

# MS-7750 Ver: 1.0 ATX 305\*220mm

## CPU:

INTEL - Sandy Bridge LGA 1155

## System Chipset:

INTEL - Cougar Point PCH(H67/Z68)

## OnBoard Chipset:

HD Audio Codec:ALC887 co-lay 892

LAN:RTL 8111E 10/100/1000 , Co-lay 8105E 10/100

SIO:FIN71869AD

Flash ROM:64Mb SPI (PCH)

## Main Memory:

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

## Expansion Slots:

PCI Express (X16) Slot \* 1

PCI Express (X4) 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 (PCH)+ SATA2.0 x4 (PCH)

USB2.0 RearX4 Front x8

USB3.0 RearX2

D-SUB \*1




TPM Header \*1

COM Header \*1

LPT Header \*1

on BOARD BUZZER

### BOM:

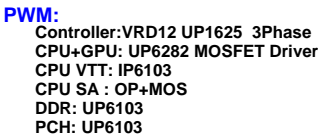
- 1.H67 Full Spec (  )
- 2.H61 Full Spec (  )
- 3.H61 common Spec (  )

MICRO-STAR INT'L CO.,LTD		
MS-7750		
Size	Document Description	Rev
Custom	Cover Sheet	1.0
Date: Thursday, May 26, 2011 (Sheet 1 of 54)		

www.aitech1.ru

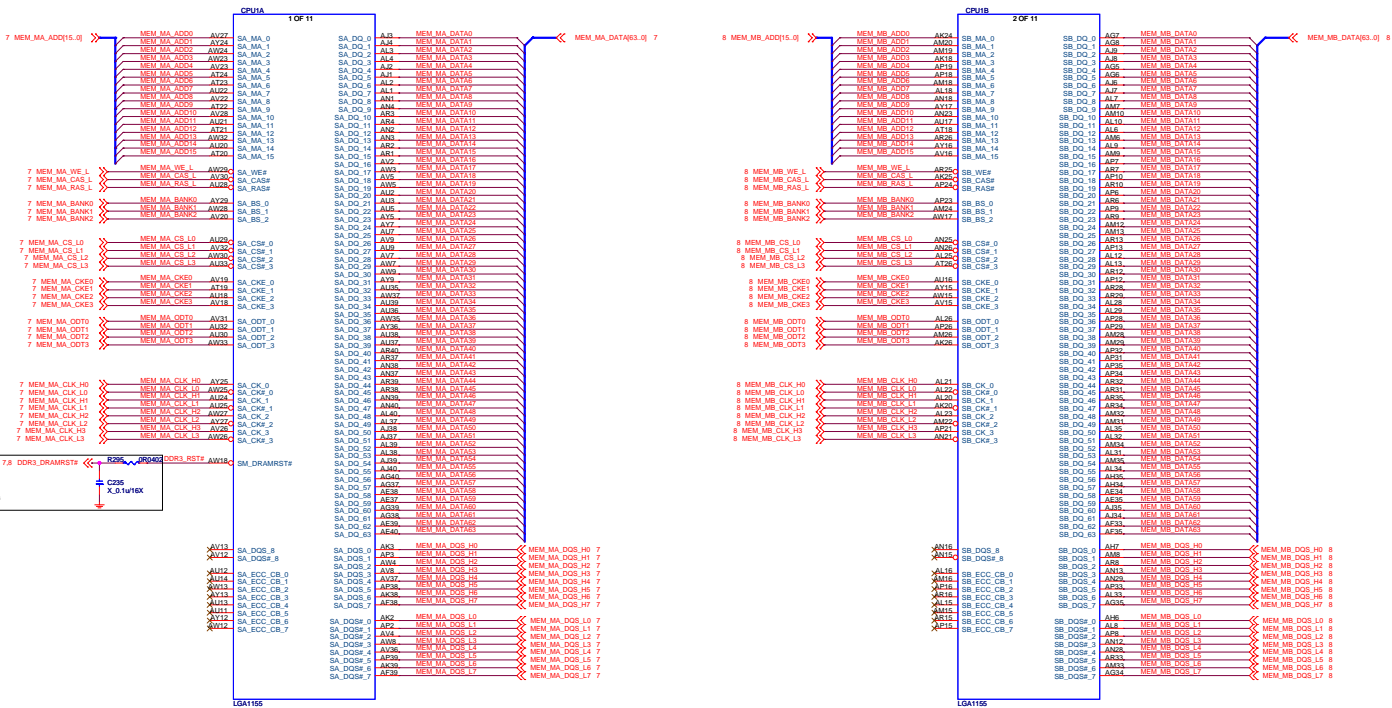
Power Saving circuit	40
DDR Power - uP6103 1-Phase	41
PCH Power - uP6103 1-Phase	42
Manuf & Optio	42
CPU VTT - IP6113- 1-Phase	42
Manuf & Optio	42
CPU SA - uP6113 1-Phase	42
Manuf & Optio	42
VRD12 - UP16234 6+2-Phase	42
UP6234 6-Phase CPU(Dr.Mos)	42

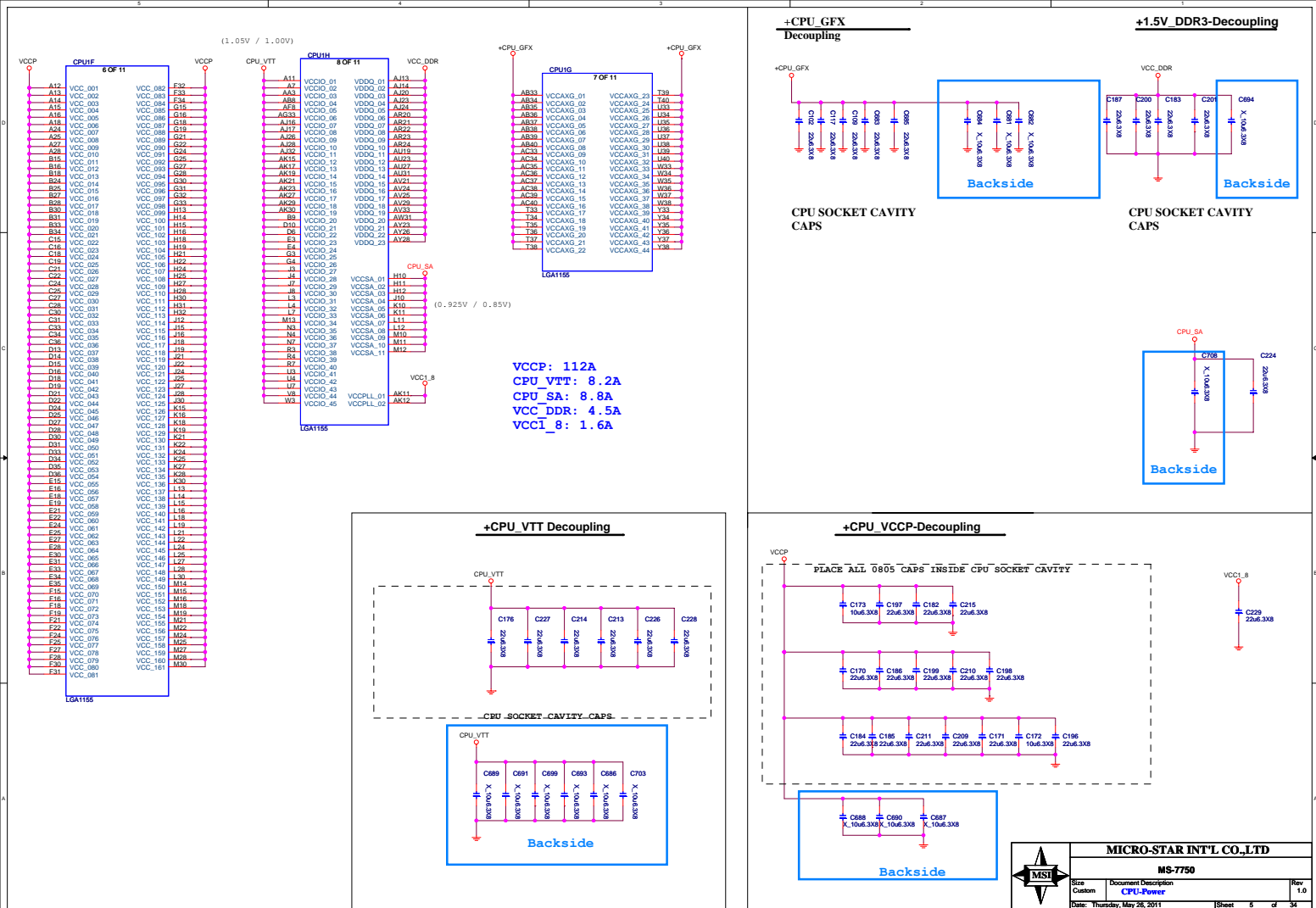
**ATX 305\*205mm**



	<b>MICRO-STAR INT'L CO.,LTD</b>		
	<b>MS-7750</b>		
	Size Custom	Document Description <b>Block Diagram</b>	Rev 1.0
	Date: Thursday, May 26, 2011 Sheet 2 of 34		





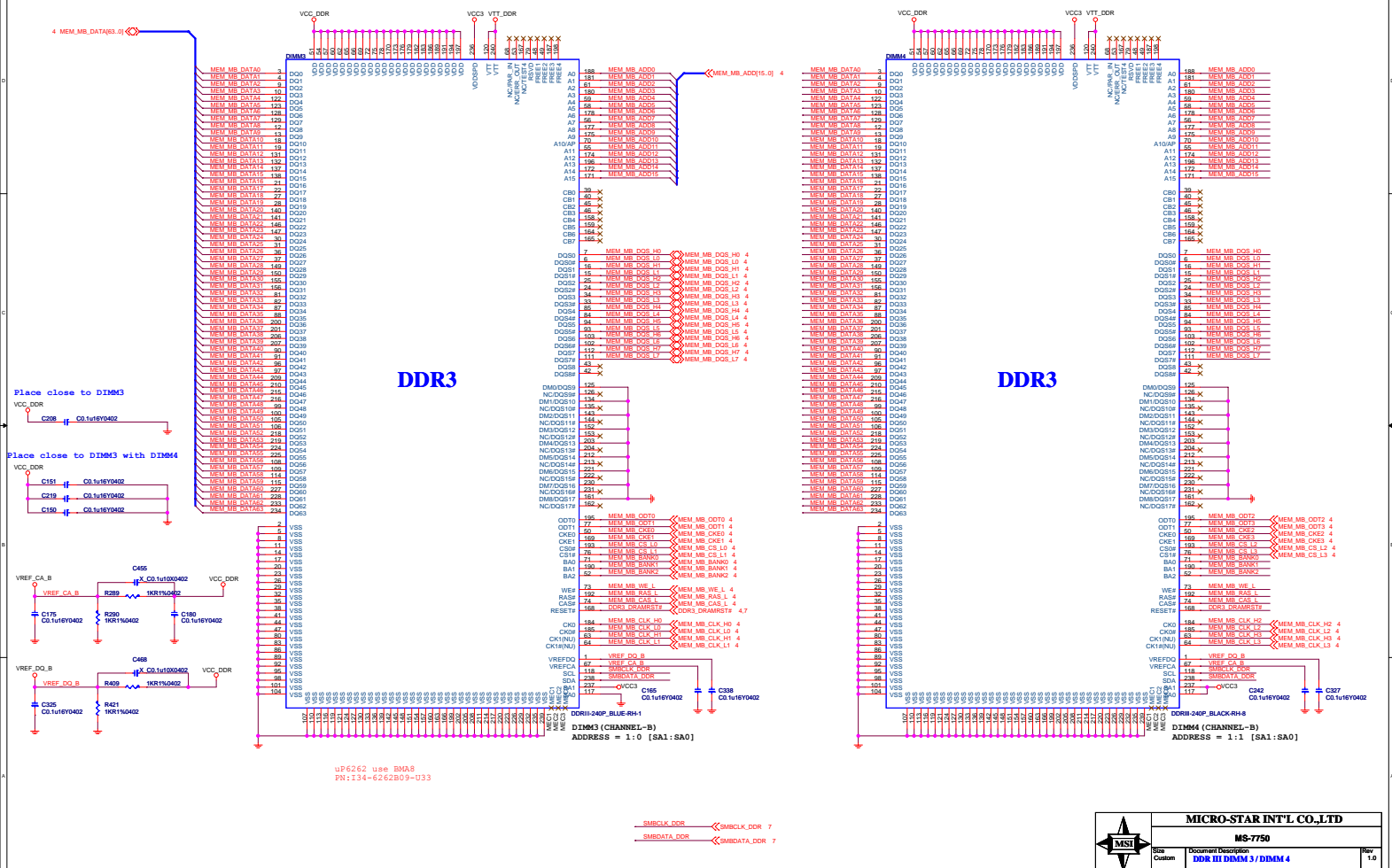




## DDRIII DIMM\_A1



## DDRIII DIMM\_B1





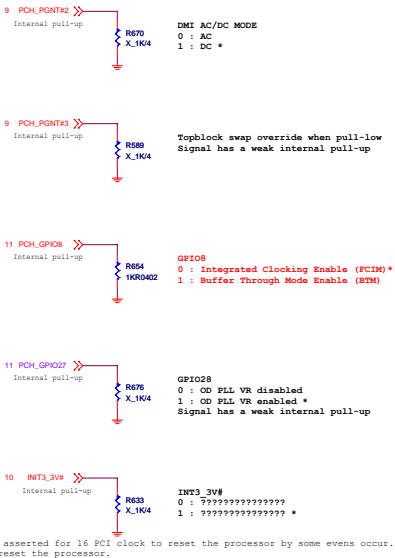
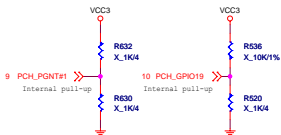




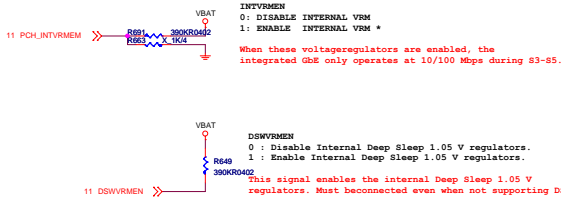


PCH Straps

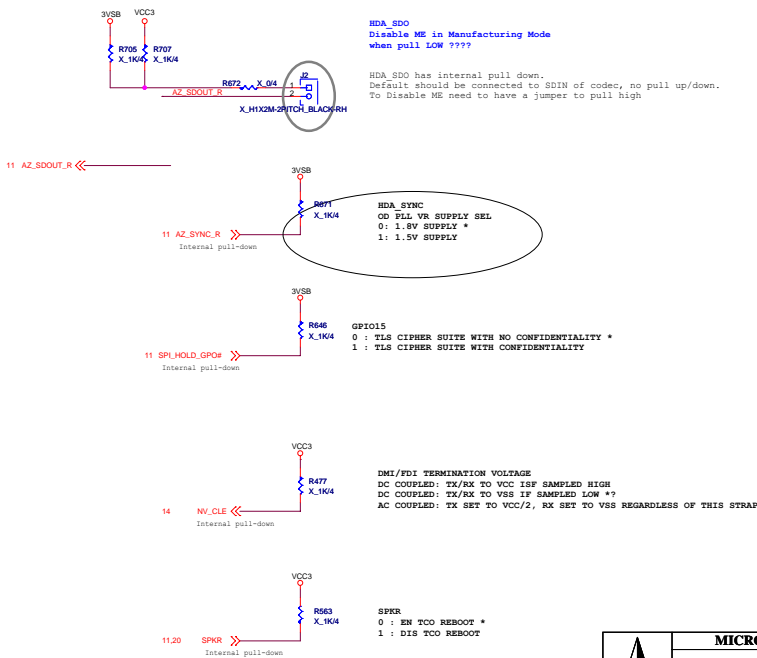
BOOT DEVICE	GNT1	SATA/GP/GPIO19
LPC	0	0
PCI	1	0
SPI	1	1



1: INT3\_3V to asserted for 16 PCI clock to reset the processor by some events occur.  
0: Can not to reset the processor.



INTVSMEM  
0: DISABLE INTERNAL VSM  
1: ENABLE INTERNAL VSM \*  
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.

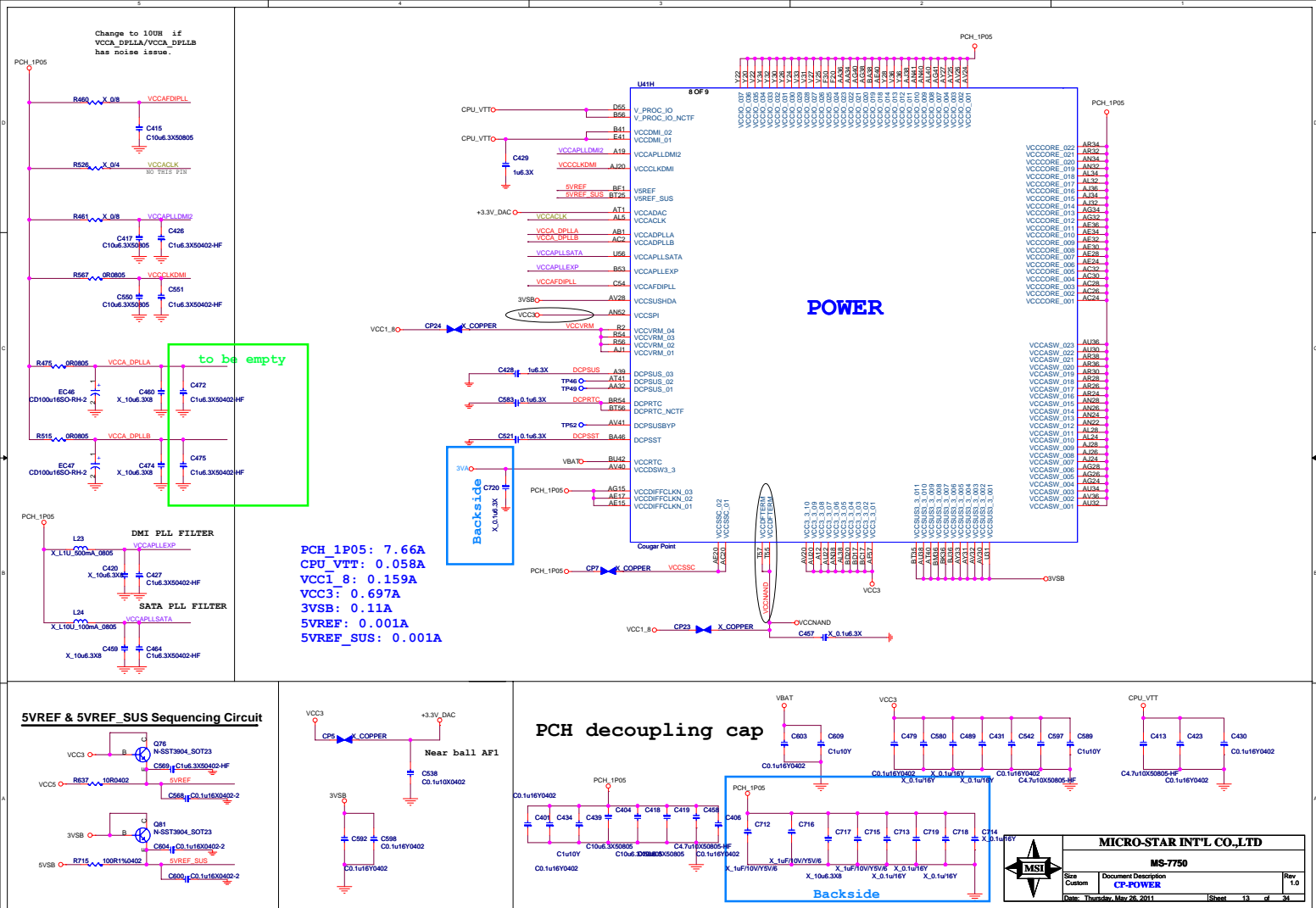


HDA\_SDO  
Disable ME in Manufacturing Mode when pull LOW ???  
HDA\_SDO has internal pull down.  
Default should be connected to SDIN of codec, no pull up/down.  
To Disable ME need to have a jumper to pull high  
HDA\_SYNC  
OD PLL VR SUPPLY SEL  
0: 1.5V SUPPLY \*  
1: 1.5V SUPPLY  
GPIO15  
0: TLS CIPHER SUITE WITH NO CONFIDENTIALITY \*  
1: TLS CIPHER SUITE WITH CONFIDENTIALITY  
DMI/FDI TERMINATION VOLTAGE  
DC COUPLED: TX/RX TO VCC IF 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

MS-7750

Size	Document Description	Rev
Custom	CP-Strap	1.0
Date: Thursday, May 28, 2014		Sheet 12 of 34



www.aitech1.ru

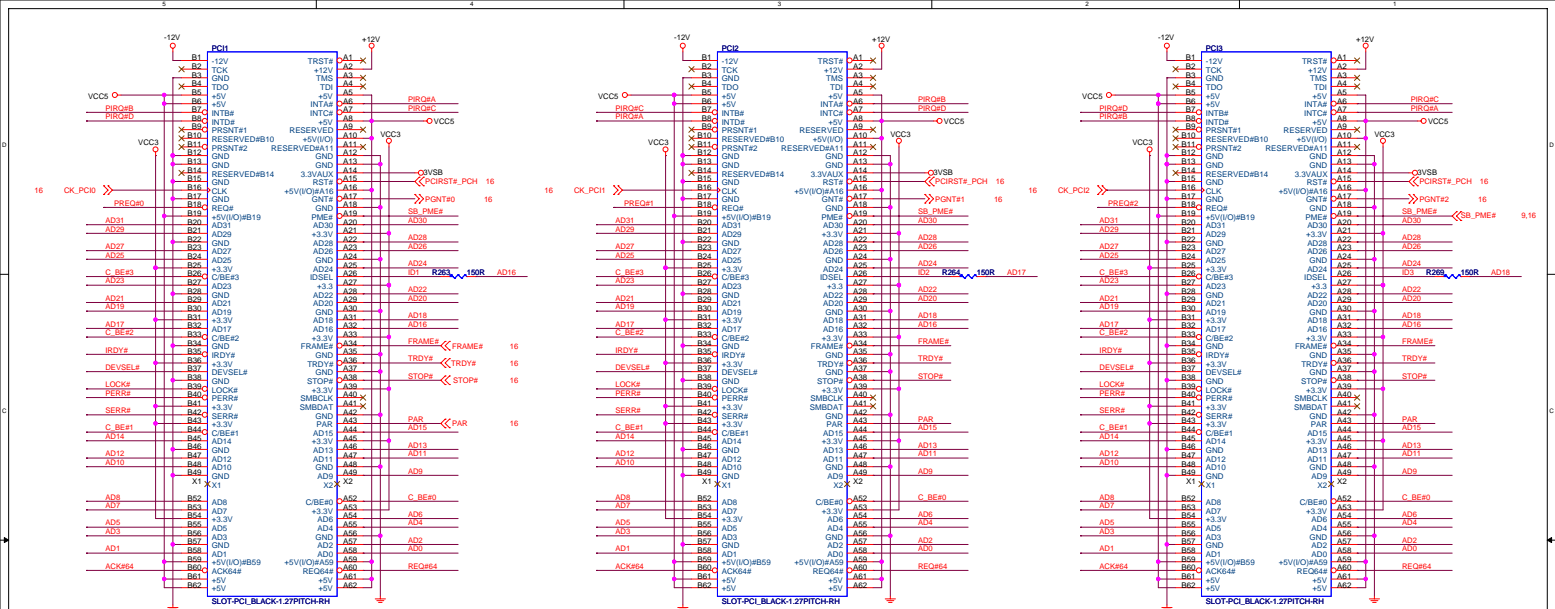


PCI EXPRESS x1-PORT





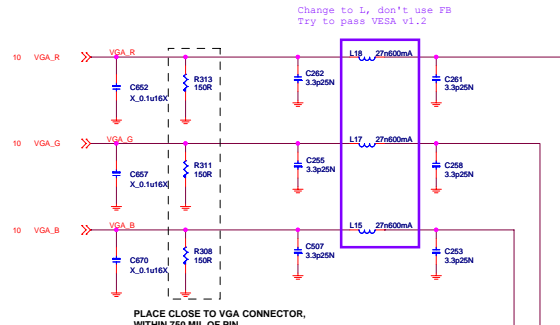
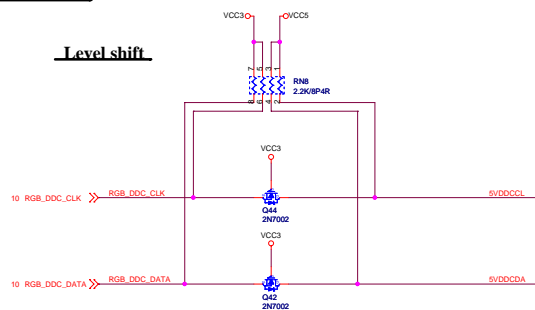




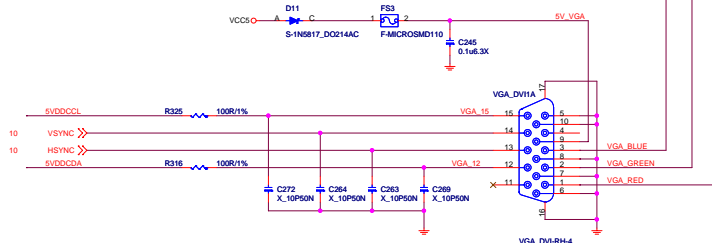
## D-Sub

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

### Level shift

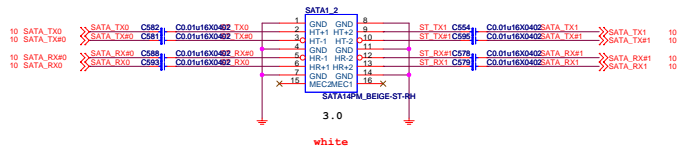


PLACE CLOSE TO VGA CONNECTOR,  
WITHIN 750 MIL OF PIN



### SATA6G 1,2

#### SATA1-2

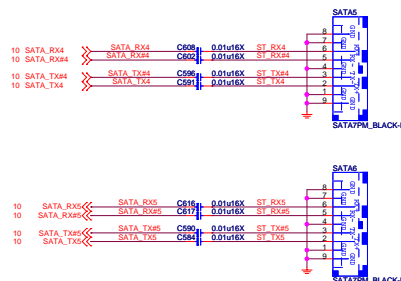


### SATA 3G PORT3,4

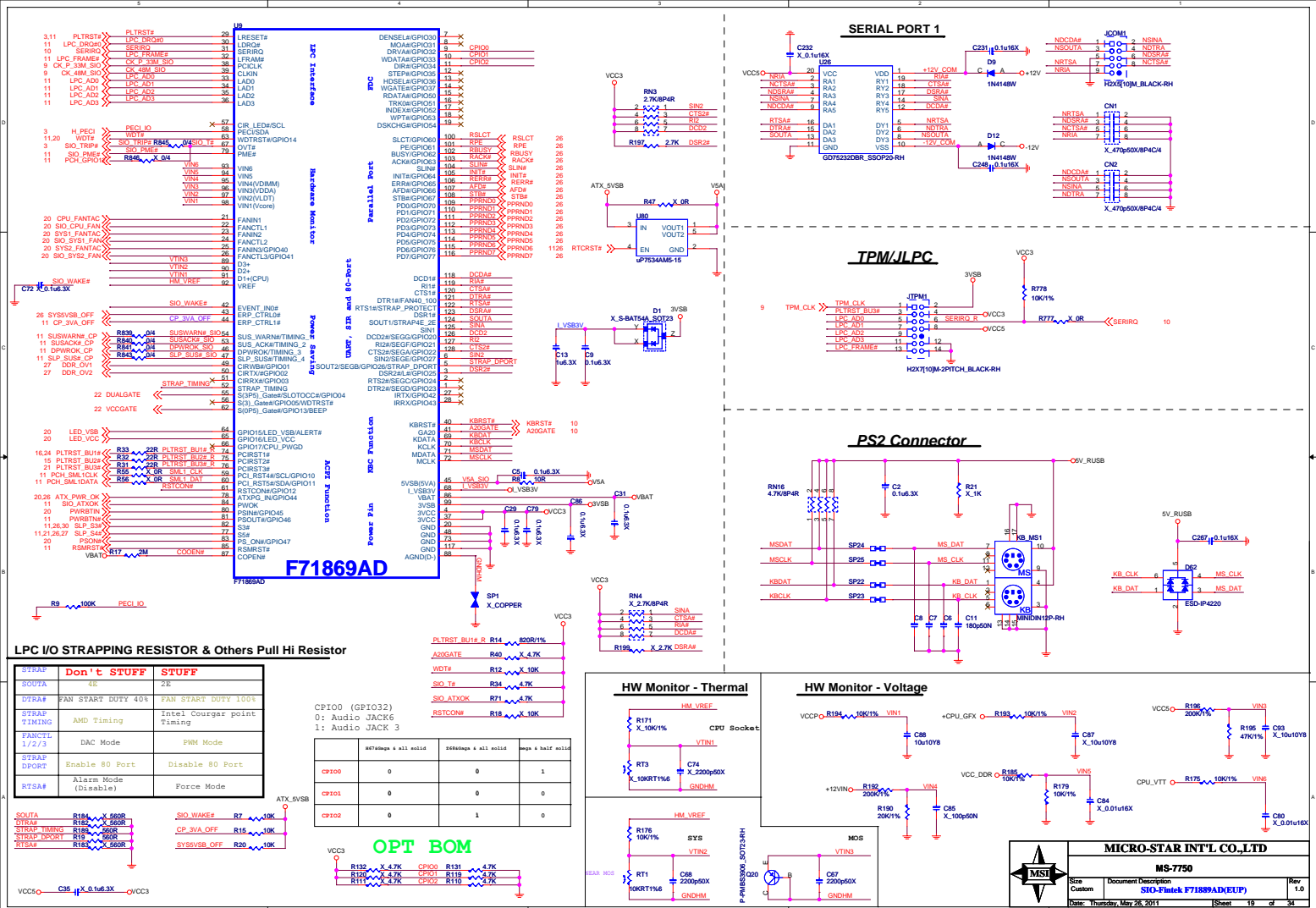
#### SATA3-4



### SATA 3G PORT 5,6

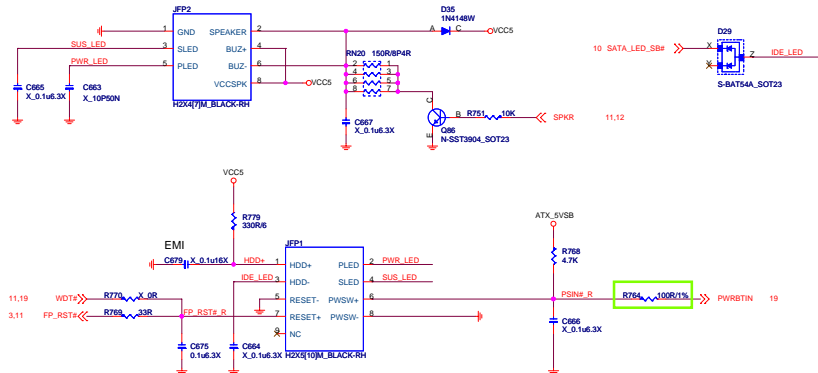


www.aitech1.ru

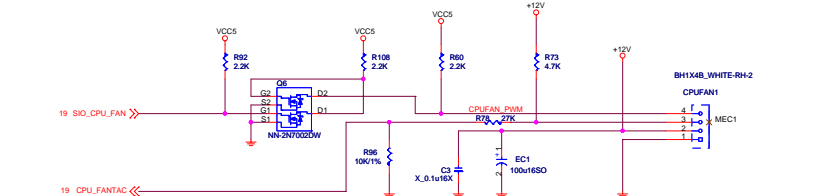


www.aitech1.ru

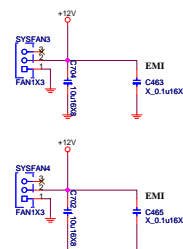
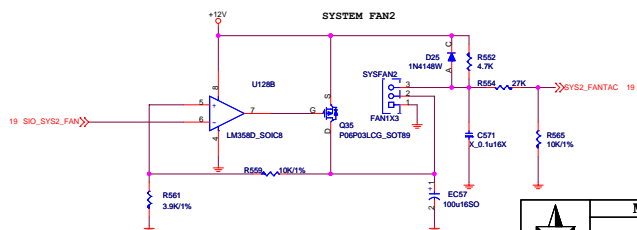
FRONT PANNEL



### CPU FAN-COUNTROL CIRCUIT



## SYSTEM FAN1



**MICRO-STAR INT'L CO., LTD**

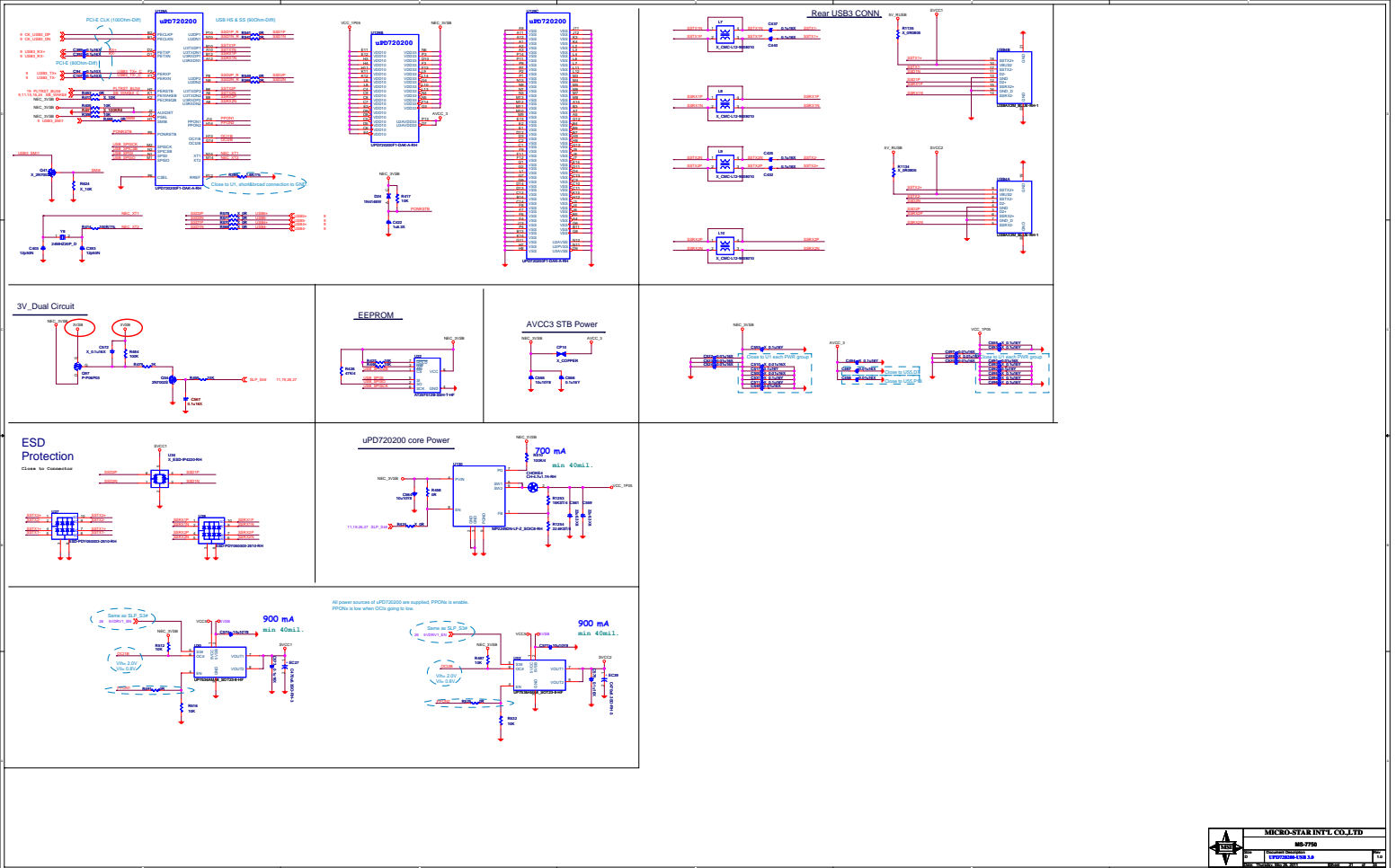
MS-7750

Size	Document Description
Custom	ATK BWD, Computer & Event Based, & EM

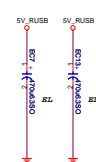
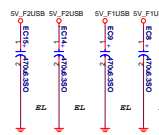
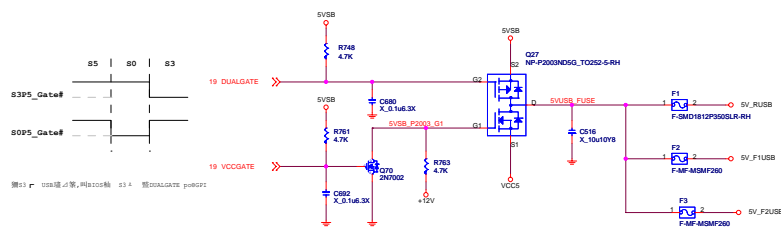
Date: Thursday, May 26, 2011	Sheet 20 of
------------------------------	-------------

---

www.aitech1.ru

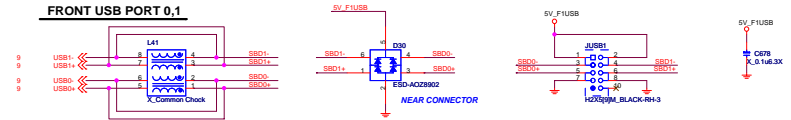


## 5V\_RUSB Switch

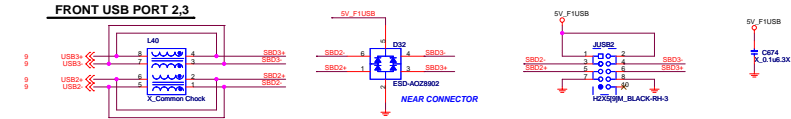


## Front USB Connector

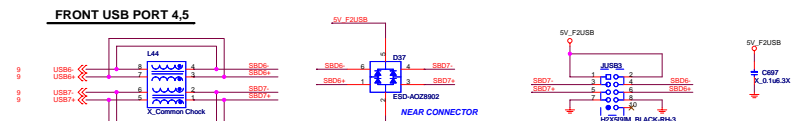
### FRONT USB PORT 0,1



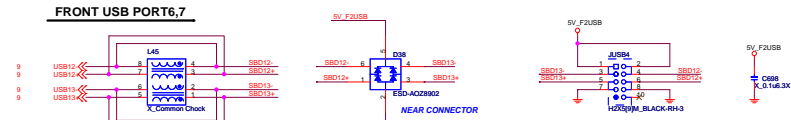
### FRONT USB PORT 2,3



### FRONT USB PORT 4,5

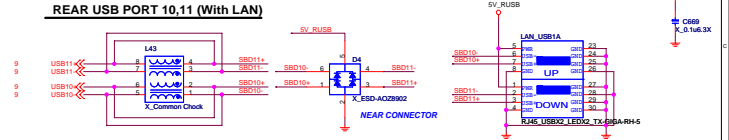


### FRONT USB PORT6,7

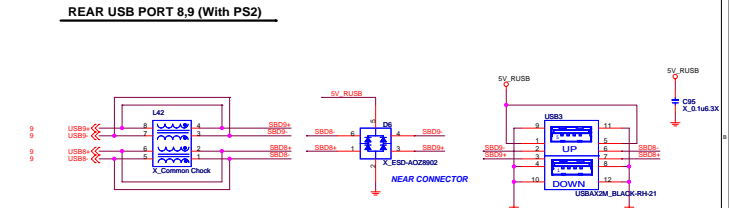


## Rear USB Connector

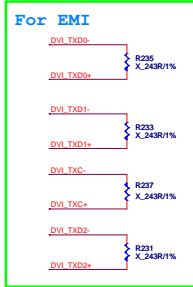
**REAR USB PORT 10,11 (With LAN)**



### REAR USB PORT 8,9 (With PS2)



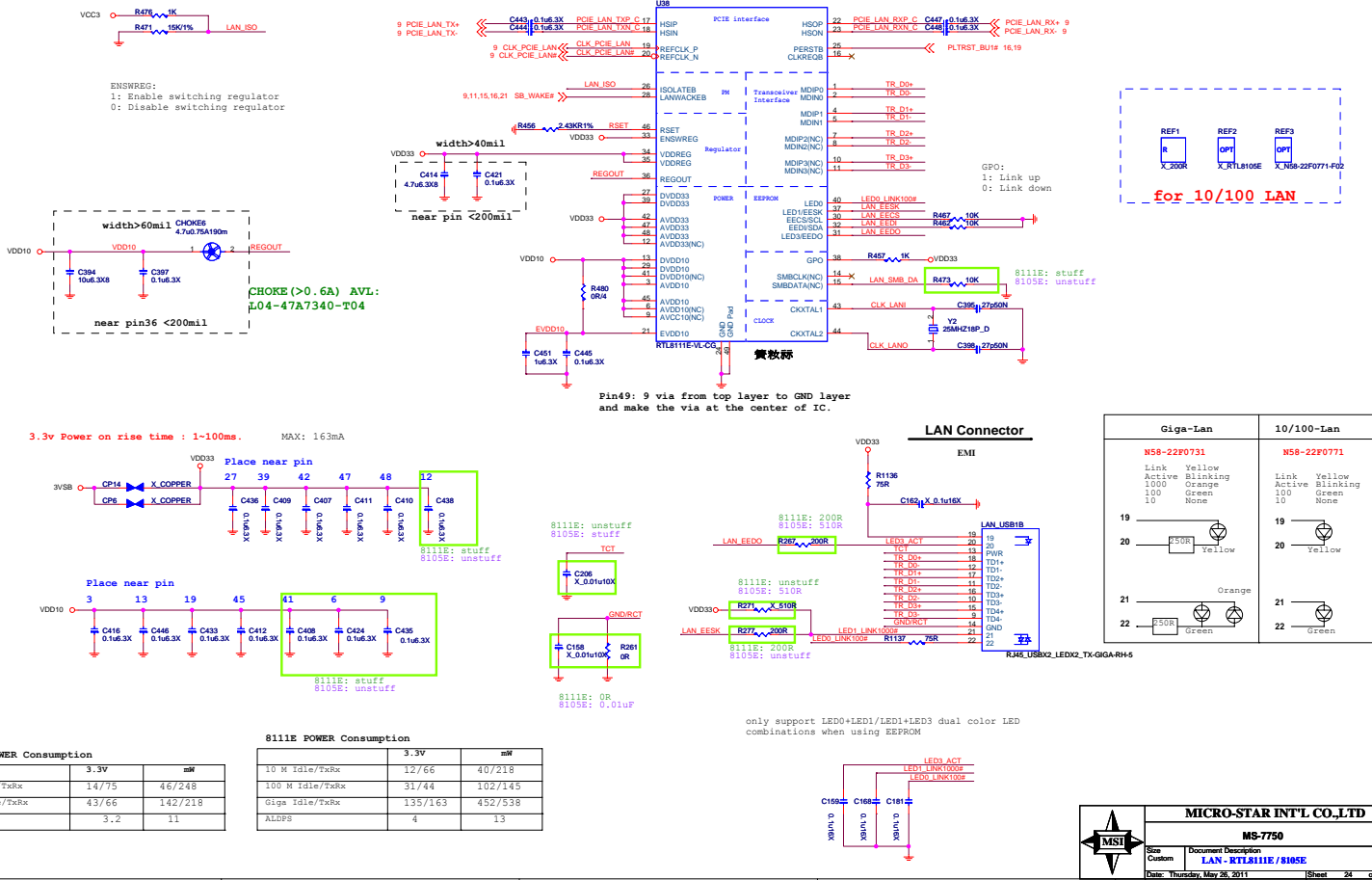
VGA: resolution of 2048x1536 pixels with 32-bit color at 75 Hz (4:3 QXGA)



	<b>MICRO-STAR INT'L CO.,LTD</b>		
	<b>MS-7750</b>		
	Size Custom	Document Description <b>DVI transfer</b>	Rev 1.0
	Date: Thursday, May 26, 2011		Sheet 23 of 34

# RTL8111E Giga LAN

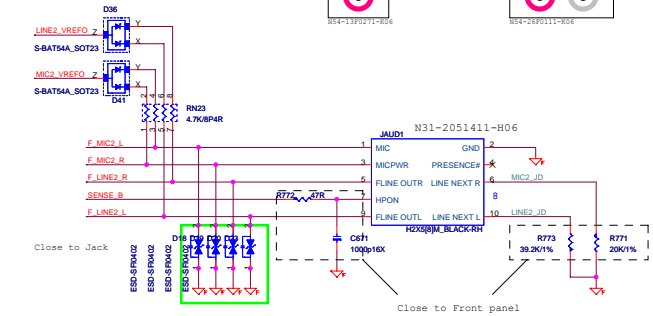
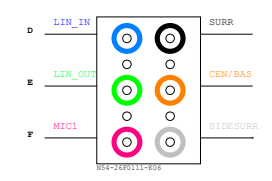
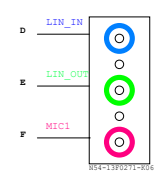
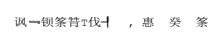
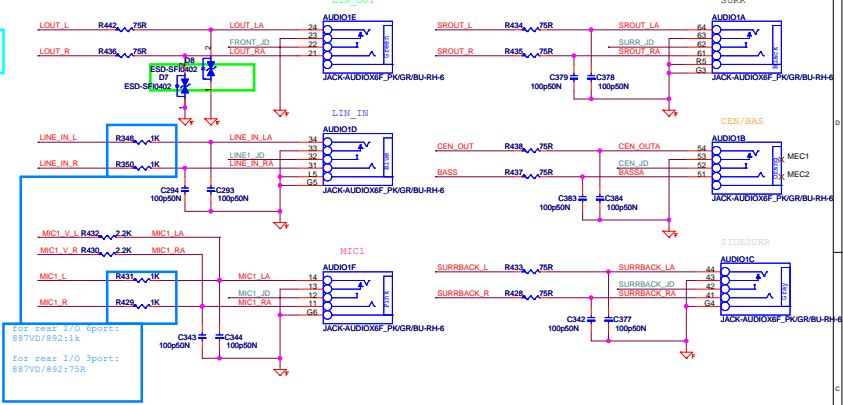
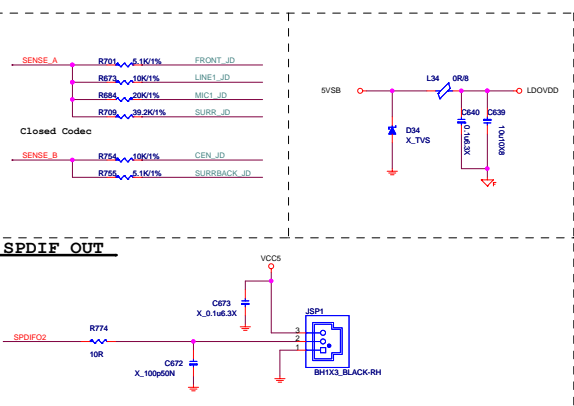
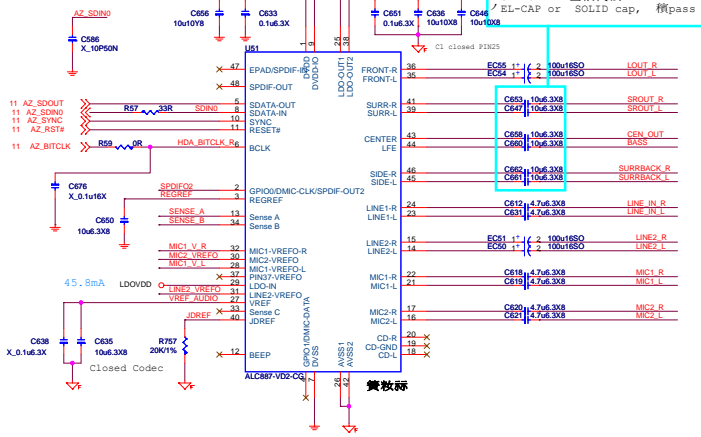
# RTL8105E 10/100 LAN



www.aitech1.ru



ALC887-VD  
ALC892



RN22

MIC2\_R 1 2 F\_MIC2\_R

MIC2\_L 3 4 F\_MIC2\_L

LINE2\_L 5 6 F\_LINE2\_L

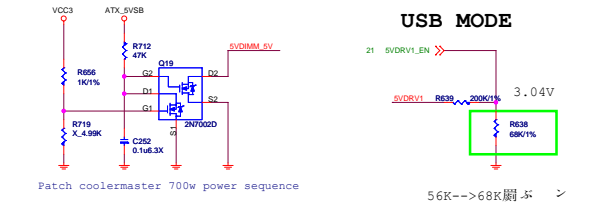
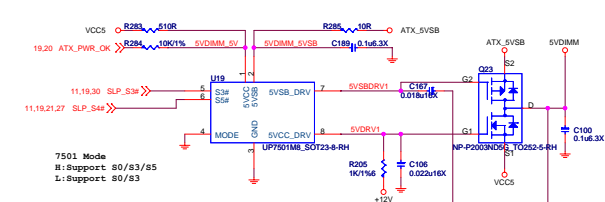
LINE2\_R 7 8 F\_LINE2\_R

75R/SP4R

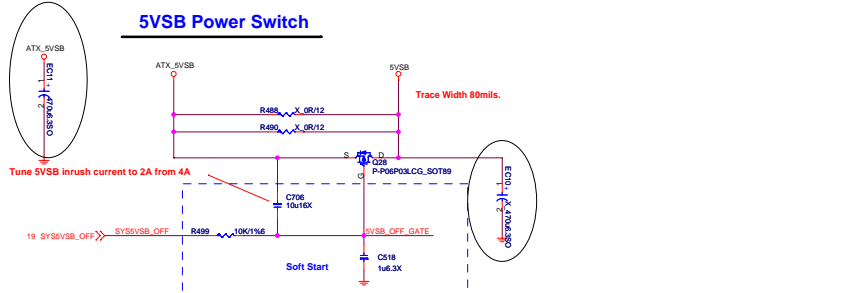
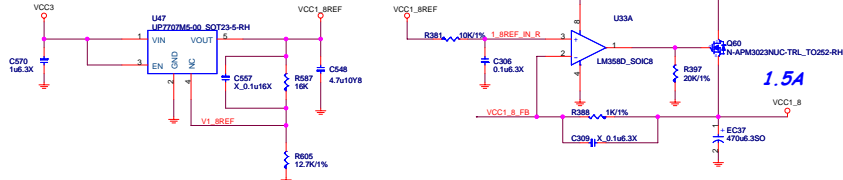


<b>MICRO-STAR INT'L CO.,LTD</b>		
<b>MS-7750</b>		
Size Custom	Document Description <b>ALC892_COLAY_ALC887VD</b>	Rev 1.0
Doc#	Rev#	Rev#

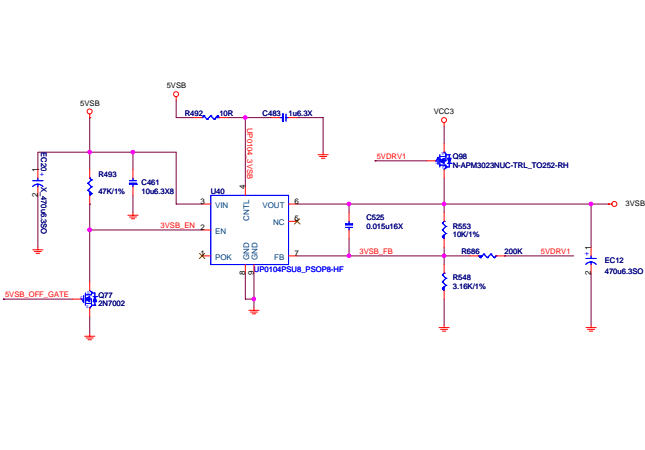
5VDDIMM FOR DDR



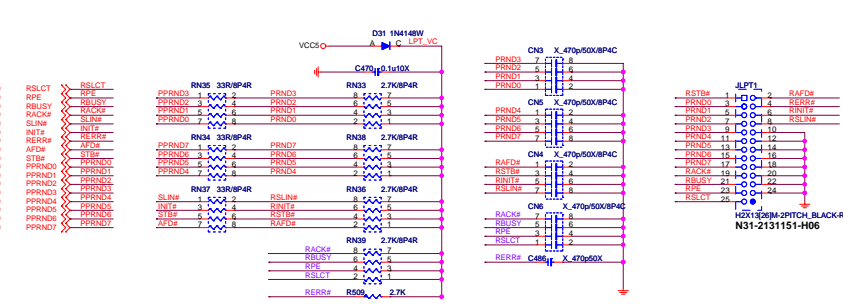
VCC1\_8REF



3VSB



PARALLAL PORT

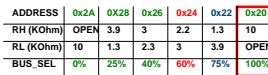




**MICRO-STAR INT'L CO.,LTD**  
**MS-7750**  
Size: Custom    Document Description: **ACPI Controller UPI/Parallel**    Rev: 1.0  
Date: Thursday, May 28, 2011    Sheet: 26 of 54

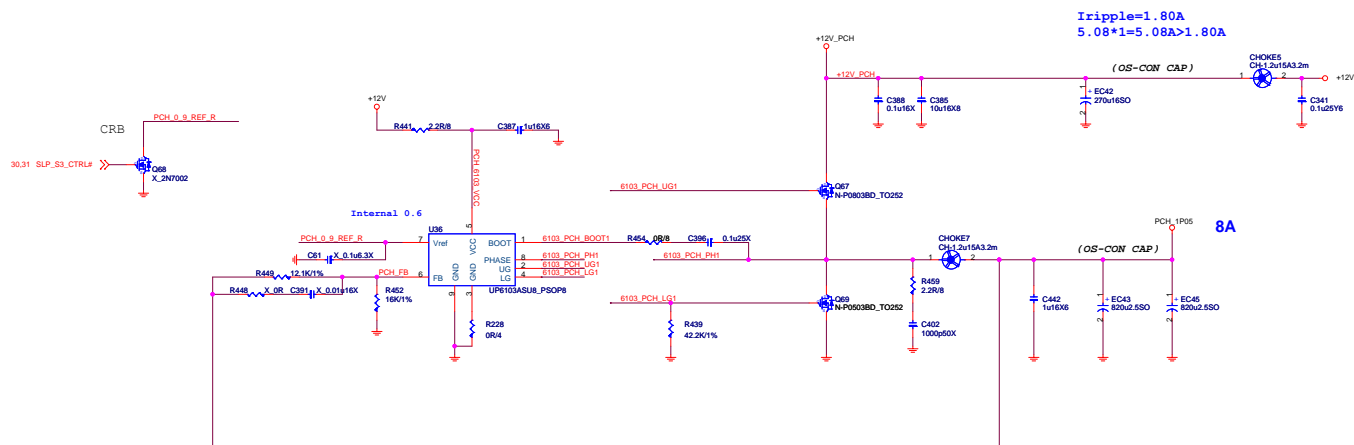
www.aitech1.ru

4.5A FOR CPU  
11A FOR 4DIMM  
1A FOR DDR VTT



<b>MICRO-STAR INT'L CO.,LTD</b>			
<b>MS-7750</b>			
Size Custom	Document Description <b>DDR Power - uP6103 1-Phase</b>		Rev 1.0
Date: Thursday, May 26, 2011		Sheet 27 of 34	

**PCH Power:1.05V**  
**PCH Core 6.2A+1.8A=8A**  
**6.2A FOR PCH**  
**1.8A FOR ME CORE**

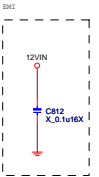
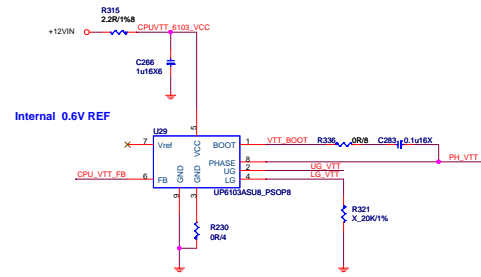


MICRO-STAR INT'L CO.,LTD		
MS-7750		
Size	Document Description	Rev
Custom	PCH Power - uP6103 1-Phase	1.0
Date: Thursday, May 26, 2011 [Sheet 28 of 54]		

www.aitech1.ru

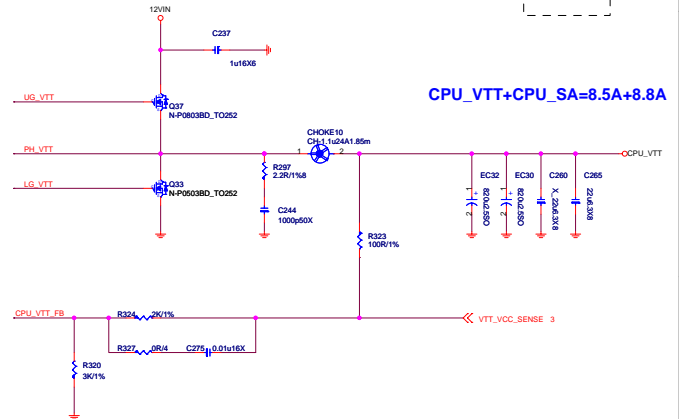
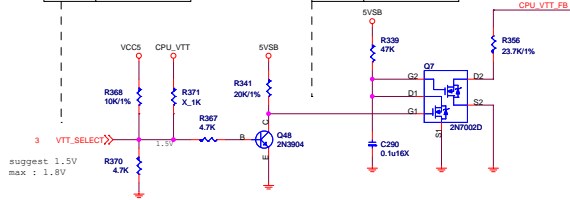
**CPU VTT 8.5A + SA Core =17.3A**

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



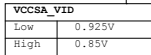
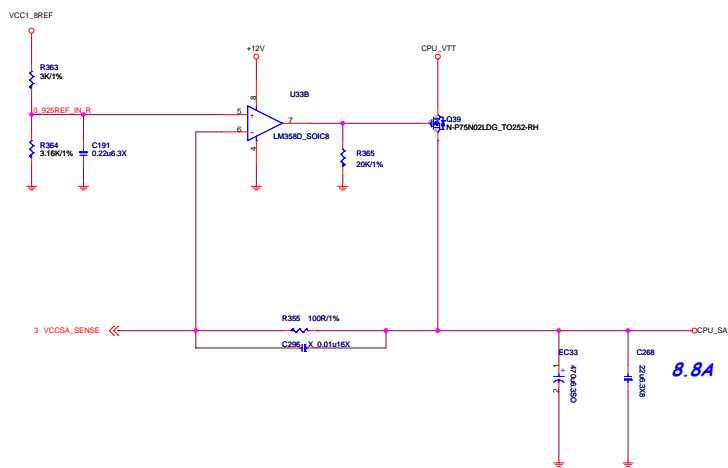
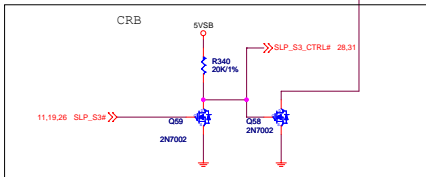
VTT_SELECT	
Low	1.0V
High	1.05V

Low	1.05V
High	1.0V



<b>MICRO-STAR INT'L CO.,LTD</b>			
<b>MS-7750</b>			
Size Custom	Document Description <b>CPU_VTT - uP6103- 1-Phase</b>		Rev 1.0
Date: Thursday, May 26, 2011		Sheet 29 of 34	

**SA Core = 8.8A**



Low	0.85V
High	0.925V



**MICRO-STAR INT'L CO.,LTD**

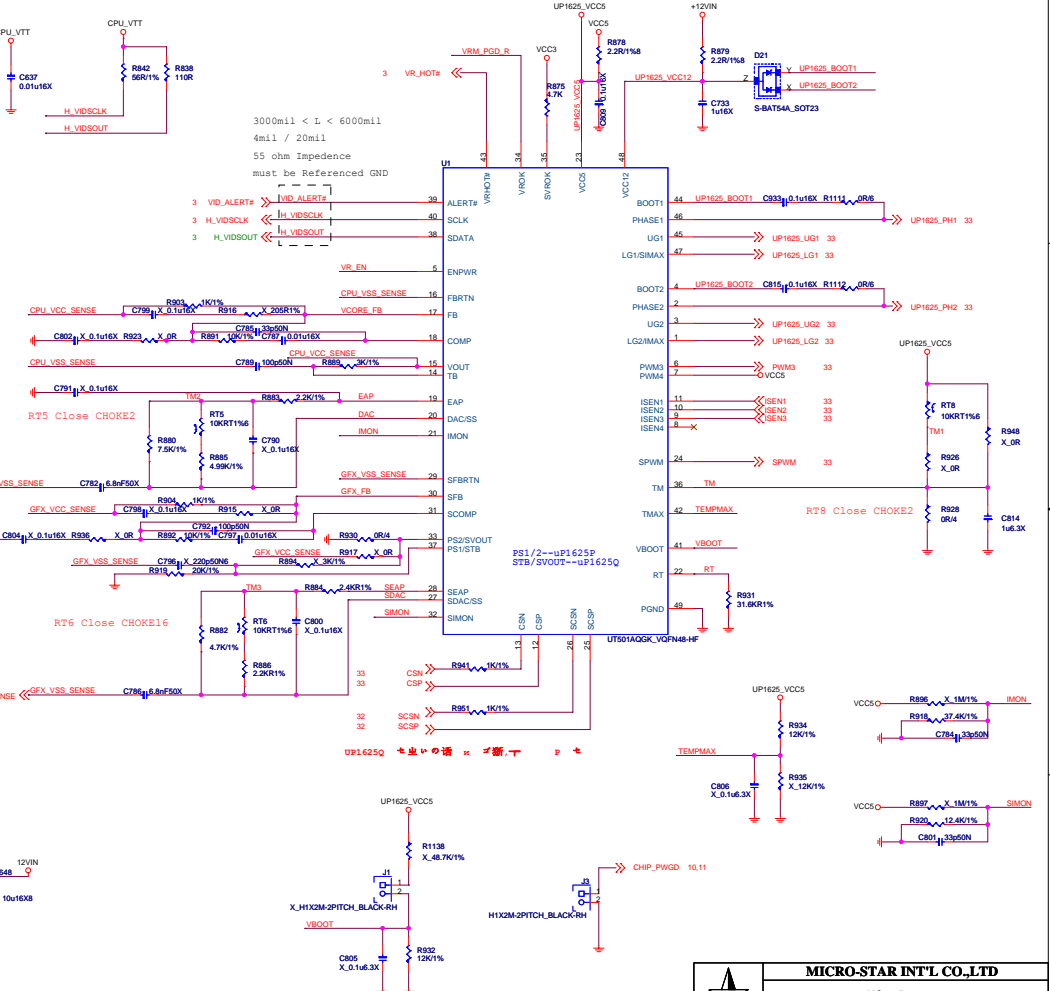
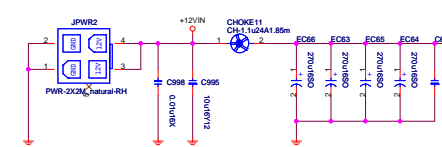
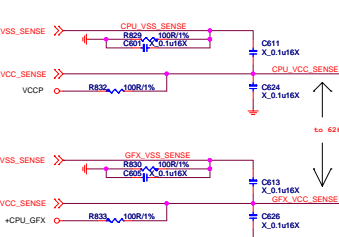
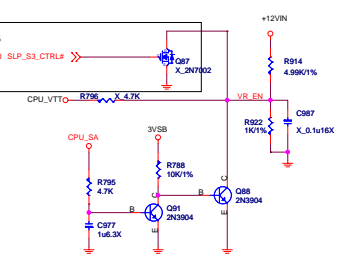
MS-7750

Size	Document Description
Custom	<b>CPU_SA - uP6103 1-Phase</b>
Date: Thursday, May 26, 2011	Sheet

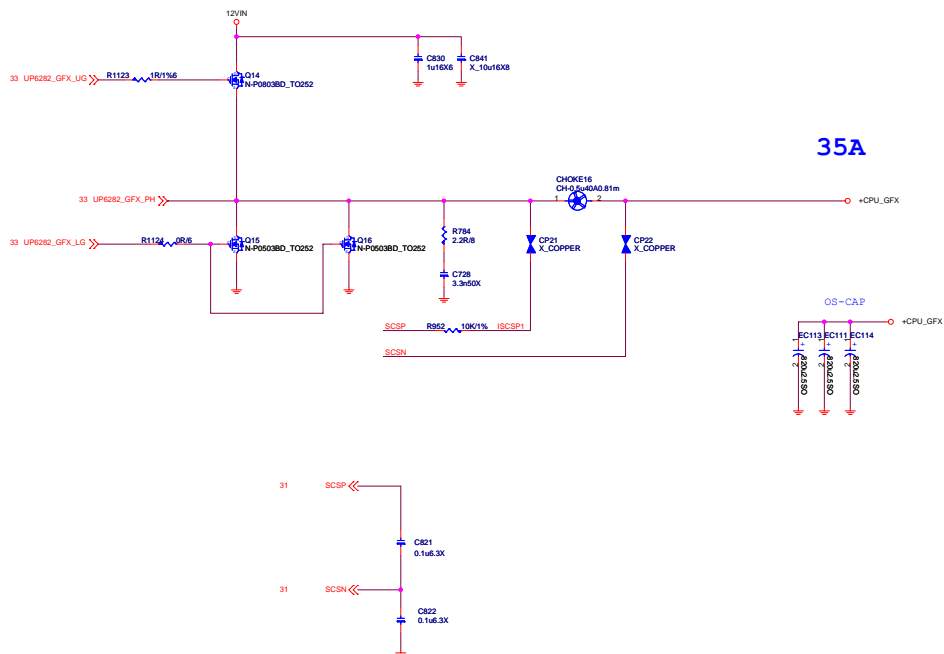
Date: Thursday, May 26, 2011	Sheet 30 of 34
------------------------------	----------------

---

www.aitech1.ru



	<b>MICRO-STAR INT'L CO.,LTD</b>			
	<b>MS-7750</b>			
	Size Custom	Document Description <b>VRD12 - UPI6234 4+1-Phase</b>		Rev 1.0
Part No. MS-7750 Rev. 2004.4		ESPEC. 8-4		8-4



MICRO-STAR INT'L CO.,LTD		
MS-7750		
Doc	Document Description	Rev
Custom	UP6234 1-Phase GPU	1.0
Date: Thursday, May 26, 2011		Sheet 32 of 34

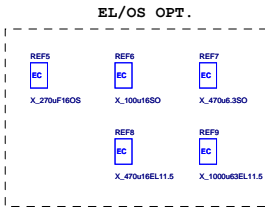
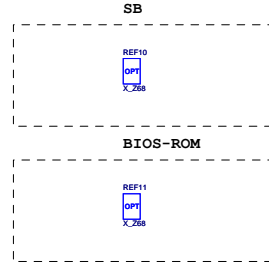
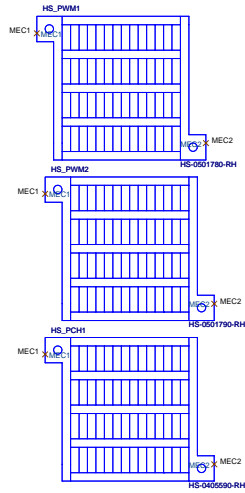
www.aitech1.ru



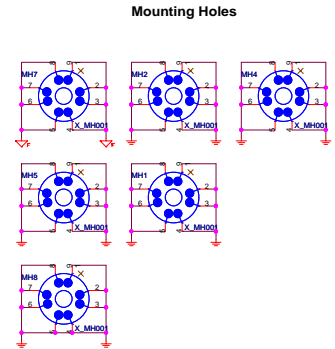
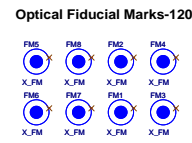


Configure	BOM	Function
A	CFG-7750-0A-A	601-7750-A20
B	CFG-7750-0A-B	601-7750-A30
C	CFG-7750-1.0-A	601-7750-01S
D	CFG-7750-1.0-B	601-7750-02S

MS-77500A OPT:A H67M Intel H67+4*DDRIII+1*PCIe16,1*PCIe4,2*PCIe1,3*PCI+DVI/D-sub +4*SATAII+2*SATAIII+12*USB2.0+2*USB3.0+HD8Ch Audio+Gb lan,EuP, (All Solid Cap),RoHS
MS-77500A OPT:B Z68 Intel H67+4*DDRIII+1*PCIe16,1*PCIe4,2*PCIe1,3*PCI+DVI/D-sub +4*SATAII+2*SATAIII+12*USB2.0+2*USB3.0+HD8Ch Audio+Gb lan,EuP, (All Solid Cap),RoHS
MS-7750 10 H67A-G43 (B3) ,H67 B3 +4DDR3+2*PCI_Ex16+2*PCI_Ex1+3*PCI+4*SATAII +2*SATAIII+HD 8CH Audio+12USB2.0+Gb LAN+2USB3.0, (EuP),RoHS
MS-7750 10 OPT:A Z68A-G43 (B3) ,Z68 B3 +4DDR3+2*PCI_Ex16+2*PCI_Ex1+3*PCI+4*SATAII +2*SATAIII+HD 8CH Audio+12USB2.0+Gb LAN+2USB3.0, (EuP),RoHS



	端	架测端	7
CPU脚	E21-7557040-L06	E21-7670020-L06	E21-7557050-L06



MSI		MS-7750	
Size	Custom	Document Description	XDP / Manual Parts
Date	Thursday, May 26, 2011	Sheet	34 of 34

www.aitech1.ru