MS-7736

ATX(Full Size)
Ver: 10

CPU:

INTEL - Sandy Bridge-E LGA2011

System Chipset:

INTEL - Patsburg PCH

OnBoard Chipset:

Clock Gen:932SQ420D + 9FGL1216AGLF
LAN:RTL 8111E 10/100/1000 NIC X 1
USB3.0: UPD720200F1 X2
Flash ROM: 8 MB SPI / 8 MB SPI (PCH)
SATA6G Controller: ASM1061
SIO:FIN71889AD(LAA)
1394 Controller: VIA6315N

Expansion Slots:

PCI Express (X16) Slot * 2
PCI Express (X8) Slot * 1
PCI Express (X1) Slot * 3

PWM:

CPU:uP1618 (8-Dr.MOS)
CPU_SA:uP1618 (2-Dr.MOS)
CPU_VTT:UP6212 (2-Dr.MOS)
VCC_DDR:UP6212(2-Dr.MOS)
PCH:uP1508 (1-Dr.MOS)

ACPI:

UPI

Main Memory:

DDRIII (1066/1333MHz) * 4

Other:

SATA3.0 x2+SATA2.0 x4 (PCH)
SATA 3.0 x2(ASM1061)
USB2.0 *12 (Rear*8 Front*4)
USB3.0 *4 (Rear*2 Front*2) co-lay
USB2.0 *4(Rear*2 Front*2)

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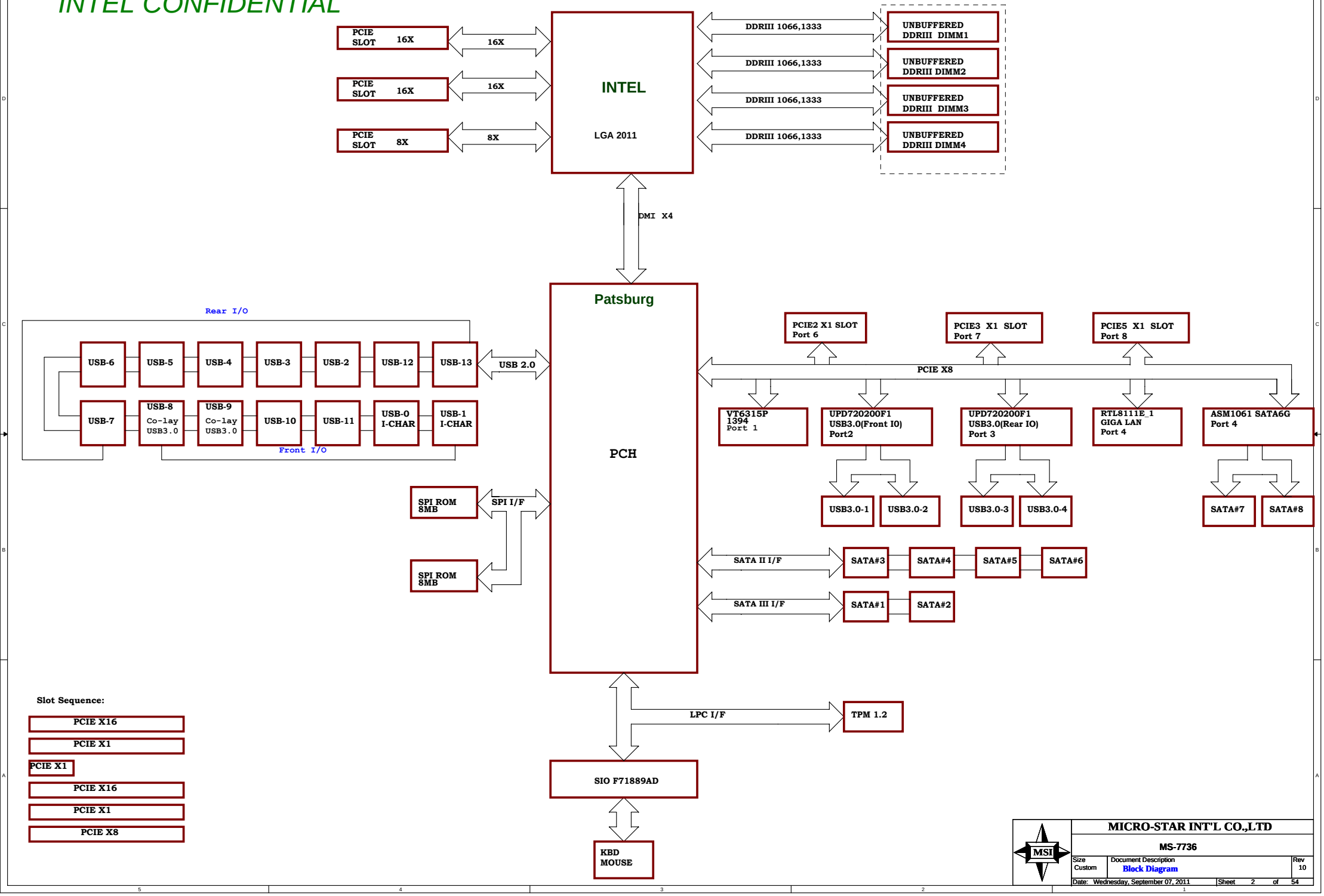
INTEL CONFIDENTIAL



Slot Sequence:

- PCIE X16
- PCIE X1
- PCIE X1
- PCIE X16
- PCIE X1
- PCIE X8

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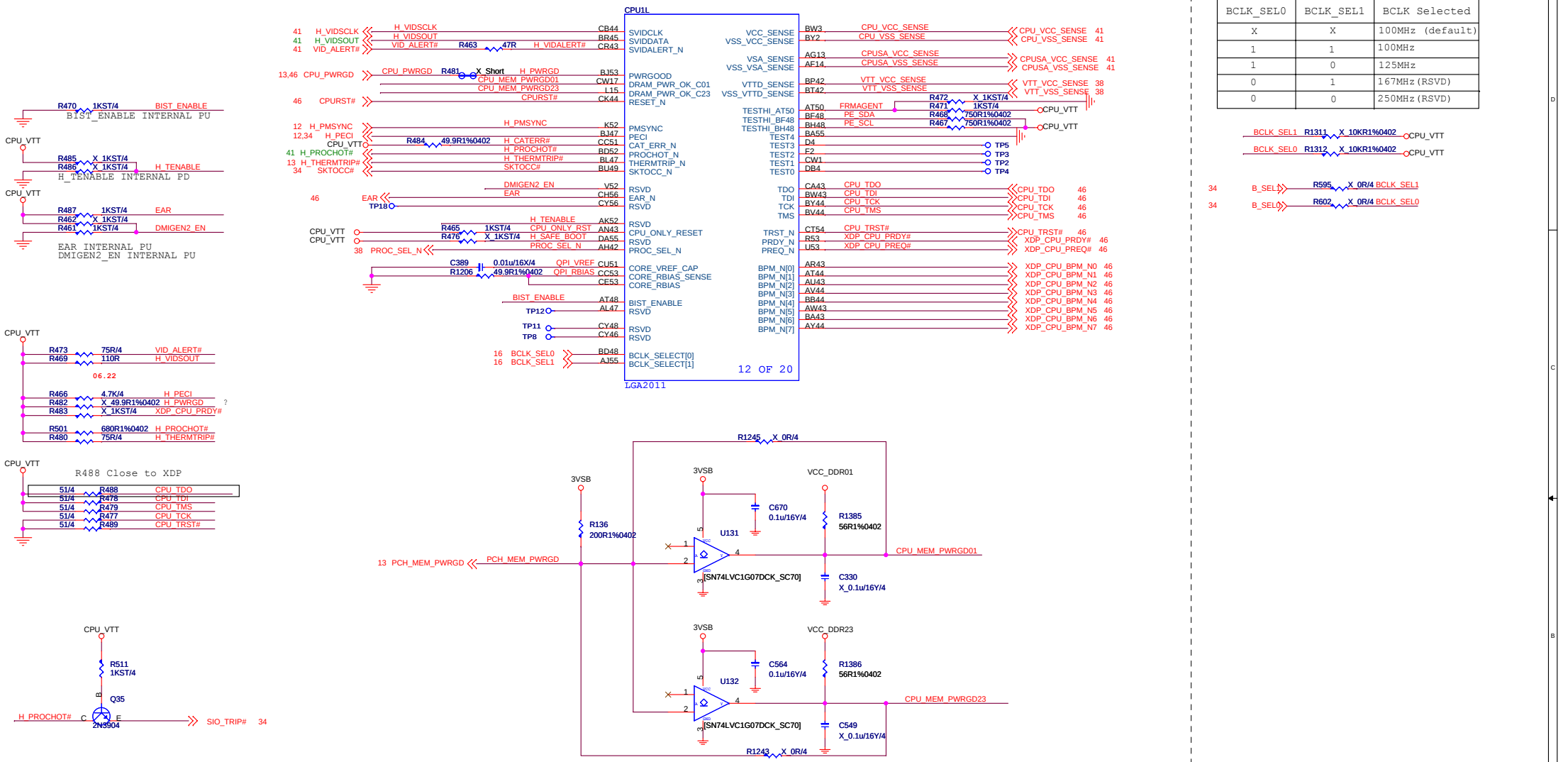
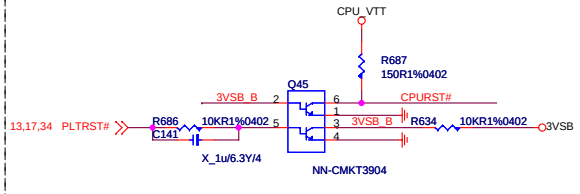
BCLK SELECT

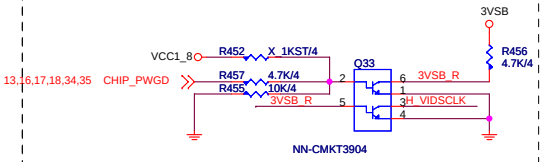
BCLK_SEL0	BCLK_SEL1	BCLK Selected
X	X	100MHz (default)
1	1	100MHz
1	0	125MHz
0	1	167MHz(RSVD)
0	0	250MHz(RSVD)



CPU_RESET#



CRB



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Size: Custom	Document Description: CPU-CNTL/CLK/MISC
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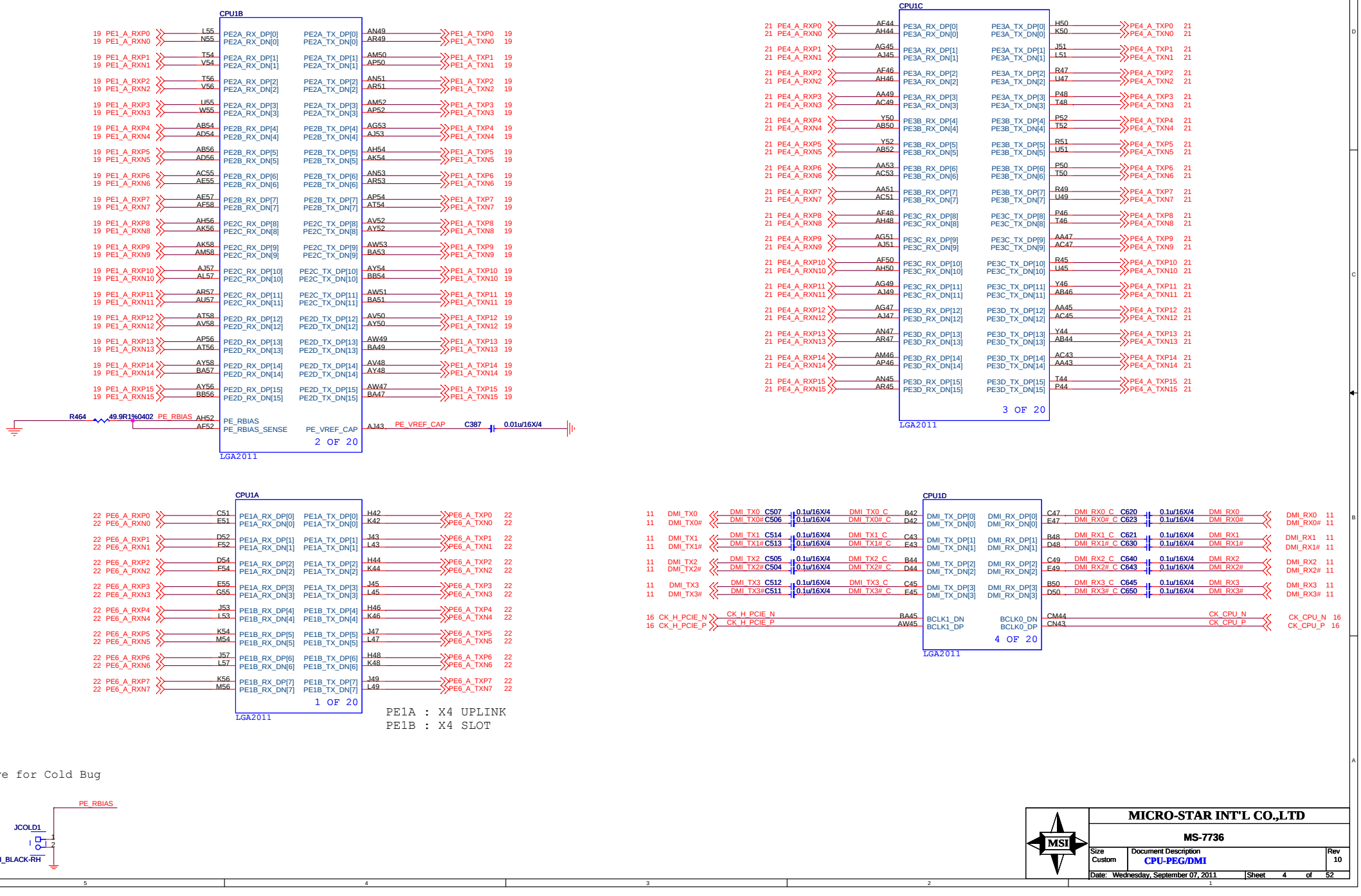
CPU1B
PE2A_RX_DP[0] L55
PE2A_RX_DN[0] N55
PE2A_TX_DP[0] AN49
PE2A_TX_DN[0] AR49
PE1_A_TXP0 19
PE1_A_TXN0 19
PE2A_RX_DP[1] T54
PE2A_RX_DN[1] V54
PE2A_TX_DP[1] AM50
PE2A_TX_DN[1] AP50
PE1_A_TXP1 19
PE1_A_TXN1 19
PE2A_RX_DP[2] T56
PE2A_RX_DN[2] V56
PE2A_TX_DP[2] AN51
PE2A_TX_DN[2] AR51
PE1_A_TXP2 19
PE1_A_TXN2 19
PE2A_RX_DP[3] U55
PE2A_RX_DN[3] W55
PE2A_TX_DP[3] AM52
PE2A_TX_DN[3] AP52
PE1_A_TXP3 19
PE1_A_TXN3 19
PE2B_RX_DP[4] AB54
PE2B_RX_DN[4] AD54
PE2B_TX_DP[4] AG53
PE2B_TX_DN[4] AJ53
PE1_A_TXP4 19
PE1_A_TXN4 19
PE2B_RX_DP[5] AB56
PE2B_RX_DN[5] AD56
PE2B_TX_DP[5] AH54
PE2B_TX_DN[5] AK54
PE1_A_TXP5 19
PE1_A_TXN5 19
PE2B_RX_DP[6] AC55
PE2B_RX_DN[6] AE55
PE2B_TX_DP[6] AN53
PE2B_TX_DN[6] AR53
PE1_A_TXP6 19
PE1_A_TXN6 19
PE2B_RX_DP[7] AE57
PE2B_RX_DN[7] AF58
PE2B_TX_DP[7] AP54
PE2B_TX_DN[7] AT54
PE1_A_TXP7 19
PE1_A_TXN7 19
PE2C_RX_DP[8] AH56
PE2C_RX_DN[8] AK56
PE2C_TX_DP[8] AV52
PE2C_TX_DN[8] AY52
PE1_A_TXP8 19
PE1_A_TXN8 19
PE2C_RX_DP[9] AK58
PE2C_RX_DN[9] AM58
PE2C_TX_DP[9] AW53
PE2C_TX_DN[9] BA53
PE1_A_TXP9 19
PE1_A_TXN9 19
PE2C_RX_DP[10] AJ57
PE2C_RX_DN[10] AL57
PE2C_TX_DP[10] AY54
PE2C_TX_DN[10] BB54
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PE1_A_TXN10 19
PE2C_RX_DP[11] AR57
PE2C_RX_DN[11] AU57
PE2C_TX_DP[11] AW51
PE2C_TX_DN[11] BA51
PE1_A_TXP11 19
PE1_A_TXN11 19
PE2D_RX_DP[12] AT58
PE2D_RX_DN[12] AV58
PE2D_TX_DP[12] AV50
PE2D_TX_DN[12] AY50
PE1_A_TXP12 19
PE1_A_TXN12 19
PE2D_RX_DP[13] AP56
PE2D_RX_DN[13] AT56
PE2D_TX_DP[13] AW49
PE2D_TX_DN[13] BA49
PE1_A_TXP13 19
PE1_A_TXN13 19
PE2D_RX_DP[14] AY58
PE2D_RX_DN[14] BA57
PE2D_TX_DP[14] AV48
PE2D_TX_DN[14] AY48
PE1_A_TXP14 19
PE1_A_TXN14 19
PE2D_RX_DP[15] AY56
PE2D_RX_DN[15] BB56
PE2D_TX_DP[15] AW47
PE2D_TX_DN[15] BA47
PE1_A_TXP15 19
PE1_A_TXN15 19
R464 49.9R1%0402 PE_RBIAS
PE_RBIAS AH52
PE_RBIAS_SENSE AF52
PE_VREF_CAP AJ43
PE_VREF_CAP C387 0.01u/16X/4
2 OF 20
LGA2011
CPU1C
PE3A_RX_DP[0] AF44
PE3A_RX_DN[0] AH44
PE3A_TX_DP[0] H50
PE3A_TX_DN[0] K50
PE4_A_TXP0 21
PE4_A_TXN0 21
PE3A_RX_DP[1] AG45
PE3A_RX_DN[1] AJ45
PE3A_TX_DP[1] J51
PE3A_TX_DN[1] L51
PE4_A_TXP1 21
PE4_A_TXN1 21
PE3A_RX_DP[2] AF46
PE3A_RX_DN[2] AH46
PE3A_TX_DP[2] R47
PE3A_TX_DN[2] U47
PE4_A_TXP2 21
PE4_A_TXN2 21
PE3A_RX_DP[3] AA49
PE3A_RX_DN[3] AC49
PE3A_TX_DP[3] P48
PE3A_TX_DN[3] T48
PE4_A_TXP3 21
PE4_A_TXN3 21
PE3B_RX_DP[4] Y50
PE3B_RX_DN[4] AB50
PE3B_TX_DP[4] P52
PE3B_TX_DN[4] T52
PE4_A_TXP4 21
PE4_A_TXN4 21
PE3B_RX_DP[5] Y52
PE3B_RX_DN[5] AB52
PE3B_TX_DP[5] R51
PE3B_TX_DN[5] U51
PE4_A_TXP5 21
PE4_A_TXN5 21
PE3B_RX_DP[6] AA53
PE3B_RX_DN[6] AC53
PE3B_TX_DP[6] P50
PE3B_TX_DN[6] T50
PE4_A_TXP6 21
PE4_A_TXN6 21
PE3B_RX_DP[7] AA51
PE3B_RX_DN[7] AC51
PE3B_TX_DP[7] R49
PE3B_TX_DN[7] U49
PE4_A_TXP7 21
PE4_A_TXN7 21
PE3C_RX_DP[8] AF48
PE3C_RX_DN[8] AH48
PE3C_TX_DP[8] P46
PE3C_TX_DN[8] T46
PE4_A_TXP8 21
PE4_A_TXN8 21
PE3C_RX_DP[9] AG51
PE3C_RX_DN[9] AJ51
PE3C_TX_DP[9] AA47
PE3C_TX_DN[9] AC47
PE4_A_TXP9 21
PE4_A_TXN9 21
PE3C_RX_DP[10] AF50
PE3C_RX_DN[10] AH50
PE3C_TX_DP[10] R45
PE3C_TX_DN[10] U45
PE4_A_TXP10 21
PE4_A_TXN10 21
PE3C_RX_DP[11] AG49
PE3C_RX_DN[11] AJ49
PE3C_TX_DP[11] Y46
PE3C_TX_DN[11] AB46
PE4_A_TXP11 21
PE4_A_TXN11 21
PE3D_RX_DP[12] AG47
PE3D_RX_DN[12] AJ47
PE3D_TX_DP[12] AA45
PE3D_TX_DN[12] AC45
PE4_A_TXP12 21
PE4_A_TXN12 21
PE3D_RX_DP[13] AN47
PE3D_RX_DN[13] AR47
PE3D_TX_DP[13] Y44
PE3D_TX_DN[13] AB44
PE4_A_TXP13 21
PE4_A_TXN13 21
PE3D_RX_DP[14] AM46
PE3D_RX_DN[14] AP46
PE3D_TX_DP[14] AC43
PE3D_TX_DN[14] AA43
PE4_A_TXP14 21
PE4_A_TXN14 21
PE3D_RX_DP[15] AN45
PE3D_RX_DN[15] AR45
PE3D_TX_DP[15] T44
PE3D_TX_DN[15] P44
PE4_A_TXP15 21
PE4_A_TXN15 21
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LGA2011
CPU1A
PE1A_RX_DP[0] C51
PE1A_RX_DN[0] E51
PE1A_TX_DP[0] H42
PE1A_TX_DN[0] K42
PE6_A_TXP0 22
PE6_A_TXN0 22
PE1A_RX_DP[1] D52
PE1A_RX_DN[1] F52
PE1A_TX_DP[1] J43
PE1A_TX_DN[1] L43
PE6_A_TXP1 22
PE6_A_TXN1 22
PE1A_RX_DP[2] D54
PE1A_RX_DN[2] F54
PE1A_TX_DP[2] H44
PE1A_TX_DN[2] K44
PE6_A_TXP2 22
PE6_A_TXN2 22
PE1A_RX_DP[3] E55
PE1A_RX_DN[3] G55
PE1A_TX_DP[3] J45
PE1A_TX_DN[3] L45
PE6_A_TXP3 22
PE6_A_TXN3 22
PE1B_RX_DP[4] J53
PE1B_RX_DN[4] L53
PE1B_TX_DP[4] H46
PE1B_TX_DN[4] K46
PE6_A_TXP4 22
PE6_A_TXN4 22
PE1B_RX_DP[5] K54
PE1B_RX_DN[5] M54
PE1B_TX_DP[5] J47
PE1B_TX_DN[5] L47
PE6_A_TXP5 22
PE6_A_TXN5 22
PE1B_RX_DP[6] J57
PE1B_RX_DN[6] L57
PE1B_TX_DP[6] H48
PE1B_TX_DN[6] K48
PE6_A_TXP6 22
PE6_A_TXN6 22
PE1B_RX_DP[7] K56
PE1B_RX_DN[7] M56
PE1B_TX_DP[7] J49
PE1B_TX_DN[7] L49
PE6_A_TXP7 22
PE6_A_TXN7 22
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LGA2011
PE1A : X4 UPLINK
PE1B : X4 SLOT
CPU1D
DMI_TX0 DMI_TX0_C C507 0.1u/16X/4 DMI_TX0_C B42
DMI_TX0# DMI_TX0# C506 0.1u/16X/4 DMI_TX0# C D42
DMI_TX1 DMI_TX1 C514 0.1u/16X/4 DMI_TX1_C C43
DMI_TX1# DMI_TX1# C513 0.1u/16X/4 DMI_TX1# C E43
DMI_TX2 DMI_TX2 C505 0.1u/16X/4 DMI_TX2_C B44
DMI_TX2# DMI_TX2# C504 0.1u/16X/4 DMI_TX2# C D44
DMI_TX3 DMI_TX3 C512 0.1u/16X/4 DMI_TX3_C C45
DMI_TX3# DMI_TX3# C511 0.1u/16X/4 DMI_TX3# C E45
CK_H_PCIE_N BA45
CK_H_PCIE_P AW45
DMI_TX_DP[0] DMI_TX_DN[0] DMI_TX_DP[1] DMI_TX_DN[1] DMI_TX_DP[2] DMI_TX_DN[2] DMI_TX_DP[3] DMI_TX_DN[3]
BCLK1_DN BCLK1_DP
DMI_RX_DP[0] DMI_RX_DN[0] DMI_RX_DP[1] DMI_RX_DN[1] DMI_RX_DP[2] DMI_RX_DN[2] DMI_RX_DP[3] DMI_RX_DN[3]
BCLK0_DN BCLK0_DP
DMI_RX0_C C47 DMI_RX0_C C620 0.1u/16X/4 DMI_RX0
DMI_RX0# C E47 DMI_RX0# C C623 0.1u/16X/4 DMI_RX0#
DMI_RX1_C B48 DMI_RX1_C C621 0.1u/16X/4 DMI_RX1
DMI_RX1# C D48 DMI_RX1# C C630 0.1u/16X/4 DMI_RX1#
DMI_RX2_C C49 DMI_RX2_C C640 0.1u/16X/4 DMI_RX2
DMI_RX2# C E49 DMI_RX2# C C643 0.1u/16X/4 DMI_RX2#
DMI_RX3_C B50 DMI_RX3_C C645 0.1u/16X/4 DMI_RX3
DMI_RX3# C D50 DMI_RX3# C C650 0.1u/16X/4 DMI_RX3#
CM44 CK_CPU_N
CN43 CK_CPU_P
4 OF 20
LGA2011
Reserve for Cold Bug
PE_RBIAS
JCOLD1
H1X2M-2PITCH_BLACK-RH
MICRO-STAR INT'L CO.,LTD
MS-7736
Size Custom
Document Description CPU-PEG/DMI
Rev 10
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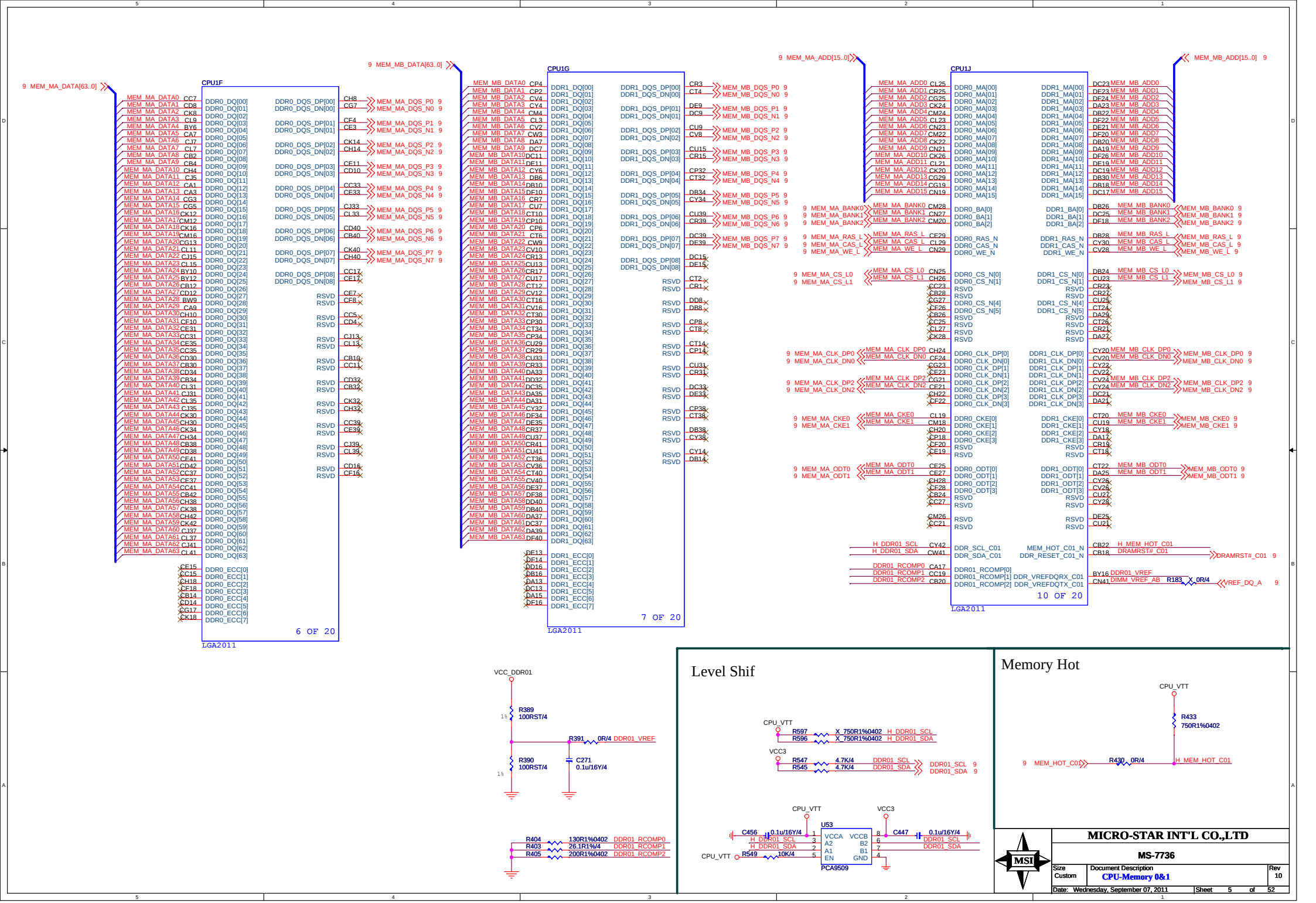
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LGA2011
CPU1G
7 OF 20
LGA2011
CPU1J
10 OF 20
LGA2011
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9 MEM_MB_DATA[63..0]
9 MEM_MA_ADD[15..0]
MEM_MB_ADD[15..0] 9
Level Shif
Memory Hot
MICRO-STAR INT'L CO.,LTD
MS-7736
CPU-Memory 0&1
Rev 10
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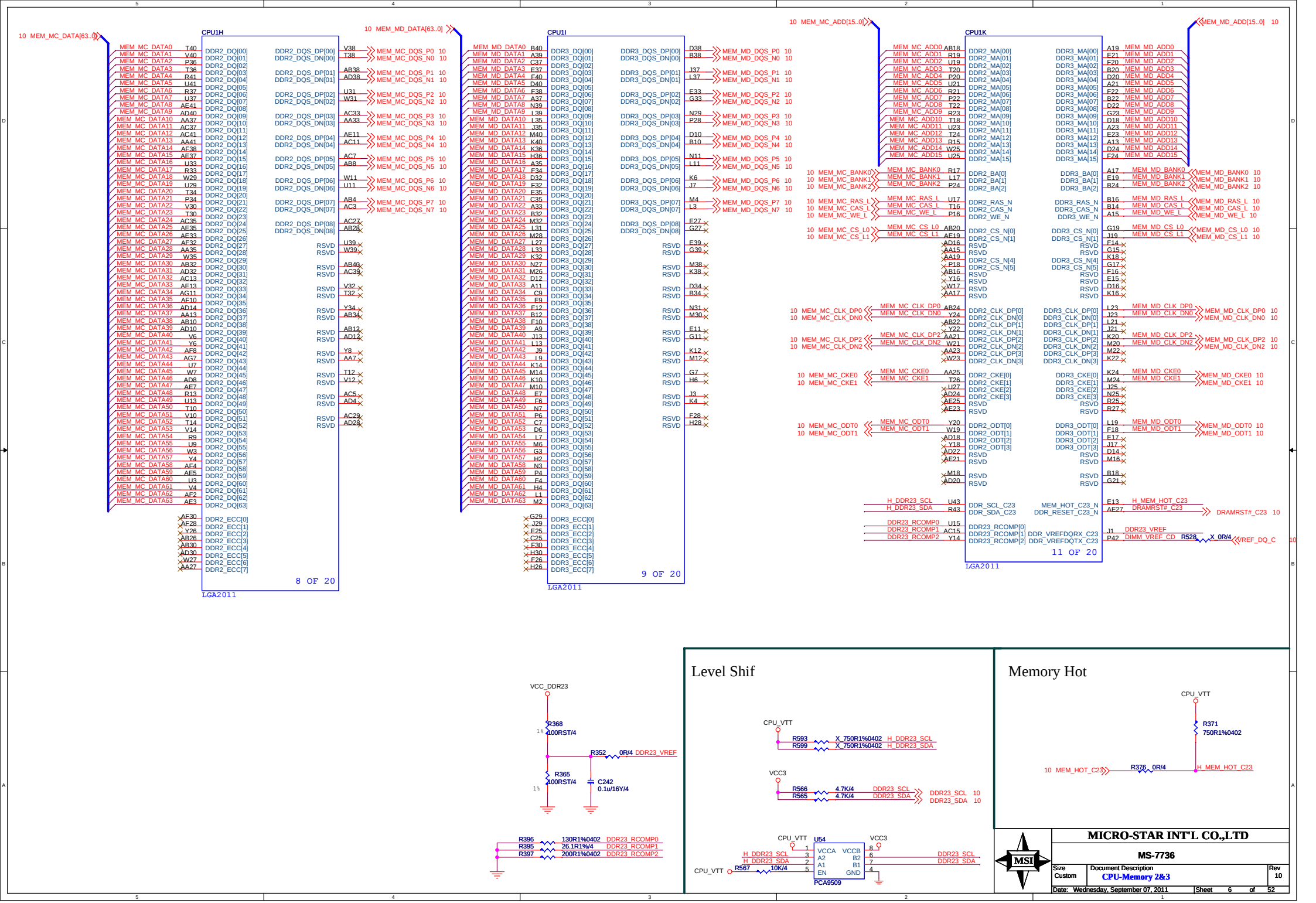
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LGA2011
CPU1I
9 OF 20
LGA2011
CPU1K
11 OF 20
LGA2011
Level Shif
Memory Hot
MICRO-STAR INT'L CO.,LTD
MS-7736
CPU-Memory 2&3
Size
Custom
Document Description
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10
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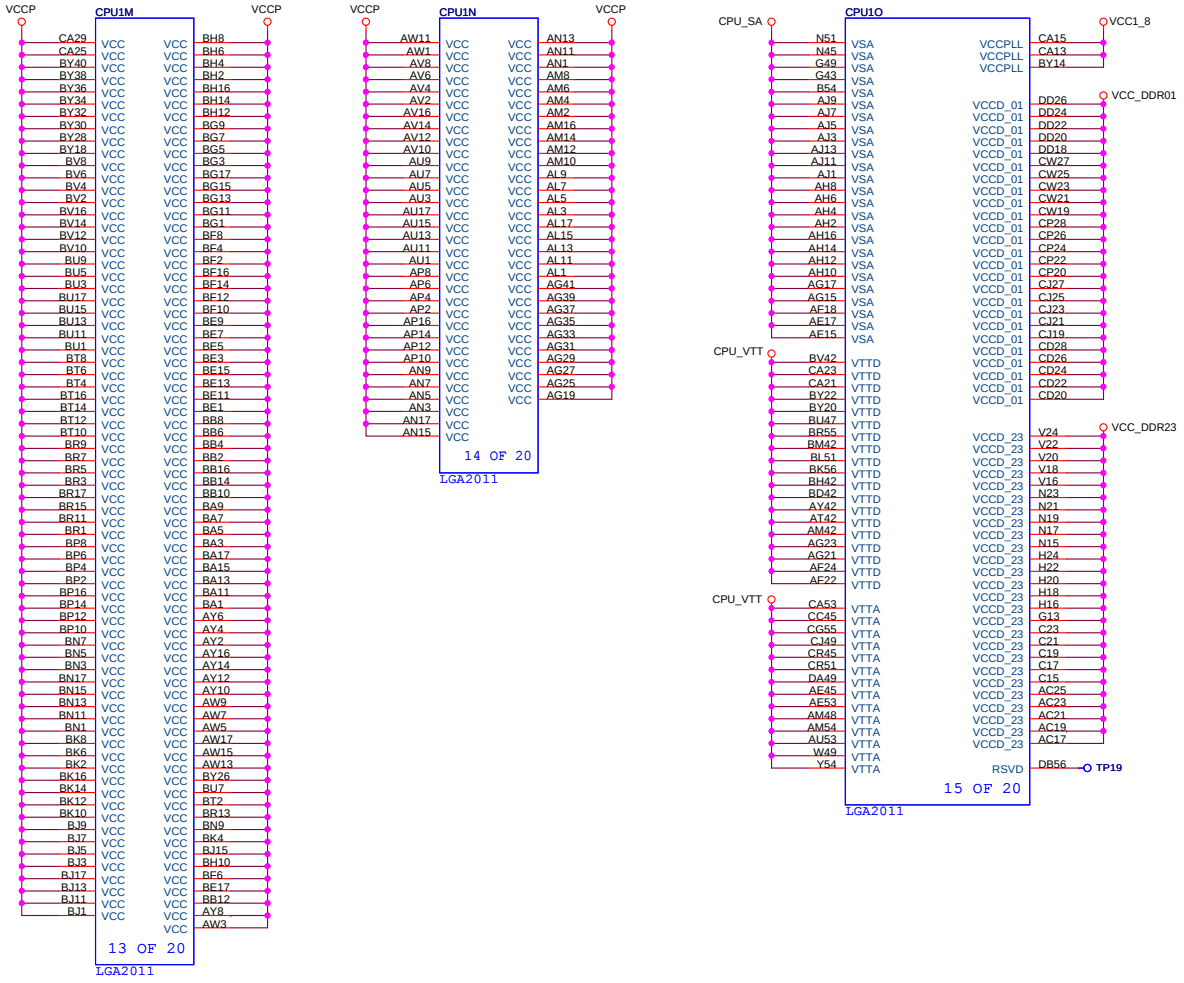

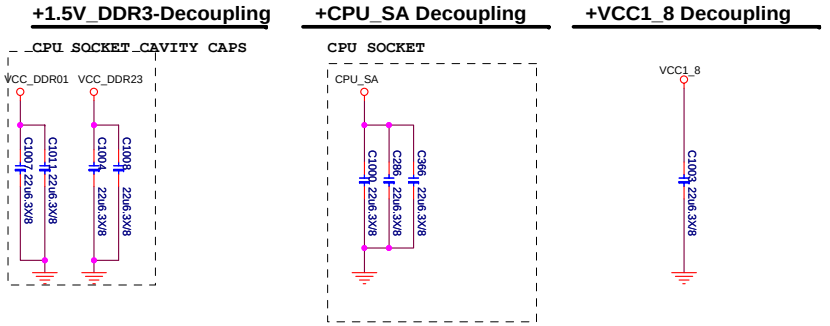

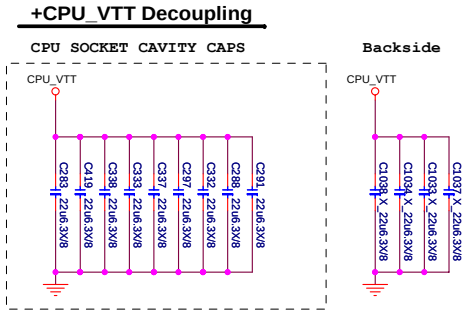

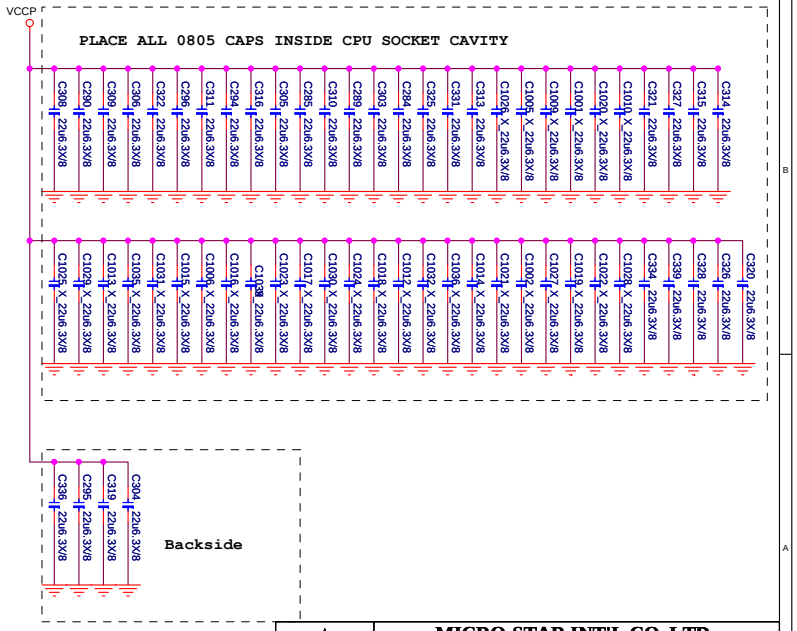

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MS-7736		
Size: Custom	Document Description: CPU-Power	Rev: 10
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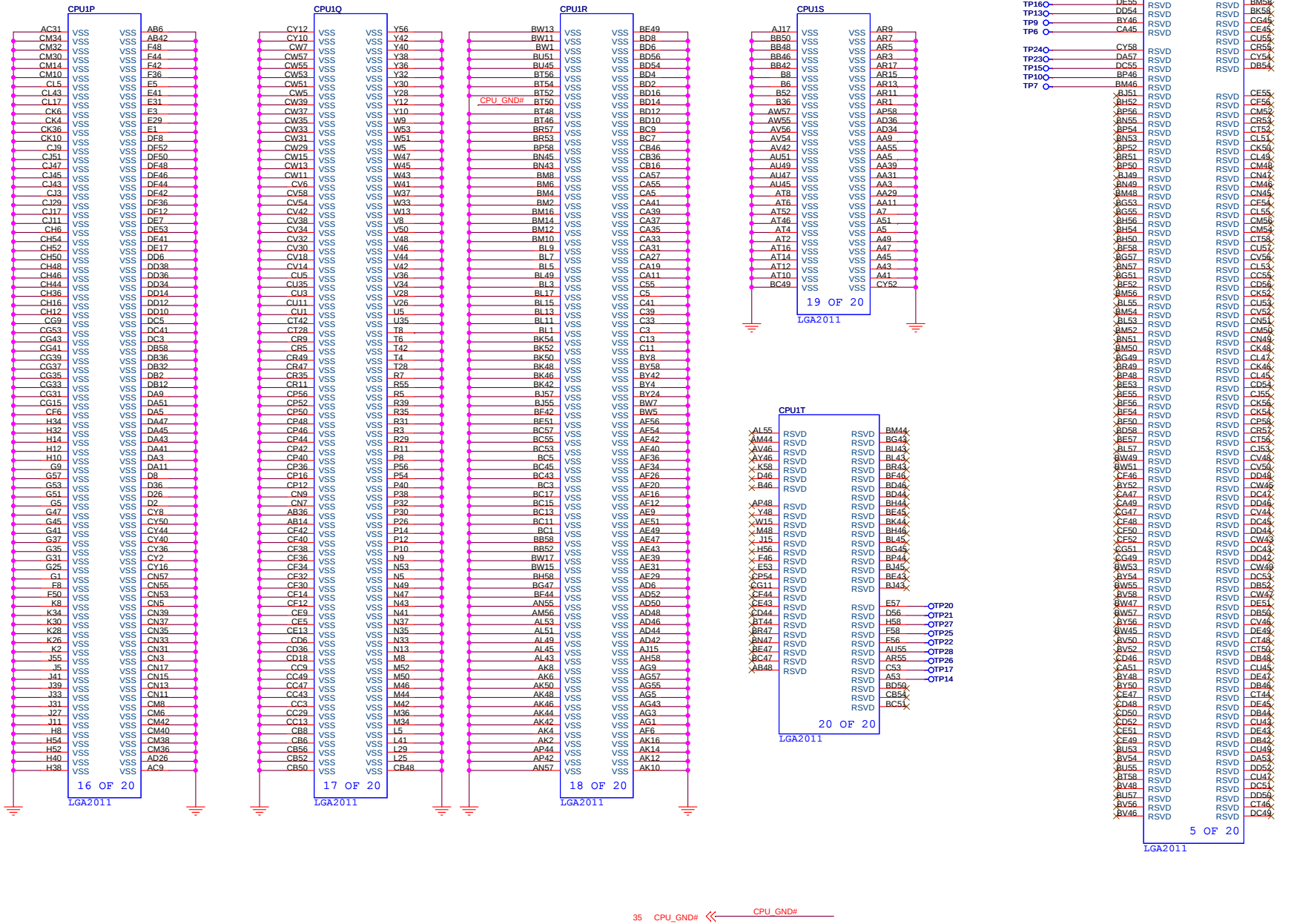

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DDRIII DIMM_A0

DDRIII DIMM_B0

DDR3

DDR3

A0 B0 D0 C0

Place close to DIMM1

Place close to DIMM1 with DIMM2

Place close to DIMM2

UPI VOLTAGE CONSOLE

DIMM1(CHANNEL-A)
ADDRESS = 0:0:0 [SA2:SA1:SA0]

DIMM2(CHANNEL-B)
ADDRESS = 1:0:0 [SA2:SA1:SA0]

UPI VOLTAGE CONSOLE

0x26:RH=18K,RL=13K

ADDRESS	0x2A	0x28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

UPI VOLTAGE CONSOLE

0x28:RH=9.1K,RL=3K

ADDRESS	0x2A	0x28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

Warning LED

LED04-R-30mA2V_1608-RH

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MS-7735	
Size: Custom	Document Description: DDR3 Chanel-A/B DIMM1/2
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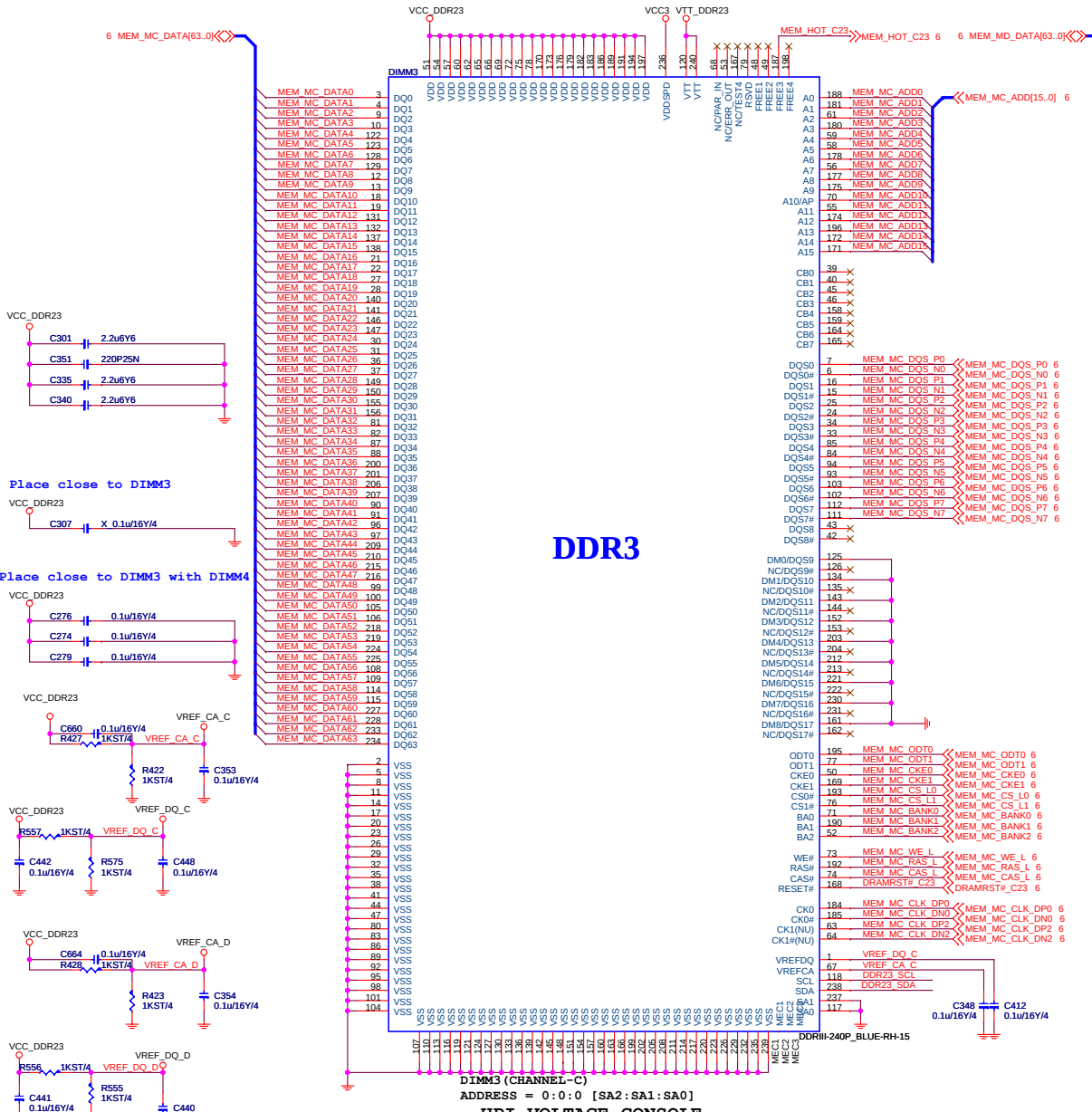
DDRIII DIMM_C0



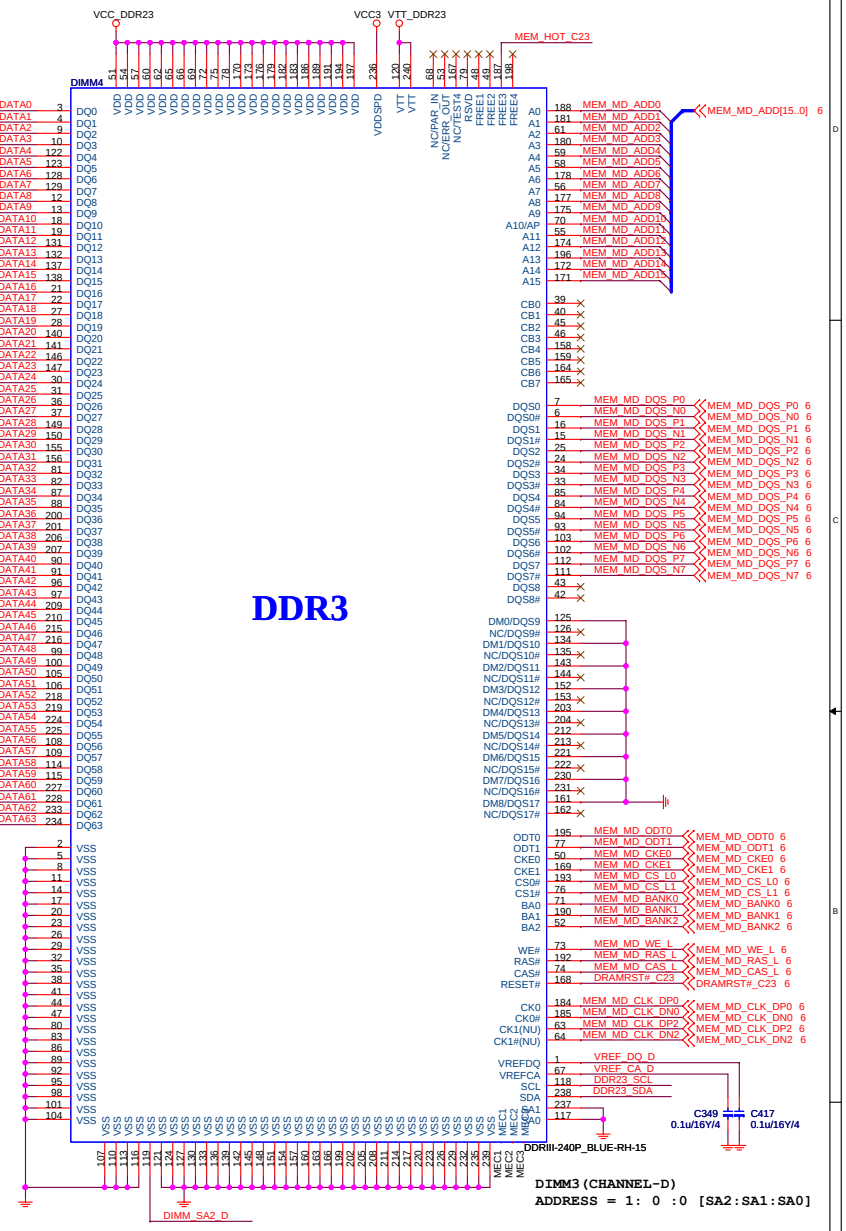
DIMM3(CHANNEL-C)
ADDRESS = 0:0:0 [SA2:SA1:SA0]

UPI VOLTAGE CONSOLE

0x20:RH=10K

ADDRESS	0x2A	0X28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

DDRIII DIMM_D0



DIMM3(CHANNEL-D)
ADDRESS = 1: 0 :0 [SA2:SA1:SA0]

UPI VOLTAGE CONSOLE

0x2A,RL=10K

ADDRESS	0x2A	0X28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

Warning LED

MICRO-STAR INT'L CO.,LTD	
MS-7736	
Size: Custom	Document Description: DDR3 Chanel-C/D DIMM3/4
Rev: 10	
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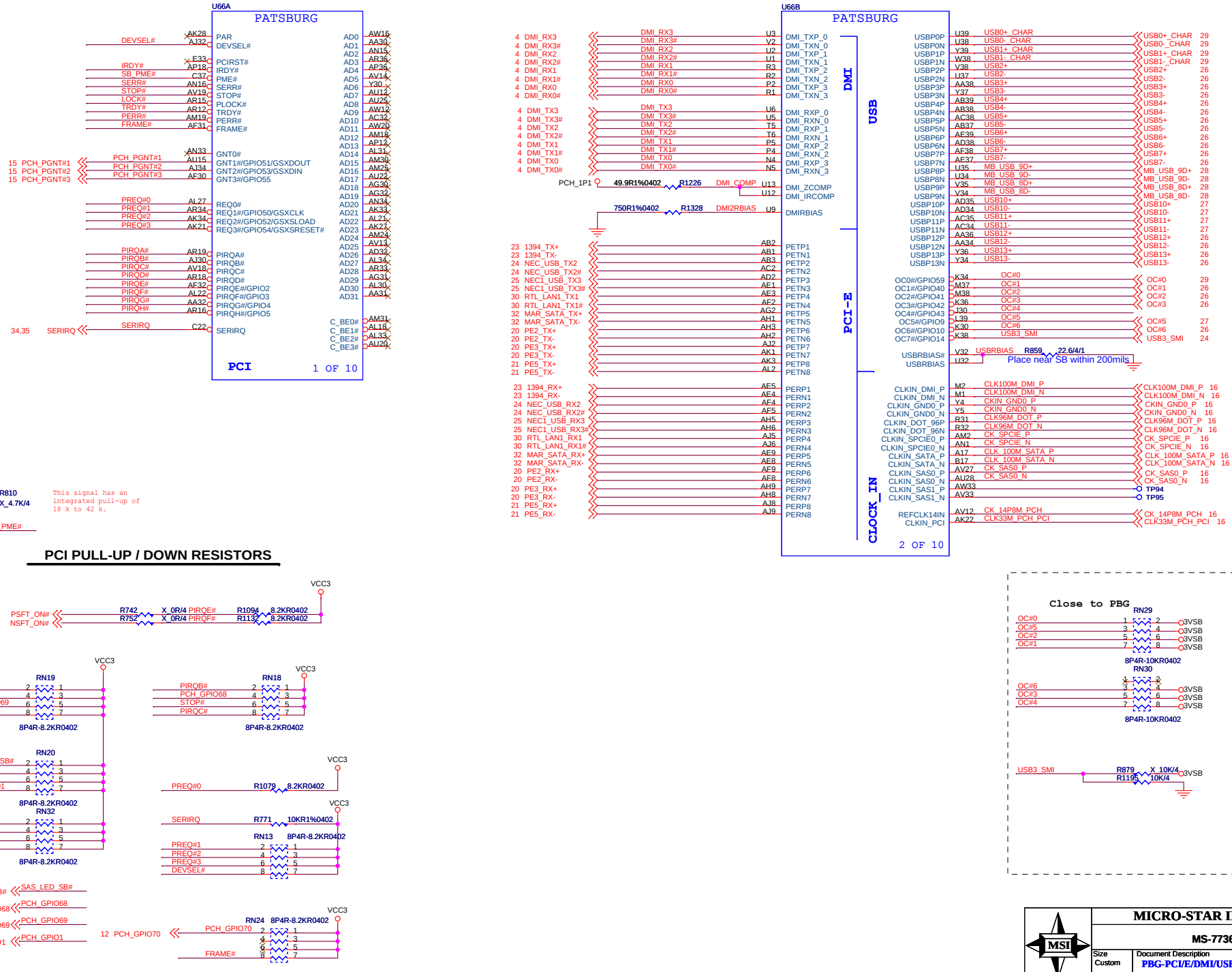

MICRO-STAR INT'L CO.,LTD	
MS-7736	
Size: Custom	Document Description: PBG-PCI/E/DMI/USB/CLK
Rev: 10	
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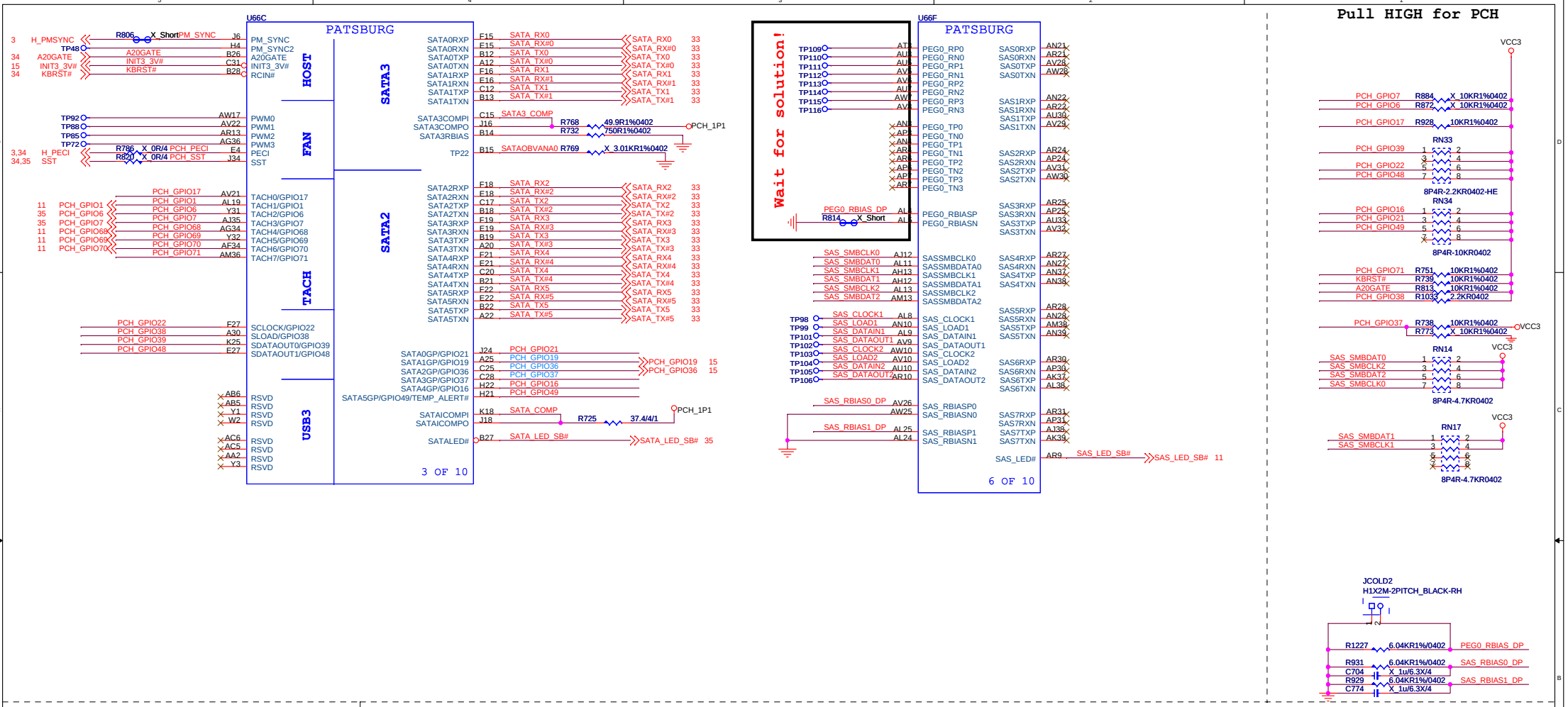
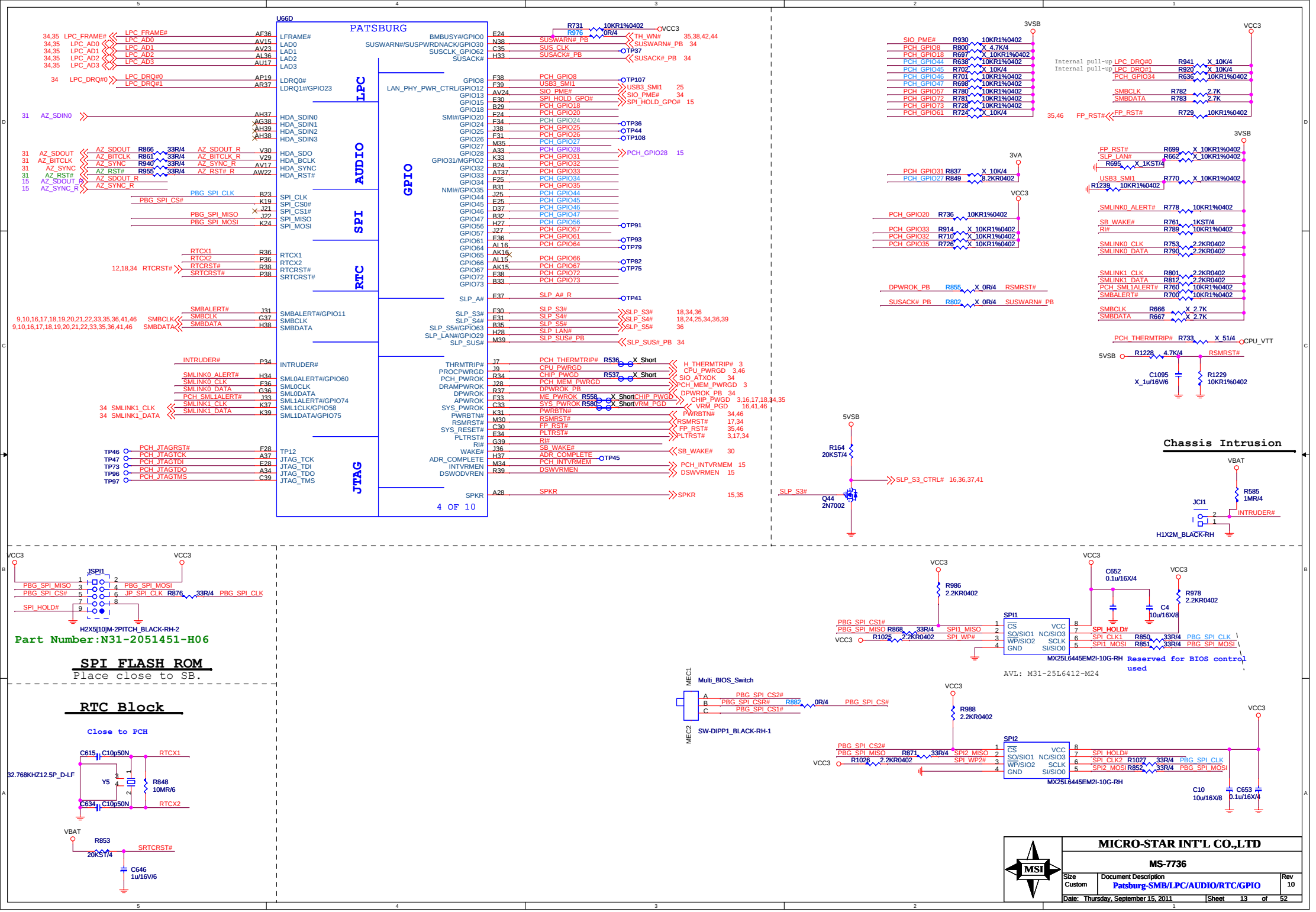

U66C
PATSBURG
HOST
FAN
TACH
SATA3
SATA2
USB3
3 OF 10
U66F
Wait for solution!
6 OF 10
Pull HIGH for PCH
RTC and CLR_CMOS
Clear CMOS button
Clear CMOS
CMOS CLEAR JUMPER
JBAT1 Clear CMOS
1 - 2 Normal
2 - 3 Clear CMOS
Close to PCH
MICRO-STAR INT'L CO.,LTD
MS-7736
PBG-SATA/HOST/FAN/CCMOS
Date: Wednesday, September 07, 2011
Sheet 12 of 52


U66D
PATSBURG
LPC
AUDIO
SPI
RTC
JTAG
GPIO
4 OF 10
LPC_FRAME#
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_DRQ#0
LPC_DRQ#1
AZ_SDIN0
AZ_SDOUT
AZ_BITCLK
AZ_SYNC
AZ_RST#
AZ_SDOUT_R
AZ_SYNC_R
PBG_SPI_CLK
PBG_SPI_CS#
PBG_SPI_MISO
PBG_SPI_MOSI
RTCX1
RTCX2
RTCRST#
SRTCRST#
SMBALERT#
SMBCLK
SMBDATA
INTRUDER#
SMLINK0_ALERT#
SMLINK0_CLK
SMLINK0_DATA
SMLINK1_CLK
SMLINK1_DATA
PCH_JTAGRST#
PCH_JTAGTCK
PCH_JTAGTDI
PCH_JTAGTDO
PCH_JTAGTMS
SLP_A#
SLP_S3#
SLP_S4#
SLP_S5#
SLP_LAN#
SLP_SUS#
SPKR
PCH_THERMTRIP#
CPU_PWRGD
CHIP_PWGD
DPWROK_PB
VRM_PGD
PWRBTN#
RSMRST#
FP_RST#
PLTRST#
SB_WAKE#
ADR_COMPLETE
INTVRMEN
DSWVRMEN
SUSWARN#_PB
SUS_CLK
SUSACK#_PB
TH_WN#
SUSWARN#_PB
SUSACK#_PB
SIO_PME#
SPI_HOLD_GPO#
PCH_INTVRMEM
DSWVRMEN
SLP_S3#
SLP_S4#
SLP_S5#
SLP_SUS#_PB
H_THERMTRIP#
CPU_PWRGD
SIO_ATXOK
PCH_MEM_PWRGD
DPWROK_PB
CHIP_PWGD
VRM_PGD
PWRBTN#
RSMRST#
FP_RST#
PLTRST#
SB_WAKE#
PCH_INTVRMEM
DSWVRMEN
SPKR
R731 10KR1%0402
R976 0R/4
VCC3
3VSB
SIO_PME# R930 10KR1%0402
PCH_GPIO8 R800 X_4.7K/4
PCH_GPIO18 R697 X_10KR1%0402
PCH_GPIO44 R638 10KR1%0402
PCH_GPIO45 R702 X_10K/4
PCH_GPIO46 R701 10KR1%0402
PCH_GPIO47 R698 10KR1%0402
PCH_GPIO57 R780 10KR1%0402
PCH_GPIO72 R781 10KR1%0402
PCH_GPIO73 R728 10KR1%0402
PCH_GPIO61 R724 X_10K/4
Internal pull-up LPC_DRQ#0 R941 X_10K/4
Internal pull-up LPC_DRQ#1 R920 X_10K/4
PCH_GPIO34 R636 10KR1%0402
SMBCLK R782 2.7K
SMBDATA R783 2.7K
FP_RST# R729 10KR1%0402
3VA
PCH_GPIO31 R837 X_10K/4
PCH_GPIO27 R849 8.2KR0402
PCH_GPIO20 R736 10KR1%0402
PCH_GPIO33 R914 X_10KR1%0402
PCH_GPIO32 R710 X_10KR1%0402
PCH_GPIO35 R726 X_10KR1%0402
DPWROK_PB R855 X_0R/4 RSMRST#
SUSACK#_PB R802 X_0R/4 SUSWARN#_PB
FP_RST# R699 X_10KR1%0402
SLP_LAN# R662 X_10KR1%0402
R695 X_1KST/4
USB3_SMI1 R770 X_10KR1%0402
R1239 10KR1%0402
SMLINK0_ALERT# R778 10KR1%0402
SB_WAKE# R761 1KST/4
RI# R789 10KR1%0402
SMLINK0_CLK R753 2.2KR0402
SMLINK0_DATA R790 2.2KR0402
SMLINK1_CLK R801 2.2KR0402
SMLINK1_DATA R812 2.2KR0402
PCH_SML1ALERT# R760 10KR1%0402
SMBALERT# R700 10KR1%0402
SMBCLK R666 X_2.7K
SMBDATA R667 X_2.7K
PCH_THERMTRIP# R733 X_51/4
CPU_VTT
5VSB R1228 4.7K/4
RSMRST#
C1095 X_1u/16V/6
R1229 10KR1%0402
R164 20KST/4
SLP_S3_CTRL# 16,36,37,41
Q44 2N7002
Chassis Intrusion
VBAT
R585 1MR/4
JCI1
INTRUDER#
H1X2M_BLACK-RH
JSPI1
PBG_SPI_MISO
PBG_SPI_CS#
SPI_HOLD#
PBG_SPI_MOSI
JP_SPI_CLK R876 33R/4 PBG_SPI_CLK
H2X5[10]M-2PITCH_BLACK-RH-2
Part Number:N31-2051451-H06
SPI FLASH ROM
Place close to SB.
RTC Block
Close to PCH
C615 C10p50N
RTCX1
32.768KHZ12.5P_D-LF
Y5
R848 10MR/6
C634 C10p50N
RTCX2
VBAT
R853 20KST/4
SRTCRST#
C646 1u/16V/6
MEC1
Multi_BIOS_Switch
PBG_SPI_CS2#
PBG_SPI_CSR#
PBG_SPI_CS1#
R882 0R/4
PBG_SPI_CS#
MEC2
SW-DIPP1_BLACK-RH-1
R986 2.2KR0402
PBG_SPI_CS1#
PBG_SPI_MISO R868 33R/4 SPI1_MISO
R1025 2.2KR0402 SPI_WP#
SPI1
CS VCC
SO/SIO1 NC/SIO3
WP/SIO2 SCLK
GND SI/SIO0
MX25L6445EM2I-10G-RH
C652 0.1u/16X/4
C4 10u/16X/8
R978 2.2KR0402
SPI_HOLD#
SPI_CLK1 R850 33R/4 PBG_SPI_CLK
SPI1_MOSI R851 33R/4 PBG_SPI_MOSI
Reserved for BIOS control used
AVL: M31-25L6412-M24
R988 2.2KR0402
PBG_SPI_CS2#
PBG_SPI_MISO R871 33R/4 SPI2_MISO
R1026 2.2KR0402 SPI_WP2#
SPI2
SPI_HOLD#
SPI_CLK2 R1027 33R/4 PBG_SPI_CLK
SPI2_MOSI R852 33R/4 PBG_SPI_MOSI
C10 10u/16X/8
C653 0.1u/16X/4
MICRO-STAR INT'L CO.,LTD
MS-7736
Size Custom
Document Description Patsburg-SMB/LPC/AUDIO/RTC/GPIO
Rev 10
Date: Thursday, September 15, 2011
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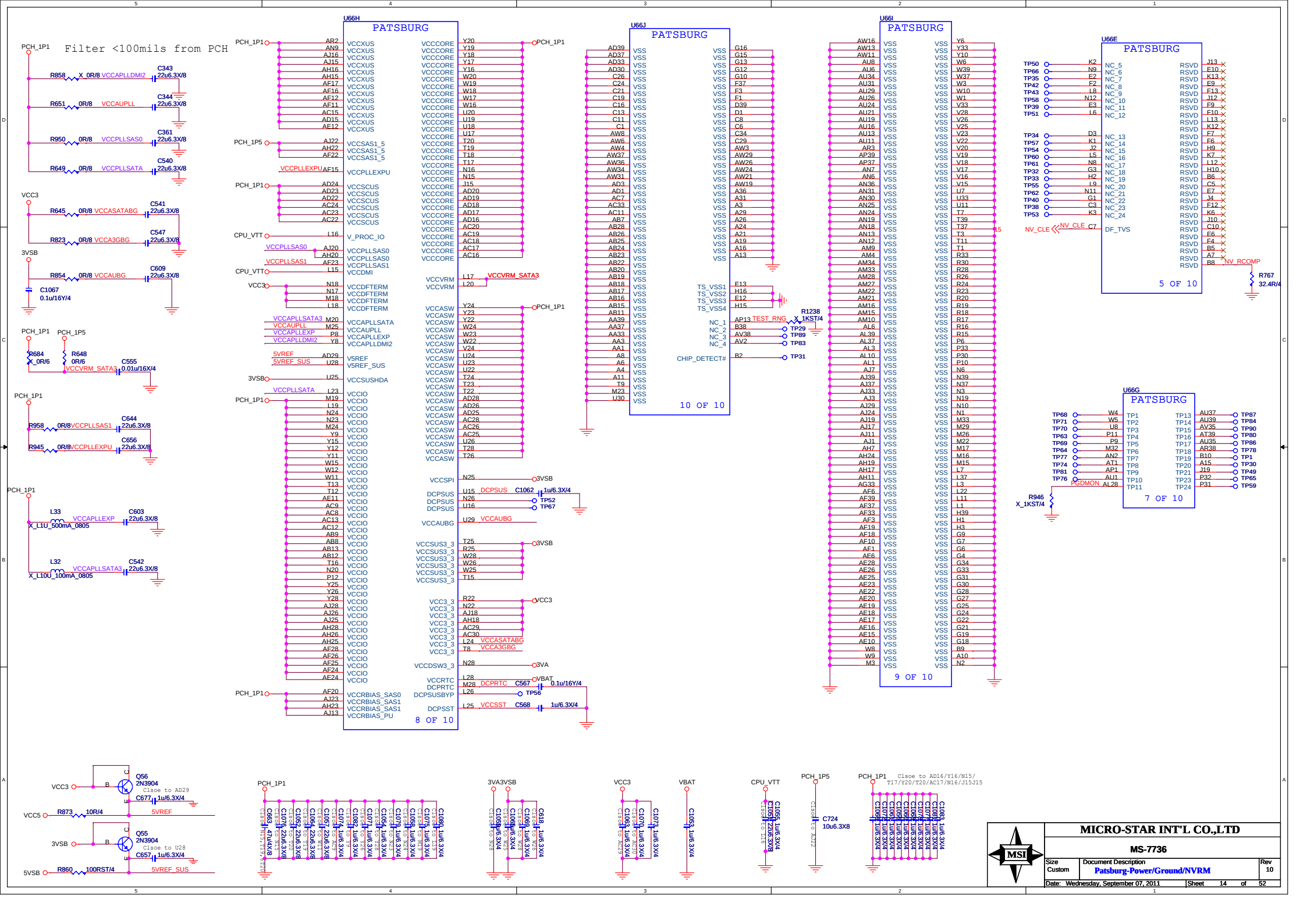
Filter <100mils from PCH
PATSBURG
U66H
8 OF 10
U66J
10 OF 10
U66I
9 OF 10
U66E
5 OF 10
U66G
7 OF 10
MICRO-STAR INT'L CO.,LTD
MS-7736
Patsburg-Power/Ground/NVRM
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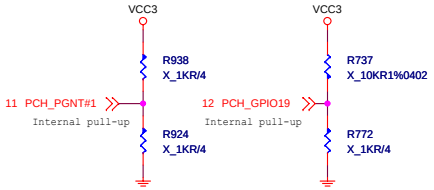
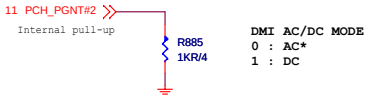
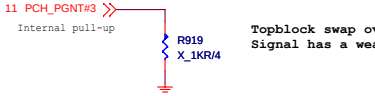
PCH Straps

BOOT DEVICE	GNT1	SATA1GP/GPIO19
LPC	0	0
PCI	1	0
SPI	1	1

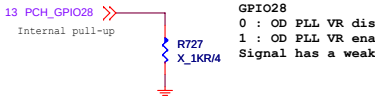




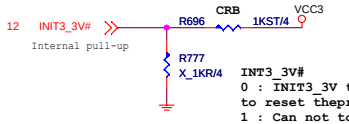
DMI AC/DC MODE
0 : AC*
1 : DC



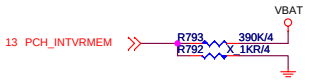
Topblock swap override when pull-low
Signal has a weak internal pull-up



GPIO28
0 : OD PLL VR disabled
1 : OD PLL VR enabled *
Signal has a weak internal pull-up

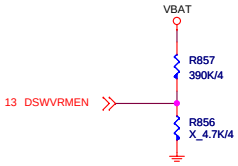


INT3_3V#
0 : INIT3_3V to asserted for 16 PCI clock to reset theprocessor by some evens occur
1 : Can not to reset the processor



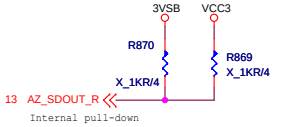
INTVRMEN
0: DISABLE INTERNAL VRM
1: ENABLE INTERNAL VRM *

When these voltageregulators are enabled, the integrated GbE only operates at 10/100 Mbps during S3-S5.

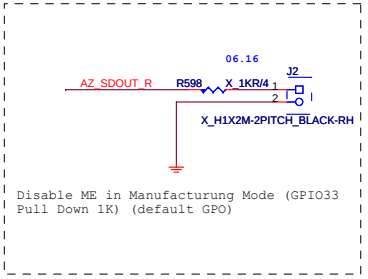


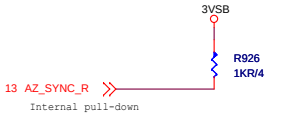
DSWVRMEN
0 : Disable Internal Deep Sleep 1.05 V regulators.
1 : Enable Internal Deep Sleep 1.05 V regulators.

This signal enables the internal Deep Sleep 1.05 V regulators. Must beconnected even when not supporting DSW.



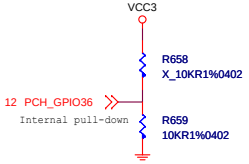
HDA_SDO
Disable ME in Manufacturing Mode when pull LOW ????

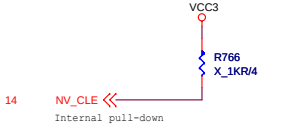




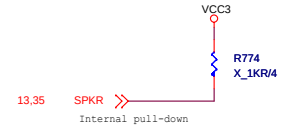
HDA_SYNC
OD PLL VR SUPPLY SEL
0: 1.8V SUPPLY
1: 1.5V SUPPLY *

GPIO15
0 : TLS CIPHER SUITE WITH NO CONFIDENTIALITY *
1 : TLS CIPHER SUITE WITH CONFIDENTIALITY





DMI/FDI TERMINATION VOLTAGE
DC COUPLED: TX/RX TO VCC ISF SAMPLED HIGH
DC COUPLED: TX/RX TO VSS IF SAMPLED LOW *?
AC COUPLED: TX SET TO VCC/2, RX SET TO VSS REGARDLESS OF THIS STRAP



SPKR
0 : EN TCO REBOOT *
1 : DIS TCO REBOOT

MICRO-STAR INT'L CO.,LTD

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Custom	Patsburg -Strap	10

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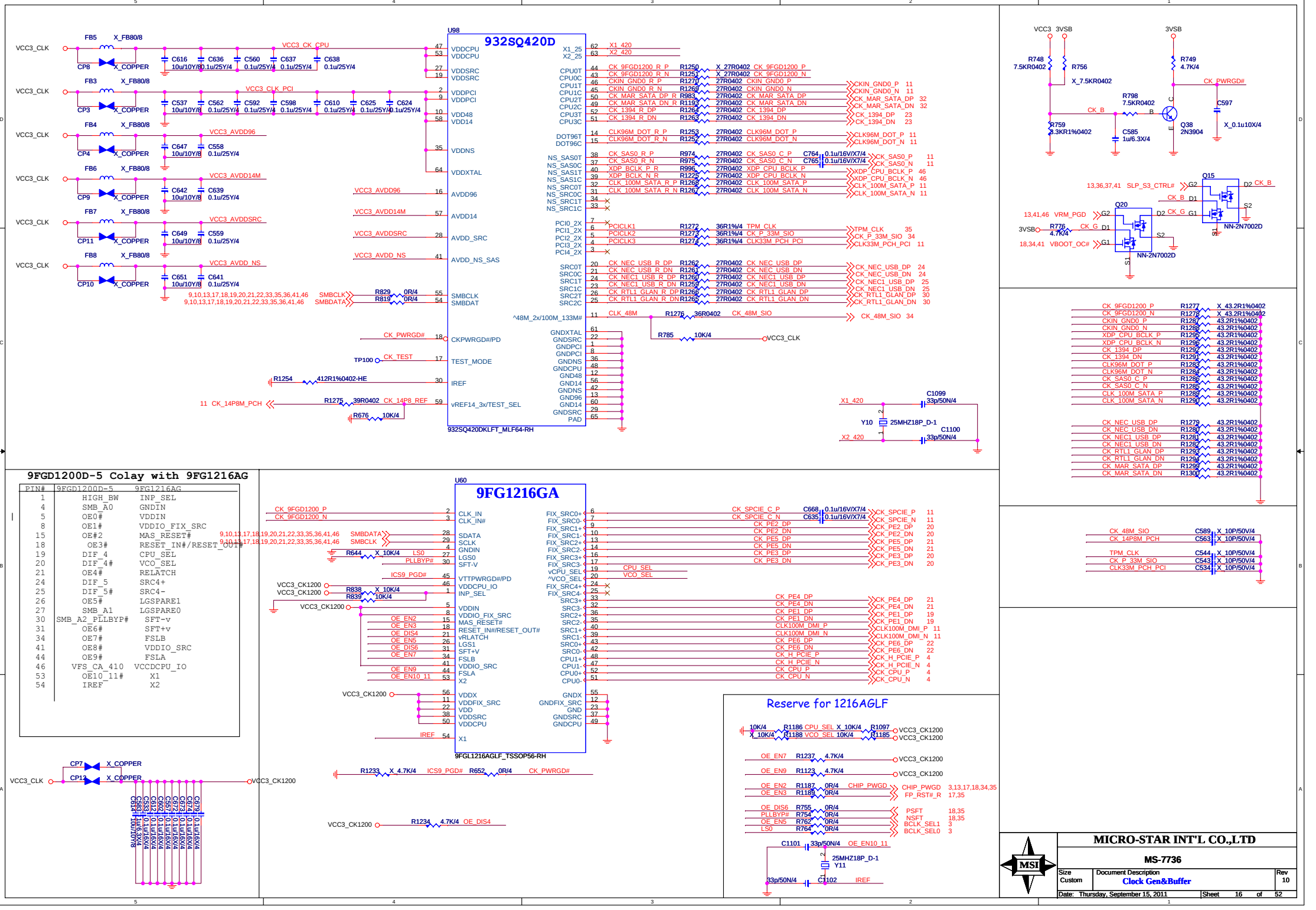
932SQ420D
U98
932SQ420DKLFT_MLF64-RH
9FG1216GA
U60
9FGL1216AGLF_TSSOP56-RH
9FGD1200D-5 Colay with 9FG1216AG
PIN# 9FGD1200D-5 9FG1216AG
1 HIGH_BW INP_SEL
4 SMB_A0 GNDIN
5 OE0# VDDIN
8 OE1# VDDIO_FIX_SRC
15 OE#2 MAS_RESET#
18 OE3# RESET_IN#/RESET_OUT#
19 DIF_4 CPU_SEL
20 DIF_4# VCO_SEL
21 OE4# RELATCH
24 DIF_5 SRC4+
25 DIF_5# SRC4-
26 OE5# LGSPARE1
27 SMB_A1 LGSPARE0
30 SMB_A2_PLLBYP# SFT-v
31 OE6# SFT+v
34 OE7# FSLB
41 OE8# VDDIO_SRC
44 OE9# FSLA
46 VFS_CA_410 VCCDCPU_IO
53 OE10_11# X1
54 IREF X2
Reserve for 1216AGLF
MICRO-STAR INT'L CO.,LTD
MS-7736
Clock Gen&Buffer
Size Custom
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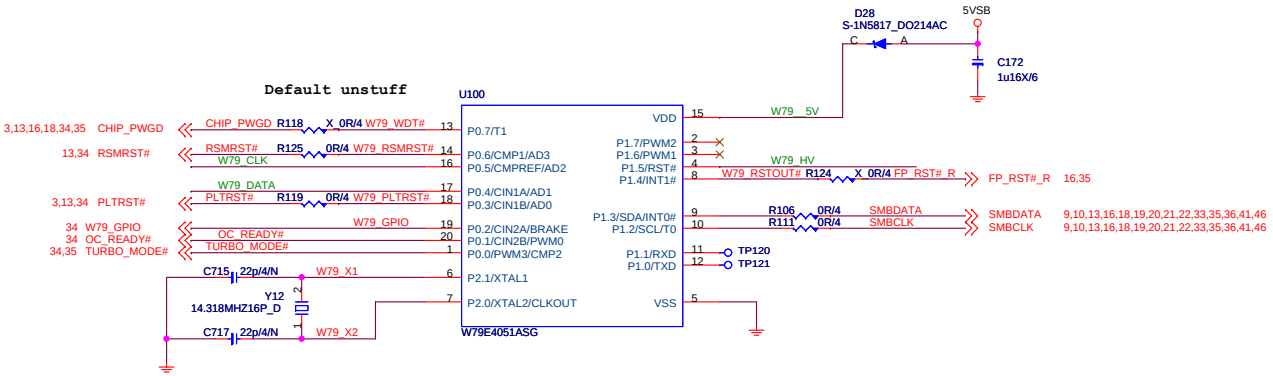
out for Full reset, can pull up to 3V

RSMRST# for 8051 refer to read GPIO state
ICP Programmer

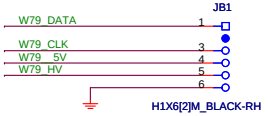
ICP Programmer
PLTRST# is a power on event for 8051

Reserved, can pull to 3V
BIOS inform to 8051 the OC ready, can pull up to 3V
OC Button, can pull up to 3V

Default unstuff



繹魁CONNECT



MSI	MICRO-STAR INT'L CO.,LTD	
	MS-7736	
Size: Custom	Document Description: XDP / Manual Parts	Rev: 0A
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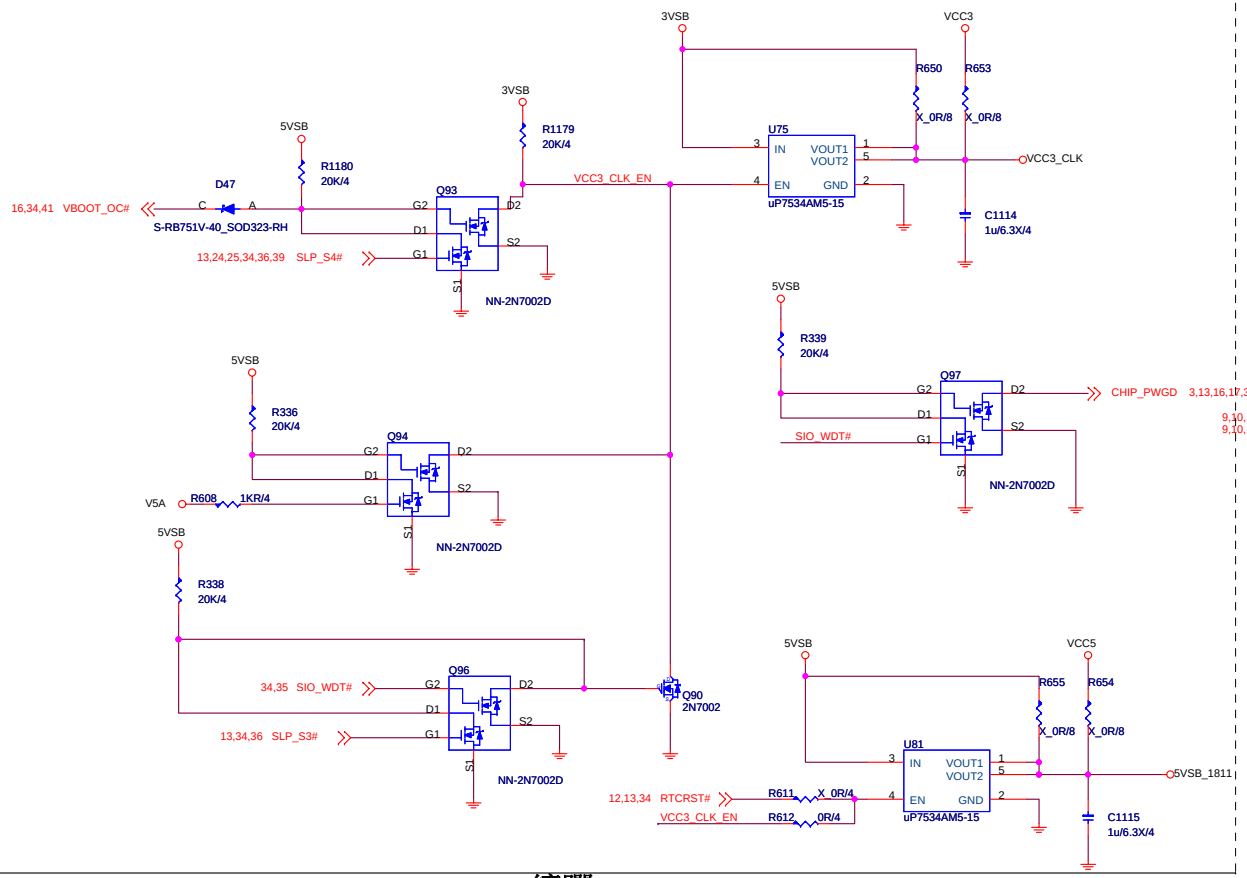
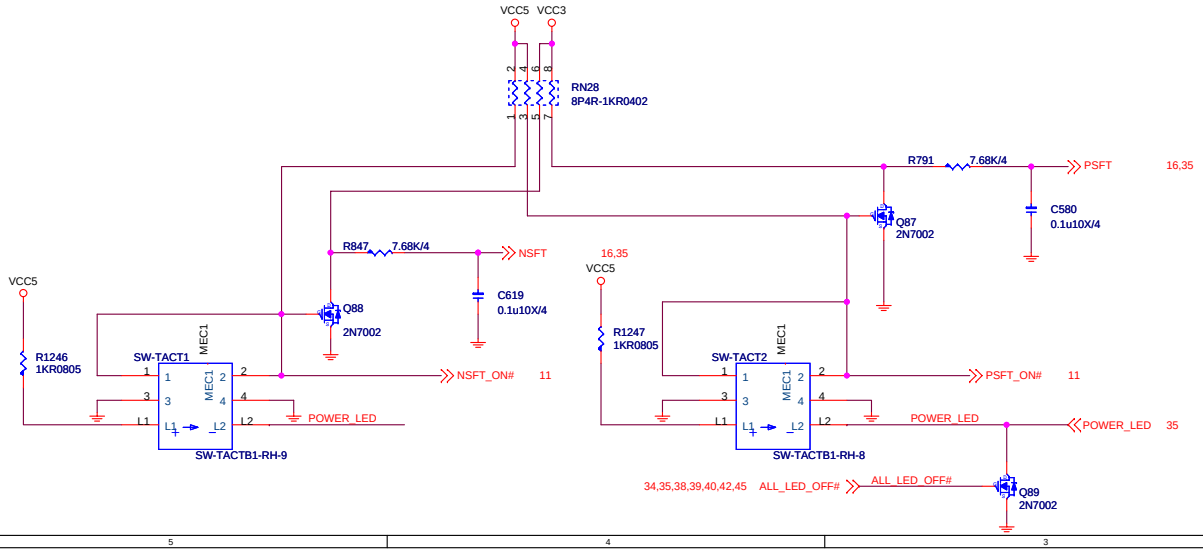
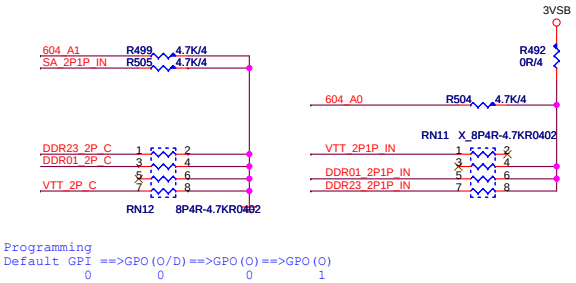
POWER METER



+-繪瞷



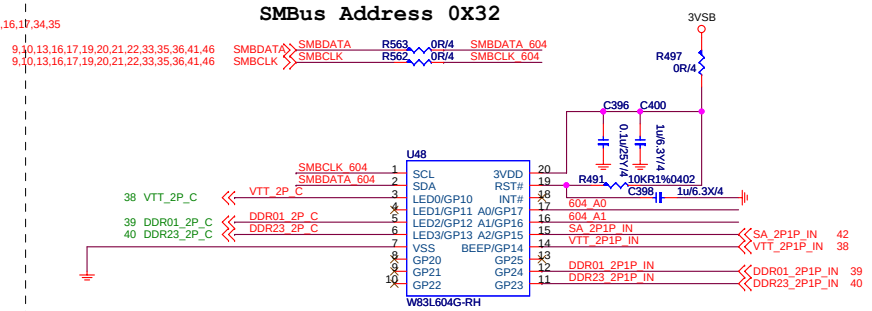
GPIO Controller - B LED / VTT / PHASE6



Programming

Default GPI	==>GPO(O/D)	==>GPO(O)	==>GPO(O)
0	0	0	1

SMBus Address 0X32



Only VTT_PSI_GPO# Default High
Others Default Low

MSI	MICRO-STAR INT'L CO.,LTD	
	MS-7736	
Size: Custom	Document Description: 41.OC SWITCH/W604GPIO CTL/OC	Rev: 0A
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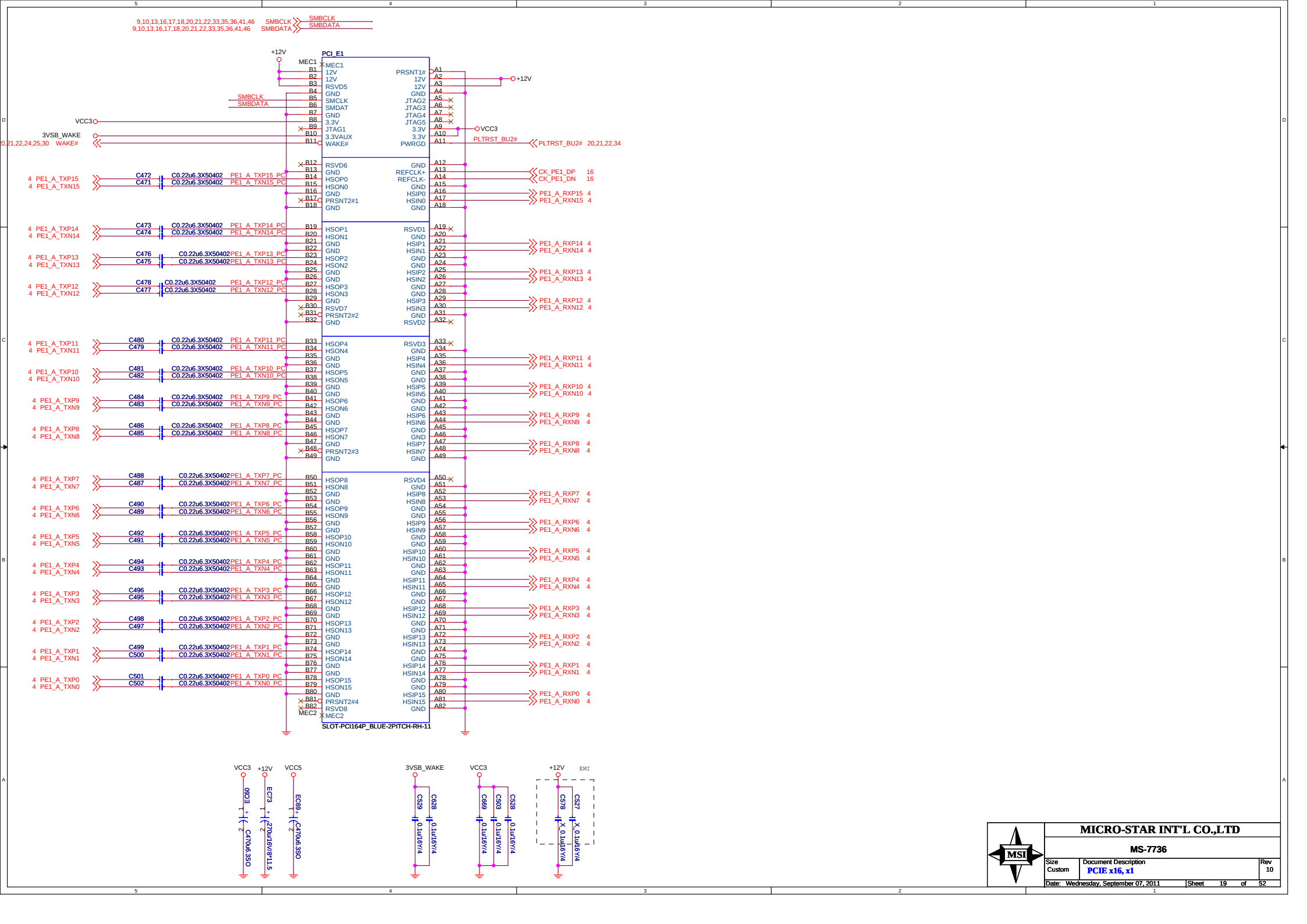

MICRO-STAR INT'L CO.,LTD	
MS-7736	
Size: Custom	Document Description: PCIE x16, x1
Rev: 10	
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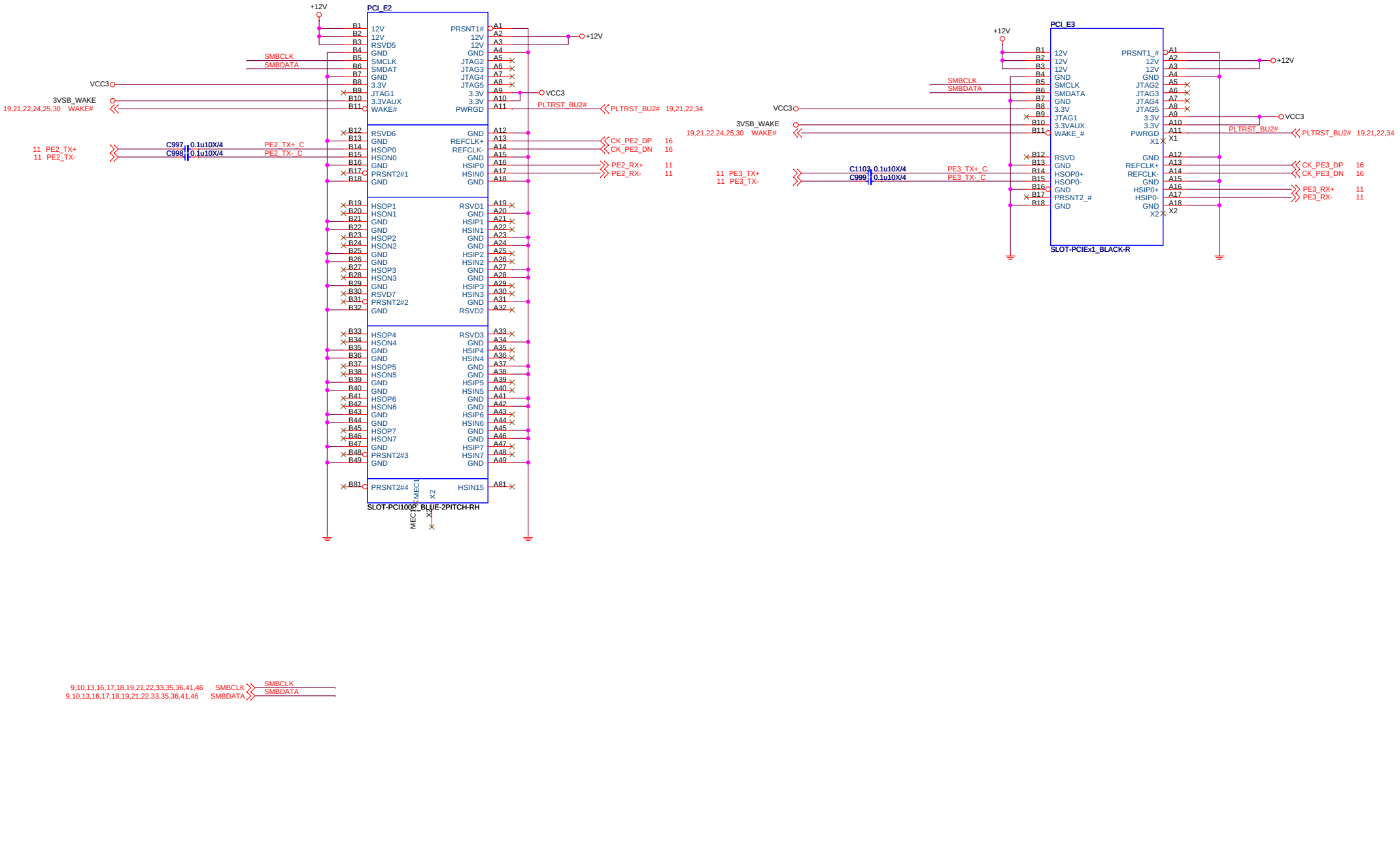

MICRO-STAR INT'L CO.,LTD		
MS-7736		
Size: Custom	Document Description: PCI-E X8 & Switch	Rev: 10
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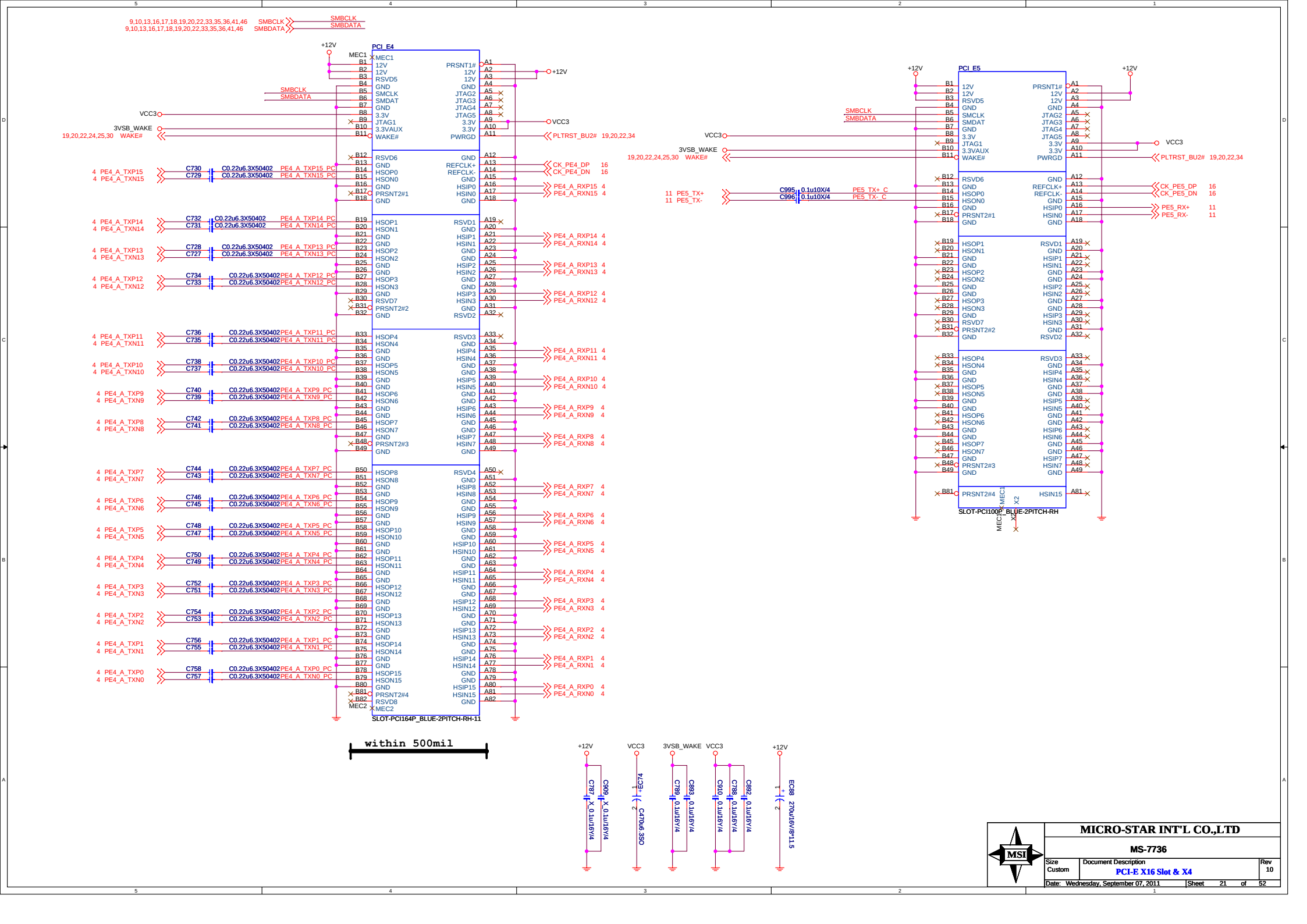

MICRO-STAR INT'L CO.,LTD	
MS-7736	
Size: Custom	Document Description: PCI-E X16 Slot & X4
Rev: 10	
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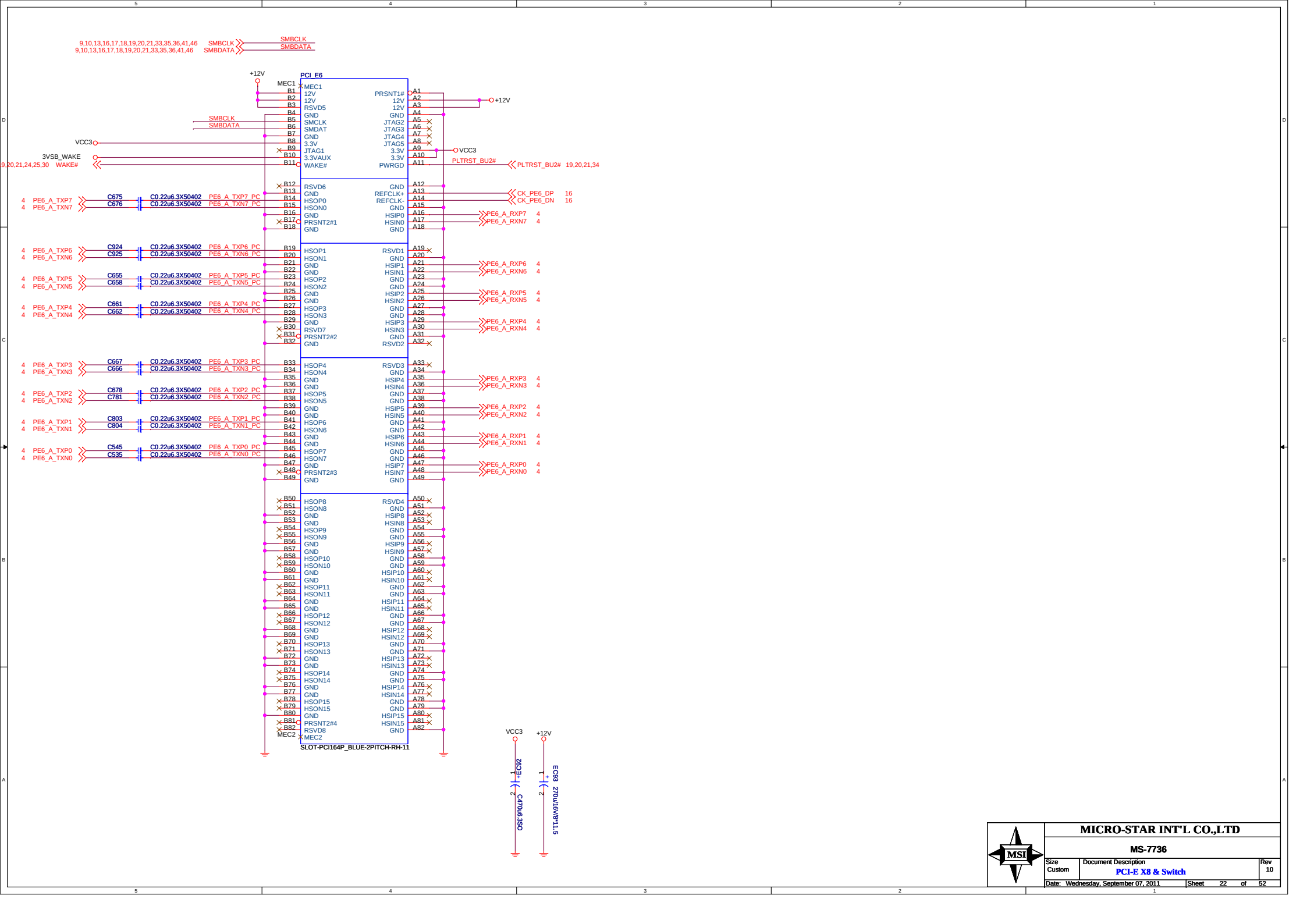

MICRO-STAR INT'L CO.,LTD		
MS-7736		
Size: Custom	Document Description: PCI-E X8 & Switch	Rev: 10
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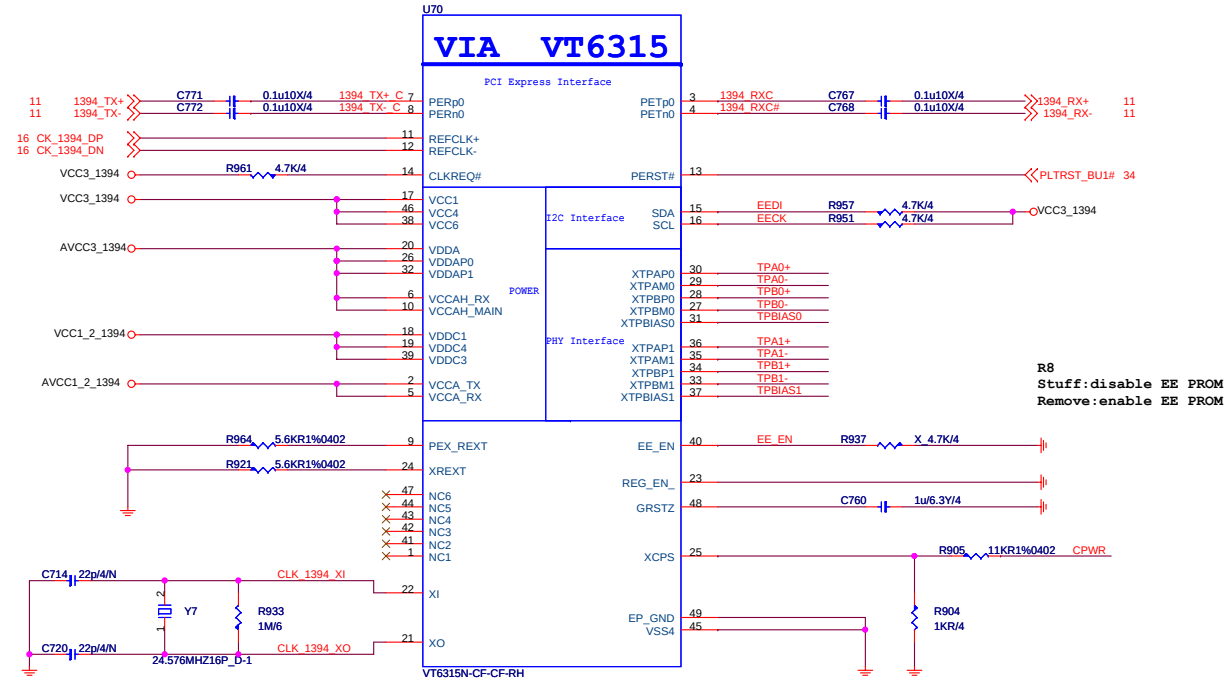
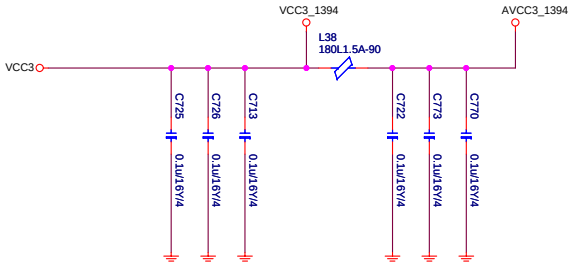
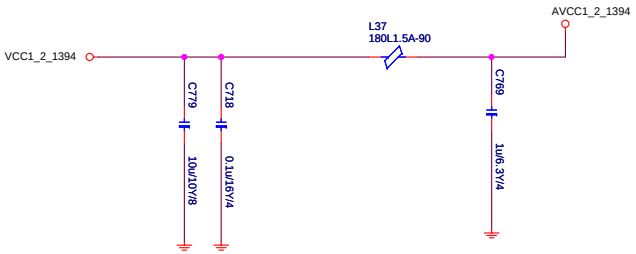
1394 CONTROLLER



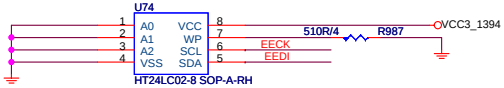
R8
Stuff:disable EE PROM
Remove:enable EE PROM



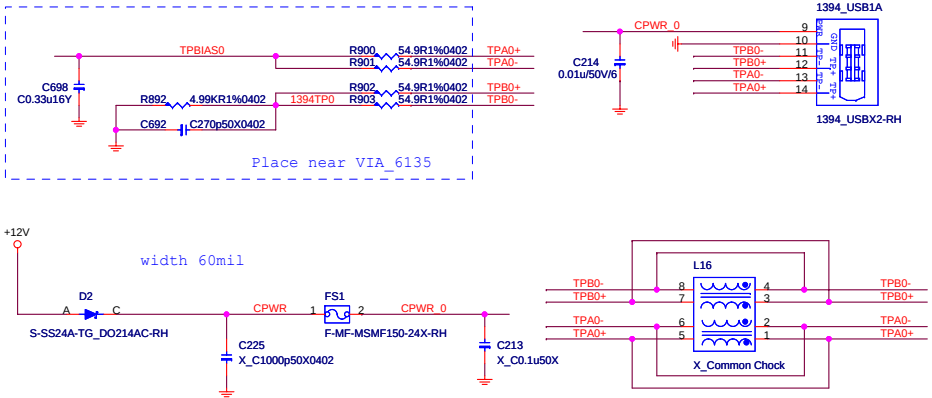
close to chip of all Cap.



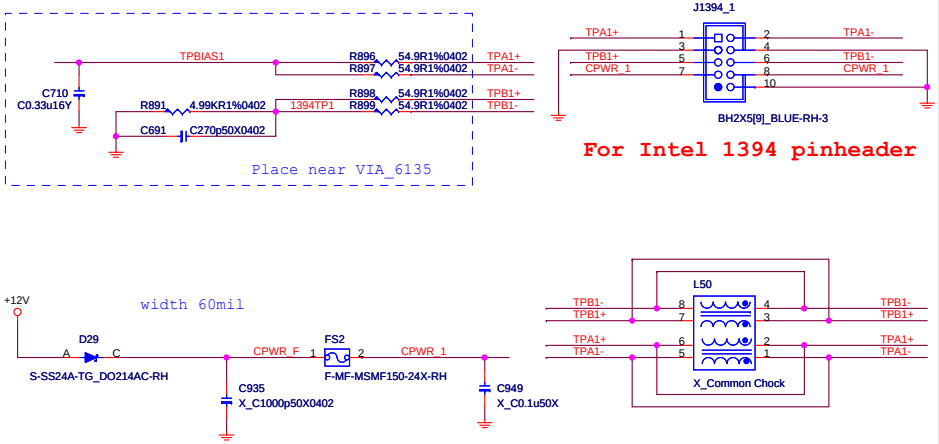
EE PROM



Rear 1394 port



Front 1394 pin header



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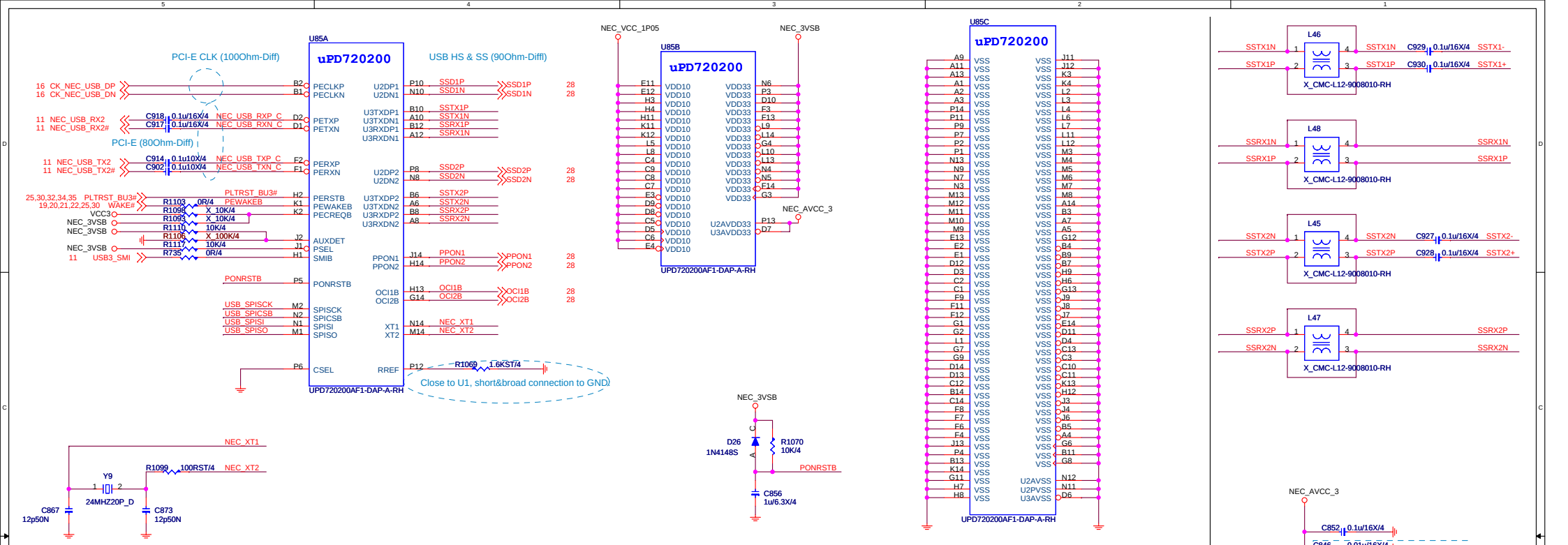
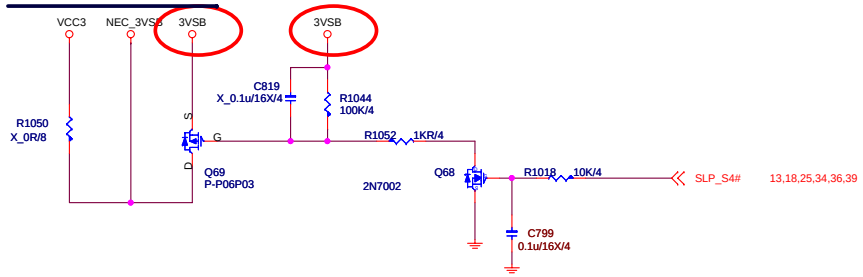
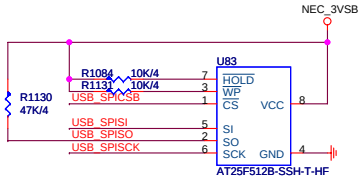


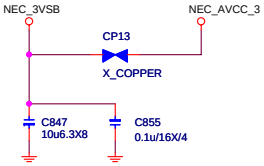
3V_Dual Circuit



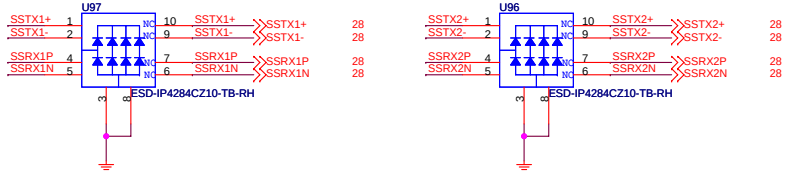
EEPROM



AVCC3 STB Power

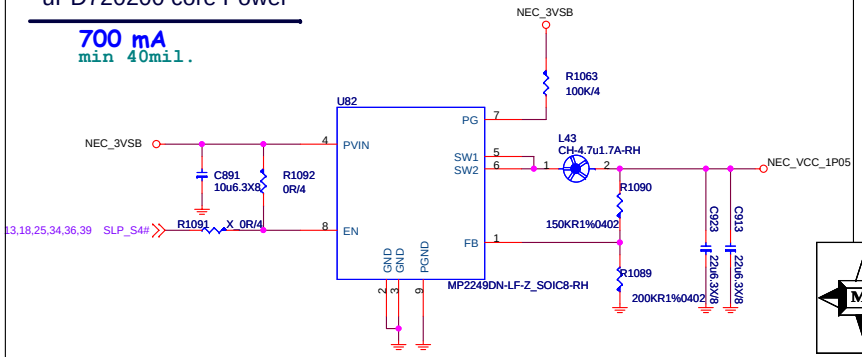


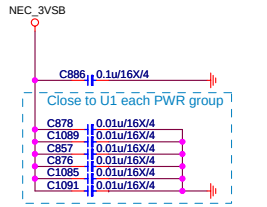
ESD Protection

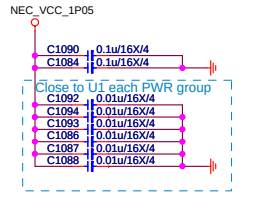


uPD720200 core Power

700 mA
min 40mil.







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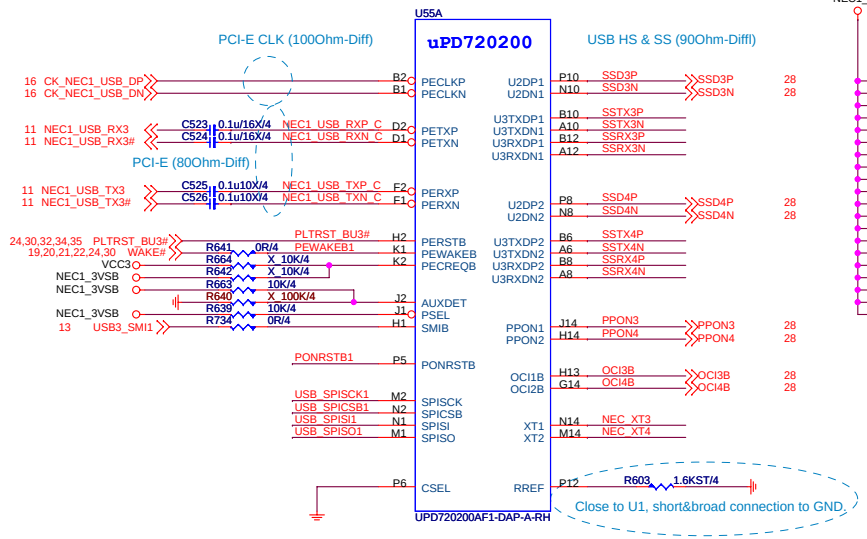
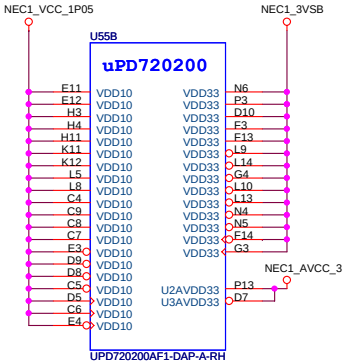
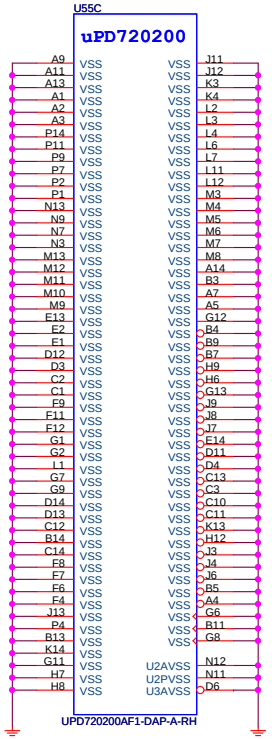
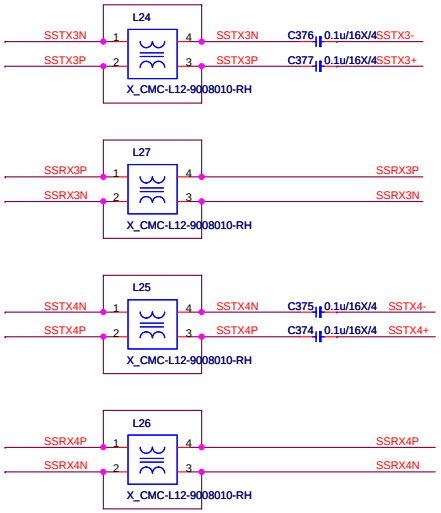
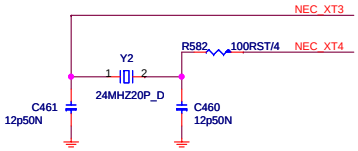
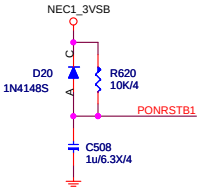




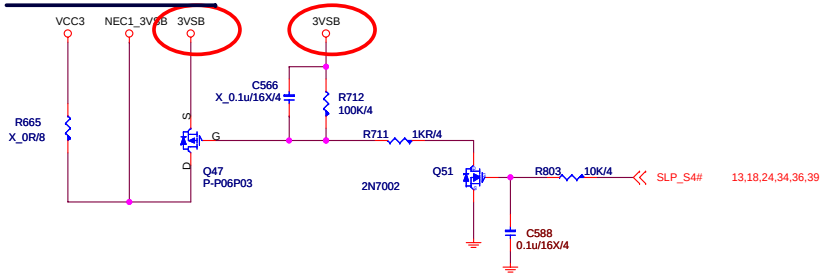




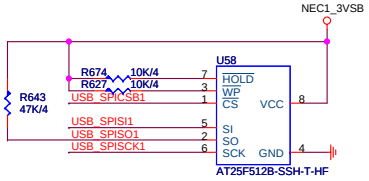




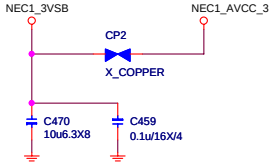
3V_Dual Circuit

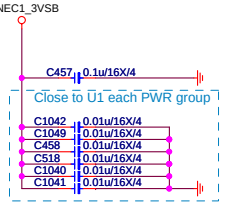


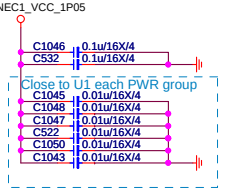
EEPROM



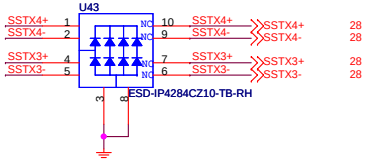
AVCC3 STB Power

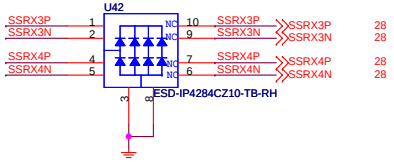






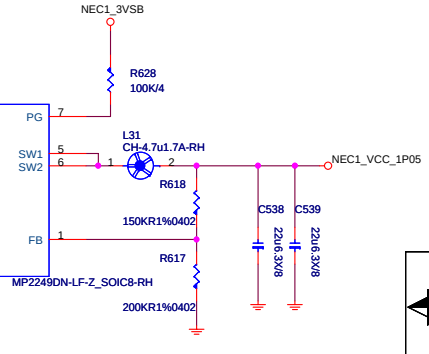
ESD Protection





uPD720200 core Power

700 mA
min 40mil.



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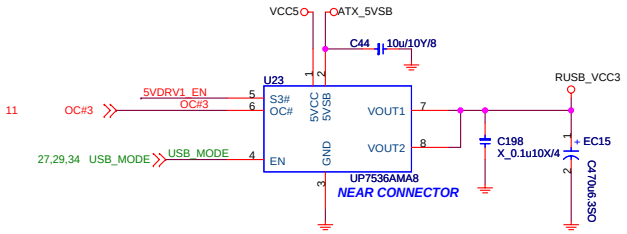
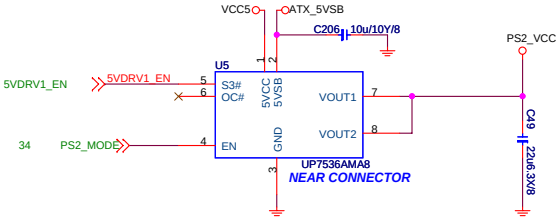
Rear USB Connector

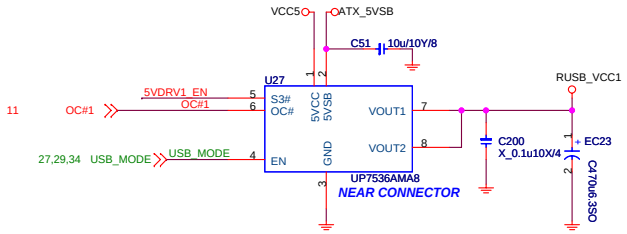
USB POWER FOR PORT 10,11



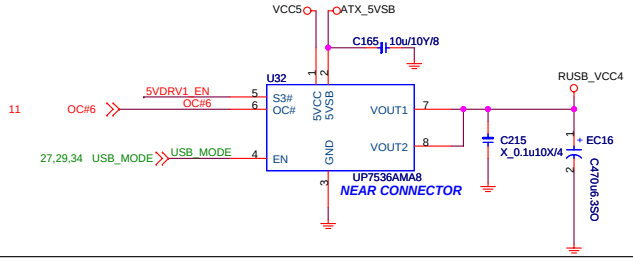
PS2 POWER



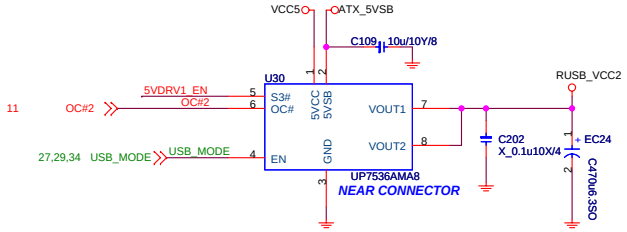
USB POWER FOR PORT 10,11



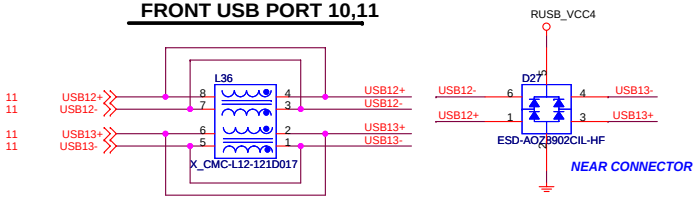
USB POWER FOR PORT 10,11

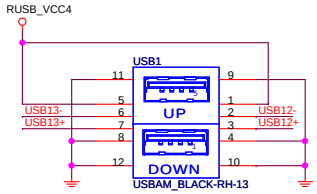


USB POWER FOR PORT 10,11

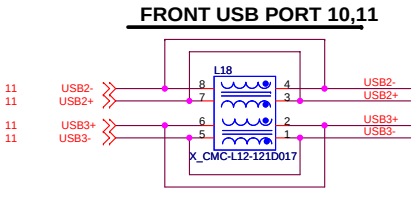


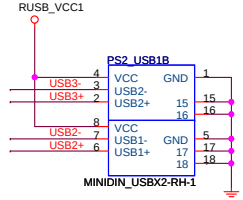
FRONT USB PORT 10,11



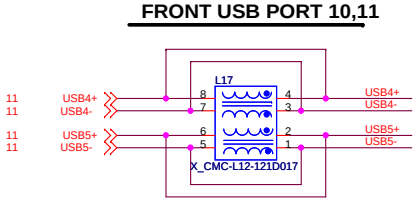


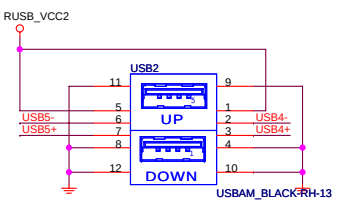
FRONT USB PORT 10,11

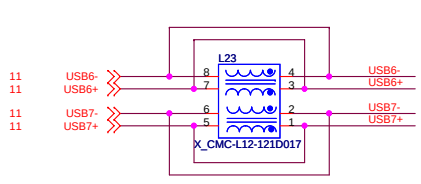




FRONT USB PORT 10,11







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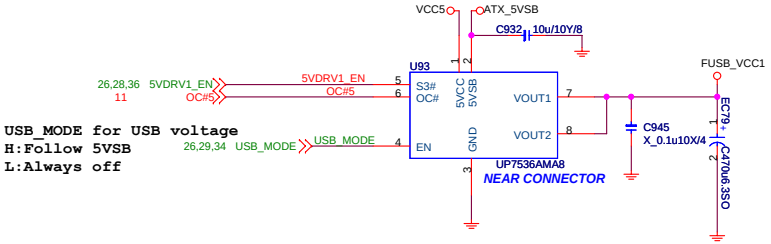
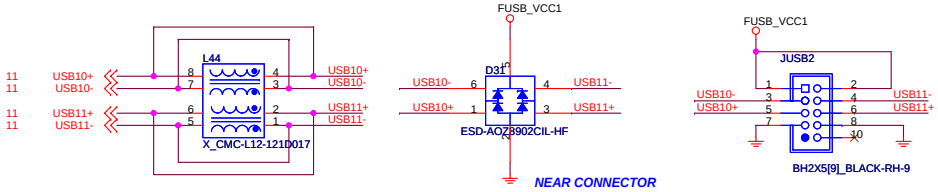
USB POWER Front PORT 2,3



FRONT USB PORT 2,3



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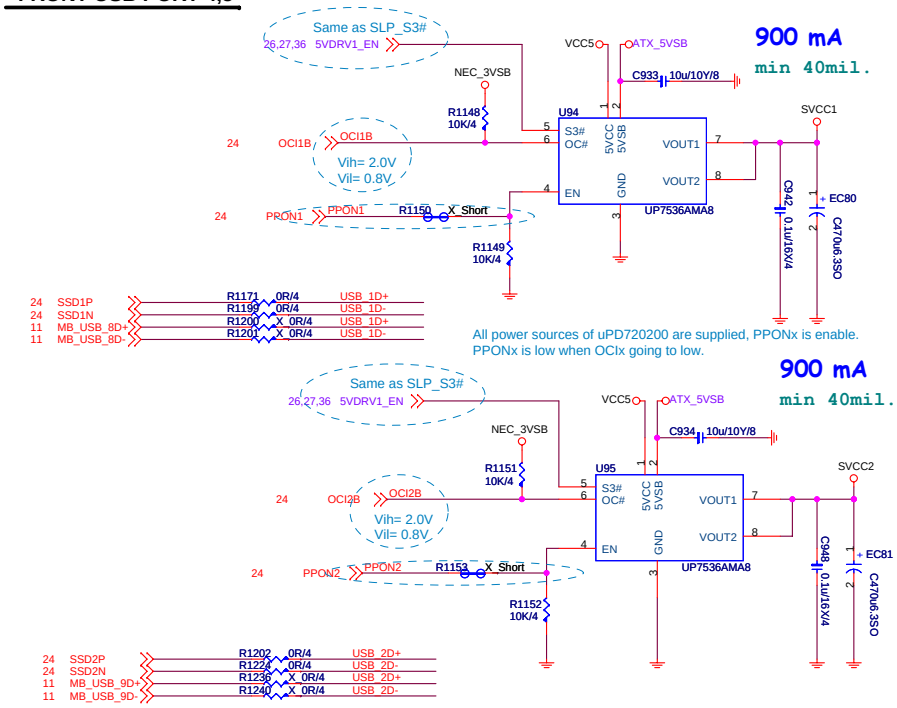
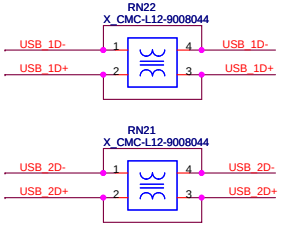
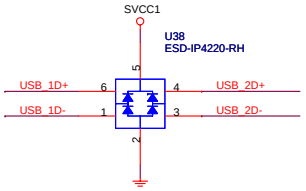
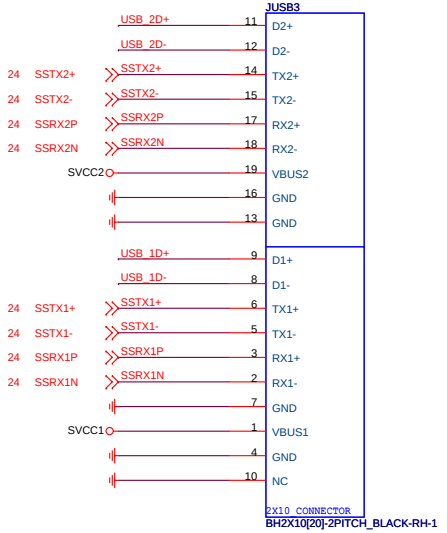
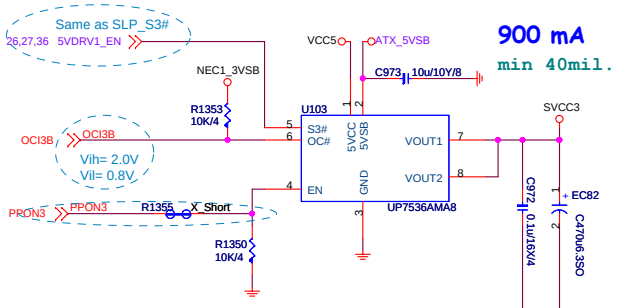
FRONT USB PORT 4,5

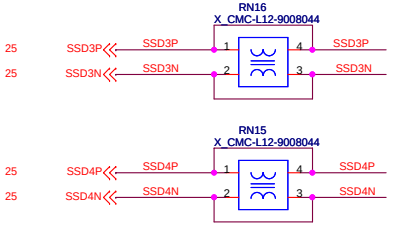


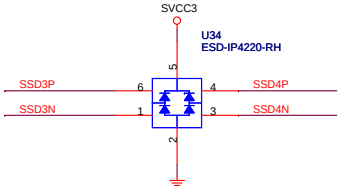


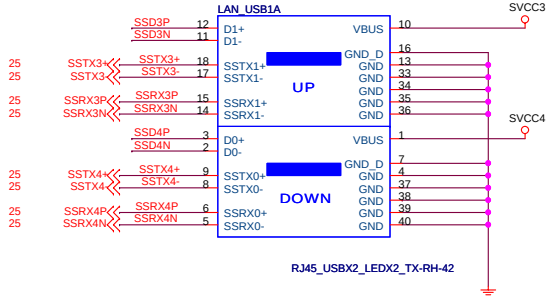












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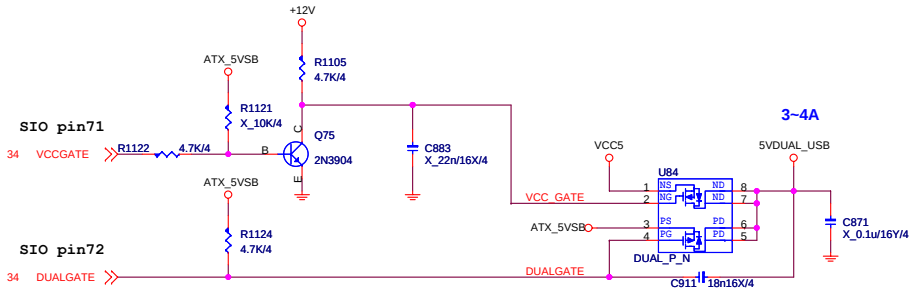
5VDUAL_USB



SIO GPIO40 Pin7 (I_VSB3V)

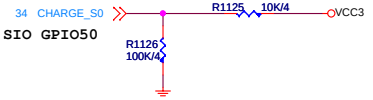
USB_CHARGE: (OD)
0: Don't support USB charge and resume.
1: Support USB charge and resume.

Power plug in , H/W default support USB charge.

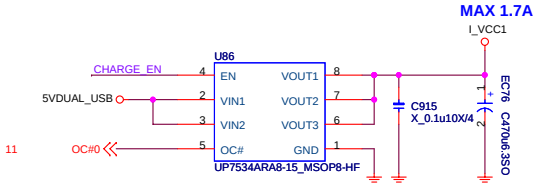
Pin power I_3VSB or VBAT
Register power I_3VSB or VBAT
Register reset I_3VSB or VBAT

Pin power I_3VSB
Register power I_3VSB
Register reset I_3VSB

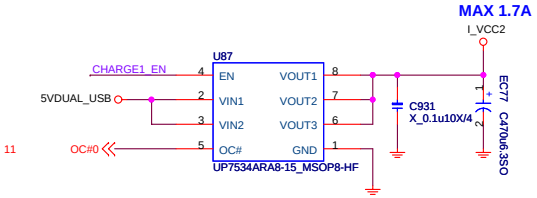
Update~2010.9.15



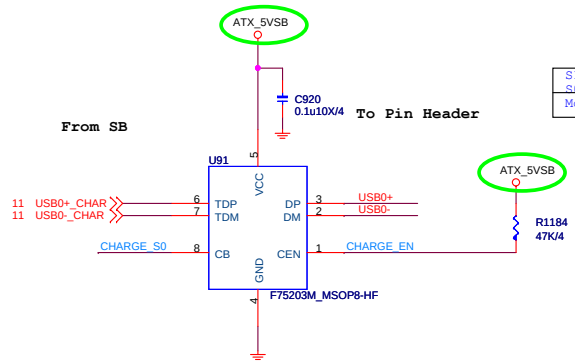
USB POWER PORT 0 For USB Charging



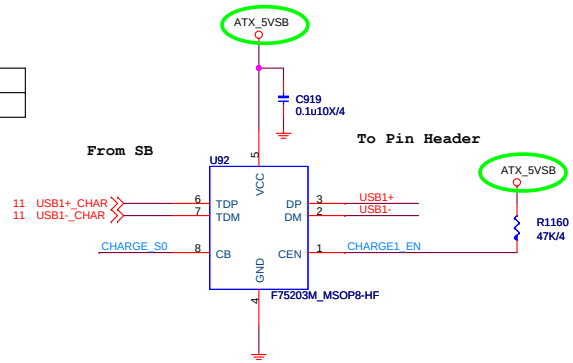
USB POWER PORT 1 For USB Charging



** If your spec will not need bom option, please don't co-lay blue labels.

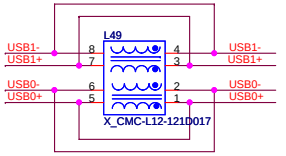


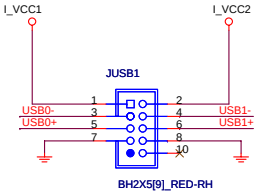
S1	0		0	1
S0	0		1	1
Mode	AUTO		A	Y



A type
2.70V< D+ <3.1 V
1.85V< D- < 2.1V
For i-Pad / i-Phone 4G charges current up to 1.6A.

FRONT USB PORT 0,1





Please name the pin header JUSB1 and use SB USB0,1 link for charger port.

PI5USB14550 has internal EDS diode.

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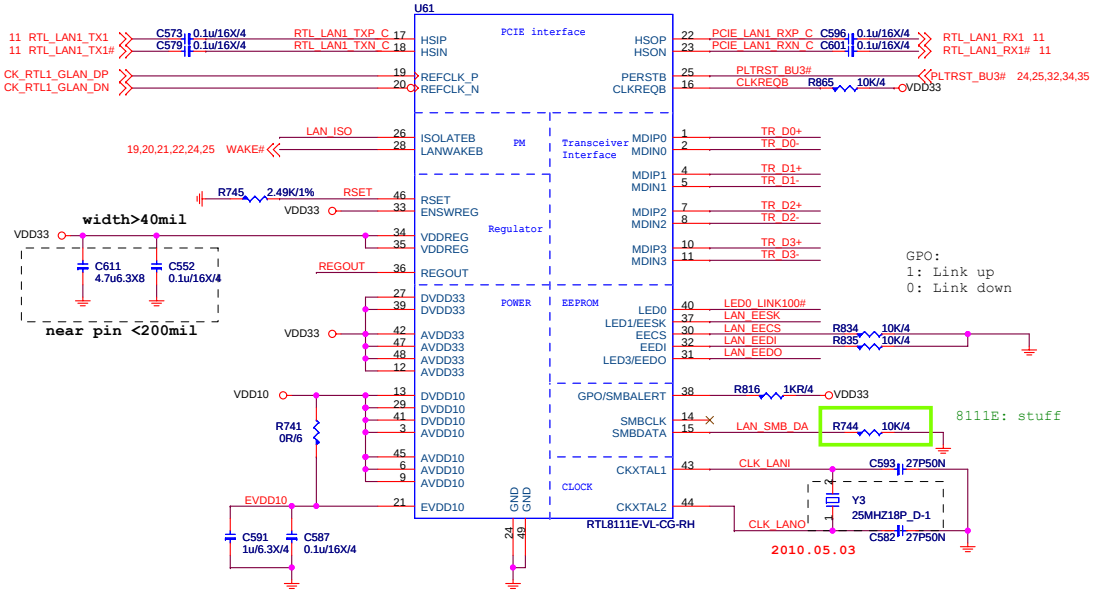
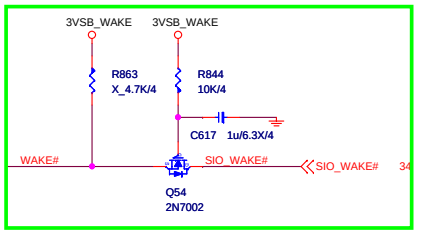
RTL8111E Giga LAN

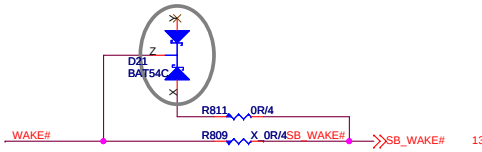


Pin49: 9 via from top layer to GND layer and make the via at the center of IC.

only support LED0+LED1/LED1+LED3 dual color LED combinations when using EEPROM

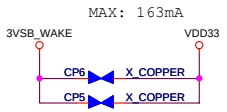
LAN/PCIE/PCI Wake Up CTRL Circuit





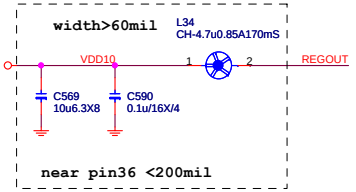
8111E POWER Consumption

	3.3V	mW
10 M Idle/TxRx	12/66	40/218
100 M Idle/TxRx	31/44	102/145
Giga Idle/TxRx	135/163	452/538
ALDPS	4	13

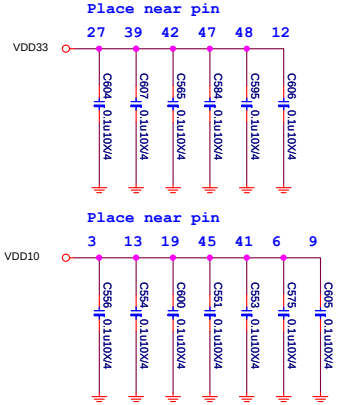


3.3v Power on rise time : 1~100ms.

ENSWREG:
1: Enable switching regulator
0: Disable switching regulator



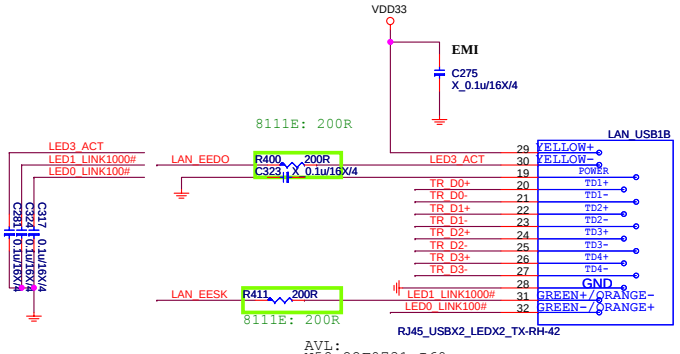
CHOKE(>0.6A) AVL:
L04-22A7470-T04
*L04-47A7340-T04
L04-47A7330-T04
L04-47A7320-T04



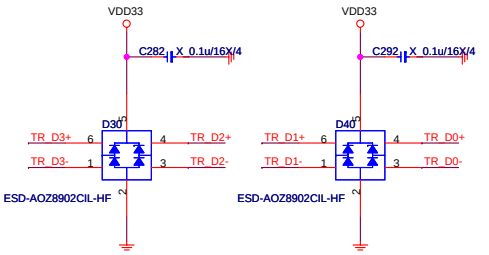
Giga-Lan	10/100-Lan
N58-22F0731	N58-22F0771
Link Yellow Active Blinking 1000 Orange 100 Green 10 None	Link Yellow Active Blinking 100 Green 10 None
19 / 20 250R Yellow 21 / 22 250R Green Orange	19 / 20 Yellow 21 / 22 Green

only support LED0+LED1/LED1+LED3 dual color LED combinations when using EEPROM

LAN Connector



AVL:
N58-22F0731-I60
N58-22F0731-S42
N58-22F0731-U30



close to Connector close to Connector

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Custom	LAN-RTL8111E-1	10

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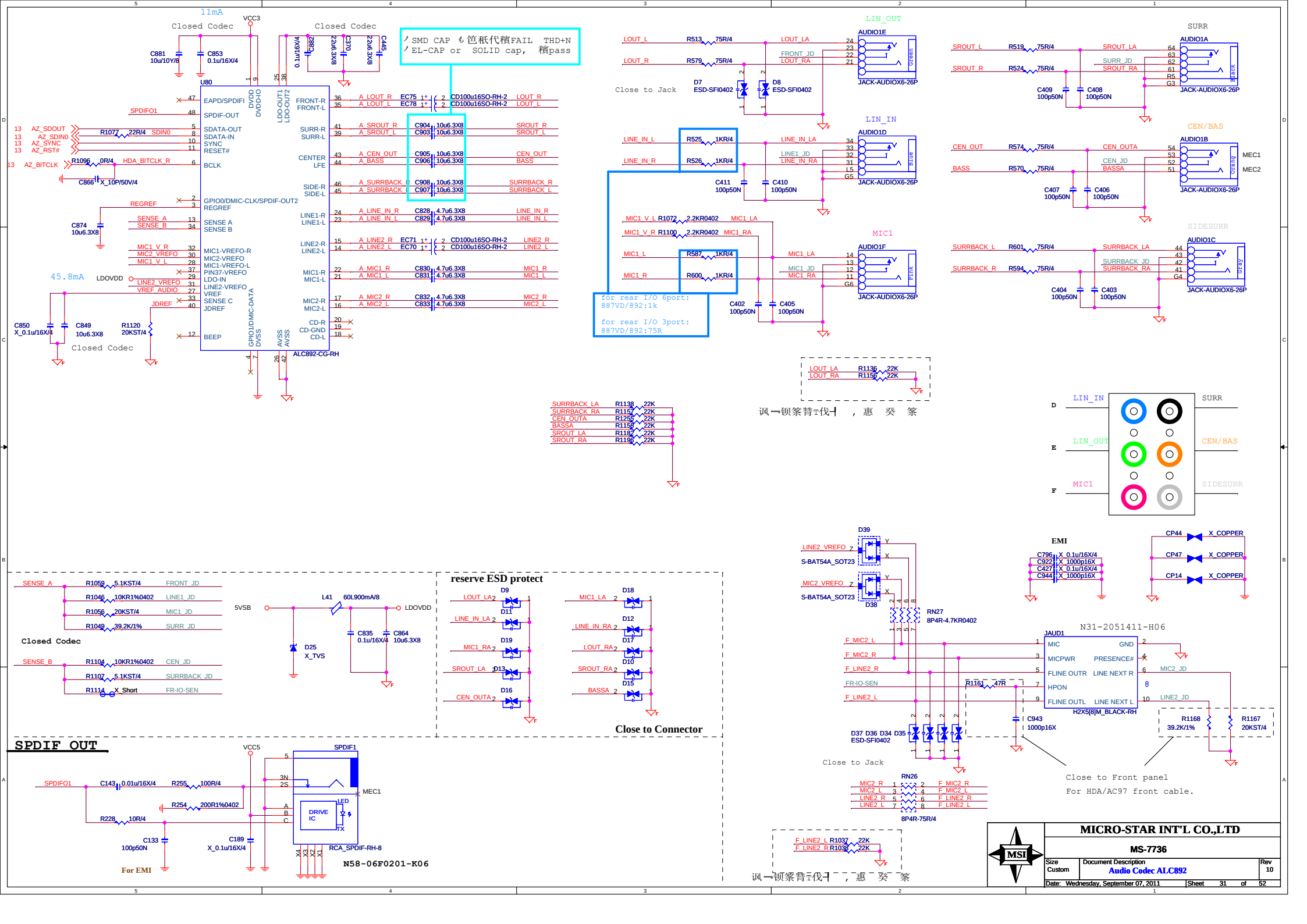
11mA
Closed Codec
VCC3
C881 10u/10Y/8
C853 0.1u/16X/4
U80
EAPD/SPDIFI
SPDIFO1
SPDIF-OUT
AZ_SDOUT
AZ_SDIN0
AZ_SYNC
AZ_RST#
R1077 22R/4 SDIN0
SDATA-OUT
SDATA-IN
SYNC
RESET#
AZ_BITCLK
R1096 0R/4 HDA_BITCLK_R
BCLK
C866 X_10P/50V/4
REGREF
GPIO0/DMIC-CLK/SPDIF-OUT2
C874 10u6.3X8
SENSE_A
SENSE_B
SENSE A
SENSE B
MIC1_V_R
MIC2_VREFO
MIC1_V_L
MIC1-VREFO-R
MIC2-VREFO
MIC1-VREFO-L
45.8mA
LDOVDD
LINE2_VREFO
VREF_AUDIO
PIN37-VREFO
LDO-IN
LINE2-VREFO
VREF
SENSE C
JDREF
C850 X_0.1u/16X/4
C849 10u6.3X8
R1120 20KST/4
BEEP
Closed Codec
DVDD
DVDD-IO
LDO-OUT1
LDO-OUT2
GPIO1/DMIC-DATA
DVSS
AVSS
ALC892-CG-RH
C882 0.1u/16X4
C879 22u6.3X8
C445 22u6.3X8
Closed Codec
SMD CAP 也笆秖代稹FAIL THD+N
EL-CAP or SOLID cap, 稹pass
FRONT-R
FRONT-L
A_LOUT_R
A_LOUT_L
EC75
EC78
CD100u16SO-RH-2
LOUT_R
LOUT_L
SURR-R
SURR-L
A_SROUT_R
A_SROUT_L
C904 10u6.3X8
C903 10u6.3X8
SROUT_R
SROUT_L
CENTER
LFE
A_CEN_OUT
A_BASS
C905 10u6.3X8
C906 10u6.3X8
CEN_OUT
BASS
SIDE-R
SIDE-L
A_SURRBACK_R
A_SURRBACK_L
C908 10u6.3X8
C907 10u6.3X8
SURRBACK_R
SURRBACK_L
LINE1-R
LINE1-L
A_LINE_IN_R
A_LINE_IN_L
C828 4.7u6.3X8
C829 4.7u6.3X8
LINE_IN_R
LINE_IN_L
LINE2-R
LINE2-L
A_LINE2_R
A_LINE2_L
EC71
EC70
LINE2_R
LINE2_L
MIC1-R
MIC1-L
A_MIC1_R
A_MIC1_L
C830 4.7u6.3X8
C831 4.7u6.3X8
MIC1_R
MIC1_L
MIC2-R
MIC2-L
A_MIC2_R
A_MIC2_L
C832 4.7u6.3X8
C833 4.7u6.3X8
MIC2_R
MIC2_L
CD-R
CD-GND
CD-L
LIN_OUT
LOUT_L
LOUT_R
R513 75R/4
R579 75R/4
LOUT_LA
LOUT_RA
FRONT_JD
AUDIO1E
JACK-AUDIOX6-26P
Close to Jack
D7 ESD-SFI0402
D8 ESD-SFI0402
LIN_IN
LINE_IN_L
LINE_IN_R
R525 1KR/4
R526 1KR/4
LINE_IN_LA
LINE1_JD
LINE_IN_RA
AUDIO1D
C411 100p50N
C410 100p50N
MIC1
MIC1_V_L R1072 2.2KR0402
MIC1_V_R R1100 2.2KR0402
MIC1_LA
MIC1_RA
MIC1_L
MIC1_R
R587 1KR/4
R600 1KR/4
MIC1_JD
AUDIO1F
C402 100p50N
C405 100p50N
for rear I/O 6port:
887VD/892:1k
for rear I/O 3port:
887VD/892:75R
SURR
SROUT_L
SROUT_R
R519 75R/4
R524 75R/4
SROUT_LA
SROUT_RA
SURR_JD
AUDIO1A
C409 100p50N
C408 100p50N
CEN/BAS
CEN_OUT
BASS
R574 75R/4
R570 75R/4
CEN_OUTA
BASSA
CEN_JD
AUDIO1B
MEC1
MEC2
C407 100p50N
C406 100p50N
SIDESURR
SURRBACK_L
SURRBACK_R
R601 75R/4
R594 75R/4
SURRBACK_LA
SURRBACK_RA
SURRBACK_JD
AUDIO1C
C404 100p50N
C403 100p50N
SURRBACK_LA R1138 22K
SURRBACK_RA R1157 22K
CEN_OUTA R1255 22K
BASSA R1158 22K
SROUT_LA R1182 22K
SROUT_RA R1195 22K
LOUT_LA R1136 22K
LOUT_RA R1156 22K
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D
E
F
LIN_IN
SURR
LIN_OUT
CEN/BAS
MIC1
SIDESURR
SENSE_A
R1059 5.1KST/4 FRONT_JD
R1046 10KR1%0402 LINE1_JD
R1056 20KST/4 MIC1_JD
R1049 39.2K/1% SURR_JD
Closed Codec
SENSE_B
R1104 10KR1%0402 CEN_JD
R1107 5.1KST/4 SURRBACK_JD
R1114 X_Short FR-IO-SEN
5VSB
L41 60L900mA/8
LDOVDD
D25 X_TVS
C835 0.1u/16X/4
C864 10u6.3X8
reserve ESD protect
D9
D11
D19
D13
D16
D18
D12
D17
D10
D15
LOUT_LA
LINE_IN_LA
MIC1_RA
SROUT_LA
CEN_OUTA
MIC1_LA
LINE_IN_RA
LOUT_RA
SROUT_RA
BASSA
Close to Connector
SPDIF OUT
VCC5
SPDIF1
SPDIFO1
C143 0.01u/16X/4
R255 100R/4
R254 200R1%0402
R228 10R/4
C133 100p50N
C189 X_0.1u/16X/4
For EMI
DRIVE IC
LED
MEC1
RCA_SPDIF-RH-8
N58-06F0201-K06
D39
LINE2_VREFO
MIC2_VREFO
S-BAT54A_SOT23
D38
RN27
8P4R-4.7KR0402
EMI
C796 X_0.1u/16X4
C922 X_1000p16X
C427 X_0.1u/16X/4
C944 X_1000p16X
CP44 X_COPPER
CP47 X_COPPER
CP14 X_COPPER
N31-2051411-H06
JAUD1
MIC
MICPWR
FLINE OUTR
HPON
FLINE OUTL
GND
PRESENCE#
LINE NEXT R
LINE NEXT L
H2X5[8]M_BLACK-RH
F_MIC2_L
F_MIC2_R
F_LINE2_R
FR-IO-SEN
F_LINE2_L
R1161 47R
C943 1000p16X
MIC2_JD
LINE2_JD
R1168 39.2K/1%
R1167 20KST/4
D37 D36 D34 D35
ESD-SFI0402
Close to Jack
RN26
8P4R-75R/4
Close to Front panel
For HDA/AC97 front cable.
F_LINE2_L R1037 22K
F_LINE2_R R1038 22K
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MICRO-STAR INT'L CO.,LTD
MS-7736
Size
Custom
Document Description
Audio Codec ALC892
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10
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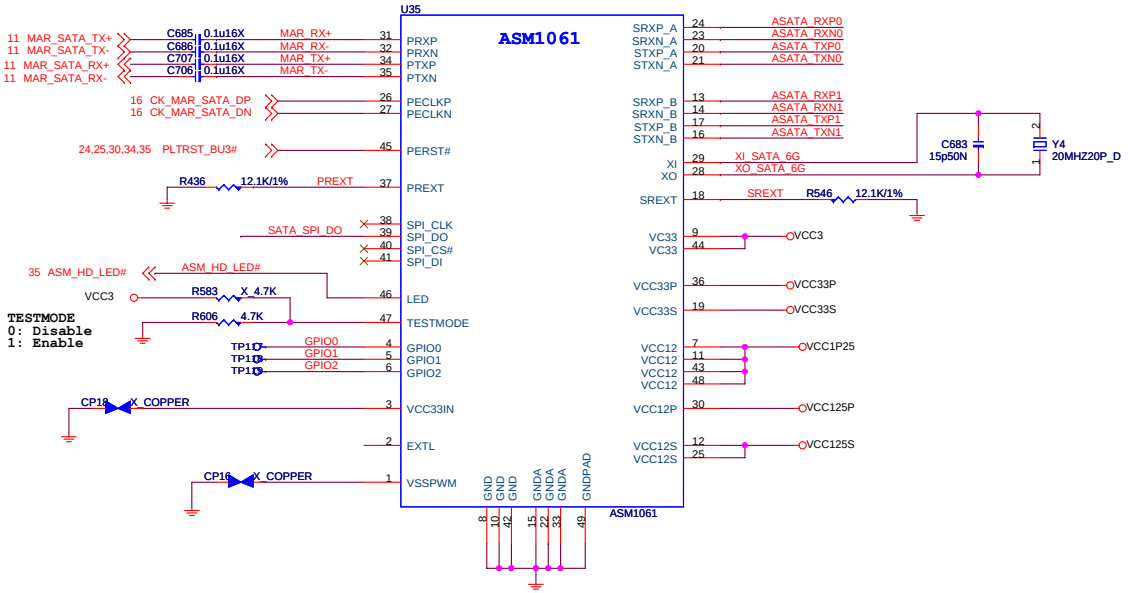
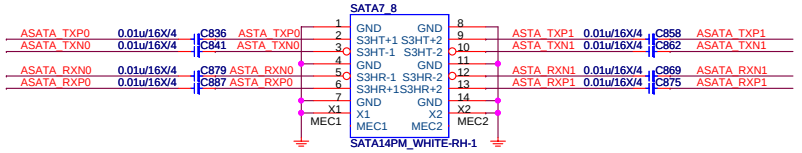
ASM1061 SATA6G

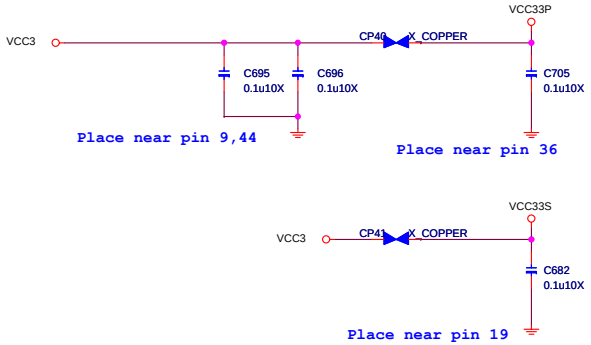
SATA 6G

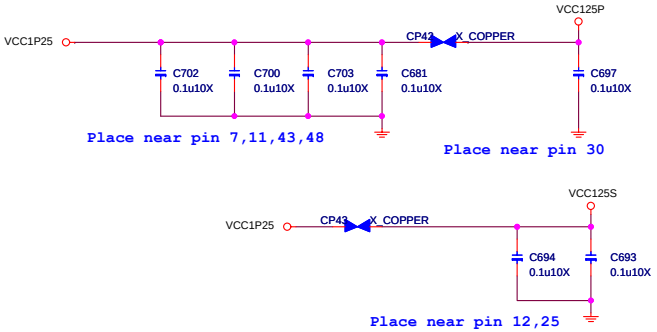




ASM1061 POWER Consumption

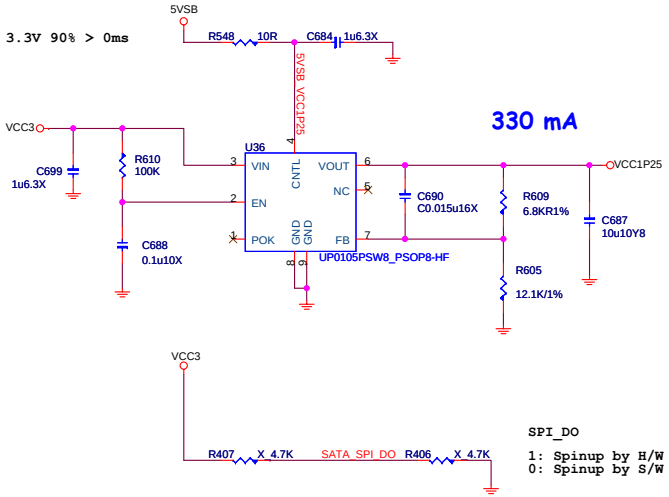
	3.3V	1.2V	Power (mW)
Idle (mA)	98.45	212.3	579.645
Busy (mA)	91.1	330.7	697.47





1.2V delay from 3.3V 90% > 0ms

330 mA



MICRO-STAR INT'L CO.,LTD

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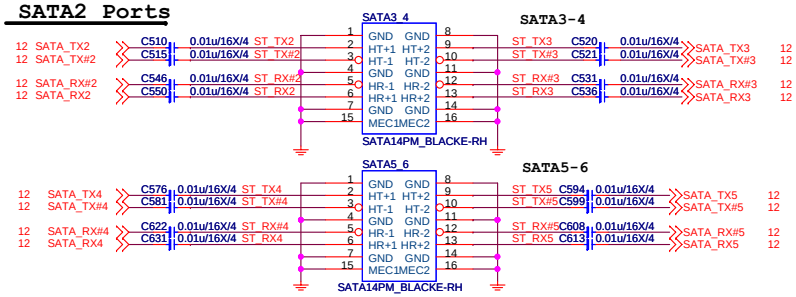
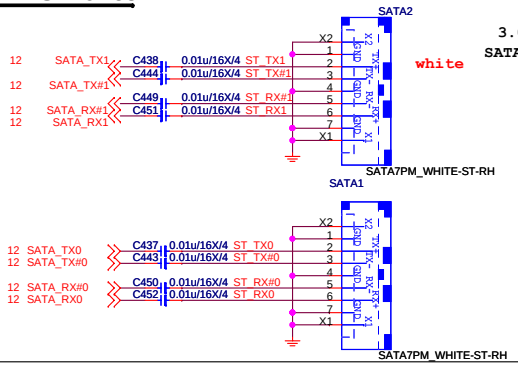
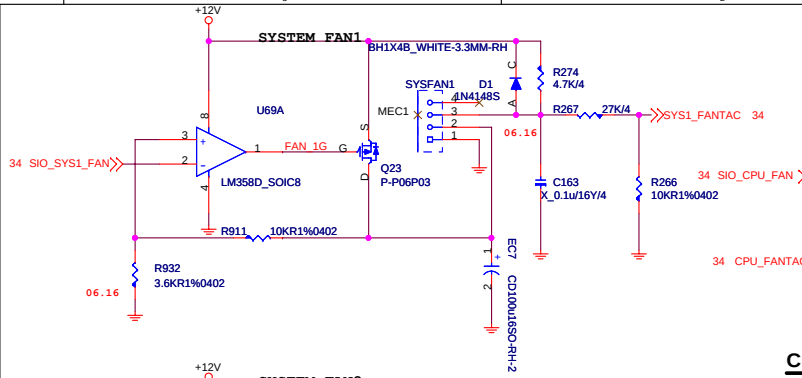
SATA2 Ports



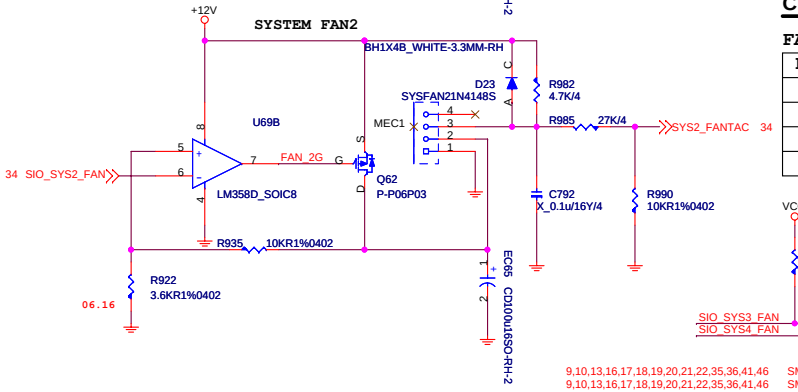
SATA3 Ports



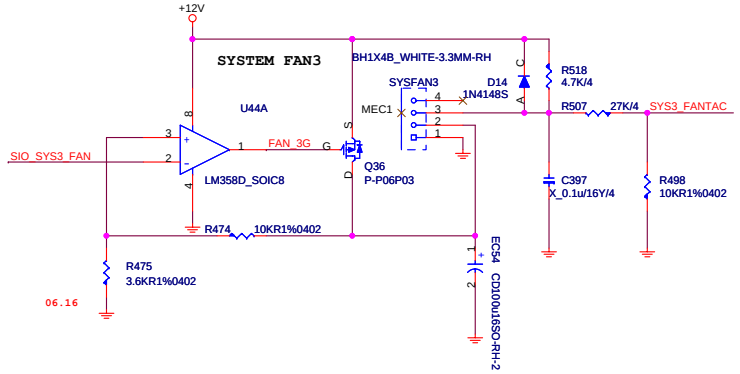
SYSTEM FAN1



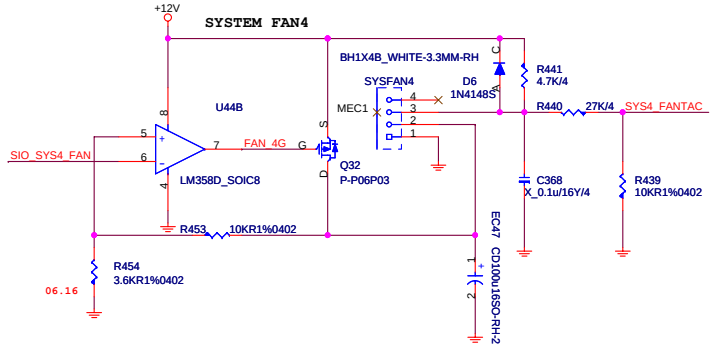
SYSTEM FAN2



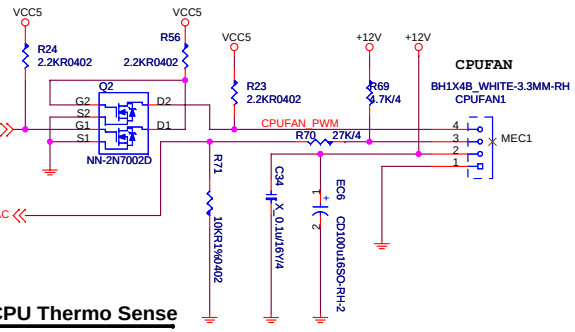
SYSTEM FAN3



SYSTEM FAN4



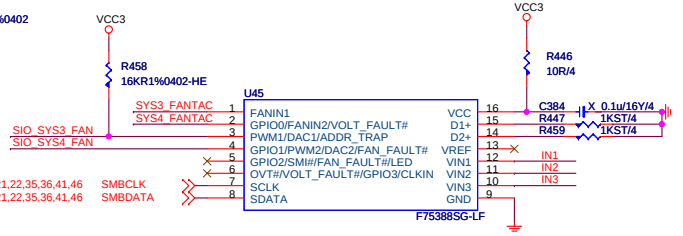
CPU FAN-COUNTROL CIRCUIT

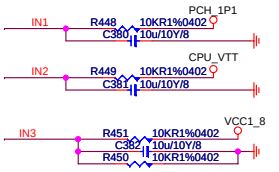


CPU Thermo Sense

FAN initial Speed setting(PIN3)

FAN Speed rate	I2C Address	FAN Type	R324
60%	0x5A	DAC	NC
100%	0x5C	DAC	200K
60%	0x5C	PWM	*16K
100%	0x5A	PWM	2.2K





HW Monitor

MICRO-STAR INT'L CO.,LTD	
MS-7736	
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SERIAL PORT 1

NO USE UART PORT1

VCC3

RN25
2.7K/8P4R

DSR#
CTS#
RIA#
DCDA#

R534 2.7K SINA
R370 X_2.7K SOUTA

PS2 KEYBOARD & MOUSE CONNECTOR

RN1
8P4R-4.7KR0402

MSDAT
MSCLK
KBDAT
KBCLK

R67 0R/4
R74 0R/4
R79 0R/4
R92 0R/4

C23 X_0.1u/16Y/4
R50 X_1KR/4

PS2_USB1A
MINIDIN_USBX2-RH-1

PS2_VCC
C22 0.1u/16X/4

C38 C180P50N2
C31 C180P50N2
C47 C180P50N2
C42 C180P50N2

U99
ESD-IP4220-RH

GPIO for BIOS USE

R1317 X_10K/4 BIOS_3
R1320 X_10K/4 BIOS_2
R1318 X_10K/4 BIOS_1
R1319 X_10K/4 BIOS_0

D24
X_S-BAT54A_SOT23

C811 X_1u/6.3X/4
C809 0.1u/16X/4

F71889AD

U79

F71889AD-LAC-RH

LPC Interface
Bus Interface
Parallel Port
Hardware Monitor
UART, KIR and 80-Port
KBC Function
ACPI Function
Power Pin

PLTRST# LPC_DRQ#0 SERIRQ LFRAME# PCICLK CLKIN LAD[0] LAD[1] LAD[2] LAD[3]

CIRRX#/GPIO25
SLP_SUS#/GPIO26
SUS_WARN#/GPIO27
ERP_CTRL2#/GPIO00
SUS_ACK#/GPIO01
DPWROK/GPIO02

SLOTOCC#/GPIO03
CIR_LED#/GPIO12/WDTRST#

CIRTX/TSI_CLK/IBX_CLK/GPIO13
CIRWB#/TSI_DAT/IBX_SDA/GPIO14
SST/TSI_CLK/IBX_CLK/GPIO15
PECI/TSI_DAT/IBX_SDA/GPIO16

VIN6 VIN5 VIN4 VIN3 VIN2 VIN1
VCORE(VIN1)

FANIN1 FANCTL1 FANIN2 FANCTL2 FANIN3/GPIO10/IRRX1 FANCTL3/GPIO11/IRTX1
D3+(System) D2+ D1+(CPU) VREF

SIO_WAKE# PS2_MODE
EVENT_IN0# USBEN/EVENT_IN1# ERP_CTRL0# ERP_CTRL1# SUSC#/GPIO06/BEEP/ALERT#

SIO_TRIP# SIO_PME#
OVT# PME#

GPIO04/LED_VSB GPIO05/LED_VCC PCIRST1# PCIRST2# PCIRST3# ATXPG_IN PWOK PSIN# PSOUT# S3# S5# PSON# RSMRST# COPEN#

GPIO40/CIR_LED# GPIO41 GPIO42 GPIO43 GPIO44 GPIO45 GPIO46 GPIO47 GPIO50 GPIO51 GPIO52 GPIO53 GPIO54

SLCT/GPIO60 PE/GPIO61 BUSY/GPIO62 ACK#/GPIO63 SLIN# INIT#/GPIO64 ERR#/GPIO65 AFD#/GPIO66 STB#/GPIO67 PD0/GPIO70 PD1/GPIO71 PD2/GPIO72 PD3/GPIO73 PD4/GPIO74 PD5/GPIO75 PD6/GPIO76 PD7/GPIO77

DCD1# RI1# CTS1# DTR1#/FAN60_100 RTS1#/80PORT_TRAP DSR1# SOUT1/Config4E_2E SIN1 DCD2#/SEGG/GPIO30 RI2#/SEGF/GPIO31 CTS2#/SEGA/GPIO32 SIN2/SEGE/GPIO37 SOUT2/SEGB/GPIO36/OVP_STRAP DSR2#/L#/GPIO35 RTS2#/SEGC/GPIO34/PWM_DC DTR2#/SEGD/GPIO33

KBRST# GA20 KDATA KCLK MDAT MCLK

VREF1 VREF2 VREF3 VREF_EN DUALGATE VCCGATE

VSB5V(V5A) I_VSB3V VBAT 3VSB 3VCC 3VCC GND GND GND GND AGND(D-)

87,86,85 :0.9V

SIO_DDR_REF SIO_PCH_REF SIO_VTT_REF SIO_REF_EN R1058 4.7K/4 VCC3
DUALGATE VCCGATE

C797 0.1u/16X/4
R998 10R/4
I_VSB3V V5A

C825 VBAT
C880 3VSB
C794 C870 VCC3
0.1u/16X/4

SP13
X_COPPER

LPC I/O STRAPPING RESISTOR & Others Pull Hi Resistor

STRAP	Don't STUFF	STUFF
SOUTA	4E	2E
DTRA#	FAN START DUTY 60%	FAN START DUTY 100%
DTR2#	PIN51~56=GPIO	PIN51~56=BUS
RTSB#	PWM FAN	LINEAR FAN
RTSA#	80Port ENABLE	80 Port DISABLE
SLIN#	PD 47K, pin 100-103 and pin105-116 as GPIO pin.	

SOUTA R1113 X_560R
DTRA# R1111 X_560R
DTRB# R1083 X_1KR/4
RTSA# R1112 X_560R
RTSB# R1072 X_560R

VCC3

PLTRST_BU1# R R1006 820R0402
SIO_TRIP# R1007 4.7K/4
SIO_ATXOK R1045 1KR/4

SIO_WDT# R1249 4.7K/4 3VSB

26,27,29 USB_MODE
35 SYS5VSB_OFF
Q66 2N7002

SIO_ATXOK R1322 X_10K/4 ATX_5VSB
VBOOT_OC# R1172 4.7K/4 5VSB
SKTOCC# R R1008 X_10K/4 3VSB
R995 2M VBAT
ALL_LED_OFF# R1064 4.7K/4 3VSB
R1062 X_4.7K/4 VCC3

HW Monitor - Thermal

HM_VREF
R1082 10KR1%0402
VTIN1
RT9 10KRT1%6
C865 2.2n/50X/4
GNDHM

HM_VREF
R1081 X_10KR1%0402
VTIN2
Q70 P-3906
RT8 X_10KRT1%6
C854 2.2n/50X/4
GNDHM

HW Monitor - Voltage

VCCP R1129 10KR1%0402 VIN1
C890 10u/10Y/8

+12V R1108 200KR1%0402 VIN4
R1109 20KST/4
C885 10u/10Y/8

VCC_DDR23 R1128 10KR1%0402 VIN2
R1127 10KR1%0402
C889 10u/10Y/8

VCC5 R1118 200KR1%0402 VIN3
R1119 47K
C888 10u/10Y/8

VCC_DDR01 R1101 10KR1%0402 VIN5
R1102 10KR1%0402
C877 10u/10Y/8

CPU_SA R1088 10KR1%0402 VIN6
C872 10u/10Y/8

>2.048V (S/IO積 Hi)

ATX_5VSB
TH_CTRL R1067 47K/4
R1147 X_47K/4

3VSB_LAN_EN# R1009 10K/4
SYS5VSB_OFF R999 10K/4
SIO_WAKE# R1012 10K/4
CP_3VA_OFF R1011 10K/4

3VA
SUSACK# PB R992 10K/4
DPWROK PB R991 10K/4

3VSB
SIO_GPIO50 R1181 4.7K/4
OC_READY# R1248 4.7K/4

U73
uP7534AM5-15

12,13,18 RTCRST#
3,13,16,17,18,35 CHIP_PWGD
J3
X_H1X2M-2PITCH_BLACK-RH

SIO_DDR_REF
SIO_PCH_REF
SIO_VTT_REF
C839 C840 C848
X_0.1u/10X/4
X_0.1u/10X/4
X_0.1u/10DX/4

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MS-7736

Size: Custom
Document Description: SIO-Fintek F71889AD/COM
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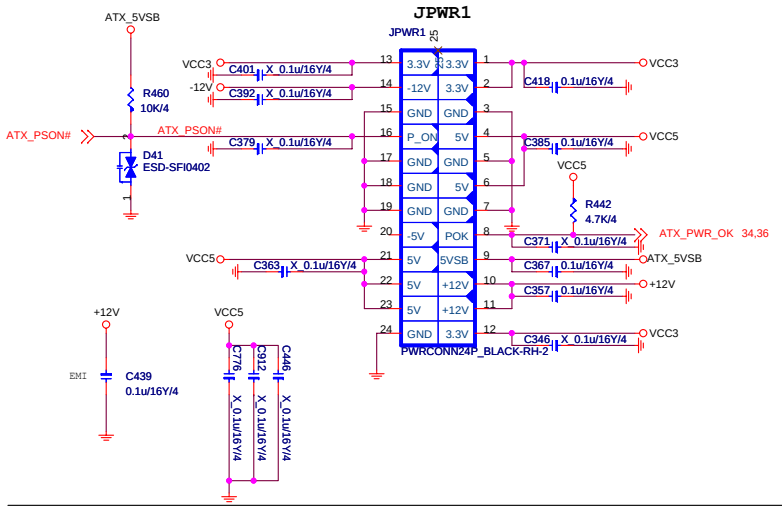
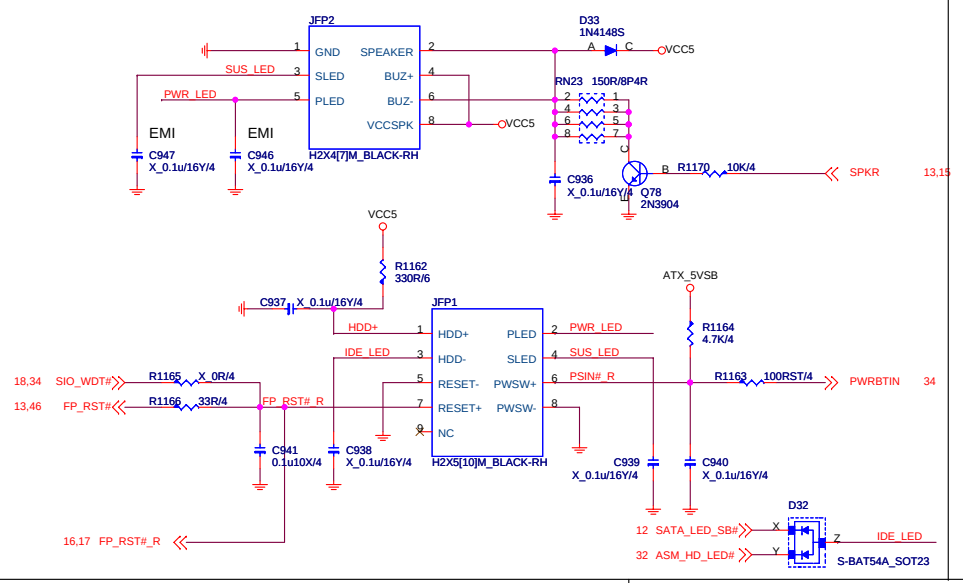
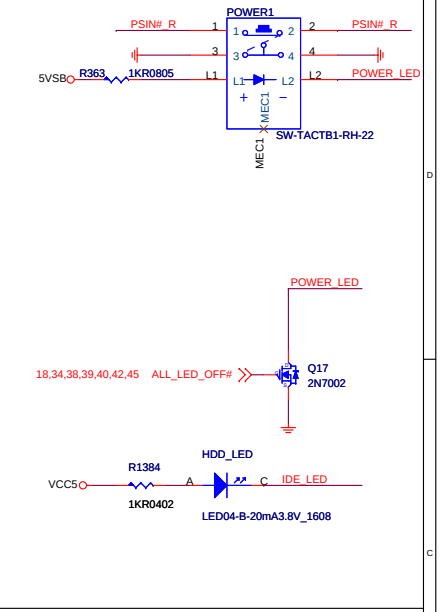
ATX POWER CONNECTOR

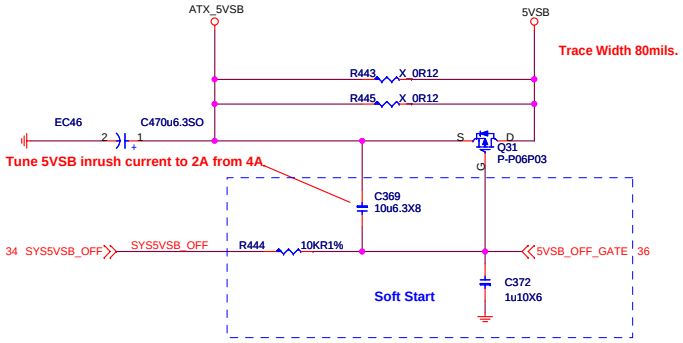


FRONT PANNEL

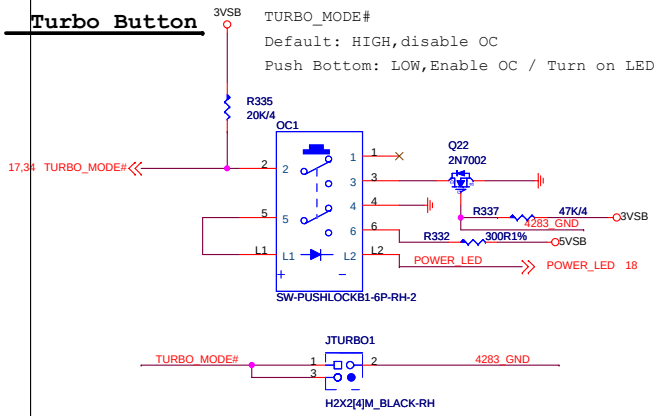




5VSB Power Switch

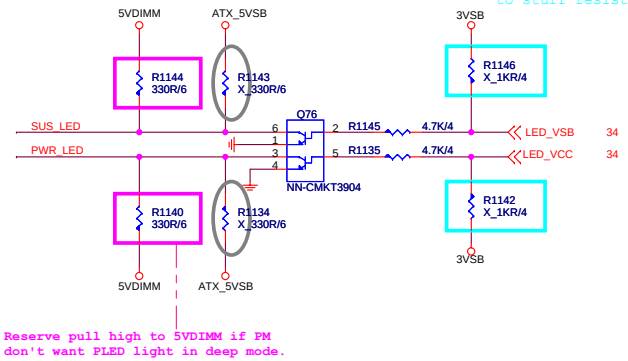


Turbo Button



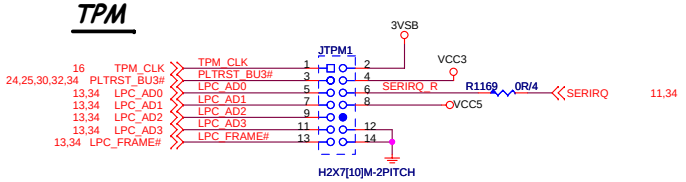
LED (for Fintek 71889)

SIO ver. LAA
Push pull pin, no need to stuff resisters.

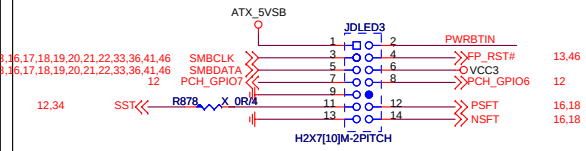


Reserve pull high to 5VDIMM if PM don't want PLED light in deep mode.

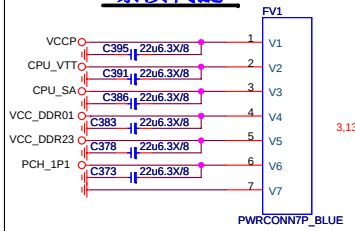
TPM



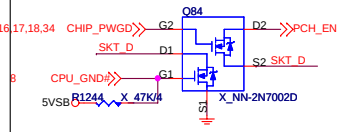
JDLED3



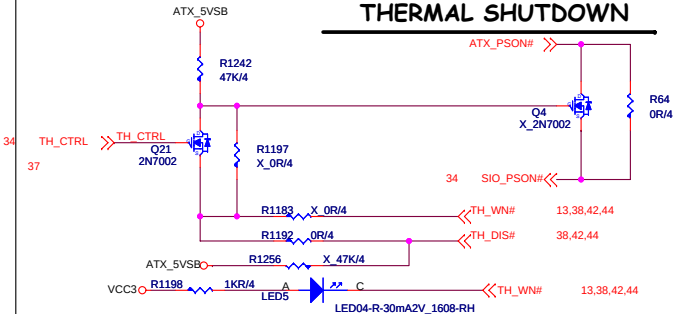
繁溃代璁



ñ代刚絽隔



THERMAL SHUTDOWN



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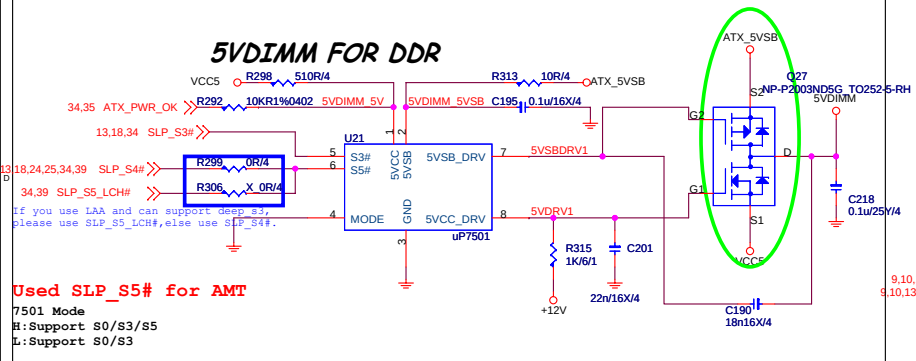
5VDIMM FOR DDR



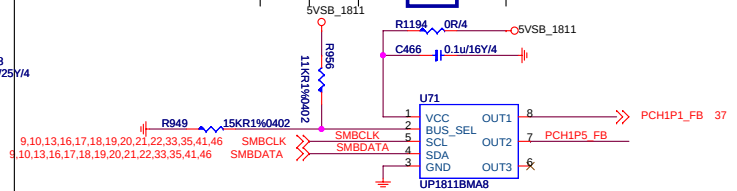
Used SLP_S5# for AMT

7501 Mode
H:Support S0/S3/S5
L:Support S0/S3

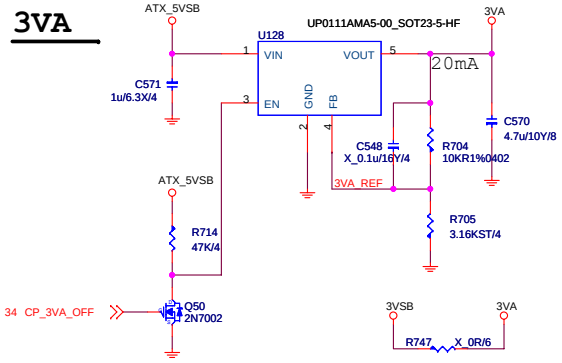
UPI VOLTAGE CONSOLE

0x24:RH=11K,RL=15K

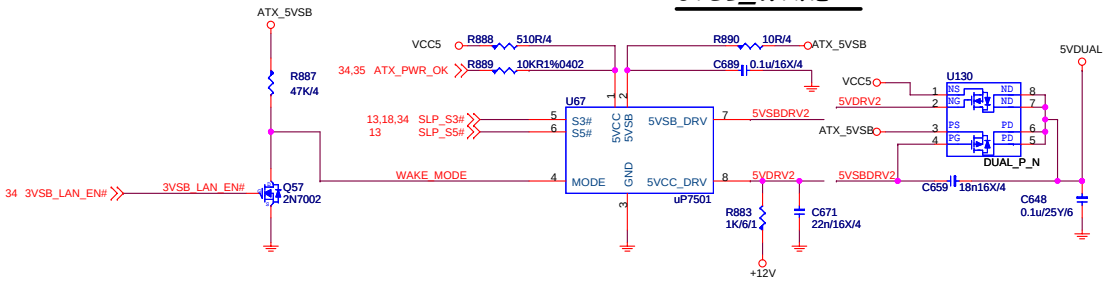
ADDRESS	0x2A	0x28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

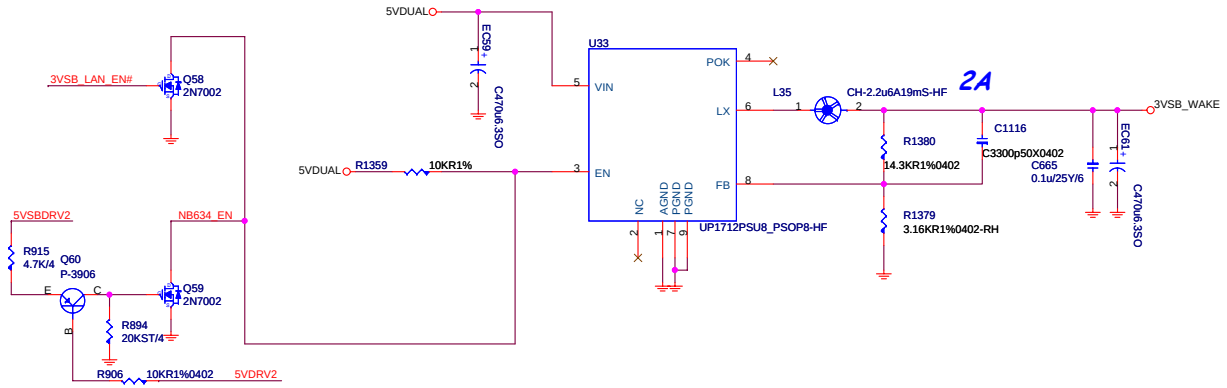


3VA

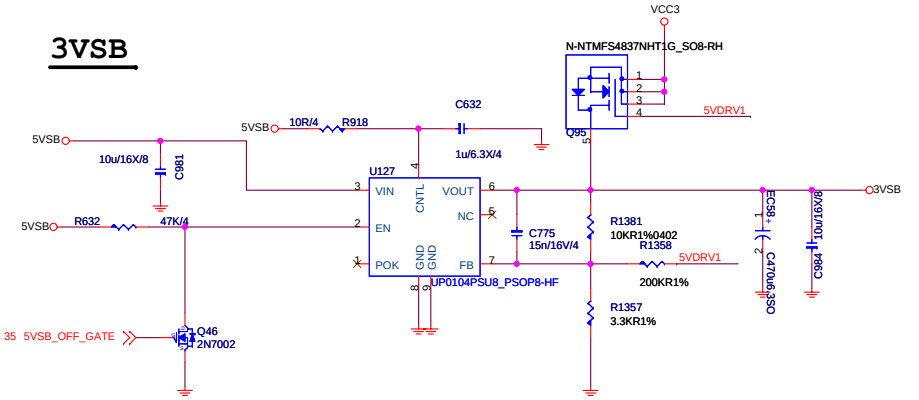


3VSB_WAKE

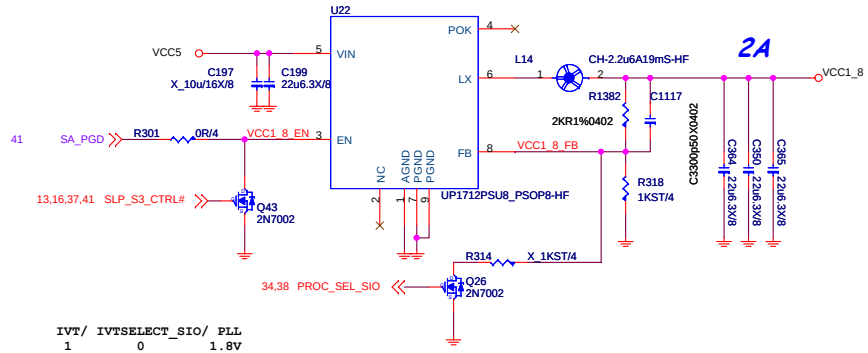




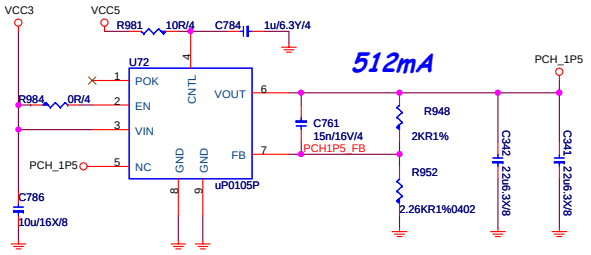
3VSB



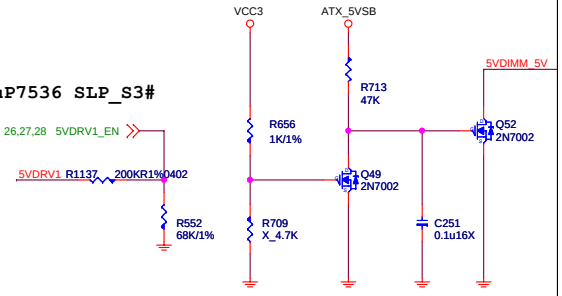
CPU_1.8



PCH1.5



uP7536 SLP_S3#



Patch coolermaster 700w power sequence

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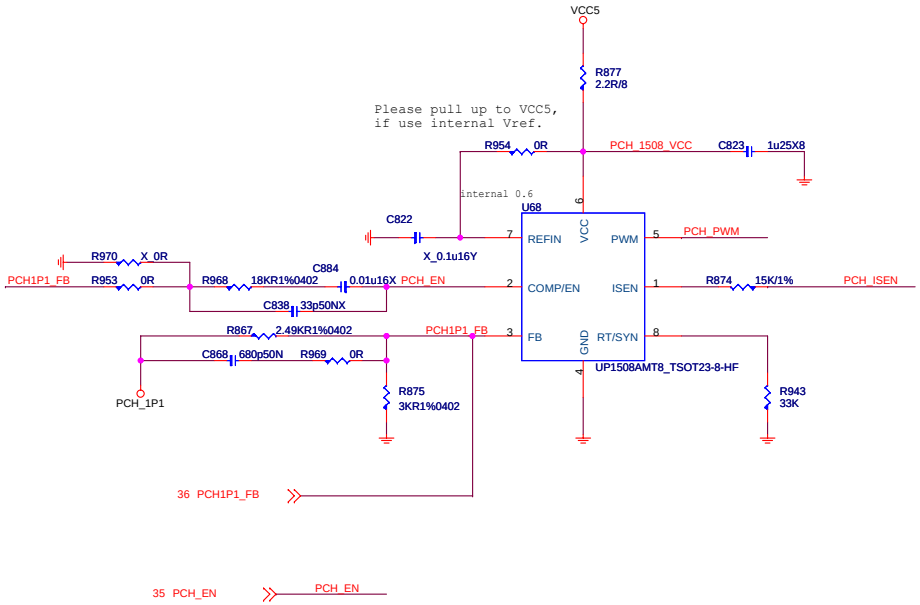
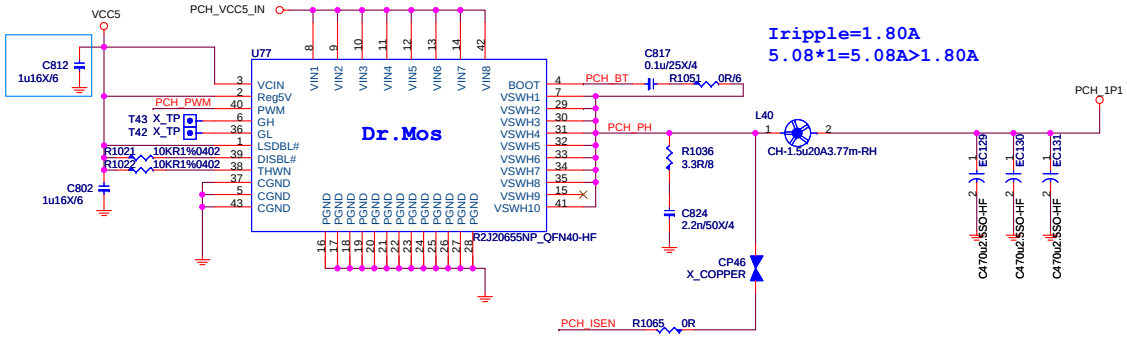
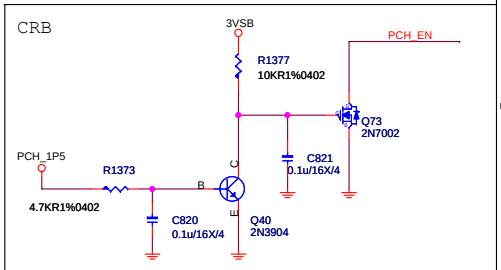
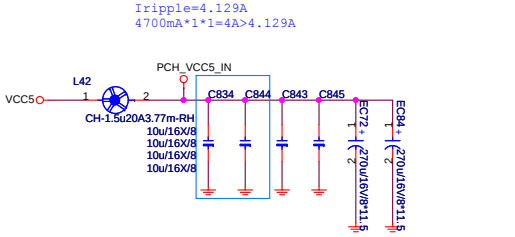
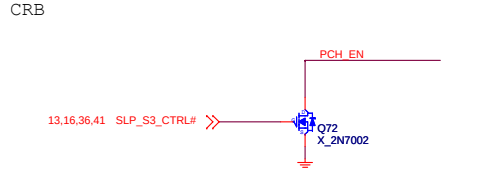
PCH Core 17.2A











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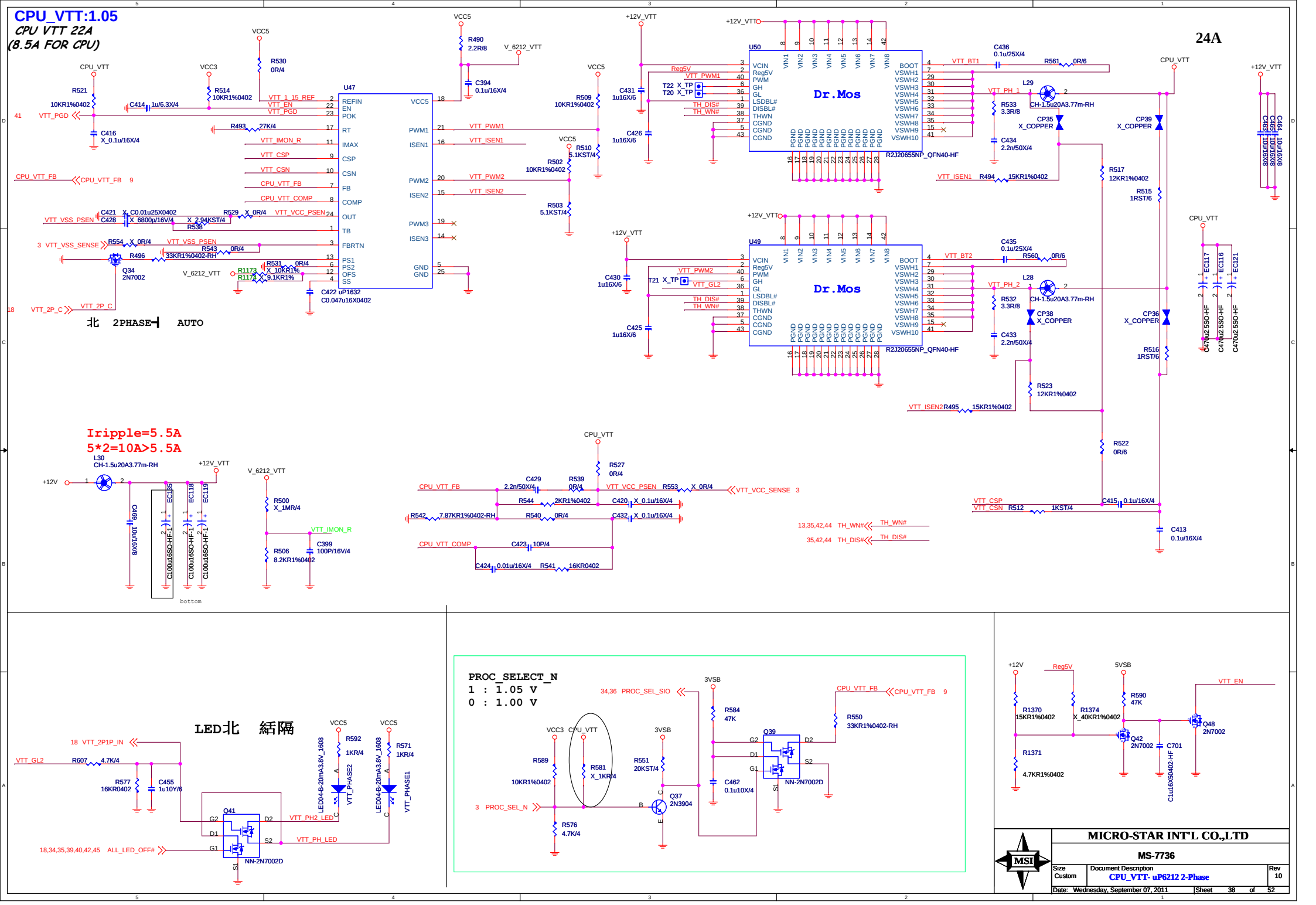
CPU_VTT:1.05
CPU VTT 22A
(8.5A FOR CPU)
24A
U47
U50
U49
Dr.Mos
R2J20655NP_QFN40-HF
北 2PHASE┤ AUTO
Iripple=5.5A
5*2=10A>5.5A
LED北 絡隔
PROC_SELECT_N
1 : 1.05 V
0 : 1.00 V
MICRO-STAR INT'L CO.,LTD
MS-7736
CPU_VTT- uP6212 2-Phase
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DDR3_1.5V 20A
3.3A FOR CPU
1A FOR DDR VTT
13A FOR 2DIMM

DDR3_1.5V 20A

07.14

Meet Intel Power Down Sequence

If you use LAA and can support deep_s3,
please use SLP_S5_LCH#,else use SLP_S4#.

LED北 絣隔

Iripple=4.25A
4.7*2*1=9.4A>4.25A

DDR VTT Power

To CPU Copper trace width > 250mils , Fill island behind DIMM > 400mils

0.5A*2=1A

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DDR3_1.5V 20A
3.3A FOR CPU
1A FOR DDR VTT
13A FOR 2DIMM

DDR3_1.5V 20A

07.14

U24 uP1632
U29 R2J20655NP_QFN40-HF
U28 R2J20655NP_QFN40-HF

LED北 結隔

Iripple=4.25A
4.7*2*1=9.4A>4.25A
Iripple=1.97A
3000mA*1=3A>1.97A

DDR VTT Power

To CPU Copper trace width > 250mils , Fill island behind DIMM > 400mils

0.25A*2=1A

U59 uP0109P 1.25V/2.9A

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MS-7736	
Size: Custom	Document Description: DDR23-uP6212 2-Phase
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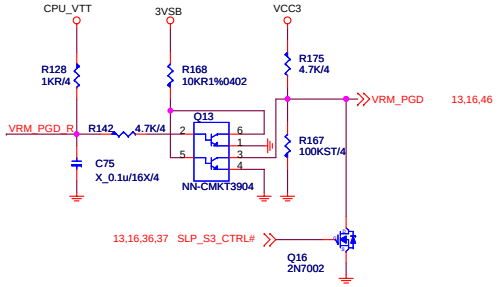
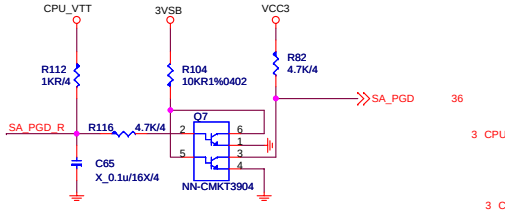
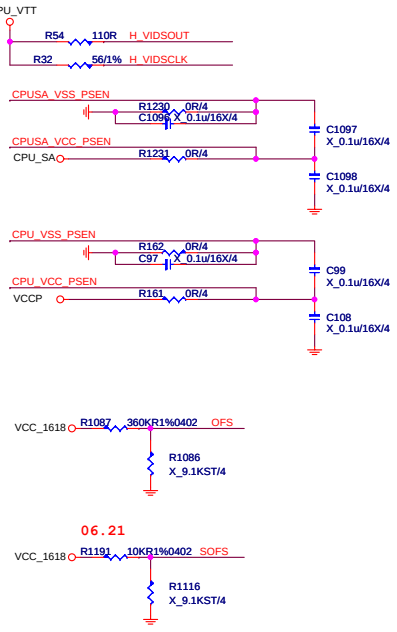
VRMPWRGD LEVEL SHIFT



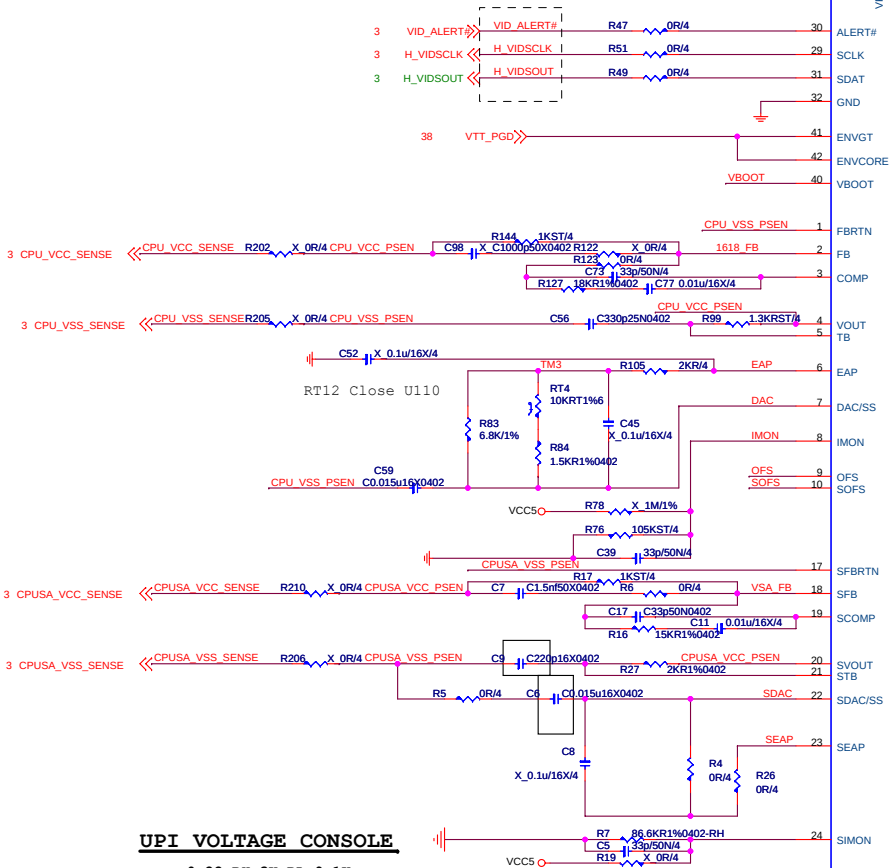
SAPGD LEVEL SHIFT





3000mil < L < 6000mil
4mil / 20mil
55 ohm Impedence
must be Referenced GND

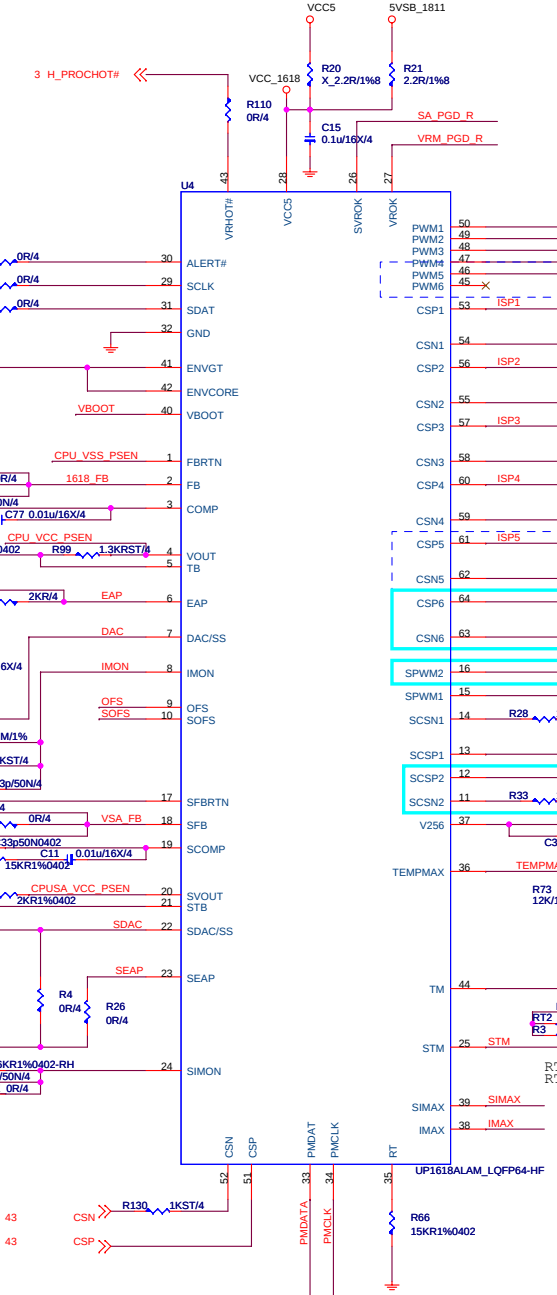
RT12 Close U110

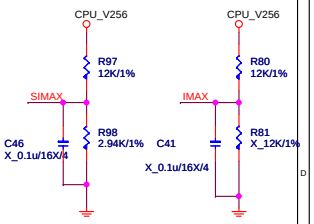


UPI VOLTAGE CONSOLE

0x22:RH=3K,RL=9.1K

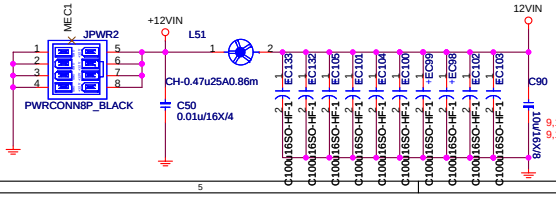
ADDRESS	0x2A	0X28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

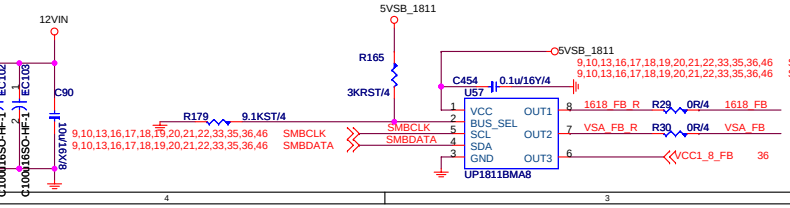


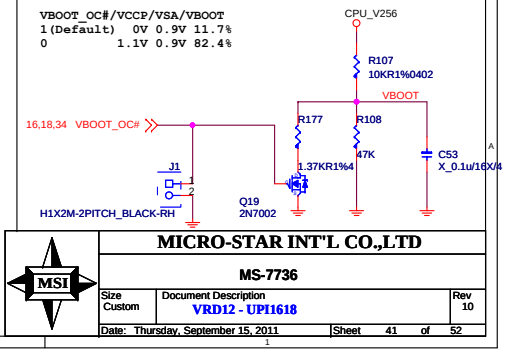


RT5 Close U112
RT7 Close U110

5000mA*4*1=20A >13.7A (7.68)







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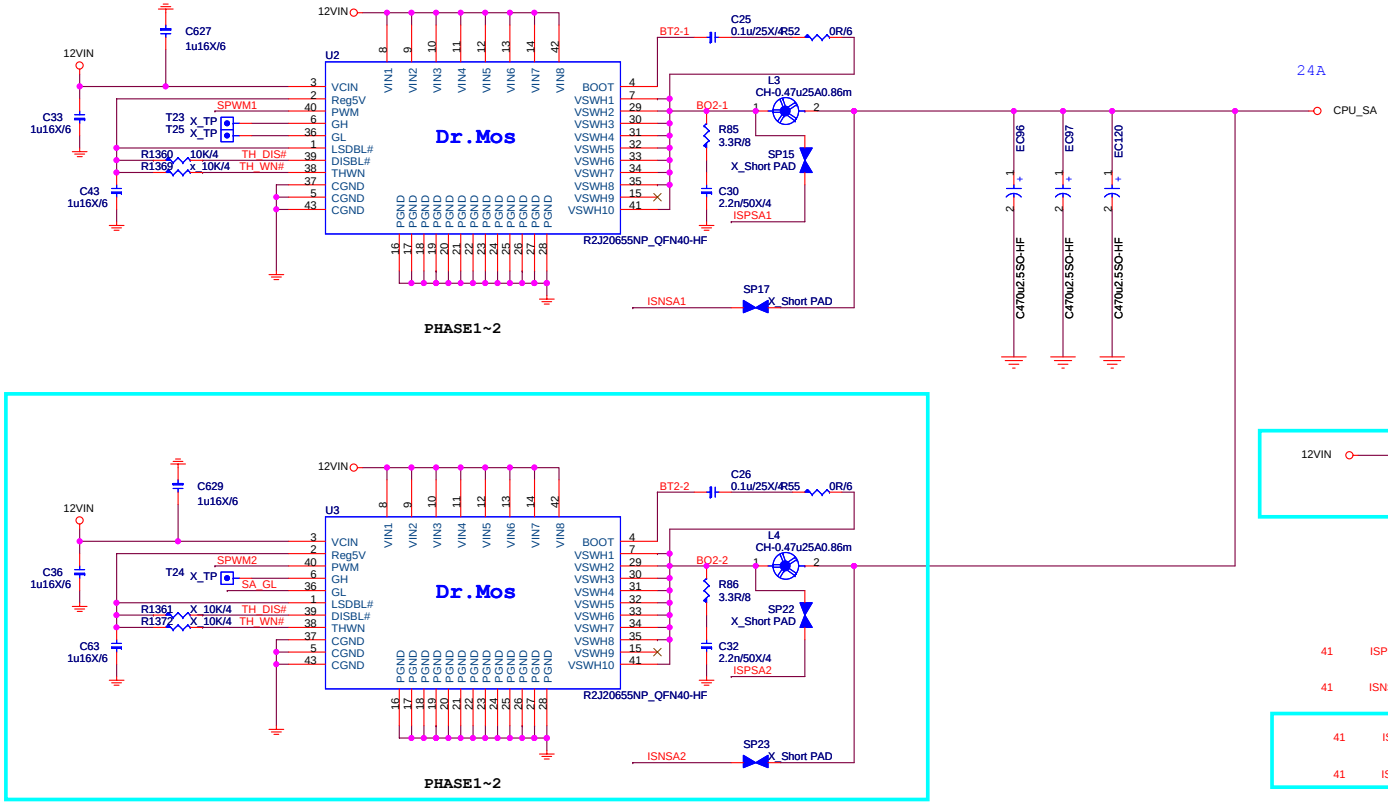
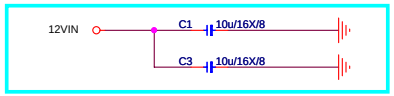




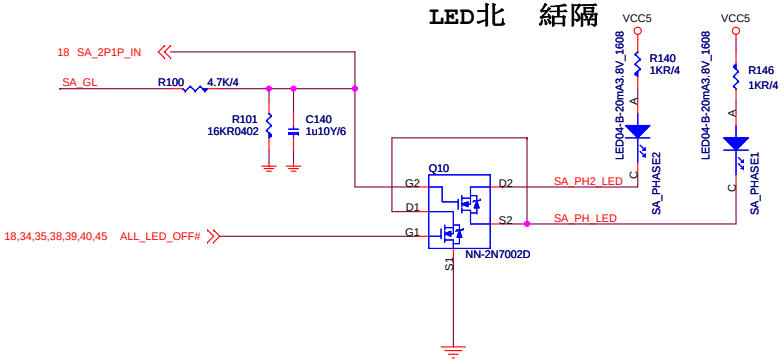
41 ISPSA1
41 ISNSA1

41 ISPSA2
41 ISNSA2

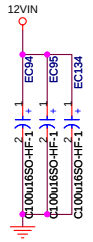
LED北　紡隔

13,35,38,44 TH_WN# TH_WN#
35,38,44 TH_DIS# TH_DIS#

LED北　紡隔



41 SPWM1
41 SPWM2



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Size: Custom	Document Description: UP1618 2-Phase SA (Dr.Mos)	Rev: 10
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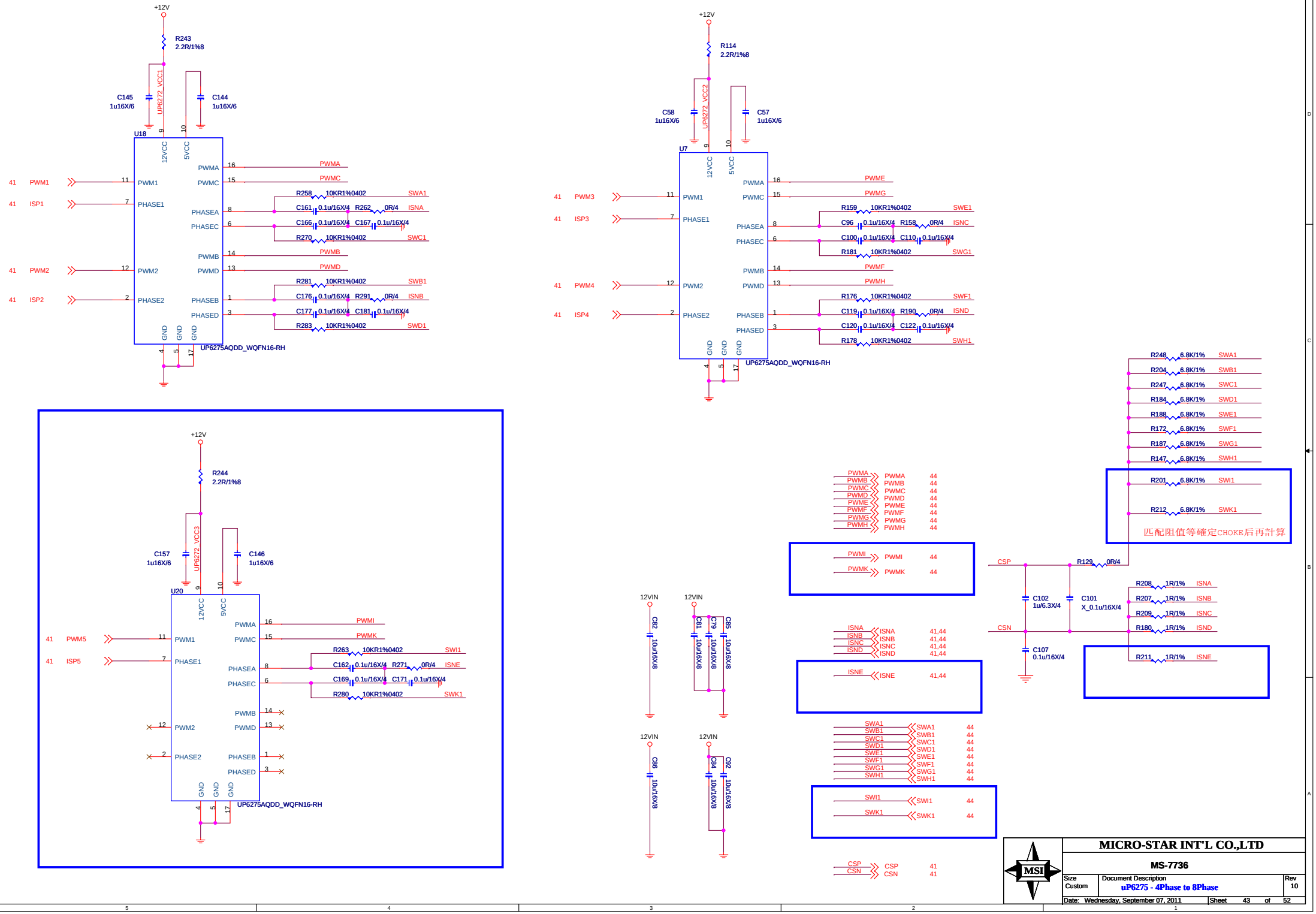
+12V
R243
2.2R/1%8
C145
1u16X/6
UP6272_VCC1
C144
1u16X/6
U18
12VCC
5VCC
PWMA
PWMC
PWMB
PWMD
PWM1
PWM2
PHASE1
PHASE2
PHASEA
PHASEC
PHASEB
PHASED
GND
UP6275AQDD_WQFN16-RH
41 PWM1
41 ISP1
41 PWM2
41 ISP2
R258 10KR1%0402 SWA1
C161 0.1u/16X/4 R262 0R/4 ISNA
C166 0.1u/16X/4 C167 0.1u/16X/4
R270 10KR1%0402 SWC1
R281 10KR1%0402 SWB1
C176 0.1u/16X/4 R291 0R/4 ISNB
C177 0.1u/16X/4 C181 0.1u/16X/4
R283 10KR1%0402 SWD1
+12V
R114
2.2R/1%8
C58
1u16X/6
UP6272_VCC2
C57
1u16X/6
U7
41 PWM3
41 ISP3
41 PWM4
41 ISP4
R159 10KR1%0402 SWE1
C96 0.1u/16X/4 R158 0R/4 ISNC
C100 0.1u/16X/4 C110 0.1u/16X/4
R181 10KR1%0402 SWG1
R176 10KR1%0402 SWF1
C119 0.1u/16X/4 R190 0R/4 ISND
C120 0.1u/16X/4 C122 0.1u/16X/4
R178 10KR1%0402 SWH1
+12V
R244
2.2R/1%8
C157
1u16X/6
UP6272_VCC3
C146
1u16X/6
U20
41 PWM5
41 ISP5
R263 10KR1%0402 SWI1
C162 0.1u/16X/4 R271 0R/4 ISNE
C169 0.1u/16X/4 C171 0.1u/16X/4
R280 10KR1%0402 SWK1
12VIN
C82 10u/16X/8
C81 10u/16X/8
C79 10u/16X/8
C85 10u/16X/8
C96 10u/16X/8
C84 10u/16X/8
C92 10u/16X/8
PWMA 44
PWMB 44
PWMC 44
PWMD 44
PWME 44
PWMF 44
PWMG 44
PWMH 44
PWMI 44
PWMK 44
ISNA 41,44
ISNB 41,44
ISNC 41,44
ISND 41,44
ISNE 41,44
SWA1 44
SWB1 44
SWC1 44
SWD1 44
SWE1 44
SWF1 44
SWG1 44
SWH1 44
SWI1 44
SWK1 44
CSP 41
CSN 41
R248 6.8K/1% SWA1
R204 6.8K/1% SWB1
R247 6.8K/1% SWC1
R184 6.8K/1% SWD1
R188 6.8K/1% SWE1
R172 6.8K/1% SWF1
R187 6.8K/1% SWG1
R147 6.8K/1% SWH1
R201 6.8K/1% SWI1
R212 6.8K/1% SWK1
匹配阻值等确定CHOKE后再計算
CSP
CSN
R129 0R/4
C102 1u/6.3X/4
C101 X_0.1u/16X/4
C107 0.1u/16X/4
R208 1R/1% ISNA
R207 1R/1% ISNB
R209 1R/1% ISNC
R180 1R/1% ISND
R211 1R/1% ISNE
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uP6275 - 4Phase to 8Phase
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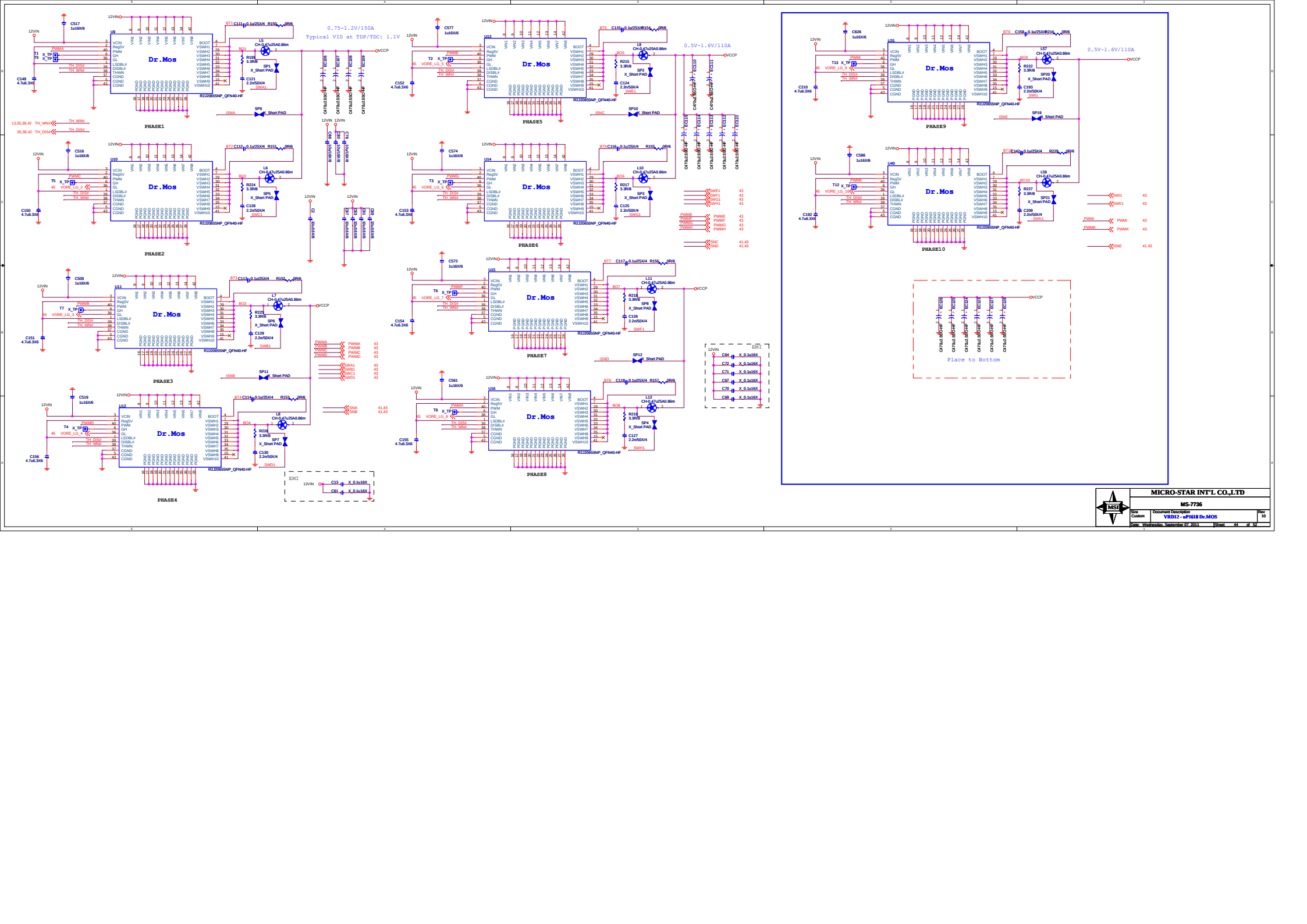
0.75~1.2V/150A
Typical VID at TDP/TDC: 1.1V
0.5V~1.6V/110A
PHASE1
PHASE2
PHASE3
PHASE4
PHASE5
PHASE6
PHASE7
PHASE8
PHASE9
PHASE10
Dr.MOS
R2J20655NP_QFN40-HF
Place to Bottom
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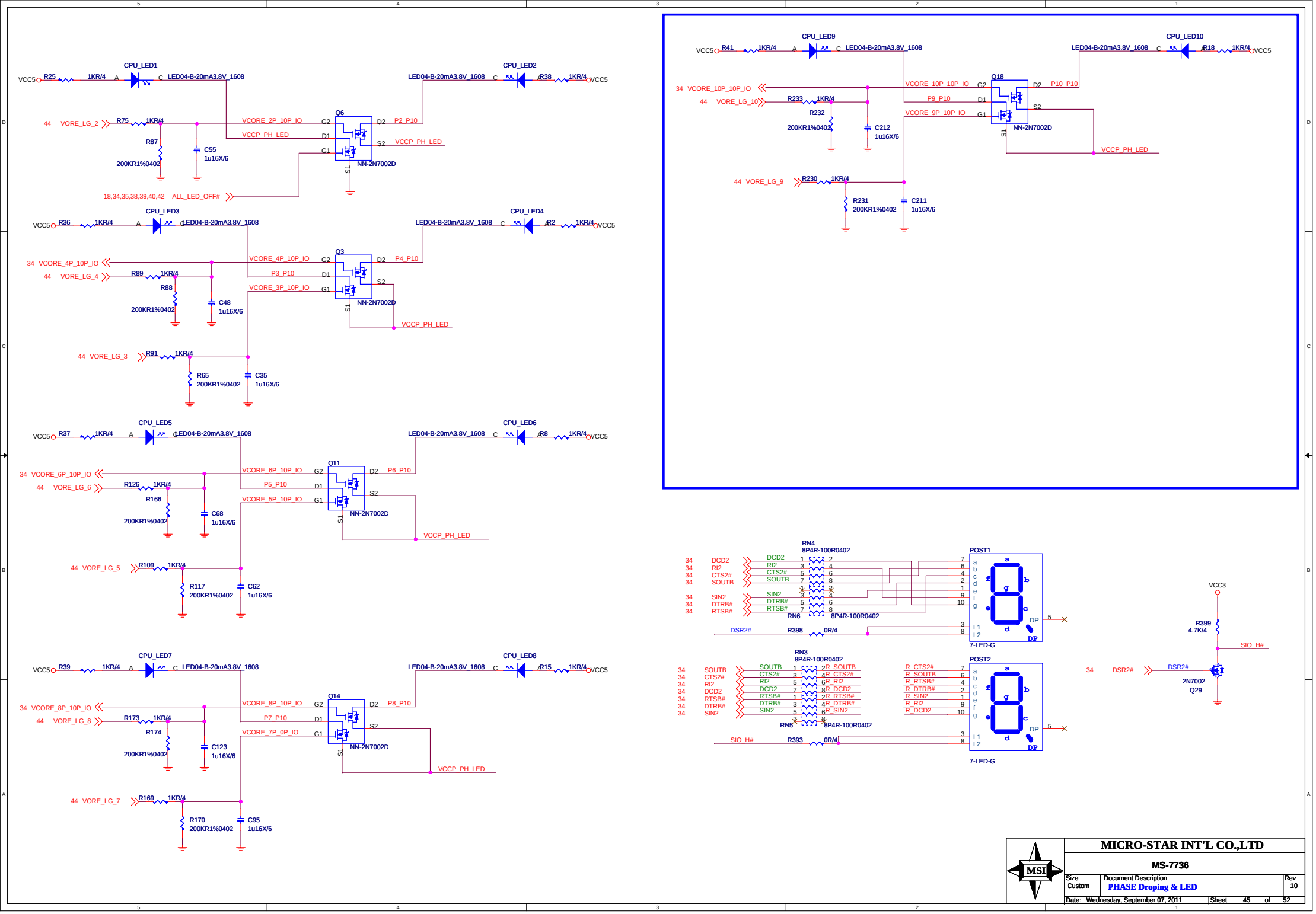
MS-7736
VRD12 - uP1618 Dr.MOS
Wednesday, September 07, 2011


CPU_LED1
CPU_LED2
CPU_LED3
CPU_LED4
CPU_LED5
CPU_LED6
CPU_LED7
CPU_LED8
CPU_LED9
CPU_LED10
LED04-B-20mA3.8V_1608
NN-2N7002D
Q6
Q3
Q11
Q14
Q18
VCC5
VCC3
VCORE_2P_10P_IO
VCORE_4P_10P_IO
VCORE_6P_10P_IO
VCORE_8P_10P_IO
VCORE_10P_10P_IO
VCORE_9P_10P_IO
VCORE_7P_0P_IO
VCCP_PH_LED
ALL_LED_OFF#
RN4
RN6
RN3
RN5
8P4R-100R0402
POST1
POST2
7-LED-G
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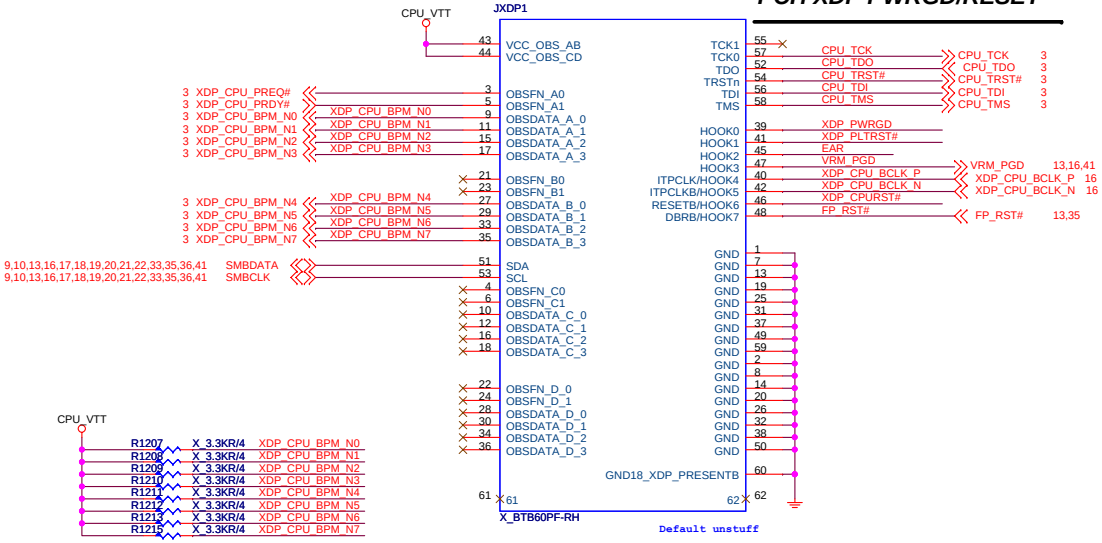
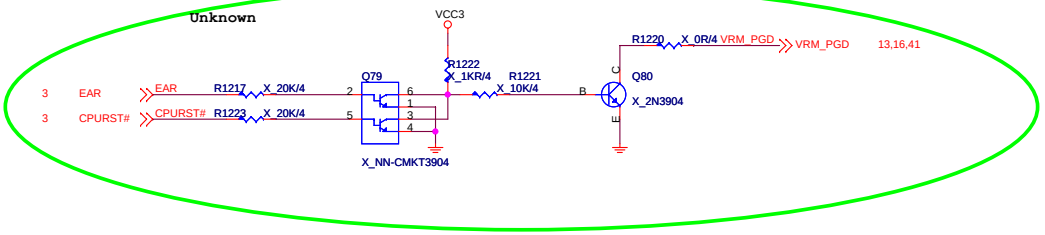
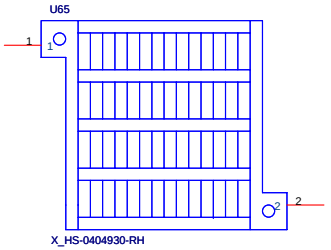
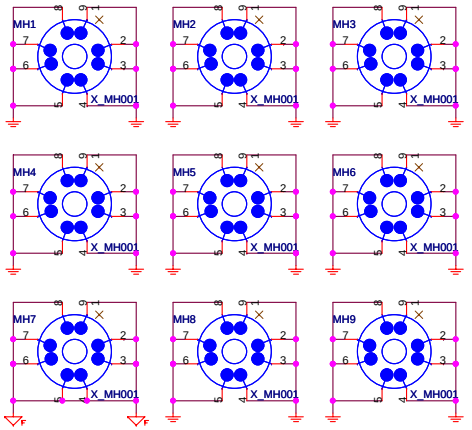
PCH XDP PWRGD/RESET



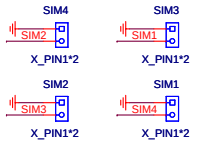




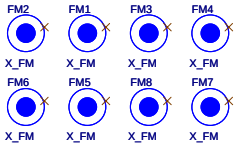
Mounting Holes



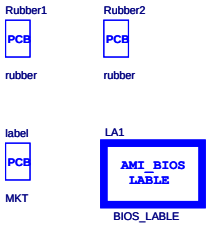
Simulation



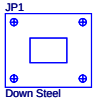
Optical Fiducial Marks-120

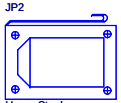


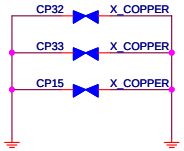
Optical Fiducial Marks-100

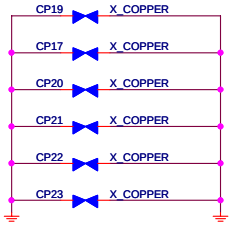


PK0-077350B-G37,紋ネ









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