MCP61M-M3

REV: 1.0 A (Support DDR3、EuP)

PCB:15-R42-011011、15-R42-011010
BOM:81-605-R42110

MCP61P Real S3
Components :714PCS

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22-Super I/O (F71862F)/FDD
23-PS2/COM/LPT
24-USB Conn.
25-LAN PHY RTL8201EL&8211CL
26-AUDIO VT1705/ALC662(CHIP)
27-AUDIO VT1705/ALC662(PANEL)
28-PWR CON / FNT PNL
29-CPU VCORE (UP6217)
30-DC-DC
31-Clock & Power Distribution

	Signature	Date
Designer	Eli	08/24/2009
Layout	Linda/Bing	08/20/2009
Check		
Approval		

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Title: MCP61M-M3

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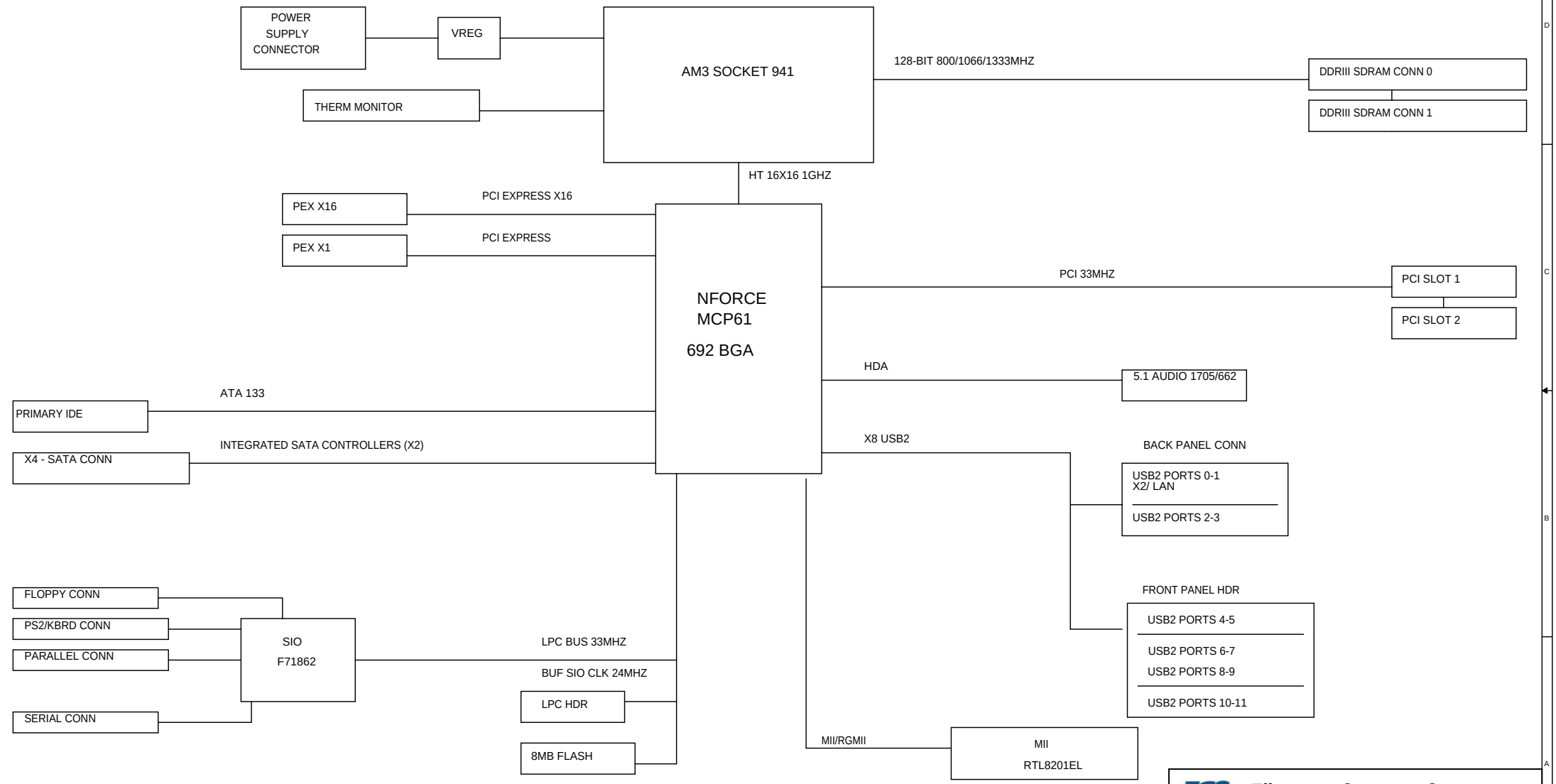
BLOCK DIAGRAM



Elitegroup Computer Systems		
Title: MCP61M-M3		
Size: B	Document Number: BLOCK DIAGRAM	Rev: 1.0A
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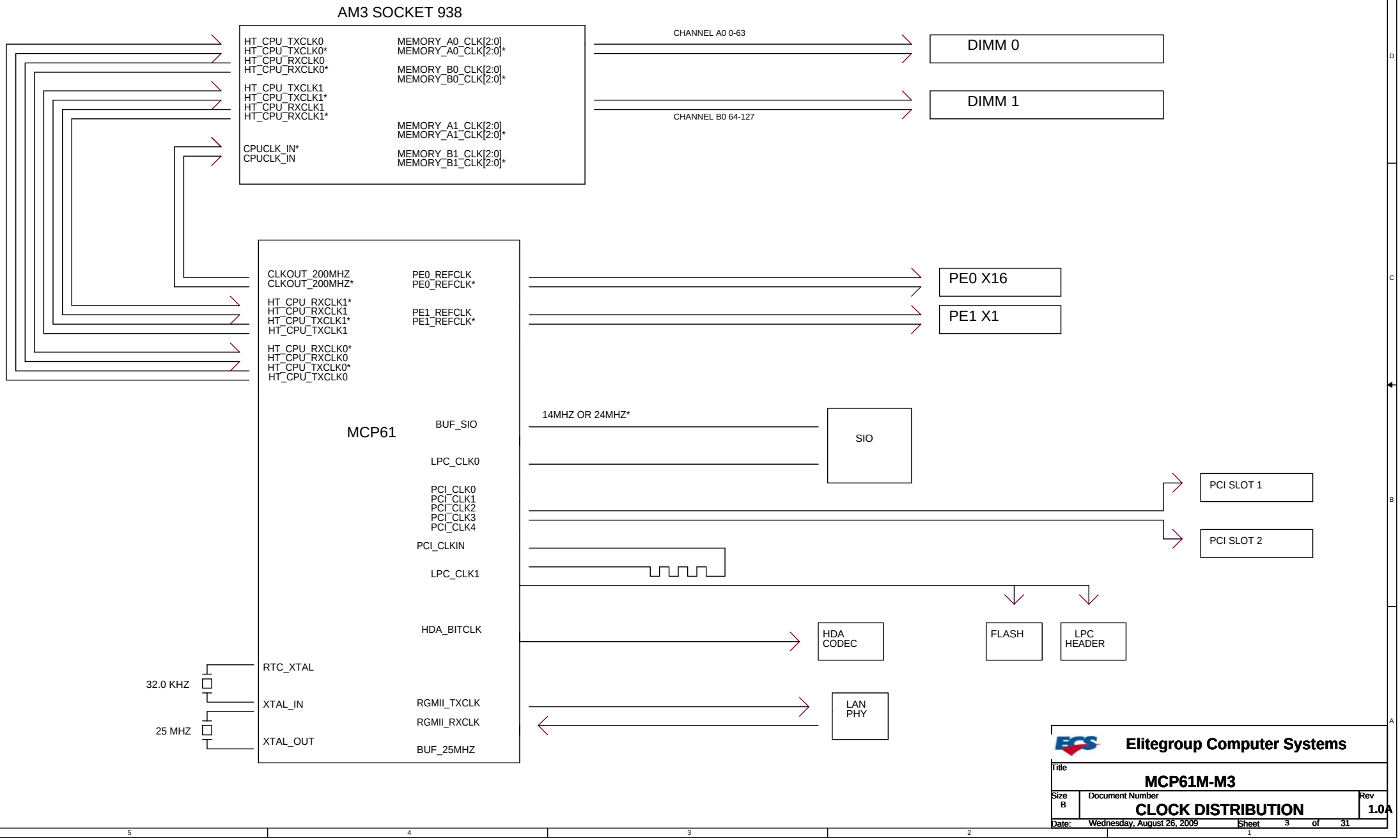

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Title	MCP61M-M3	
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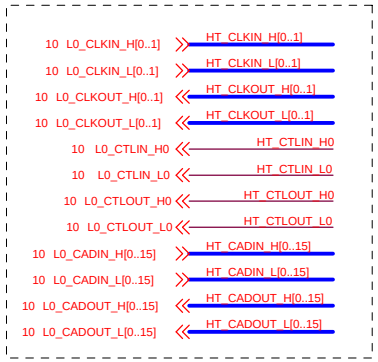
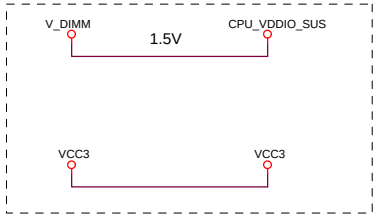
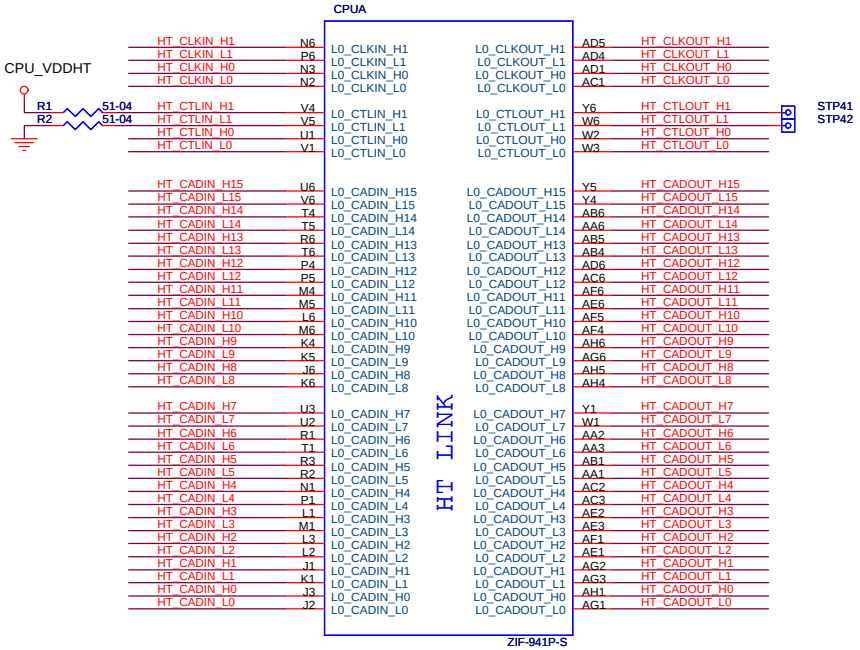
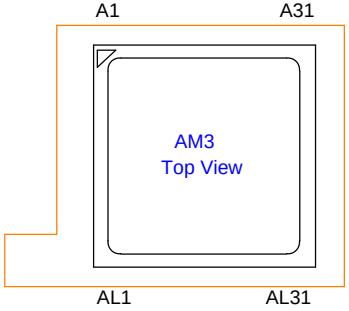
HyperTransport

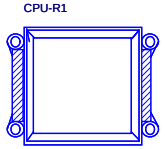






Please use 1mm pad size, place all ELT test pads on bottom side only.





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Title: MCP61M-M3		
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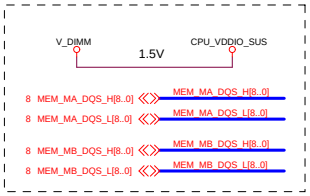
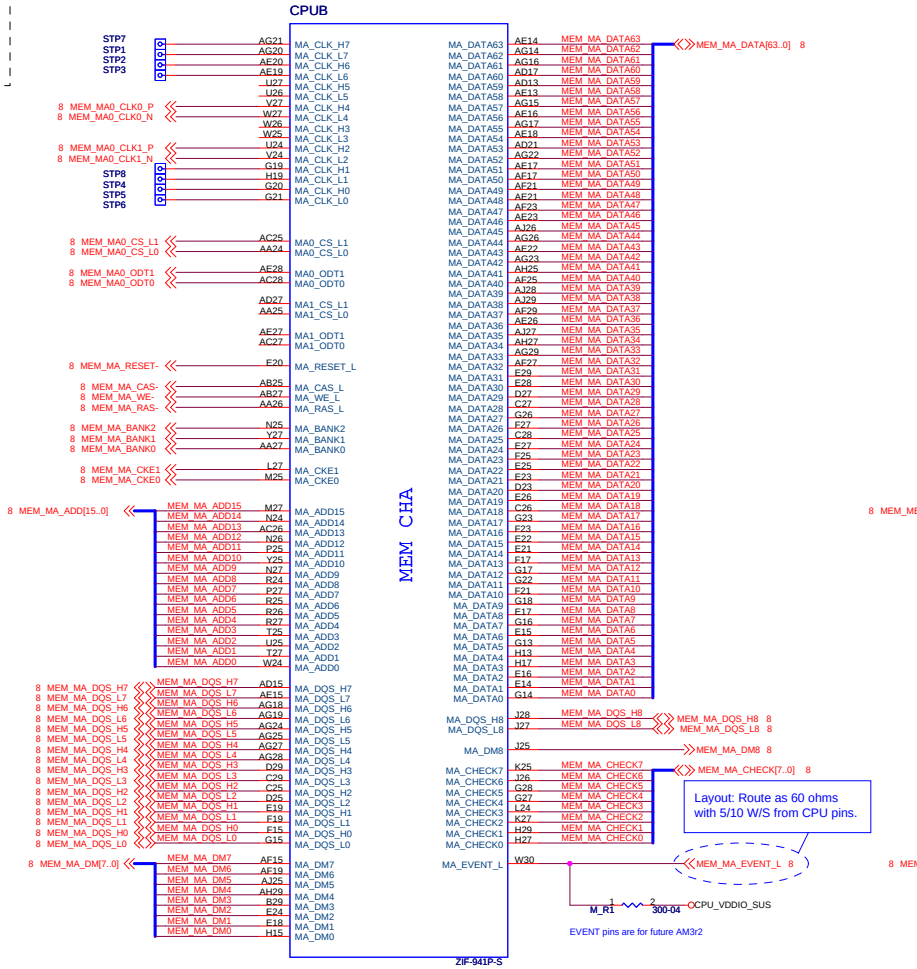
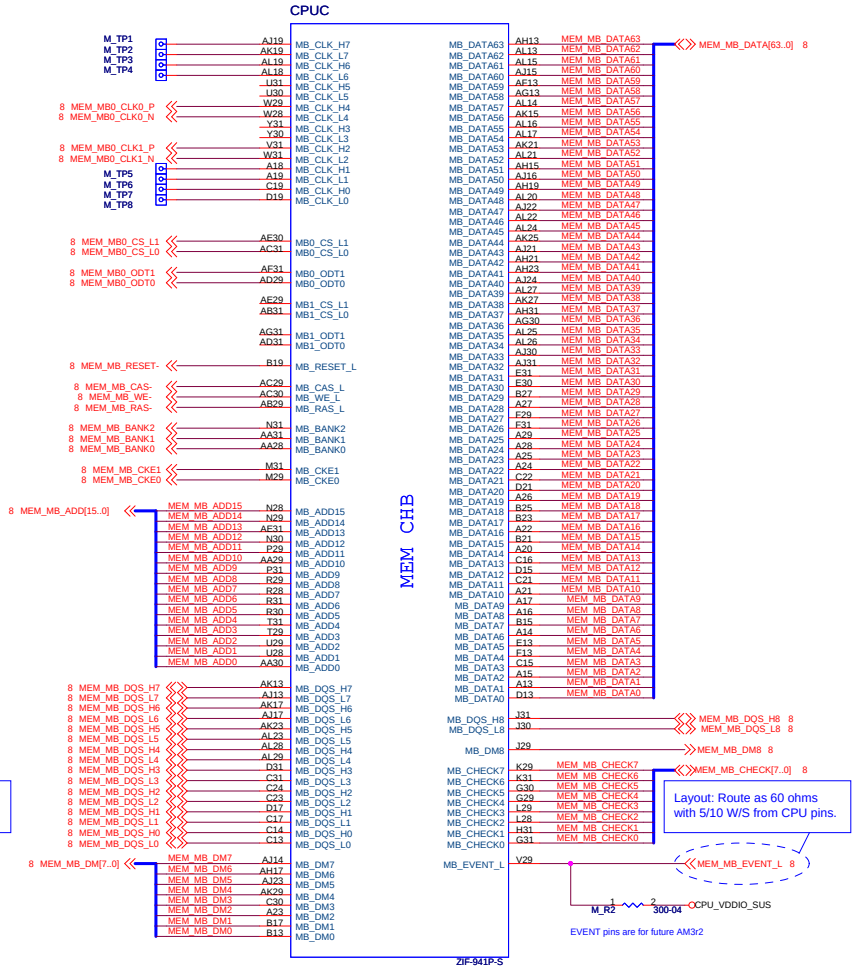
CPU Memory



DDR3 Memory Interface A

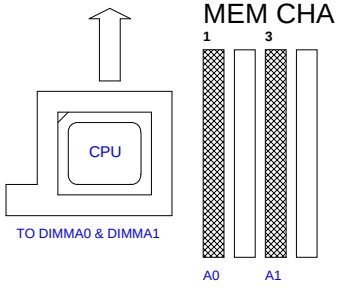


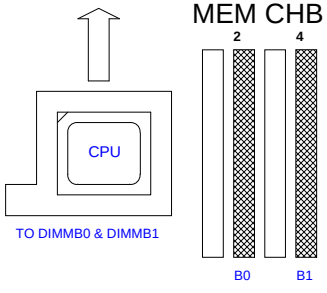
DDR3 Memory Interface B



MEMORY CLOCK TRANSLATION

DIMM	DDR2 Memory Signal	CPU Signal
DIMM A0	MEM_MA0_CLK1	MA_CLK2
	MEM_MA0_CLK0	MA_CLK4
DIMM A1	MEM_MA1_CLK1	MA_CLK5
	MEM_MA1_CLK0	MA_CLK3
DIMM B0	MEM_MB0_CLK1	MB_CLK2
	MEM_MB0_CLK0	MB_CLK4
DIMM B1	MEM_MB1_CLK1	MB_CLK5
	MEM_MB1_CLK0	MB_CLK3





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Title: MCP61M-M3

Size: C | Document Number: AM3 CPU MEMORY | Rev: 1.0A

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下版改爲0603

VCC3 — VCC3
+12V — +12V
2.5VREF
VREF25 — VCCNS_REF

1.5V
V_DIMM — CPU_VDDIO_SUS
1.2V
+1.2V_HT — CPU_VDDHT

10 CPU_CLK_200_P — CPU_CLKP
10 CPU_CLK_200_N — CPU_CLKN

10 HTCPU_PWRGD — CPU_PWRGD — M_TP14
10 HTCPU_STOP- — LDT_STOP- — M_TP16
10 HTCPU_RST- — LDT_RST- — M_TP17

29 CPU_PVEN — CPU_PVEN — M_TP21
29 CPU_SVD — CPU_SVD — M_TP23
29 CPU_SVC — CPU_SVC — M_TP25

22 CPU_THERMDC — CPU_THERMDC — STP9
22 CPU_THERMDA — CPU_THERMDA — STP10
10 CPU_THERMTRIP — CPU_THERMTRIP_L_15 — M_STP11
10 PROCHOT_L — CPU_PROCHOT_L_15

29 CPU_CORE_FB — CPU_VDD_FB_H — M_STP15
29 CPU_CORE_FB- — CPU_VDD_FB_L — M_STP14

29 CPU_VDDNB_FB — CPU_VDDNB_FB_H — M_STP16
29 CPU_VDDNB_FB- — CPU_VDDNB_FB_L — M_STP17

15 SB_CPU_SIC — CPU_SIC
15 SB_CPU_SID — CPU_SID

a,20mil(width):20mil(spacing)
b,reference to GND
VCC25A — M_FB1 FB120-08 — CPU_VDDA_RUN 2.5V@0.25A

Layout: Place as close as possible to CPU socket.

M_C1 10U-08
M_C2 .22U-06-06
M_C3 3300P-04

M_TP10

a,Rshunt near CPU pin<600mil
b,Cseries as a pair within 25mil
c,Cseries to CPU pin trace length<1250mil
d,12:4:6:4:12(1080 for 93ohm)

M_C5 3900P-04 — CPU_CLKP
M_R5 169-1-04
M_C4 3900P-04 — CPU_CLKN

CPUD

C10 VDDA_1
D10 VDDA_2
MISC.
CPU_CLKIN_SC_P A8
CPU_CLKIN_SC_N B8
CLKIN_H
CLKIN_L
CORE_TYPE — G5 CPU_CORE_TYPE_L — M_R4 1K-04 — CPU_VDDIO_SUS

CPU_PWRGD C9
LDT_STOP- D8
LDT_RST- C7
PWROK
LDTSTOP_L
RESET_L
CPU_PRESENT_L_15 AL3
CPU_PRESENT_L
VID5 — D2 CPU_VID5 — SSTP11
VID4 — D1 CPU_VID4 — M_TP12
SVC/VID3 — C1 CPU_SVC — M_R6 1K-04
SVD/VID2 — E3 CPU_SVD — M_R7 1K-04
PVIEN/VID1 — E2 CPU_PVEN
VID0 — E1 CPU_VID0 — STP33

CPU_SIC AL6
CPU_SID AK6
CPU_SA0 AK4
CPU_ALERT_ AL4
M_TP15 SSTP9
SIC
SID
SA0
ALERT_L
THERMDC — AG9 CPU_THERMDC
THERMDA — AG8 CPU_THERMDA
THERMTRIP_L — AK7 CPU_THERMTRIP_L_15
PROCHOT_L — AL7 CPU_PROCHOT_L_15

M_R8 300-04
For AM3 CPU

SSTP18 AL10
SSTP20 AJ10
SSTP22 AH10
M_TP24 AL9
TDI
TRST_L
TCK
TMS
TDO — AK10 CPU_TDO — SSTP19

SSTP26 A5
DBREQ_L
DBRDY — B6 CPU_DBRDY — SSTP27

CPU_VDD_FB_H G2
CPU_VDD_FB_L G1
VDD_FB_H
VDD_FB_L
VDDIO_FB_H — AK11 CPU_VDDIO_FB_H — M_TP28
VDDIO_FB_L — AL11 CPU_VDDIO_FB_L — M_TP29
VDDNB_FB_H — G4 CPU_VDDNB_FB_H
VDDNB_FB_L — G3 CPU_VDDNB_FB_L

STP34 CPU_VDDIO_PWRGD F3
M_VDDIO_PWRGD
STP12 CPU_VTT_SUS_SENSE E12
VDDR_SENSE
PSI_L — F1 CPU_PSI- — SSTP30 — M_STP13

CPU_M_VREF F12
M_VREF
M_ZN
M_ZP
HTREF1 — V8 CPU_HTREF1 — M_R10 44.2-1-04
HTREF0 — V7 CPU_HTREF0 — M_R12 44.2-1-04
M_TP35

TEST25_H
TEST25_L
TEST19
TEST18
TEST13
TEST9
TEST29_H — C11 CPU_TEST29_H_FBCLKOUT_H
TEST29_L — D11 CPU_TEST29_L_FBCLKOUT_L — M_R16 80.6-1-04

TEST24 — AK8 CPU_TEST24_SCANCLK1 — SSTP34
TEST23 — AH8 CPU_TEST23_TSTUPD — STP18
TEST22 — AJ9 CPU_TEST22_SCANSHIFTEN — SSTP35
TEST21 — AL8 CPU_TEST21_SCANEN — SSTP36
TEST20 — AJ8 CPU_TEST20_SCANCLK2 — SSTP37

TEST28_H — J10 CPU_TEST28_H_PLLCHRZ_H — STP24
TEST28_L — H9 CPU_TEST28_L_PLLCHRZ_L — STP32
TEST27 — AK9 CPU_TEST27_SINGLECHAIN — M_TP38
TEST26 — AK5 CPU_TEST26_BURNIN_L — M_TP39
TEST10 — G7 CPU_TEST10_ANALOGOUT — STP29
TEST8 — D4 CPU_TEST8_DIG_T — STP31

CPU_TEST25_H_BYPASSCLK_H A10
CPU_TEST25_H_BYPASSCLK_L B10
CPU_TEST19_PLLTEST0 F10
CPU_TEST18_PLLTEST1 E9
CPU_TEST17_BP3 D6
CPU_TEST16_BP2 E7
CPU_TEST15_BP1 F8
CPU_TEST14_BP0 C5
CPU_TEST12_SCANSHIFTENB AH9
CPU_TEST7_ANALOG_T F5
CPU_TEST6_DIECRACKMON AJ5
CPU_TEST3_GATE0 AH7
CPU_TEST2_DRAIN0 AJ6

C18 RSVD1
C20 RSVD2
F2 RSVD3
G24 RSVD4
G25 RSVD5
H25 RSVD6
L25 RSVD7
L26 RSVD8
INT. MISC.
RSVD9 L30
RSVD10 L31
RSVD11 AD25
RSVD12 AE24
RSVD13 AE25
RSVD14 AJ18
RSVD15 AJ20
RSVD16 AK3

ZIF-941P-S

CPU_VDDIO_SUS
M_R9 15-1-06 0.25W
M_R14 15-1-06
M_C6 .1U-04
M_C7 1000P-04
CPU_M_VREF_SUS
CPU_VDDIO_SUS
12mil(width):20mil(spacing)

Layout: Keep trace to resistors less than 1" from CPU pins.
Layout: Place within 500 mils of the CPU socket.

M_R11 39.2-1-04 — CPU_M_ZN
M_R13 39.2-1-04 — CPU_M_ZP
M_R15 511-1-04 — CPU_TEST25_H_BYPASSCLK_H
M_R17 511-1-04 — CPU_TEST25_H_BYPASSCLK_L
M_TP32 — CPU_TEST19_PLLTEST0
M_TP33 — CPU_TEST18_PLLTEST1

Layout: Keep CPU_HTREF0,1 less than 1.5" from in length.
Layout: Route as 80 ohms diff impedance (4/5mil).Keep trace to resistor < 1" from CPU pins.

CPU_VDDHT

M_RN1 300-8P4R
LDT_RST-
LDT_STOP-
CPU_PWRGD

CPU_PRESENT_L_15 — M_R18 10K-04
CPU_SIC — M_R19 10K-04
CPU_SID — M_R20 10K-04

M_RN2 300-8P4R
CPU_TEST27_SINGLECHAIN
CPU_PROCHOT_L_15
CPU_THERMTRIP_L_15
CPU_TEST26_BURNIN_L

CPU_SA0 — M_R24 0-04
CPU_PWRGD — M_C9 180P-04-O
LDT_STOP- — M_C10 180P-04-O
LDT_RST- — M_C11 180P-04-O

VCC25A for CPU PLL

VREF25 — M_R21 0-04 — U30A OP324-S
+12V
VCC3
VCC3
M_C8 4.7U-08
M_Q1 2N7002-S
VCC25A
M_R22 0-04
M_R23 10K-04-O
EC48 22U-25DE

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Title: MCP61M-M3
Size: Custom
Document Number: AM3 CPU CONTROL&MISC
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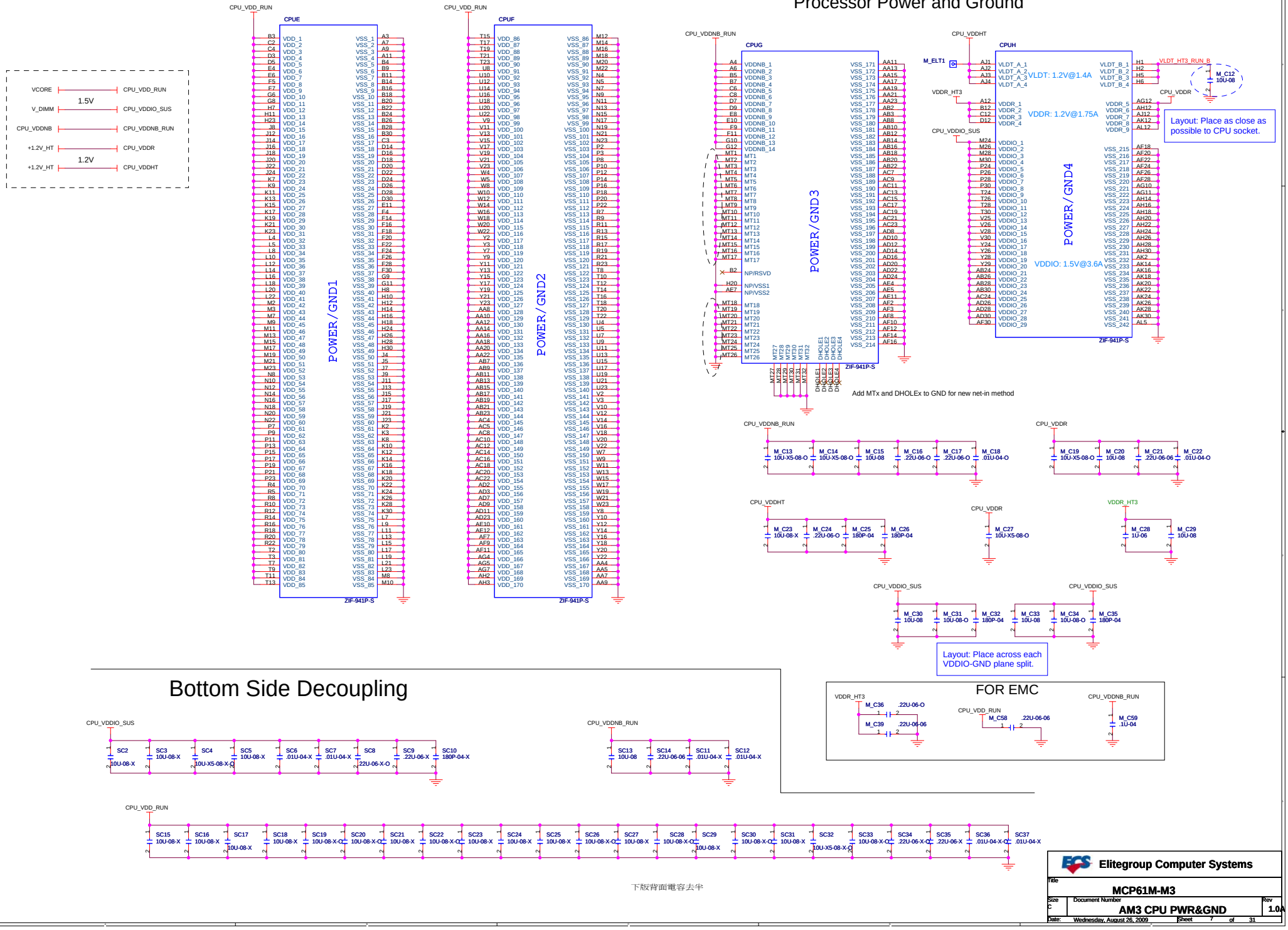
Processor Power and Ground



Bottom Side Decoupling

FOR EMC

下版背面電容去牛

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Title: MCP61M-M3		
Size: C	Document Number: AM3 CPU PWR&GND	Rev: 1.0A
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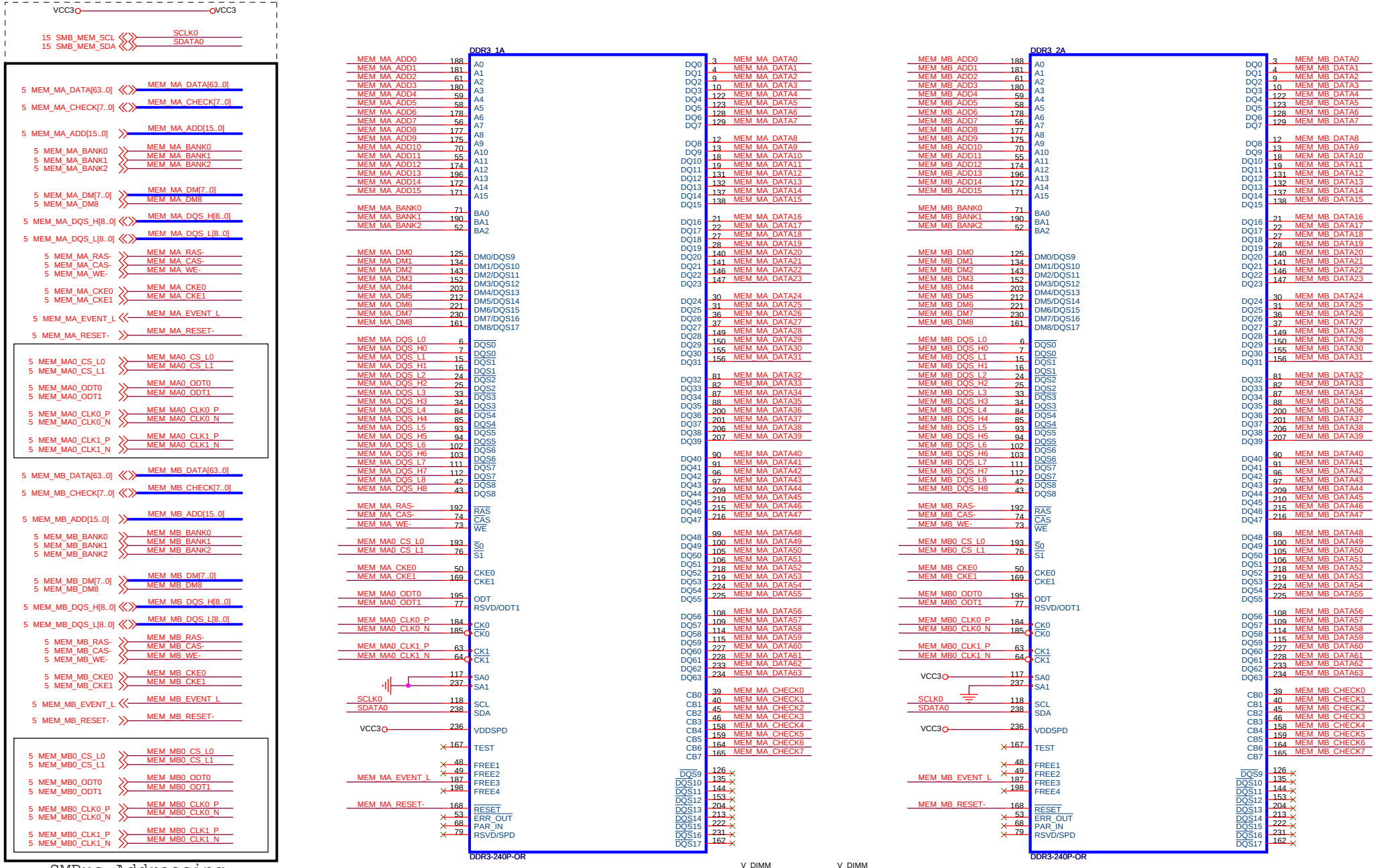


SMBus Addressing

SMBus 0	
Device	8-bit Address (hex)
DIMMA0	A0
DIMMB0	A2
DIMMA1	A4
DIMMB1	A6

Elitegroup Computer Systems

Title: MCP61M-M3

Size: Custom | Document Number: DDR3 DIMM A/B CH | Rev: 1.0A

Date: Wednesday, August 26, 2009 | Sheet 8 of 31

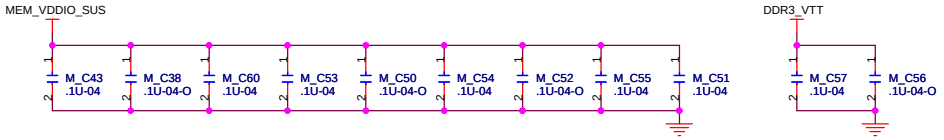
1.5V

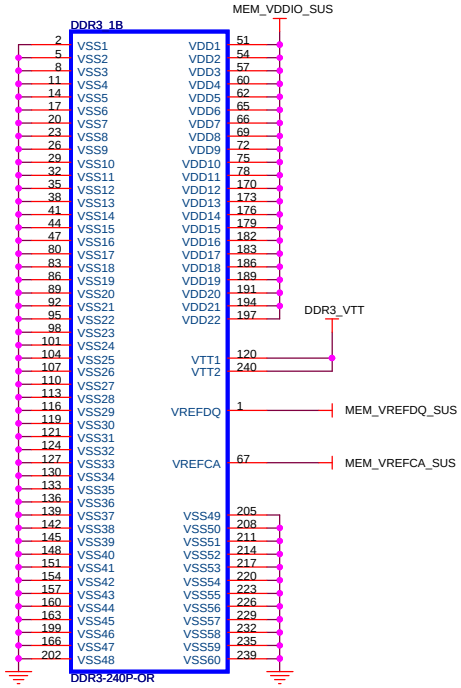
V_DIMM — MEM_VDDIO_SUS

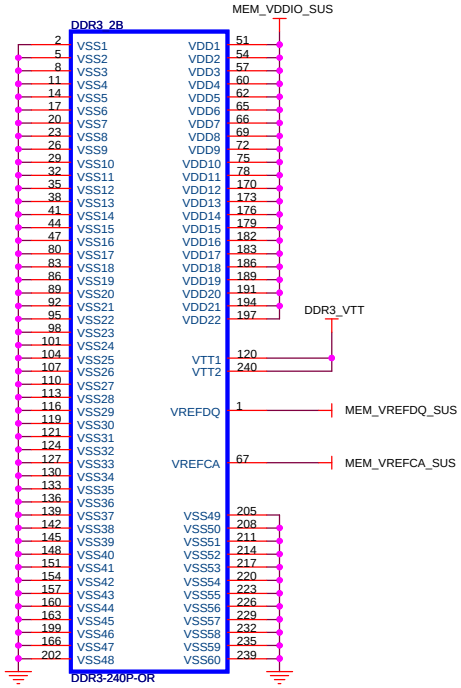
0.75V

DDR_VTT — DDR3_VTT

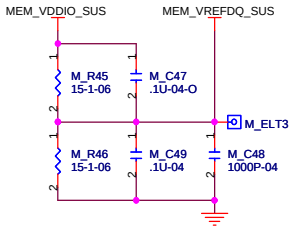
DE-COUPLING CAP FOR DIMMs





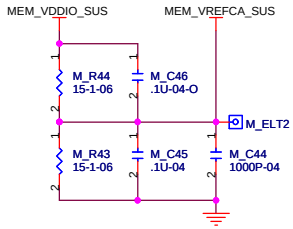


MEM_VREFDQ_SUS



Layout: Place within 500 mils of the DIMMB1 socket. 12mil(width):20mil(spacing)

MEM_VREFCA_SUS



Layout: Place within 500 mils of the DIMMB1 socket. 12mil(width):20mil(spacing)

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Title: MCP61M-M3

Size: Custom | Document Number: DDR3 DIMM PWR | Rev: 1.0A

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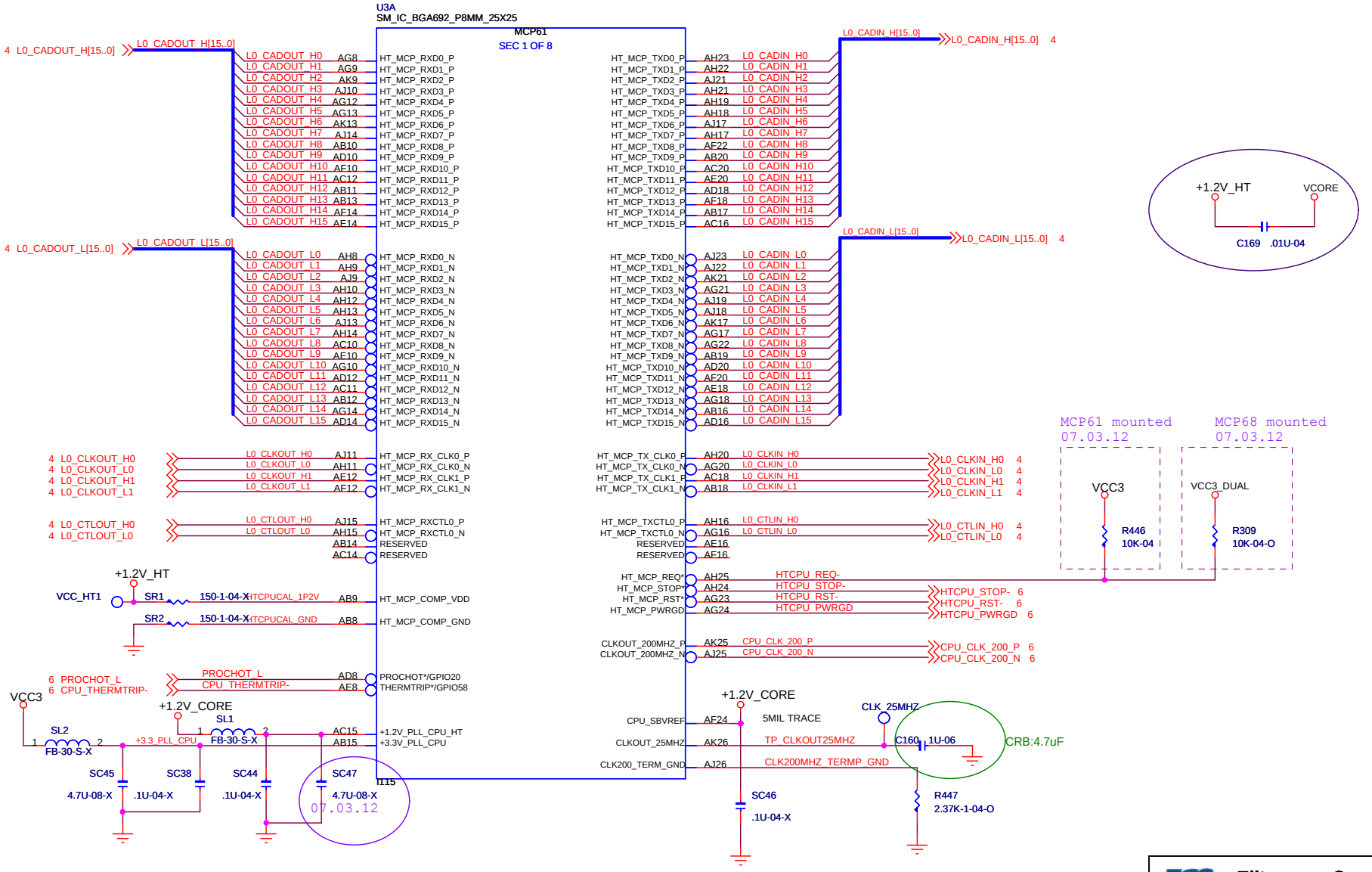

Elitegroup Computer Systems		
Title: MCP61M-M3		
Size: B	Document Number: MCP61 HT	Rev: 1.0A
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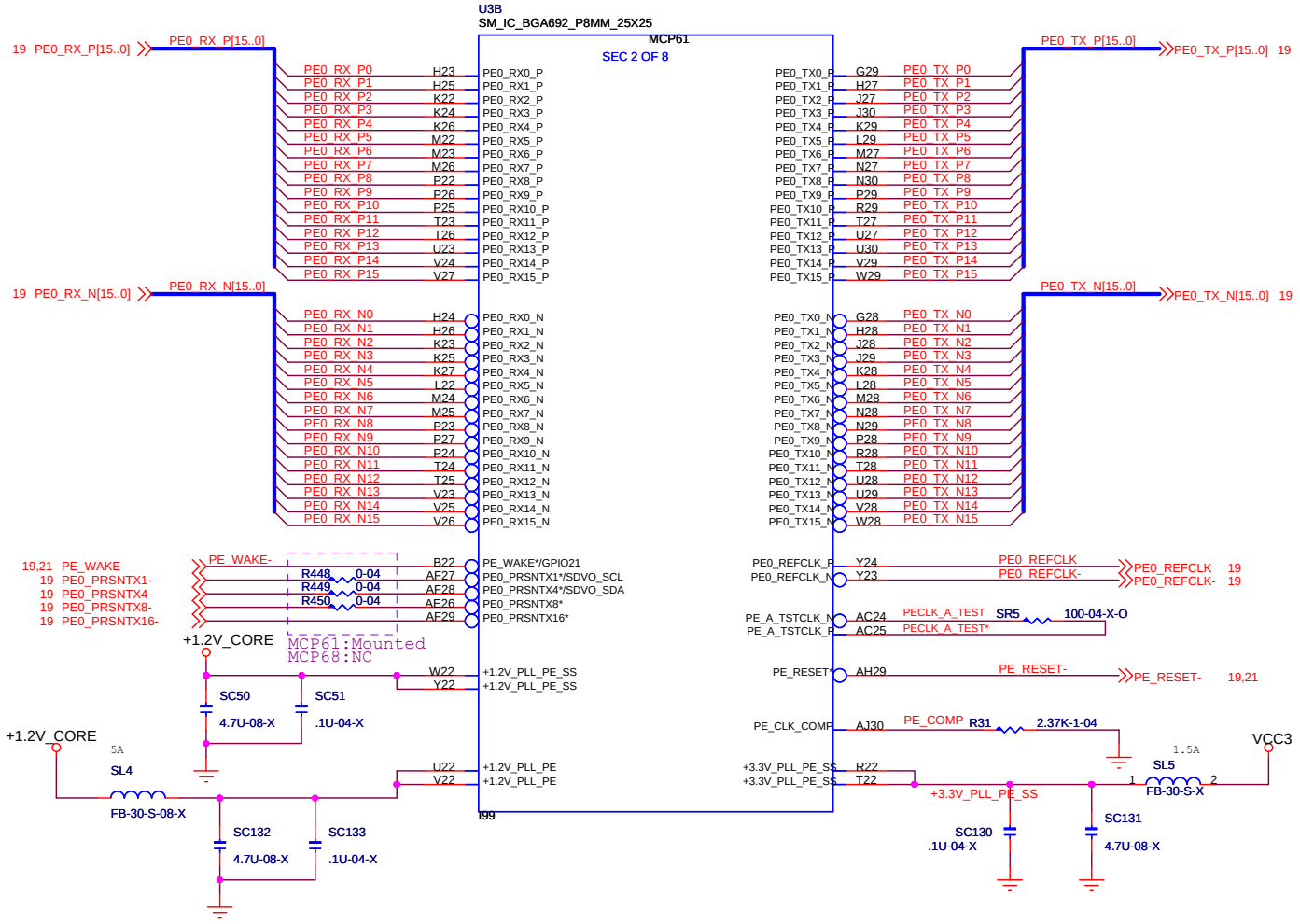

MCP61 Pin Define	MCP68 Pin Define
PRSNTX1(AF27)	+3.3V_HDMI_PLL_HVDD
PRSNTX4(AF28)	HDCP_ROM_SCLK
PRSNTX8(AE26)	+3.3V_HDMI
GND(AF30)	HDCP_ROM_SDATA

Elitegroup Computer Systems

Title: MCP61M-M3

Size: B | Document Number: MCP61 PCI-E X16 | Rev: 1.0A

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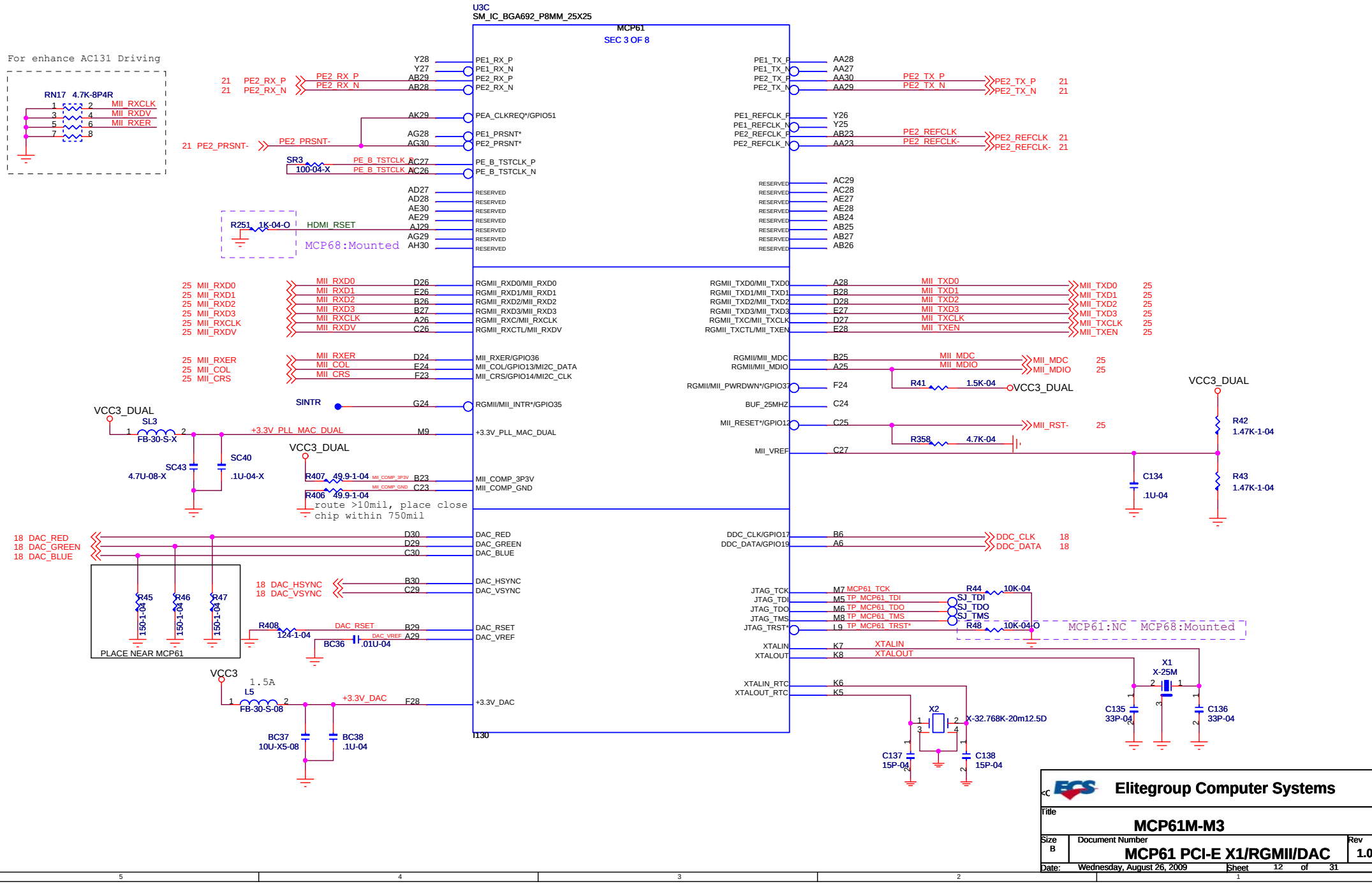
U3C
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 3 OF 8
For enhance AC131 Driving
RN17 4.7K-8P4R
MII_RXCLK
MII_RXDV
MII_RXER
PE2_RX_P
PE2_RX_N
PE2_PRSNT-
SR3
100-04-X
PE_B_TSTCLK_P
PE_B_TSTCLK_N
R251 1K-04-O
HDMI_RSET
MCP68:Mounted
PE2_TX_P
PE2_TX_N
PE2_REFCLK
PE2_REFCLK-
MII_RXD0
MII_RXD1
MII_RXD2
MII_RXD3
MII_RXCLK
MII_RXDV
MII_RXER
MII_COL
MII_CRS
MII_TXD0
MII_TXD1
MII_TXD2
MII_TXD3
MII_TXCLK
MII_TXEN
MII_MDC
MII_MDIO
R41 1.5K-04
VCC3_DUAL
SINTR
SL3
FB-30-S-X
+3.3V_PLL_MAC_DUAL
SC43 4.7U-08-X
SC40 .1U-04-X
R407 49.9-1-04
R406 49.9-1-04
MII_COMP_3P3V
MII_COMP_GND
route >10mil, place close chip within 750mil
R358 4.7K-04
C134 .1U-04
R42 1.47K-1-04
R43 1.47K-1-04
MII_RST-
DAC_RED
DAC_GREEN
DAC_BLUE
DAC_HSYNC
DAC_VSYNC
R45 150-1-04
R46 150-1-04
R47 150-1-04
PLACE NEAR MCP61
R408 124-1-04
DAC_RSET
DAC_VREF
BC36 .01U-04
DDC_CLK
DDC_DATA
JTAG_TCK
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_TRST*
SJ_TDI
SJ_TDO
SJ_TMS
R44 10K-04
R48 10K-04-O
MCP61:NC MCP68:Mounted
XTALIN
XTALOUT
X1
X-25M
C135 33P-04
C136 33P-04
VCC3
1.5A
L5
FB-30-S-08
+3.3V_DAC
BC37 10U-X5-08
BC38 .1U-04
X2
X-32.768K-20m12.5D
C137 15P-04
C138 15P-04
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Title
MCP61M-M3
Size B
Document Number
MCP61 PCI-E X1/RGMII/DAC
Rev 1.0A
Date: Wednesday, August 26, 2009
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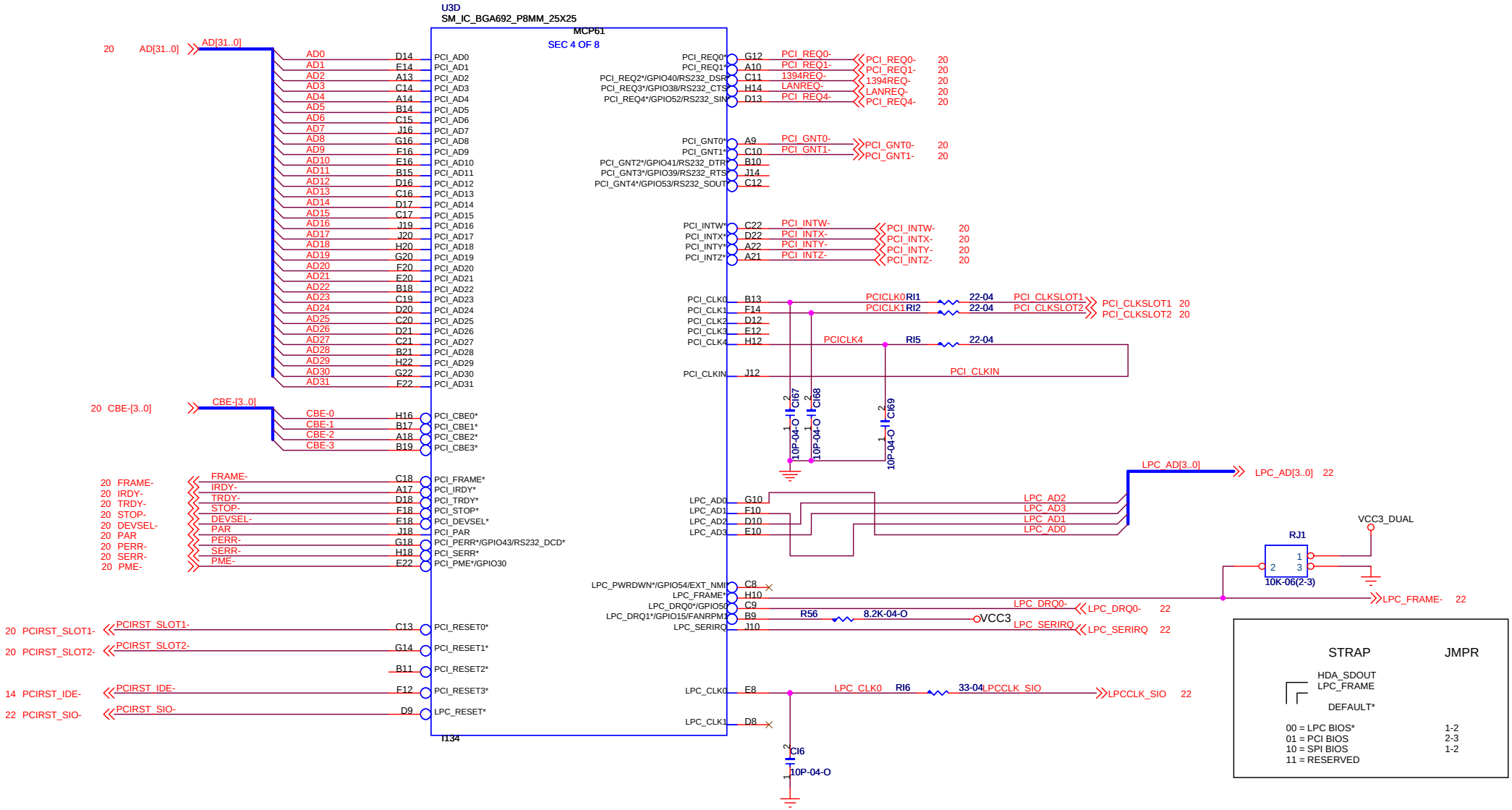
U3D
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 4 OF 8
AD[31..0]
CBE-[3..0]
FRAME-
IRDY-
TRDY-
STOP-
DEVSEL-
PAR
PERR-
SERR-
PME-
PCIRST_SLOT1-
PCIRST_SLOT2-
PCIRST_IDE-
PCIRST_SIO-
PCI_REQ0-
PCI_REQ1-
PCI_REQ2*/GPIO40/RS232_DSR*
PCI_REQ3*/GPIO38/RS232_CTS*
PCI_REQ4*/GPIO52/RS232_SIN*
PCI_GNT0*
PCI_GNT1*
PCI_GNT2*/GPIO41/RS232_DTR*
PCI_GNT3*/GPIO39/RS232_RTS*
PCI_GNT4*/GPIO53/RS232_SOUT*
PCI_INTW*
PCI_INTX*
PCI_INTY*
PCI_INTZ*
PCI_CLK0
PCI_CLK1
PCI_CLK2
PCI_CLK3
PCI_CLK4
PCI_CLKIN
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_PWRDWN*/GPIO54/EXT_NMI*
LPC_FRAME*
LPC_DRQ0*/GPIO50
LPC_DRQ1*/GPIO15/FANRPM2
LPC_SERIRQ
LPC_CLK0
LPC_CLK1
LPC_RESET*
I134
PCICLK0
PCICLK1
PCICLK4
LPC_AD[3..0]
VCC3_DUAL
RJ1
10K-06(2-3)
R56
8.2K-04-O
VCC3
STRAP
JMPR
HDA_SDOUT
LPC_FRAME
DEFAULT*
00 = LPC BIOS*
01 = PCI BIOS
10 = SPI BIOS
11 = RESERVED
Elitegroup Computer Systems
MCP61M-M3
MCP61 PCI
1.0A
Wednesday, August 26, 2009
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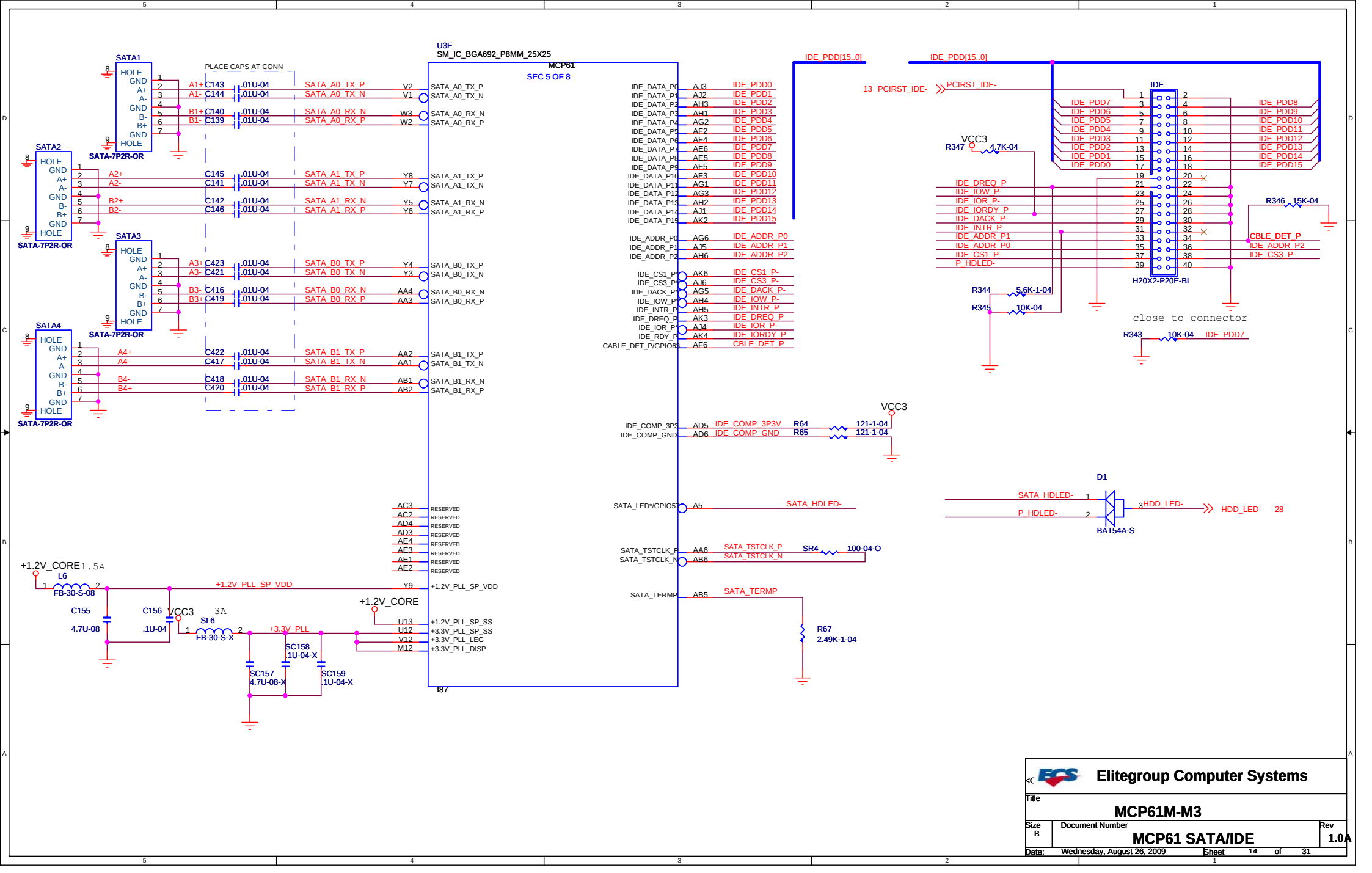
SATA1
SATA2
SATA3
SATA4
SATA-7P2R-OR
PLACE CAPS AT CONN
U3E
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 5 OF 8
SATA_A0_TX_P
SATA_A0_TX_N
SATA_A0_RX_N
SATA_A0_RX_P
SATA_A1_TX_P
SATA_A1_TX_N
SATA_A1_RX_N
SATA_A1_RX_P
SATA_B0_TX_P
SATA_B0_TX_N
SATA_B0_RX_N
SATA_B0_RX_P
SATA_B1_TX_P
SATA_B1_TX_N
SATA_B1_RX_N
SATA_B1_RX_P
IDE_PDD[15..0]
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
RESERVED
+1.2V_CORE
1.5A
L6
FB-30-S-08
+1.2V_PLL_SP_VDD
C155
4.7U-08
C156
.1U-04
VCC3
3A
SL6
FB-30-S-X
+3.3V_PLL
SC158
1U-04-X
SC157
4.7U-08-X
SC159
.1U-04-X
+1.2V_PLL_SP_SS
+3.3V_PLL_LEG
+3.3V_PLL_DISP
I87
R64
121-1-04
R65
121-1-04
SR4
100-04-O
R67
2.49K-1-04
PCIRST_IDE-
IDE
H20X2-P20E-BL
R347
4.7K-04
R346
15K-04
R344
5.6K-1-04
R345
10K-04
R343
10K-04
close to connector
D1
BAT54A-S
SATA_HDLED-
P_HDLED-
HDD_LED-
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MCP61M-M3
MCP61 SATA/IDE
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REMOVE FOR PRODUCTION

USB0~3 --> BACK CONNECTORS
USB4~11 --> ON-BOARD HEADER

Location Unimportant.

AC_RST*
1 = *RGMII
0 = MII

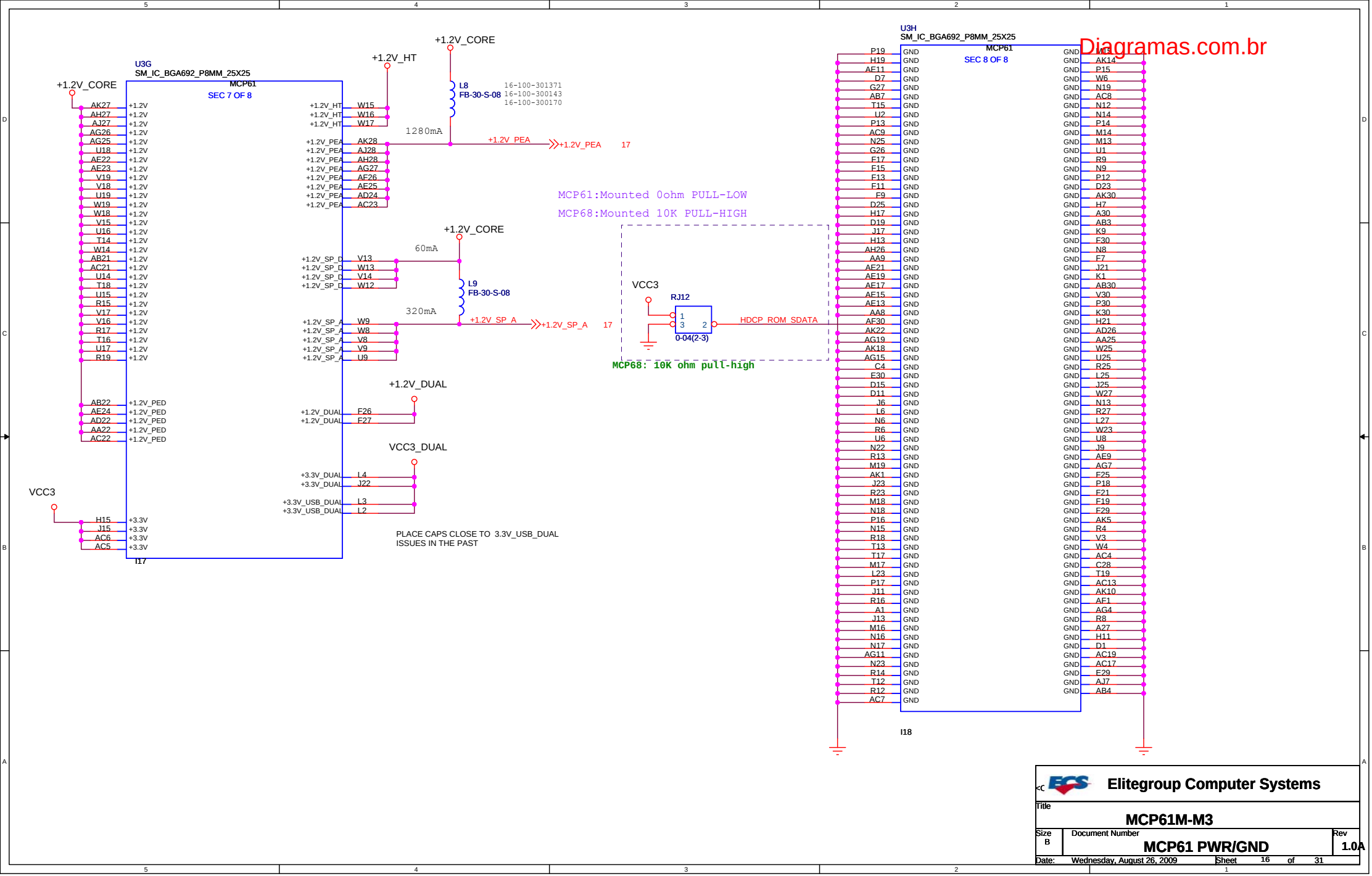
AC_SYNC
(SIO CLK)
1 = *24MHZ
0 = 14.318MHZ

* = DEFAULT

U3F
SM_IC_BGA692_P8MM_25X25
MCP61
SEC 6 OF 8

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

GPIO6 : HI--Pseudo S3
GPIO6 : LOW--Real S3



Elitegroup Computer Systems	
Title	MCP61M-M3
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Rev	1.0A
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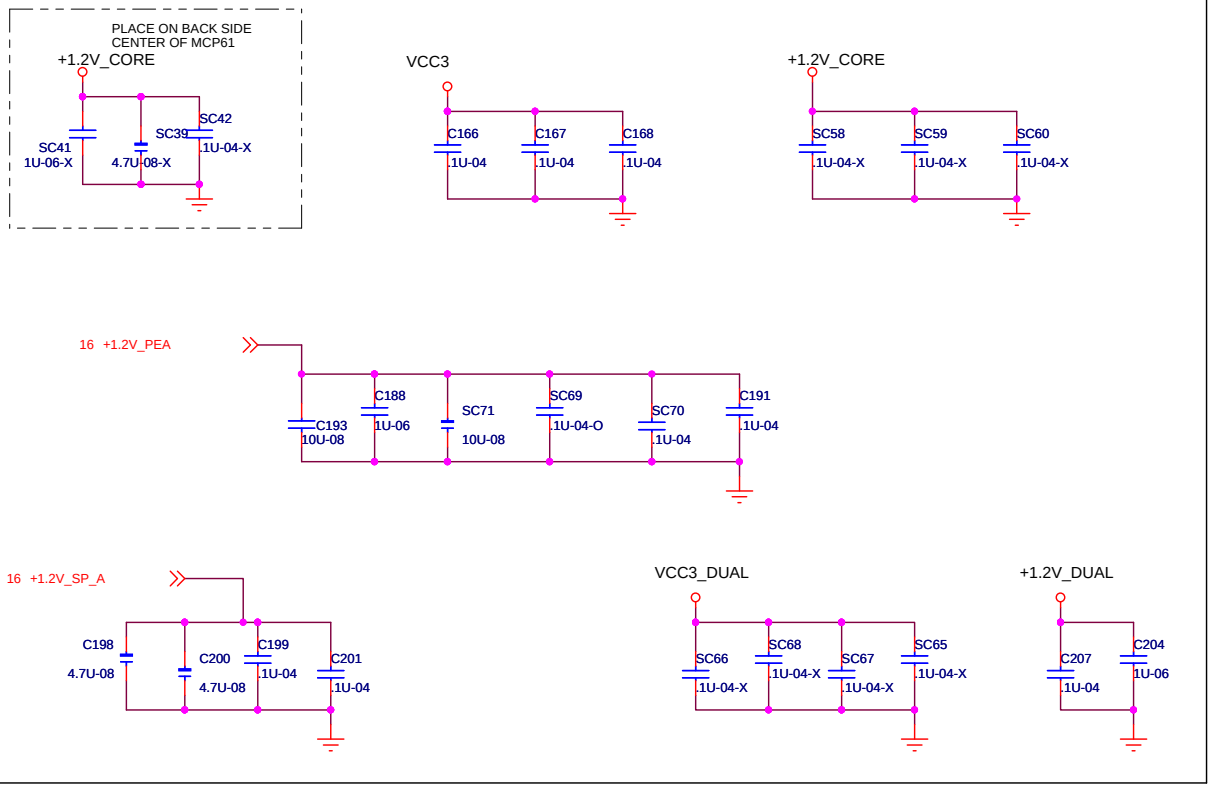
MCP61/8 DECOUPLING/EMI



MCP61 INTERNAL PULL-UP/DOWNS

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

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: MCP61M-M3

Size: B | Document Number: MCP61 SATA / IDE / CONN | Rev: 1.0A

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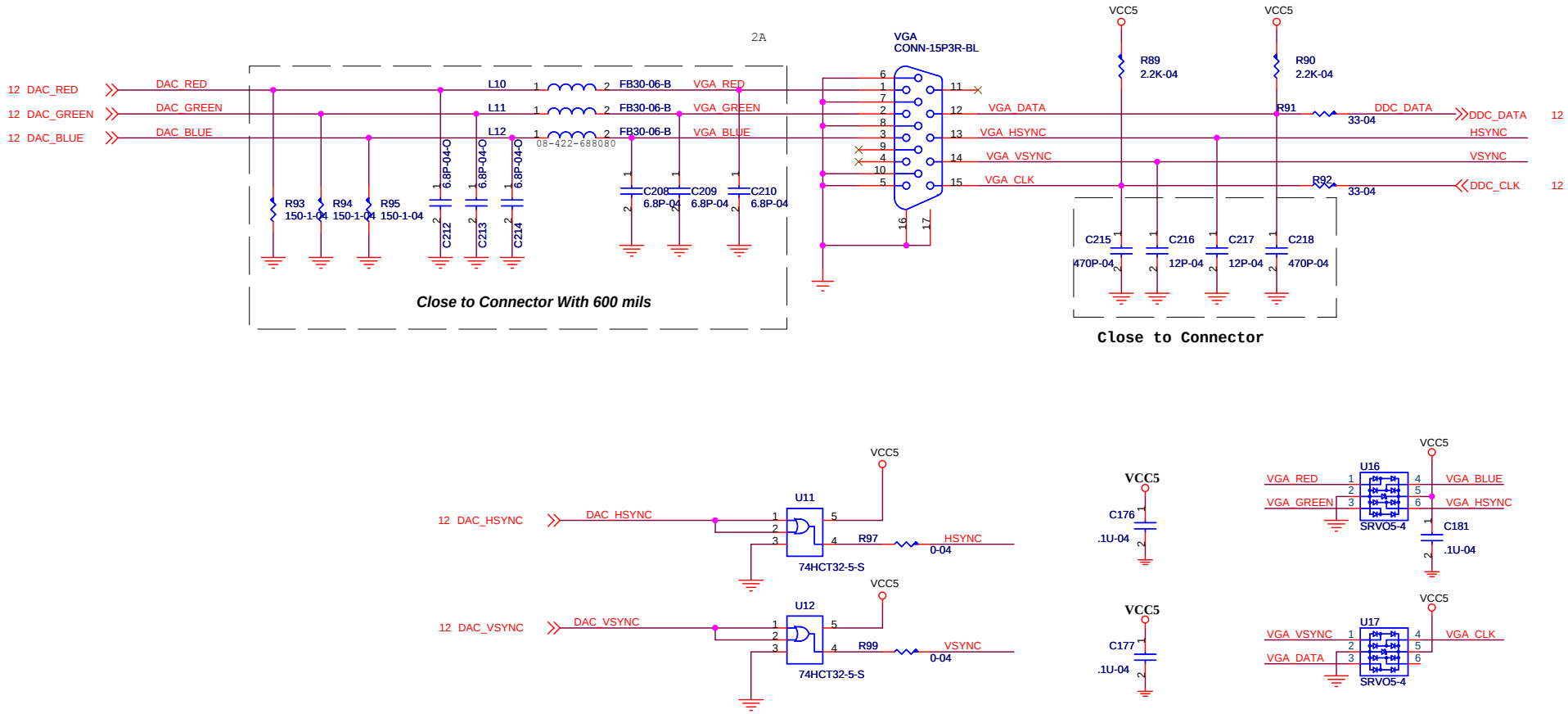
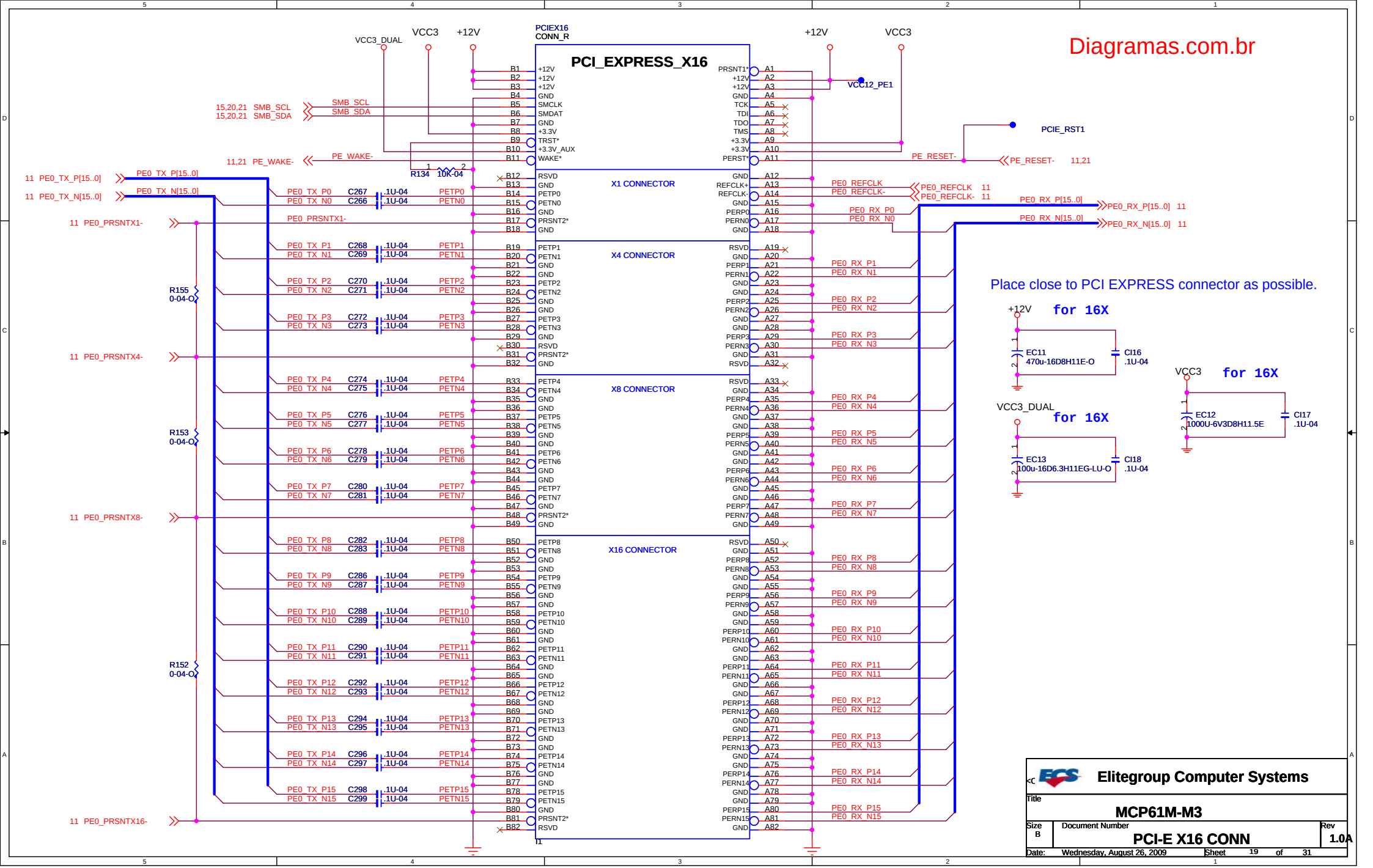


Elitegroup Computer Systems		
Title: MCP61M-M3		
Size: B	Document Number: VGA	Rev: 1.0A
Date: Wednesday, August 26, 2009	Sheet 18 of 31	


Diagramas.com.br
PCIEX16
CONN_R
PCI_EXPRESS_X16
X1 CONNECTOR
X4 CONNECTOR
X8 CONNECTOR
X16 CONNECTOR
VCC3_DUAL
VCC3
+12V
PE_WAKE-
SMB_SCL
SMB_SDA
PE_RESET-
PCIE_RST1
VCC12_PE1
PE0_TX_P[15..0]
PE0_TX_N[15..0]
PE0_RX_P[15..0]
PE0_RX_N[15..0]
PE0_REFCLK
PE0_REFCLK-
PE0_PRSNTX1-
PE0_PRSNTX4-
PE0_PRSNTX8-
PE0_PRSNTX16-
R155 0-04-O
R153 0-04-O
R152 0-04-O
R134 10K-04
Place close to PCI EXPRESS connector as possible.
for 16X
EC11 470u-16D8H11E-O
CI16 .1U-04
EC12 1000U-6V3D8H11.5E
CI17 .1U-04
EC13 100u-16D6.3H11EG-LU-O
CI18 .1U-04
Elitegroup Computer Systems
MCP61M-M3
PCI-E X16 CONN
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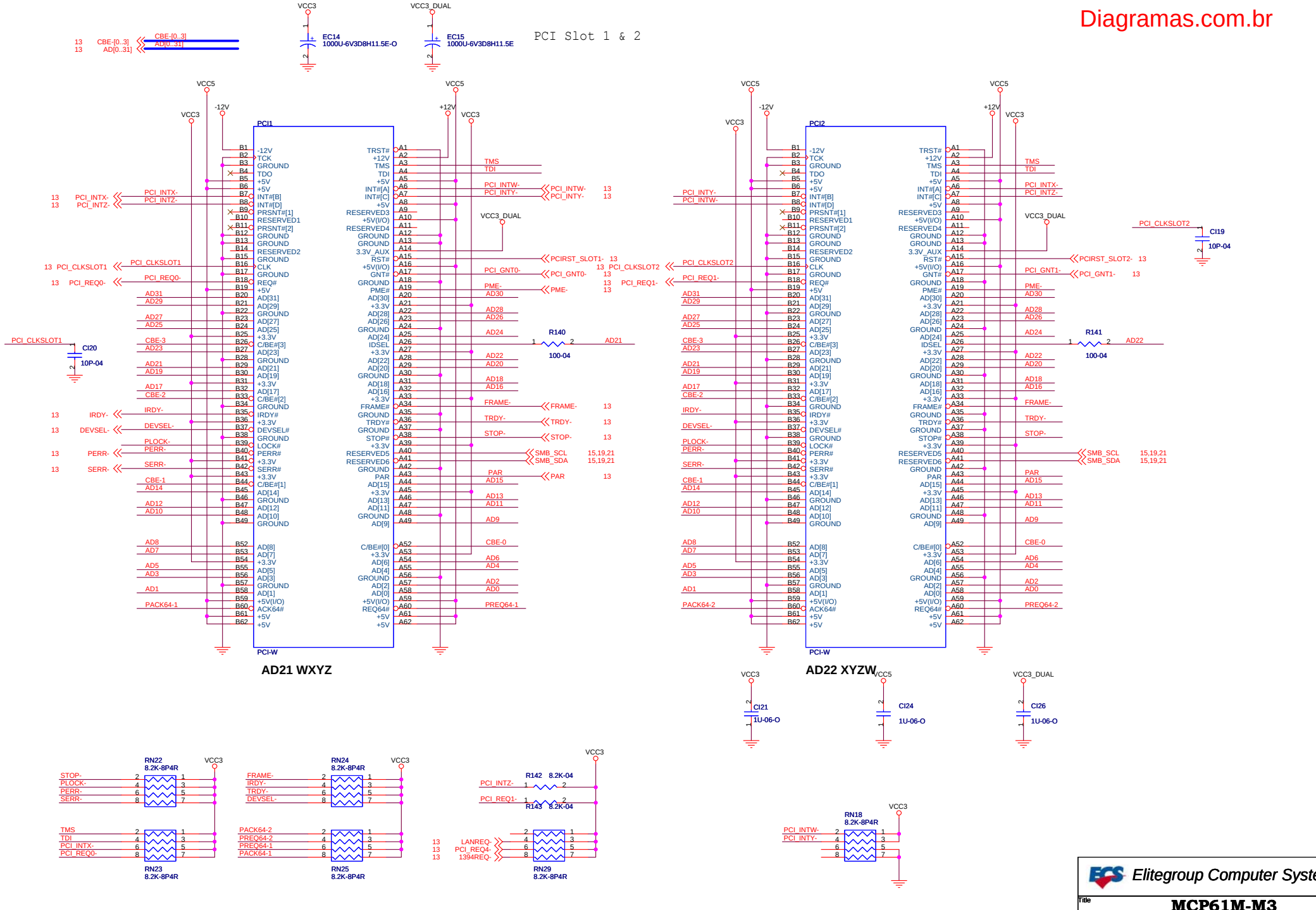
PCI Slot 1 & 2



Title	MCP61M-M3
Size	Custom
Document Number	PCI 1 & 2
Rev	1.0A
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Elitegroup Computer Systems

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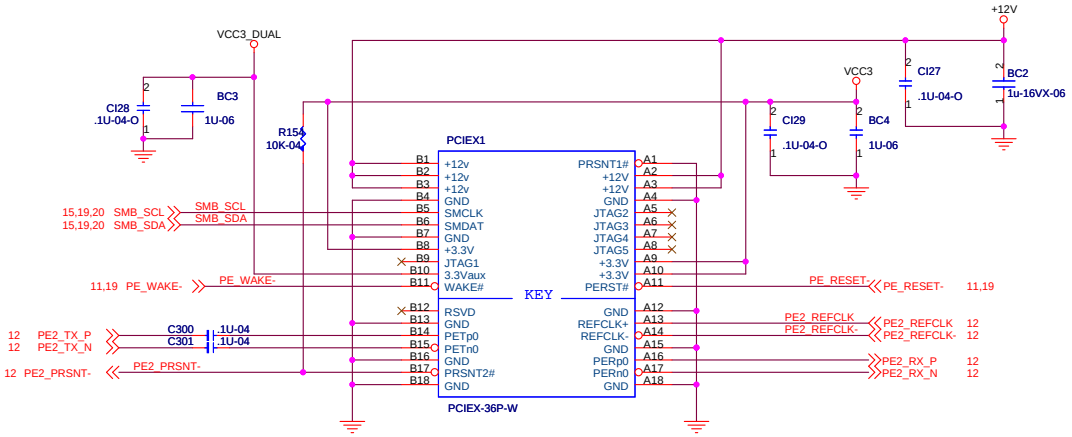
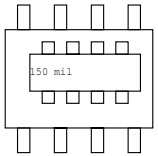
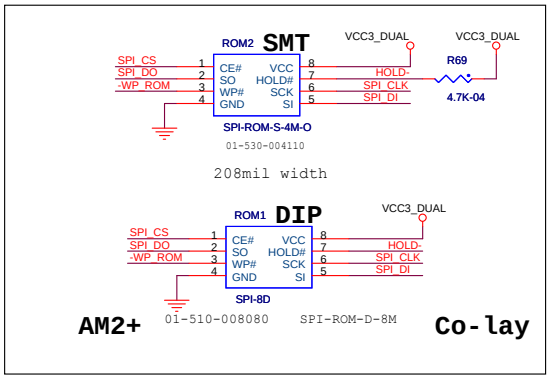
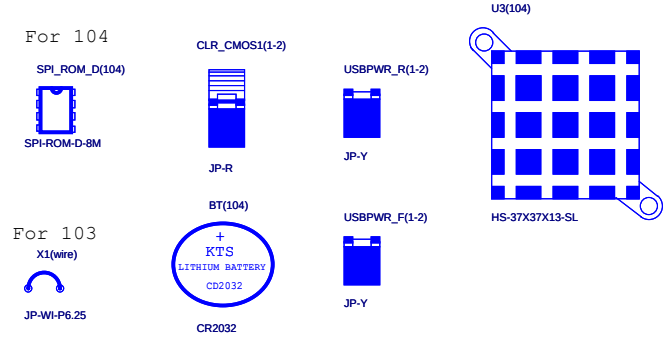


SO8 MN and MW co-layout layout draw





for SPI ROM



Elitegroup Computer Systems

Title	MCP61M-M3	
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Temperature Monitor

SYSTMP — C122 2200P-04-O — RT1 NTC-10K-1-06 — SIOVREF — ER58 10K-1-04 — HM_AGND
BC90 1U-06
ER59 15K-1-04-O — C320 2200P-04 — CPU_THERMDC 6
CPUTMP — CPU_THERMDA 6

FAN Ctrol

VCC5 — VCC

28 FAN_TAC1 — FAN_CTL1
28 FANPWM1
28 FAN_TAC2 — FAN_CTL2
28 FANPWM2

COM

23 -RIA — RI-A
23 -DCDA — DCD-A
23 TXDA — SOUTA
23 RXDA — SINA
23 -DTRA — DTR-A
23 -RTSA — RTS-A
23 -DSRA — DSR-A
23 -CTSA — CTS-A

LPT

23 -LPT-ERR — ERR-
23 -LPT-ACK — ACK-
23 LPT-BUSY — BUSY
23 LPT-PE — PE
23 LPT-SLCT — SLCT
23 -LPT-STB — STB-
23 -LPT-AFD — AFD-
23 -LPT-INIT — INIT
23 -LPT-SLIN — SLIN-
23 LPT-D[0..7] — PD[0..7] — PD0 PD1 PD2 PD3 PD4 PD5 PD6 PD7

15 BUF_SIO_CLK — SIO24M

KB/MS

23 KCLK — KBCLK
23 KDATA — KBDAT
23 MCLK — PMCLK
23 MDATA — PMDAT
15 SIO_KBRST- — SIOKBRST
15 A20GATE — GA20

Power On Strap.

(F71862FG Initial Pull High)

DTR-A — R100 1K-04-O
1 => CPUFAN PWM 50%
0 => CPUFAN PWM 100%

SOUTA — R101 1K-04
1 => IO Address : 4E
0 => IO Address : 2E

DTR-B — R102 1K-04-O
1 => SPI ROM Backup Mode
0 => SPI ROM Primary Mode

RTS-B — R103 1K-04-O
1 => FAN CTL PWM Mode
0 => FAN CTL DAC Mode

SOUT-B — R104 1K-04-O
1 => SPI Disable
0 => SPI Enable

COPEN- — BC29 1000P-04-O — CASE — H2*1-P-BL

+3.3V_VBAT — FB23 0-06-SH — HM_AGND
SYSTMP
CPUTMP
SIOVREF
R98 2M-04 — COPEN-

VIN2
VIN1
VIN0

SLCT
PE
BUSY

VCC3

RSMRST-
PS_PWRGD
PSON-
SLP_S3-
BTN_OUT
IO_PWRBTN-
SIOPME
PWOK
SLP_S5-

5VSB — R240 10K-04 — IO_PWRBTN- — R105 0-04-O — PWRBTN- — PWRBTN- 28,30

DEL R253

RSTPCI1
PMCLK
PMDAT
KBCLK
KBDAT
3VSB
OVT-
EX_GPIO_3
PWRLED

IO

ACK- SLIN- INIT- ERR- AFD- STB- PD0 PD1 PD2 PD3 PD4 PD5 PD6 PD7
DCD-A RI-A CTS-A DTR-A RTS-A DSR-A SOUTA SINA

GPIO15/LED_VSB/ALERT# — ACPILED
GPIO14/FWH_DIS/WDTRST#/SPI_CS1#
GPIO13/SPI_MOSI/BEEP
GPIO12/SPI_MISO/FANCTL1_1
GPIO11/SPI_CS0
GPIO10/SPI_CLK
PECI/AMDSI_DAT
AMDSI_CLK
ST1/GPIO03/WDTRST# — S3_SW
ST2/SLOTOCC#/GPIO02 — DISABLE_EUP_IO — DISABLE_EUP_IO 30
GPIO01
GPIO00
VIDOUTD
VIDOUTC
VIDOUTB
VIDOUTA
GND — -WP_ROM — -WP_ROM 21
GPIO45
GPIO44
VIDIND
VIDINC
VIDINB
VIDINA
GA20 — GA20
KBRST# — SIOKBRST
CLKIN — SIO24M

DTR2/#FWH_TRAP RTS2#/PWM_DC DSR2# SOUT2/SPI_TRAP SIN2 DENSEL# MOA# DRVA# WDATA# DIR# STEP# HDSEL# WGATE# RDATA# TRK0# INDEX# WPT# DSKCHG# GND FANIN1 FANCTL1 FANIN2 FANCTL2 FANIN3/GPIO40 FANCTL3/GPIO41 IRTX/GPIO42 IRRX/GPIO43 LRESET# LDRQ# SERIRQ LFRAM# LAD0 LAD1 LAD2 LAD3 VCC PCICLK

01-210-862520

F71862FG

Voltage Monitor

VCORE — ER60 10K-1-04 — VIN0
V_DIMM — ER62 10K-1-04 — VIN1
VCC — ER63 200K-1-04 — VIN2
ER61 100K-1-04
ER64 47K-04
VCC3

* HM_VIN0 for VCORE
* HM_VIN1 for V_DIMM
* HM_VIN2 for VCC5

DTR-B
RTS-B
SOUT-B

RWC-
MO-A
DS-A
WD-
DIR-
STEP-
HEAD-
WE-
RDATA-
TRK0-
INDEX-
WP-
DSKCHG-

LPC_CLK0
LAD3
LAD2
LAD1
LAD0
LFRAME-
SIRQ
LDRQ-
SIOPCIRST-
IRRX
IRTX
EX_GPIO_2
EX_GPIO_1
FAN_CTL2
FAN_TAC2
FAN_CTL1
FAN_TAC1

R270 330-04
R244 330-04
FCT1

FDD

VCC — R457 1K-04 — RN51 1K-8P4R

FDD

RWC- INDEX- MO-A DS-A DIR- STEP- WD- WE- TRK0- WP- RDATA- HEAD- DSKCHG-

H17X2-P5E-W

IR

VCC — BC208 .1U-04 — IR — IRTX — IRRX — H3X2-P2E-B-O

3VSB — MC60 10U-08-O — BC28 .1U-04
+3.3V_VBAT — MC61 1U-06-O — BC26 .1U-04
VCC3 — MC62 10U-08-O — BC27 .1U-04

Place Near To SIO

ACPI

SIOPME — SIO_PME- 15
SLP_S5- — SLP_S5- 15,28,30
SLP_S3- — SLP_S3- 15

PS_PWRGD — MCP61_PWRGD 15
PSON- — SIO_PSON- 28
PWOK — PWRGD_PS 28
IO_PWRBTN- — IO_PWRBTN- 30
BTN_OUT — SIO_PWRON- 15

RSMRST- — R106 0-04 — PWRGD_SB 15,30

OVT- — CPU_THERM- 15
ACPILED — SUSLED 28
PWRLED — PWRLED 28

S3_SW — -3VSBSW 30

LPC

LAD0
LAD1
LAD2
LAD3
LAD[0..3] — LPC_AD[0..3] 13

SIOPCIRST- — PCIRST_SIO- 13
LFRAME- — LPC_FRAME- 13
LPC_CLK0 — LPCCLK_SIO 13
SIRQ — LPC_SERIRQ 13
LDRQ- — LPC_DRQ0- 13

Open Drain

RSMRST- — RN3 1K-8P4R — 3VSB VCC3
RSTPCI1
OVT-

PS_PWRGD — RN1 1K-8P4R — 3VSB
BTN_OUT
SIOPME
S3_SW

PWRLED — RN2 4.7K-8P4R
ACPILED
15,21 SPI_DO_MCP

GPIO

EX_GPIO_1 — RJ13 — VCC3
GPIO41/EX_GPIO_1
High-W/LPT
Low-WO/LPT
4.7K-04(2-3)

EX_GPIO_2 — RJ14 — VCC3
GPIO42/EX_GPIO_2
High-W/IR
Low-WO/IR
4.7K-04(2-3)

EX_GPIO_3 — RJ15 — 3VSB
4.7K-04-O

LPC_CLK0 — BC24 10P-04-O
SIO24M — BC25 10P-04

Please place it near SIO

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Title: MCP61M-M3

Size: Custom — Document Number: Super I/O (F71862F) — Rev: 1.0A

Date: Wednesday, August 26, 2009 — Sheet 22 of 31

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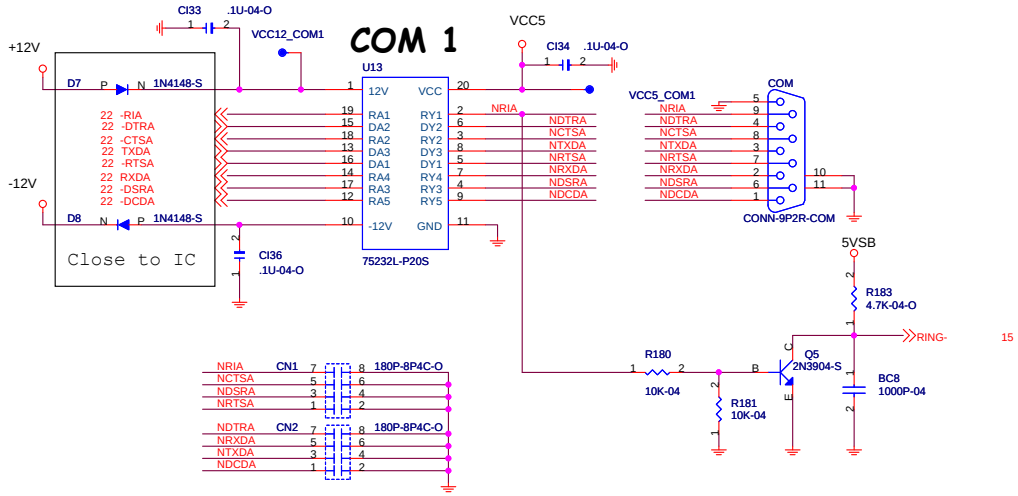

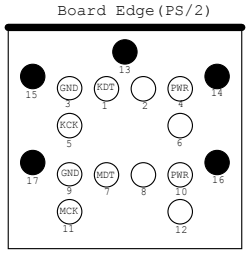

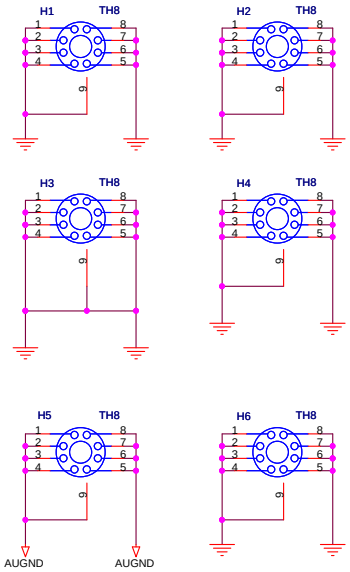

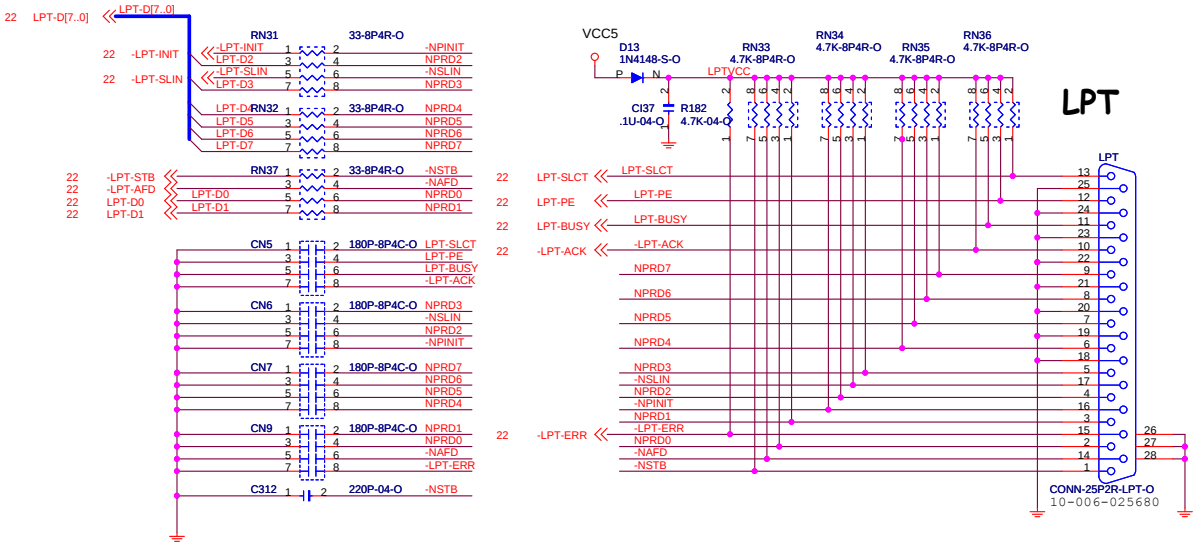

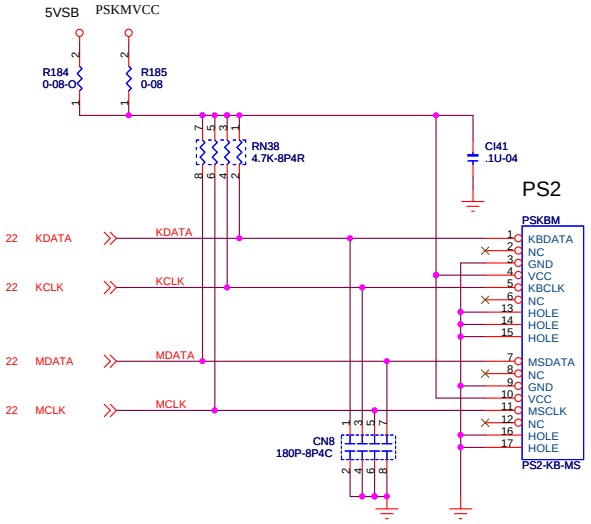

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Title	MCP61M-M3		
Size: Custom	Document Number: LPT / COM / PS2		Rev: 1.0A
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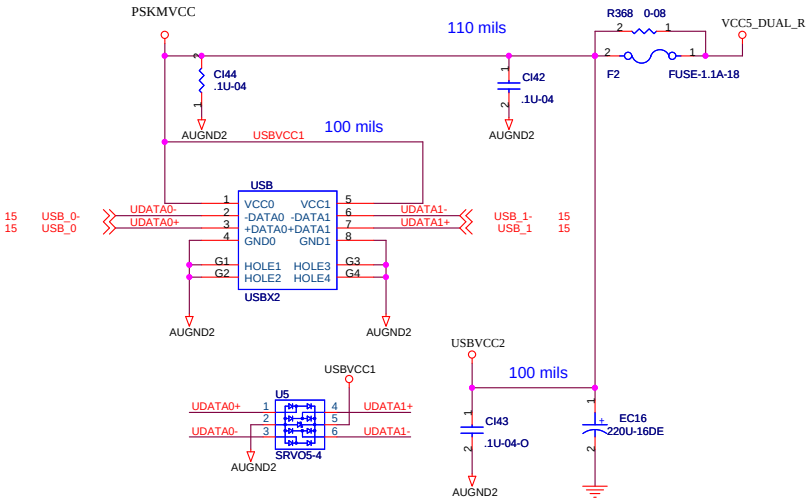


PCB Impedance control

Impedance (ohm)	Trace Width (mil) (S/W/S)	Trace Length (inch)	Pre-preg
* 60	5 (20/5/20)	6	2116
50	4 (50/4/50)	6	1080
42	6 (50/6/50)	6	1080

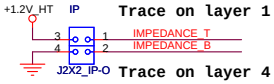
1)Circuit type 1

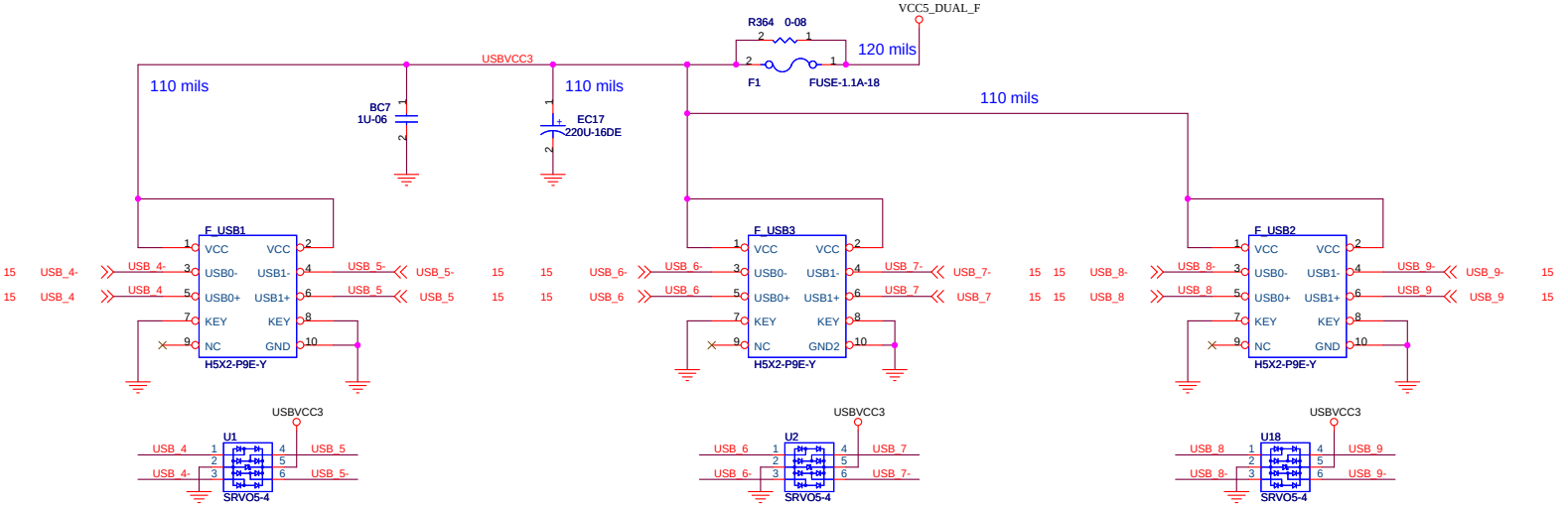
Layer 1:TOP

Layer 2:PWR

Layer 3:GND

Layer 4:BOTTOM





Elitegroup Computer Systems

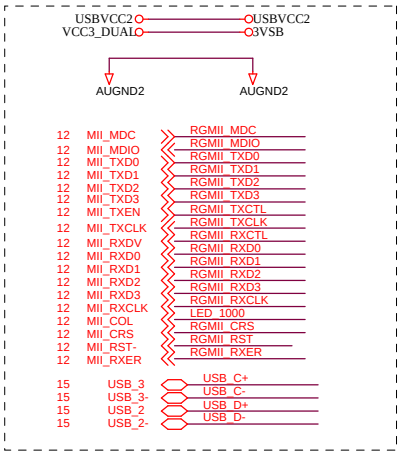
Title: **MCP61M-M3**

Size: Custom | Document Number: USB Conn. | Rev: 1.0A

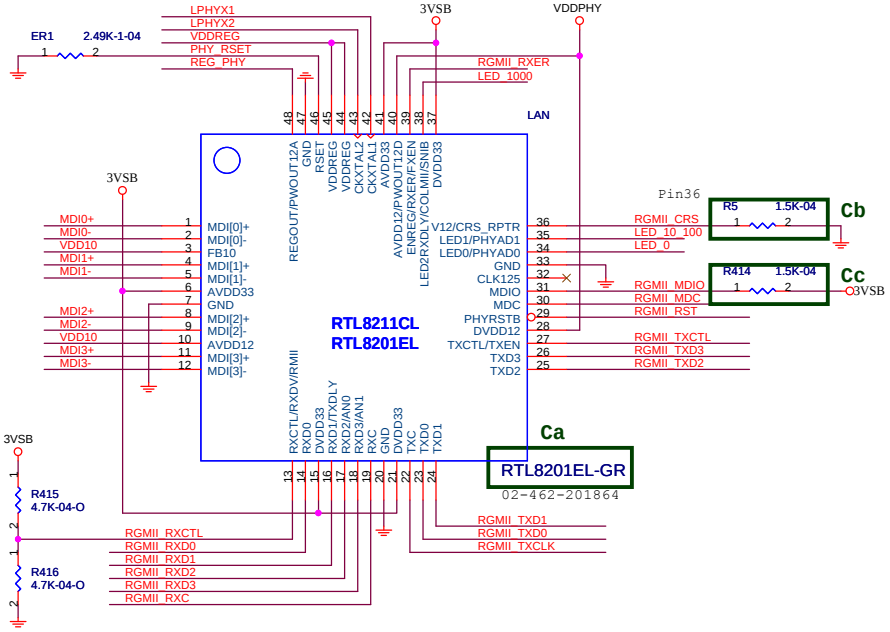
Date: Wednesday, August 26, 2009 | Sheet 24 of 31

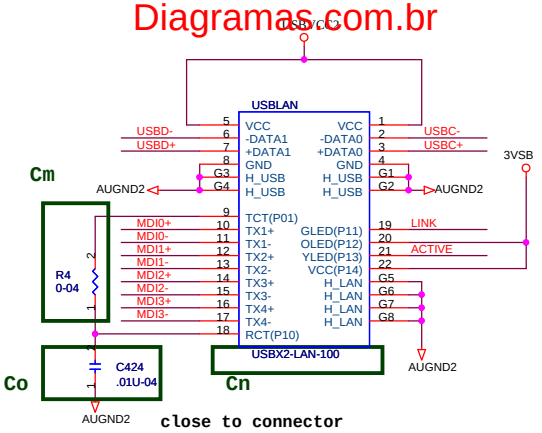
Diagramas.com.br

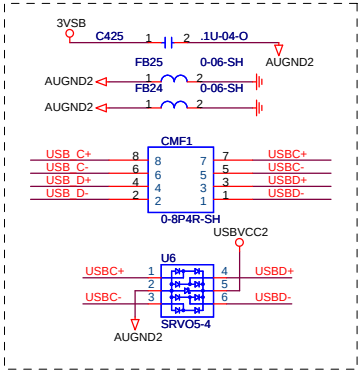
External Connection

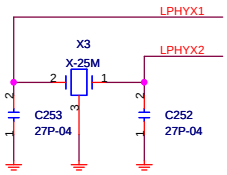


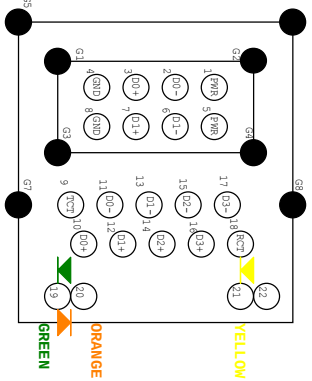
When you found some bug, please inform Hook(ext:26161) to update circuit.

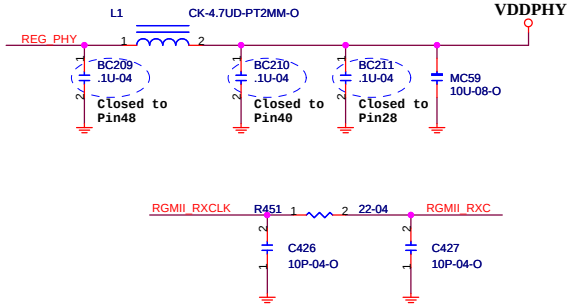




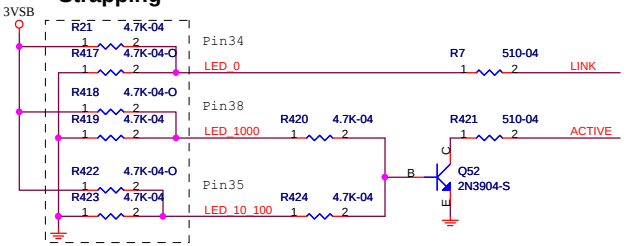








Strapping



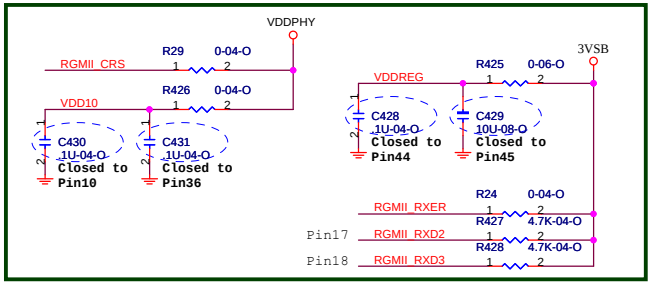
BOM Difference

Location	RTL8201EL 10/100M	RTL8211CL 1000M
Ca	RTL8201EL-GR	RTL8211CL-GR
Cb	V	X
Cc	1.5K-04	10K-04
Cd	X	V
Ce		
Cf		
Cg		
Ch		
Ci		
Ck		
Cm	V	X
Cn	USBX2-LAN-100	USBX2-LAN-1000
Co	.01U-04	0-04

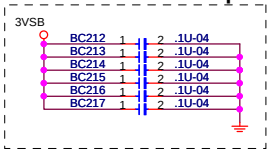
Strapping

Pin13,39 Internal Pull Low

	RTL8201EL	RTL8211CL
Pin13	1: RMII * 0: MII	N/A
Pin[34:35]	PHY Address:00H	PHY Address:00H
Pin36	1: Repeat mode * 0: Disable	N/A
Pin38	1: SNI mode * 0: MII/RMII mode	
Pin39	1: Fiber mode * 0: UTP mode	
Pin[17:18]	N/A	11: AUTO Negotiation



Closed to each PWR pin



Elitegroup Computer Systems

Title: MCP61M-M3

Size: Custom | Document Number: LAN PHY RTL8201EL&8211CL | Rev: 1.0A

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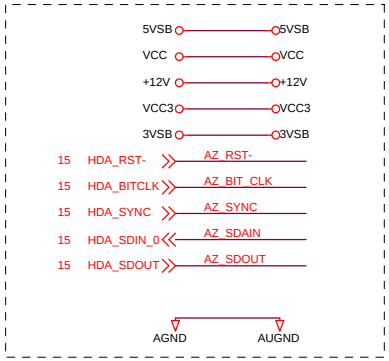
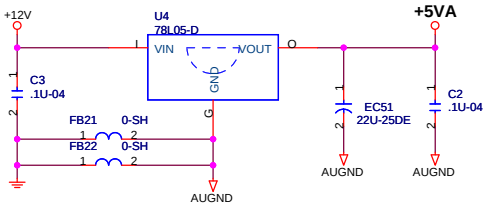
External Connection

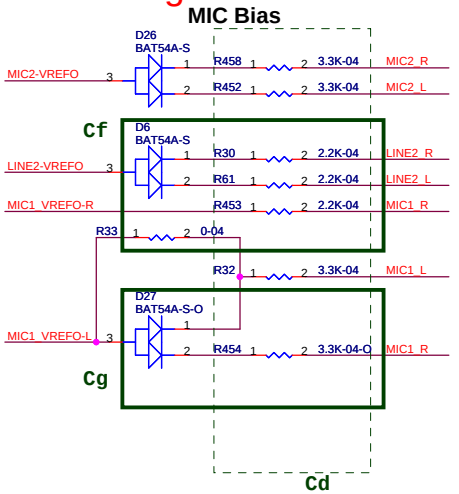


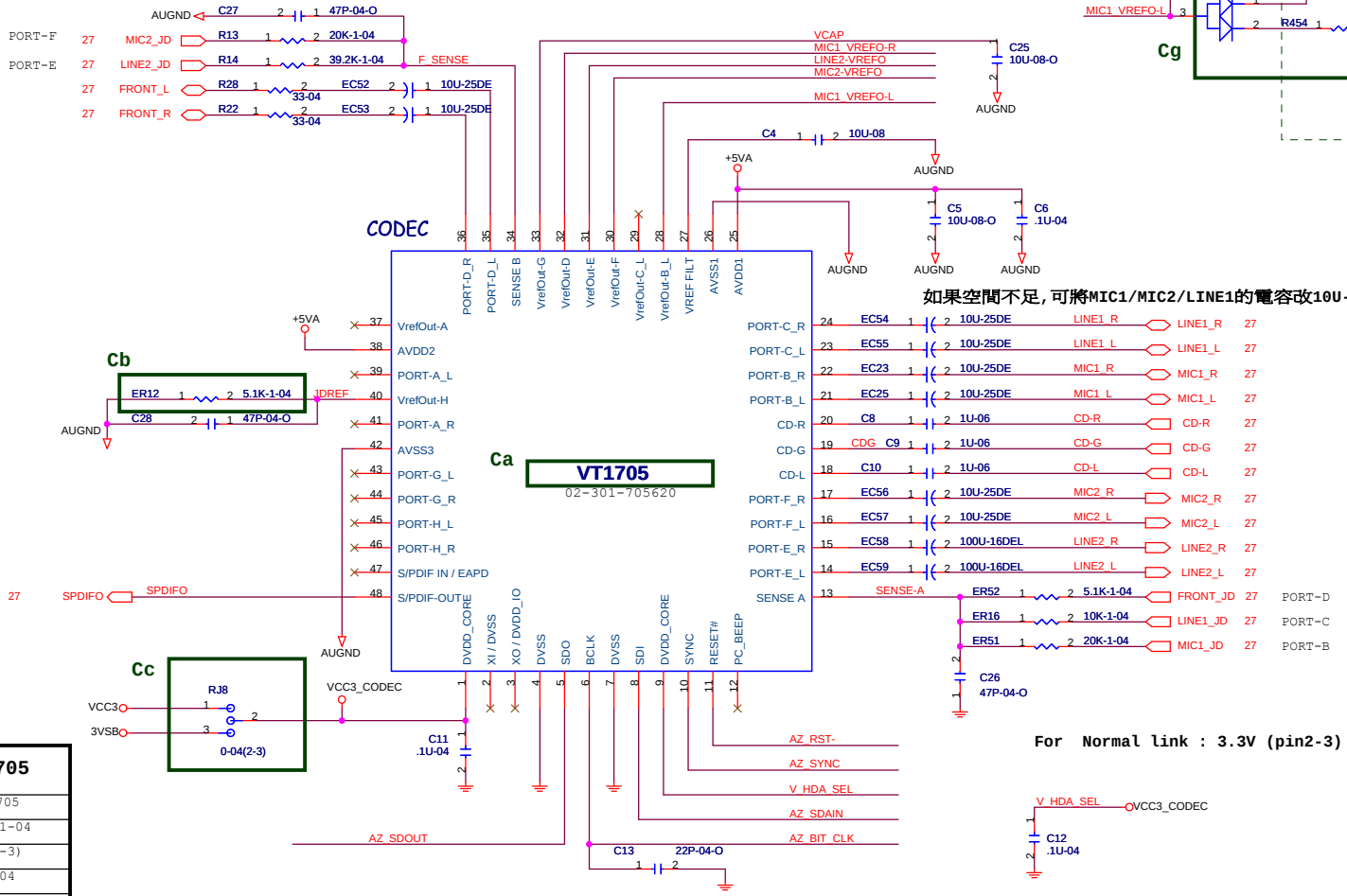
BOM Difference

Location	ALC662	VT1708B-CE	VT1705
Ca	ALC662-VC-GRS	VT1708B-CE	VT1705
Cb	20K-1-04	5.1K-1-04	5.1K-1-04
Cc	RJ2(1-2)	RJ2(2-3)	RJ2(2-3)
Cd	2.2K-04	3.3K-04	3.3K-04
Ce	75-04	16-04	16-04
Cf	V	X	V
Cg	X	V	X

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







如果空間不足,可將MIC1/MIC2/LINE1的電容改10U-X5R-08

For Normal link : 3.3V (pin2-3)

VT1708BS 02-301-708621 (rev:CD)
VT1708B-CE 02-301-708623 (rev:CE)

Elitegroup Computer Systems

Title: MCP61M-M3

Size: Custom | Document Number: AUDIO VT1705/ALC662 (CHIP) | Rev: 1.0A

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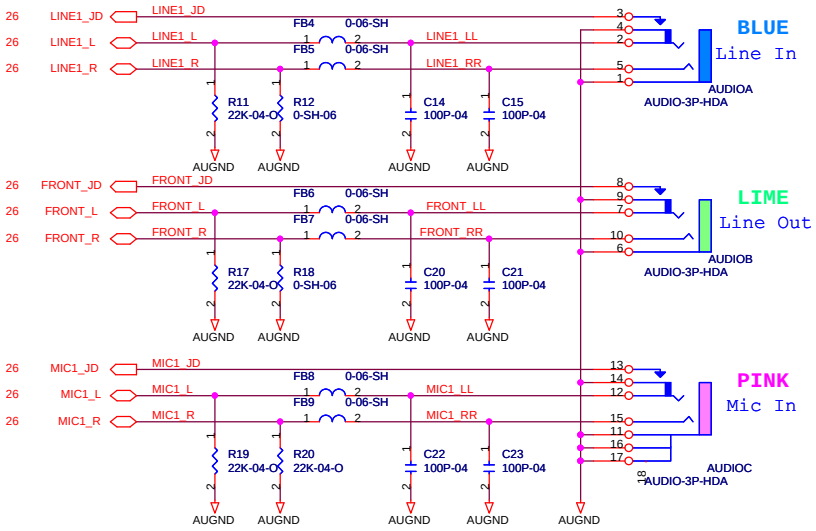
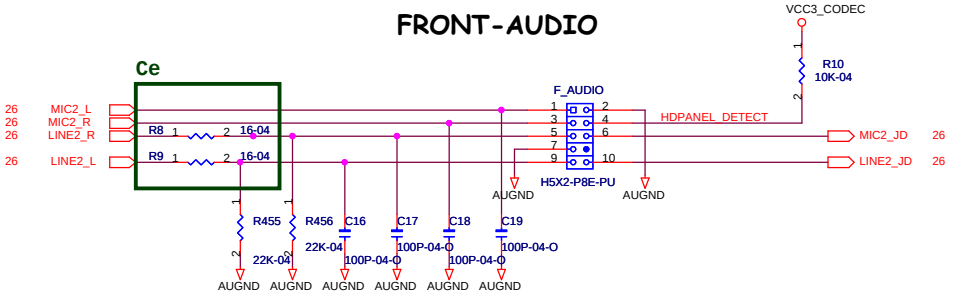
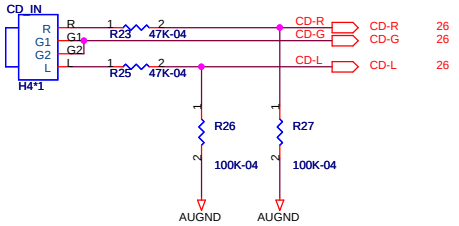
REAR-AUDIO



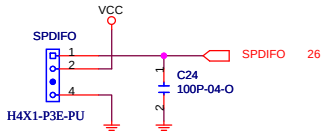
FRONT-AUDIO

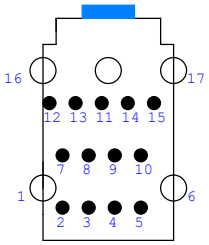


CD_IN

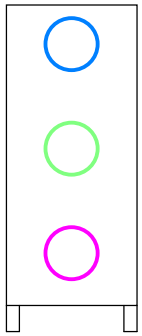


SPDIF-OUT





TOP VIEW



Line in

Front out

Mic in

FRONT VIEW

Elitegroup Computer Systems	
Title	MCP61M-M3
Size: Custom	Document Number: AUDIO VT1705/ALC662 (PANEL)
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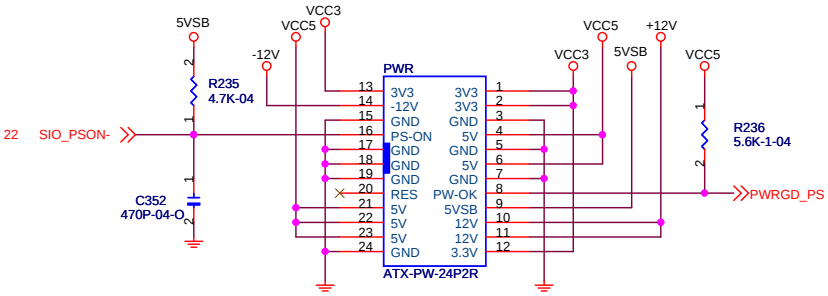
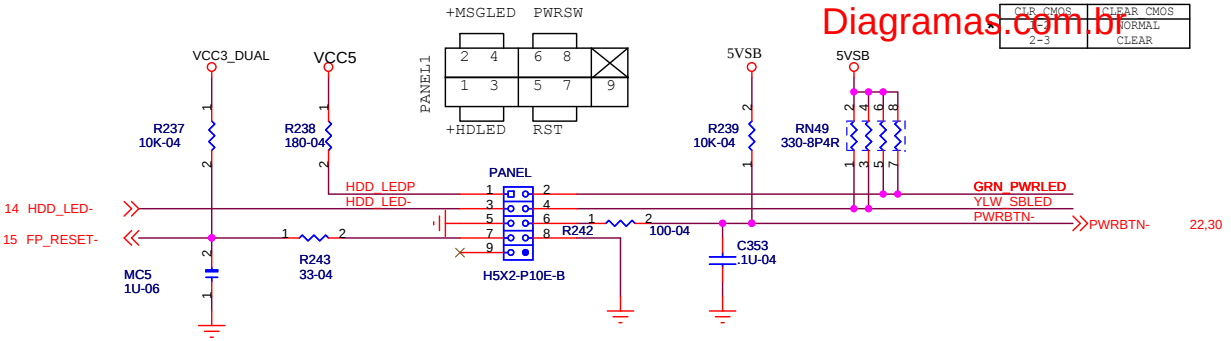
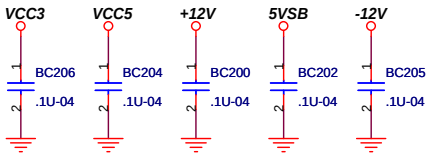


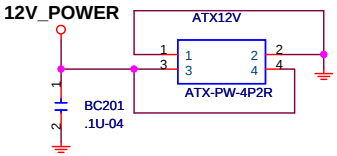


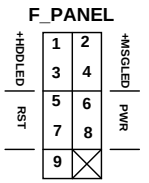
CLR_CMOS	CLEAR CMOS
2-3	NORMAL
	CLEAR

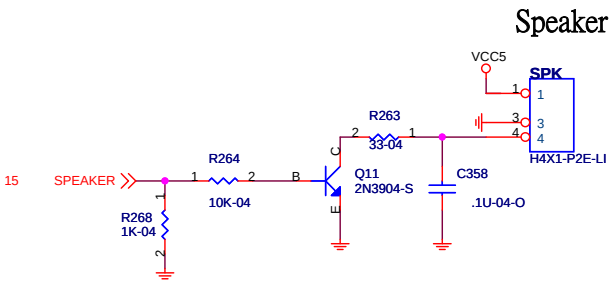
Layout :

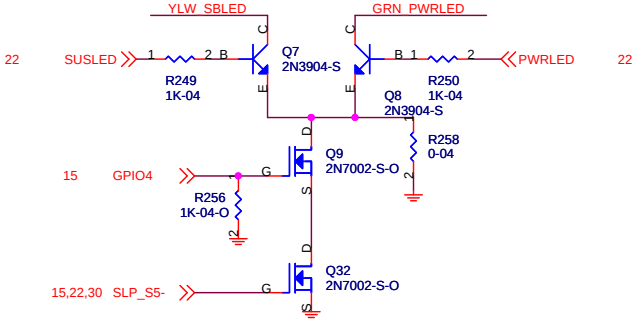
Bypass capacitors close to ATX power connector for EMI solution.

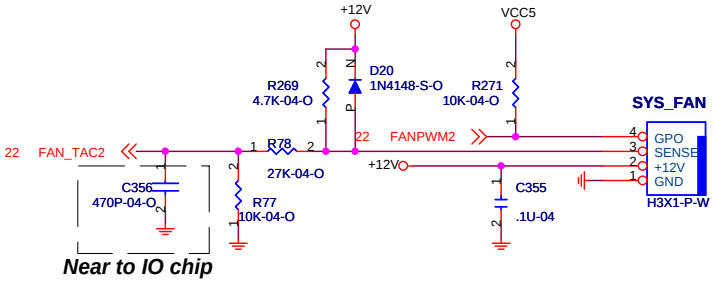


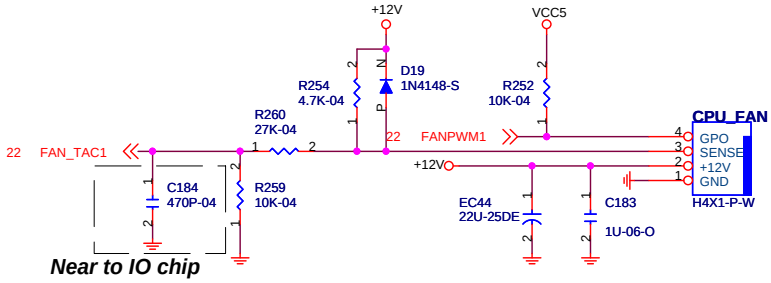












Elitegroup Computer Systems

Title: MCP61M-M3

Size: Custom | Document Number: PWR CON / FNT PNL | Rev: 1.0A

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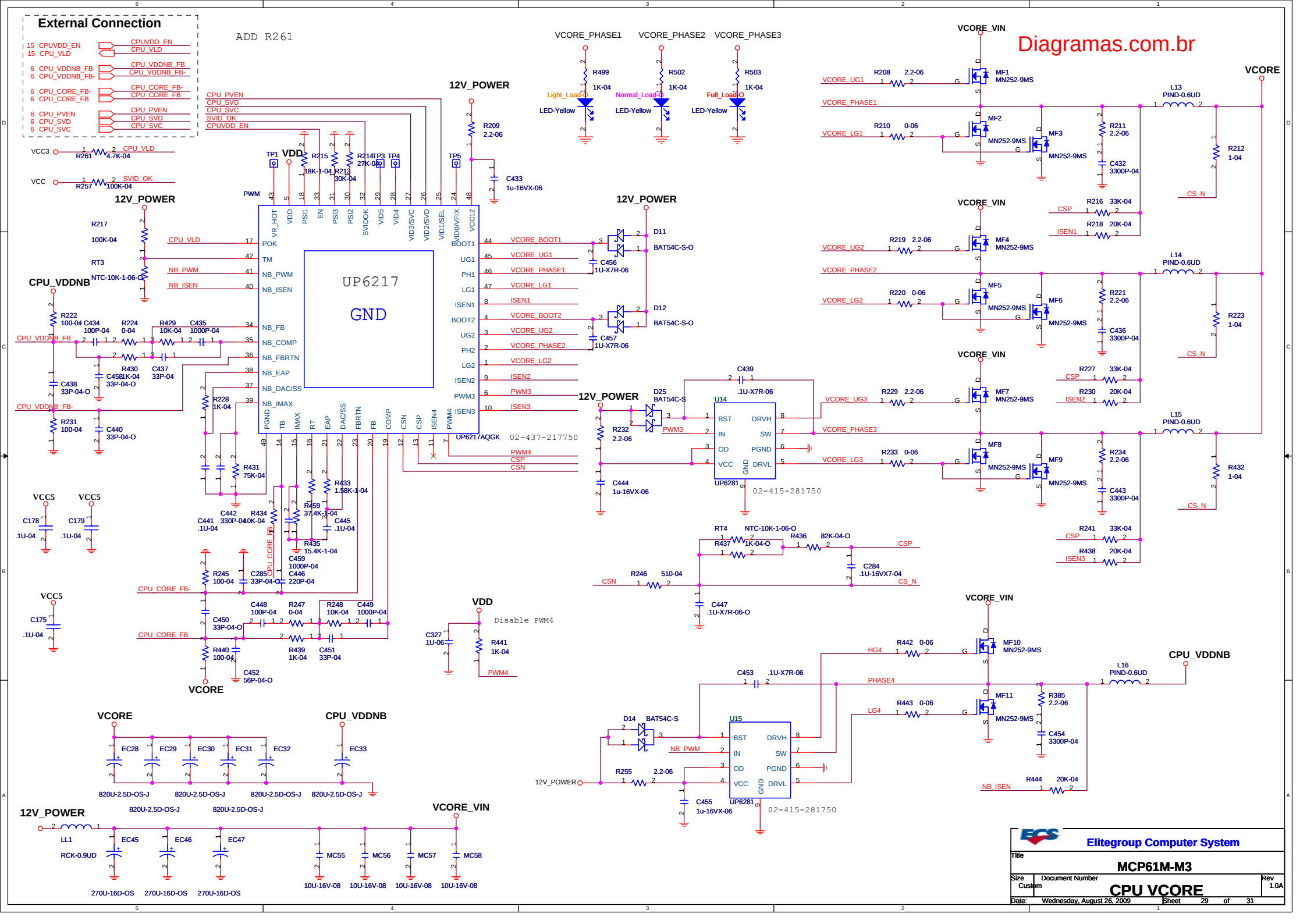
External Connection
15 CPUVDD_EN
15 CPU_VLD
6 CPU_VDDNB_FB
6 CPU_VDDNB_FB-
6 CPU_CORE_FB-
6 CPU_CORE_FB
6 CPU_PVEN
6 CPU_SVD
6 CPU_SVC
ADD R261
Diagramas.com.br
UP6217
GND
UP6217AQGK
02-437-217750
UP6281
02-415-281750
12V_POWER
VCORE
CPU_VDDNB
VCORE_VIN
VDD
Disable PWM4
Elitegroup Computer System
MCP61M-M3
CPU VCORE
Wednesday, August 26, 2009

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Power for MCP61/68 Core

VREF25 +12V +12V V_DIMM

Soft Start. U30B OP324-S

ER66 1K-1-04 ER70 1K-1-04 MC64 4.7U-08 MC48 1U-06-O R149 1K-04 Q20 MN252-20MS 03-050-751377

VCC5 CI62 1U-06 CI63 1U-06

+1.2V_CORE EC35 1000U-6V3D8H11.5E

1K//1K=1.25V

1.24K//1.15K=1.2V

Q20=(1.56V-1.25) X 8A = 2.48W

VCC3 R308 68.1-1-04 VREF25 BC11 1U-06 D22 43-1-S

+1.2V_HT(VLDT)

for 1A@MCP61 / 1.5A@CPU

for 0.85A@MCP68 / 1.5A@CPU

+1.2V_CORE R163 0-08-O +1.2V_HT R164 0-08-O

Reserve for MCP68 R163.R164

for MCP61/68@10A

VCC3_DUAL 5VSB R315 10K-04 R314 10K-04 HT_VLD 15 Q31 2N7002-S

+1.2V_HT R316 2K-04 C390 1U-06 Q30 2N3904-S

VREF25 +12V +12V V_DIMM

Soft Start. U30C OP324-S

ER65 1.24K-1-04 ER69 1.15K-1-04 MC47 1U-06-O R148 1K-04 Q19 P3055LDG-S 03-050-705528

5VSB R317 10K-04 Q51 2N3904-S +1.2V_HT EC36 220U-16DE

15 HTVDD_EN ER25 1K-04 Q44 2N3904-S

+3.3V_DUAL for MCP61/68@200mA

5VSB U8 ADJ1086-S R165 0-08-O Q23 APM2301ACTRL-S VCC3_DUAL

ER29 100-04 ER30 169-1-04 BC12 1U-06 EC37 100U-16DE

Vo=1.25(1+Rb/Rt)

U30D OP324-S

USB conn./PS2

Defaul(1-2) USBPWR_F VCC5 VCC5_DUAL_F H3X1-B

Defaul(1-2) USBPWR_R VCC5 VCC5_DUAL_R H3X1-B

USBPWR_F / R	
1-2	VCC5
2-3	VCC5_DUAL

MCP61 AUX(1.2V) @850mA

136mA (Measure)

VCC3_DUAL R318 6.98K-1-04 R319 4.02K-1-04 C392 1U-06 U10 9173DPSP-S MC63 4.7U-08-O

+1.2V_DUAL C391 1U-06-O MC54 10U-08 Near Pin 4

3VSB Q24 2N7002-S

22 DISABLE_EUP_IO 22,28 PWRBTN- +12V 22 IO_PWRBTN- 15,22 PWRGD_SB

R144 200K-04 D15 BAT54C-S MC30 1U-06-O Q25 2N7002-S Q26 2N3904-S R145 10K-04 V_DIMM

R146 10K-04 Q27 2N3904-S MC65 10U-08-O MC31 1U-06

5VSB

5VSB 5VSB VCC3 VCC3

EC38 1000U-6V3D8H11.5E CI64 1U-06 CI65 1U-06 CI66 1U-06

VCC5 C174 .1U-04

VCC5_DUAL_1 +5V_DUAL FOR USB,PS2

+12V R404 4.7K-04 Q37 MN252-9MS R445 1K-04

VCC3_DUAL R401 4.7K-04 Q43 2N3904-S VCC5

5VSB R320 4.7K-04 R322 0-04 Q38 APM2301ACTRL-S

VCC3_DUAL R325 4.7K-04 Q35 2N3904-S 5VSB

22 -3VSBSW C402 .01U-04-O

	RT9202	RT9214
R343	10	X
D30	X	V
R344	X	30K
R752	24K	X

VCC3 下版修正 C173 .1U-04-O

5VSB +12V VCC5_DUAL_1 R326 10-04-O D23 BAT54C-S L34 RCK-0.5UD

C303 1u-16VX-06 D24 BAT54C-S C397 1U-16VX7-04 R327 24K-04-O

U7 GND VCC BOOT UGATE PHASE COMP/OCSET LGATE FB APW7120KE-TRLS

R328 2.2-06 Q33 MN252-9MS C396 10U-08 EC40 560U-6.3D-OS

R329 1.05K-1-04 R330 18K-1-04 L35 CK-2.2UD V_DIMM

R331 2.2-06 Q34 MN252-9MS R334 0-06 C398 .01U-04

R147 0-04-O R336 1K-04-O C399 470P-04-O R338 1K-1-04

V_DIMM=0.8V*(1+RT/RB)

R329 / V_DIMM :
1.13K / 1.50V
1.05K / 1.56V **
1.02K / 1.58V
1K / 1.6V

APM2510/2SK4212

Memory Power OCP Rocset (R330) 18KΩ(40A)

5VSB R339 4.7K-04-O Q41 2N7002-S-O

15,22,28 SLP_S5- R340 22K-04-O Q42 2N3904-S-O

DDR3 = 1.56V
1pcs DDR@2.5A

Iocp = R330*40uA-0.4V/Q40@Rds(on)

R330/EC2 :
2 Dimm 18K/1000uF

DDR_VTT 2pcs Dual DDR2@0.7A

V_DIMM R332 10K-1-04 R337 10K-1-04 C401 .1U-04

U9 9173DPSP-S V_DIMM 5VSB EC41 22U-25DE-O C400 1U-06

DDR_VTT MC52 4.7U-08 MC53 4.7U-08

Memory Power Output Control

	PSON-	PWOK	SLP_S5-	SLP_S3-	-3VSBSW
S0	0	1	1	1	1
S1	0	1	1	1	1
S3	1	0	1	0	0
S4	1	0	0	0	1
S5	1	0	0	0	1

Elitegroup Computer Systems

Title: MCP61M-M3

Size: C | Document Number: DC-DC | Rev: 1.0A

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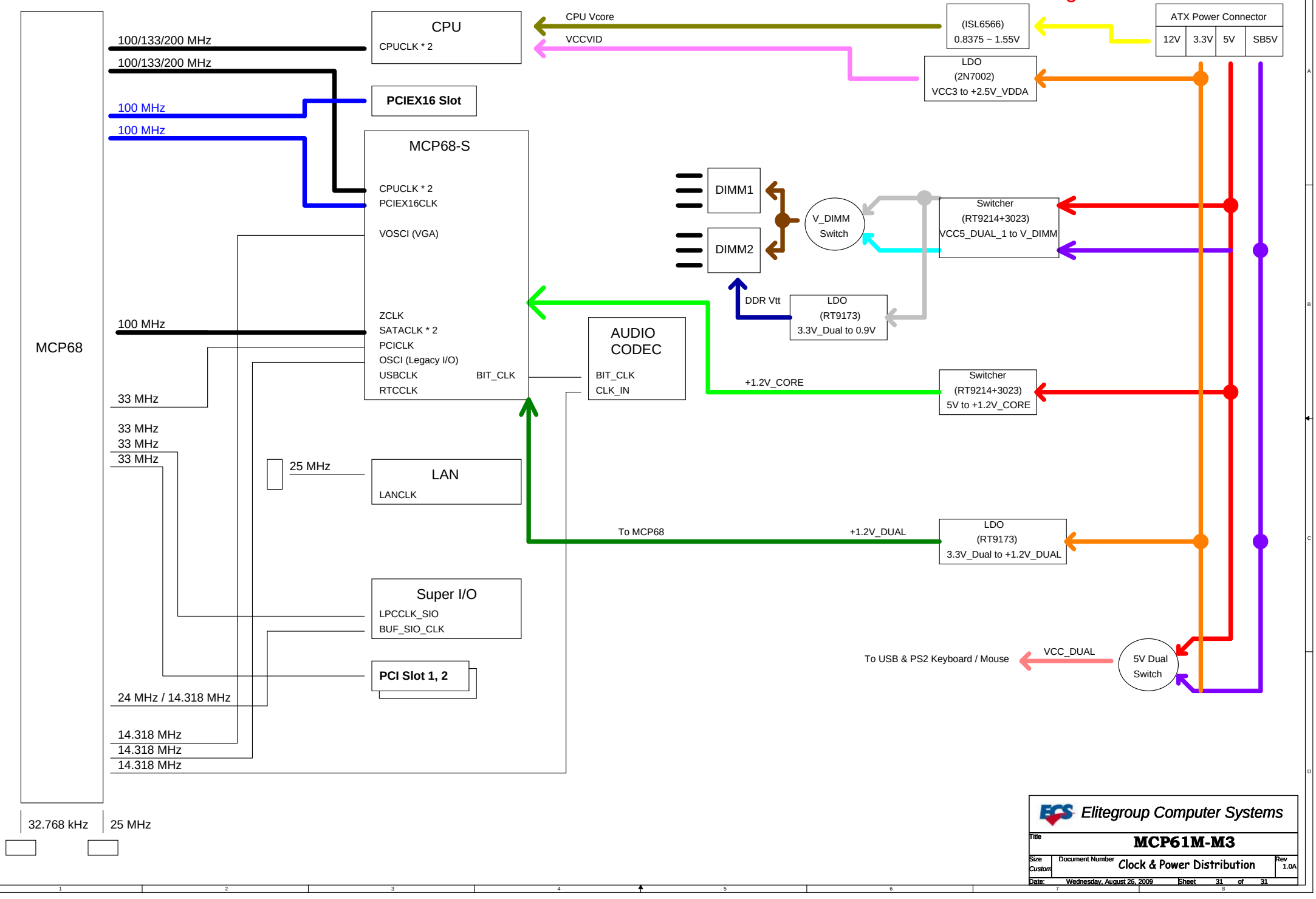

Elitegroup Computer Systems

Title: MCP61M-M3

Size: Custom | Document Number: Clock & Power Distribution | Rev: 1.0A

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