MS-7615 10 ATX(200mm X 305mm)

CPU:

AMD AM3/AM2+/AM2 Socket940 SUPPORT TO 95W

System Chipset:

North Bridge --- MCP61-D

OnBoard Chipset:

Clock Gen:NA
AC'97 Codec:ALC888S/889, Azalia 7.1 channel codec
LAN(PHY):Realtek RTL8201EL(10/100)/Realtek RT8111DL(Giga)
SIO:Fintek F71889(with smart fan control)
Flash ROM:8MB SPI

Main Memory:

DDRII 533/667/800/1066* 2 (Dual Channel)

Expansion Slots:

PCI Express (X16) Slot * 1
PCI Express (X1) Slot * 1
PCI Slot * 4

PWM:

Controller:ISL6362A(3+1-Phase)

ACPI:

UPI

Other:

IDE(DMA133) *1

FDD *1
SATA(SATA2-300MB/S) *2

USB2.0 *8(Rear*4 Front*4)

COM PORT *1

LPT PORT *1

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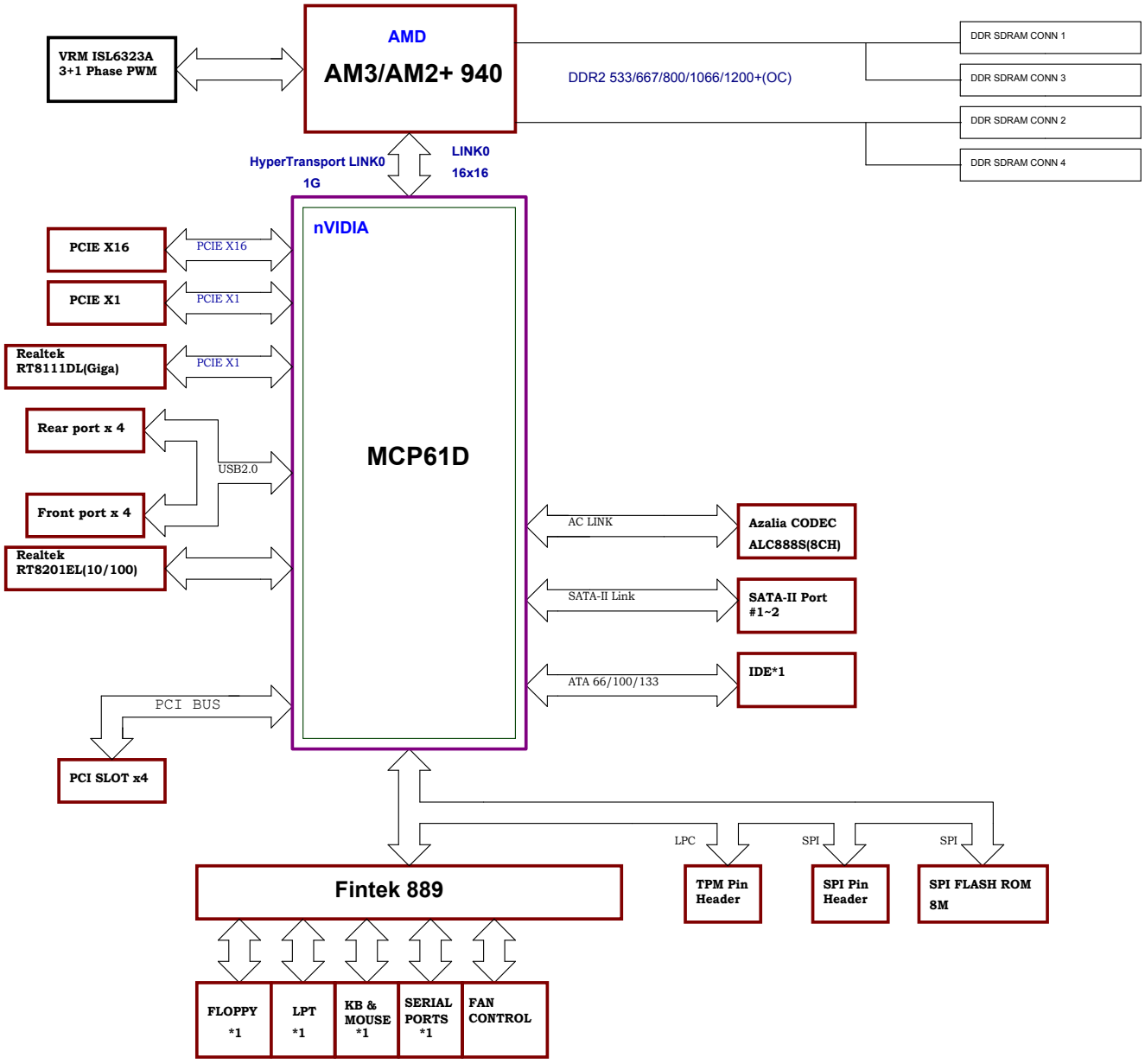

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PCI RESET DEVICE

MCP61D	
Signals	Target
PCI_RESET0*	PCISLOT1
PCI_RESET1*	PCISLOT2
PCI_RESET2*	PCISLOT3
PCI_RESET3*	PCISLOT4
LPC_RESET*	LPC/SIO

SIO F71889	
Signals	Target
HDD_RST#	IDE

MEMORY CLOCK TRANSLATION

DIMM	DDR2 Memory Signal	CPU Signal
DIMM A0	MEM_MA0_CLK(2) MEM_MA0_CLK(1) MEM_MA0_CLK(0)	MA_CLK(7) MA_CLK(1) MA_CLK(5)
DIMM A1	MEM_MA1_CLK(2) MEM_MA1_CLK(1) MEM_MA1_CLK(0)	MA_CLK(6) MA_CLK(0) MA_CLK(4)
DIMM B0	MEM_MB0_CLK(2) MEM_MB0_CLK(1) MEM_MB0_CLK(0)	MB_CLK(7) MB_CLK(1) MB_CLK(5)
DIMM B1	MEM_MB1_CLK(2) MEM_MB1_CLK(1) MEM_MB1_CLK(0)	MB_CLK(6) MB_CLK(0) MB_CLK(4)

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PCI_INT#Y PCI_INT#Z PCI_INT#W PCI_INT#X	PCI_REQ0# PCI_GNT0#	AD26	PCI_CLKSLOT1 (PCICLK0)
PCI Slot 2	PCI_INT#X PCI_INT#Y PCI_INT#Z PCI_INT#W	PCI_REQ1# PCI_GNT1#	AD25	PCI_CLKSLOT2 (PCICLK1)
PCI Slot 3	PCI_INT#W PCI_INT#X PCI_INT#Y PCI_INT#Z	PCI_REQ2# PCI_GNT2#	AD24	PCI_CLKSLOT3 (PCICLK2)
PCI Slot 4	PCI_INT#Z PCI_INT#W PCI_INT#X PCI_INT#Y	PCI_REQ3# PCI_GNT3#	AD23	PCI_CLKSLOT4 (PCICLK3)
LPC				LPC_PCLK
SIO				SIO_PCLK

USB	Port	DATA +/-	OC#
Rear	USB1	USB0- USB0+ USB1- USB1+	USB_OC#0 (OC#0~1)
	LAN_USB1	USB2- USB2+ USB3- USB3+	USB_OC#1 (OC#2~3)
Front	JUSB1	USB4- USB4+ USB5- USB5+	USB_OC#2 (OC#4~5)
	JUSB2	USB6- USB6+ USB7- USB7+	USB_OC#3 (OC#6~7)

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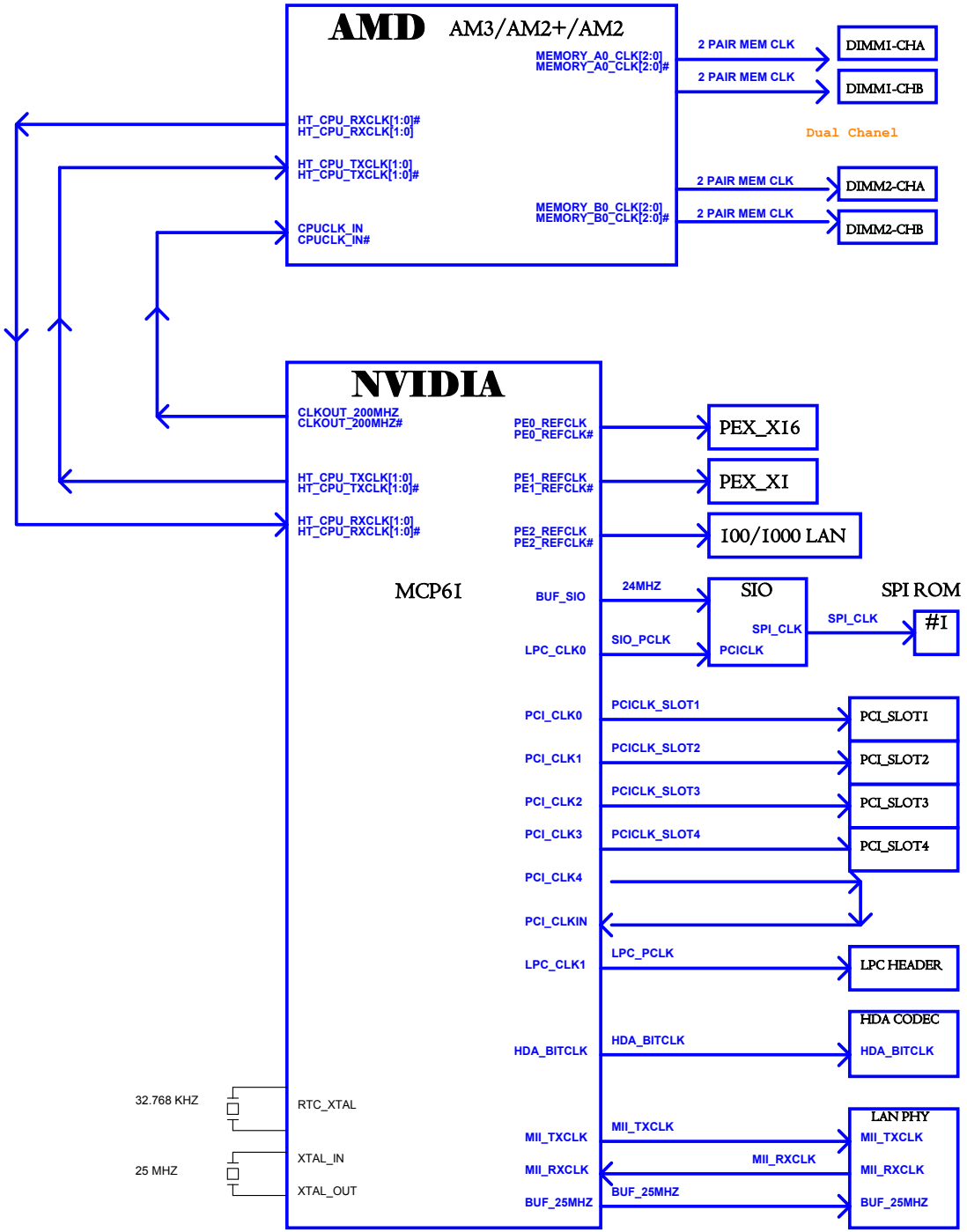
MCP61 GPIO TABLE

PIN NAME	FUNCTION
THERMTRIP*/GPIO58 PROCHOT*/GPIO20	CPU_THERMTRIP* PROCHOT*
MII_RXER/GPIO36 MII_COL/GPIO13/MI2C_DATA MII_CRS/GPIO14/MI2C_CLK RGMII/MII_INTR*/GPIO35 RGMII/MII_PWRDWN*/GPIO37 MII_RESET*/GPIO12	MII_RXER MII_COL MII_CRS Pull High 10K to 3VDUAL -- MII_RESET*
PCI_REQ2*/GPIO40.RS232_DSR* PCI_REQ3*/GPIO38/RS232_CTS* PCI_GNT2*/GPIO41/RS232_DTR* PCI_GNT3*/GPIO39/RS232_RTS* PCI_PERR*/GPIO43/RS232_DCD* PCI_PME*/GPIO30 LPC_PWRDWN*/GPIO54/EXT_NMI* LPC_DRQ0*/GPIO50 LPC_DRQ1*/GPIO15/FANRPM1	PCI_REQ2* Pull High 10K to 3VDUAL PCI_GNT2* PCI_GNT3* PCI_PERR* PCI_PME* -- LPC_DRQ0* --
CABLE_DET_P/GPIO63 SATE_LED*/GPIO57	CABLE_DET_P SATE_LED*
HDA_SDATA_OUT0/GPIO45 HDA_SDATA_IN0/GPIO22 HDA_SDATA_IN1/GPIO23/MGPIO0 HDA_SYNC/GPIO44 GPIO_1 GPIO_2/NMI*/PS2_CLK0 GPIO_3/SMI*/PS2_DATA0 GPIO_4/SCI_INTR/PS2_CLK1 GPIO_5/INIT*/PS2_DATA2 GPIO_6/FERR*/SYS_FERR* GPIO_7/NFERR*/SYS_PERR* GPIO_8/SPI_DI GPIO_9/SPI_DO GPIO_10/SPI_CS GPIO_11/SPI_CLK USB_OC0*/GPIO25 USB_OC1*/GPIO26 USB_OC2*/GPIO27 USB_OC3*/GPIO28/MGPIO_1 USB_OC4*/GPIO29 A20GATE/GPIO55 EXT_SMI*/GPIO32 RI*/GPIO33 SIO_PME*/GPIO31 KBRDRSTIN*/GPIO56 SUS_CLK/GPIO34 THERM*/GPIO59 FANRPM0/GPIO60 FANCTL0/GPIO61 FANCTL1/GPIO62 THERM_SIC/GPIO48 THERM_SID0/GPIO49 PE_WAKE*/GPIO21	HDA_SDATA_OUT HDA_SDATA_IN0 -- HDA_SYNC -- -- -- USB EN(CONTROL USB POWER) -- -- -- SPI_DI SPI_DO SPI_CS SPI_CLK USB_Rear_1_0OC* USB_Rear_3_2OC* USB_FNTPNL_5_4OC* USB_FNTPNL_7_6OC* Pull High 10K to 3VDUAL(USB not USE) AGATE20 EXT_SMI* SIO_PME* SIO_KBRST* -- THERM* -- -- -- -- PE_WAKE*

SIO GPIO TABLE

GROUP	PIN NAME	FUNCTION
UART & SIR	IRTX/GPIO42 IRRX/GPIO43 GPIO17	-- -- --
Hardware Monitor	FANIN3/GPIO40 FAN_CTL3/GPIO41 PME#/GPIO25 GPIO10/SPISLK/FININ4 GPIO11/SPI_CS0#/FAN_CTL4 FPIO12/SPI_MISO/FANCTL1_1 GPIO13/SPI_MOSI/BEEP GPIO14/FWH_DIS/WDTRST#/SPI_CS1#	-- -- PME# SPI_SLK SPI_CS0# SPI_MISO SPI_MOSI SPI_CS1#
ACPI Function Pins	GPIO15/LED_VSB/ALERT# GPIO16/LED_VCC/Turbo2# PCIRST1#/GPIO20 PCIRST2#/GPIO21 PCIRST3#/GPIO22 GPIO23/RSTCON# ATXPG_IN/GPIO24 PWROK/GPIO32 PWSIN#/GPIO26 PWSOUT#/GPIO27 S3#/GPIO30 PSON#/GPIO31 RSMRST#/GPIO33	-- CPU_FAN_GPO -- -- -- -- ATXPG_IN -- PWSIN# PWSOUT# S3# PSON# RSMRST#
VID Controller	SST/TSI_CLK/GPIO15 PECI/TSI_DAT/GPIO16 SLOTOCC#/GPIO3 GPIO7/Turbo1#/WDTRST#	SIC SID SLOTOCC# --



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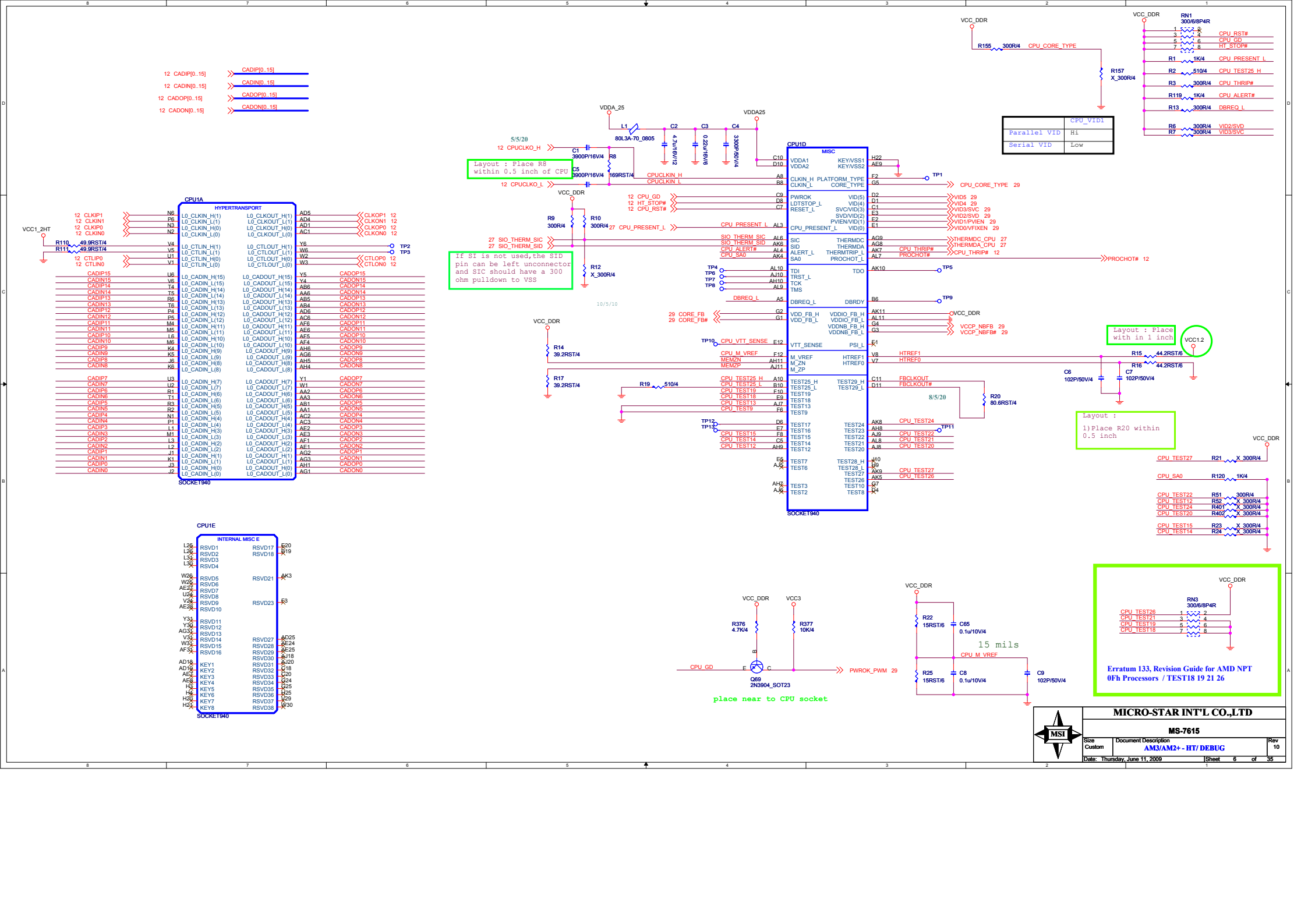
CPU1A
HYPERTRANSPORT
SOCKET940
CPU1D
MISC
SOCKET940
CPU1E
INTERNAL MISC E
SOCKET940
Layout : Place R8 within 0.5 inch of CPU
If SI is not used,the SID pin can be left unconnector and SIC should have a 300 ohm pulldown to VSS
Layout : Place with in 1 inch
Layout : 1)Place R20 within 0.5 inch
place near to CPU socket
15 mils
Erratum 133, Revision Guide for AMD NPT 0Fh Processors / TEST18 19 21 26
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AM3/AM2+ - HT/ DEBUG
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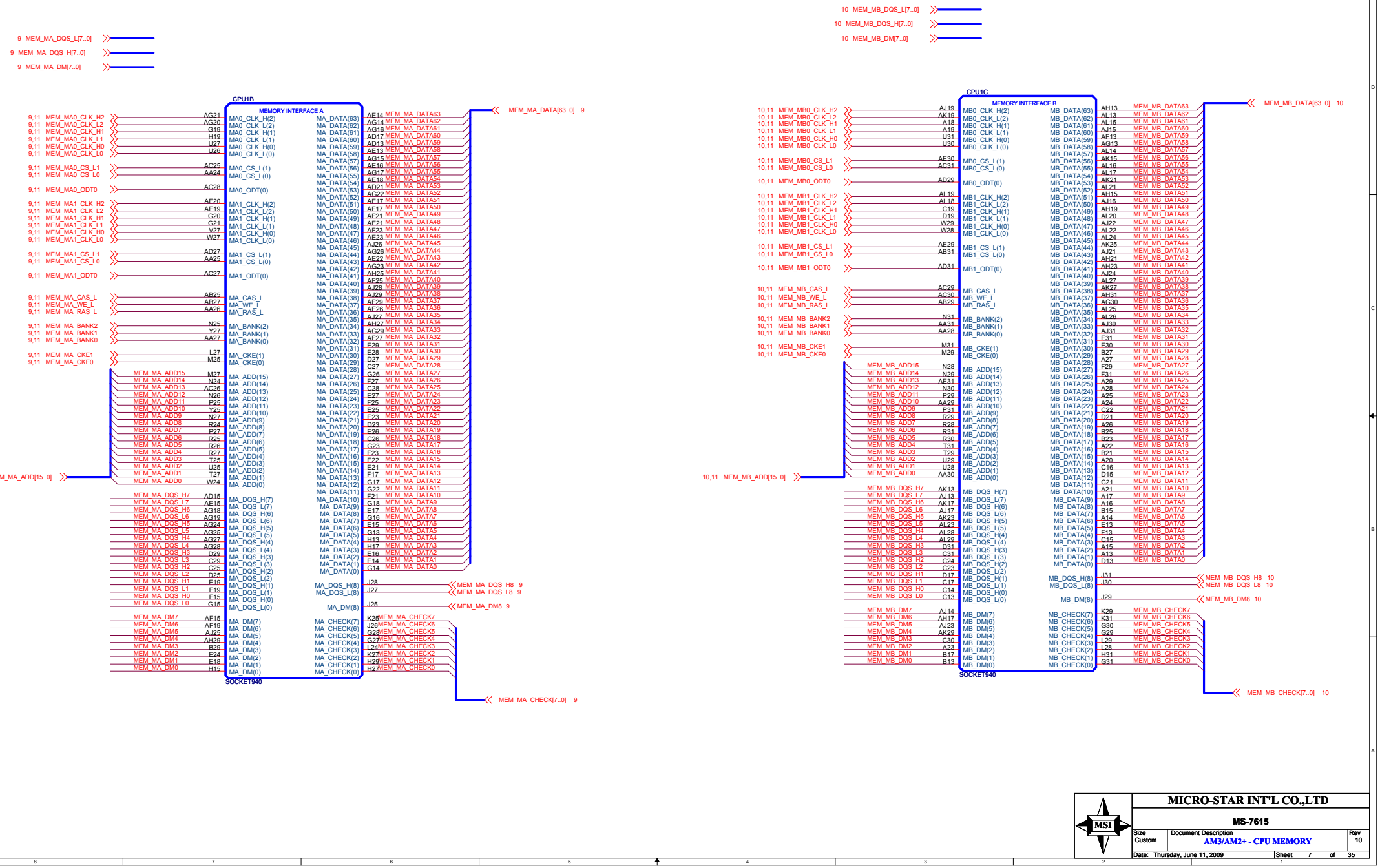

MSI	MICRO-STAR INT'L CO.,LTD	
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Size: Custom	Document Description: AM3/AM2+ - CPU MEMORY	Rev: 10
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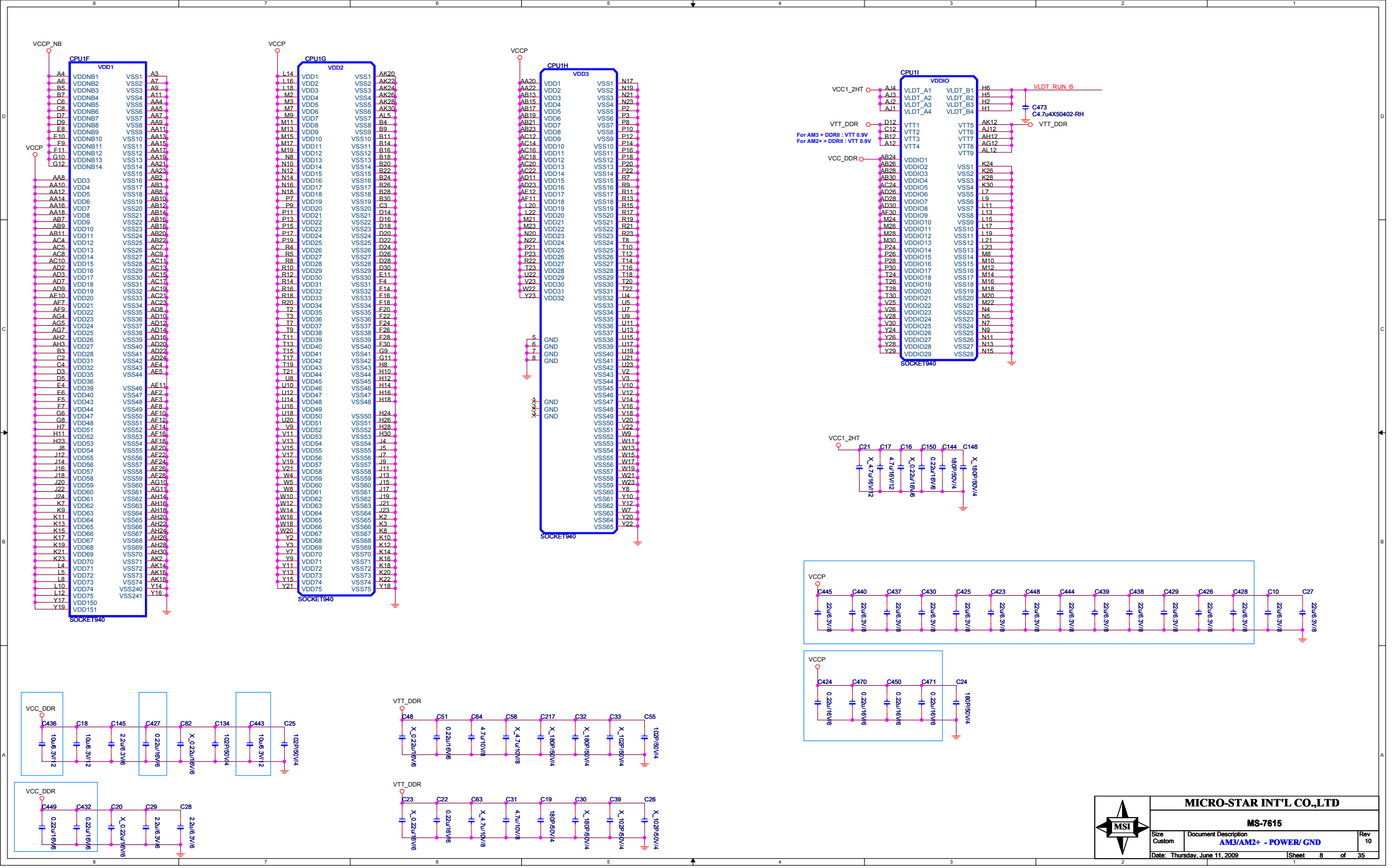

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Size: Custom	Document Description: AM3/AM2+ - POWER/ GND	Rev: 10
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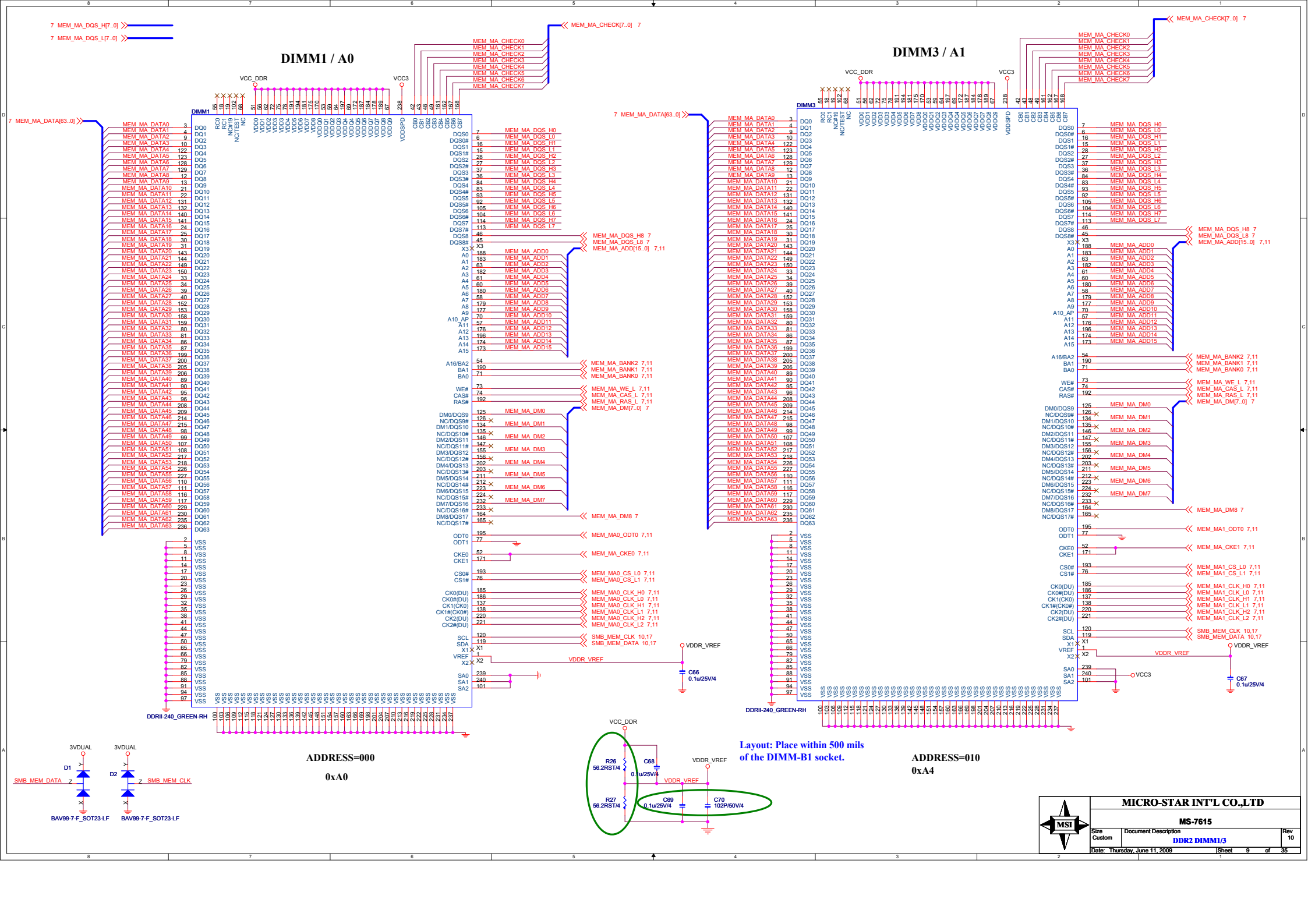
DIMM1 / A0
DIMM3 / A1
DIMM1
DIMM3
DDRII-240_GREEN-RH
ADDRESS=000
0xA0
ADDRESS=010
0xA4
Layout: Place within 500 mils of the DIMM-B1 socket.
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DDR2 DIMM1/3
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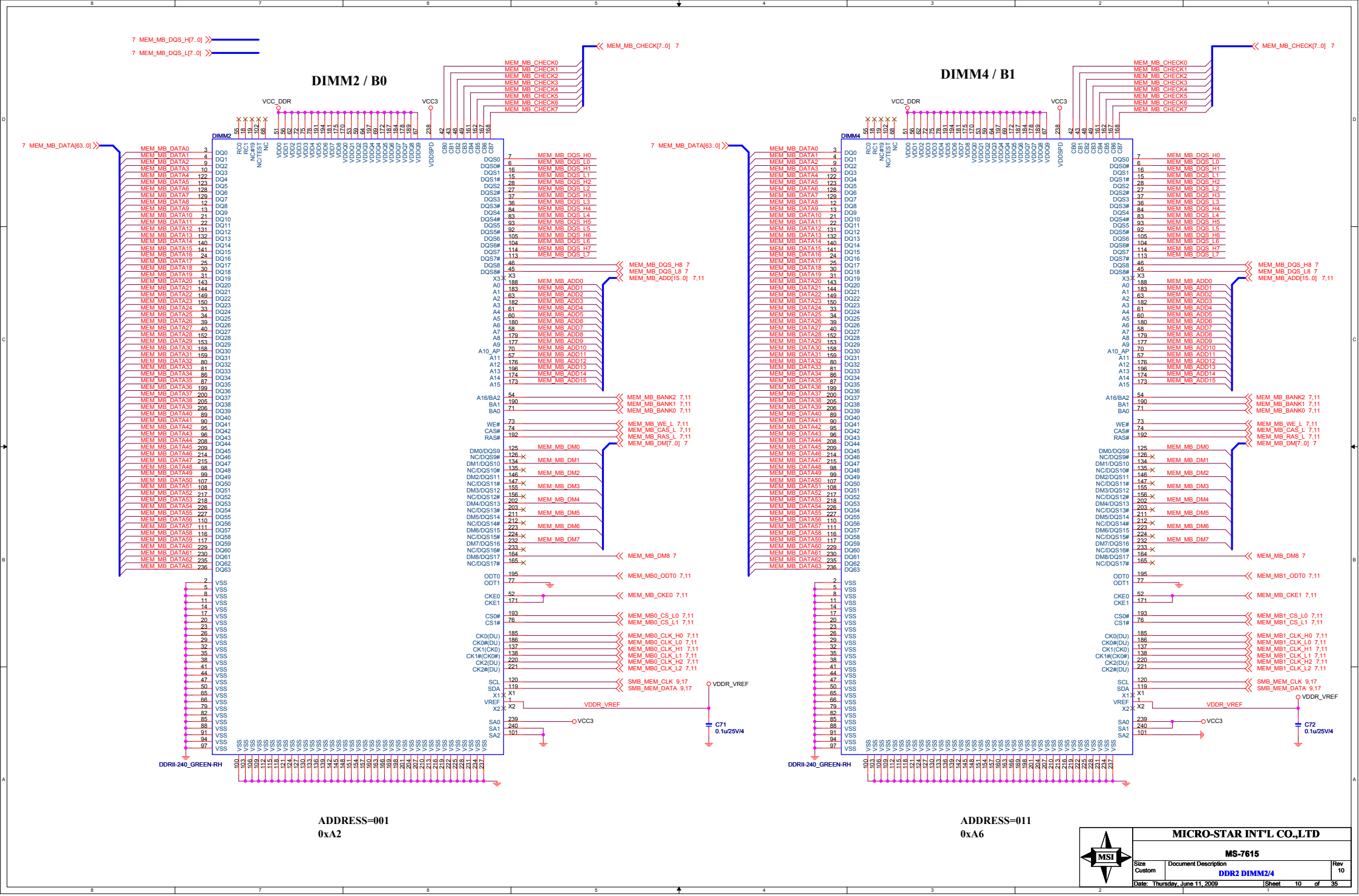

MICRO-STAR INT'L CO.,LTD	
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Size: Custom	Document Description: DDR2 DIMM2/4
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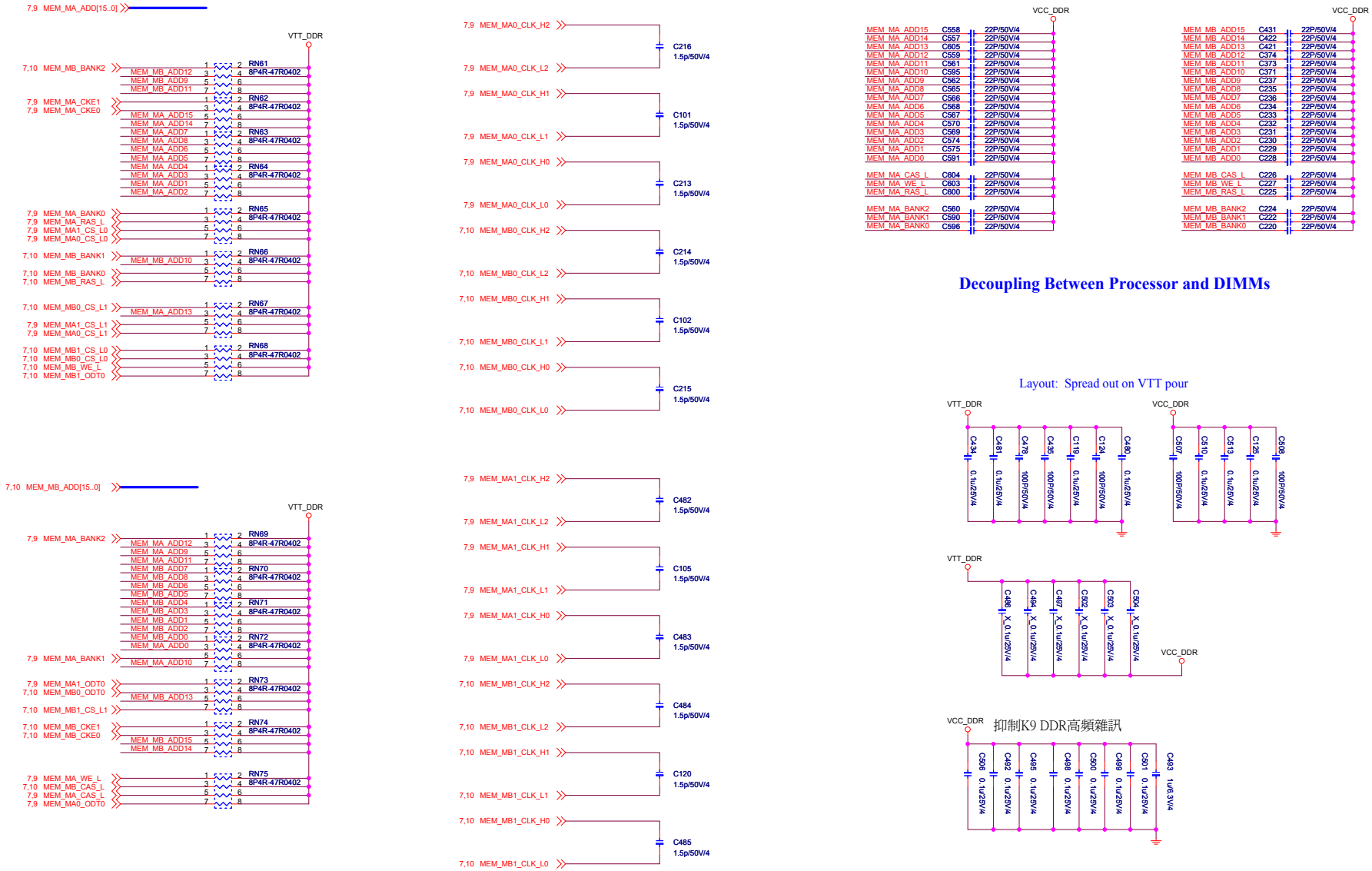
7,9 MEM_MA_ADD[15..0]
VTT_DDR
7,10 MEM_MB_BANK2
MEM_MB_ADD12
MEM_MB_ADD9
MEM_MB_ADD11
RN61
8P4R-47R0402
7,9 MEM_MA_CKE1
7,9 MEM_MA_CKE0
MEM_MA_ADD15
MEM_MA_ADD14
MEM_MA_ADD7
MEM_MA_ADD8
MEM_MA_ADD6
MEM_MA_ADD5
MEM_MA_ADD4
MEM_MA_ADD3
MEM_MA_ADD1
MEM_MA_ADD2
RN62
RN63
RN64
7,9 MEM_MA_BANK0
7,9 MEM_MA_RAS_L
7,9 MEM_MA1_CS_L0
7,9 MEM_MA0_CS_L0
RN65
7,10 MEM_MB_BANK1
MEM_MB_ADD10
RN66
7,10 MEM_MB_BANK0
7,10 MEM_MB_RAS_L
7,10 MEM_MB0_CS_L1
MEM_MA_ADD13
RN67
7,9 MEM_MA1_CS_L1
7,9 MEM_MA0_CS_L1
7,10 MEM_MB1_CS_L0
7,10 MEM_MB0_CS_L0
7,10 MEM_MB_WE_L
7,10 MEM_MB1_ODT0
RN68
7,9 MEM_MA0_CLK_H2
7,9 MEM_MA0_CLK_L2
7,9 MEM_MA0_CLK_H1
7,9 MEM_MA0_CLK_L1
7,9 MEM_MA0_CLK_H0
7,9 MEM_MA0_CLK_L0
7,10 MEM_MB0_CLK_H2
7,10 MEM_MB0_CLK_L2
7,10 MEM_MB0_CLK_H1
7,10 MEM_MB0_CLK_L1
7,10 MEM_MB0_CLK_H0
7,10 MEM_MB0_CLK_L0
C216
C101
C213
C214
C102
C215
1.5p/50V/4
VCC_DDR
MEM_MA_ADD15 C558
MEM_MA_ADD14 C557
MEM_MA_ADD13 C605
MEM_MA_ADD12 C559
MEM_MA_ADD11 C561
MEM_MA_ADD10 C595
MEM_MA_ADD9 C562
MEM_MA_ADD8 C565
MEM_MA_ADD7 C566
MEM_MA_ADD6 C568
MEM_MA_ADD5 C567
MEM_MA_ADD4 C570
MEM_MA_ADD3 C569
MEM_MA_ADD2 C574
MEM_MA_ADD1 C575
MEM_MA_ADD0 C591
MEM_MA_CAS_L C604
MEM_MA_WE_L C603
MEM_MA_RAS_L C600
MEM_MA_BANK2 C560
MEM_MA_BANK1 C590
MEM_MA_BANK0 C596
22P/50V/4
MEM_MB_ADD15 C431
MEM_MB_ADD14 C422
MEM_MB_ADD13 C421
MEM_MB_ADD12 C374
MEM_MB_ADD11 C373
MEM_MB_ADD10 C371
MEM_MB_ADD9 C237
MEM_MB_ADD8 C235
MEM_MB_ADD7 C236
MEM_MB_ADD6 C234
MEM_MB_ADD5 C233
MEM_MB_ADD4 C232
MEM_MB_ADD3 C231
MEM_MB_ADD2 C230
MEM_MB_ADD1 C229
MEM_MB_ADD0 C228
MEM_MB_CAS_L C226
MEM_MB_WE_L C227
MEM_MB_RAS_L C225
MEM_MB_BANK2 C224
MEM_MB_BANK1 C222
MEM_MB_BANK0 C220
Decoupling Between Processor and DIMMs
Layout: Spread out on VTT pour
VTT_DDR
VCC_DDR
C434 C481 C478 C435 C119 C124 C490
C507 C510 C513 C125 C508
0.1u/25V/4
100P/50V/4
C486 C494 C497 C502 C503 C504
X_0.1u/25V/4
抑制K9 DDR高頻雜訊
C506 C492 C495 C498 C500 C499 C501 C493
1u/6.3V/4
7,10 MEM_MB_ADD[15..0]
7,9 MEM_MA_BANK2
MEM_MA_ADD12
MEM_MA_ADD9
MEM_MA_ADD11
RN69
8P4R-47R0402
MEM_MB_ADD7
MEM_MB_ADD8
MEM_MB_ADD6
MEM_MB_ADD5
MEM_MB_ADD4
MEM_MB_ADD3
MEM_MB_ADD1
MEM_MB_ADD2
MEM_MB_ADD0
MEM_MA_ADD0
RN70
RN71
RN72
7,9 MEM_MA_BANK1
MEM_MA_ADD10
7,9 MEM_MA1_ODT0
7,10 MEM_MB0_ODT0
MEM_MB_ADD13
RN73
7,10 MEM_MB1_CS_L1
7,10 MEM_MB_CKE1
7,10 MEM_MB_CKE0
MEM_MB_ADD15
MEM_MB_ADD14
RN74
7,9 MEM_MA_WE_L
7,10 MEM_MB_CAS_L
7,9 MEM_MA_CAS_L
7,9 MEM_MA0_ODT0
RN75
7,9 MEM_MA1_CLK_H2
7,9 MEM_MA1_CLK_L2
7,9 MEM_MA1_CLK_H1
7,9 MEM_MA1_CLK_L1
7,9 MEM_MA1_CLK_H0
7,9 MEM_MA1_CLK_L0
7,10 MEM_MB1_CLK_H2
7,10 MEM_MB1_CLK_L2
7,10 MEM_MB1_CLK_H1
7,10 MEM_MB1_CLK_L1
7,10 MEM_MB1_CLK_H0
7,10 MEM_MB1_CLK_L0
C482
C105
C483
C484
C120
C485
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Size Custom
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DDR2 Terminatior
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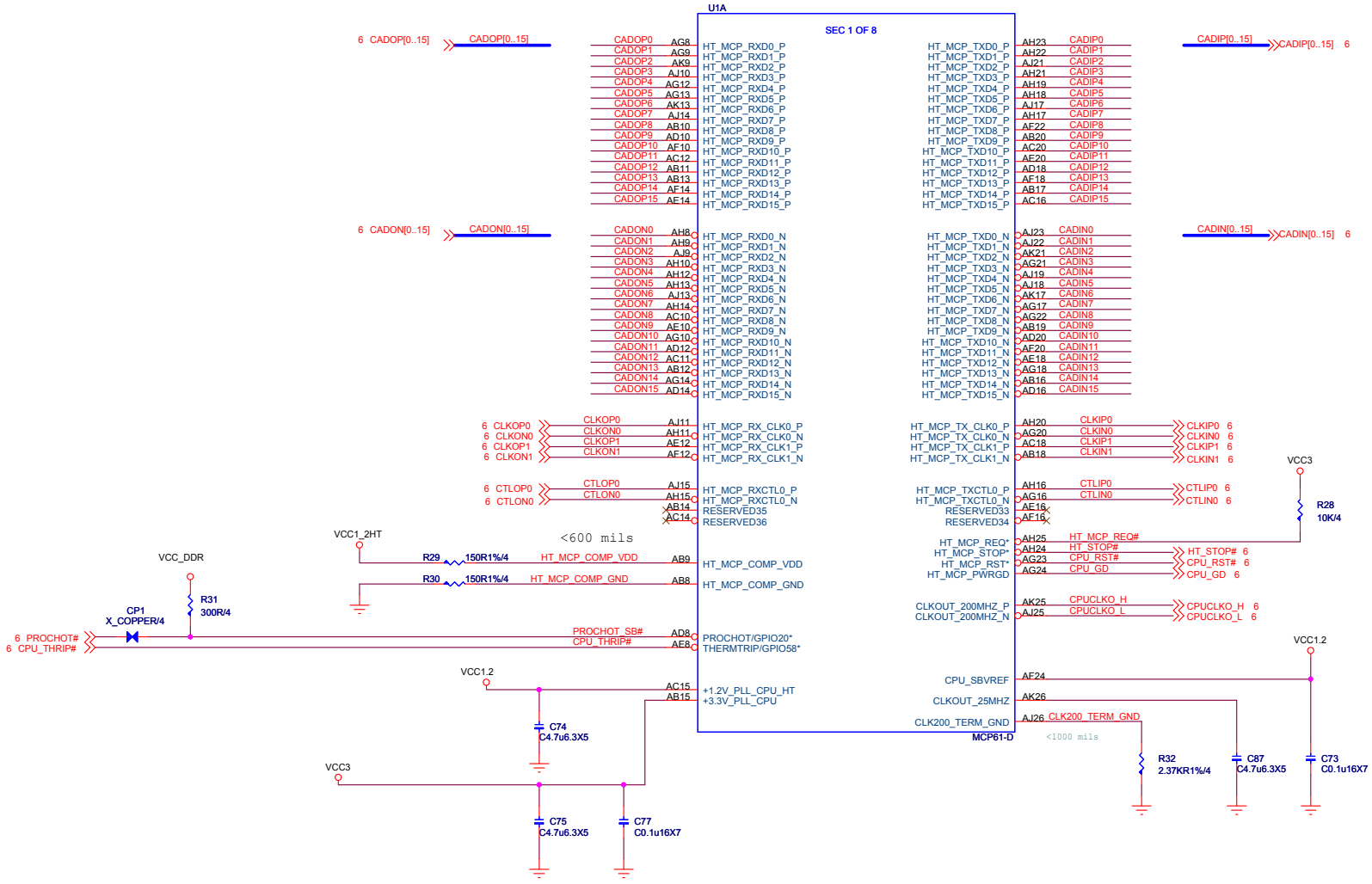

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MS-7597		
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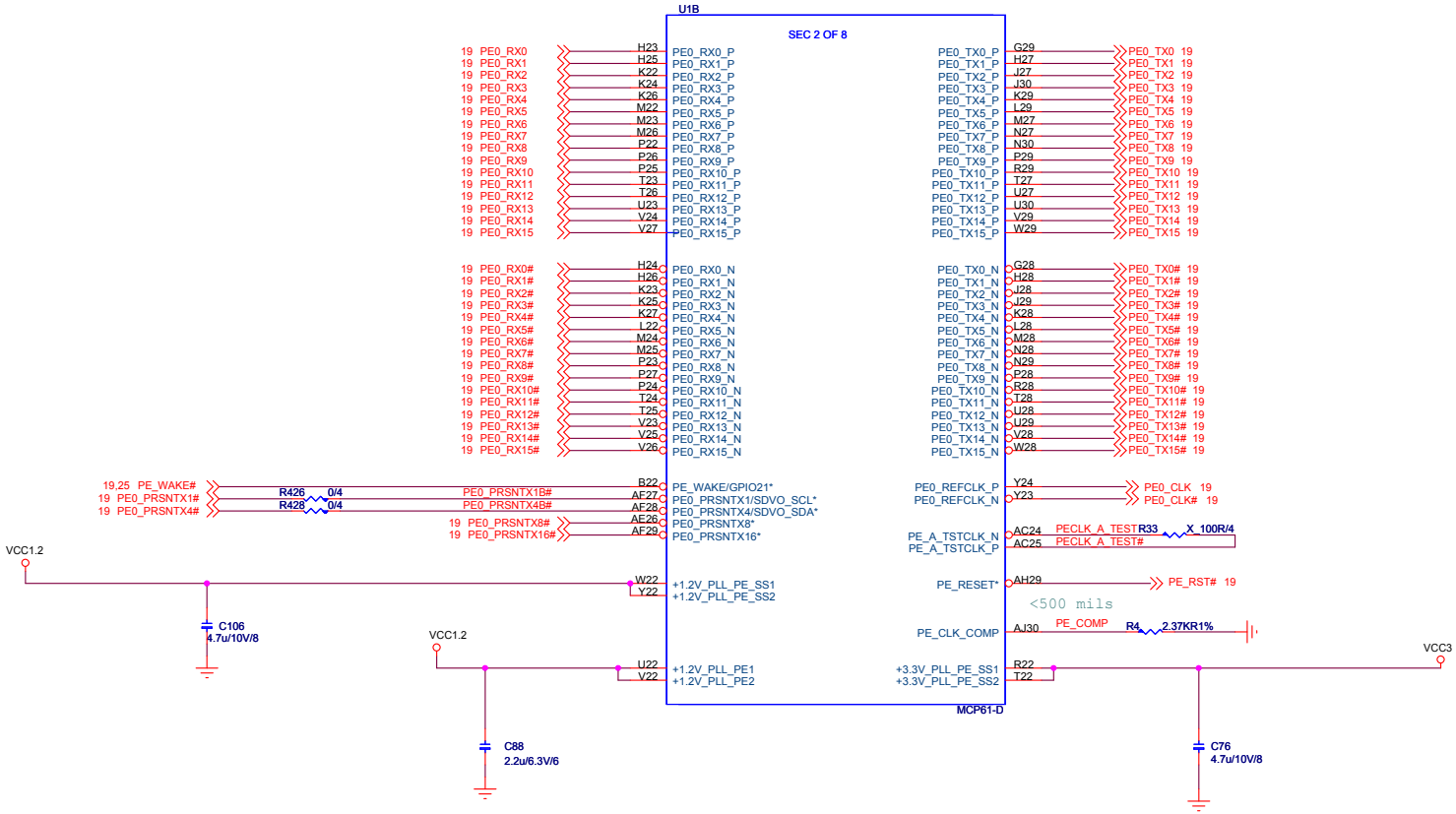

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MS-7615		
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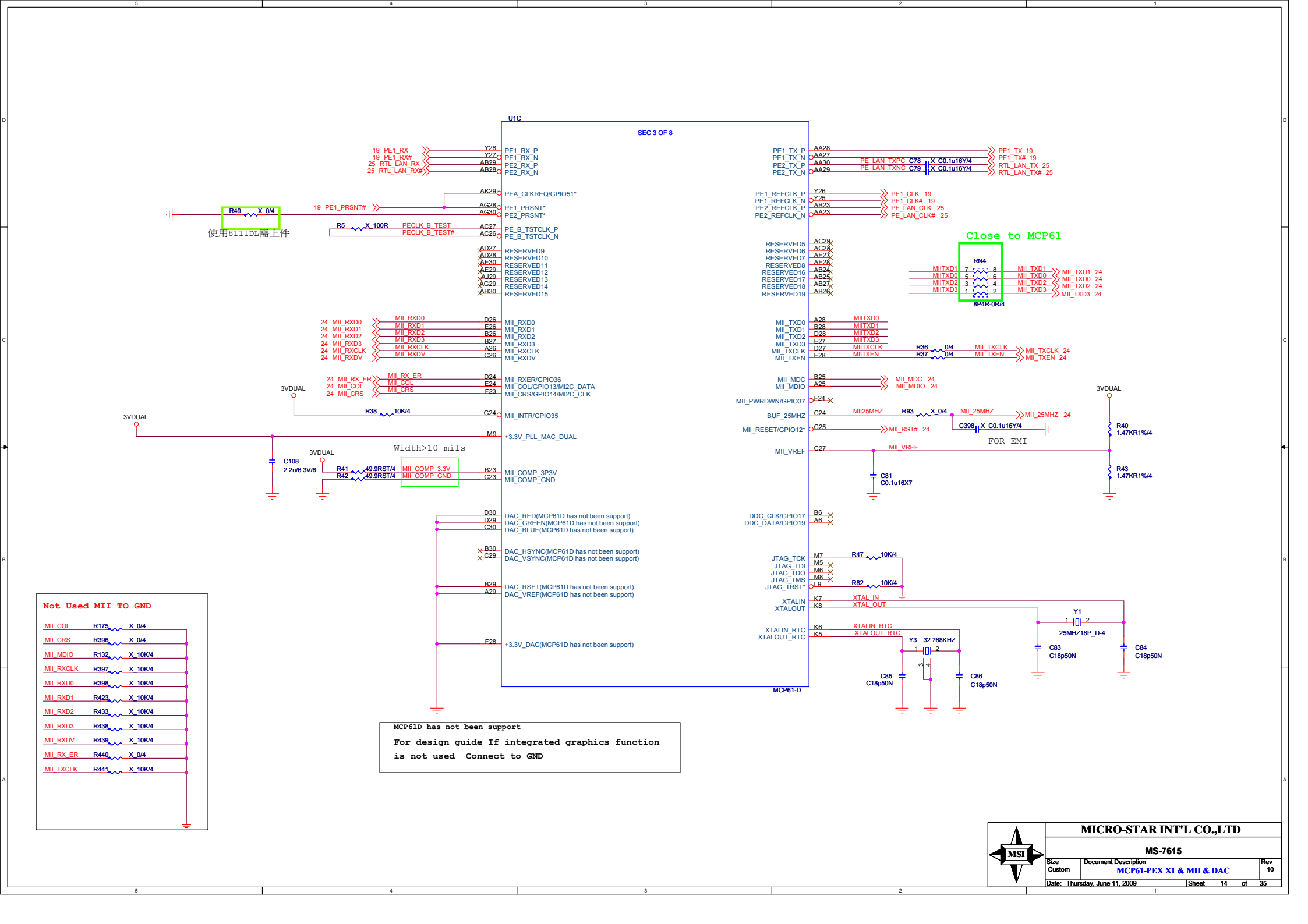
U1C
SEC 3 OF 8
MCP61-D
19 PE1_RX
19 PE1_RX#
25 RTL_LAN_RX
25 RTL_LAN_RX#
Y28 PE1_RX_P
Y27 PE1_RX_N
AB29 PE2_RX_P
AB28 PE2_RX_N
PE1_TX_P AA28 PE1_TX 19
PE1_TX_N AA27 PE1_TX# 19
PE2_TX_P AA30 RTL_LAN_TX 25
PE2_TX_N AA29 RTL_LAN_TX# 25
PE_LAN_TXPC C78 X_C0.1u16Y/4
PE_LAN_TXNC C79 X_C0.1u16Y/4
AK29 PEA_CLKREQ/GPIO51*
19 PE1_PRSNT#
AG28 PE1_PRSNT*
AG30 PE2_PRSNT*
R49 X_0/4
使用8111DL需上件
PE1_REFCLK_P Y26 PE1_CLK 19
PE1_REFCLK_N Y25 PE1_CLK# 19
PE2_REFCLK_P AB23 PE_LAN_CLK 25
PE2_REFCLK_N AA23 PE_LAN_CLK# 25
R5 X_100R PECLK_B_TEST PECLK_B_TEST#
AC27 PE_B_TSTCLK_P
AC26 PE_B_TSTCLK_N
AD27 RESERVED9
AD28 RESERVED10
AE30 RESERVED11
AE29 RESERVED12
AJ29 RESERVED13
AG29 RESERVED14
AH30 RESERVED15
RESERVED5 AC29
RESERVED6 AC28
RESERVED7 AE27
RESERVED8 AE28
RESERVED16 AB24
RESERVED17 AB25
RESERVED18 AB27
RESERVED19 AB26
Close to MCP61
RN4
MIITXD1 7 8 MII_TXD1
MIITXD0 5 6 MII_TXD0
MIITXD2 3 4 MII_TXD2
MIITXD3 1 2 MII_TXD3
MII_TXD1 24
MII_TXD0 24
MII_TXD2 24
MII_TXD3 24
8P4R-0R/4
24 MII_RXD0 MII_RXD0 D26 MII_RXD0
24 MII_RXD1 MII_RXD1 E26 MII_RXD1
24 MII_RXD2 MII_RXD2 B26 MII_RXD2
24 MII_RXD3 MII_RXD3 B27 MII_RXD3
24 MII_RXCLK MII_RXCLK A26 MII_RXCLK
24 MII_RXDV MII_RXDV C26 MII_RXDV
MII_TXD0 A28 MIITXD0
MII_TXD1 B28 MIITXD1
MII_TXD2 D28 MIITXD2
MII_TXD3 E27 MIITXD3
MII_TXCLK D27 MIITXCLK R36 0/4 MII_TXCLK MII_TXCLK 24
MII_TXEN E28 MIITXEN R37 0/4 MII_TXEN MII_TXEN 24
24 MII_RX_ER MII_RX_ER D24 MII_RXER/GPIO36
24 MII_COL MII_COL E24 MII_COL/GPIO13/MI2C_DATA
24 MII_CRS MII_CRS F23 MII_CRS/GPIO14/MI2C_CLK
MII_MDC B25 MII_MDC 24
MII_MDIO A25 MII_MDIO 24
MII_PWRDWN/GPIO37 F24
3VDUAL
R38 10K/4
G24 MII_INTR/GPIO35
3VDUAL
M9 +3.3V_PLL_MAC_DUAL
Width>10 mils
C108 2.2u/6.3V/6
3VDUAL
R41 49.9RST/4 MII_COMP_3.3V
R42 49.9RST/4 MII_COMP_GND
B23 MII_COMP_3P3V
C23 MII_COMP_GND
BUF_25MHZ C24 MII25MHZ R93 X_0/4 MII_25MHZ MII_25MHZ 24
MII_RESET/GPIO12* C25 MII_RST# 24
C398 X_C0.1u16Y/4
FOR EMI
MII_VREF C27 MII_VREF
C81 C0.1u16X7
3VDUAL
R40 1.47KR1%/4
R43 1.47KR1%/4
D30 DAC_RED(MCP61D has not been support)
D29 DAC_GREEN(MCP61D has not been support)
C30 DAC_BLUE(MCP61D has not been support)
B30 DAC_HSYNC(MCP61D has not been support)
C29 DAC_VSYNC(MCP61D has not been support)
B29 DAC_RSET(MCP61D has not been support)
A29 DAC_VREF(MCP61D has not been support)
F28 +3.3V_DAC(MCP61D has not been support)
DDC_CLK/GPIO17 B6
DDC_DATA/GPIO19 A6
JTAG_TCK M7 R47 10K/4
JTAG_TDI M5
JTAG_TDO M6
JTAG_TMS M8
JTAG_TRST* L9 R82 10K/4
XTALIN K7 XTAL_IN
XTALOUT K8 XTAL_OUT
Y1
25MHZ18P_D-4
C83 C18p50N
C84 C18p50N
XTALIN_RTC K6 XTALIN_RTC
XTALOUT_RTC K5 XTALOUT_RTC
Y3 32.768KHZ
C85 C18p50N
C86 C18p50N
MCP61D has not been support
For design guide If integrated graphics function is not used Connect to GND
Not Used MII TO GND
MII_COL R175 X_0/4
MII_CRS R396 X_0/4
MII_MDIO R132 X_10K/4
MII_RXCLK R397 X_10K/4
MII_RXD0 R398 X_10K/4
MII_RXD1 R423 X_10K/4
MII_RXD2 R433 X_10K/4
MII_RXD3 R438 X_10K/4
MII_RXDV R439 X_10K/4
MII_RX_ER R440 X_0/4
MII_TXCLK R441 X_10K/4
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Size Custom
Document Description MCP61-PEX X1 & MII & DAC
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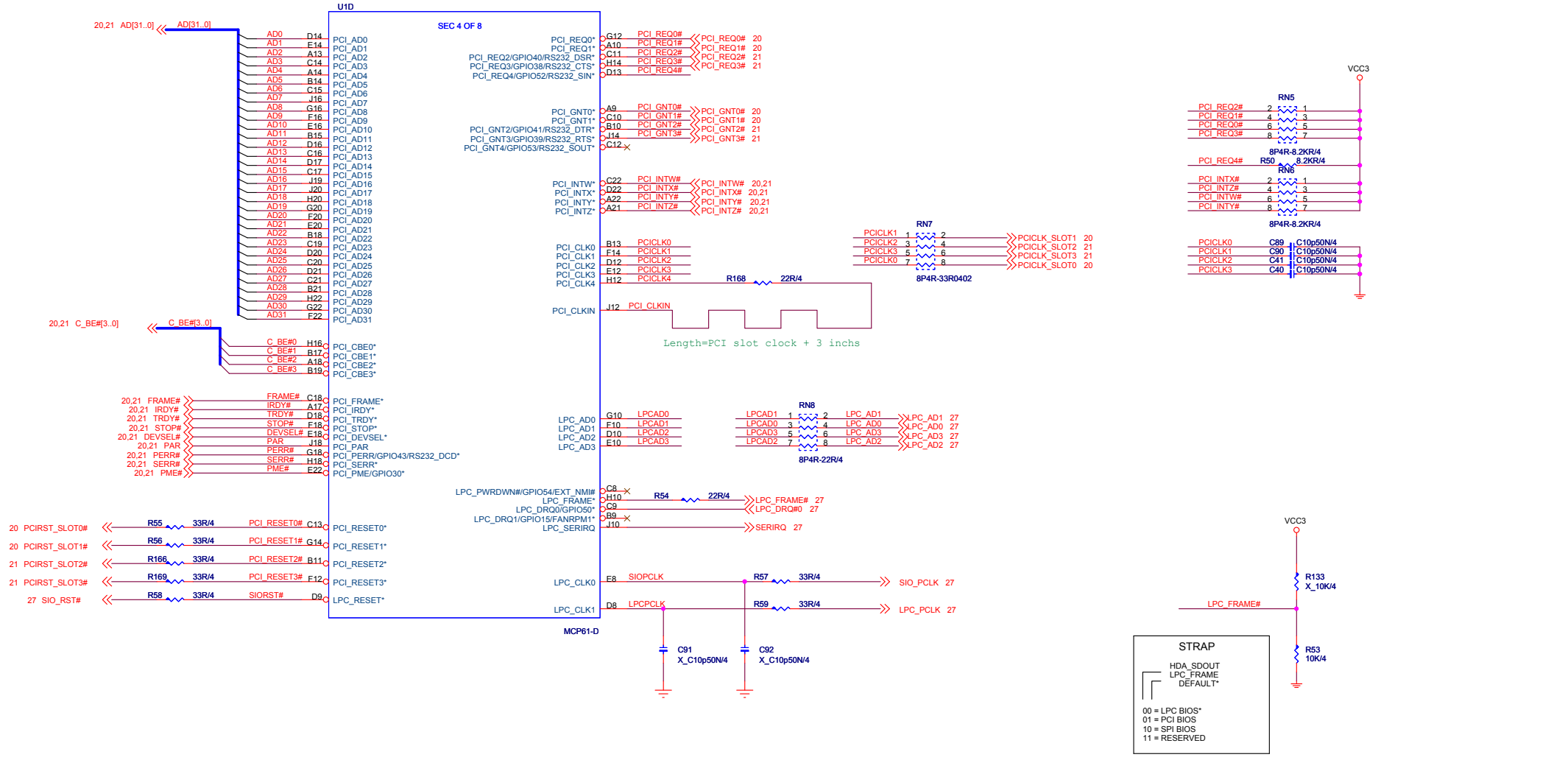

MICRO-STAR INT'L CO.,LTD		
MS-7615		
Size: Custom	Document Description: MCP61-PCI & LPC	Rev: 10
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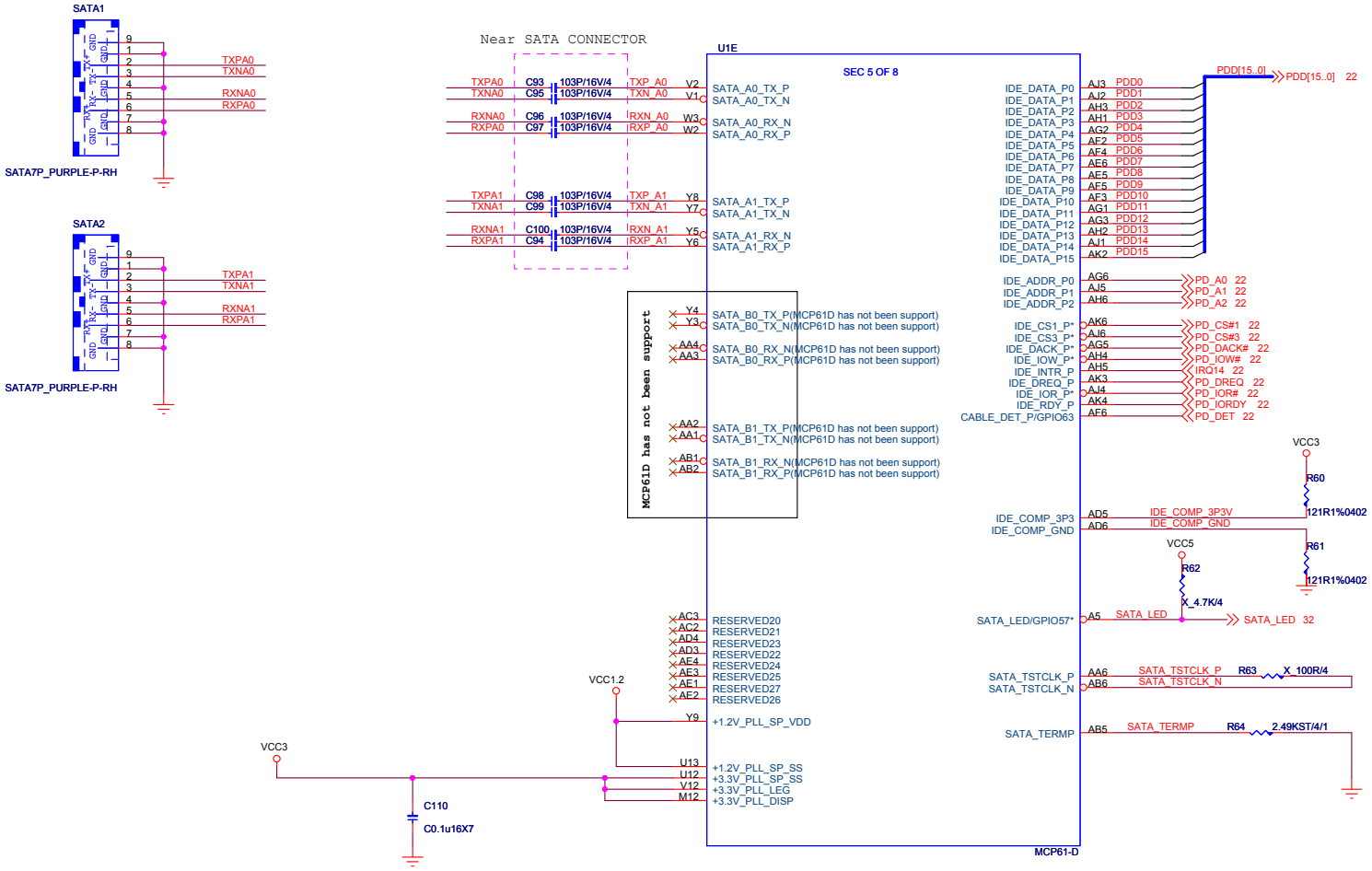
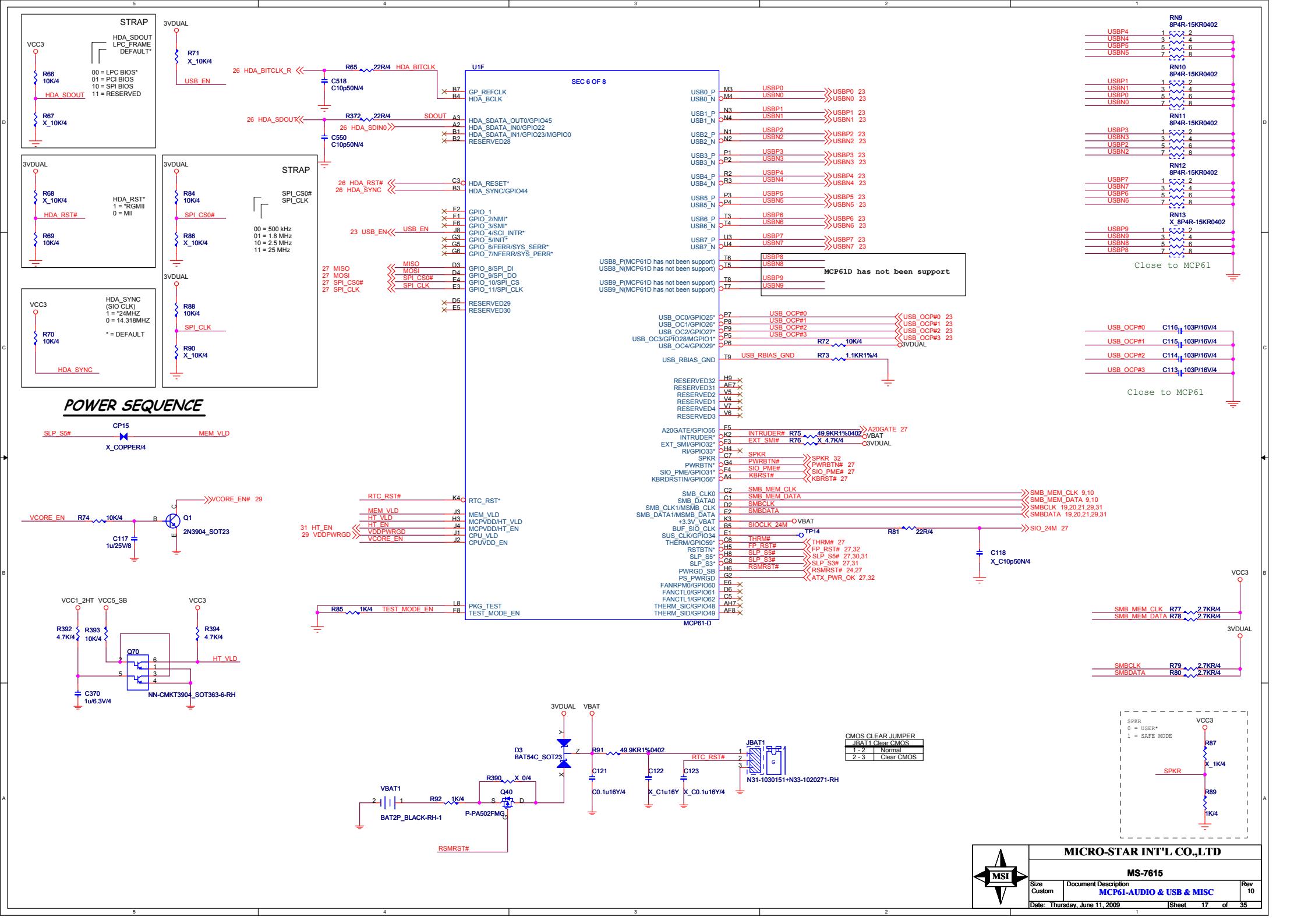


MICRO-STAR INT'L CO.,LTD		
MS-7615		
Size: Custom	Document Description: MCP61-SATA & IDE	Rev: 10
Date: Thursday, June 11, 2009	Sheet 16 of 35	


STRAP
HDA_SDOUT
LPC_FRAME
DEFAULT*
00 = LPC BIOS*
01 = PCI BIOS
10 = SPI BIOS
11 = RESERVED
R66 10K/4
R67 X_10K/4
R71 X_10K/4
USB_EN
R65 22R/4 HDA_BITCLK
C518 C10p50N/4
R372 22R/4 SDOUT
C550 C10p50N/4
U1F
SEC 6 OF 8
GP_REFCLK
HDA_BCLK
HDA_SDATA_OUT0/GPIO45
HDA_SDATA_IN0/GPIO22
HDA_SDATA_IN1/GPIO23/MGPIO0
RESERVED28
HDA_RESET*
HDA_SYNC/GPIO44
GPIO_1
GPIO_2/NMI*
GPIO_3/SMI*
GPIO_4/SCI_INTR*
GPIO_5/INIT*
GPIO_6/FERR/SYS_SERR*
GPIO_7/NFERR/SYS_PERR*
GPIO_8/SPI_DI
GPIO_9/SPI_DO
GPIO_10/SPI_CS
GPIO_11/SPI_CLK
RESERVED29
RESERVED30
MCP61-D
R68 X_10K/4
R69 10K/4
HDA_RST*
1 = *RGMII
0 = MII
R84 10K/4
R86 X_10K/4
SPI_CS0#
SPI_CLK
00 = 500 kHz
01 = 1.8 MHz
10 = 2.5 MHz
11 = 25 MHz
R88 10K/4
R90 X_10K/4
R70 10K/4
HDA_SYNC
(SIO CLK)
1 = *24MHZ
0 = 14.318MHZ
* = DEFAULT
USB0_P
USB0_N
USB1_P
USB1_N
USB2_P
USB2_N
USB3_P
USB3_N
USB4_P
USB4_N
USB5_P
USB5_N
USB6_P
USB6_N
USB7_P
USB7_N
USB8_P(MCP61D has not been support)
USB8_N(MCP61D has not been support)
USB9_P(MCP61D has not been support)
USB9_N(MCP61D has not been support)
MCP61D has not been support
USB_OC0/GPIO25*
USB_OC1/GPIO26*
USB_OC2/GPIO27*
USB_OC3/GPIO28/MGPIO1*
USB_OC4/GPIO29*
R72 10K/4
USB_RBIAS_GND
R73 1.1KR1%/4
RESERVED32
RESERVED31
RESERVED2
RESERVED1
RESERVED4
RESERVED3
A20GATE/GPIO55
INTRUDER*
EXT_SMI/GPIO32*
RI/GPIO33*
SPKR
PWRBTN*
SIO_PME/GPIO31*
KBRDRSTIN/GPIO56*
R75 49.9KR1%0402
R76 X_4.7K/4
SMB_CLK0
SMB_DATA0
SMB_CLK1/MSMB_CLK
SMB_DATA1/MSMB_DATA
+3.3V_VBAT
BUF_SIO_CLK
SUS_CLK/GPIO34
THERM/GPIO59*
RSTBTN*
SLP_S5*
SLP_S3*
PWRGD_SB
PS_PWRGD
FANRPM0/GPIO60
FANCTL0/GPIO61
FANCTL1/GPIO62
THERM_SIC/GPIO48
THERM_SID/GPIO49
SIOCLK_24M
TP14
R81 22R/4
C118 X_C10p50N/4
RTC_RST#
MEM_VLD
HT_VLD
HT_EN
VDDPWRGD
VCORE_EN
MCPVDD/HT_VLD
MCPVDD/HT_EN
CPU_VLD
CPUVDD_EN
R85 1K/4 TEST_MODE_EN
PKG_TEST
TEST_MODE_EN
RN9 8P4R-15KR0402
RN10 8P4R-15KR0402
RN11 8P4R-15KR0402
RN12 8P4R-15KR0402
RN13 X_8P4R-15KR0402
Close to MCP61
C116 103P/16V/4
C115 103P/16V/4
C114 103P/16V/4
C113 103P/16V/4
Close to MCP61
POWER SEQUENCE
CP15
X_COPPER/4
SLP_S5#
MEM_VLD
VCORE_EN
R74 10K/4
C117 1u/25V/8
Q1
2N3904_SOT23
VCC1_2HT
VCC5_SB
R392 4.7K/4
R393 10K/4
R394 4.7K/4
Q70
NN-CMKT3904_SOT363-6-RH
C370 1u/6.3V/4
SMB_MEM_CLK
SMB_MEM_DATA
SMBCLK
SMBDATA
R77 2.7KR/4
R78 2.7KR/4
R79 2.7KR/4
R80 2.7KR/4
D3 BAT54C_SOT23
R91 49.9KR1%0402
C121 C0.1u16Y/4
C122 X_C1u16Y
C123 X_C0.1u16Y/4
JBAT1
N31-1030151+N33-1020271-RH
CMOS CLEAR JUMPER
JBAT1 Clear CMOS
1 - 2 Normal
2 - 3 Clear CMOS
R390 X_0/4
Q40
P-PA502FMG
R92 1K/4
BAT2P_BLACK-RH-1
RSMRST#
SPKR
0 = USER*
1 = SAFE MODE
R87 X_1K/4
R89 1K/4
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MS-7615
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Document Description
MCP61-AUDIO & USB & MISC
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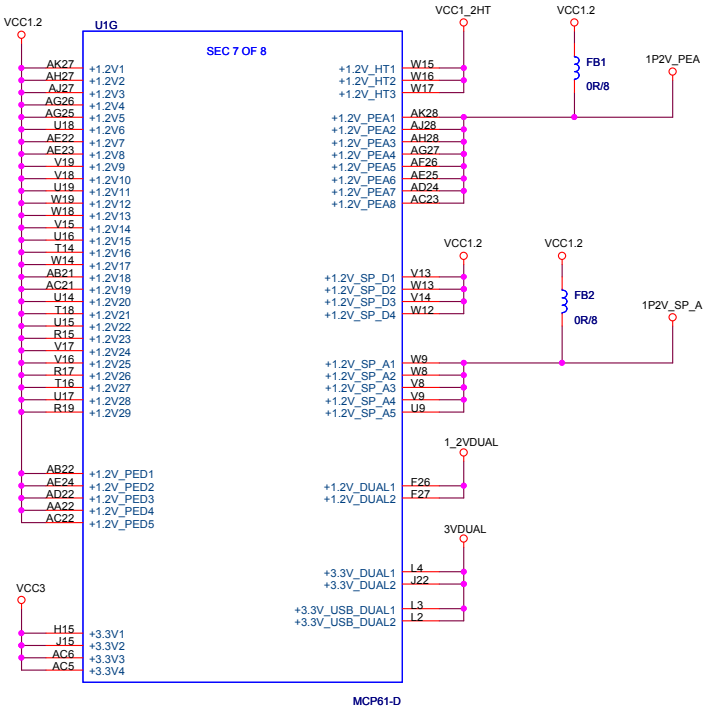
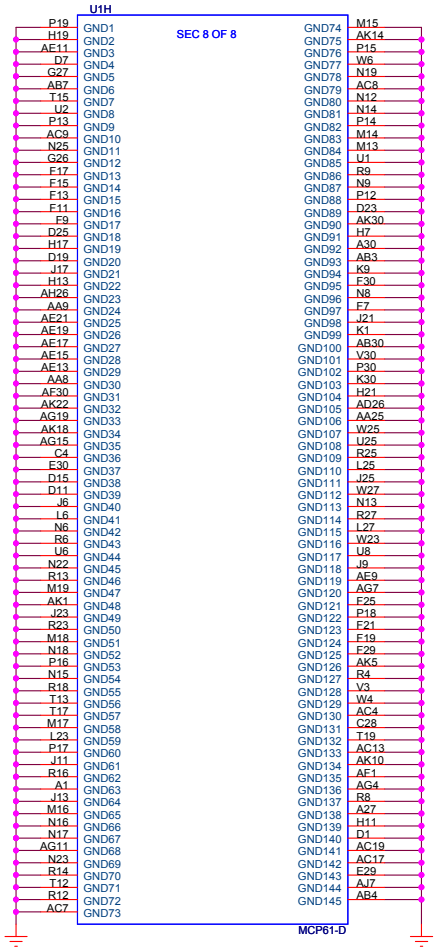
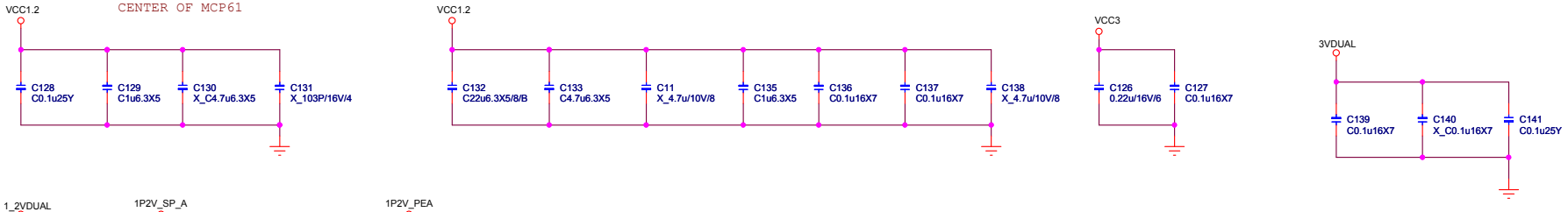
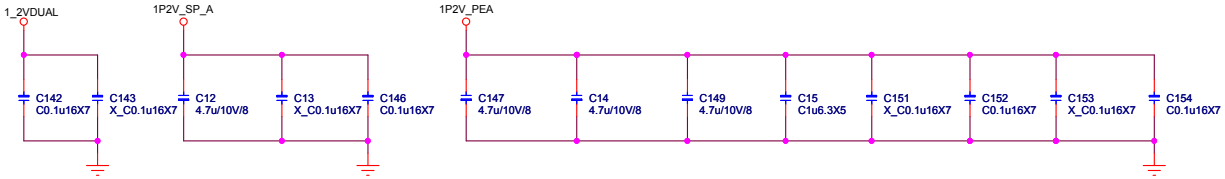




PLACE ON BACK SIDE
CENTER OF MCP61





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Custom	MCP61-Power & GND	10

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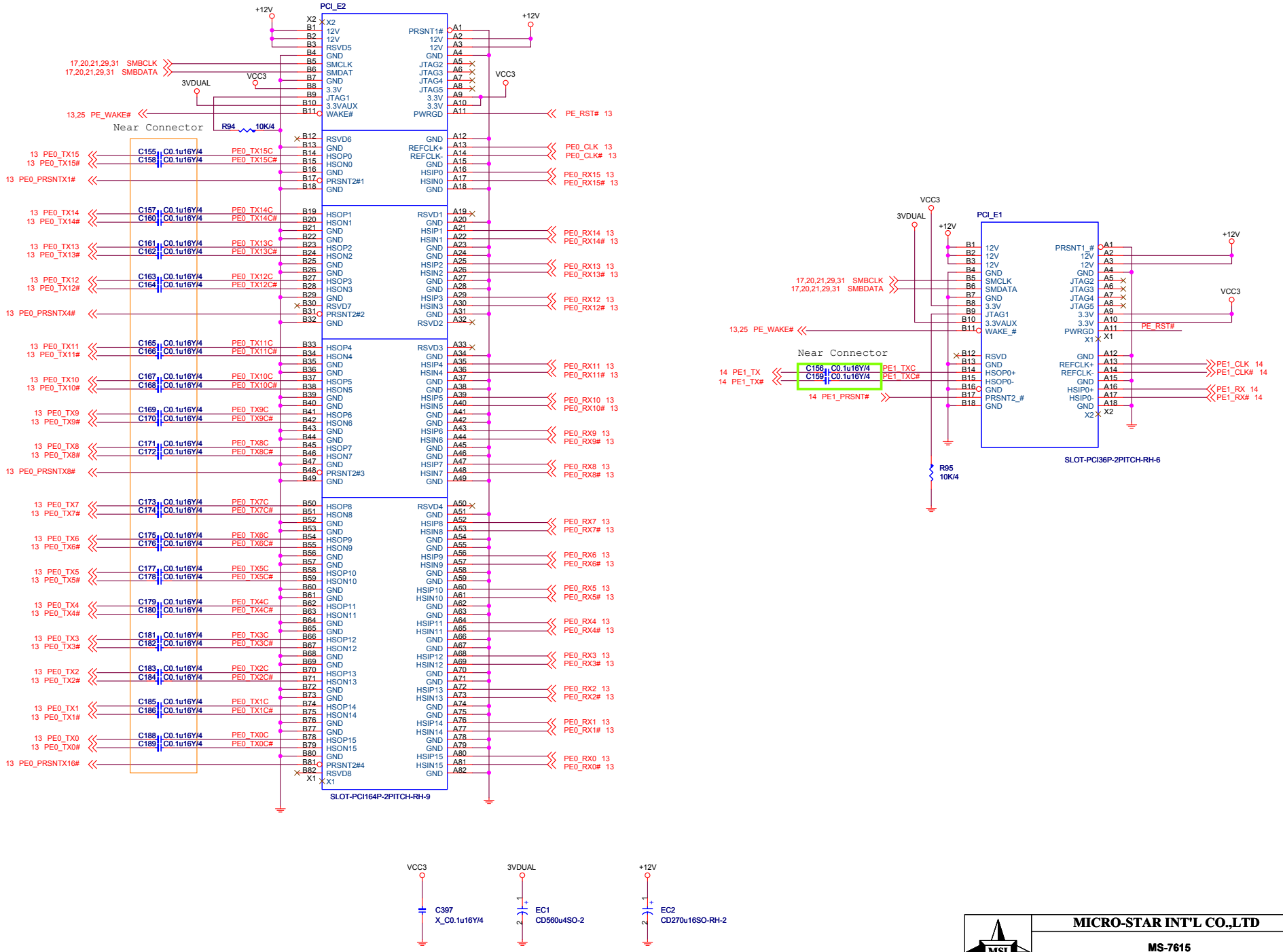

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MS-7615	
Size: Custom	Document Description: PCI-E X16 SLOT&PCI-E X1 SLOT
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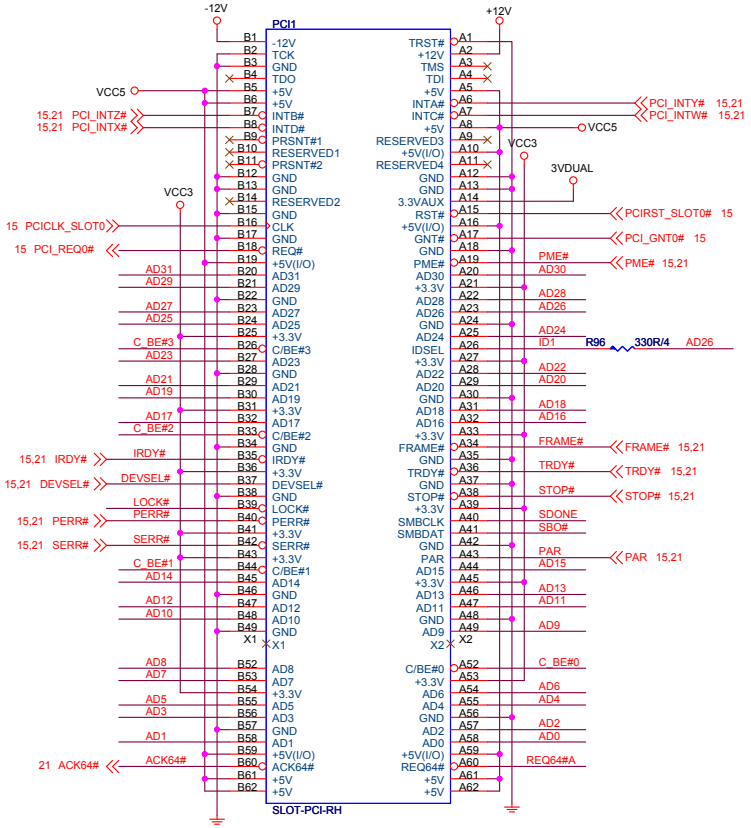
15,21 AD[31..0] AD[31..0]

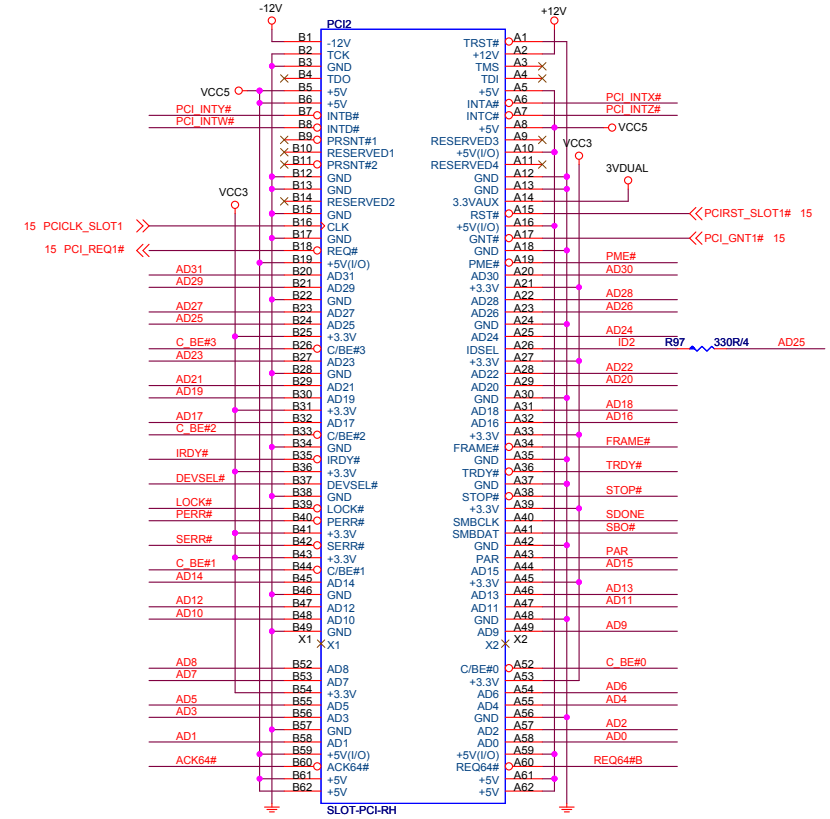
15,21 C_BE#[3..0] C_BE#[3..0]

PCI SLOT 1 (PCI VER: 2.2 COMPLY)



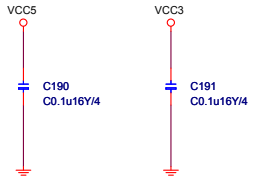
IDSEL = AD26
PCI_REQ0# PCI_GNT0#
INT Y# Z# W# X#
PCICLK_SLOT1

PCI SLOT 2 (PCI VER: 2.2 COMPLY)

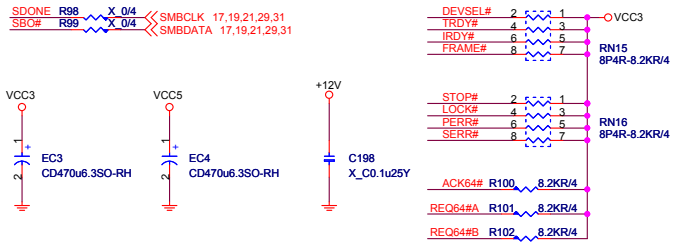


IDSEL = AD25
PCI_REQ1# PCI_GNT1#
INT X# Y# Z# W#
PCICLK_SLOT2

PCI SLOT DECOUPLING CAPACITORS



PCI PULL-UP / DOWN RESISTORS



MICRO-STAR INT'L CO.,LTD

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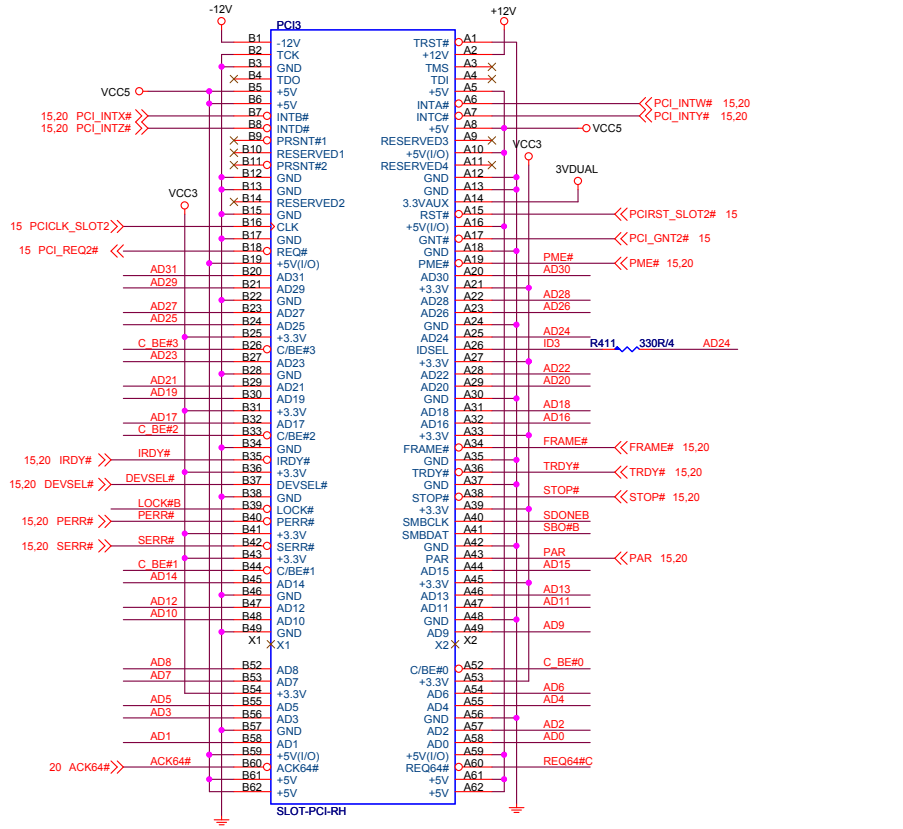
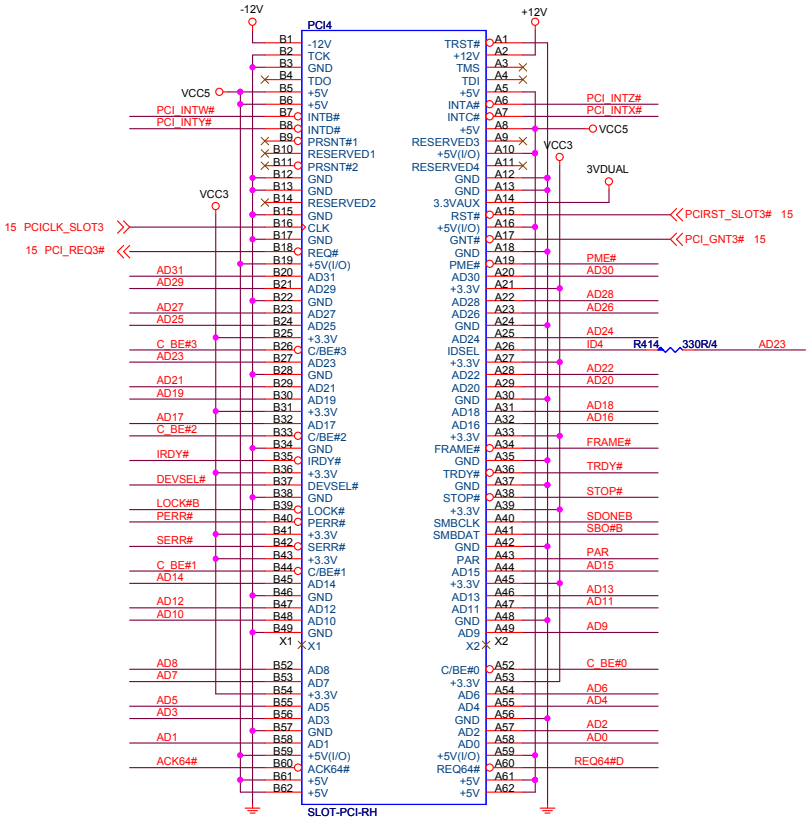
PCI SLOT 3 (PCI VER: 2.2 COMPLY)



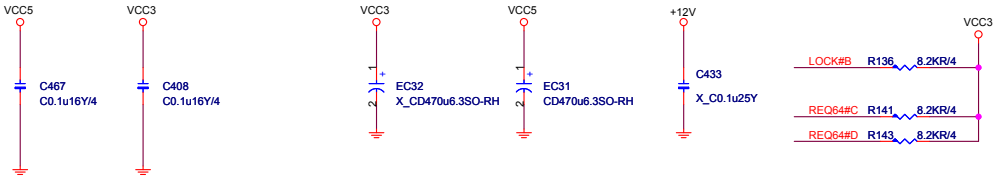
IDSEL = AD24
PCI_REQ2# PCI_GNT2#
INT W# X# Y# Z#
PCICLK_SLOT3

PCI SLOT 4(PCI VER: 2.2 COMPLY)



IDSEL = AD23
PCI_REQ3# PCI_GNT#
INT Z# W# X#Y#
PCICLK_SLOT4

PCI SLOT DECOUPLING CAPACITORS



PCI PULL-UP / DOWN RESISTORS

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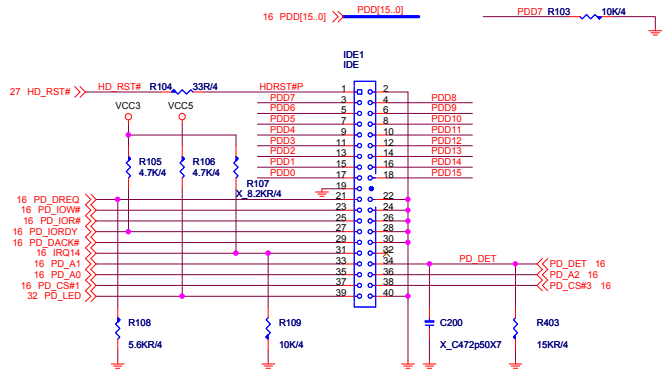
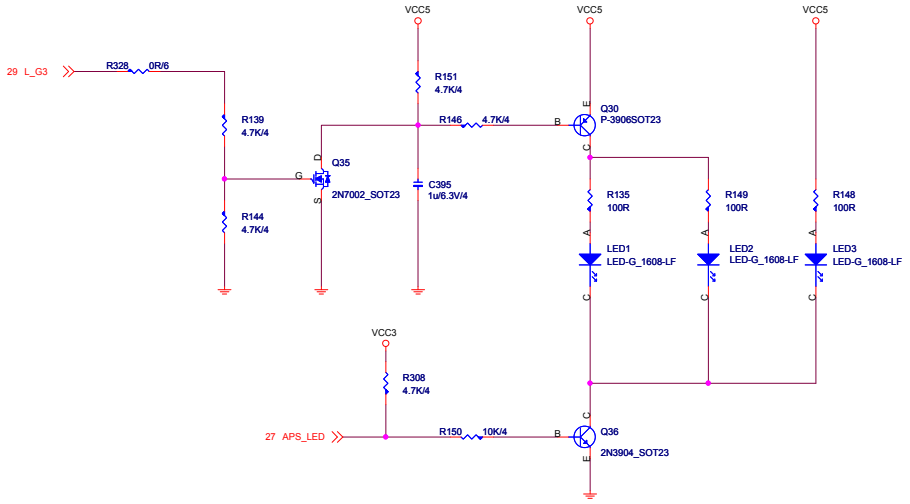
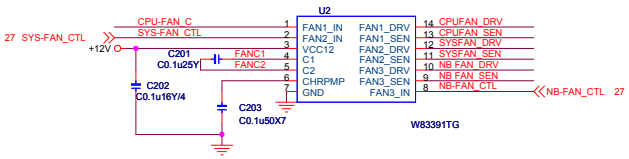
PRIMARY IDE BLOCK

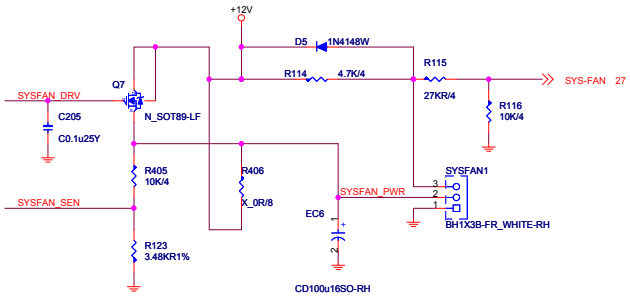




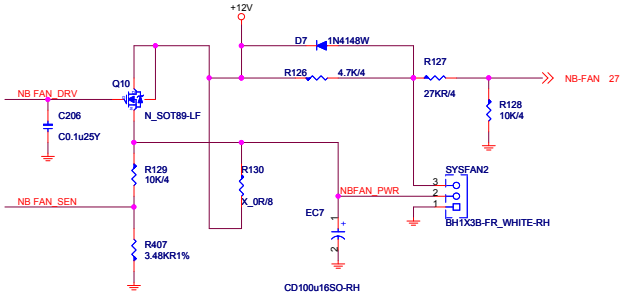
FAN BOLCK



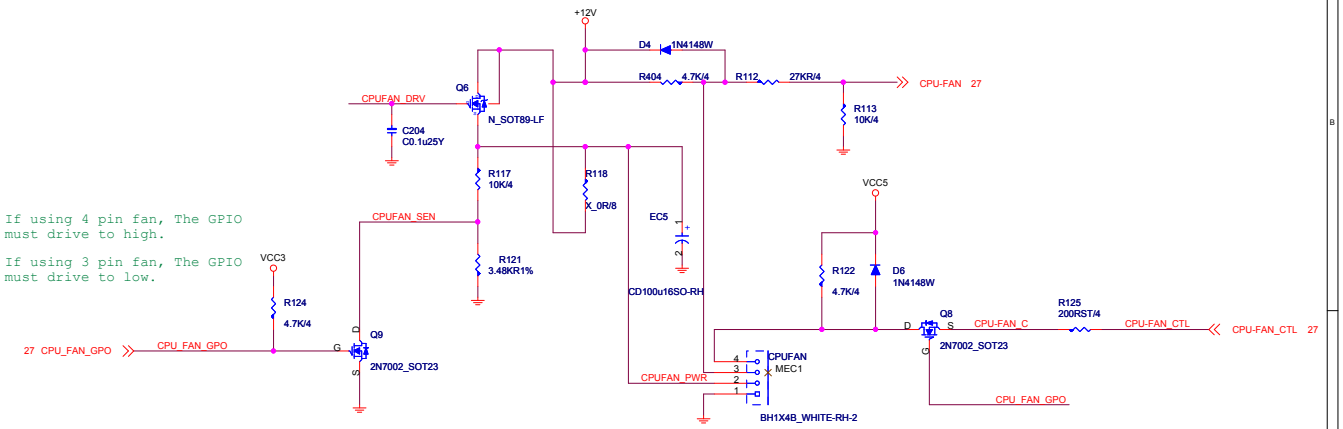
SYS FAN1



SYS FAN2



CPU FAN

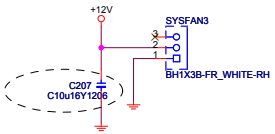


If using 4 pin fan, The GPIO must drive to high.

If using 3 pin fan, The GPIO must drive to low.

If using 3 pin fan, The Q52 will turn off to avoid the VCC5(R522) bias to CPU-FAN_CTL.

SYS FAN3



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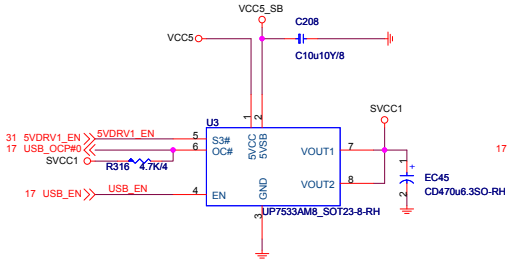
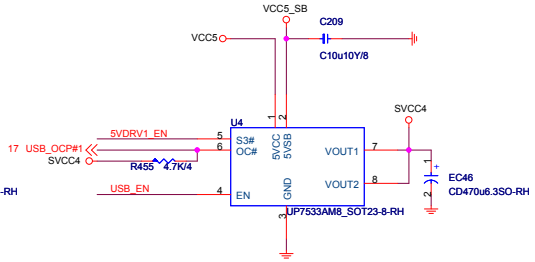
POWER CIRCUIT FOR USB PORT 0,1

40 mils



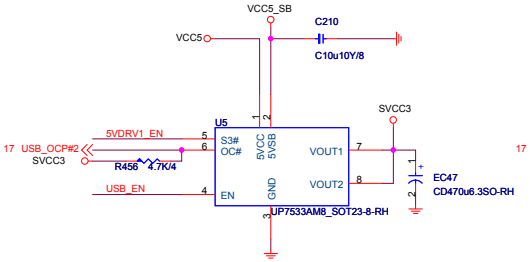
POWER CIRCUIT FOR USB PORT 2,3

40 mils



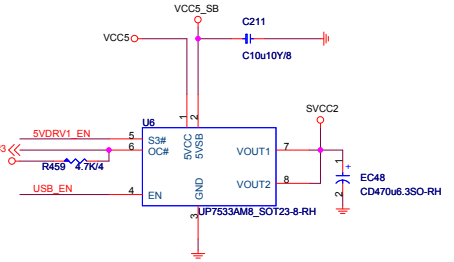
POWER CIRCUIT FOR USB PORT 4,5

40 mils

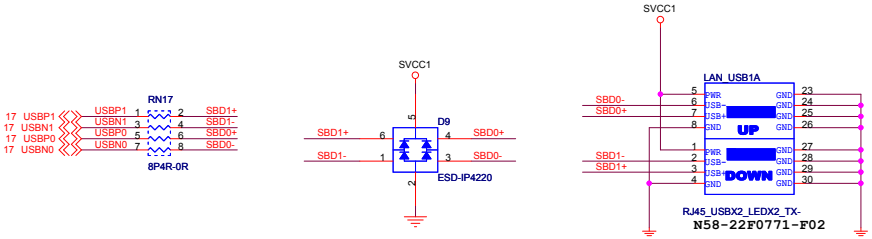


POWER CIRCUIT FOR USB PORT 6,7

40 mils



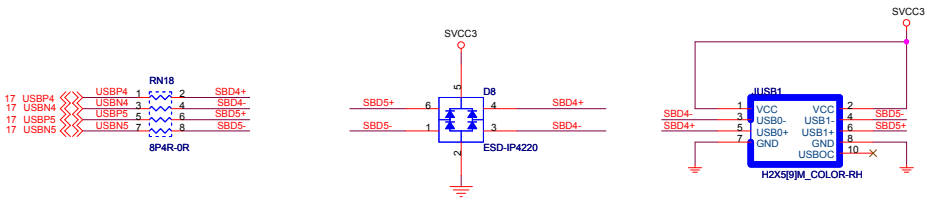
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

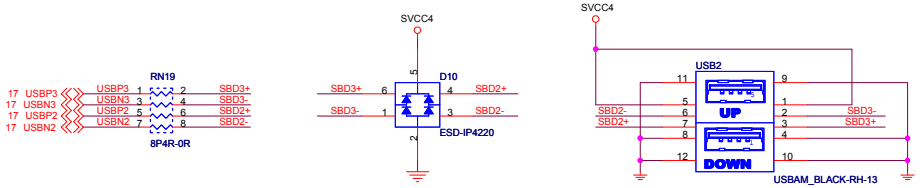
FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

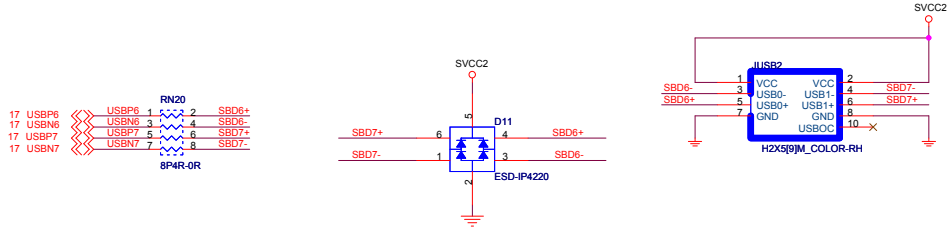
REAR PANEL USB CONNECTOR FOR USB PORT 2,3



NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

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Custom	USB	10

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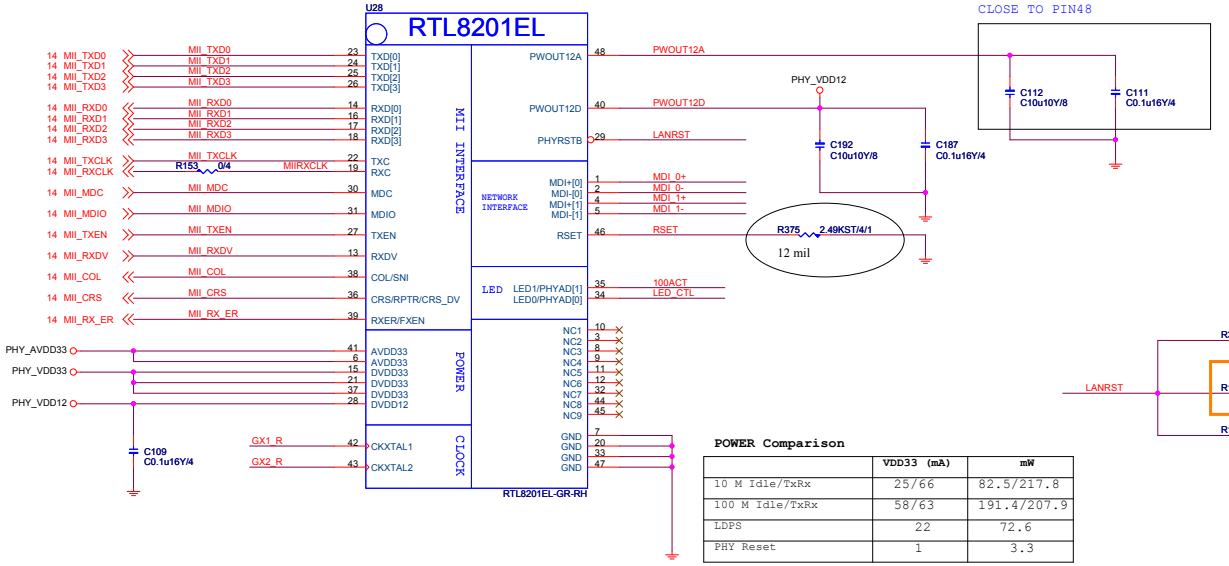
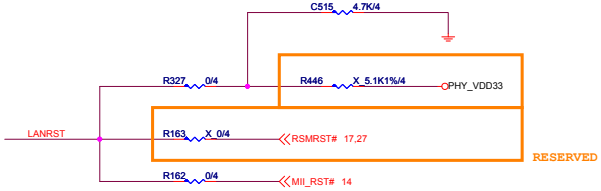
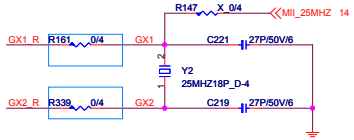
RTL8201EL

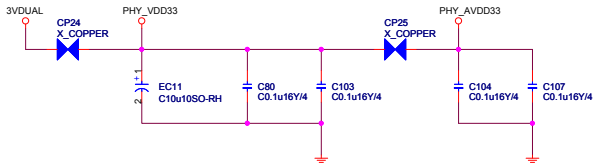


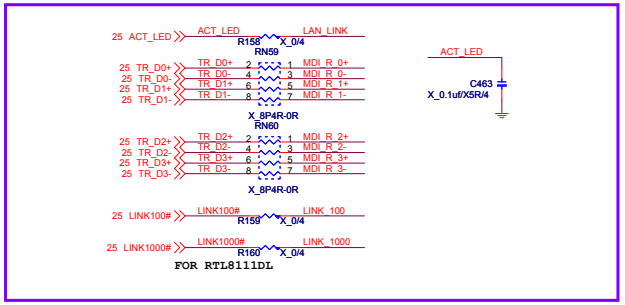


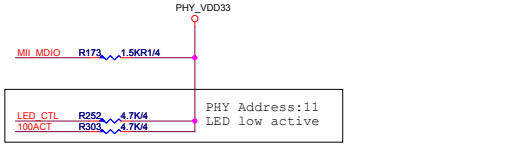
POWER Comparison

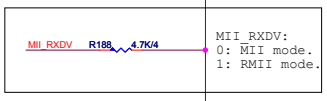
	VDD33 (mA)	mW
10 M Idle/TxRx	25/66	82.5/217.8
100 M Idle/TxRx	58/63	191.4/207.9
LDPS	22	72.6
PHY Reset	1	3.3

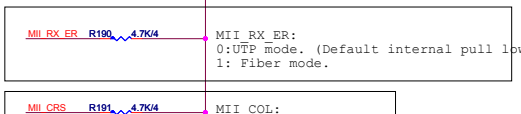


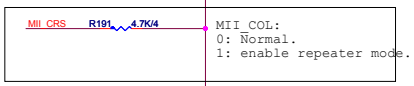


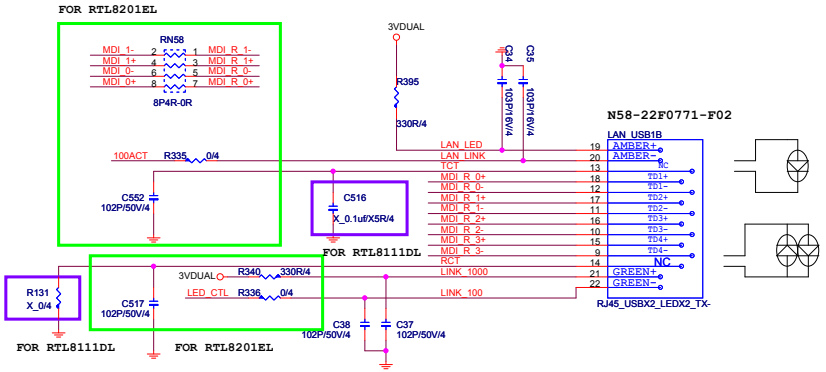




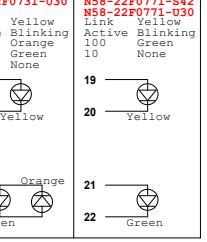








Giga-Lan		10/100-Lan	
N58-22F0731-F02 N58-22F0731-U30		N58-22F0771-F02 N58-22F0771-S42 N58-22F0771-U30	
Link	Yellow	Link	Yellow
Active	Blinking	Active	Blinking
1000	Orange	100	Green
100	Green	10	None
10	None		



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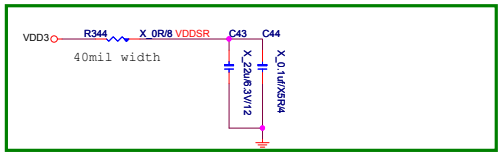
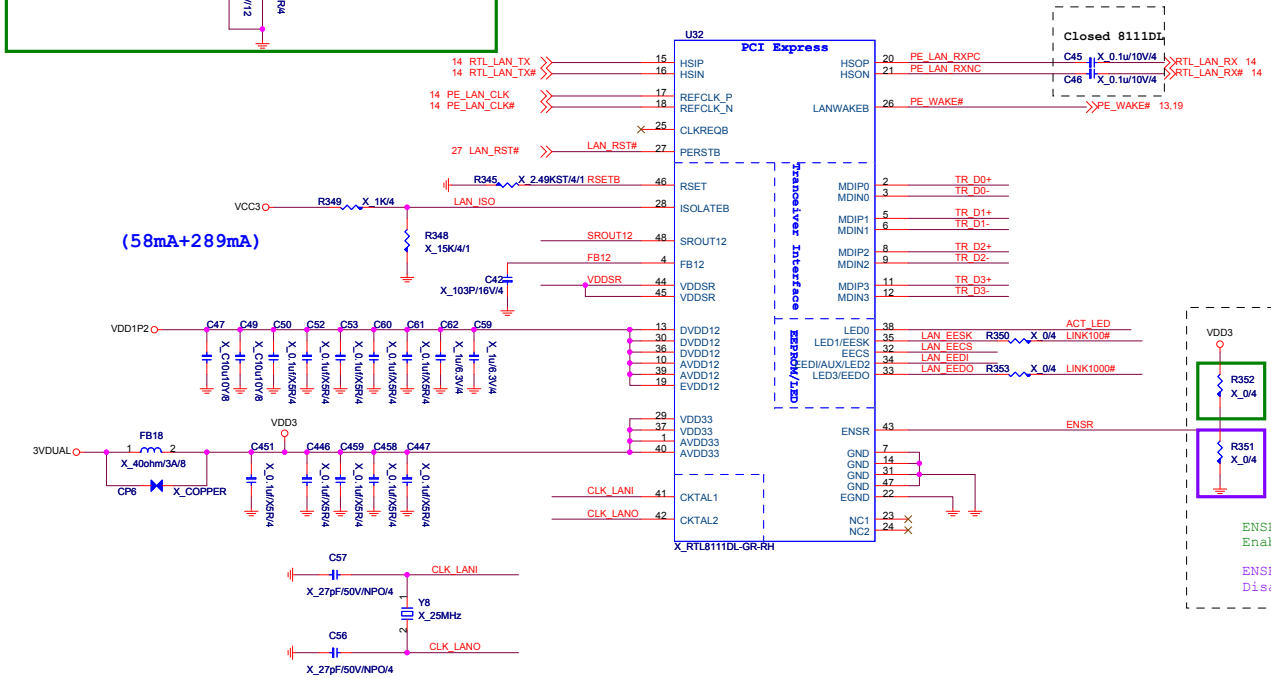
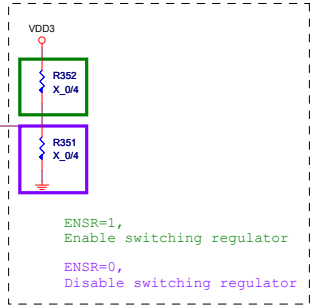
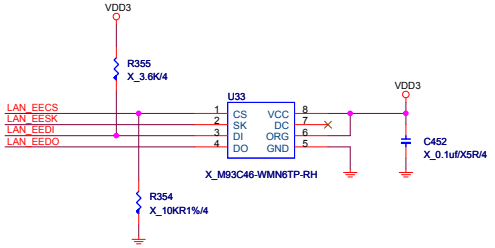
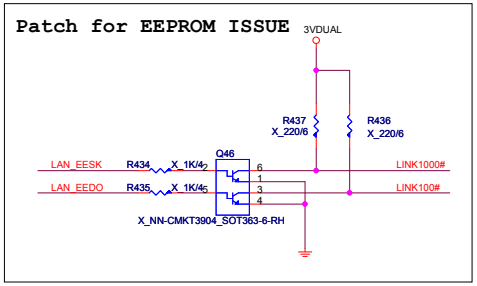
RTL8111DL

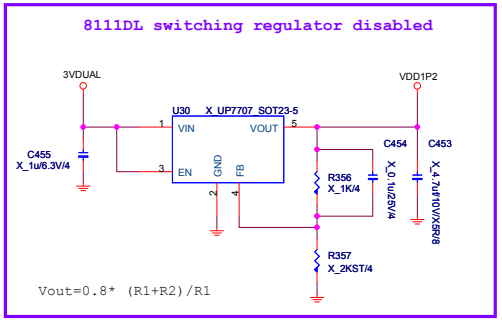


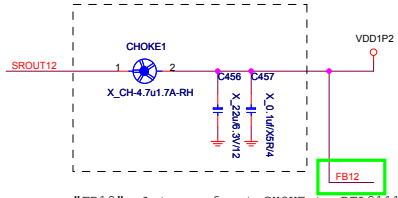


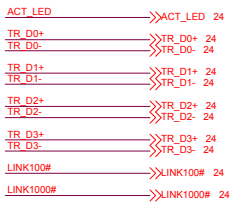












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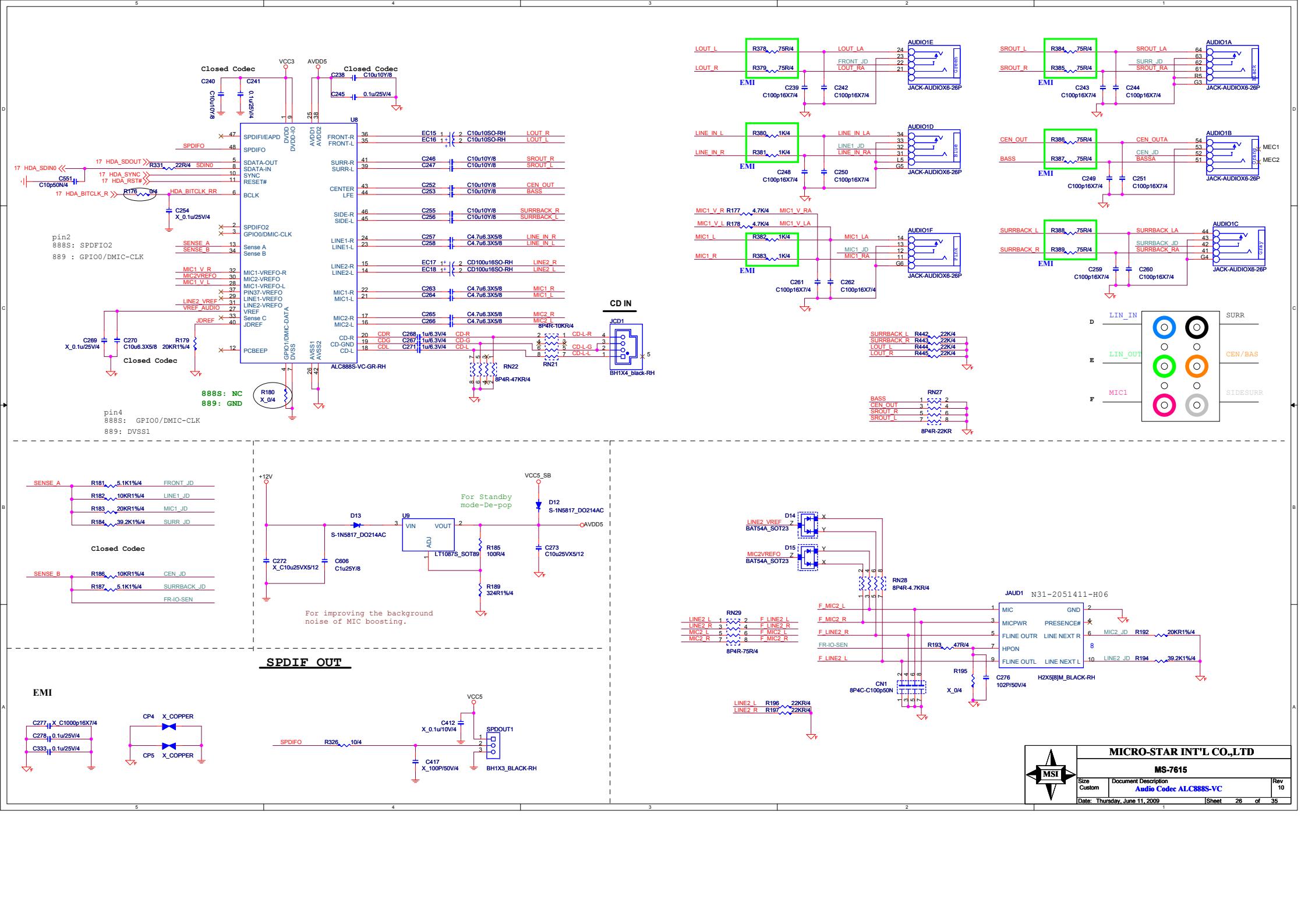
Closed Codec
VCC3
AVDD5
Closed Codec
C240
C241
C238
C10u10Y/8
C245
0.1u/25V/4
U8
SPDIFI/EAPD
SPDIFO
SDATA-OUT
SDATA-IN
SYNC
RESET#
BCLK
SPDIFO2
GPIO0/DMIC-CLK
Sense A
Sense B
MIC1-VREFO-R
MIC2-VREFO
MIC1-VREFO-L
PIN37-VREFO
LINE1-VREFO
LINE2-VREFO
VREF
Sense C
JDREF
PCBEEP
GPIO1/DMIC-DATA
DVSS
DVDD
DVDD-IO
AVDD1
AVDD2
AVSS1
AVSS2
FRONT-R
FRONT-L
SURR-R
SURR-L
CENTER
LFE
SIDE-R
SIDE-L
LINE1-R
LINE1-L
LINE2-R
LINE2-L
MIC1-R
MIC1-L
MIC2-R
MIC2-L
CD-R
CD-GND
CD-L
ALC888S-VC-GR-RH
17 HDA_SDIN0
17 HDA_SDOUT
17 HDA_SYNC
17 HDA_RST#
17 HDA_BITCLK_R
R331 22R/4
C551 C10p50N/4
R176 0/4
HDA_BITCLK_RR
SDIN0
SPDIFO
C254 X_0.1u/25V/4
SENSE_A
SENSE_B
MIC1_V_R
MIC2VREFO
MIC1_V_L
LINE2_VREF
VREF_AUDIO
JDREF
C269 X_0.1u/25V/4
C270 C10u6.3X5/8
R179 20KR1%/4
Closed Codec
pin2
888S: SPDFIO2
889 : GPIO0/DMIC-CLK
pin4
888S: GPIO0/DMIC-CLK
889: DVSS1
888S: NC
889: GND
R180 X_0/4
EC15 C10u10SO-RH
EC16 C10u10SO-RH
LOUT_R
LOUT_L
C246 C10u10Y/8
C247 C10u10Y/8
SROUT_R
SROUT_L
C252 C10u10Y/8
C253 C10u10Y/8
CEN_OUT
BASS
C255 C10u10Y/8
C256 C10u10Y/8
SURRBACK_R
SURRBACK_L
C257 C4.7u6.3X5/8
C258 C4.7u6.3X5/8
LINE_IN_R
LINE_IN_L
EC17 CD100u16SO-RH
EC18 CD100u16SO-RH
LINE2_R
LINE2_L
C263 C4.7u6.3X5/8
C264 C4.7u6.3X5/8
MIC1_R
MIC1_L
C265 C4.7u6.3X5/8
C266 C4.7u6.3X5/8
MIC2_R
MIC2_L
8P4R-10KR/4
C268 1u/6.3V/4
C267 1u/6.3V/4
C271 1u/6.3V/4
CDR
CDG
CDL
CD-R
CD-G
CD-L
CD-L-R
CD-L-G
CD-L-L
RN21
RN22
8P4R-47KR/4
CD IN
JCD1
BH1X4_black-RH
AUDIO1E
AUDIO1D
AUDIO1F
AUDIO1A
AUDIO1B
AUDIO1C
JACK-AUDIOX6-26P
EMI
R378 75R/4
R379 75R/4
LOUT_LA
LOUT_RA
FRONT_JD
C239 C100p16X7/4
C242 C100p16X7/4
R380 1K/4
R381 1K/4
LINE_IN_LA
LINE_IN_RA
LINE1_JD
C248 C100p16X7/4
C250 C100p16X7/4
MIC1_V_R R177 4.7K/4
MIC1_V_L R178 4.7K/4
MIC1_V_RA
MIC1_V_LA
R382 1K/4
R383 1K/4
MIC1_LA
MIC1_RA
MIC1_JD
C261 C100p16X7/4
C262 C100p16X7/4
R384 75R/4
R385 75R/4
SROUT_LA
SROUT_RA
SURR_JD
C243 C100p16X7/4
C244 C100p16X7/4
R386 75R/4
R387 75R/4
CEN_OUTA
BASSA
CEN_JD
C249 C100p16X7/4
C251 C100p16X7/4
MEC1
MEC2
R388 75R/4
R389 75R/4
SURRBACK_LA
SURRBACK_RA
SURRBACK_JD
C259 C100p16X7/4
C260 C100p16X7/4
SURRBACK_L R442 22K/4
SURRBACK_R R443 22K/4
LOUT_L R444 22K/4
LOUT_R R445 22K/4
RN27
BASS
CEN_OUT
SROUT_R
SROUT_L
8P4R-22KR
LIN_IN
LIN_OUT
MIC1
SURR
CEN/BAS
SIDESURR
SENSE_A
R181 5.1K1%/4
R182 10KR1%/4
R183 20KR1%/4
R184 39.2K1%/4
FRONT_JD
LINE1_JD
MIC1_JD
SURR_JD
Closed Codec
SENSE_B
R186 10KR1%/4
R187 5.1K1%/4
CEN_JD
SURRBACK_JD
FR-IO-SEN
+12V
D13
S-1N5817_DO214AC
U9
VIN
VOUT
ADJ
LT1087S_SOT89
VCC5_SB
D12
S-1N5817_DO214AC
AVDD5
For Standby mode-De-pop
C272 X_C10u25VX5/12
C606 C1u25Y/8
R185 100R/4
C273 C10u25VX5/12
R189 324R1%/4
For improving the background noise of MIC boosting.
D14
D15
LINE2_VREF
MIC2VREFO
BAT54A_SOT23
RN28 8P4R-4.7KR/4
RN29
LINE2_L
LINE2_R
MIC2_L
MIC2_R
F_MIC2_L
F_MIC2_R
F_LINE2_L
F_LINE2_R
8P4R-75R/4
FR-IO-SEN
R193 47R/4
R195
C276 102P/50V/4
CN1 8P4C-C100p50N
X_0/4
JAUD1 N31-2051411-H06
MIC
MICPWR
FLINE OUTR
HPON
FLINE OUTL
GND
PRESENCE#
LINE NEXT R
LINE NEXT L
MIC2_JD R192 20KR1%/4
LINE2_JD R194 39.2K1%/4
H2X5[8]M_BLACK-RH
LINE2_L R196 22KR/4
LINE2_R R197 22KR/4
SPDIF OUT
EMI
C277 X_C1000p16X7/4
C278 0.1u/25V/4
C333 0.1u/25V/4
CP4 X_COPPER
CP5 X_COPPER
VCC5
SPDIFO
R326 10/4
C412 X_0.1u/10V/4
C417 X_100P/50V/4
SPDOUT1
BH1X3_BLACK-RH
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MS-7615
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Document Description
Audio Codec ALC888S-VC
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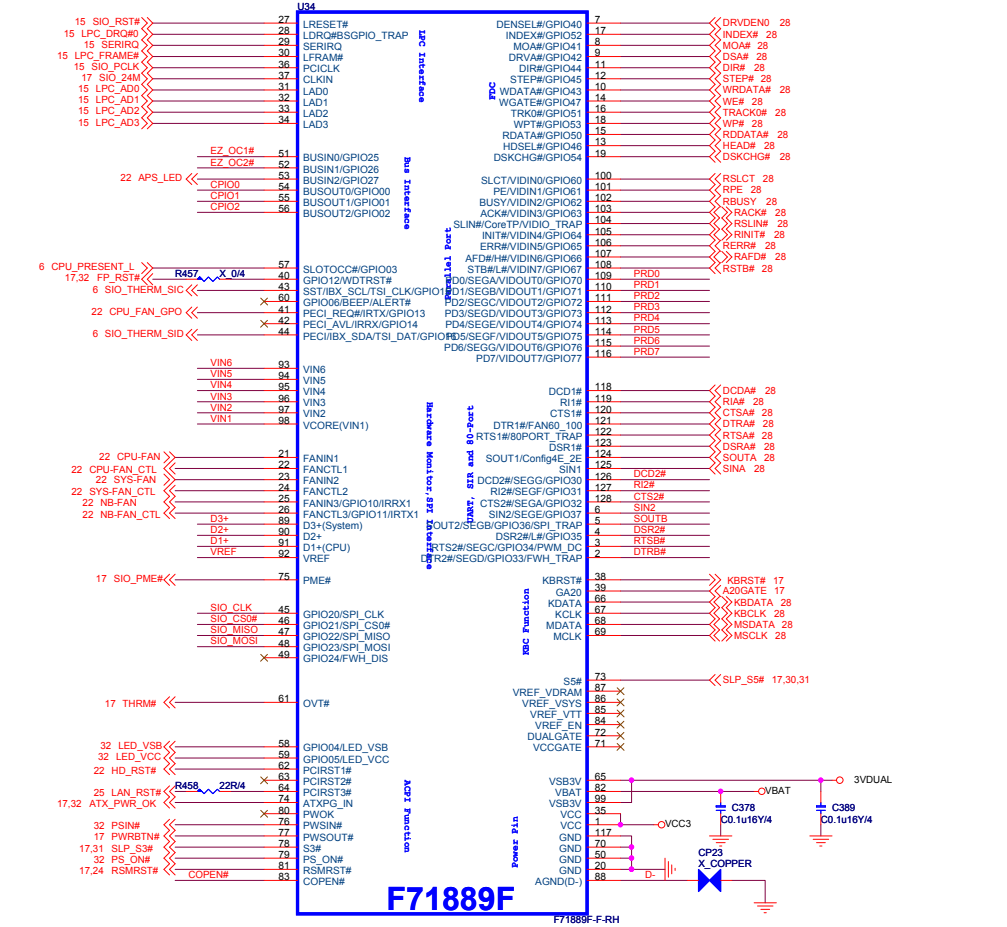
LPC SUPER I/O F71889



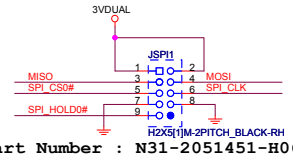
28 PRD[0..7] → PRD[0..7]

VCC3
C326 X_C0.1u25Y
C327 X_C0.1u25Y
C330 C0.1u16Y/4
C331 C0.1u16Y/4
C332 C0.1u16Y/4

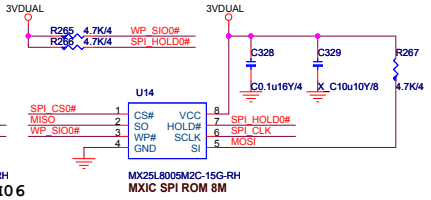
(Place capacitor close to IC)

SPI FLASH MEMORY

SPI DEBUG PORT
Place close to SPI ROM



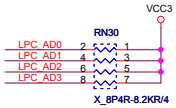
Part Number : N31-2051451-H06



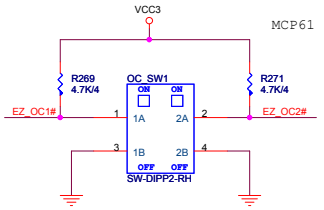
MCP61D SPI

17 MOSI
17 MISO
17 SPI_CS0#
17 SPI_CLK
MOSI
MISO
SPI_CS0#
SPI_CLK

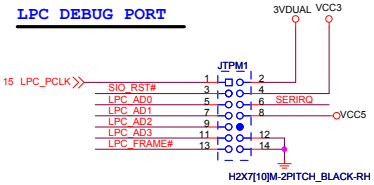
Reserved



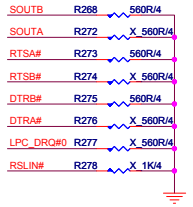
MCP61 Internal Pull-High



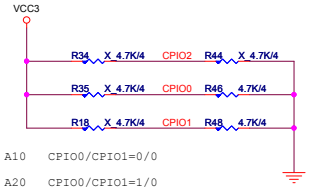
LPC DEBUG PORT



POWER TRIP R



For BIOS to detect different function and BOM



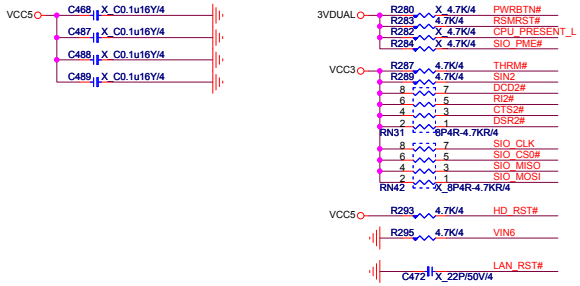
A10 CPIO0/CPIO1=0/0

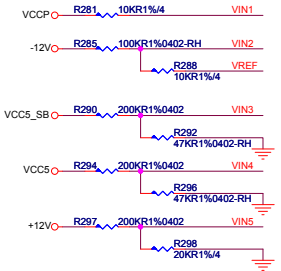
A20 CPIO0/CPIO1=1/0

	Don't STUFF	STUFF
RTSB#	PWM FAN	LINEAR FAN
LPC_DRQ#0	PIN51-53=BUSIN PIN54-56=BUSOUT	PIN51-53=GPIO PIN54-56=GPIO
SOUTA	4E	2E
SOUTB/DTRB#	SPI_DISABLE	SPI_ENABLE
DTRA#	FAN START DUTY 60%	FAN START DUTY 100%
RTSA#	ENABLE 80 PORT	DISABLE 80 PORT
RSLIN#	PULL 1K FOR PIN100~116 AS LTP INTERFACES	

VOLTAGE SENSING(H/W Monitor).

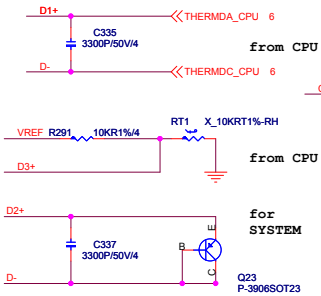
The best voltage input level is about 1V.



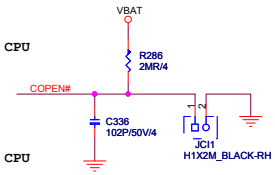


Temperature Sensing

DIODE SENSING CIRCUIT



CASE OPEN CIRCUIT



MSI

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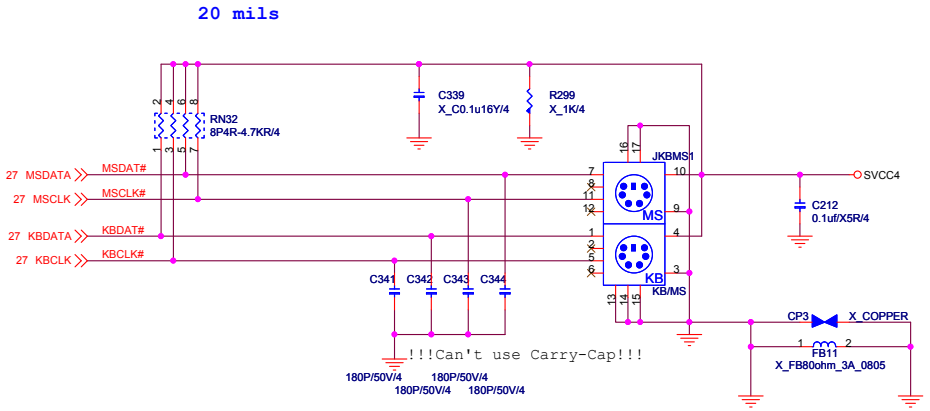
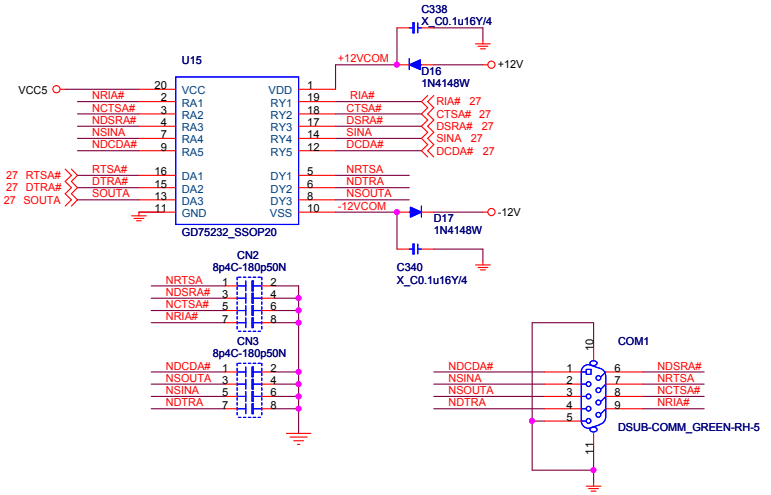
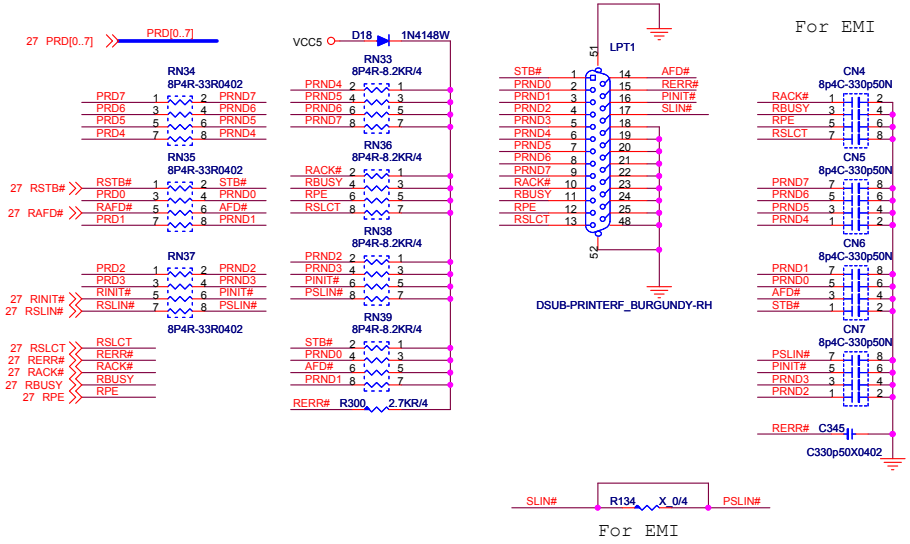
PS2 KEYBOARD & MOUSE CONNECTOR



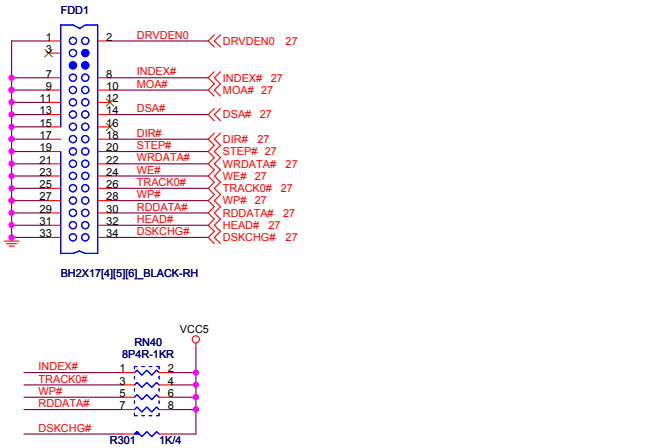
SERIAL PORT 1



PARALLAL PORT



FLOPPY CONN BOLCK



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MS-7615		
Size: Custom	Document Description: KB/MS,LPT,COM,Floppy CONN	Rev: 10
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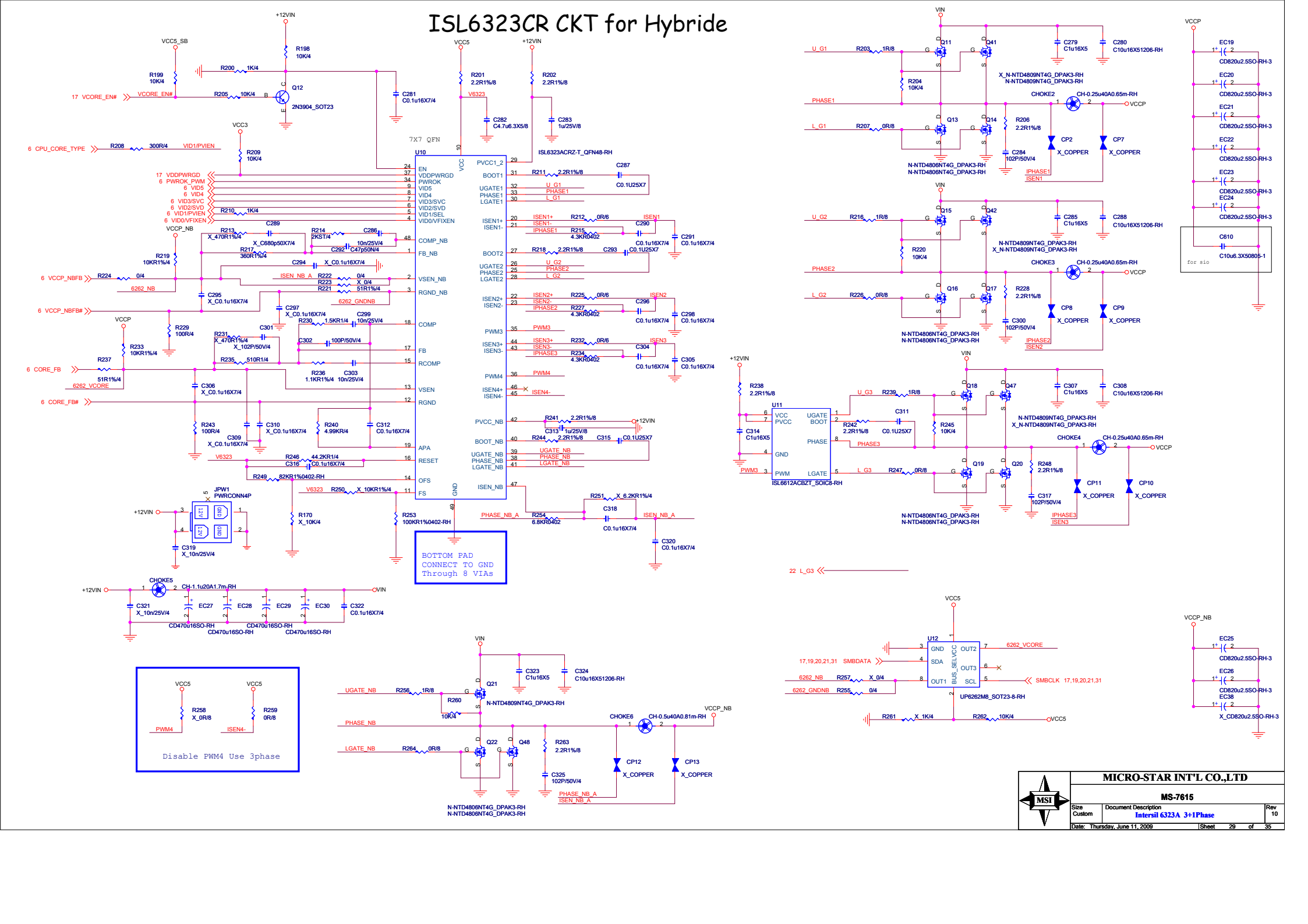
ISL6323CR CKT for Hybride



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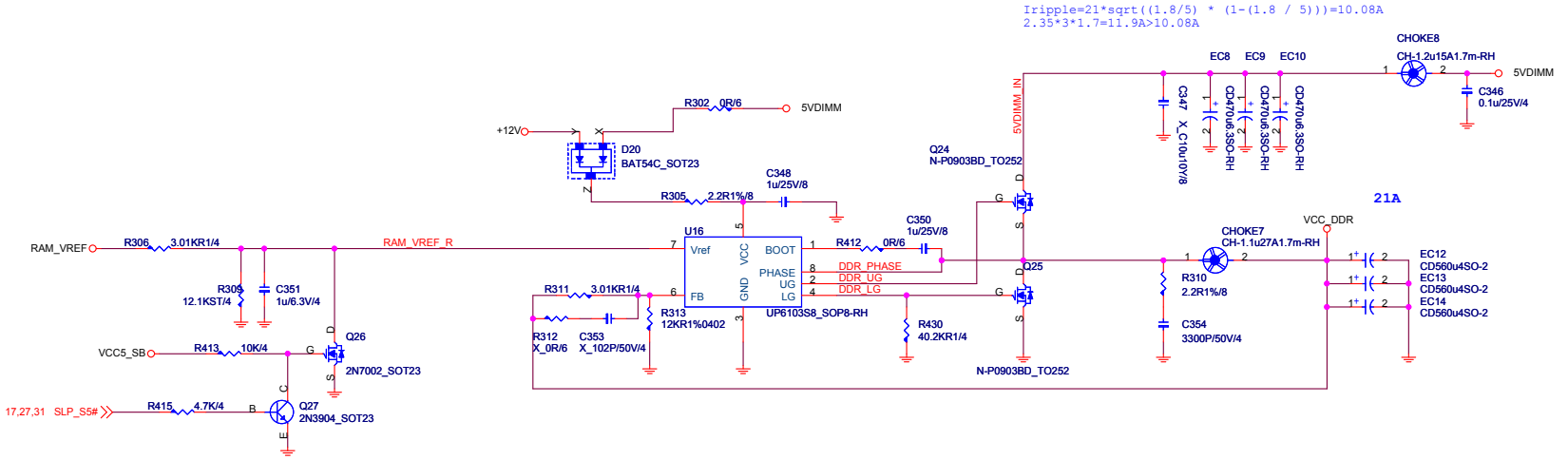
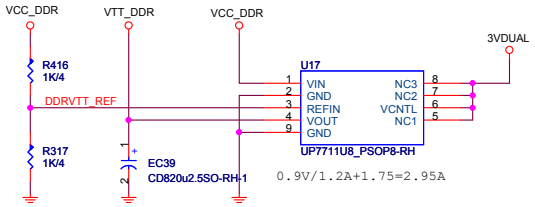
DDR II 1.8V POWER



DDR VTT Power

To CPU Copper trace width > 200mils



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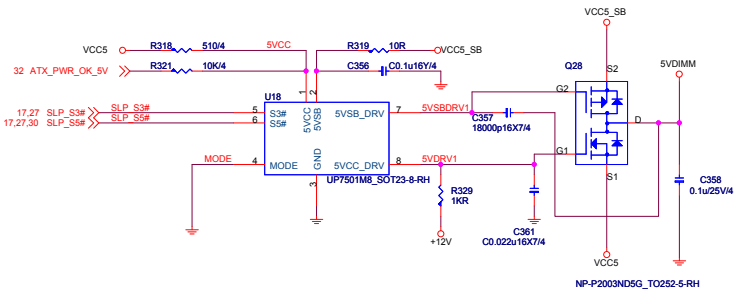
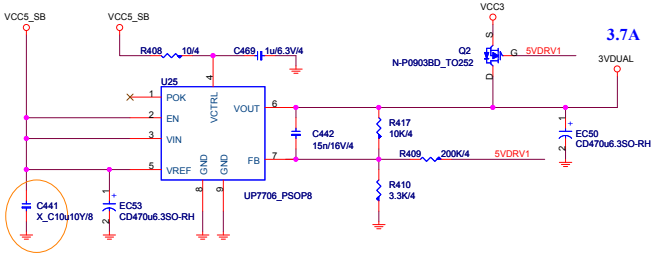
5VDIMM FOR DDR



FOR GPIO CONTROL S5 POWER OR SHUTDOWN

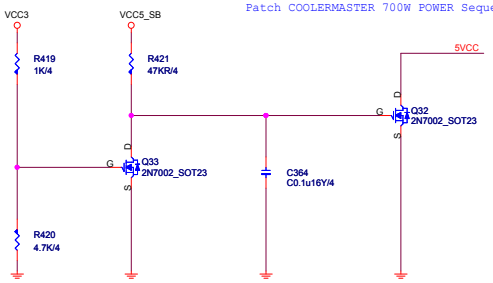
S5	S3	MODE	5VDUAL	REMARK
1	1	X	VCC5	S0/S1/S2
1	0	X	VCC5_SB	S3
0	X	1	VCC5_SB	S4/S5
0	X	0	SHUTDOWM	S4/S5

3VDUAL CONTROLLER

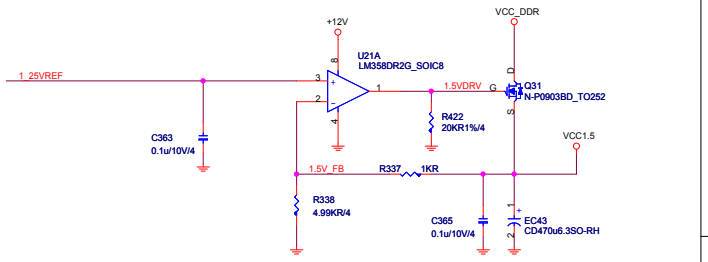


560mA+30mA+6*375mA+225mA+650mA=3.7A

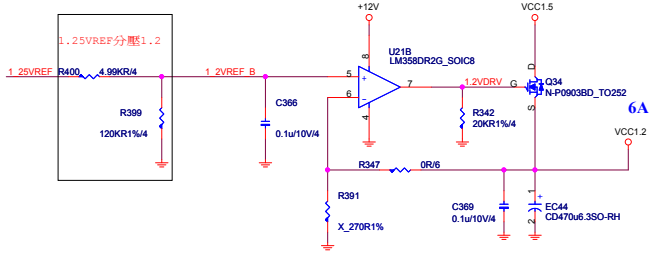
Patch COOLERMASTER 700W POWER Sequence



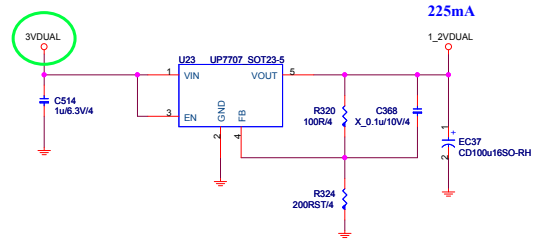
MCP 61D 1.2V



Vout : 1.25 [(4.99K / 1K) + 1] = 1.5 Volt

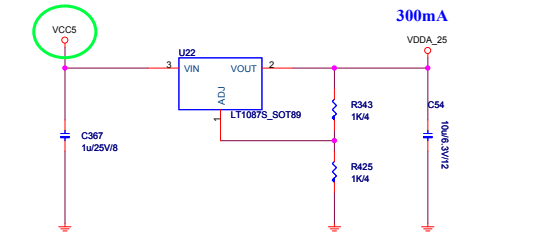


ONLY FOR MCP61D 6A



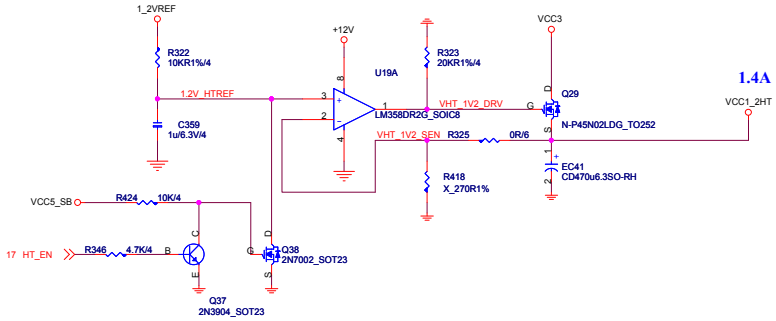
ONLY FOR MCP61D 6A

VDDA_25

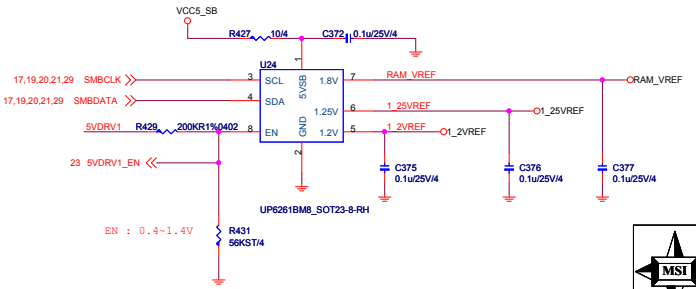


ONLY FOR CPU

1.2V HT



reference Voltage



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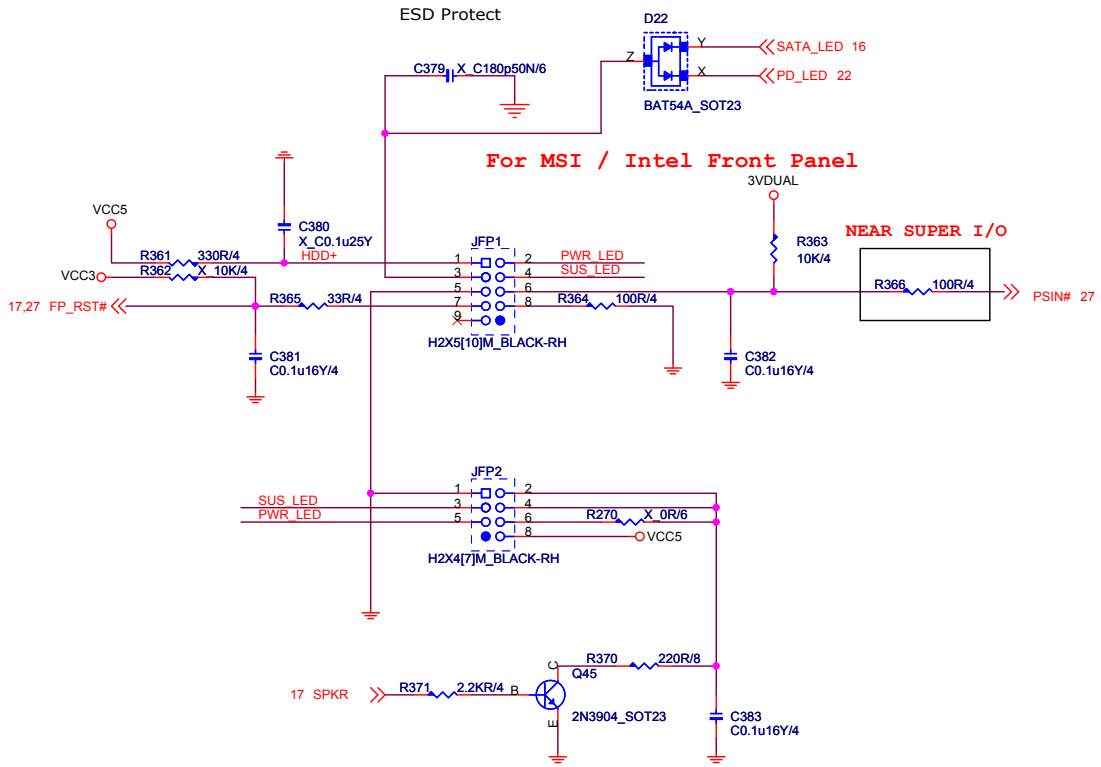
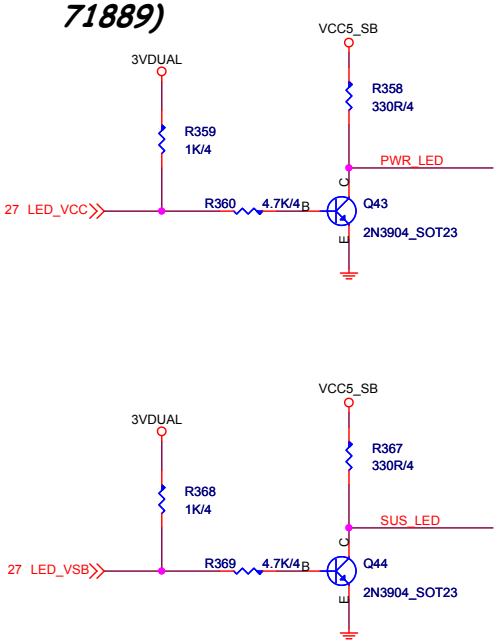
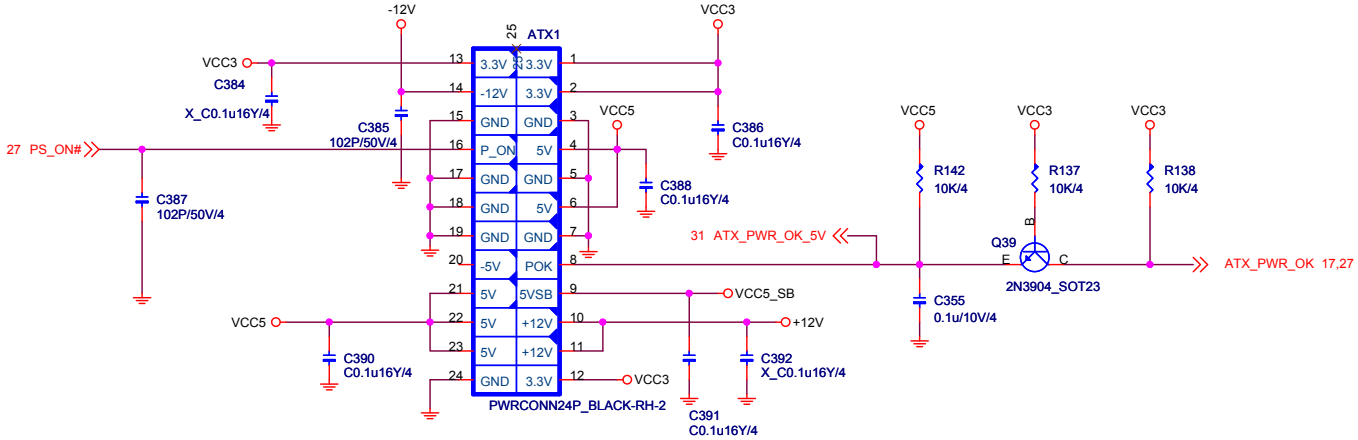
Front Panel



LED (for Fintek 71889)



ATX Connector



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Optics Orientation Holes

FM1 FM2 FM3
FM4 FM5 FM6
FM7 FM8
X_FM

Mounting Holes

MH1 MH2 MH3 MH4 MH5 MH6

NB FAN/HEAT-SINK

U31_H1
MEC1
MEC2
HS-0404282-RH

BATTERY

VBAT1-S1
BAT-BCR2032P-RH

CPU RM

CPU3
CPU_RM
E95-0000003-H06
AVL: E95-0000003-H06

PCB

PCB1
PCB_10
P80-0761510-E48

Simulation

JS1 JS2
VCC5 SIM2 SIM1
X_PIN1*2 X_PIN1*2

VCCP C496 C505 C509 X_C0.1u16Y/4
VCC5 C511 C512 C519 C520 C521 C522 C523 C524 C525 C526 C527 C528 C547 C548 C549 X_C0.1u16Y/4
VIN C529 C530 C531 X_C0.1u16Y/4
VCC3 C535 C537 C536 C538 C539 C540 C541 C543 C542 C532 C533 C534 C544 C545 C546 X_C0.1u16Y/4
VTT_DDR C571 C553 C555 C556 X_C0.1u16Y/4
VCC_DDR C577 C578 C563 C564 X_C0.1u16Y/4
CP26 X_COPPER

for EMI

VCC1_2HT VCC3 C490 C491 C0.1u16Y/4 VCC1.2 VCC1.2

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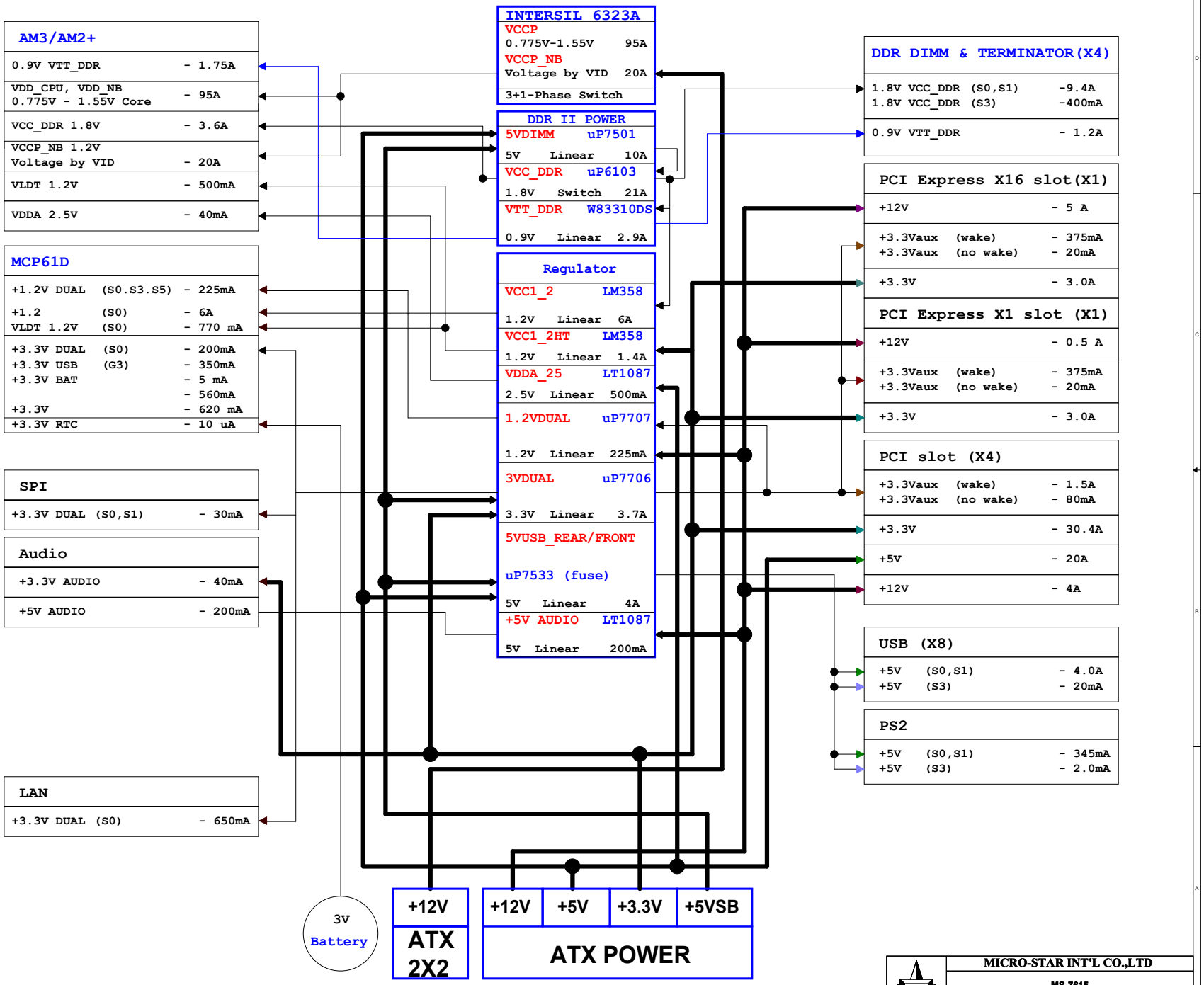
AM3/AM2+
0.9V VTT_DDR - 1.75A
VDD_CPU, VDD_NB 0.775V - 1.55V Core - 95A
VCC_DDR 1.8V - 3.6A
VCCP_NB 1.2V Voltage by VID - 20A
VLDT 1.2V - 500mA
VDDA 2.5V - 40mA
MCP61D
+1.2V DUAL (S0.S3.S5) - 225mA
+1.2 (S0) - 6A
VLDT 1.2V (S0) - 770 mA
+3.3V DUAL (S0) - 200mA
+3.3V USB (G3) - 350mA
+3.3V BAT - 5 mA
- 560mA
+3.3V - 620 mA
+3.3V RTC - 10 uA
SPI
+3.3V DUAL (S0,S1) - 30mA
Audio
+3.3V AUDIO - 40mA
+5V AUDIO - 200mA
LAN
+3.3V DUAL (S0) - 650mA
INTERSIL 6323A
VCCP
0.775V-1.55V 95A
VCCP_NB
Voltage by VID 20A
3+1-Phase Switch
DDR II POWER
5VDIMM uP7501
5V Linear 10A
VCC_DDR uP6103
1.8V Switch 21A
VTT_DDR W83310DS
0.9V Linear 2.9A
Regulator
VCC1_2 LM358
1.2V Linear 6A
VCC1_2HT LM358
1.2V Linear 1.4A
VDDA_25 LT1087
2.5V Linear 500mA
1.2VDUAL uP7707
1.2V Linear 225mA
3VDUAL uP7706
3.3V Linear 3.7A
5VUSB_REAR/FRONT
uP7533 (fuse)
5V Linear 4A
+5V AUDIO LT1087
5V Linear 200mA
DDR DIMM & TERMINATOR(X4)
1.8V VCC_DDR (S0,S1) -9.4A
1.8V VCC_DDR (S3) -400mA
0.9V VTT_DDR - 1.2A
PCI Express X16 slot(X1)
+12V - 5 A
+3.3Vaux (wake) - 375mA
+3.3Vaux (no wake) - 20mA
+3.3V - 3.0A
PCI Express X1 slot (X1)
+12V - 0.5 A
+3.3Vaux (wake) - 375mA
+3.3Vaux (no wake) - 20mA
+3.3V - 3.0A
PCI slot (X4)
+3.3Vaux (wake) - 1.5A
+3.3Vaux (no wake) - 80mA
+3.3V - 30.4A
+5V - 20A
+12V - 4A
USB (X8)
+5V (S0,S1) - 4.0A
+5V (S3) - 20mA
PS2
+5V (S0,S1) - 345mA
+5V (S3) - 2.0mA
3V
Battery
+12V
ATX 2X2
+12V
+5V
+3.3V
+5VSB
ATX POWER
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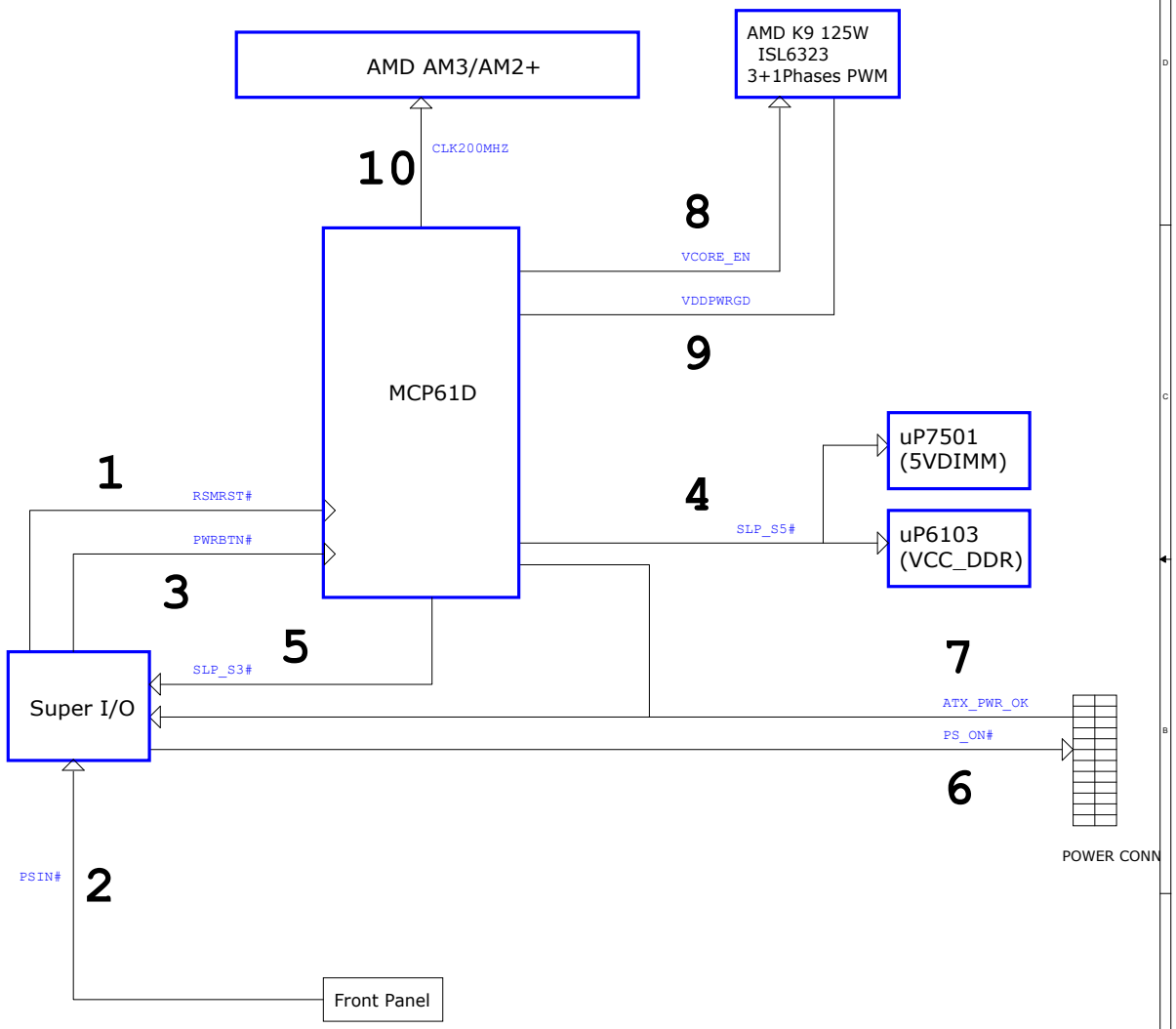
power sequence

VCC5_SB
3VDUAL
1_2DUAL
RSMRST#
PSIN#
PWRBTN#

SLP_S5#
MEM_VLD
SLP_S3#
PS_ON#

+12V
VCC5
VCC3
VDDA_25
VCC_DDR
VTT_DDR
VCC1.2
ATX_PWR_OK
VCORE_EN
VCCP
VCCP_NB
VDDPWRGD
HT_EN
VCC1_2HT
HT_VLD
SIO_PCLK
SIO_RST#
CLK200MHZ
CPU_GD
PCI_RESET#
CPU_RST#

PWROK MAP



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