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MS-7823

mATX

Ver: 11(243.84x243.84)

Intel -SharkBay plamform Z87

CPU:

Haswell LGA1150

System Chipset:

Lynx Point Z87 co-lay H87 & B85

Onboard Chip:

HD Audio Codec:ALC892
LAN-RTL8111G
SIO:Nuvoton 6779D
Flash ROM: SPI 64 MB/128MB

Main Memory:

*DDRIII (1066/1333/1600MHz) * 4 (Dual Channel)*

ACPI:

UPI

PWM:

ISL95812 3 Phase

Expansion Slots:

*PCI Express (X16) Slot * 1*
*PCI Express (X1) Slot * 2*
*PCI Express (X4) Slot * 1*

Other:

SATA3.0 x6(PCH)
*REAL USB2.0 *4*
*FRONT USB2.0 *6*
*REAL USB3.0 *2*
*FRONT USB3.0 *2*

MICRO-STAR INT'L CO.,LTD

MS-7823

Size: Custom | Document Description: Cover Sheet | Rev: 11

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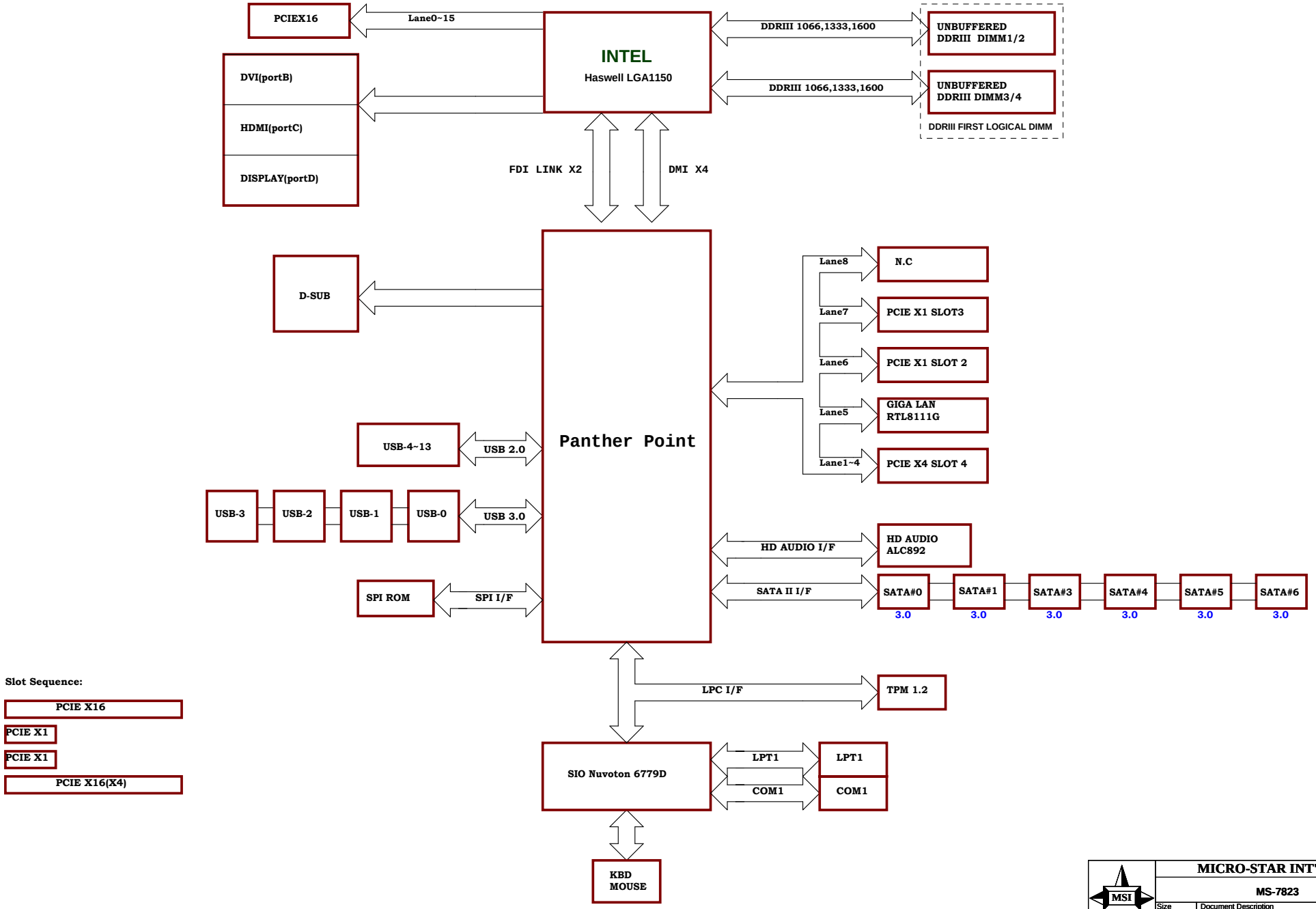
MS-7823 Block Diagram



MICRO-STAR INT'L CO.,LTD		
MS-7823		
Size: Custom	Document Description: Block Diagram	Rev: 11
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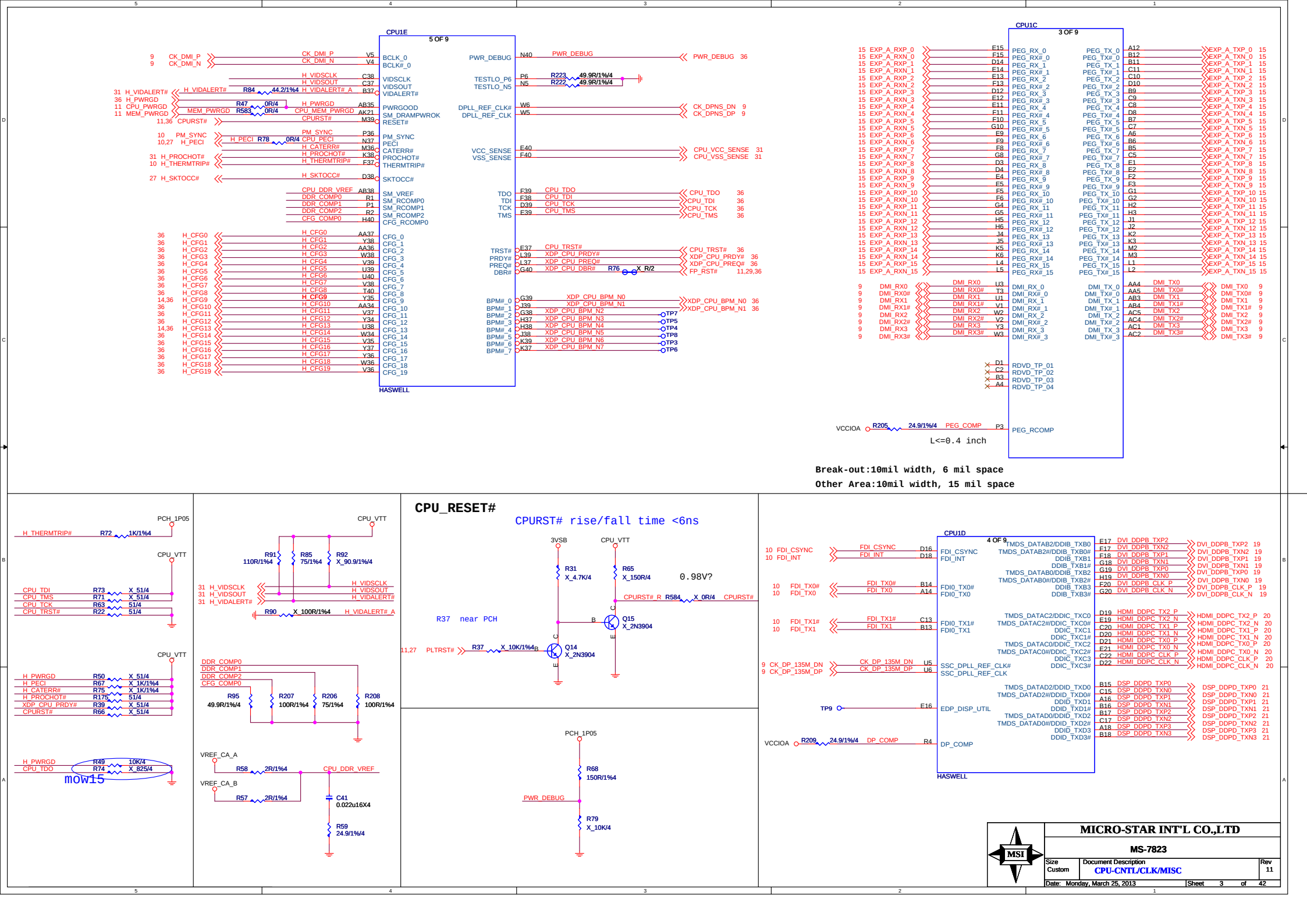
CPU1E
5 OF 9
HASWELL
CPU1C
3 OF 9
CPU1D
4 OF 9
CPU_RESET#
CPURST# rise/fall time <6ns
R37 near PCH
0.98V?
Break-out:10mil width, 6 mil space
Other Area:10mil width, 15 mil space
L<=0.4 inch
mow15
MICRO-STAR INT'L CO.,LTD
MS-7823
CPU-CNTL/CLK/MISC
Monday, March 25, 2013
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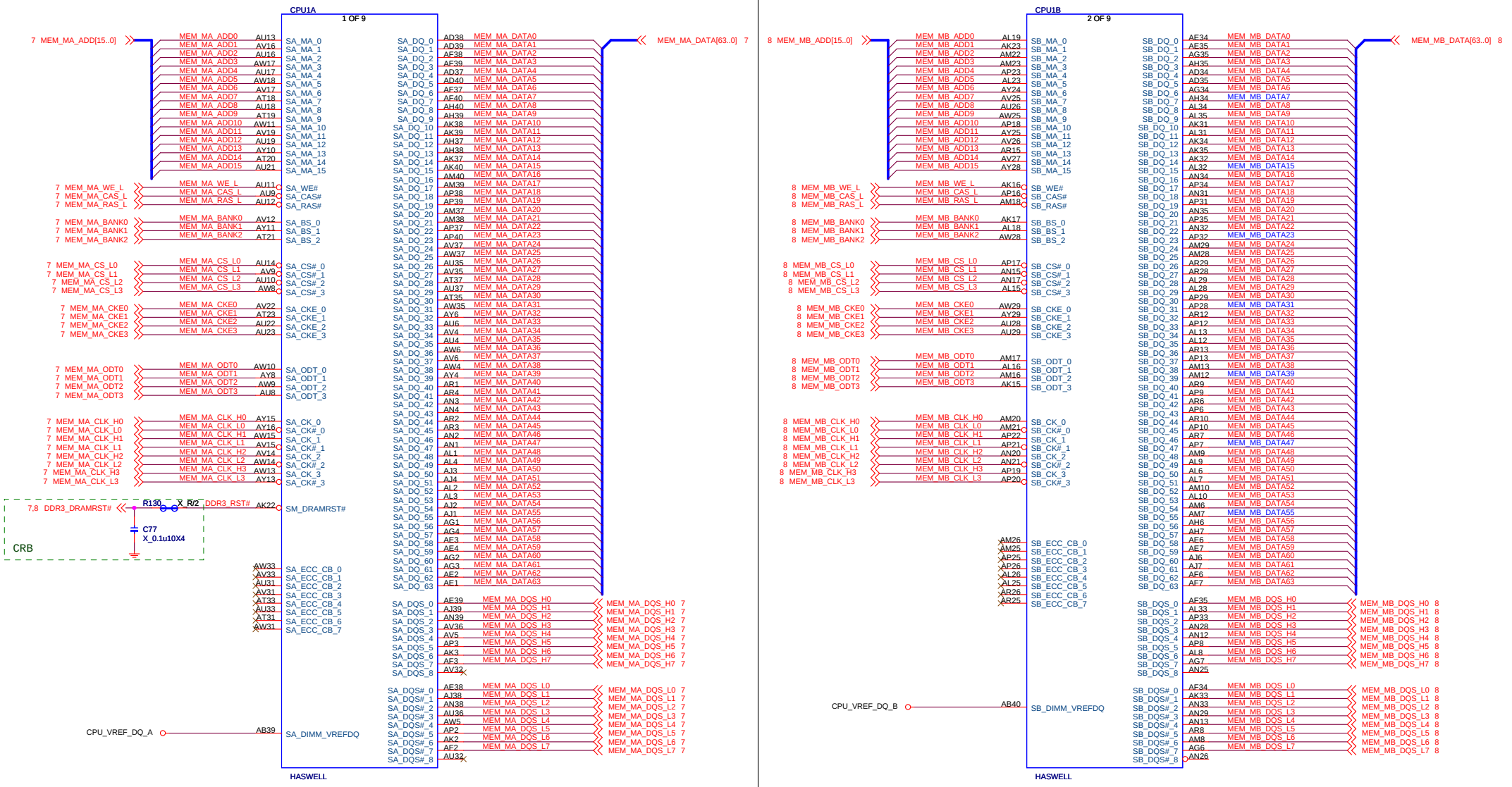
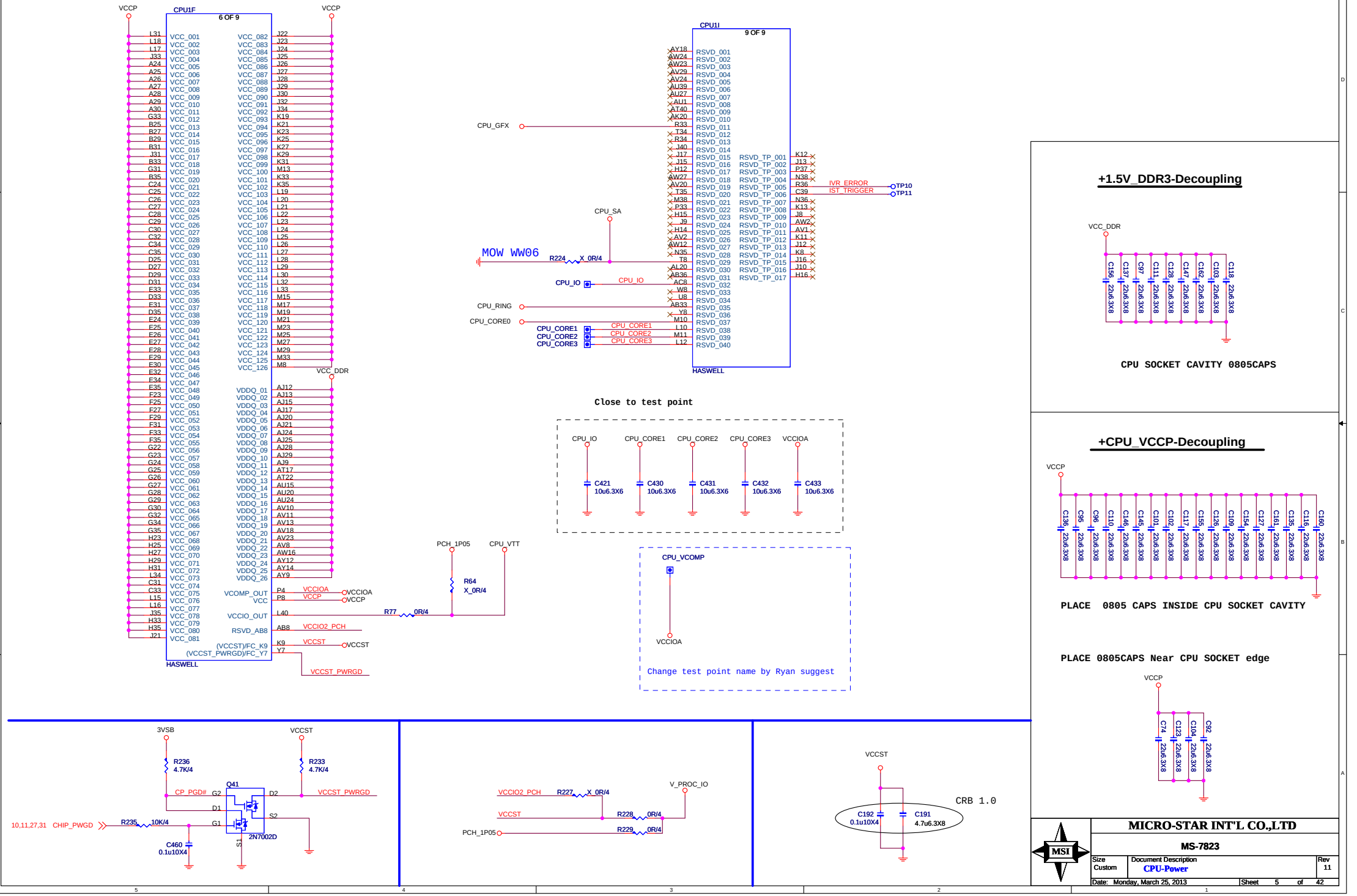


MICRO-STAR INT'L CO.,LTD

MS-7823

Size: Custom | Document Description: CPU-Memory | Rev: 11

Date: Monday, March 25, 2013 | Sheet 4 of 42


CPU1F
6 OF 9
HASWELL
VCCP
VCC_DDR
CPU1I
9 OF 9
CPU_GFX
CPU_SA
MOW WW06
R224 X_0R/4
CPU_IO
CPU_RING
CPU_CORE0
CPU_CORE1
CPU_CORE2
CPU_CORE3
IVR_ERROR
IST_TRIGGER
TP10
TP11
Close to test point
C421 10u6.3X6
C430 10u6.3X6
C431 10u6.3X6
C432 10u6.3X6
C433 10u6.3X6
PCH_1P05
CPU_VTT
R64 X_0R/4
R77 0R/4
CPU_VCOMP
Change test point name by Ryan suggest
+1.5V_DDR3-Decoupling
CPU SOCKET CAVITY 0805CAPS
+CPU_VCCP-Decoupling
PLACE 0805 CAPS INSIDE CPU SOCKET CAVITY
PLACE 0805CAPS Near CPU SOCKET edge
3VSB
R236 4.7K/4
R233 4.7K/4
Q41
2N7002D
CP_PGD#
VCCST_PWRGD
10,11,27,31 CHIP_PWGD
R235 10K/4
C460 0.1u10X4
VCCIO2_PCH
R227 X_0R/4
V_PROC_IO
R228 0R/4
R229 0R/4
C192 0.1u10X4
C191 4.7u6.3X8
CRB 1.0
MICRO-STAR INT'L CO.,LTD
MS-7823
Size Custom
Document Description CPU-Power
Rev 11
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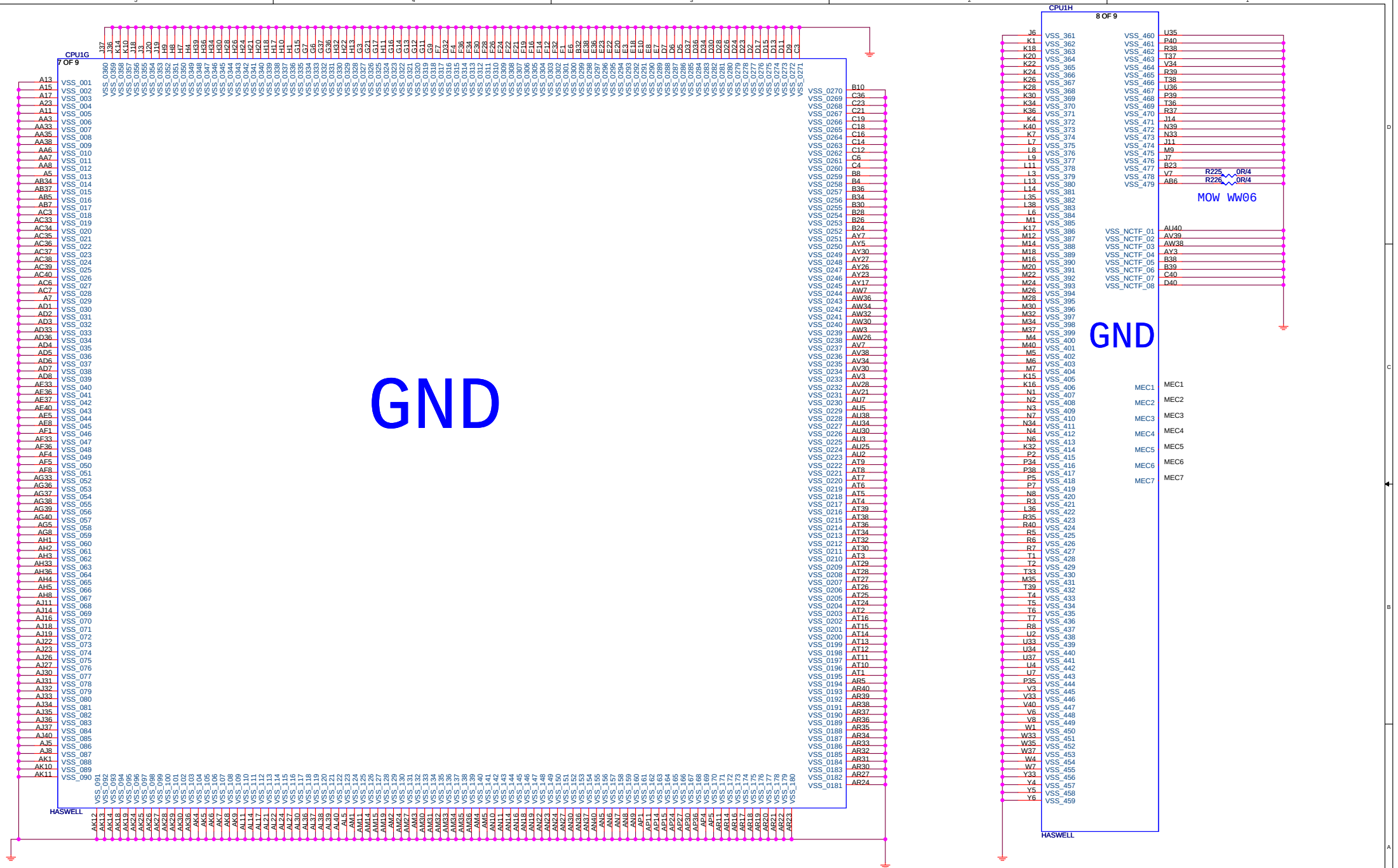

MICRO-STAR INT'L CO.,LTD	
MS-7823	
Size: Custom	Document Description: CPU-GND
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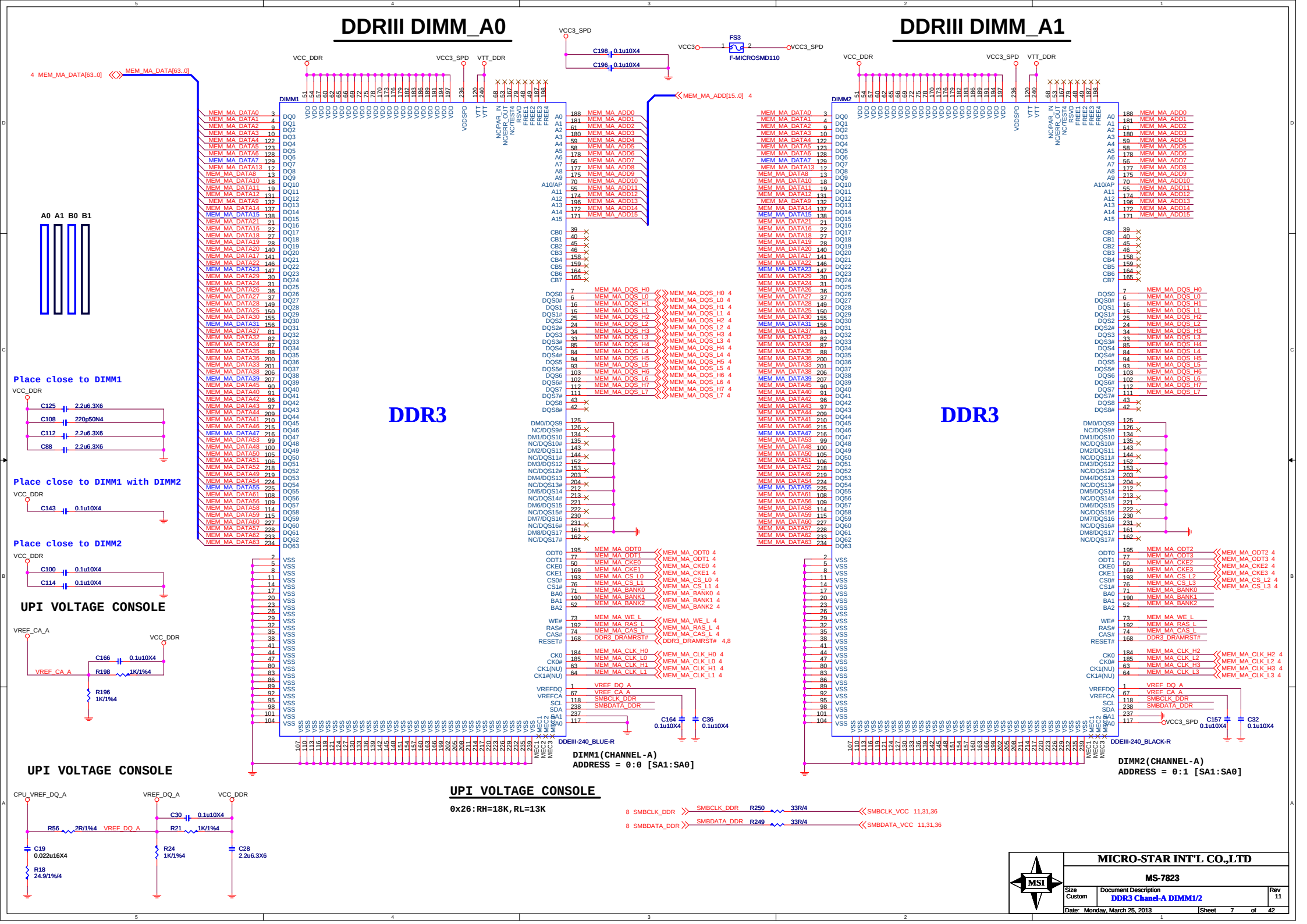
DDRIII DIMM_A0

DDRIII DIMM_A1



MICRO-STAR INT'L CO.,LTD	
MS-7823	
Size: Custom	Document Description: DDR3 Chanel-A DIMM1/2
Rev: 11	
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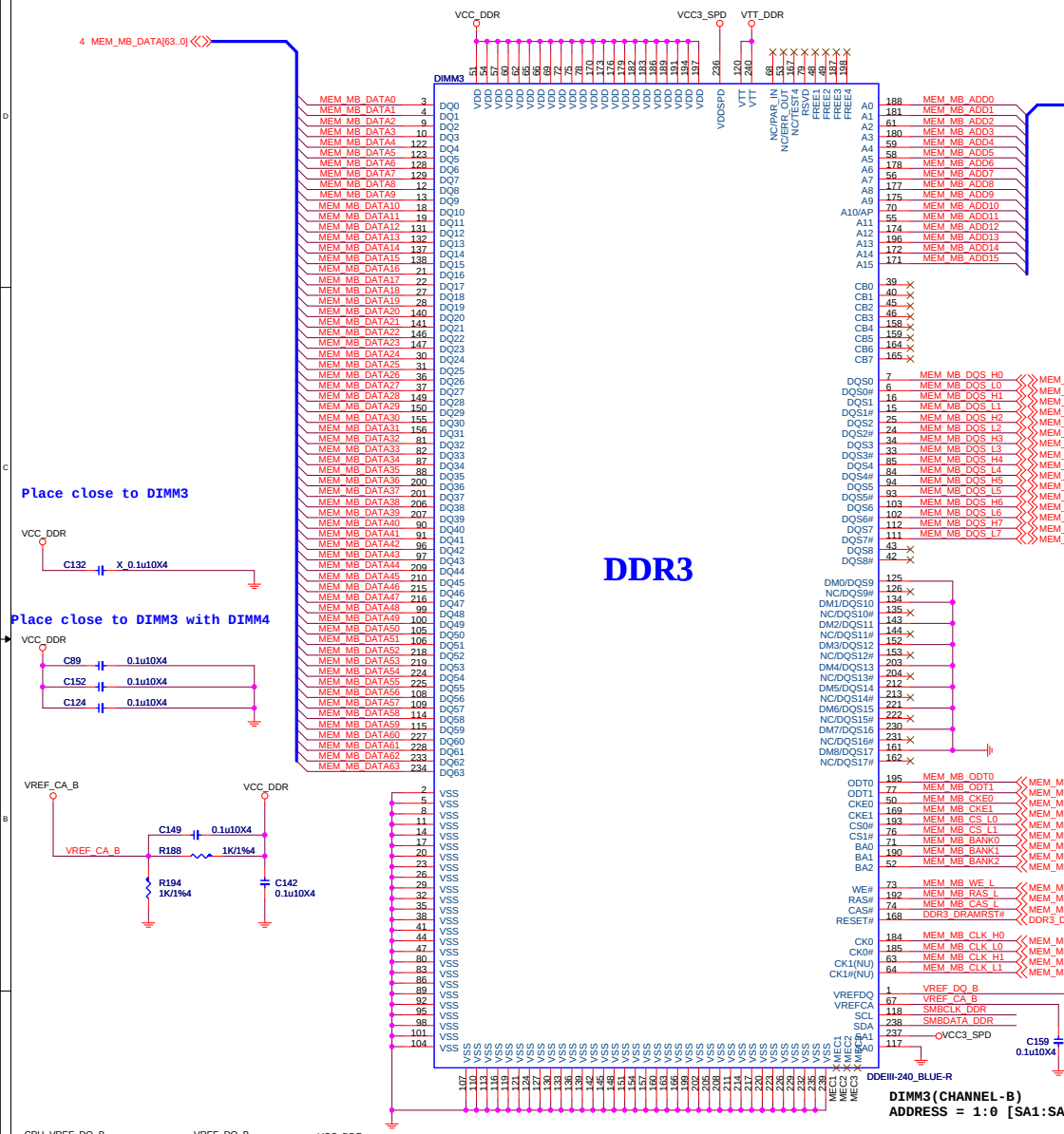
DDRIII DIMM_B0



DDRIII DIMM_B1

UPI VOLTAGE CONSOLE

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

MICRO-STAR INT'L CO.,LTD		
MS-7823		
Size: Custom	Document Description: DDR3 Chanel-B DIMM3/4	Rev: 11
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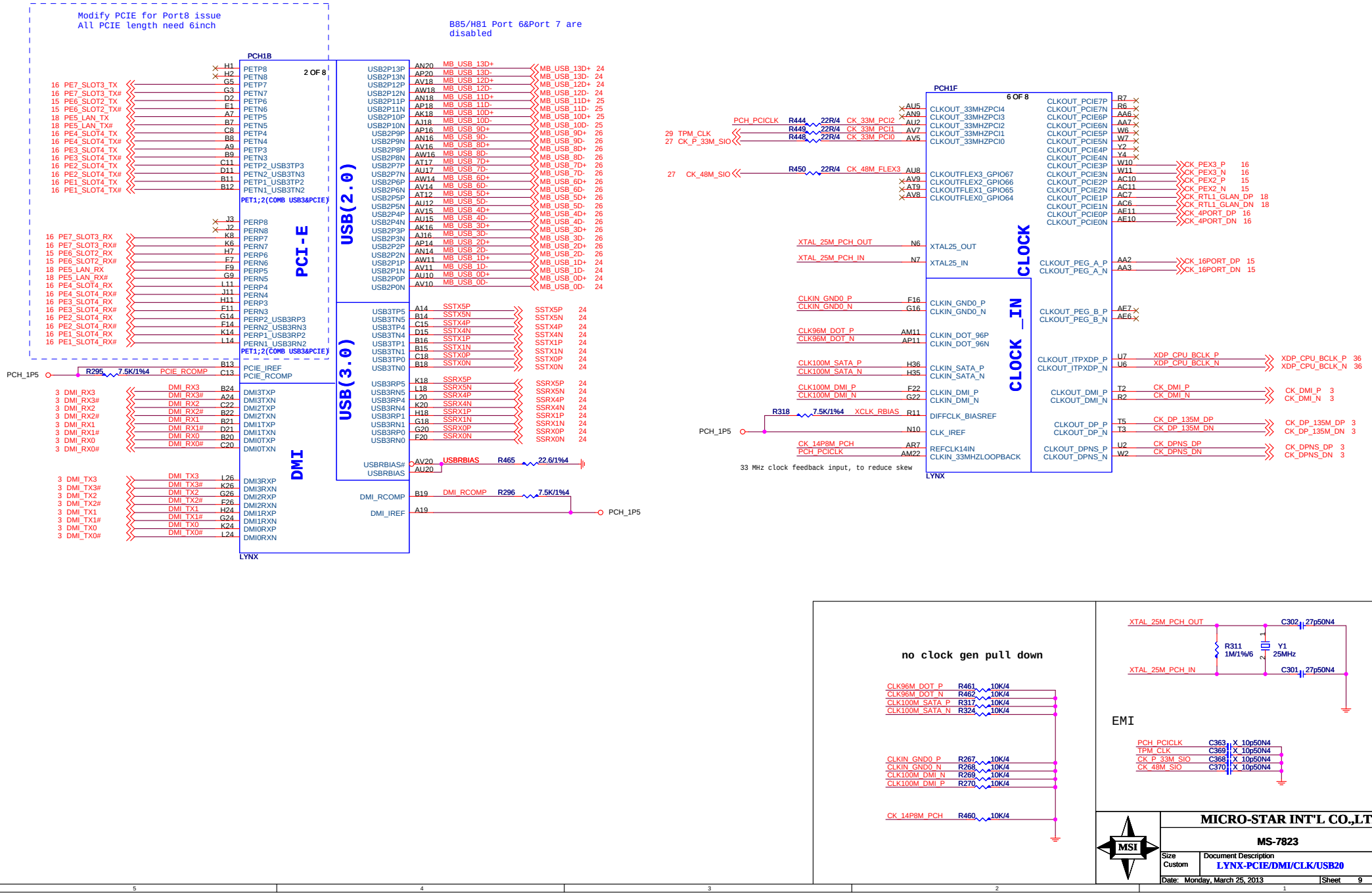
Modify PCIE for Port8 issue
All PCIE length need 6inch
B85/H81 Port 6&Port 7 are disabled
PCH1B
2 OF 8
PCI-E
USB(2.0)
USB(3.0)
DMI
LYNX
PCH1F
6 OF 8
CLOCK
CLOCK _IN
33 MHz clock feedback input, to reduce skew
no clock gen pull down
EMI
MICRO-STAR INT'L CO.,LTD
MS-7823
LYNX-PCIE/DMI/CLK/USB20
Size Custom
Rev 11
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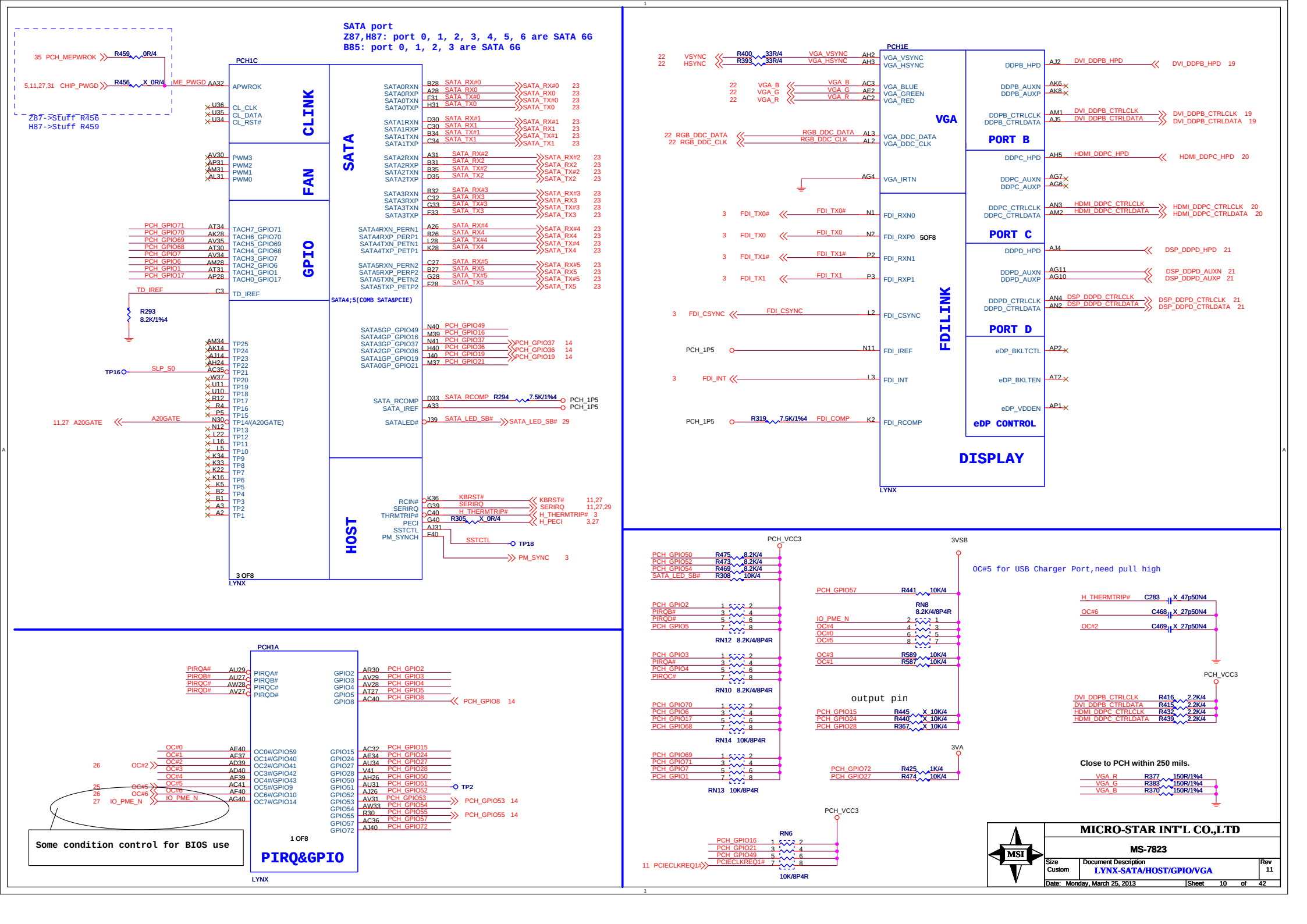
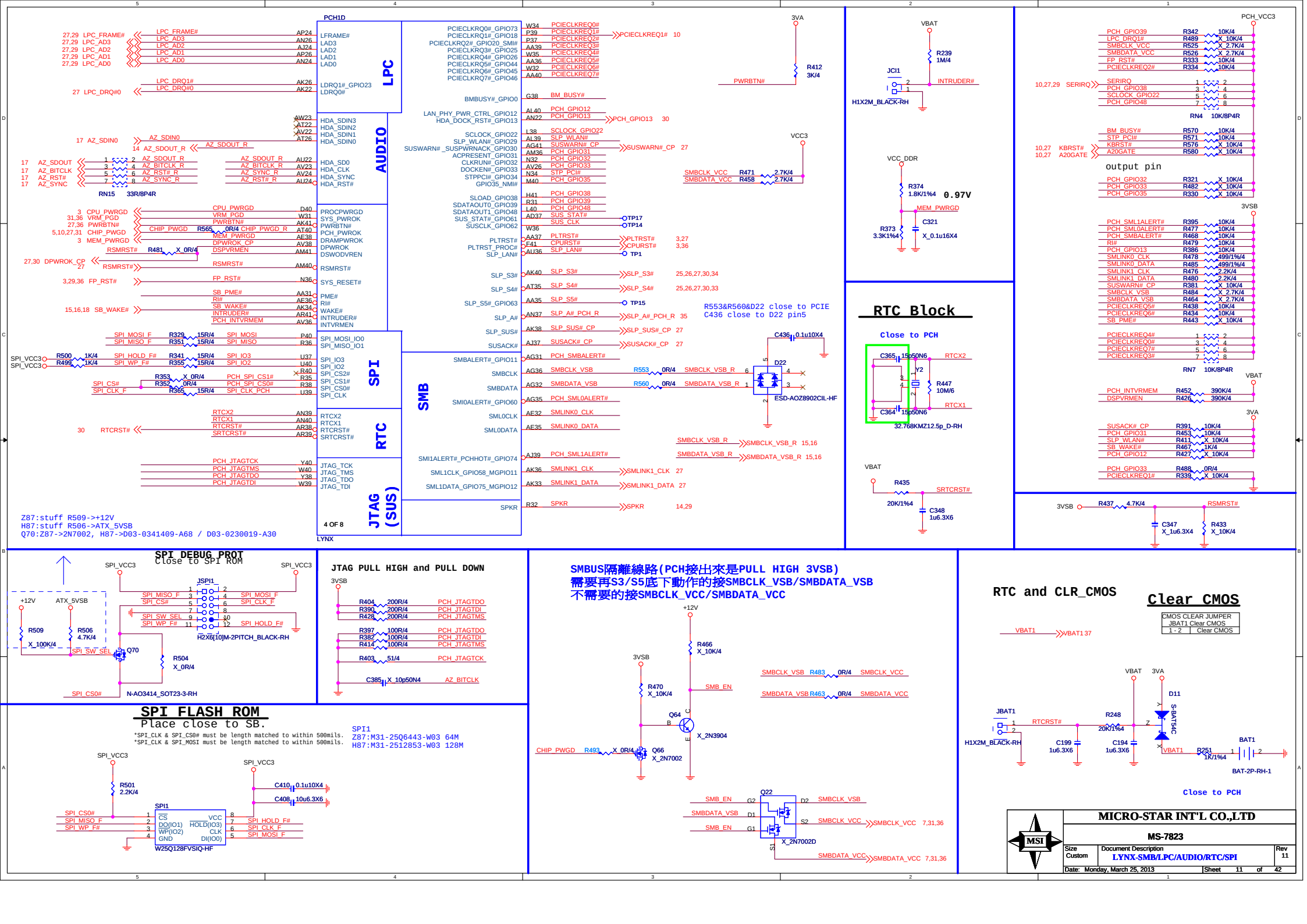
Sheet 9 of 42


SATA port
Z87,H87: port 0, 1, 2, 3, 4, 5, 6 are SATA 6G
B85: port 0, 1, 2, 3 are SATA 6G
Z87->Stuff R456
H87->Stuff R459
PCH1C
CLINK
FAN
GPIO
SATA
HOST
SATA4;5(COMB SATA&PCIE)
3 OF8
LYNX
PCH1E
VGA
PORT B
PORT C
PORT D
eDP CONTROL
FDILINK
DISPLAY
PCH1A
PIRQ&GPIO
1 OF8
Some condition control for BIOS use
OC#5 for USB Charger Port,need pull high
output pin
Close to PCH within 250 mils.
MICRO-STAR INT'L CO.,LTD
MS-7823
LYNX-SATA/HOST/GPIO/VGA
Monday, March 25, 2013


PCH1D
LPC
AUDIO
SPI
SMB
RTC
JTAG (SUS)
LYNX
4 OF 8
LFRAME#
LAD3
LAD2
LAD1
LAD0
LDRQ1#_GIPO23
LDRQ0#
HDA_SDIN3
HDA_SDIN2
HDA_SDIN1
HDA_SDIN0
HDA_SD0
HDA_CLK
HDA_SYNC
HDA_RST#
PROCPWRGD
SYS_PWROK
PWRBTN#
PCH_PWROK
DRAMPWROK
DPWROK
DSWODVREN
RSMRST#
SYS_RESET#
PME#
RI#
WAKE#
INTRUDER#
INTVRMEN
SPI_MOSI_IO0
SPI_MISO_IO1
SPI_IO3
SPI_IO2
SPI_CS2#
SPI_CS1#
SPI_CS0#
SPI_CLK
RTCX2
RTCX1
RTCRST#
SRTCRST#
JTAG_TCK
JTAG_TMS
JTAG_TDO
JTAG_TDI
PCIECLKRQ0#_GPIO73
PCIECLKRQ1#_GPIO18
PCIECLKRQ2#_GPIO20_SMI#
PCIECLKRQ3#_GPIO25
PCIECLKRQ4#_GPIO26
PCIECLKRQ5#_GPIO44
PCIECLKRQ6#_GPIO45
PCIECLKRQ7#_GPIO46
BMBUSY#_GPIO0
LAN_PHY_PWR_CTRL_GPIO12
HDA_DOCK_RST#_GPIO13
SCLOCK_GPIO22
SLP_WLAN#_GPIO29
SUSWARN#_SUSPWRNACK_GPIO30
ACPRESENT_GPIO31
CLKRUN#_GPIO32
DOCKEN#_GPIO33
STPPCI#_GPIO34
GPIO35_NMI#
SLOAD_GPIO38
SDATAOUT0_GPIO39
SDATAOUT1_GPIO48
SUS_STAT#_GPIO61
SUSCLK_GPIO62
PLTRST#
PLTRST_PROC#
SLP_LAN#
SLP_S3#
SLP_S4#
SLP_S5#_GPIO63
SLP_A#
SLP_SUS#
SUSACK#
SMBALERT#_GPIO11
SMBCLK
SMBDATA
SMI0ALERT#_GPIO60
SML0CLK
SML0DATA
SMI1ALERT#_PCHHOT#_GPIO74
SML1CLK_GPIO58_MGPIO11
SML1DATA_GPIO75_MGPIO12
SPKR
PCIECLKREQ0#
PCIECLKREQ1#
PCIECLKREQ2#
PCIECLKREQ3#
PCIECLKREQ4#
PCIECLKREQ5#
PCIECLKREQ6#
PCIECLKREQ7#
PCIECLKREQ1# 10
PWRBTN#
R412 3K/4
3VA
BM_BUSY#
PCH_GPIO12
PCH_GPIO13
PCH_GPIO13 30
SCLOCK_GPIO22
SLP_WLAN#
SUSWARN#_CP
SUSWARN#_CP 27
PCH_GPIO32
PCH_GPIO33
STP_PCI#
PCH_GPIO35
VCC3
SMBCLK_VCC R471 2.7K/4
SMBDATA_VCC R458 2.7K/4
PCH_GPIO38
PCH_GPIO39
PCH_GPIO48
SUS_STAT#
SUS_CLK
TP17
TP14
PLTRST# 3,27
CPURST# 3,36
SLP_LAN#
TP1
SLP_S3# 25,26,27,30,34
SLP_S4# 25,26,27,30,33
TP15
SLP_A#_PCH_R 35
SLP_SUS#_CP 27
SUSACK#_CP 27
PCH_SMBALERT#
SMBCLK_VSB
SMBDATA_VSB
R553 0R/4 SMBCLK_VSB_R
R560 0R/4 SMBDATA_VSB_R
PCH_SML0ALERT#
SMLINK0_CLK
SMLINK0_DATA
SMBCLK_VSB_R
SMBDATA_VSB_R
PCH_SML1ALERT#
SMLINK1_CLK
SMLINK1_CLK 27
SMLINK1_DATA
SMLINK1_DATA 27
SPKR
SPKR 14,29
C436 0.1u10X4
D22
ESD-AOZ8902CIL-HF
R553&R560&D22 close to PCIE
C436 close to D22 pin5
27,29 LPC_FRAME#
LPC_AD3
LPC_AD2
LPC_AD1
LPC_AD0
LPC_DRQ1#
27 LPC_DRQ#0
17 AZ_SDIN0
14 AZ_SDOUT_R
17 AZ_SDOUT
17 AZ_BITCLK
17 AZ_RST#
17 AZ_SYNC
RN15 33R/8P4R
3 CPU_PWRGD
31,36 VRM_PGD
27,36 PWRBTN#
5,10,27,31 CHIP_PWGD
3 MEM_PWRGD
RSMRST# R481 X_0R/4
27,30 DPWROK_CP
27 RSMRST#
3,29,36 FP_RST#
SB_PME#
15,16,18 SB_WAKE#
INTRUDER#
PCH_INTVRMEM
SPI_MOSI_F R329 15R/4
SPI_MISO_F R351 15R/4
SPI_VCC3 R500 1K/4
SPI_VCC3 R499 1K/4
SPI_HOLD_F# R341 15R/4
SPI_WP_F# R355 15R/4
SPI_MOSI
SPI_MISO
SPI_IO3
SPI_IO2
SPI_CS#
SPI_CLK_F
R353 X_0R/4
R352 0R/4
R365 15R/4
PCH_SPI_CS1#
PCH_SPI_CS0#
SPI_CLK_PCH
30 RTCRST#
RTCX2
RTCX1
RTCRST#
SRTCRST#
PCH_JTAGTCK
PCH_JTAGTMS
PCH_JTAGTDO
PCH_JTAGTDI
Z87:stuff R509->+12V
H87:stuff R506->ATX_5VSB
Q70:Z87->2N7002, H87->D03-0341409-A68 / D03-0230019-A30
VBAT
R239 1M/4
JCI1
INTRUDER#
H1X2M_BLACK-RH
VCC_DDR
R374 1.8K/1%4
0.97V
MEM_PWRGD
C321
R373 3.3K1%4
X_0.1u16X4
RTC Block
Close to PCH
C365 15p50N6
RTCX2
Y2
R447 10M/6
RTCX1
C364 15p50N6
32.768KMZ12.5p_D-RH
VBAT
R435
20K/1%4
SRTCRST#
C348 1u6.3X6
PCH_VCC3
PCH_GPIO39 R342 10K/4
LPC_DRQ1# R489 X_10K/4
SMBCLK_VCC R525 X_2.7K/4
SMBDATA_VCC R526 X_2.7K/4
FP_RST# R333 10K/4
PCIECLKREQ2# R334 10K/4
10,27,29 SERIRQ
SERIRQ
PCH_GPIO38
SCLOCK_GPIO22
PCH_GPIO48
RN4 10K/8P4R
BM_BUSY# R570 10K/4
STP_PCI# R571 10K/4
10,27 KBRST# KBRST# R576 X_10K/4
10,27 A20GATE A20GATE R580 X_10K/4
output pin
PCH_GPIO32 R321 X_10K/4
PCH_GPIO33 R482 X_10K/4
PCH_GPIO35 R330 X_10K/4
3VSB
PCH_SML1ALERT# R395 10K/4
PCH_SML0ALERT# R477 10K/4
PCH_SMBALERT# R468 10K/4
RI# R479 10K/4
PCH_GPIO13 R386 10K/4
SMLINK0_CLK R478 499/1%4
SMLINK0_DATA R485 499/1%4
SMLINK1_CLK R476 2.2K/4
SMLINK1_DATA R480 2.2K/4
SUSWARN#_CP R381 X_10K/4
SMBCLK_VSB R484 X_2.7K/4
SMBDATA_VSB R464 X_2.7K/4
PCIECLKREQ5# R438 10K/4
PCIECLKREQ6# R434 10K/4
SB_PME# R443 X_10K/4
PCIECLKREQ4#
PCIECLKREQ0#
PCIECLKREQ7#
PCIECLKREQ3#
RN7 10K/8P4R
VBAT
PCH_INTVRMEM R452 390K/4
DSPVRMEN R426 390K/4
3VA
SUSACK#_CP R391 10K/4
PCH_GPIO31 R453 10K/4
SLP_WLAN# R411 X_10K/4
SB_WAKE# R467 1K/4
PCH_GPIO12 R427 X_10K/4
PCH_GPIO33 R488 0R/4
PCIECLKREQ1# R339 X_10K/4
3VSB R437 4.7K/4
RSMRST#
C347 X_1u6.3X4
R433 X_10K/4
SPI DEBUG PROT
Close to SPI ROM
SPI_VCC3
JSPI1
SPI_MISO_F
SPI_CS#
SPI_SW_SEL
SPI_WP_F#
SPI_MOSI_F
SPI_CLK_F
SPI_HOLD_F#
H2X6[10]M-2PITCH_BLACK-RH
+12V
ATX_5VSB
R509
R506 4.7K/4
X_100K/4
Q70
R504 X_0R/4
SPI_CS0#
N-AO3414_SOT23-3-RH
JTAG PULL HIGH and PULL DOWN
3VSB
R404 200R/4 PCH_JTAGTDO
R390 200R/4 PCH_JTAGTDI
R428 200R/4 PCH_JTAGTMS
R397 100R/4 PCH_JTAGTDO
R382 100R/4 PCH_JTAGTDI
R414 100R/4 PCH_JTAGTMS
R403 51/4 PCH_JTAGTCK
C385 X_10p50N4 AZ_BITCLK
SMBUS隔離線路(PCH接出來是PULL HIGH 3VSB)
需要再S3/S5底下動作的接SMBCLK_VSB/SMBDATA_VSB
不需要的接SMBCLK_VCC/SMBDATA_VCC
+12V
R466 X_10K/4
3VSB
R470 X_10K/4
SMB_EN
Q64
X_2N3904
CHIP_PWGD R493 X_0R/4
Q66 X_2N7002
SMBCLK_VSB R483 0R/4 SMBCLK_VCC
SMBDATA_VSB R463 0R/4 SMBDATA_VCC
Q22
SMB_EN G2
SMBDATA_VSB D1
SMB_EN G1
D2 SMBCLK_VSB
S2 SMBCLK_VCC
SMBCLK_VCC 7,31,36
X_2N7002D
S1
SMBDATA_VCC
SMBDATA_VCC 7,31,36
RTC and CLR_CMOS
Clear CMOS
CMOS CLEAR JUMPER
JBAT1 Clear CMOS
1 - 2 Clear CMOS
VBAT1
VBAT1 37
VBAT
3VA
D11
S-BAT54C
JBAT1
H1X2M_BLACK-RH
RTCRST#
R248 20K/1%4
C199 1u6.3X6
C194 1u6.3X6
VBAT1
R251 1K/1%4
BAT1
BAT-2P-RH-1
Close to PCH
SPI FLASH ROM
Place close to SB.
*SPI_CLK & SPI_CS0# must be length matched to within 500mils.
*SPI_CLK & SPI_MOSI must be length matched to within 500mils.
SPI1
Z87:M31-25Q6443-W03 64M
H87:M31-2512853-W03 128M
SPI_VCC3
R501 2.2K/4
SPI_CS0#
SPI_MISO_F
SPI_WP_F#
SPI1
CS
DO(IO1)
WP(IO2)
GND
VCC
HOLD(IO3)
CLK
DI(IO0)
W25Q128FVSIQ-HF
C410 0.1u10X4
C408 10u6.3X6
SPI_HOLD_F#
SPI_CLK_F
SPI_MOSI_F
MICRO-STAR INT'L CO.,LTD
MS-7823
Size Custom
Document Description LYNX-SMB/LPC/AUDIO/RTC/SPI
Rev 11
Date: Monday, March 25, 2013
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Change to 10UH if
VCCA_DPLLA/VCCA_DPLLB
has noise issue.

AF25 ;AD25 DT CRB0.7 ASW POWER

(Internal) 1.312A+(External)1.38A=2.45A

POWER

VCC3	0.21A
3VA	0.015A
VBAT	6uA
3VSB	0.261A
VCC1_5	0.249A
PCH_1P05	5.921A

PCH_VCC3 HAVE SEQENCING

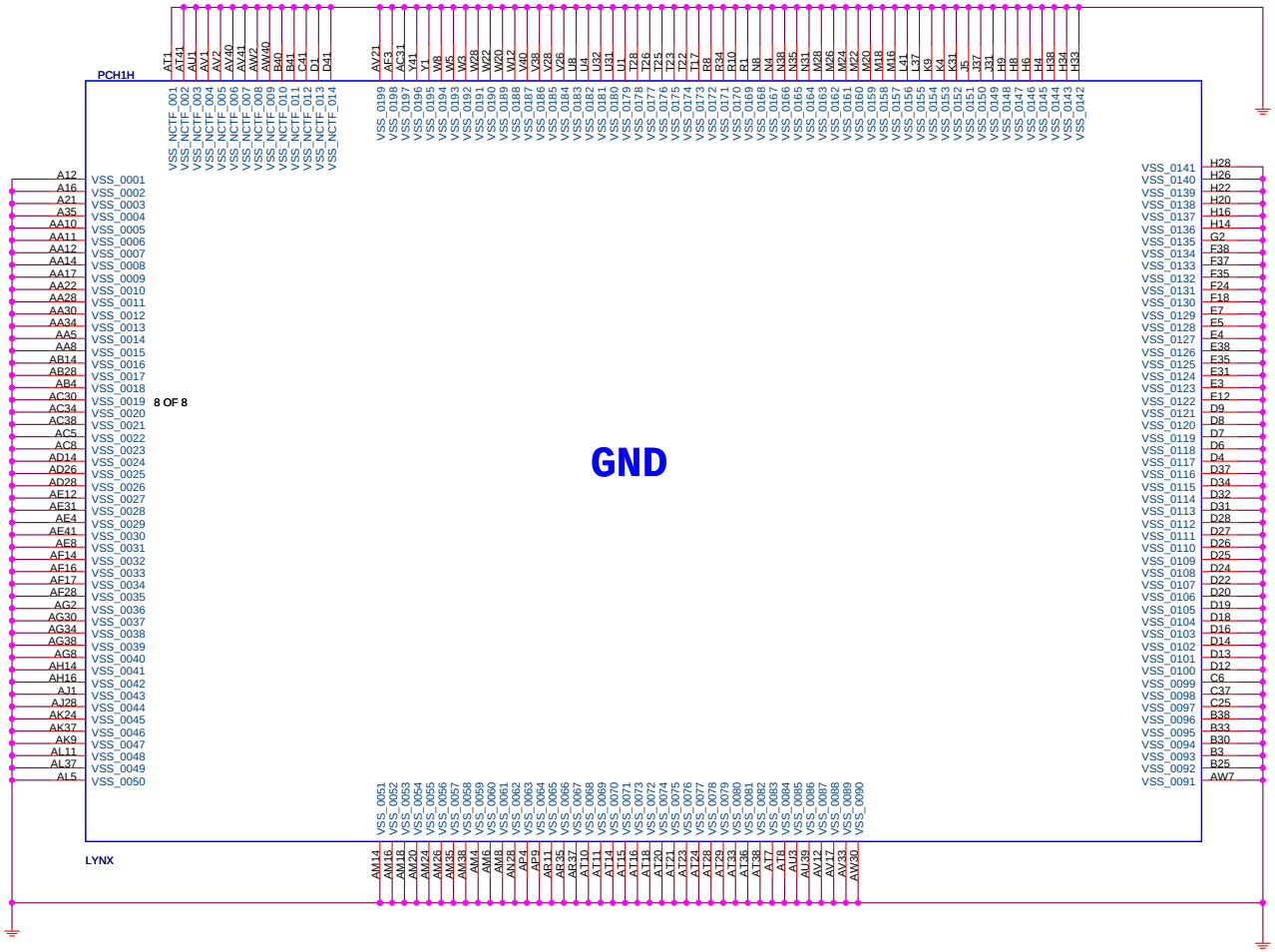
AG1 DT CRB0.7 VCC3 POWER

(Internal) 0.261A+(External)0.261A=0.522A

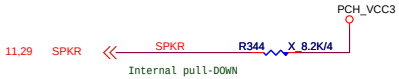
Backside for V14,U12,T16,V16
unstuff

PCH decoupling cap

MICRO-STAR INT'L CO.,LTD	
MS-7823	
Size: Custom	Document Description: LYNX-POWER
Rev: 11	
Date: Monday, March 25, 2013	Sheet 12 of 42

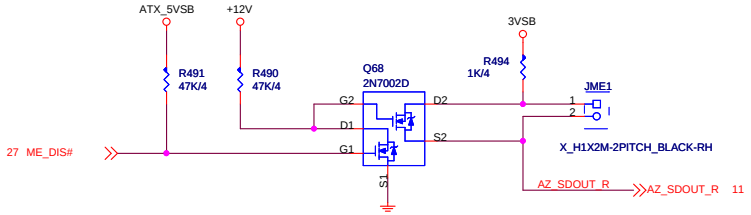


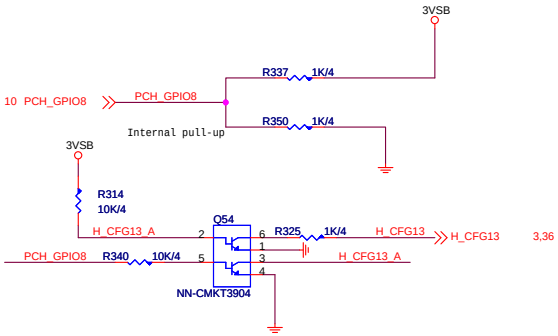
MICRO-STAR INT'L CO.,LTD		
MS-7823		
Size: Custom	Document Description: LYNX-GND/NVRAM/USB30	Rev: 11
Date: Monday, March 25, 2013	Sheet 13 of 42	



SPKR
Default Mode:
Internal weak Pull-down.

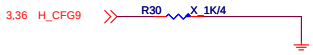
No Reboot Mode with TCO Disabled:
Connect to Vcc3_3 with 8.2k-10k Ohm weak pullup resistor.



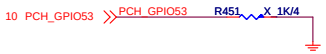


GPIO55
Default Mode:
Internal pull-up.

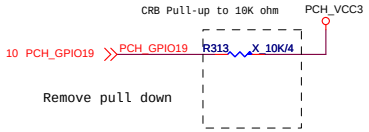
Top Block Swap Mode:
Connect to ground with 4.7k Ohm weak pulldown resistor.



For Sx power Cycling May Fail Due to SVID Logic Race Condition Within the Processor



GPIO53
Connect to ground with 1k Ohm pull-down resistor.



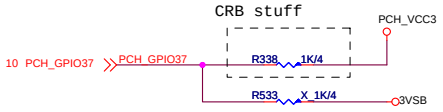
Default (SPI):
Left both SATA1GP/GPIO19 and GPIO51 floating.
No pull up required.

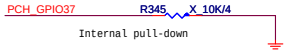
Boot from PCI:
Connect SATA1GP/GPIO19 to ground with 1k Ohm pull-down resistor.
Leave GPIO51 Floating.

Boot from LPC:
Connect both SATA1GP/GPIO19 and GPIO51 to ground with 1k Ohm pull-down resistor.

BOOT DEVICE	GPIO51	GPIO19
LPC	0	0
SPI	1	1

Default





Enable TLS:
Pull up with 1k Ohm to VccSus3.3.

Default (Disable TLS):
Leave NC. Internal pull down.

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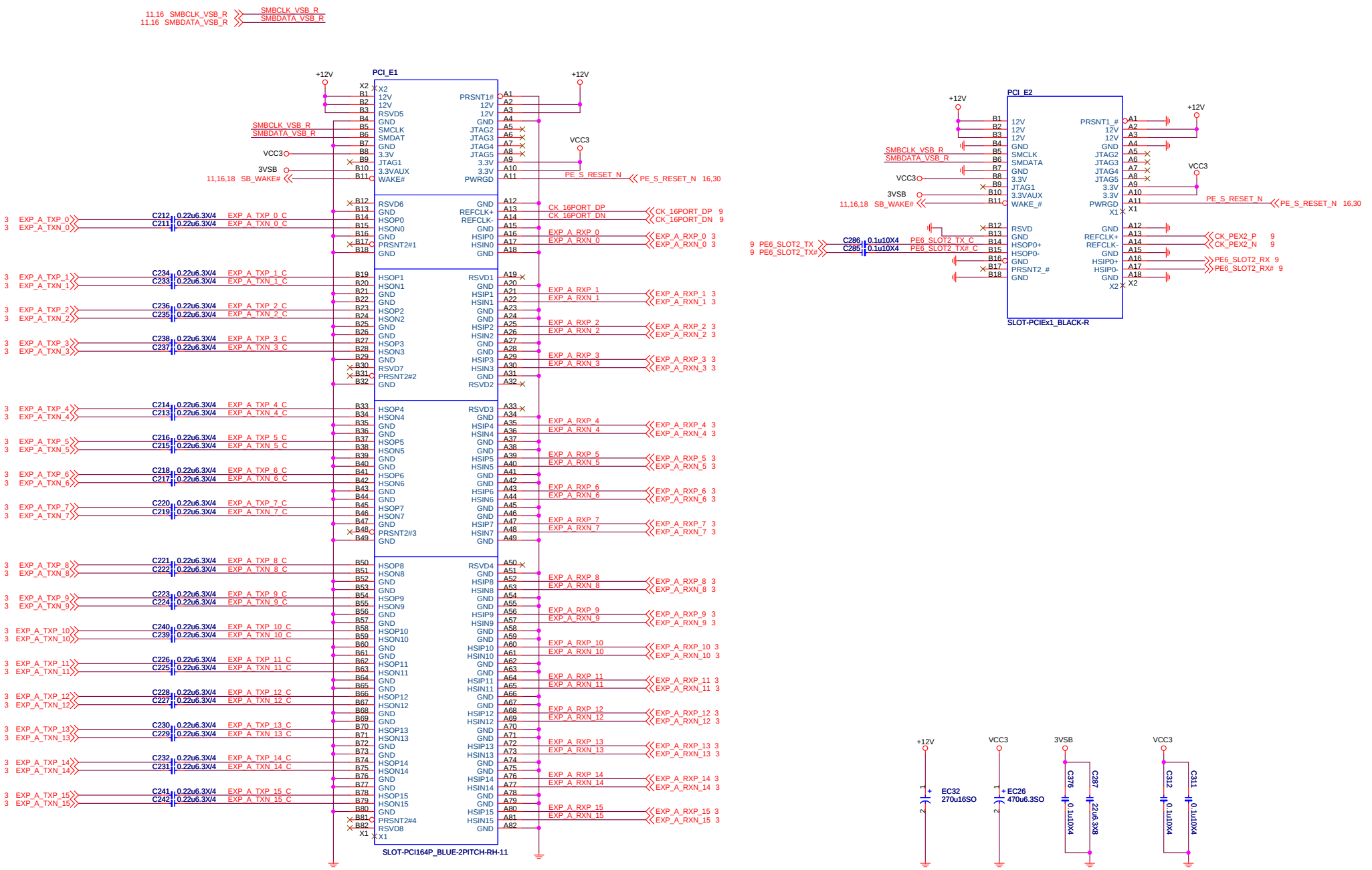

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Size: Custom	Document Description: PCIE1(X1) & PCIE2(X16) Slots	Rev: 11
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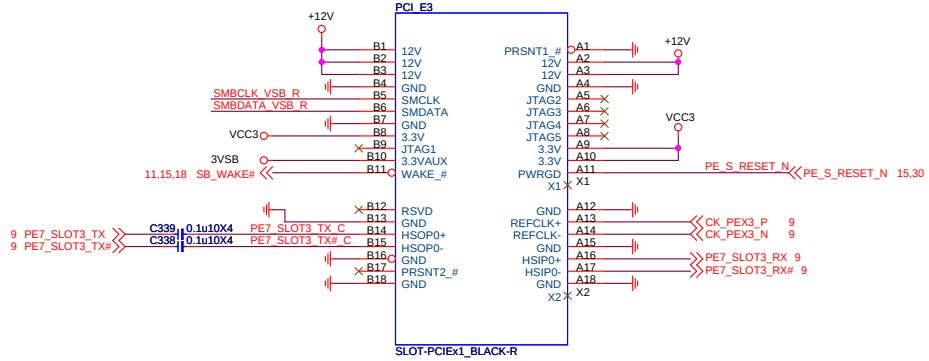
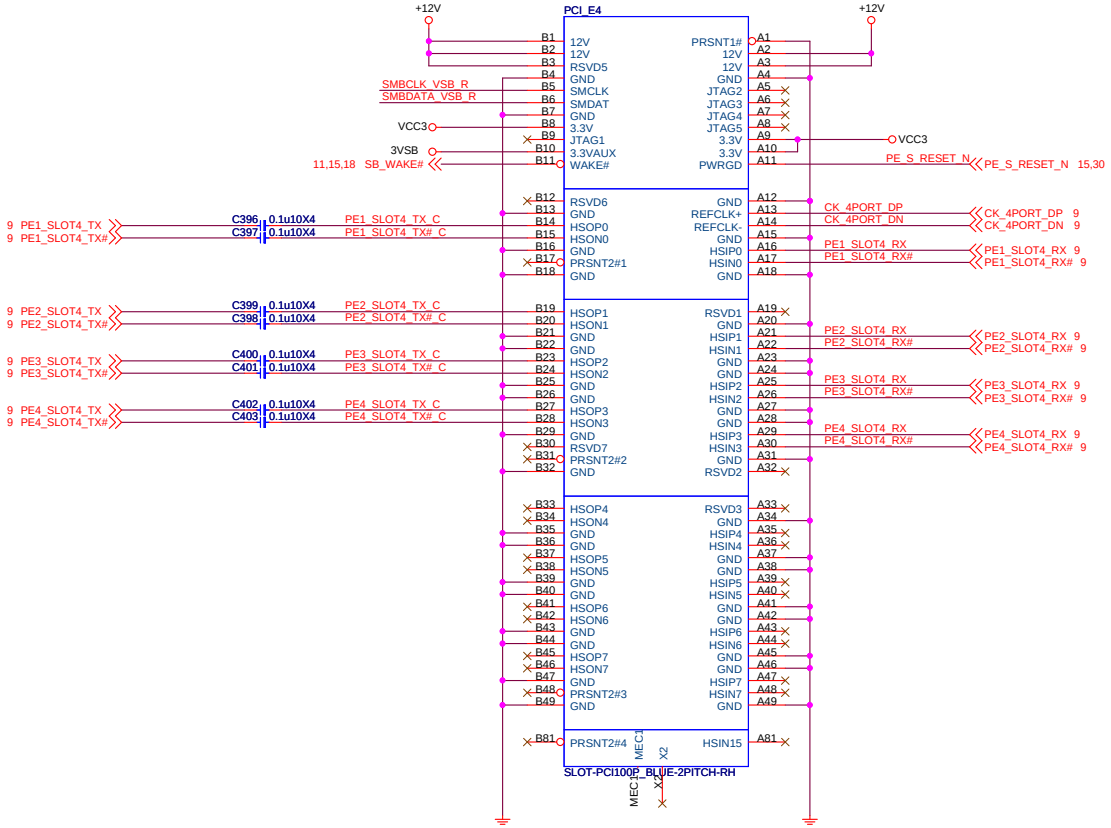
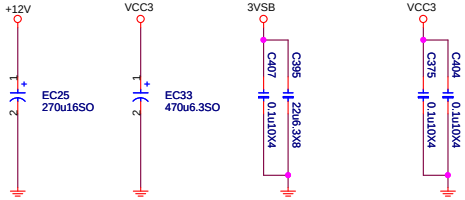
PCI_Express X4 Slot







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Type B: ALC892/887

11mA
Closed Codec

CA4 closed PIN25
CA3 closed PIN38

SMD CAP: Fail to test THD+N
EL/SOLID cap: Test THD+N will Pass

UA1 — ALC892-CG-RH

45.8mA

CA29.CA30 close to Pin27

2.2k for better recording quality

for rear I/O 6port:
887VD/892:1k

for rear I/O 3port:
887VD/892:75R

EMI

Add by EMI

0R for cost down

CA33,CA34 close to LA2

Varister --> cap for cost down

D0G-2950500-SI0
D0G-3010510-I05
Close to Jack

Close to Front panel
For HDA/AC97 front cable.

SPDIF_OUT

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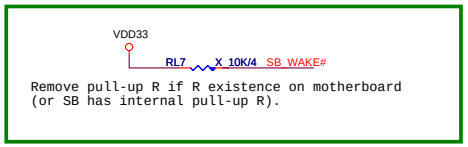
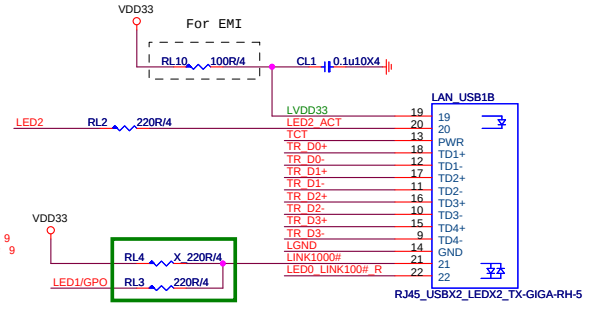
RTL8111G Giga LAN
RTL8106E 10/100M LAN

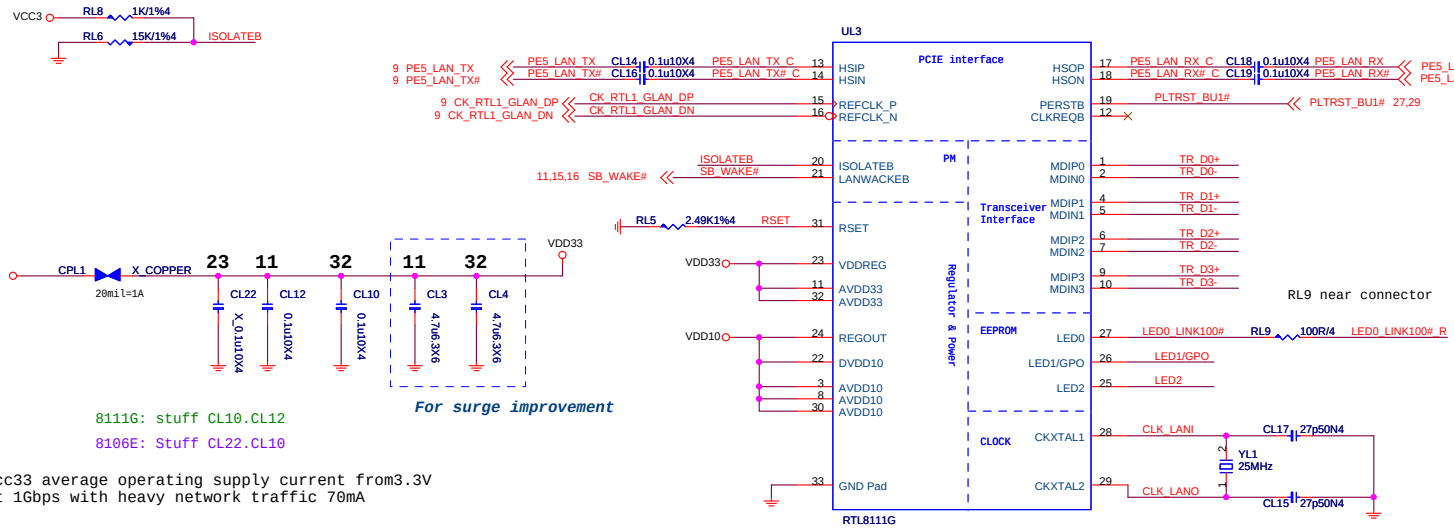


LAN Connector



8111G: Keep RL6 and Remove RL5 for RTL8111G
8106E: Keep RL5 and Remove RL6 for RTL8106E

Support R>= 249 ohm Resister For Single Color LED.
Support R>= 125 ohm Resister For Dual Color LED.



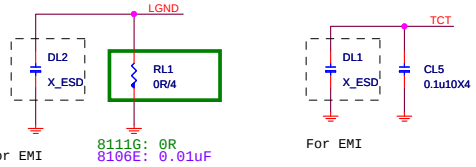
RL9 near connector

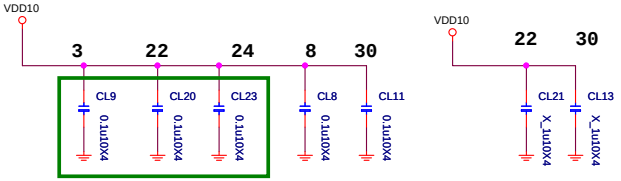
For surge improvement

8111G: stuff CL10.CL12
8106E: Stuff CL22.CL10

Icc33 average operating supply current from3.3V
At 1Gbps with heavy network traffic 70mA

Pin33: 4 via from top layer to GND layer
and make the via at the center of IC.





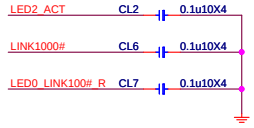
CL21 Reserve for 8111G
CL13 reserve for 8106E

8111G: stuff
8106E: unstuff

Icc10 average operating supply current from1.0V
At 1Gbps with heavy network traffic 300mA

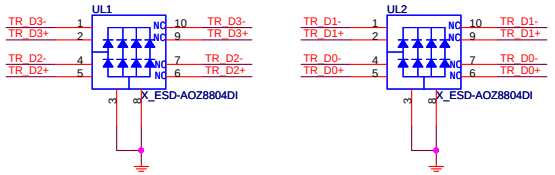
8111G:stuff CL20,CL9,CL8,CL11,CL23
un stuff CL13,CL21

8106E: stuff CL8,CL11,CL13
un stuff CL21.CL20.CL9.CL23



Reserve ESD Protect

Change to 10 pin TVS by EMI



8106E POWER Consumption

	3.3V @ mA	mW
10 M Idle/TxRx	15/94	49.5/310.2
100 M Idle/TxRx	52/105	171.6/346.5
S0 ALDPS	4	13.2

8111G POWER Consumption

	3.3V @ mA	mW
10 M Idle/TxRx	17.15/116.7	56.6/385.1
100 M Idle/TxRx	71.45/129.5	235.8/427.4
Giga Idle/TxRx	179.1/243.9	591/804.9
ALDPS	6.41	21.15

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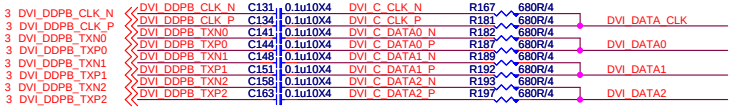
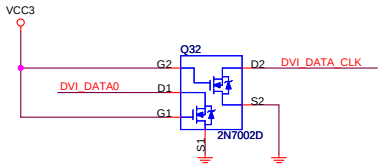
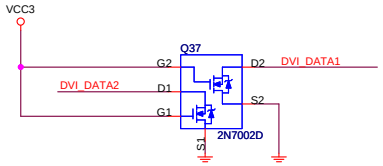
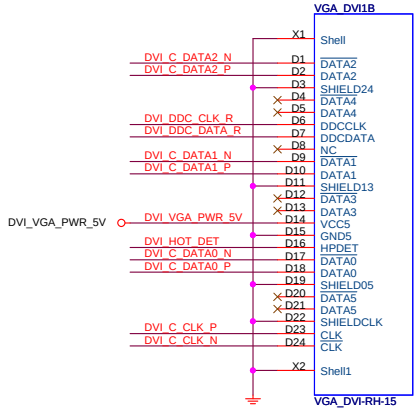
VGA: resolution of 2048x1536 pixels with 32-bit color at 75 Hz (4:3 QXGA)

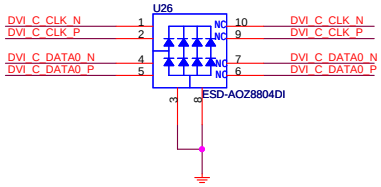




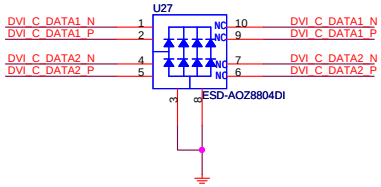


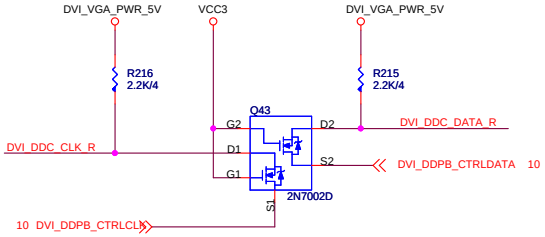


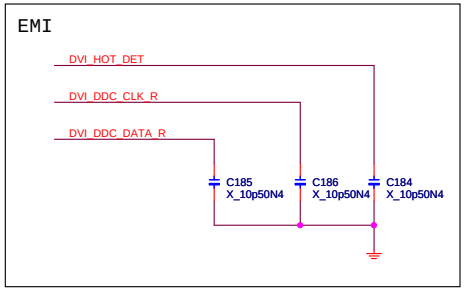
U26 AVL:D0G-05A050C-O05
D0G-06A050C-A68

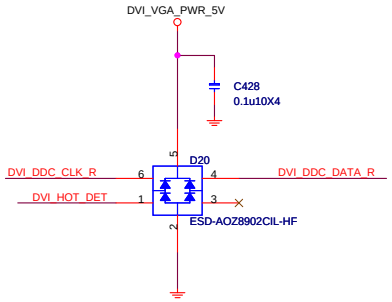


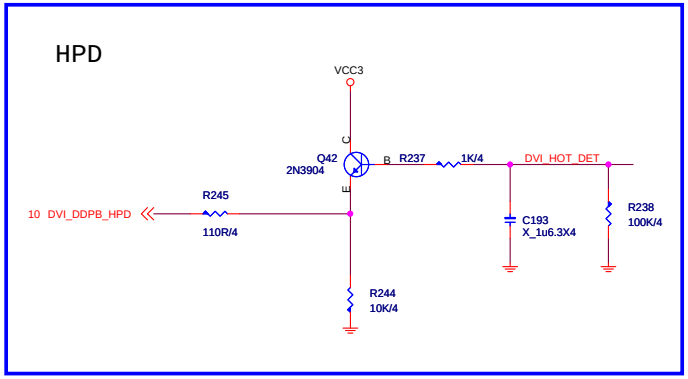
U27 AVL:D0G-05A050C-O05
D0G-06A050C-A68

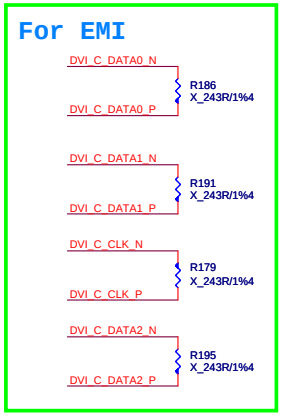












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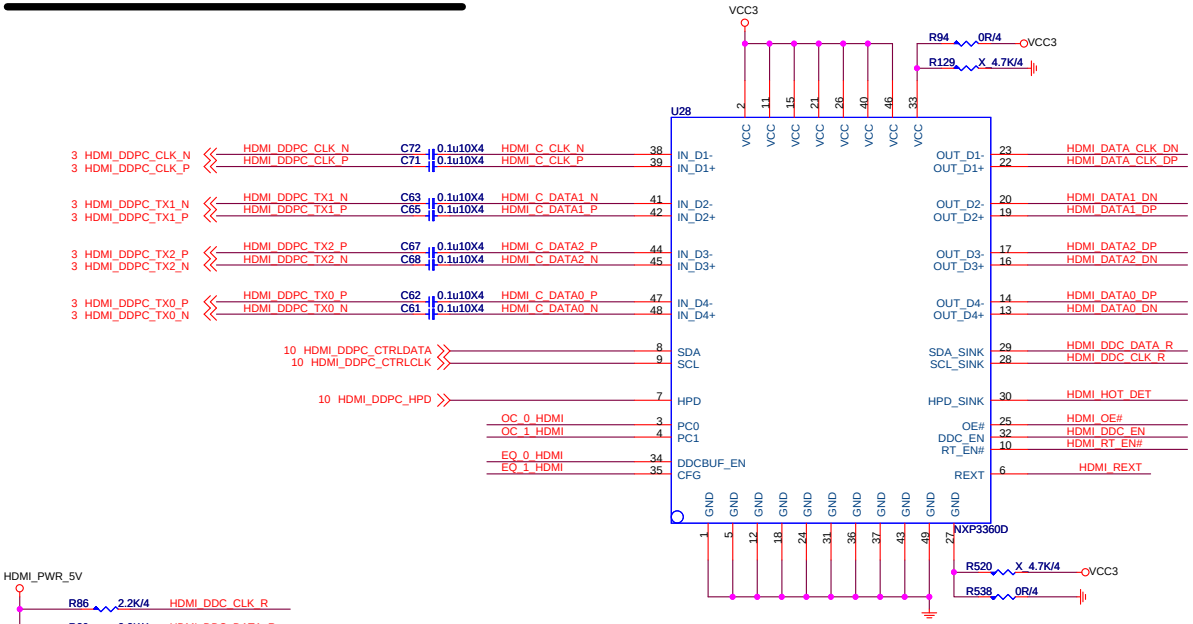
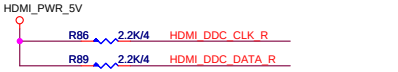
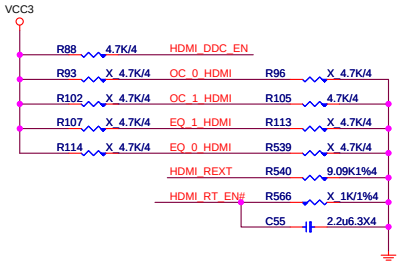
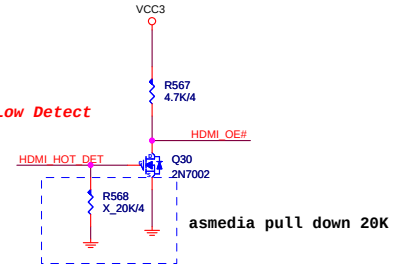
HDMI level shifter









注意High/Low Detect

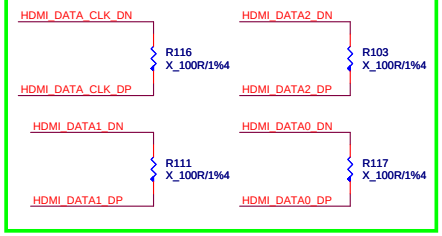
asmedia pull down 20K

	"0"	"1"	note
DDC_EN	DDC level shifter disable	DDC level shifter enable	internal pull-up at ~500K ohm.
RT_EN#	Input 50 ohm termination resistor enable	the input termination ; resistors are set to high impedances	internal pull-down at ~500K ohm.
OE#	enable	the chip is power down and input termination resistors will be at high impedance.	internal pull-down at ~500K ohm.
HPD_SINK	disable	enable	internal pull-down at ~200K ohm; 5V tolerant.
DDCBUF_EN	For DDC level shifitng configuration, please refer to Table.		internal pull-down at ~500K ohm.
REXT			analog current generation.

[DDC_EN, DDCBUF_EN, OE#]	DDC Passive Switch	DDC Active Buffer
1, 0, X	On	Off
1, 1, 0	Off	On
1, 1, 1	Off	Off

PC1, PC0		note
00	8 dB	internal pull-down at ~500K ohm.
01	4 dB	
10	12 dB	

For EMI



EMI

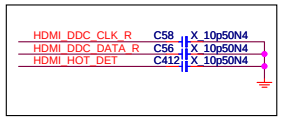
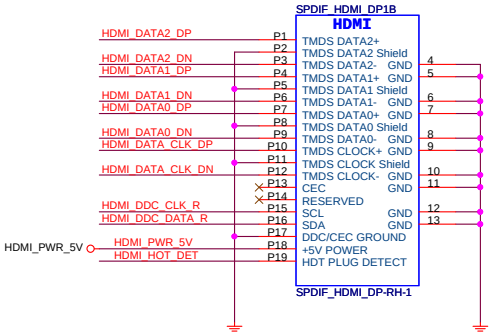
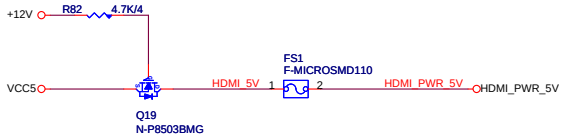
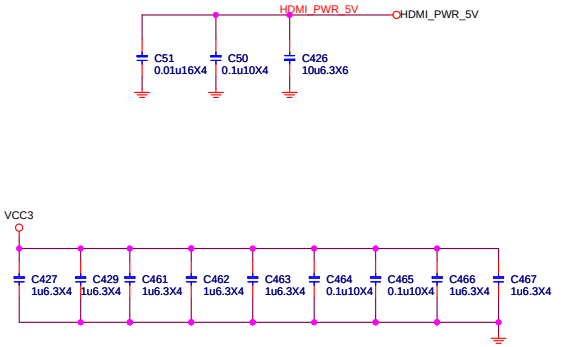


Table 8-1. PCH PCI Express Tx/RX - HDMI Signal Mappings

Port	Digital Display Interface Differential Pairs	HDMI Signals	PCH Digital Display Interface Pins
Port B	DDSP_B_TX0_DN	TMDSB_DATA2#	DDPB_0N
	DDSP_B_TX0_DP	TMDSB_DATA2	DDPB_0P
	DDSP_B_TX1_DN	TMDSB_DATA1#	DDPB_1N
	DDSP_B_TX1_DP	TMDSB_DATA1	DDPB_1P
	DDSP_B_TX2_DN	TMDSB_DATA0#	DDPB_2N
	DDSP_B_TX2_DP	TMDSB_DATA0	DDPB_2P
	DDSP_B_TX3_DN	TMDSB_CLK#	DDPB_3N
	DDSP_B_TX3_DP	TMDSB_CLK	DDPB_3P
	DDPB_HPD	DDSP_B_HPD0	Hot plug detect used by HDMI Port B.
	SDVO_CTRLCLK	HDMIB_CTRL_CLK	HDMI DDC lines for Port B
	SDVO_CTRLDATA	HDMIB_CTRL_DATA	







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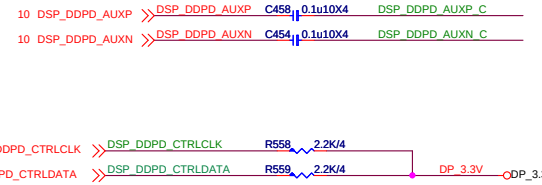
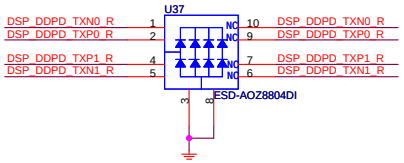
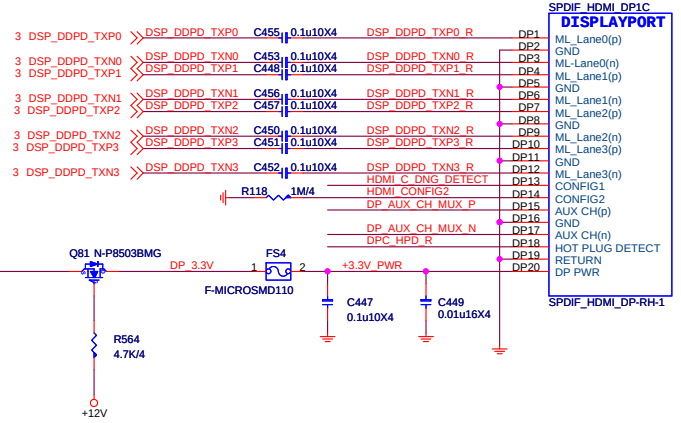
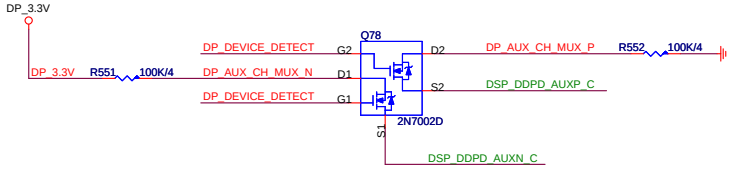
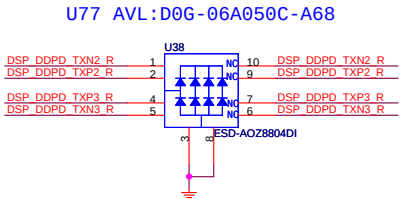
DP

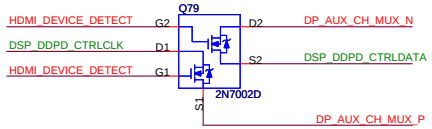


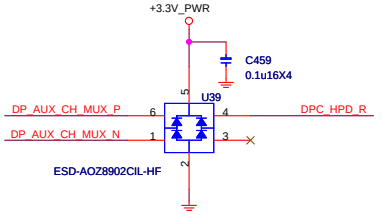


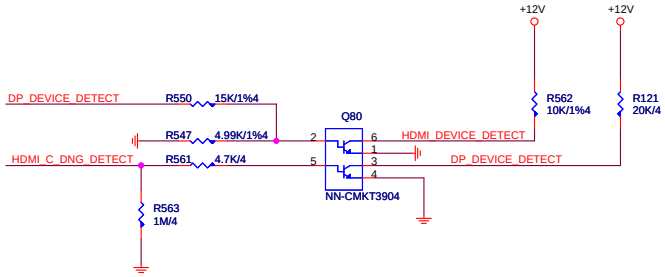


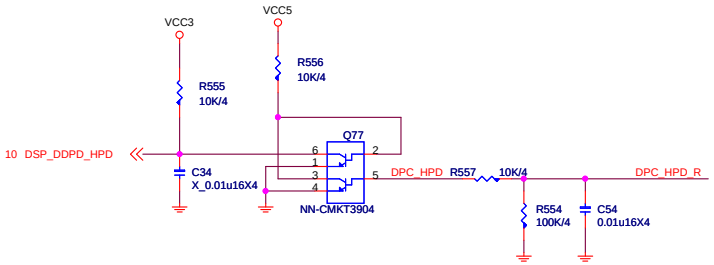












	DP	HDMI
HDMI_C_DNG_DETECT	L	H
DP_DEVICE_DETECT	H	L
HDMI_DEVICE_DETECT	L	H

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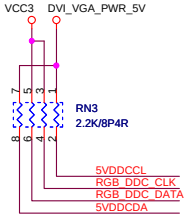
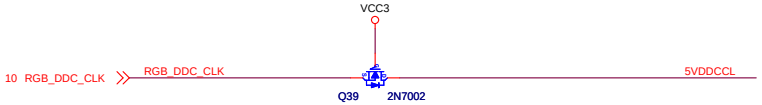
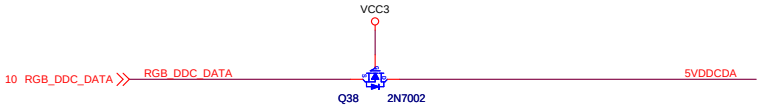
D-Sub

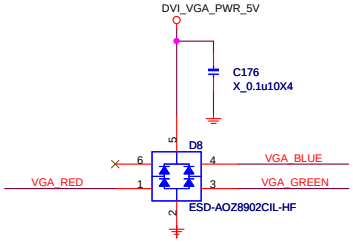
VGA: resolution of 2048x1536 pixels with 32-bit color at 75 Hz (4:3 QXGA)

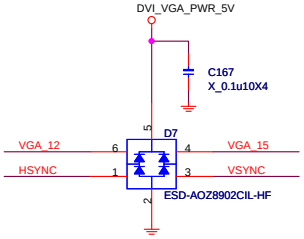
Level shift

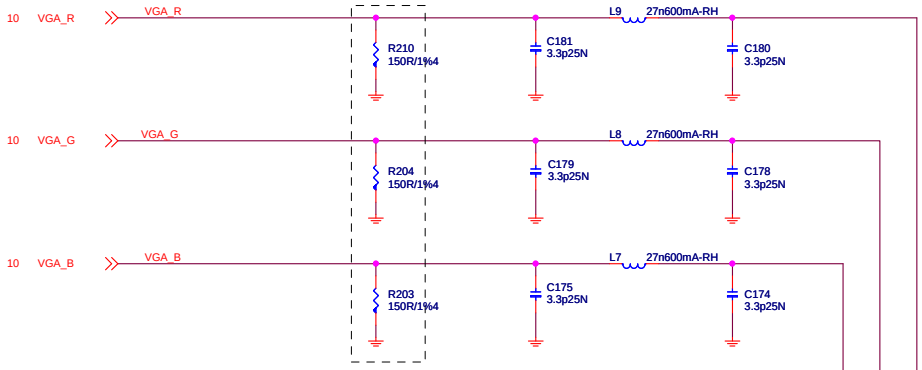




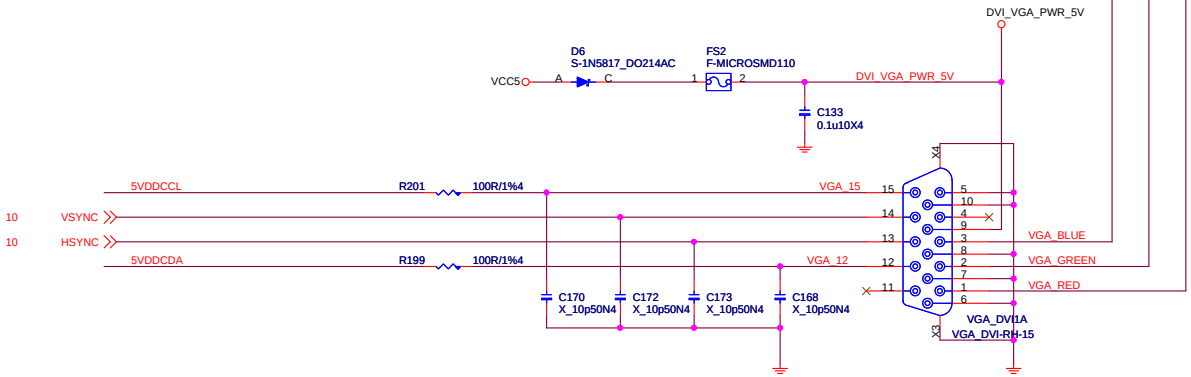








PLACE CLOSE TO VGA CONNECTOR,
WITHIN 750 MIL OF PIN



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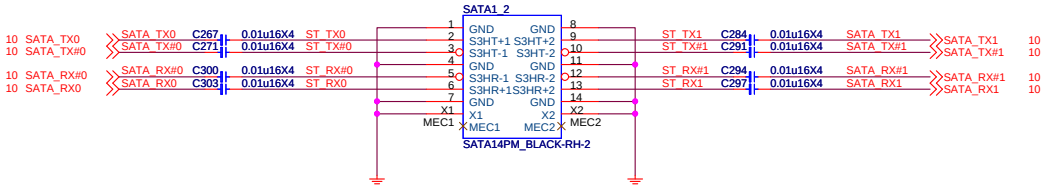
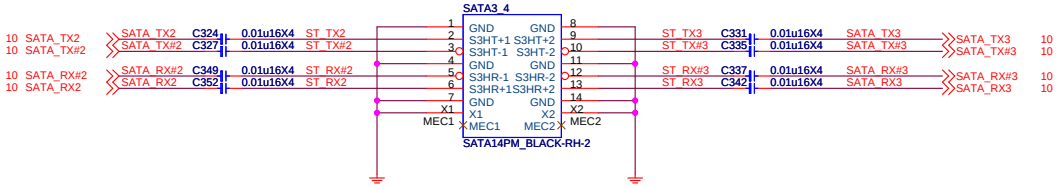
SATA 6G PORT 0,1

3.0 Black



SATA 3G PORT 2,3

3.0 Black

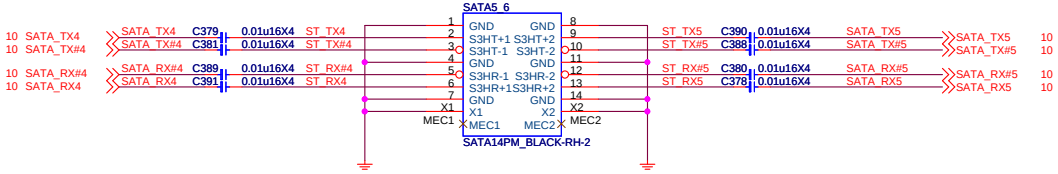


Change 90 by PM

SATA 3G PORT 4,5

3.0 Black

Z87,H87 chip support SATA3.0
B85 chip support SATA2.0



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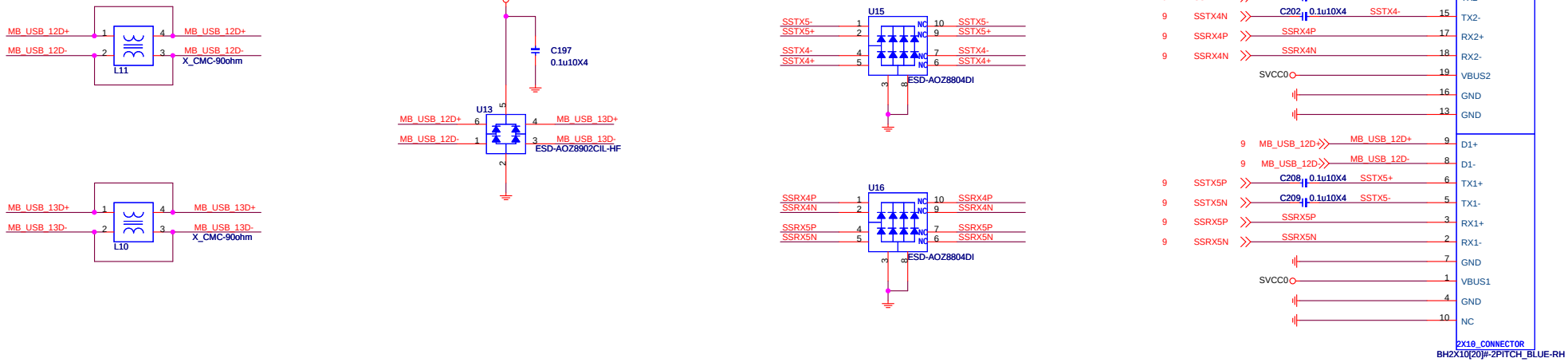

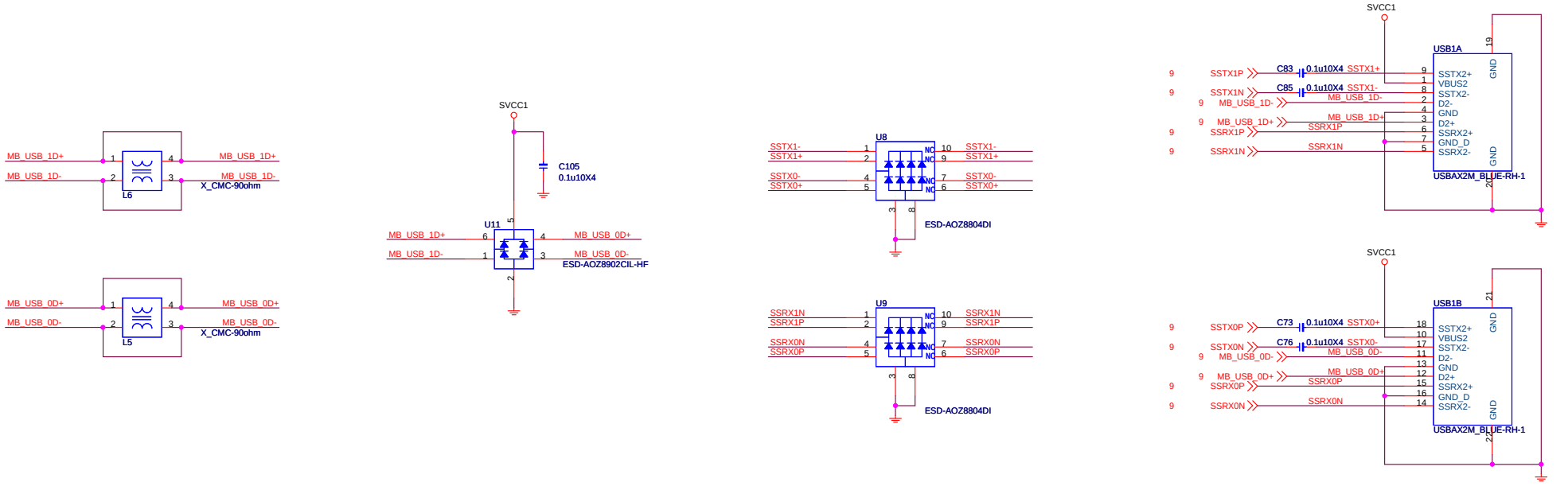

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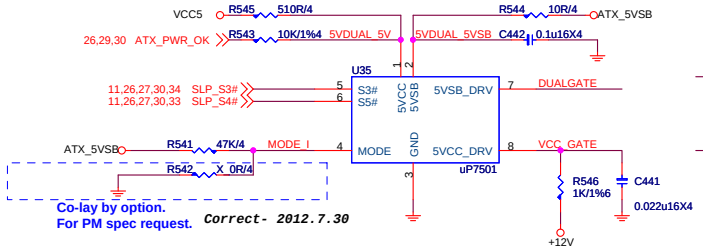
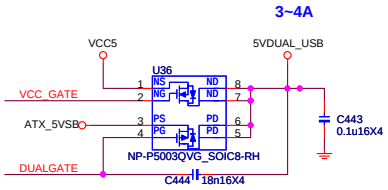
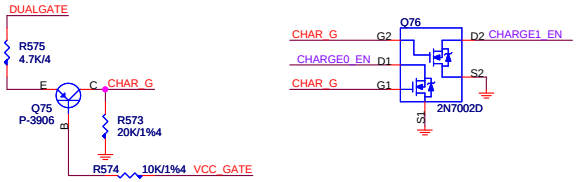
5VDUAL_USB - uP7501

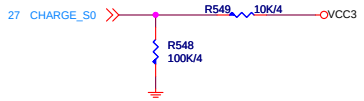




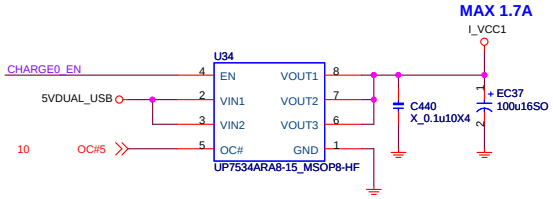


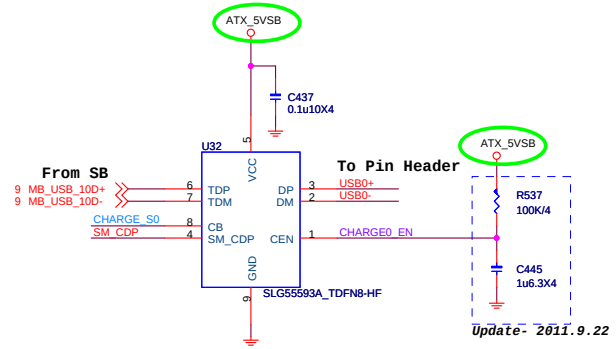
F71868 GPIO12

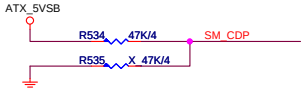
NCT6779D GPIO24
F71889 GPIO25



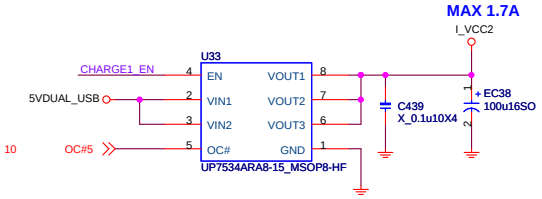
USB POWER PORT 0 For USB Charging

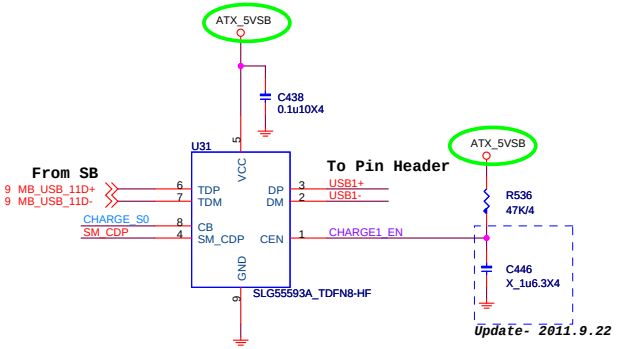




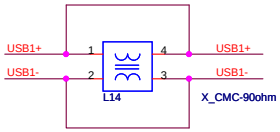


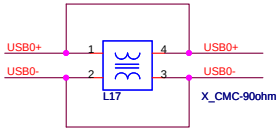
USB POWER PORT 1 For USB Charging



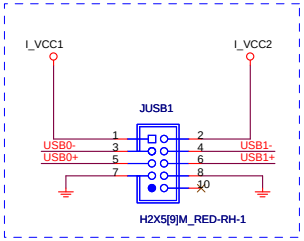


FRONT USB PORT 0,1





SLG55583A has internal ESD diode.



Please name the pin header JUSB1.

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2013.03.14 update

VCC5 R514 510R/4 R119 10R/4 ATX_5VSB
25,29,30 ATX_PWR_OK R100 10K/4 5VUSB_5V 5VUSB_5VSB C59 0.1u10X4
U30
11,25,27,30,34 SLP_S3#
11,25,27,30,33 SLP_S4#
S3# S5# 5VCC 5VSB 5VSB_DRV 5VSBDRV2
27 USB_MODE MODE GND 5VCC_DRV 5VDRV2
uP7501
R516 1K/1%6 C70 0.022u16X4 +12V

TO:NCT6779 GP72

H:SUPPORT S0/S3/S5
L:SUPPORT S0/S3

30 5VDRV2 5VDRV2

ATX_5VSB
Q73 P-P06P03LCGA_SOT89-3-HF
5VSBDRV2 C422 X_18n16X4 5V_FUSB
Q72 N-NTMFS4C05NT1G_SO8-HF
5VDRV2 VCC5
5V_FUSB F4 F-SMD1812P260TFT-HF 5V_FUSB1
F3 F-SMD1812P260TFT-HF SVCC0

ATX_5VSB
Q28 P-P06P03LCGA_SOT89-3-HF
5VSBDRV2 C69 X_18n16X4 5V_RUSB
Q24 N-NTMFS4C05NT1G_SO8-HF
5VDRV2 VCC5
5V_RUSB F1 F-SMD1812P260TFT-HF 5V_RUSB1
F2 F-SMD1812P260TFT-HF SVCC1

5V_FUSB1 5V_FUSB1 SVCC0 5V_FUSB1
EC35 470u6.3SO EC36 470u6.3SO EC28 470u6.3SO
C414 0.1u10X4 C413 0.1u10X4
C413&C414 near D18&19 Pin5

5V_RUSB1 5V_RUSB1 SVCC1 5V_RUSB1
EC13 470u6.3SO EC5 470u6.3SO EC15 470u6.3SO
C60 0.1u10X4 C43 0.1u10X4
C60&C43 near D3&D2 Pin5

5V_FUSB1
10 OC#2 R581 10K/1%4 R585 15K/1%4

SVCC0
10 OC#6 R582 10K/1%4 R586 15K/1%4

5VDRV1, 5VSBDRV1 width 12mil
D08-0300700-P16 (Itrip=2.6A; 0.015ohm) support 2 USB ports

REAR USB PORT 2,3(OC1#)

9 MB_USB_3D- MB_USB_3D-
9 MB_USB_3D+ MB_USB_3D+
L4 X_CMC-90ohm
9 MB_USB_2D- MB_USB_2D-
9 MB_USB_2D+ MB_USB_2D+
L3 X_CMC-90ohm

5V_RUSB1
D3
MB_USB_3D- MB_USB_2D-
MB_USB_3D+ MB_USB_2D+
ESD-AOZ8902CIL-HF
NEAR CONNECTOR

5V_RUSB1
PS2_USB1B
MB_USB_2D- MB_USB_2D+
MB_USB_3D- MB_USB_3D+
VCC USB2- USB2+ GND USB1- USB1+
MINIDIN_USBX2-RH-1

FRONT USB PORT 8,9 (With LAN)

9 MB_USB_8D- MB_USB_8D-
9 MB_USB_8D+ MB_USB_8D+
L1 X_CMC-90ohm
9 MB_USB_9D- MB_USB_9D-
9 MB_USB_9D+ MB_USB_9D+
L2 X_CMC-90ohm

5V_RUSB1
D2
MB_USB_9D- MB_USB_8D-
MB_USB_9D+ MB_USB_8D+
ESD-AOZ8902CIL-HF
NEAR CONNECTOR

5V_RUSB1
LAN_USB1A
MB_USB_8D- MB_USB_8D+
MB_USB_9D- MB_USB_9D+
PWR USB- USB+ GND UP DOWN GND
RJ45_USBX2_LEDX2_TX-GIGA-RH-5

for B85 remove

FRONT USB PORT 6,7(OC3#)

9 MB_USB_6D- MB_USB_6D-
9 MB_USB_6D+ MB_USB_6D+
L15 X_CMC-90ohm
9 MB_USB_7D- MB_USB_7D-
9 MB_USB_7D+ MB_USB_7D+
L18 X_CMC-90ohm

5V_FUSB1
D18
MB_USB_7D- MB_USB_6D-
MB_USB_7D+ MB_USB_6D+
ESD-AOZ8902CIL-HF
NEAR CONNECTOR

5V_FUSB1
JUSB2
MB_USB_7D- MB_USB_6D-
MB_USB_7D+ MB_USB_6D+
H2X5[9]M_BLACK-RH-3

FRONT USB PORT 4,5(OC2#)

9 MB_USB_4D- MB_USB_4D-
9 MB_USB_4D+ MB_USB_4D+
L13 X_CMC-90ohm
9 MB_USB_5D- MB_USB_5D-
9 MB_USB_5D+ MB_USB_5D+
L16 X_CMC-90ohm

5V_FUSB1
D19
MB_USB_5D- MB_USB_4D-
MB_USB_5D+ MB_USB_4D+
ESD-AOZ8902CIL-HF
NEAR CONNECTOR

5V_FUSB1
JUSB3
MB_USB_5D- MB_USB_4D-
MB_USB_5D+ MB_USB_4D+
H2X5[9]M_BLACK-RH-3

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SERIAL PORT 1

SIO_VCC3
RN11 X_2.7K/8P4R
RIA# CTSA# SINA DCDA#
R396 X_2.7K/4 DSRA#
NO USE UART PORT1
R331 2.7K/4 SIN2
R332 2.7K/4 DTRB#

C366 X_0.1u16X4
VCC5
U24 GD75232DBR_SSOP20-RH
NRIA NCTSA# NDSRA# NSINA NDCDA#
RTSA# DTRA# SOUTA
VCC RA1 RA2 RA3 RA4 RA5 DA1 DA2 DA3 GND VDD RY1 RY2 RY3 RY4 RY5 DY1 DY2 DY3 VSS
+12V_COM RIA# CTSA# DSRA# SINA DCDA# NRTSA NDTRA NSOUTA -12V_COM

C392 0.1u16X4
D13 1N4148W +12V
D12 1N4148W -12V
C394 0.1u16X4

JCOM1 H2X5[10]M_BLACK-RH
NDCDA# NSOUTA NRTSA NRIA NSINA NDTRA NDSRA# NCTSA#

CN1 X_470p50X/8P4C
NRTSA NDSRA# NCTSA# NRIA

CN2 X_470p50X/8P4C
NDCDA# NSOUTA NSINA NDTRA

都當GPIO
沒用的GPIO PIN 請PULL DOWN
FOR SIO POWER CONSUMPTION
GP73 BIOS要PO成WDT# FUNCTION

PS2 KEYBOARD & MOUSE CONNECTOR

PS2_USB
RN1 4.7K/8P4R
R2 X_1K/4
C1 0.1u10X4
KBDAT MSDAT KBCLK MSCLK
RN2 33R/8P4R
PS2_USB1A MINIDIN_USBX2-RH-1
KB_DT MS_DT KB_CK MS_CK
C8 C9 C10 C11 180p50N4
PS2_USB
C5 0.01u16X4
U3 ESD-AOZ8902CIL-HF
KB_DT KB_CK MS_DT MS_CK

SIO_VCC3 VCC3 PCH_VCC3
R524 X_0R/6
R523 0R/6

3V Analog Power

SIO_VCC3
CP1 X_CP SIO_AVCC3
L12 X_120L600mA-250
C252 0.1u10X4
C258 10u6.3X6
Closed PIN99
Closed PIN46,85
VBAT SIO_3VA
C288 0.1u10X4
C307 0.1u10X4
C350 X_10u6.3X6

SIO Pin Strap

(PIN31)RTSA# 0=2E 1=4E
(PIN32)DTRA# 0=24MHz 1=48MHz
(PIN34)SOUTA 0=Port80 Enable 1=PRT Enable
(PIN69)DSW_EN 0=Disable 1=Enable
(PIN9))(RTSB#)ORT80_EN 0=Disable 1=Enable
(PIN96)AMDPWR_EN 0=Disable 1=Enable
(PIN62)(SLP_S5_LCH#)TEST_MODE_EN 0=Disable 1=Enable

SIO_VCC3
R406 R413 R420 R322 1K/4
RTSA# DTRA# SOUTA RTSB#
R407 X_680R/4
R421 X_680R/4
R323 680R/4
SIO_3VA
R419 1K/4
AMDPWR_EN DSW_EN SLP_S5_LCH#
R307 R409 R424 680R/4
Closed PIN24,108
ATX_5VSB
SIO_VCC3
C319 0.1u10X4
C295 X_10u6.3X6
SYS3VSB_OFF R328 10K/4
SKTOCC#_R R297 X_2M/4
R299 1K/4
VBAT

HM_VREF
R278 X_10K/1%4
SYSTIN
Q51 P-3906
RT3 X_10K/1%6
C289 2.2n50X4
GNDHM

DSW_EN R521 X_0R/4 PS2_MODE >> PS2_MODE 30
AMDPWR_EN R522 0R/4

U19 NCT6779D-RH

LPC Interface
LRESET# PCICLK IOCLK LDRQ# SERIRQ LFRAME# LAD0 LAD1 LAD2 LAD3
PLTRST# 26
CK_P_33M_SIO 17
CK_48M_SIO 15
LPC_DRQ#0 18
SERIRQ 19
LPC_FRAME# 25
LPC_AD1 23
LPC_AD2 22
LPC_AD3 21
LPC_AD3 20

DSW Interface
GP50/SUSWARN#/RSTOUT3#
GP53/SUSWARN_5VDUAL
GP51/5VDUAL
GP52/SUSACK#/RSTOUT4#
GP54/SLP_SUS#/PWROK/3VSBSW#
GP55/SLP_SUS_FET/PWROK#
DPWROK#
SLPS5_Lch/GP40(TEST_MODE_EN)
DEEP_S5_0/3VSBSW/LATCH_BKFD_CUT/PWROK/ATXPGDO
DEEP_S5_1/CASEOPEN1#
11 SUSWARN#_CP R387 0R/4 SUSACK#_CP 11
SIO_5VDUAL 92
11 SLP_SUS#_CP R320 0R/4 SLP_SUS#_SIO 89
30 SYS3VSB_OFF SYS3VSB_OFF 88
11,30 DPWROK_CP R401 0R/4 DPWROK_SIO 73
SLP_S5_LCH# 62
70
72

AMD used TSIC/D but intel used GPIO
GP32/SCL/MSCL
GP31/SDA/MSDA
TSIC/GP26
TSID/PECI
OVT#/SMI#/GP03
SMI#/OVT#
SKTOCC#
PME#
11 SMLINK1_CLK R392 X_0R/4 SIO_CLK0 75
11 SMLINK1_DATA R388 X_0R/4 SIO_SDA0 76
3,10 H_PECI R288 43R/4 PECI_IO 120
2
3 H_SKTOCC# R292 X_0R/4 SKTOCC#_R 102
10 IO_PME_N IO_PME_N 65

Harddware Monitor
VIN8 VIN7 VIN6 VIN5 VIN4 VDIMM VIN2 VIN1 VIN0 CPUVcore
103 116 115 114 111 107 106 105 104 109
VIN8 AUXTIN3/VIN7 AUXTIN2/VIN6 AUXTIN1/VIN5 AUXTIN0/VIN4 VIN3/VDIMM VIN2/VLDT VIN1 VIN0 CPUVCORE
SYSTIN 113
CPUTIN 112
SYSTIN CPUTIN

FAN Control
If un-used input pin please add pull down
28 SYS1_FANTAC 3
28 SYS2_FANTAC 4
AUXFANIN2 5
28 SIO_SYS1_FAN 121
28 SIO_SYS2_FAN 122
123
28 CPU_FANTAC 124
28 SIO_CPU_FAN 125
SYSFANIN 126
127
AUXFANIN0/GP04 AUXFANIN1/GP05 AUXFANIN2/GP06 AUXFANOUT0/GP00 AUXFANOUT1/GP01 AUXFANOUT2/GP02 CPUFANIN CPUFANOUT SYSFANIN SYSFANOUT

ACPI Function
11 RSMRST# 101
29 PWRBTIN 61
11,36 PWRBTN# 60
11,25,26,30,34 SLP_S3# 64
11,25,26,30,33 SLP_S4# 84
29 SIO_PSON# 63
29 ATX_PWR_OK_SIO 80
5,10,11,31 CHIP_PWGD CHIP_PWGD 82
FP_RST#_I 83
37
18,29 PLTRST_BU1# R375 22R/4 PLTRST_BU1#_R 79
30 PLTRST_BU2# R380 22R/4 PLTRST_BU2#_R 78
77
81
29 LED_VSB 86
29 LED_VCC 87
RSMRST# PSIN# PSOUT# SLP_S3# SLP_S5# PSON#/AMD_PSON# ATXPGD PWROK RESETCONO#/GP30/OVT#/SMI# RESETCONO#/GP47 RSTOUT0#/GP74 RSTOUT1#/GP75 RSTOUT2#/GP76
PWROK/AMD_PWROK GP57/VLDT_EN GP56/VCORE_EN
PLTRST_BUS1,2,3 connect to slot or device

GPIO
(DSW_EN)GP70 69 DSW_EN
GP71 68 ME_DIS# >> ME_DIS# 14
GP72 67 USB_MODE >> USB_MODE 26
GP73 66 WDT# >> WDT# 29

Printer mode
MLED/CIRRWB1/GP27 98 TURBO_MODE#
(AMDPWR_EN)IRTX1/CIRTX1/GP25 96 AMDPWR_EN
IRRX1/GP24/CIRRX 95 CHARGE_S0 >> CHARGE_S0 25
CIRTX0/GP07 6

Port80 LED Control
SLCT/CIRRXWB0/GP46 38 RSLCT >> RSLCT 29
ACK#/GP43/DGL# 41 RACK# >> RACK# 29
ERR#/GP36 53 RERR# >> RERR# 29
AFD#/GP35 54 AFD# >> AFD# 29
STB#/GP34 55 STB# >> STB# 29
INIT#/GP41/SCL/MSCL 52 INIT# >> INIT# 29
SLIN#/GP42/BEEP/SDA/MSDA 51 SLIN# >> SLIN# 29

GPIO
PD0/GP60/LED_A 50 PPRND0 >> PPRND0 29
PD1/GP61/LED_B 49 PPRND1 >> PPRND1 29
PD2/GP62/LED_C 48 PPRND2 >> PPRND2 29
PD3/GP63/LED_D 47 PPRND3 >> PPRND3 29
PD4/GP64/LED_E 45 PPRND4 >> PPRND4 29
PD5/GP65/LED_F 44 PPRND5 >> PPRND5 29
PD6/GP66/LED_G 43 PPRND6 >> PPRND6 29
PD7/GP67/DGH# 42 PPRND7 >> PPRND7 29
BUSY/GP44/GRN_LED 40 RBUSY >> RBUSY 29
PE/GP45/YLW_LED 39 RPE >> RPE 29
GPIO 41, 46, 31 and 32 that Support Wake-Up Function

UART SIR
RIA#/GP87 36 RIA#
DCDA#/GP86 35 DCDA#
(LPT_EN)SOUTA_P80/SOUTA/GP85 34 SOUTA
SINA/GP84 33 SINA
(24_48M_SEL)DTRA#/GP83 32 DTRA#
(2E_4E_SEL)RTSA#/GP82 31 RTSA#
DSRA#/GP81 30 DSRA#
CTSA#/GP80 29 CTSA#
RIB#/GP10 14 SIO_GP10
DCDB#/GP11 13 SIO_GP11
IRTX0/SOUTB/GP12 12 SIO_GP12
IRRX0/SINB/GP13 11 SIN2
DTRB#/GP14 10 DTRB#
(UARTP80_EN)RTSB#/GP15 9 RTSB#
DSRB#/GP16 8 SIO_GP16
CTSB#/GP17 7 SIO_GP17
SIO_VCC3
R356 X_10K/4 SIO_GP10 R357 10K/4
R346 X_10K/4 SIO_GP11 R347 10K/4
R335 X_10K/4 SIO_GP12 R336 10K/4
FOR BIOS USED
SIO_VCC3
R315 10K/4 SIO_GP16
R316 10K/4 SIO_GP17

KBC Function
GA20M 27 A20GATE >> A20GATE 10,11
KBRST# 28 KBRST# >> KBRST# 10,11
GP23/MCLK 56 MSCLK
GP22/MDAT 57 MSDAT
GP21/KCLK 58 KBCLK
GP20/KDAT 59 KBDAT

LATCH_BKFD_CUT#/GP33/3VSBSW# 71
BKFD_CUT 74

Power Pin
PCHVSB 97 R303 1K/1%4 3VSB
VTT 119 CPU_VTT
VBAT 99 VBAT
CASEOPEN0# 100 R300 1M/4 VBAT
3VA 46 SIO_3VA
3VA 85
3VCC 1 SIO_VCC3
3VCC 24
AVCC 108 SIO_AVCC3
VREF 110 HM_VREF (0,2.048V)
VSS 16
VSS 94
CPUD-/AGND 117 GNDHM
C265 4.7u6.3X8
SP1 X_COPPER

HW Monitor - Voltage

SIO_VCC3
LPC_FRAME# R385 X_4.7K/4
LPC_DRQ#0 R371 X_4.7K/4
PLTRST_BU1#_R R368 820R/4
CHIP_PWGD R359 1K/4
R358 X_100K/4
FP_RST#_I R349 4.7K/4
PLTRST# R384 X_4.7K/4

PECI_IO C266 X_47p50N4
R289 X_1K/4
SIO_5VDUAL R312 1K/4
SYSFANIN R310 1K/4
AUXFANIN2 R309 1K/4
TURBO_MODE# R20 1K/4
CPUTIN R284 1K/4
USB_MODE R431 10K/4

VCCP R276 10K/1%4 CPUVcore
R279 10K/1%4
C268 10u6.3X6
+12V R291 200K/1%4 VIN0
R287 20K/1%4
C263 0.1u16X4
VCC5 R290 12K/1%4 VIN1
R286 3K/1%4
C262 0.1u10X4
CPU_VTT R280 10K/1%4 VIN2
C272 10u6.3X6
VCC_DDR R272 10K/1%4 VDIMM
Q50 2N7002
R273 10K/1%4
VCC5
C257 10u6.3X6
PCH_1P05 R285 10K/1%4 VIN4
C282 10u6.3X6
CPU_CORE0 R283 10K/1%4 VIN5
C281 10u6.3X6
CPU_GFX R282 10K/1%4 VIN6
C280 10u6.3X6
CPU_RING R281 10K/1%4 VIN7
C279 10u6.3X6
CPU_SA R298 10K/1%4 VIN8
C293 10u6.3X6

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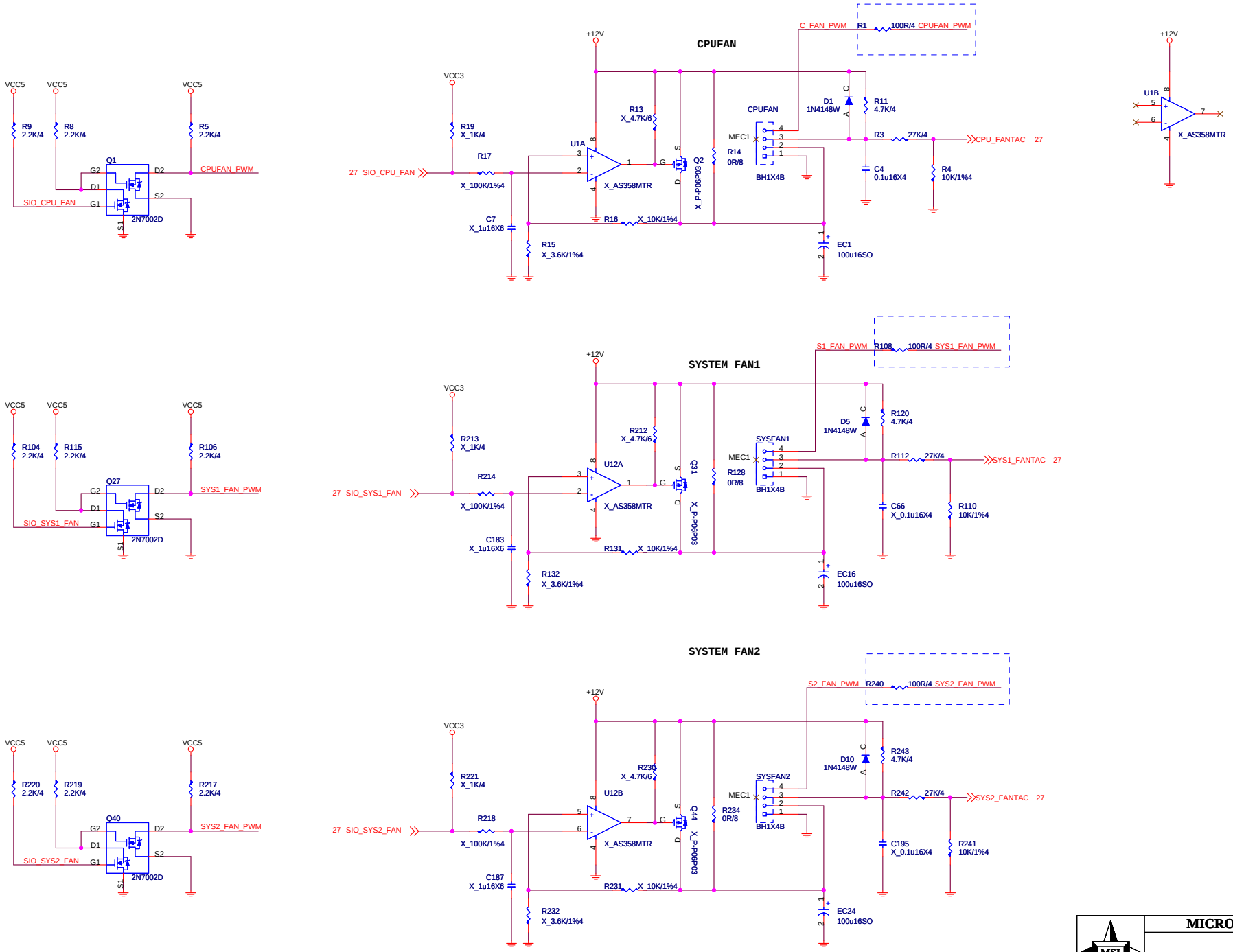
FAN-COUNTROL CIRCUIT



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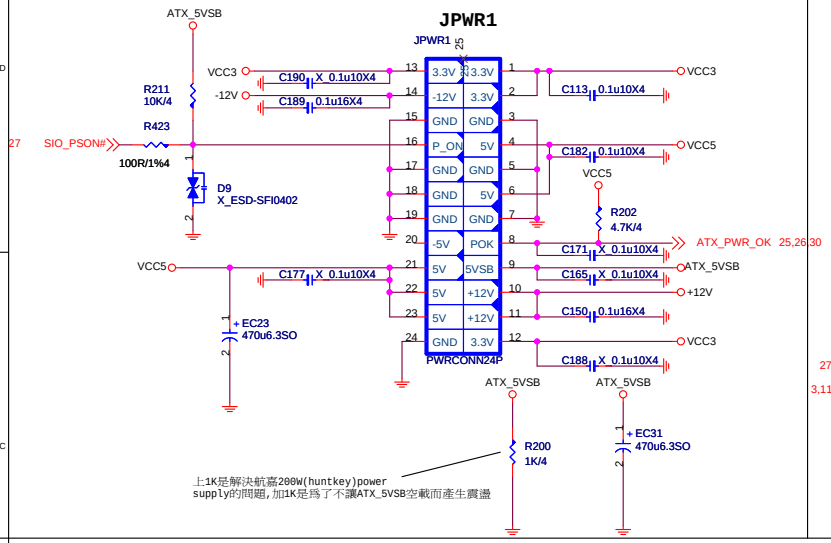
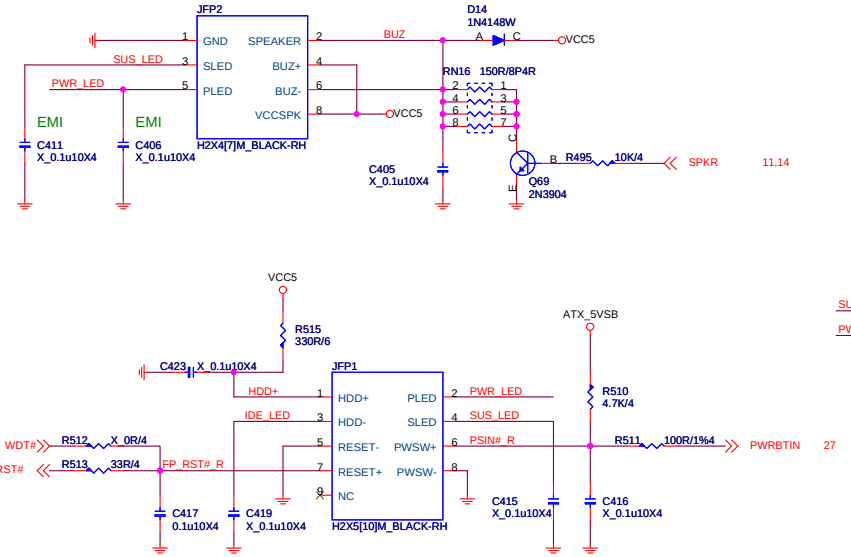
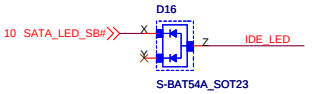
ATX POWER CONNECTOR

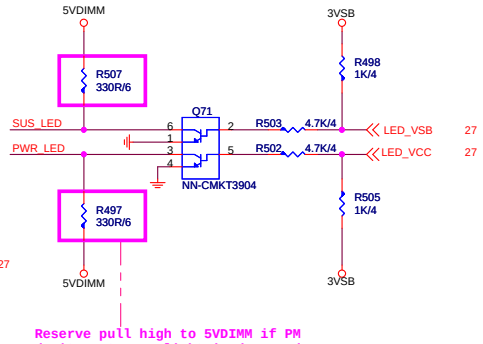


FRONT PANNEL

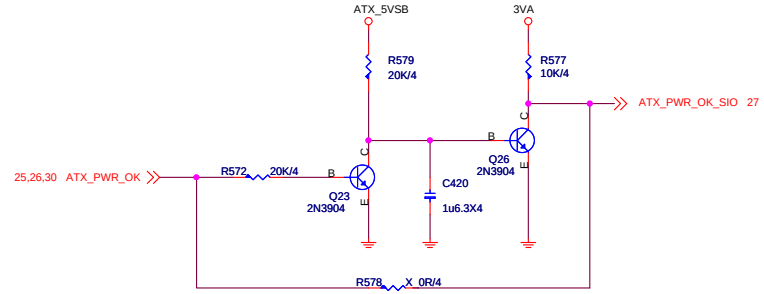




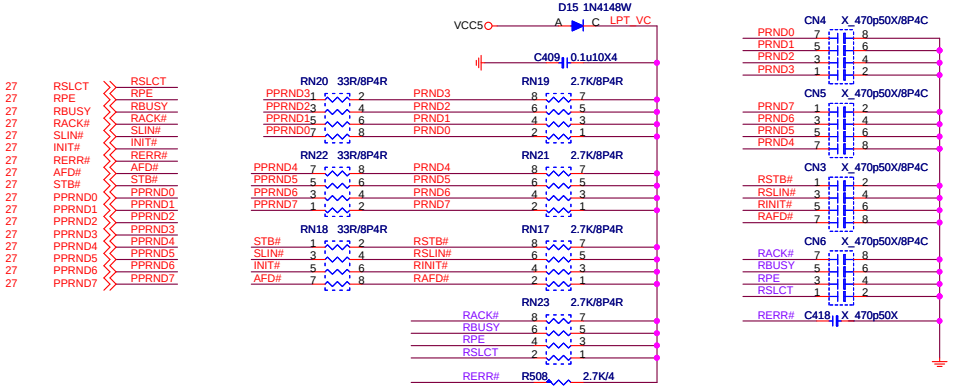
LED (for Fintek 71869)



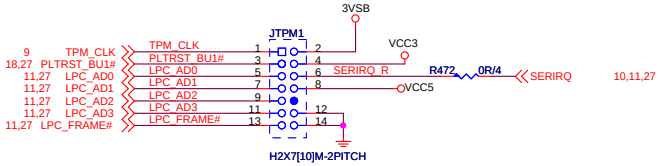
5VCC leakage from ATXPGD.(NCT6779 PIN80)

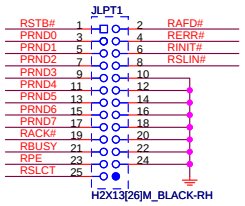


PARALLAL PORT



TPM





N31-2131151-H06 : 2.0mm

N31-2131131-H06 : 2.54mm

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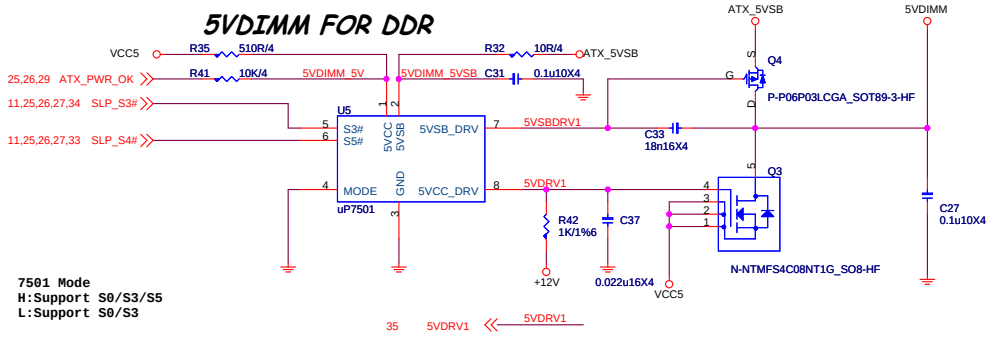
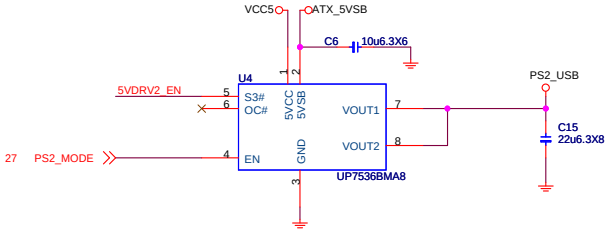
5VDIMM FOR DDR

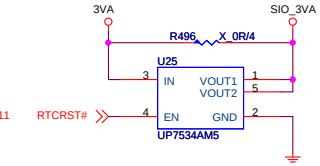


7501 Mode
H:Support S0/S3/S5
L:Support S0/S3

PS2 Power



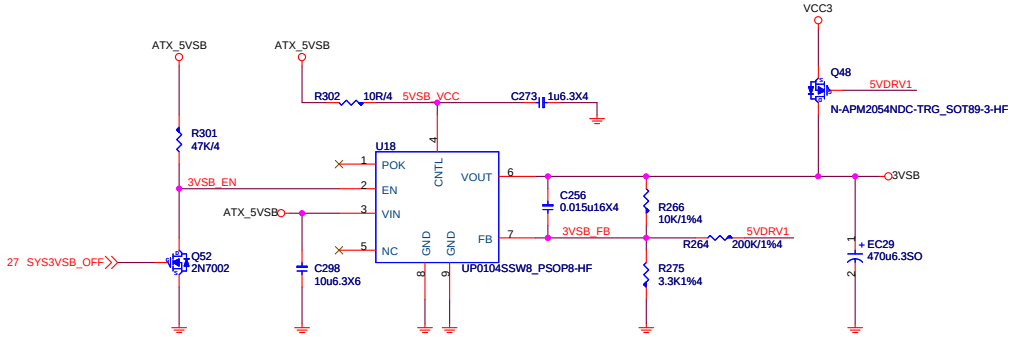
隔離PCH&SIO的3VA



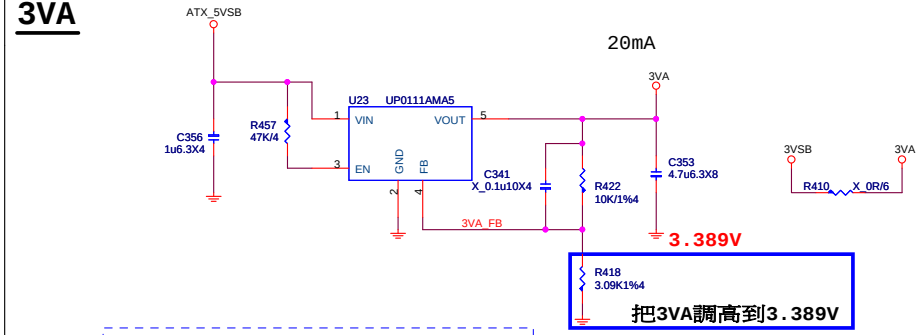
3VSB

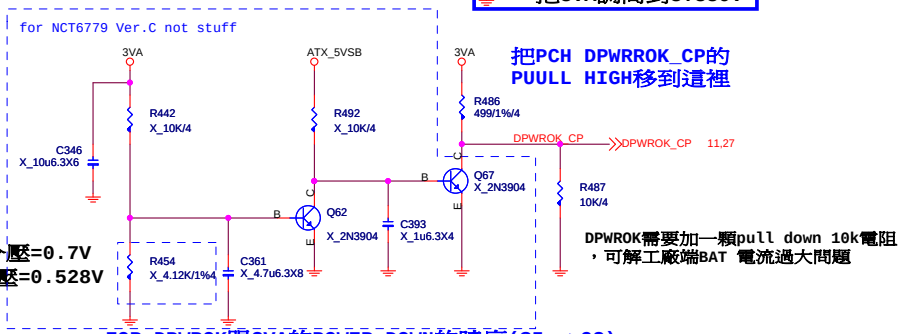
0.216+0.2+1.5+0.67=2.586A
PCH:216mA
LAN:200mA
PCIE Slot:375mA x4
up0104 ME Power:0.67A

Q48 AVL:D03-3057L19-N03

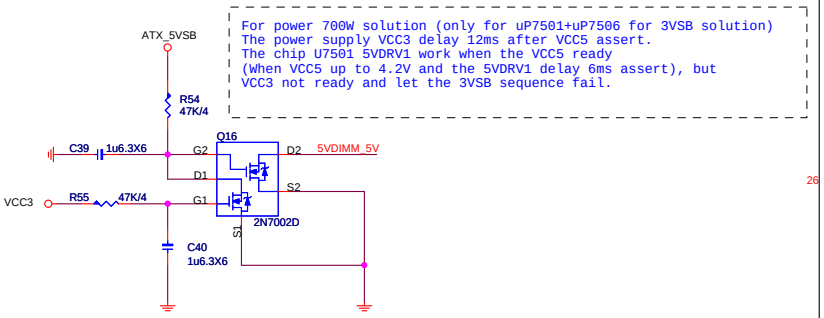


3VA

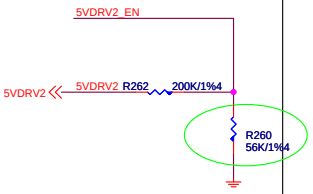


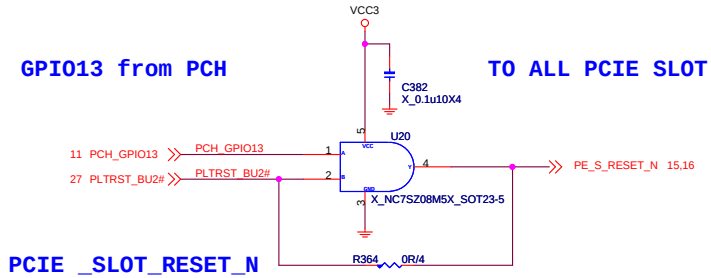


FOR DPWROK跟3VA的POWER DOWN的時序(S5-->G3)



USB MODE





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Custom	ACPI controller UPI	11

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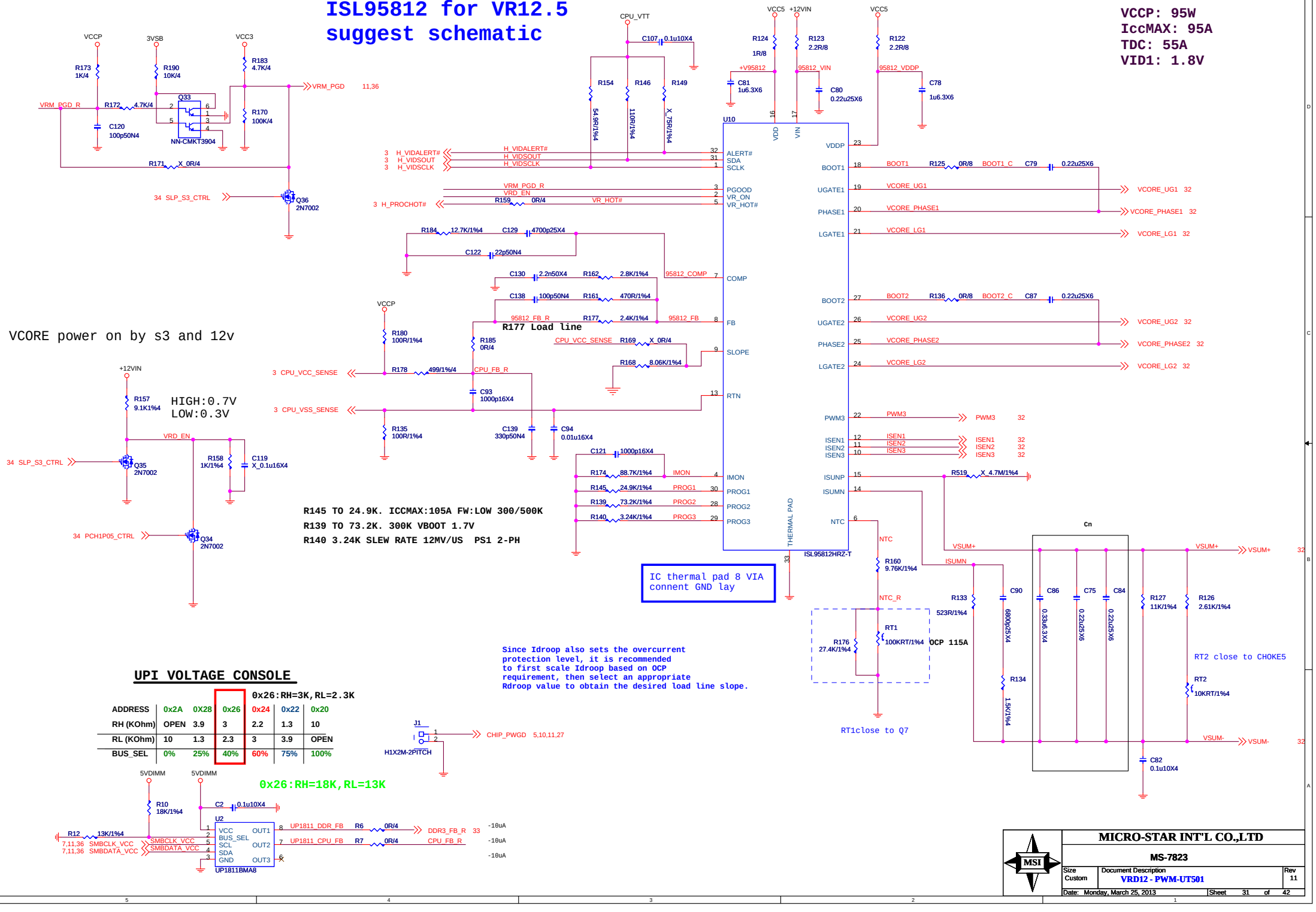
ISL95812 for VR12.5 suggest schematic

VCCP: 95W
IccMAX: 95A
TDC: 55A
VID1: 1.8V



VCORE power on by s3 and 12v

UPI VOLTAGE CONSOLE

0x26:RH=3K,RL=2.3K

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%

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

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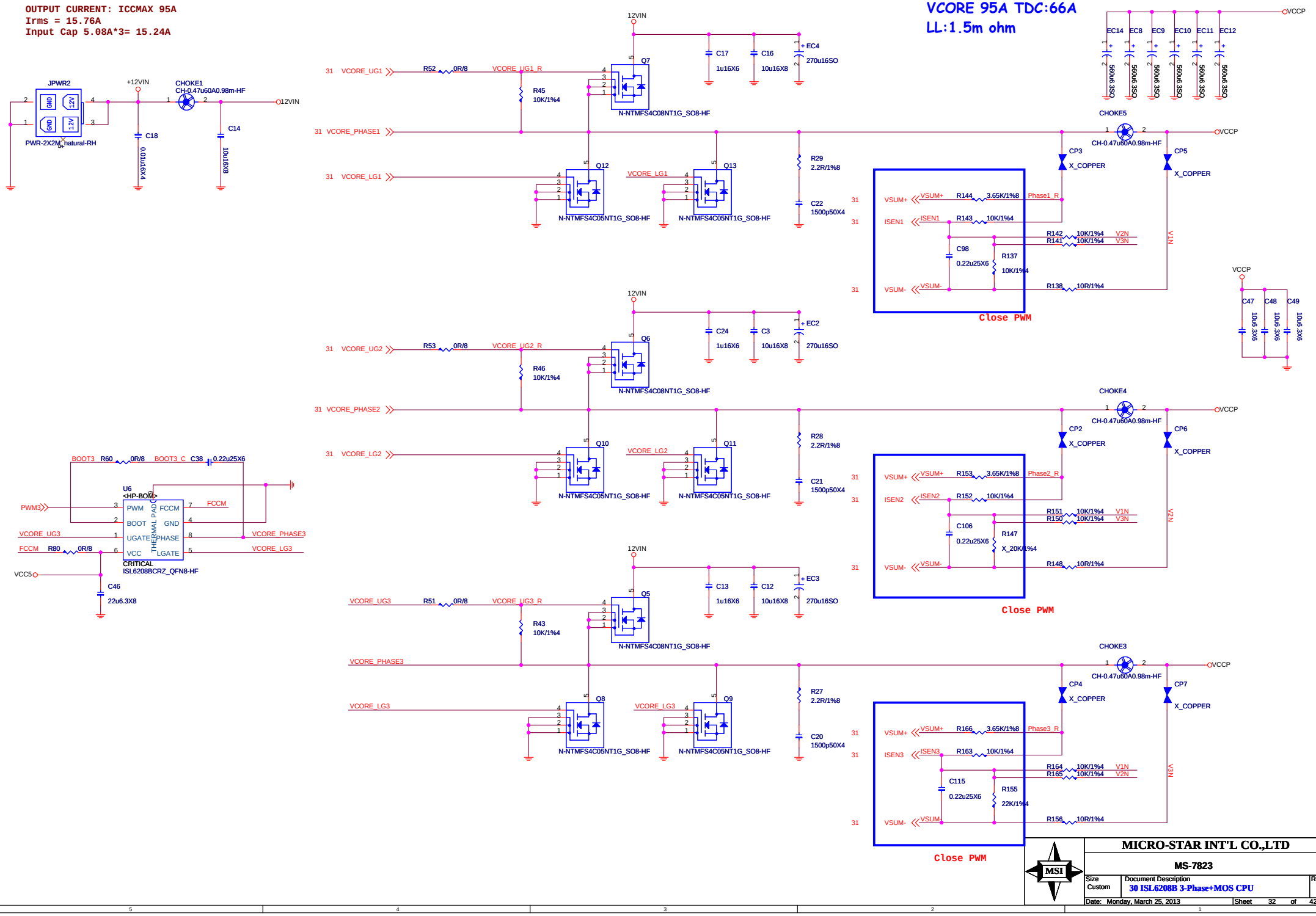
OUTPUT CURRENT: ICCMAX 95A
Irms = 15.76A
Input Cap 5.08A*3= 15.24A

VCORE 95A TDC:66A
LL:1.5m ohm



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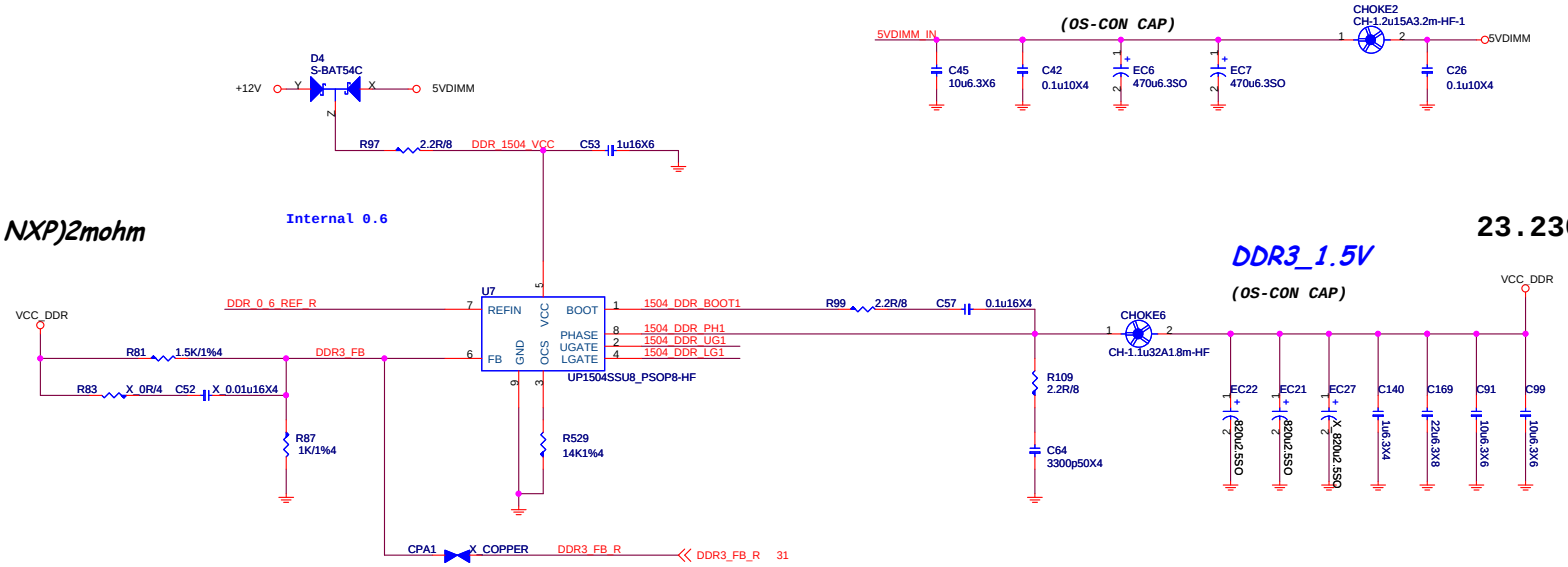
DDR Power:1.5V

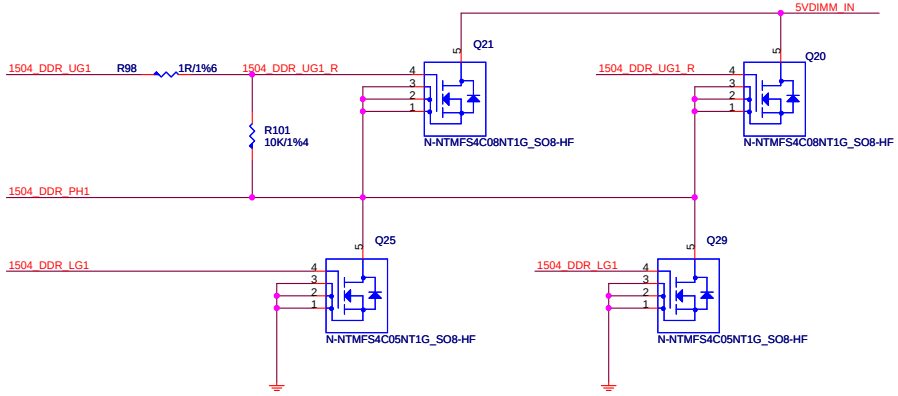
DDR3_1.5V 4.2A+12A+1.115A+5.921A=23.236A

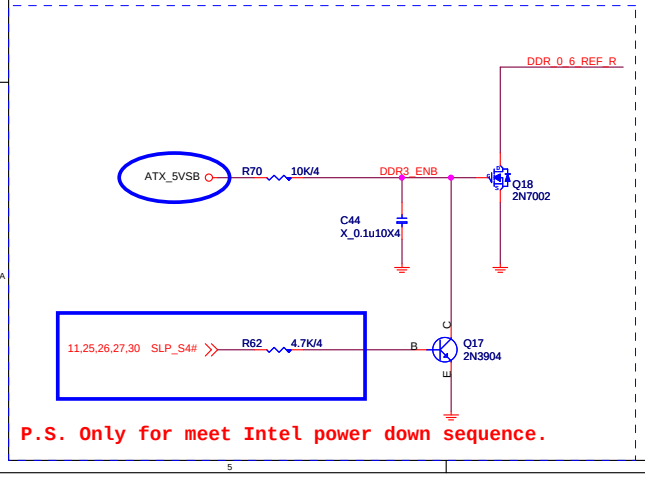
4.2A FOR CPU
12A FOR 4DIMM
1.115A FOR VTT_DDR
5.921A FOR PCH

*OCP 23.236A*1.5=34.845A*
*OCP=[20uA*Rocs(R320)]/4*Rdson(Low side NXP)2mohm*
R529=14K ohm

Iripple=10.64807288A
4.7*2*1=9.4A

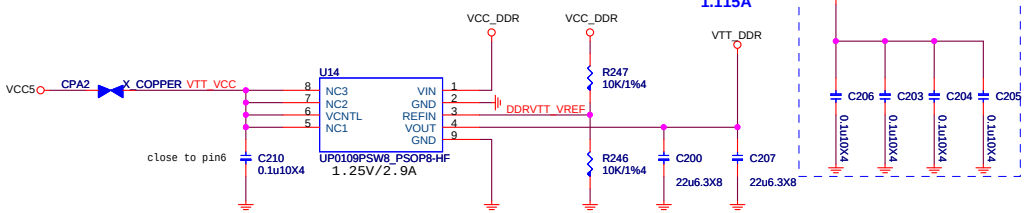






DDR VTT Power

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



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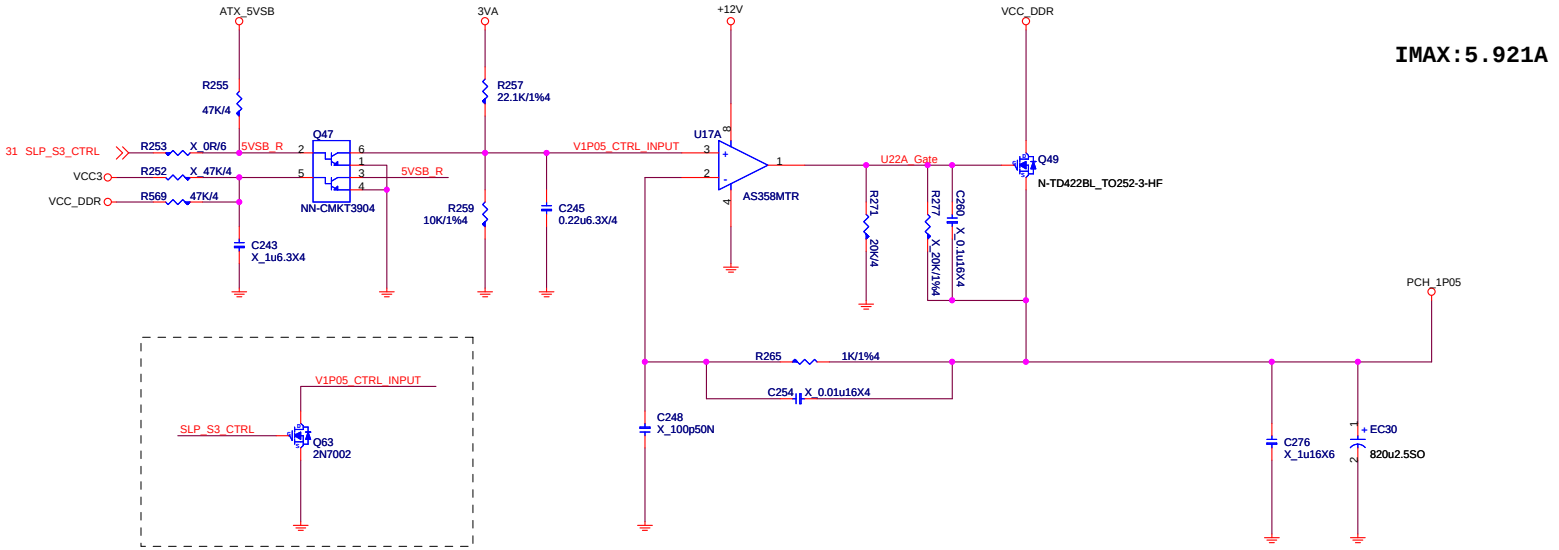
PCH Power:1.05V

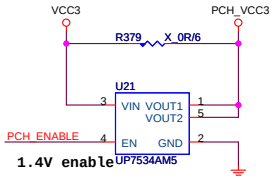
PCH Core 5.921A



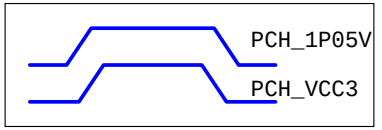
IMAX:5.921A

PCH Power:3.3V

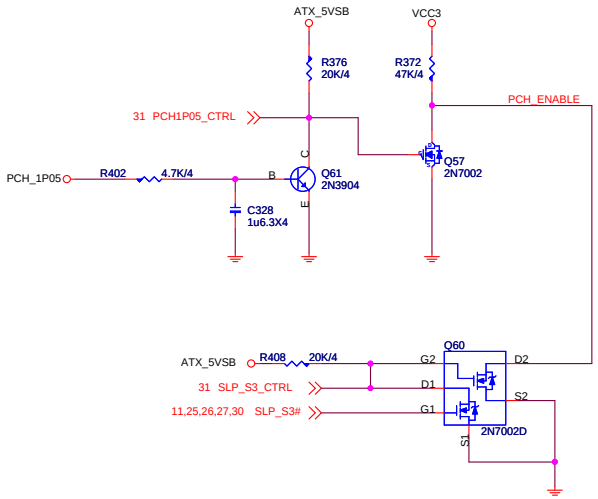
0.133A



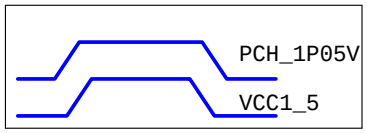
VCC1_5_CTRL_INPUT:
0:1P05V low or S3 low
1:1P05V HIGH and S3 HIGH



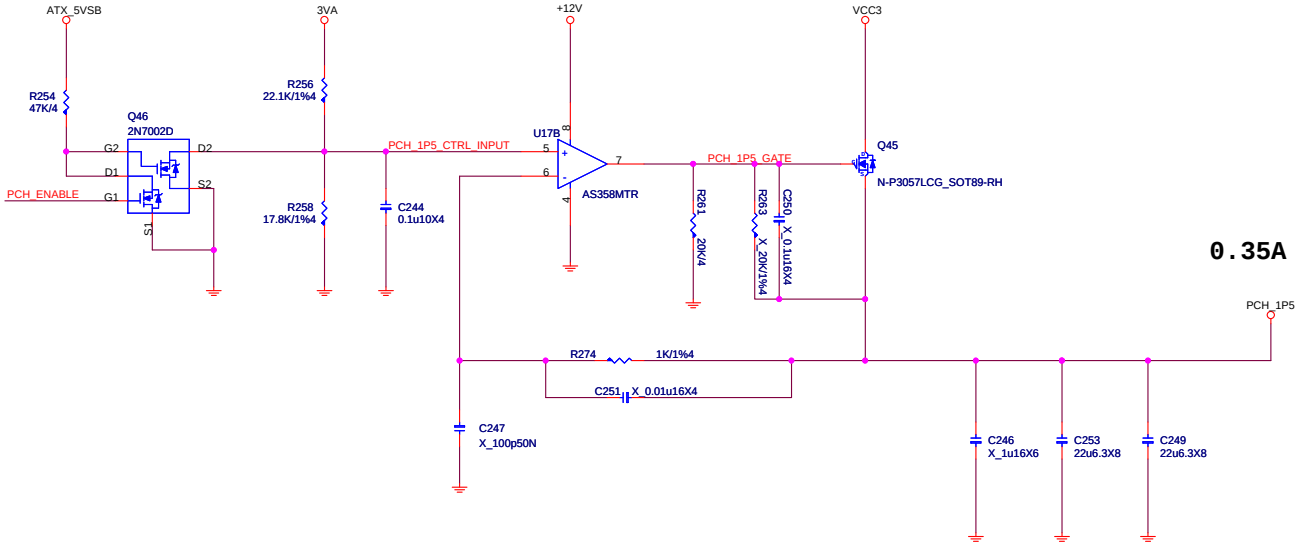
Waitting PCH_1P05 Ready



VCC1_5_CTRL_INPUT:
0:1P05V low or S3 low
1:1P05V HIGH and S3 HIGH



PCH Power:1.5V



0.35A

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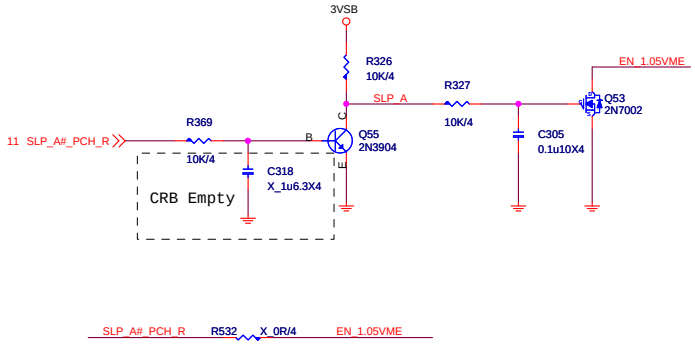
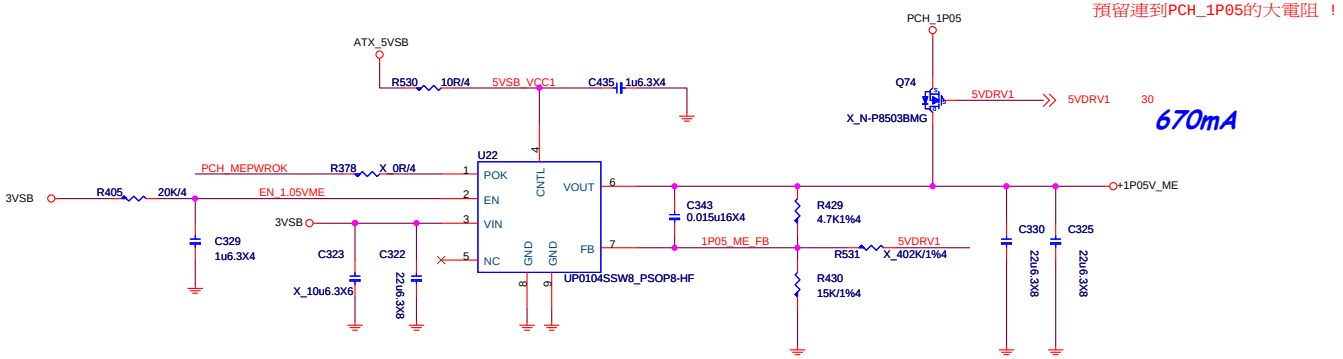
SLP_A

ME Power Control

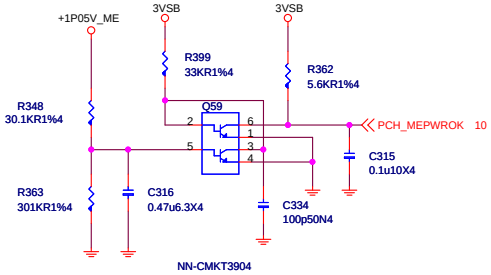


+1.05V_ME(VCCIO_ME)

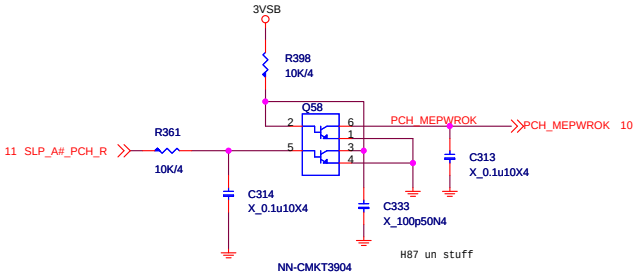
預留連到PCH_1P05的大電阻 ！



PCH_MEPWROK

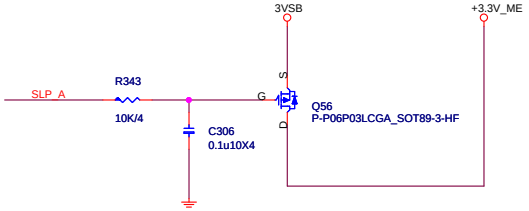


VccASW active to APWROK high 1ms



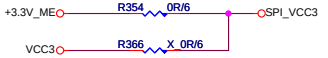
APWROK falling to VccASW falling 40ns

+3.3V_ME



For INTEL ME BUG

Z87->Stuff R366
H87->Stuff R354



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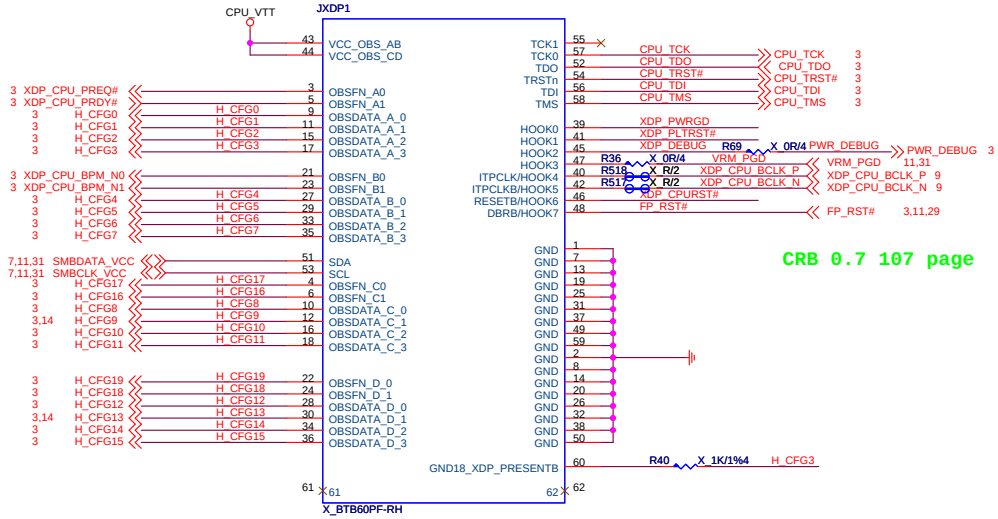
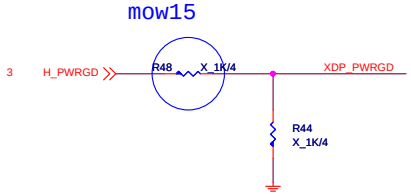
Reserve debug port 5020





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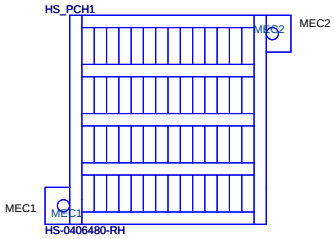
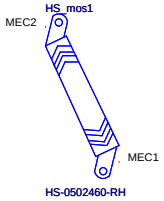
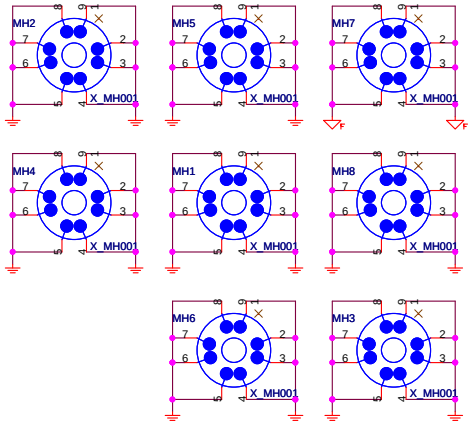
HEATSINK



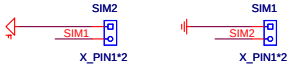


PK0-0782311-G37,精成,23,寶安恩斯邁廠(MSIS)
PK0-0782311-G37,精成,77,寶安恩斯邁廠(MSIS)
PK0-0782311-E48,競華,23,寶安恩斯邁廠(MSIS)
PK0-0782311-E48,競華,77,寶安恩斯邁廠(MSIS)

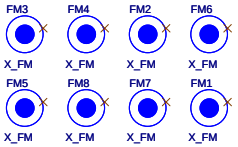
Mounting Holes



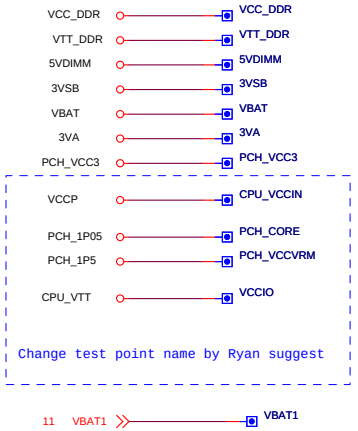
Simulation



Optical Fiducial Marks-120



Test point



SBC_LA1 — Label SBC — SBC LABEL

THX_LA2 — Label THX — X_THX LABEL

THX Virtual Part Number

LA3 — AMI_BIOS LABLE — BIOS_LABLE

HDMI_LA1 — Label HDMI — HDMI LABEL

HDMI_RLA1 — Real Label HDMI — X_HDMI_RLA

LABEL2 — MKT — X_BUY

BAT1_X1 — BAT-BCR2032P-RH

CPU_H1 — CPU 鐵座 — CPU_H1

Label OPT.

LA2 — Label 601-7823-XXX — MKT-LABEL — **H87**

LA10 — Label 601-7823-XXX — MKT-LABEL — **Z87**

LA11 — Label 601-7823-XXX — MKT-LABEL — **H87-MCJ**

LA12 — Label 601-7823-XXX — MKT-LABEL — **B85**

LA13 — Label 601-7823-XXX — MKT-LABEL — **B85-MCJ**

Chip OPT.

U100 — LPT Z87 — Lynx PointZ87 — **Z87**

U101 — LPT Z87 — Lynx PointB85 — **B85**

MCJ OPT.

DP — Displayport Connector — DISPO20PM_BLACK-HF-2

FAN3 — SYSFAN 3PIN Connector — BH1X3B-FR_WHITE-RH

Z87 SPI OPT.

SPI10 — SPI 8M — W25Q64FVSSIQ-HF

D1000 — MOS — 2N7002

MS-7823-1.1 主BOM爲H87

OPT	Configure	BOM	Function	GPIO Setting(GP10/GP11/GP12)
	H87M-G43	601-7823-04S	MS-7823 11 H87 H87M-G43,H87,LGA1150,4DDR3,2PCI-Ex16,2PCI-Ex1 6SATA3,4USB3,HD Audio,Gb LAN,HDMI,DP,DVI,D-Sub	0,0,0
A	Z87M-G43	601-7823-05S	MS-7823 11 OPT:A Z87 Z87M-G43,Z87,LGA1150,4DDR3,2PCI-Ex16,2PCI-Ex1 6SATA3,4USB3,HD Audio,Gb LAN,HDMI,DP,DVI,D-Sub	0,0,0
B	H87M-S01(MCJ)	601-7823-06S	MS-7823 11 OPT:B H87 H87M-S01,H87,LGA1150,4DDR3,2PCI-Ex16,2PCI-Ex1 6SATA3,4USB3,HD Audio,Gb LAN,DP,DVI,D-Sub	1,0,0
C	B85M-G43	601-7823-07S	MS-7823 11 OPT:C B85 B85M-G43,B85,LGA1150,4DDR3,2PCI-Ex16,2PCI-Ex1 4SATA3,4USB3,HD Audio,Gb LAN,HDMI,DP,DVI,D-Sub	0,0,0
D	B85M-S01(MCJ)	601-7823-08S	MS-7823 11 OPT:D B85 B85M-S01,B85,LGA1150,4DDR3,2PCI-Ex16,2PCI-Ex1 4SATA3,4USB3,HD Audio,Gb LAN,DP,DVI,D-Sub	1,0,0

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