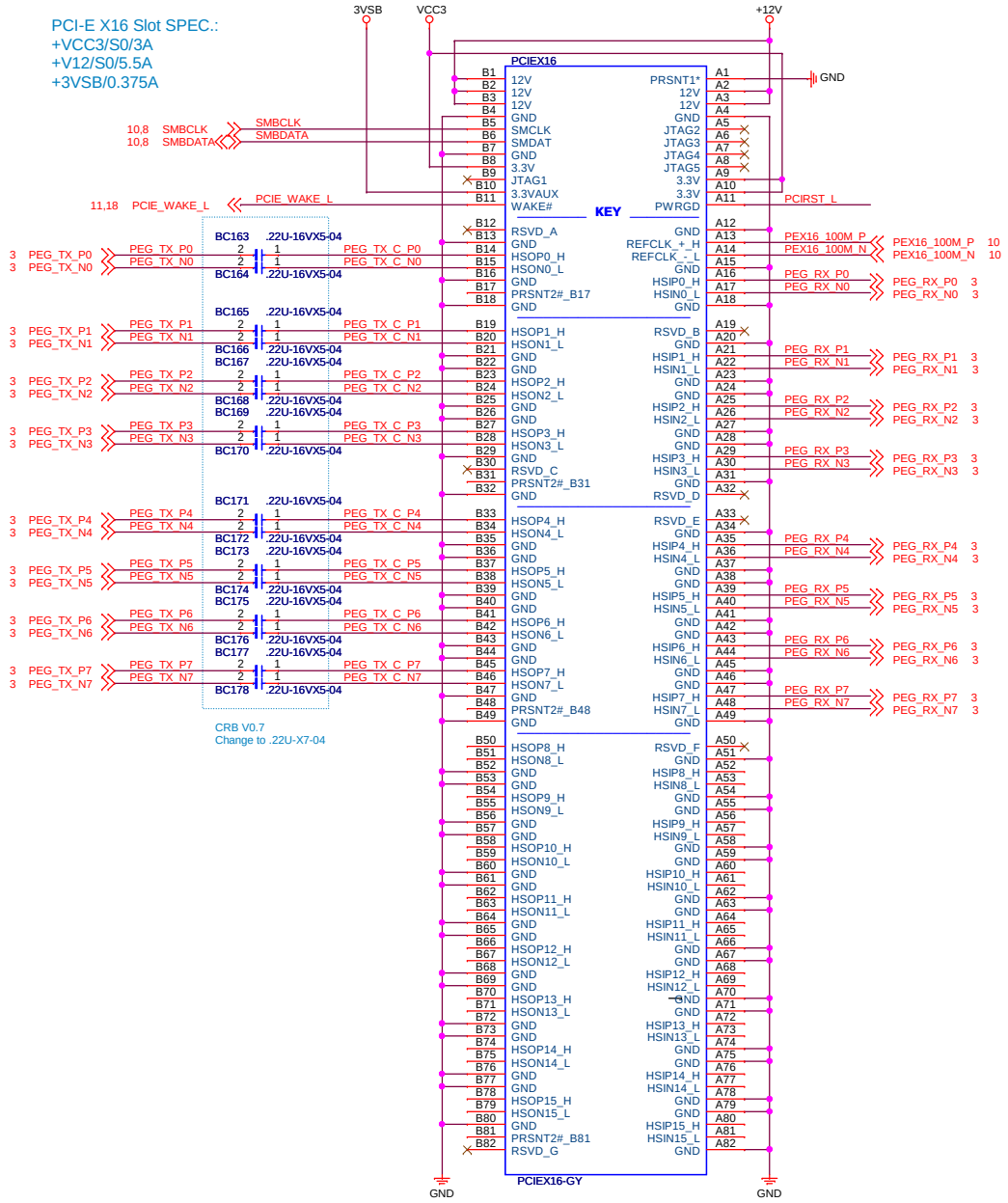
Elitegroup Computer Systems

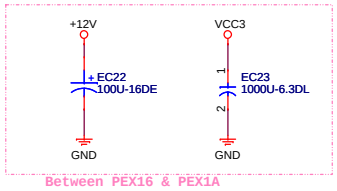
Title: DC/DC VDIMM/1.8V/DDRVTT/EU

Size: Custom | Document Number: NM70-I | Rev: 1.0

Date: Tuesday, August 21, 2012 | Sheet 24 of 30

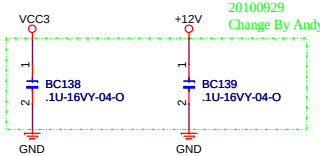
PCI-E X16 Slot SPEC.:
+VCC3/S0/3A
+V12/S0/5.5A
+3VSB/0.375A

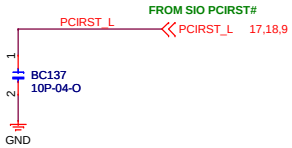




Between PEX16 & PEX1A

20100929
Change By Andy lu

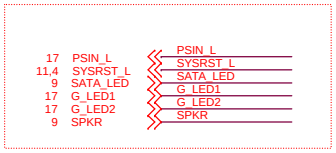


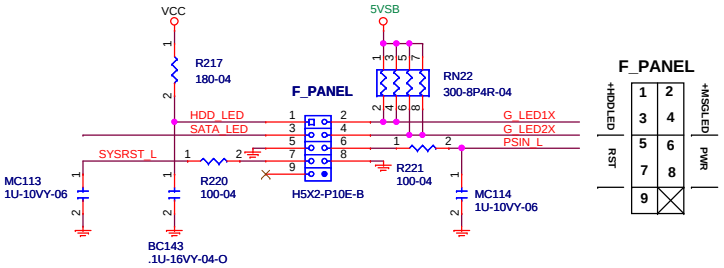


Elitegroup Computer Systems

Title	PCIEX16 Slot		
Size: Custom	Document Number: NM70-I		Rev: 1.0
Date: Tuesday, August 21, 2012		Sheet 25 of 30	

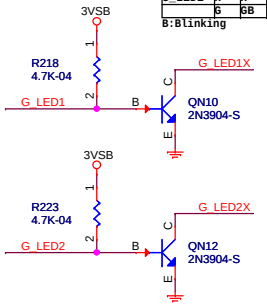
FRONT PANEL
External Connection

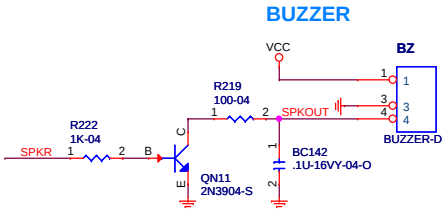




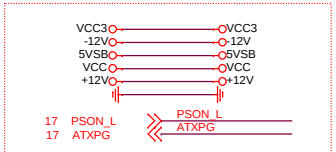
	S0	S1	S3	S4	S5
G_LED1	L	B	B	L	L
G_LED2	H	H	L	L	L
	G	GB	YB	OFF	OFF

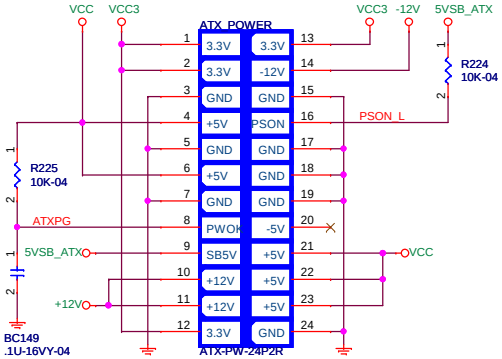
B:Blinking

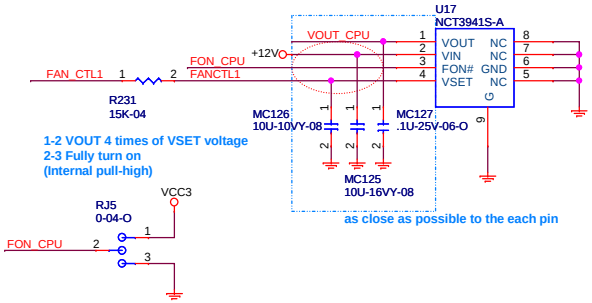


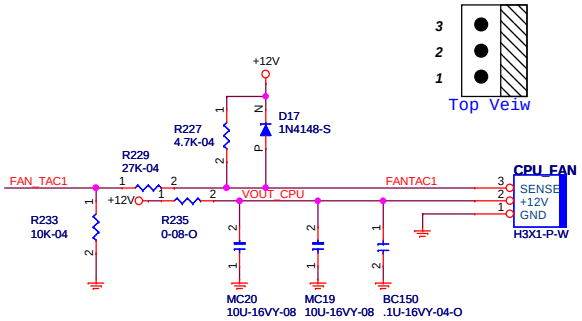


POWER CONNECTOR
External Connection

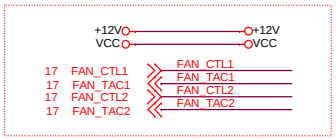


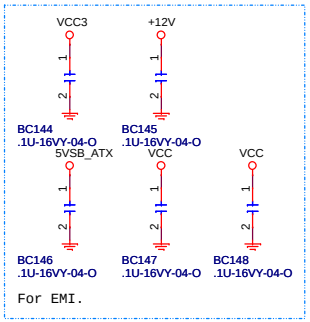


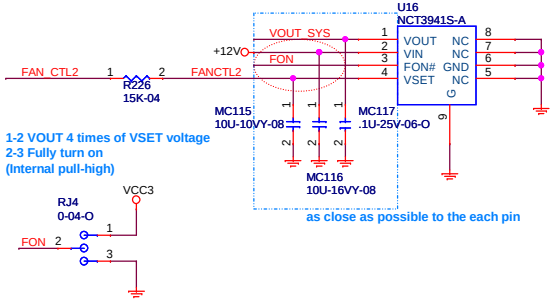


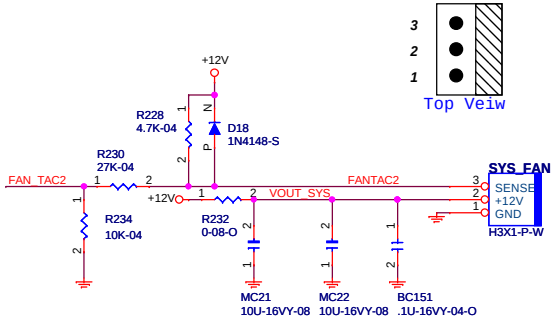


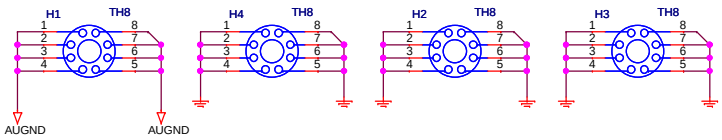
FAN
External Connection

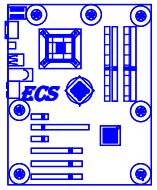










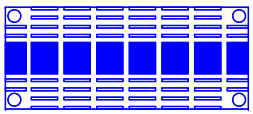


USBPWR_R	USB POWER SELECT
1-2	VCC5 *
2-3	5VSB

USBPWR_R(1-2)(104)

USBPWR_F	USB POWER SELECT
1-2	VCC5 *
2-3	5VSB

USBPWR_F(1-2)(104)



Elitegroup Computer Systems

Title: Front Pan/FAN/PowerConn

Size	Document Number	Rev
Custom	NM70-I	1.0

Date: Tuesday, August 21, 2012 Sheet 26 of 30

Panther Point

Name	Type	Voltage	Default	Functional Description	
GPIO0	I	VCC3	Input	AZ_DET_L	
GPIO1	I/O	VCC3	Input	BOM DET1 * HI: With LVDS LOW: Without LVDS	
GPIO6	I/O	VCC3	Input	BOM DET2 * HI: HDMI LOW: DVI	
GPIO7	I	VCC3	Input	THRM_L	Reserved
GPIO16	blink	VCC3	Input	BKLCTL	Reserved
GPIO17	I/O	VCC3	Input	BOM DET3 * HI: Giga LOW: 10/100	
GPIO13	I	3VSB	Input	LPCPME_L	
GPIO22	I/O	VCC3	Input	GPIO22 * HI: W/ COM1 LOW: W/O COM1	

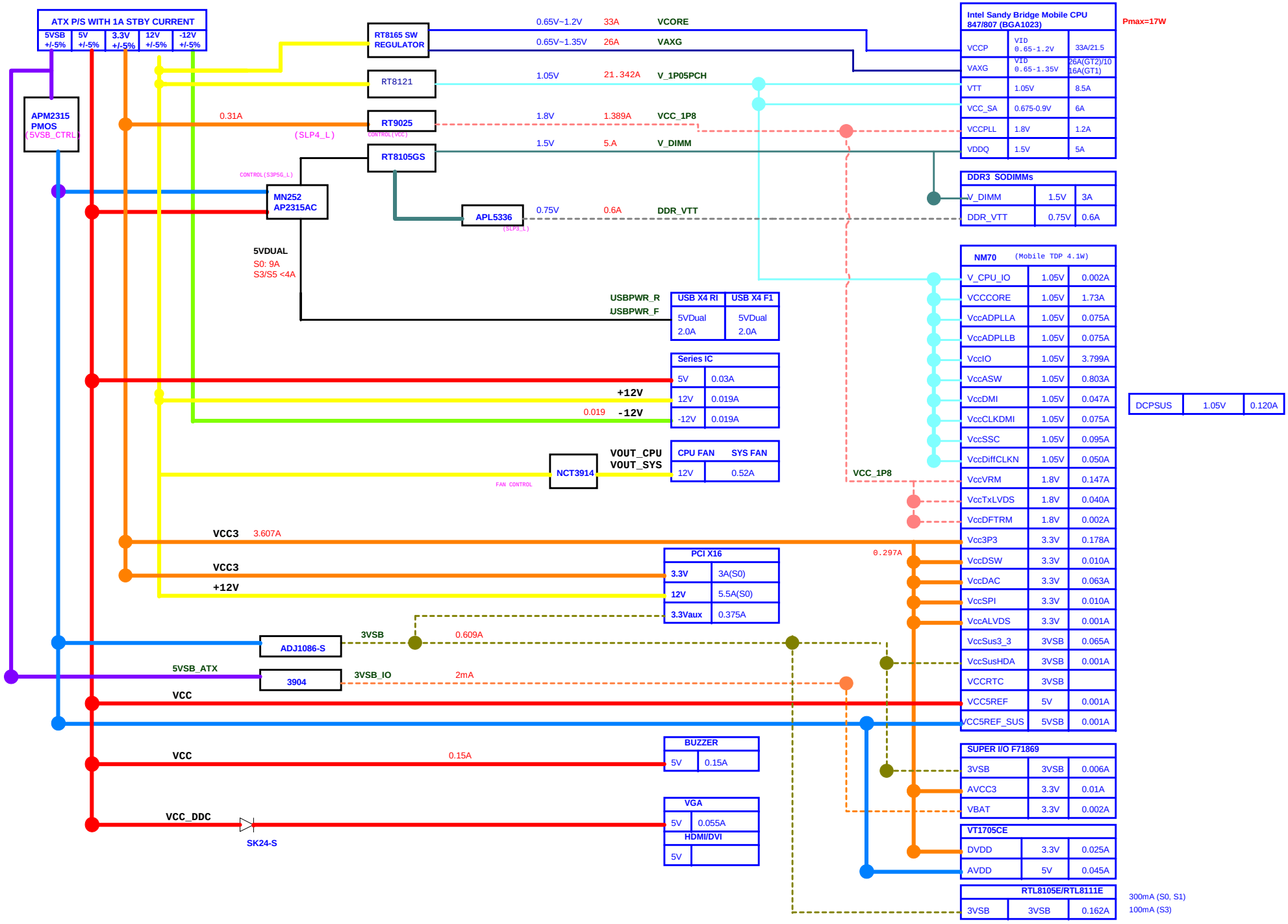
F71869

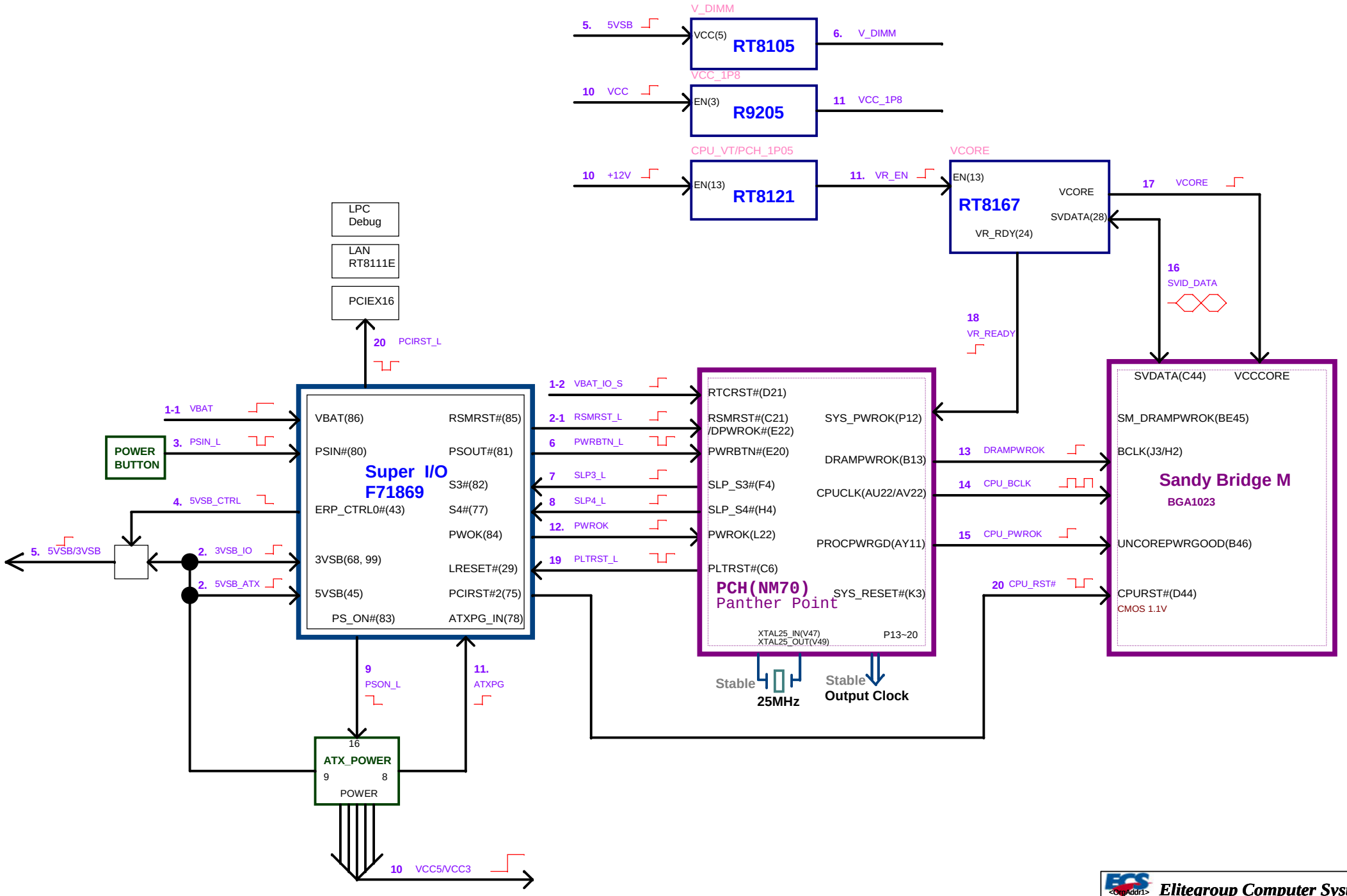
Name	Type	Voltage	Functional Description	Function
GPIO15	I/O	3VSB	Power LED for VSB	G_LED1
GPIO16	I/O	3VSB	Power LED for VCC	G_LED2
OVT#	O			THRM_L
VIN1	I			VIN1 for VCORE
VIN4	I			VIN4 for V_DIMM
FANIN1	I		CPU FAN tachometer	
FANCTL1	O		CPU FAN control	
FANIN2	I		System FAN tachometer	
FANCTL2	O		System FAN control	
S3P5G_L/ST2			S0=1 S3=0 S5=0	

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

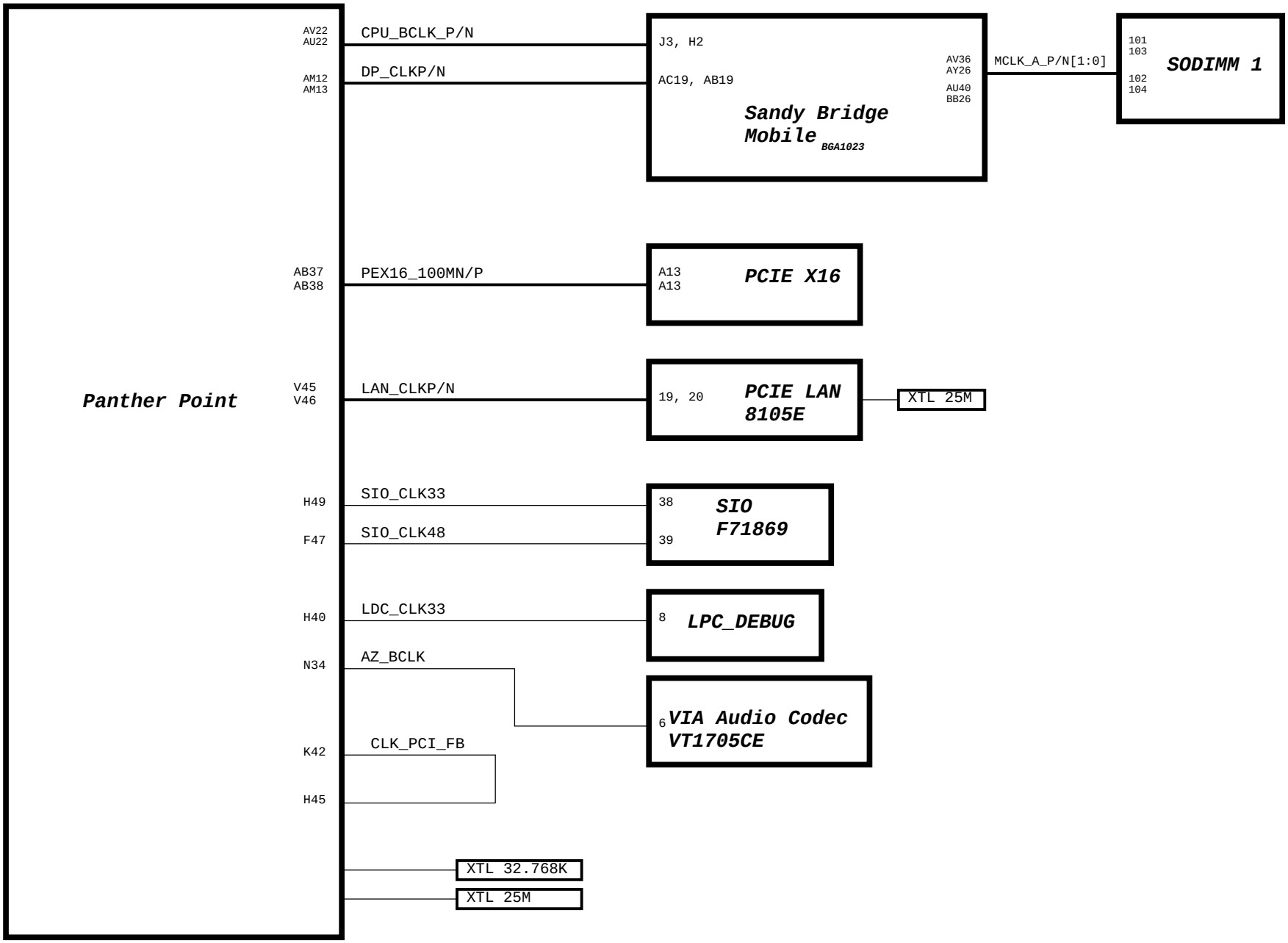
B:Blinking

Elitegroup Computer Systems			
Title: GPIO			
Size: Custom	Document Number: NM70-I		Rev: 1.0
Date: Tuesday, August 21, 2012		Sheet 27 of 30	


ATX P/S WITH 1A STBY CURRENT
5VSB +/-5%
5V +/-5%
3.3V +/-5%
12V +/-5%
-12V +/-5%
APM2315 PMOS
(5VSB_CTRL)
RT8165 SW REGULATOR
0.65V~1.2V
33A
VCORE
0.65V~1.35V
26A
VAXG
RT8121
1.05V
21.342A
V_1P05PCH
0.31A
(SLP4_L)
RT9025
CONTROL(VCC)
1.8V
1.389A
VCC_1P8
RT8105GS
1.5V
5.A
V_DIMM
CONTROL(S3P5G_L)
MN252
AP2315AC
APL5336
(SLP3_L)
0.75V
0.6A
DDR_VTT
5VDUAL
S0: 9A
S3/S5 <4A
USBPWR_R
USBPWR_F
+12V
0.019
-12V
NCT3914
FAN CONTROL
VOUT_CPU
VOUT_SYS
VCC3
3.607A
VCC3
+12V
ADJ1086-S
3VSB
0.609A
5VSB_ATX
3904
3VSB_IO
2mA
VCC
VCC
0.15A
VCC_DDC
SK24-S
Intel Sandy Bridge Mobile CPU
847/807 (BGA1023)
Pmax=17W
VCCP
VID 0.65-1.2v
33A/21.5
VAXG
VID 0.65-1.35v
26A(GT2)/10 16A(GT1)
VTT
1.05V
8.5A
VCC_SA
0.675-0.9V
6A
VCCPLL
1.8V
1.2A
VDDQ
1.5V
5A
DDR3 SODIMMs
V_DIMM
1.5V
3A
DDR_VTT
0.75V
0.6A
NM70
(Mobile TDP 4.1W)
V_CPU_IO
1.05V
0.002A
VCCCORE
1.05V
1.73A
VccADPLLA
1.05V
0.075A
VccADPLLB
1.05V
0.075A
VccIO
1.05V
3.799A
VccASW
1.05V
0.803A
VccDMI
1.05V
0.047A
VccCLKDMI
1.05V
0.075A
VccSSC
1.05V
0.095A
VccDiffCLKN
1.05V
0.050A
VccVRM
1.8V
0.147A
VccTxLVDS
1.8V
0.040A
VccDFTRM
1.8V
0.002A
Vcc3P3
3.3V
0.178A
VccDSW
3.3V
0.010A
VccDAC
3.3V
0.063A
VccSPI
3.3V
0.010A
VccALVDS
3.3V
0.001A
VccSus3_3
3VSB
0.065A
VccSusHDA
3VSB
0.001A
VCCRTC
3VSB
VCC5REF
5V
0.001A
VCC5REF_SUS
5VSB
0.001A
DCPSUS
1.05V
0.120A
USB X4 RI
USB X4 FI
5VDual 2.0A
5VDual 2.0A
Series IC
5V
0.03A
12V
0.019A
-12V
0.019A
CPU FAN
SYS FAN
12V
0.52A
PCI X16
3.3V
3A(S0)
12V
5.5A(S0)
3.3Vaux
0.375A
0.297A
VCC_1P8
BUZZER
5V
0.15A
VGA
5V
0.055A
HDMI/DVI
5V
SUPER I/O F71869
3VSB
3VSB
0.006A
AVCC3
3.3V
0.01A
VBAT
3.3V
0.002A
VT1705CE
DVDD
3.3V
0.025A
AVDD
5V
0.045A
RTL8105E/RTL8111E
3VSB
3VSB
0.162A
300mA (S0, S1)
100mA (S3)
Elitegroup Computer Systems
Power Delivery Chart
NM70-I
1.0
Tuesday, August 21, 2012
28 of 30



Elitegroup Computer Systems		
Title: Power Sequencing Diagram		
Size: Custom	Document Number: NM70-I	Rev: 1.0
Date: Tuesday, August 21, 2012	Sheet 29 of 30	



Elitegroup Computer Systems

Title: Clock Distribution

Size	Document Number	Rev
Custom	NM70-I	1.0

Date: Tuesday, August 21, 2012 Sheet 30 of 30