MS-7732 Ver: 1.1 ATX : 304.8 X 205mm

CPU:

INTEL - Sandy Bridge LGA 1155

System Chipset:

INTEL - Cougar Point PCH(H61)

OnBoard Chipset:

HD Audio Codec:RTL887 Co-lay 892
LAN:RTL 8111E 10/100/1000 , Co-lay 8105E 10/100
SIO:FIN71869AD
Flash ROM: 32Mb SPI (PCH)

Main Memory:

DDRIII (1066/1333MHz) * 2 (Dual Channel)

Expansion Slots:

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

PWM:

Controller:VRD12 UP1625 3Phase
CPU+GPU: UP6282 MOSFET Driver
CPU VTT: IP6103
CPU SA : OP+MOS
DDR: UP6103
PCH: UP6103

ACPI:

UPI

Other:

SATA3.0 x2 (ASM1061)+ SATA2.0 x4 (PCH)
USB2.0 RearX4 Front x4
USB3.0 RearX2
D-SUB *1 DVI*1
TPM Header *1
COM Header *1
LPT Header *1
on BOARD BUZZER

三個BOM:

A.H61 Full Spec(全固)
B.H61 No USB3 & SATA 6G(全固)
C.H61 網吧板(全固)

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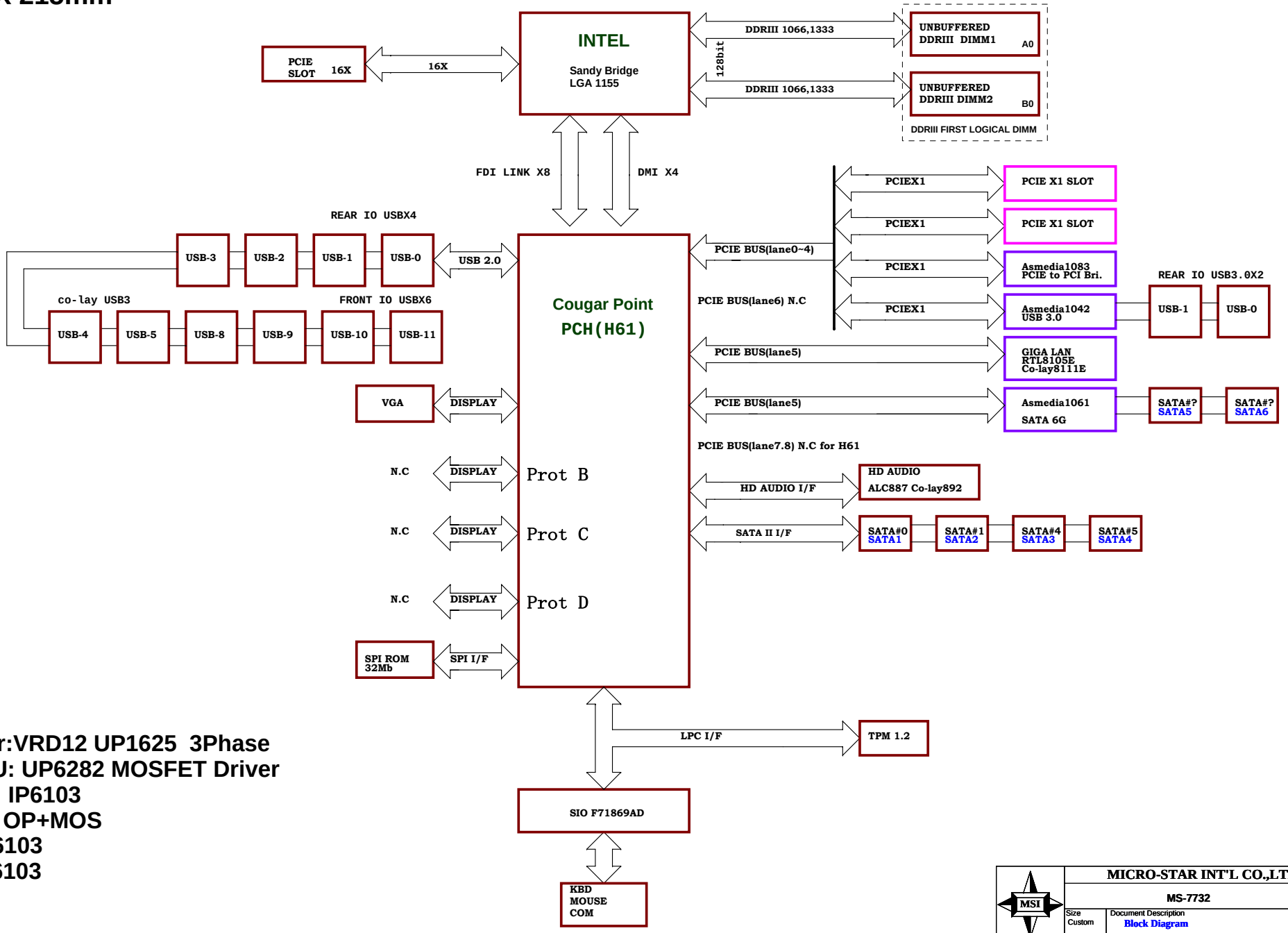
MS-7732

Size: Custom | Document Description: Cover Sheet | Rev: 1.1

Date: Tuesday, May 17, 2011 | Sheet 1 of 37

MS-7732 Ver: 1.0

ATX : 305 X 215mm



PWM:

- Controller:VRD12 UP1625 3Phase
- CPU+GPU: UP6282 MOSFET Driver
- CPU VTT: IP6103
- CPU SA : OP+MOS
- DDR: UP6103
- PCH: UP6103

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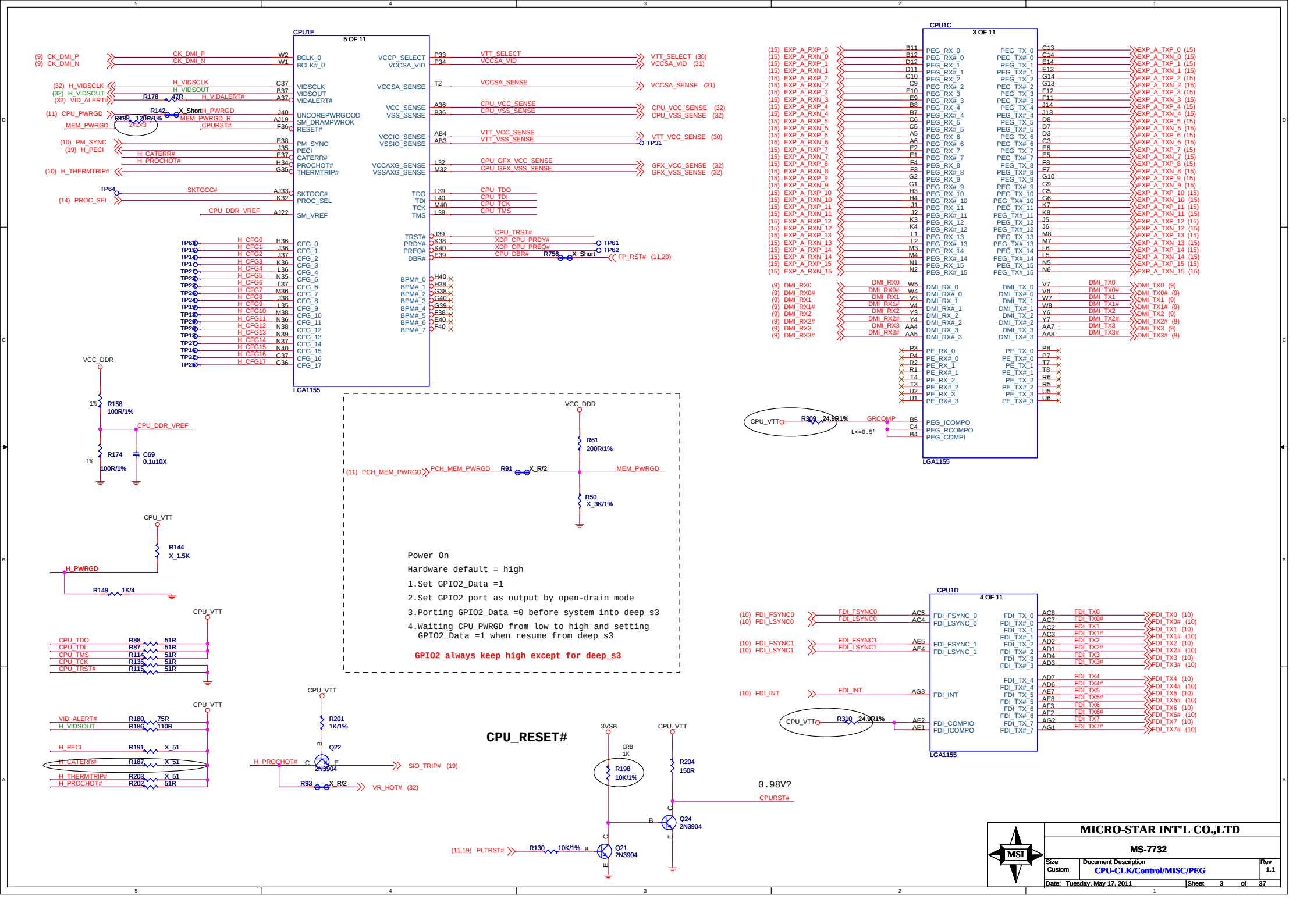
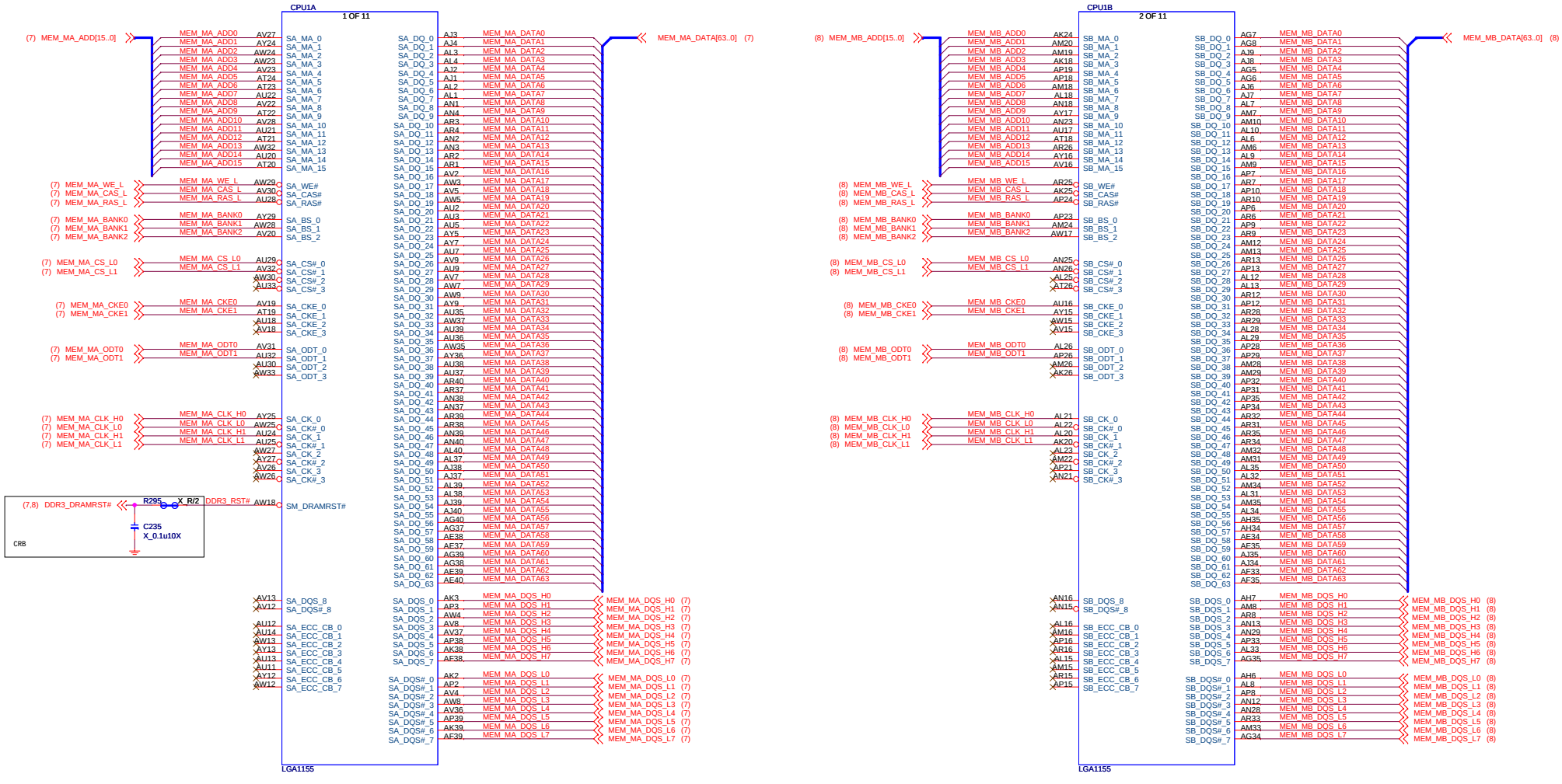
Size: Custom | Document Description: Block Diagram | Rev: 1.1

Date: Tuesday, May 17, 2011 | Sheet 2 of 37


CPU1E
5 OF 11
LGA1155
CPU1C
3 OF 11
LGA1155
CPU1D
4 OF 11
LGA1155
Power On
Hardware default = high
1.Set GPIO2_Data =1
2.Set GPIO2 port as output by open-drain mode
3.Porting GPIO2_Data =0 before system into deep_s3
4.Waiting CPU_PWRGD from low to high and setting GPIO2_Data =1 when resume from deep_s3
GPIO2 always keep high except for deep_s3
CPU_RESET#
0.98V?
MICRO-STAR INT'L CO.,LTD
MS-7732
CPU-CLK/Control/MISC/PEG
Size Custom
Rev 1.1
Date: Tuesday, May 17, 2011
Sheet 3 of 37



MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
Custom	CPU-Memory	1.1

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(1.05V / 1.00V)

(0.925V / 0.85V)

VCCP: 112A
CPU_VTT: 8.2A
CPU_SA: 8.8A
VCC_DDR: 4.5A
VCC1_8: 1.6A

+CPU_GFX Decoupling

+1.5V_DDR3-Decoupling

CPU SOCKET CAVITY CAPS

CPU SOCKET CAVITY CAPS

+CPU_VTT Decoupling

CPU SOCKET CAVITY CAPS

+CPU_VCCP-Decoupling

PLACE ALL 0805 CAPS INSIDE CPU SOCKET CAVITY

MICRO-STAR INT'L CO.,LTD	
MS-7732	
Size: Custom	Document Description: CPU-Power
Rev: 1.1	
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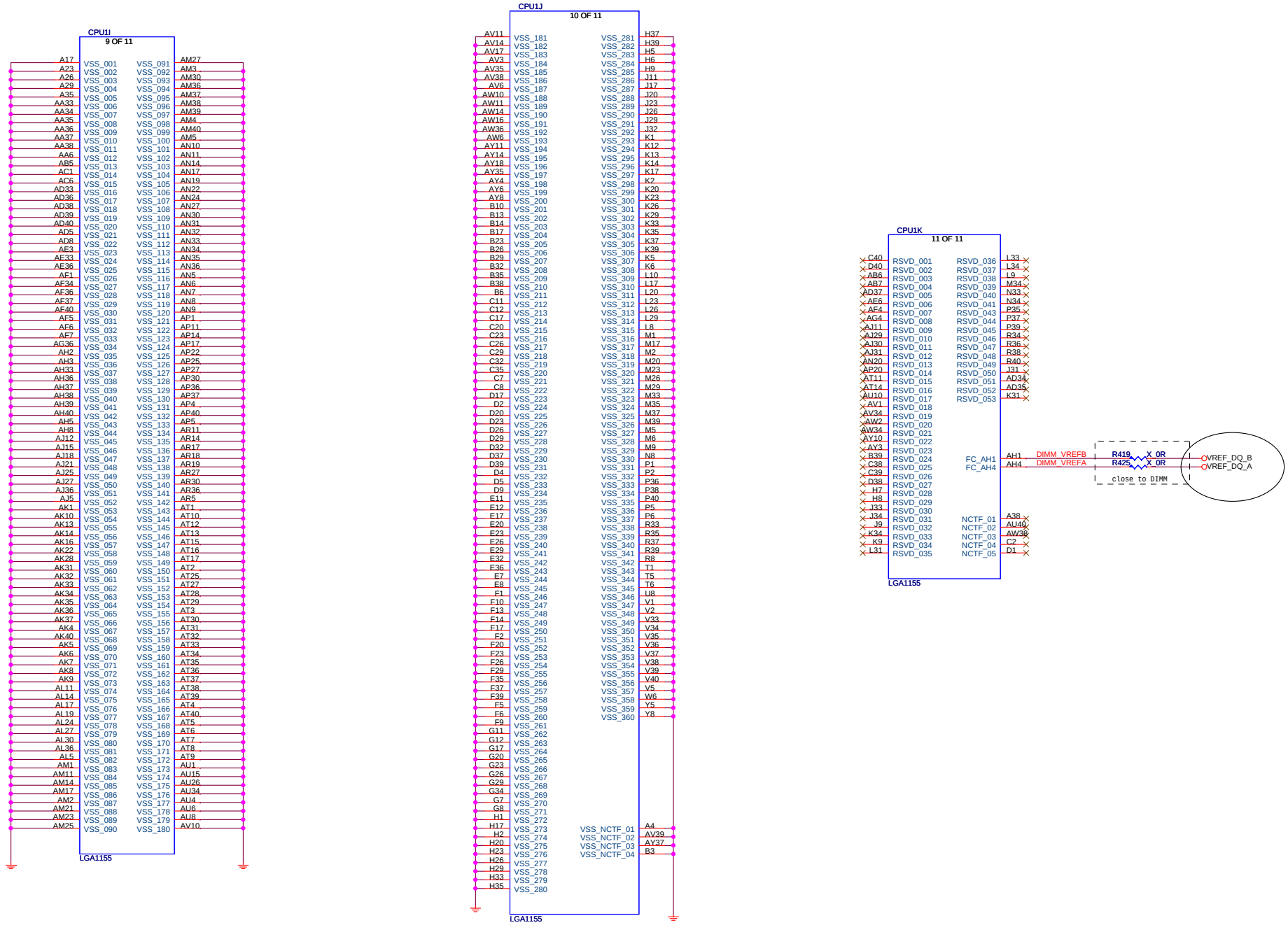

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MS-7732		
Size: Custom	Document Description: CPU-GND	Rev: 1.1
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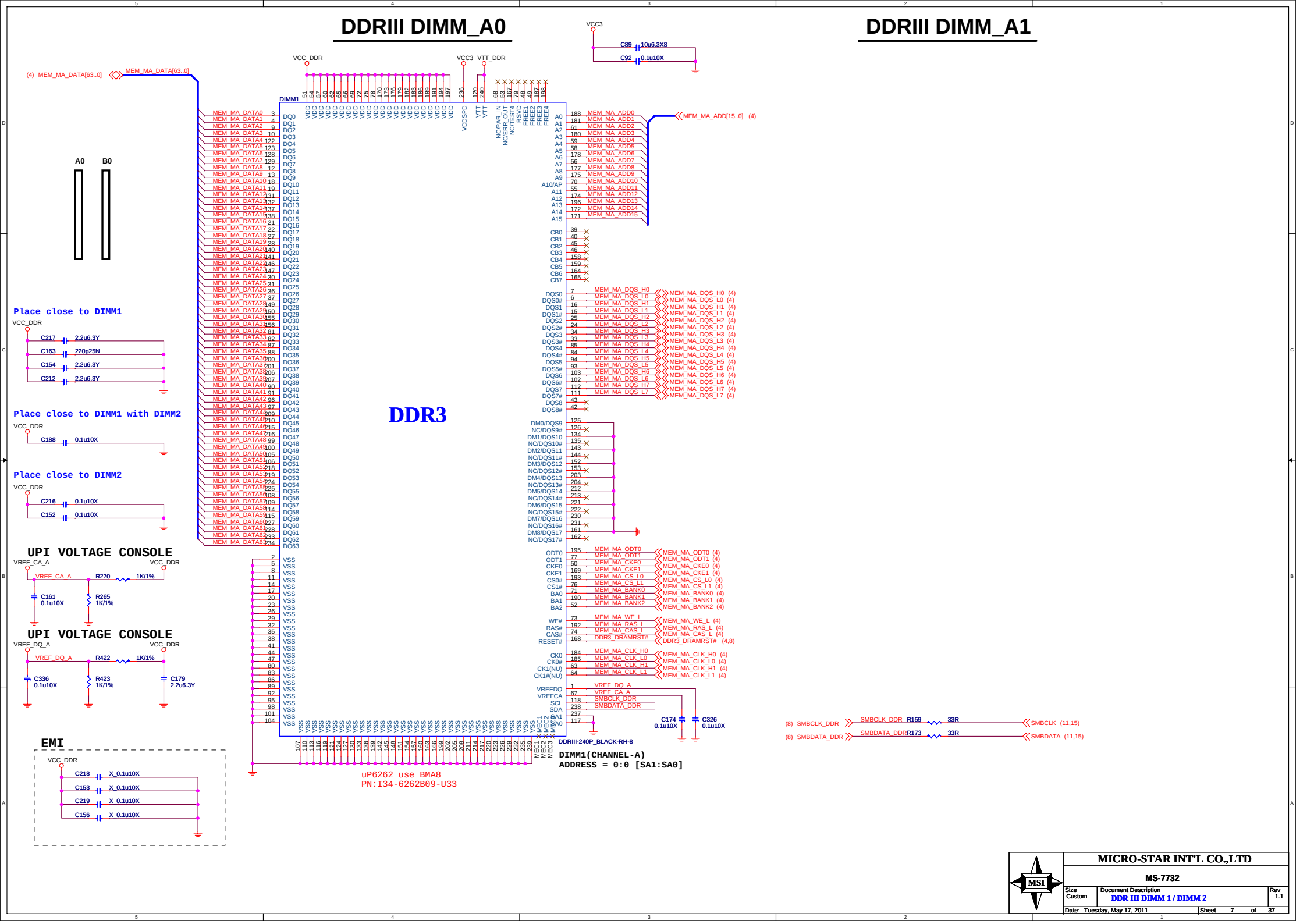
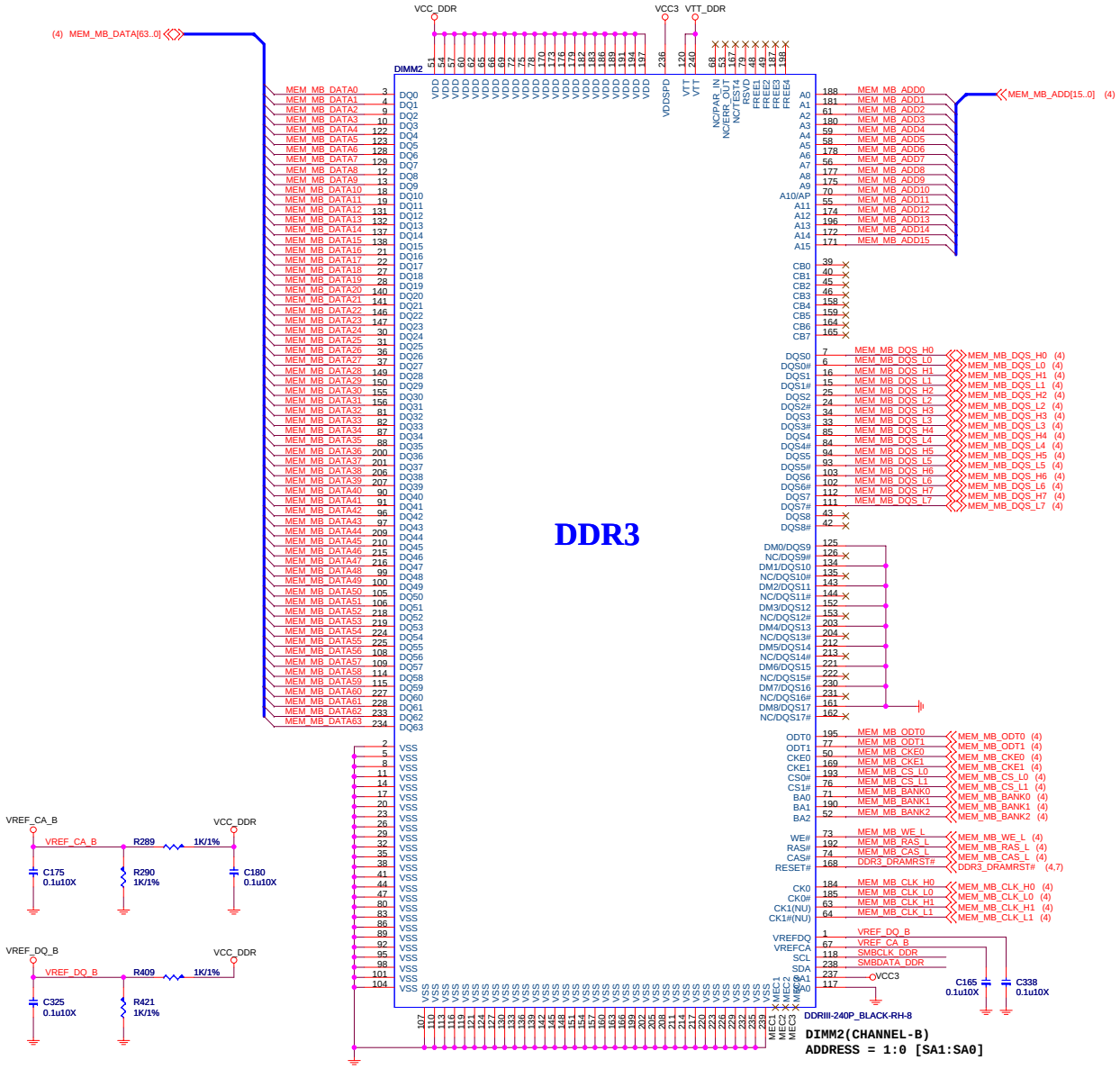
DDRIII DIMM_A0

DDRIII DIMM_A1



MICRO-STAR INT'L CO.,LTD	
MS-7732	
Size: Custom	Document Description: DDR III DIMM 1 / DIMM 2
Rev: 1.1	
Date: Tuesday, May 17, 2011	Sheet 7 of 37

DDRIII DIMM_B0



MICRO-STAR INT'L CO.,LTD	
MS-7732	
Size: Custom	Document Description: DDR III DIMM 3 / DIMM 4
Rev: 1.1	
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only for H67

only for H67

U41B

2 OF 9

PCI-E

USB

DMI

Cougar Point

Place near SB

Programmable output clock to 48MHZ

U41G

7 OF 9

CLOCK

CLOCK_IN

Cougar Point

no clock gen pull down

PCICLK LOOPBACK

U41A

1 OF 9

PCI

Cougar Point

EMI

MICRO-STAR INT'L CO.,LTD		
MS-7732		
Size: Custom	Document Description: CP-PCI/E/DMI/USB/CLK	Rev: 1.1
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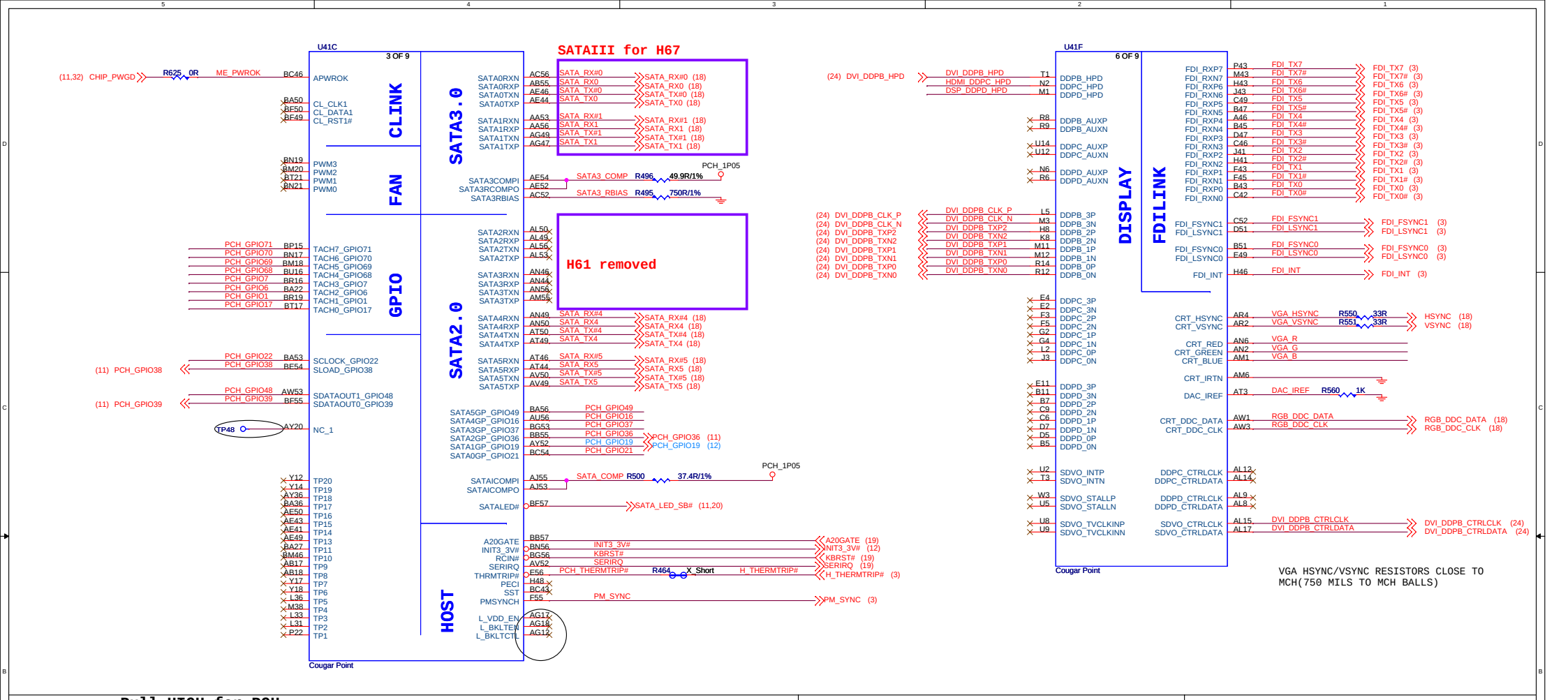

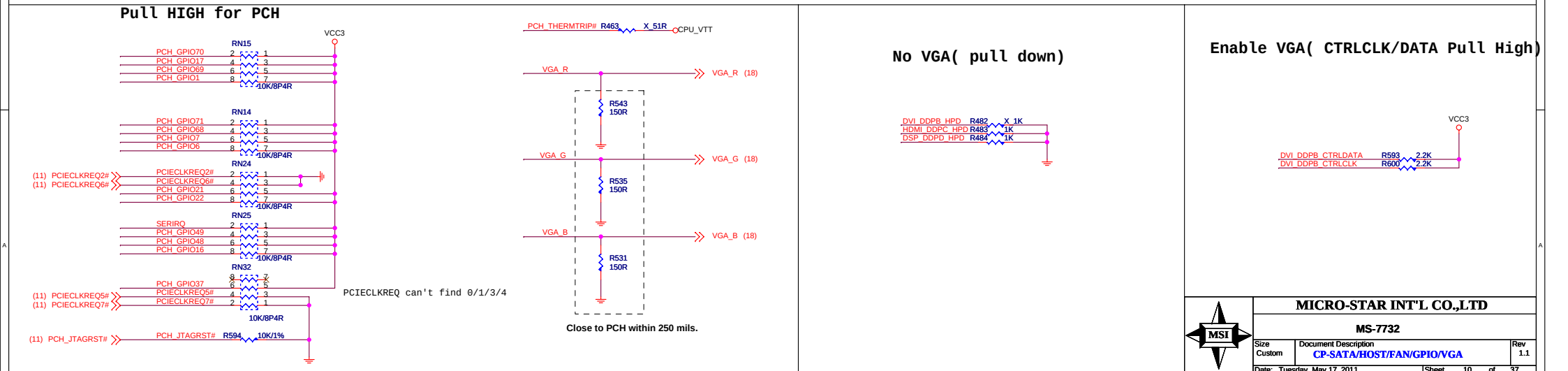

MICRO-STAR INT'L CO.,LTD		
MS-7732		
Size: Custom	Document Description: CP-SATA/HOST/FAN/GPIO/VGA	Rev: 1.1
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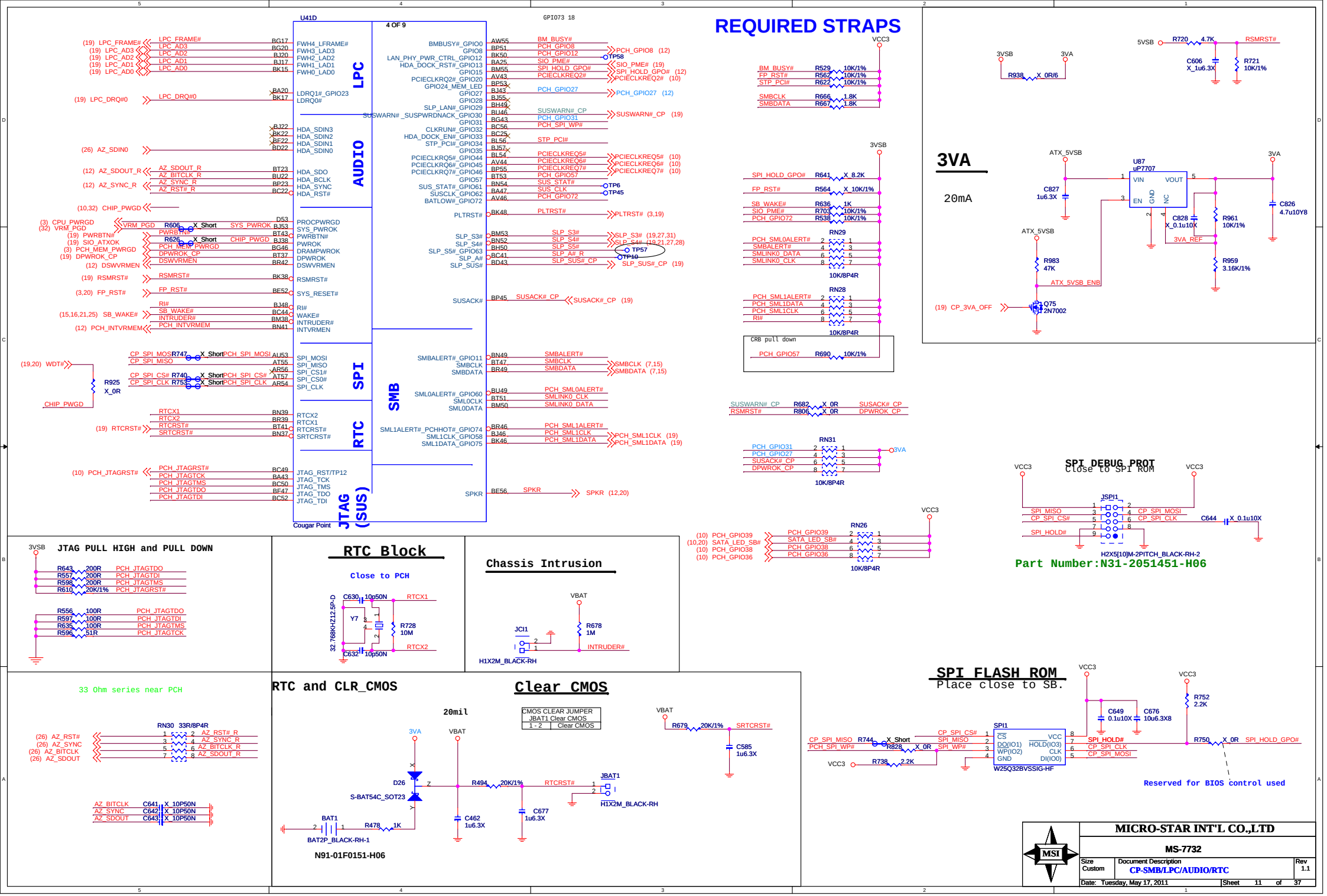
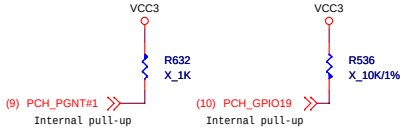
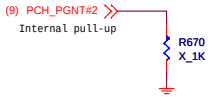


Reserved for BIOS control used

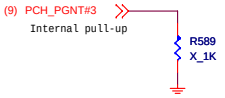
PCH Straps

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

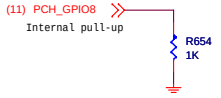




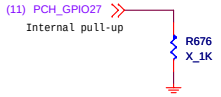
DMI AC/DC MODE
0 : AC
1 : DC *



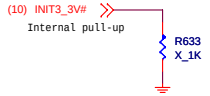
Topblock swap override when pull-low
Signal has a weak internal pull-up



GPIO8
0 : Integrated Clocking Enable (FCIM)*
1 : Buffer Through Mode Enable (BTM)

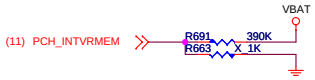


GPIO28
0 : OD PLL VR disabled
1 : OD PLL VR enabled *
Signal has a weak internal pull-up



INT3_3V#
0 : ??????????????
1 : ?????????????? *

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

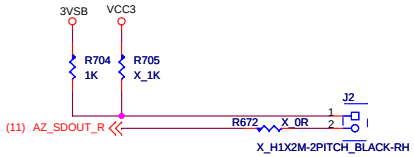


INTVRMEN
0: DISABLE INTERNAL VRM
1: ENABLE INTERNAL VRM *

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

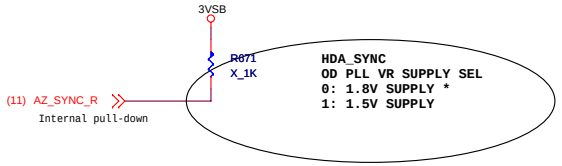
DSWVRMEN
0 : Disable Internal Deep Sleep 1.05 V regulators.
1 : Enable Internal Deep Sleep 1.05 V regulators.

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

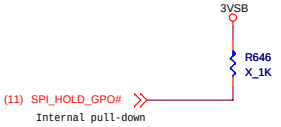


HDA_SDO
Disable ME in Manufacturing Mode
when pull LOW ????

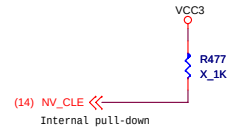
HDA_SDO has internal pull down.
Default should be connected to SDIN of codec, no pull up/down.
To Disable ME need to have a jumper to pull high



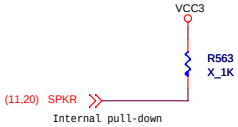
HDA_SYNC
OD PLL VR SUPPLY SEL
0: 1.8V SUPPLY *
1: 1.5V SUPPLY



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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Change to 10UH if
VCCA_DPLLA/VCCA_DPLLB
has noise issue.

PCH_1P05

R460 X_0/8 VCCAFDIPLL
C415 10u6.3X8

R526 X_0R VCCACLK
NO THIS PIN

R461 X_0/8 VCCAPLLDMI2
C417 X_10u6.3X8
C426 X_1u6.3X

R567 0R/8 VCCCLKDMI
C550 10u6.3X8
C551 1u6.3X

R475 0R/8 VCCA_DPLLA
EC46 X_100u16SO
C460 10u6.3X8
C472 X_1u6.3X

R515 0R/8 VCCA_DPLLB
EC47 X_100u16SO
C474 10u6.3X8
C475 X_1u6.3X

to be empty

PCH_1P05

DMI PLL FILTER
L23 X_L1U_500mA_0805
VCCAPLLEXP
C420 X_10u6.3X8
C427 1u6.3X

SATA PLL FILTER
L24 X_L10U_100mA_0805
VCCAPLLSATA
C459 X_10u6.3X8
C464 1u6.3X

PCH_1P05

U41H
8 OF 9
Cougar Point

CPU_VTT
D55 V_PROC_IO
B56 V_PROC_IO_NCTF

CPU_VTT
B41 VCCDMI_02
E41 VCCDMI_01
C429 1u6.3X
VCCAPLLDMI2 A19 VCCAPLLDMI2
VCCCLKDMI AJ20 VCCCLKDMI

5VREF BF1 V5REF
5VREF_SUS BT25 V5REF_SUS

+3.3V_DAC
AT1 VCCADAC
VCCACLK AL5 VCCACLK

VCCA_DPLLA AB1 VCCADPLLA
VCCA_DPLLB AC2 VCCADPLLB

VCCAPLLSATA U56 VCCAPLLSATA
VCCAPLLEXP B53 VCCAPLLEXP
VCCAFDIPLL C54 VCCAFDIPLL

3VSB AV28 VCCSUSHDA
VCC3 AN52 VCCSPI

VCC1_8 CP24 X_COPPER VCCVRM
R2 VCCVRM_04
R54 VCCVRM_03
R56 VCCVRM_02
AJ1 VCCVRM_01

C428 1u6.3X DCPSUS A39 DCPSUS_03
TP44 AT41 DCPSUS_02
AA32 DCPSUS_01

C583 0.1u10X DCPRTC BR54 DCPRTC
BT56 DCPRTC_NCTF

TP51 AV41 DCPSUSBYP

C521 0.1u10X DCPSST BA46 DCPSST

VBAT BU42 VCCRTC
AV40 VCCDSW3_3

3VA
C720 X_0.1u10X
Backside

PCH_1P05
AG15 VCCDIFFCLKN_03
AE17 VCCDIFFCLKN_02
AE15 VCCDIFFCLKN_01

PCH_1P05 CP7 X_COPPER VCCSSC
AE20 VCCSSC_02
AC20 VCCSSC_01

VCCDFTERM T57
VCCDFTERM T55
VCCNAND

AV20 VCC3_3_10
AU20 VCC3_3_09
AU22 VCC3_3_08
AN38 VCC3_3_07
AL38 VCC3_3_06
BD20 VCC3_3_05
BD17 VCC3_3_04
BC17 VCC3_3_03
AE57 VCC3_3_02
VCC3_3_01
VCC3

BT35 VCCSUS3_3_011
AU38 VCCSUS3_3_010
AT40 VCCSUS3_3_009
BA36 VCCSUS3_3_008
BK36 VCCSUS3_3_007
BJ36 VCCSUS3_3_006
AY33 VCCSUS3_3_005
AY31 VCCSUS3_3_004
AY32 VCCSUS3_3_003
AY30 VCCSUS3_3_002
U31 VCCSUS3_3_001
3VSB

VCC1_8 CP23 X_COPPER VCCNAND
C457 X_0.1u10X

PCH_1P05

VCCCORE_022 AR34
VCCCORE_021 AR32
VCCCORE_020 AN34
VCCCORE_019 AN32
VCCCORE_018 AL34
VCCCORE_017 AL32
VCCCORE_016 A136
VCCCORE_015 AJ34
VCCCORE_014 AJ32
VCCCORE_013 AG34
VCCCORE_012 AG32
VCCCORE_011 AE36
VCCCORE_010 AE34
VCCCORE_009 AE32
VCCCORE_008 AE30
VCCCORE_007 AE28
VCCCORE_006 AE24
VCCCORE_005 AC32
VCCCORE_004 AC30
VCCCORE_003 AC28
VCCCORE_002 AC26
VCCCORE_001 AC24

VCCASW_023 AU36
VCCASW_022 AU30
VCCASW_021 AR38
VCCASW_020 AR36
VCCASW_019 AR30
VCCASW_018 AR28
VCCASW_017 AR26
VCCASW_016 AR24
VCCASW_015 AN28
VCCASW_014 AN26
VCCASW_013 AN24
VCCASW_012 AN22
VCCASW_011 AL28
VCCASW_010 AL24
VCCASW_009 AJ28
VCCASW_008 AJ26
VCCASW_007 AJ24
VCCASW_006 AG28
VCCASW_005 AG26
VCCASW_004 AG24
VCCASW_003 AU34
VCCASW_002 AV36
VCCASW_001 AU32

POWER

PCH_1P05: 7.66A
CPU_VTT: 0.058A
VCC1_8: 0.159A
VCC3: 0.697A
3VSB: 0.11A
5VREF: 0.001A
5VREF_SUS: 0.001A

5VREF & 5VREF_SUS Sequencing Circuit

VCC3 Q76 2N3904 C569 1u6.3X 5VREF
VCC5 R637 10R C568 0.1u10X

3VSB Q81 2N3904 C604 0.1u10X 5VREF_SUS
5VSB R715 100R/1% C600 0.1u10X

VCC3 L44 60L500mA-100-RH-1 +3.3V_DAC
Near ball AF1
C538 0.1u10X

3VSB
C592 0.1u10X
C598 0.1u10X

PCH decoupling cap

PCH_1P05
C401 0.1u10X
C434 0.1u10X
C439 1u6.3X
C404 10u6.3X8
C418 10u6.3X8
C419 10u6.3X8
C458 4.7u10X8
C406 0.1u10X

VBAT
C603 0.1u10X
C609 1u6.3X

VCC3
C479 0.1u10X
C580 X_0.1u10X
C489 X_0.1u10X
C431 X_0.1u10X
C542 0.1u10X
C597 4.7u10X8
C589 1u6.3X

CPU_VTT
C413 4.7u10X8
C423 0.1u10X
C430 0.1u10X

Backside
PCH_1P05
C712 X_1u6.3X
C716 X_1u6.3X
C717 X_10u6.3X8
C715 X_1u6.3X
C713 X_0.1u10X
C719 X_0.1u10X
C718 X_0.1u10X
C714 X_0.1u10X

MSI

MICRO-STAR INT'L CO.,LTD
MS-7732
Size: Custom
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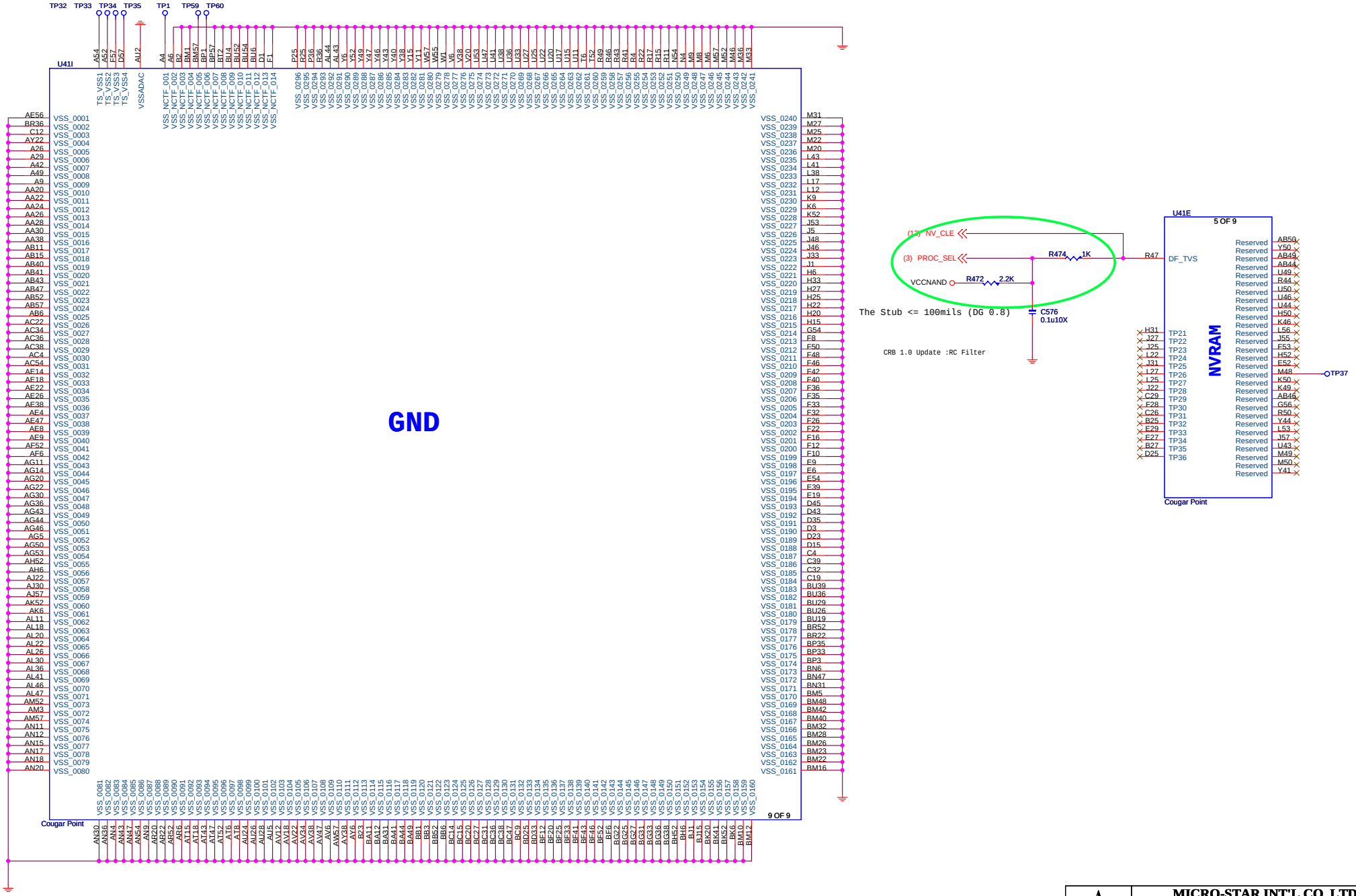

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Size: Custom	Document Description: CP-GND/NVRAM		Rev: 1.1
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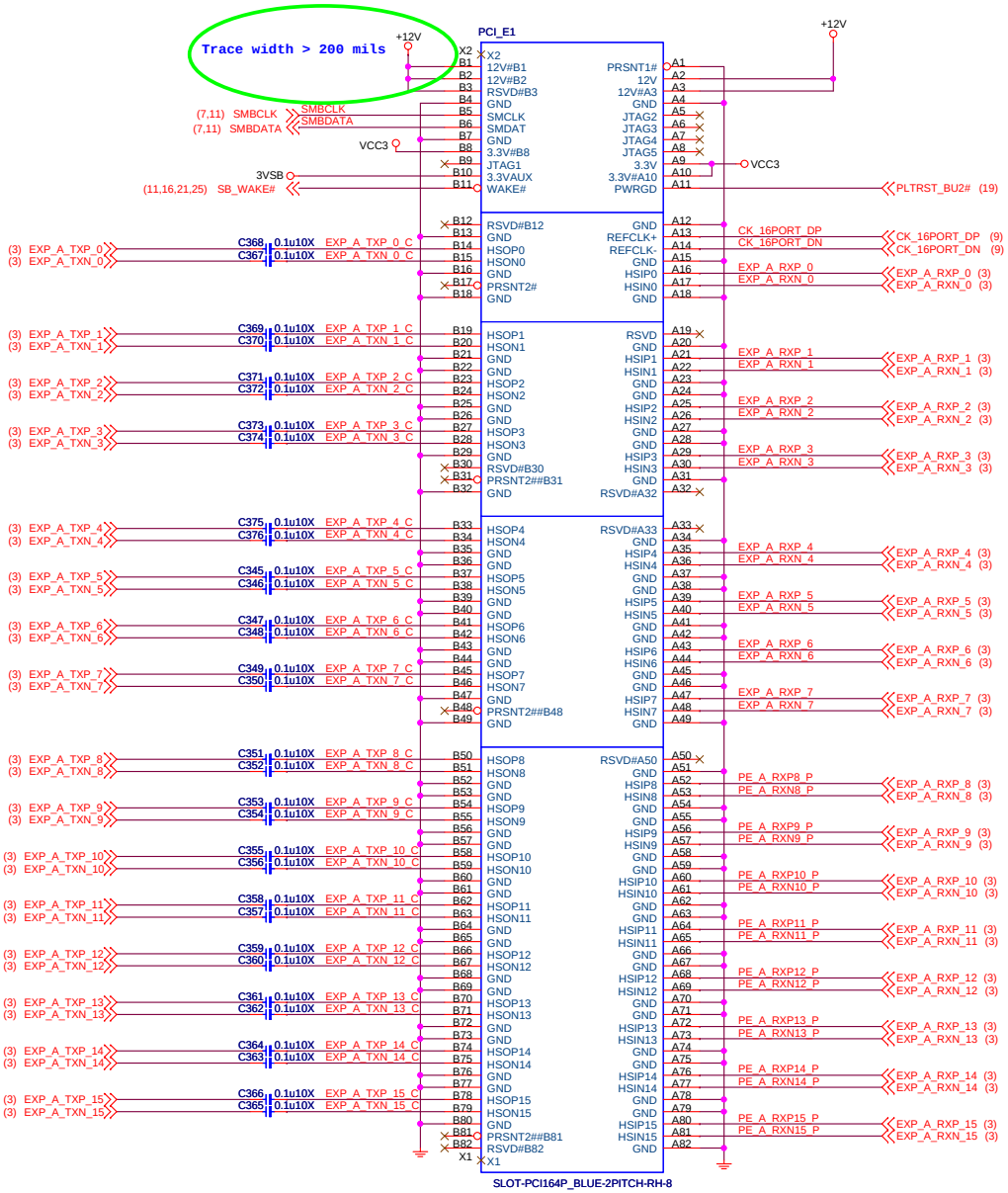
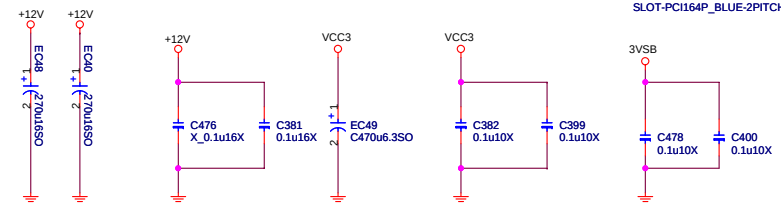
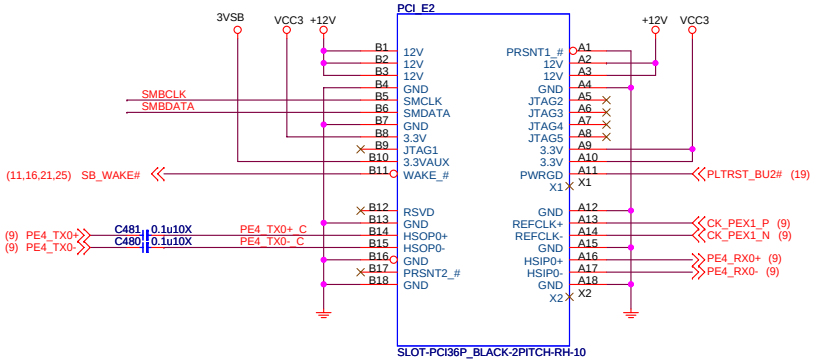
PCI_Express X16 Slot

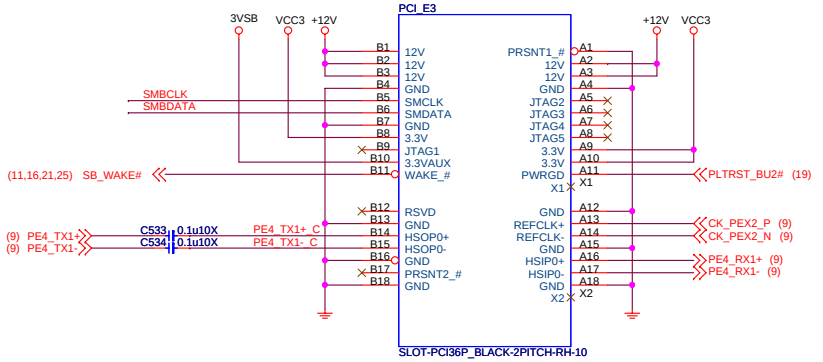




PCI EXPRESS x1-PORT



PCI EXPRESS x1-PORT



PCI Express X16 slot(X1)	
+12V	- 5.5 A
+3.3Vaux (wake) +3.3Vaux (no wake)	- 375mA - 20mA
+3.3V	- 3.0A
PCI Express X1 slot (X2)	
+12V	- 1 A
+3.3Vaux (wake) +3.3Vaux (no wake)	- 750mA - 40mA
+3.3V	- 6.0A

MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
Custom	PCIE x16 /x1/x1	1.1

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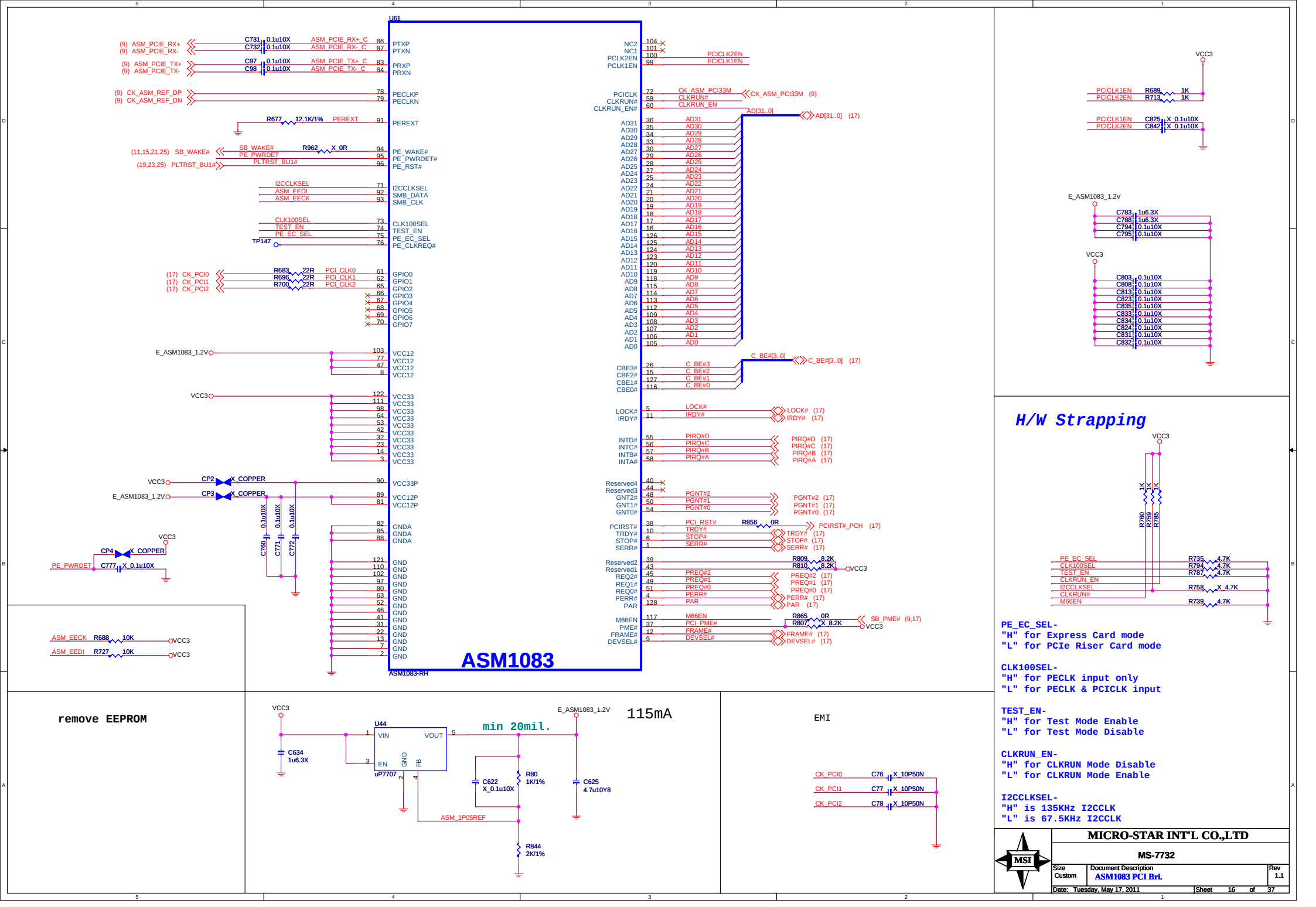
U61
ASM1083
ASM1083-RH
PTXP
PTXN
PRXP
PRXN
PECLKP
PECLKN
PEREXT
PE_WAKE#
PE_PWRDET#
PE_RST#
I2CCLKSEL
SMB_DATA
SMB_CLK
CLK100SEL
TEST_EN
PE_EC_SEL
PE_CLKREQ#
GPIO0
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
VCC12
VCC33
VCC33P
VCC12P
GNDA
GND
AD31
AD30
AD29
AD28
AD27
AD26
AD25
AD24
AD23
AD22
AD21
AD20
AD19
AD18
AD17
AD16
AD15
AD14
AD13
AD12
AD11
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
C_BE#3
C_BE#2
C_BE#1
C_BE#0
LOCK#
IRDY#
PIRQ#D
PIRQ#C
PIRQ#B
PIRQ#A
PGNT#2
PGNT#1
PGNT#0
PCI_RST#
TRDY#
STOP#
SERR#
PREQ#2
PREQ#1
PREQ#0
PERR#
PAR
M66EN
PCI_PME#
FRAME#
DEVSEL#
PCICLK2EN
PCICLK1EN
CK_ASM_PCI33M
CLKRUN#
CLKRUN_EN
AD[31..0]
C_BE#[3..0]
PCIRST#_PCH
SB_PME# (9,17)
E_ASM1083_1.2V
VCC3
H/W Strapping
PE_EC_SEL
CLK100SEL
TEST_EN
CLKRUN_EN
I2CCLKSEL
CLKRUN#
M66EN
PE_EC_SEL-
"H" for Express Card mode
"L" for PCIe Riser Card mode
CLK100SEL-
"H" for PECLK input only
"L" for PECLK & PCICLK input
TEST_EN-
"H" for Test Mode Enable
"L" for Test Mode Disable
CLKRUN_EN-
"H" for CLKRUN Mode Disable
"L" for CLKRUN Mode Enable
I2CCLKSEL-
"H" is 135KHz I2CCLK
"L" is 67.5KHz I2CCLK
remove EEPROM
115mA
min 20mil.
U44
uP7707
EMI
MICRO-STAR INT'L CO.,LTD
MS-7732
ASM1083 PCI Bri.
Size
Custom
Document Description
Rev
1.1
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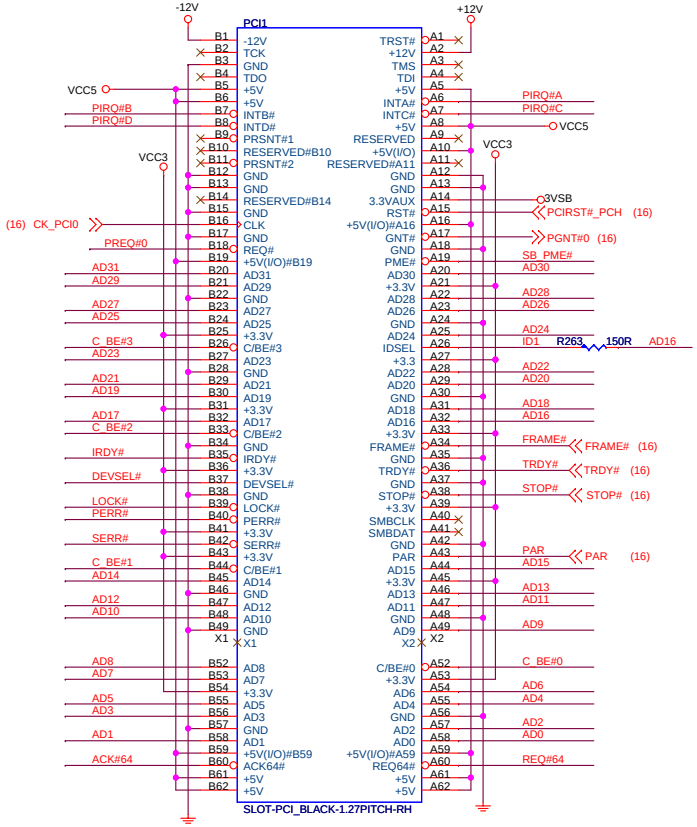
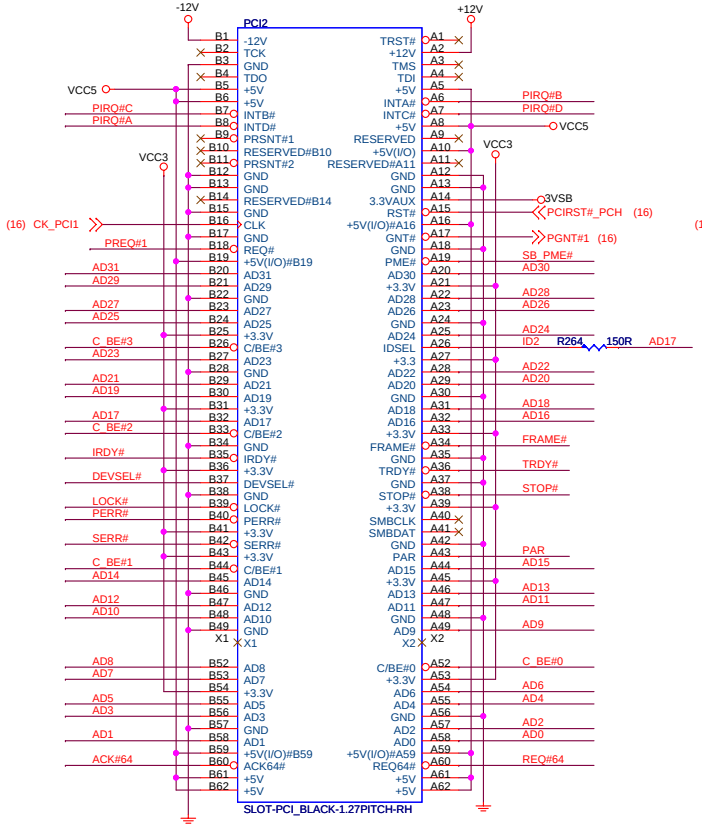
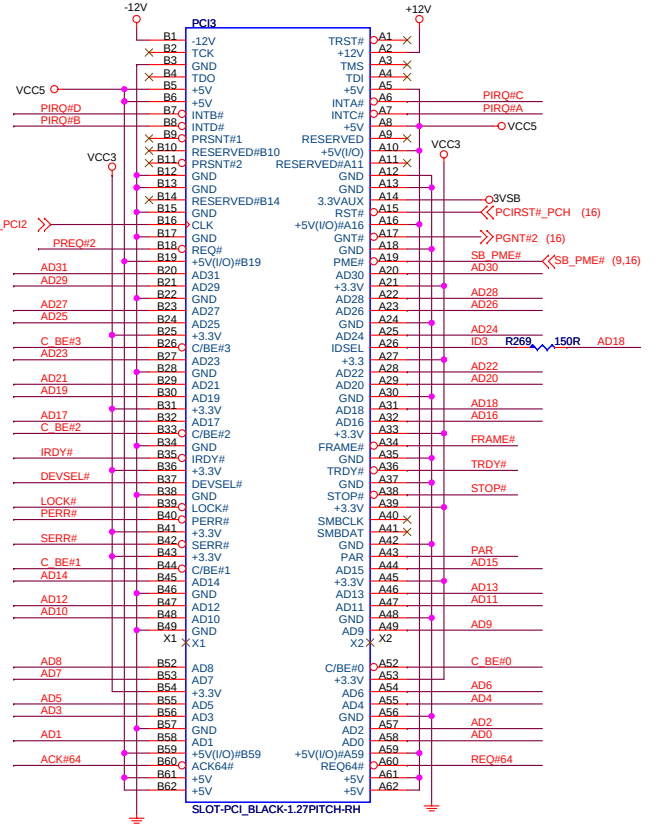


IDSEL = AD16
MASTER = PREQ#0
PIRQ#A



IDSEL = AD17
MASTER = PREQ#1
PIRQ#B

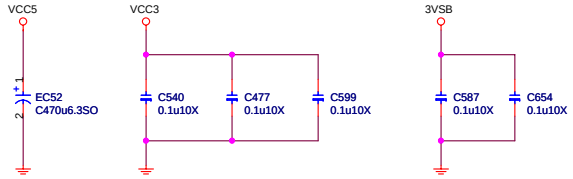


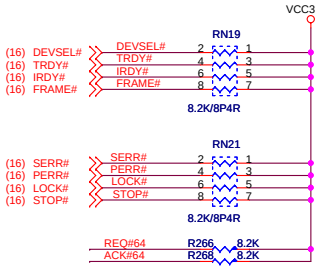
IDSEL = AD18
MASTER = PREQ#2
PIRQ#C

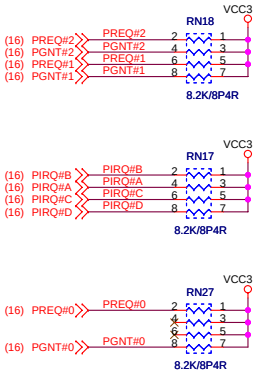
AD[31..0] AD[31..0] (16)

C_BE#[3..0] C_BE#[3..0] (16)

PCI PULL-UP / DOWN RESISTORS







PCI slot (X3)	
+3.3Vaux (wake)	- 1125mA
+3.3Vaux (no wake)	- 60mA
+3.3V	- 7.6A
+5V	- 15A
+12V	- 1.5A

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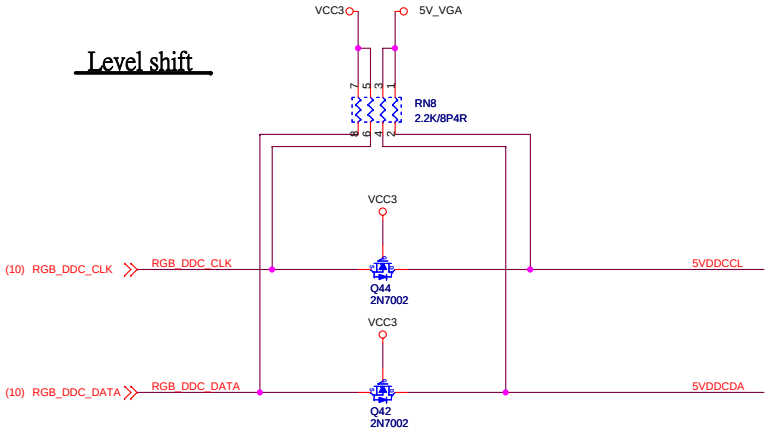
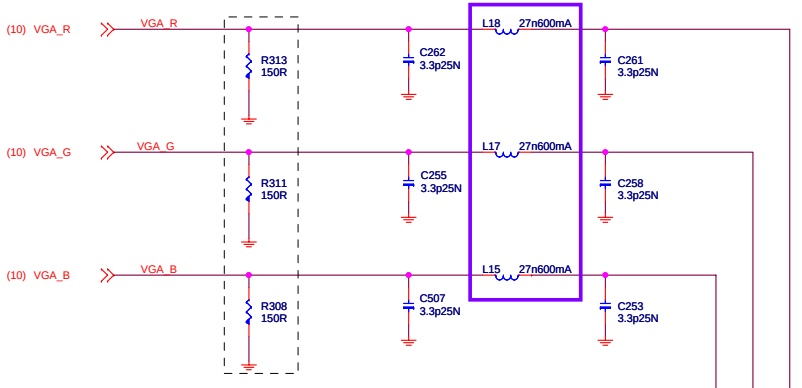
D-Sub

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

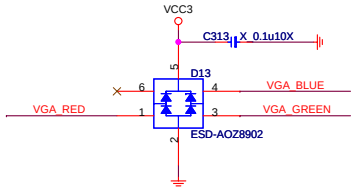
Change to L, don't use FB
Try to pass VESA v1.2

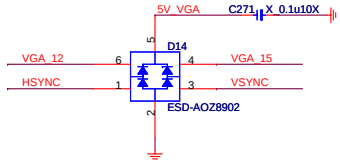
Level shift

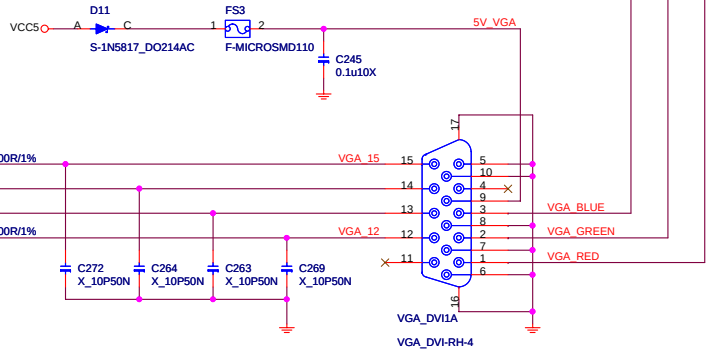




PLACE CLOSE TO VGA CONNECTOR,
WITHIN 750 MIL OF PIN

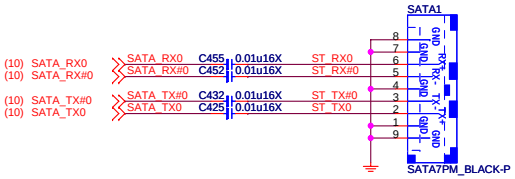


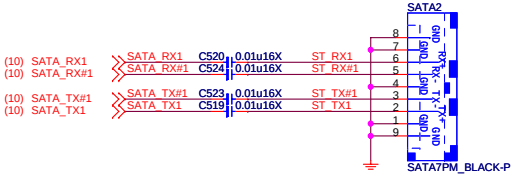




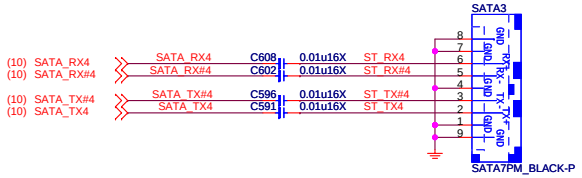
H67 SATA 6G PORT 0,1

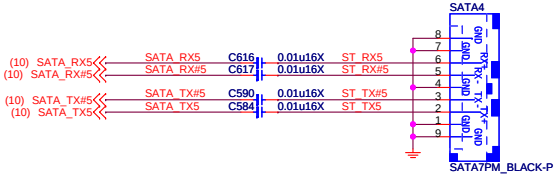
H61 PORT 0/1 Support 3G





SATA 3G PORT 4,5





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Size: Custom	Document Description: VGA/SATA3G	Rev: 1.1
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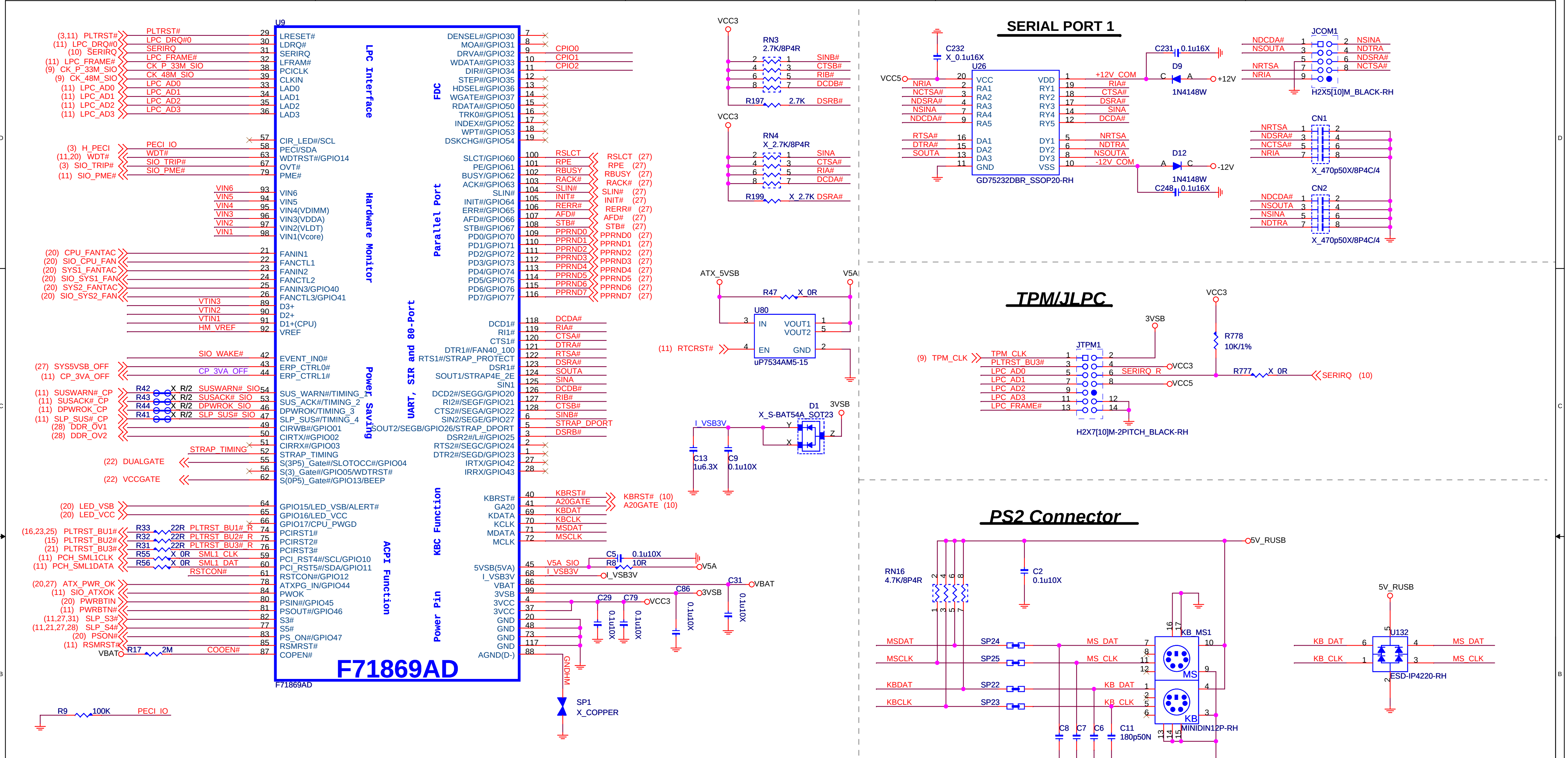
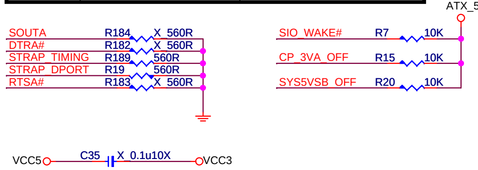
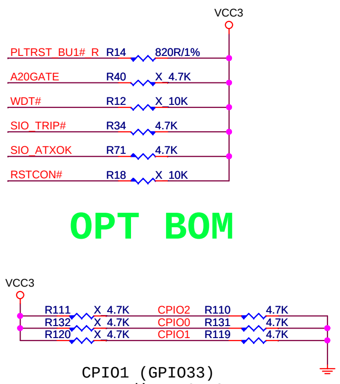


LPC I/O STRAPPING RESISTOR & Others Pull Hi Resistor

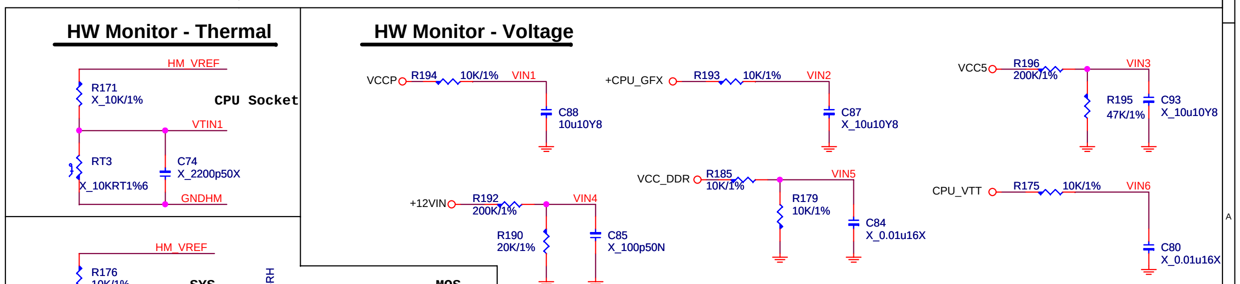
STRAP	Don't STUFF	STUFF
SOUTA	4E	2E
DTRA#	FAN START DUTY 40%	FAN START DUTY 100%
STRAP TIMING	AMD Timing	Intel Courgar point Timing
FANCTL 1/2/3	DAC Mode	PWM Mode
STRAP DPORT	Enable 80 Port	Disable 80 Port
RTSA#	Alarm Mode (Disable)	Force Mode





OPT BOM

CPIO1 (GPIO33)
1: Audio JACK 3
0: Audio JACK 6



MICRO-STAR INT'L CO.,LTD

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Custom	SIO-Fintek F71889AD(EUP)	1.1

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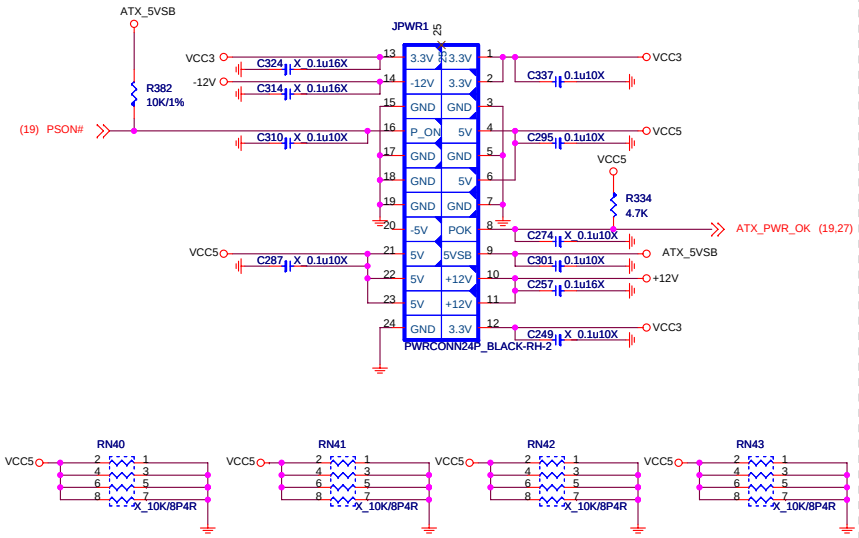
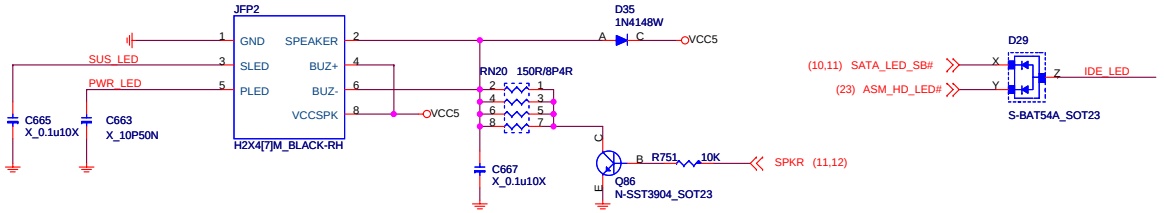
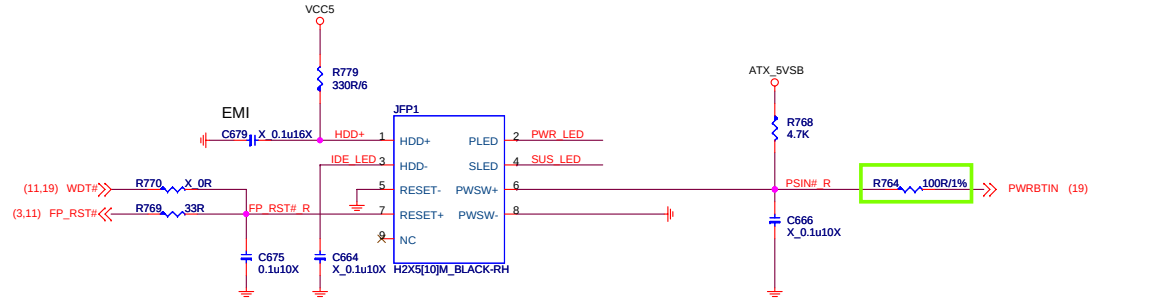
ATX POWER CONNECTOR

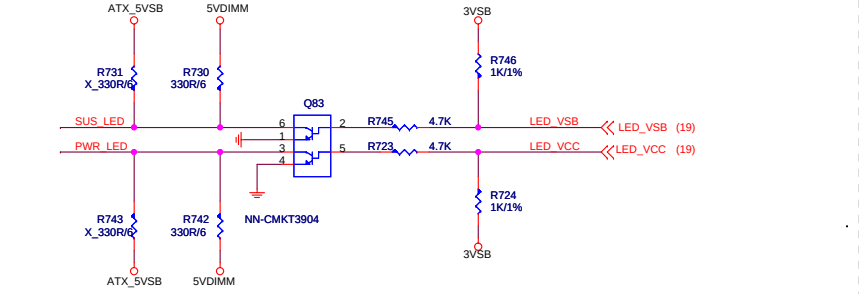


FRONT PANNEL

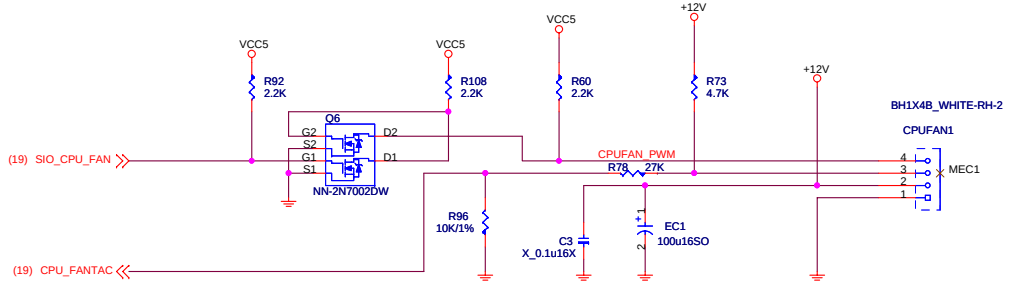




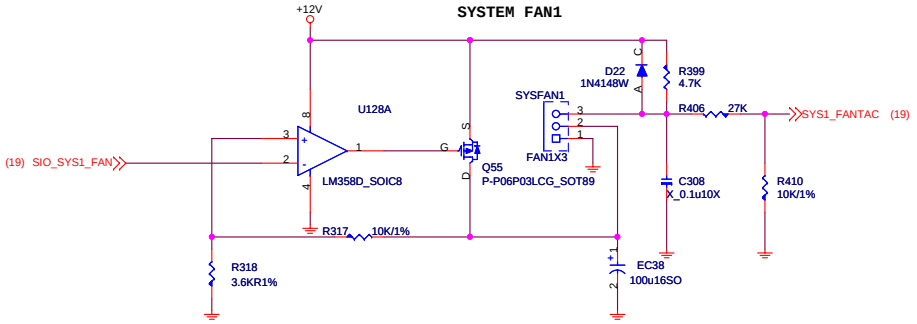
LED (for Fintek 71869)

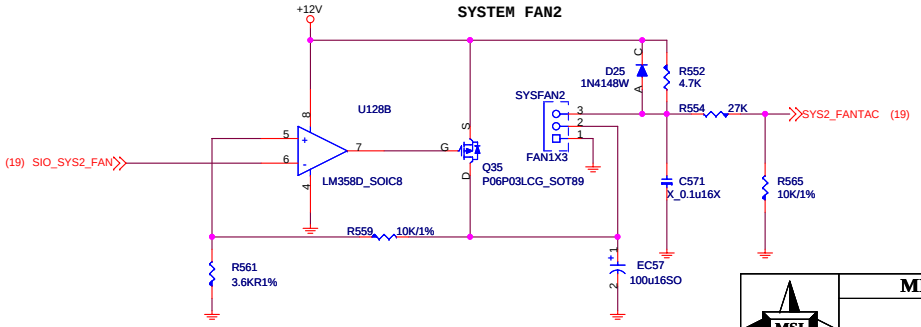


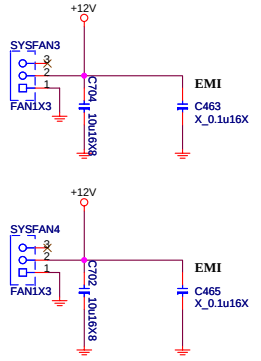
CPU FAN-COUNTROL CIRCUIT



SYSTEM FAN-COUNTROL CIRCUIT







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Custom	ATX PWR-Connector & Front Panel & EMI	1.1

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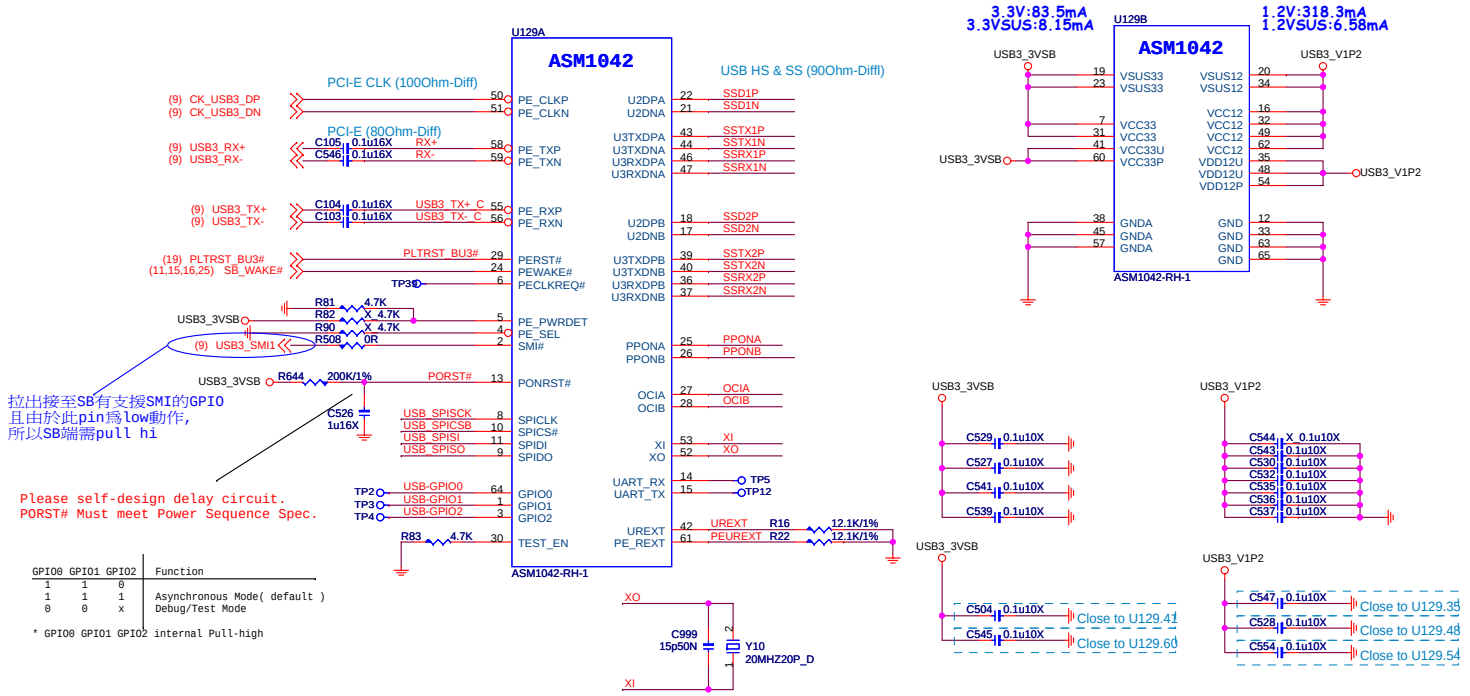
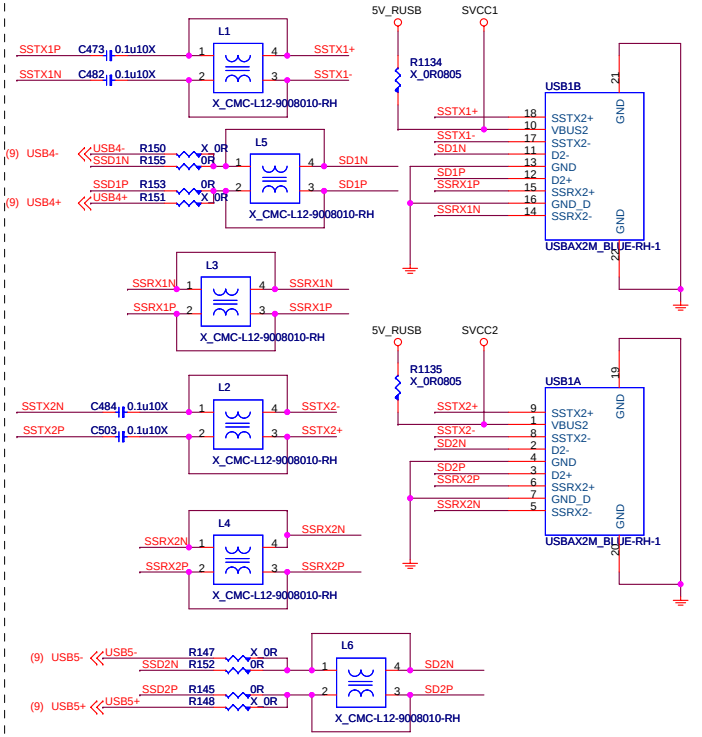
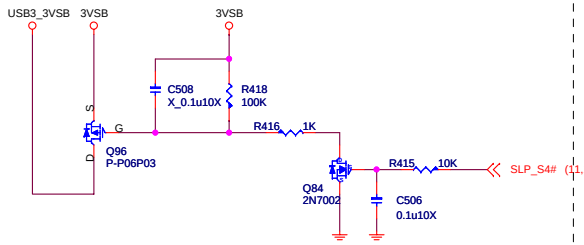
ASM1042 USB3.0



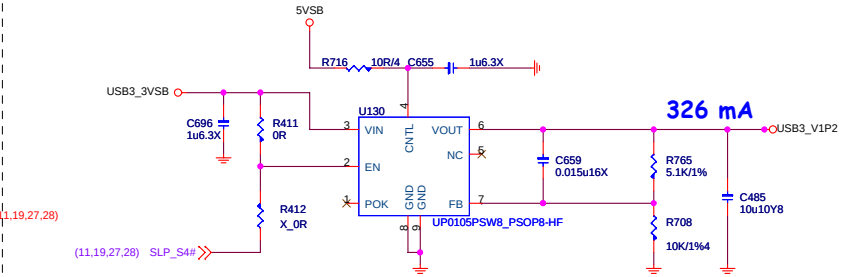
Rear USB3 CONN



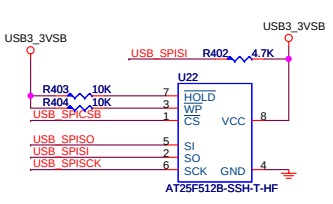
ASM1042 3VSB Circuit



ASM1042 1_2VSB Power

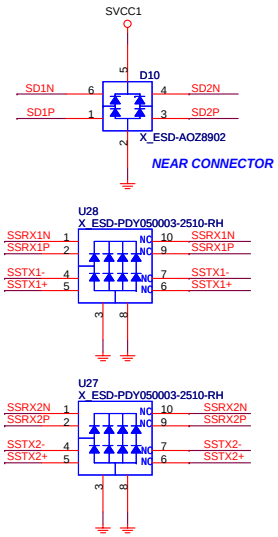


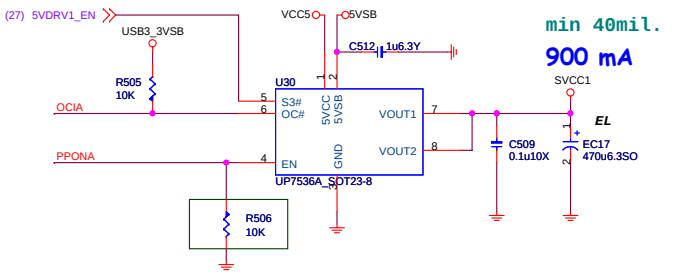
EEPROM

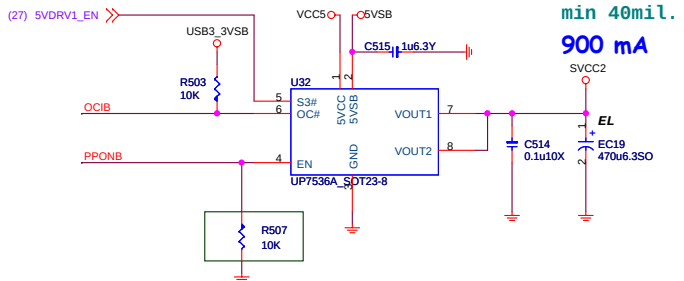


ESD Protection

Close to Connector







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Size: Custom	Document Description: ASM1042-USB 3.0	Rev: 1.1
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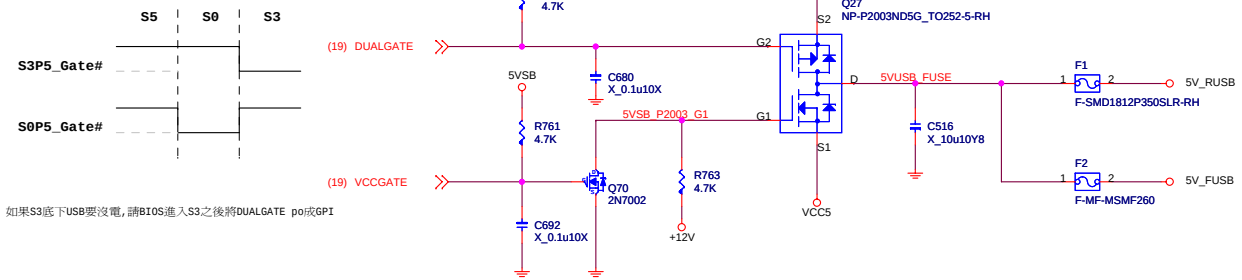
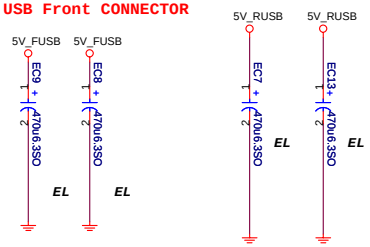
5V_RUSB Switch



如果S3底下USB要沒電,請BIOS進入S3之後將DUALGATE po成GPI

NEAR USB REAR CONNECTOR

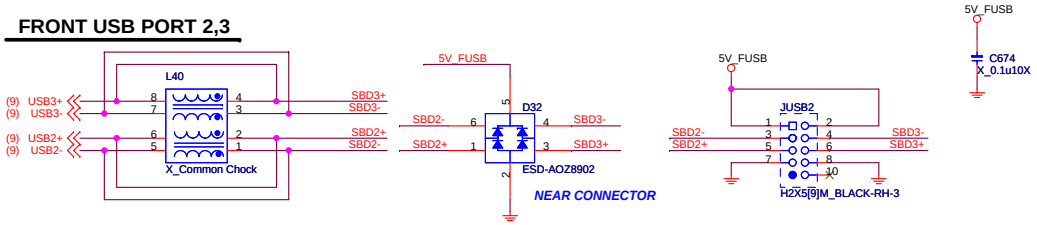
NEAR USB Front CONNECTOR



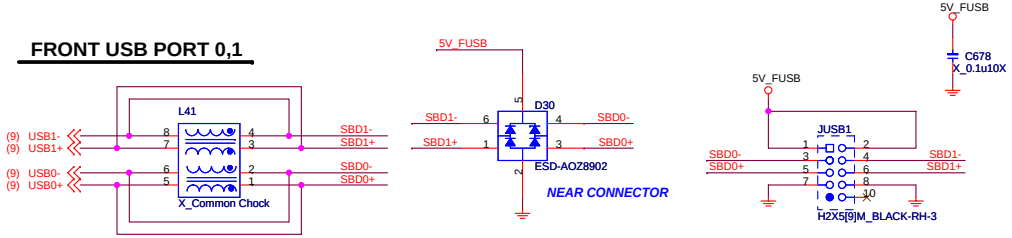
Front USB Connector

For H61 6,7,12,13 Port should be remove

FRONT USB PORT 2,3

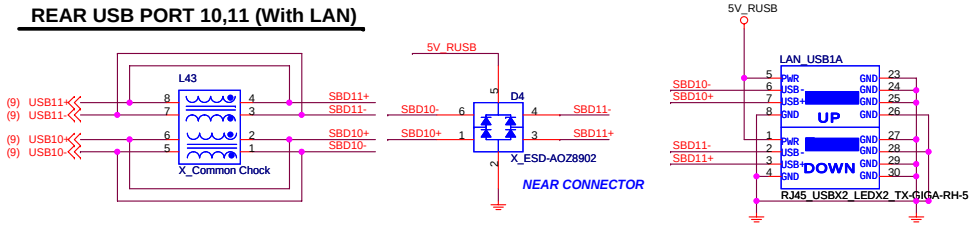


FRONT USB PORT 0,1

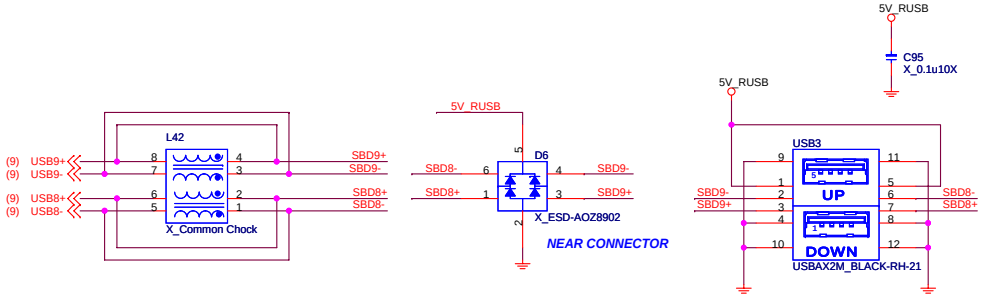


Rear USB Connector

REAR USB PORT 10,11 (With LAN)



REAR USB PORT 8,9 (With PS2)



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Size: Custom	Document Description: USB Connector	Rev: 1.1
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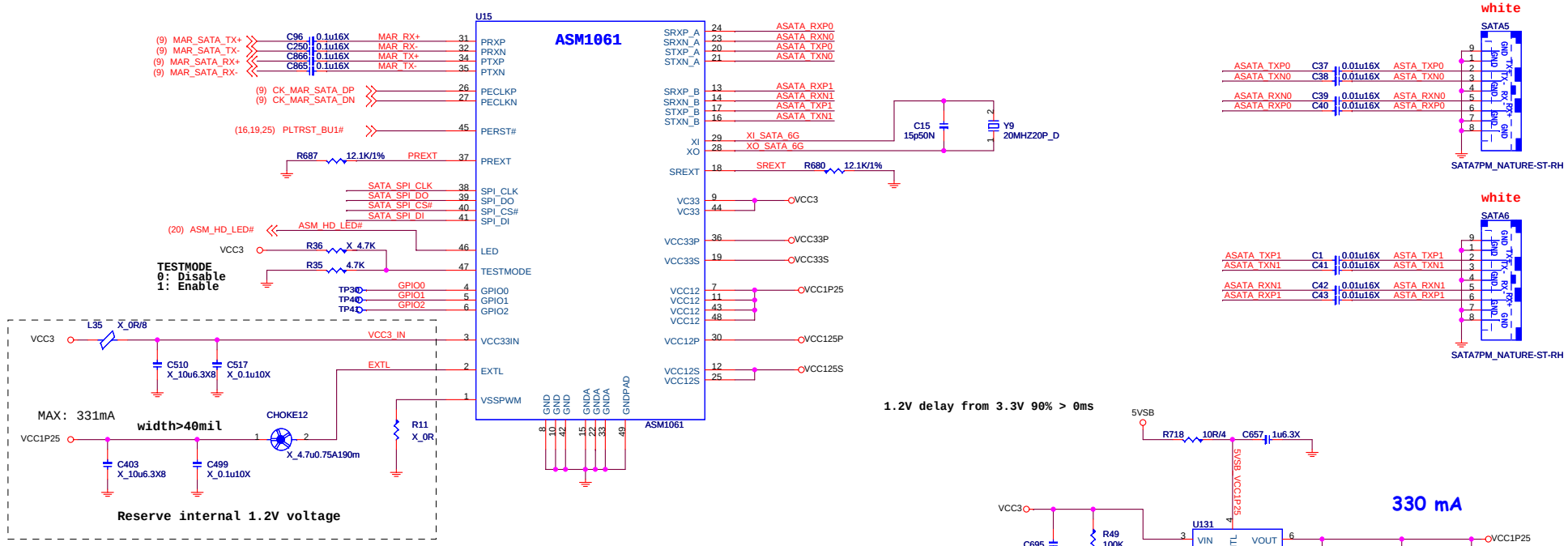
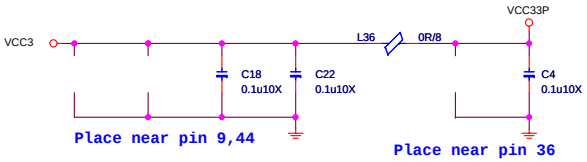
ASM1061 SATA6G

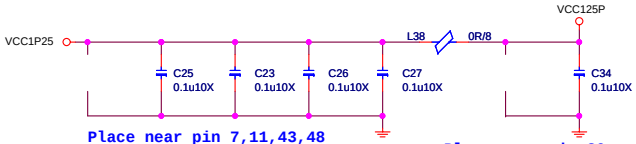


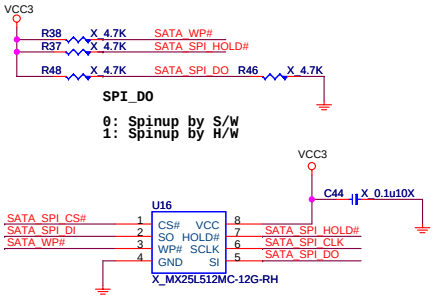
1.2V delay from 3.3V 90% > 0ms

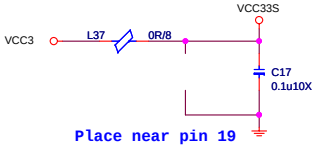
ASM1061 POWER Consumption

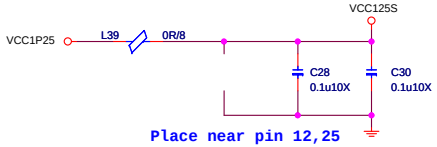
	3.3V	1.2V	Power (mW)
Idle (mA)	98.45	212.3	579.645
Busy (mA)	91.1	330.7	697.47











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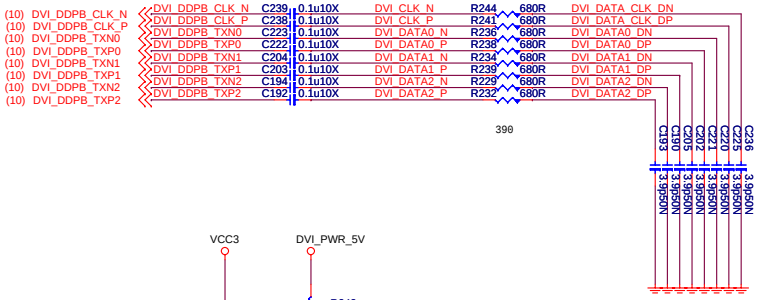
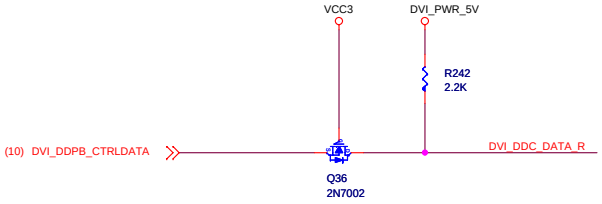
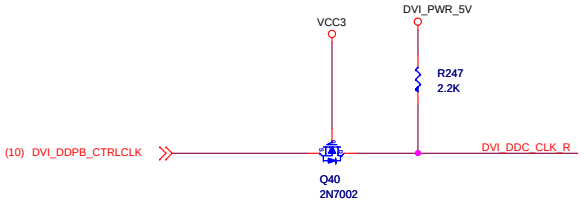
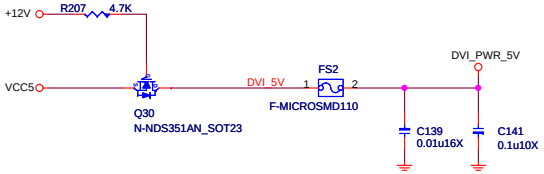
DVI level shifter

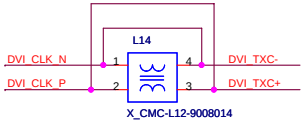
VGA: resolution of 2048x1536 pixels with 32-bit color at 75 Hz (4:3 QXGA)

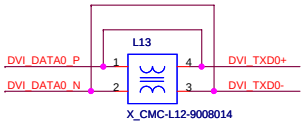


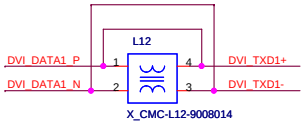


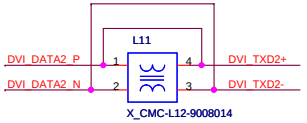


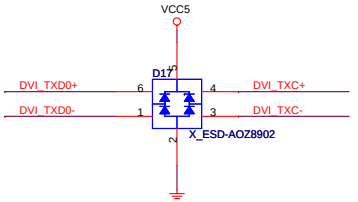


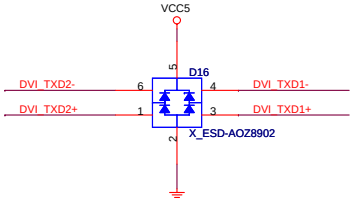


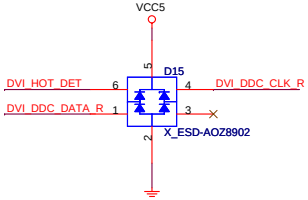


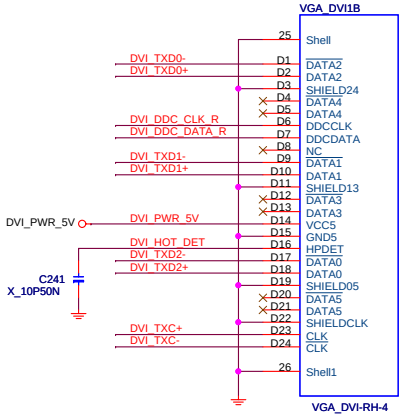


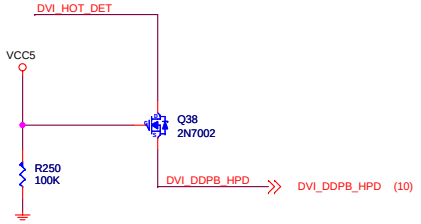


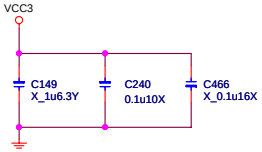


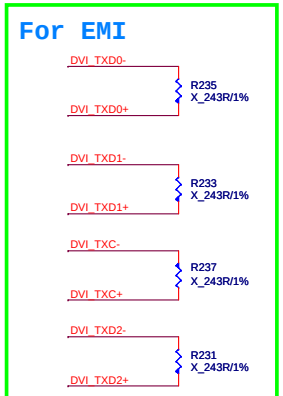


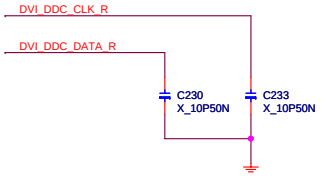












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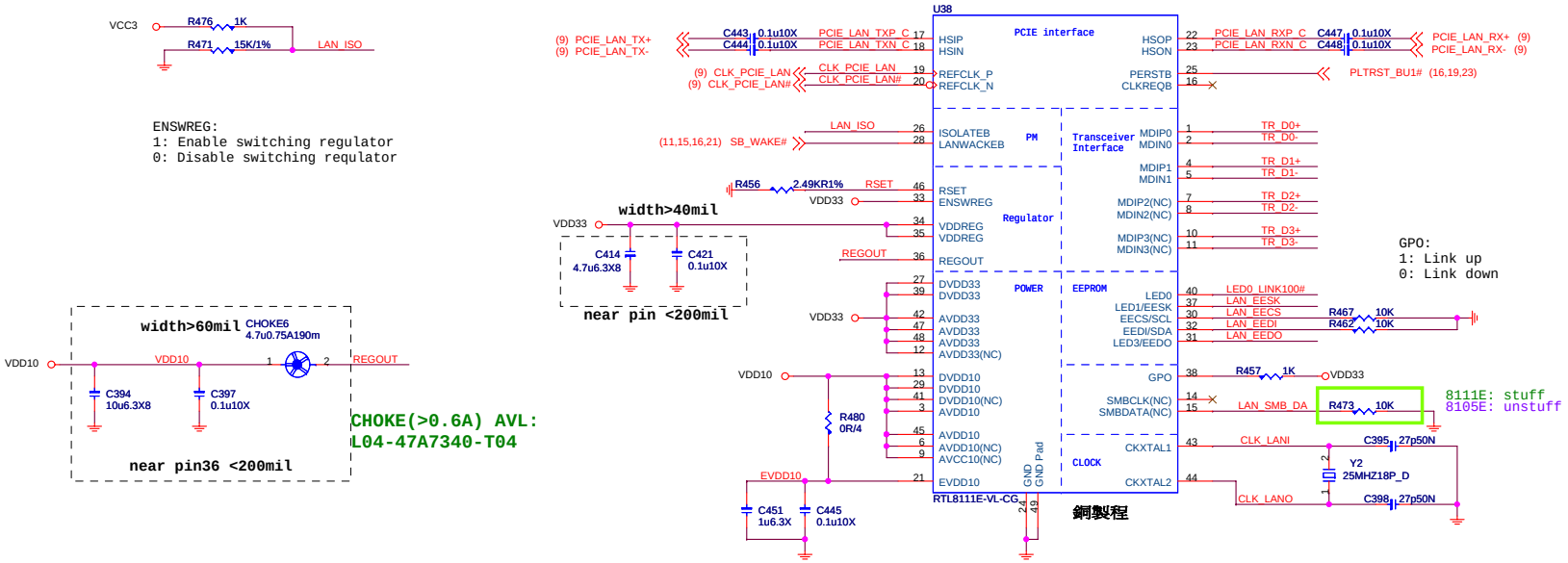
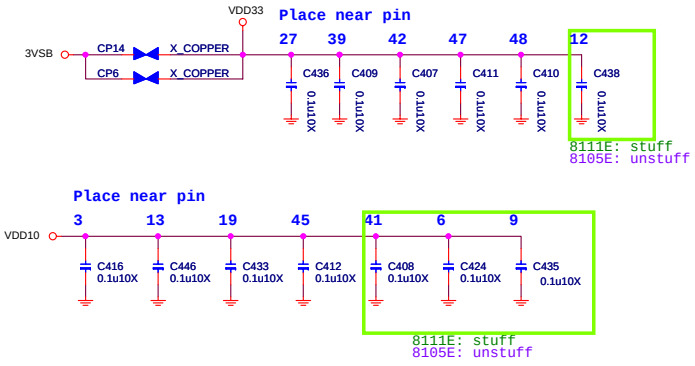
RTL8111E Giga LAN

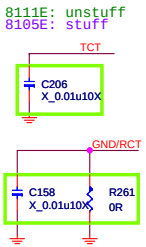
RTL8105E 10/100M LAN

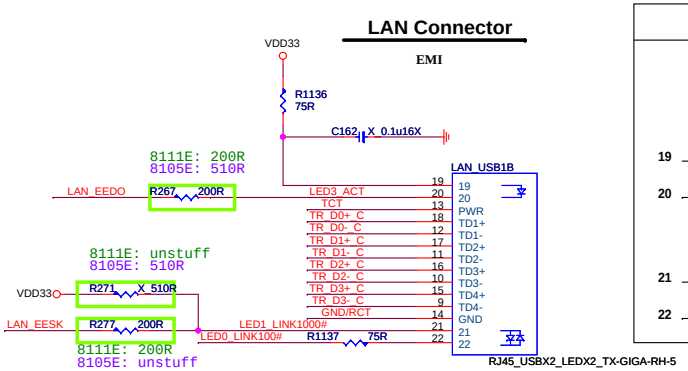


Pin49: 9 via from top layer to GND layer
and make the via at the center of IC.

3.3v Power on rise time : 1~100ms. MAX: 163mA

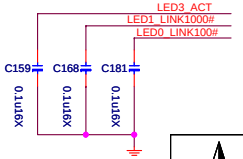


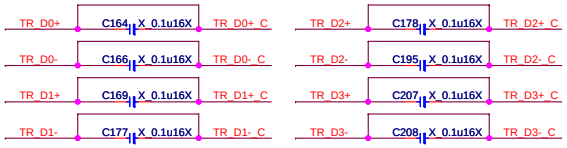




Giga-Lan	10/100-Lan
N58-22F0731	N58-22F0771
Link Yellow Active Blinking 1000 Orange 100 Green 10 None	Link Yellow Active Blinking 100 Green 10 None
19 20 250R Yellow	19 20 Yellow
21 22 250R Orange Green	21 22 Green

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





8105E POWER Consumption

	3.3V	mW
10 M Idle/TxRx	14/75	46/248
100 M Idle/TxRx	43/66	142/218
S0 ALDPS	3.2	11

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

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ALC887-VD
ALC892

11mA

Closed Codec

VCC3

用SMD CAP 手動量測會FAIL在THD+N
用EL-CAP or SOLID cap,才會pass

C656 10u10Y8
C633 0.1u10X
C651 0.1u10X
C636 10u10X8
C645 10u10X8
C1 closed PIN25

AZ_SDIN0
C586 X_10P50N

U51

EPAD/SPDIF-IN
SPDIF-OUT
SDATA-OUT
SDATA-IN
SYNC
RESET#
BCLK
GPIO0/DMIC-CLK/SPDIF-OUT2
REGREF
Sense A
Sense B
MIC1-VREFO-R
MIC2-VREFO
MIC1-VREFO-L
PIN37-VREFO
LDO-IN
LINE2-VREFO
VREF
Sense C
JDREF
BEEP
GPIO1/DMIC-DATA
DVSS
DVDD
DVDD-IO
LDO-OUT1
LDO-OUT2
AVSS1
AVSS2
FRONT-R
FRONT-L
SURR-R
SURR-L
CENTER
LFE
SIDE-R
SIDE-L
LINE1-R
LINE1-L
LINE2-R
LINE2-L
MIC1-R
MIC1-L
MIC2-R
MIC2-L
CD-R
CD-GND
CD-L

ALC887-VD2-CG

(11) AZ_SDOUT
(11) AZ_SDIN0
(11) AZ_SYNC
(11) AZ_RST#
(11) AZ_BITCLK
R57 33R SDIN0
SP2 X_COPPER HDA_BITCLK_R

SPDIFO2
REGREF
C650 10u6.3X8

SENSE_A
SENSE_B

MIC1_V_R
MIC2_VREFO
MIC1_V_L

45.8mA
LDOVDD
LINE2_VREFO
VREF_AUDIO
JDREF
C638 X_0.1u10X
C635 10u6.3X8
R757 20K/1%
Closed Codec

EC53 EC54 100u16SO
EC51 EC50 100u16SO
C653 C647 10u6.3X8
C658 C660 10u6.3X8
C662 C661 10u6.3X8
C612 C631 4.7u6.3X8
C618 C619 4.7u6.3X8
C620 C621 4.7u6.3X8

FRONT-R LOUT_R
FRONT-L LOUT_L
SURR-R SROUT_R
SURR-L SROUT_L
CENTER CEN_OUT
LFE BASS
SIDE-R SURRBACK_R
SIDE-L SURRBACK_L
LINE1-R LINE_IN_R
LINE1-L LINE_IN_L
LINE2-R LINE2_R
LINE2-L LINE2_L
MIC1-R MIC1_R
MIC1-L MIC1_L
MIC2-R MIC2_R
MIC2-L MIC2_L

銅製程

LIN_OUT

LOUT_L R442 75R LOUT_LA
LOUT_R R436 75R LOUT_RA
FRONT_JD
D48 ESD-MLVS0402M04-EM
D47 ESD-MLVS0402M04-EM
AUDIO1E green
JACK-AUDIOX6F_PK/GR/BU-RH-6

SURR

SROUT_L R434 75R SROUT_LA
SROUT_R R435 75R SROUT_RA
SURR_JD
C379 100p50N
C378 100p50N
AUDIO1A black
JACK-AUDIOX6F_PK/GR/BU-RH-6

LIN_IN

LINE_IN_L R346 1K LINE_IN_LA
LINE_IN_R R350 1K LINE_IN_RA
LINE1_JD
C294 100p50N
C293 100p50N
AUDIO1D blue
JACK-AUDIOX6F_PK/GR/BU-RH-6

CEN/BAS

CEN_OUT R438 75R CEN_OUTA
BASS R437 75R BASSA
CEN_JD
C383 100p50N
C384 100p50N
AUDIO1B orang
MEC1
MEC2
JACK-AUDIOX6F_PK/GR/BU-RH-6

MIC1

MIC1_V_L R432 2.2K MIC1_LA
MIC1_V_R R430 2.2K MIC1_RA
MIC1_L R431 1K
MIC1_R R429 1K
MIC1_JD
C343 100p50N
C344 100p50N
AUDIO1F PINK
JACK-AUDIOX6F_PK/GR/BU-RH-6

SIDESURR

SURRBACK_L R433 75R SURRBACK_LA
SURRBACK_R R428 75R SURRBACK_RA
SURRBACK_JD
C342 100p50N
C377 100p50N
AUDIO1C grey
JACK-AUDIOX6F_PK/GR/BU-RH-6

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

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

當串接電容有極性時，需上對地電阻

EMI

C288 X_0.1u10X
C405 1000p16X
C390 0.1u10X
C560 1000p16X

CP8 X_COPPER
CP9 X_COPPER

LOUT_LA R729 22K
LOUT_RA R732 22K
F_LINE2_R R776 22K
F_LINE2_L R775 22K

D
LIN_IN
E
LIN_OUT
F
MIC1
N54-13F0271-K06

D
LIN_IN
SURR
E
LIN_OUT
CEN/BAS
F
MIC1
SIDESURR
N54-26F0111-K06

SENSE_A R701 5.1K/1% FRONT_JD
R673 10K/1% LINE1_JD
R684 20K/1% MIC1_JD
R709 39.2K/1% SURR_JD
Closed Codec
SENSE_B R754 10K/1% CEN_JD
R755 5.1K/1% SURRBACK_JD

5VSB L34 0R/8 LDOVDD
D34 X_TVS
C640 0.1u10X
C639 10u10X8

D36
LINE2_VREFO
S-BAT54A_SOT23
MIC2_VREFO
S-BAT54A_SOT23
D41

RN23 4.7K/8P4R

F_MIC2_L
F_MIC2_R
F_LINE2_R
SENSE_B
F_LINE2_L
Close to Jack

N31-2051411-H06
JAUD1
MIC GND
MICPWR PRESENCE#
FLINE OUTR LINE NEXT R
HPON
FLINE OUTL LINE NEXT L
H2X5[8]M_BLACK-RH
MIC2_JD
LINE2_JD

R772 47R
C671 1000p16X
R773 39.2K/1%
R771 20K/1%
Close to Front panel

D43 D44 D45 D46
ESD-MLVS0402M04-EM
Varister --> cap for cost down

SPDIF_OUT

VCC5
C673 X_0.1u10X
SPDIFO2
R774 10R
C672 X_100p50N
JSP1
BH1X3_BLACK-RH

RN22
MIC2_R F_MIC2_R
MIC2_L F_MIC2_L
LINE2_L F_LINE2_L
LINE2_R F_LINE2_R
75R/8P4R

MSI

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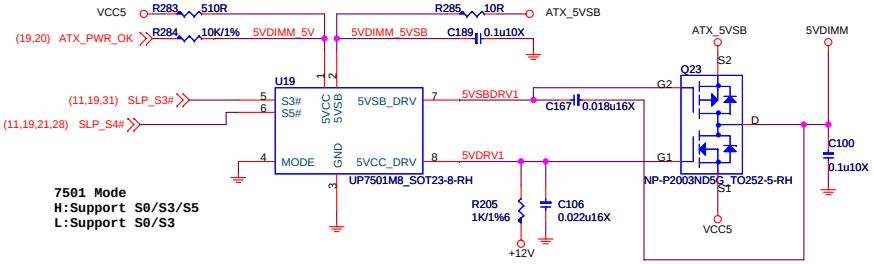
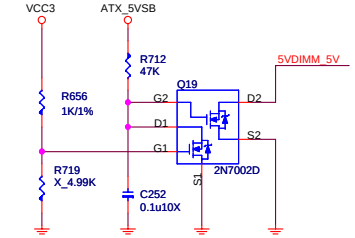
5VDIMM FOR DDR

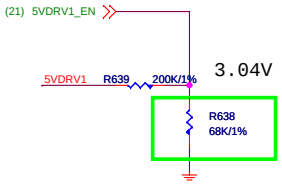


7501 Mode
H:Support S0/S3/S5
L:Support S0/S3



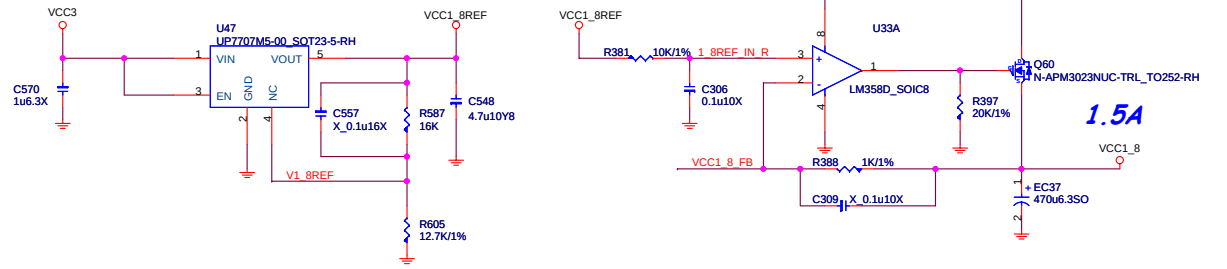
Patch coolermaster 700w power sequence

USB MODE

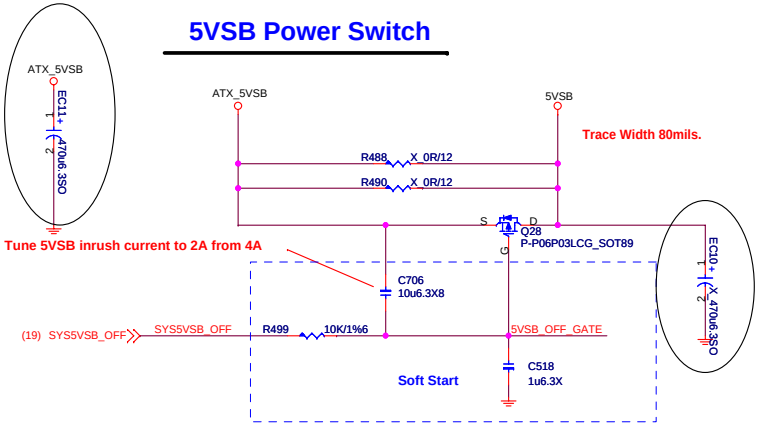


56K-->68K縮少料件

VCC1_8REF

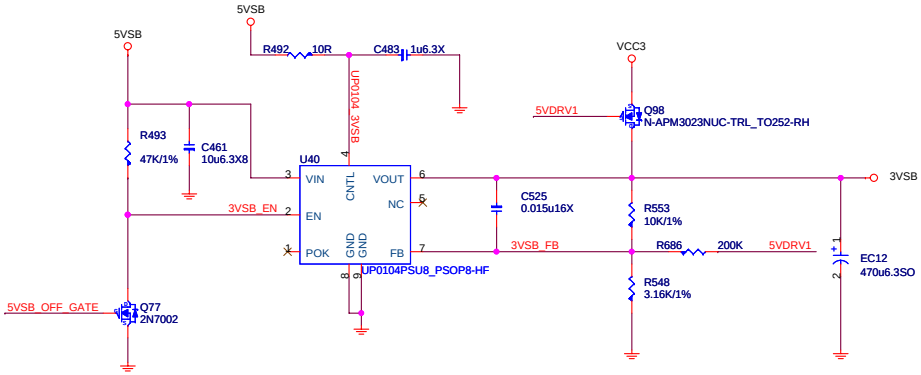


5VSB Power Switch

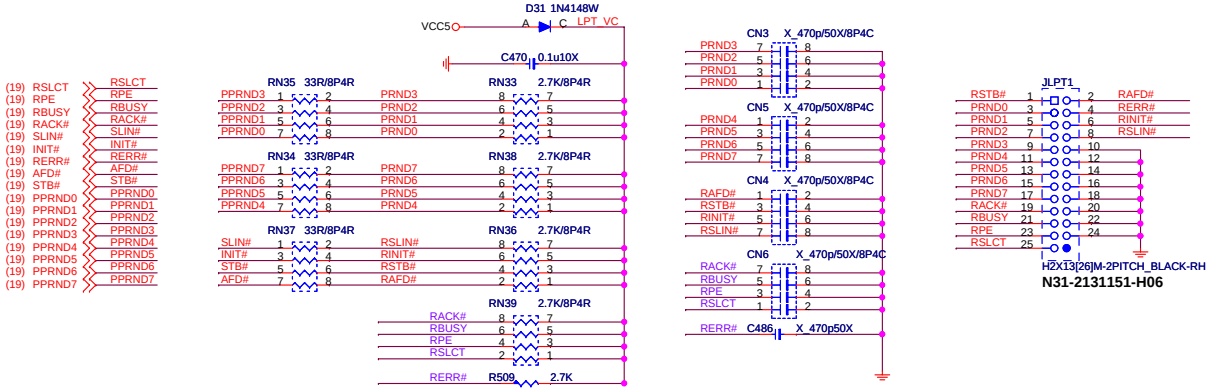


3VSB

3VSB supply to PCH and other device.
Turn off when Deep S3/S5 by 5VSB off.



PARALLAL PORT



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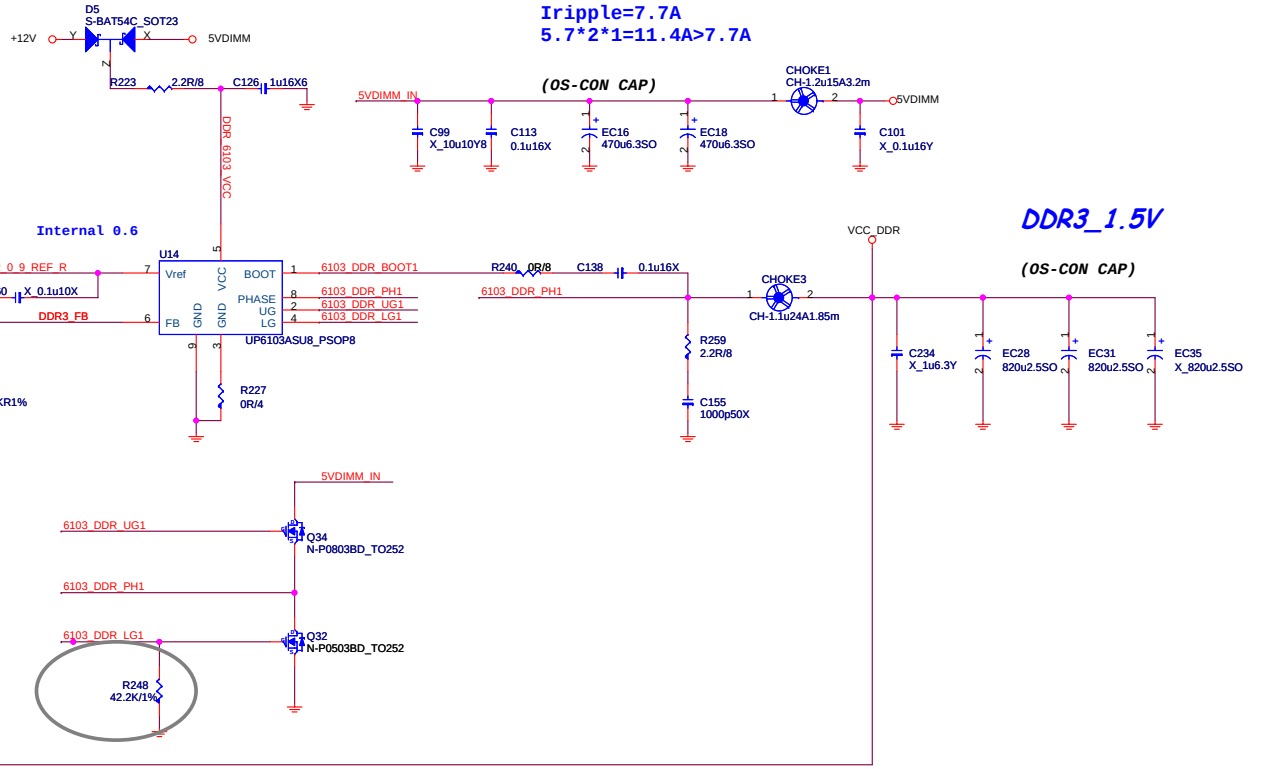
DDR3_1.5V 4.5A+7.5A+1A=13A

4.5A FOR CPU

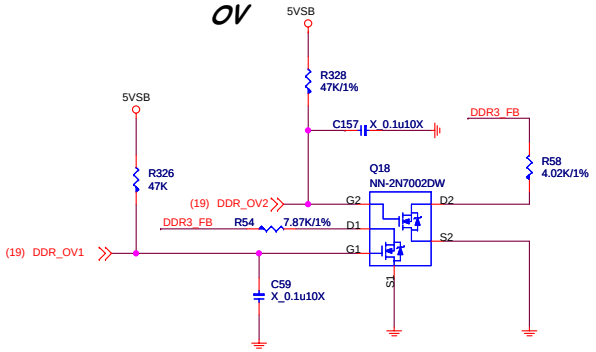
7.5A FOR 2DIMM

1A FOR DDR VTT

Iripple=7.7A
5.7*2*1=11.4A>7.7A



OV



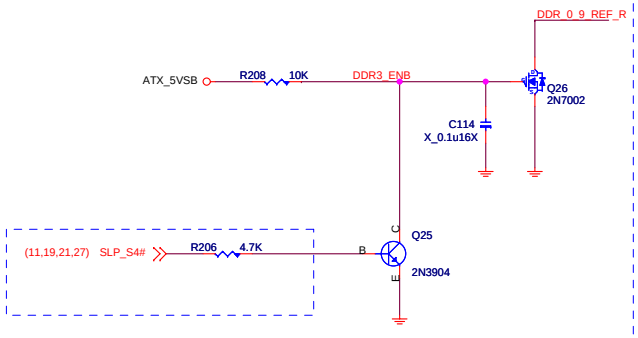
MODE	第一階	Default	第二階	第三階
DDR_OV1	LOW	HIGH	LOW	HIGH
DDR_OV2	LOW	LOW	HIGH	HIGH
VALUE	1.35V	1.5V	1.65V	1.8V

UPI VOLTAGE CONSOLE

0x20:RH=10K,RL=OPEN

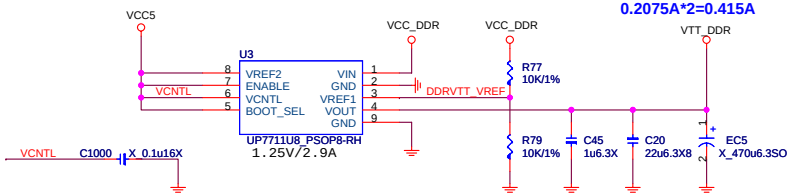
ADDRESS	0x2A	0X28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

P.S. Only for meet Intel power down sequence.



DDR VTT Power

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



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Size: Custom	Document Description: DDR Power - uP6103 1-Phase
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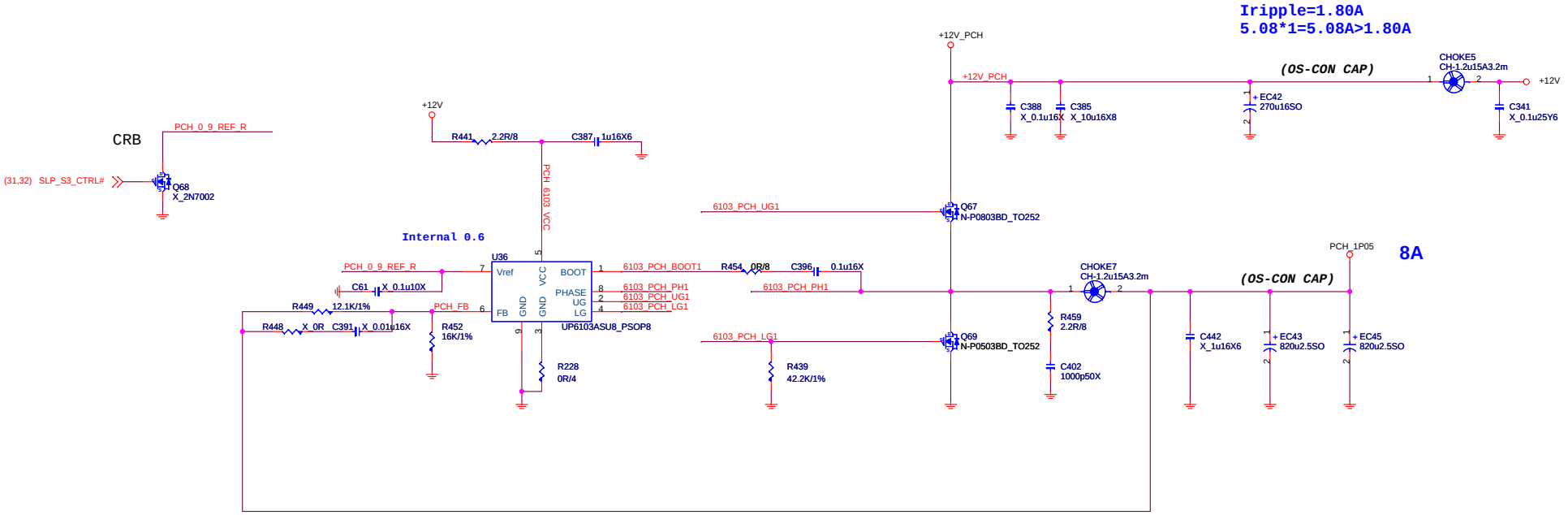
PCH Power:1.05V

PCH Core 6.2A+1.8A=8A

6.2A FOR PCH

1.8A FOR ME CORE



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Size: Custom	Document Description: PCH Power - uP6103 1-Phase	Rev: 1.1
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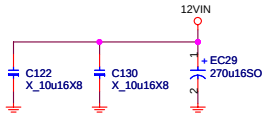
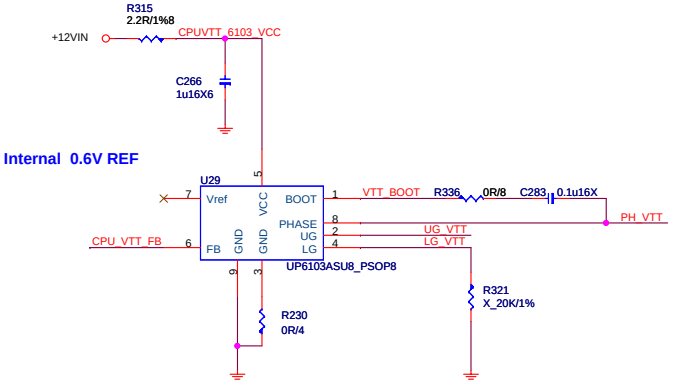
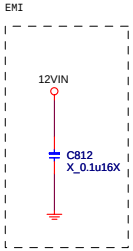
CPU_VTT:1.05/1.00

CPU VTT 8.5A + SA Core =17.3A

Iripple=1.92(vtt)+1.88(sa)
5.08*2=10.16A>3.8A

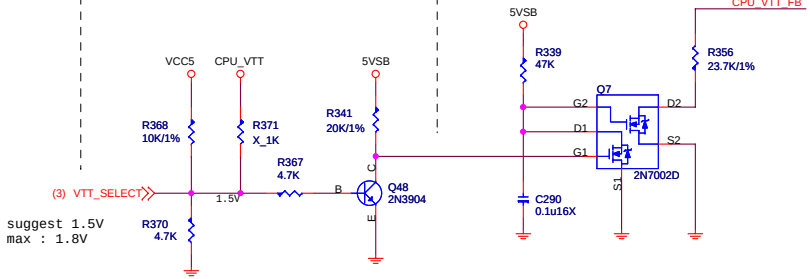




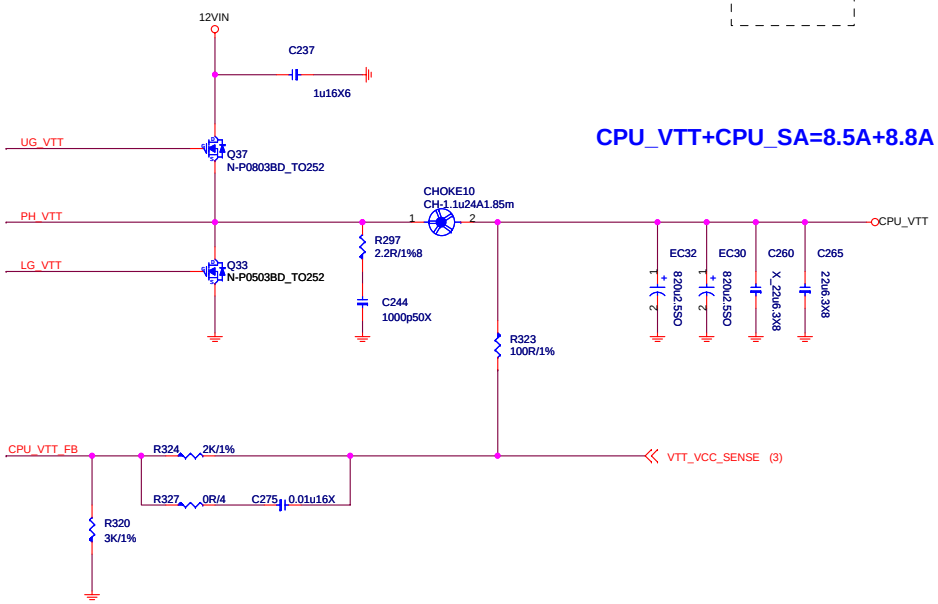


VTT_SELECT	
Low	1.0V
High	1.05V

VTT_SELECT Table	
Low	1.05V
High	1.0V



CPU_VTT+CPU_SA=8.5A+8.8A



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MS-7732	
Size: Custom	Document Description: CPU_VTT - uP6103- 1-Phase
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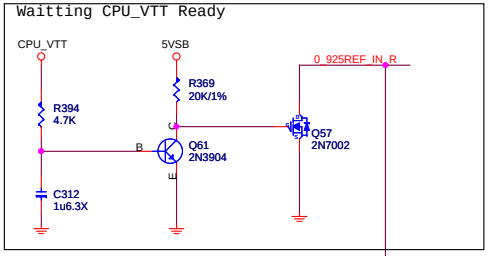
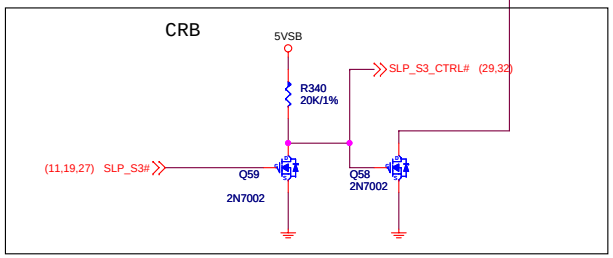
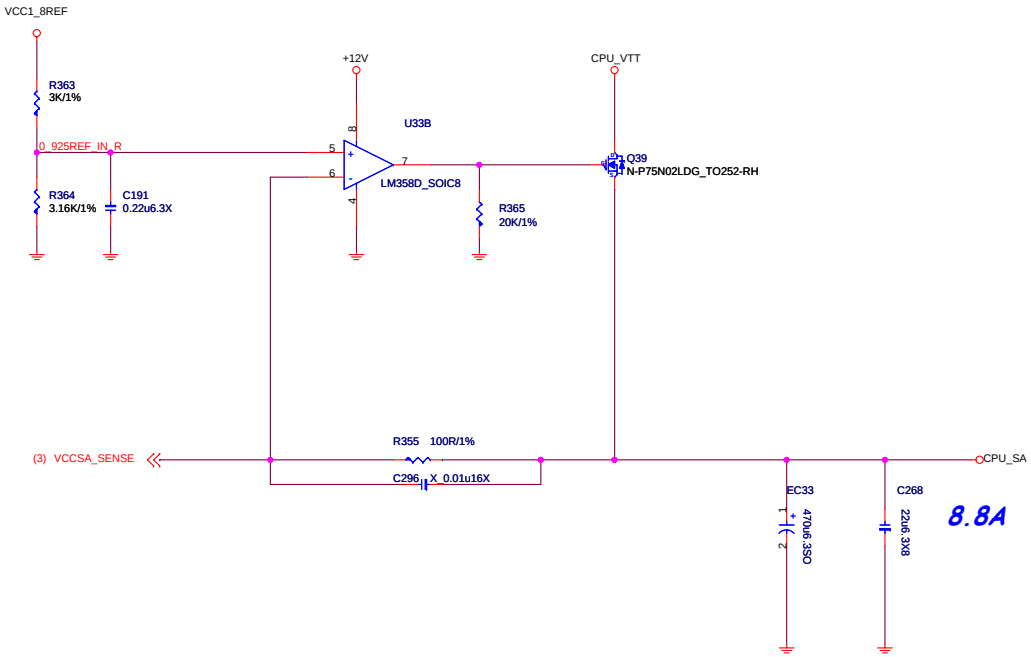
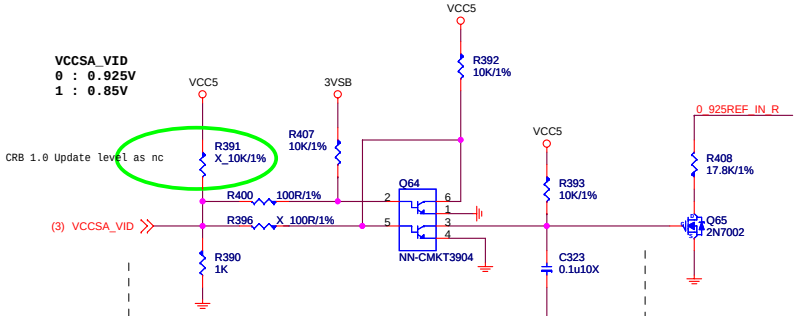
CPU_SA:0.925/0.85

SA Core =8.8A









VCCSA_VID	
Low	0.925V
High	0.85V

VCCSA_VID_SIO Table	
Low	0.85V
High	0.925V

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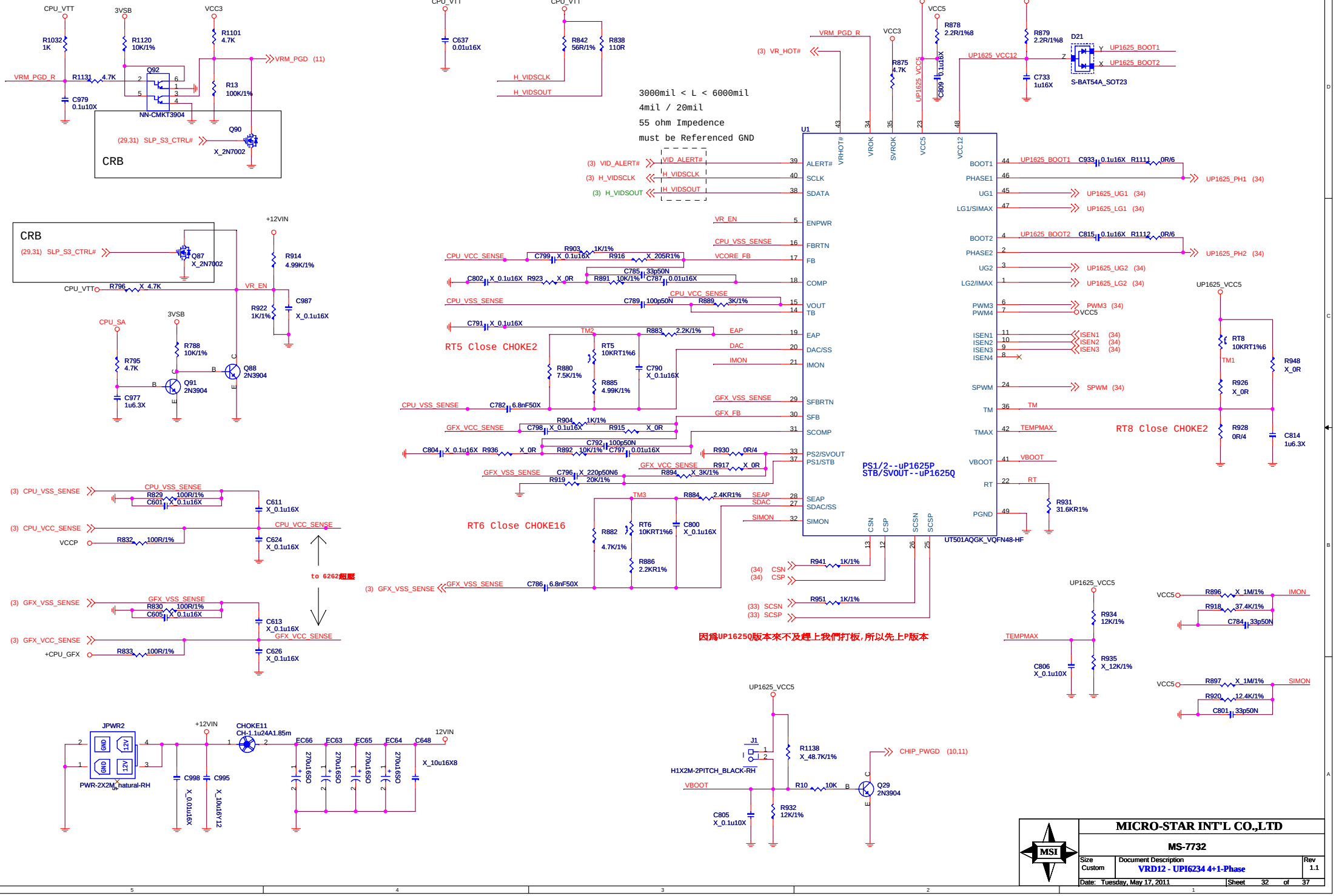
VRMPWRGD LEVEL SHIFT



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Size: Custom	Document Description: VRD12 - UP16234 4+1-Phase
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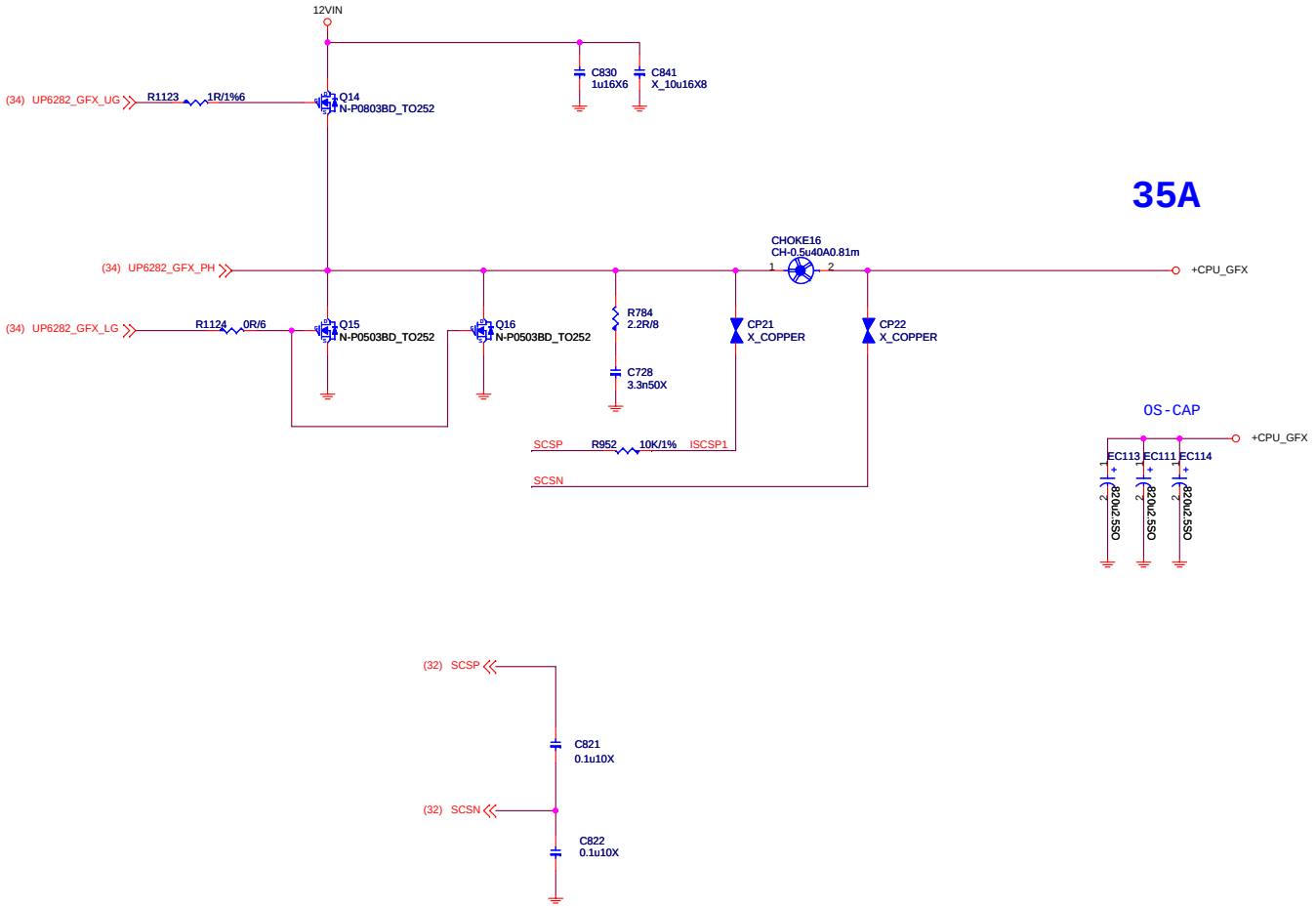

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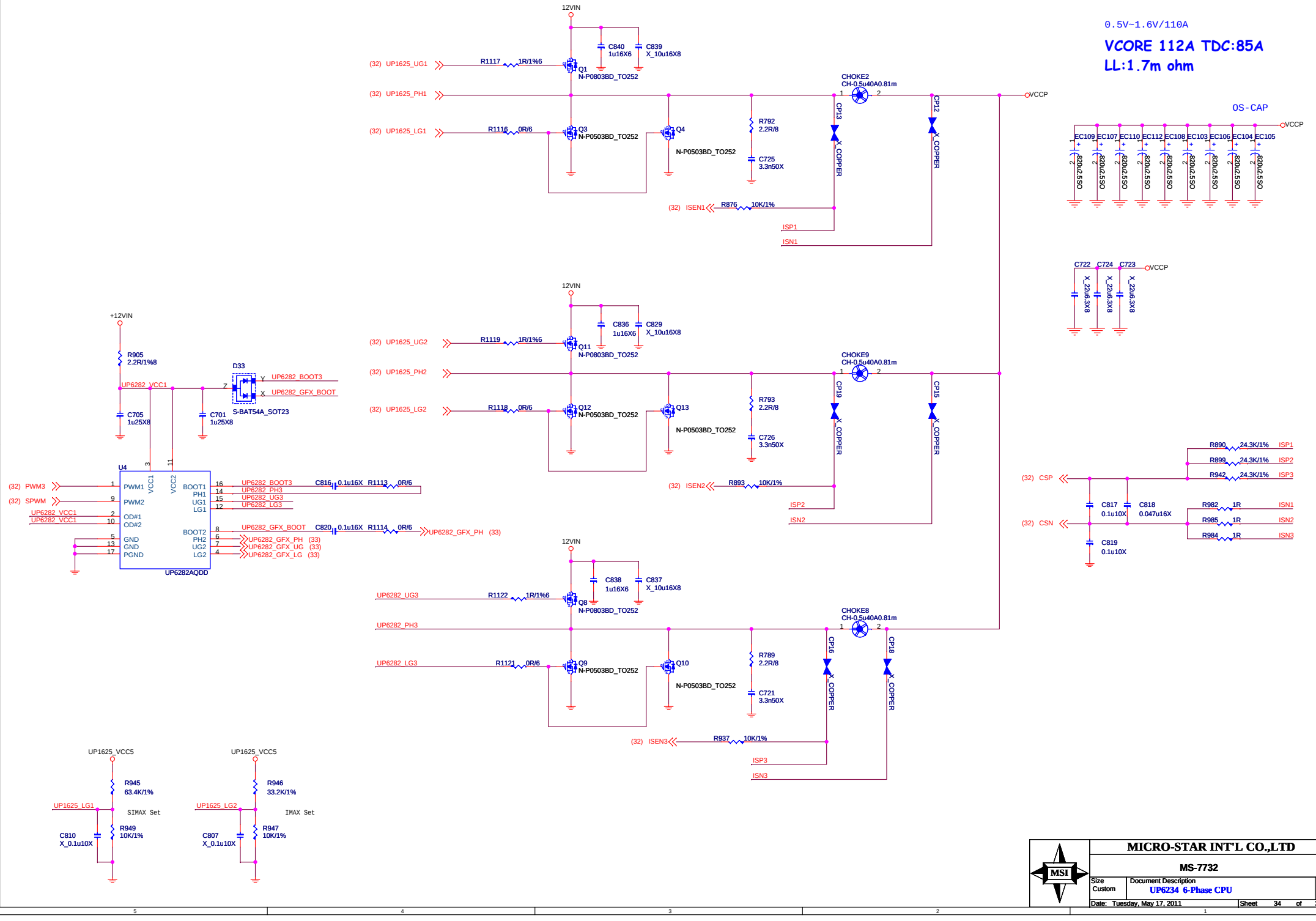
0.5V~1.6V/110A

VCORE 112A TDC:85A

LL:1.7m ohm



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MS-7732		
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OPT	Configure	BOM	Function	Marketing Name	M.P. ERP NO.
	CFG-7732-A	601-7732-01S	MS-7732 1.0 H61MU-E45 Intel H61+2*DDRIII+1*PCIe16,2*PCIe1,1*PCI+DVI/D-sub +4*SATAII+2*SATAIII+2*USB3.0+8*USB2+6 Flexible audio ports+Gb lan,EuP,(All Solid Cap),RoHS	PH61A-P35 (B3)	
A	CFG-7732-B	601-7732-02S	MS-7732 1.0 OPT:A H61MU-E45 Intel H61+2*DDRIII+1*PCIe16,2*PCIe1,1*PCI+D-sub +4*SATAII+10*USB2+6 Flexible Audio ports+Gb lan,EuP,(All Solid Cap),RoHS	PH61-P33 (B3)	601-7732-010
B	CFG-7732-C	601-7732-03S	MS-7732 1.0 OPT:B H61MU-E45 Intel H61+2*DDRIII+1*PCIe16,2*PCIe1,1*PCI+DVI/D-sub +2*SATAII+6*USB2+3 Flexible Audio ports+Gb lan,EuP,(All Solid Cap),RoHS	PH61-SP35 (B3)	601-7732-020 OPT:C

H67 OPT.

U100 — CPT H67 — Cougar point H67(B2)

SATA10_11 — SATA CON. — SATA14PM_BEIGE-ST-RH

USB 3.0

R272 — R — 0R

USB2 — USB CONN — USBAX2M_BLACK-RH-20

R279 — OPT BOM-R — 4.7K

AUDIO & VGA CON OPT.

AUDIO10 — AUDIO — PK/GR/BU/GY/OR/BL

VGA1 — D-SUB — DSUB-VGAF_BLUE-RH-9

EL/OS OPT.

EC200 — EC — 270uF16OS

EC201 — EC — 100u16SO

EC202 — EC — 470u6.3SO

EC204 — EC — 470u16EL11.5

EC203 — EC — 1000u63EL11.5

HS_PCH1 — MEC1 — MEC2 — HS-0405590-RH

CPU_H1 — CPU 鐵座 — E21-7557050-L06

	銀	電泳黑	白色
CPU鐵座	E21-7557040-L06	E21-7670020-L06	E21-7557050-L06

Simulation

VCC5 — SIM2 — SIM1 — X_PIN1*2

SIM1 — SIM2 — X_PIN1*2

Optical Fiducial Marks-120

FM5 FM8 FM2 FM4 — X_FM

FM6 FM7 FM1 FM3 — X_FM

Mounting Holes

MH7 MH2 MH4 — X_MH001

MH5 MH1 — X_MH001

MH8 — X_MH001

PCB1 — 7732-1.0

BAT1_X1 — BAT-BCR2032P-RH

RUB1 — USB — X_Rubber

RUB2 — USB — X_Rubber

LA10 — Label — 601-7732-01S — LABEL

LA11 — Label — 601-7732-02S — LABEL

LA12 — Label — 601-7732-03S — LABEL

PK0-0773210-G37,精成,23,寶安恩斯邁廠(MSIS)
PK0-0773210-G37,精成,77,寶安恩斯邁廠(MSIS)
PK0-0773210-E36,E&E,23,寶安恩斯邁廠(MSIS)
PK0-0773210-E36,E&E,27,寶安恩斯邁廠(MSIS)
PK0-0773210-E48,競華,23,寶安恩斯邁廠(MSIS)
PK0-0773210-E48,競華,27,寶安恩斯邁廠(MSIS)

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