H55H-M V :1.0

SCHEMATICS TABLE:

REVISION HISTORY:

Rev	Date	Notes
1.0	090831	P07---Change 9LRS4105 to 9LRS4200 Remove 3VSB power co-lay,Remove DOC over clock circuit P08---add VR_HOT level switch circut P15---add Case-Open ,ME_UNLOCK fuction,gpio for audio verb table P23---Remove CD-IN header

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.

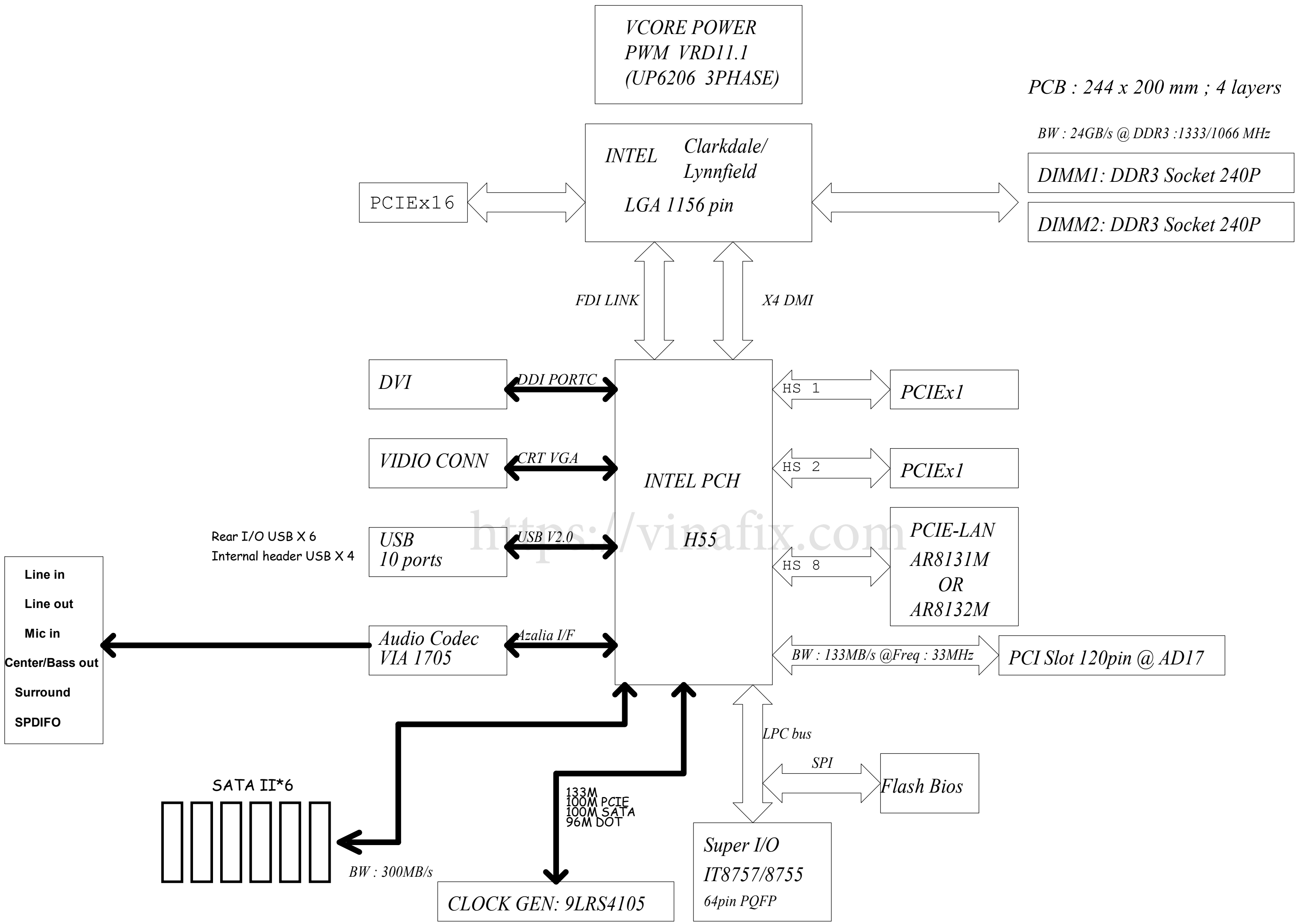
2) DESIGN NOTES in yellow are notes of caution.

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

PCB STACK: L1:TOP
L2:VCC
L3:GND
L4:BOTTOM

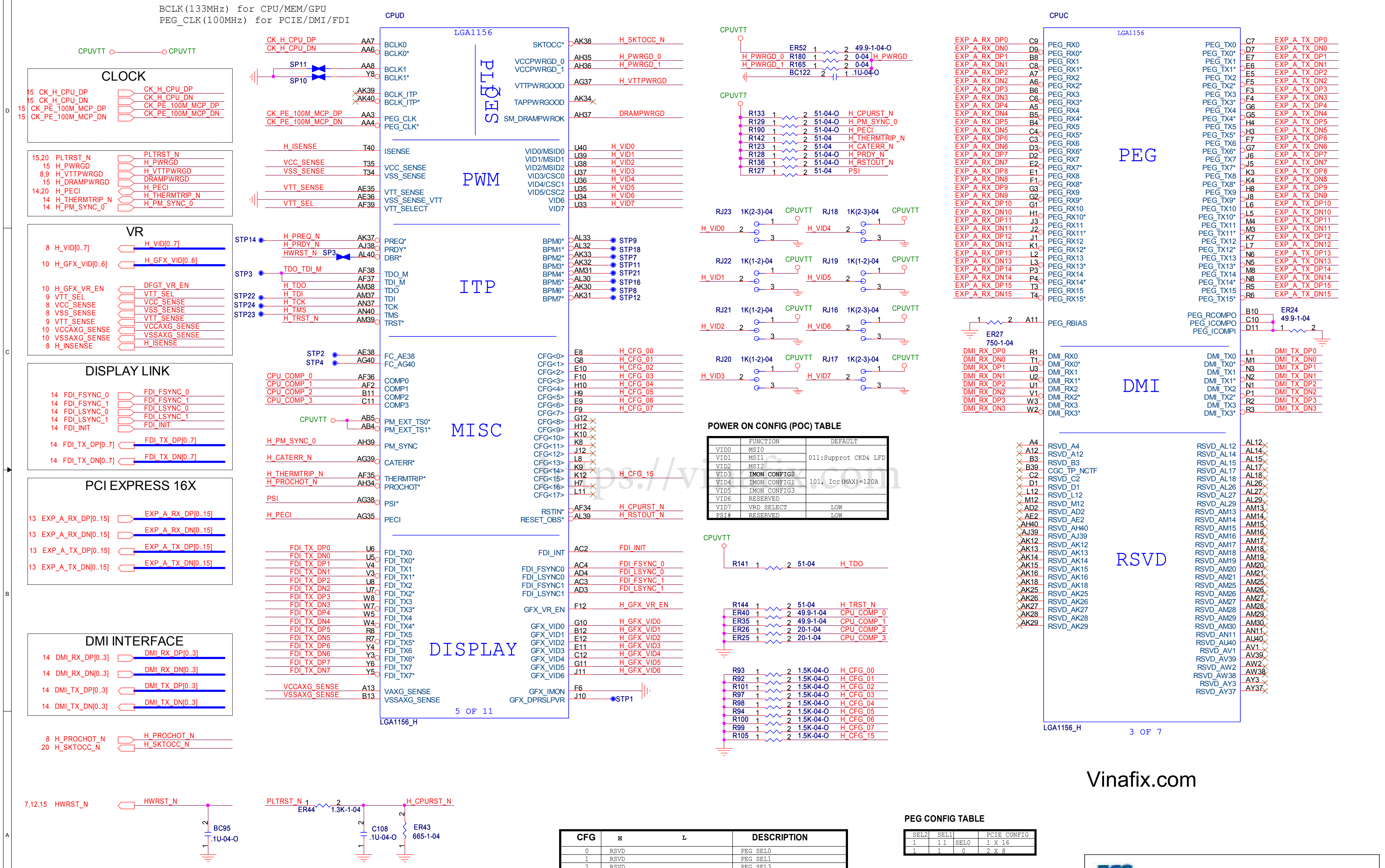
Elitegroup Computer Systems

Title	Cover Page		
Size: Custom	Document Number: H55H-M		Rev: 1.0
Date: Thursday, September 03, 2009	Sheet 1	of 28	



Elitegroup Computer Systems

Title	Block Diagram	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 2 of 28	



POWER ON CONFIG (POC) TABLE

	FUNCTION	DEFAULT
VID0	MSI0	011:Supprot CKD& LFD
VID1	MSI1	
VID2	MSI2	
VID3	IMON CONFIG2	101, Icc(MAX)=120A
VID4	IMON CONFIG1	
VID5	IMON CONFIG3	
VID6	RESERVED	
VID7	VRD SELECT	LOW
PSI#	RESERVED	LOW

CFG	H	L	DESCRIPTION
0	RSVD		PEG SEL0
1	RSVD		PEG SEL1
2	RSVD		PEG SEL3
3	NORM	REVERSED	PEG LANE REVERSAL
4	DISABLE	ENABLE	DP PRESENCE
5	RSVD		
6	RSVD		
7	RSVD		ENGINEERING EXPERIMENT
15	RSVD		ENGINEERING EXPERIMENT

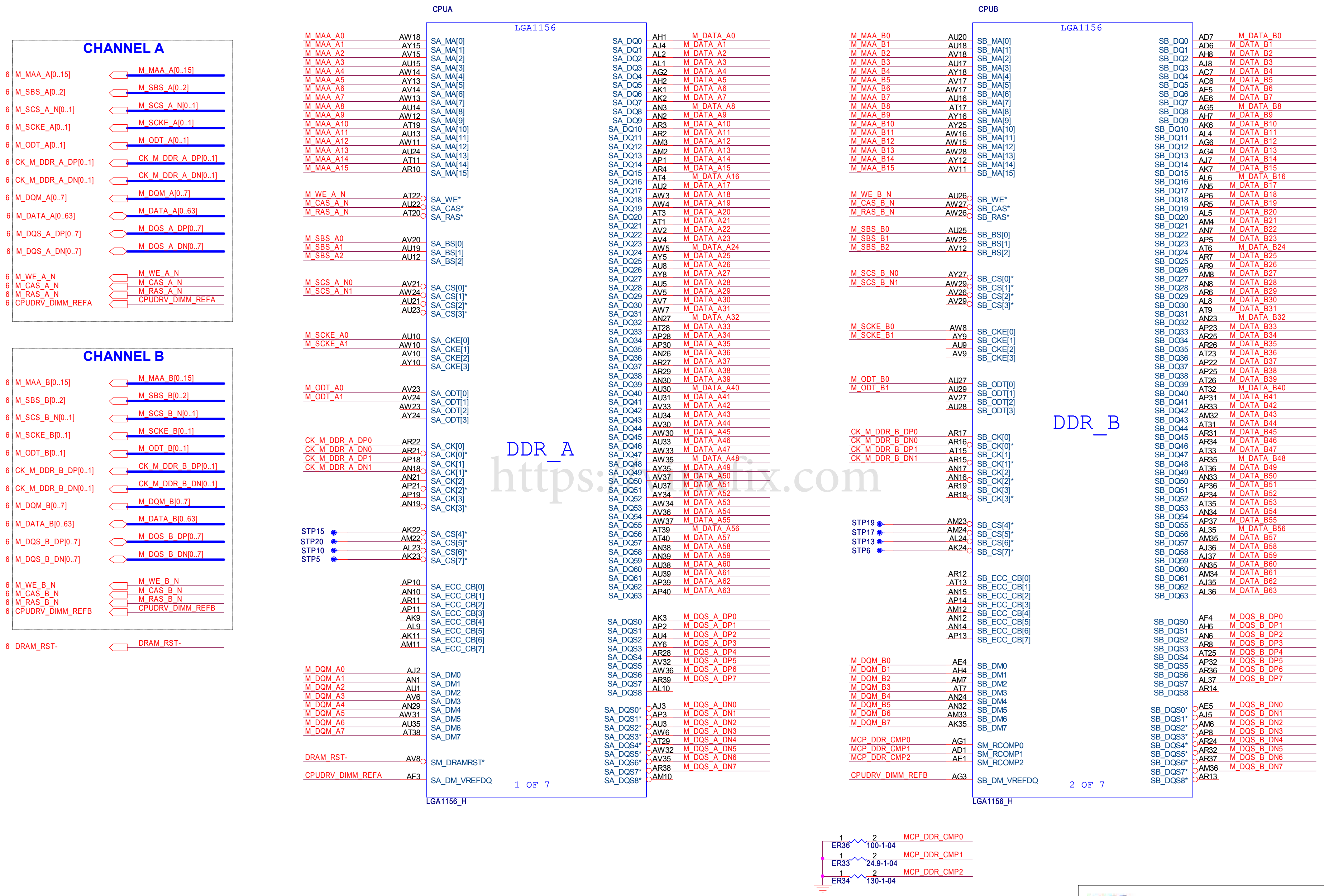
0~5 HAVE INTERNAL PULL-UP

PEG CONFIG TABLE

SEL2	SEL1		PCIE CONFIG
1	1 1	SEL0	1 X 16
1	1	0	2 X 8

ECS **Elitegroup Computer Systems**

Title	LGA1156 CPU/GPU/PEG/DMI
Size: Custom	Document Number: H55H-M
Rev	1.0
Date:	Wednesday, September 02, 2009
Sheet	3 of 28

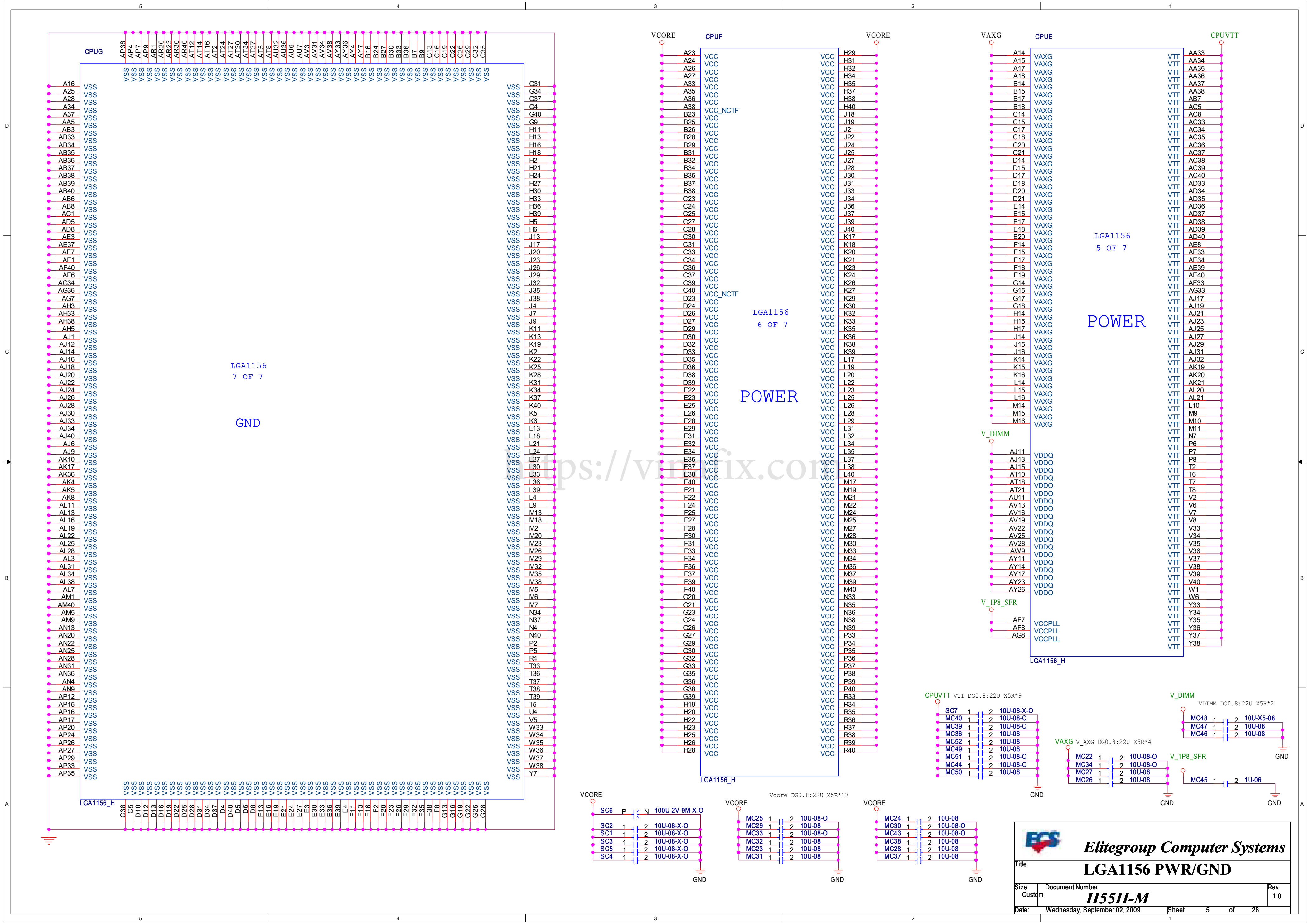


Elitegroup Computer Systems

Title: LGA1156 DDR3 MEMORY

Size	Document Number	Rev
Custom	H55H-M	1.0

Date: Wednesday, September 02, 2009 Sheet 4 of 28

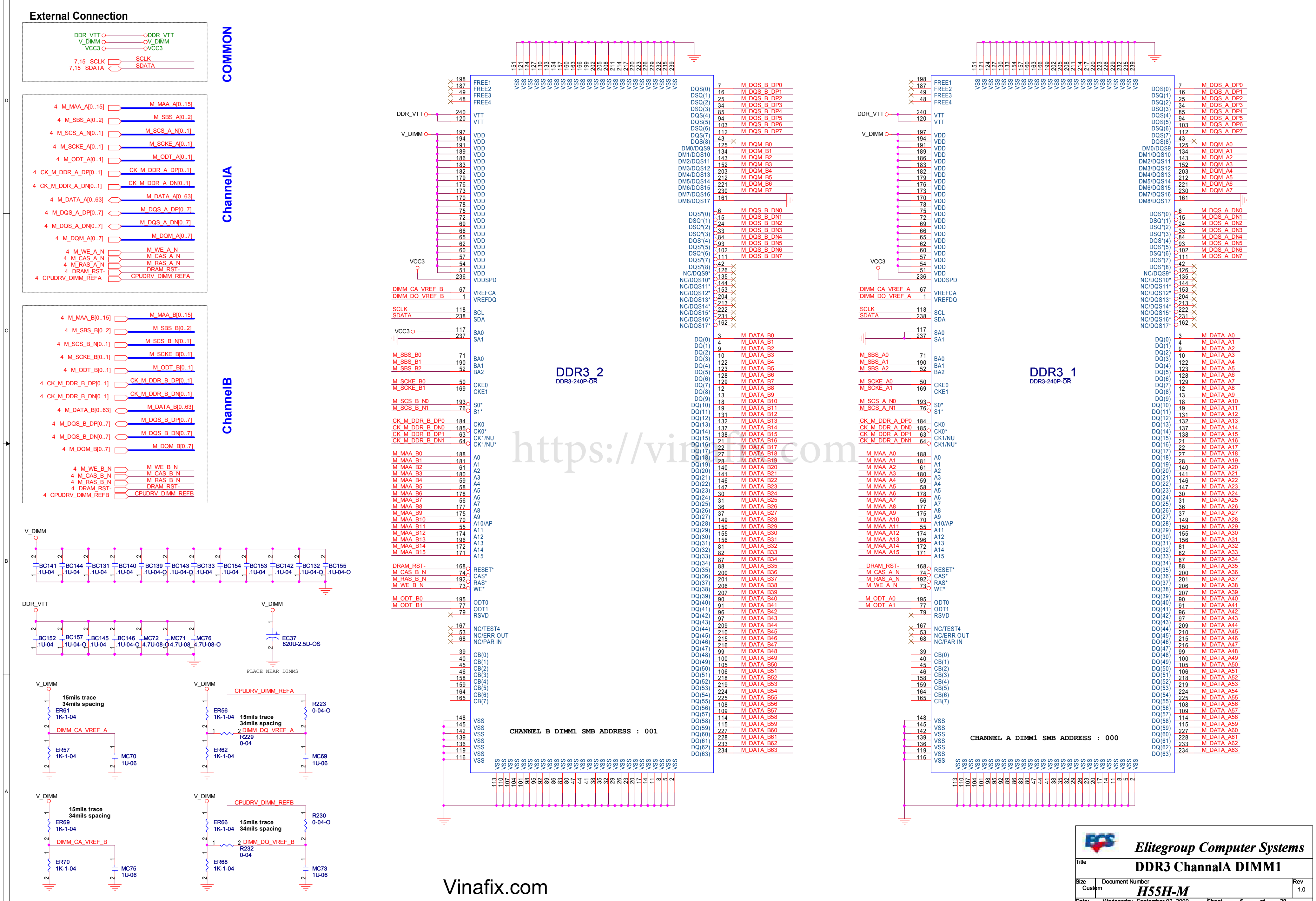


Elitegroup Computer Systems

Title: LGA1156 PWR/GND

Size: Custom | Document Number: H55H-M | Rev: 1.0

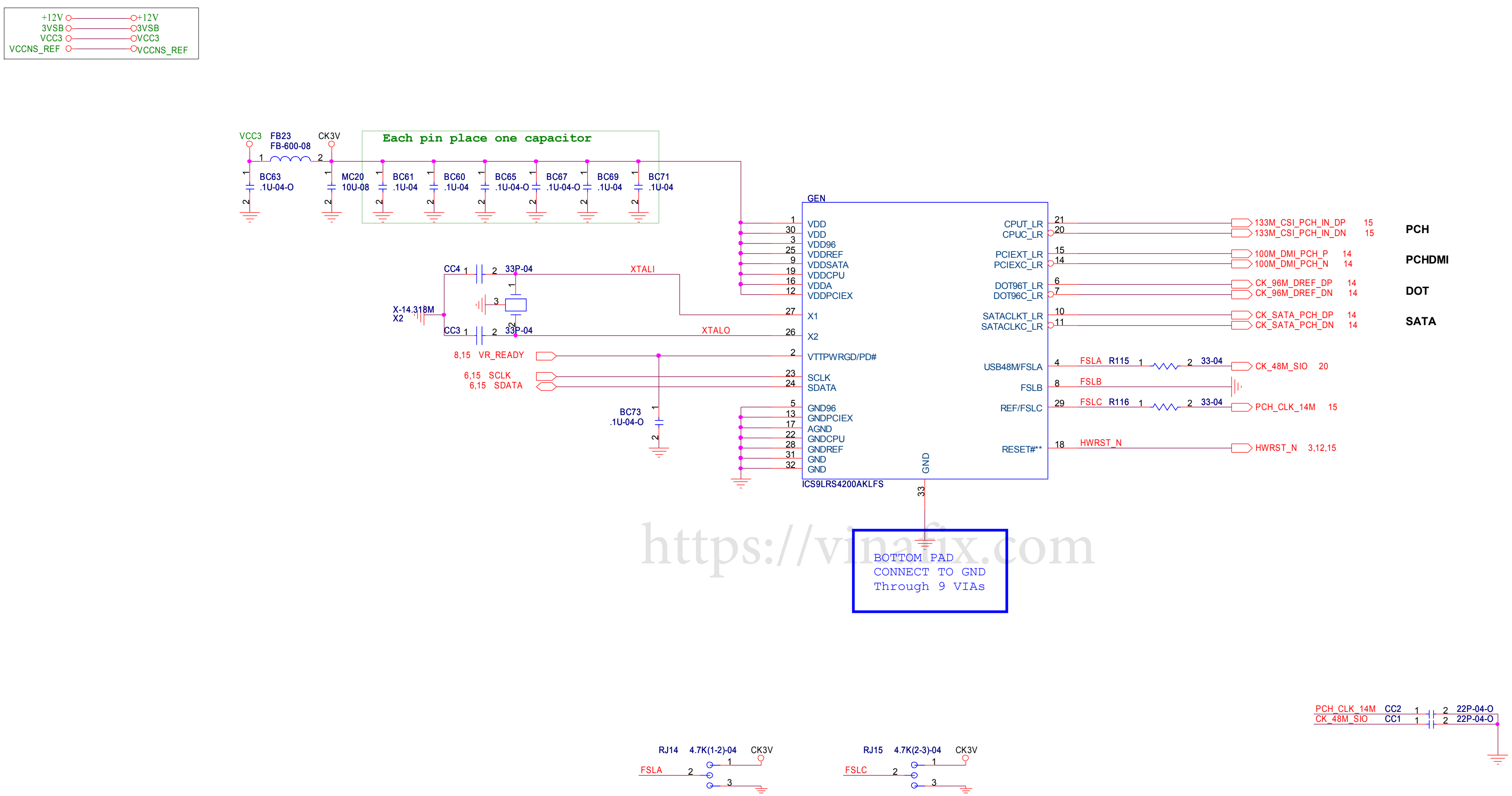
Date: Wednesday, September 02, 2009 | Sheet 5 of 28



Elitegroup Computer Systems

Title	DDR3 ChannalA DIMM1	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 6 of 28	

External Connection

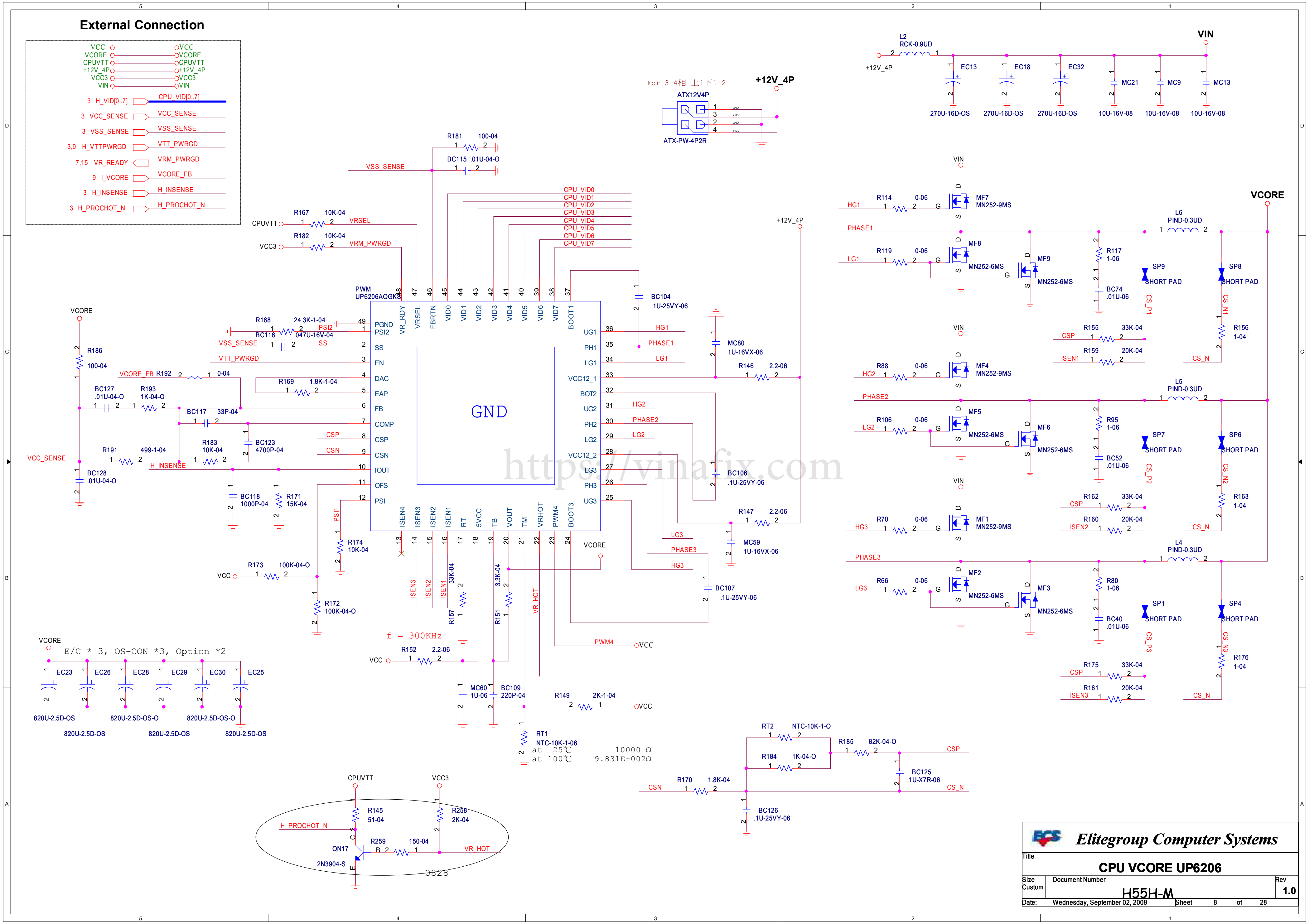


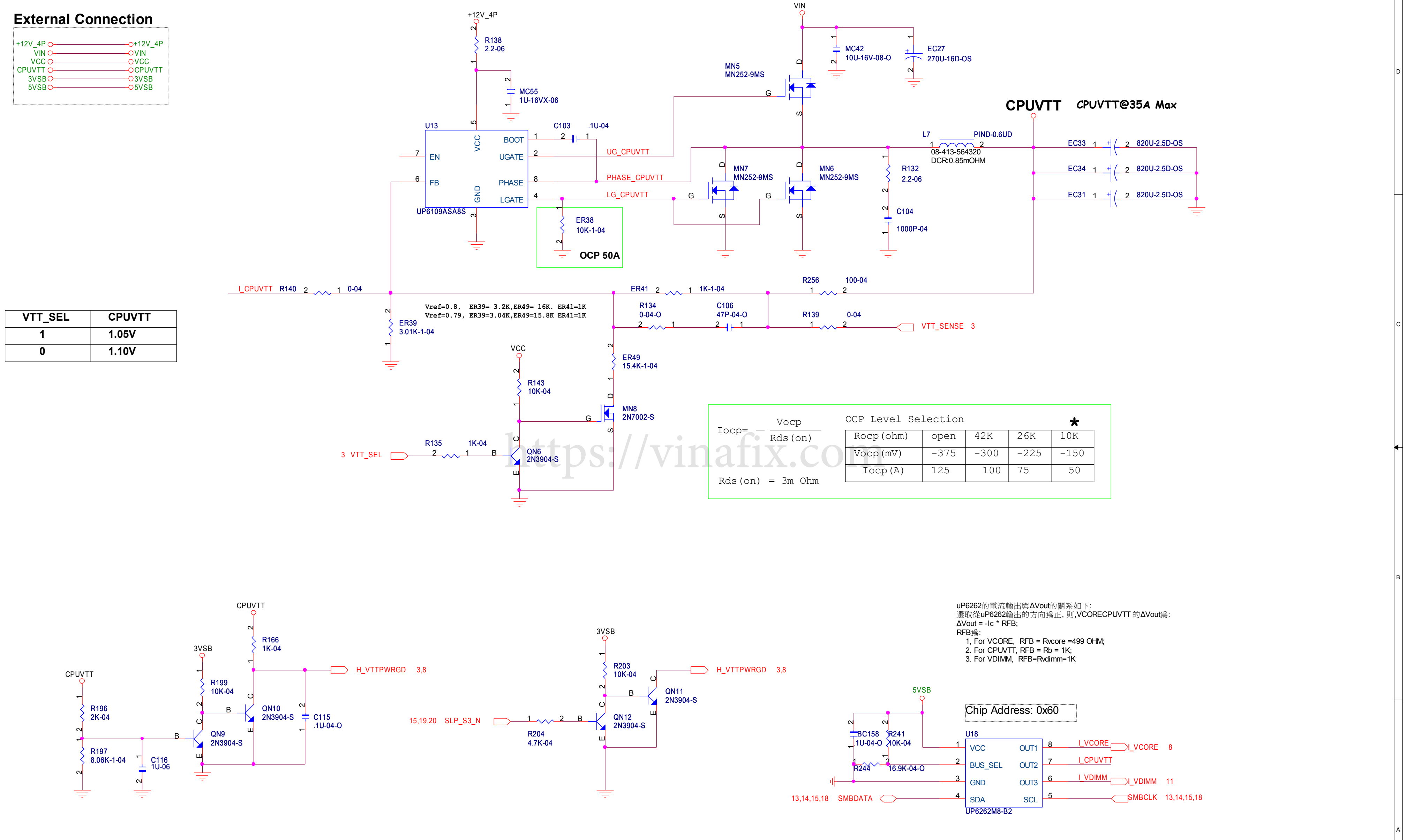
FSLC,FSLB,FSLA = 001, CPU_CLK = 133MHz

FSLC (B0b2)	FSLB (B0b1)	FSLA (B0b0)	CPU MHz	PCIE MHz	SATA MHz	DOT96 MHz
0	0	1	133.33	100	100	96.00
1	0	1	100.00	100	100	96.00

Elitegroup Computer Systems

Title	CLK 9LRS4200
Size: Custom	Document Number: H55H-M
Rev	1.0
Date:	Wednesday, September 02, 2009
Sheet	7 of 28


External Connection
VCC
VCORE
CPUVTT
+12V_4P
VCC3
VIN
3 H_VID[0..7]
CPU_VID[0..7]
3 VCC_SENSE
3 VSS_SENSE
3,9 H_VTTPWRGD
VTT_PWRGD
7,15 VR_READY
VRM_PWRGD
9 I_VCORE
VCORE_FB
3 H_INSENSE
3 H_PROCHOT_N
For 3-4相 上1下1-2
+12V_4P
ATX12V4P
ATX-PW-4P2R
L2
RCK-0.9UD
VIN
EC13
EC18
EC32
MC21
MC9
MC13
270U-16D-OS
10U-16V-08
PWM
UP6206AQGKS
GND
R181 100-04
BC115 .01U-04-O
R167 10K-04
R182 10K-04
VRSEL
CPU_VID0
CPU_VID1
CPU_VID2
CPU_VID3
CPU_VID4
CPU_VID5
CPU_VID6
CPU_VID7
BC104 .1U-25VY-06
MC80 1U-16VX-06
R146 2.2-06
BC106 .1U-25VY-06
R147 2.2-06
MC59 1U-16VX-06
BC107 .1U-25VY-06
R168 24.3K-1-04
BC116 .047U-16V-04
R186 100-04
R192 0-04
BC127 .01U-04-O
R193 1K-04-O
BC117 33P-04
R169 1.8K-1-04
R191 499-1-04
R183 10K-04
BC123 4700P-04
BC128 .01U-04-O
BC118 1000P-04
R171 15K-04
R174 10K-04
R173 100K-04-O
R172 100K-04-O
R157 33K-04
R151 3.3K-04
f = 300KHz
R152 2.2-06
MC60 1U-06
BC109 220P-04
R149 2K-1-04
RT1 NTC-10K-1-06
at 25℃ 10000 Ω
at 100℃ 9.831E+002Ω
E/C * 3, OS-CON *3, Option *2
EC23 EC26 EC28 EC29 EC30 EC25
820U-2.5D-OS
820U-2.5D-OS-O
R145 51-04
R258 2K-04
QN17 2N3904-S
R259 150-04
H_PROCHOT_N
VR_HOT
0828
MF7 MN252-9MS
MF8 MN252-6MS
MF9 MN252-6MS
R114 0-06
R119 0-06
L6 PIND-0.3UD
VCORE
R117 1-06
BC74 .01U-06
SP9 SHORT PAD
SP8 SHORT PAD
R155 33K-04
R159 20K-04
R156 1-04
MF4 MN252-9MS
MF5 MN252-6MS
MF6 MN252-6MS
R88 0-06
R106 0-06
L5 PIND-0.3UD
R95 1-06
BC52 .01U-06
SP7 SHORT PAD
SP6 SHORT PAD
R162 33K-04
R160 20K-04
R163 1-04
MF1 MN252-9MS
MF2 MN252-6MS
MF3 MN252-6MS
R70 0-06
R66 0-06
L4 PIND-0.3UD
R80 1-06
BC40 .01U-06
SP1 SHORT PAD
SP4 SHORT PAD
R175 33K-04
R161 20K-04
R176 1-04
RT2 NTC-10K-1-O
R185 82K-04-O
R184 1K-04-O
BC125 .1U-X7R-06
R170 1.8K-04
BC126 .1U-25VY-06
https://vinafix.com
Elitegroup Computer Systems
Title
CPU VCORE UP6206
Size Custom
Document Number
H55H-M
Rev 1.0
Date: Wednesday, September 02, 2009
Sheet 8 of 28



VTT_SEL	CPUVTT
1	1.05V
0	1.10V

$$Iocp = \frac{Vocp}{Rds(on)}$$

Rds(on) = 3m Ohm

OCP Level Selection

Rocp(ohm)	open	42K	26K	10K *
Vocp(mV)	-375	-300	-225	-150
Iocp(A)	125	100	75	50

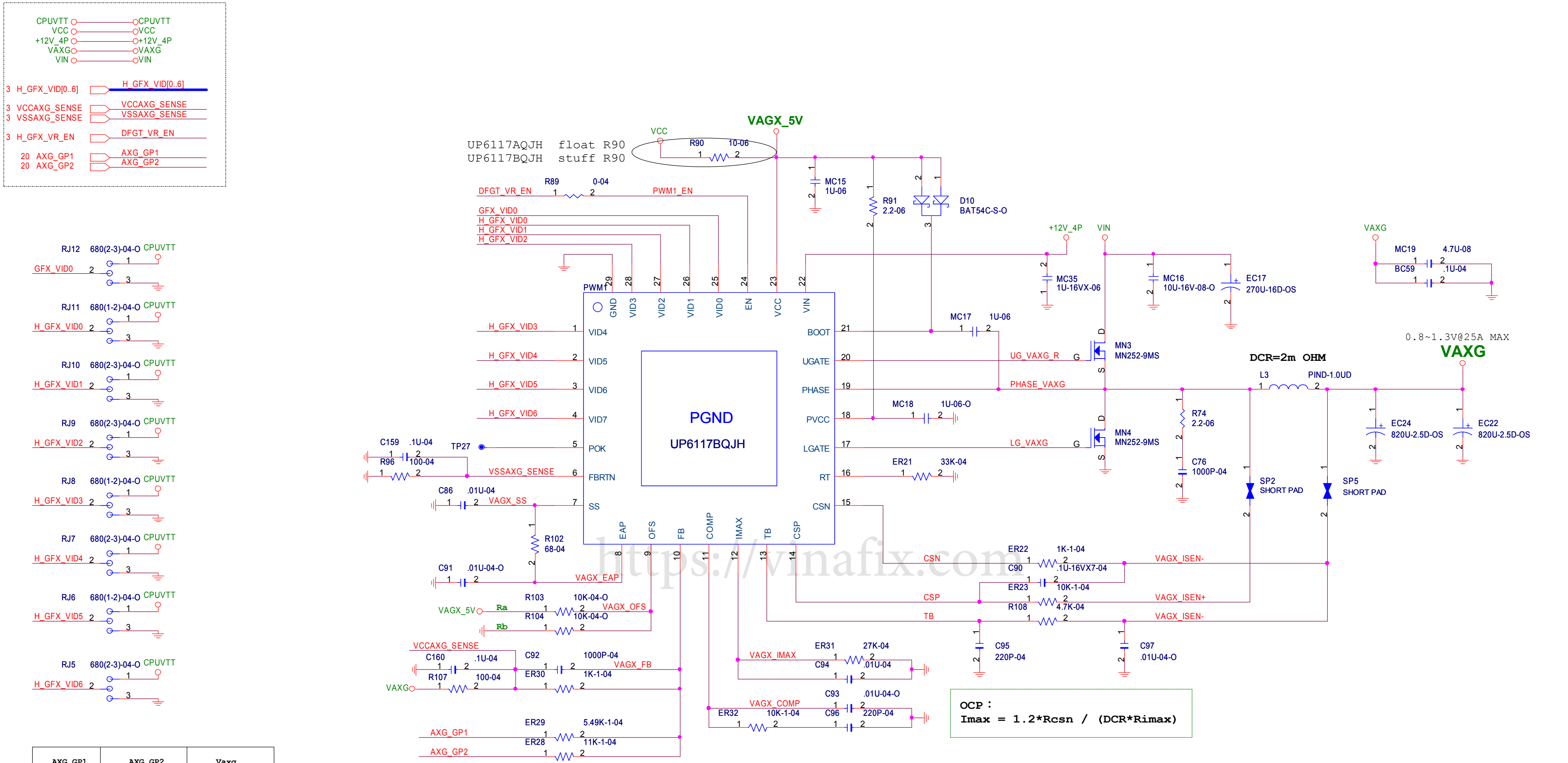
uP6262的電流輸出與ΔVout的關系如下:
選取從uP6262輸出的方向爲正, 則,VCORECPUVTT 的ΔVout爲:
ΔVout = -Ic * RFB;
RFB爲:
1, For VCORE, RFB = Rvcore =499 OHM;
2. For CPUVTT, RFB = Rb = 1K;
3. For VDIMM, RFB=Rvdimm=1K

Elitegroup Computer Systems

Title: CPUVTT UP6109ASA8S

Size: Custom | Document Number: H55H-M | Rev: 1.0

Date: Thursday, September 03, 2009 | Sheet 9 of 28



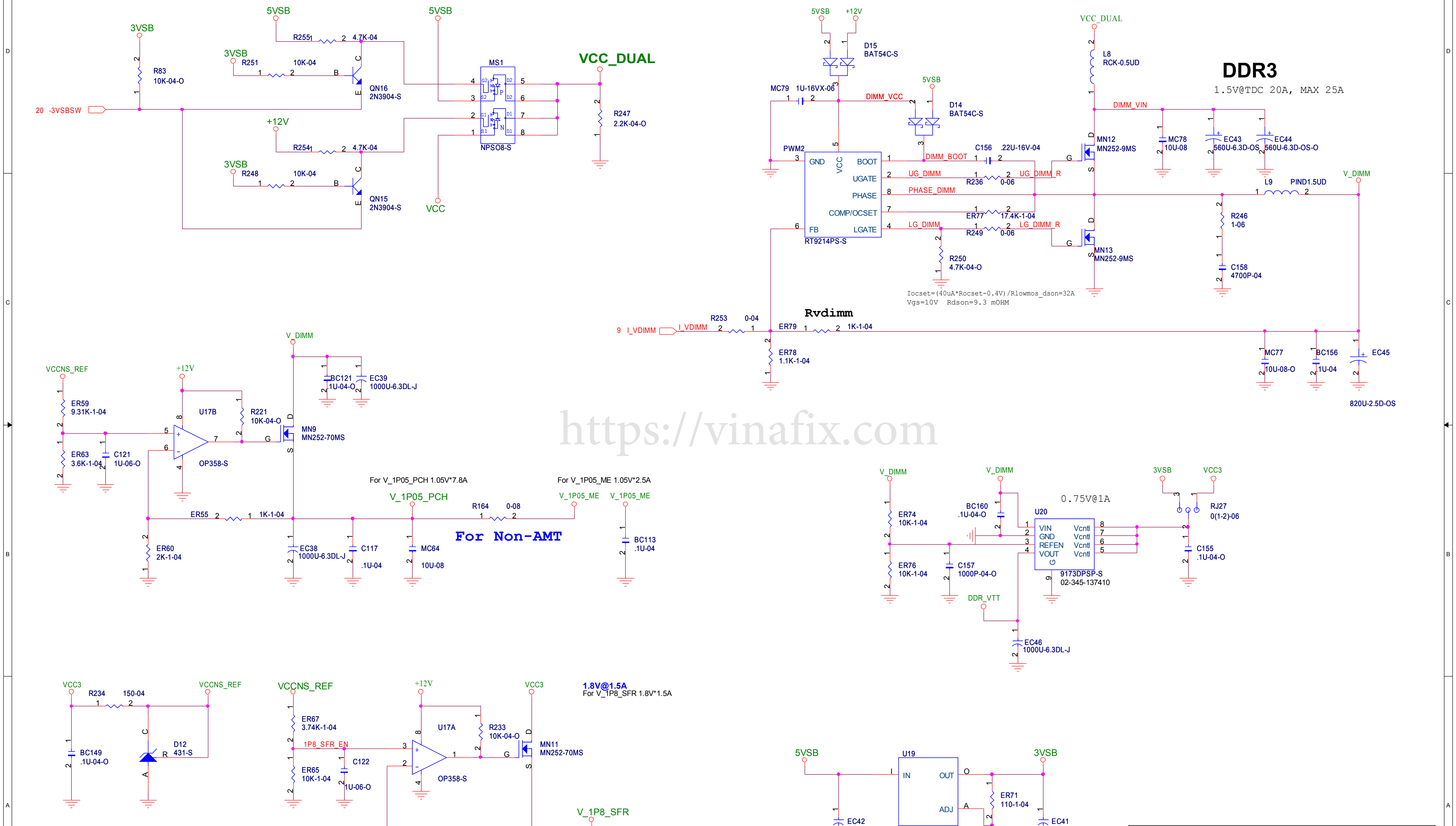
AXG_GP1	AXG_GP2	Vaxg
1	1	+0 mV
1	0	+100mV
0	1	+200mV
0	0	+300mV

Elitegroup Computer Systems

Title: CPU VAXG POWER UP6117A

Size: Custom | Document Number: H55H-M | Rev: 1.0

Date: Thursday, September 03, 2009 | Sheet 10 of 28



Elitegroup Computer Systems

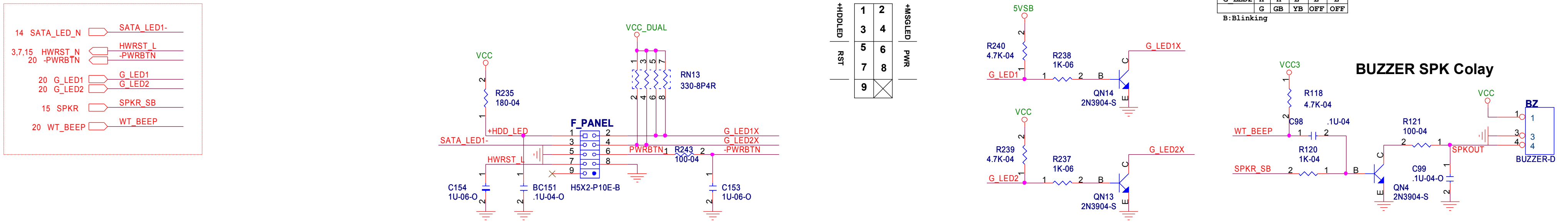
Title	DC-DC DUAL VDIMM	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 11 of 28	

FRONT PANEL

External Connection

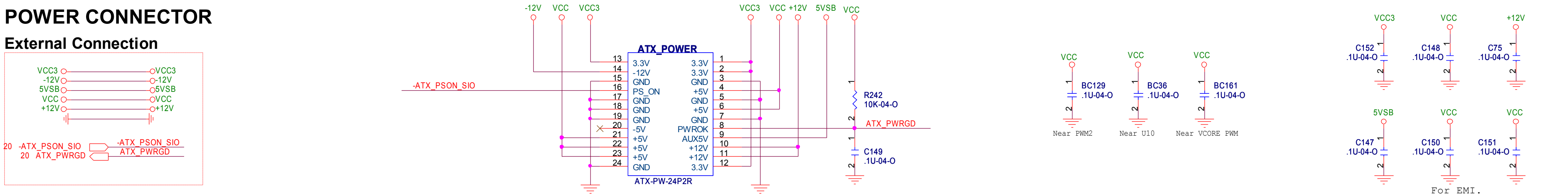
	S0	S1	S3	S4	S5
G_LED1	L	B	B	L	L
G_LED2	H	H	L	L	L
	G	GB	YB	OFF	OFF

B:Blinking



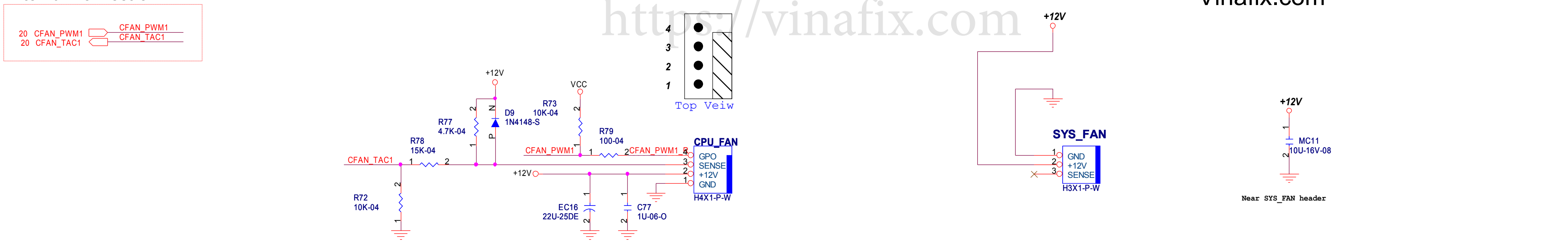
POWER CONNECTOR

External Connection

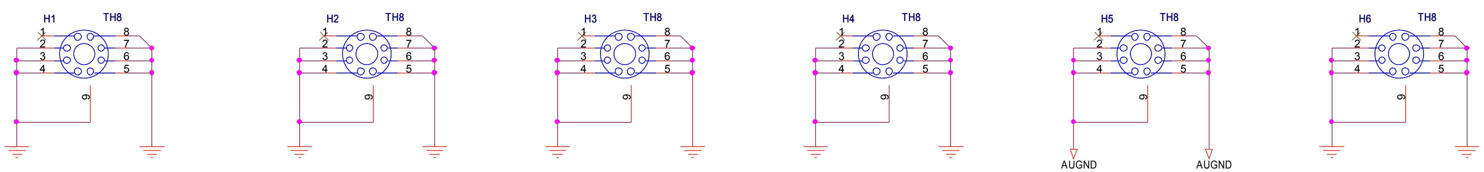


FAN

External Connection



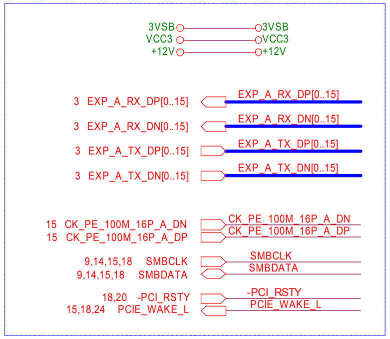
Vinafix.com

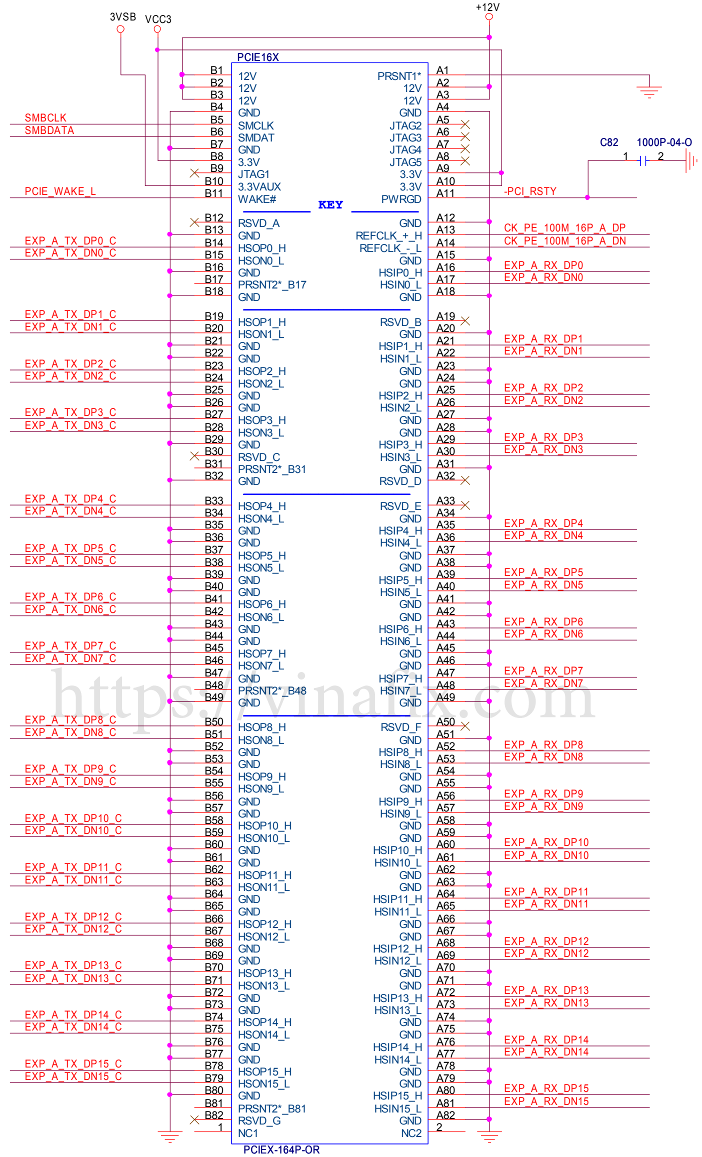


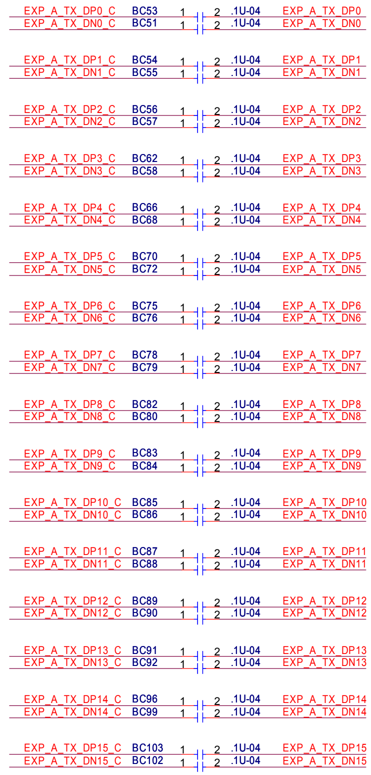
ECS Elitegroup Computer Systems

Title	Front Panel,FAN,PowerConn	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 12 of 28	

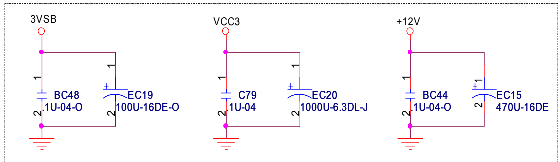
PCIEX16
External Connection





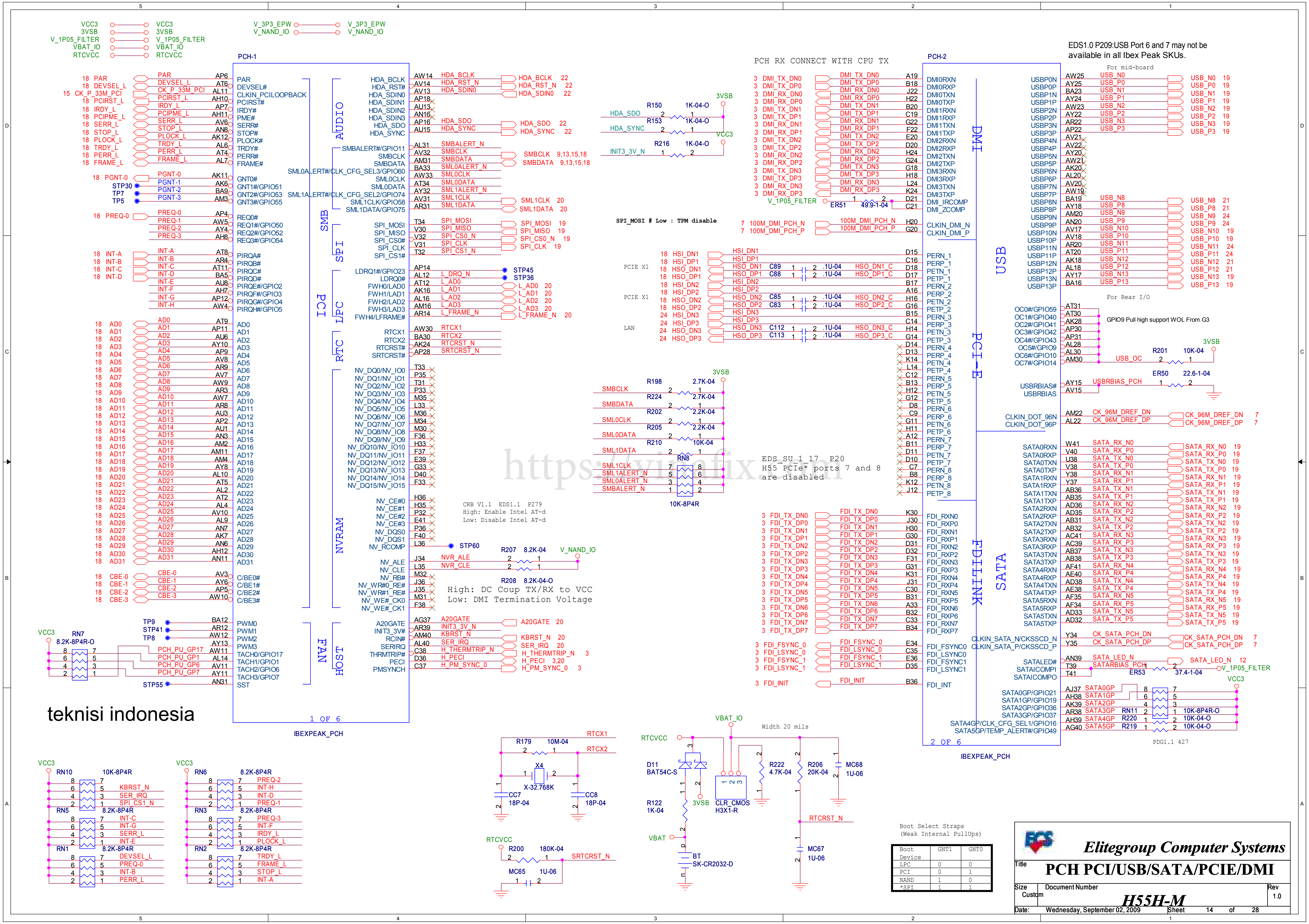


Please place the caps close to PCI-EX16 Slot.

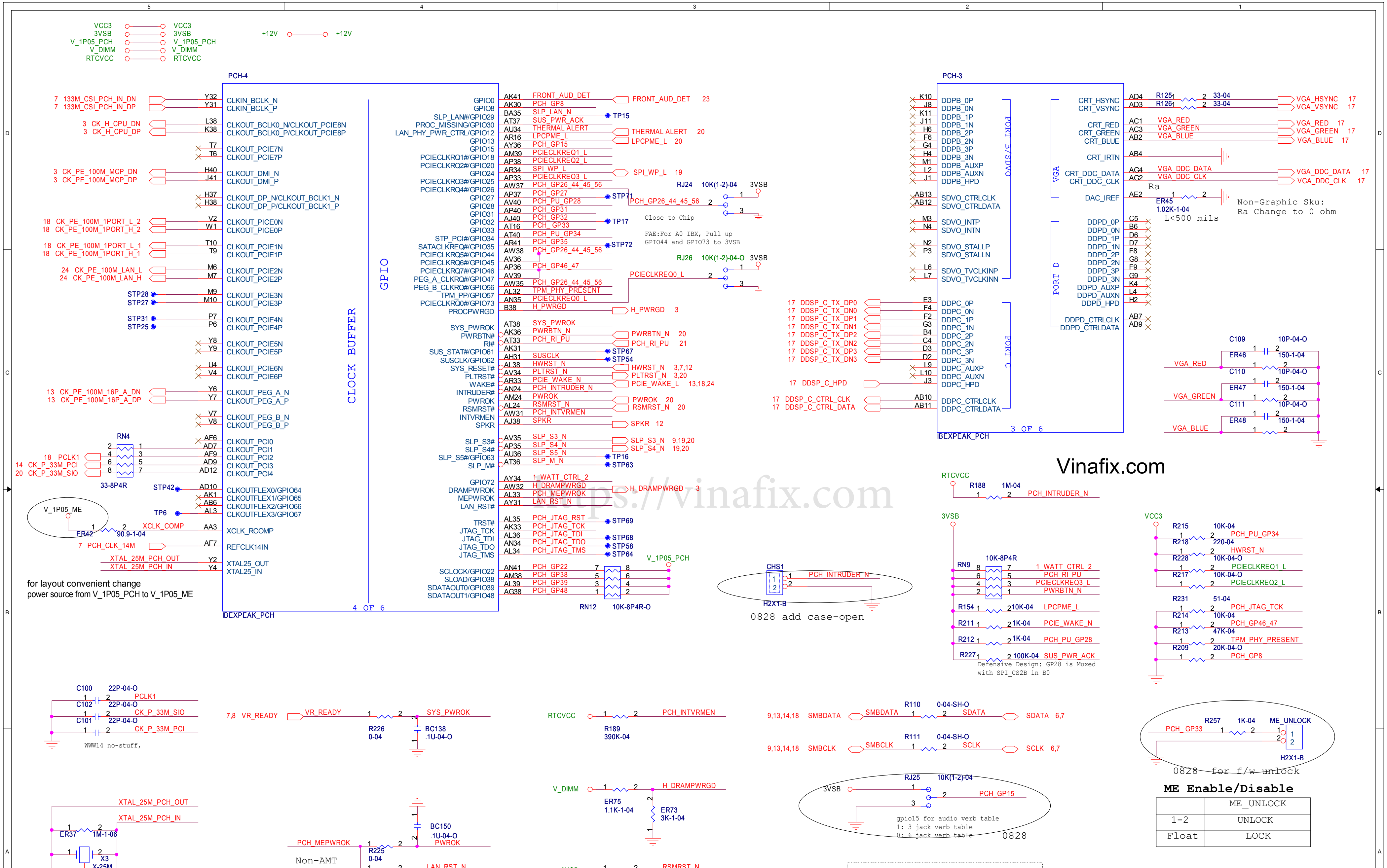


Elitegroup Computer Systems

Title	PCIEX16 slot	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 13 of 28	



Boot Device	GNT1	GNT0
LPC	0	0
PCI	0	1
NAND	1	0
*SPI	1	1



ME Enable/Disable

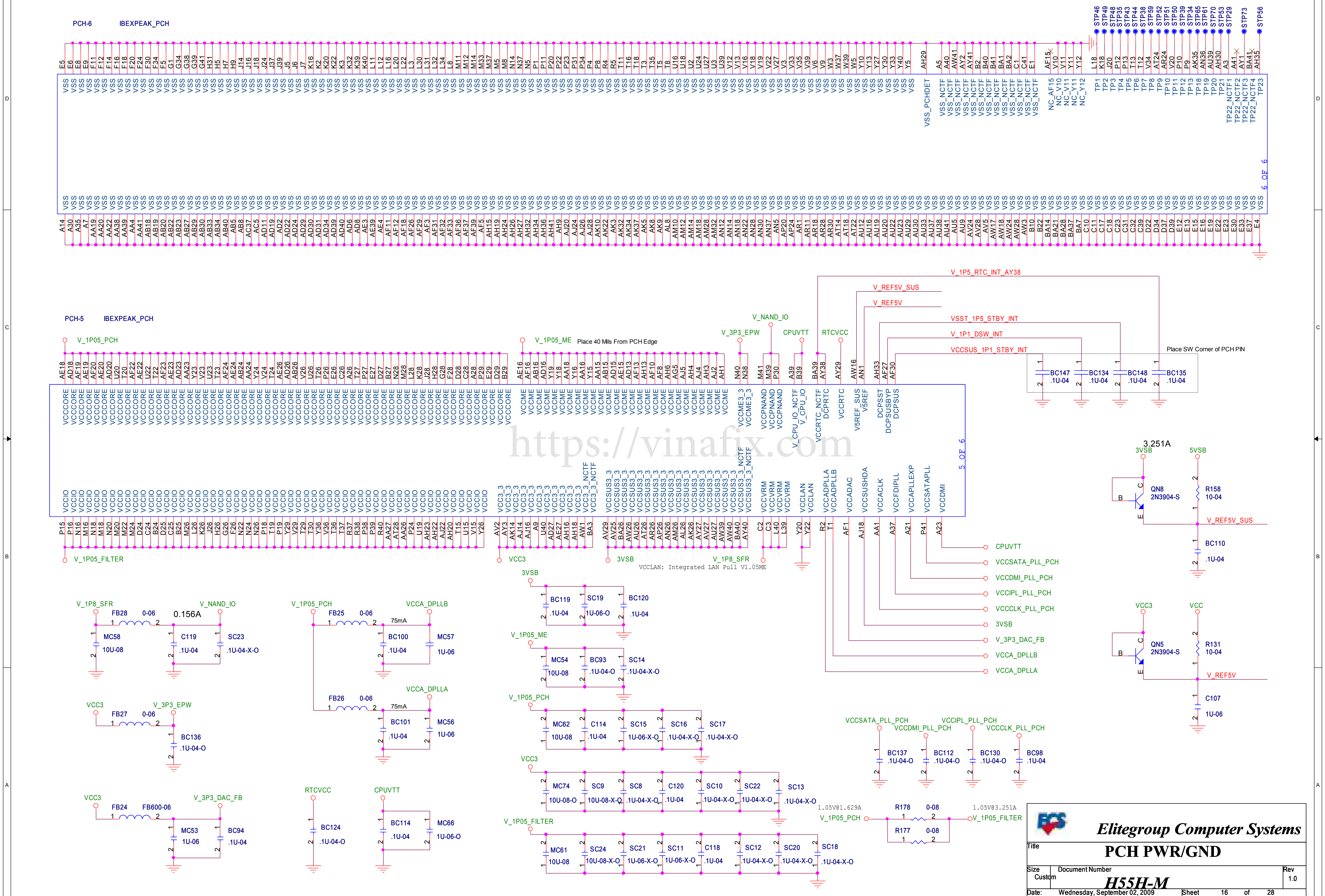
	ME_UNLOCK
1-2	UNLOCK
Float	LOCK

Elitegroup Computer Systems

Title: PCH CLK/GPIO/DISPLAY

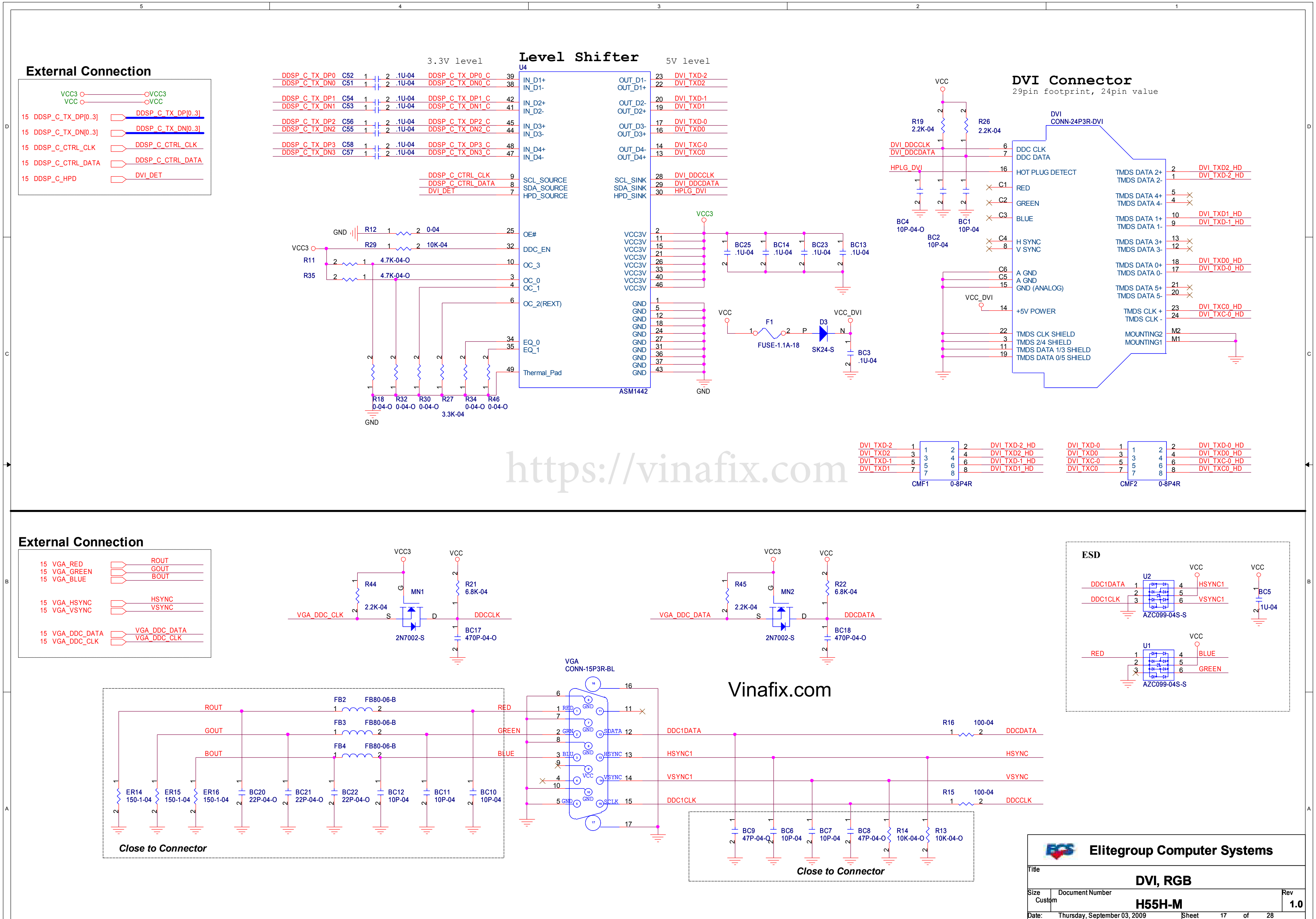
Size: Custom | Document Number: H55H-M | Rev: 1.0

Date: Wednesday, September 02, 2009 | Sheet 15 of 28



Elitegroup Computer Systems

Title	PCH PWR/GND	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 16 of 28	



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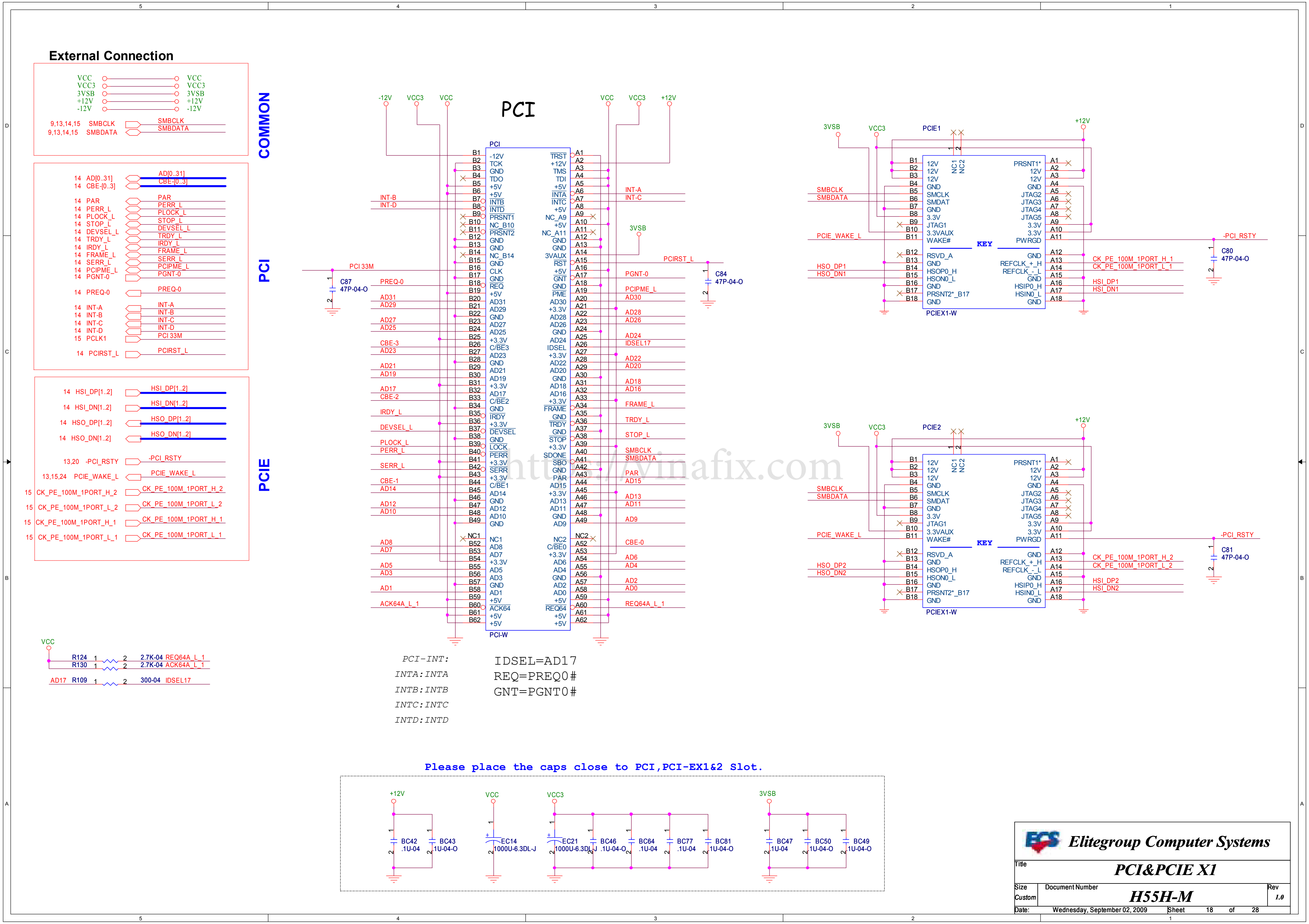
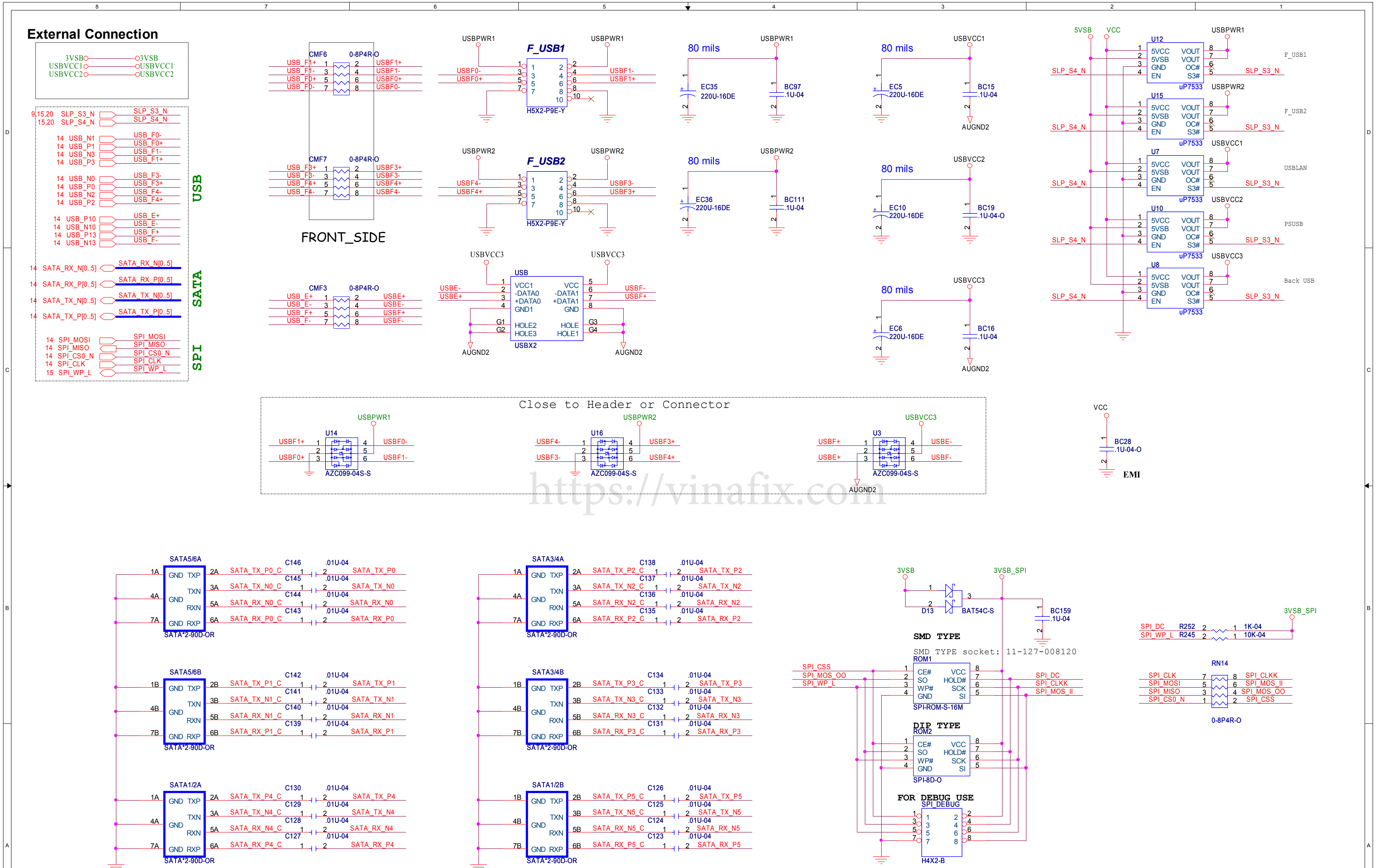
Title: DVI, RGB

Size: Custom | Document Number: H55H-M | Rev: 1.0

Date: Thursday, September 03, 2009 | Sheet 17 of 28


External Connection
COMMON
PCI
PCIE
VCC
VCC3
3VSB
+12V
-12V
9,13,14,15 SMBCLK
9,13,14,15 SMBDATA
14 AD[0..31]
14 CBE-[0..3]
14 PAR
14 PERR_L
14 PLOCK_L
14 STOP_L
14 DEVSEL_L
14 TRDY_L
14 IRDY_L
14 FRAME_L
14 SERR_L
14 PCIPME_L
14 PGNT-0
14 PREQ-0
14 INT-A
14 INT-B
14 INT-C
14 INT-D
15 PCLK1
14 PCIRST_L
14 HSI_DP[1..2]
14 HSI_DN[1..2]
14 HSO_DP[1..2]
14 HSO_DN[1..2]
13,20 -PCI_RSTY
13,15,24 PCIE_WAKE_L
15 CK_PE_100M_1PORT_H_2
15 CK_PE_100M_1PORT_L_2
15 CK_PE_100M_1PORT_H_1
15 CK_PE_100M_1PORT_L_1
PCI
PCI-W
PCIE1
PCIE2
PCIEX1-W
KEY
R124 2.7K-04 REQ64A_L_1
R130 2.7K-04 ACK64A_L_1
AD17 R109 300-04 IDSEL17
PCI-INT:
INTA:INTA
INTB:INTB
INTC:INTC
INTD:INTD
IDSEL=AD17
REQ=PREQ0#
GNT=PGNT0#
Please place the caps close to PCI,PCI-EX1&2 Slot.
BC42 .1U-04
BC43 1U-04-O
EC14 1000U-6.3DL-J
EC21 1000U-6.3DL-J
BC46 .1U-04-O
BC64 .1U-04
BC77 .1U-04
BC81 1U-04-O
BC47 1U-04
BC50 1U-04-O
BC49 1U-04-O
C87 47P-04-O
C84 47P-04-O
C80 47P-04-O
C81 47P-04-O
Elitegroup Computer Systems
Title PCI&PCIE X1
Size Custom
Document Number H55H-M
Rev 1.0
Date: Wednesday, September 02, 2009
Sheet 18 of 28

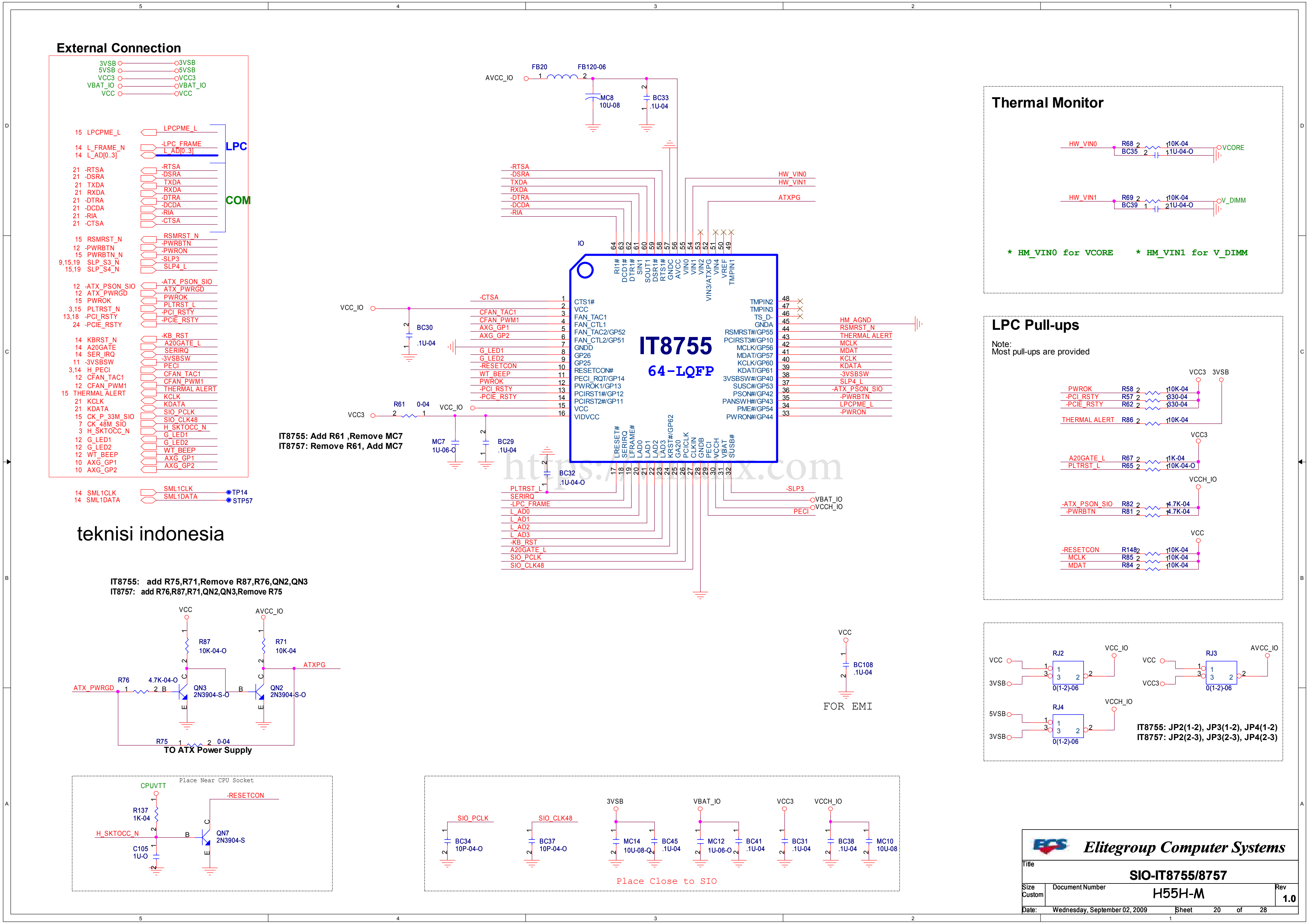


Elitegroup Computer Systems

Title: USB/SPI/SATA

Size: Custom | Document Number: H55H-M | Rev: 1.0

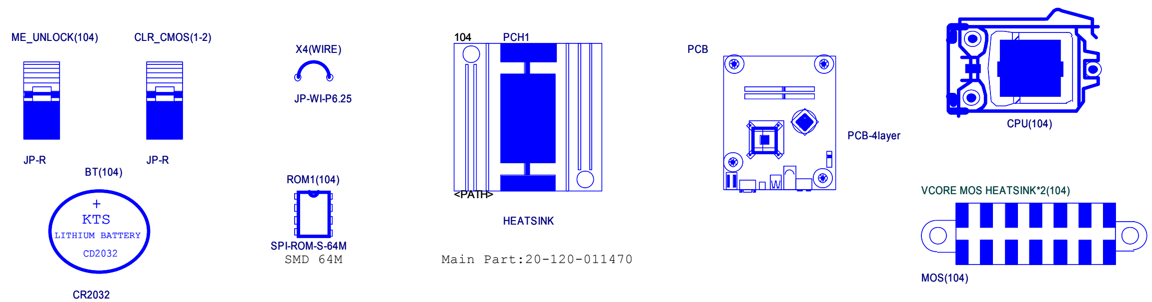
Date: Wednesday, September 02, 2009 | Sheet 19 of 28



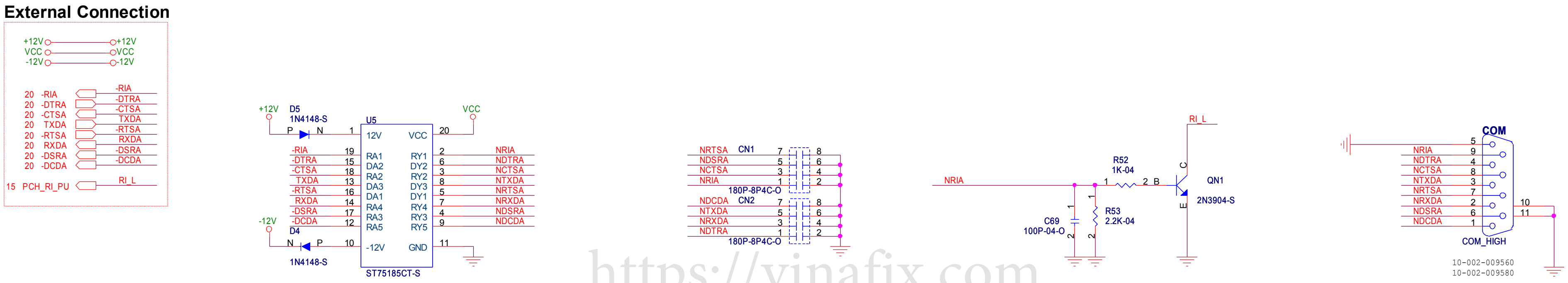
Elitegroup Computer Systems

Title	SIO-IT8755/8757	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 20 of 28	

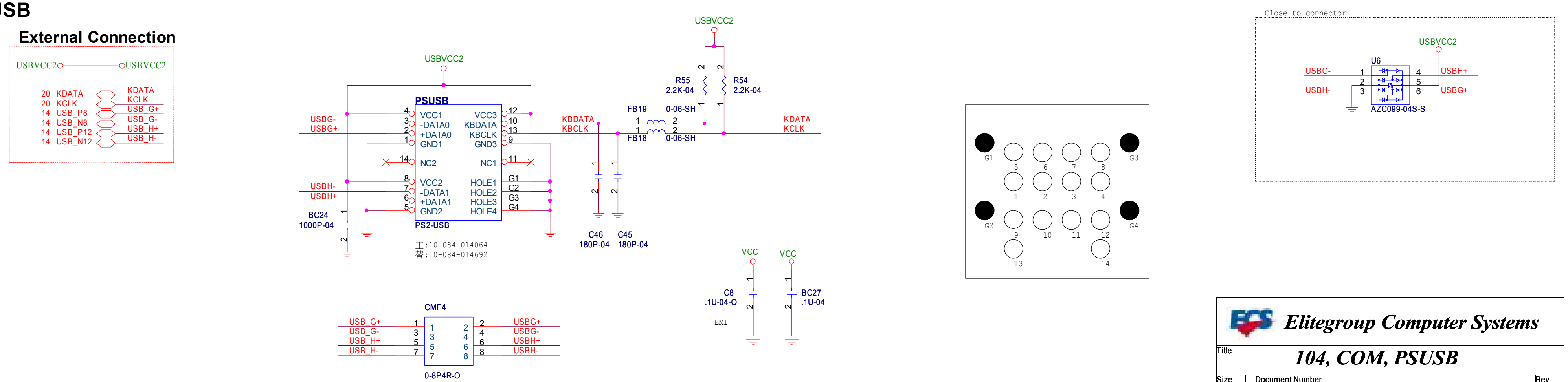

```
1080 : trace width 4 mil 50 ohm
       Trace Length 3150 mils
       Spacing: 1.clearance to itself 50/4/50(S:W:S)
                2.clearance to other signal 3W
```



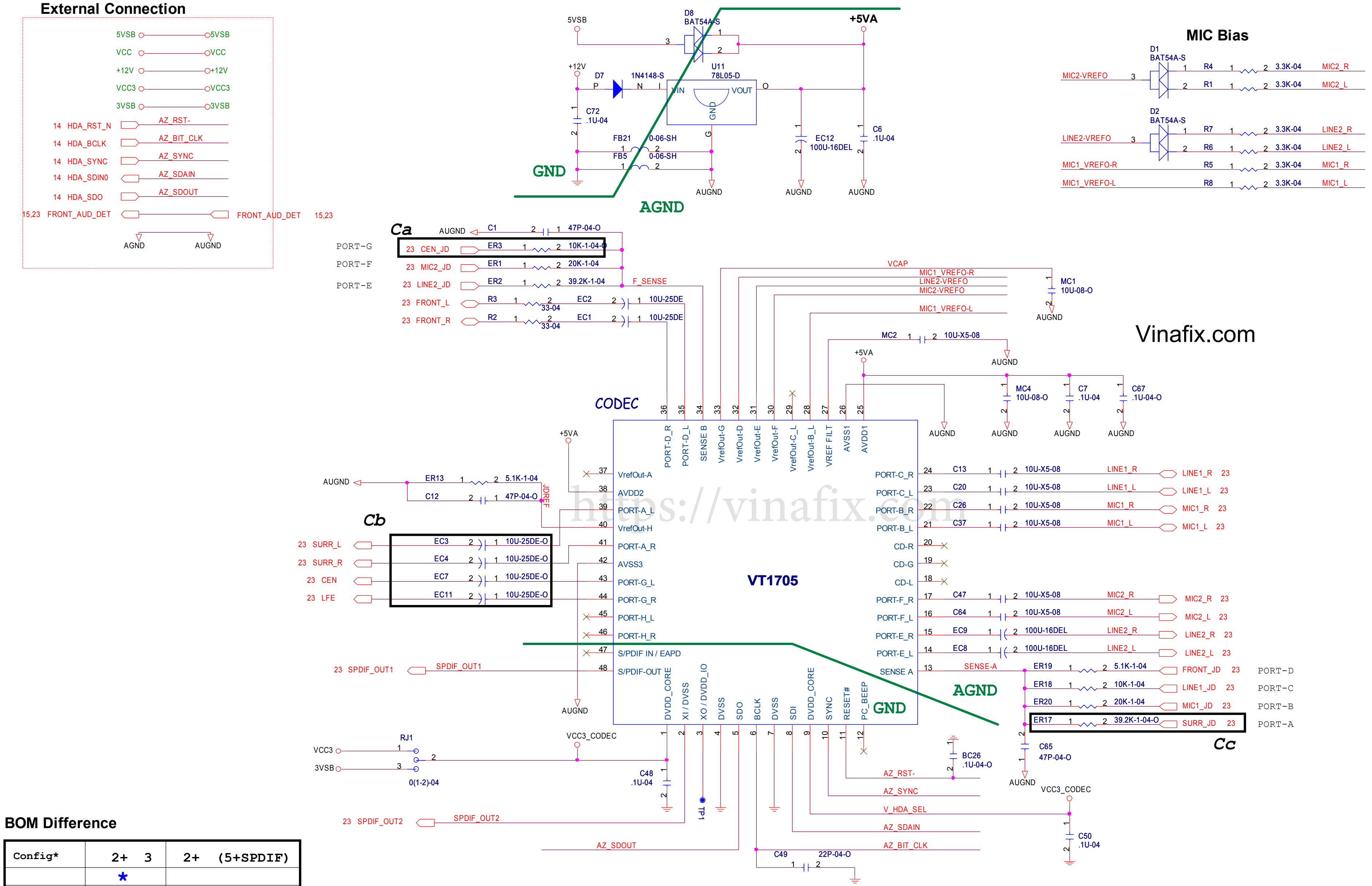
COM Ports



PSUSB



	Elitegroup Computer Systems		
Title	104, COM, PSUSB		
Size: Custom	Document Number: H55H-M		Rev: 1.0
Date:	Thursday, September 03, 2009	Sheet 21	of 28



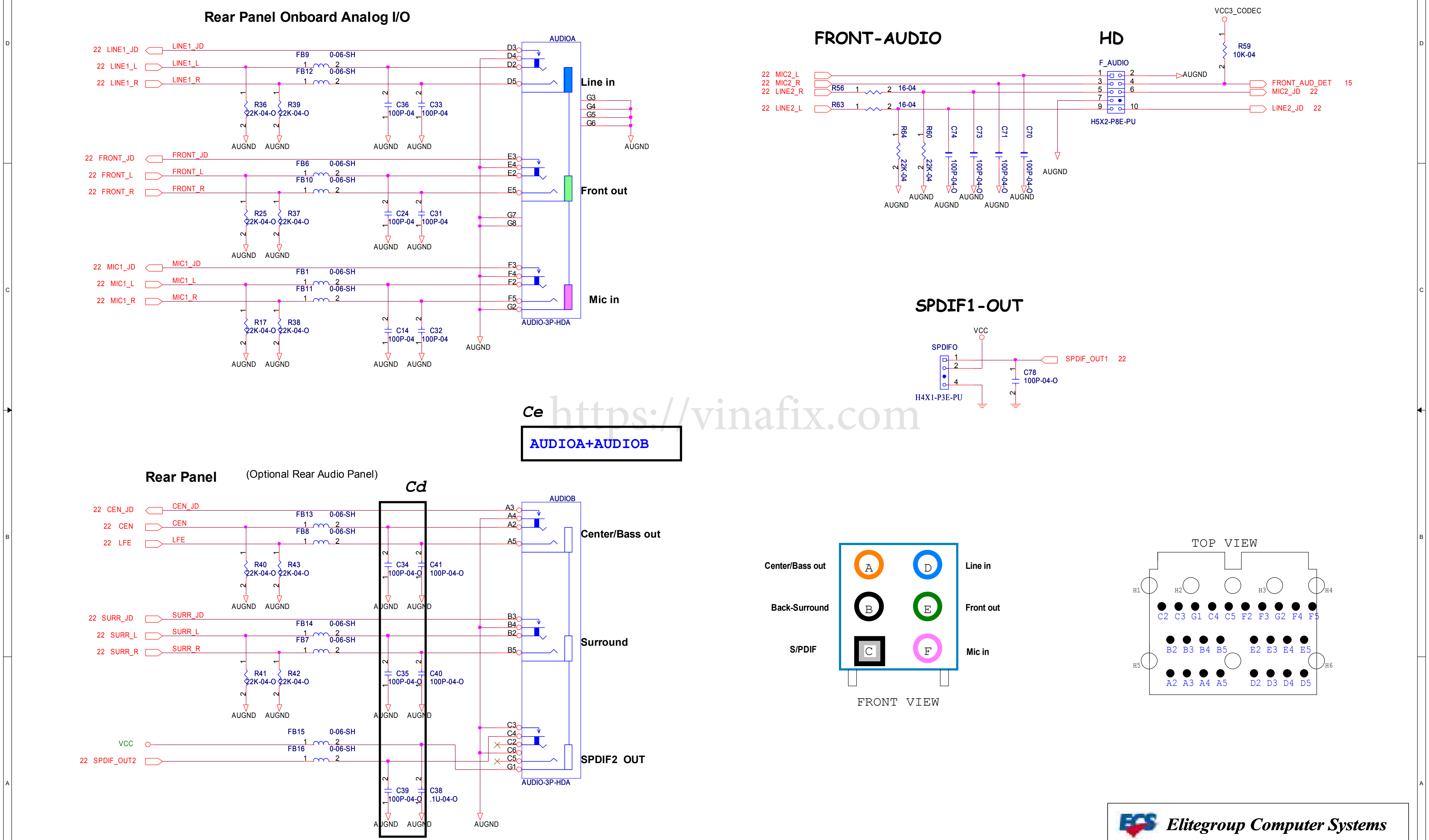
BOM Difference

Config*	2+ 3	2+ (5+SPDIF)
	*	
Ca	X	V
Cb	X	V
Cc	X	V
Cd	X	V
Ce	AUDIO-3P-HDA	AUDIO-25P-SPE

When you change BOM, remember change GPI[RJ25] to inform BIOS use different Verb-Table.

Elitegroup Computer Systems

Title	AUDIO VT1705 (CHIP)	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Thursday, September 03, 2009	Sheet 22 of 28	

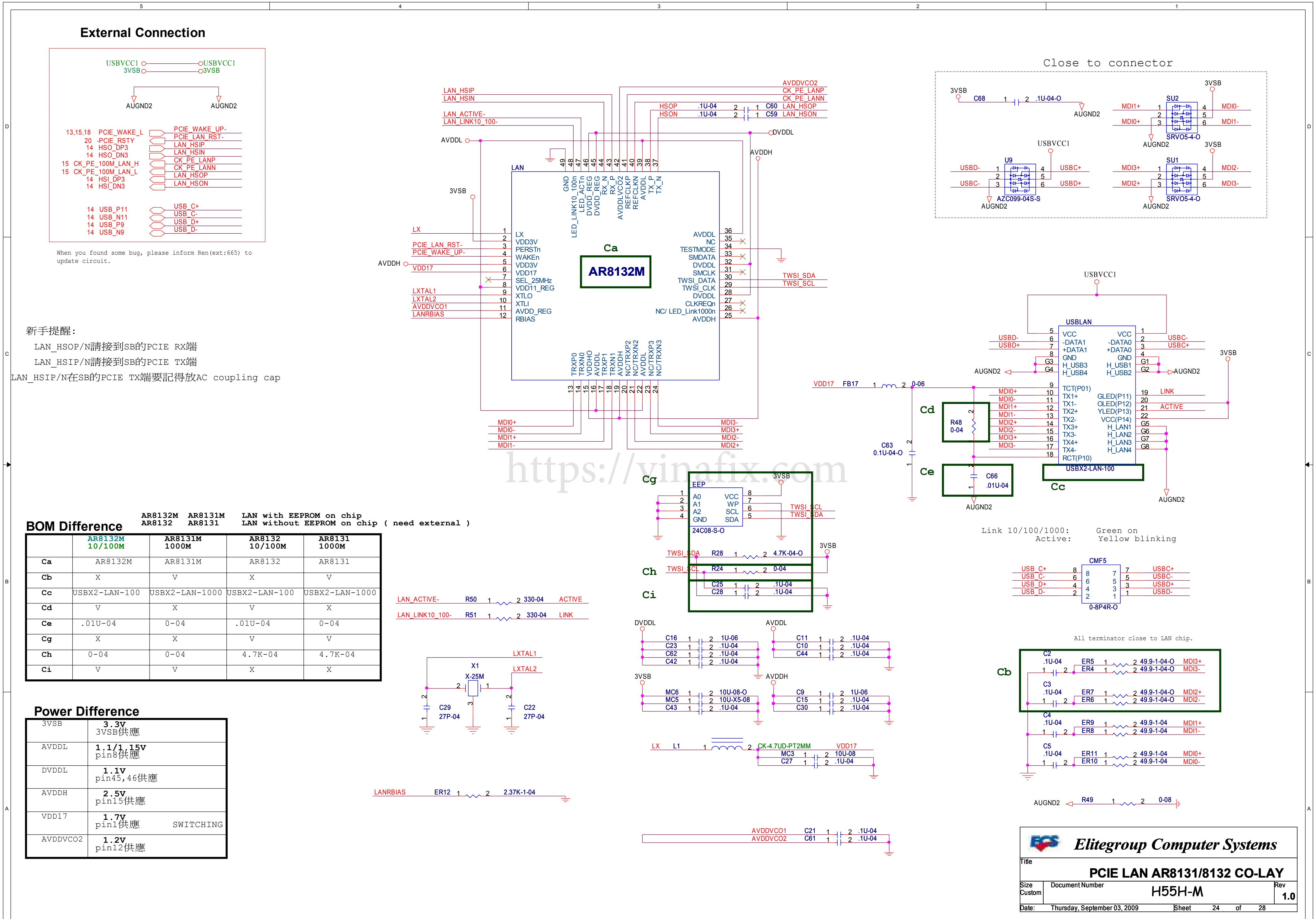


Elitegroup Computer Systems

Title: Audio Connector

Size: Custom | Document Number: H55H-M | Rev: 1.0

Date: Thursday, September 03, 2009 | Sheet 23 of 28



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

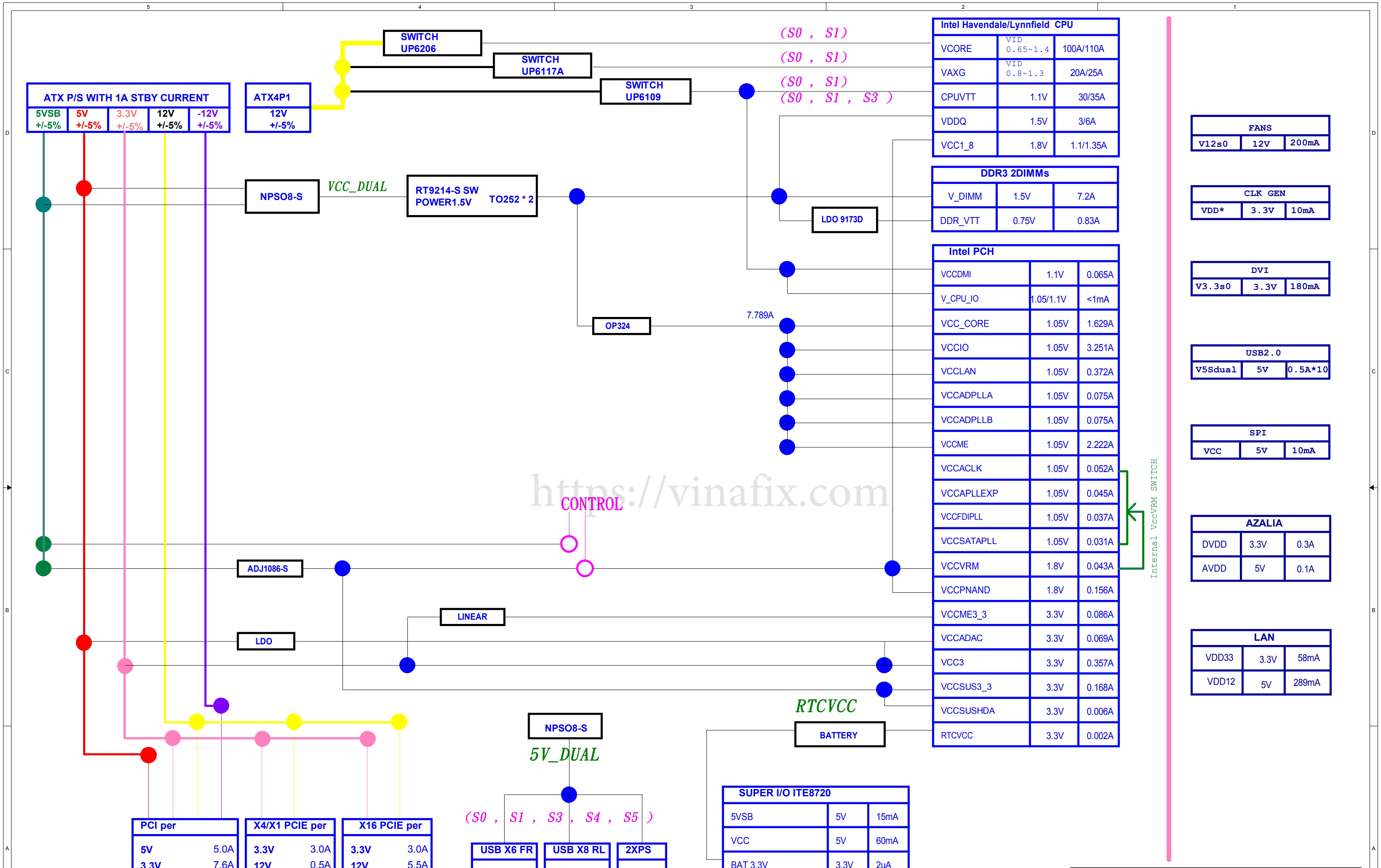
BOM Difference

AR8132M AR8131M LAN with EEPROM on chip
AR8132 AR8131 LAN without EEPROM on chip (need external)

	AR8132M 10/100M	AR8131M 1000M	AR8132 10/100M	AR8131 1000M
Ca	AR8132M	AR8131M	AR8132	AR8131
Cb	X	V	X	V
Cc	USBX2-LAN-100	USBX2-LAN-1000	USBX2-LAN-100	USBX2-LAN-1000
Cd	V	X	V	X
Ce	.01U-04	0-04	.01U-04	0-04
Cg	X	X	V	V
Ch	0-04	0-04	4.7K-04	4.7K-04
Ci	V	V	X	X

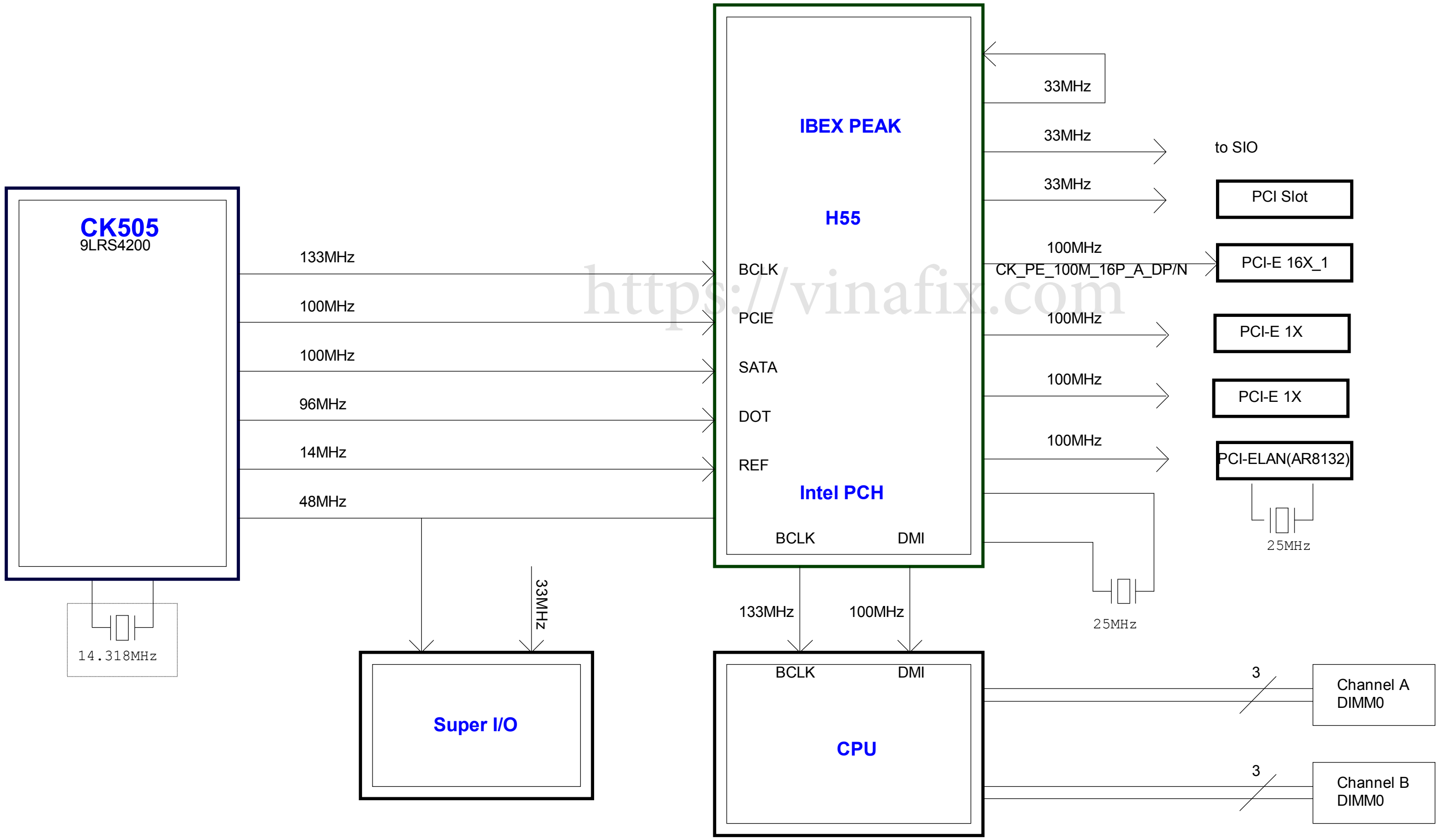
Power Difference

3VSB	3.3V 3VSB供應
AVDDL	1.1/1.15V pin8供應
DVDDL	1.1V pin45,46供應
AVDDH	2.5V pin15供應
VDD17	1.7V pin1供應 SWITCHING
AVDDVCO2	1.2V pin12供應



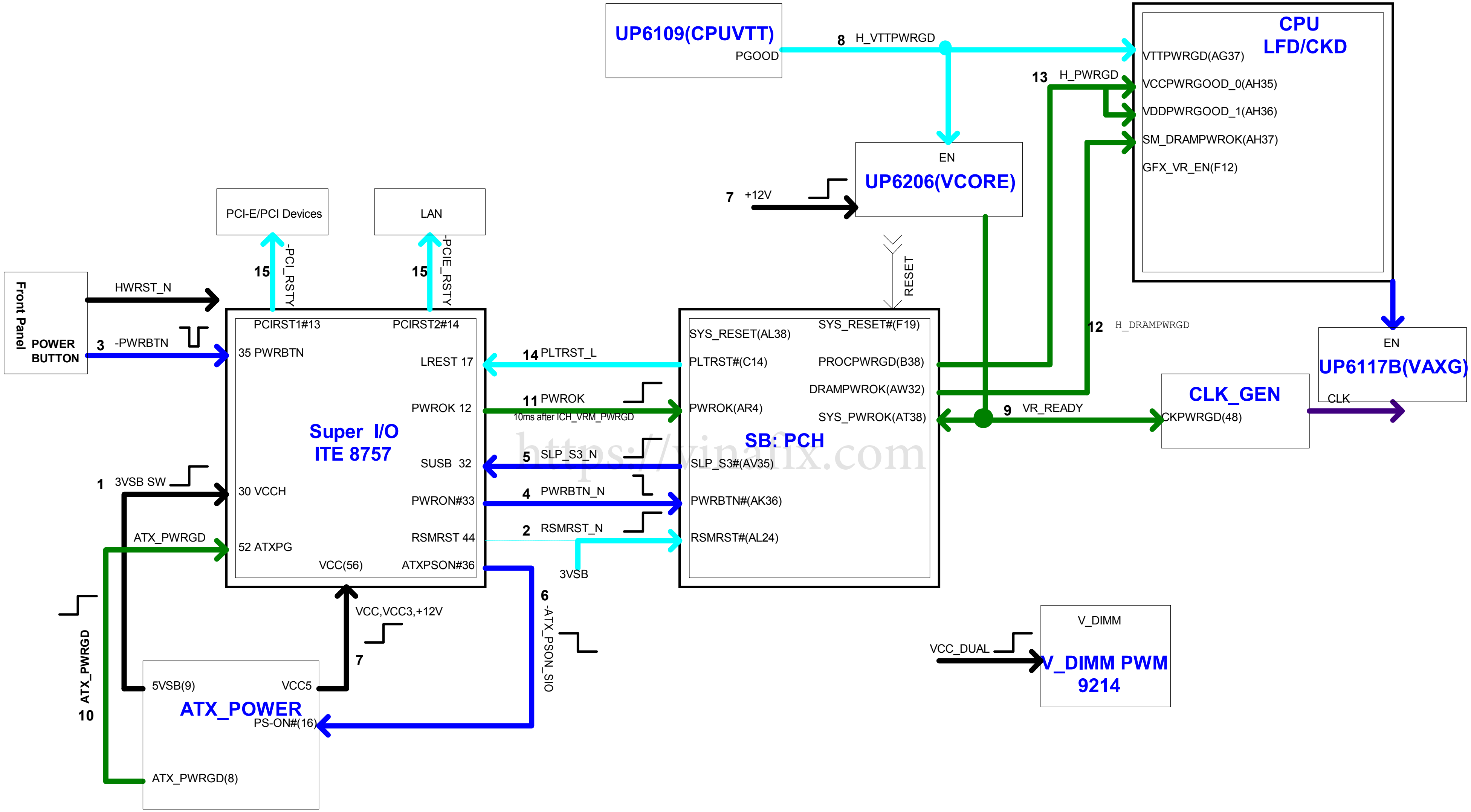
Elitegroup Computer Systems

Title	Power Delivery Chart
Size	Custom
Document Number	H55H-M
Rev	1.0
Date:	Wednesday, September 02, 2009
Sheet	25 of 28



Elitegroup Computer Systems

Title	Clock Distribution		
Size: Custom	Document Number: H55H-M		Rev: 1.0
Date: Thursday, September 03, 2009	Sheet 26	of 28	



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Title	Power Sequencing Diagram	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Thursday, September 03, 2009	Sheet 27 of 28	

PCH STRAPS TABLE				
	H	L	DESCRIPTION	Default
PGNT-3	(inter pu)	*Top Boot Block(-O)	A16 SWAP OVERRIDE Low: OVERRIDE	TestPoint
PGNT-1, PGNT-0	BOOT DEVICE / GNT0 / GNT1: LPC 0 0; PCI 0 1; *SPI 1 1		Inter Pu Hi	SPI
PGNT-2	(inter pu)	*(-O),Desktop not pull low	DMI AC Coupling Low: Full Voltage Mode	TestPoint
HDA_SDO	*POWERED BY EPW(-O)	POWERED BY CORE(inter pu)	NAND VCCQ PWR WELL SEL	
HDA_SYNC	*1.5V(-O)	1.8V	OD PLL VR SUPPLY SEL	
SPI_MOSI	*EN(-O)	DIS(inter pu)	TPM FUNCTIONALITY TPM DISABLED WHEN SAMPLED LOW	
NVR_ALE	*(10K)		DANBURY Technology Enable Enable When Sampled High	
NVR_CLE	*(-O)		DMI Termination Voltage DC Coup: TX/RX To VCC Is Sampled High	
INIT3_3V_N		*(-O)	Configurable CPU Output, Stronger If Low	
SPKR	*EN(1K)	DIS	STUFF TO ENABLE NO-REBOOT OPTION AT POWER-UP (CONFIGURATION STRAPPING).	
PCH_INTVRMEN	*EN(390K)		ENABLE INTERGRATED 1.05V SUS VRM.	
PCH_PU_GP33				
IGC_EN_N		*EN	INTEGRATED CLOCK CHIP ENABLE, Stuff Low For Full Clock Integration Enable.	
VCCVRM_EN	*EN(inter pu)	DIS(-O)	OD PLL VR(VccCLK,VccapllEXP, VccFDIPLL,VccSATAPLL; DG P383)	
PCH_GP15	*EN(10K)	DIS	INTEL ME CRYPTO TRANSPORT LAYER SECURITY (TLS) WITH CONFIDENTIALITY	

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PCI ROUTING

PCI1	AD17	INTA,B,C,D	PREQ-1	PGNT-0

FAN_TAC1	CPU_FAN
FAN_CTL1	CPU_FAN
TMPIN1	SYS_Temp
VIN0	VCORE
VIN1	V_DIMM

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Title	GPIO, IRQ, IDSEL MAP	
Size: Custom	Document Number: H55H-M	Rev: 1.0
Date: Wednesday, September 02, 2009	Sheet 28 of 28	