

Title	Page
Cover Sheet	1
Block Diagram	2
CPU-CLK/Control/MISC/PEG,CPU-Memory	3,4
CPU-Power,CPU-GND	5,6
DDR III DIMM 1 ,DDR III DIMM 2	7,8
CP-PCI/E/DMI/USB/CLK	9
CP-SATA/HOST/FAN/GPIO/VGA	10
CP-SMB/LPC/AUDIO/RTC/RST	11
CP-POWER,GND/NVRAM	12,13
CP STRAPS	14
Reserved	15
SIO-Fintek NCT6681D	16
HDMI IN	17
BIOS Request Form	18
HDMI OUT	19
LAN-RTL8111E	20
Audio Codec ALC887	21
USB Connector	22
SATA / FAN Control	23
ACPI Controller UPI	24
CP / CPU_SA Power	25
DDR Power - NCP5217	26
CPU_VTT - NCP5217	27
CPU CORE -NCP6151	28
VCCP AND CPU_GFX POWER	29
ATX/EMI/HOTKEY/LED	30
Manual Parts	31
CPU/PCH XDP	32
CARD READER-RTS5159	33
Scaler Circuit	34
Mini PCIe Slot	36
System Power 3V/5V	37
ASmedia USB3.0	38
GPU Circuit	39~52
LVDS Connector	53,54
Power Delivery	55
History	56

# MS-AC751 Ver: 1.0

Intel -SugarBay plamform

## CPU:

INTEL-Sandy bridge LGA1155

## System Chipset:

INTEL-Cougar Point

## OnBoard Chipset:

HD Audio Codec:ALC887

LAN-RTL8111E

SIO: NCT6681D

## Main Memory:

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

## Expansion Slots:

MINIPCI Express (X1) Slot \* 2

## PWM:

Controller:NCP6131 3+1Phase

## Other:

SATA(SATA2-300MB/s) \*2

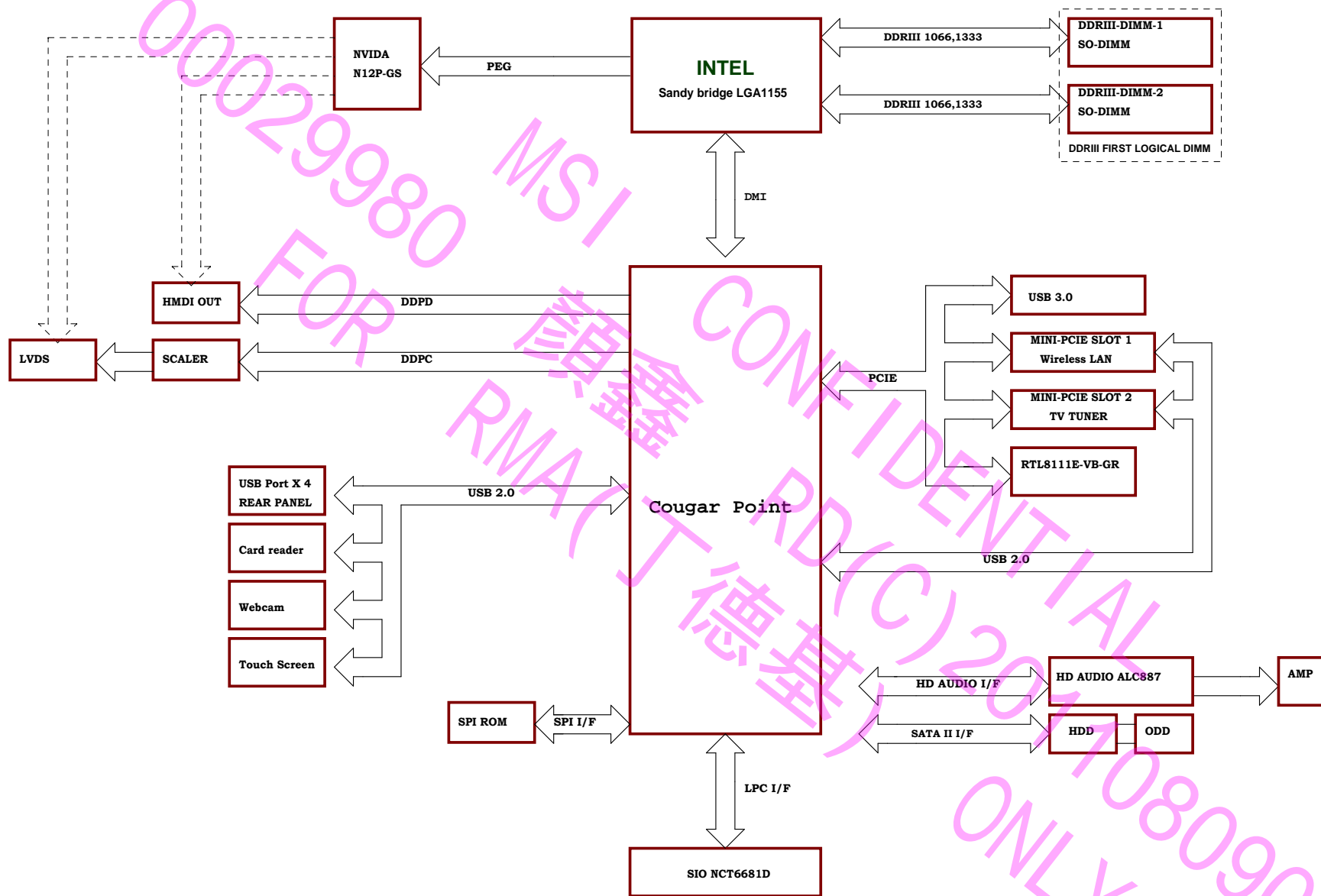
USB2.0 \*4

USB3.0 \*2

HDMI OUT\*1

MICRO-STAR INT'L CO.,LTD	
MS-AC75	
Size	Document Description
Custom	Cover Sheet
Date: 4/10/2010	Rev: 1.0
Sheet 1 of 57	

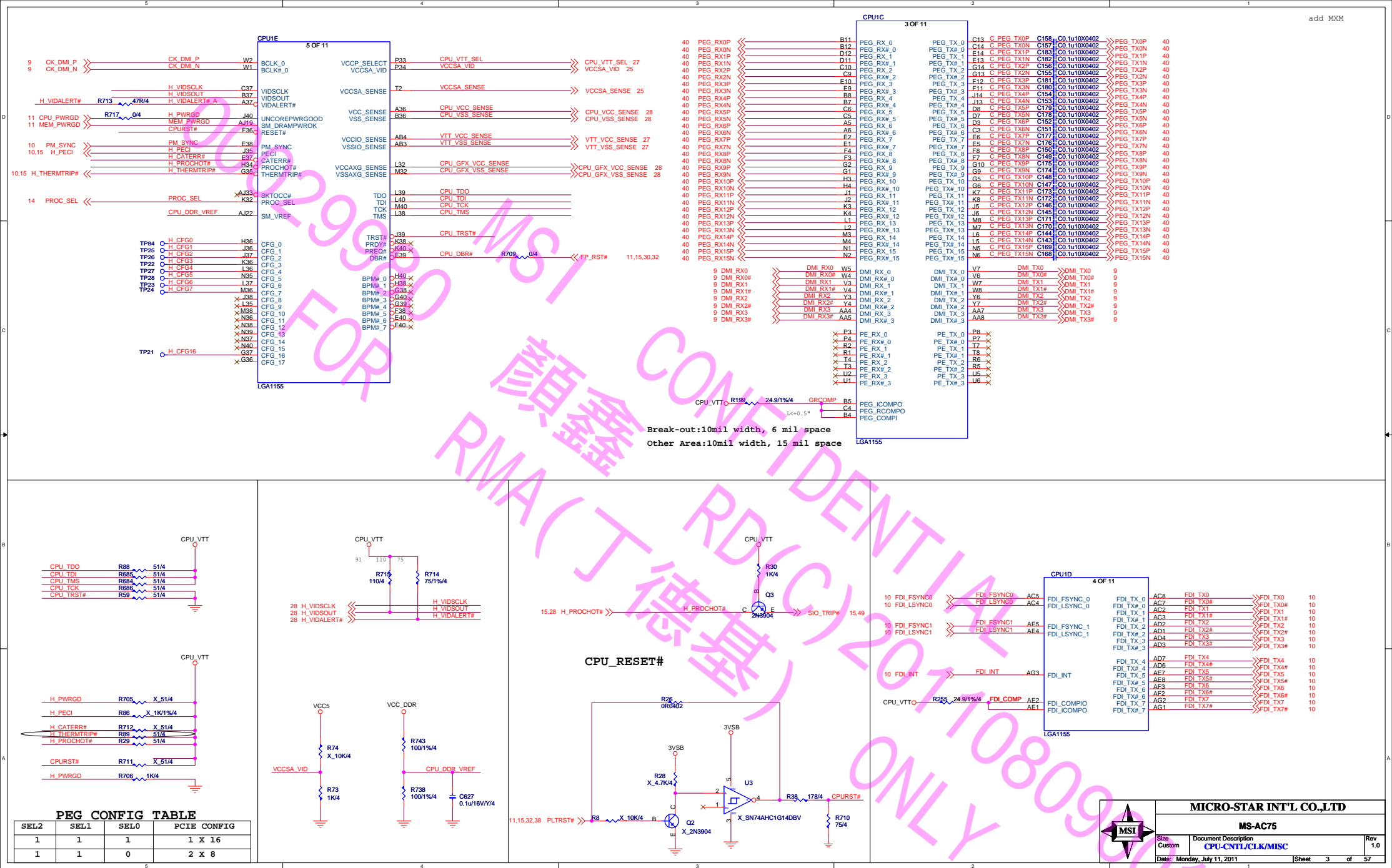
# MS-AC75 (MS-AC751)



MICRO-STAR INT'L CO.,LTD

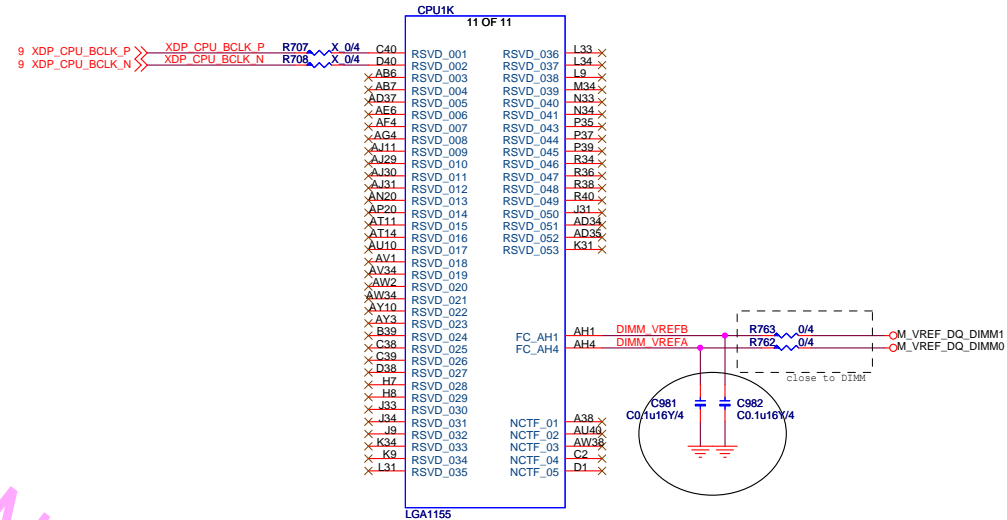
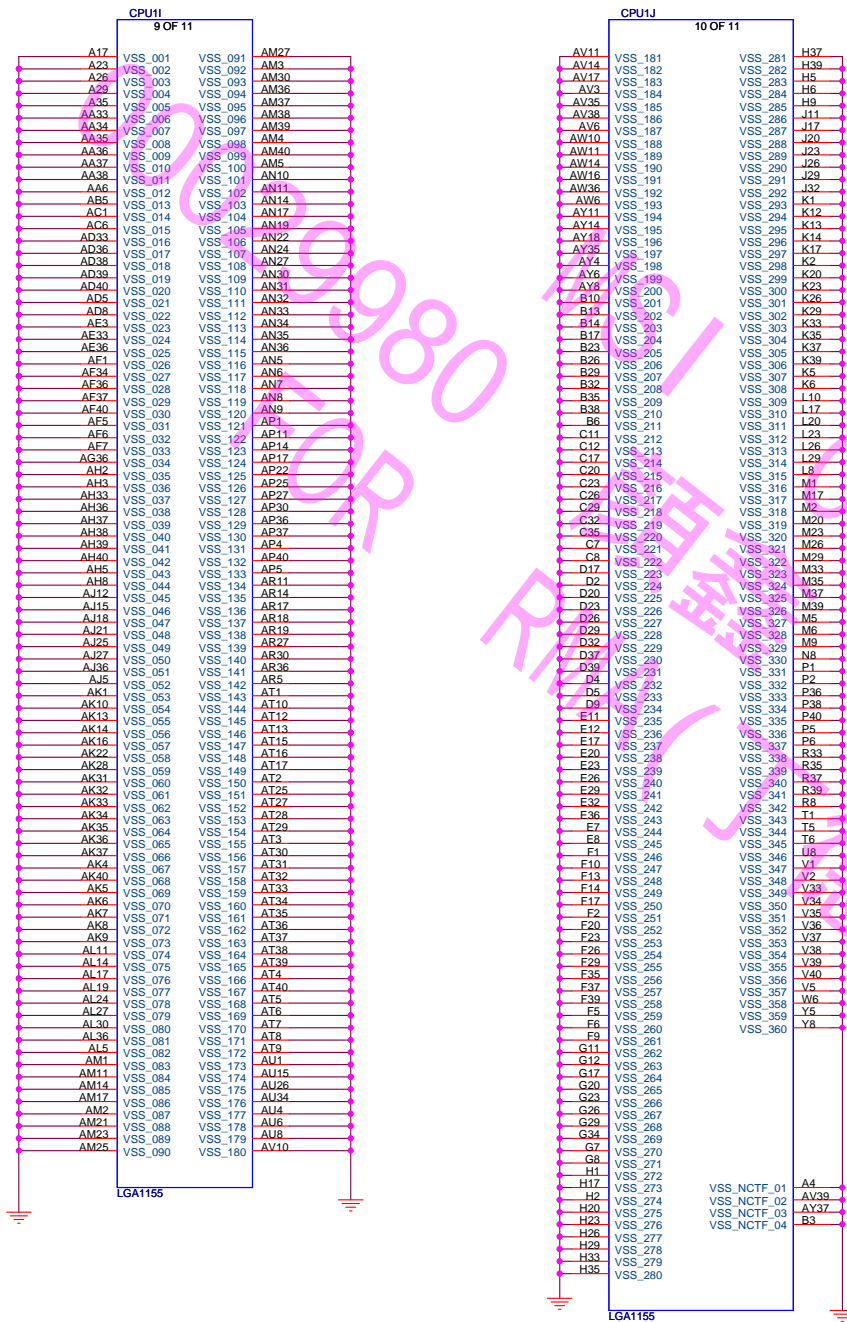
MS-AC75

Size Custom	Document Description Block Diagram	Rev 1.0
Date: Thursday, July 07, 2011	Sheet 2 of 57	











Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	MEM_MA_BANK0	21	MEM_MA_DQS_L7	31	MEM_MA_DQS_H7	41	MEM_MA_DQS_L7
2	MEM_MA_BANK1	22	MEM_MA_DQS_L6	32	MEM_MA_DQS_H6	42	MEM_MA_DQS_L6
3	MEM_MA_BANK2	23	MEM_MA_DQS_L5	33	MEM_MA_DQS_H5	43	MEM_MA_DQS_L5
4	MEM_MA_CS_L0	24	MEM_MA_DQS_L4	34	MEM_MA_DQS_H4	44	MEM_MA_DQS_L4
5	MEM_MA_CS_L1	25	MEM_MA_DQS_L3	35	MEM_MA_DQS_H3	45	MEM_MA_DQS_L3
6	MEM_MA_CLK_H0	26	MEM_MA_DQS_L2	36	MEM_MA_DQS_H2	46	MEM_MA_DQS_L2
7	MEM_MA_CLK_L0	27	MEM_MA_DQS_L1	37	MEM_MA_DQS_H1	47	MEM_MA_DQS_L1
8	MEM_MA_CLK_H1	28	MEM_MA_DQS_L0	38	MEM_MA_DQS_H0	48	MEM_MA_DQS_L0
9	MEM_MA_CKE0	29	MEM_MA_DM7	39	MEM_MA_DM7	49	MEM_MA_DM7
10	MEM_MA_CKE1	30	MEM_MA_DM6	40	MEM_MA_DM6	50	MEM_MA_DM6
11	MEM_MA_CAS_L0	31	MEM_MA_DM5	41	MEM_MA_DM5	51	MEM_MA_DM5
12	MEM_MA_RAS_L1	32	MEM_MA_DM4	42	MEM_MA_DM4	52	MEM_MA_DM4
13	MEM_MA_WE_L1	33	MEM_MA_DM3	43	MEM_MA_DM3	53	MEM_MA_DM3
14	MEM_MA_ODT0	34	MEM_MA_DM2	44	MEM_MA_DM2	54	MEM_MA_DM2
15	MEM_MA_ODT1	35	MEM_MA_DM1	45	MEM_MA_DM1	55	MEM_MA_DM1
16	M_A_DM0	36	MEM_MA_DM0	46	MEM_MA_DM0	56	MEM_MA_DM0
17	M_A_DM1	37	MEM_MA_DM0	47	MEM_MA_DM0	57	MEM_MA_DM0
18	M_A_DM2	38	MEM_MA_DM0	48	MEM_MA_DM0	58	MEM_MA_DM0
19	M_A_DM3	39	MEM_MA_DM0	49	MEM_MA_DM0	59	MEM_MA_DM0
20	M_A_DM4	40	MEM_MA_DM0	50	MEM_MA_DM0	60	MEM_MA_DM0
21	M_A_DM5	41	MEM_MA_DM0	51	MEM_MA_DM0	61	MEM_MA_DM0
22	M_A_DM6	42	MEM_MA_DM0	52	MEM_MA_DM0	62	MEM_MA_DM0
23	M_A_DM7	43	MEM_MA_DM0	53	MEM_MA_DM0	63	MEM_MA_DM0
24	MEM_MA_DQS_H0	44	MEM_MA_DM0	54	MEM_MA_DM0	64	MEM_MA_DM0
25	MEM_MA_DQS_H1	45	MEM_MA_DM0	55	MEM_MA_DM0	65	MEM_MA_DM0
26	MEM_MA_DQS_H2	46	MEM_MA_DM0	56	MEM_MA_DM0	66	MEM_MA_DM0
27	MEM_MA_DQS_H3	47	MEM_MA_DM0	57	MEM_MA_DM0	67	MEM_MA_DM0
28	MEM_MA_DQS_H4	48	MEM_MA_DM0	58	MEM_MA_DM0	68	MEM_MA_DM0
29	MEM_MA_DQS_H5	49	MEM_MA_DM0	59	MEM_MA_DM0	69	MEM_MA_DM0
30	MEM_MA_DQS_H6	50	MEM_MA_DM0	60	MEM_MA_DM0	70	MEM_MA_DM0
31	MEM_MA_DQS_H7	51	MEM_MA_DM0	61	MEM_MA_DM0	71	MEM_MA_DM0
32	MEM_MA_DQS_L0	52	MEM_MA_DM0	62	MEM_MA_DM0	72	MEM_MA_DM0
33	MEM_MA_DQS_L1	53	MEM_MA_DM0	63	MEM_MA_DM0	73	MEM_MA_DM0
34	MEM_MA_DQS_L2	54	MEM_MA_DM0	64	MEM_MA_DM0	74	MEM_MA_DM0
35	MEM_MA_DQS_L3	55	MEM_MA_DM0	65	MEM_MA_DM0	75	MEM_MA_DM0
36	MEM_MA_DQS_L4	56	MEM_MA_DM0	66	MEM_MA_DM0	76	MEM_MA_DM0
37	MEM_MA_DQS_L5	57	MEM_MA_DM0	67	MEM_MA_DM0	77	MEM_MA_DM0
38	MEM_MA_DQS_L6	58	MEM_MA_DM0	68	MEM_MA_DM0	78	MEM_MA_DM0
39	MEM_MA_DQS_L7	59	MEM_MA_DM0	69	MEM_MA_DM0	79	MEM_MA_DM0
40	MEM_MA_DQS_L7	60	MEM_MA_DM0	70	MEM_MA_DM0	80	MEM_MA_DM0

VCC3

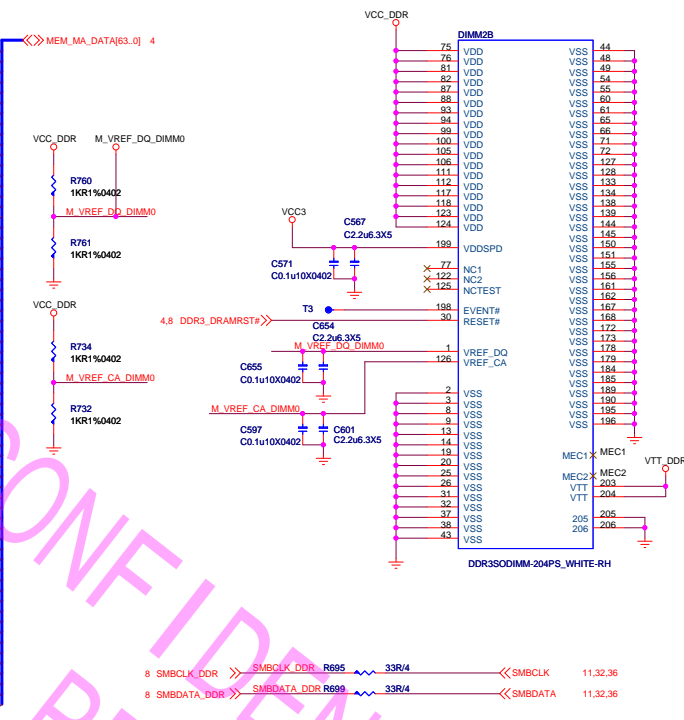
R703  
X1R0K0402

SAD DIM0  
SAT DIM0

R700  
X1R0K0402

R680  
X1R0K0402

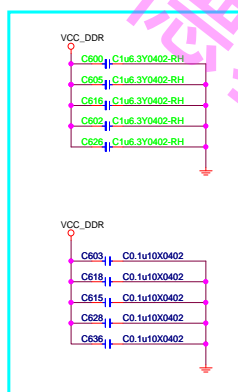
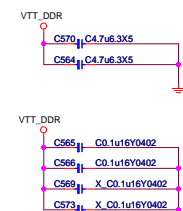
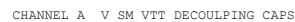
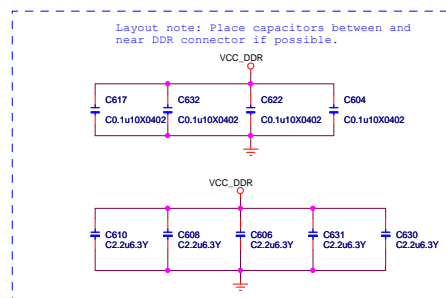
DOR3S00IM4-204PS, WH4TE-RH



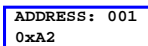
H=11mm

6-LAYER BOARD

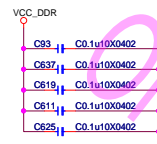
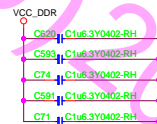
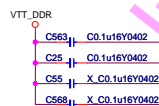
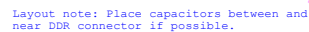
6-LAYER BOARD



4 MEM\_MB\_ADD[15..0] >>



DDR3SODIMM-204PS\_WHITE-RH-1



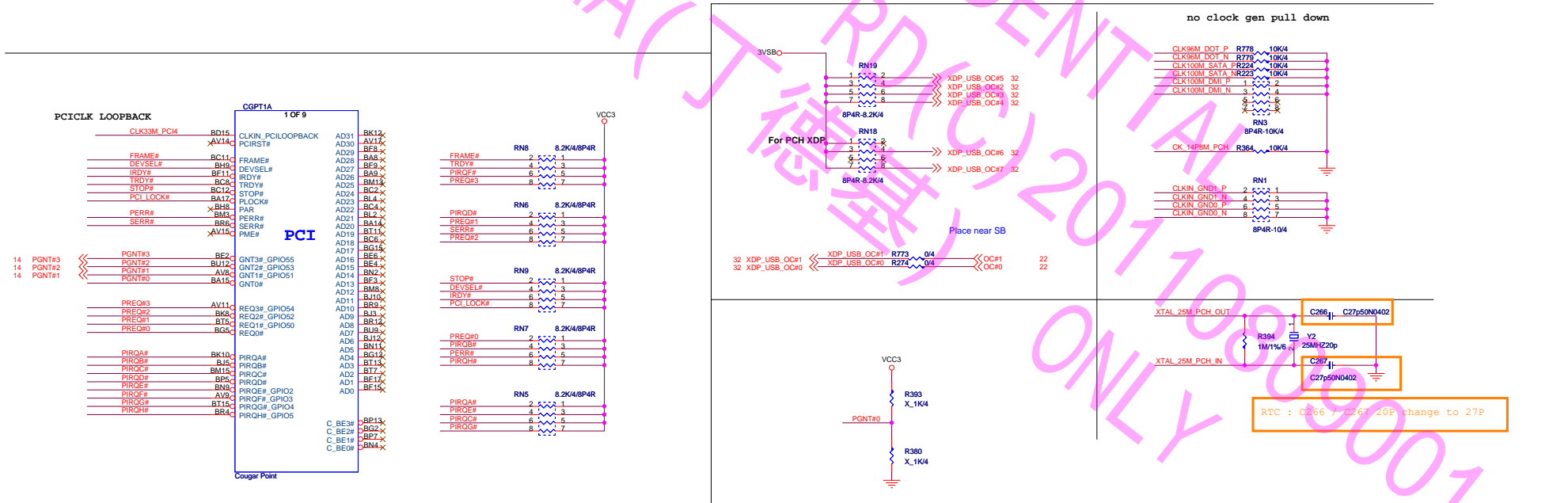
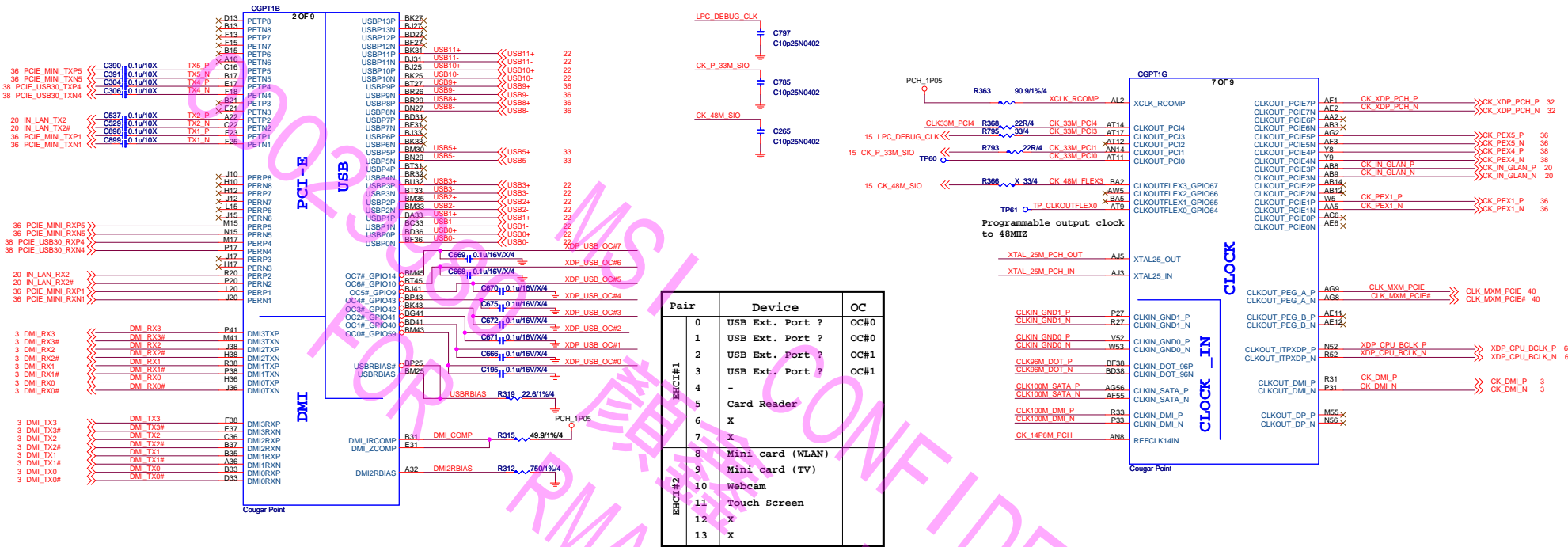
**MICRO-STAR INT'L CO.,LTD**

MS-AC75

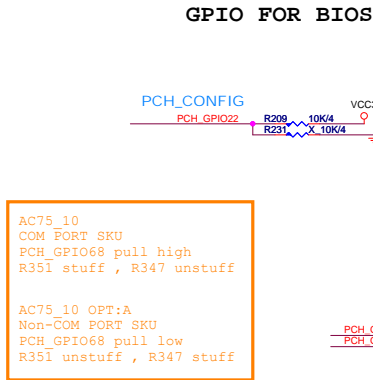
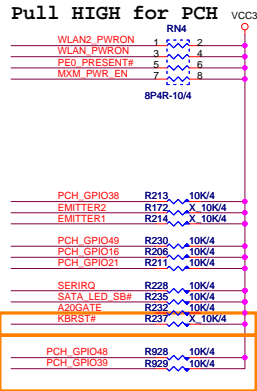
Size C	Document Description <b>DDR III SODIMM 2</b>	Rev 1.1
Date: Monday, July 11, 2011		Sheet 8 of 57



H61 SKU:PCIe ports 7 and 8 are disabled.  
H61 SKU:USB ports 6, 7, 12 and 13 are disabled.



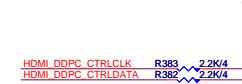
H61 SKU:SATA ports 2 and 3 are disabled.



No VGA( pull down)



Enable VGA (CTRLCLK/DATA PULL HIGH)



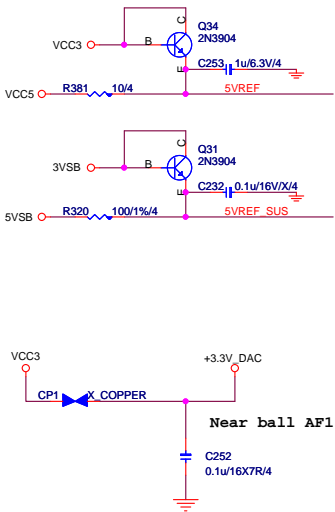
MICRO-STAR INT'L CO.,LTD		
MS-AC75		
Size Custom	Document Description	Rev 1.0
CP SATA/HOST/FAN/GPIO/VGA		
Date: Monday, July 11, 2011	Sheet 10	of 57



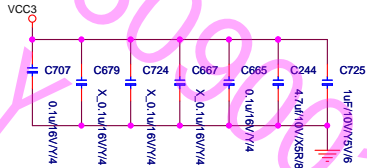
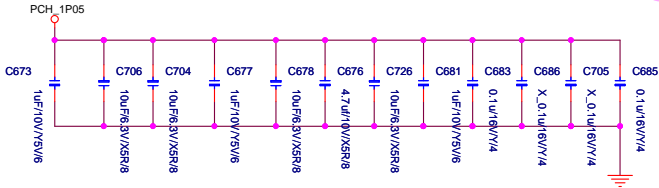
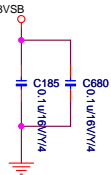
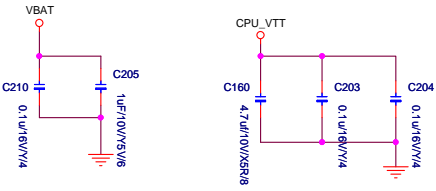
Table 3-7. VCCPLL Decoupling Requirements

Capacitance	Qty	ESR (each)	ESL (each)	Filter	Placement	Notes
Aluminum Electrolytic 220µF	1	77mΩ	3.3nH	Output	North of processor - as close to RM keep-out as possible	1
10µF 0805 XSR	1	3mΩ	0.51nH	Output		1,2,3

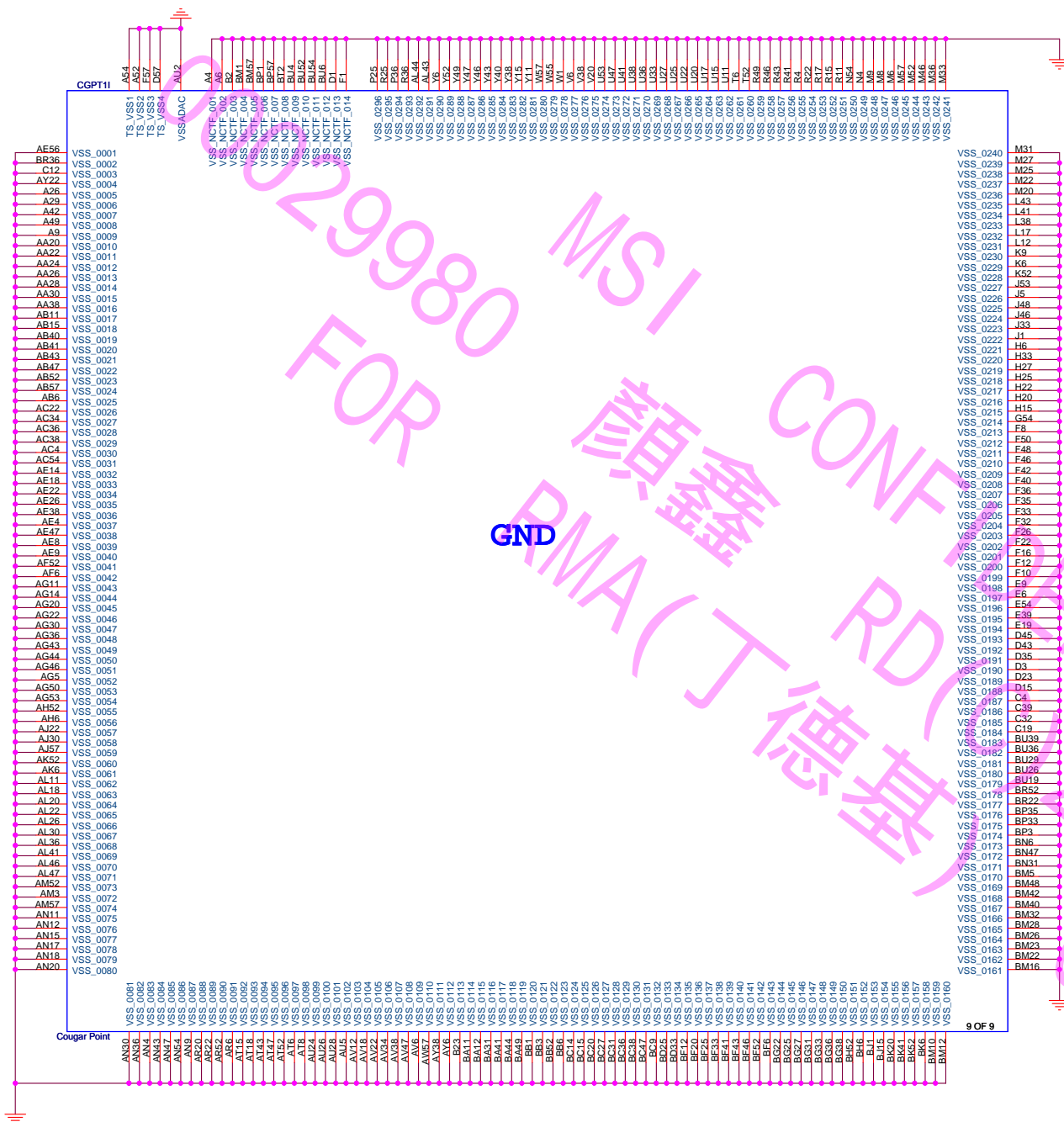
5VREF & 5VREF\_SUS Sequencing Circuit



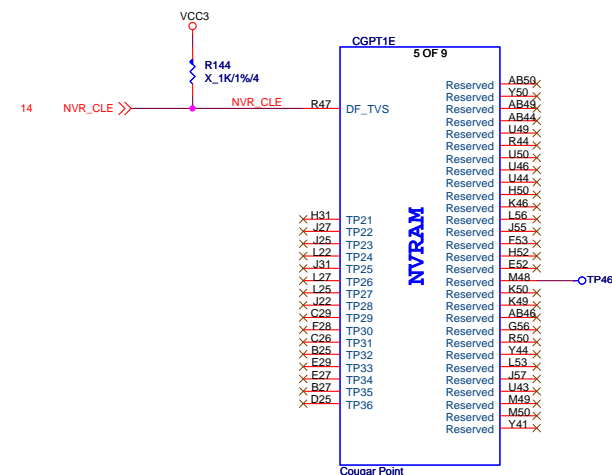
PCH decoupling cap



MICRO-STAR INT'L CO.,LTD			
MS-AC75			
Size Custom	Document Description	Rev 1.0	
CP POWER		Date: Monday, July 11, 2011	Sheet 12 of 57



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



MICRO-STAR INT'L CO.,LTD

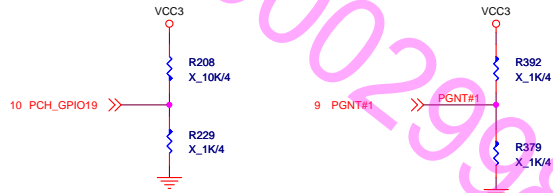
MS-AC75

Size	Document Description	Rev
Custom	CP GND/NVRAM	1.0
Date: Monday, July 11, 2011	Sheet 13 of 57	



# CP REQUIRED STRAPS

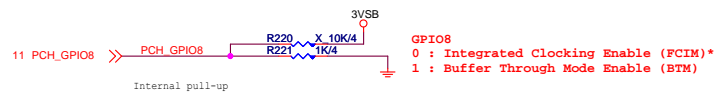
BOOT DEVICE	GNT1	SATA1GP/GPIO19
LPC	0	0
PCI	0	Floating
SPI	Floating	Floating



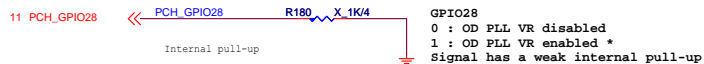
DMI AC/DC MODE  
0 : AC  
1 : DC \*



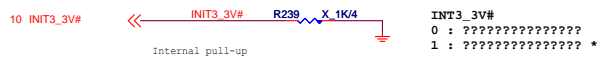
Topblock swap override when pull-low  
Signal has a weak internal pull-up



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



GPIOS28  
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 voltage regulators are enabled, the integrated GbE only operates at 10/100 Mbps during S3-S5.

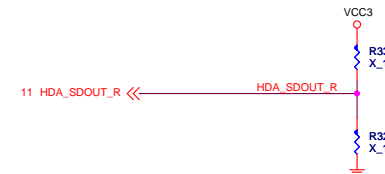


DSWVRMEN  
0 : Disable Internal Deep Sleep 1.05 V regulators.  
1 : Enable Internal Deep Sleep 1.05 V regulators.

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

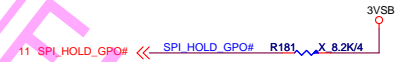


HDA\_SYNC  
OD PLL VR SUPPLY SEL  
0 : 1.8V SUPPLY \*  
1 : 1.5V SUPPLY

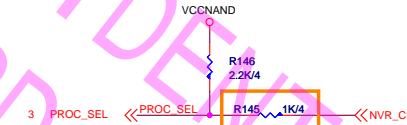


HDA\_SDO  
Disable ME in Manufacturing Mode  
when pull LOW ????

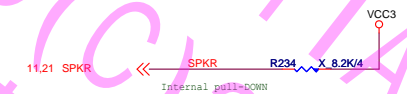
HDA\_SDO has internal pull down.  
Default should be connected to SDIN of codec, no pull up/down.  
To Disable ME need to have a jumper to pull high



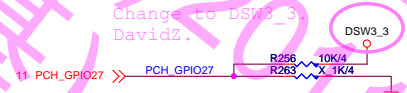
GPIOS15  
0 : TLS CIPHER SUITE WITH NO CONFIDENTIALITY \*  
1 : TLS CIPHER SUITE WITH CONFIDENTIALITY



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



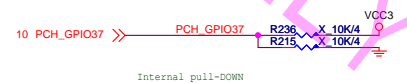
SPKR  
0 : EN TCO REBOOT \*  
1 : DIS TCO REBOOT



In Deep Sleep Power Well.  
If not used, require a weak pull-up(8.2k-10k) to VccDSW3\_3



Cougar point EDS PAGE:93 This signal should not be pull high



Cougar point EDS PAGE:93 This signal should not be pull high

MICRO-STAR INT'L CO.,LTD			
MS-AC75			
Size	Document Description	Rev	
Custom	CP STRAPS	1.0	
Date: Monday, July 11, 2011	Sheet	14	of 57





00029980  
FOR

MSI

廣錕  
電子

RMA(丁德基)

CONFIDENTIAL

RD(C)20110809001  
ONLY



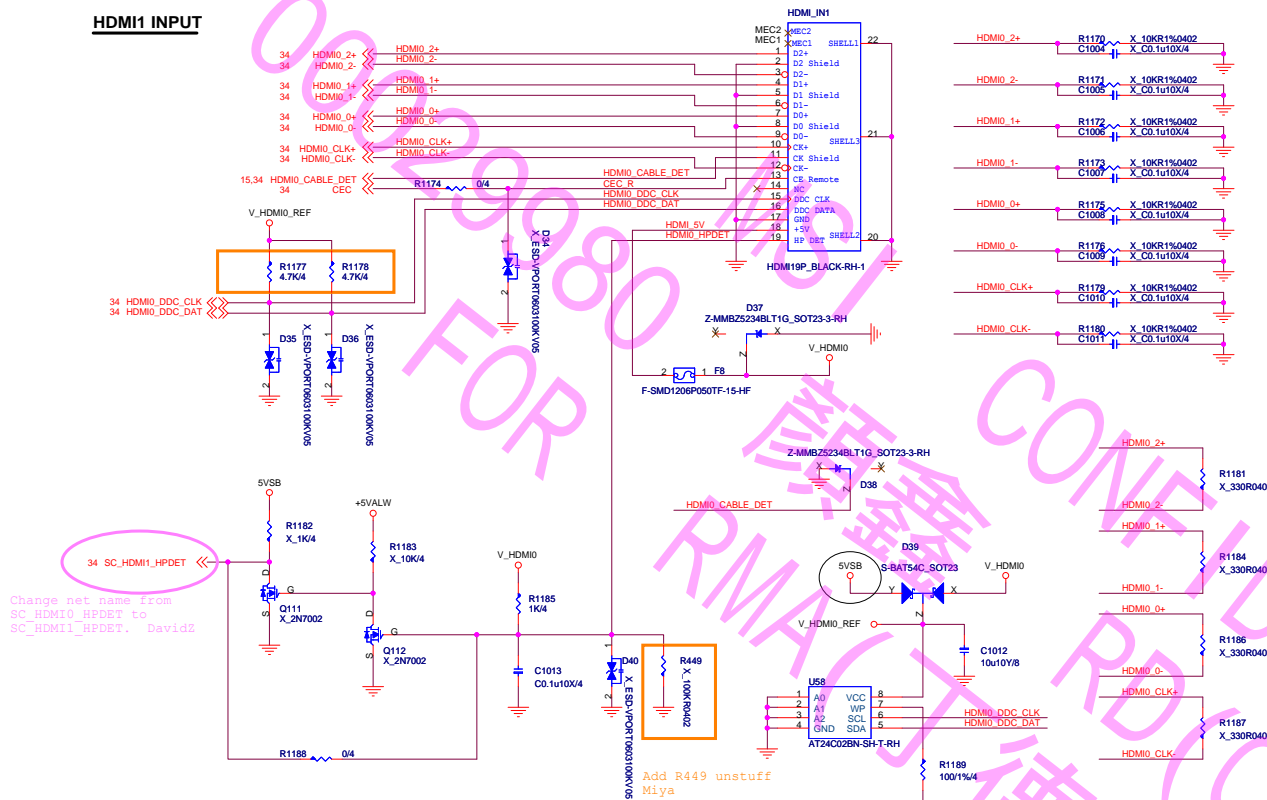
MICRO-STAR INT'L CO.,LTD

MS-AC75

Size Custom	Document Description Reserved	Rev 1.0
----------------	----------------------------------	------------

# N5Y-19M0221-H06

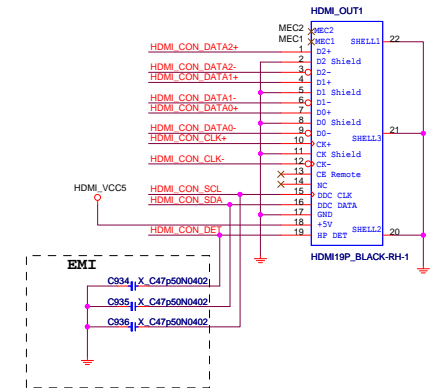
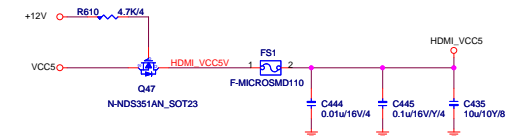
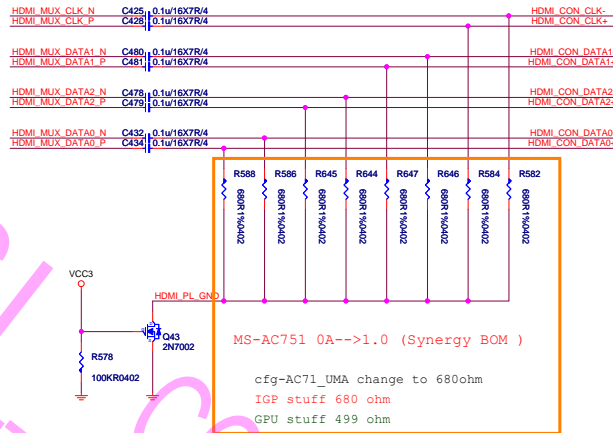
## HDMI1 INPUT



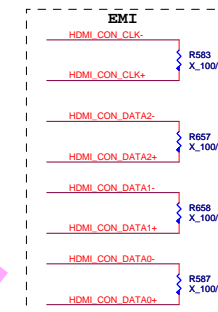
## M33-24C02X3-A26

PCH

GPIO	Alt Func	Type	POWER	SMI	TOL	DEFAULT	SIGNAL NAME	Pull up or Pull down	BIOS
GPIO0	BMBUSY#	I/O	CORE	Y	3.3V	GPI	NEC_SMIB	Pull-up 10K to VCC3	GPI
GPIO1		I/O	CORE	Y	3.3V	GPI	WLAN2_PWRON		GPO
GPIO2	PIRQE#	I/OD	CORE	Y	5V	GPI	PIRQE#	Pull-up 8.2K to VCC3	No USE
GPIO3	PIRQF#	I/OD	CORE	Y	5V	GPI	PIRQF#	Pull-up 8.2K to VCC3	No USE
GPIO4	PIRQG#	I/OD	CORE	Y	5V	GPI	PIRQG#	Pull-up 8.2K to VCC3	No USE
GPIO5	PIRQH#	I/OD	CORE	Y	5V	GPI	PIRQH#	Pull-up 8.2K to VCC3	No USE
GPIO6		I/O	CORE	Y	3.3V	GPI	BKLT-	Pull-up 10K to VCC3	GPI
GPIO7		I/O	CORE	Y	3.3V	GPI	BKLT+	Pull-up 10K to VCC3	GPI
GPIO8	Unmultiplexed	I/O	Suspend	Y	3.3V	GPO	PCH_GPIO8	Pull-down 1K to GND	No USE
GPIO9	OC5#	I/O	Suspend	Y	3.3V	Native	OC5#	Pull-up 10K to 3VSB	Native
GPIO10	OC6#	I/O	Suspend	Y	3.3V	Native	OC6#	Pull-up 10K to 3VSB	Native
GPIO11	SMBALERT#	I/O	Suspend	Y	3.3V	Native	PCH_GPIO11	Pull-up 10K to 3VSB	No USE
GPIO12	LAN_PHY_PWR_CTRL	I/O	Suspend	Y	3.3V	Native	(NC)		No USE
GPIO13	HDA_DOCK_RST#	I/O	Suspend	Y	3.3V	GPI	SIO_PME#		No USE
GPIO14	OC7#	I/O	Suspend	Y	3.3V	Native	OC7#	Pull-up 10K to 3VSB	Native
GPIO15	Unmultiplexed	I/O	Suspend	Y	3.3V	GPO	SPI_HOLD_GPO#	Internal pull-down	Straps
GPIO16	SATA4GP	I/O	CORE	N	3.3V	GPI	PCH_GPIO16	Pull-up 10K to VCC3	No USE
GPIO17		I/O	CORE	N	3.3V	GPI	WLAN_PWRON	Pull-up 10K to VCC3	GPO
GPIO19		I/O	CORE	N	3.3V	GPI	PCH_GPIO19	Internal pull-up	Straps
GPIO20	PCIECLKRQ2#	I/O	CORE	N	3.3V	Native	PCH_GP20	Pull-down 10K to GND	Native
GPIO21	SATA0GP	I/O	CORE	N	3.3V	GPI	PCH_GPIO21	Pull-up 10K to VCC3	No USE
GPIO22	SCLOCK	I/O	CORE	N	3.3V	GPI	PCH_GPIO22	Pull-up 10K to VCC3	No USE
GPIO23	LDRQ1#	I/O	CORE	N	3.3V	Native	(NC)		No USE
GPIO24	Unmultiplexed	I/O	Suspend	N	3.3V	GPO	PCH_GPIO24	Pull-up 10K to 3VSB	No USE
GPIO25	PCIECLKRQ3#	I/O	Suspend	N	3.3V	Native	USB3_CLKRQ#	Pull-up 10K to 3VSB	Native
GPIO26	PCIECLKRQ4#	I/O	Suspend	N	3.3V	Native	PCIECLKRQ4#	(pull high)	Native
GPIO27	Unmultiplexed	I/O	Deep Sleep	N	3.3V	GPI	DSW_WAKE#	internal pull-up	GPI
GPIO28	Unmultiplexed	I/O	Suspend	N	3.3V	GPO	PLL_ODVR_EN	internal pull-up	Straps
GPIO29	SLP_LAN#	I/O	Suspend	N	3.3V	GPI	SLP_LAN#	Pull-up 10K to 3VSB	No USE
GPIO30	SUSPWRDNACK	I/O	Deep Sleep	N	3.3V	Native	SUSPWRACK	Pull-up 10K to 3VSB	Native
GPIO31	ACPRESENT	I/O	Deep Sleep	N	3.3V	GPI	AC_PRESENT	Pull-up 10K to 3VSB	No USE
GPIO32	CLKRUN#	I/O	CORE	N	3.3V	GPO	PM_CLKRUN#	Pull-up 8.2K to VCC3	
GPIO33	HDA_DOCK_EN#	I/O	CORE	N	3.3V	GPO	HDA_DOCK_EN#	Test Pin	No USE
GPIO34	STP_PCI#	I/O	CORE	N	3.3V	GPI	STP_PCI#	Pull-up 10K to VCC3	No USE
GPIO35	(Mobile Only)	I/O	CORE	N	3.3V	GPO	PCH_GPIO35	Test Pin	No USE
GPIO36	SATA2GP	I/O	CORE	N	3.3V	GPI	PCH_GPIO36	Pull-down 10K to GND	Straps
GPIO37	SATA3GP	I/O	CORE	N	3.3V	GPI	PCH_GPIO37	Pull-down 10K to GND	Straps
GPIO38	SLOAD	I/O	CORE	N	3.3V	GPI	PCH_GPIO38	Pull-up 10K to VCC3	No USE
GPIO39	SDATAOUT0	I/O	CORE	N	3.3V	GPI	GFX_DET		GPI
GPIO40	OC1#	I/O	Suspend	N	3.3V	Native	USB_OC1#	(pull high)	Native



2011.06.29 EMI test unstuff C934 ,C935 ,C936

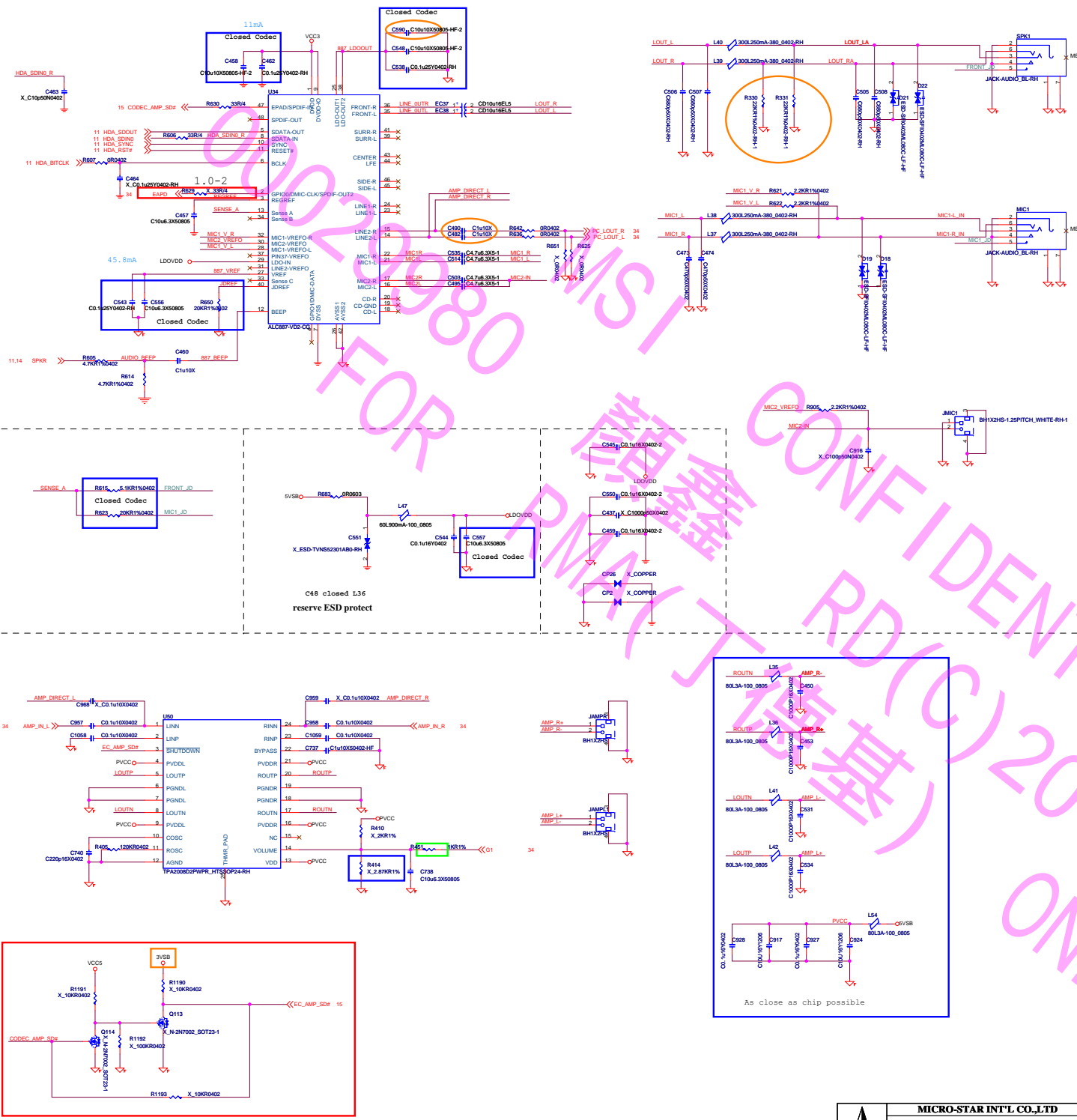


MS-AC751 0A-->1.0 (Synergy BOM )  
 RN11 , RN12 ,RN14, RN15 unstuff ,  
 RN20 , RN21 ,RN22, RN23 stuff  
 R913 , R910 ,R907, R916 ,R920 unstuff ,  
 R918 , R911 ,R909, R915 ,R919 stuff

MICRO-STAR INT'L CO.,LTD			
MS-AC75			
Size	Document Description	Rev	
Custom	HDMI OUT	1.0	
Date: Monday, July 11, 2011	Sheet	10	of 57

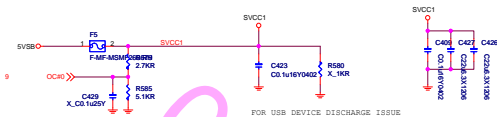




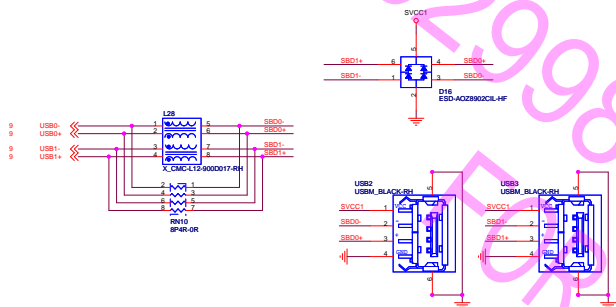


MICRO-STAR INT'L CO.,LTD			
MS-AC75			
Doc No	Document Description	Rev	1.0
MS-AC75	MS-AC75	1.0	1.0

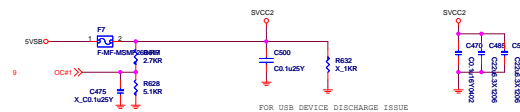
# POWER CIRCUIT FOR USB PORT 0,1 (REAR)



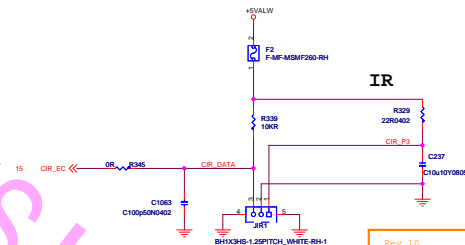
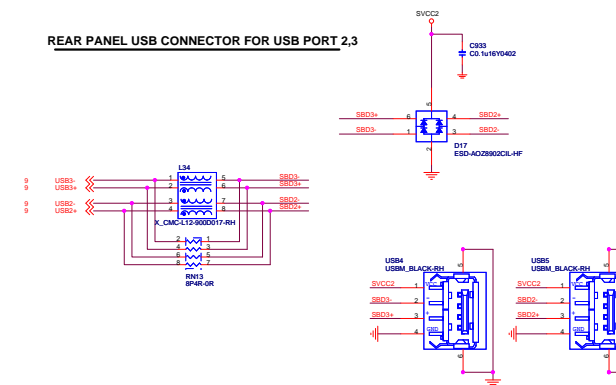
# REAR PANEL USB CONNECTOR FOR USB PORT 0,1



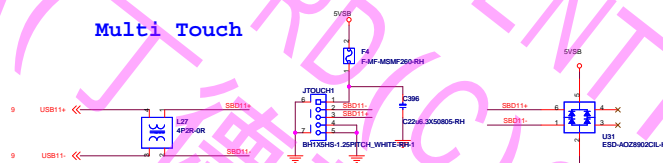
# POWER CIRCUIT FOR USB PORT 2,3 (REAR)



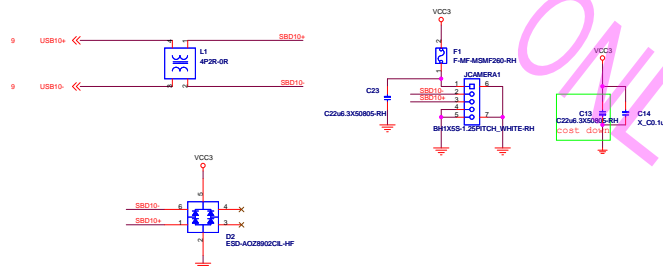
# REAR PANEL USB CONNECTOR FOR USB PORT 2,3



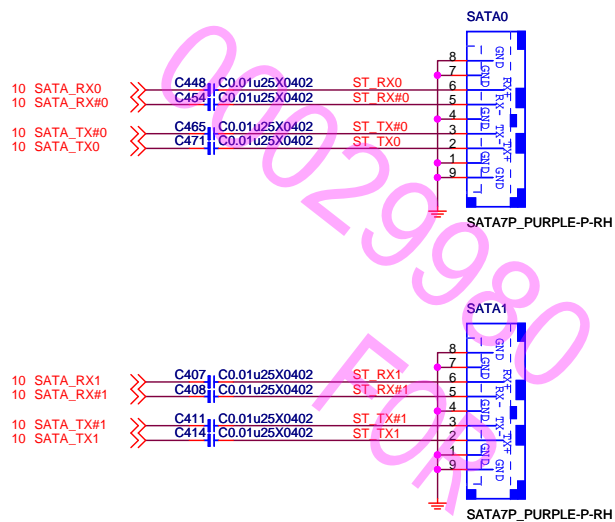
# Multi Touch



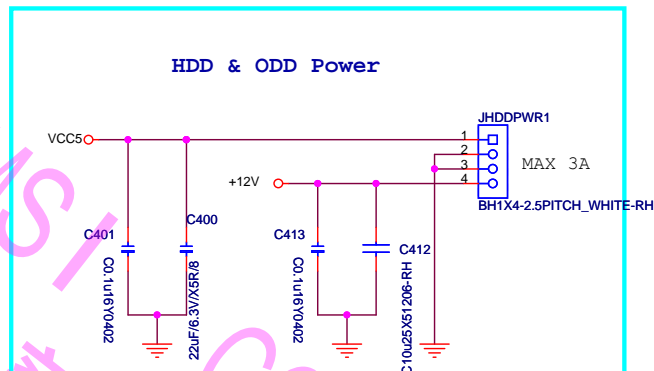
# Webcam



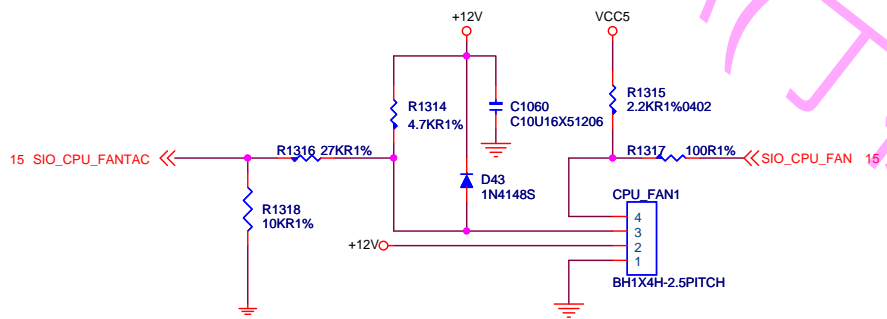
# SATA HDD



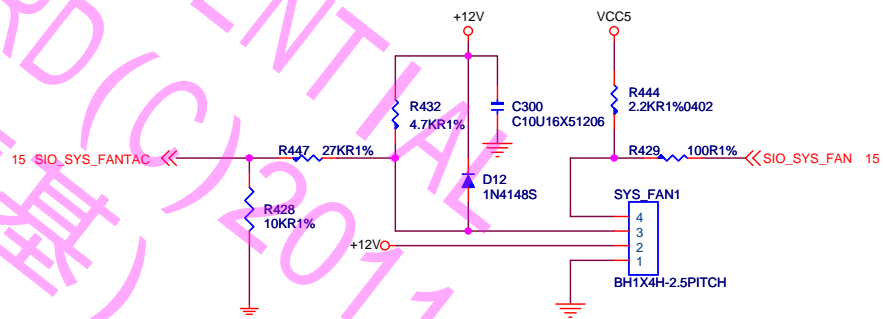
## HDD & ODD Power



## CPU FAN



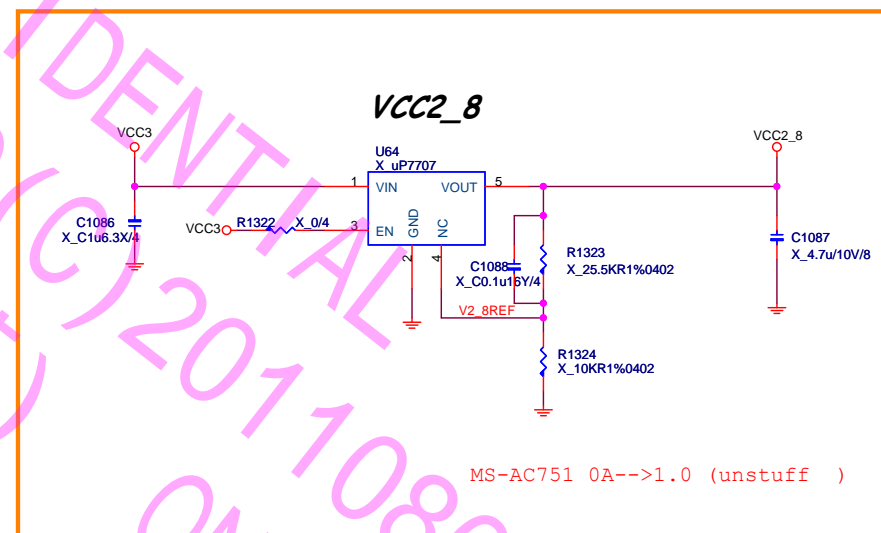
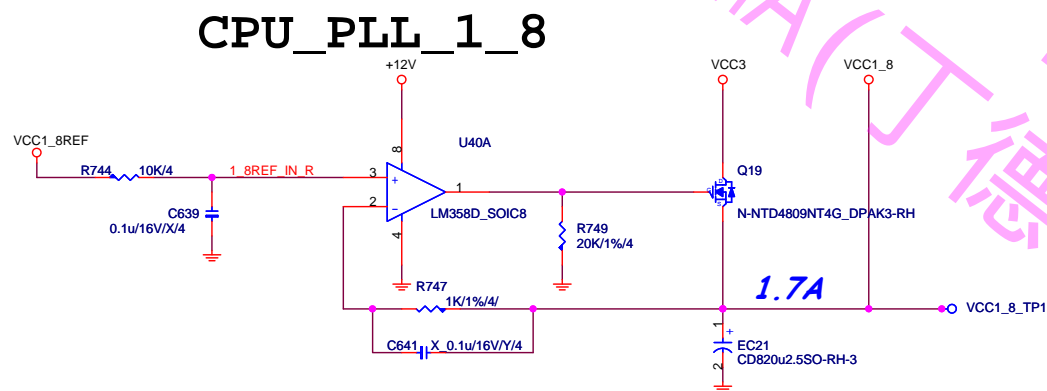
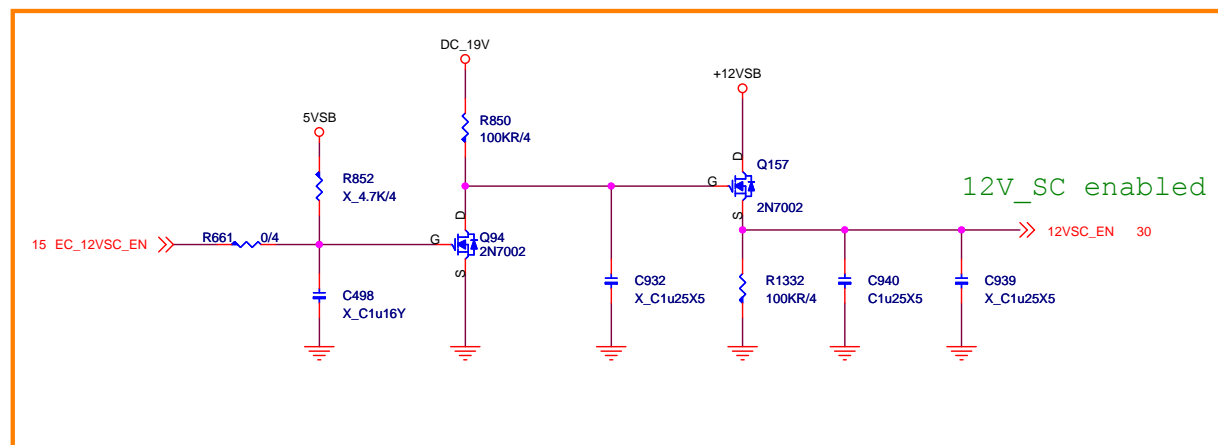
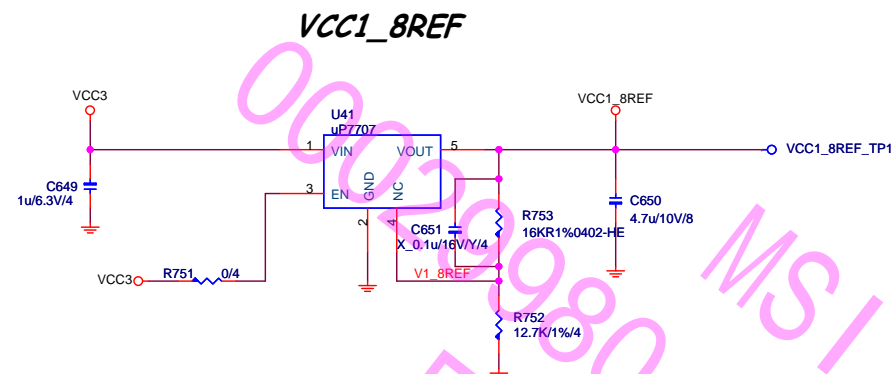
## SYSTEM FAN



MICRO-STAR INT'L CO.,LTD

MS-AC75

Size B	Document Description	Rev
	SATA /FAN Control	1.0
Date: Monday, July 11, 2011	Sheet 23 of 57	



MICRO-STAR INT'L CO.,LTD

MS-AC75

Size	Document Description	Rev
B	ACPI Controller UPI	1.0
Date:	Monday, July 11, 2011	Sheet 24 of 57

## CPU\_SA Power

### VTT-->CPU\_SA

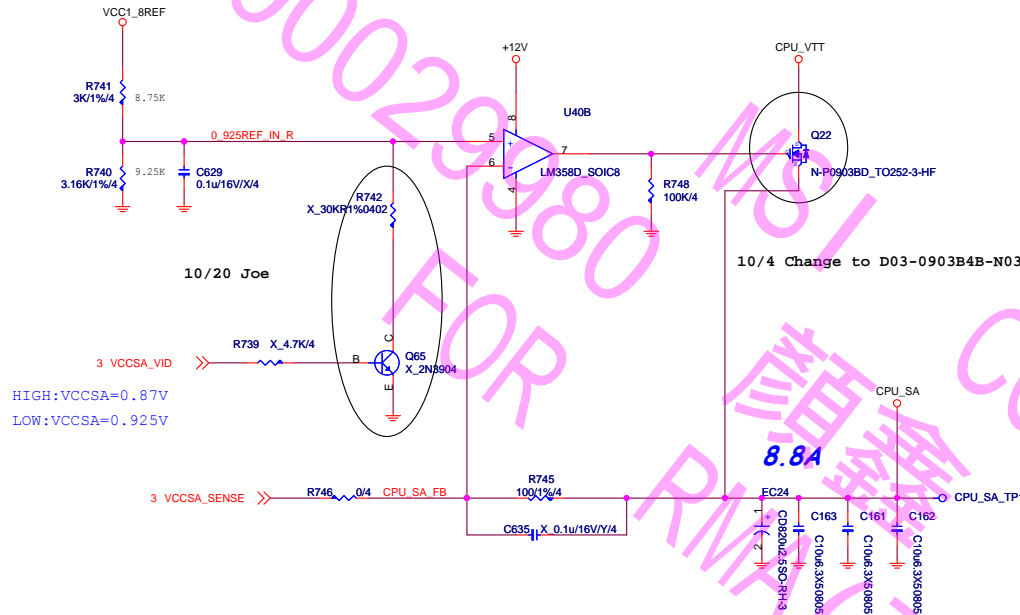
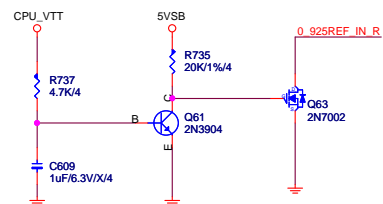


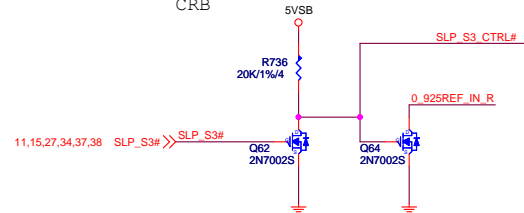
Table 3-10. VCCSA Decoupling Requirements

Capacitance	Qty	ESR (each)	ESL (each)	Filter	Placement	Notes
Aluminum Polymer 500µF	1	7mΩ	1.4nH	Output	As close to RM keep-out as possible	1
10µF 0805 XSR	2	3mΩ	0.51nH	Output	Inside processor socket cavity	1,2,3

### Waiting CPU\_VTT Ready



### CRB



## CP Power

### DDR-->PCH

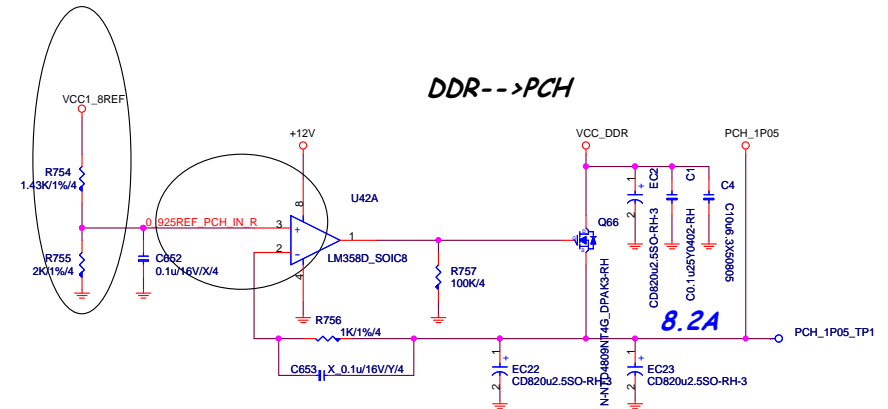
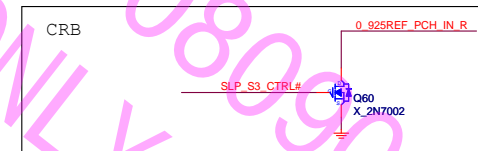


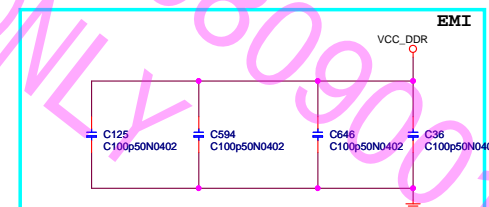
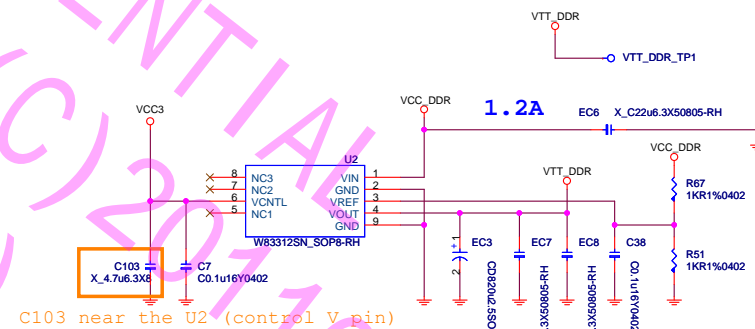
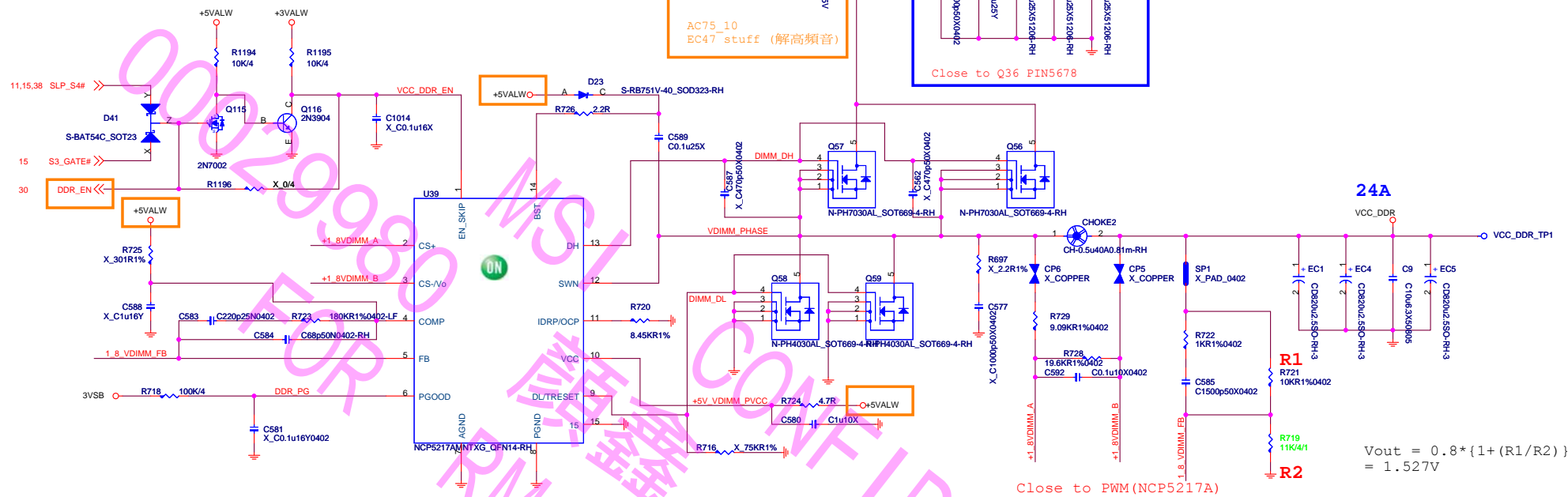
Table 4-1. V1.05A\_PCH Plane Decoupling Recommendations

Bulk Decoupling Location	Qty x µF (size)	ESR, m
1.05S rail for VccCore & VccIO (dedicated)(AMT sku)	1x820µF	21mohm (bulk)
1.05A rail for VccASW (dedicated)(AMT sku)	2x22µF MLCC	
1.05S rail merge with 1.05A rail (non-AMT sku)	1x500µF 2x 22µF MLCC	7mohm (bulk)

**Note:** Bulk electrolytic capacitors (tantalum or aluminum based) render an aggregate ESR that matches the motherboard impedance budget. Other electrolytic capacitors that render motherboard impedance match can be deemed suitable as long as ripple current ratings and attach rate renders Bulk ESR not significantly different than those shown.



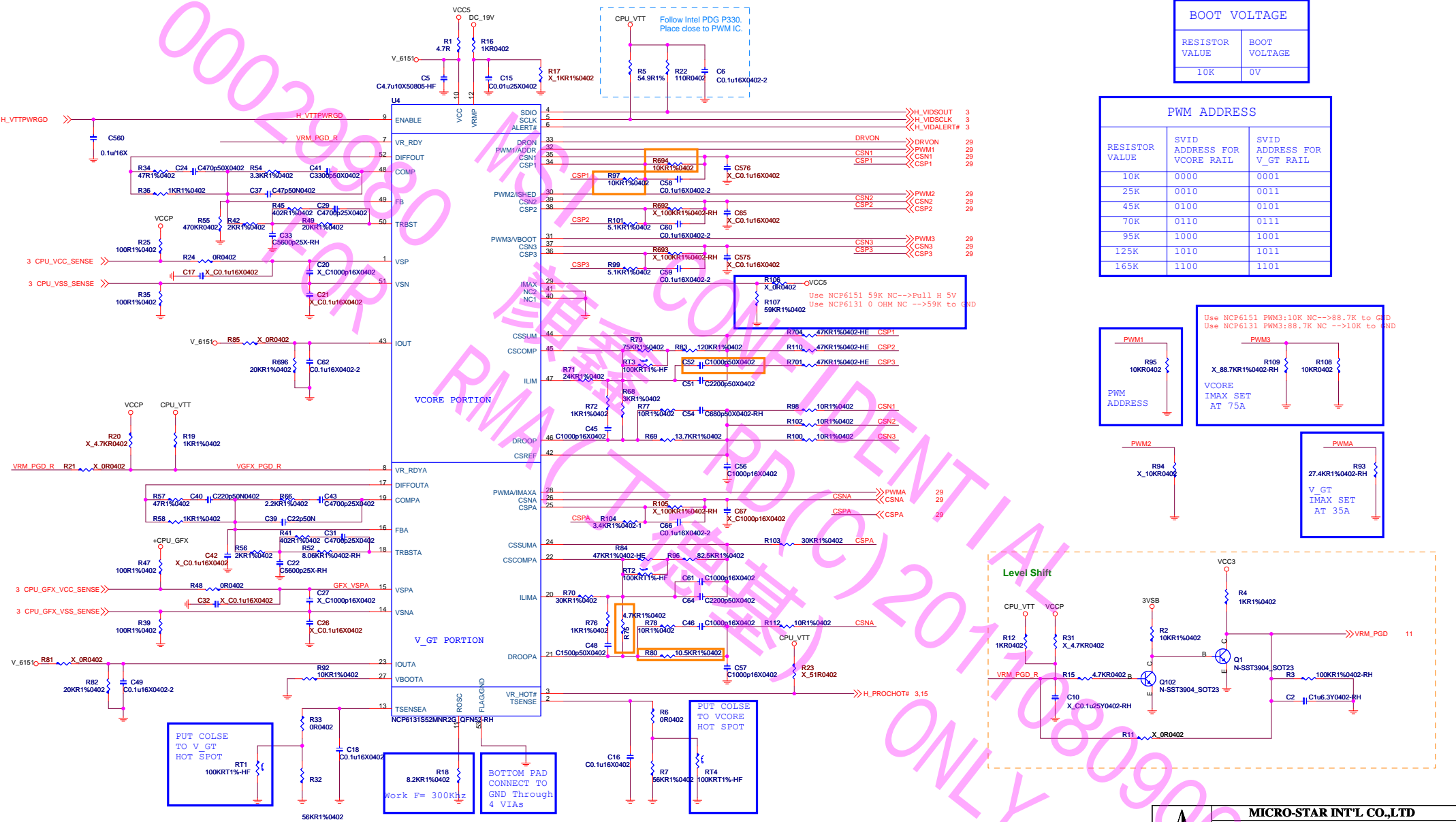
# DDR III 1.5V POWER



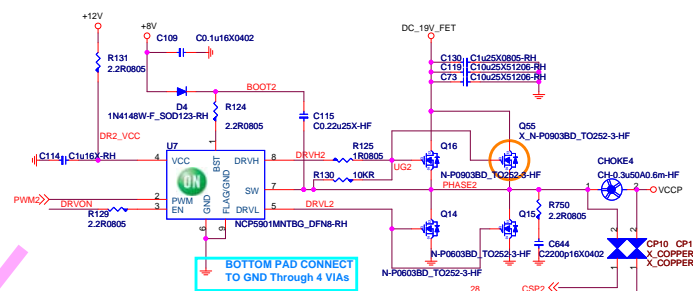




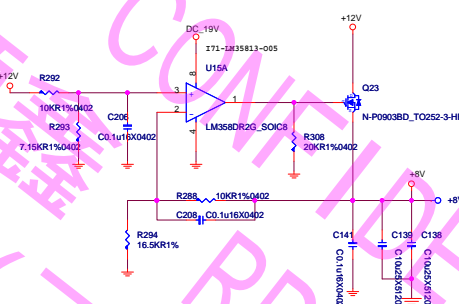
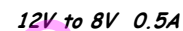
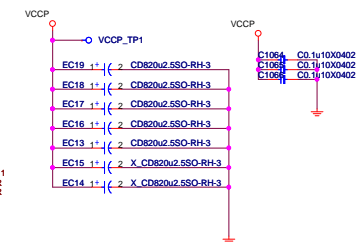
# Modulize of NCP6151/NCP6131 COLAY (19V VR12)



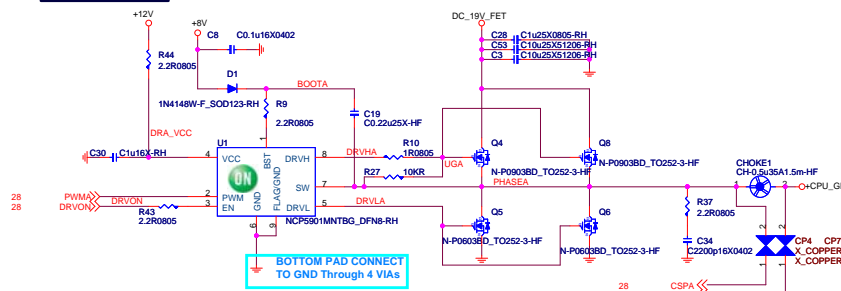
High Side D03-0480900-005 High Side D03-0903B4B-N03  
Low Side D03-0480600-005 Low Side D03-0603B2B-N03



## +CPU\_VCCP Output Caps



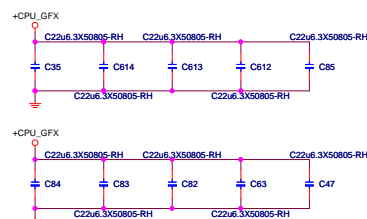
## +CPU\_GFX Output Caps

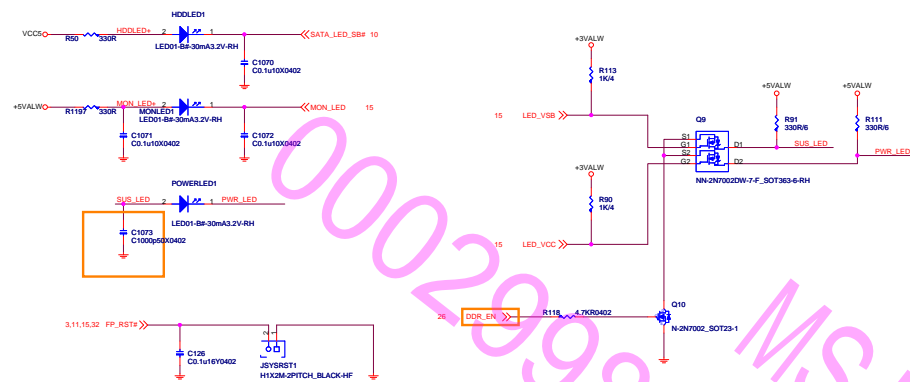


## +CPU\_GFX:35A

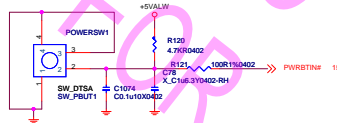


### +CPU\_GFX Decoupling

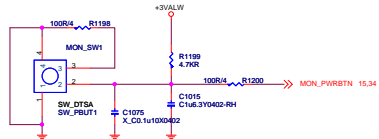




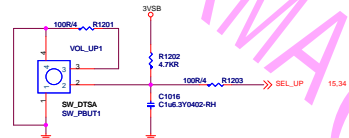
### POWER ON/OFF BUTTON



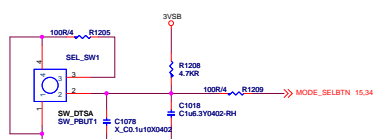
### MONITOR ON/OFF BUTTON



### MODE SELECT CONTROL

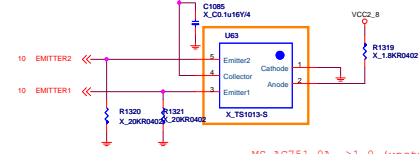


### MODE SELECT BUTTON



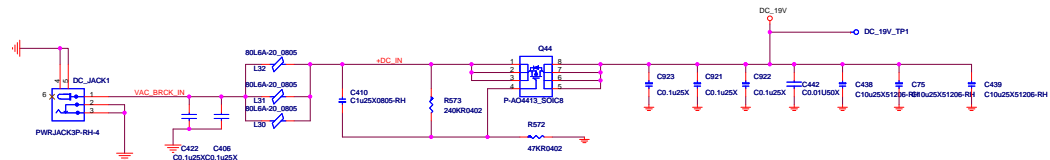
### Detecting Rotation Characteristics

DEFAULT : 00

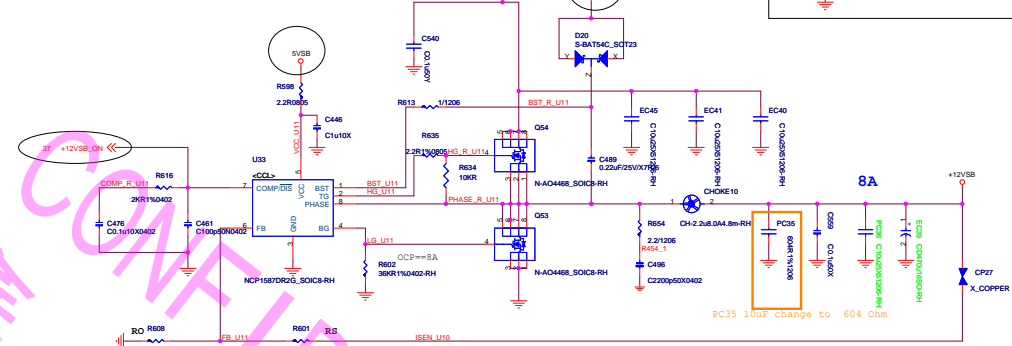


	E1	E2
LED	0	1
LED	0	0
LED	1	0
LED	1	1

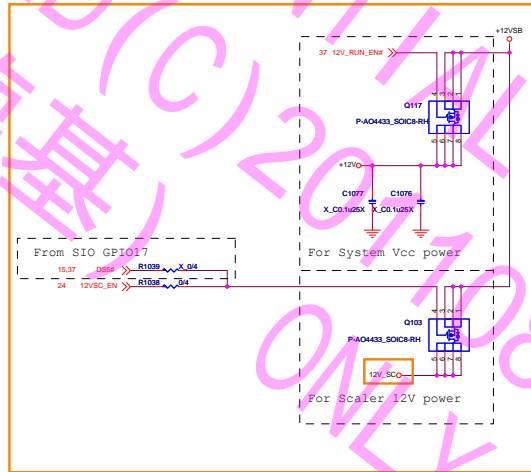
MS-AC751 0A-->1.0 (unstuff )



### 19V TO 12V

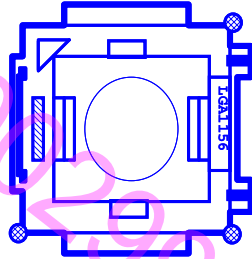
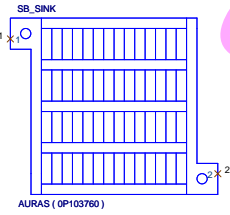


Trace list for layout==>Width:25, Spacing:20  
HG\_R\_U11  
PHASE\_R\_U11  
LG\_U11

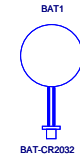


SB\_SINK  
footprint:HS\_37\_8X37\_8

CPU1\_X1  
CPU SOCKET

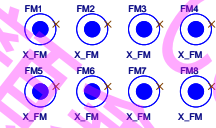


PCB1 DEL FOR PRE-BOM

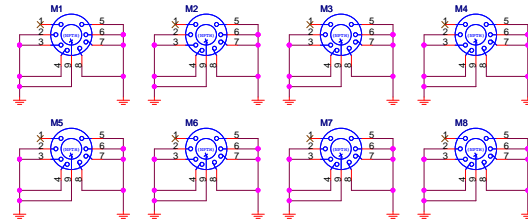


AC71 CPU\_backplate

### Optical Fiducial Marks-120



### Mounting Holes

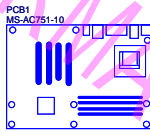
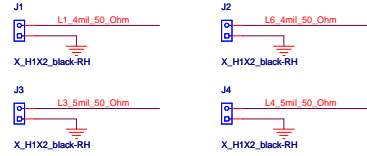


### VRM SINK

PWM MOSFET heat-pipe stand off.



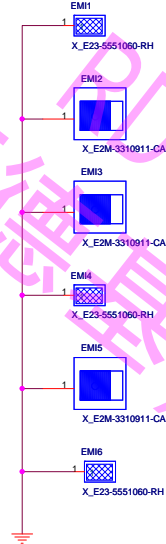
### Single End 50ohm



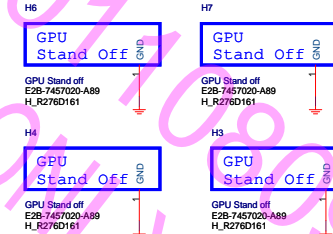
### BIOS label



1.0 12/01



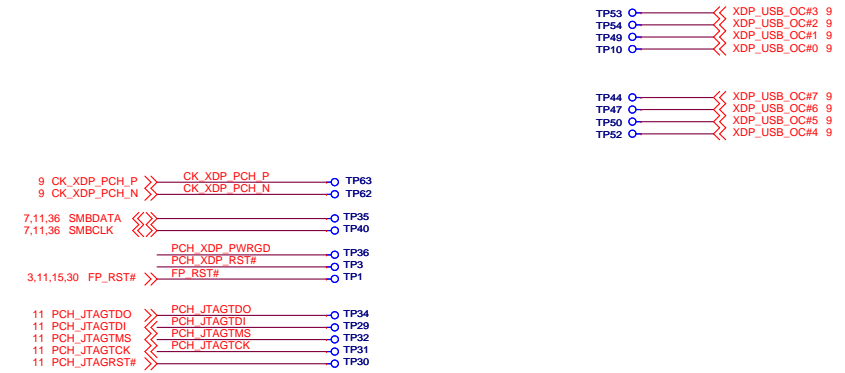
### GPU Stand off



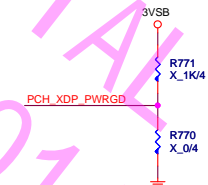
Title			<Title>	
Size	Document Number			Rev
Custom	MS-AC75			1.0
Date:	Monday, July 11, 2011	Sheet	31 of 37	

Reserve debug port 5020

PCH XDP



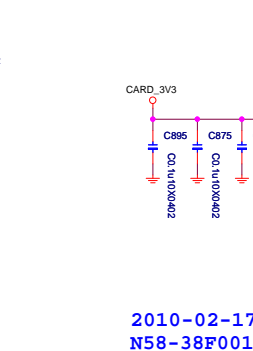
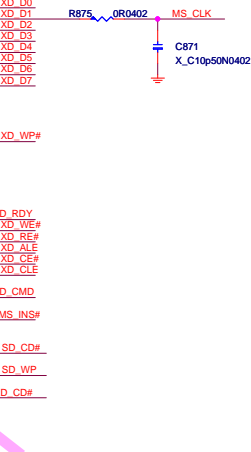
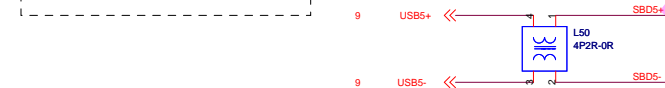
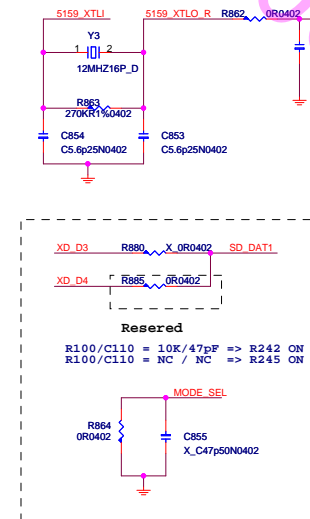
PCH XDP PWRGD/RESET



		MICRO-STAR INT'L CO.,LTD	
		MS-AC75	
Size	Custom	Document Description	Rev
		XDP CPU & CP	1.0
Date: Monday, July 11, 2011		Sheet	32 of 57

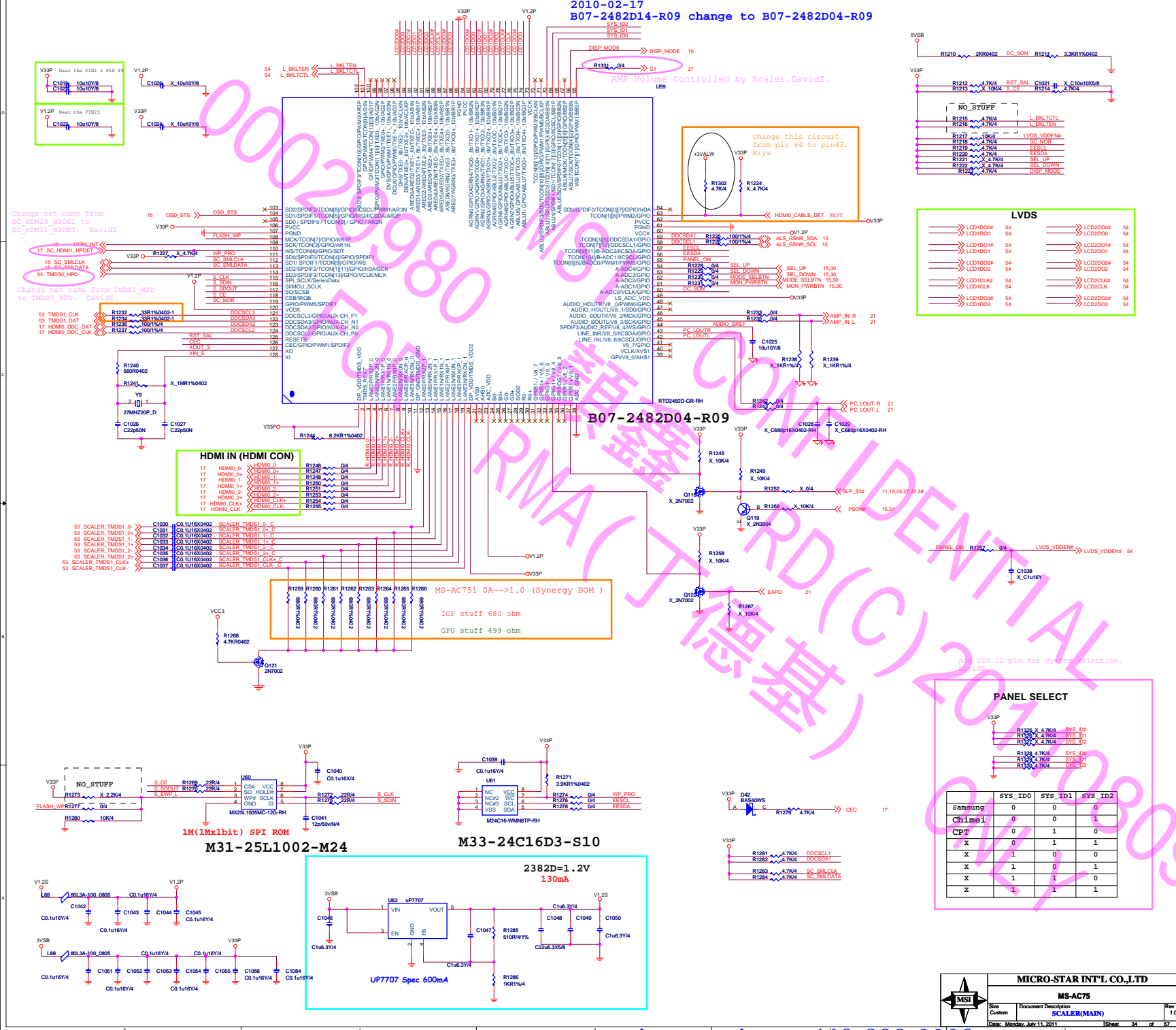


XTAL\_CTR:  
Stuff R=48MHz CLK  
Unstuff R=12MHz Crystal



MICRO-STAR INT'L CO.,LTD			
MS-AC75			
Size	Document Description	Rev	
Custom	RT15159(Card Reader)	1.0	
Date: Monday, July 11, 2011		Sheet 33 of 57	

2010-02-17  
B07-2482D14-R09 change to B07-2482D04-R09

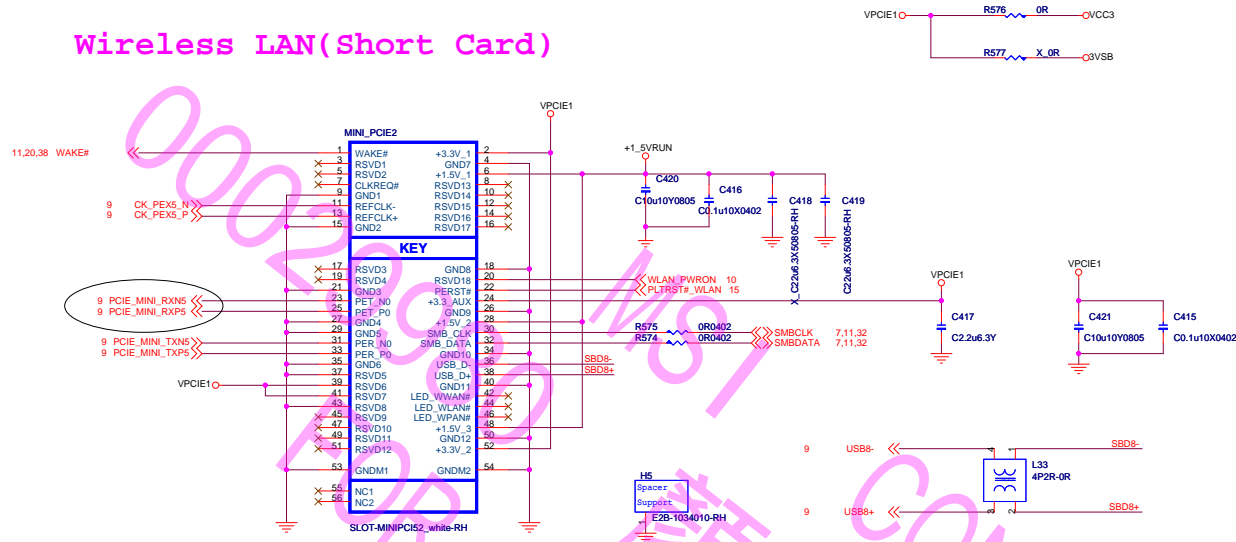


00029980  
FOR  
MSI  
廣錕  
RMA(丁德基)  
CONFIDENTIAL  
RD(C)20110809007  
ONLY

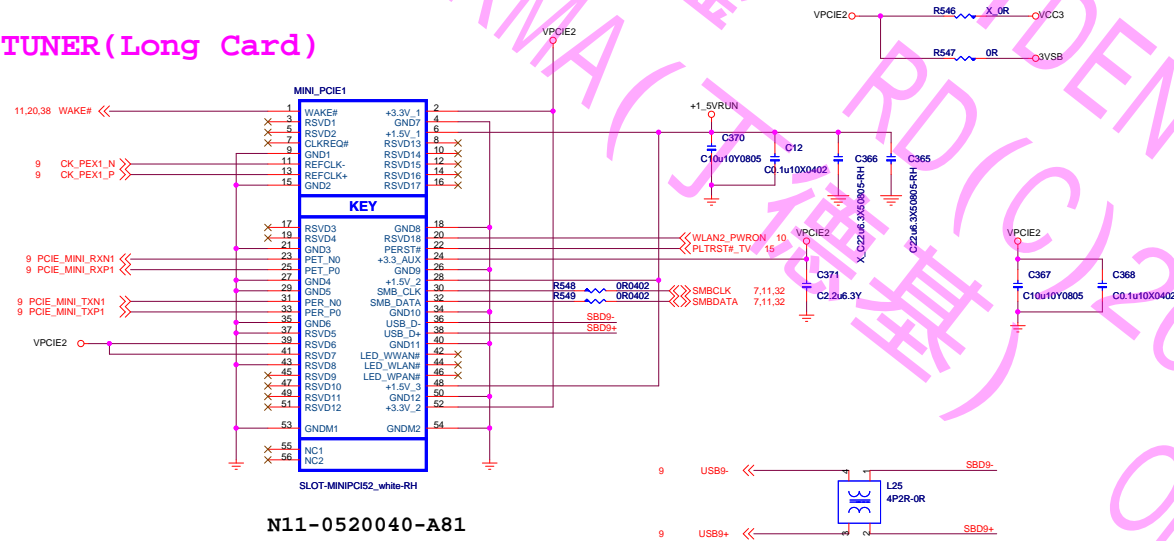


MICRO-STAR INT'L CO.,LTD		
MS-AC75		
Size A	Document Description Reserved	Rev 1.0
Date: Thursday, July 07, 2011		Sheet 35 of 57

## Wireless LAN(Short Card)



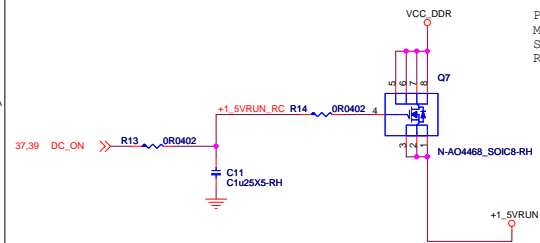
## TV TUNER(Long Card)



N11-0520040-A81

PCI ExpressR  
Mini Card Electromechanical  
Specification  
Revision 1.2

H8  
Spacer  
Support  
E2B-1034010-RH



MICRO-STAR INT'L CO.,LTD

MS-AC75

Size Custom Document Description MINI-PCI-E Slot

Rev 1.0

Date: 2013/03/14 Ver: 44.001

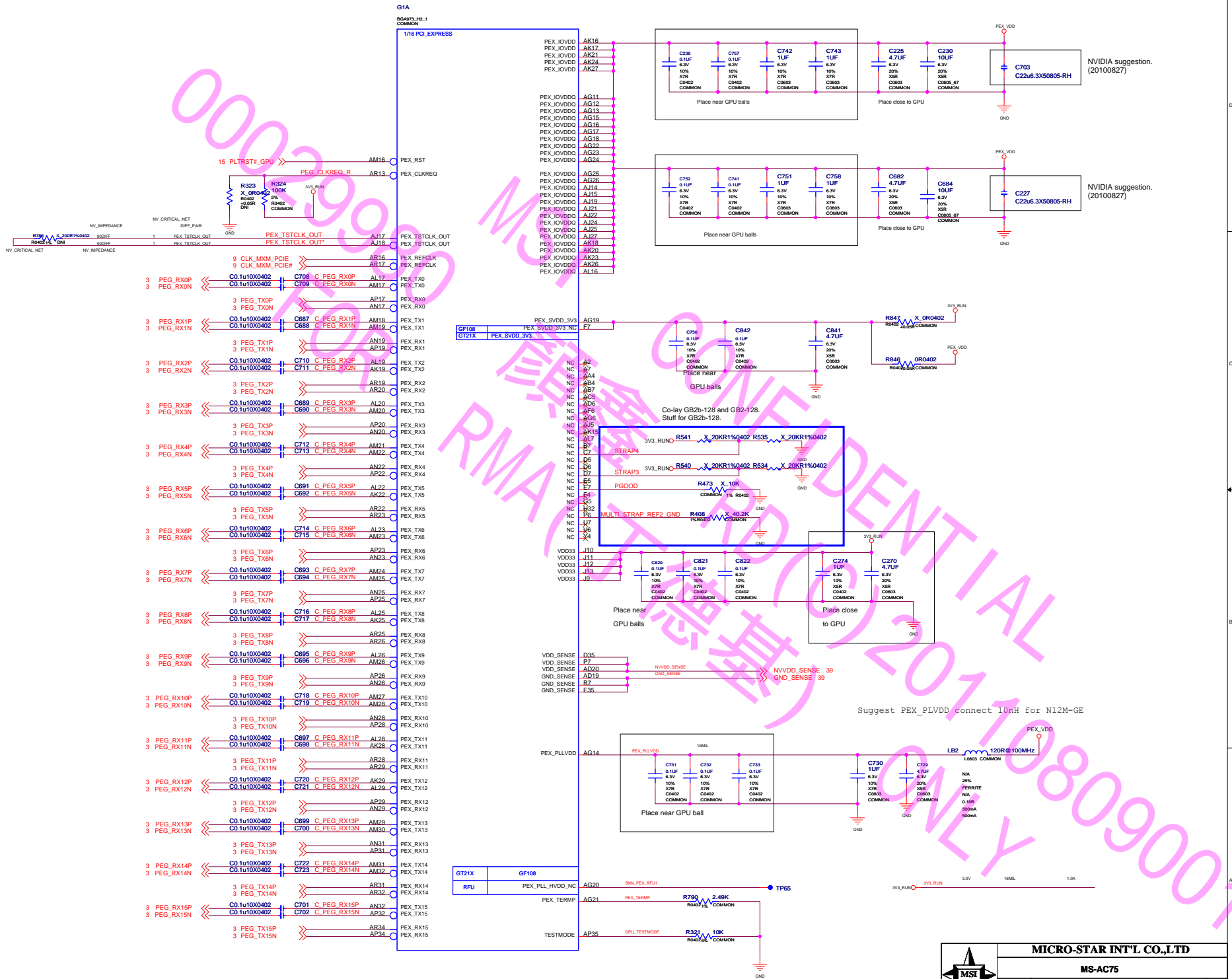
Sheet 36 of 57

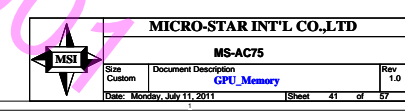




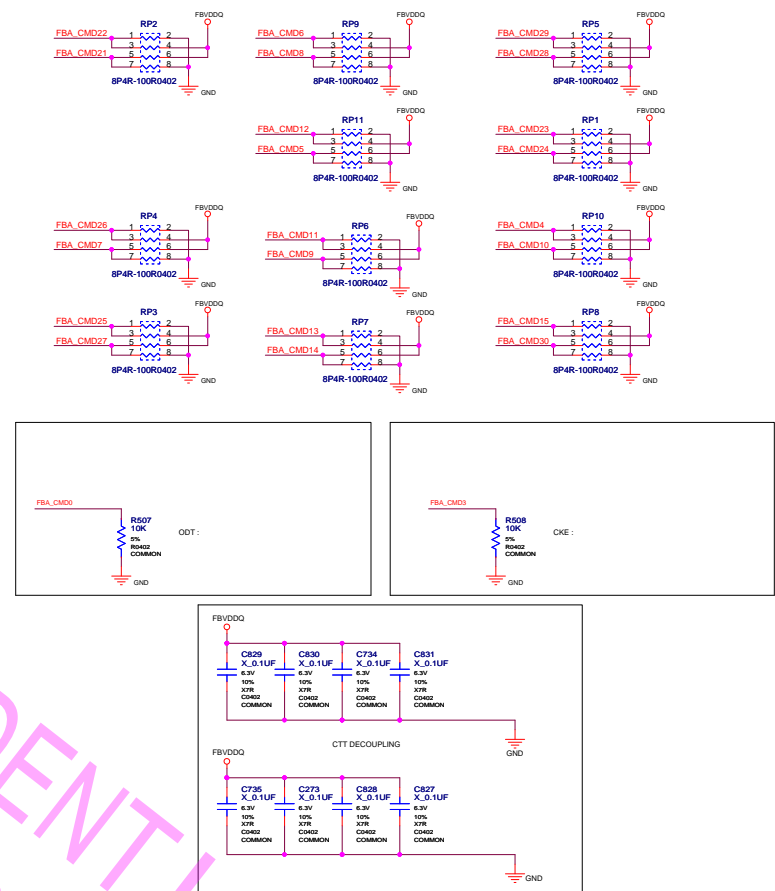
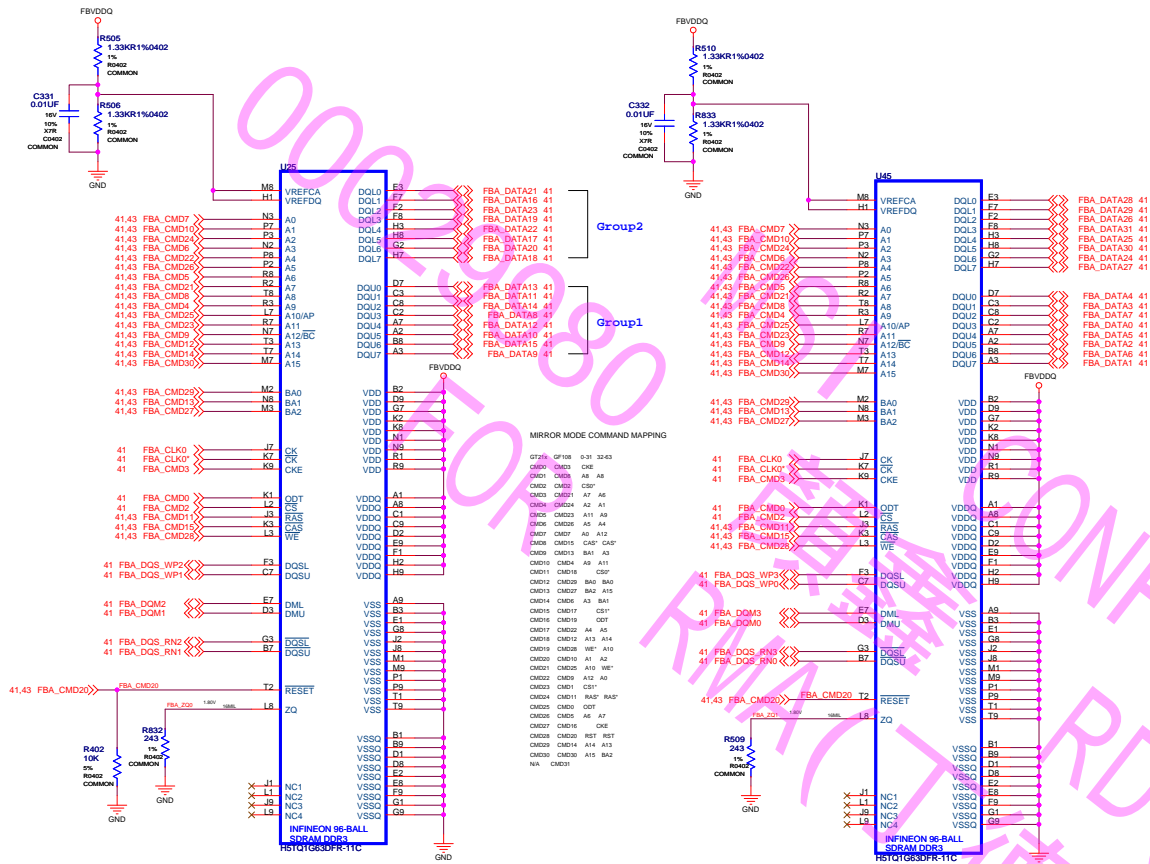








#### 4. MEMORY PARTITION A LOWER 32 BITS



## MEMORY PARTITION A SIGNAL CONSTRAINTS

[illegible]

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

MS-AC75

**VRAM-A LOWER**

Size

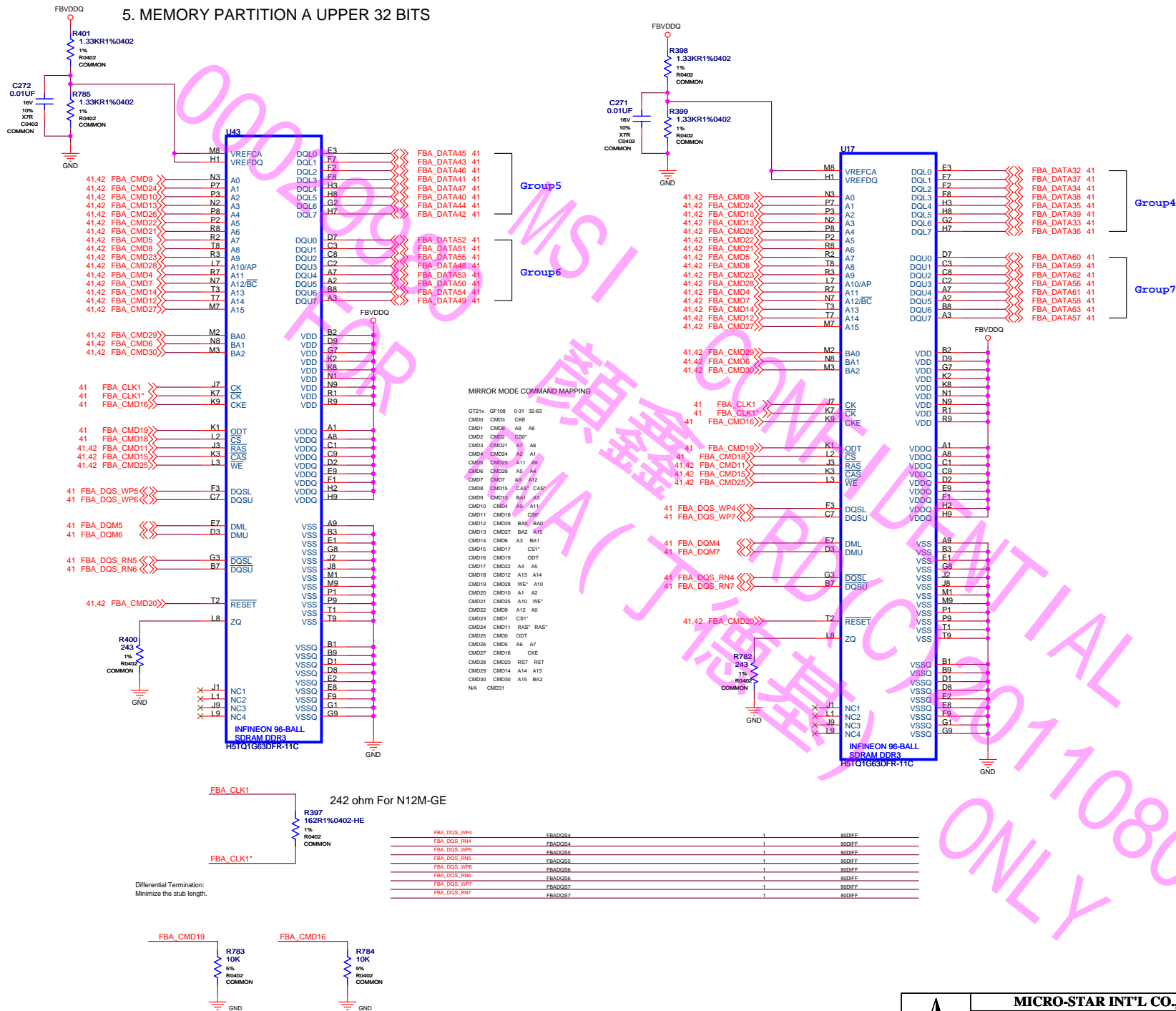
Document
----------

Date: Monday, July 11, 2011

Sheet 42 of 57

	Rev
--	-----

## 5. MEMORY PARTITION A UPPER 32 BITS



MICRO-STAR INT'L CO.,LTD

MS-AC75

Size  
Custom

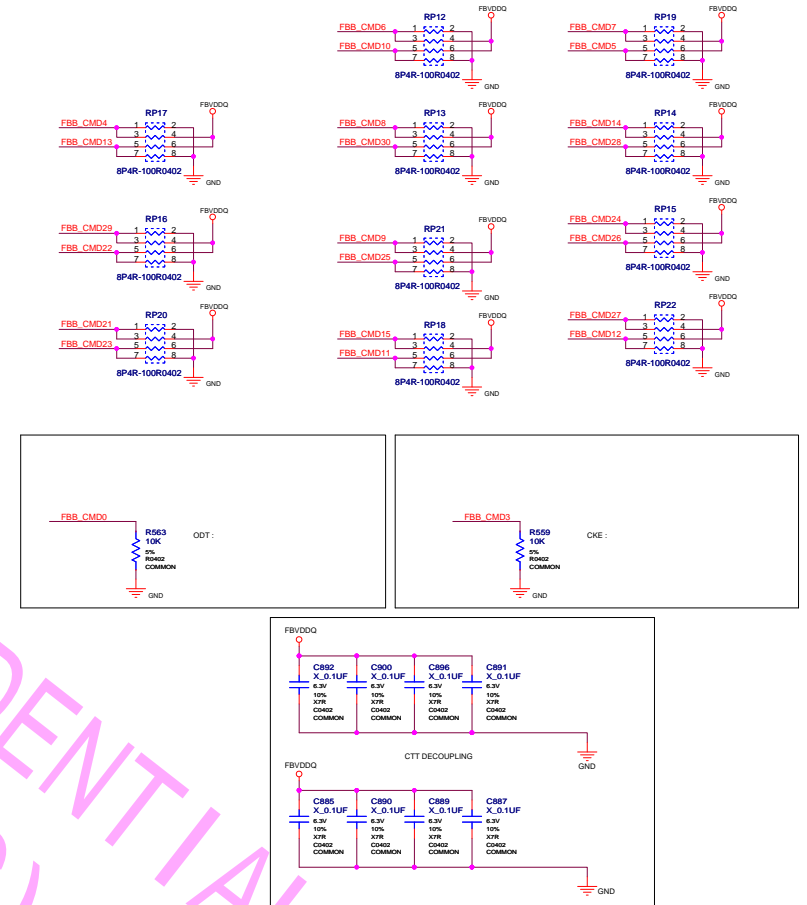
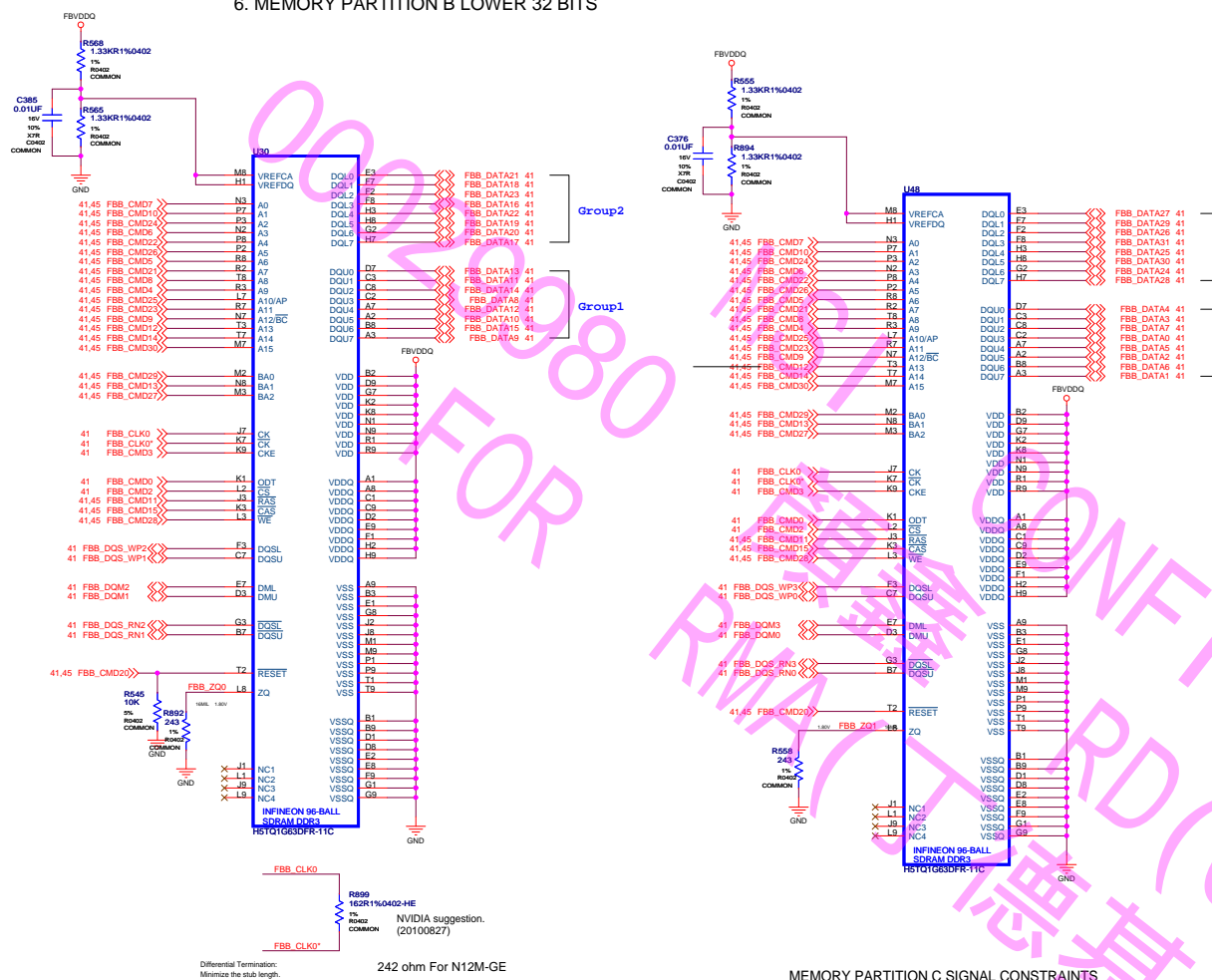
Document Description  
VRAM-A UPPER

Rev  
1.0

Date: Monday, July 11, 2011

Sheet 43 of 57

## 6. MEMORY PARTITION B LOWER 32 BITS



## MEMORY PARTITION C SIGNAL CONSTRAINTS

NET	DIFFER	CRITICAL	IMPEDANCE
FBR_205_1010	FBR_205_1010	1	NOFF
FBR_205_1020	FBR_205_1020	1	NOFF
FBR_205_1030	FBR_205_1030	1	NOFF
FBR_205_1040	FBR_205_1040	1	NOFF
FBR_205_1050	FBR_205_1050	1	NOFF
FBR_205_1060	FBR_205_1060	1	NOFF
FBR_205_1070	FBR_205_1070	1	NOFF
FBR_205_1080	FBR_205_1080	1	NOFF
FBR_205_1090	FBR_205_1090	1	NOFF
FBR_205_1100	FBR_205_1100	1	NOFF
FBR_205_1110	FBR_205_1110	1	NOFF
FBR_205_1120	FBR_205_1120	1	NOFF
FBR_205_1130	FBR_205_1130	1	NOFF
FBR_205_1140	FBR_205_1140	1	NOFF
FBR_205_1150	FBR_205_1150	1	NOFF
FBR_205_1160	FBR_205_1160	1	NOFF
FBR_205_1170	FBR_205_1170	1	NOFF
FBR_205_1180	FBR_205_1180	1	NOFF
FBR_205_1190	FBR_205_1190	1	NOFF
FBR_205_1200	FBR_205_1200	1	NOFF
FBR_205_1210	FBR_205_1210	1	NOFF
FBR_205_1220	FBR_205_1220	1	NOFF
FBR_205_1230	FBR_205_1230	1	NOFF
FBR_205_1240	FBR_205_1240	1	NOFF
FBR_205_1250	FBR_205_1250	1	NOFF
FBR_205_1260	FBR_205_1260	1	NOFF
FBR_205_1270	FBR_205_1270	1	NOFF
FBR_205_1280	FBR_205_1280	1	NOFF
FBR_205_1290	FBR_205_1290	1	NOFF
FBR_205_1300	FBR_205_1300	1	NOFF
FBR_205_1310	FBR_205_1310	1	NOFF
FBR_205_1320	FBR_205_1320	1	NOFF
FBR_205_1330	FBR_205_1330	1	NOFF
FBR_205_1340	FBR_205_1340	1	NOFF
FBR_205_1350	FBR_205_1350	1	NOFF
FBR_205_1360	FBR_205_1360	1	NOFF
FBR_205_1370	FBR_205_1370	1	NOFF
FBR_205_1380	FBR_205_1380	1	NOFF
FBR_205_1390	FBR_205_1390	1	NOFF
FBR_205_1400	FBR_205_1400	1	NOFF
FBR_205_1410	FBR_205_1410	1	NOFF
FBR_205_1420	FBR_205_1420	1	NOFF
FBR_205_1430	FBR_205_1430	1	NOFF
FBR_205_1440	FBR_205_1440	1	NOFF
FBR_205_1450	FBR_205_1450	1	NOFF
FBR_205_1460	FBR_205_1460	1	NOFF
FBR_205_1470	FBR_205_1470	1	NOFF
FBR_205_1480	FBR_205_1480	1	NOFF
FBR_205_1490	FBR_205_1490	1	NOFF
FBR_205_1500	FBR_205_1500	1	NOFF
FBR_205_1510	FBR_205_1510	1	NOFF
FBR_205_1520	FBR_205_1520	1	NOFF
FBR_205_1530	FBR_205_1530	1	NOFF
FBR_205_1540	FBR_205_1540	1	NOFF
FBR_205_1550	FBR_205_1550	1	NOFF
FBR_205_1560	FBR_205_1560	1	NOFF
FBR_205_1570	FBR_205_1570	1	NOFF
FBR_205_1580	FBR_205_1580	1	NOFF
FBR_205_1590	FBR_205_1590	1	NOFF
FBR_205_1600	FBR_205_1600	1	NOFF
FBR_205_1610	FBR_205_1610	1	NOFF
FBR_205_1620	FBR_205_1620	1	NOFF
FBR_205_1630	FBR_205_1630	1	NOFF
FBR_205_1640	FBR_205_1640	1	NOFF
FBR_205_1650	FBR_205_1650	1	NOFF
FBR_205_1660	FBR_205_1660	1	NOFF
FBR_205_1670	FBR_205_1670	1	NOFF
FBR_205_1680	FBR_205_1680	1	NOFF
FBR_205_1690	FBR_205_1690	1	NOFF
FBR_205_1700	FBR_205_1700	1	NOFF
FBR_205_1710	FBR_205_1710	1	NOFF
FBR_205_1720	FBR_205_1720	1	NOFF
FBR_205_1730	FBR_205_1730	1	NOFF
FBR_205_1740	FBR_205_1740	1	NOFF
FBR_205_1750	FBR_205_1750	1	NOFF
FBR_205_1760	FBR_205_1760	1	NOFF
FBR_205_1770	FBR_205_1770	1	NOFF
FBR_205_1780	FBR_205_1780	1	NOFF
FBR_205_1790	FBR_205_1790	1	NOFF
FBR_205_1800	FBR_205_1800	1	NOFF
FBR_205_1810	FBR_205_1810	1	NOFF
FBR_205_1820	FBR_205_1820	1	NOFF
FBR_205_1830	FBR_205_1830	1	NOFF
FBR_205_1840	FBR_205_1840	1	NOFF
FBR_205_1850	FBR_205_1850	1	NOFF
FBR_205_1860	FBR_205_1860	1	NOFF
FBR_205_1870	FBR_205_1870	1	NOFF
FBR_205_1880	FBR_205_1880	1	NOFF
FBR_205_1890	FBR_205_1890	1	NOFF
FBR_205_1900	FBR_205_1900	1	NOFF
FBR_205_1910	FBR_205_1910	1	NOFF
FBR_205_1920	FBR_205_1920	1	NOFF
FBR_205_1930	FBR_205_1930	1	NOFF
FBR_205_1940	FBR_205_1940	1	NOFF
FBR_205_1950	FBR_205_1950	1	NOFF
FBR_205_1960	FBR_205_1960	1	NOFF
FBR_205_1970	FBR_205_1970	1	NOFF
FBR_205_1980	FBR_205_1980	1	NOFF
FBR_205_1990	FBR_205_1990	1	NOFF
FBR_205_2000	FBR_205_2000	1	NOFF
FBR_205_2010	FBR_205_2010	1	NOFF
FBR_205_2020	FBR_205_2020	1	NOFF
FBR_205_2030	FBR_205_2030	1	NOFF
FBR_205_2040	FBR_205_2040	1	NOFF
FBR_205_2050	FBR_205_2050	1	NOFF
FBR_205_2060	FBR_205_2060	1	NOFF
FBR_205_2070	FBR_205_2070	1	NOFF
FBR_205_2080	FBR_205_2080	1	NOFF
FBR_205_2090	FBR_205_2090	1	NOFF
FBR_205_2100	FBR_205_2100	1	NOFF
FBR_205_2110	FBR_205_2110	1	NOFF
FBR_205_2120	FBR_205_2120	1	NOFF
FBR_205_2130	FBR_205_2130	1	NOFF
FBR_205_2140	FBR_205_2140	1	NOFF
FBR_205_2150	FBR_205_2150	1	NOFF
FBR_205_2160	FBR_205_2160	1	NOFF
FBR_205_2170	FBR_205_2170	1	NOFF
FBR_205_2180	FBR_205_2180	1	NOFF
FBR_205_2190	FBR_205_2190	1	NOFF
FBR_205_2200	FBR_205_2200	1	NOFF
FBR_205_2210	FBR_205_2210	1	NOFF
FBR_205_2220	FBR_205_2220	1	NOFF
FBR_205_2230	FBR_205_2230	1	NOFF
FBR_205_2240	FBR_205_2240	1	NOFF
FBR_205_2250	FBR_205_2250	1	NOFF
FBR_205_2260	FBR_205_2260	1	NOFF
FBR_205_2270	FBR_205_2270	1	NOFF
FBR_205_2280	FBR_205_2280	1	NOFF
FBR_205_2290	FBR_205_2290	1	NOFF
FBR_205_2300	FBR_205_2300	1	NOFF
FBR_205_2310	FBR_205_2310	1	NOFF
FBR_205_2320	FBR_205_2320	1	NOFF
FBR_205_2330	FBR_205_2330	1	NOFF
FBR_205_2340	FBR_205_2340	1	NOFF
FBR_205_2350	FBR_205_2350	1	NOFF
FBR_205_2360	FBR_205_2360	1	NOFF
FBR_205_2370	FBR_205_2370	1	NOFF
FBR_205_2380	FBR_205_2380	1	NOFF
FBR_205_2390	FBR_205_2390	1	NOFF
FBR_205_2400	FBR_205_2400	1	NOFF
FBR_205_2410	FBR_205_2410	1	NOFF
FBR_205_2420	FBR_205_2420	1	NOFF
FBR_205_2430	FBR_205_2430	1	NOFF
FBR_205_2440	FBR_205_2440	1	NOFF
FBR_205_2450	FBR_205_2450	1	NOFF
FBR_205_2460	FBR_205_2460	1	NOFF
FBR_205_2470	FBR_205_2470	1	NOFF
FBR_205_2480	FBR_205_2480	1	NOFF
FBR_205_2490	FBR_205_2490	1	NOFF
FBR_205_2500	FBR_205_2500	1	NOFF
FBR_205_2510	FBR_205_2510	1	NOFF
FBR_205_2520	FBR_205_2520	1	NOFF
FBR_205_2530	FBR_205_2530	1	NOFF
FBR_205_2540	FBR_205_2540	1	NOFF
FBR_205_2550	FBR_205_2550	1	NOFF
FBR_205_2560	FBR_205_2560	1	NOFF
FBR_205_2570	FBR_205_2570	1	NOFF
FBR_205_2580	FBR_205_2580	1	NOFF
FBR_205_2590	FBR_205_2590	1	NOFF
FBR_205_2600	FBR_205_2600	1	NOFF
FBR_205_2610	FBR_205_2610	1	NOFF
FBR_205_2620	FBR_205_2620	1	NOFF
FBR_205_2630	FBR_205_2630	1	NOFF
FBR_205_2640	FBR_205_2640	1	NOFF
FBR_205_2650	FBR_205_2650	1	NOFF
FBR_205_2660	FBR_205_2660	1	NOFF
FBR_205_2670	FBR_205_2670	1	NOFF
FBR_205_2680	FBR_205_2680	1	NOFF
FBR_205_2690	FBR_205_2690	1	NOFF
FBR_205_2700	FBR_205_2700	1	NOFF
FBR_205_2710	FBR_205_2710	1	NOFF
FBR_205_2720	FBR_205_2720	1	NOFF
FBR_205_2730	FBR_205_2730	1	NOFF
FBR_205_2740	FBR_205_2740	1	NOFF
FBR_205_2750	FBR_205_2750	1	NOFF
FBR_205_2760	FBR_205_2760	1	NOFF
FBR_205_2770	FBR_205_2770	1	NOFF
FBR_205_2780	FBR_205_2780	1	NOFF
FBR_205_2790	FBR_205_2790	1	NOFF
FBR_205_2800	FBR_205_2800	1	NOFF
FBR_205_2810	FBR_205_2810	1	NOFF
FBR_205_2820	FBR_205_2820	1	NOFF
FBR_205_2830	FBR_205_2830	1	NOFF
FBR_205_2840	FBR_205_2840	1	NOFF
FBR_205_2850	FBR_205_2850	1	NOFF
FBR_205_2860	FBR_205_2860	1	NOFF
FBR_205_2870	FBR_205_2870	1	NOFF
FBR_205_2880	FBR_205_2880	1	NOFF
FBR_205_2890	FBR_205_2890	1	NOFF
FBR_205_2900	FBR_205_2900	1	NOFF
FBR_205_2910	FBR_205_2910	1	NOFF
FBR_205_2920	FBR_205_2920	1	NOFF
FBR_205_2930	FBR_205_2930	1	NOFF
FBR_205_2940	FBR_205_2940	1	NOFF
FBR_205_2950	FBR_205_2950	1	NOFF
FBR_205_2960	FBR_205_2960	1	NOFF
FBR_205_2970	FBR_205_2970	1	NOFF
FBR_205_2980	FBR_205_2980	1	NOFF
FBR_205_2990	FBR_205_2990	1	NOFF
FBR_205_3000	FBR_205_3000	1	NOFF
FBR_205_3010	FBR_205_3010	1	NOFF
FBR_205_3020	FBR_205_3020	1	NOFF
FBR_205_3030	FBR_205_3030	1	NOFF
FBR_205_3040	FBR_205_3040	1	NOFF
FBR_205_3050	FBR_205_3050	1	NOFF
FBR_205_3060	FBR_205_3060	1	NOFF
FBR_205_3070	FBR_205_3070	1	NOFF
FBR_205_3080	FBR_205_3080	1	NOFF
FBR_205_3090	FBR_205_3090	1	NOFF
FBR_205_3100	FBR_205_3100	1	NOFF
FBR_205_3110	FBR_205_3110	1	NOFF
FBR_205_3120	FBR_205_3120	1	NOFF
FBR_205_3130	FBR_205_3130	1	NOFF
FBR_205_3140	FBR_205_3140	1	NOFF
FBR_205_3150	FBR_205_3150	1	NOFF
FBR_205_3160	FBR_205_3160	1	NOFF
FBR_205_3170	FBR_205_3170	1	NOFF
FBR_205_3180	FBR_205_3180	1	NOFF
FBR_205_3190	FBR_205_3190	1	NOFF
FBR_205_3200	FBR_205_3200	1	NOFF
FBR_205_3210	FBR_205_3210	1	NOFF
FBR_205_3220	FBR_205_3220	1	NOFF
FBR_205_3230	FBR_205_3230	1	NOFF
FBR_205_3240	FBR_205_3240	1	NOFF
FBR_205_3250	FBR_205_3250	1	NOFF
FBR_205_3260	FBR_205_3260	1	NOFF
FBR_205_3270	FBR_205_3270	1	NOFF
FBR_205_3280	FBR_205_3280	1	NOFF
FBR_205_3290	FBR_205_3290	1	NOFF
FBR_205_3300	FBR_205_3300	1	NOFF
FBR_205_3310	FBR_205_3310	1	NOFF
FBR_205_3320	FBR_205_3320	1	NOFF
FBR_205_3330	FBR_205_3330	1	NOFF
FBR_205_3340	FBR_205_3340	1	NOFF
FBR_205_3350	FBR_205_3350	1	NOFF
FBR_205_3360	FBR_205_3360	1	NOFF
FBR_205_3370	FBR_205_3370	1	NOFF
FBR_205_3380	FBR_205_3380	1	NOFF
FBR_205_3390	FBR_205_3390	1	NOFF
FBR_205_3400	FBR_205_3400	1	NOFF
FBR_205_3410	FBR_205_3410	1	NOFF
FBR_205_3420	FBR_205_3420	1	NOFF
FBR_205_3430	FBR_205_3430	1	NOFF
FBR_205_3440	FBR_205_3440	1	NOFF
FBR_205_3450	FBR_205_3450	1	NOFF
FBR_205_3460	FBR_205_3460	1	NOFF
FBR_205_3470	FBR_205_3470	1	NOFF
FBR_205_3480	FBR_205_3480	1	NOFF
FBR_205_3490	FBR_205_3490	1	NOFF
FBR_205_3500	FBR_205_3500	1	NOFF
FBR_205_3510	FBR_205_3510	1	NOFF
FBR_205_3520	FBR_205_3520	1	NOFF
FBR_205_3530	FBR_205_3530	1	NOFF
FBR_205_3540	FBR_205_3540	1	NOFF
FBR_205_3550	FBR_205_3550	1	NOFF
FBR_205_3560	FBR_205_3560	1	NOFF
FBR_205_3570	FBR_205_3570	1	NOFF
FBR_205_3580	FBR_205_3580	1	NOFF
FBR_205_3590	FBR_205_3590	1	NOFF
FBR_205_3600	FBR_205_3600	1	NOFF
FBR_205_3610	FBR_205_3610	1	NOFF
FBR_205_3620	FBR_205_3620	1	NOFF
FBR_205_3630	FBR_205_3630	1</	



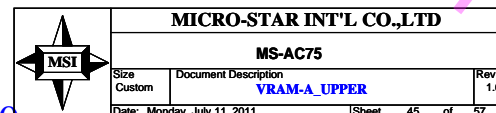
**MICRO-STAR INT'L CO.,LTD**

MS-AC75

VRAM-B\_LOWER

Size Custom	Document Description <b>VRAM-B_LOWER</b>	Rev 1.0
Date: Monday, July 11, 2011		Sheet 44 of 57

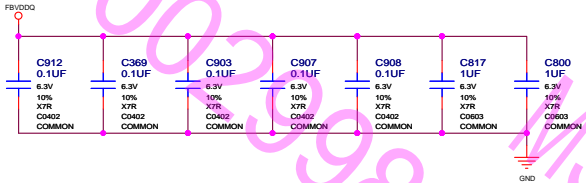
www.xinxunwei.com 400-800-9990



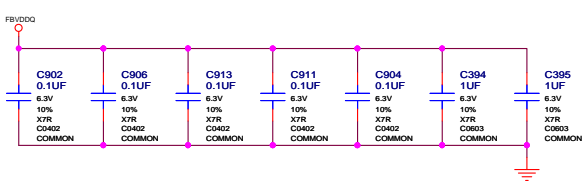


8. MEMORY DECOUPLING CAPS

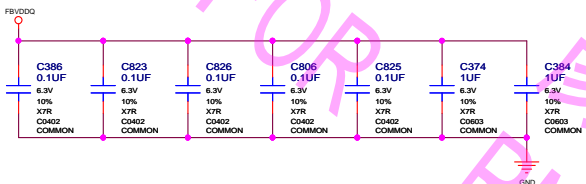
DECOUPLING CAPS FOR ONE MEMORY OF PARTION A LOWER BITS 0-15



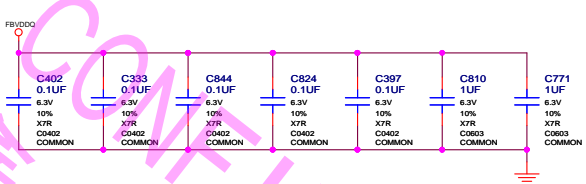
DECOUPLING CAPS FOR ONE MEMORY OF PARTION B LOWER BITS 0-15



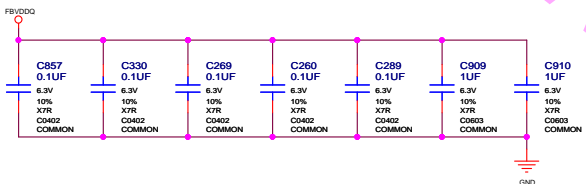
DECOUPLING CAPS FOR ONE MEMORY OF PARTION A LOWER BITS 16-31



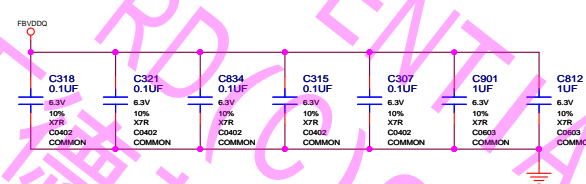
DECOUPLING CAPS FOR ONE MEMORY OF PARTION B LOWER BITS 16-31



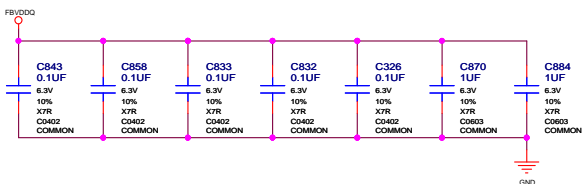
DECOUPLING CAPS FOR ONE MEMORY OF PARTION A UPPER BITS 32-47



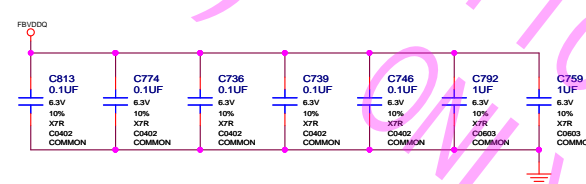
DECOUPLING CAPS FOR ONE MEMORY OF PARTION B UPPER BITS 32-47



DECOUPLING CAPS FOR ONE MEMORY OF PARTION A UPPER BITS 48-63



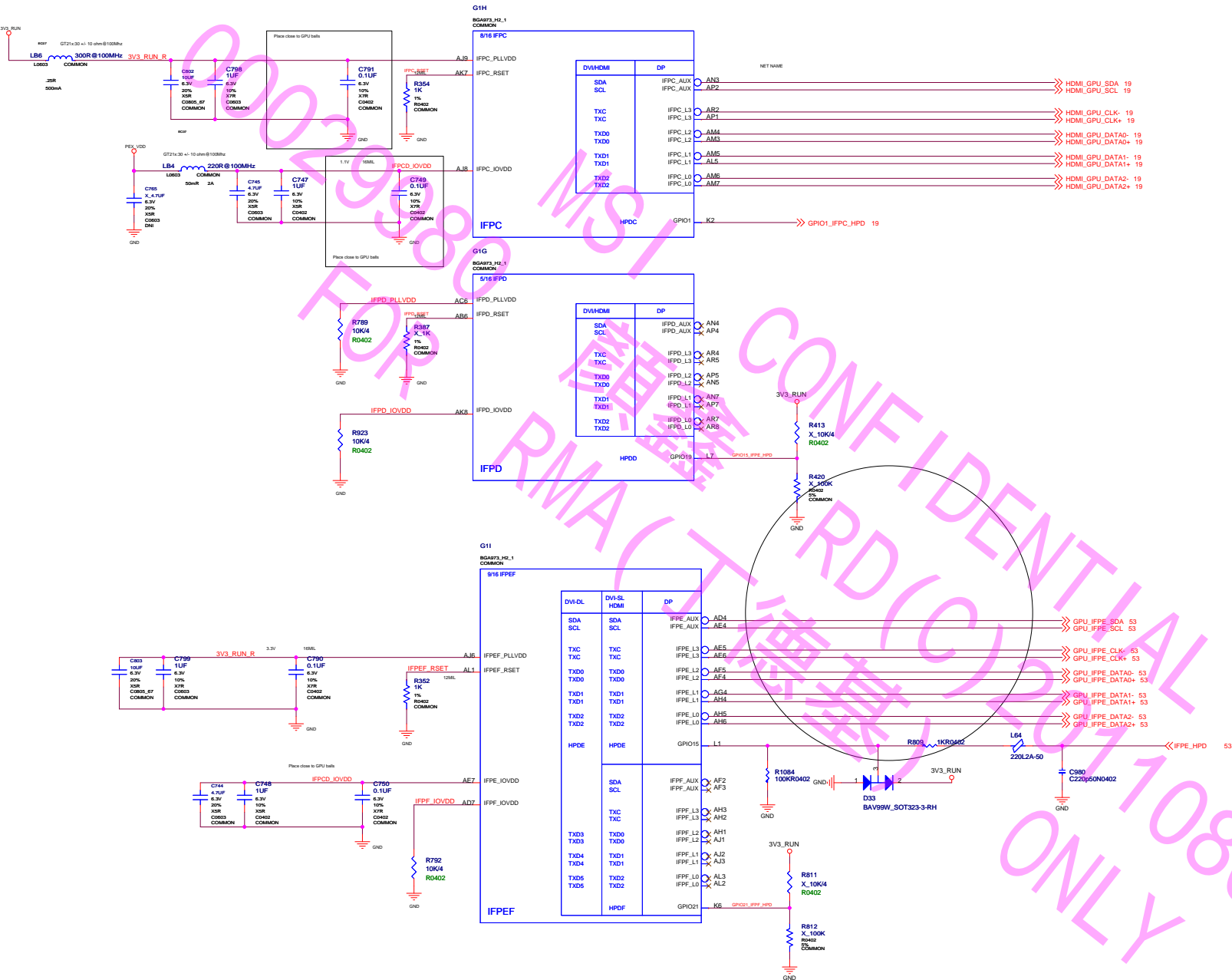
DECOUPLING CAPS FOR ONE MEMORY OF PARTION C UPPER BITS 48-63

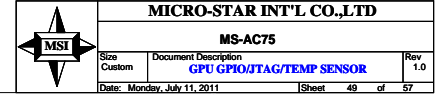






# 10. DP LINKS CD, LINK EF

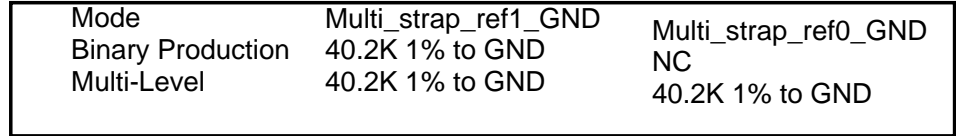




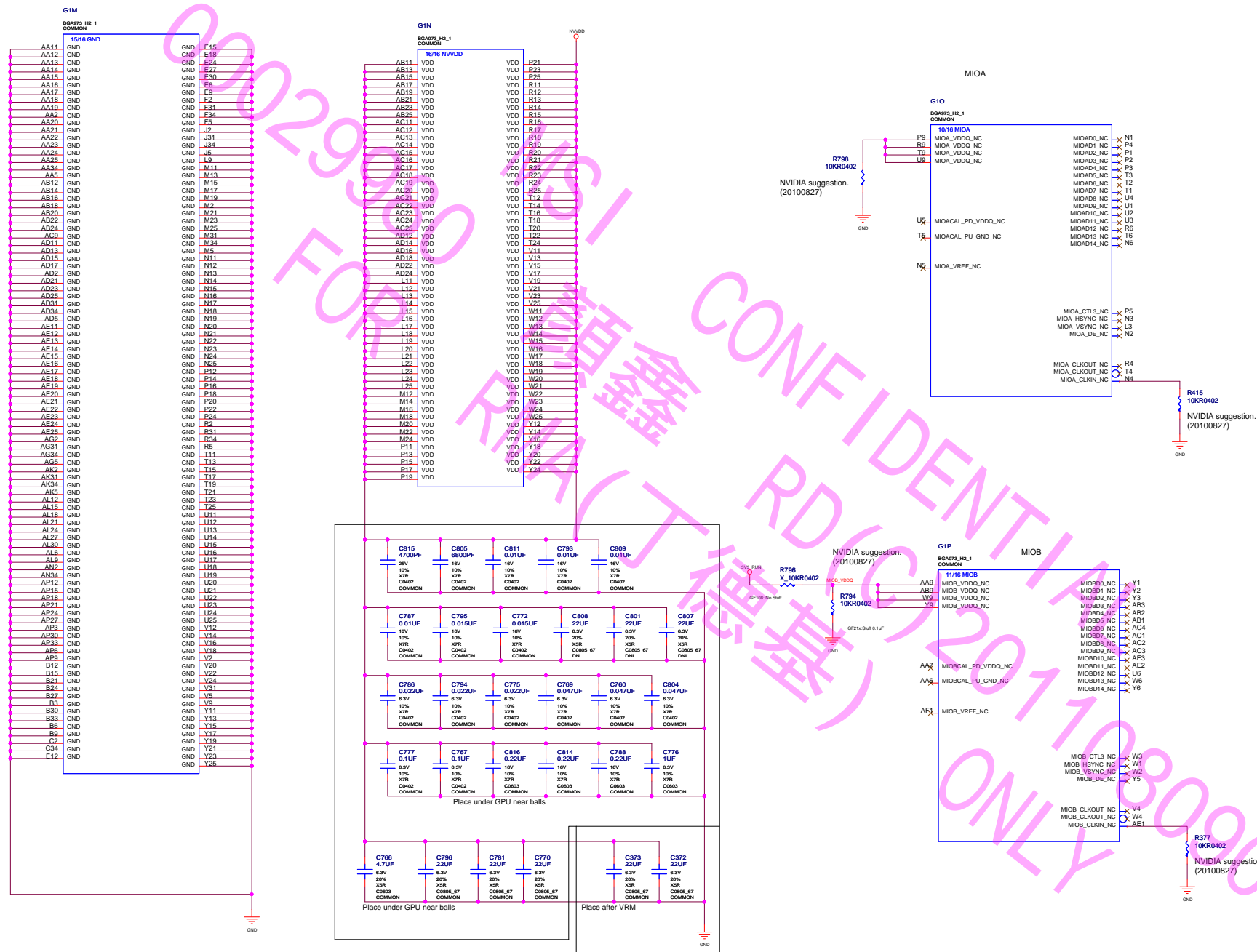
The schematic diagram illustrates the electrical connections for the I/FB module. It includes several key components and their interconnections:

- Resistors:** R927 (10K/4), R787 (X\_1K), R0402 COMMON, R926 (10K/4), R0402 COMMON, R423 (X\_100K), R563 (10K), R0402 COMMON, R839 (2.2K), R837 (2.2K).
- Capacitors:** C363 (X\_3.3UF, 6.3V, 10%, 1778), C0402 COMMON.
- Integrated Circuits:** U28 (X\_U\_MEM\_FL\_SER\_128KX8), G1K (13/16 MISC2), BGA073\_HZ\_1 COMMON, ABS\_CEC.
- Connectors and Pins:** J26, J25, N0, M0, AK9, AJ11, AG9, AG10, K1, A5, A4, C5, AK14, K9.
- Signal Lines:** IFPAB\_PLLVDD, IFPAB\_RSET, IFPA\_IQVDD, IFPB\_IQVDD, ROM\_CS\*, ROM\_SI, ROM\_SO, ROM\_SCLK, STRAP0, STRAP1, STRAP2, I2CH\_SCL, I2CH\_SDA, SPDIF\_NC, BUFRST, PGOOD\_OUT, GND.

The diagram shows a complex network of these components, with specific values and tolerances indicated for each part. The connections are color-coded and labeled to facilitate identification and assembly.

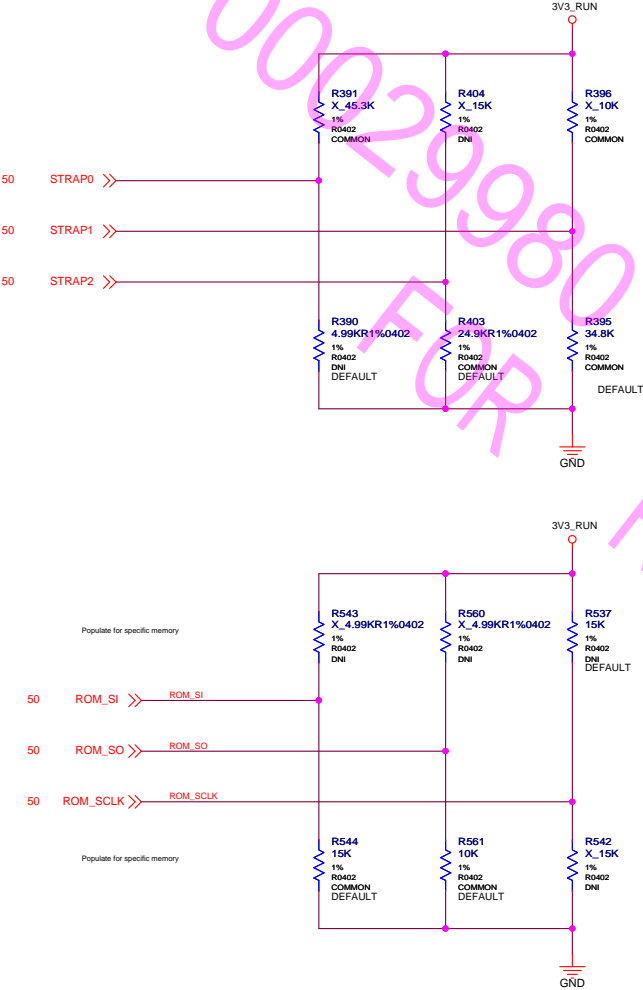


#### 14. MIOA, MIOB, GPU VDD/DCPLNG/GND



17. STRAPS, MOUNTING HOLES

STRAP0 was defined to select LVDS panel, if EDID was saved through VBIOS,  
PD 5K = 0000 (It means EDID save table 0)



STRAP2 should 25K PD (N12P-GS: 0DF4) => 0100  
15K PU (N12M-GE-B:0A7A) =>1010

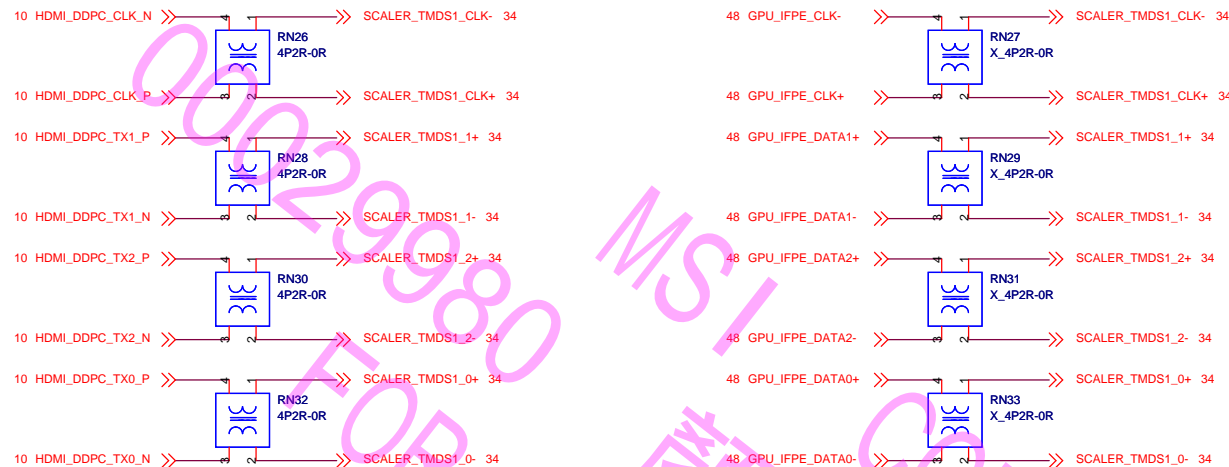
USER\_BIT0  
USER\_BIT1  
USER\_BIT2  
USER\_BIT3

Default All SKU(s):  
0xF = 45K PU  
LVDS Panel EDID Mode

3GIO\_PADCFG\_LUT\_ADR0  
3GIO\_PADCFG\_LUT\_ADR1  
3GIO\_PADCFG\_LUT\_ADR2  
3GIO\_PADCFG\_LUT\_ADR3

Set at HW reset by the PEX\_PADCFG Circuit  
0x0: Desktop default (normal swing) - 5k PD  
0x1: Mobile default (low swing) - 10k PD

PCDEVID_3[0] Definitions (Note Actual DEVID set also depends on PCI_DEVID_4)													
PCI_DEVID_0	GT218					GT216							
PCI_DEVID_1	1000	5K	PU	GT218-700		1000	5K	PU	GT216-600	0000	5K	PD	GF108-630
	0100	25K	PD	GT218-730		0100	25K	PD	GT216-630				
						1100	25K	PU	GT216-640				
PCI_DEVID_2						1100	25K	PU	GT216-950				
PCI_DEVID_3													



MS-AC751 0A-->1.0 (Synergy BOM )  
 RN27 , RN29 ,RN31, RN33 unstuff ,  
 RN26 , RN28 ,RN30, RN32 stuff

R1291 , R1293 ,R1297, R1299 ,R1295 unstuff ,  
 R1290 , R1292 ,R1296, R1298 ,R1294 stuff



MICRO-STAR INT'L CO.,LTD

MS-AC75

Size Custom

Document Description

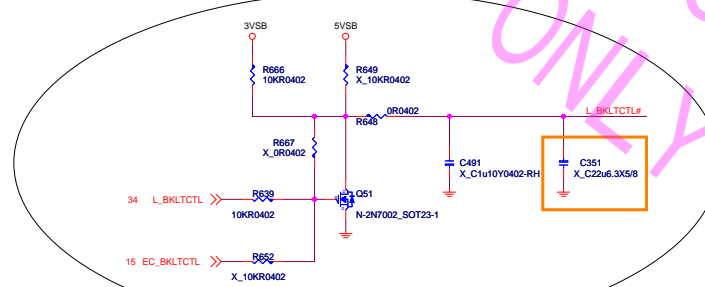
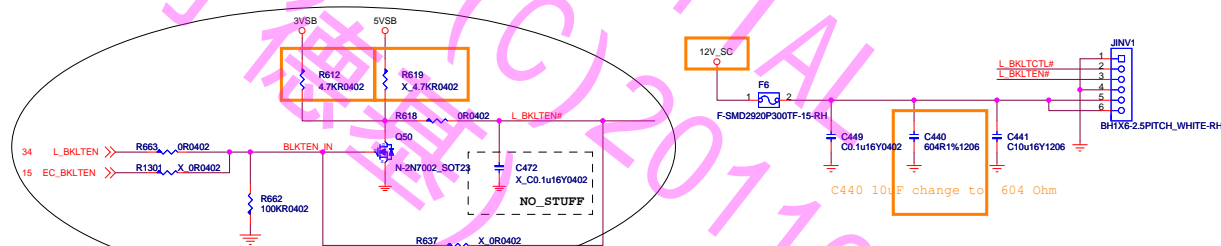
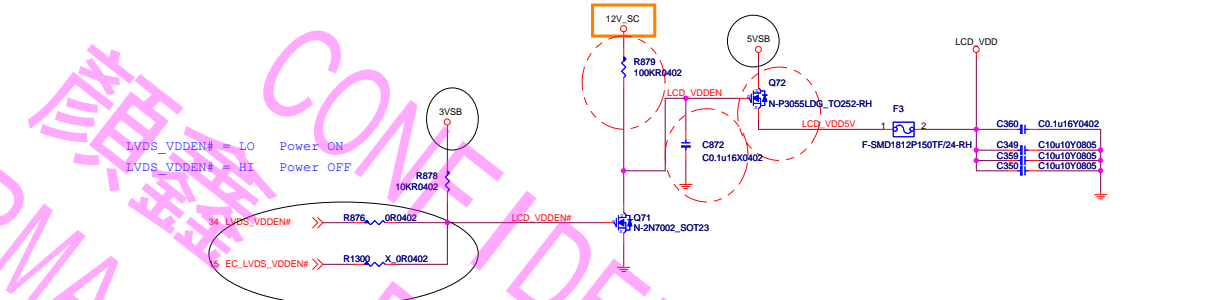
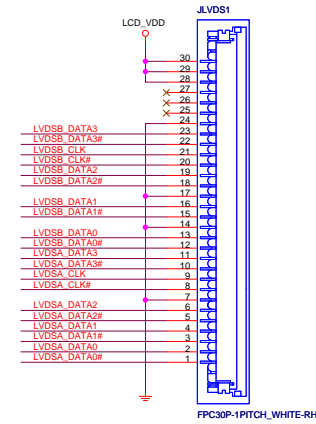
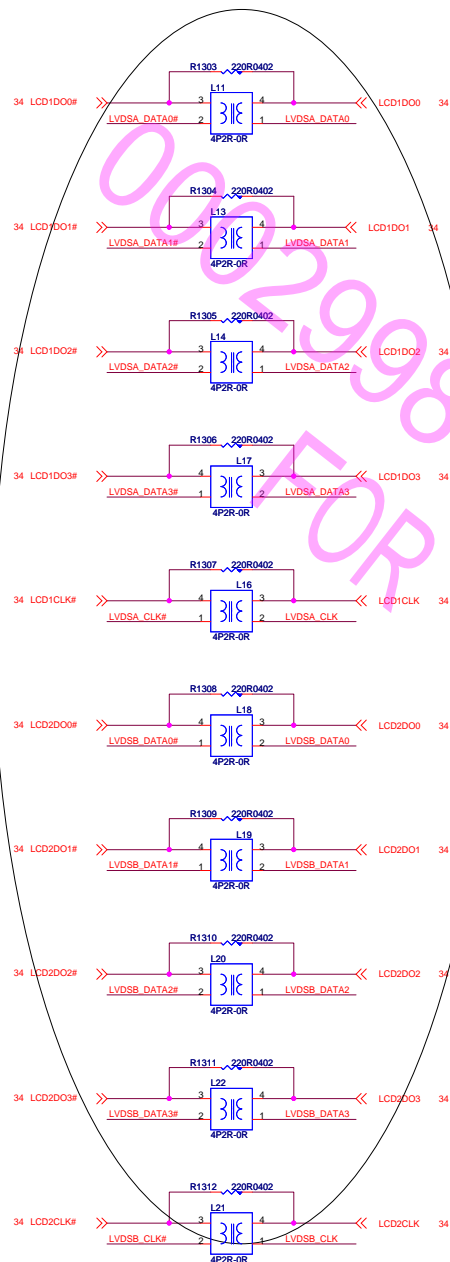
EDP CONNECTOR

Rev 1.0

Date: Monday, July 11, 2011

Sheet 53 of 57





LGA1155 - CPU (65W)	
CPU_CORE	- 75A
VCC_DDR	- 4.75A
CPU_SA	- 8.8A
VCC1_8	- 1.5A
CPU_VTT	- 8.5A
+CPU_GFX	- 35A

PCH	
CPU_VTT	- 0.06A
VCC1_8	- 0.179A
PCH_1P05	- 8.16A
VCC3	- 0.355A
3VSB	- 0.13A

REALTEK/RTL8111E-VB	
3VSB -> VDD3	0.17A

HD Audio ALC887	
VCC3	- 0.012A
5VSB -> LDOVDD	- 0.05A

AMP TPA2008	
VCC5 -> PVCC	- 1.5A

DDRIII x2 & TERMINATOR	
VTT_DDR	- 1.2A
VCC_DDR	-8A

SATA HDD /SATA ODD	
VCC5	-3A

(LVDS) LCD PANEL	
VCC5 -> LCD_VDD	- 1.5A
(IRUSH)	-3A

USB 2.0 PORT X4	
5VSB -> SVCC1	- 4A
5VSB -> SVCC2	- 4A

USB TOUCH	
5VSB	- 0.5A

USB 3.0 PORT X2	
5VSB -> SVCC4	- 3A
5VSB -> SVCC5	- 3A

ISL6364CR	
CPU_CORE	0.25V-1.52V 75A
+CPU_GFX	0.25V-1.52V 35A

NCP5217AMNTXG_QFN14	
VCC_DDR	1.5V 23.71A

NCP5217AMNTXG_QFN14	
NVVD	Variable 39.37A

NTMFS4841NHTIG_S08	
VCC1_8	1.8V 1.679A

NTMFS4841NHTIG_S08	
CPU_SA	0.925V 8.8A

NTD4809NT4G_DPAK3	
PCH_1P05	1.05V - 8.16A

NCP5217AMNTXG_QFN14	
CPU_VTT	1.05V 21.19A

W83310DG_SOP8	
VTT_DDR	0.75V - 1.2A

N-A04468_SOIC8	
+1_SVRUN	1.5V - 1A

APL5913KAC-TRL_SOP8	
VCC_1P0	1.05V - 0.6A

NCP5217AMNTXG_QFN14	
FBVDDQ	1.5V - 7.9A

GPU N12P-GS (30W)	
VCC3 ->3V3_RUN	- 1.38A
NVVD	- 39.37A
FBVDD+FBVDDQ	- 7.9A
CPU_VTT -> PEX_VDD	- 3.83A
1V8_NV	

Mini PCI-E slot x2	
VCC3	- 2.75A
3VSB	- 2.75A
1.5V -> +1_SVRUN	- 1A
BlueTooth	- 0.5A
Level Shifter	- 0.15A
Webcam	- 0.5A
Card Reader	- 0.3A

NEC USB3.0	
VCC_1P0	- 0.6A
3VSB -> 3V_DUAL	- 0.11A

+12V CPU & SYS FAN	- 1A
INVERTER	- 1A

VCC5	
7.5A	

VCC3	
7.626A+EDP_VDD	

5VSB	
14.5A	
3VSB	
8.036A	
+SVALW	
0.5A	
+3VALW	
0.5A	
TI/TPS51120	

+12V	
NCP1587DR2G_SOIC8	

+19V	
ADAPTER	

MICRO-STAR INT'L CO.,LTD	
MS-AC75	
Rev	Microstar Corporation
Customer	Power Delivery
Date	Thursday, 22/09/2011
Sheet	55 of 59

MS-AC751 0A-->1.0

Page 21 Stuff R1022,unstuff R1023.  
Page 21 Change net "EAPD" from U34 pin 47 to U34 pin2.  
Page 15 Add R1167 and R1131.  
Page 15 Add net EC\_AMP\_SD# on EIO pin18.  
Page 21 modify U50 shutdown circuit.  
Page 21 Unstuff C451,C452,C532,C533.  
Page 21 Change L56 connection from PVCC to 5VSB.  
Page 21 Unstuff L55.  
Page 21 Change C917 and C928 connection from GND to PGND.

MS-AC751 0A-->1.0 (2011.04.11)  
Page 21 Change net: HDMI0\_CABLE\_DET from pin 64 to pin63.  
Page 26 Add C103 near the U2 (control V pin) unstuff  
Page 17 Add R449 unstuff  
Page 31 EMI5 unstuff (BOM)

MS-AC751 0A-->1.0 (2011.04.11)  
Page 15, 24,30,54 Add For Scaler 12V power circuit (12V\_SC)  
Page 21 Amplifier change back to TI 2008D  
Page 26 Add EC47 CAP (C71-5610210-S03)  
Page 28 Modify:C52,R75,R80 (Power solution)

MS-AC751 0A-->1.0 (2011.04.18)  
Page 26 5VSB change to +5VALM (DDR POWER)  
Page 14 R145 4.7K change to 1K  
Page 26,30 About power LED can't blink ==>add net: DDR\_EN  
Page 10 Change sensor EMITTER1,EMITTER2 ==>GPIO6 , GPIO7

MS-AC751 0A-->1.0 (2011.04.20)  
Page 15 R1103 4.7K change to 1K  
Page 39 Add power(GPU)  
Page 15 SIO (NCT6681D) MSI PN:B02-0668104-N62  
Page 22 JIR1 Change MSI PN:N32-1030870-H06

MS-AC751 0A-->1.0 (2011.04.22) Reference AA71 SCH, modify the points  
Page 54 Add C351 CAP unstuff  
Page 26 Add EC51 CAP (預留,MSI料號申請中)  
Page 38 power sequence VCC5 change to 5VSB , Add C789 , Delete R477

MS-AC751 0A-->1.0 (2011.04.25)  
Page 54 R619 unstuff , R612 stuff

MS-AC751 0A-->1.0 (2011.04.29)  
EMI Suggestion:  
Page 27,39 R774, C674, PR18, PC14 上件 針對低頻150MHz)  
Page 30 C1073 改為1000p 上件 (192MHz)  
Page 15 LPC\_FRAME# 增加10pF to GND near JTPM1 (192MHz)  
Page 31 H1與H2 請改為與GND 連接  
Page 15 KBRST issue R1149 unstuff , R1152 stuff 1K Ohm

MS-AC751 0A-->1.0 (2011.05.02)  
Page 17 R1177 ,R1178 1.8K Ohm chage to 4.7K Ohm  
Page 31 M1-M8 modify footprint :H\_R394D157\_V8  
Page 9 RTC : C266 / C267 20P change to 27P  
Page 11 RTC : C221 / C222 12P change to 10P  
Page 30 PC35 10uF change to 604 Ohm  
Page 34 R1232,R1234 100 Ohm change to 33 Ohm,  
Page 29 Q20 unstuff , Q49 stuff  
Page 11,15 R777 unstuff , R1144 stuff  
Page 10 R237 unstuff  
Page 28 Thermal balance solutions R97,R694 change to 10K

MS-AC751 0A-->1.0 (2011.06.10)  
Page 24 unstuff POWER VCC2\_8  
Page 30 unstuff SENSORMODULE  
Page 11 C221 10P change to 8.2P ,C222 10P change to 12P  
Page 54 C440 10uF change to 604 Ohm

MS-AC751 0A-->1.0 (2011.06.29)  
Page 19 unstuff C934 ,C935 ,C936  
Page 54 R879 10K change to 100K ,C872 0.01u change to 0.1u (panel issue)  
Page 54 PANEL SELECT (SYS\_ID0,SYS\_ID1,SYS\_ID2)

Title			
<Title>			
Size	Document Number		Rev
Customer	Doc		1.0
Date	Thursday, July 07, 2011		Sheet 56 of 57