MCP61PM-GM REV:2.4

REV:A

PCB:15-V06-010010 (BLD)
BOM:81-685-V06000 for HP Nettle Model
BOM:81-685-V06001 for HP Iris Model

REV:1.0A

PCB:15-V06-011010(BLD)
PCB:15-V06-011011(GE1)
PCB:15-V06-011012(BLD OSP)
PCB:15-V06-011013(GE1 OSP)
BOM:89-386-V06100 for HP Nettle Model
BOM:89-386-V06101 for HP Iris Model
BOM:89-486-V06102 for HP Nettle Model CKD BOM

REV:1.0B

PCB:15-V06-011021(BLD OSP)
PCB:15-V06-011022(GE1 OSP)
BOM:81-685-V06111 for HP Nettle2 Model
BOM:81-685-V061112 for HP Iris V1.0B Model
BOM:81-685-V06113 for HP Iris8 Model

REV:2.0

PCB:15-V06-012000 (BLD OSP)

BOM:81-685-V06200 for HP Nettle3 cPC Model

BOM:81-685-V06201 for HP Bowie bPC Model

REV:2.1

PCB:15-V06-012100 (BLD OSP)
PCB:15-V06-012101 (GE1 OSP)
BOM:89-386-V06211 for HP Nettle3 cPC Model
BOM:89-386-V06210 for HP Bowie bPC Model

REV:2.2

PCB:15-V06- (BLD OSP)
PCB:15-V06- (GE1 OSP)
PCB:15-V06- (GBM OSP)
BOM:89-386-V06 for HP Nettle3 cPC Model

REV:2.3

ADD EUP LOT 6.0 SOLUTION
LAN CHANGE TO 8201EL

REV:2.4

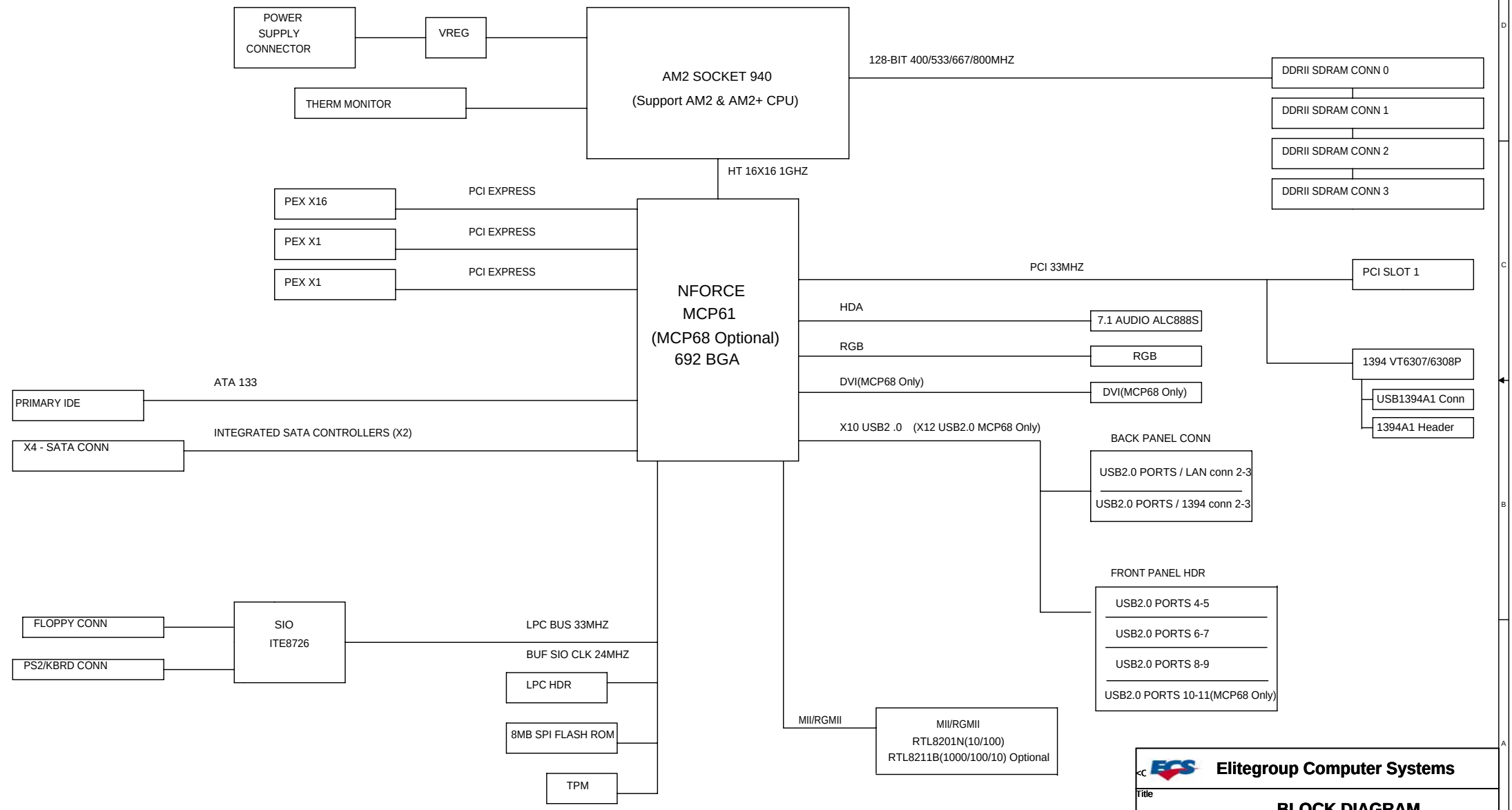
FIX EUP LOT 6.0 SOLUTION

V2.4	Signature	Date
Designer		
Layout		
Check		
Approval		

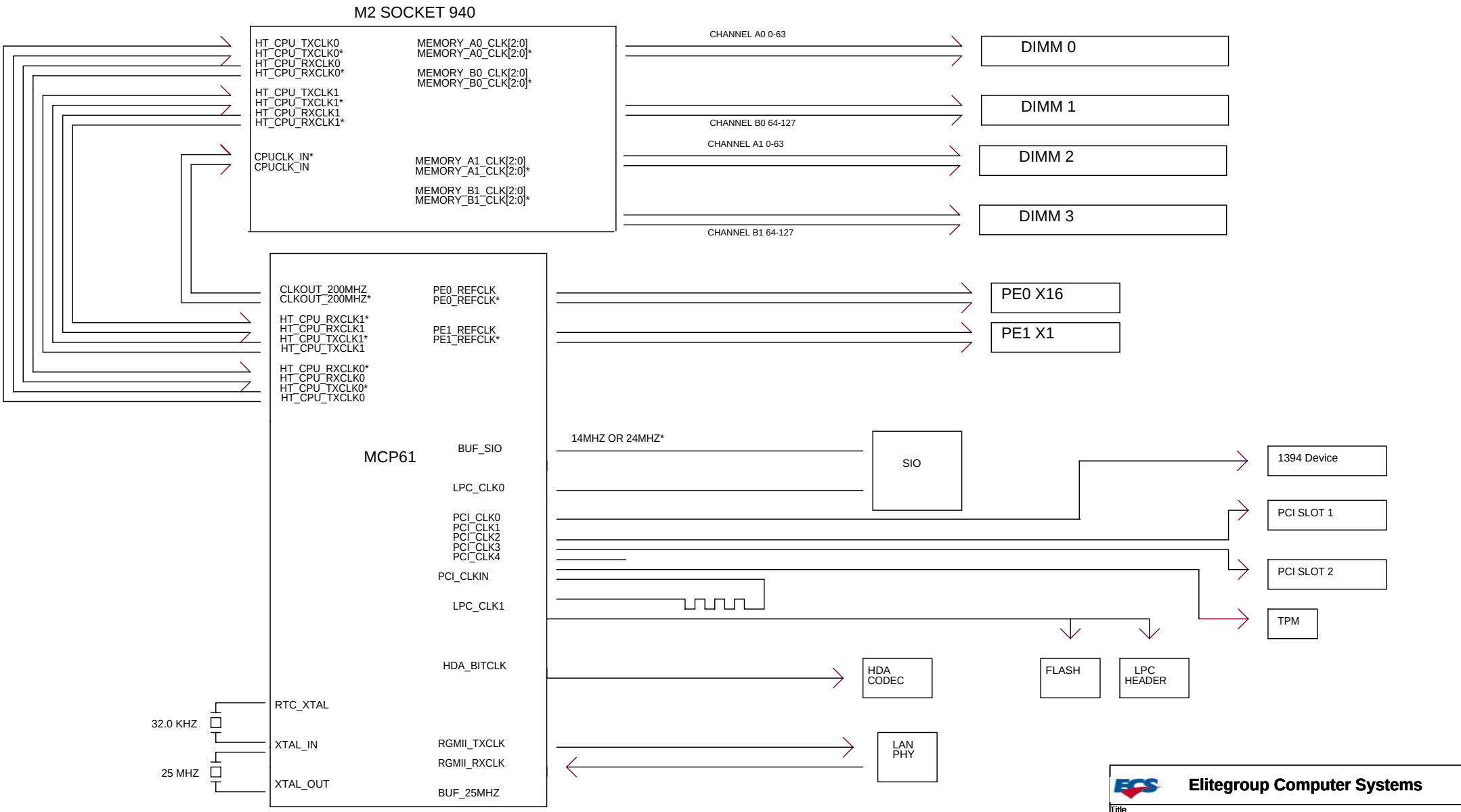
Page Index

Elitegroup Computer Systems		
Title: COVER PAGE		
Size: B	Document Number: MCP61PM-GM	Rev: 2.4
Date: Wednesday, June 24, 2009	Sheet 1 of 34	

BLOCK DIAGRAM



Elitegroup Computer Systems		
Title: BLOCK DIAGRAM		
Size: B	Document Number: MCP61PM-GM	Rev: 2.4
Date: Friday, June 19, 2009	Sheet 2 of 34	



Elitegroup Computer Systems		
Title: CLOCK DISTRIBUTION		
Size: B	Document Number: MCP61PM-GM	Rev: 2.4
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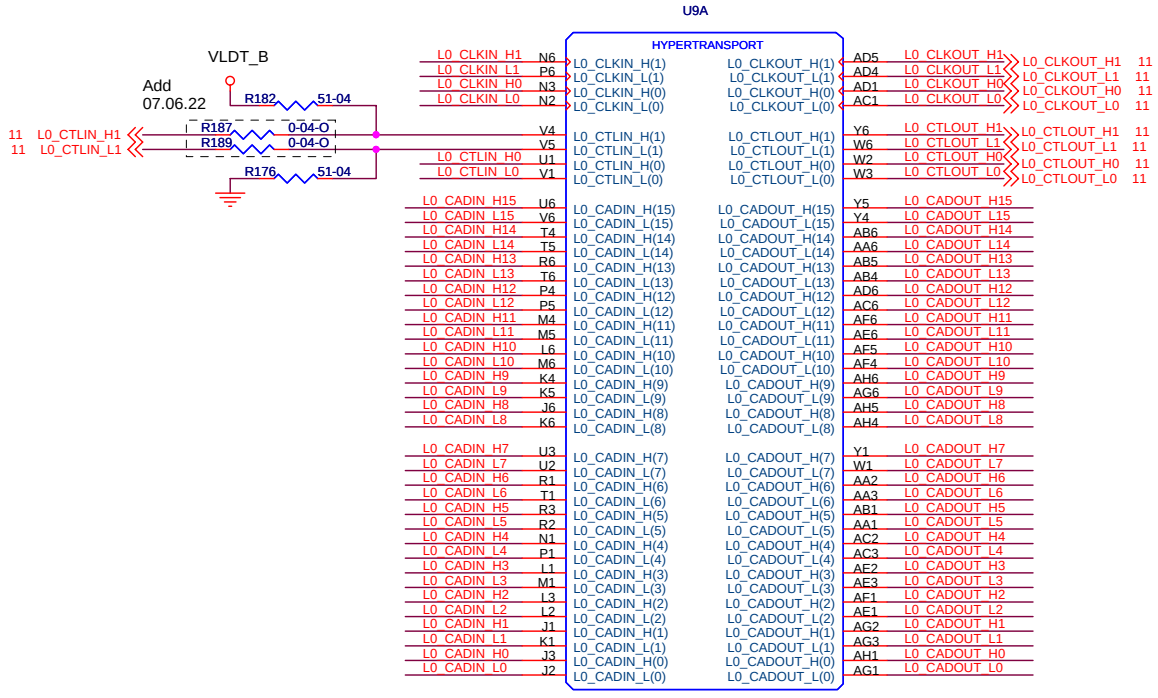
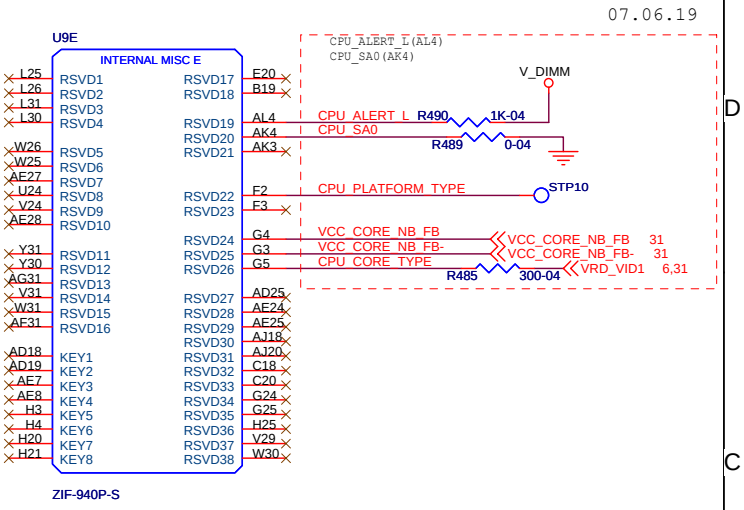
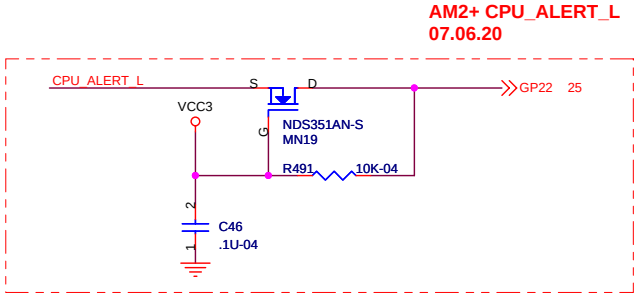
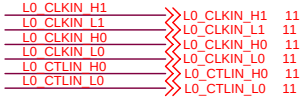


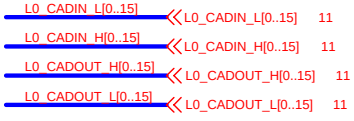
If routing to a chipset that doesn't support HyperTransport 3:

- L0_CTLIN_H(1) should be connected to VLDT_RUN using 49.9 Ohm resistor
- L0_CTLIN_L(1) should be connected to GND using 49.9 Ohm resistor









Elitegroup Computer Systems

Title: CPU M2-1 HyperTransport

Size	Document Number	Rev
B	MCP61PM-GM	2.4

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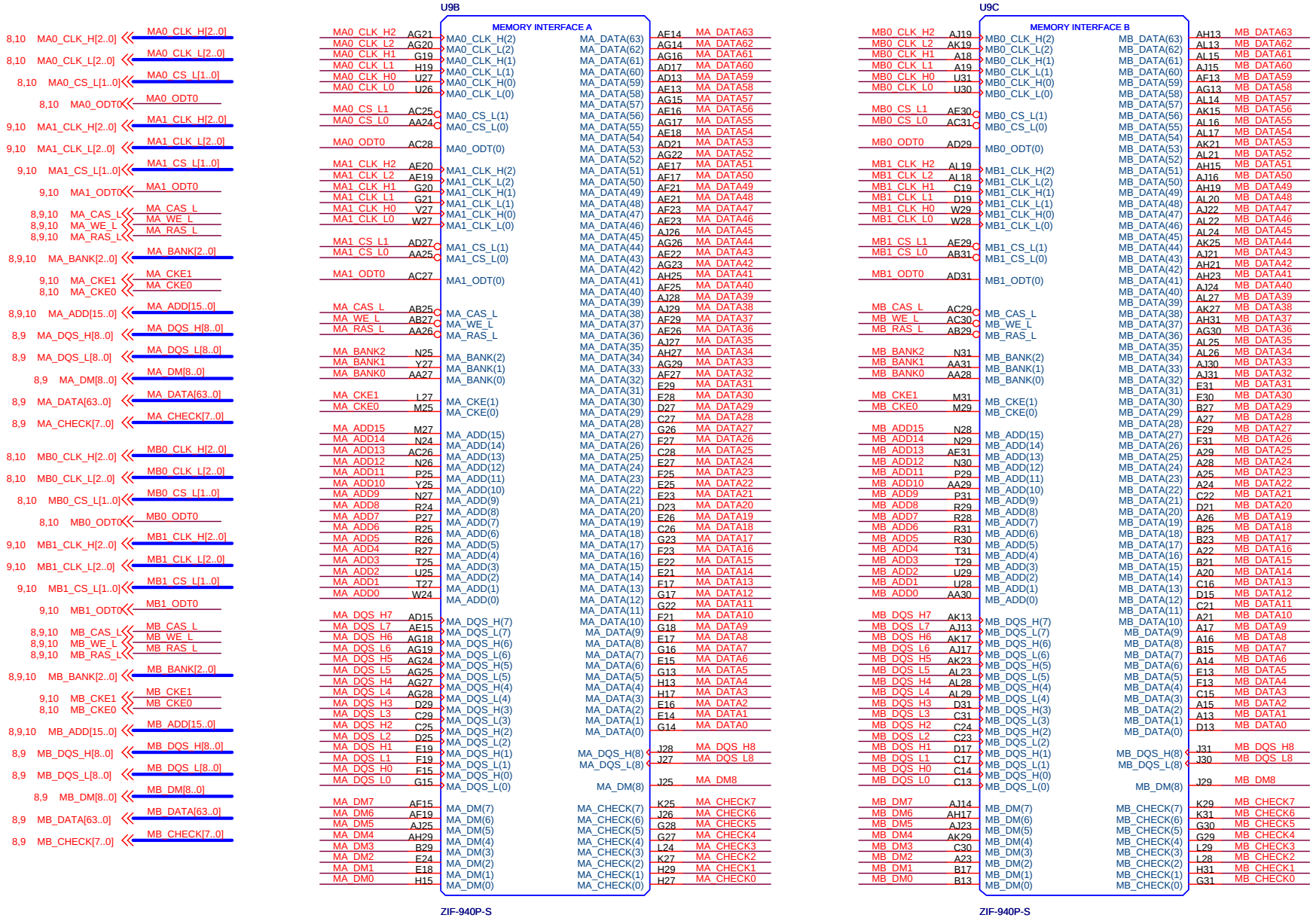

Title	CPU M2-2 DDR2
Size	B
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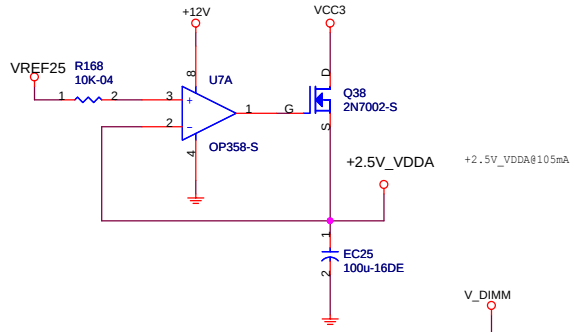
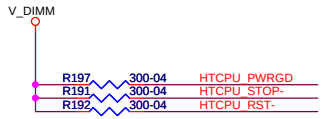
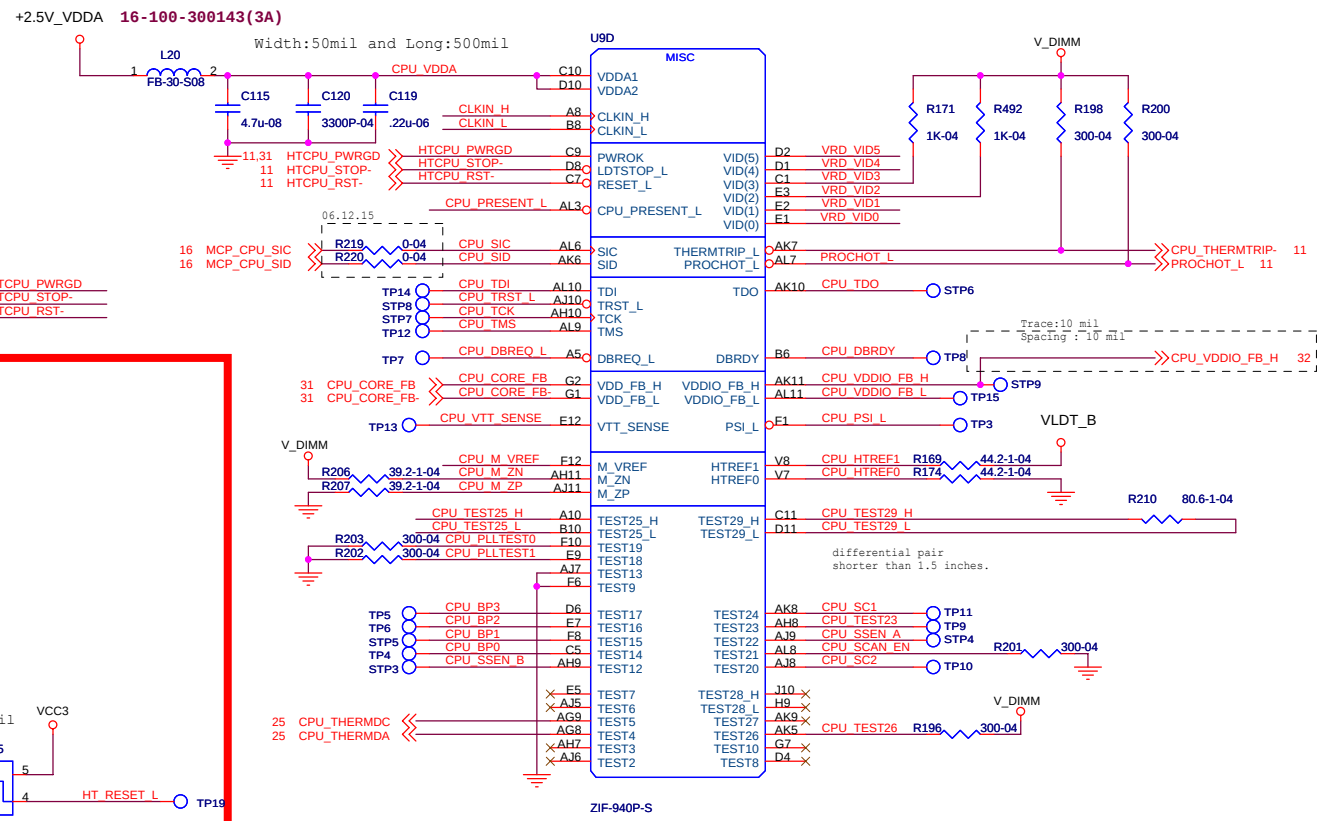
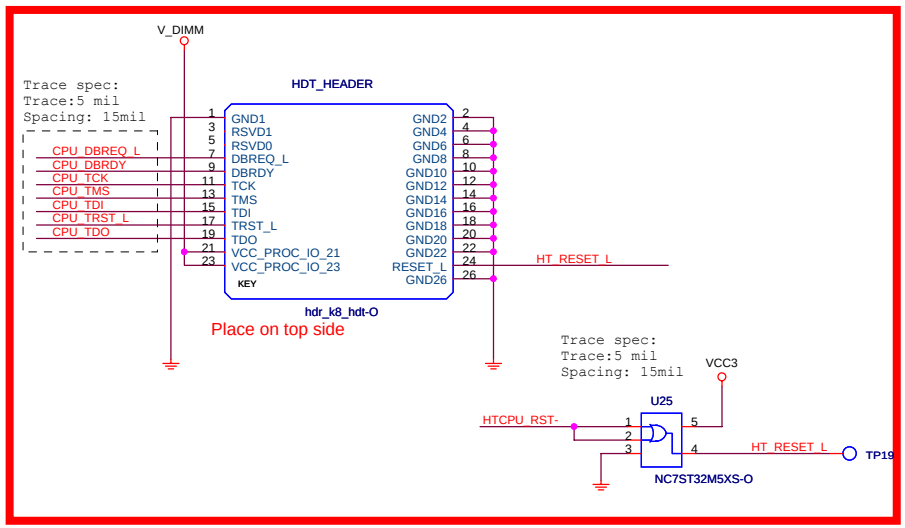
Elitegroup Computer Systems

+2.5V_VDDA for CPU PLL

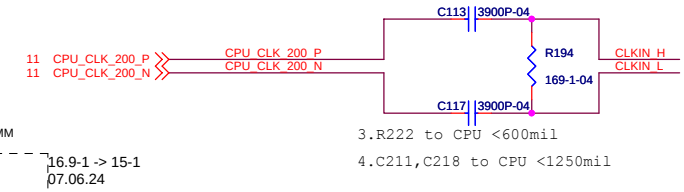


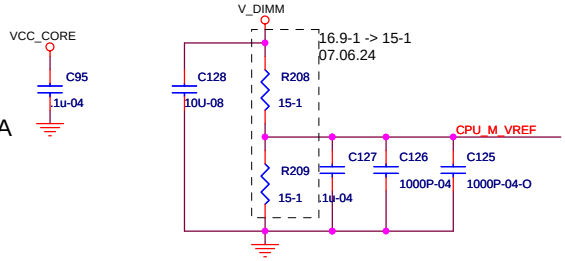






AMD HDT Header
06.12.16

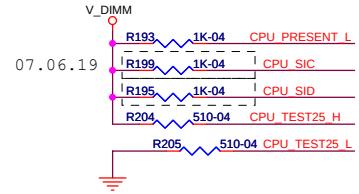




AMD SBI Temperature Sensor Interface (SB_TSI)

	Used	Unused
(CPU_SIC) R219	0 ohm CPU_SIC connect to MCP61	NC
(CPU_SID) R220	0 ohm CPU_SID connect to MCP61	NC
(CPU_SIC) R199	1K pull up to V_DIMM	390 ohm
(CPU_SID) R195	1K pull up to V_DIMM	NC
(CPU_SA0) R489	0 ohm pull to GND	NC
(CPU_ALERT_L) R490	1K pull up to V_DIMM	NC

07.06.20



Elitegroup Computer Systems	
Title	CPU M2-3 Miscellany
Size B	Document Number MCP61PM-GM
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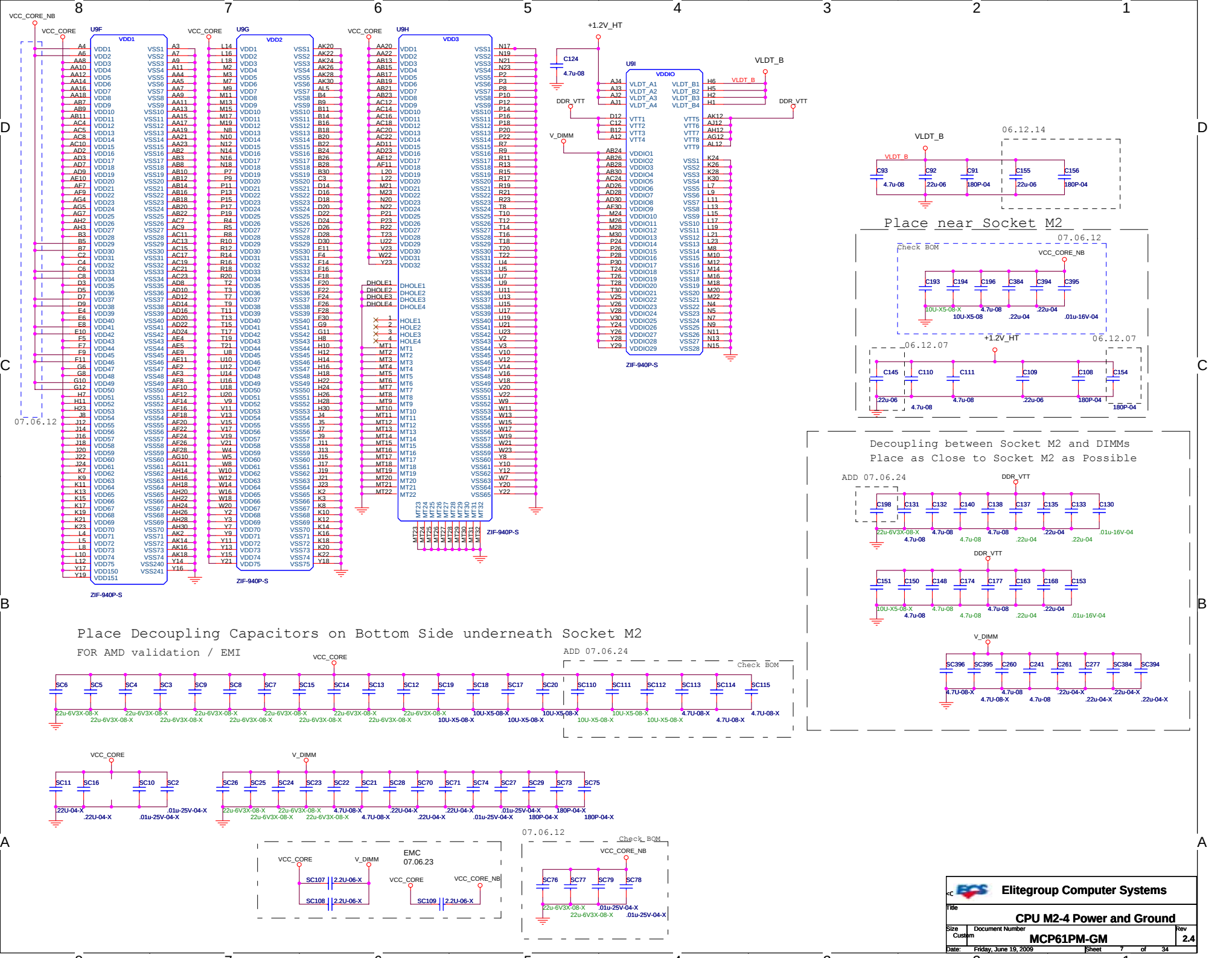
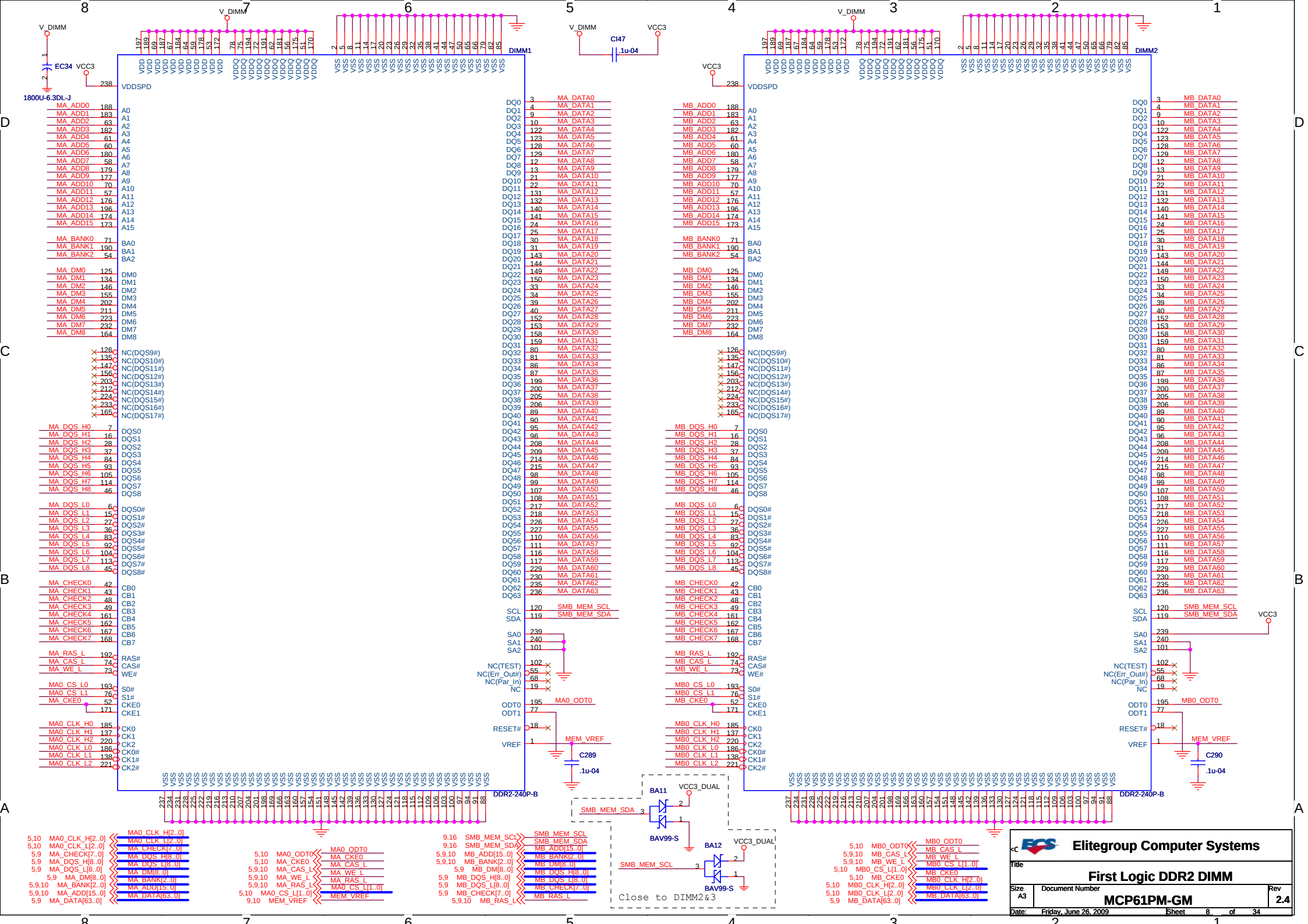

VCC_CORE_NB
VCC_CORE
U9F
VDD1
ZIF-940P-S
U9G
VDD2
U9H
VDD3
+1.2V_HT
C124
4.7u-08
U9I
VDDIO
VLDT_B
DDR_VTT
V_DIMM
07.06.12
Place near Socket M2
Check BOM
06.12.14
06.12.07
Decoupling between Socket M2 and DIMMs
Place as Close to Socket M2 as Possible
ADD 07.06.24
Place Decoupling Capacitors on Bottom Side underneath Socket M2
FOR AMD validation / EMI
EMC
07.06.23
Elitegroup Computer Systems
CPU M2-4 Power and Ground
MCP61PM-GM
2.4
Friday, June 19, 2009


DIMM1
DIMM2
DDR2-240P-B
V_DIMM
VCC3
VCC3_DUAL
EC34
1800U-6.3DL-J
CI47
.1u-04
C289
C290
MEM_VREF
BA11
BA12
BAV99-S
Close to DIMM2&3
Elitegroup Computer Systems
First Logic DDR2 DIMM
MCP61PM-GM
Size A3
Rev 2.4
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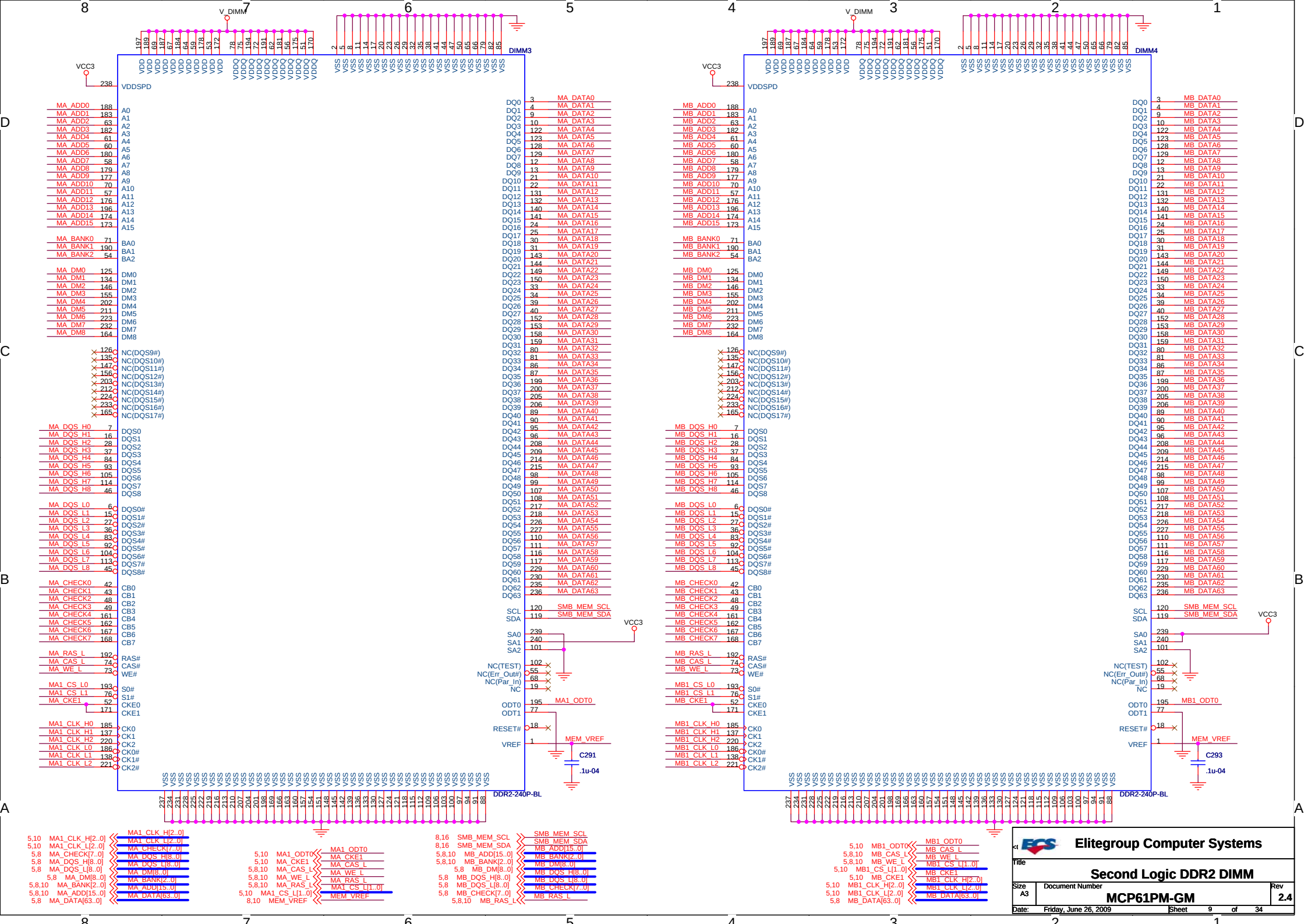

Elitegroup Computer Systems

Title: Second Logic DDR2 DIMM

Size	Document Number	Rev
A3	MCP61PM-GM	2.4

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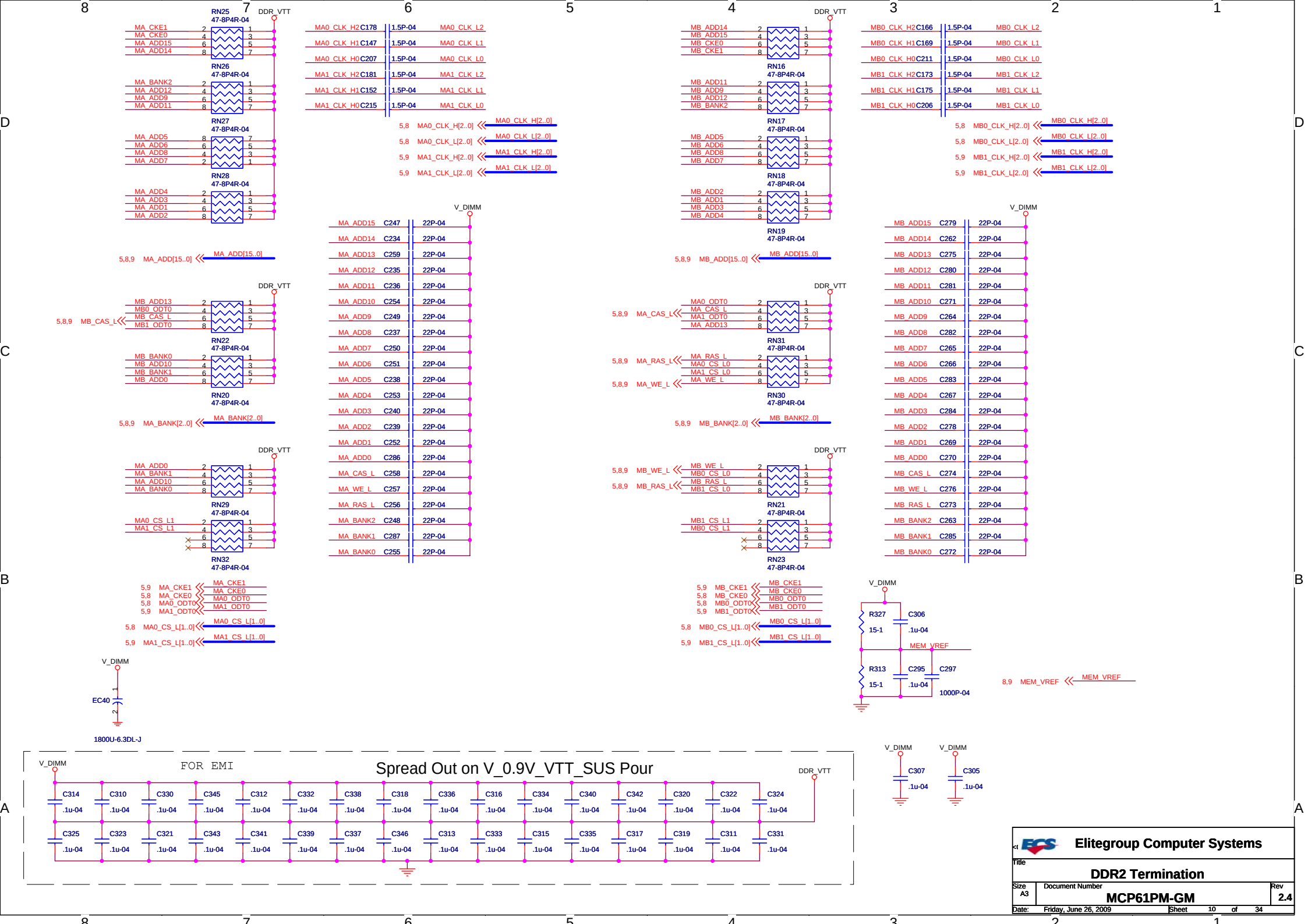
RN25 47-8P4R-04
RN26 47-8P4R-04
RN27 47-8P4R-04
RN28 47-8P4R-04
RN22 47-8P4R-04
RN20 47-8P4R-04
RN29 47-8P4R-04
RN32 47-8P4R-04
RN16 47-8P4R-04
RN17 47-8P4R-04
RN18 47-8P4R-04
RN19 47-8P4R-04
RN31 47-8P4R-04
RN30 47-8P4R-04
RN21 47-8P4R-04
RN23 47-8P4R-04
DDR_VTT
V_DIMM
MA_ADD[15..0]
MA_BANK[2..0]
MB_ADD[15..0]
MB_BANK[2..0]
MA0_CLK_H[2..0]
MA0_CLK_L[2..0]
MA1_CLK_H[2..0]
MA1_CLK_L[2..0]
MB0_CLK_H[2..0]
MB0_CLK_L[2..0]
MB1_CLK_H[2..0]
MB1_CLK_L[2..0]
MA_CKE1
MA_CKE0
MA0_ODT0
MA1_ODT0
MA0_CS_L[1..0]
MA1_CS_L[1..0]
MB_CKE1
MB_CKE0
MB0_ODT0
MB1_ODT0
MB0_CS_L[1..0]
MB1_CS_L[1..0]
MEM_VREF
EC40
1800U-6.3DL-J
FOR EMI
Spread Out on V_0.9V_VTT_SUS Pour
Elitegroup Computer Systems
DDR2 Termination
MCP61PM-GM
Size A3
Rev 2.4
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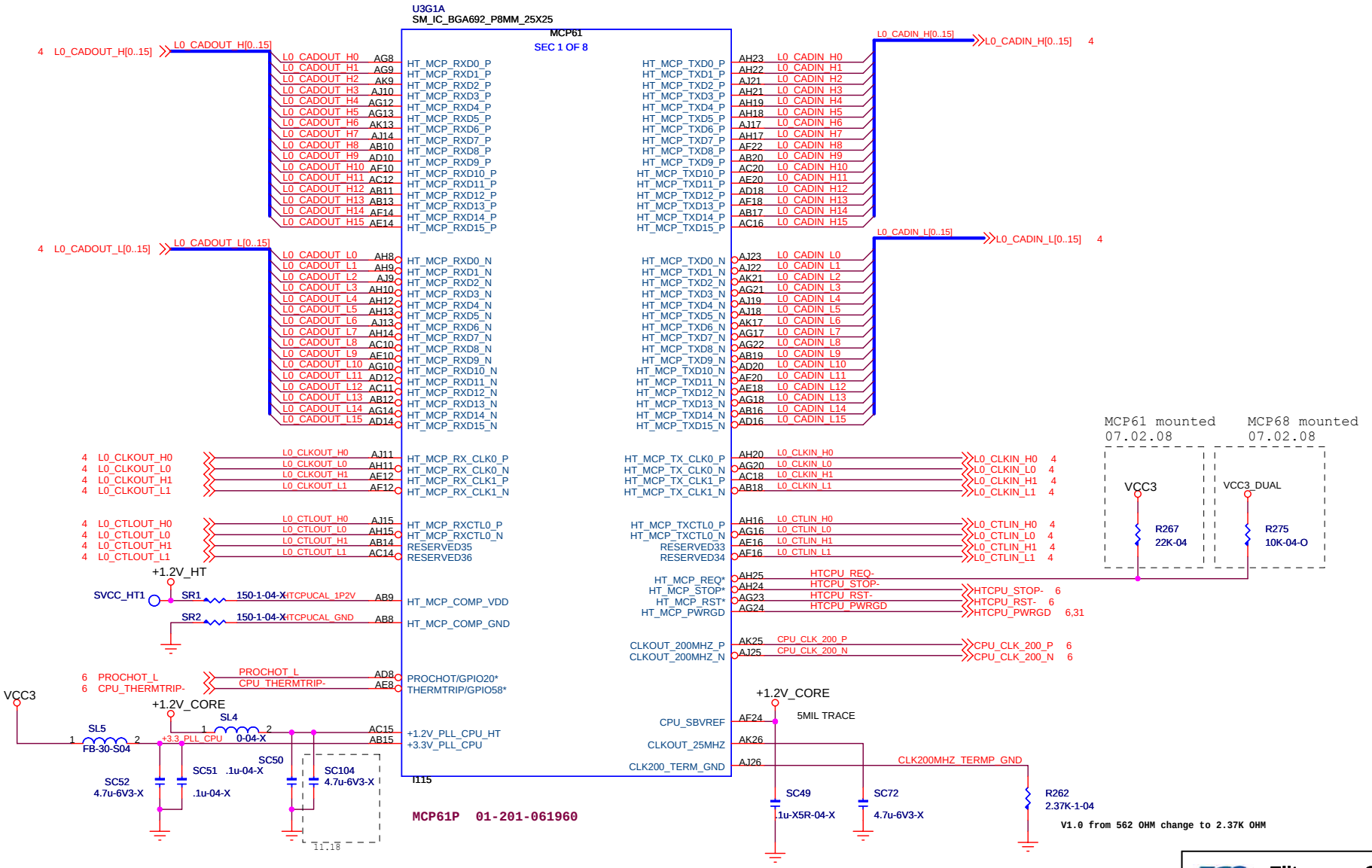

Company	Elitegroup Computer Systems
Title	MCP61 HT
Size	B
Document Number	MCP61PM-GM
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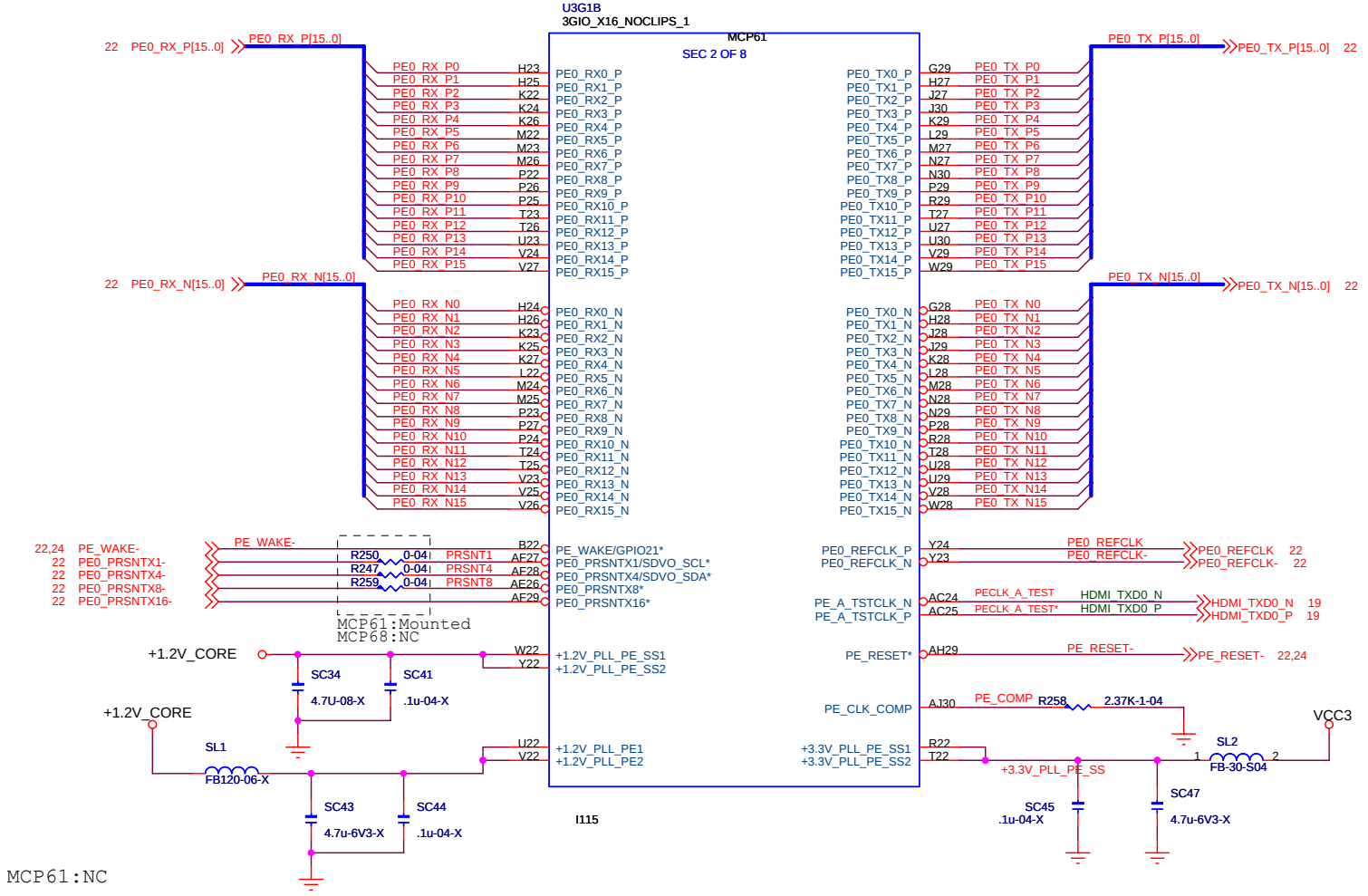
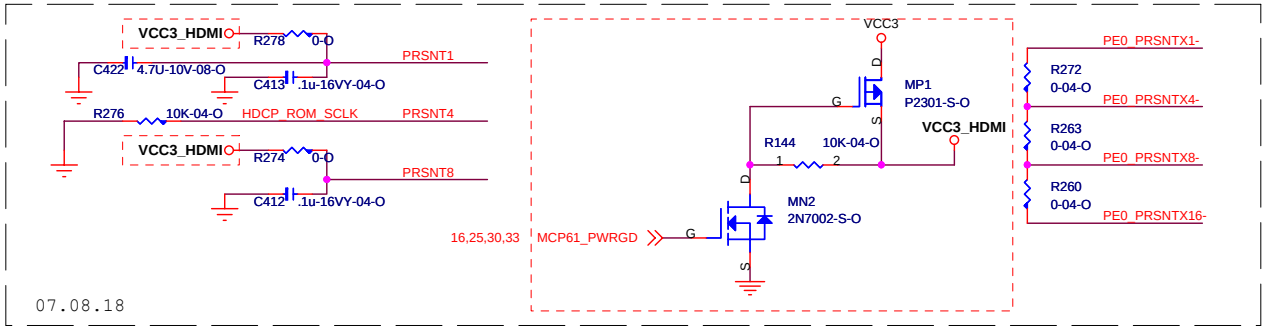


MCP61 Pin Define	MCP68 Pin Define
PRSNTX1(AF27)	+3.3V_HDMI_PLL_HVDD
PRSNTX4(AF28)	HDCP_ROM_SCLK
PRSNTX8(AE26)	+3.3V_HDMI
GND(AF30)	HDCP_ROM_SDATA

MCP61:NC
MCP68:Mounted



Elitegroup Computer Systems

Title: MCP61 PCI-E X16

Size	Document Number	Rev
B	MCP61PM-GM	2.4

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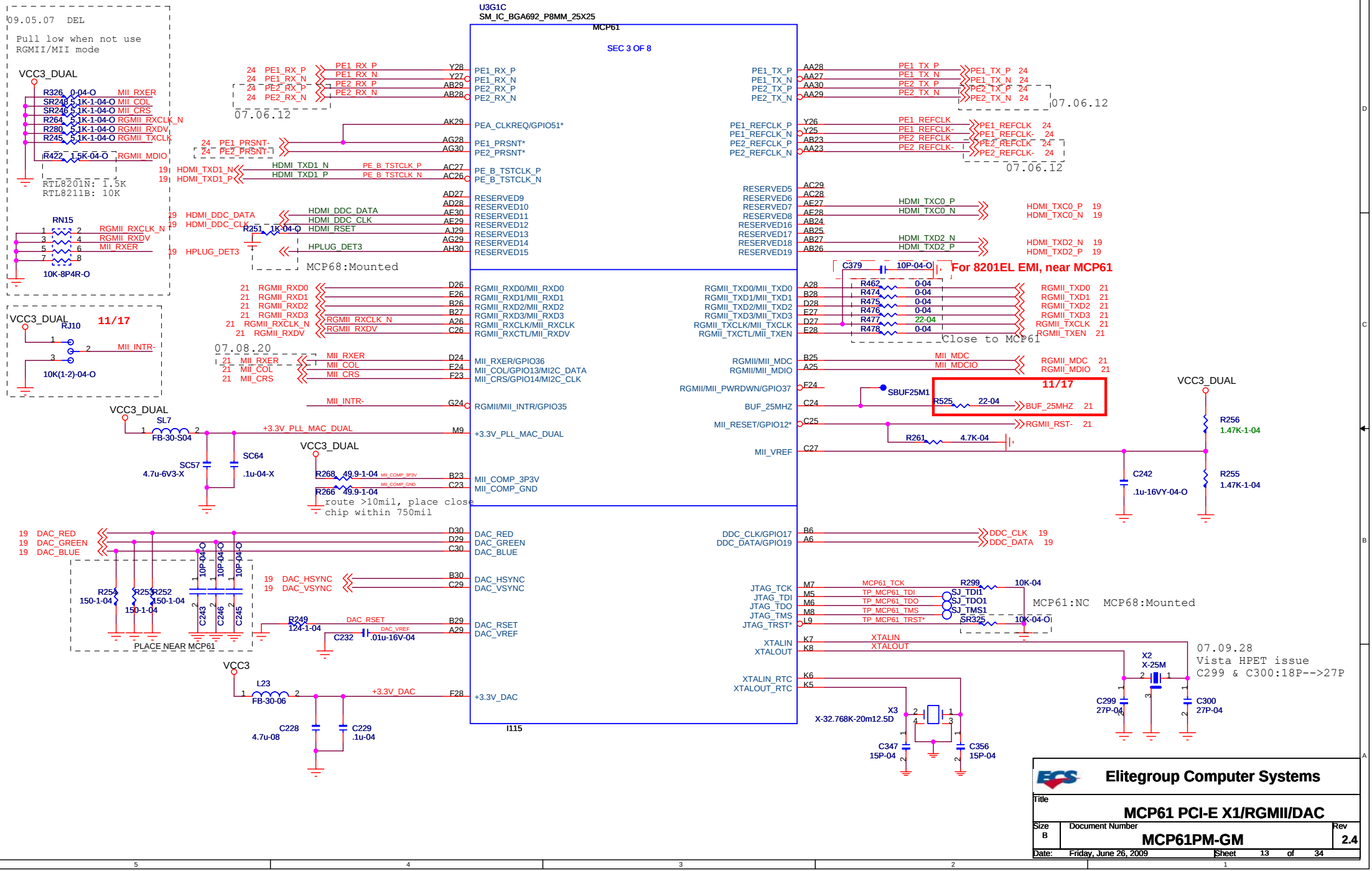
09.05.07 DEL
Pull low when not use RGMII/MII mode
VCC3_DUAL
R326 0-04-O MII_RXER
SR248 5.1K-1-04-O MII_COL
SR246 5.1K-1-04-O MII_CRS
R264 5.1K-1-04-O RGMII_RXCLK_N
R280 5.1K-1-04-O RGMII_RXDV
R245 5.1K-1-04-O RGMII_TXCLK
R422 1.5K-04-O RGMII_MDIO
RTL8201N: 1.5K
RTL8211B: 10K
RN15
10K-8P4R-O
VCC3_DUAL 11/17
RJ10
MII_INTR-
10K(1-2)-04-O
U3G1C
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 3 OF 8
PE1_RX_P Y28
PE1_RX_N Y27
PE2_RX_P AB29
PE2_RX_N AB28
PEA_CLKREQ/GPIO51* AK29
PE1_PRSNT* AG28
PE2_PRSNT* AG30
PE_B_TSTCLK_P AC27
PE_B_TSTCLK_N AC26
RESERVED9 AD27
RESERVED10 AD28
RESERVED11 AE30
RESERVED12 AE29
RESERVED13 AJ29
RESERVED14 AG29
RESERVED15 AH30
RGMII_RXD0/MII_RXD0 D26
RGMII_RXD1/MII_RXD1 E26
RGMII_RXD2/MII_RXD2 B26
RGMII_RXD3/MII_RXD3 B27
RGMII_RXCLK/MII_RXCLK A26
RGMII_RXCTL/MII_RXDV C26
MII_RXER/GPIO36 D24
MII_COL/GPIO13/MI2C_DATA E24
MII_CRS/GPIO14/MI2C_CLK F23
RGMII/MII_INTR/GPIO35 G24
+3.3V_PLL_MAC_DUAL M9
MII_COMP_3P3V B23
MII_COMP_GND C23
DAC_RED D30
DAC_GREEN D29
DAC_BLUE C30
DAC_HSYNC B30
DAC_VSYNC C29
DAC_RSET B29
DAC_VREF A29
+3.3V_DAC F28
I115
PE1_TX_P AA28
PE1_TX_N AA27
PE2_TX_P AA30
PE2_TX_N AA29
PE1_REFCLK_P Y26
PE1_REFCLK_N Y25
PE2_REFCLK_P AB23
PE2_REFCLK_N AA23
RESERVED5 AC29
RESERVED6 AC28
RESERVED7 AE27
RESERVED8 AE28
RESERVED16 AB24
RESERVED17 AB25
RESERVED18 AB27
RESERVED19 AB26
RGMII_TXD0/MII_TXD0 A28
RGMII_TXD1/MII_TXD1 B28
RGMII_TXD2/MII_TXD2 D28
RGMII_TXD3/MII_TXD3 E27
RGMII_TXCLK/MII_TXCLK D27
RGMII_TXCTL/MII_TXEN E28
RGMII/MII_MDC B25
RGMII/MII_MDIO A25
RGMII/MII_PWRDWN/GPIO37 E24
BUF_25MHZ C24
MII_RESET/GPIO12* C25
MII_VREF C27
DDC_CLK/GPIO17 B6
DDC_DATA/GPIO19 A6
JTAG_TCK M7
JTAG_TDI M5
JTAG_TDO M6
JTAG_TMS M8
JTAG_TRST* L9
XTALIN K7
XTALOUT K8
XTALIN_RTC K6
XTALOUT_RTC K5
07.06.12
07.08.20
route >10mil, place close chip within 750mil
PLACE NEAR MCP61
MCP68:Mounted
For 8201EL EMI, near MCP61
Close to MCP61
MCP61:NC MCP68:Mounted
07.09.28
Vista HPET issue
C299 & C300:18P-->27P
SBUF25M1
SL7 FB-30-S04
SC57 4.7u-6V3-X
SC64 .1u-04-X
L23 FB-30-06
C228 4.7u-08
C229 .1u-04
C232 .01u-16V-04
C379 10P-04-O
C242 .1u-16VY-04-O
R256 1.47K-1-04
R255 1.47K-1-04
R261 4.7K-04
R525 22-04
R299 10K-04
SR325 10K-04-O
X2 X-25M
X3 X-32.768K-20m12.5D
C299 27P-04
C300 27P-04
C347 15P-04
C356 15P-04
Elitegroup Computer Systems
MCP61 PCI-E X1/RGMII/DAC
MCP61PM-GM
Size B
Rev 2.4
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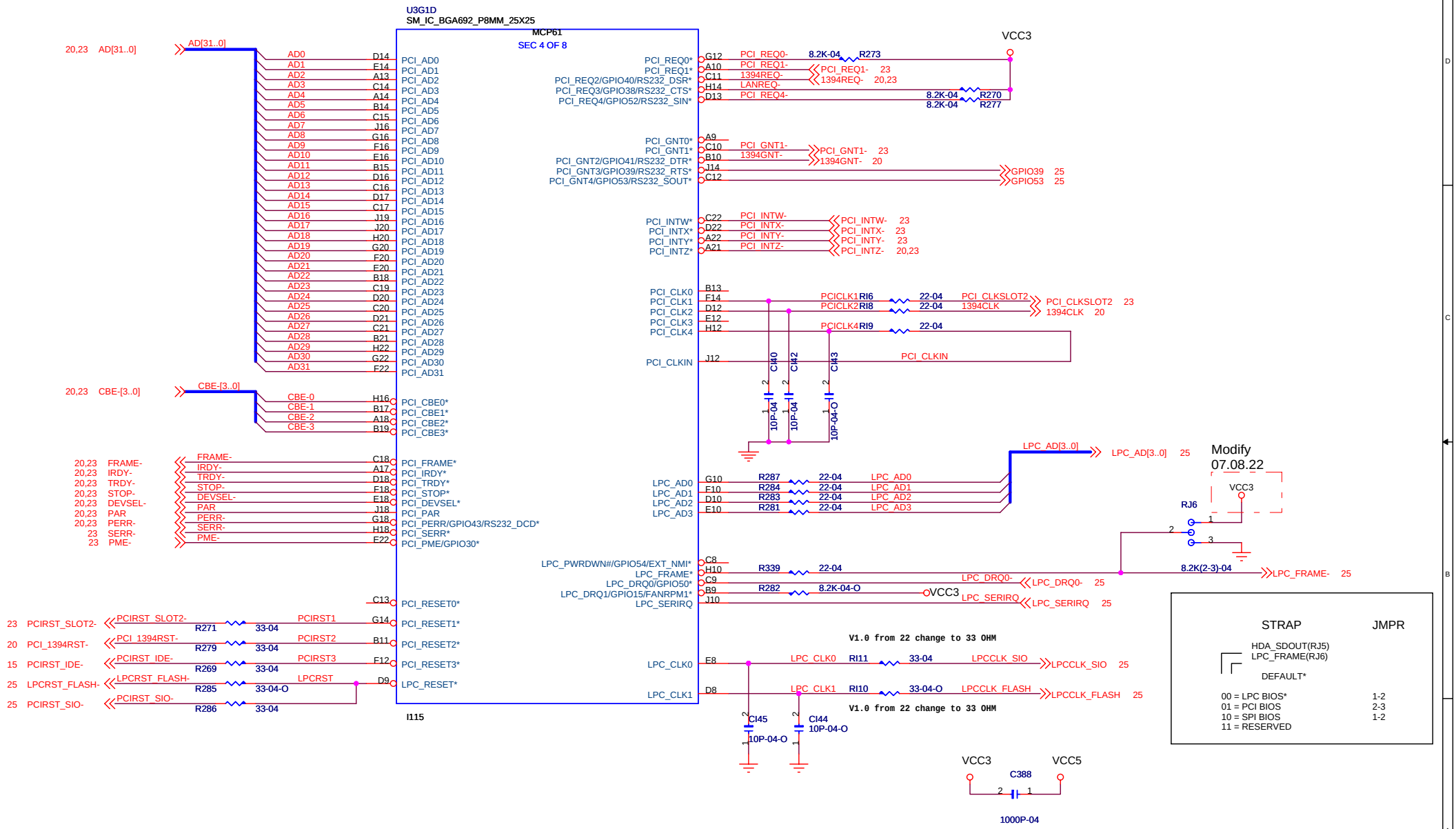
U3G1D
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 4 OF 8
I115
VCC3
VCC5
Modify
07.08.22
STRAP
JMPR
HDA_SDOUT(RJ5)
LPC_FRAME(RJ6)
DEFAULT*
00 = LPC BIOS* 1-2
01 = PCI BIOS 2-3
10 = SPI BIOS 1-2
11 = RESERVED
V1.0 from 22 change to 33 OHM
V1.0 from 22 change to 33 OHM
Elitegroup Computer Systems
MCP61 PCI
MCP61PM-GM
Custom
2.4
Friday, June 26, 2009
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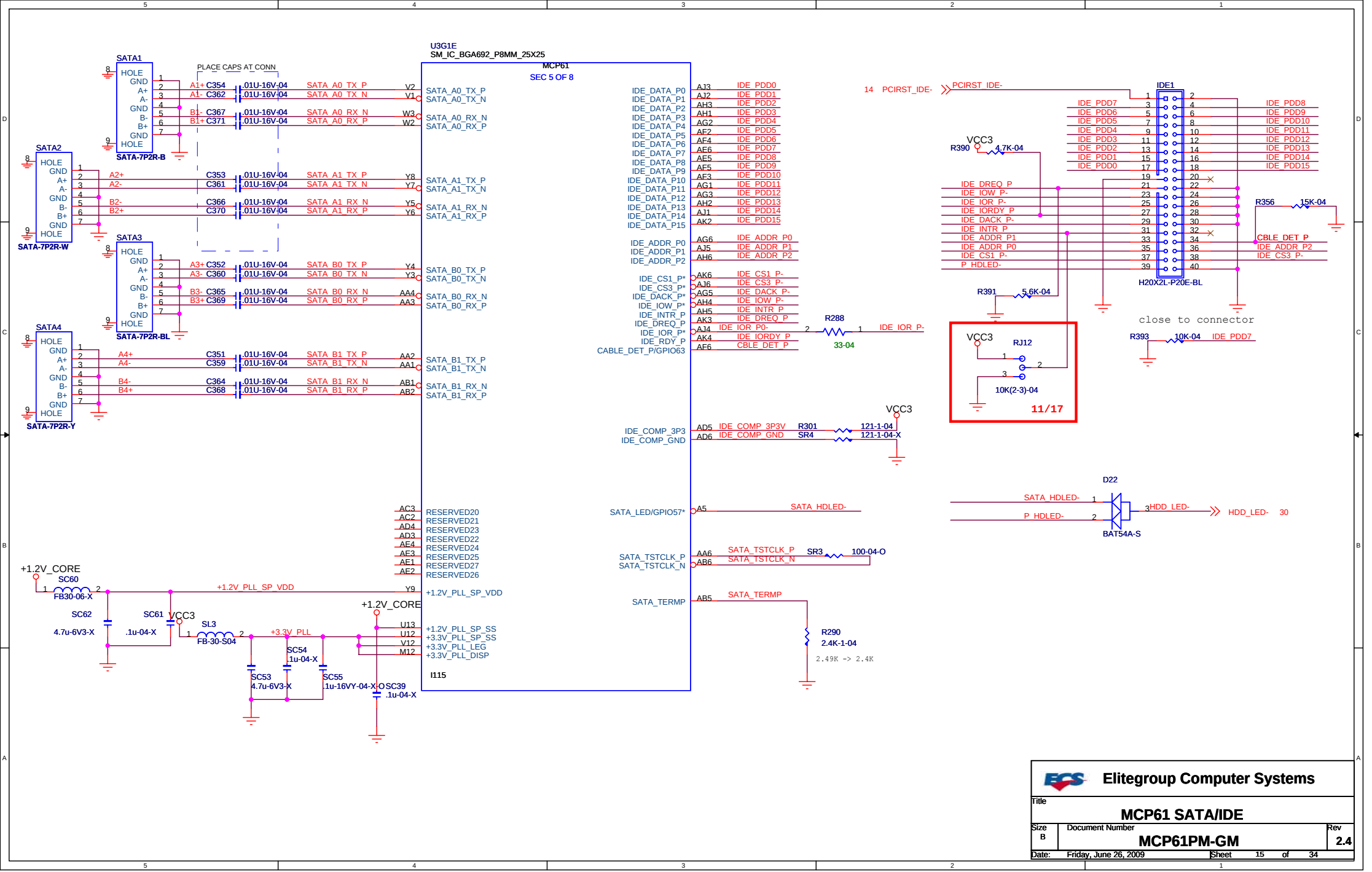

U3G1E
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 5 OF 8
SATA1
SATA-7P2R-B
SATA2
SATA-7P2R-W
SATA3
SATA-7P2R-BL
SATA4
SATA-7P2R-Y
PLACE CAPS AT CONN
SATA_A0_TX_P
SATA_A0_TX_N
SATA_A0_RX_N
SATA_A0_RX_P
SATA_A1_TX_P
SATA_A1_TX_N
SATA_A1_RX_N
SATA_A1_RX_P
SATA_B0_TX_P
SATA_B0_TX_N
SATA_B0_RX_N
SATA_B0_RX_P
SATA_B1_TX_P
SATA_B1_TX_N
SATA_B1_RX_N
SATA_B1_RX_P
IDE_DATA_P0
IDE_DATA_P1
IDE_DATA_P2
IDE_DATA_P3
IDE_DATA_P4
IDE_DATA_P5
IDE_DATA_P6
IDE_DATA_P7
IDE_DATA_P8
IDE_DATA_P9
IDE_DATA_P10
IDE_DATA_P11
IDE_DATA_P12
IDE_DATA_P13
IDE_DATA_P14
IDE_DATA_P15
IDE_ADDR_P0
IDE_ADDR_P1
IDE_ADDR_P2
IDE_CS1_P*
IDE_CS3_P*
IDE_DACK_P*
IDE_IOW_P*
IDE_INTR_P
IDE_DREQ_P
IDE_IOR_P*
IDE_RDY_P
CABLE_DET_P/GPIO63
IDE_COMP_3P3
IDE_COMP_GND
SATA_LED/GPIO57*
SATA_TSTCLK_P
SATA_TSTCLK_N
SATA_TERMP
RESERVED20
RESERVED21
RESERVED23
RESERVED22
RESERVED24
RESERVED25
RESERVED27
RESERVED26
+1.2V_PLL_SP_VDD
+1.2V_PLL_SP_SS
+3.3V_PLL_SP_SS
+3.3V_PLL_LEG
+3.3V_PLL_DISP
I115
+1.2V_CORE
+3.3V_PLL
VCC3
SC60
FB30-06-X
SC62
4.7u-6V3-X
SC61
.1u-04-X
SL3
FB-30-S04
SC54
.1u-04-X
SC53
4.7u-6V3-X
SC55
.1u-16VY-04-X
SC39
.1u-04-X
R288
33-04
R301
121-1-04
SR4
121-1-04-X
SR3
100-04-O
R290
2.4K-1-04
2.49K -> 2.4K
PCIRST_IDE-
IDE1
H20X2L-P20E-BL
R390
4.7K-04
R391
5.6K-04
R356
15K-04
RJ12
10K(2-3)-04
11/17
close to connector
R393
10K-04
D22
BAT54A-S
SATA_HDLED-
P_HDLED-
HDD_LED-
Elitegroup Computer Systems
MCP61 SATA/IDE
MCP61PM-GM
2.4
Friday, June 26, 2009
15 of 34

REMOVE FOR PRODUCTION

07.08.18

U3G1F
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 6 OF 8

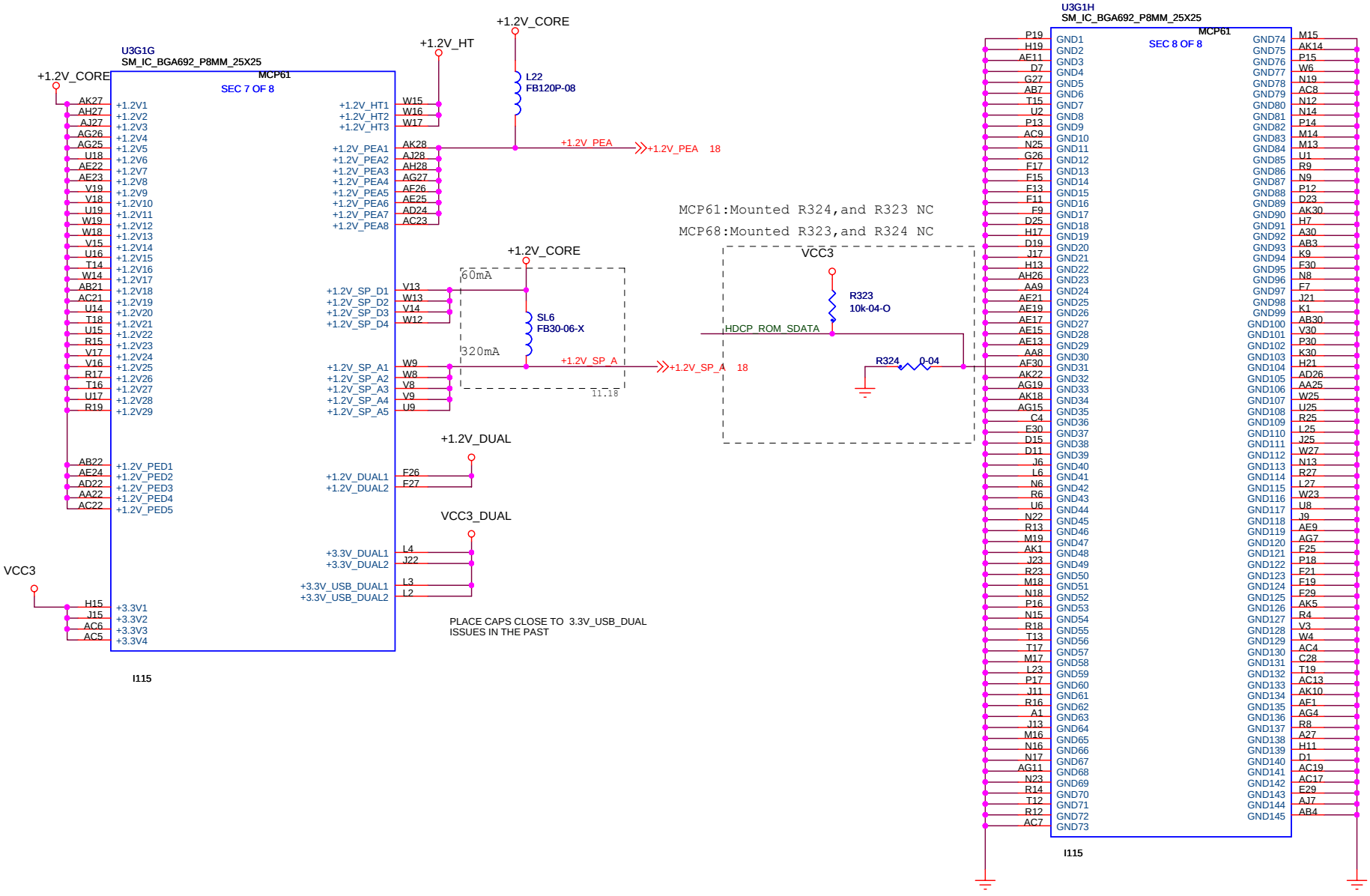
USB0~3 --> BACK CONNECTORS
USB4~9 --> ON-BOARD HEADER

V1.0 from 931 change to 976 ,680 OHM,1.1K OHM
MCP61:1.1K ohm
MCP68:1.1K ohm

Near JP2

For EMI
07.08.21

Elitegroup Computer Systems	
Title	MCP61 AUDIO/USB/MISC
Size: Custom	Document Number: MCP61PM-GM
Rev	2.4
Date: Friday, June 26, 2009	Sheet 16 of 34



Elitegroup Computer Systems	
Title	MCP61 PWR/GND
Size B	Document Number MCP61PM-GM
Rev	2.4
Date: Friday, June 26, 2009	Sheet 17 of 34

MCP61 DECOUPLING/EMI

PLACE ON BACK SIDE
CENTER OF MCP61

+1.2V_CORE
SC40 SC33 SC42 SC48 SC38
1U-06-X .1u-04-X .1u-04-X
4.7U-08-X .1u-04-X

VCC3
C296 C292 SC56 SC63 C223 C288
.1u-04 .1u-04 .1u-04-X .1u-04-X .1u-04 .1u-04

+1.2V_CORE
C217 C191 C187 C268 C210 C230 C213 C219 C218 C214 C208 C195 C212 C190 C197
22u-6V3X-08 22u-6V3X-08 4.7u-08 4.7u-08 .1u-04 .1u-04 .1u-04 .1u-04-O .1u-04 .1u-04 .1u-04-O .1u-04
22u-6V3X-08 22u-6V3X-08

17 +1.2V_PEA
C233 C222 C227 SC30 C220 SC37 SC36 C244 C226 SC35 C231
22u-6V3X-08 22u-6V3X-08 4.7u-08 .1u-04-X-O .1u-04 .1u-04-O
22u-6V3X-08 1U-06-X .1u-04-X .1u-04 .1u-04-X-O

17 +1.2V_SP_A
Pad change to 0805
07.02.04
SC65 SC68 SC59 SC58
4.7U-X5-X .1u-X5R-04-X
4.7U-X5-X .1u-X5R-04-X

VCC3_DUAL
SC69 SC66 SC46 SC67
.1u-04-X .1u-04-X
.1u-04-O .1u-04-X-O

+1.2V_DUAL
SC32 SC31
.1u-04-X-O .1u-04-X

MCP61 INTERNAL PULL-UP/DWN'S

PE0_PRSNTX16*	10K PU TO 3.3V
PE0_PRSNTX8*	10K PU TO 3.3V
PE1_PRSNT*	10K PU TO 3.3V
PE2_PRSNT*	10K PU TO 3.3V
PE1_CLKREQ*	10K PU TO 3.3V
PCI_PME*/GPIO_30	8.2K PU TO 3.3V_DUAL
LPC_AD0	8.2K PU TO 3.3V
LPC_AD1	8.2K PU TO 3.3V
LPC_AD2	8.2K PU TO 3.3V
LPC_AD3	8.2K PU TO 3.3V
LPC_DRQ1/LPC_CS*	8.2K PU TO 3.3V
LPC_DRQ0*	8.2K PU TO 3.3V
LPC_SERIRQ	10K PU TO 3.3V
HDA_SDATA_IN1/GPIO_23/MGPIO_0	10K PD TO GND
HDA_SDATA_IN0/GPIO_22	10K PD TO GND
JTAG_TMS	10K PU TO 3.3V
JTAG_TRST*	10K PD TO GND
JTAG_TDI	10K PU TO 3.3V
A20GATE	10K PU TO 3.3V
PE_WAKE*	10K PU TO 3.3V_DUAL
EXT_SMI*/GPIO32	10K PU TO 3.3V_DUAL
THERM*/GPIO_59	10K PU TO 3.3V
KBRDRSTIN*/GPIO_58	10K PU TO 3.3V
RI*/GPIO_33	10K PU TO 3.3V_DUAL
SIO_PME*/GPIO_31/MGPIO_2	10K PU TO 3.3V_DUAL
PWRBTN*	10K PU TO 3.3V_DUAL
RSTBTN*	10K PU TO 3.3V_DUAL

HS3G1
HEATSINK
45MM_PP_SQUARE
FANSINK
I155

MCP61 FAN HDR
+12V
PWR_FAN
SENSE
+12V
GND
H3*1-POW-O
C327
1U-16V-O

07.06.12

16 SPI_DO
16 SPI_CLK
16 SPI_CS
16 SPI_DI

Close to SPI_ROM_D
V_3P3_SPI
C397 C396
10u-16V-08 .1u-16VY-04-O

VCC3_DUAL
R113 0-06-O
DD1 BAT54C-S
V_3P3_SPI
R117 10K-04

V_3P3_SPI
R115 10K-04
BIOS_WP1
H2*1-O
R129 0-04-O
07.08.21

SPI_ROM_D
SPI-8D
CE# VCC
SO HOLD#
WP# SCK
GND SI
SPI_CS
SPI_DI
FWP-
HOLD-
SPI_CLK
SPI_DO

V_3P3_SPI
RJ13
SPI_CLK
10K(2-3)-04

V_3P3_SPI
RJ14
SPI_DO
10K(2-3)-04

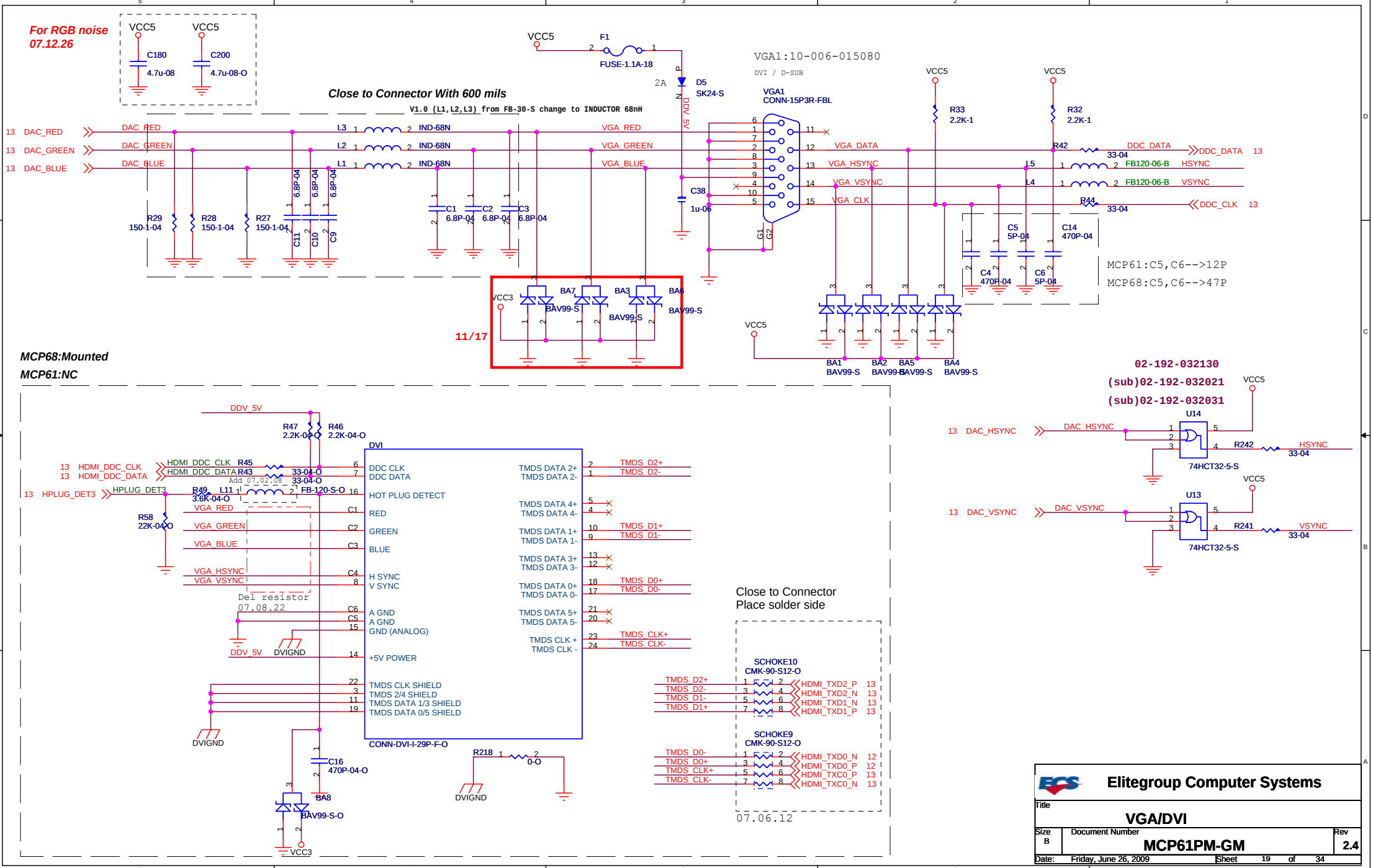
MCP61 SPI CLK STRAP	MCP68 SPI CLK STRAP
SPI_DO | SPI_CLK	SPI_DO | SPI_CLK
00 = 500KHZ	00 = 31MHZ
01 = 1.8MHZ	01 = 42MHZ
10 = 2.5MHZ	*10 = 25MHZ
*11 = 25MHZ	11 = 1MHZ
*DEFAULT	*DEFAULT

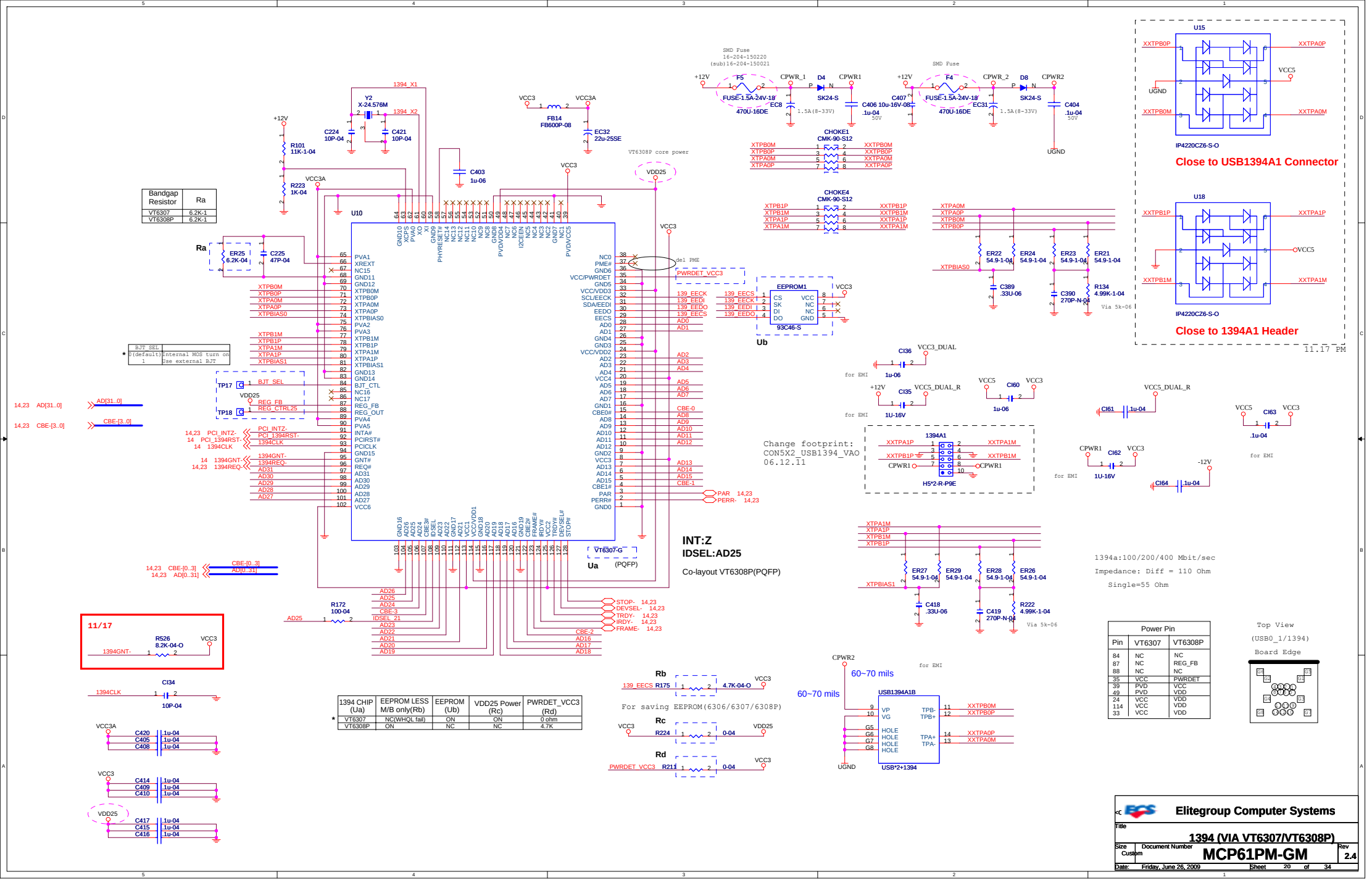
Elitegroup Computer Systems

Title: MCP61 DECOUPLING/SPI

Size	Document Number	Rev
B	MCP61PM-GM	2.4

Date: Friday, June 26, 2009 Sheet 18 of 34


For RGB noise
07.12.26
VCC5
C180
4.7u-08
C200
4.7u-08-O
Close to Connector With 600 mils
V1.0 (L1,L2,L3) from FB-30-S change to INDUCTOR 68nH
VCC5
F1
FUSE-1.1A-18
2A
D5
SK24-S
DDV_5V
VGA1:10-006-015080
DVI / D-SUB
VGA1
CONN-15P3R-FBL
13 DAC_RED
13 DAC_GREEN
13 DAC_BLUE
DAC_RED
DAC_GREEN
DAC_BLUE
L3 IND-68N
L2 IND-68N
L1 IND-68N
VGA_RED
VGA_GREEN
VGA_BLUE
R29 150-1-04
R28 150-1-04
R27 150-1-04
6.8P-04
C11
C10
C9
C1 6.8P-04
C2 6.8P-04
C3 6.8P-04
C38 1u-06
R33 2.2K-1
R32 2.2K-1
R42 33-04
DDC_DATA
DDC_DATA 13
L5 FB120-06-B HSYNC
L4 FB120-06-B VSYNC
R44 33-04
DDC_CLK 13
VGA_DATA
VGA_HSYNC
VGA_VSYNC
VGA_CLK
C5 5P-04
C14 470P-04
C4 470P-04
C6 5P-04
MCP61:C5,C6-->12P
MCP68:C5,C6-->47P
11/17
VCC3
BA7 BAV99-S
BA3 BAV99-S
BA6 BAV99-S
BA1 BAV99-S
BA2 BAV99-S
BA5 BAV99-S
BA4 BAV99-S
MCP68:Mounted
MCP61:NC
02-192-032130
(sub)02-192-032021
(sub)02-192-032031
DDV_5V
R47 2.2K-04-O
R46 2.2K-04-O
DVI
13 HDMI_DDC_CLK
13 HDMI_DDC_DATA
HDMI_DDC_CLK R45
HDMI_DDC_DATA R43
33-04-O
Add_07.02.06
33-04-O
13 HPLUG_DET3
HPLUG_DET3
R49 3.6K-04-O
L11 FB-120-S-O
R58 22K-04-O
VGA_RED
VGA_GREEN
VGA_BLUE
VGA_HSYNC
VGA_VSYNC
DDC CLK
DDC DATA
HOT PLUG DETECT
RED
GREEN
BLUE
H SYNC
V SYNC
A GND
A GND
GND (ANALOG)
+5V POWER
TMDS CLK SHIELD
TMDS 2/4 SHIELD
TMDS DATA 1/3 SHIELD
TMDS DATA 0/5 SHIELD
TMDS DATA 2+
TMDS DATA 2-
TMDS DATA 4+
TMDS DATA 4-
TMDS DATA 1+
TMDS DATA 1-
TMDS DATA 3+
TMDS DATA 3-
TMDS DATA 0+
TMDS DATA 0-
TMDS DATA 5+
TMDS DATA 5-
TMDS CLK +
TMDS CLK -
TMDS_D2+
TMDS_D2-
TMDS_D1+
TMDS_D1-
TMDS_D0+
TMDS_D0-
TMDS_CLK+
TMDS_CLK-
Del resistor
07.08.22
DDV_5V
DVIGND
CONN-DVI-I-29P-F-O
C16 470P-04-O
BA8 BAV99-S-O
VCC3
R218 0-O
Close to Connector
Place solder side
SCHOKE10
CMK-90-S12-O
SCHOKE9
CMK-90-S12-O
HDMI_TXD2_P 13
HDMI_TXD2_N 13
HDMI_TXD1_N 13
HDMI_TXD1_P 13
HDMI_TXD0_N 12
HDMI_TXD0_P 12
HDMI_TXC0_P 13
HDMI_TXC0_N 13
07.06.12
13 DAC_HSYNC
DAC_HSYNC
U14
74HCT32-5-S
R242 33-04
HSYNC
13 DAC_VSYNC
DAC_VSYNC
U13
74HCT32-5-S
R241 33-04
VSYNC
Elitegroup Computer Systems
Title
VGA/DVI
Size B
Document Number
MCP61PM-GM
Rev 2.4
Date: Friday, June 26, 2009
Sheet 19 of 34


U10
VT6308P core power
Y2
X-24.576M
1394_X1
1394_X2
C224 10P-04
C421 10P-04
R101 11K-1-04
R223 1K-04
C403 1u-06
FB14 FB600P-08
EC32 22u-25SE
VCC3
VCC3A
VDD25
Ra
ER25 6.2K-04
C225 47P-04
Bandgap Resistor | Ra
VT6307 | 6.2K-1
VT6308P | 6.2K-1
BJT SEL
0(default) Internal MOS turn on
1 Use external BJT
TP17 BJT_SEL
TP18 REG_CTRL25
REG_FB
PVA1 XREXT NC15 GND11 GND12 XTPB0M XTPB0P XTPA0M XTPA0P XTPBIAS0 PVA2 PVA3 XTPB1M XTPB1P XTPA1M XTPA1P XTPBIAS1 GND13 GND14 BJT_CTL NC16 NC17 REG_FB REG_OUT PVA4 PVA5 INTA# PCIRST# PCICLK GND15 GNT# REQ# AD31 AD30 AD29 AD28 AD27 VCC6
NC0 PME# GND6 VCC/PWRDET GND5 VCC/VDD3 SCL/EECK SDA/EEDI EEDO EECS AD0 AD1 GND4 GND3 VCC/VDD2 AD2 AD3 AD4 VCC4 AD5 AD6 AD7 GND1 CBE0# AD8 AD9 AD10 AD11 AD12 GND2 VCC3 AD13 AD14 AD15 CBE1# PAR PERR# GND0
PWRDET_VCC3
del PME
139_EECK 139_EEDI 139_EEDO 139_EECS AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7 CBE-0 AD8 AD9 AD10 AD11 AD12 AD13 AD14 AD15 CBE-1
EEPROM1
CS SK DI DO VCC NC NC GND
93C46-S
Ub
PAR 14,23
PERR- 14,23
GND16 AD26 AD25 AD24 CBE3# IDSEL AD23 GND17 AD21 VCC/VDD1 GND18 AD20 AD19 AD18 AD17 AD16 GND19 CBE2# FRAME# RDY# VCC2 TRDY# DEVSEL# STOP#
Vt6307-G
Ua
(PQFP)
STOP- 14,23
DEVSEL- 14,23
TRDY- 14,23
IRDY- 14,23
FRAME- 14,23
CBE-2 AD16 AD17 AD18
AD26 AD25 AD24 CBE-3 IDSEL_21 AD23 AD22 AD21 AD20 AD19
R172 100-04
AD25
14,23 AD[31..0]
14,23 CBE-[3..0]
14,23 PCI_INTZ-
14 PCI_1394RST-
14 1394CLK
14 1394GNT-
14,23 1394REQ-
14,23 CBE-[0..3]
14,23 AD[0..31]
11/17
R526 8.2K-04-O
1394GNT-
CI34 10P-04
1394CLK
C420 C405 C408 1u-04
C414 C409 C410 1u-04
C417 C415 C416 1u-04
INT:Z
IDSEL:AD25
Co-layout VT6308P(PQFP)
SMD Fuse
16-204-150220
(sub)16-204-150021
F5 FUSE-1.5A-24V-18
EC8 470U-16DE
D4 SK24-S
C406 10u-16V-08
1.5A(8-33V)
F4 FUSE-1.5A-24V-18
EC31 470U-16DE
D8 SK24-S
C404 .1u-04
C407 .1u-04
CHOKE1 CMK-90-S12
CHOKE4 CMK-90-S12
XTPB0M XTPB0P XTPA0M XTPA0P
XTPB1P XTPB1M XTPA1P XTPA1M
ER22 54.9-1-04
ER24 54.9-1-04
ER23 54.9-1-04
ER21 54.9-1-04
XTPBIAS0
C389 .33U-06
C390 270P-N-04
R134 4.99K-1-04
Via 5k-06
U15
U18
IP4220CZ6-S-O
Close to USB1394A1 Connector
Close to 1394A1 Header
11.17 PM
CI36 1u-06
CI35 1U-16V
CI60 1u-06
CI61 .1u-04
CI62 1U-16V
CI63 .1u-04
CI64 .1u-04
1394A1
H5*2-R-P9E
Change footprint:
CON5X2_USB1394_VAO
06.12.11
ER27 54.9-1-04
ER29 54.9-1-04
ER28 54.9-1-04
ER26 54.9-1-04
C418 .33U-06
C419 270P-N-04
R222 4.99K-1-04
1394a:100/200/400 Mbit/sec
Impedance: Diff = 110 Ohm
Single=55 Ohm
Power Pin
Pin | VT6307 | VT6308P
84 NC NC
87 NC REG_FB
88 NC NC
35 VCC PWRDET
39 PVD VCC
49 PVD VDD
24 VCC VDD
114 VCC VDD
33 VCC VDD
Top View
(USB0_1/1394)
Board Edge
Rb 4.7K-04-O
139_EECS R175
For saving EEPROM(6306/6307/6308P)
Rc R224 0-04
Rd PWRDET_VCC3 R211 0-04
60~70 mils
USB1394A1B
USB*2+1394
1394 CHIP (Ua) | EEPROM LESS M/B only(Rb) | EEPROM (Ub) | VDD25 Power (Rc) | PWRDET_VCC3 (Rd)
* VT6307 | NC(WHQL fail) | ON | ON | 0 ohm
VT6308P | ON | NC | NC | 4.7K
Elitegroup Computer Systems
Title
1394 (VIA VT6307/VT6308P)
Size Custom
Document Number
MCP61PM-GM
Rev 2.4
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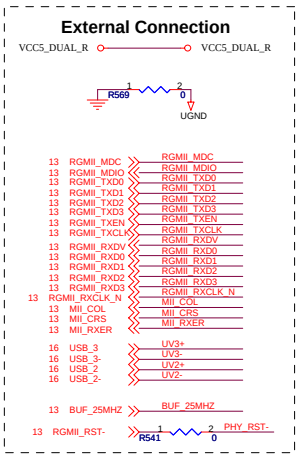
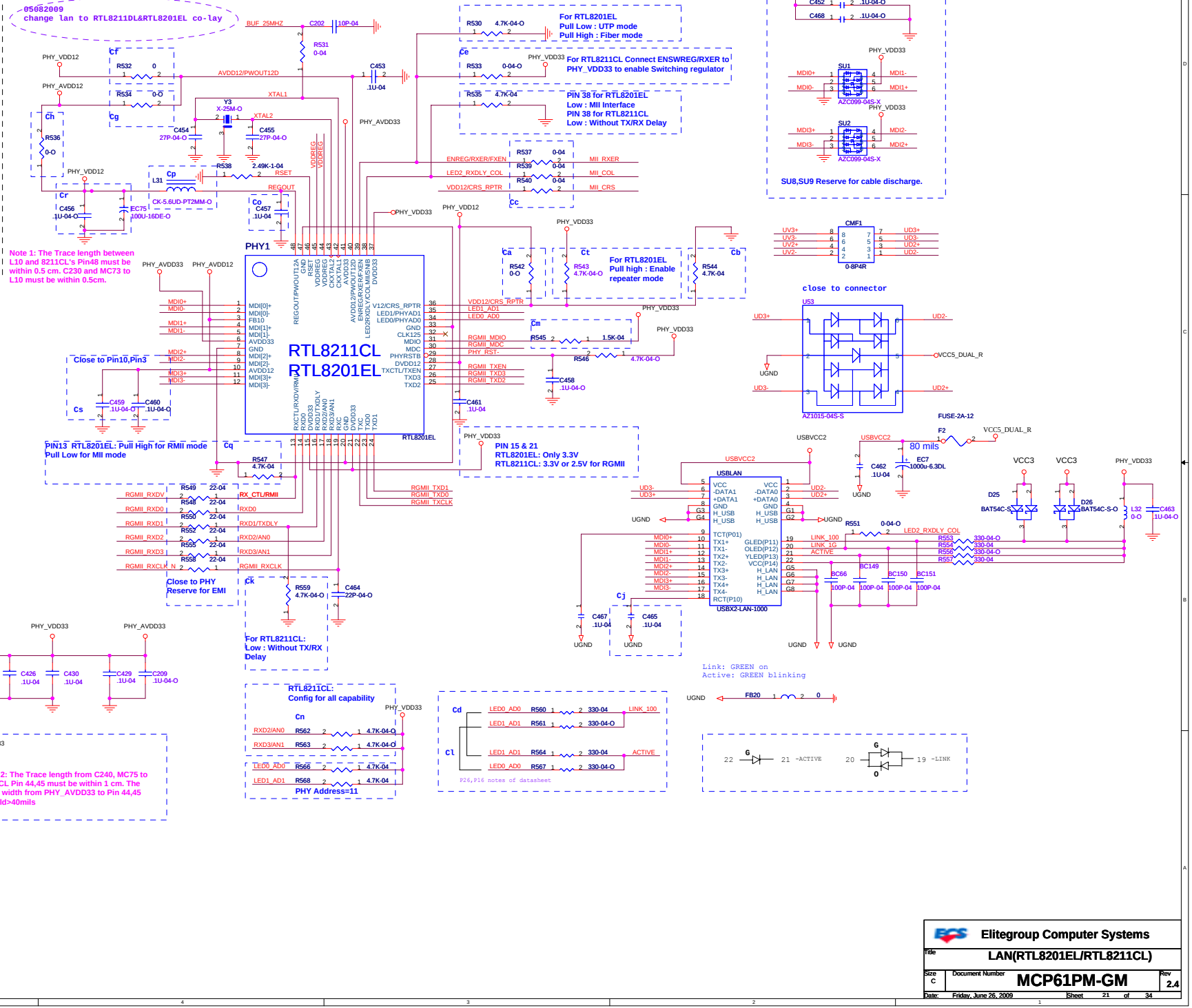
External Connection



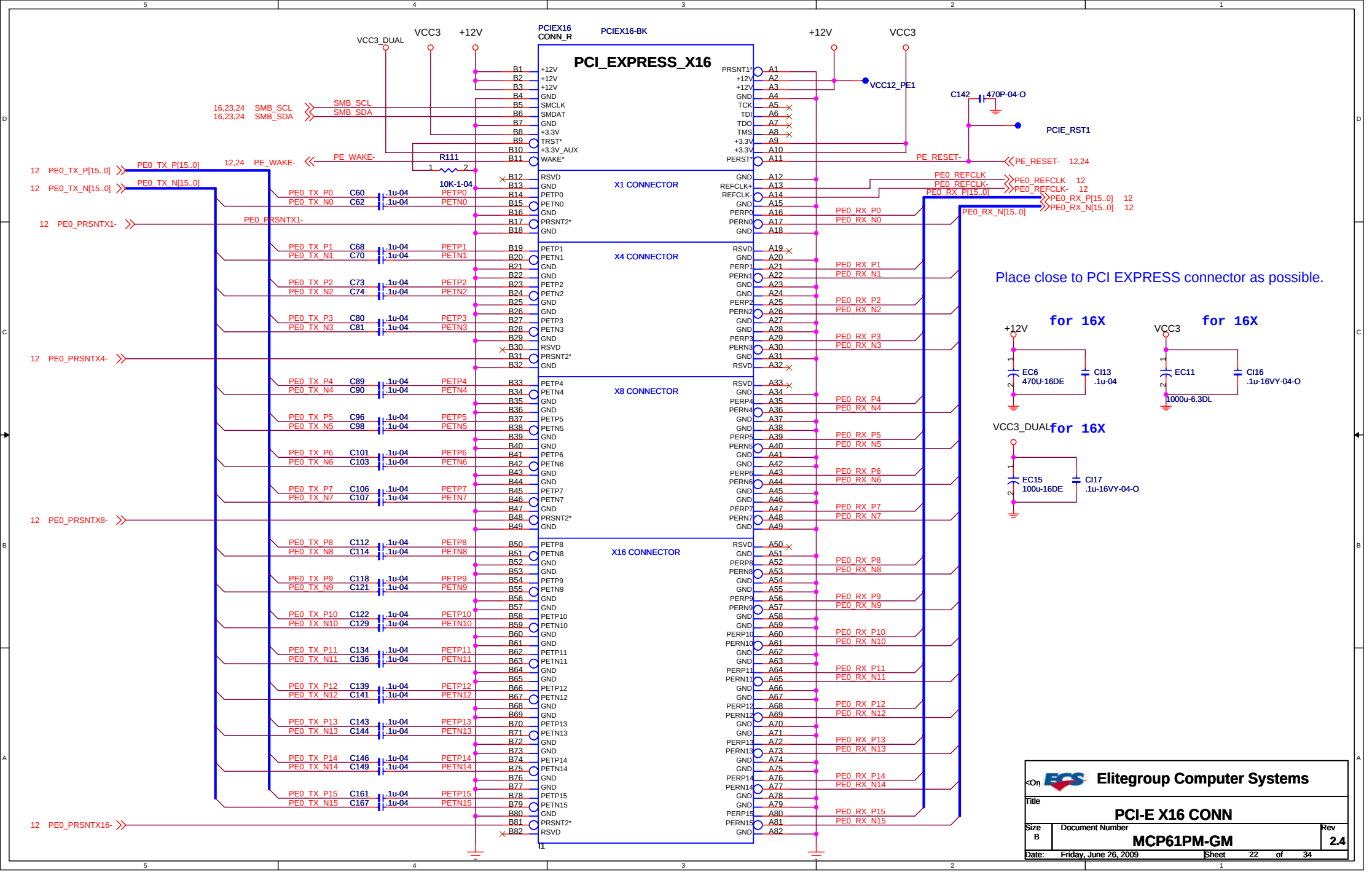
BOM Difference

	* RTL8211CL 1000M	RTL8201EL 10/100M
Ca	0-06	X
Cb	X	4.7K-04
Cc	X	0-04
Cd	X	330-04
Ce	0-04	X
Cf	X	0-06
Cg	0-06	X
Ch	0-06	X
Ci	Mount	X
Cj	.1U-04	.1U-04
Ck	4.7K-04	X
Cl	330-04	X
Cm	1.5K-04(V1.7)	1.5K-04
Cn	4.7K-04	X
Co	X	.1U-04
Cp	4.7uH-D	X
Cq	X	4.7K-04
Cr	.1U-04 22U-08	X
Cs	.1U-04	X
Ct	X	X or 4.7K-04

05082009
change lan to RTL8211DL&RTL8201EL co-lay



Elitegroup Computer Systems			
Title	LAN(RTL8201EL/RTL8211CL)		
Size C	Document Number MCP61PM-GM		Rev 2.4
Date: Friday, June 26, 2009	Sheet 21 of 34		



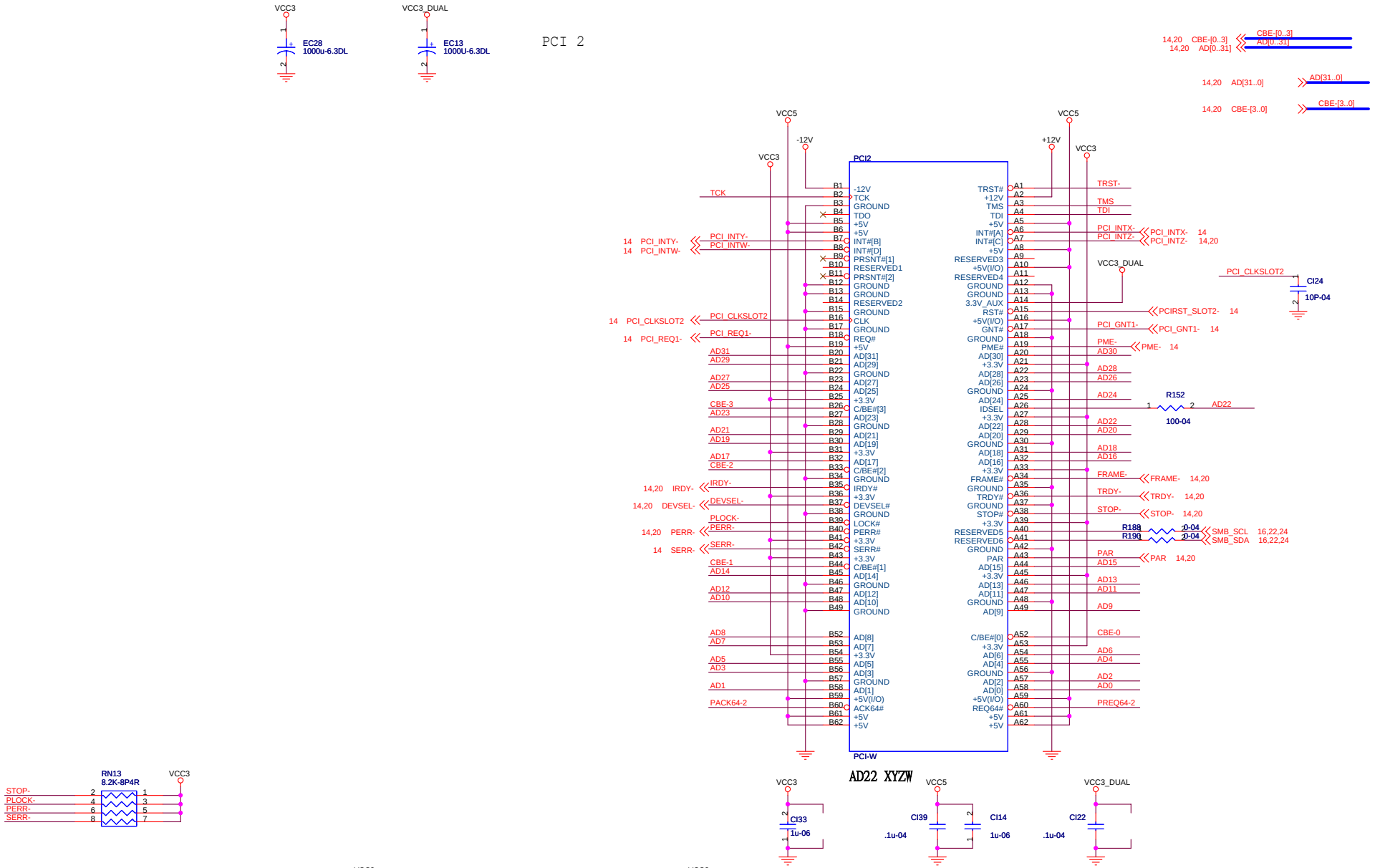
Elitegroup Computer Systems

Title: PCI-E X16 CONN

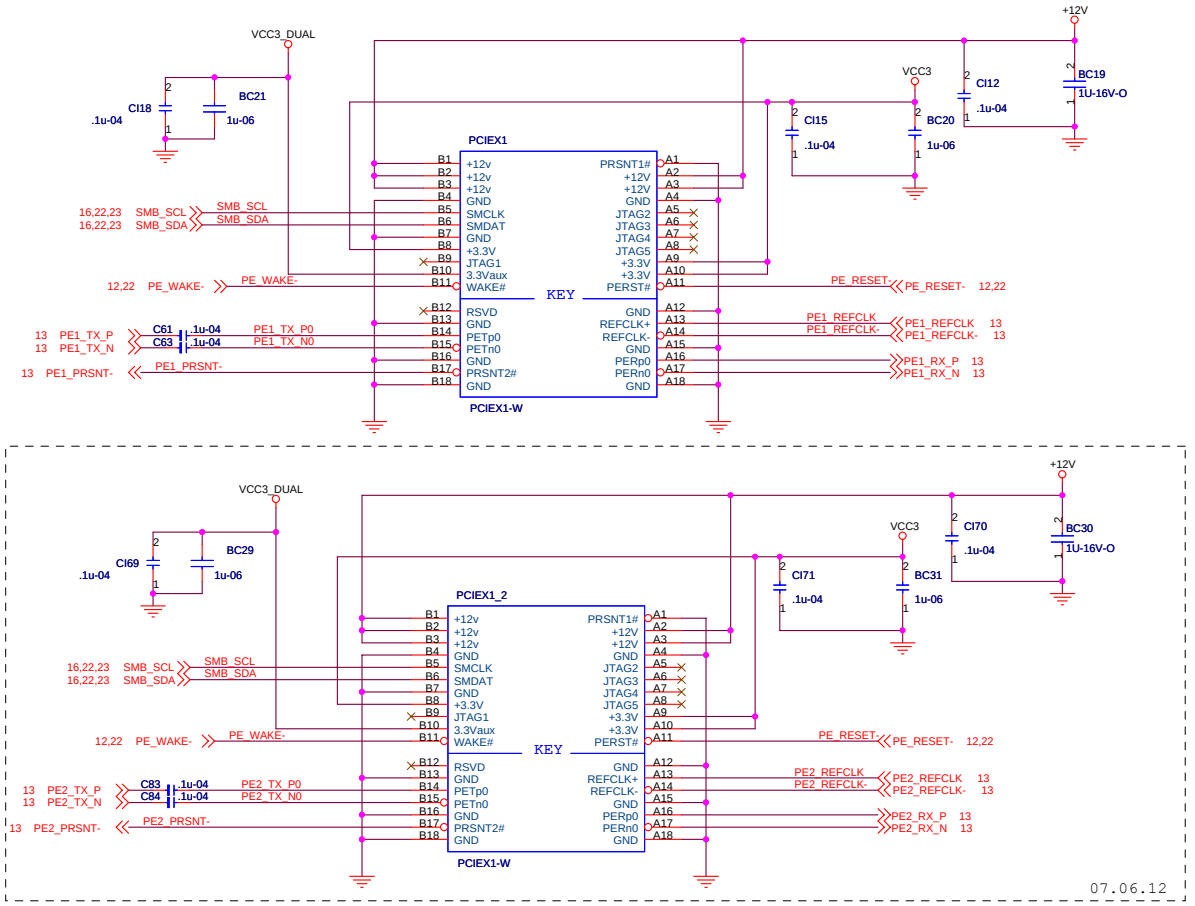
Size: B | Document Number: MCP61PM-GM | Rev: 2.4

Date: Friday, June 26, 2009 | Sheet 22 of 34

PCI 2



Elitegroup Computer Systems			
Title: PCI 1&2			
Size: Custom	Document Number: MCP61PM-GM		Rev: 2.4
Date: Friday, June 26, 2009		Sheet 23 of 34	

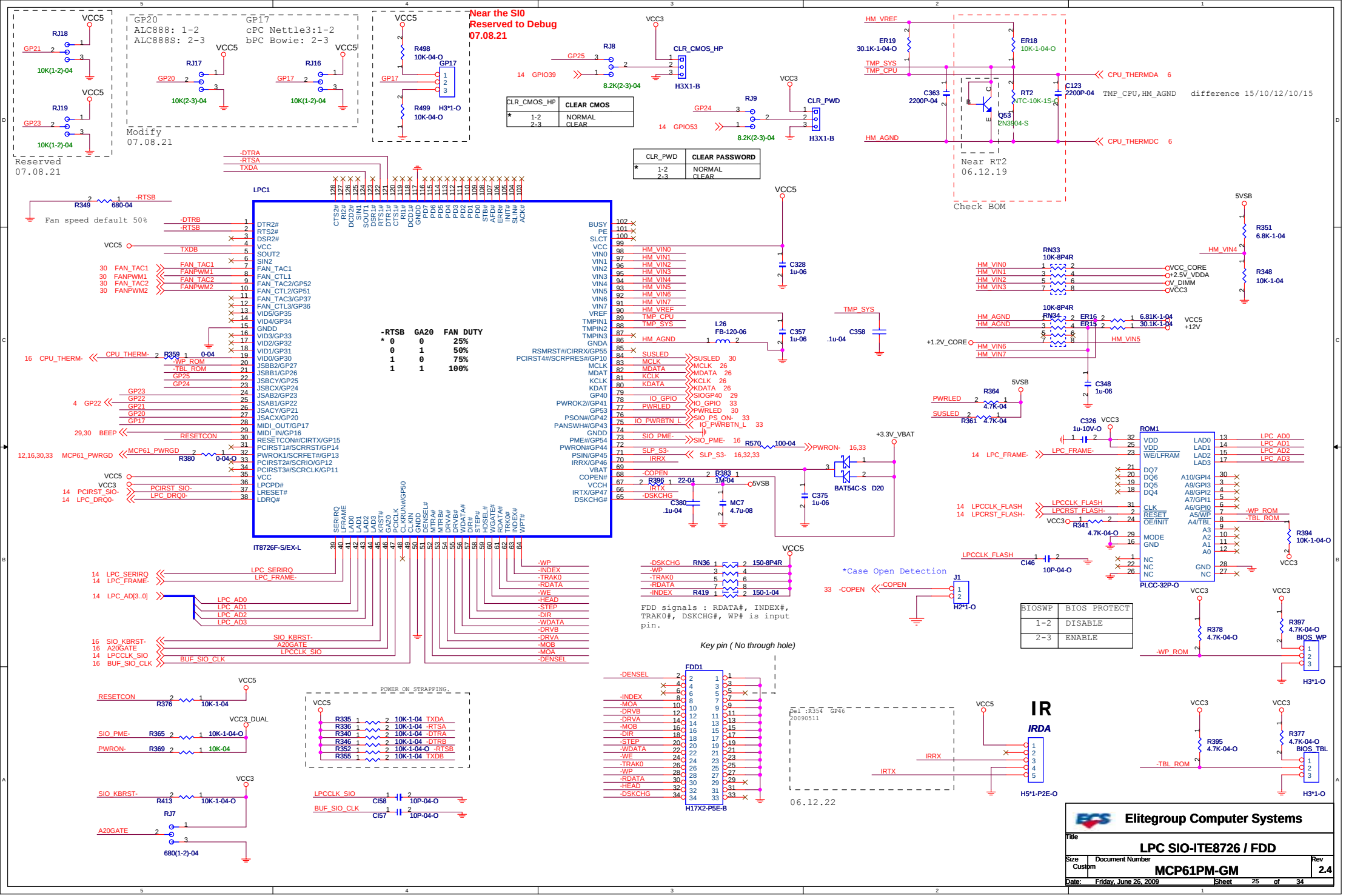


Elitegroup Computer Systems

Title: PCI-E X1

Size: Custom | Document Number: MCP61PM-GM | Rev: 2.4

Date: Friday, June 26, 2009 | Sheet 24 of 34


GP20
ALC888: 1-2
ALC888S: 2-3
GP17
cPC Nettle3:1-2
bPC Bowie: 2-3
Modify
07.08.21
Reserved
07.08.21
Near the SI0
Reserved to Debug
07.08.21
CLR_CMOS_HP
CLEAR CMOS
1-2 NORMAL
2-3 CLEAR
CLR_PWD
CLEAR PASSWORD
1-2 NORMAL
2-3 CLEAR
Near RT2
06.12.19
Check BOM
TMP_CPU,HM_AGND difference 15/10/12/10/15
Fan speed default 50%
-RTSB GA20 FAN_DUTY
0 0 25%
0 1 50%
1 0 75%
1 1 100%
LPC1
IT8726F-S/EX-L
*Case Open Detection
FDD signals : RDATA#, INDEX#, TRAK0#, DSKCHG#, WP# is input pin.
Key pin (No through hole)
POWER_ON_STRAPPING
BIOSWP BIOS PROTECT
1-2 DISABLE
2-3 ENABLE
IR
IRDA
06.12.22
Elitegroup Computer Systems
LPC SIO-ITE8726 / FDD
MCP61PM-GM
Size Custom
Rev 2.4
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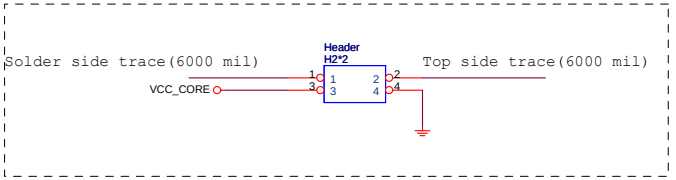
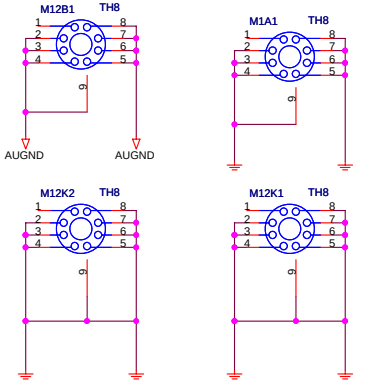
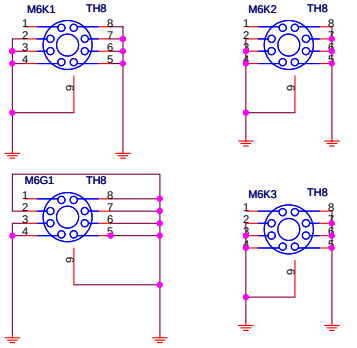
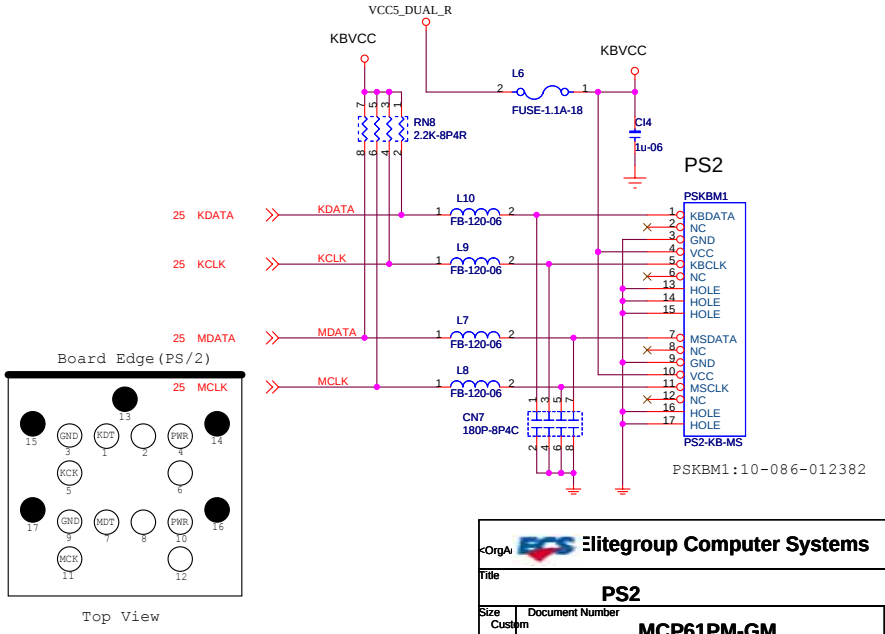
07.02.26 Impedance test

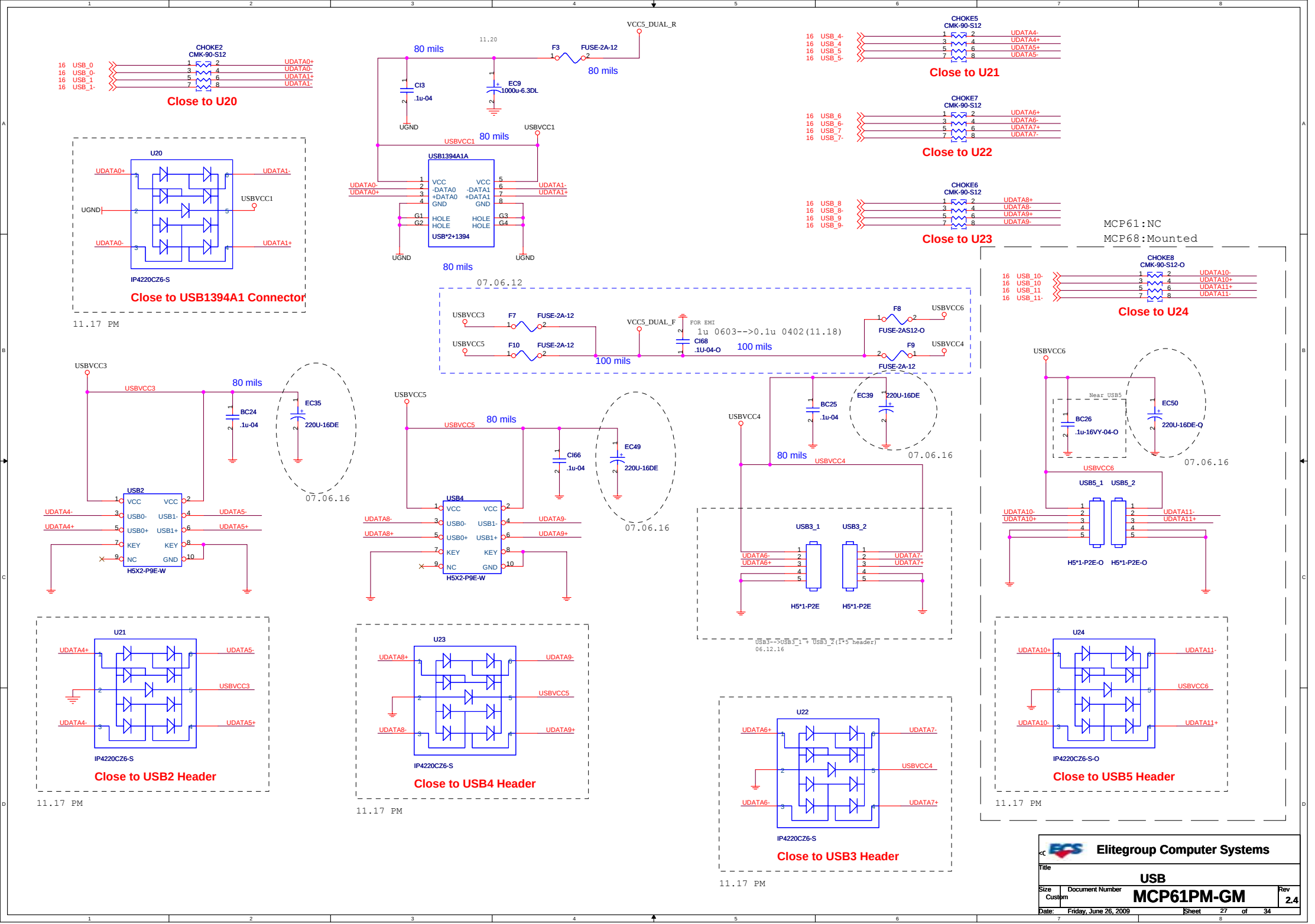








<OrgA>	Elitegroup Computer Systems	
Title	PS2	
Size: Custom	Document Number: MCP61PM-GM	Rev: 2.4
Date: Friday, June 26, 2009	Sheet 26 of 34	


CHOKE2
CMK-90-S12
16 USB_0
16 USB_0-
16 USB_1
16 USB_1-
UDATA0+
UDATA0-
UDATA1+
UDATA1-
Close to U20
U20
UDATA0+
UDATA0-
UGND
USBVCC1
UDATA1-
UDATA1+
IP4220CZ6-S
Close to USB1394A1 Connector
11.17 PM
11.20
80 mils
VCC5_DUAL_R
F3
FUSE-2A-12
80 mils
CI3
.1u-04
EC9
1000u-6.3DL
UGND
USBVCC1
80 mils
USB1394A1A
VCC
-DATA0
+DATA0
GND
HOLE
USB*2+1394
UDATA0-
UDATA0+
UDATA1-
UDATA1+
80 mils
07.06.12
USBVCC3
F7
FUSE-2A-12
USBVCC5
F10
FUSE-2A-12
100 mils
VCC5_DUAL_F
FOR EMI
1u 0603-->0.1u 0402(11.18)
CI68
.1U-04-O
100 mils
F8
FUSE-2AS12-O
USBVCC6
F9
FUSE-2A-12
USBVCC4
CHOKE5
CMK-90-S12
16 USB_4-
16 USB_4
16 USB_5
16 USB_5-
UDATA4-
UDATA4+
UDATA5+
UDATA5-
Close to U21
CHOKE7
CMK-90-S12
16 USB_6
16 USB_6-
16 USB_7
16 USB_7-
UDATA6+
UDATA6-
UDATA7+
UDATA7-
Close to U22
CHOKE6
CMK-90-S12
16 USB_8
16 USB_8-
16 USB_9
16 USB_9-
UDATA8+
UDATA8-
UDATA9+
UDATA9-
Close to U23
MCP61:NC
MCP68:Mounted
CHOKE8
CMK-90-S12-O
16 USB_10-
16 USB_10
16 USB_11
16 USB_11-
UDATA10-
UDATA10+
UDATA11+
UDATA11-
Close to U24
USBVCC3
USBVCC3
80 mils
BC24
.1u-04
EC35
220U-16DE
07.06.16
USB2
VCC
USB0-
USB0+
KEY
NC
USB1-
USB1+
GND
UDATA4-
UDATA4+
UDATA5-
UDATA5+
H5X2-P9E-W
USBVCC5
USBVCC5
80 mils
CI66
.1u-04
EC49
220U-16DE
07.06.16
USB4
UDATA8-
UDATA8+
UDATA9-
UDATA9+
H5X2-P9E-W
USBVCC4
BC25
.1u-04
EC39
220U-16DE
07.06.16
USBVCC4
80 mils
USB3_1
USB3_2
UDATA6-
UDATA6+
UDATA7-
UDATA7+
H5*1-P2E
USB3-->USB3_1 + USB3_2(1*5 header)
06.12.16
USBVCC6
Near_USB5
BC26
.1u-16VY-04-O
EC50
220U-16DE-O
07.06.16
USBVCC6
USB5_1
USB5_2
UDATA10-
UDATA10+
UDATA11-
UDATA11+
H5*1-P2E-O
U21
UDATA4+
UDATA4-
UDATA5-
USBVCC3
UDATA5+
IP4220CZ6-S
Close to USB2 Header
11.17 PM
U23
UDATA8+
UDATA8-
UDATA9-
USBVCC5
UDATA9+
IP4220CZ6-S
Close to USB4 Header
11.17 PM
U22
UDATA6+
UDATA6-
UDATA7-
USBVCC4
UDATA7+
IP4220CZ6-S
Close to USB3 Header
11.17 PM
U24
UDATA10+
UDATA10-
UDATA11-
USBVCC6
UDATA11+
IP4220CZ6-S-O
Close to USB5 Header
11.17 PM
Elitegroup Computer Systems
Title
USB
Size
Custom
Document Number
MCP61PM-GM
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2.4
Date:
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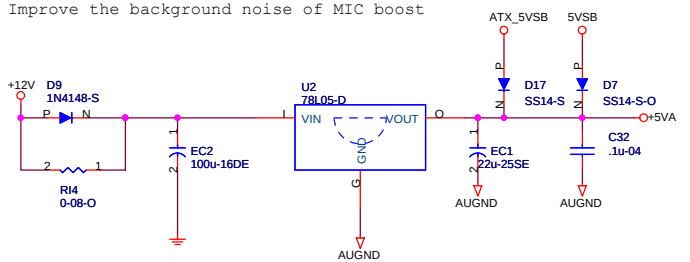
27
of
34

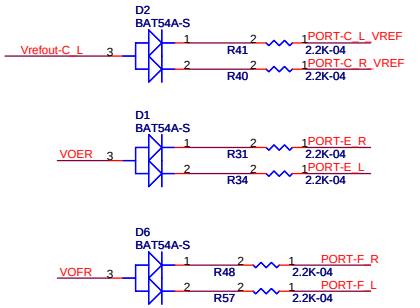
BOM Difference

Location	Nettle	Iris	Nettle2	Nettle3	bPC
Ca	ALC888	ALC888	ALC888S	ALC888S	ALC888S
Cb	V	X	V	V	X
Cc	V	X	V	V	X
Cd	V	X	V	V	X
Ce	V	X	X	X	X
Cf	X	X	V	V	V
Cg	V	X	V	V	X
Ch	V	X	V	V	X
Ci	X	X	V	V	X
Cj	X	V	X	X	V
Ck	V	X	V	V	X
Cm	V	V	V	X	X
Cn	X	X	X	X	V
Co	V	X	V	V	V
Cp	V	X	X	X	X
Cq	X	X	V	V	V
Cr	V	X	V	V	V

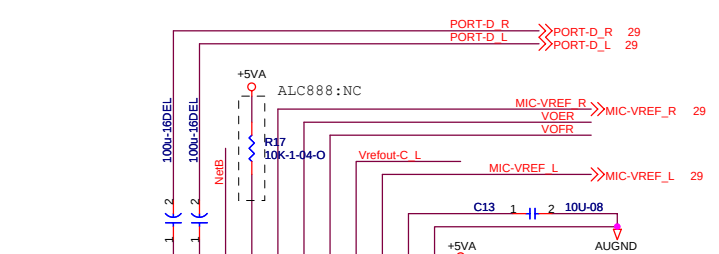
Improve the background noise of MIC boost

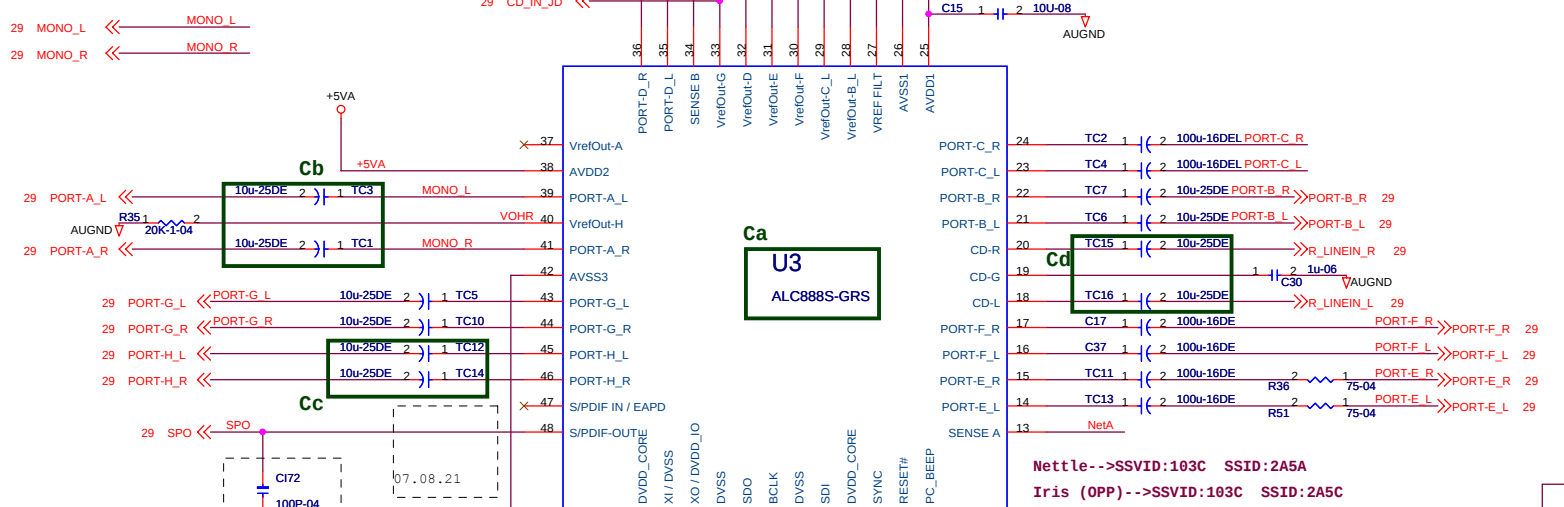
Verfout bias for stereo microphone.





Place near Chip

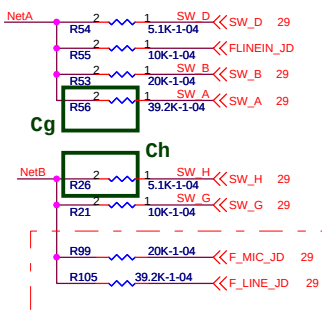


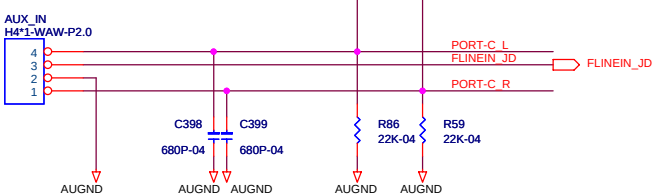


Nettle-->SSVID:103C SSID:2A5A

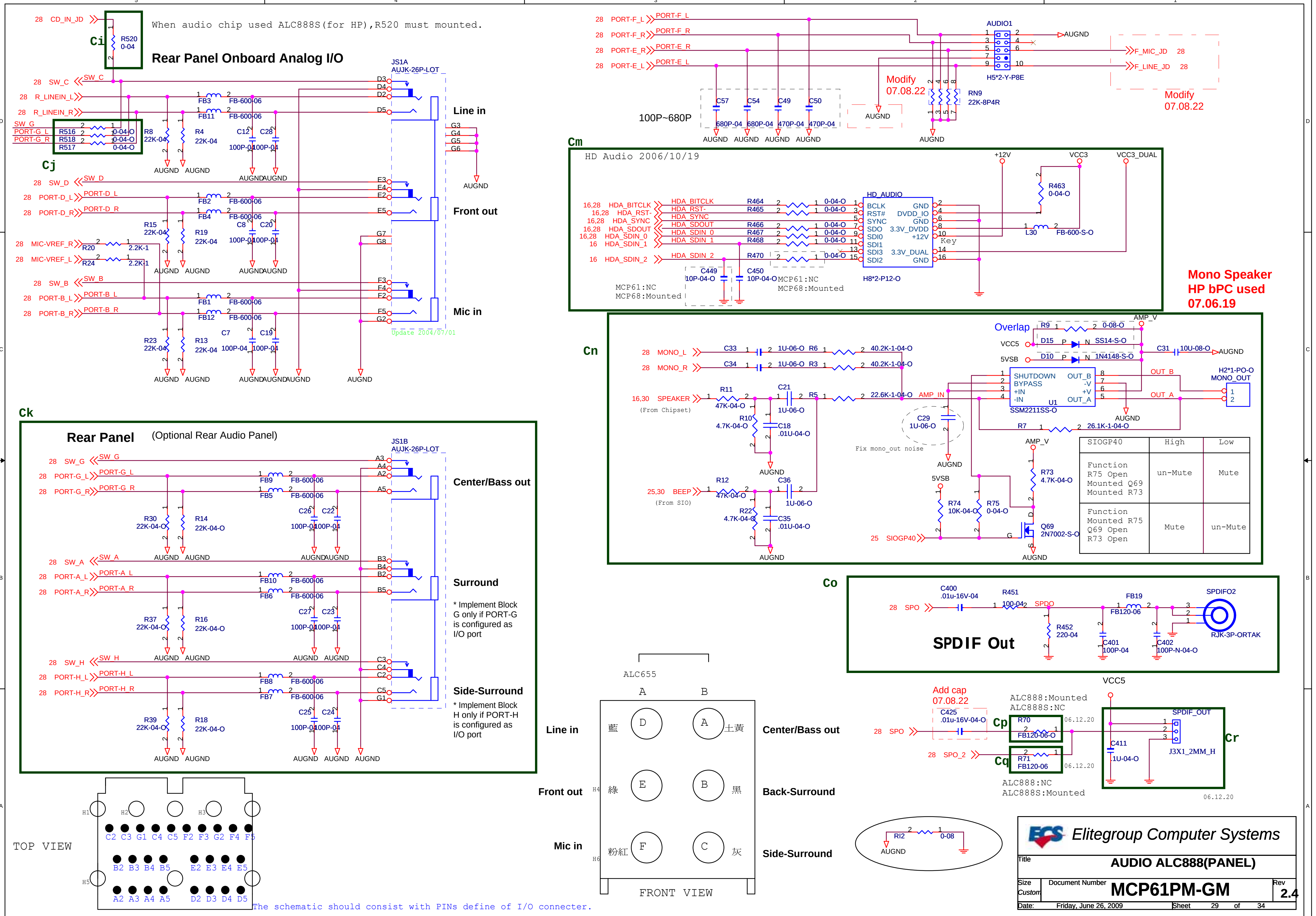
Iris (OPP)-->SSVID:103C SSID:2A5C

Resistors Networks





Elitegroup Computer Systems		
Title	AUDIO ALC888	
Size: Custom	Document Number: MCP61PM-GM	Rev: 2.4
Date: Friday, June 26, 2009	Sheet 28 of 34	



When audio chip used ALC888S(for HP),R520 must mounted.
Rear Panel Onboard Analog I/O
JS1A
AUJK-26P-LOT
Line in
Front out
Mic in
Update 2004/07/01
Rear Panel
(Optional Rear Audio Panel)
JS1B
AUJK-26P-LOT
Center/Bass out
Surround
* Implement Block G only if PORT-G is configured as I/O port
Side-Surround
* Implement Block H only if PORT-H is configured as I/O port
TOP VIEW
The schematic should consist with PINs define of I/O connecter.
AUDIO1
H5*2-Y-P8E
Modify 07.08.22
RN9 22K-8P4R
100P~680P
HD Audio 2006/10/19
HD_AUDIO
H8*2-P12-O
MCP61:NC
MCP68:Mounted
Mono Speaker
HP bPC used
07.06.19
Overlap
SSM2211SS-O
H2*1-PO-O
MONO_OUT
Fix mono_out noise
(From Chipset)
(From SIO)
SPDIF Out
SPDIFO2
RJK-3P-ORTAK
ALC655
FRONT VIEW
Line in
Front out
Mic in
Center/Bass out
Back-Surround
Side-Surround
藍
土黃
綠
黑
粉紅
灰
Add cap
07.08.22
ALC888:Mounted
ALC888S:NC
ALC888:NC
ALC888S:Mounted
SPDIF_OUT
J3X1_2MM_H

SIOGP40	High	Low
Function R75 Open Mounted Q69 Mounted R73	un-Mute	Mute
Function Mounted R75 Q69 Open R73 Open	Mute	un-Mute

Elitegroup Computer Systems

Title: AUDIO ALC888(PANEL)

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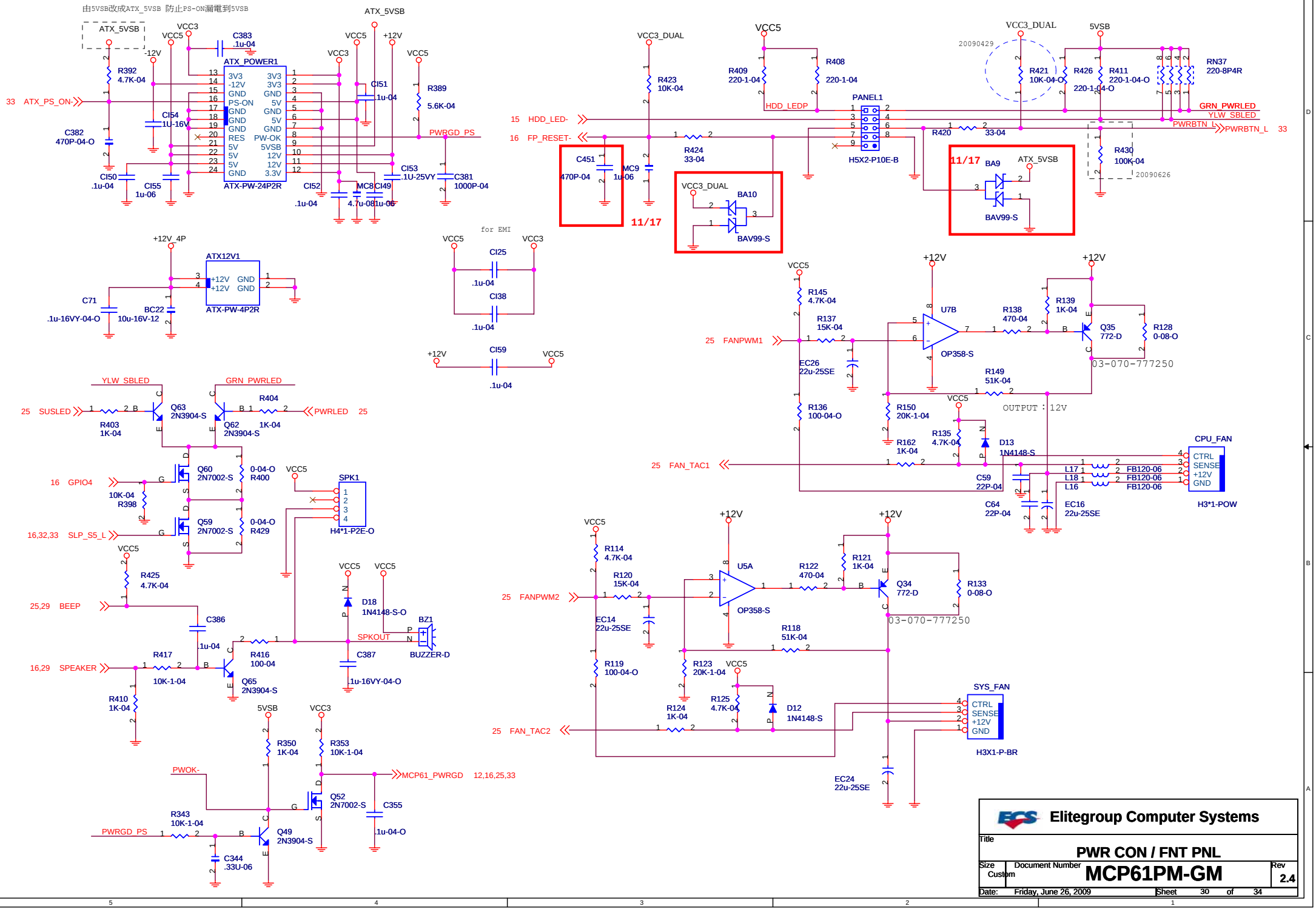
由5VSB改成ATX_5VSB 防止PS-ON漏電到5VSB
ATX_5VSB
ATX_POWER1
ATX-PW-24P2R
R392 4.7K-04
C382 470P-04-O
CI50 .1u-04
CI54 1U-16V
CI55 1u-06
C383 .1u-04
CI51 .1u-04
R389 5.6K-04
CI52 .1u-04
MC8 CI49 4.7u-081u-06
CI53 .1U-25VY
C381 1000P-04
33 ATX_PS_ON-
PWRGD_PS
+12V_4P
ATX12V1
ATX-PW-4P2R
C71 .1u-16VY-04-O
BC22 10u-16V-12
for EMI
CI25 .1u-04
CI38 .1u-04
CI59 .1u-04
VCC3_DUAL
R423 10K-04
R409 220-1-04
R408 220-1-04
HDD_LEDP
PANEL1
H5X2-P10E-B
15 HDD_LED-
16 FP_RESET-
C451 470P-04
MC9 1u-06
R424 33-04
11/17
BA10
BAV99-S
20090429
R421 10K-04-O
R426 220-1-04-O
R411 220-1-04-O
RN37 220-8P4R
GRN_PWRLED
YLW_SBLED
PWRBTN_L
R420 33-04
R430 100K-04
20090626
BA9
BAV99-S
YLW_SBLED
GRN_PWRLED
25 SUSLED
Q63 2N3904-S
Q62 2N3904-S
R403 1K-04
R404 1K-04
PWRLED 25
16 GPIO4
Q60 2N7002-S
Q59 2N7002-S
R398 10K-04
R400 0-04-O
R429 0-04-O
16,32,33 SLP_S5_L
SPK1
H4*1-P2E-O
R425 4.7K-04
25,29 BEEP
C386 .1u-04
R417 10K-1-04
16,29 SPEAKER
R416 100-04
Q65 2N3904-S
R410 1K-04
D18 1N4148-S-O
SPKOUT
C387 .1u-16VY-04-O
BZ1
BUZZER-D
R350 1K-04
R353 10K-1-04
PWOK-
R343 10K-1-04
PWRGD_PS
Q52 2N7002-S
Q49 2N3904-S
C355 .1u-04-O
C344 .33U-06
MCP61_PWRGD 12,16,25,33
R145 4.7K-04
R137 15K-04
25 FANPWM1
EC26 22u-25SE
R136 100-04-O
U7B
OP358-S
R138 470-04
R139 1K-04
Q35 772-D
R128 0-08-O
03-070-777250
R149 51K-04
R150 20K-1-04
R135 4.7K-04
R162 1K-04
OUTPUT : 12V
D13 1N4148-S
25 FAN_TAC1
C59 22P-04
C64 22P-04
L17 FB120-06
L18 FB120-06
L16 FB120-06
EC16 22u-25SE
CPU_FAN
H3*1-POW
R114 4.7K-04
R120 15K-04
25 FANPWM2
EC14 22u-25SE
R119 100-04-O
U5A
OP358-S
R122 470-04
R121 1K-04
Q34 772-D
R133 0-08-O
03-070-777250
R118 51K-04
R123 20K-1-04
R124 1K-04
R125 4.7K-04
D12 1N4148-S
25 FAN_TAC2
SYS_FAN
H3X1-P-BR
EC24 22u-25SE
Elitegroup Computer Systems
Title
PWR CON / FNT PNL
Size Custom
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MCP61PM-GM
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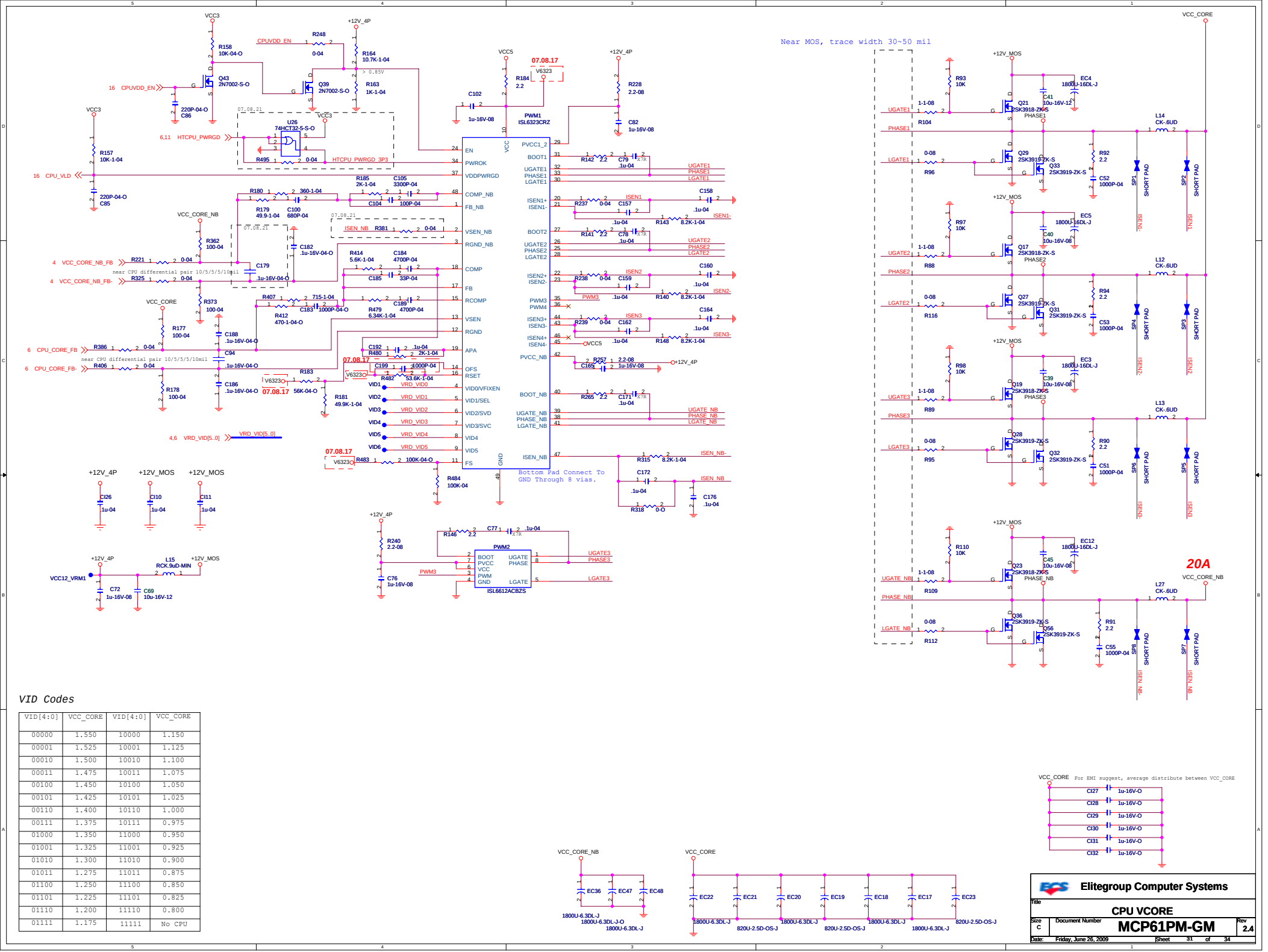
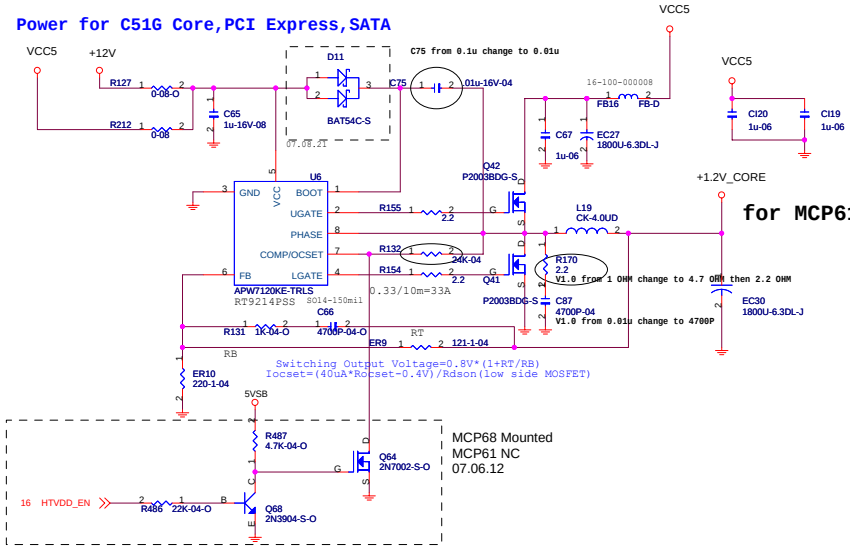


VID Codes

VID[4:0]	VCC_CORE	VID[4:0]	VCC_CORE
00000	1.550	10000	1.150
00001	1.525	10001	1.125
00010	1.500	10010	1.100
00011	1.475	10011	1.075
00100	1.450	10100	1.050
00101	1.425	10101	1.025
00110	1.400	10110	1.000
00111	1.375	10111	0.975
01000	1.350	11000	0.950
01001	1.325	11001	0.925
01010	1.300	11010	0.900
01011	1.275	11011	0.875
01100	1.250	11100	0.850
01101	1.225	11101	0.825
01110	1.200	11110	0.800
01111	1.175	11111	No CPU

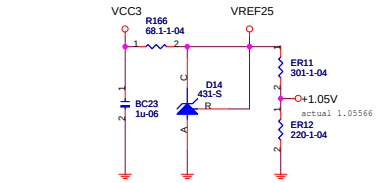
Power for C51G Core,PCI Express,SATA

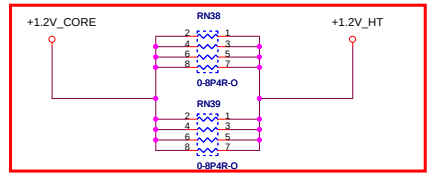


+5V_DUAL OUTPUT TRUTH TABLE

S3#	S5#	3V3AUX	VCC5_DUAL	VCC5_DUAL
1	1	3.3V	5V	S0/S1/S2 States (Active)
1	0	3.3V	5V	S3
0	1	Note		Maintains Previous State
0	0	3.3V	0V	*S4/S5(ISL6506 & 06B)
0	0	3.3V	5V	S4/S5 (ISL6506A)

NOTE: Combination Not Allowed.

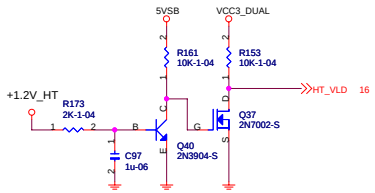


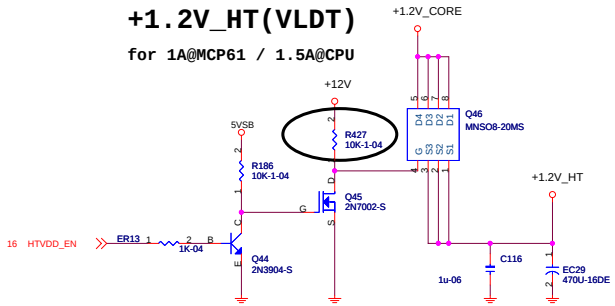


MCP68 Mounted
MCP61 NC
07.06.12

+1.2V_HT(VLDT)

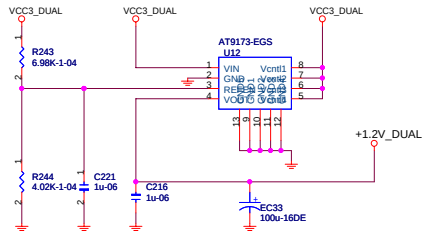
for 1A@MCP61 / 1.5A@CPU

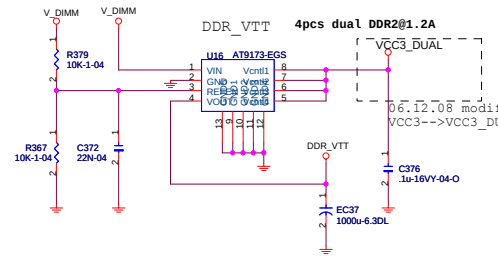




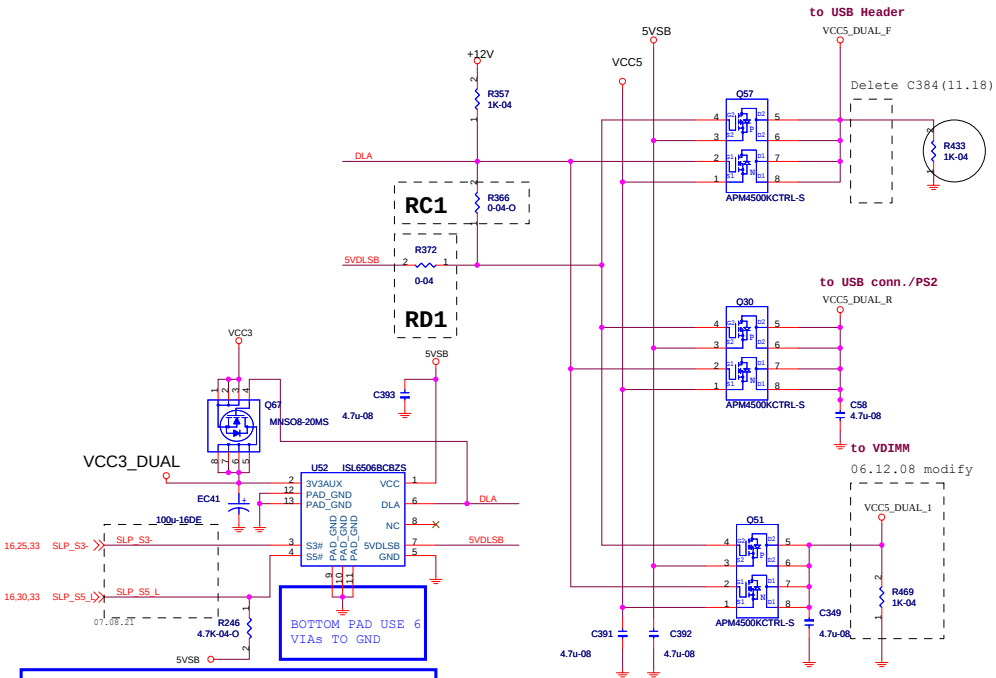
5VSB

MCP61 AUX(1.2V) @250mA

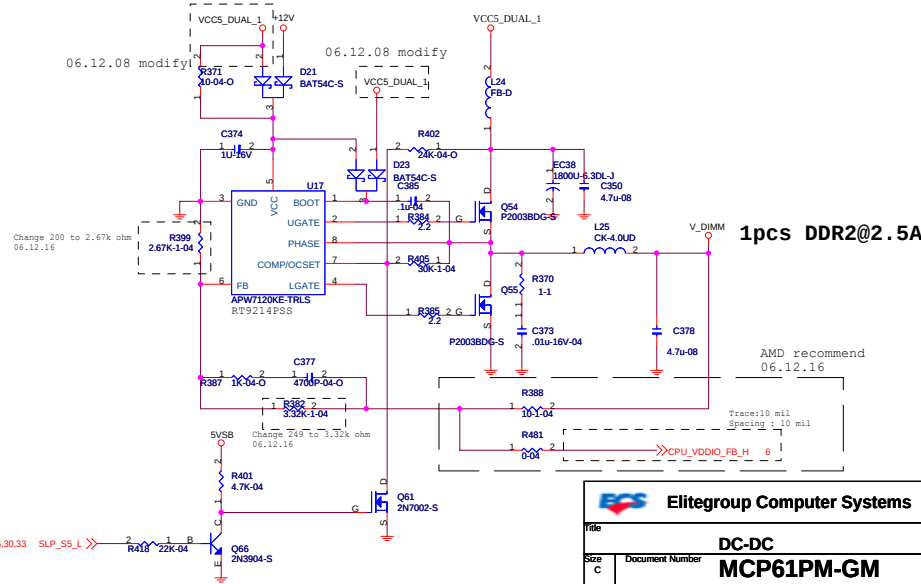




+5V_DUAL FOR USB,PS2



	RT9202	RT9214
R345	10	X
D30	X	V
R344	X	30K
R752	24K	X



Elitegroup Computer Systems

Title: DC-DC

Size: C | Document Number: MCP61PM-GM | Rev: 2.4

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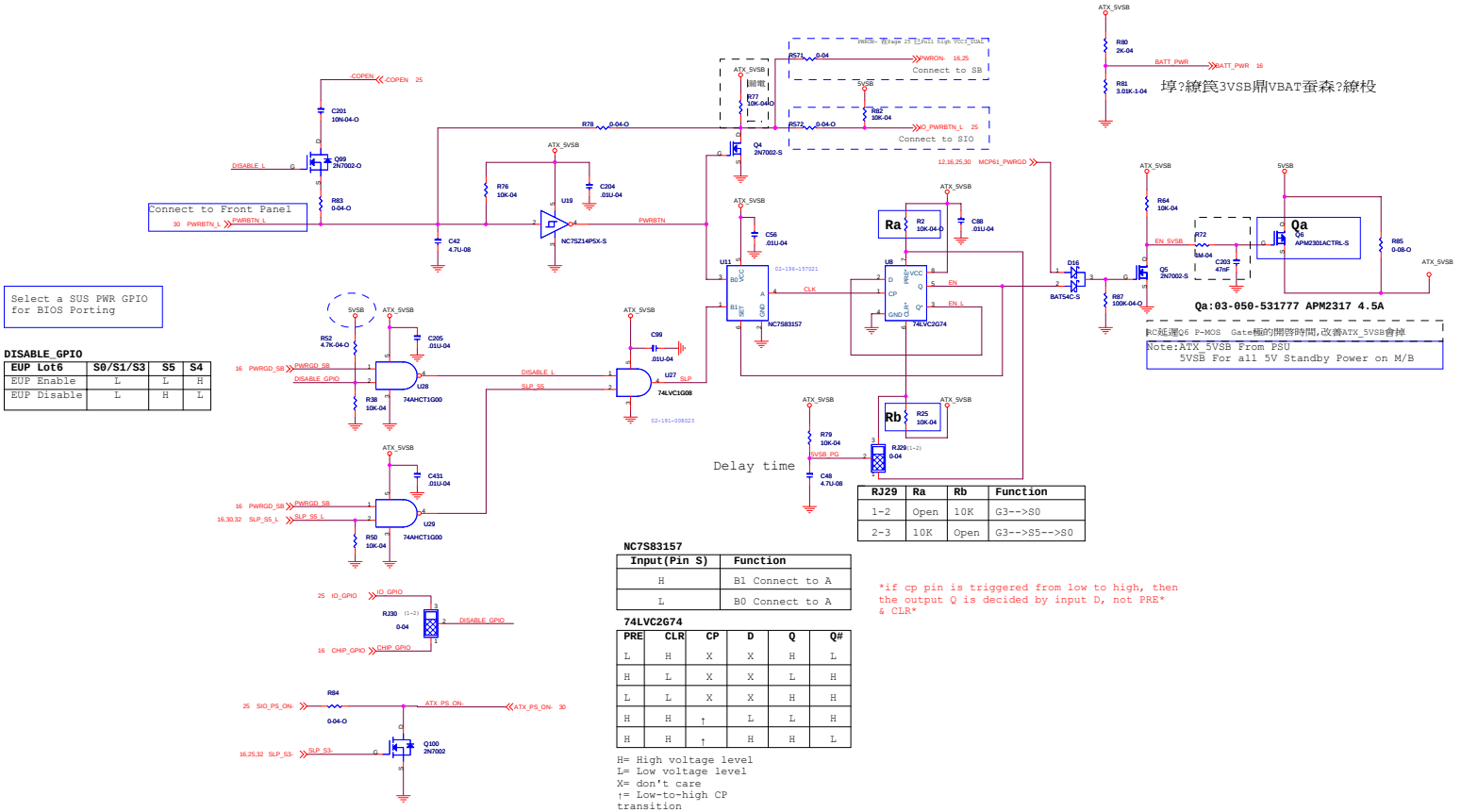

DISABLE_GPIO

EUP Lot6	S0/S1/S3	S5	S4
EUP Enable	L	L	H
EUP Disable	L	H	L

NC7S83157

Input(Pin S)	Function
H	B1 Connect to A
L	B0 Connect to A

74LVC2G74

PRE	CLR	CP	D	Q	Q#
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	↑	L	L	H
H	H	↑	H	H	L

H= High voltage level
L= Low voltage level
X= don't care
↑= Low-to-high CP transition

RJ29	Ra	Rb	Function
1-2	Open	10K	G3-->S0
2-3	10K	Open	G3-->S5-->S0

if cp pin is triggered from low to high, then the output Q is decided by input D, not PRE & CLR*

Elitegroup Computer Systems			
Title: NV EUP6 Solution			
Size: A	Document Number: MCP61PM-GM		Rev: 2.4
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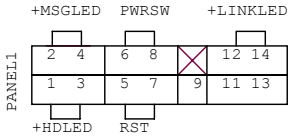
PCI_SLOT1 : REQ0, GNT0, CLK0, AD21, INT WXYX
PCI_SLOT2 : REQ1, GNT1, CLK1, AD22, INT XYZW
PCI_1394 : REQ2, GNT2, CLK2, AD25, INT Z
PCI_LAN : REQ3, GNT3, CLK3, AD24, INT Y

*

CLR_CMOS	CLEAR_CMOS
1-2	NORMAL
2-3	CLEAR



Modify List

Page 14,add SPI ROM
Page 19,add DVI connector
Page 20,change 1394 chip from TI TSB43A to VIA 6307/6308P
Page 21,change LAN chip from Marvell 88E8056 to Realtek RTL8201N/RTL8211B
Page 26,delete COM1,COM2,and LPT

06.11.13
ModifyAudio

06.11.14
ADDEC45,EC46

06.11.15
R267-->22K
R195-->300
R199 Pull high to V_DIMM

06.11.16
ADD R520
Modify page 13&24 PCIEX1 from PE2 to PE1,
Modify page 32,add ISL6506BCBZS ACPI control chip,and delete U15(5VSB-->VCC3_DUAL)
Modify RJ5,RJ6 10K-->8.2K
Page 18, add some SPI components

06.11.17
Page 12,modify circuit
Page 17,add R381
page 16,modify JP1,JP2
Page 19,modify BA3,BA6,BA7 to close VGA Connector

Page 20,
add R526
add U15,U18 ESD solution

page 21,add U19 ESD solution
page 27,add U20,U21,U22,U23,U24 ESD solution
Page 29,modify C449
Page 30,add R400,R429
Page 16,delete HDCP_SCL and HDCP_SDA nets,and delete R527 & R528(MCP61&68 is not uesd)

06.11.18
解決U3G下方放不下的問題
Page 11,SC104 0805 10u -->0603 4.7u : MCP68 design guide寫不用加,MCP68 checklist要加,MCP61不用加

Page 17, SL6 : 0603 120 ohm-->0603 30 ohm(Design guide定義)

Page 13,delete SR325

Page 32,delete C384
Page 27,delete BC30,BC27
Page 27,change BC24,BC25:0603 1u-->0402 0.1u

Page13,SR246,SR248,5.1k-->0 ohm

06.11.20
Page 20, R134&R222 4.9K-->4.99K

Page 20,U15&U18 pin5 CPWR(+12V)-->VCC5

11.21
DEL D20,R362
ADD D20(BAT54_132_1)
SWAP HD_AUDIO_AUGND-->GND

2009.04.29
Page 21 Lan 由8201N改成8201EL
Page 33 add EUP LOT6.0 solution

Elitegroup Computer Systems		
Title: ATTENTION		
Size: Custom	Document Number: MCP61PM-GM	Rev: 2.4
Date: Friday, June 26, 2009	Sheet 34 of 34	