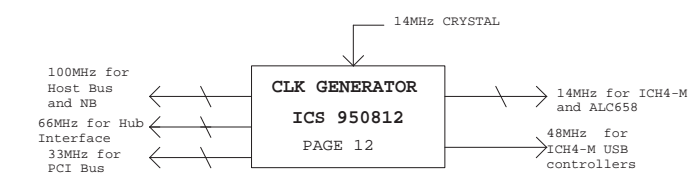
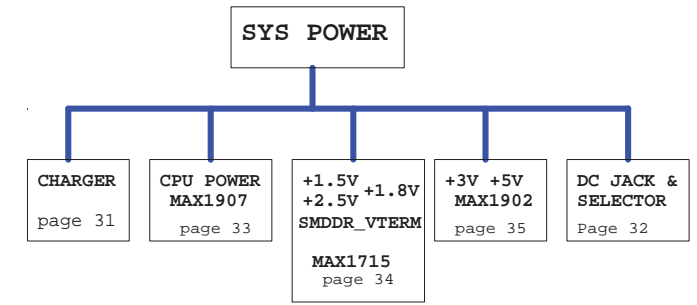
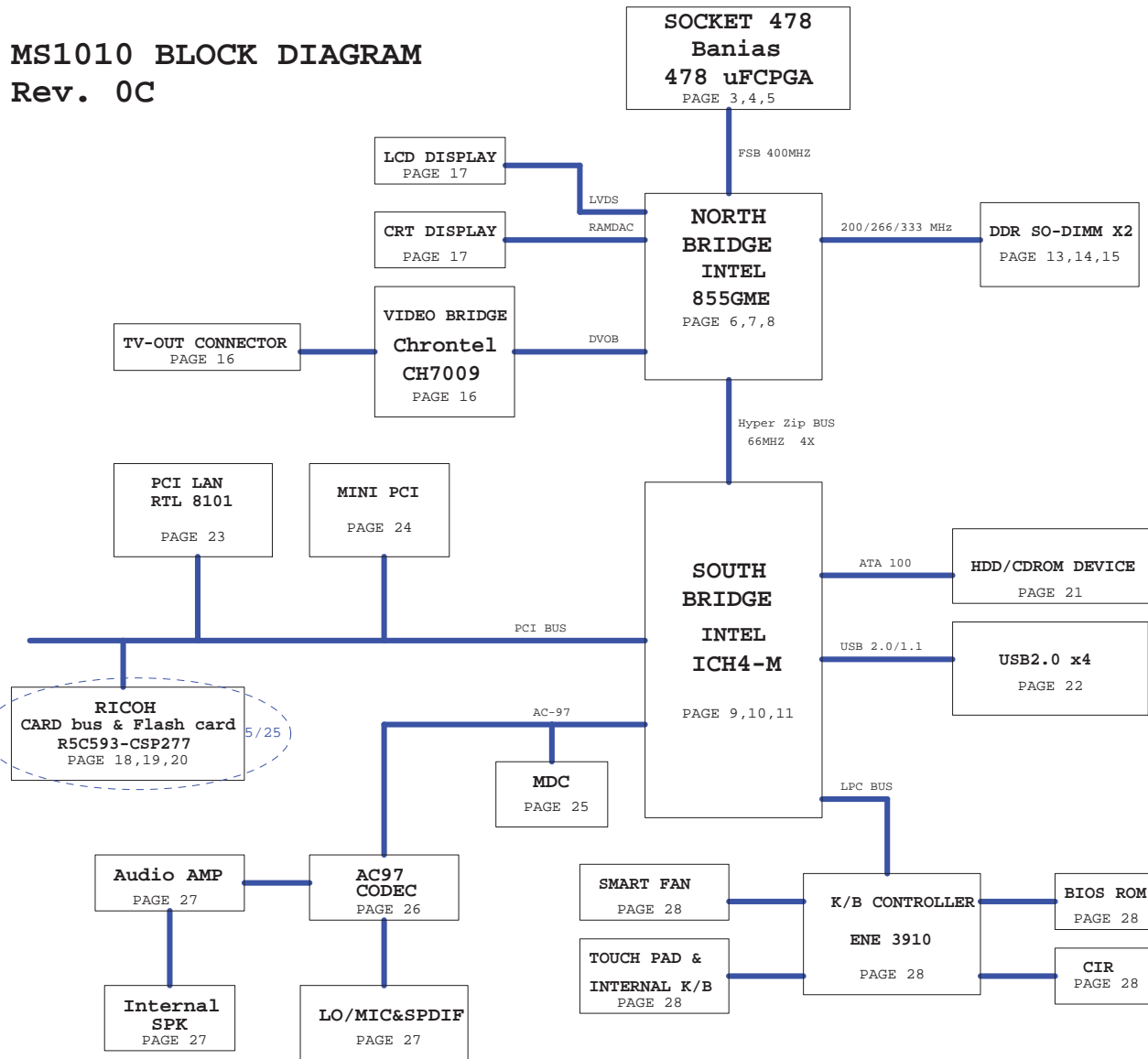


**MS1010 BLOCK DIAGRAM**  
Rev. 0C




# Voltage Rails

Vol tage	Descripti on	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
VH CORE	Core voltage for Processor	GME_PWRGD
VTT	1.05V rail for Processor I/O	RUNPWROK
+V1.35S_MCH	1.35V For 855GME Core(off in S3-S5)	RUNPWROK
SMD DR_VTERM	1.25V DDR Termination voltage(off in S4-S5)	+5VRUN
+1_5VSUS	1.5V power rail (off in S4-S5)	+5VSUS
+1_5VRUN	1.5V switched power rail(off in S3-S5)	RUN_ON
+1_8VRUN	1.8V switched power rail (off in S3-S5)	+1_5VRUN
+2_5VSUS	2.5V power rail for DDR(off in S4-S5)	+5VSUS
+3VALW	3.3V always on power rail	PWR_SRC
+3VSUS	3.3V power rail (off in S4-S5)	SUS_ON
+3VRUN	3.3V switched power rail(off in S3-S5)	RUN_ON
+5VALW	5.0V always on power rail	PWR_SRC
+5VSUS	5.0V power rail (off in S4-S5)	SUS_ON
+5VRUN	5.0V switched power rail(off in S3-S5)	RUN_ON

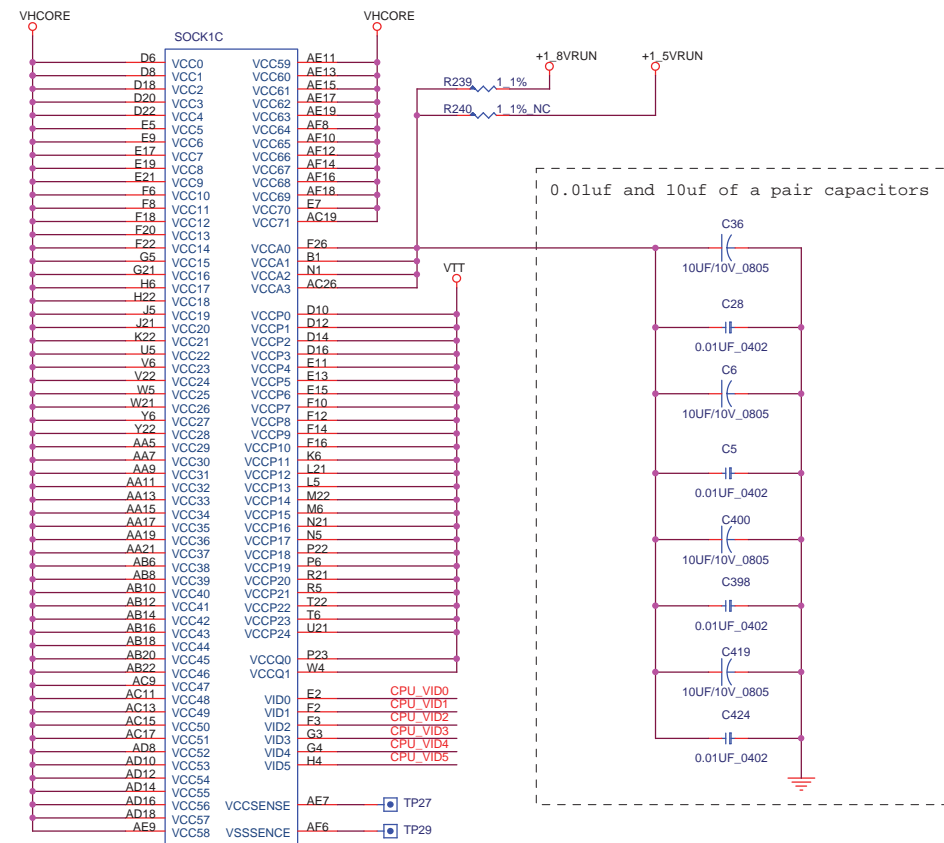
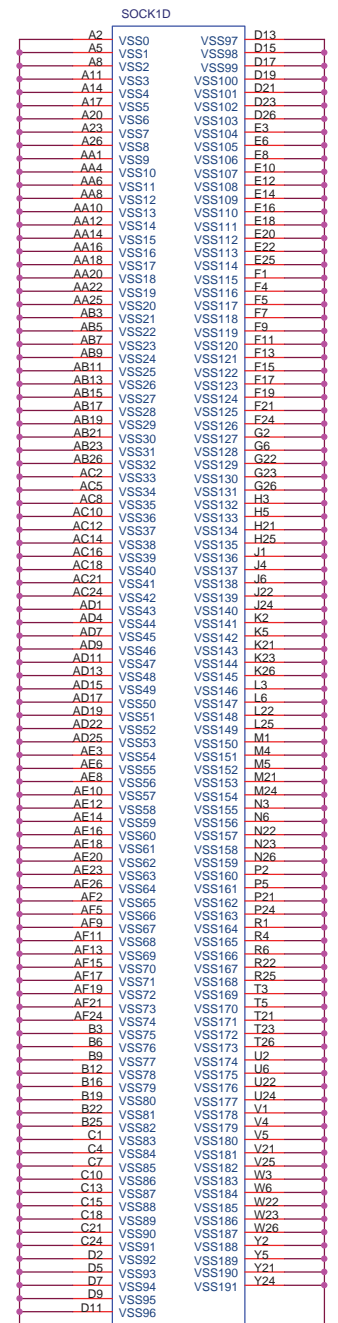
## POWER STATES

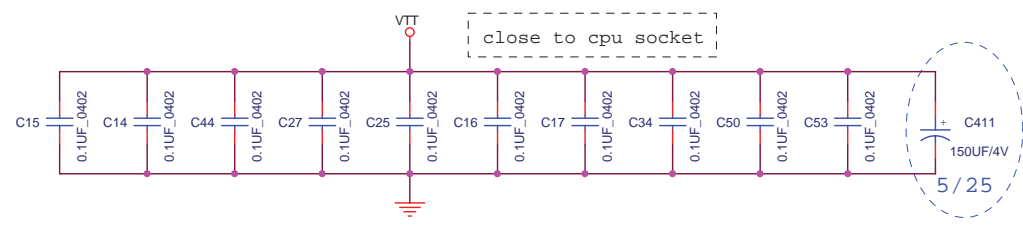
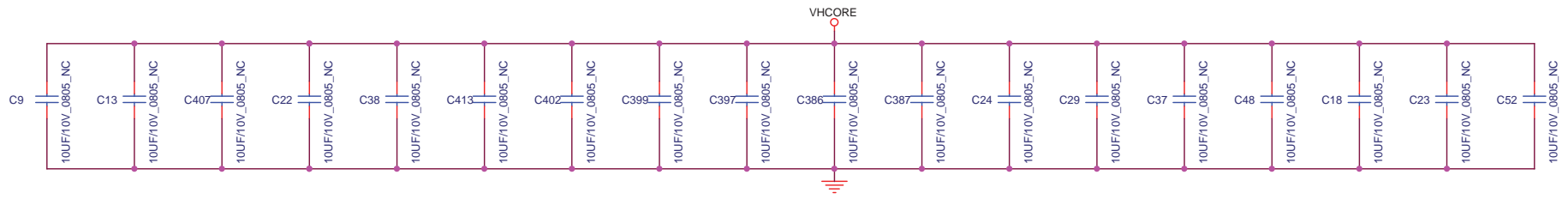
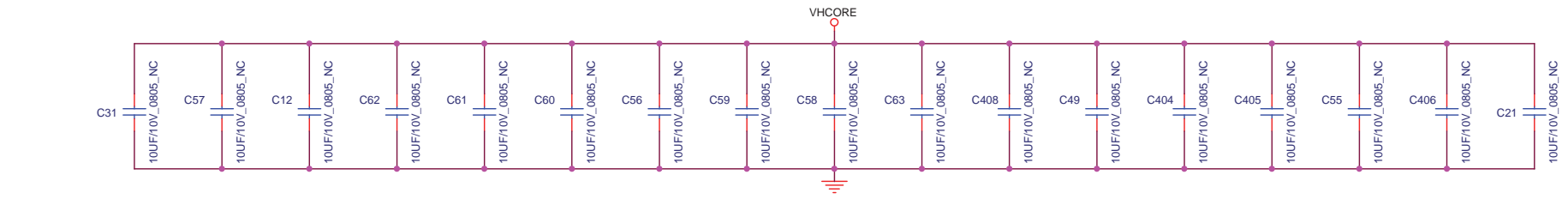
STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+V*ALWAYS	+V*SUS	+V*RUN	Clocks
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1M(Power On Suspend)	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3( Suspend to RAM)	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4( Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 / Soft OFF	LOW	LOW	LOW	ON	OFF	OFF	OFF

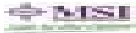
*Note : WHEN AC MODE , System turn on then +V\*SUS will always keep high*

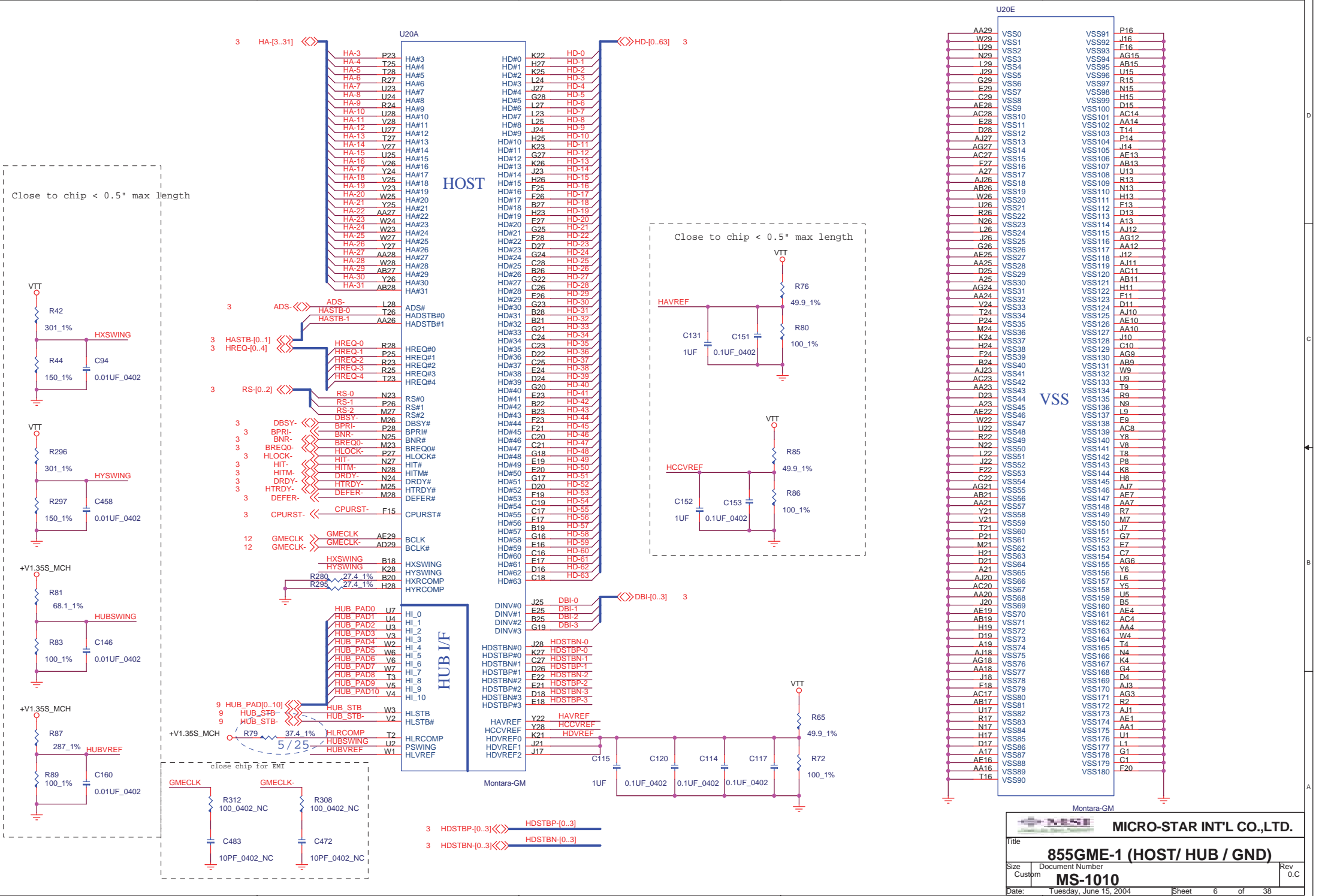
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Title			
<b>PLATFORM</b>			
Size	Document Number		Rev
Custom	<b>MS-1010</b>		0.C
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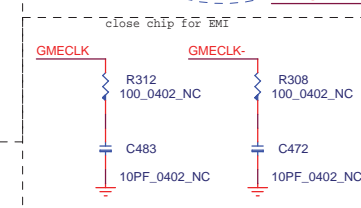


 MICRO-STAR INT'L CO.,LTD.	
Title	
<b>Banias-3</b>	
Size	Document Number
B	<b>MS-1010</b>
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Close to chip < 0.5" max length

Close to chip < 0.5" max length



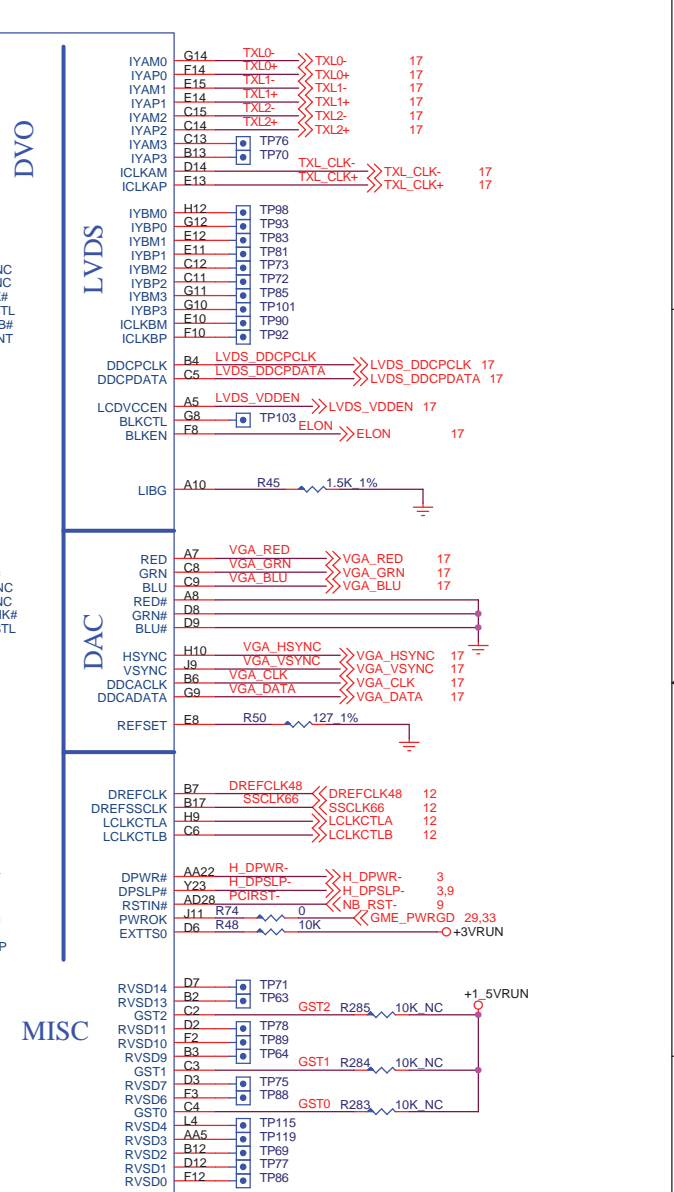
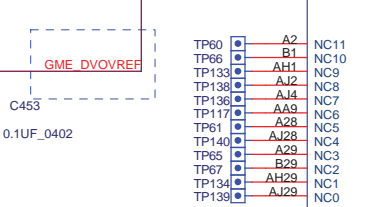
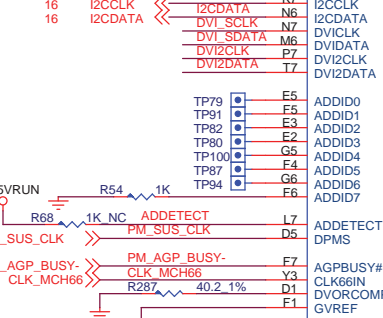
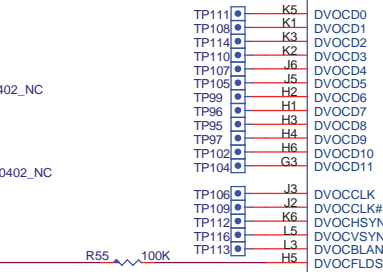
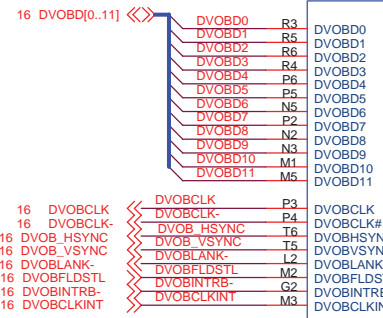
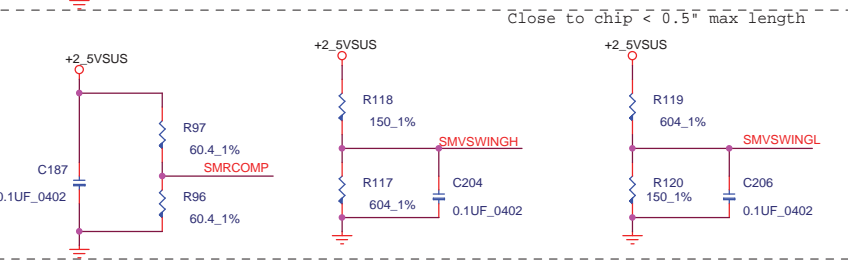
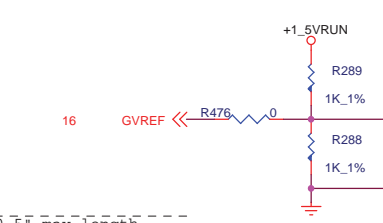
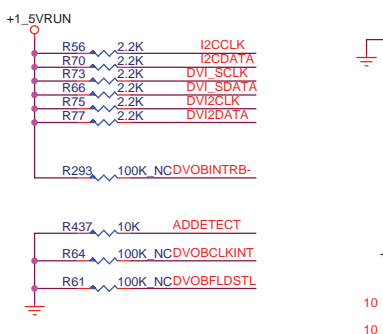
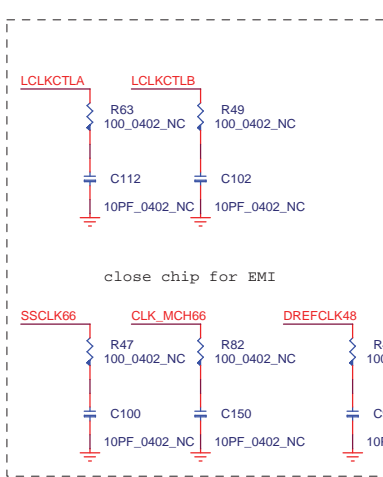
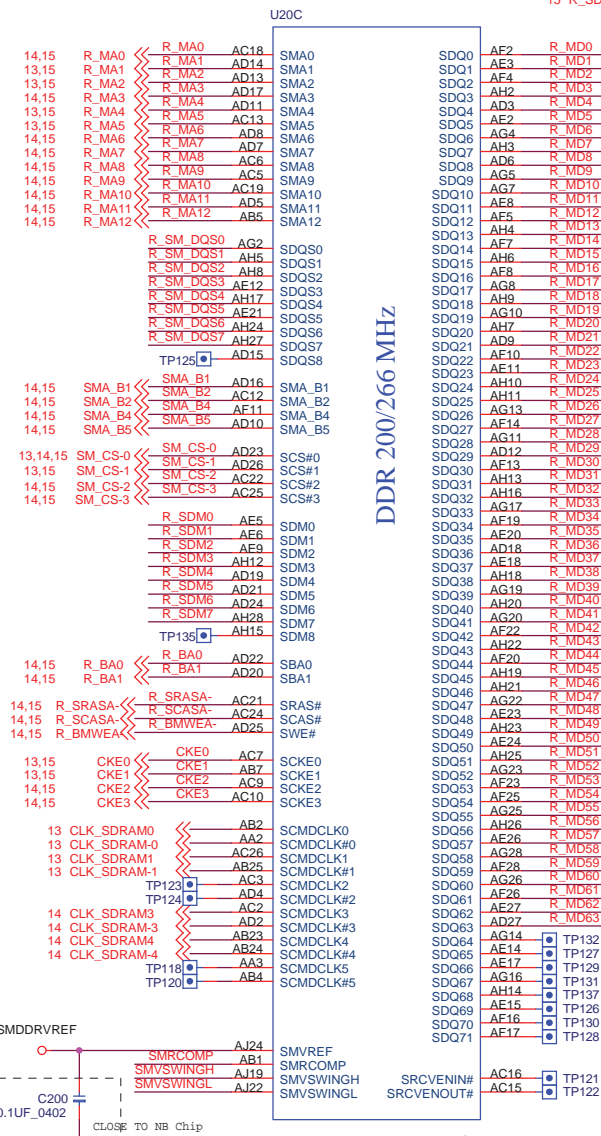
**MICRO-STAR INT'L CO.,LTD.**

Title: **855GE-M1 (HOST/HUB/GND)**

Size: Custom    Document Number: **MS-1010**    Rev: 0.C

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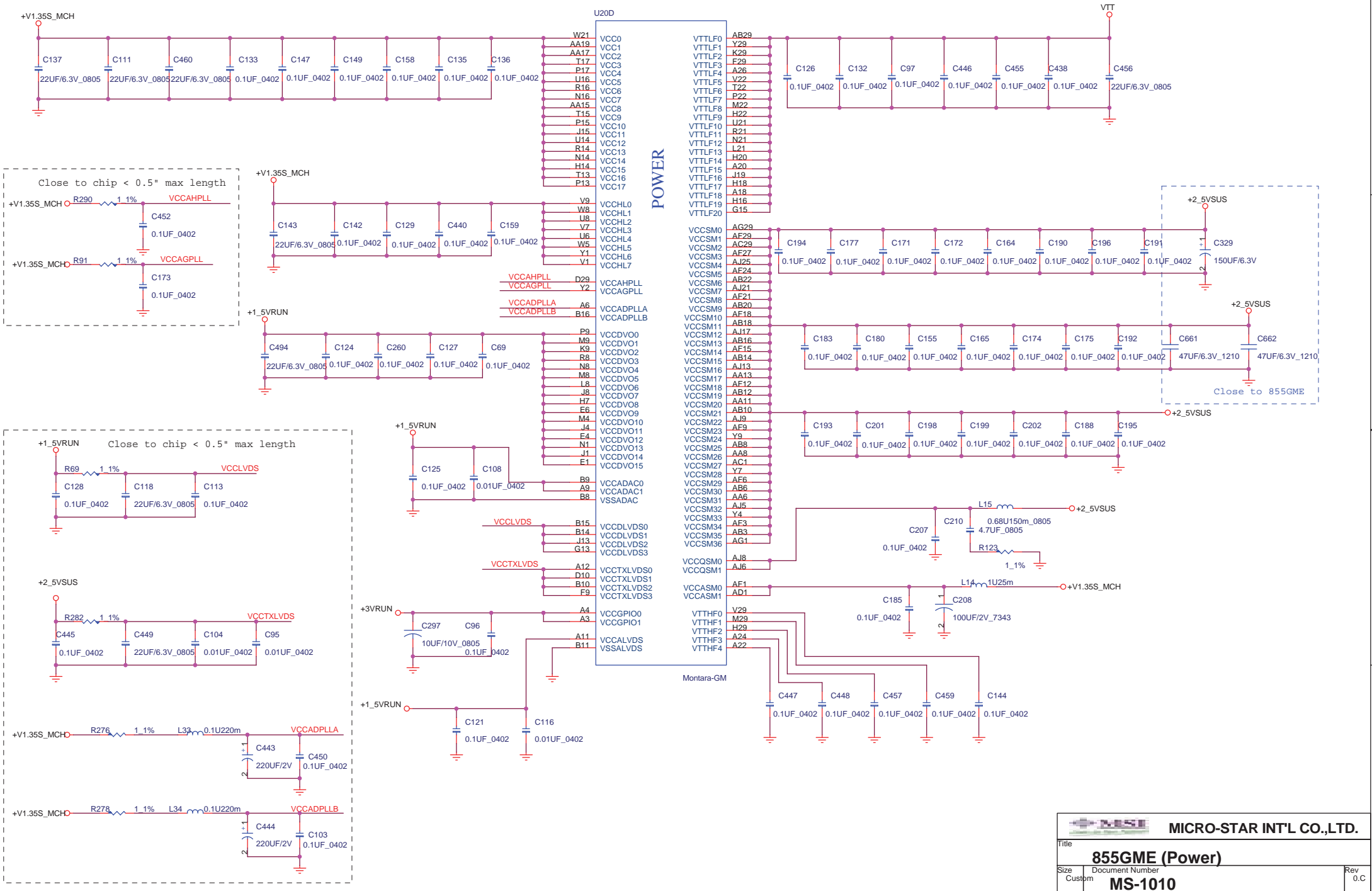



MICRO-STAR INT'L CO.,LTD.

Title 855GME-2 (DDR / VGA /Others)

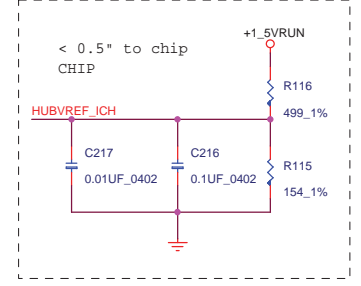
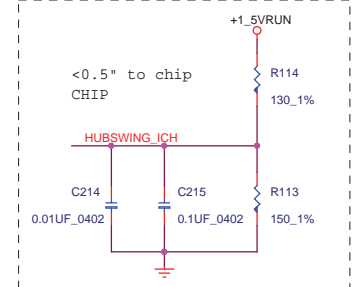
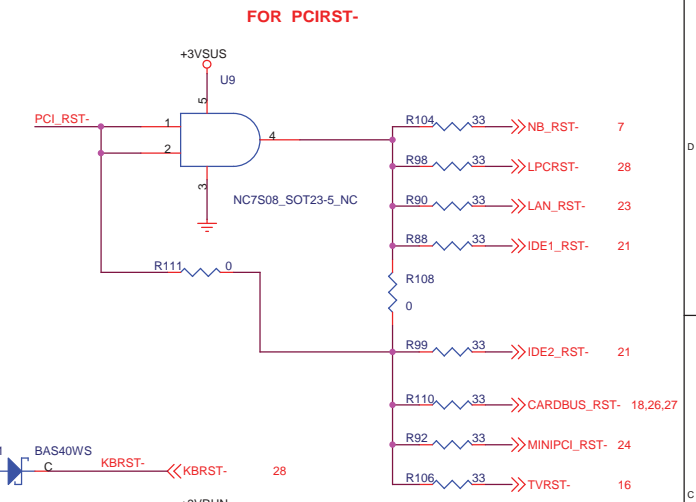
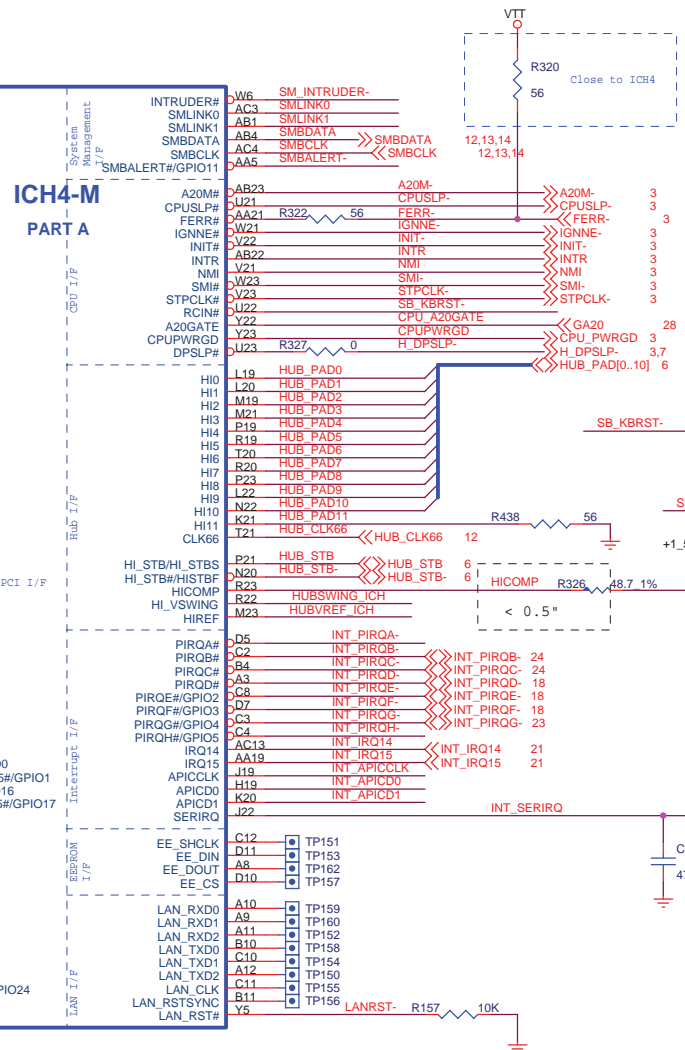
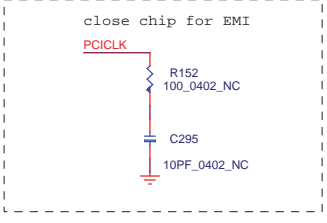
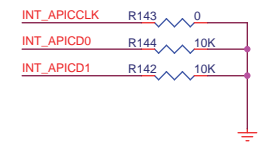
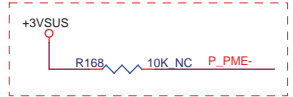
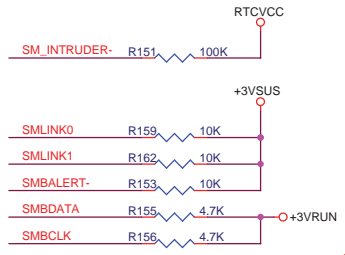
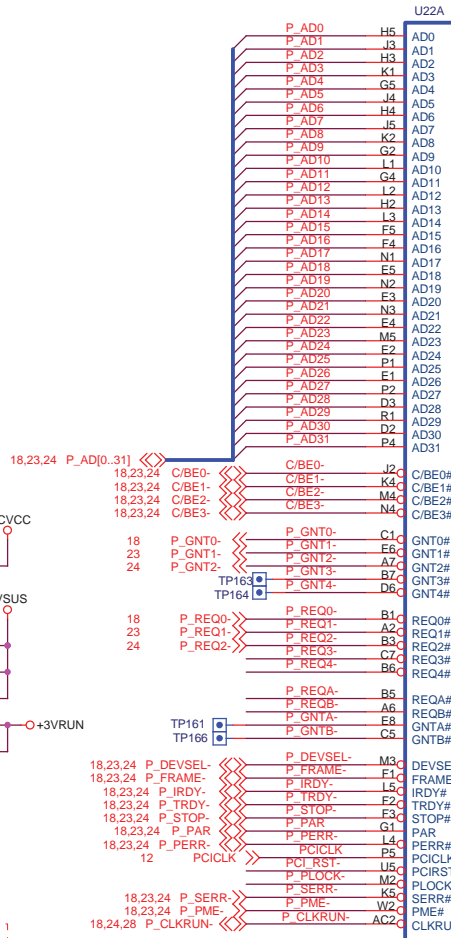
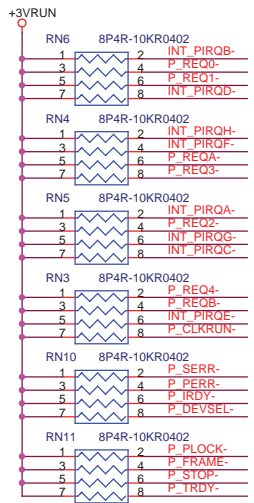
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 Custom MS-1010 Rev 0.C

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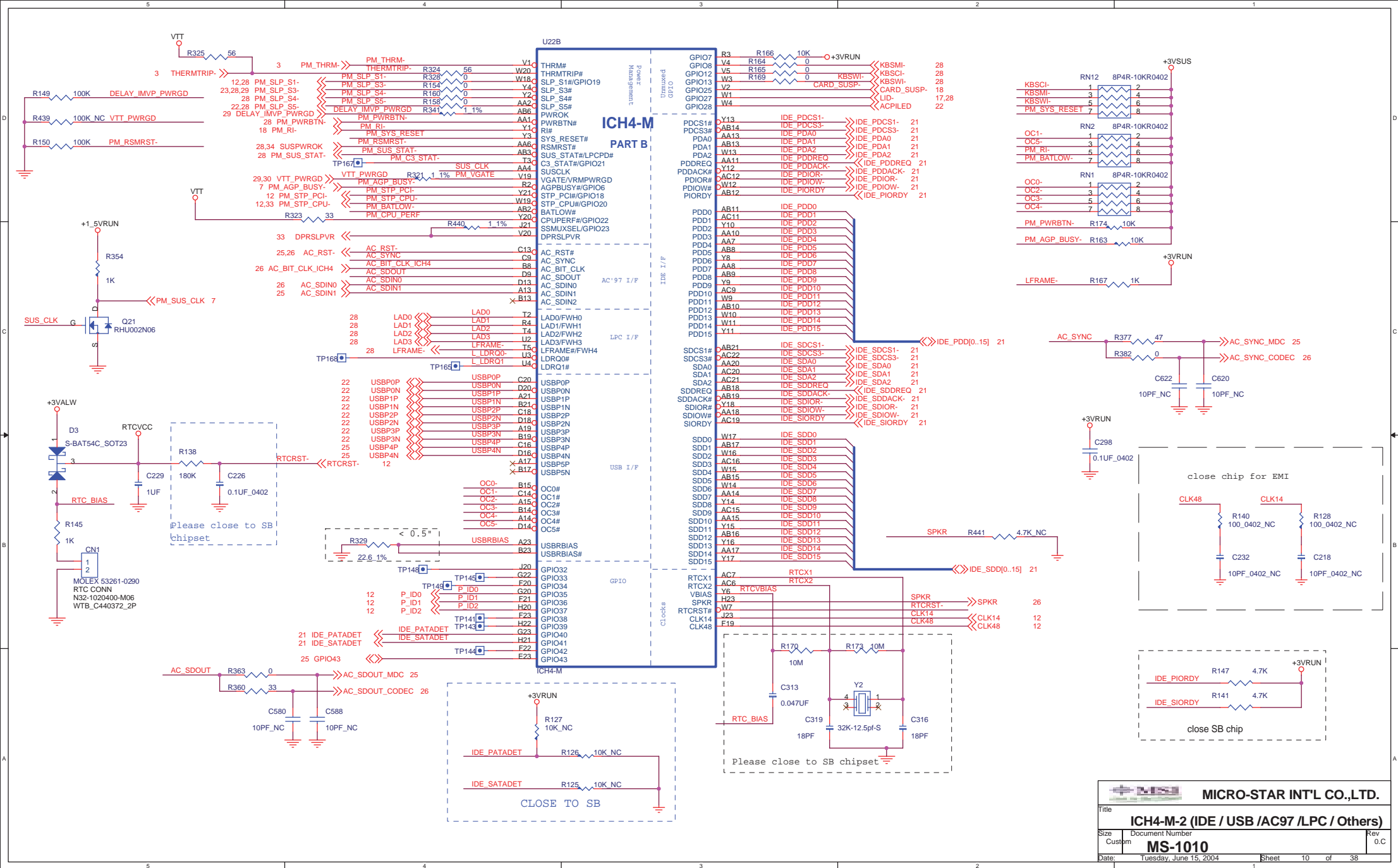


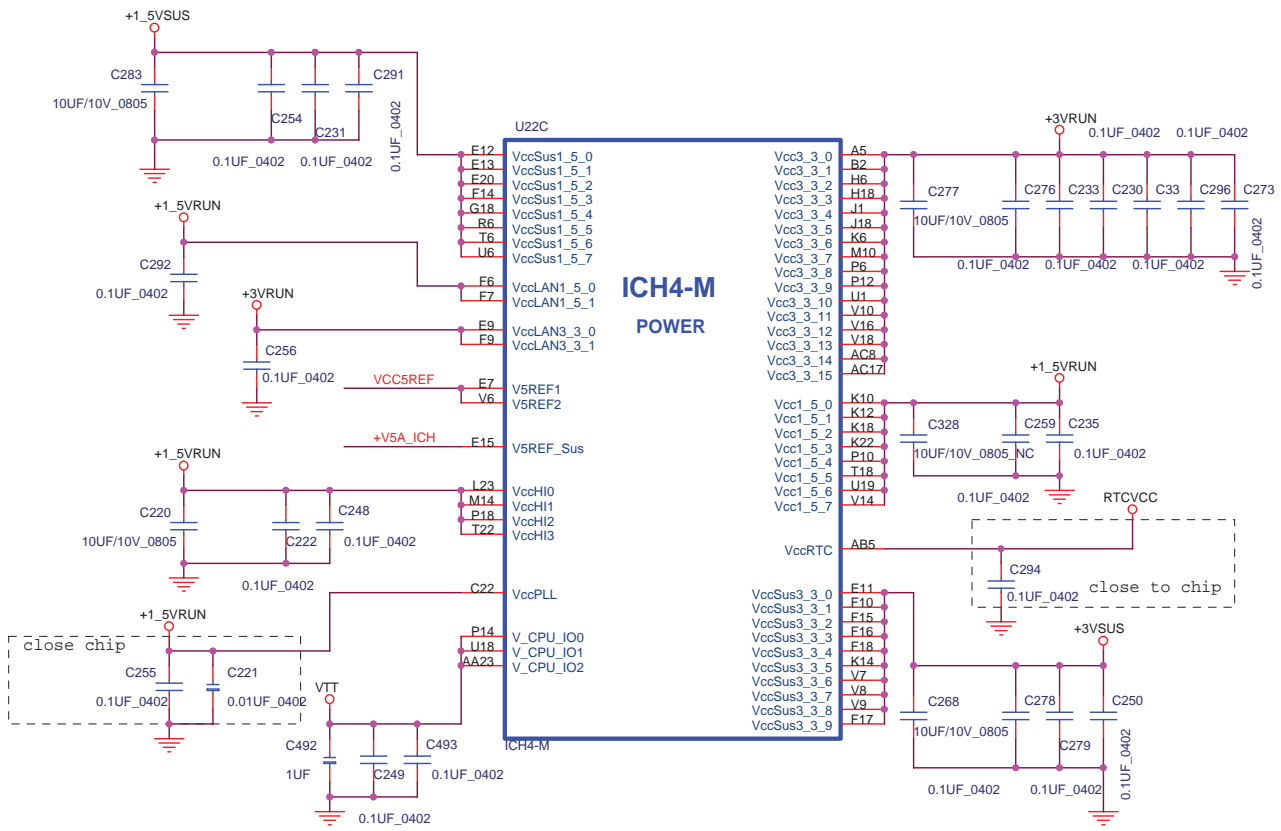
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Size Custom	Document Number <b>MS-1010</b>
Date: Tuesday, June 15, 2004	Rev 0.C
Sheet 1	of 8





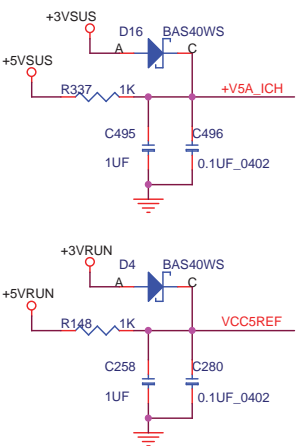
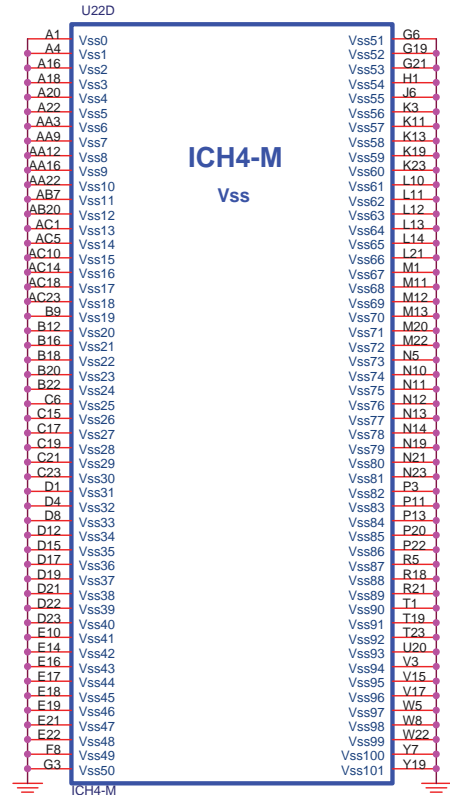
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Title: <b>ICH4-M -1 (PCI / HUB / LAN)</b>			
Size	Document Number	Rev	
Custm	<b>MS-1010</b>	0.C	
Date:	Tuesday, June 15, 2004	Sheet	9 of 38





**ICH4-M  
POWER**

**ICH4-M  
Vss**



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

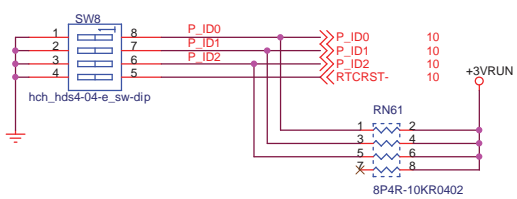
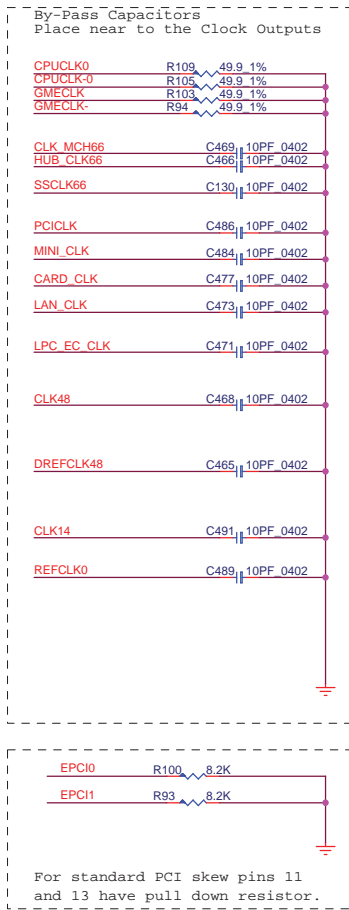
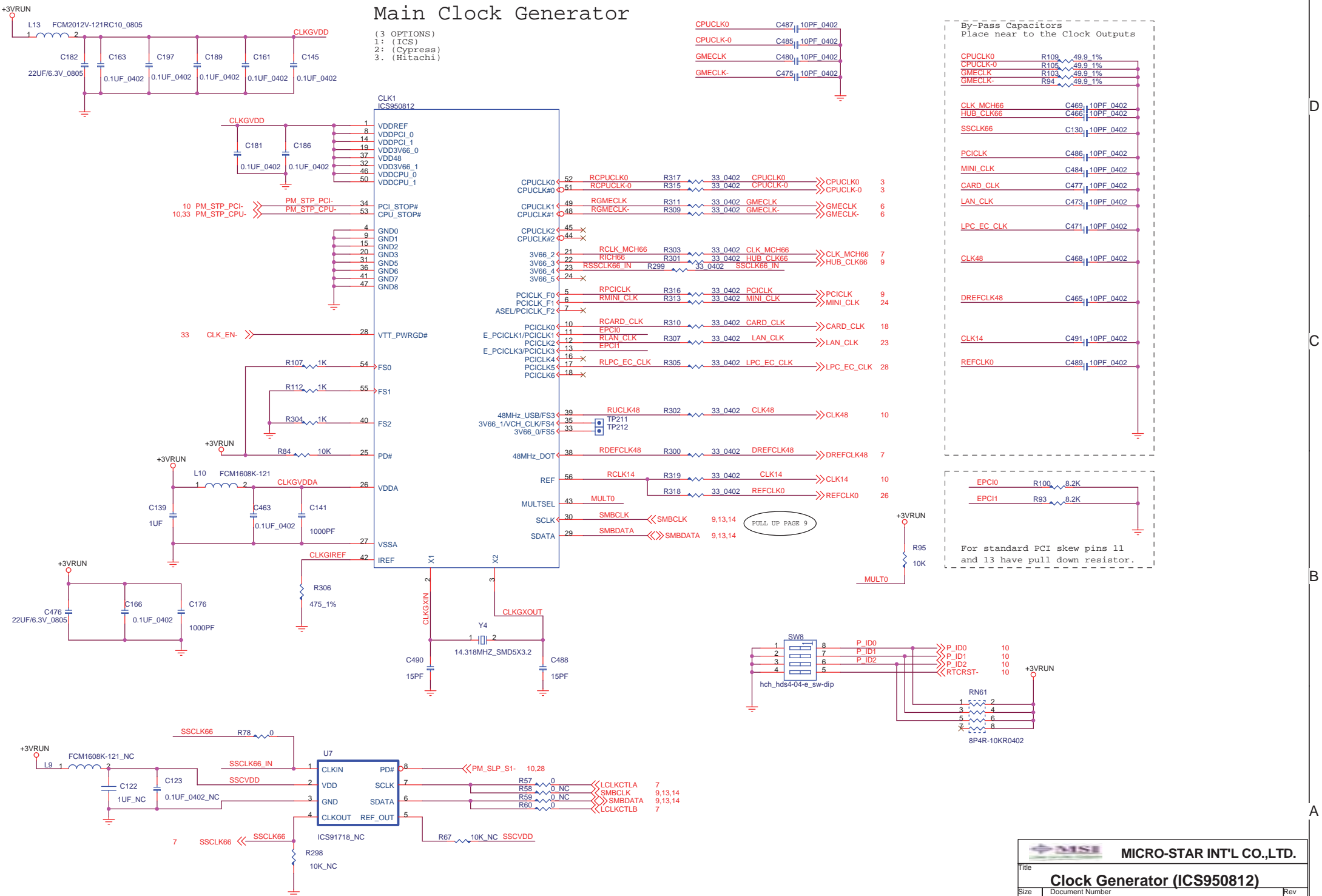
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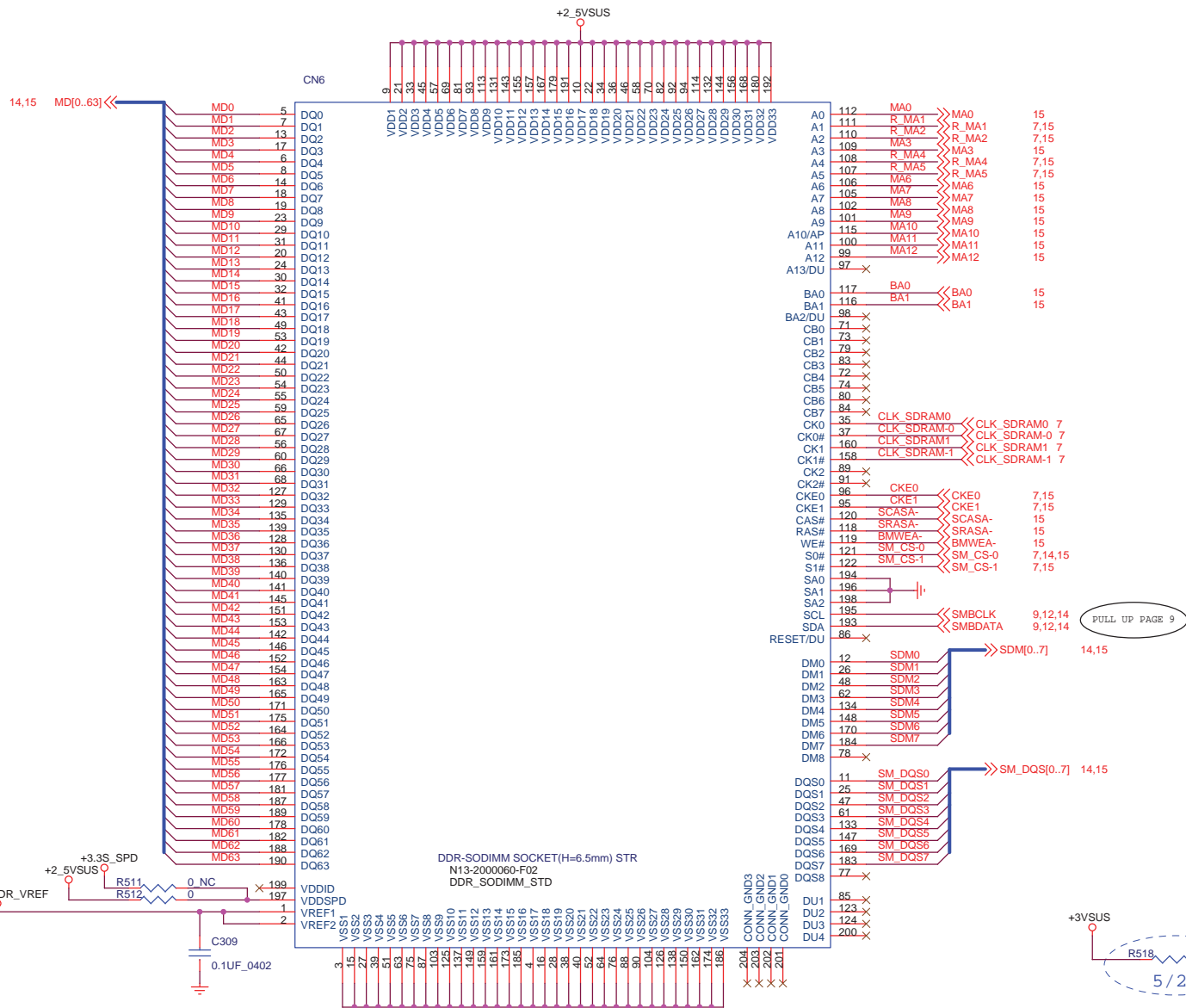
Size B Document Number: **MS-1010** Rev 0.C

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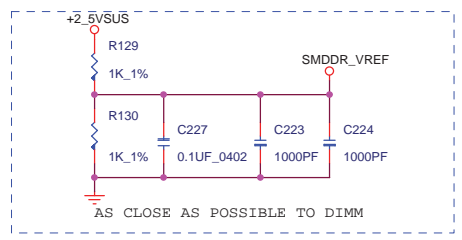
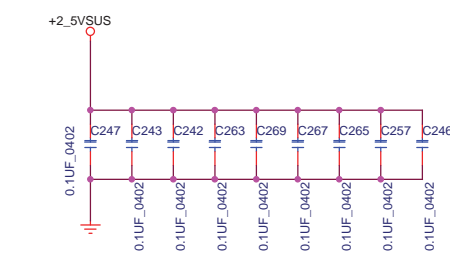
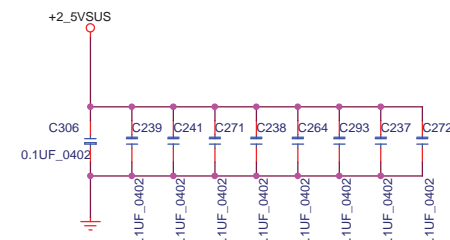
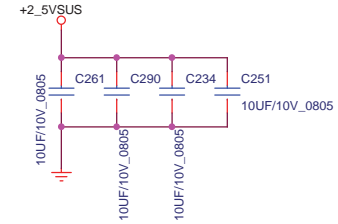
# Main Clock Generator

(3 OPTIONS)  
 1: (ICS)  
 2: (Cypress)  
 3: (Hitachi)





Layout note: Place capacitors between and near DDR connector if possible.



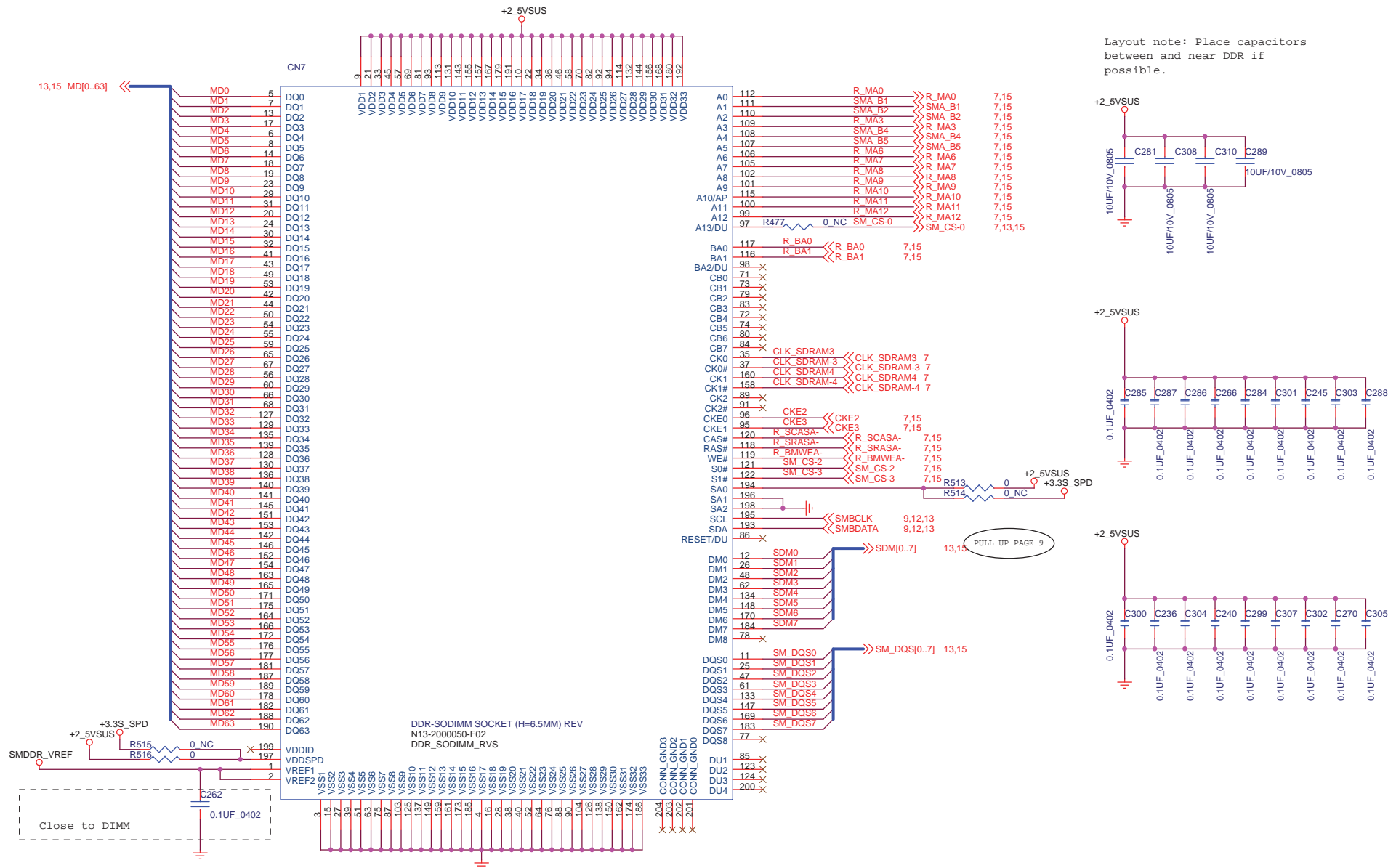
SODIMM\_0

MICRO-STAR INT'L CO.,LTD.

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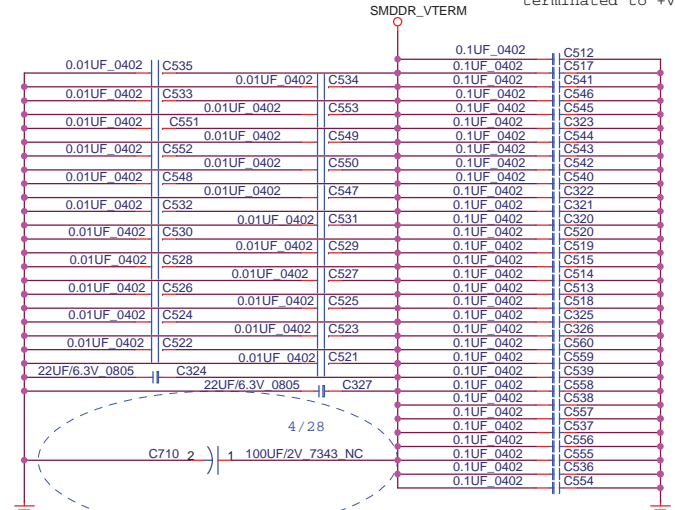
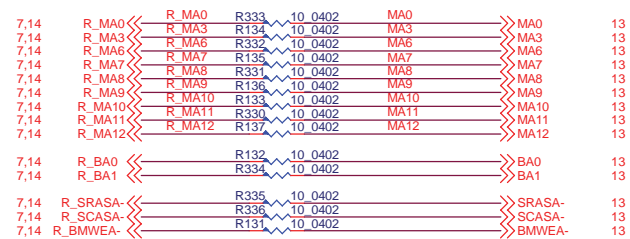
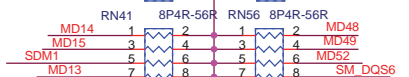
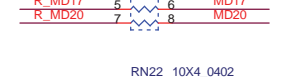
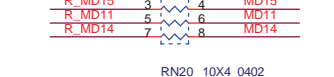
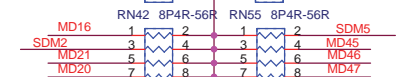
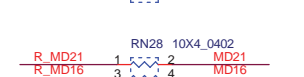
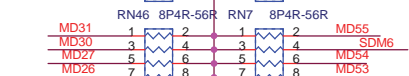
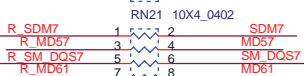
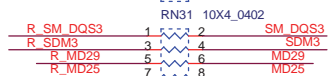
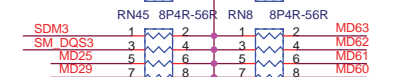
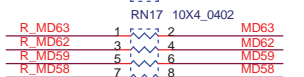
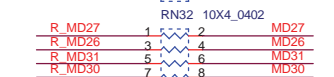
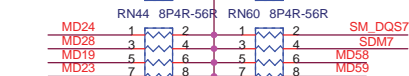
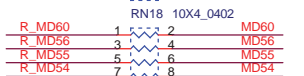
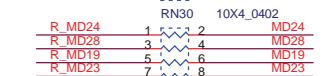
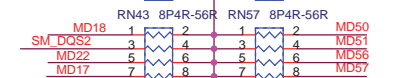
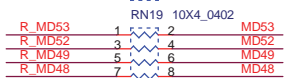
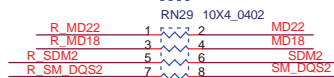
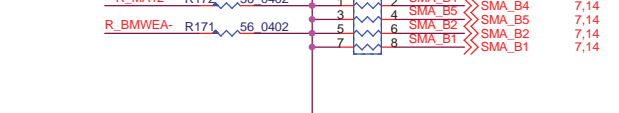
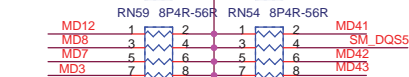
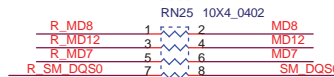
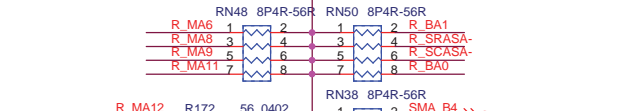
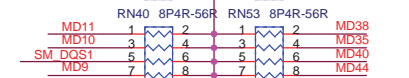
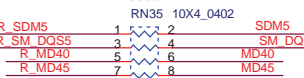
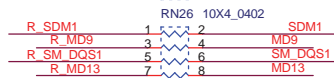
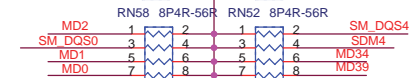
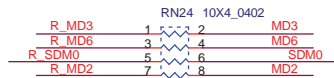
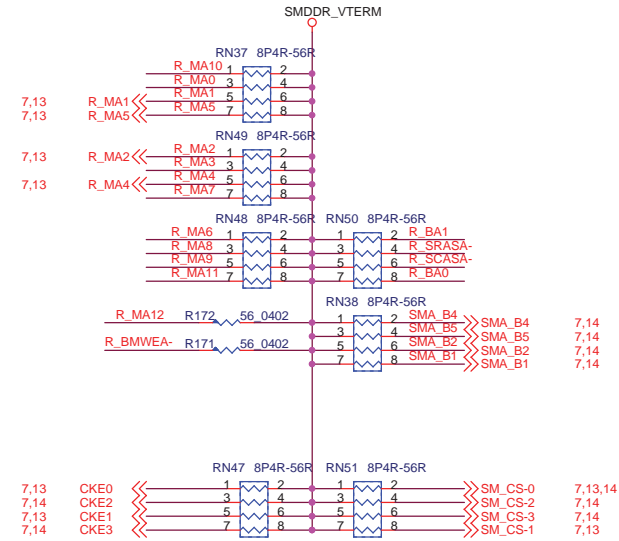
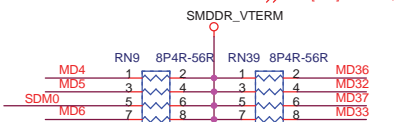
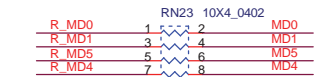
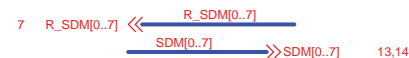
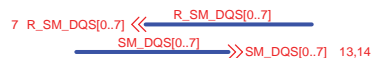
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SODIMM\_1

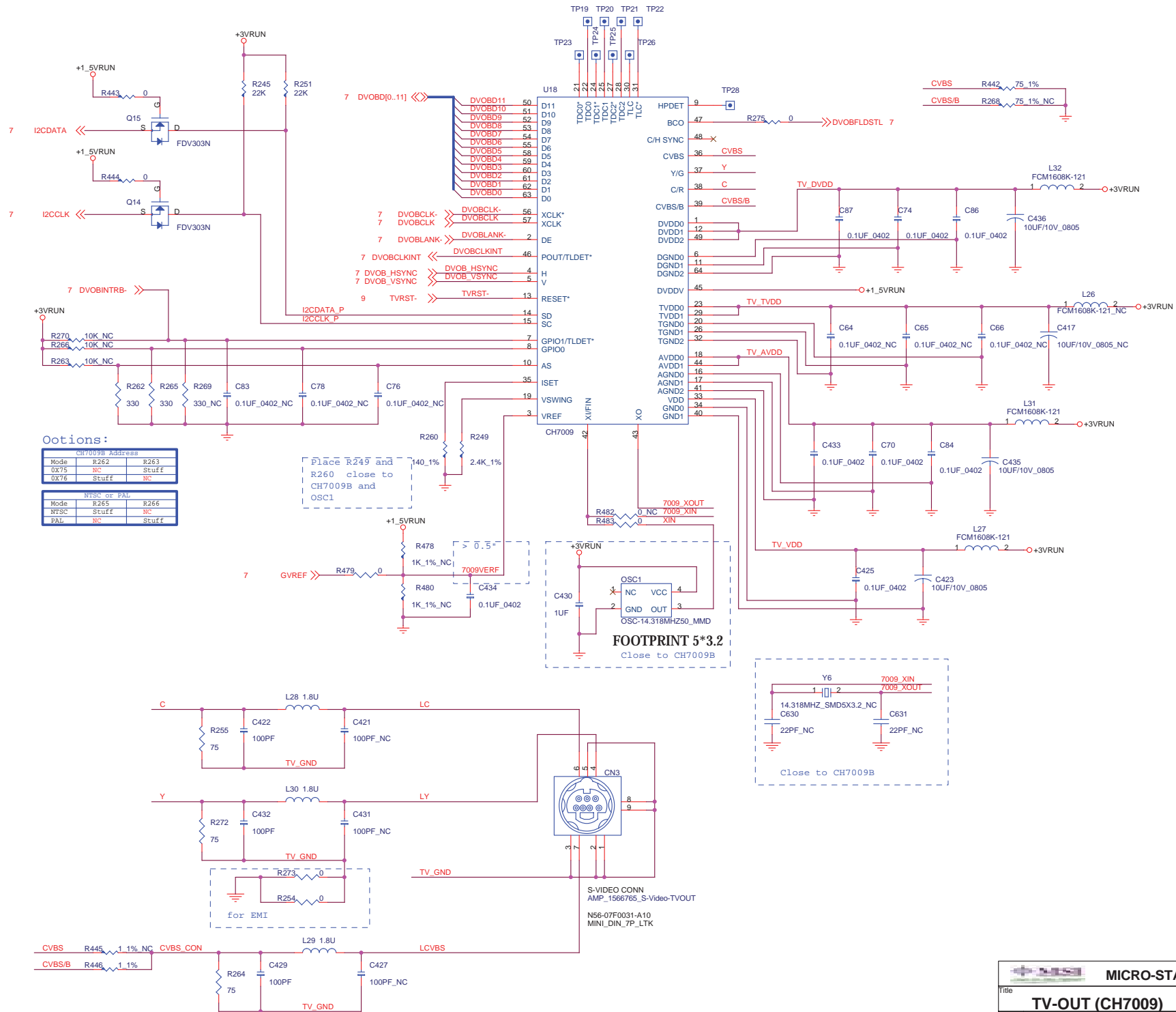
<b>MICRO-STAR INT'L CO.,LTD.</b>		
Title <b>DDR_SODIMM_1</b>		
Size Custom	Document Number <b>MS-1010</b>	Rev 0.C
Date: Tuesday, June 15, 2004	Sheet 14	of 38



Layout note: Place one cap close to every 2 pullup resistors terminated to +V1.25.

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

Title: DIMM Termination  
 Size: Custom Document Number: MS-1010  
 Date: Tuesday, June 15, 2004 Sheet 15 of 38 Rev 0.C



**Options:**

CH7009B Address			
Mode	R262	R263	
0x75	NC	StuFF	
0x76	StuFF	NC	

NTSC or PAL			
Mode	R265	R266	
NTSC	StuFF	NC	
PAL	NC	StuFF	

Place R249 and R260 close to CH7009B and OSC1

**FOOTPRINT 5\*3.2**  
Close to CH7009B

Y6  
14.318MHZ\_SMD5X3.2\_NC  
C630  
22PF\_NC  
Close to CH7009B

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

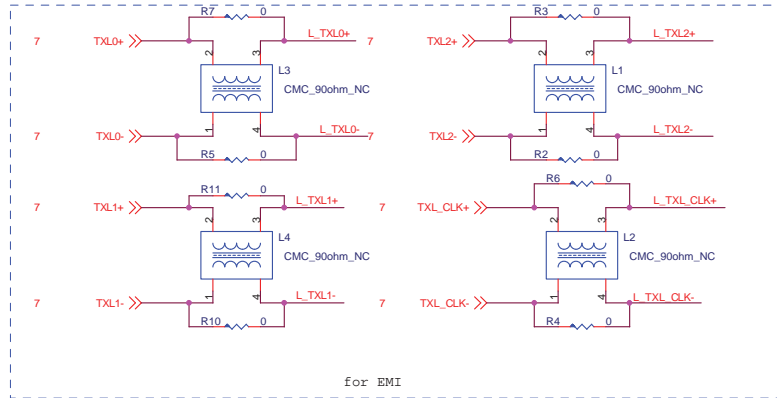
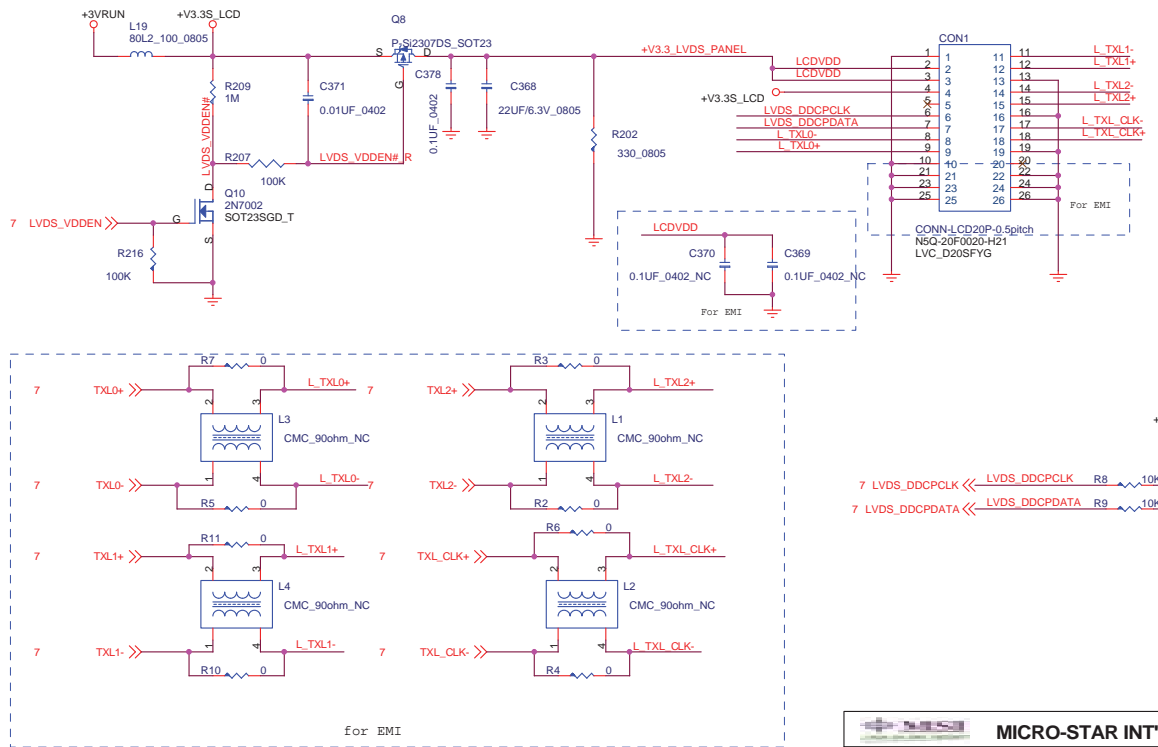
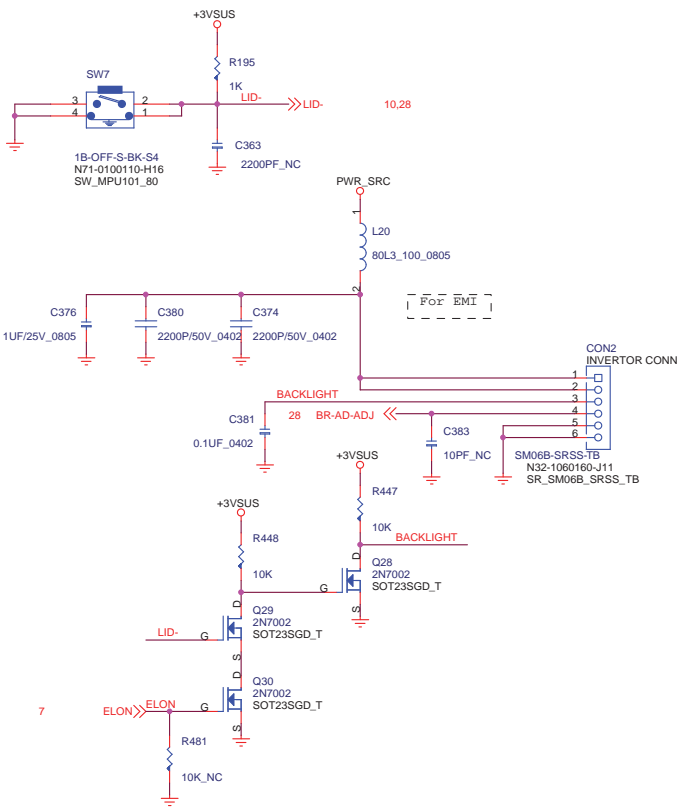
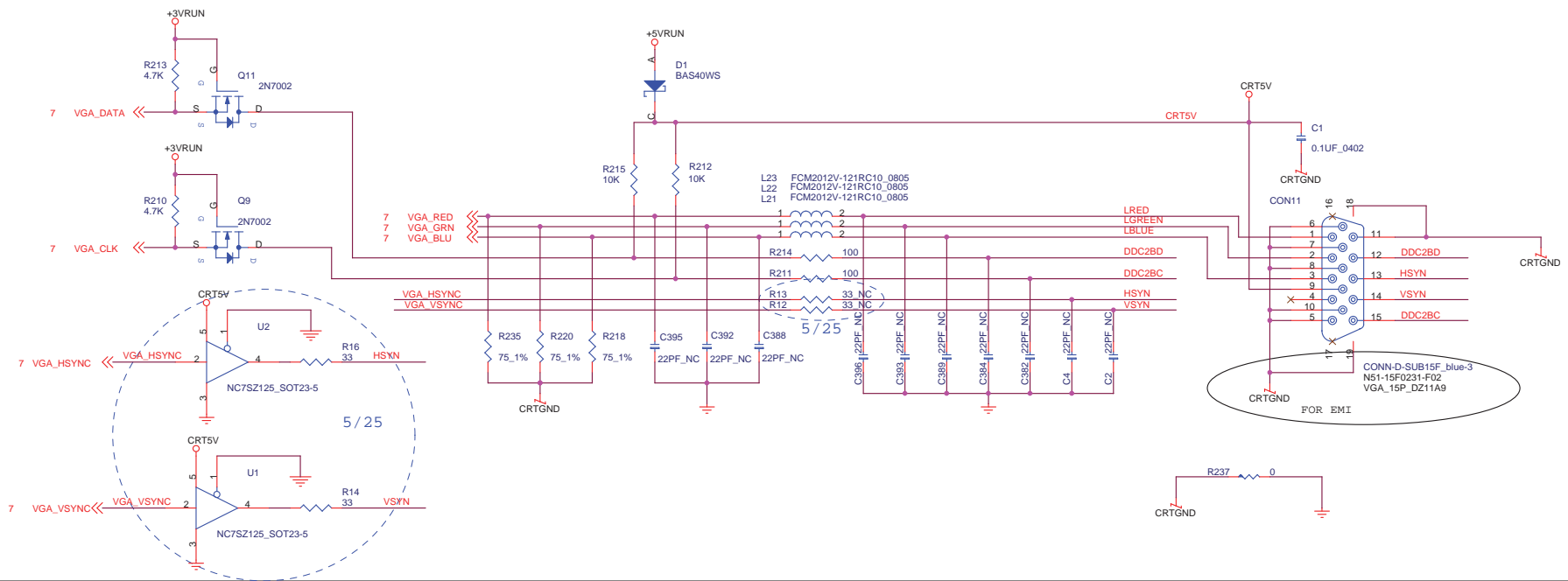
Title: **TV-OUT (CH7009)**

Size: Document Number: **MS-1010**

Rev: 0.C

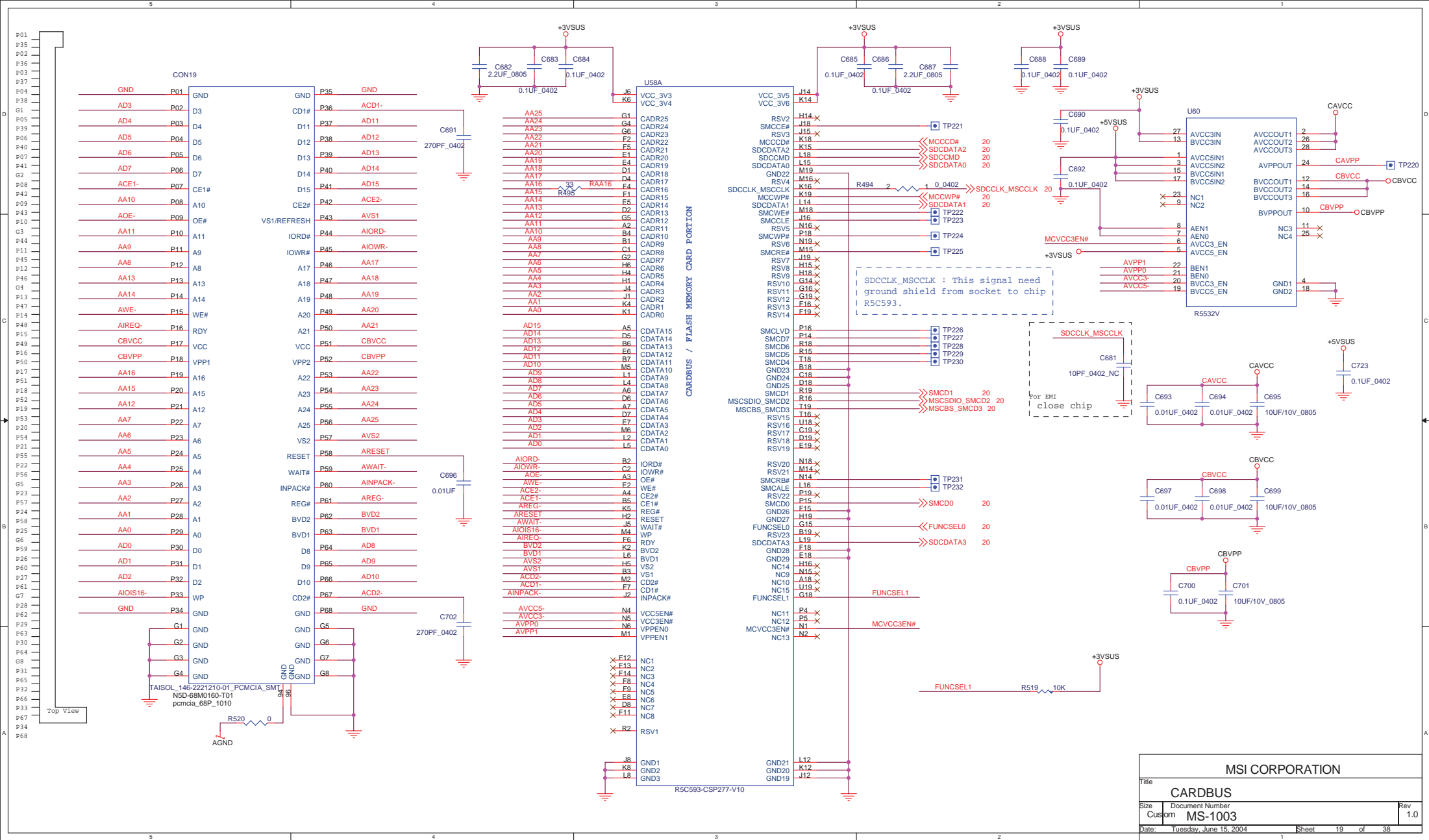
Date: July, 2004 Sheet 16 of 38

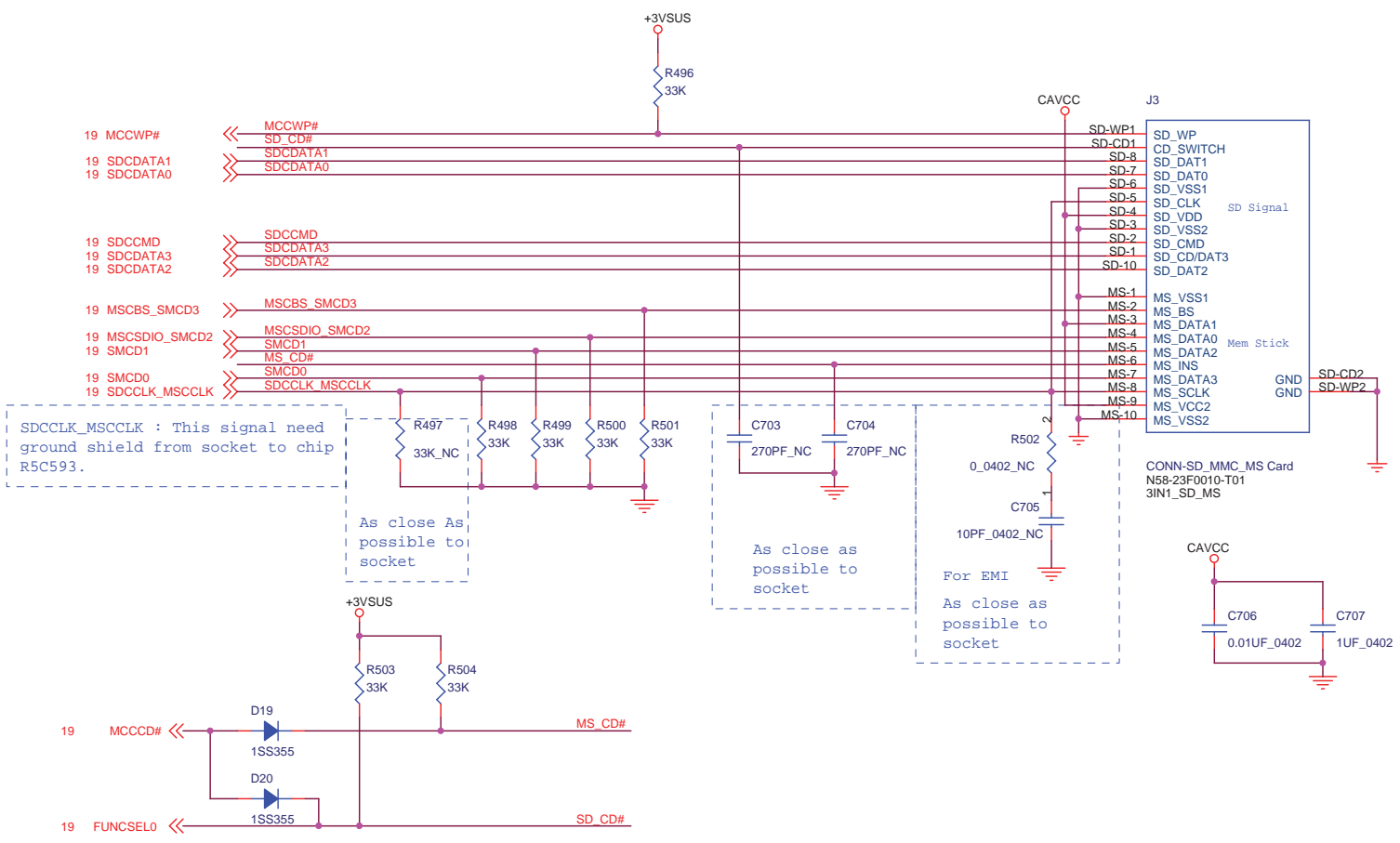




<b>MICRO-STAR INT'L CO.,LTD.</b>			
Title	<b>CRT &amp; LVDS CONN</b>		
Size	Document Number	Rev	0.C
Custom	<b>MS-1010</b>		
Date	Tuesday, June 15, 2004	Sheet	17 of 38







SDCCLK\_MSCCLK : This signal need ground shield from socket to chip R5C593.

As close As possible to socket

As close as possible to socket

For EMI  
As close as possible to socket

As close as possible to socket

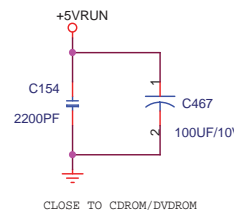
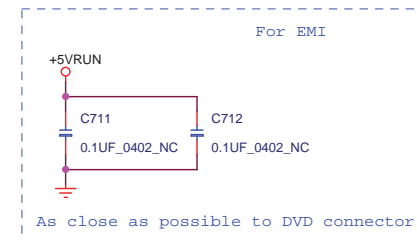
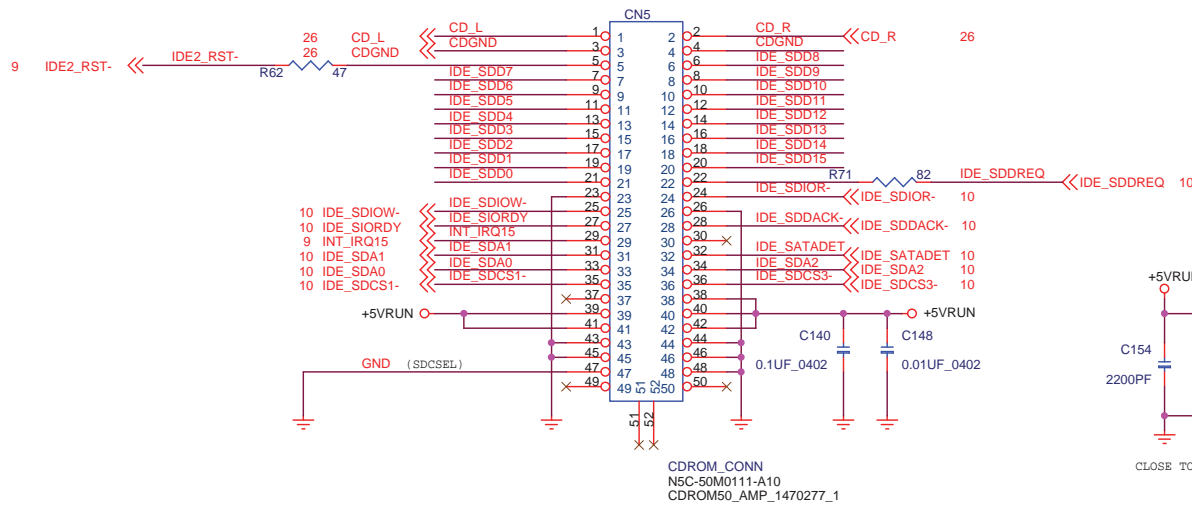
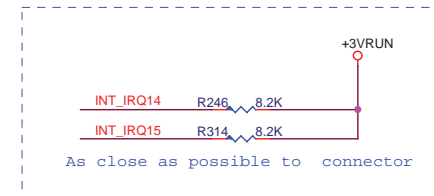
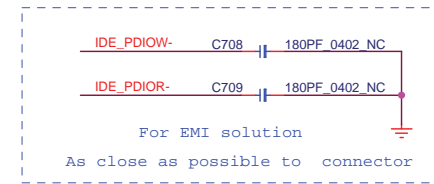
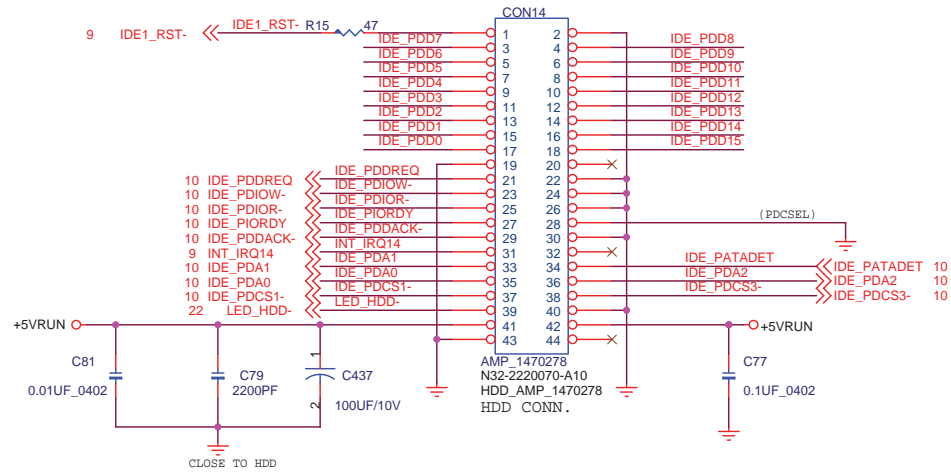
**Memory Card Detect Logic Table**

MS_CD#	SM_CD#	SD_CD#	->	Detected Card
0	0	0	->	INHIBIT
0	0	1	->	INHIBIT
0	1	0	->	INHIBIT
0	1	1	->	MemoryStick Detected
1	0	0	->	INHIBIT
1	0	1	->	SmartMedia Detected
1	1	0	->	SD/MMC Detected
1	1	1	->	Not Detected

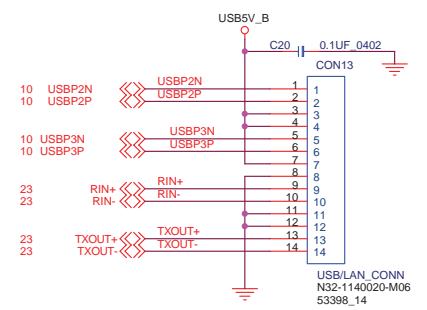
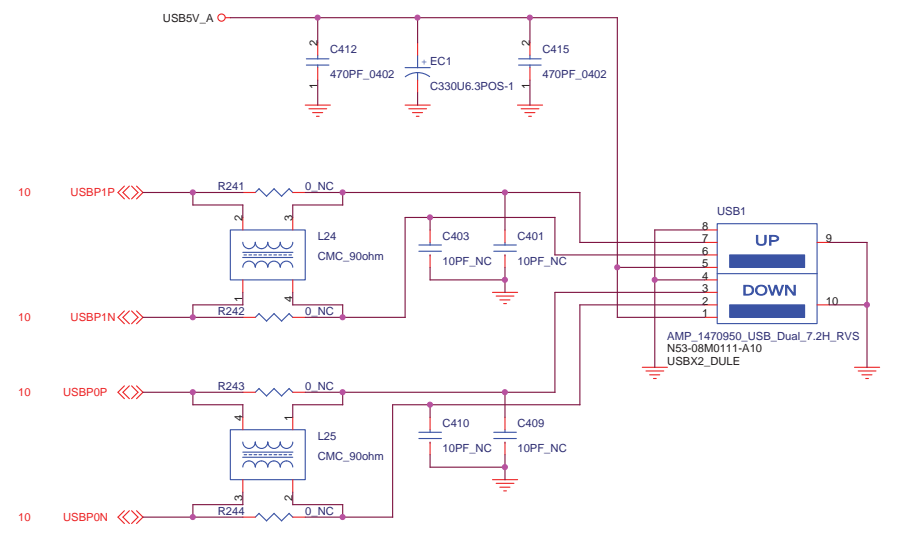
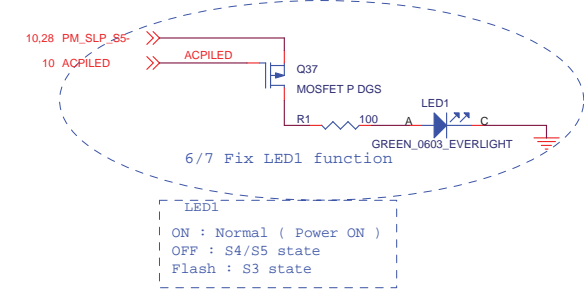
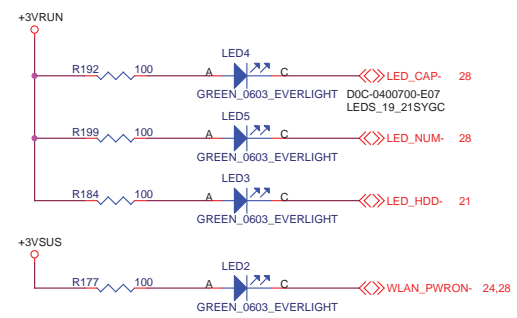
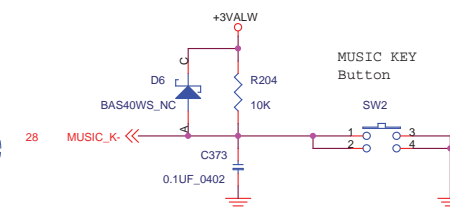
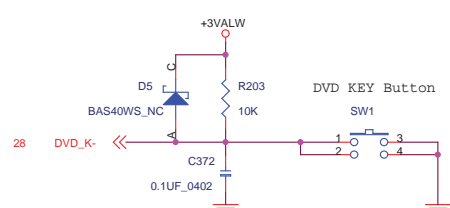
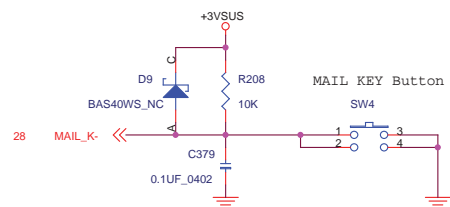
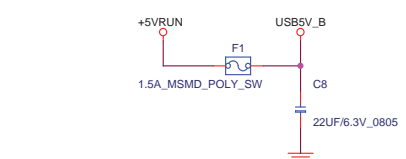
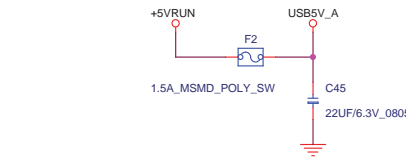
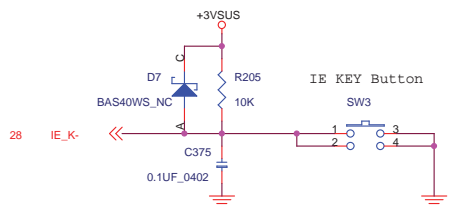
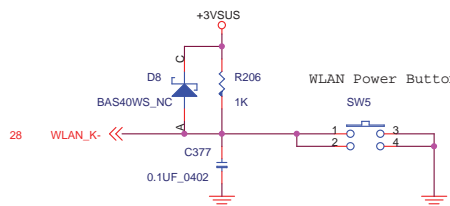
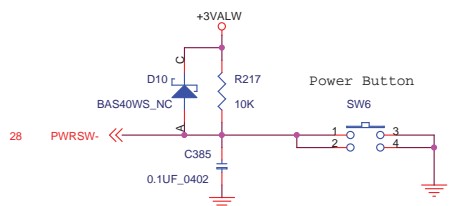
Unused

**DO NOT INSERT SMARTMEDIA, SD/MMC AND MEMORYSTICK SIMULTANEOUSLY.**

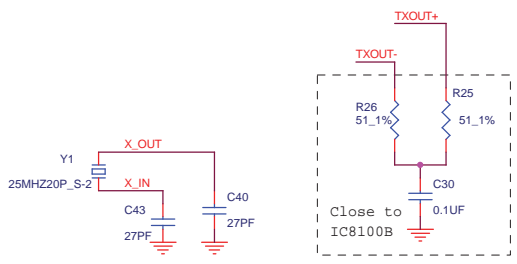
MSI CORPORATION		
Title FLASH CARD CONN.		
Size B	Document Number MS-1003	Rev 1.0
Date: Tuesday, June 15, 2004	Sheet 20	of 38



<b>MICRO-STAR INT'L CO.,LTD.</b>		
Title <b>HDD &amp; CDROM CONN</b>		
Size B	Document Number <b>MS-1010</b>	Rev 0.B
Date: Tuesday, June 15, 2004	Sheet 21	of 38

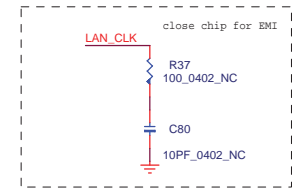
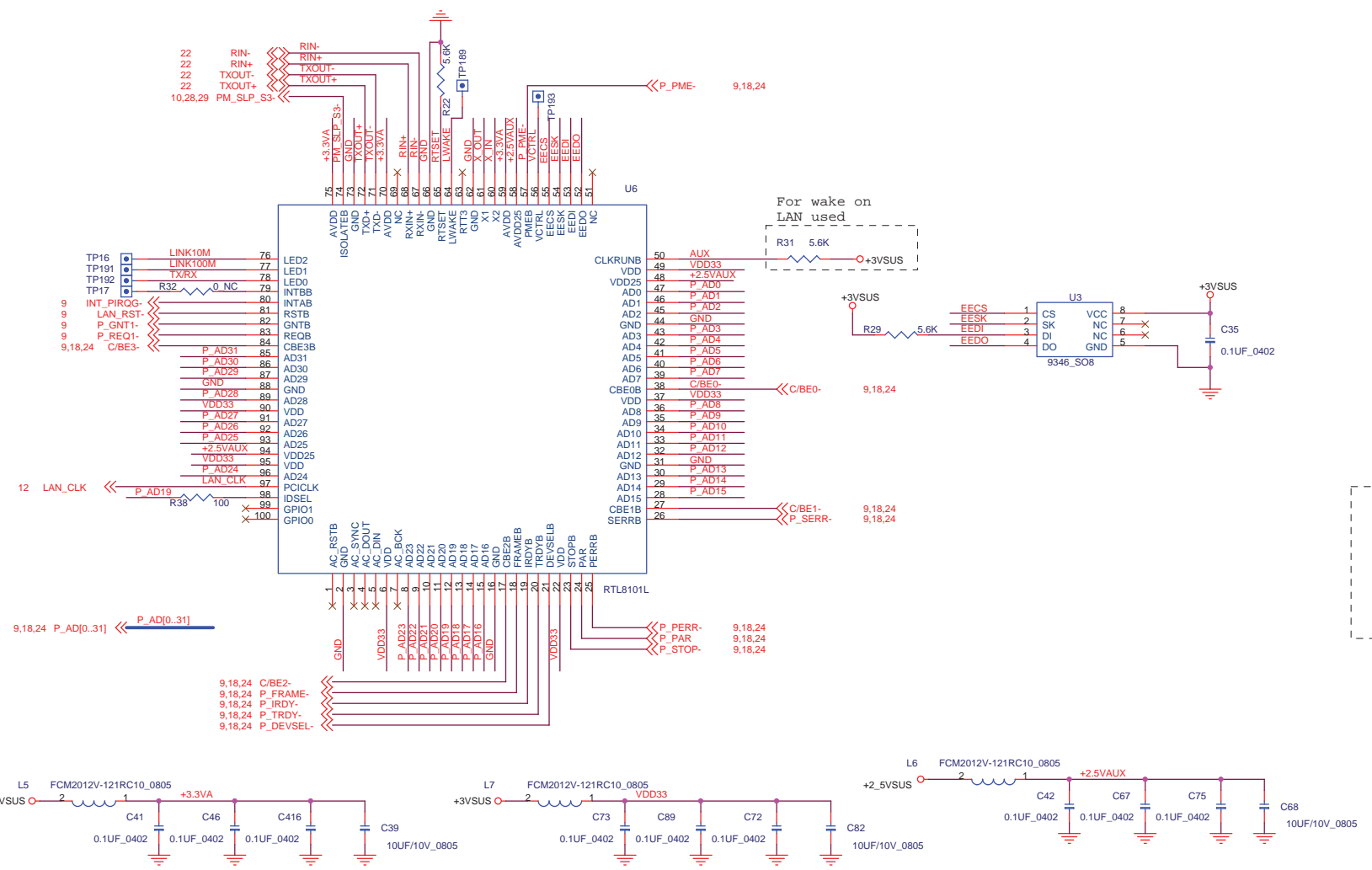


MICRO-STAR INT'L CO.,LTD.			
<b>USB PORT &amp; LEDs</b>			
Size	Document Number	Rev	
Custom	<b>MS-1010</b>	0.C	
Date:	Tuesday, June 15, 2004	Sheet	22 of 38



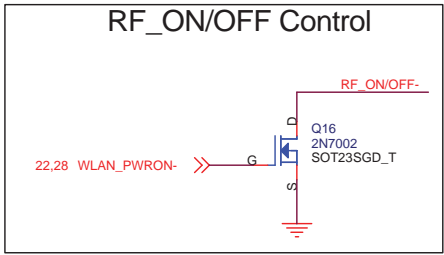
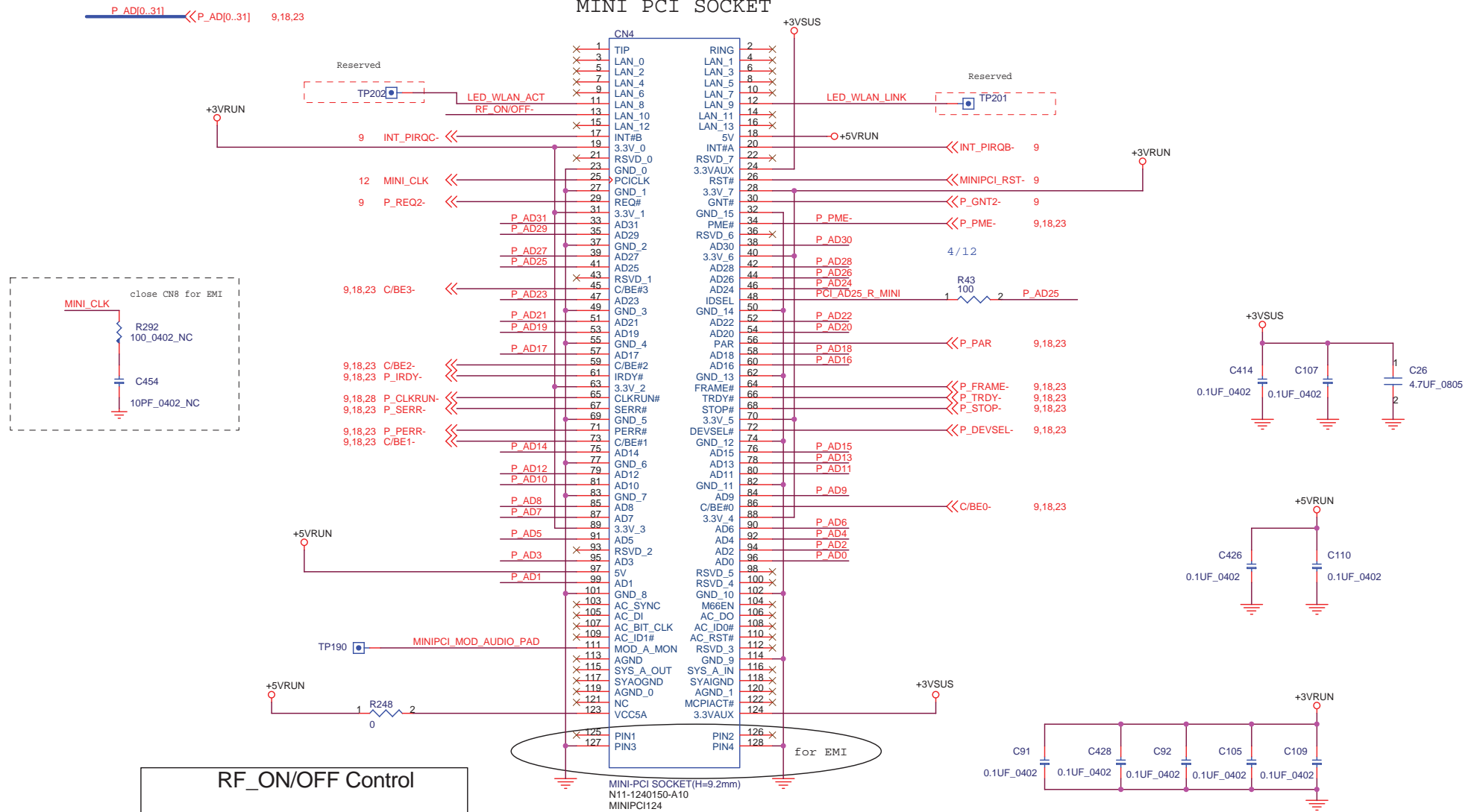
**Layout Rule :**

- 1 Tx+ and Rx+ length: +100mil
  - 2 Through hole less.
  3. Tx+/- \_\_\_\_\_
  - GND \_\_\_\_\_
  - Rxx+/- \_\_\_\_\_
- Ground planes Tx/Rx.



<b>MICRO-STAR INT'L CO.,LTD.</b>		
<b>PCI LAN (RTL8101L)</b>		
Size	Document Number	Rev
Custom	<b>MS-1010</b>	0.C
Date:	Tuesday, June 15, 2004	Sheet 23 of 38

# MINI PCI SOCKET



**OPEN RF ON (HiZ)**  
**LOW RF OFF**

MINI PCI POWER SPEC.

TOYAL	: 2W
+5V	: 100mA
3.3VAUX	: 5/200/375mA
VCC5A	: 100mA
+3V	

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

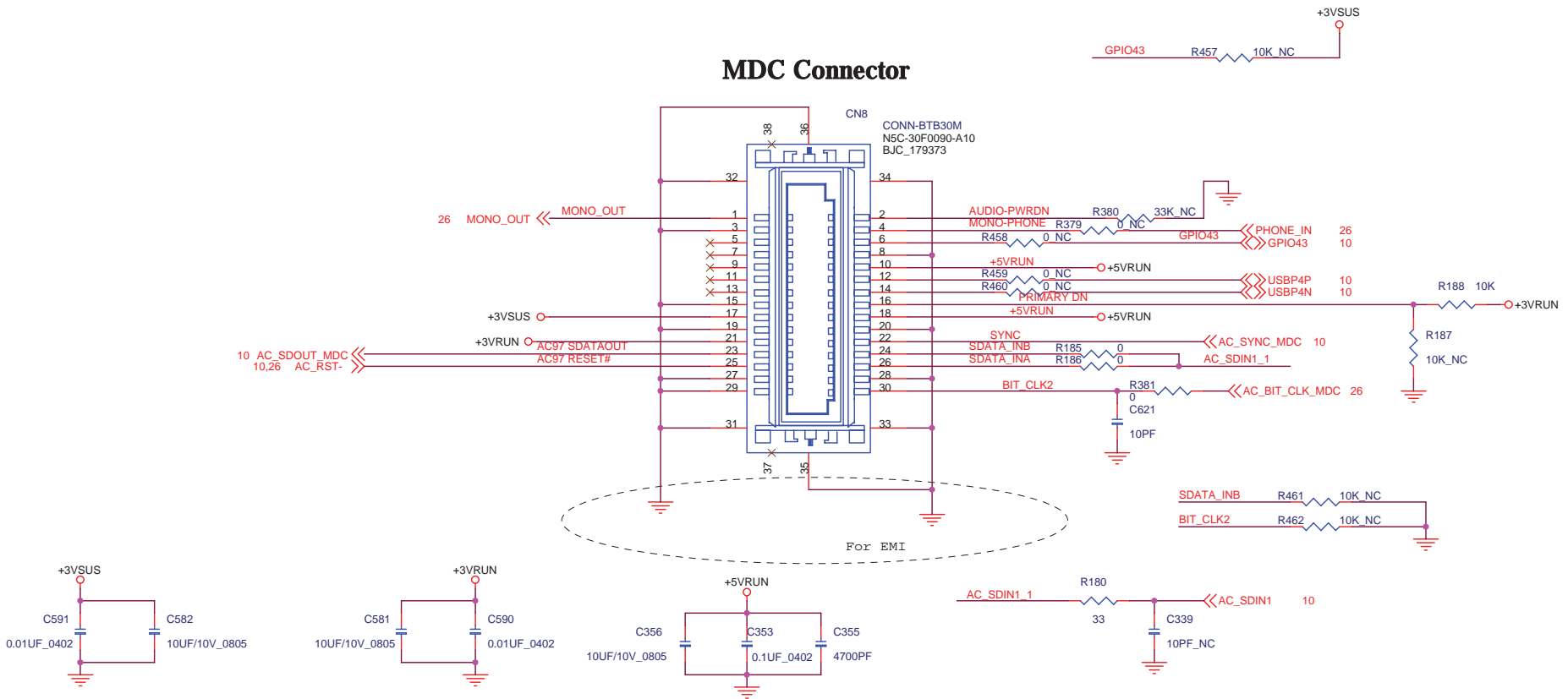
Title: **MINI PCI**

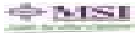
Size B	Document Number	Rev
	<b>MS-1010</b>	0.C

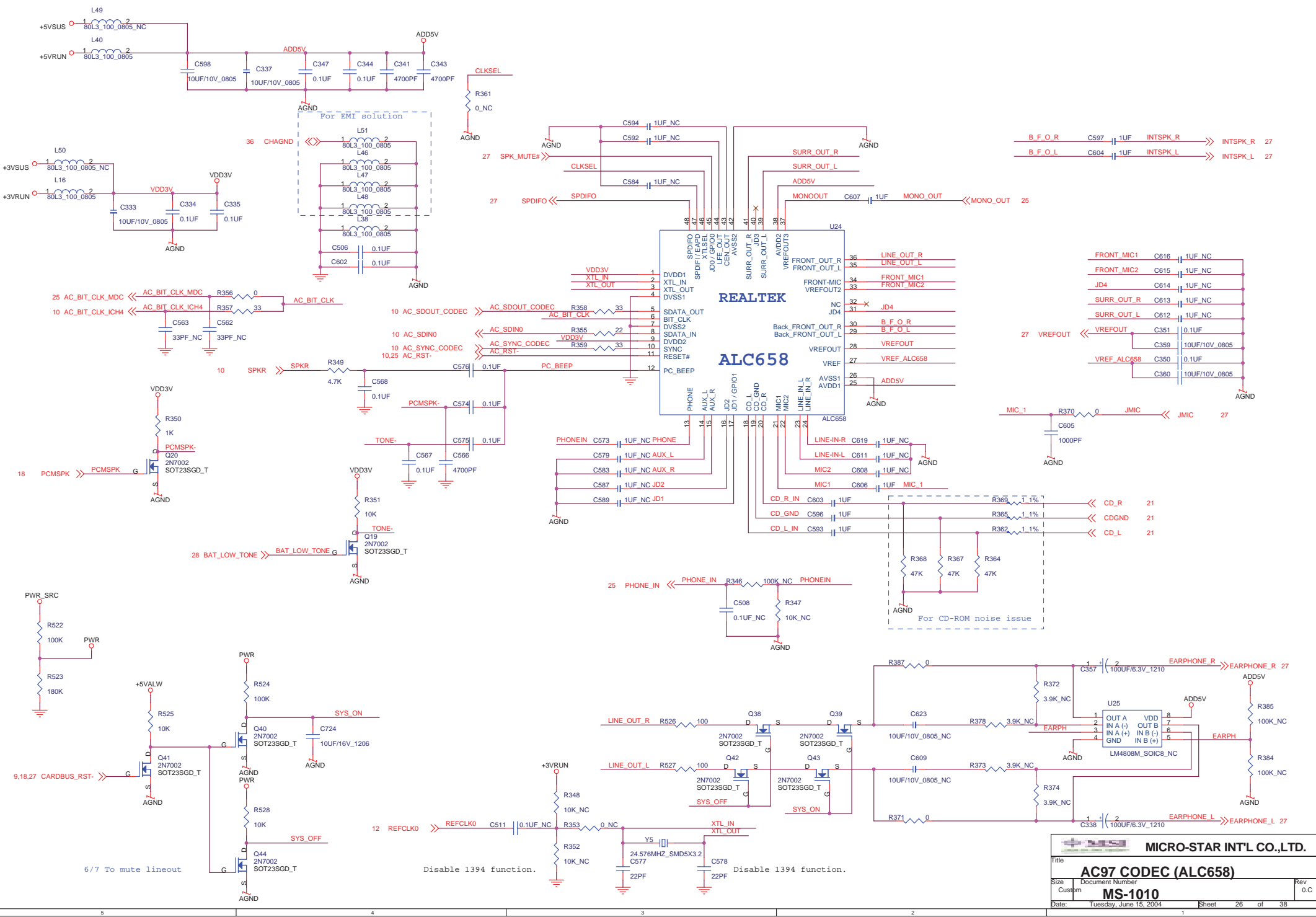
Date: Tuesday, June 15, 2004 Sheet 24 of 38

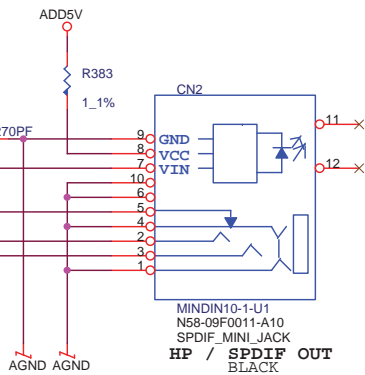
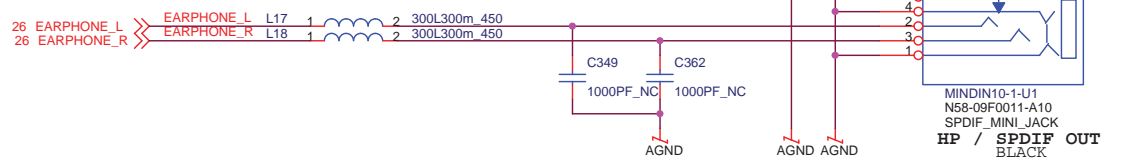
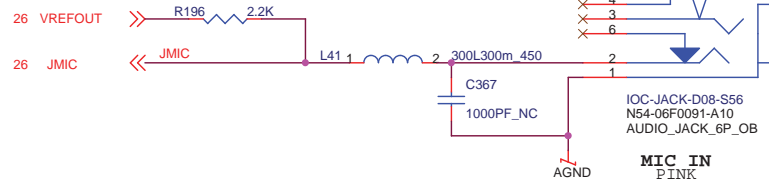
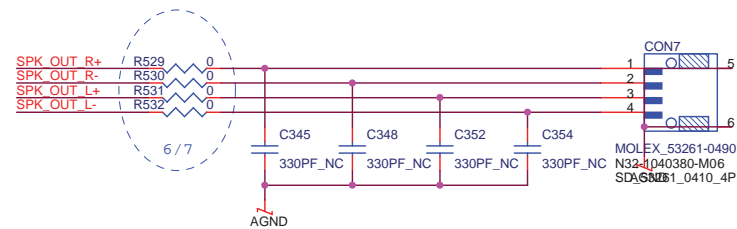
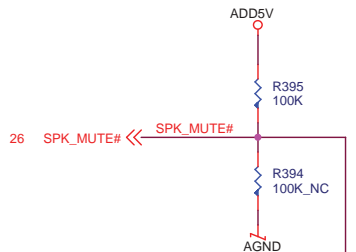
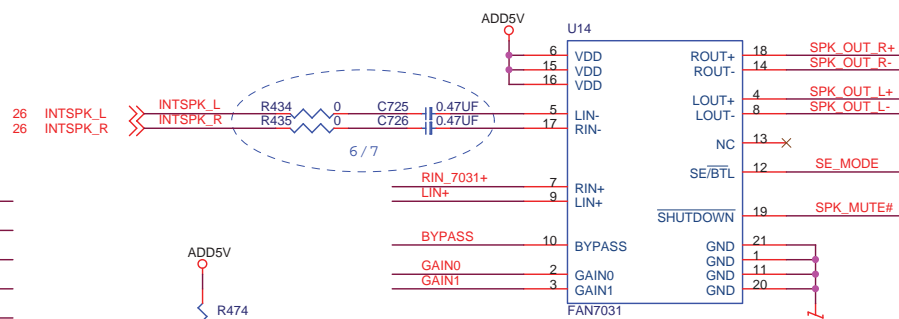
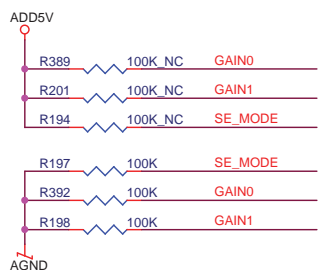
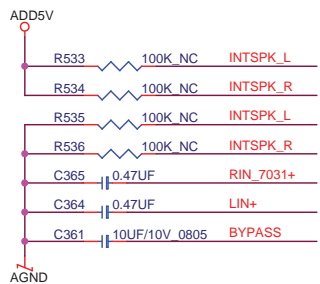
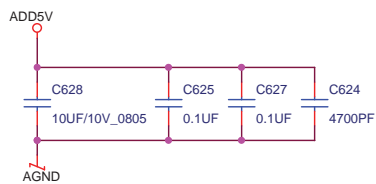


# MDC Connector



 <b>MICRO-STAR INT'L CO.,LTD.</b>	
Title	
<b>MDC Connector</b>	
Size	Document Number
B	<b>MS-1010</b>
Date:	Tuesday, June 15, 2004
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Rev	0.C





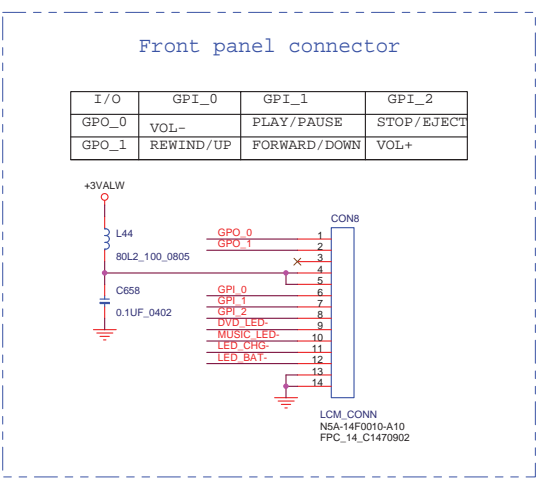
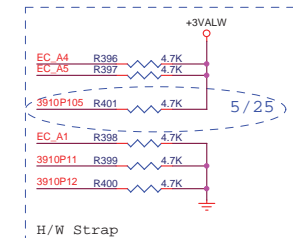
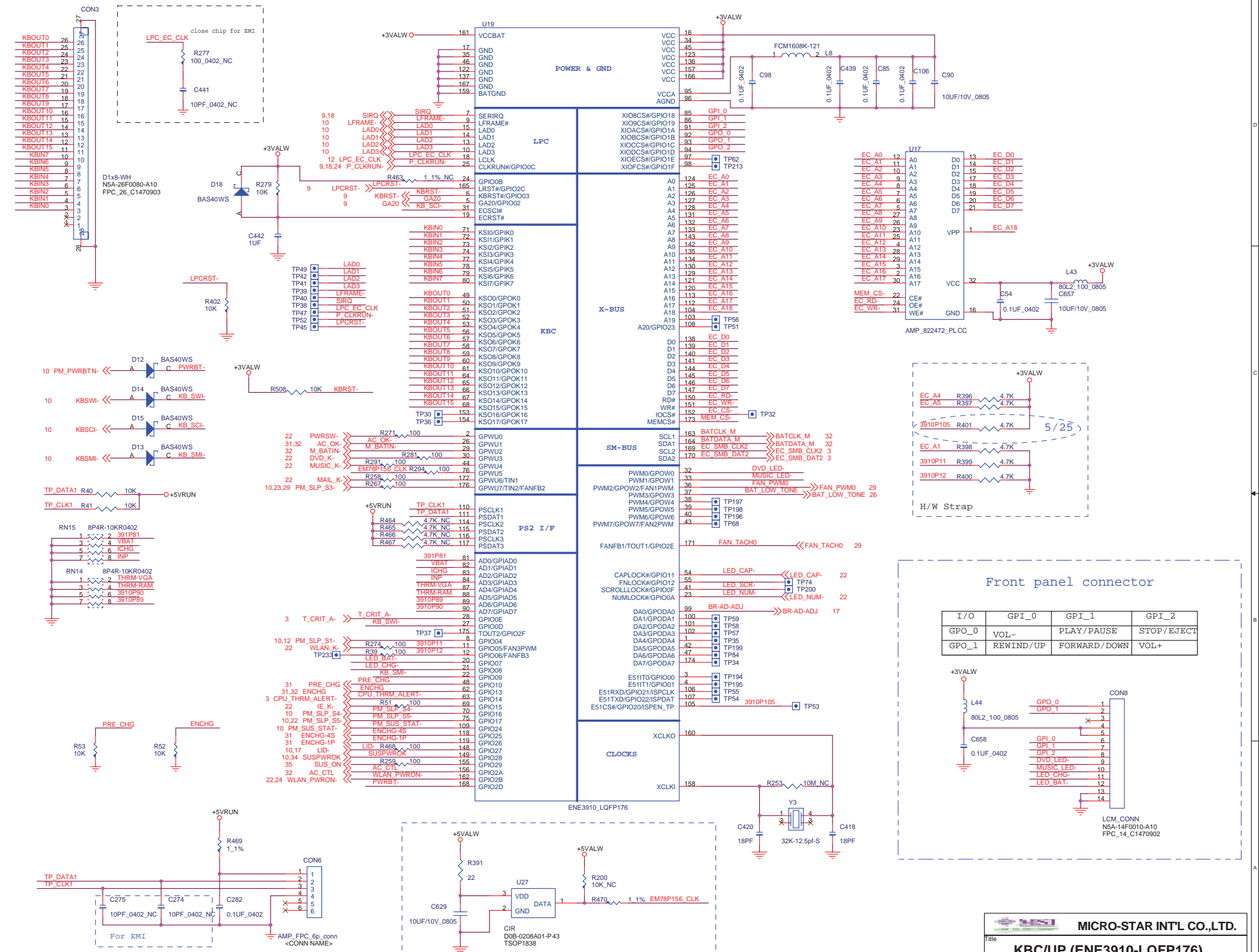
Av	GAIN0	GAIN1	SE/BTL#
6dB	0	0	0
10dB	0	1	0
15.6dB	1	0	0
21.6dB	1	1	0
4.3dB	X	X	1

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

Title: **AUDIO AMP (FAN7031)**

Size B Document Number: **MS-1010** Rev 0.C

Date: Tuesday, June 15, 2004 Sheet 27 of 38



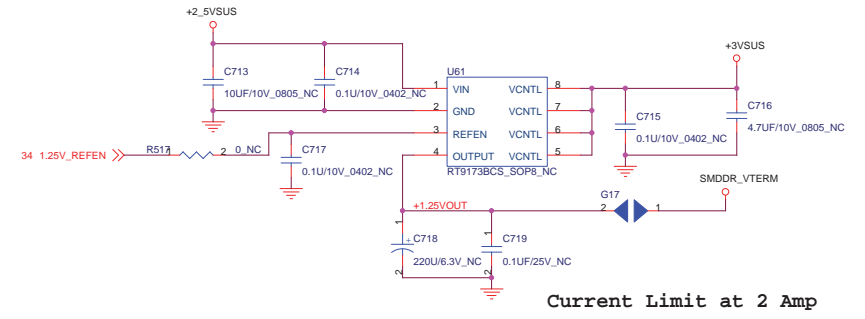
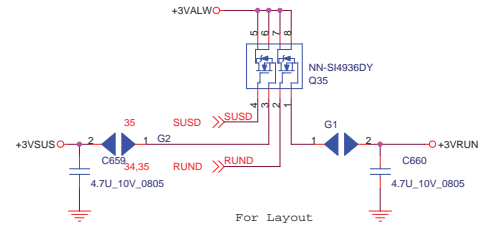
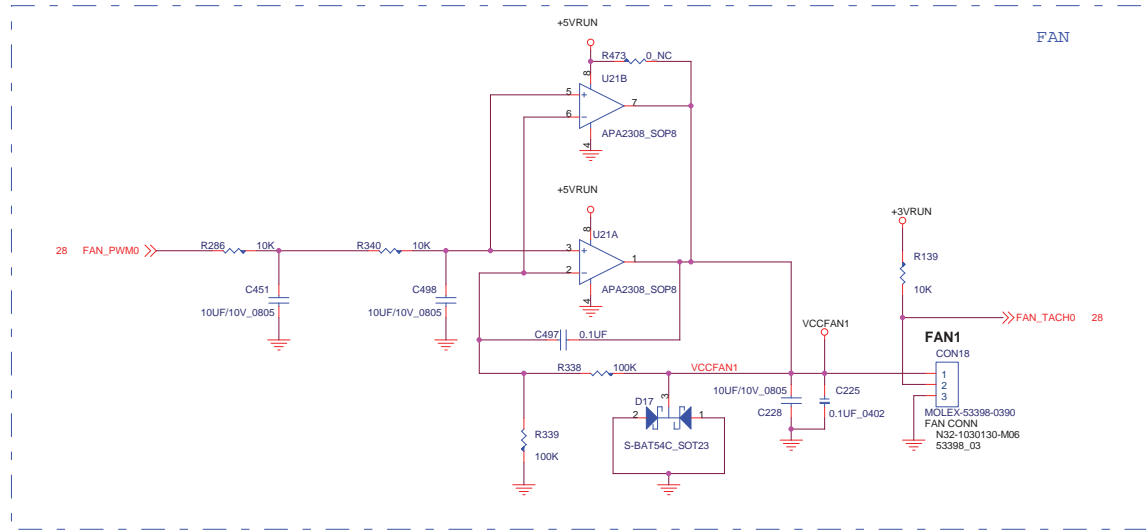
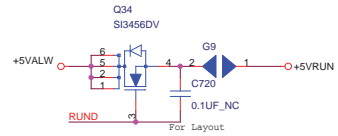
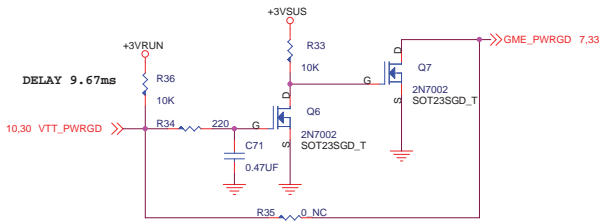
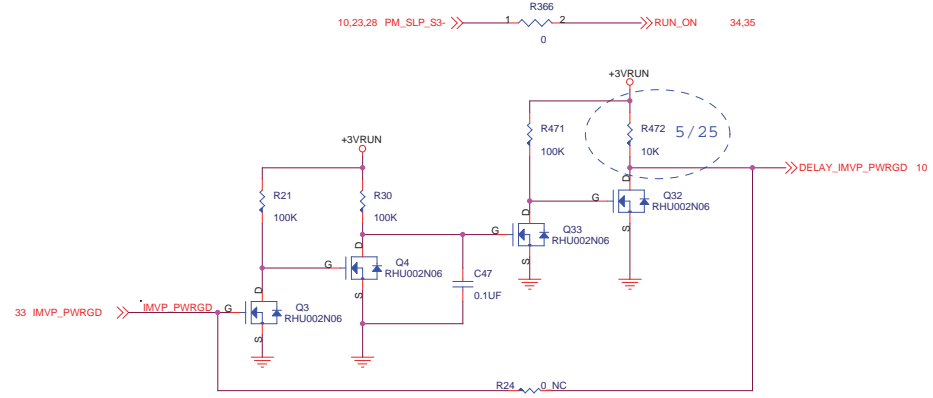
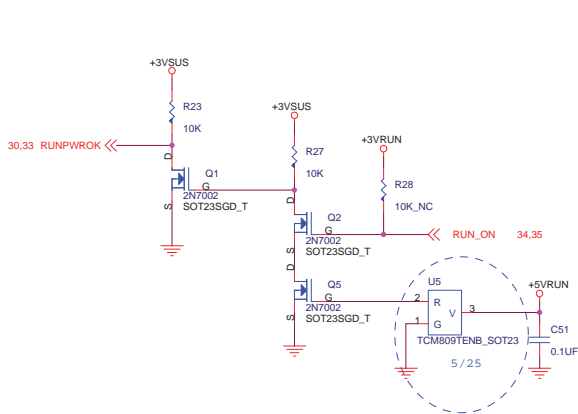
**MICRO-STAR INT'L CO.,LTD.**

File: **KBC/UP (ENE3910-LQFP176)**

Size: 103,890 bytes, Date: 15/05/2004, Sheet: 28 of 38

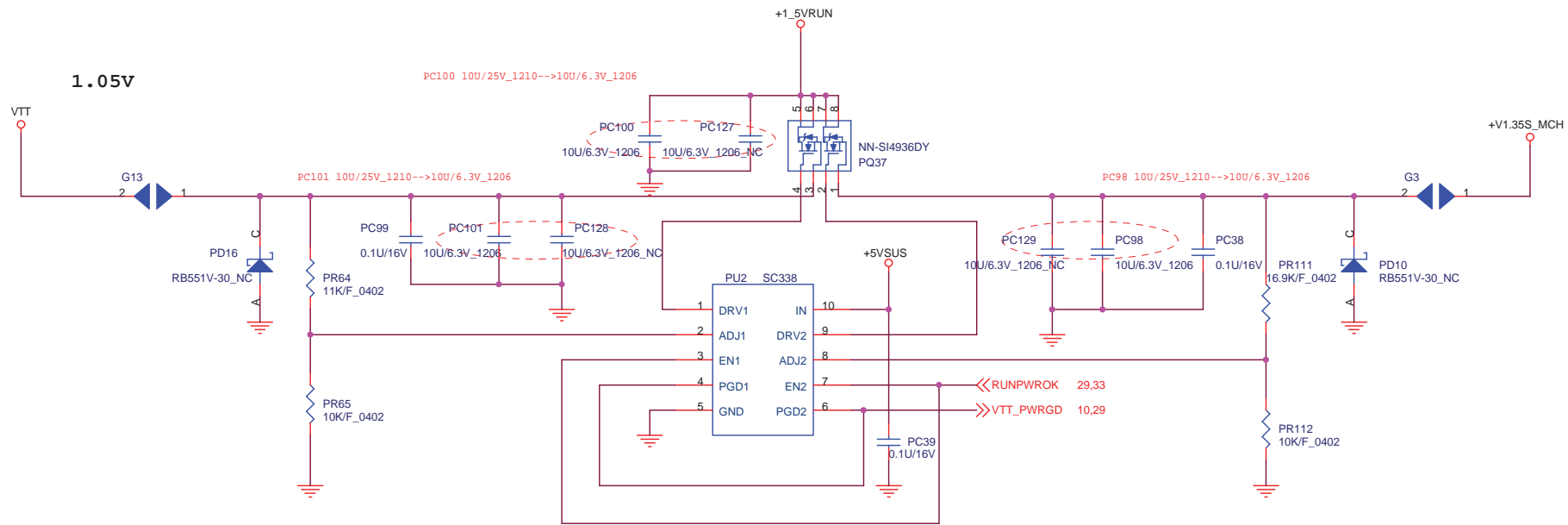
Customer: **MS-1010**

Rev: 0.C

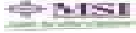


Current Limit at 2 Amp

MICRO-STAR INT'L CO.,LTD.	
Title	POWER GOOD & FAN
Size	Document Number
Custom	MS-1010
Date:	Tuesday, June 15, 2004
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Rev	0.C

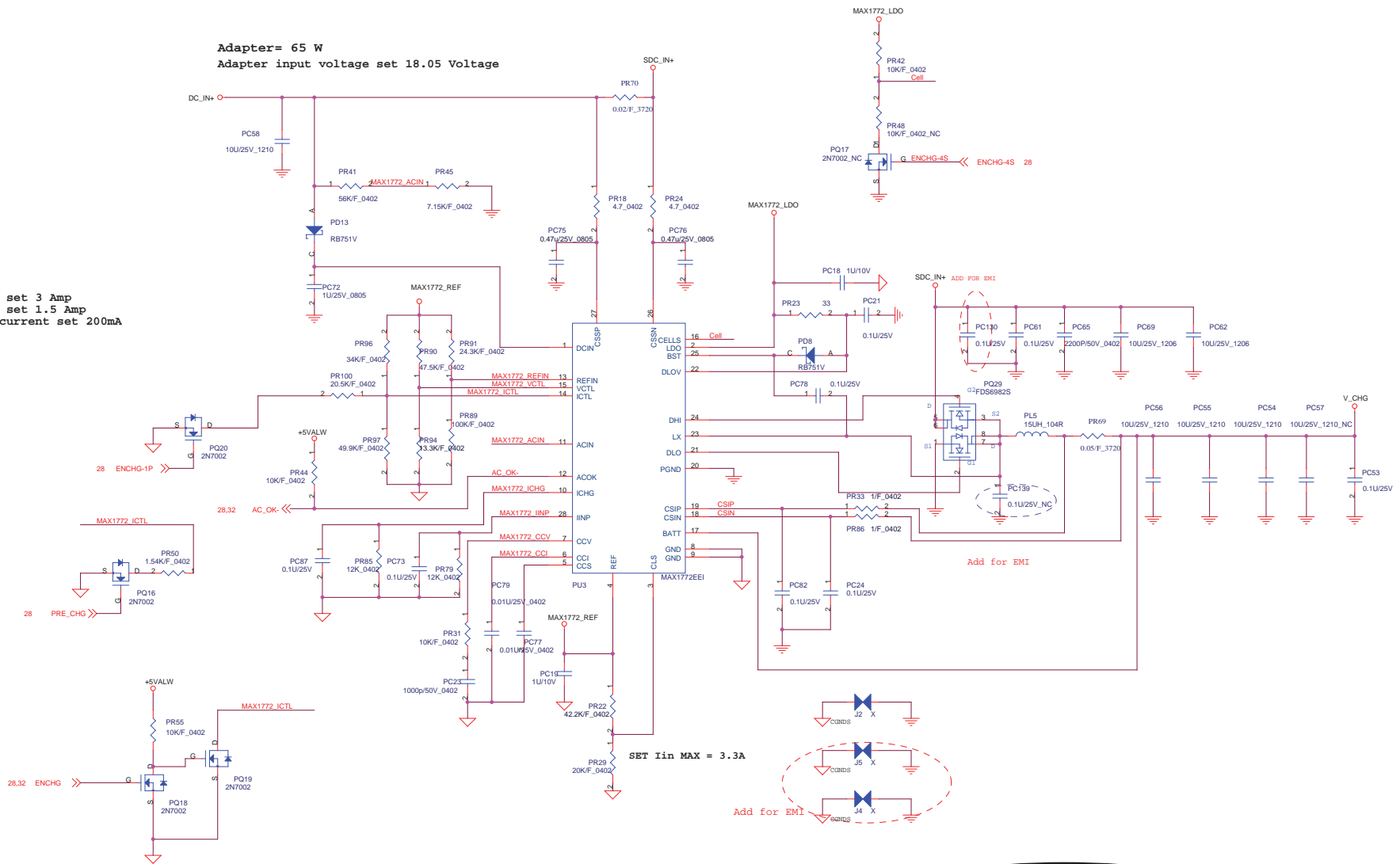


1.20V - GM, PR2=14.0K/F  
 1.35V - GM+ PR2=16.9K/F

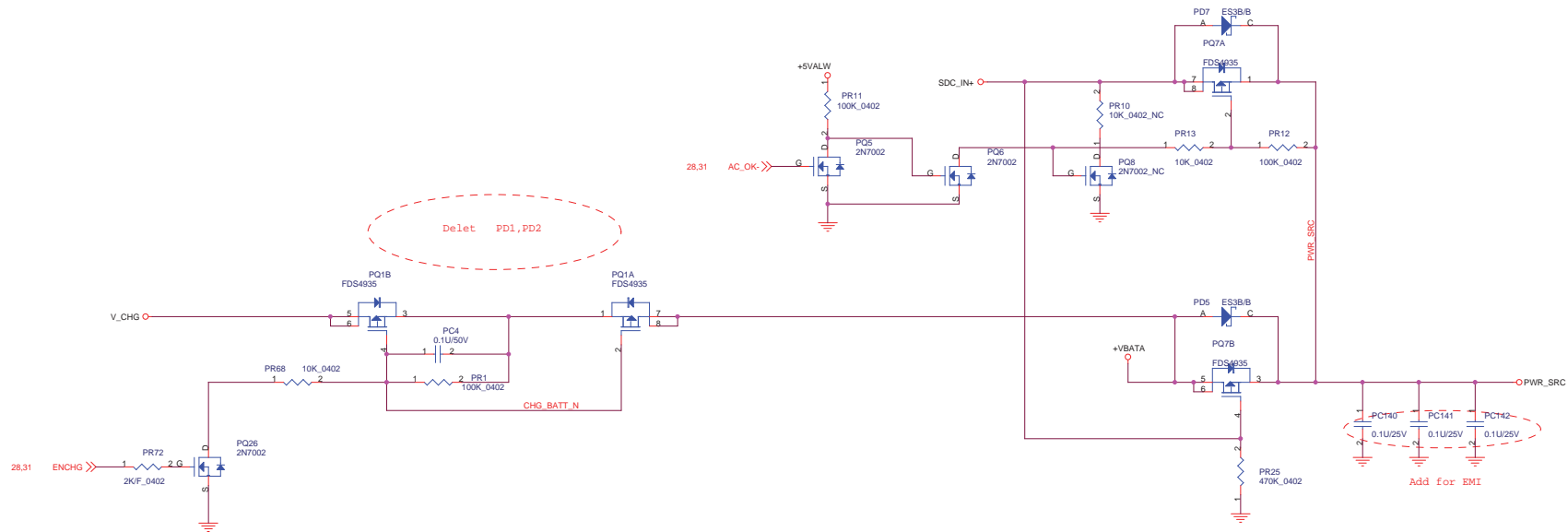
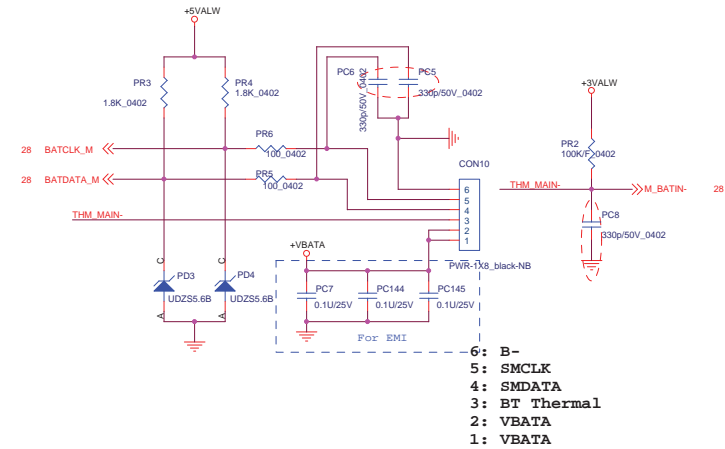
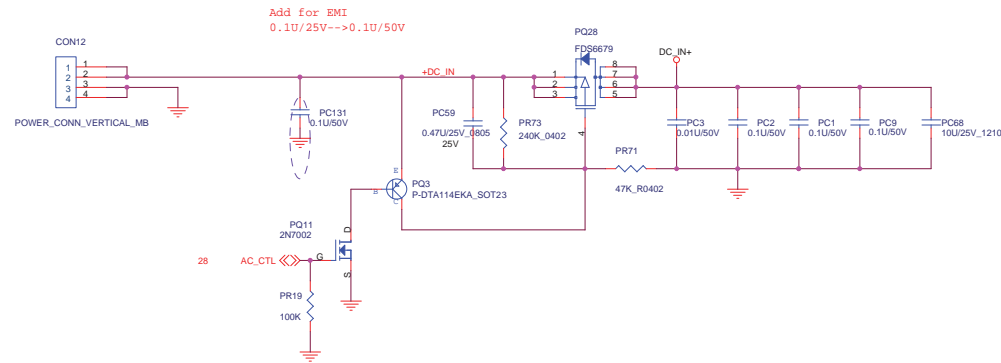
 MICRO-STAR INT'L CO.,LTD.	
Title <b>VTT &amp; 1.35V &amp; RUN POWER</b>	
Size B	Document Number <b>MS-1010</b>
Date: Tuesday, June 15, 2004	Rev 0.B
Sheet 30	of 38

Adapter= 65 W  
 Adapter input voltage set 18.05 Voltage

4S2P: Charge current set 3 Amp  
 4S1P: Charge current set 1.5 Amp  
 Pre-charger: Charge current set 200mA

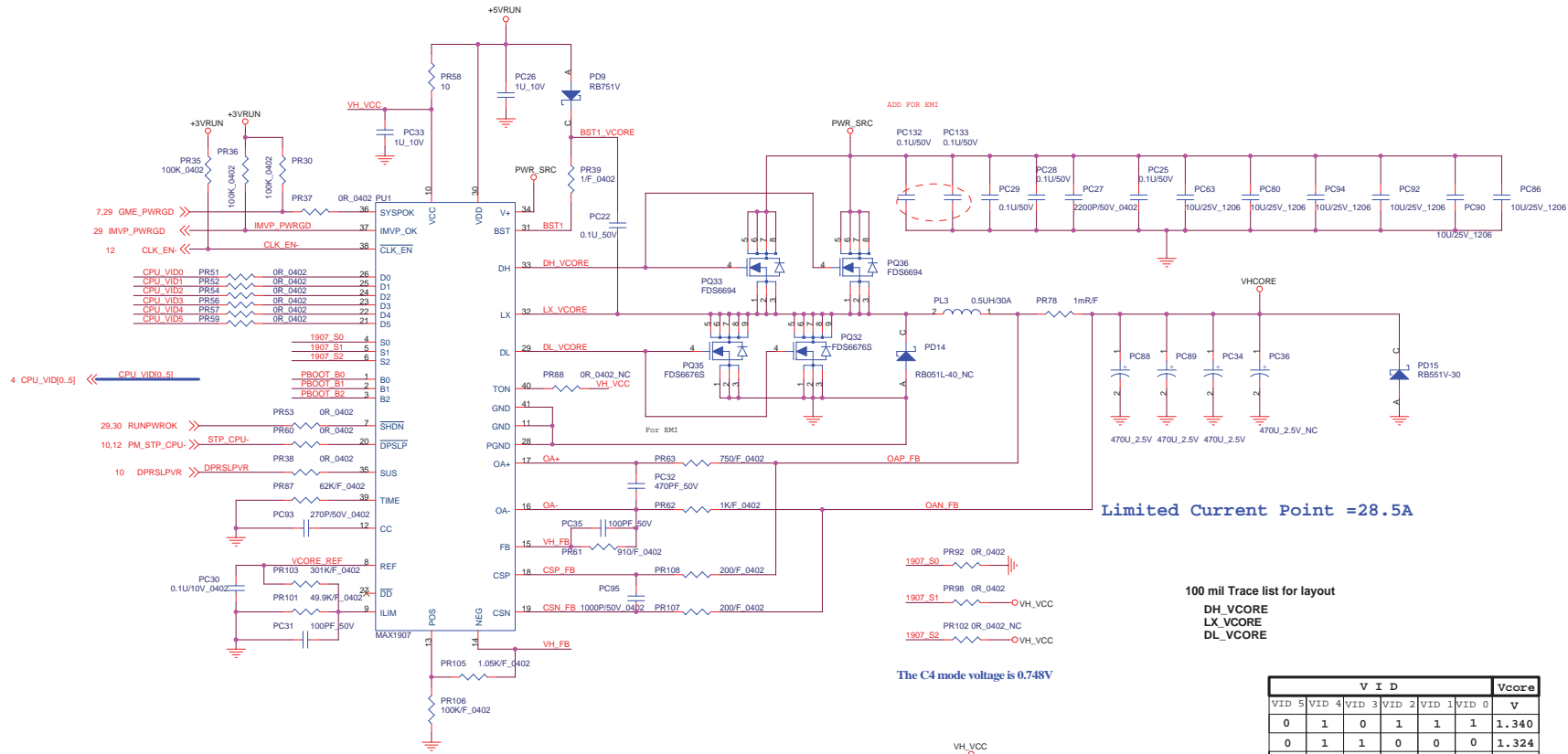


	ENCHG-1P	PRE_CHG	ENCHG	
Pre-charge	0	1	1	Pre-charge
Fast charge	0	0	1	4S2P
Fast charge	1	0	1	4S1P
STOP CHARGE	0	0	0	STOP CHARGE

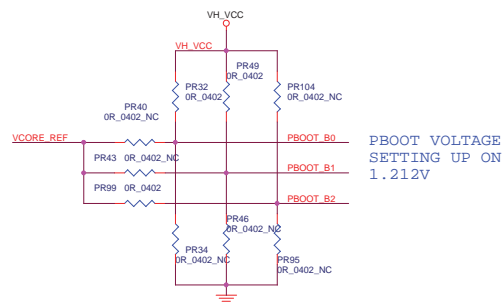


MICRO-STAR INT'L CO.,LTD.		
Title	Battery Select	
Size	Document Number	Rev
C	MS-1010	0.B
Date	Tuesday, June 15, 2004	Sheet 32 of 38





The C4 mode voltage is 0.748V



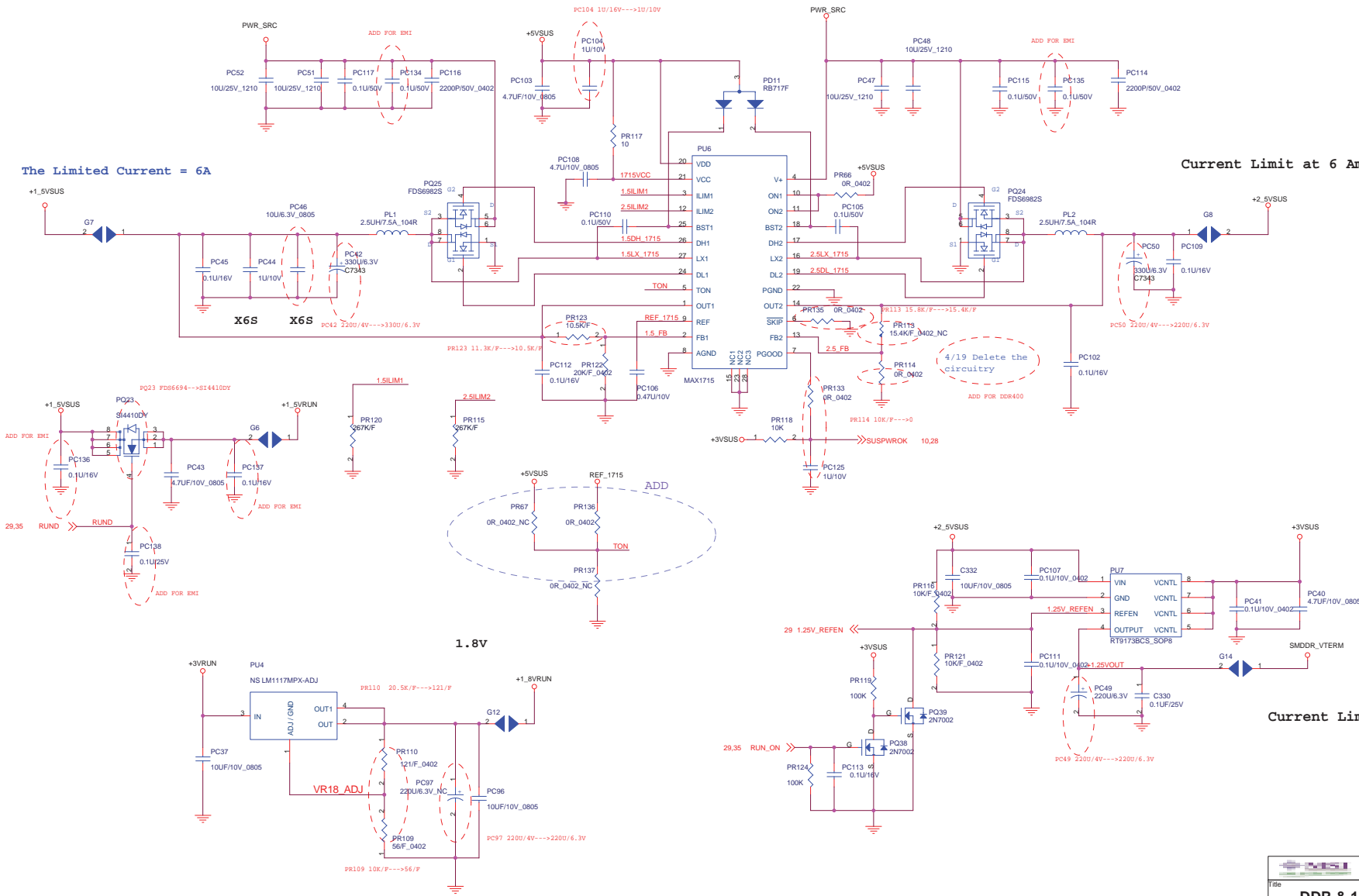
PBOOT VOLTAGE  
SETTING UP ON  
1.212V

100 mil Trace list for layout  
DH\_VCORE  
LX\_VCORE  
DL\_VCORE

V I D						Vcore
VID 5	VID 4	VID 3	VID 2	VID 1	VID 0	V
0	1	0	1	1	1	1.340
0	1	1	0	0	0	1.324
0	1	1	0	1	0	1.292
0	1	1	1	0	0	1.260
0	1	1	1	0	1	1.244
0	1	1	1	1	1	1.212
1	0	0	0	0	1	1.180
1	0	0	0	1	1	1.148
1	0	0	1	1	0	1.100
1	0	1	0	0	1	1.052
1	0	1	0	1	1	1.020
1	0	1	1	1	0	0.972
1	1	0	0	0	0	0.940

The Limited Current = 6A

Current Limit at 6 Amp

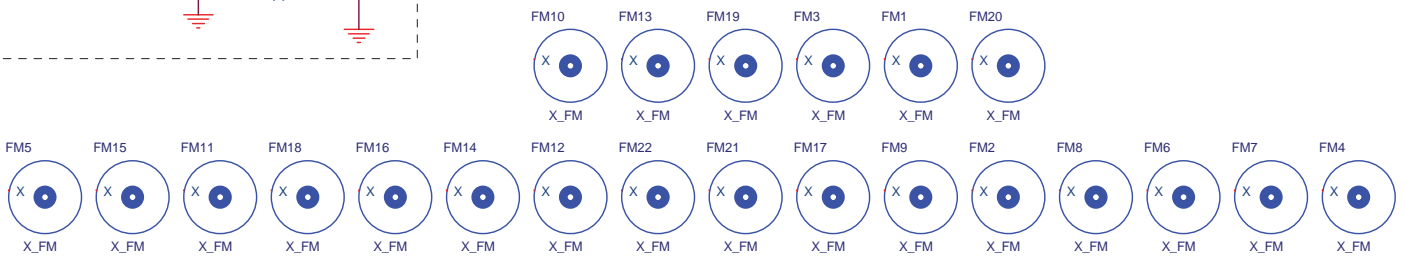
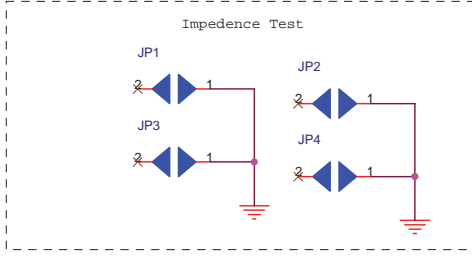
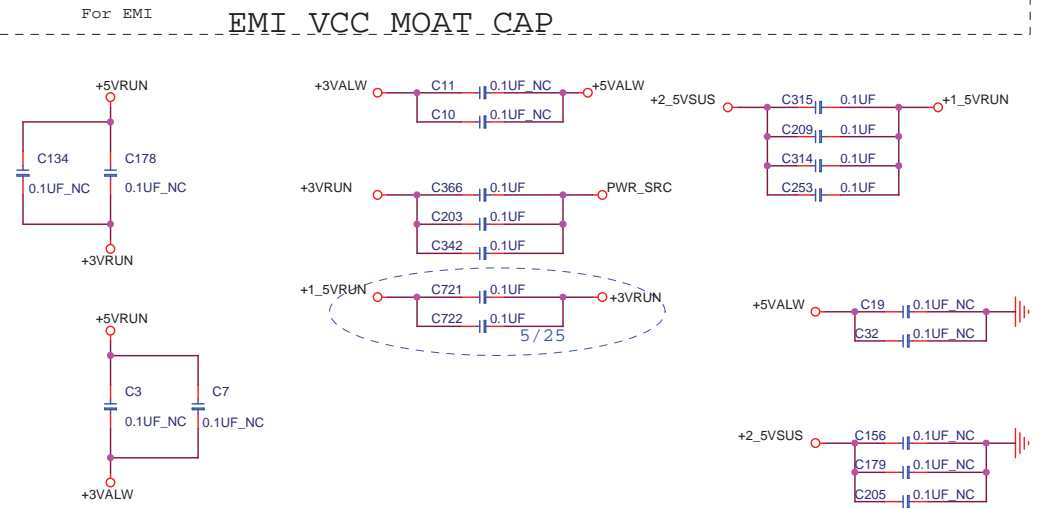
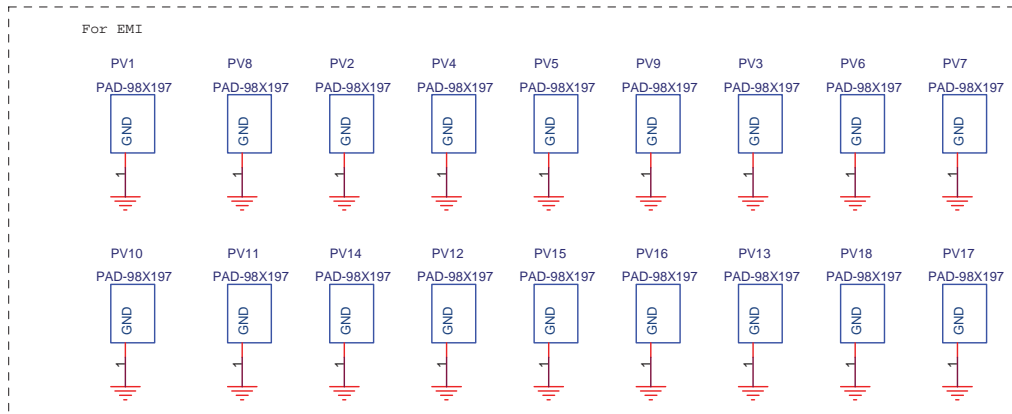
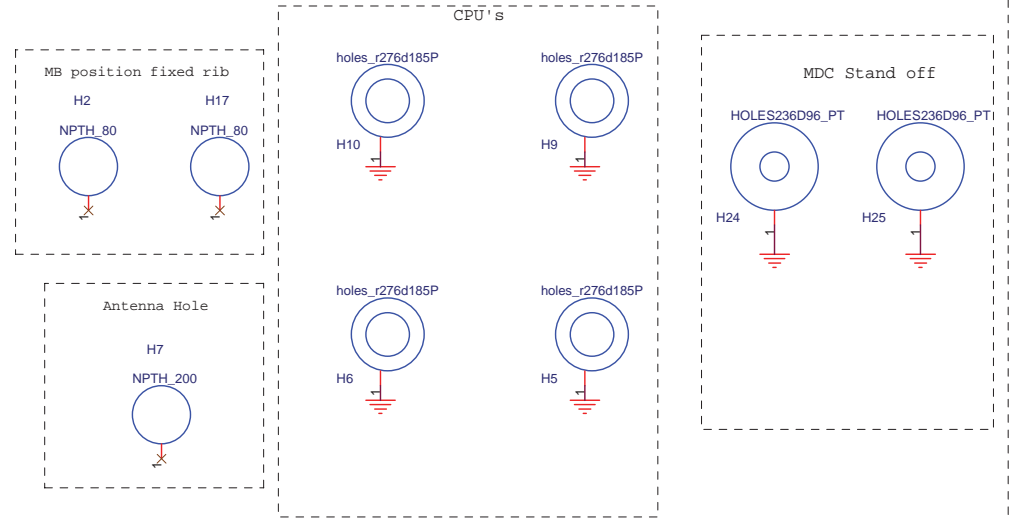
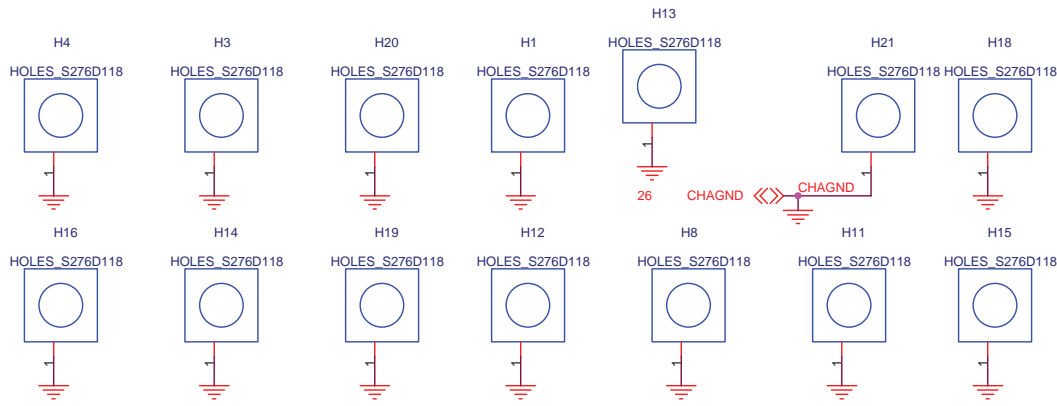


1.8V

Current Limit at 2 Amp

MICRO-STAR INT'L CO.,LTD.			
Title	DDR & 1.8V & 1.5V POWER		
Size	Document Number	Rev	
C	MS-1010	0.A	
Date	Tuesday, June 15, 2004	Sheet	34 of 38





		<b>MICRO-STAR INT'L CO.,LTD.</b>	
Title			
<b>Screw</b>			
Size	Document Number		Rev
B	<b>MS-1010</b>		0.C
Date:	Tuesday, June 15, 2004	Sheet	36 of 38

5

4

3

2

1

D

D

C

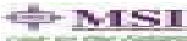
C

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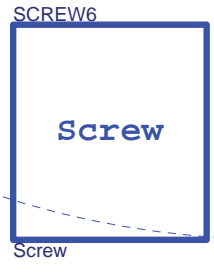
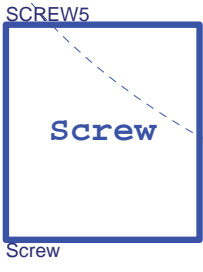
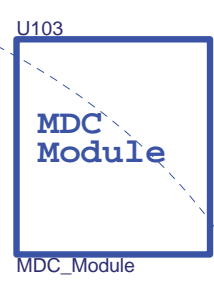
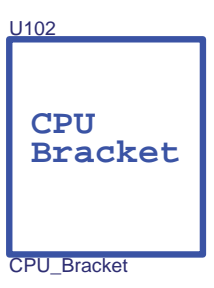
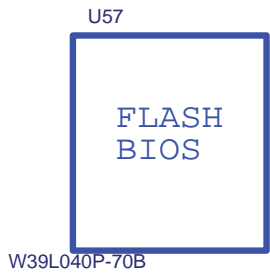
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