

MS-7680

Ver: 4.1

m-ATX : 245 X 215mm

CPU:

INTEL - Sandy Bridge LGA 1155

System Chipset:

INTEL - Cougar Point PCH(H61,Co-lay H67)

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 * 3

PCI Slot * 1

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 + SATA2.0 x4 (PCH)

USB2.0 RearX4 Front x6

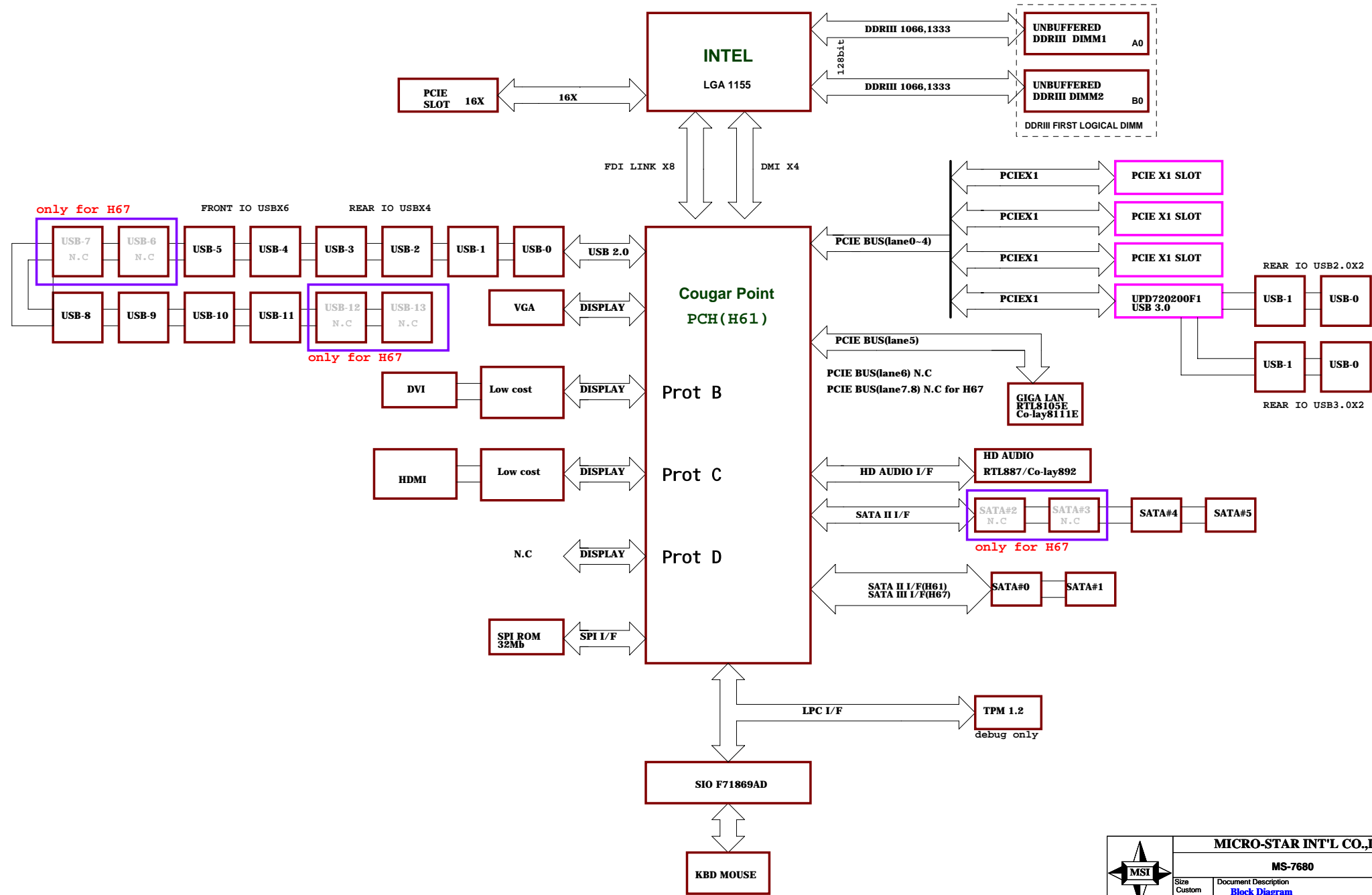
USB3.0 RearX2

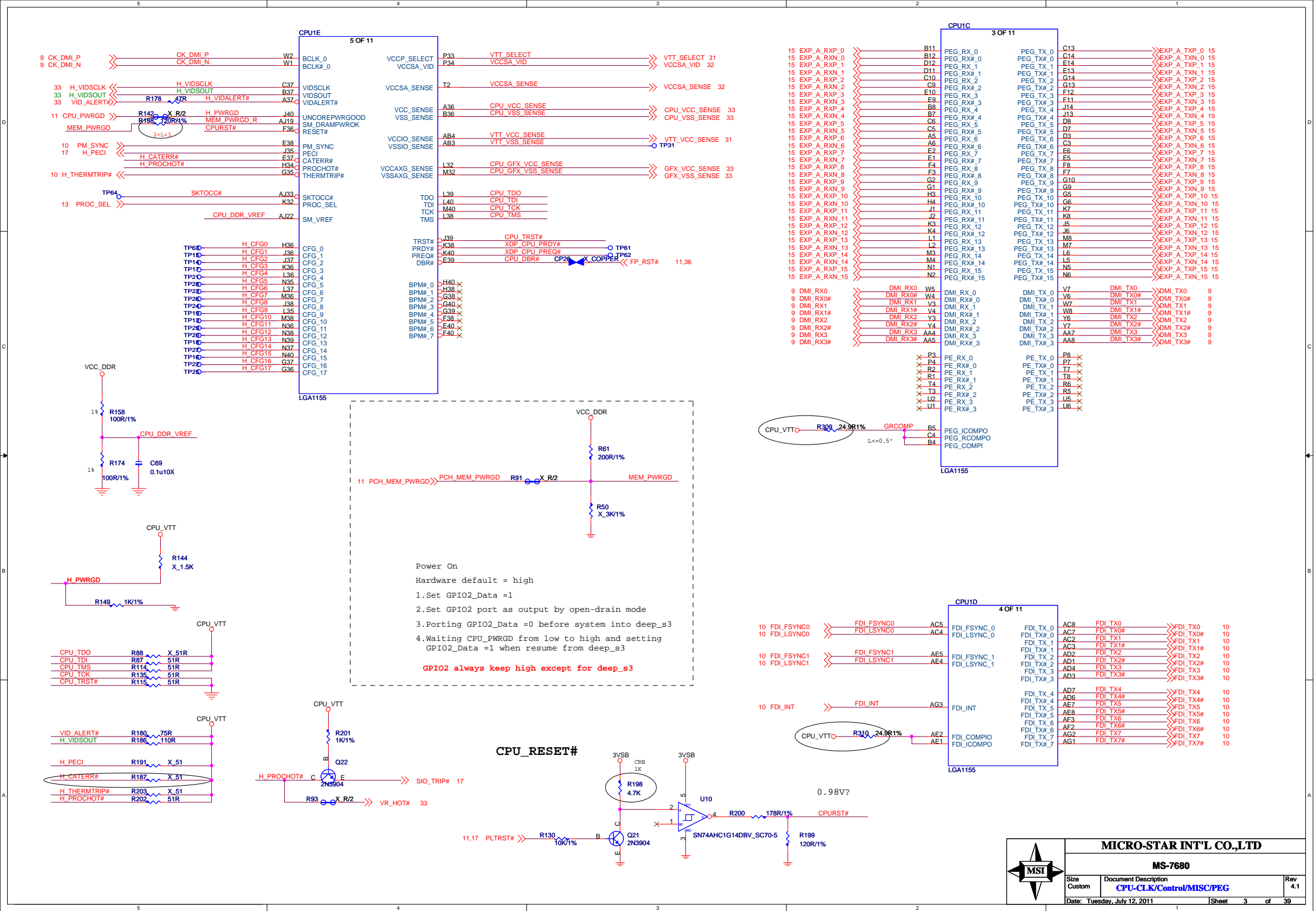
D-SUB/DVI/HDMI *1

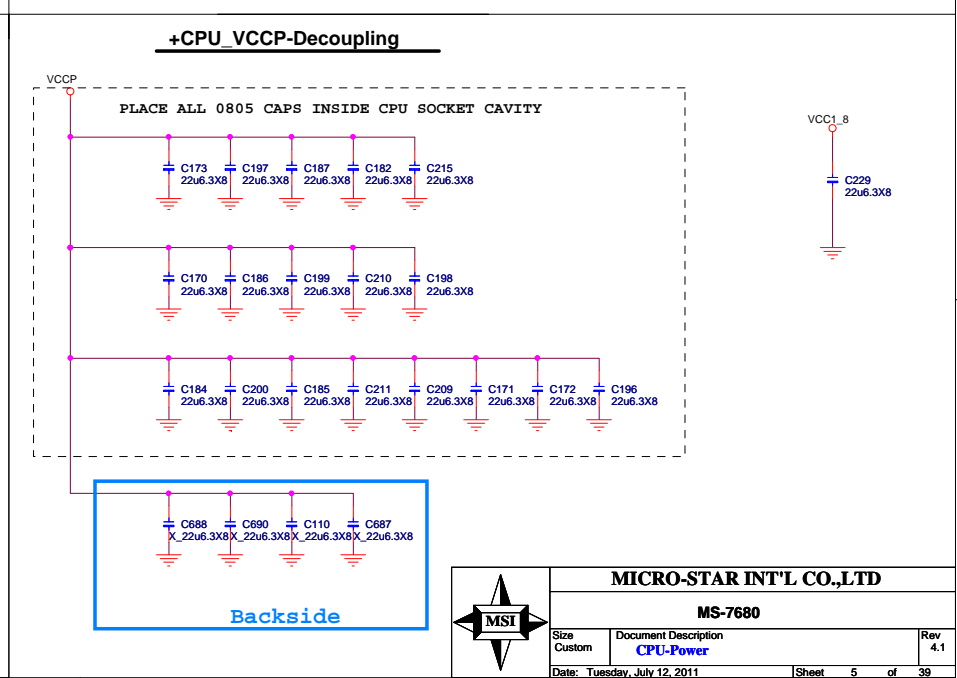
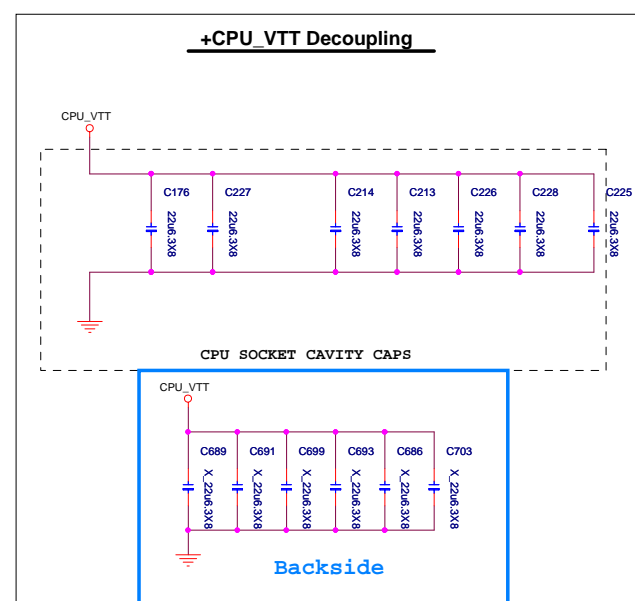
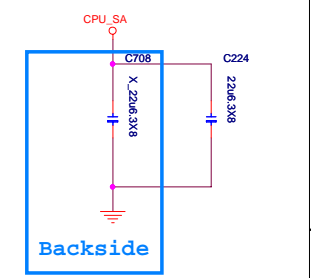
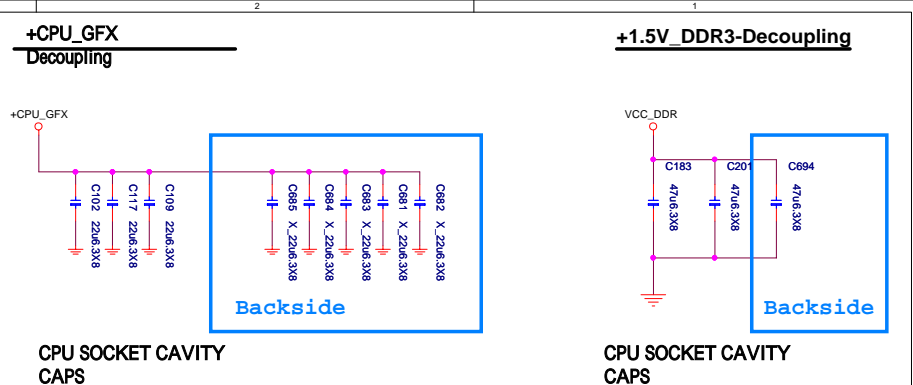
TPM Header *1(debug only)

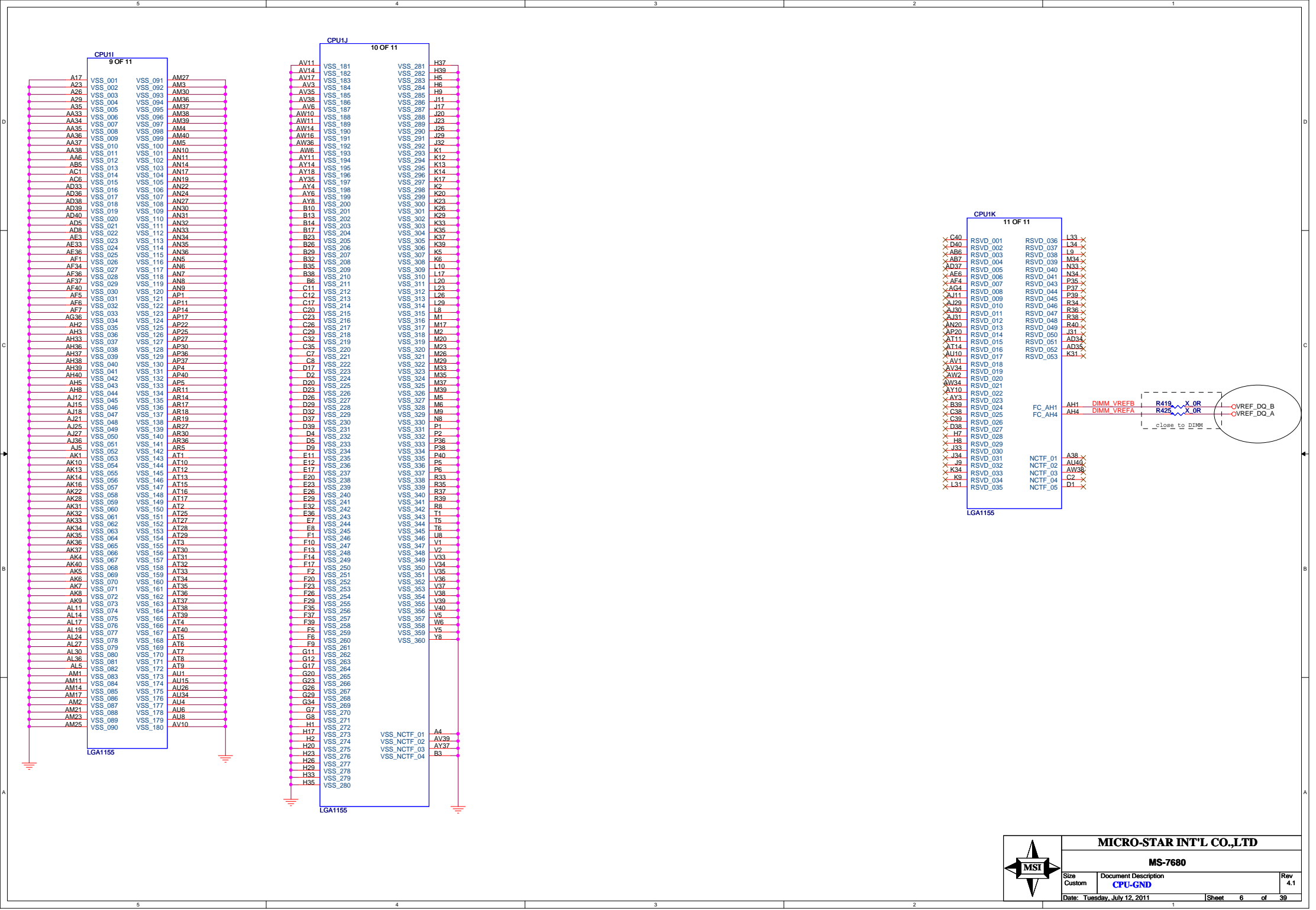
on BOARD BUZZER

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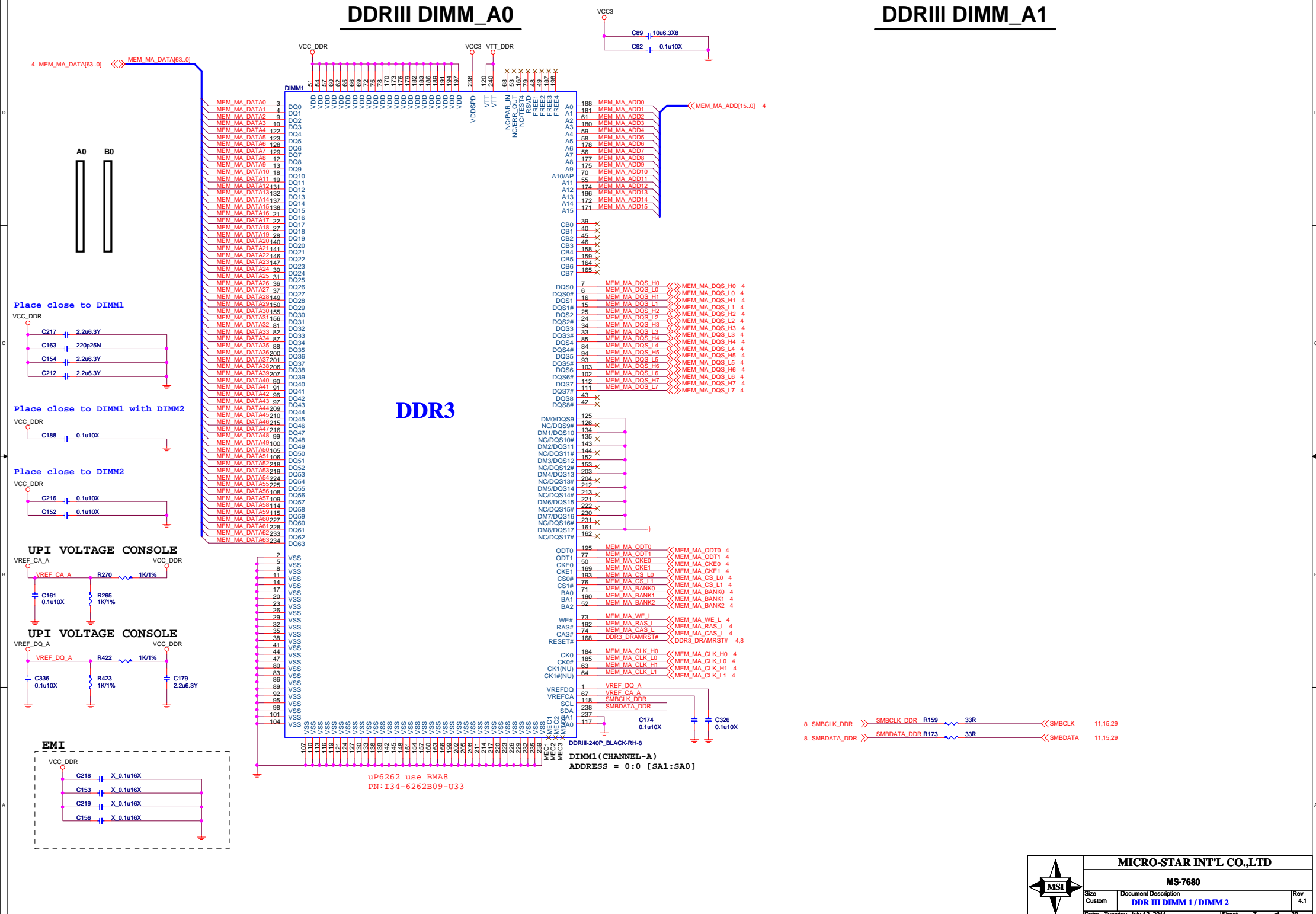


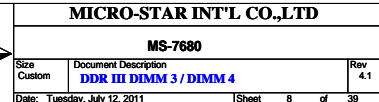
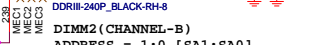


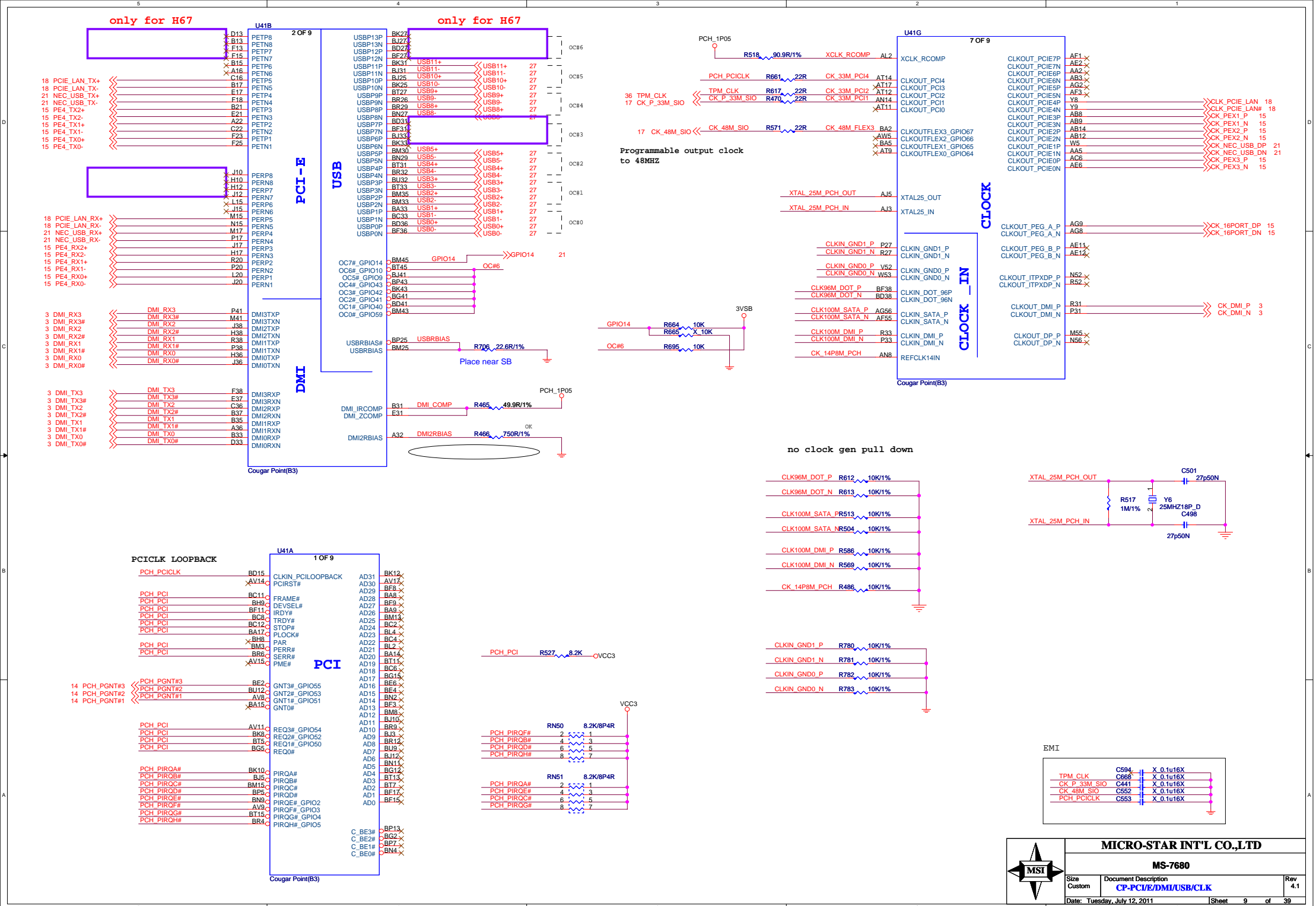


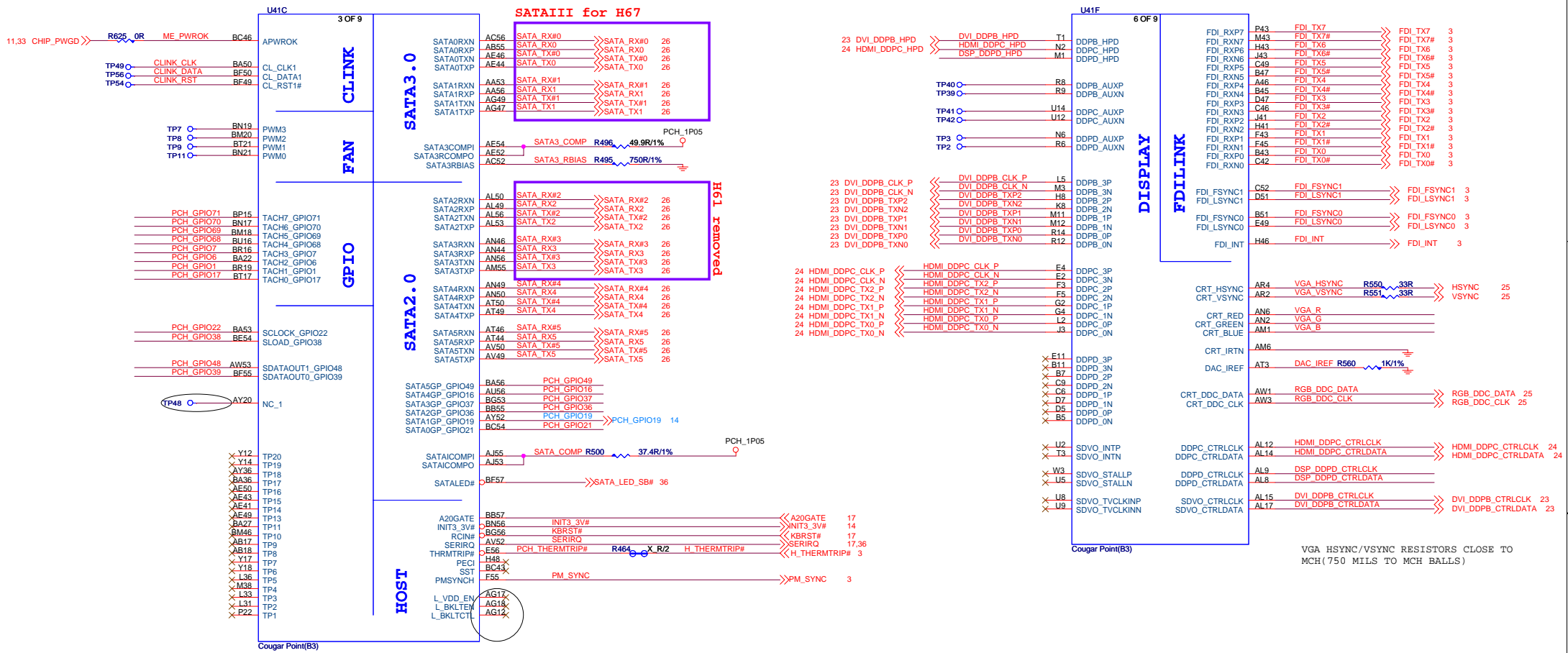
DDRIII DIMM_A0

DDRIII DIMM_A1

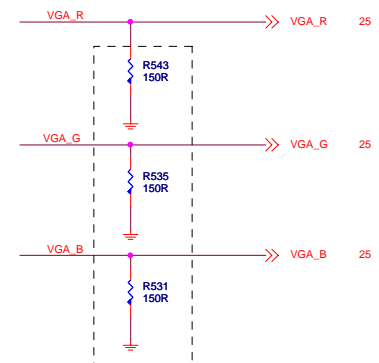
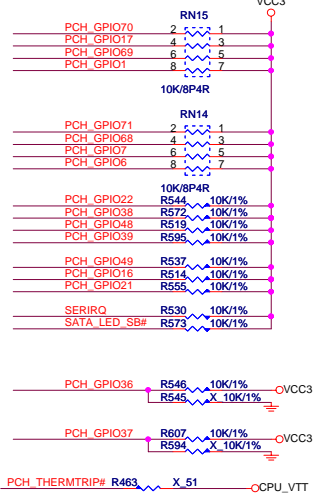








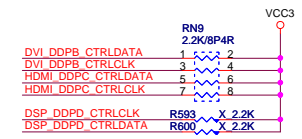
Pull HIGH for PCH

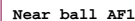
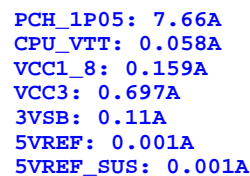


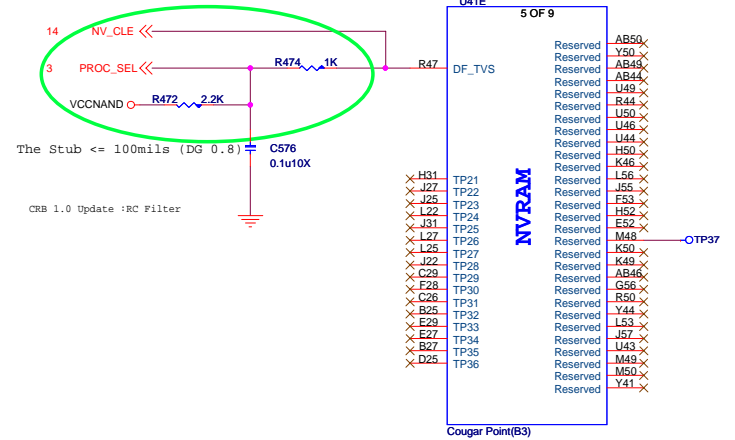
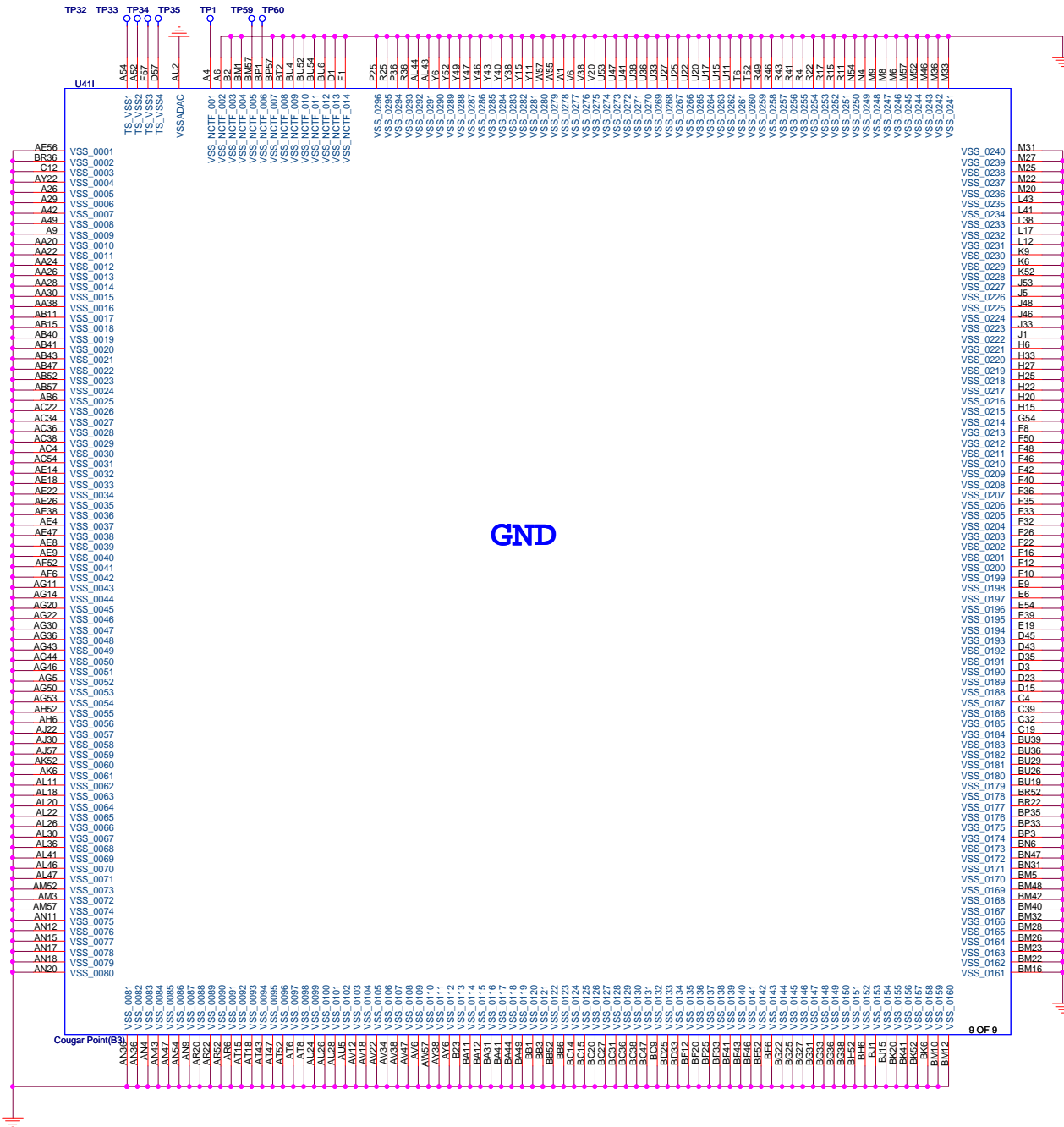
No VGA(pull down)



Enable VGA(CTRLCLK/DATA Pull High)

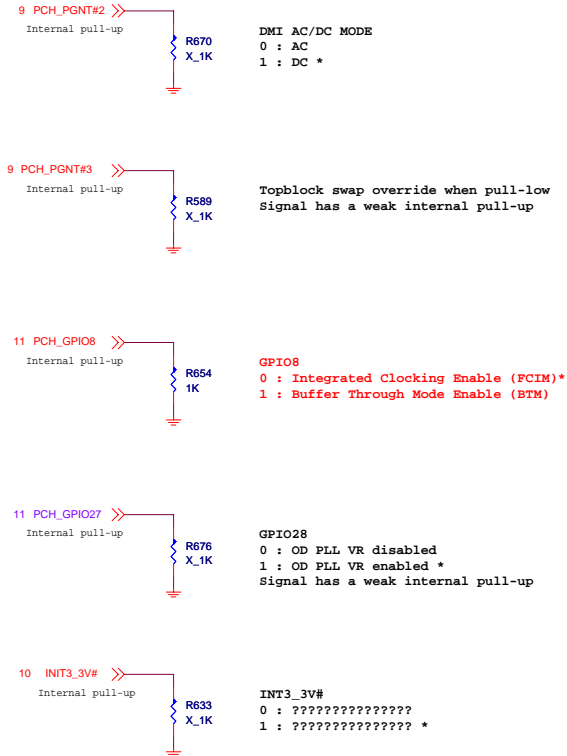
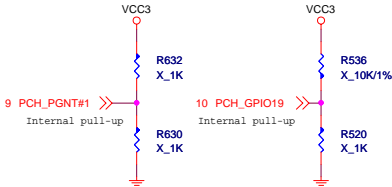






PCH Straps

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



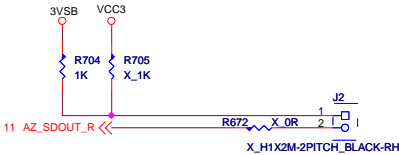
INTVRMEN
0 : DISABLE INTERNAL VRM
1 : ENABLE INTERNAL VRM *

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



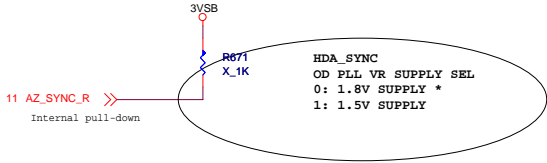
DSWVRMEN
0 : Disable Internal Deep Sleep 1.05 V regulators.
1 : Enable Internal Deep Sleep 1.05 V regulators.

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

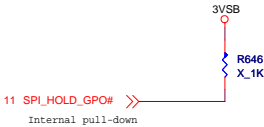


HDA_SDO
Disable ME in Manufacturing Mode when pull LOW ????

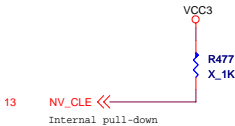
HDA_SDO has internal pull down.
Default should be connected to SDIN of codec, no pull up/down.
To Disable ME need to have a jumper to pull high



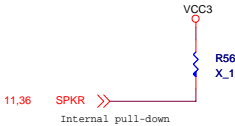
HDA_SYNC
OD PLL VR SUPPLY SEL
0: 1.8V SUPPLY *
1: 1.5V SUPPLY



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

PCI_Express X16 Slot

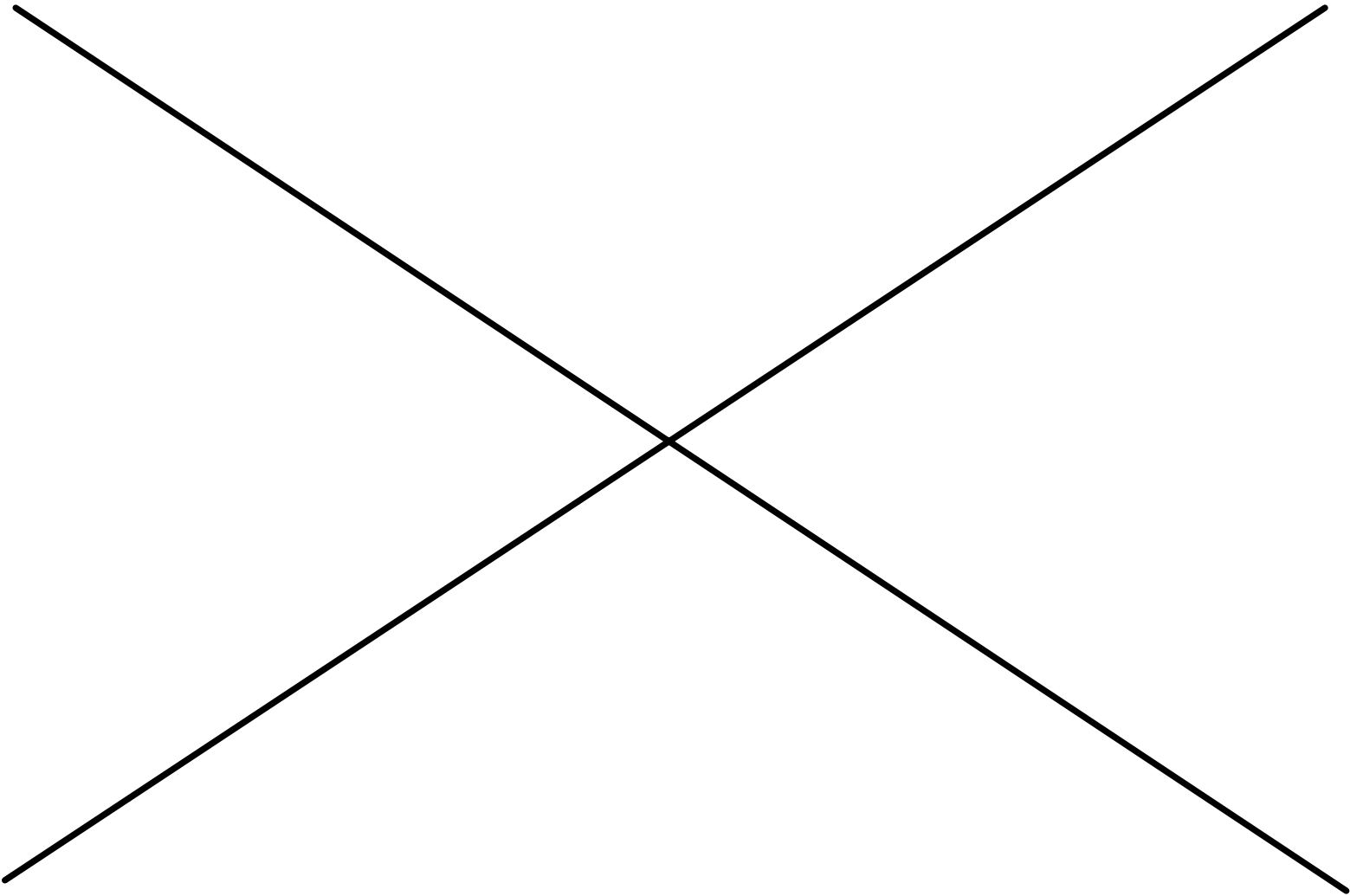


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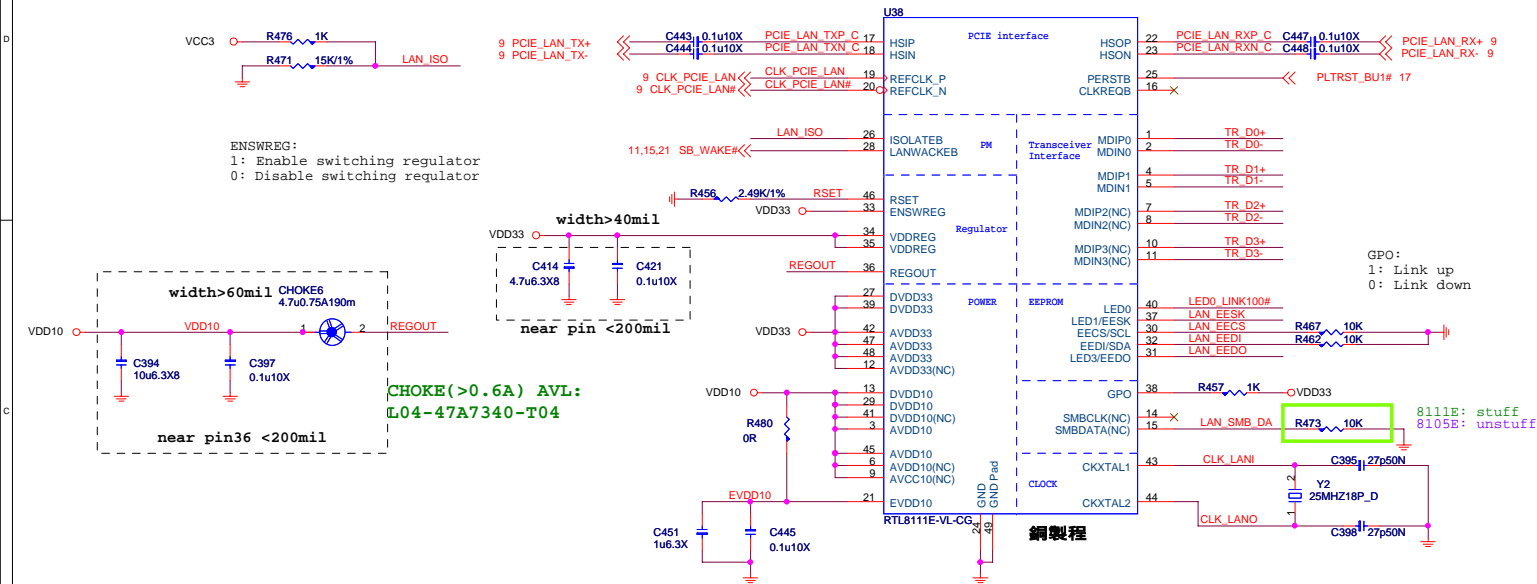
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RTL8111E Giga LAN

RTL8105E 10/100M LAN



LAN Connector

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

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



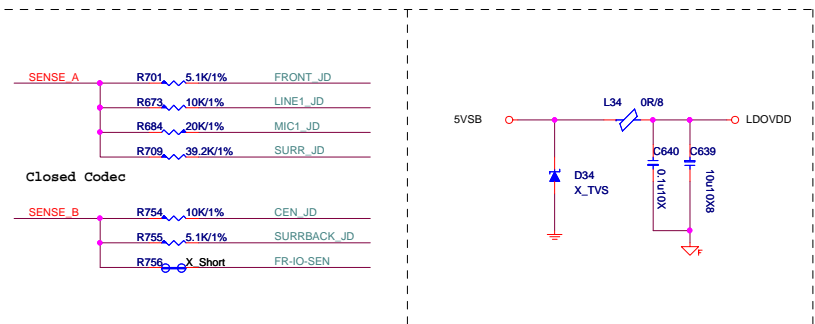
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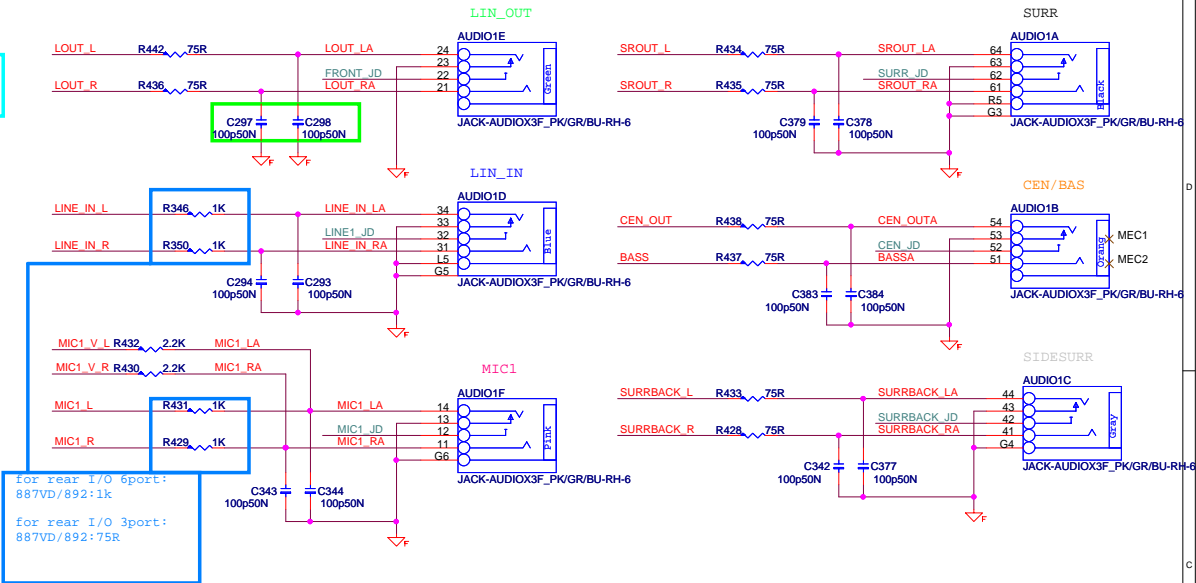
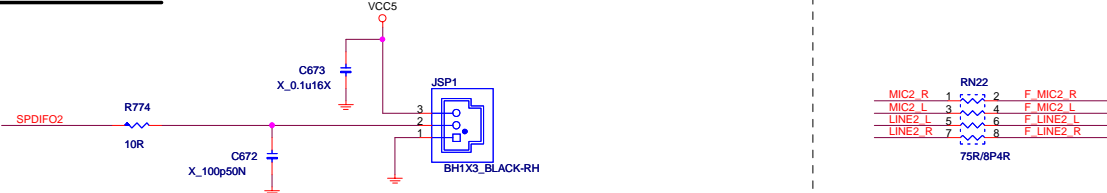
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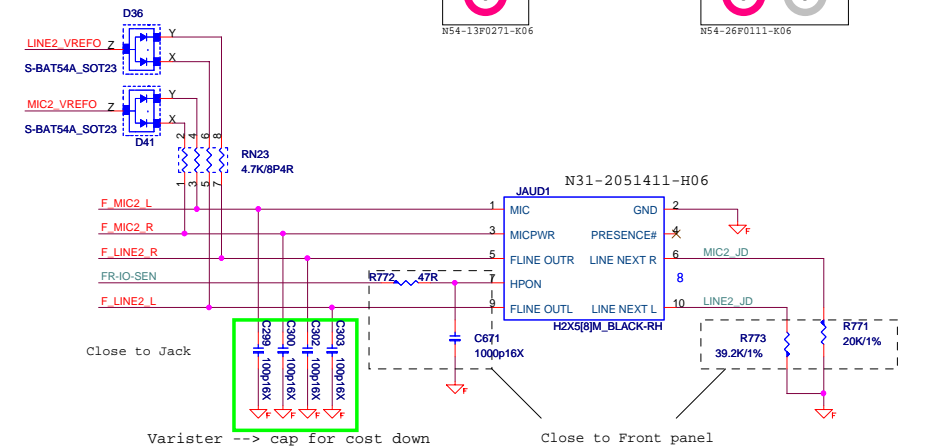
ALC892



SPDIF OUT



當串接電容有極性時，需上對地電阻

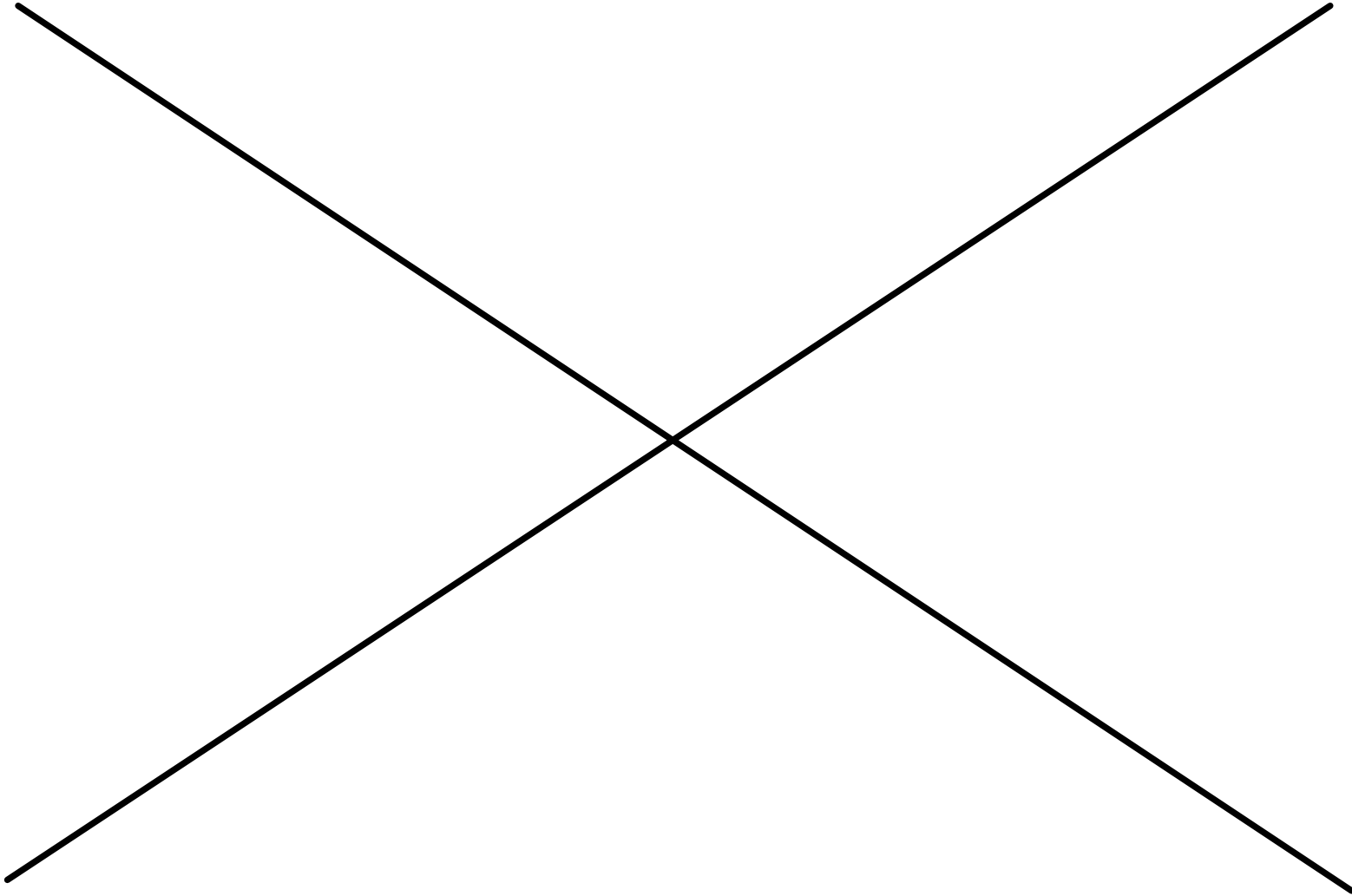


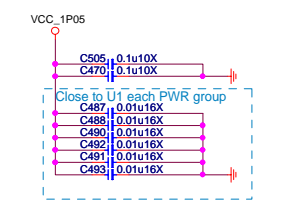
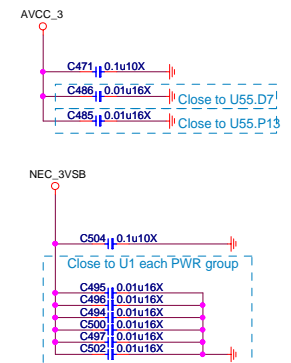
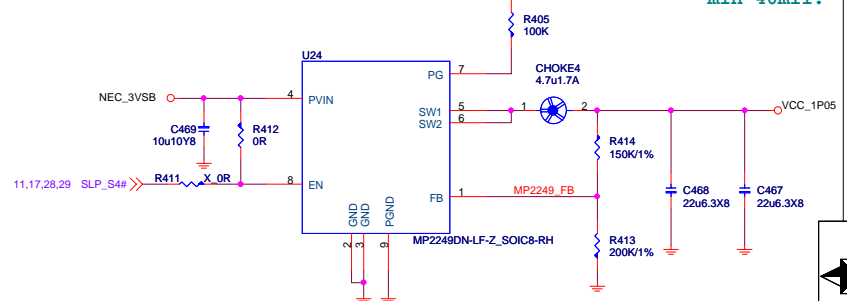
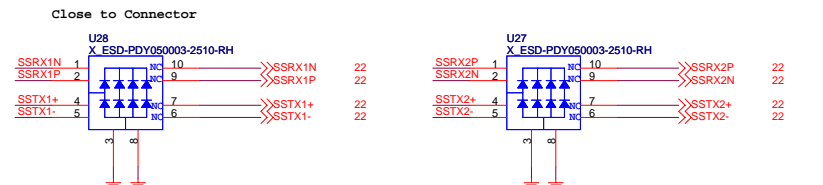
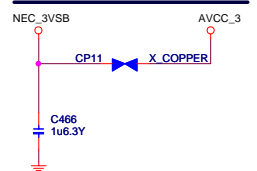
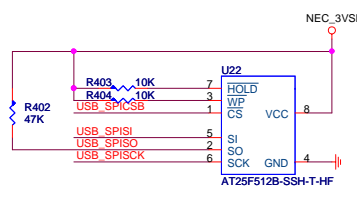
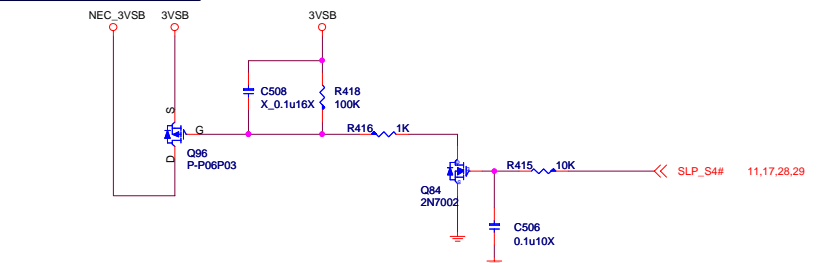
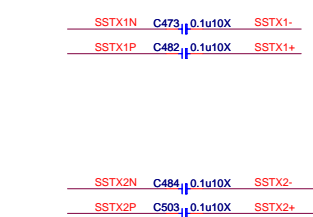
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Custom	ALC892_COLAY_ALC887VD	4.1
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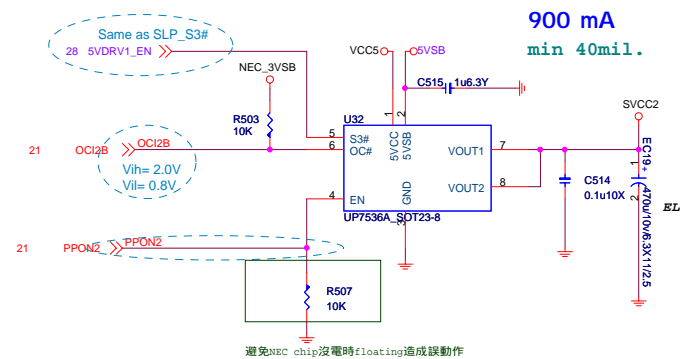
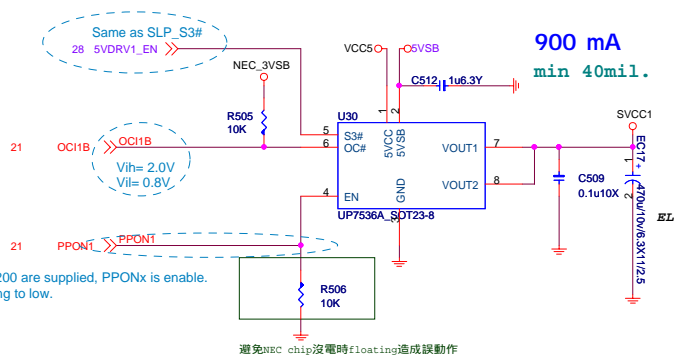
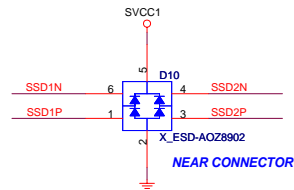
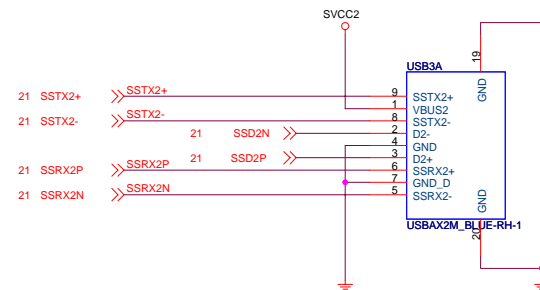
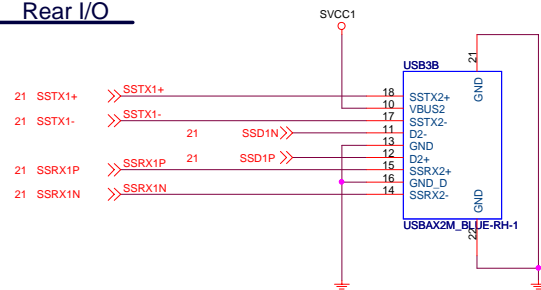




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Rear I/O



All power sources of uPD720200 are supplied, PPONx is enable.
PPONx is low when OC1x going to low.

避免NEC chip沒電時floating造成誤動作

避免NEC chip沒電時floating造成誤動作



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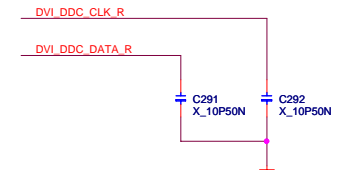
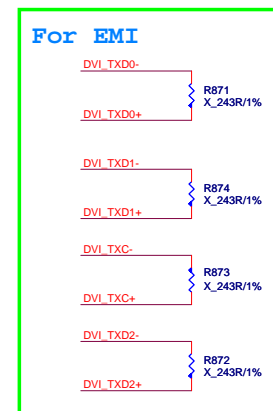
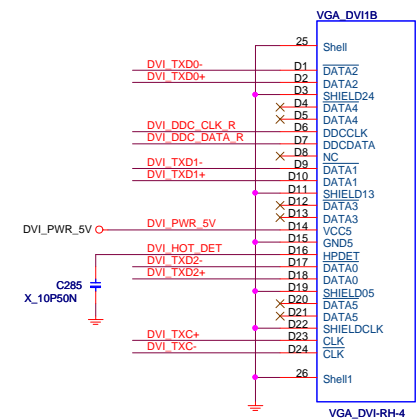
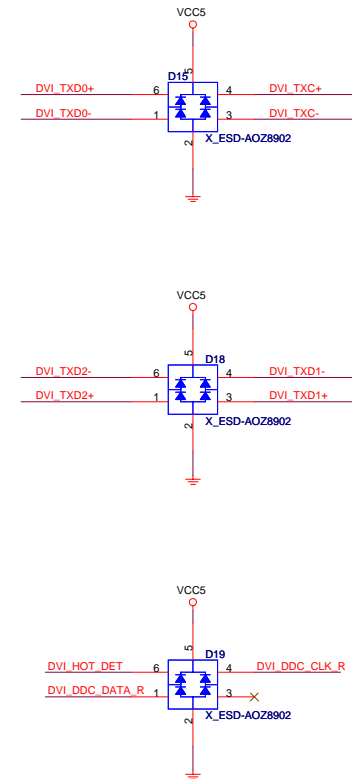
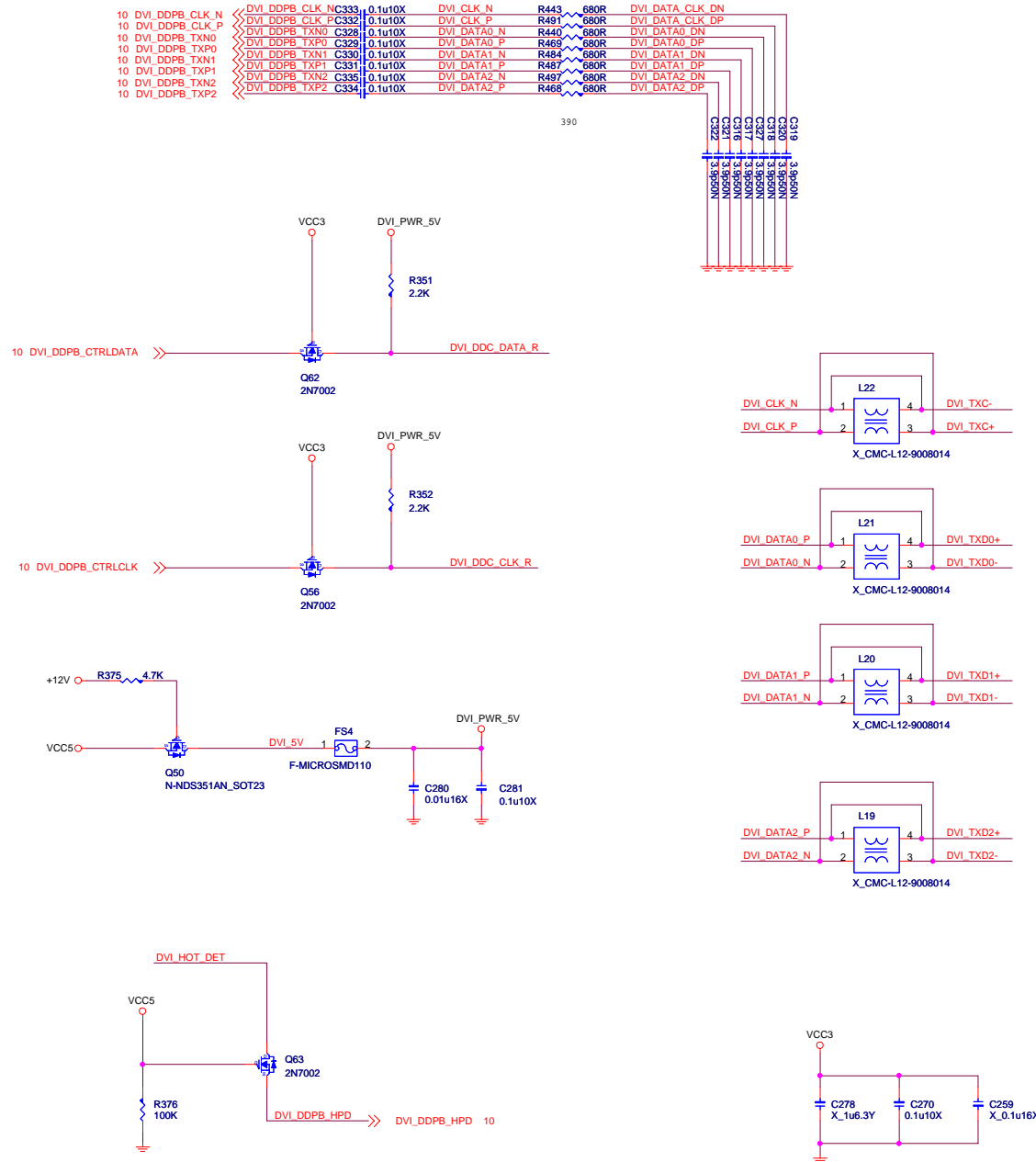
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Rev
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DVI level shifter

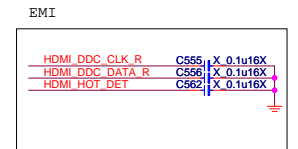
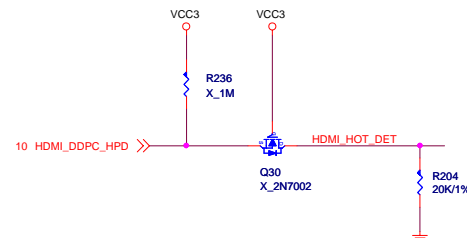
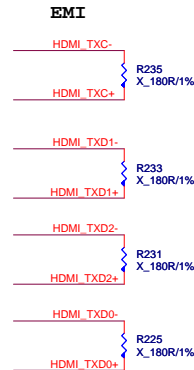
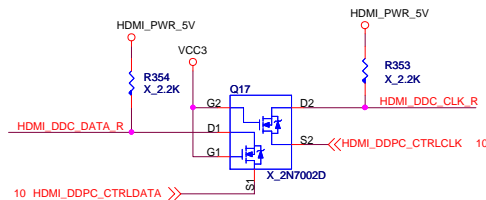
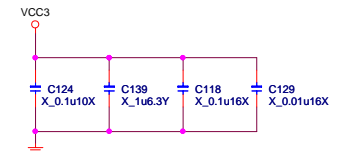
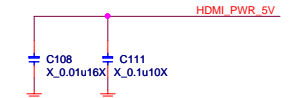
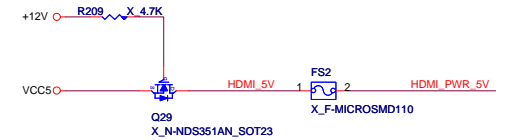
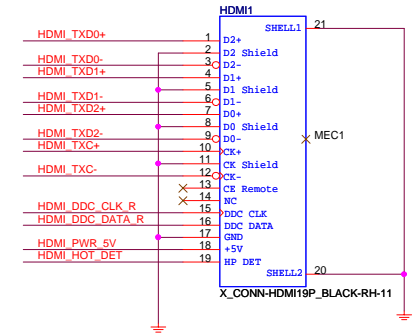
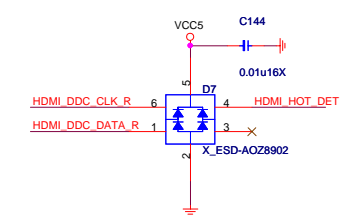
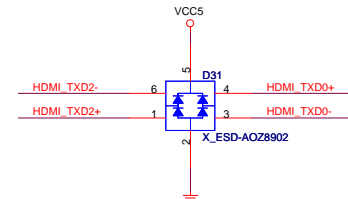
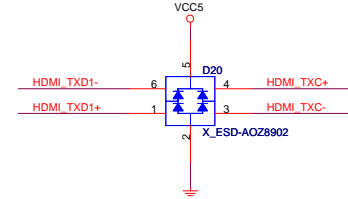
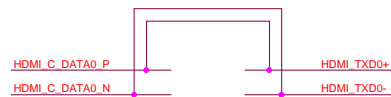
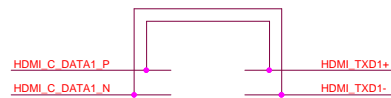
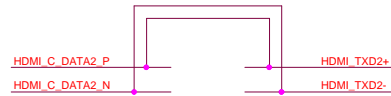
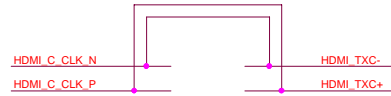
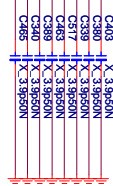
VGA: resolution of 2048x1536 pixels with 32-bit color at 75 Hz (4:3 QXGA)



HDMI level shifter

HDMI, DVI : 1920x1200 at 60 Hz (16:10 WUXGA)

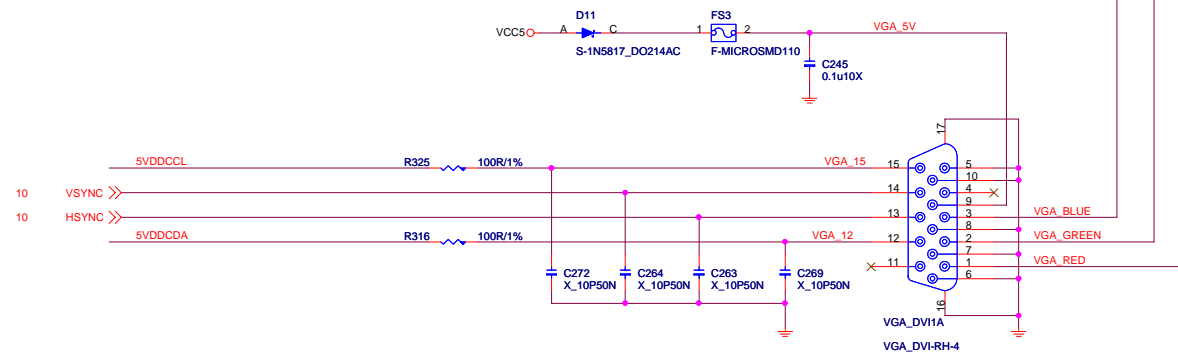
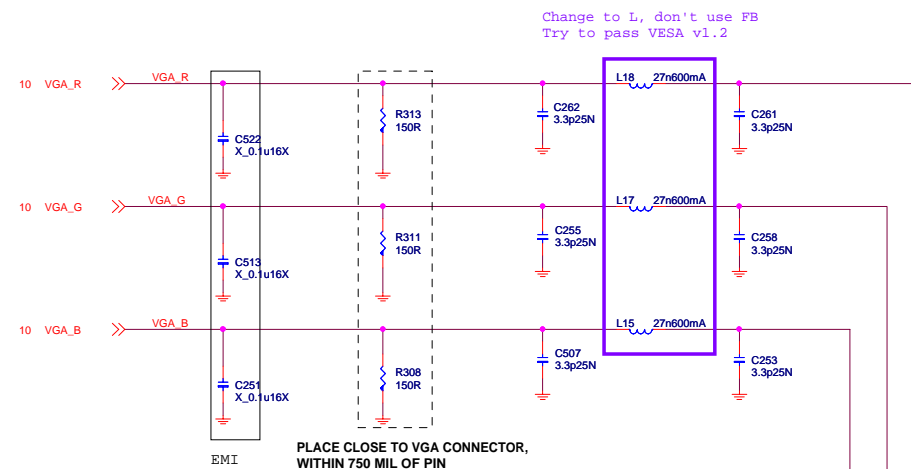
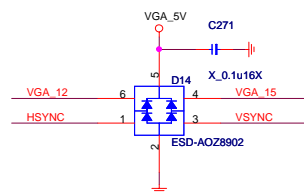
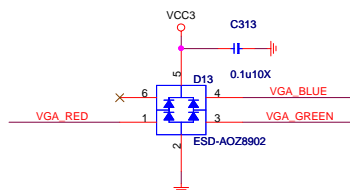
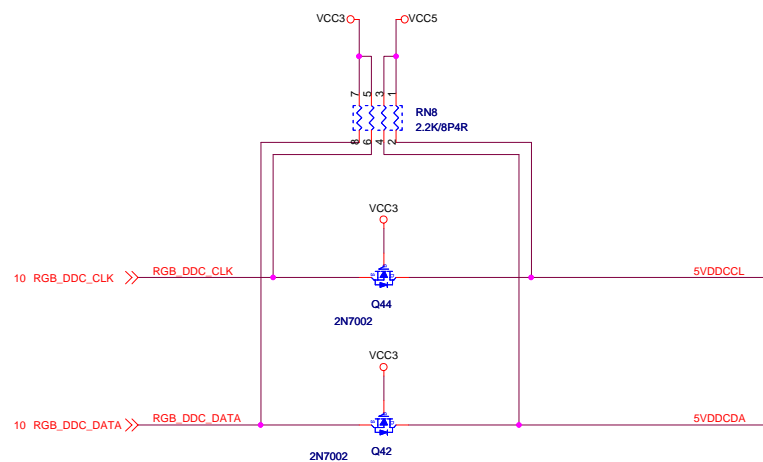
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10 HDMI_DDPC_CLK_N	HDMI_DDPC_CLK_N	C142	X 0.1u10X	HDMI_C_CLK_N	R522	X 680R	HDMI_MOS_CLKN
10 HDMI_DDPC_TX2_P	HDMI_DDPC_TX2_P	C134	X 0.1u10X	HDMI_C_DATA2_P	R510	X 680R	HDMI_MOS_D2P
10 HDMI_DDPC_TX2_N	HDMI_DDPC_TX2_N	C132	X 0.1u10X	HDMI_C_DATA2_N	R511	X 680R	HDMI_MOS_D2N
10 HDMI_DDPC_TX1_P	HDMI_DDPC_TX1_P	C136	X 0.1u10X	HDMI_C_DATA1_P	R516	X 680R	HDMI_MOS_D1P
10 HDMI_DDPC_TX1_N	HDMI_DDPC_TX1_N	C137	X 0.1u10X	HDMI_C_DATA1_N	R521	X 680R	HDMI_MOS_D1N
10 HDMI_DDPC_TX0_P	HDMI_DDPC_TX0_P	C123	X 0.1u10X	HDMI_C_DATA0_P	R523	X 680R	HDMI_MOS_D0P
10 HDMI_DDPC_TX0_N	HDMI_DDPC_TX0_N	C119	X 0.1u10X	HDMI_C_DATA0_N	R512	X 680R	HDMI_MOS_D0N



D-Sub

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

Level shift



MICRO-STAR INT'L CO.,LTD

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Size	Document Description
Custom	VGA

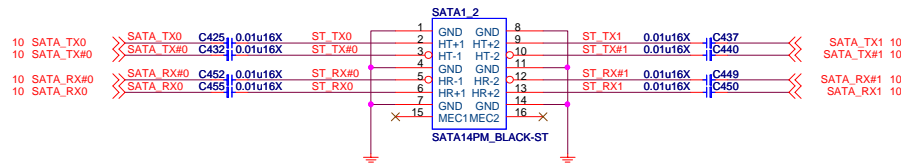
Rev	4.1
-----	-----

Date: Tuesday, July 12, 2011

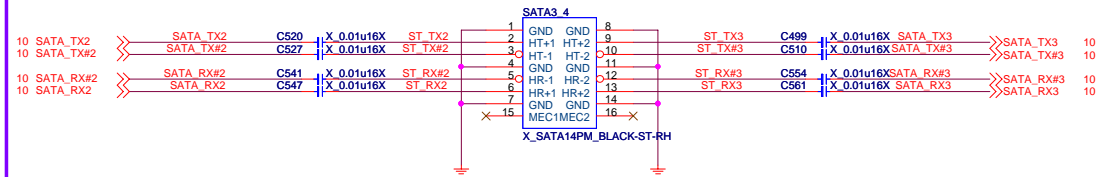
Sheet 25 of 39

SATA 6G PORT 0,1

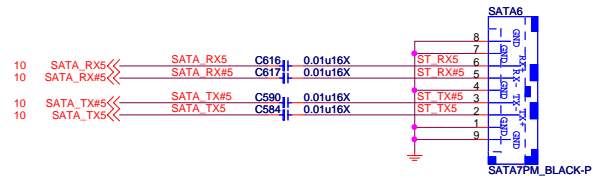
H61 PORT 0/1 Support 3G
H67 PORT 0/1 Support 6G



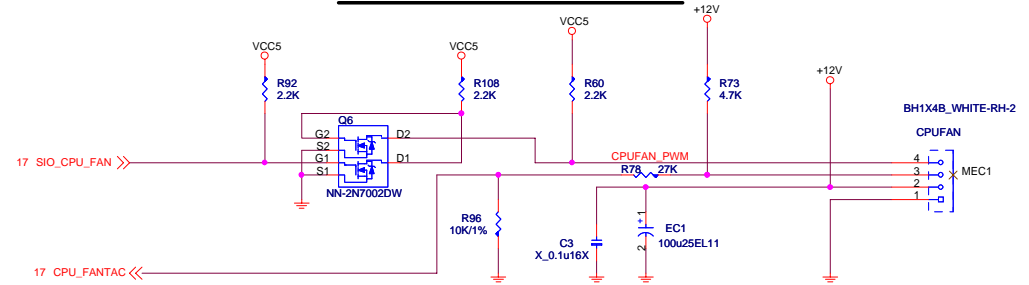
SATA 3G PORT 2,3



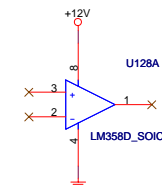
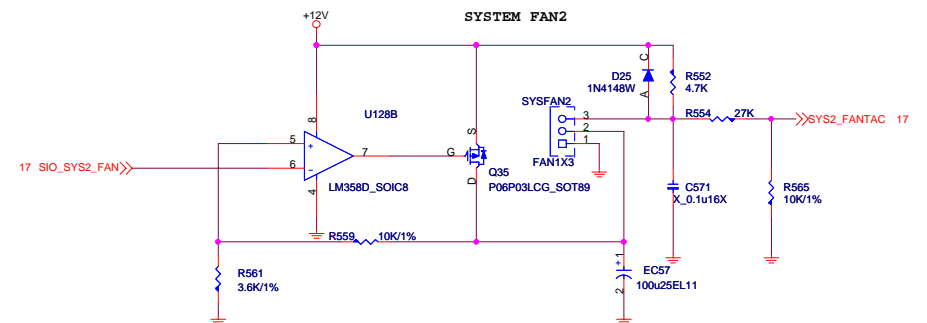
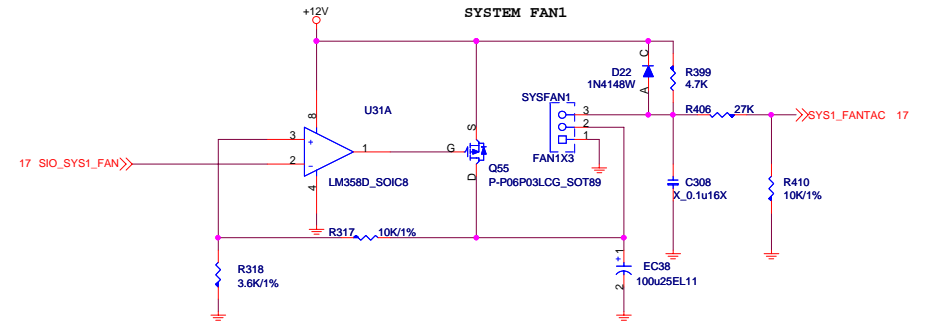
For H61,SATA3&4 removed



CPU FAN-COUNTROL CIRCUIT



SYSTEM FAN-COUNTROL CIRCUIT

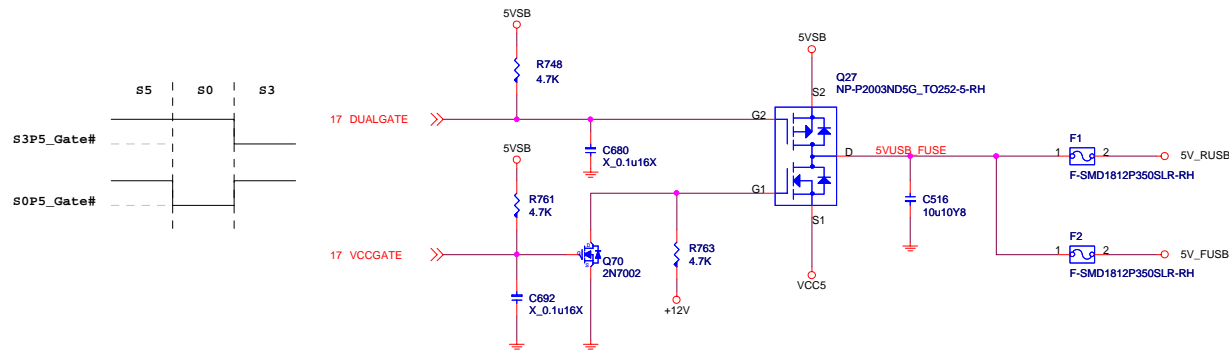


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Size	Document Description	Rev
Custom	SATA / FAN Control	4.1
Date: Tuesday, July 12, 2011	Sheet 26 of 39	

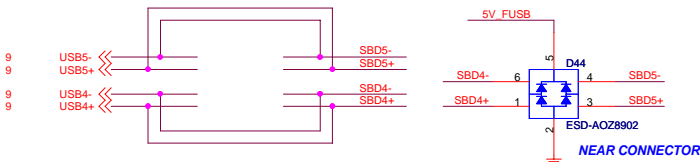
5V_RUSB Switch



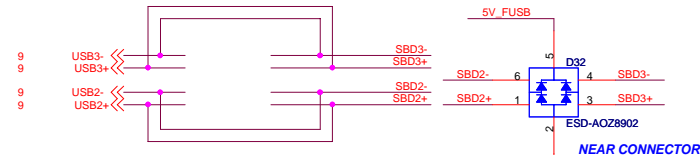
Front USB Connector

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

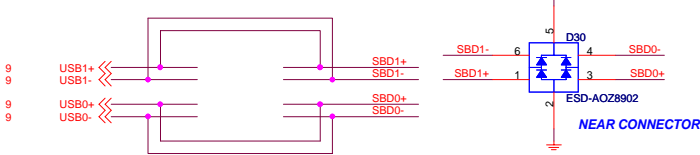
FRONT USB PORT 4,5



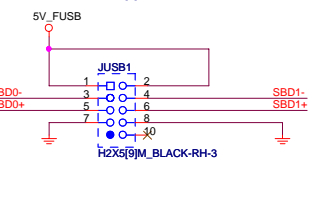
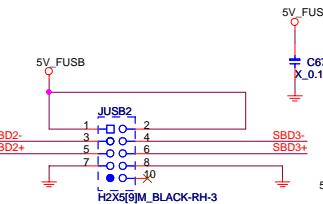
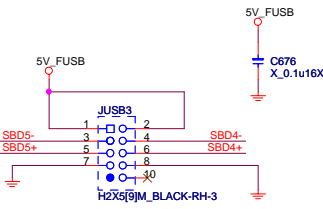
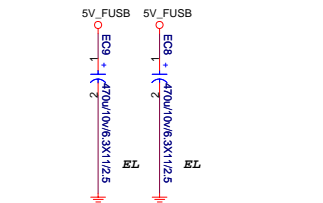
FRONT USB PORT 2,3



FRONT USB PORT 0,1

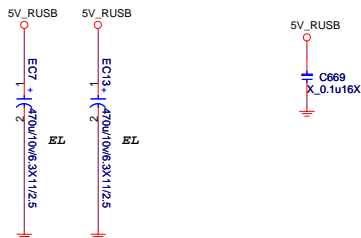


NEAR USB Front CONNECTOR

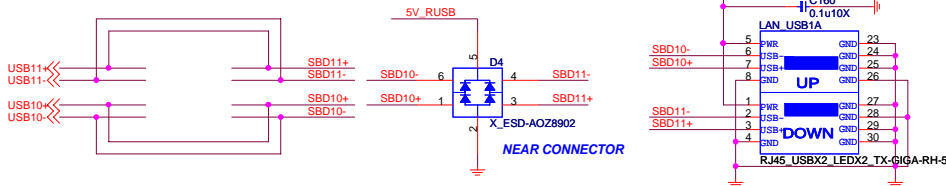


Rear USB Connector

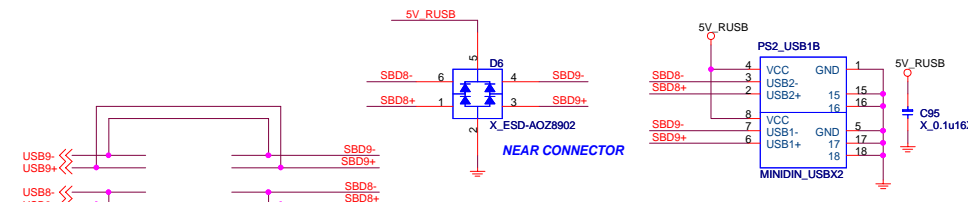
NEAR USB REAR CONNECTOR



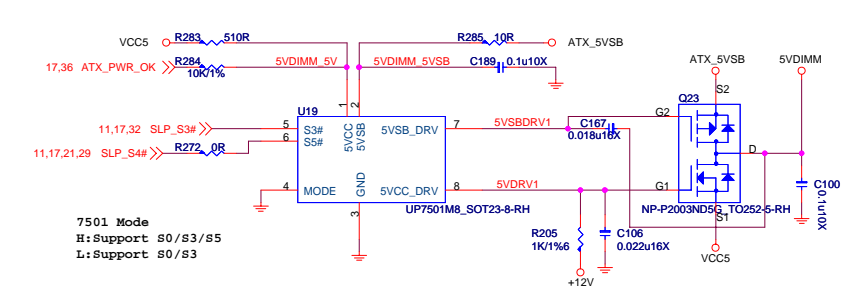
REAR USB PORT 10,11 (With LAN)



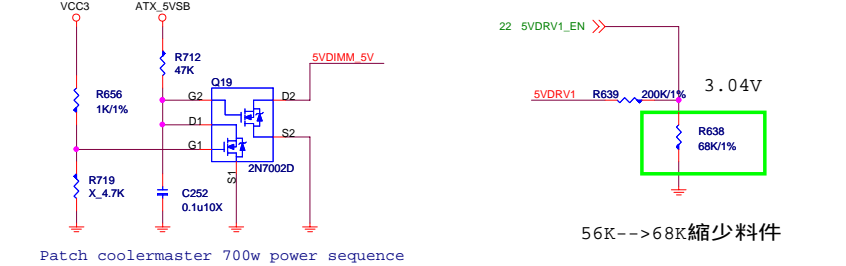
REAR USB PORT 8,9 (With PS2)



5VDIMM FOR DDR

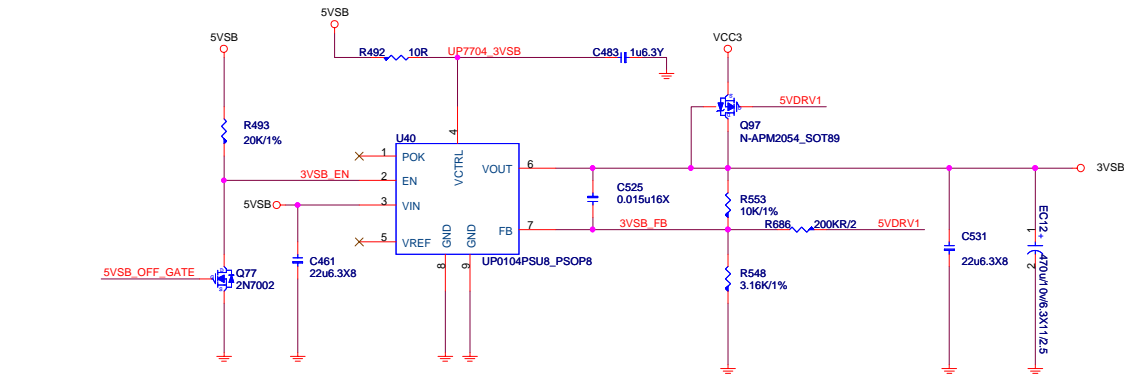


USB MODE

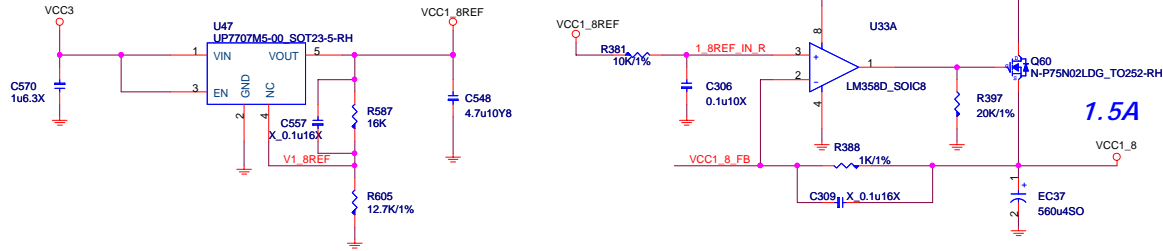


3VSB

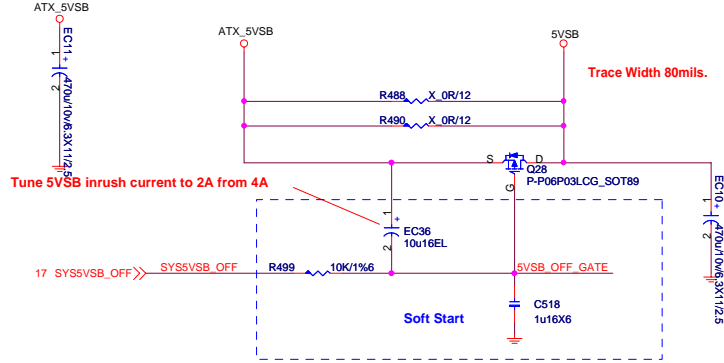
3VSB supply to PCH and other device.
Turn off when Deep S3/S5 by 5VSB off.



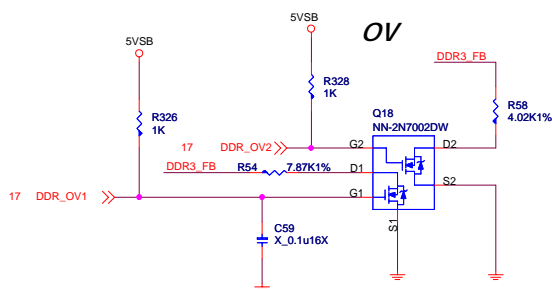
VCC1_8REF



5VSB Power Switch

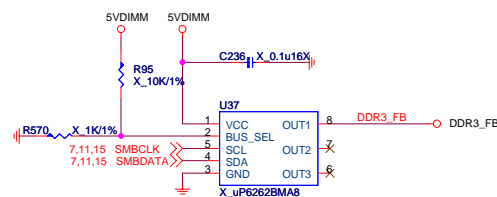


4.5A FOR CPU
7.5A FOR 2DIMM
1A FOR DDR VTT

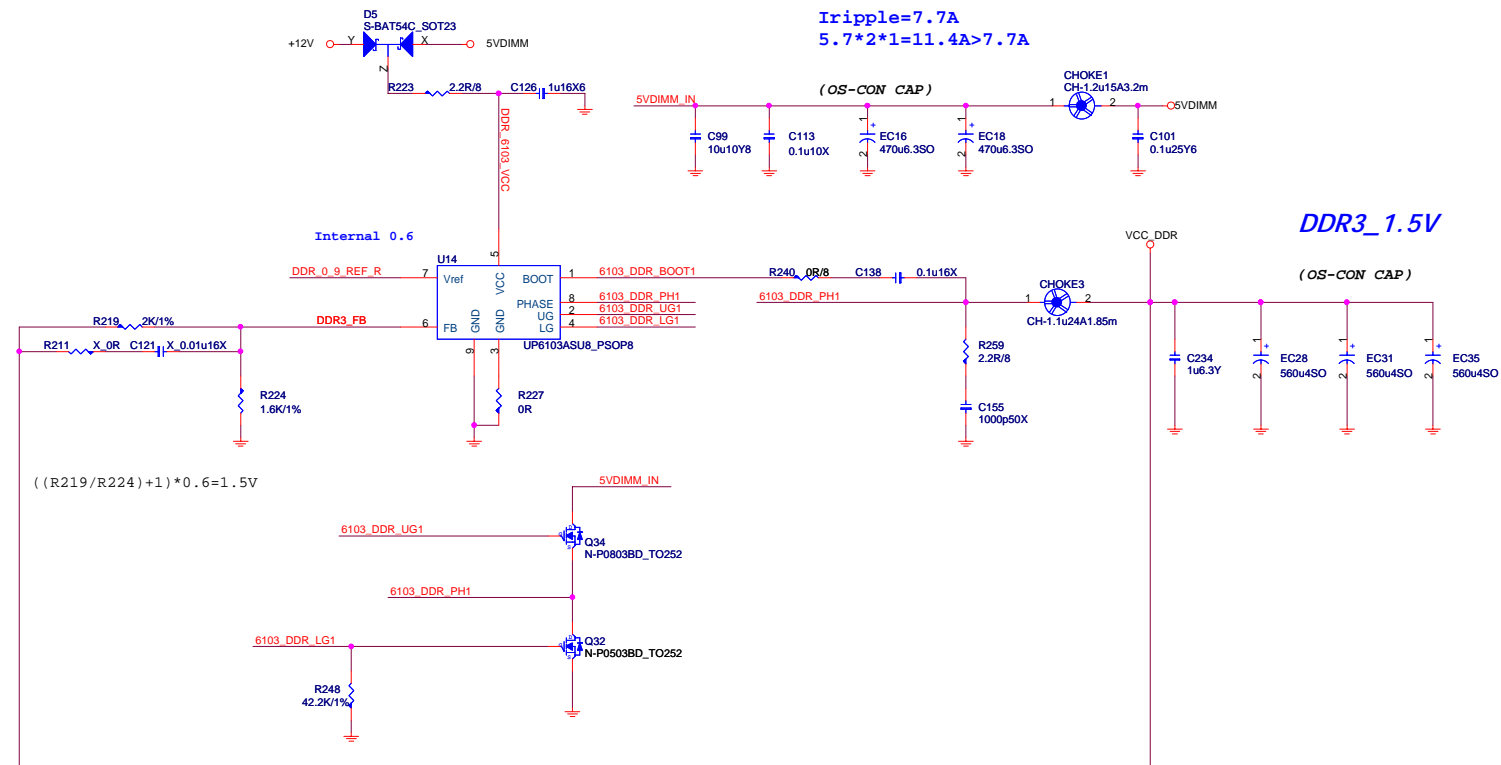
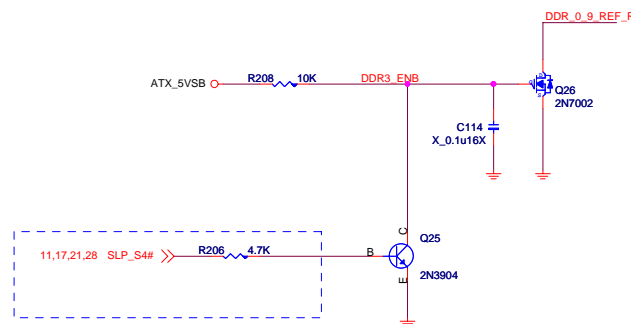


DDR_OV	1.35V	1.5V	1.65V	1.8V
DDR_OV1	Low	High	Low	High
DDR_OV2	Low	Low	High	High

DDR_OV1 = GPIO01 (S/IO)
DDR_OV2 = GPIO02 (S/IO)



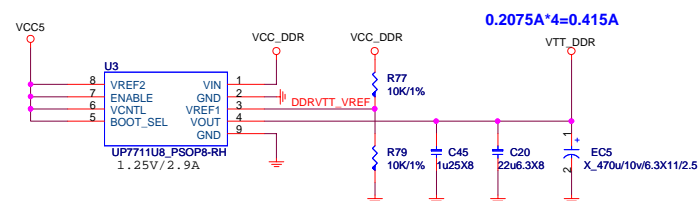
P.S. Only for meet Intel power down sequence.



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%

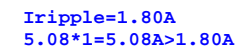
To CPU Copper trace width > 250mils , Fill island behind DIMM > 400mils .



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Size Custom	Document Description DDR Power - uP6103 1-Phase	Rev 4.1
Date: Tuesday, July 12, 2011		Sheet 29 of 39

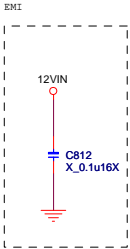
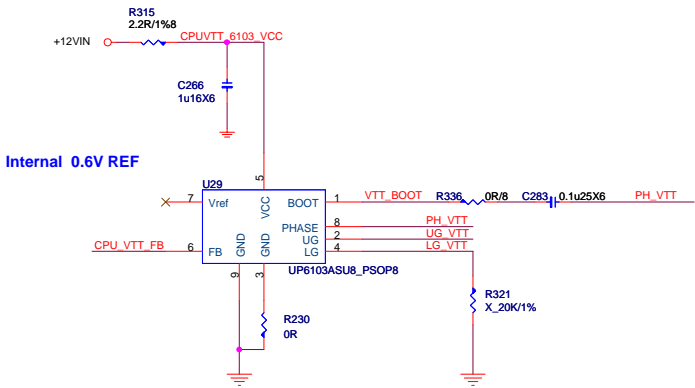
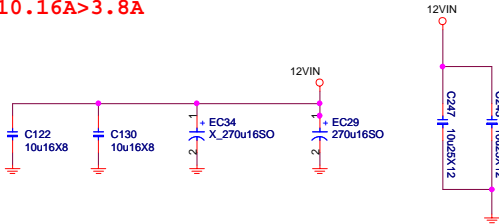
1.8A FOR ME CORE



CPU_VTT:1.05/1.00

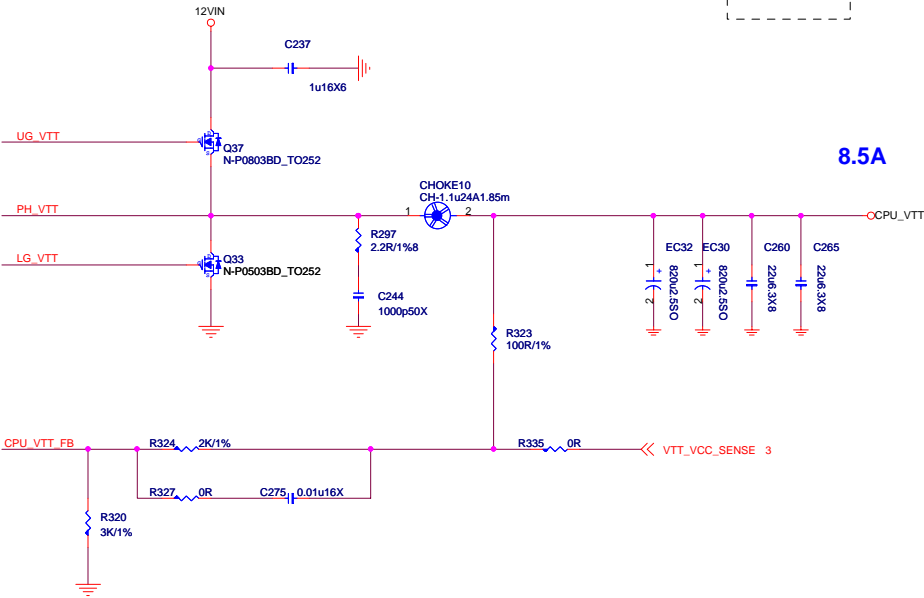
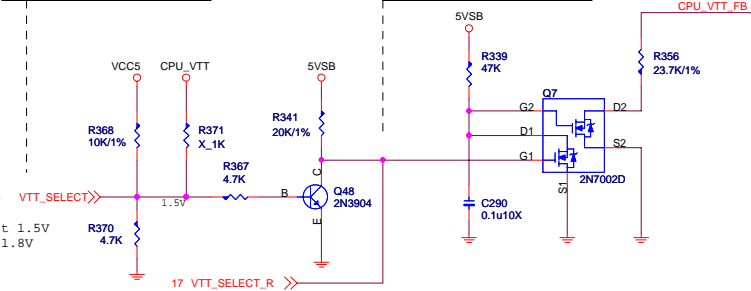
CPU VTT 8.5A + SA Core =8.8A =17.3A

$I_{ripple} = 1.92(v_{tt}) + 1.88(sa)$
 $5.08 * 2 = 10.16A > 3.8A$



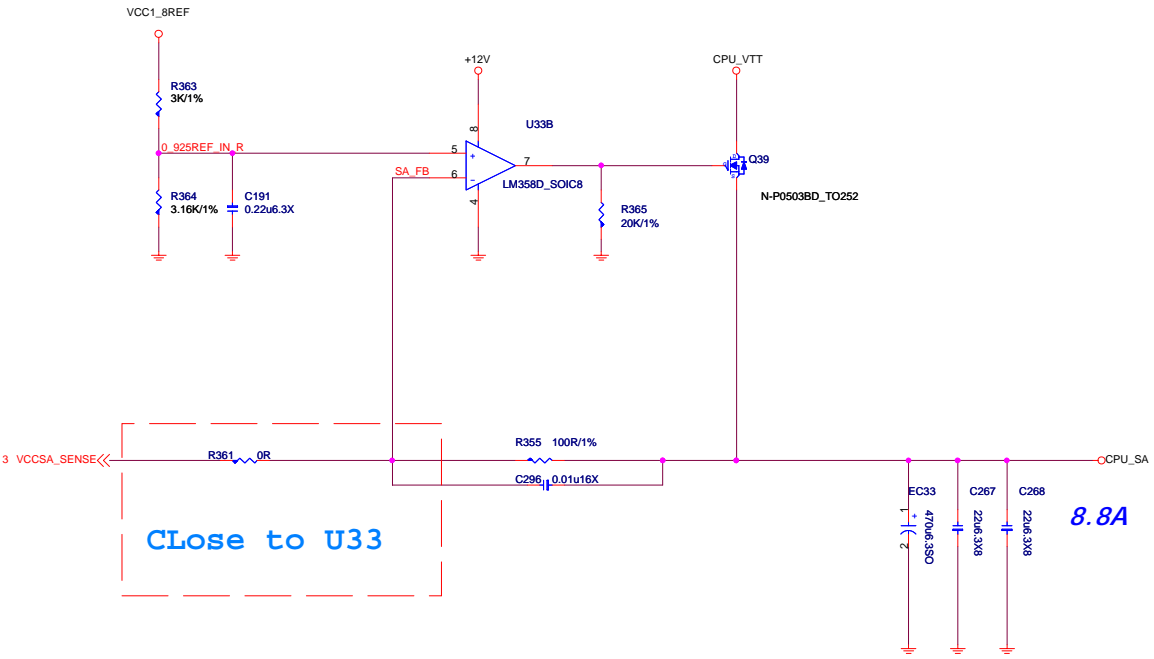
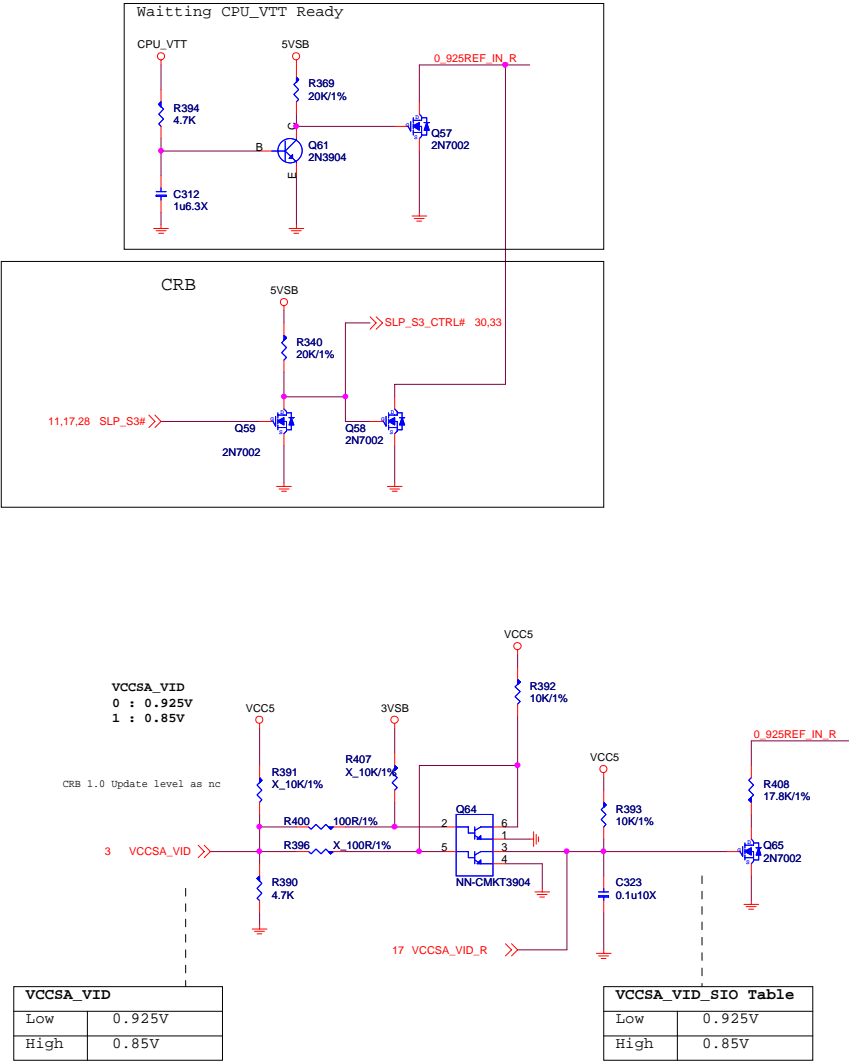
VTT_SELECT	
Low	1.0V
High	1.05V

VTT_SELECT Table	
Low	1.05V
High	1.0V



CPU_SA:0.925/0.85

SA Core =8.8A

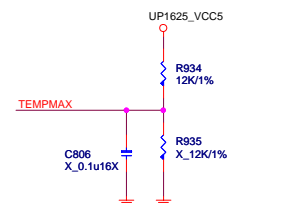
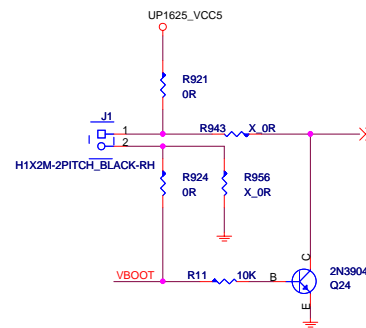
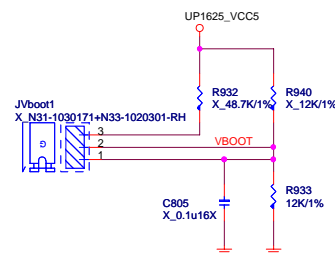
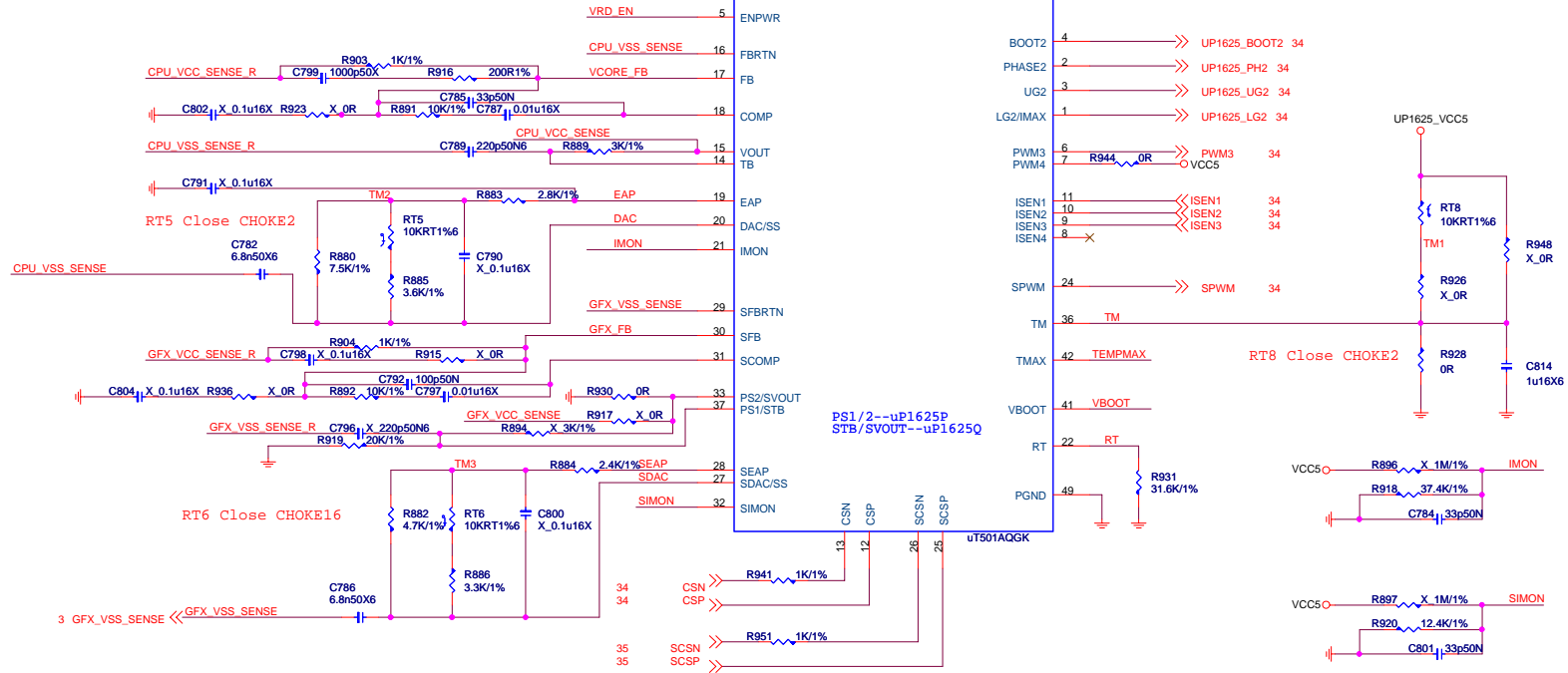
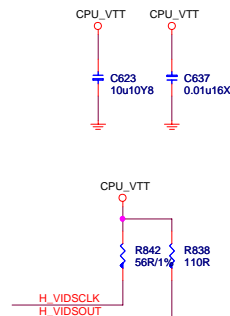
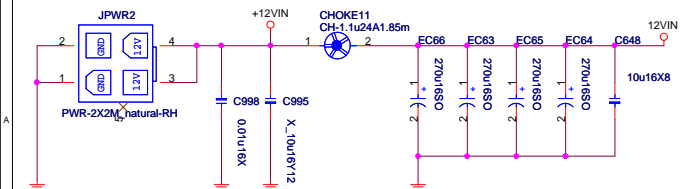
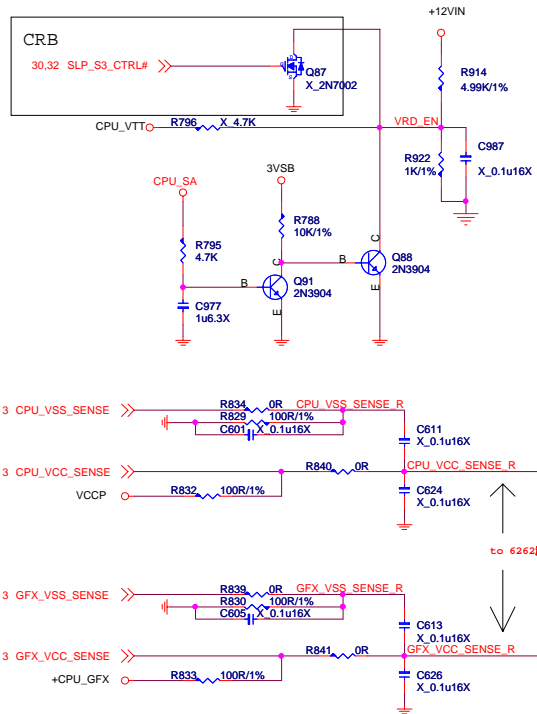
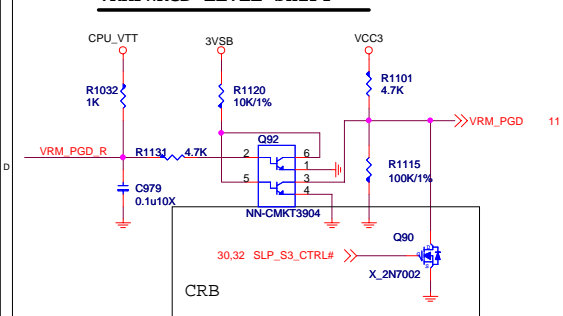


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Size	Document Description	Rev
Custom	CPU_SA - nP6103 1-Phase	4.1
Date: Tuesday, July 12, 2011		Sheet 32 of 39

VRMPWRGD LEVEL SHIFT



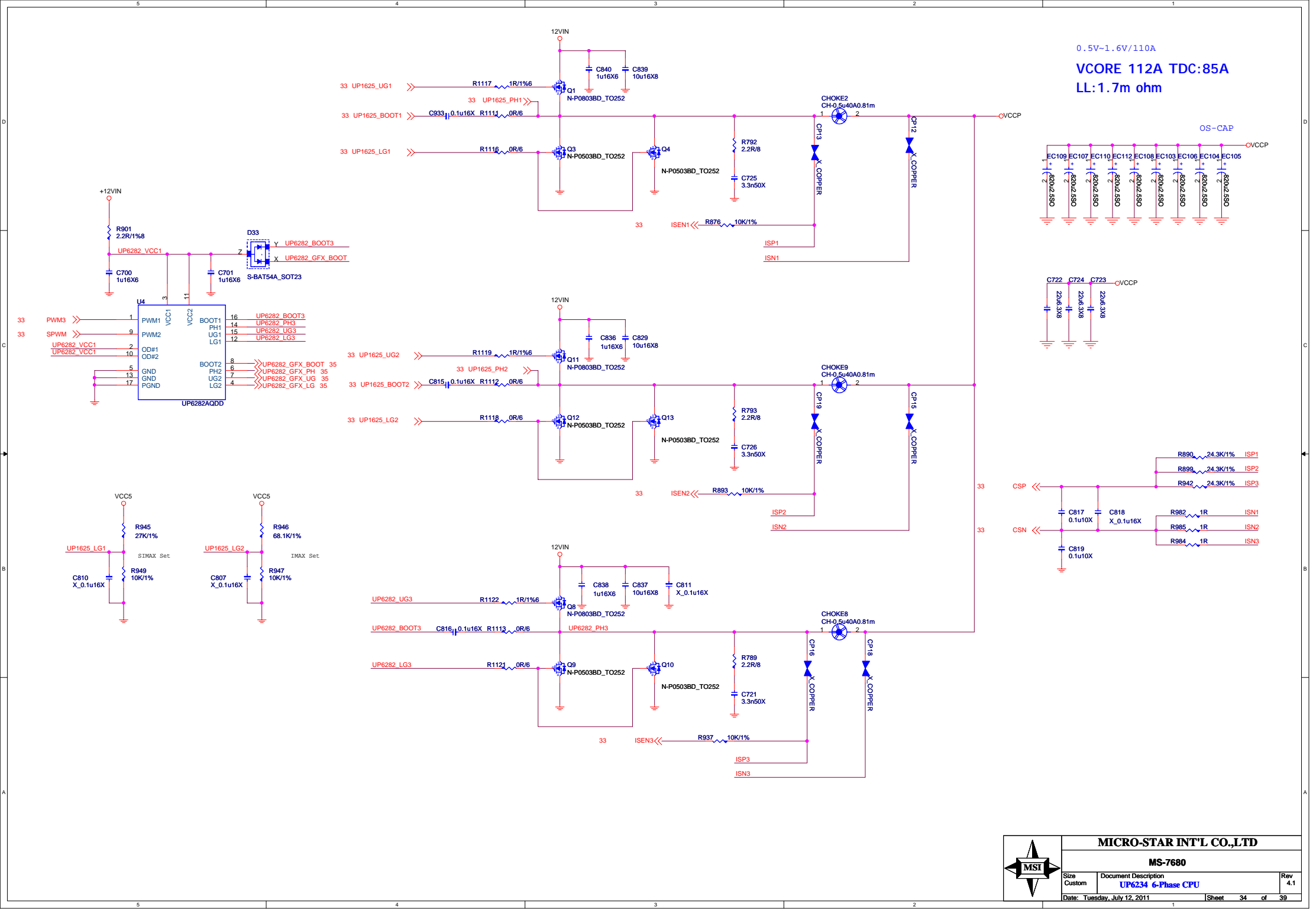
Use PWM IC I32-UT5010C-U33(old) --> stuff JVboot1/R932/R933/J1/R943/R956
Use PWM IC I32-UT5011C-U33(new) --> stuff J1/R933/R921/R924/R11/Q24

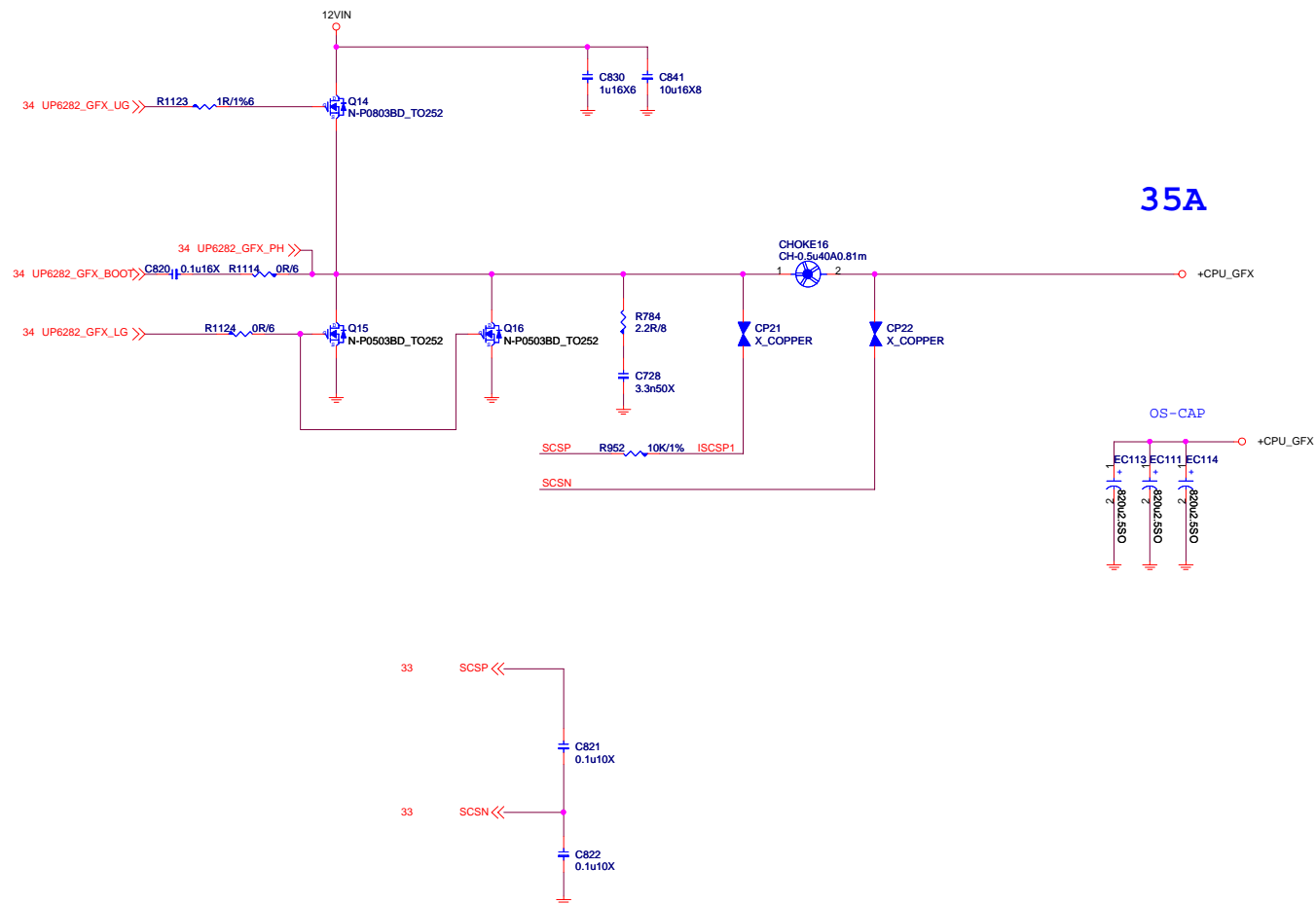


MICRO-STAR INT'L CO.,LTD

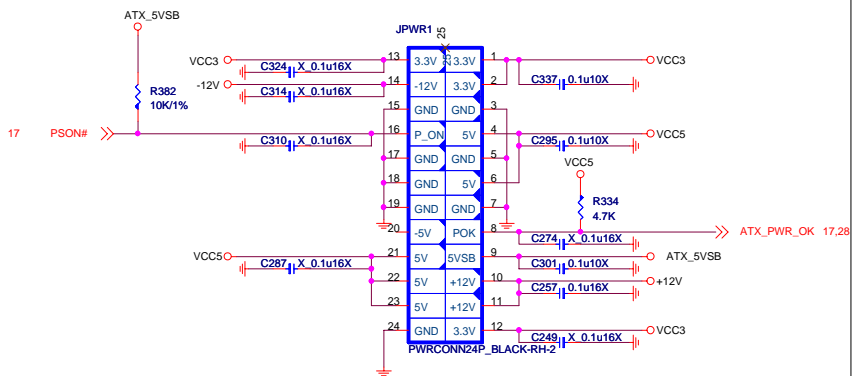
MS-7680

Size	Document Description	Rev
Custom	VRD12 - UP16234 6+1-Phase	4.1
Date: Tuesday, July 12, 2011	Sheet 33 of 39	

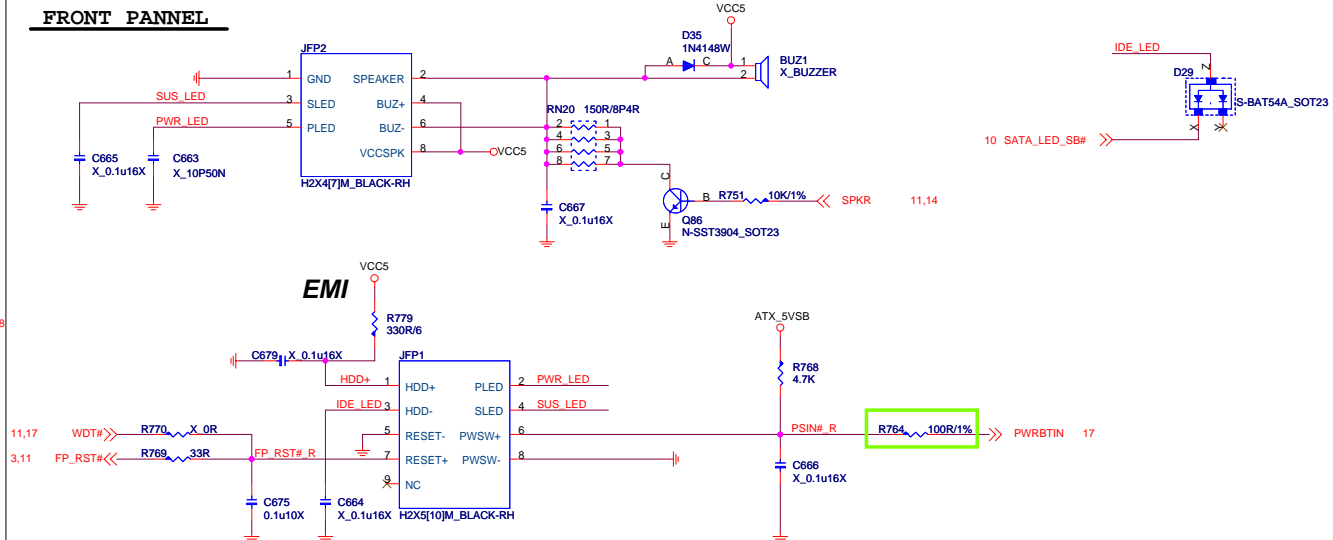




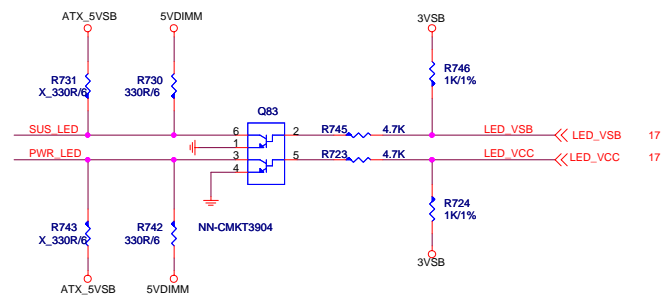
ATX POWER CONNECTOR



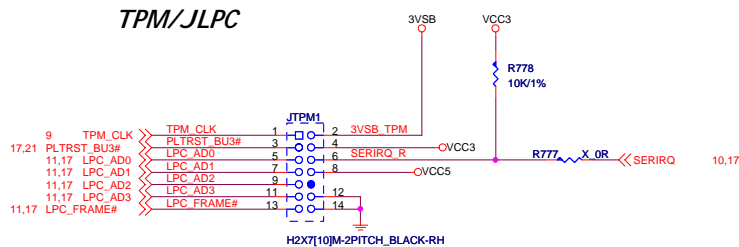
FRONT PANNEL



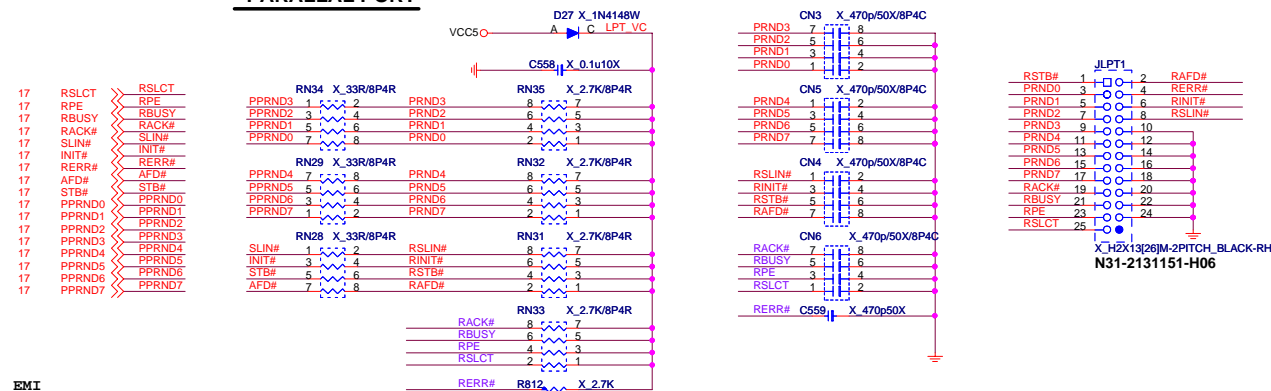
LED (for Fintek 71869)



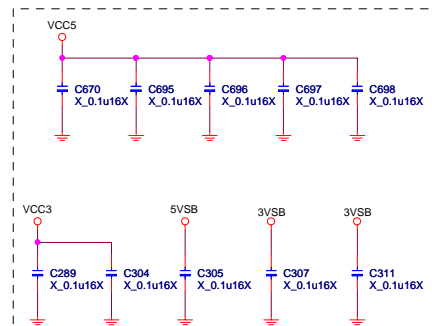
TPM/JLPC



PARALLAL PORT



EMI



MICRO-STAR INT'L CO.,LTD

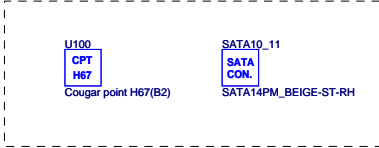
MS-7680

Size Custom	Document Description ATX PWR-Connector & Front Panel & EMI	Rev 4.1
Date: Tuesday, July 12, 2011		Sheet 36 of 39

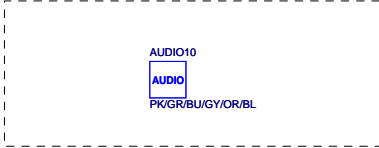
MS-7680-4.0

OPT	Configure	BOM	Function
	H61MU-S01(B3)	601-7680-120	MS-7680 40 H61MU-S01 (B3),H61 B3+2DDR3+1*PCI_Ex16+3*PCI_Ex1+4*SATAII+HD 8CH Audio+10USB2.0+2USB3.0+Gb LAN,(EuP),RoHS
A	H61MU-E34(B3)	601-7680-210	MS-7680 40 OPT:A H61MU-E34 (B3),H61 B3+2DDR3,1*PCI_Ex16+3*PCI_Ex1,4*SATAII,HD 8CH Audio,DVI/D-sub/HDMI,10USB2.0+2USB3.0+Gb LAN,all solid CAP,(EuP),RoHS
B	H61M-P22 (B3)	601-7680-240	MS-7680 40 OPT:B H61M-P22 (B3) Intel H61 B3+2*DDRIII+1*PCIE16,2*PCIE1,1*PCI+DVI/D-sub+4*SATAII+6*USB2+HD8Ch Audio+Gb lan,EuP,(Half Solid Cap),RoHS

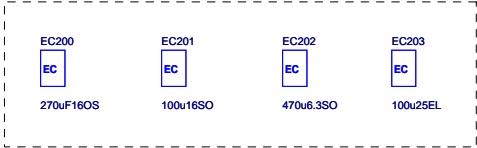
H67 OPT.



AUDIO CON OPT.



EL/OS OPT.



LABEL OPT.



7680-4.1
PK0-0768041-G37, 精成, 23, 寶安思斯邁廠 (MSIS), 4, Coffee
PK0-0768041-E36, 精成, 23, 寶安思斯邁廠 (MSIS), 4, Coffee



BAT1_1 X1
BAT-BCR2032P-RH



RUB1
X_Rubber



RUB2
X_Rubber



CPU H1
E21-7557050-L06



LA1
Label
601-7680-120
LABEL

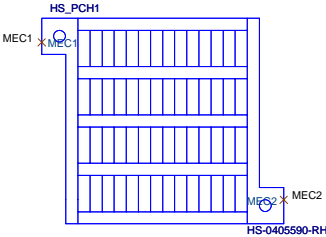


HDMI_LA1
Label
X_HDMI LABEL

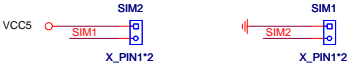


THX1
Label
X_THX LABEL

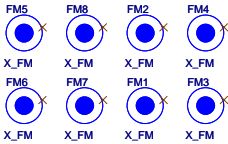
PCH XDP PWRGD/RESET



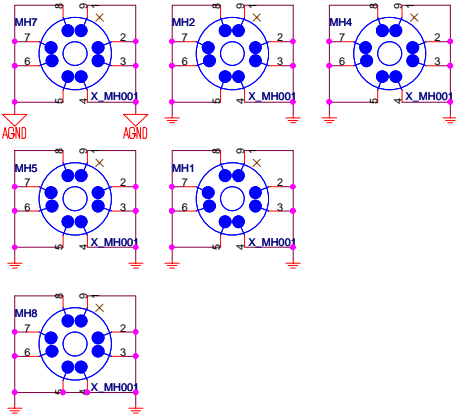
Simulation



Optical Fiducial Marks-120



Mounting Holes



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Size Custom

Document Description XDP / Manual Parts

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