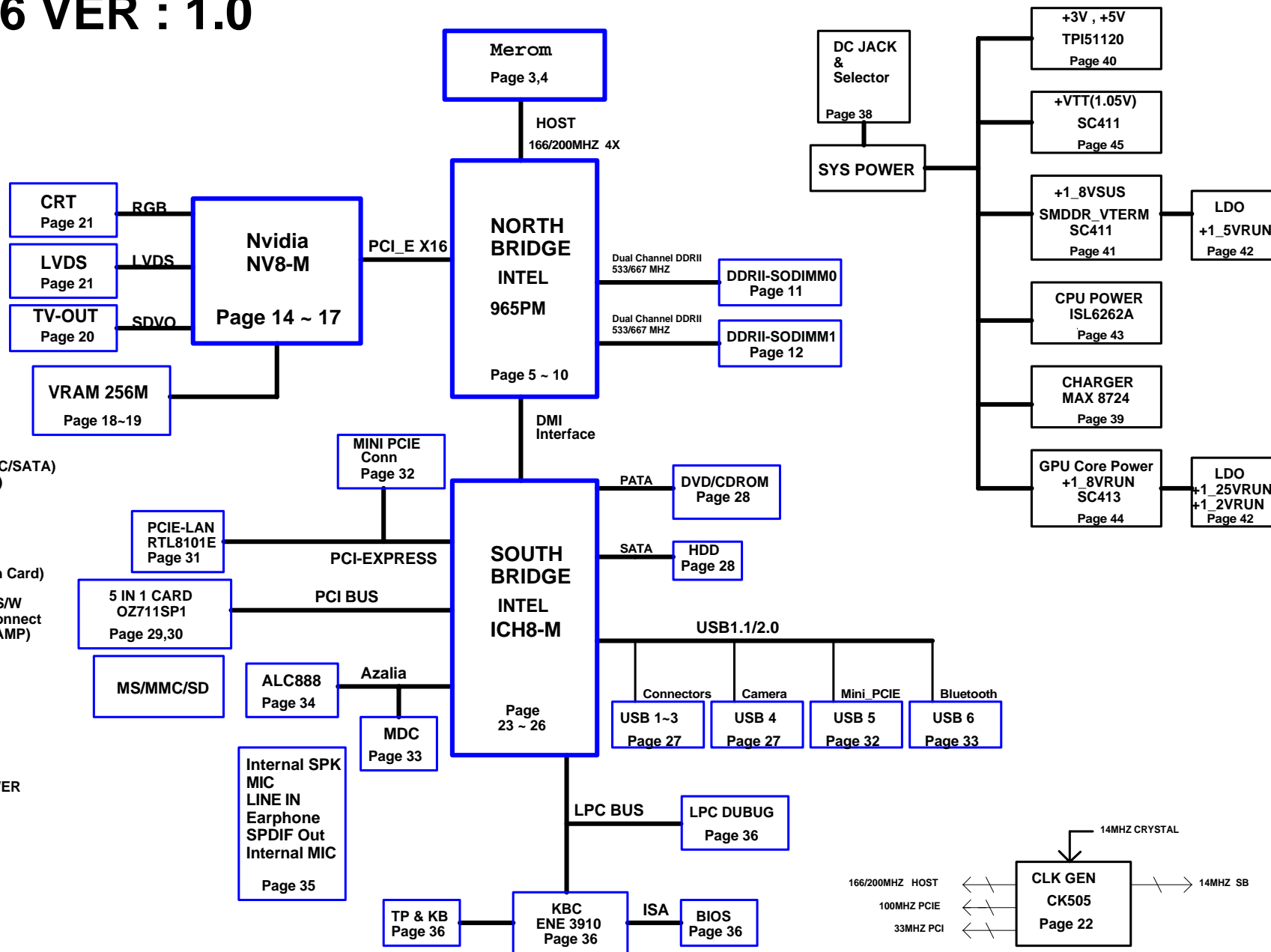


# MS-1636 VER : 1.0

- 01:BLOCK DIAGRAM
- 02:PLATFORM
- 03:Merom-1 CPU (HOST BUS)
- 04:Merom-2 CPU (POWER/GND)
- 05:i965PM-1 (HOST)
- 06:i965PM-2 (DMI/VGA)
- 07:i965PM-3 (DDR2)
- 08:i965PM-4 (Power-1)
- 09:i965PM-5 (Power-2)
- 10:i965PM-6 (GND)
- 11:DDR2\_SODIMM0
- 12:DDR2\_SODIMM1
- 13:DDR2 Termination
- 14:NB8M-1 (HOST INTERFACE)
- 15:NB8M-2 (IO INTERFACE)
- 16:NB8M-3 (MEM INTERFACE)
- 17:NB8M-4 (Power & GND)
- 18:GDDR3 32MX16 BGA\_A
- 19:GDDR3 32MX16 BGA\_B
- 20:S-VIDEO Connect
- 21:CRT & LVDS Connect
- 22:Clock GEN (SLG8P512)
- 23:ICH8-M-1 (CPU/IDE/Azalia/LPC/SATA)
- 24:ICH8-M-2 (PCI/USB/PCIE/DMI)
- 25:ICH8-M-3 (SMBUS / GPIO)
- 26:ICH8-M-4 (POWER/GND)
- 27:USB2.0 Connect & Camera
- 28:HDD & CDROM Connect
- 29:OZ711SP1-1 (PCI / 1394)
- 30:OZ711SP1-2 (CardBus / Flash Card)
- 31:RTL8111B (PCI-E Giga LAN)
- 32:MiniPCI-E Connect & LED & S/W
- 33:MDC Connect & Bluetooth Connect
- 34:ALC888(Audio) & APA2031 (AMP)
- 35:SPK & HP & MIC
- 36:ENE3910(KBC)
- 37:POWER GOOD & FAN
- 38:Battery Select
- 39:Battery Charger
- 40:System Power (3V/5V)
- 41:DDR POWER (1.8V)
- 42:POWER (1.5V / 1.25V)
- 43:CPU POWER
- 44:GFX\_CORE & 1\_8VRUN POWER
- 45:VTT POWER
- 46:Screw
- 47:EMI Suggest
- 48:Launch Board for Channel
- 49:TP Board for Channel
- 50 Power on Sequency

P30-1636110-D05, 崑崙  
P30-1636110-T53, 健鼎  
P30-1636110-H73, 瀚宇博德



Voltage Rails

Voltage	Description	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
V_CORE	Core Voltage for Processor	VR_ON
+VTT	1.05 rail for Processor & 945GM I/O	PM_SLP_S3# ( RUN_ON )
+1_5VRUN	1.5V switched power rail(off in S3-S5)	RUN_ON(+1_8VSUS-LDO)
+1_25VRUN	1.25V power rail NB PLL and PXE (off in S3-S5)	NV_PWRON(+1_8VRUN-LDO)
+3VRUN	3.3V switched power rail(off in S3-S5)	RUND ( RUN_ON )
+5VRUN	5.0V switched power rail(off in S3-S5)	RUND (RUN_ON )
SMDDR_VTERM	0.9V DDR Termination voltage (off in S4-S5)	PM_SLP_S4# ( DIMM_ON )
+1_8VDIMM	1.8V power rail DDRII (off in S4-S5)	PM_SLP_S4# ( DIMM_ON )
+3VSUS	3.3V power rail (off in S4-S5)	SUS_ON
+5VSUS	5.0V power rail (off in S4-S5)	SUS_ON
+3VALW	3.3V always on power rail	PWR_SRC
+5VALW	5.0V always on power rail	PWR_SRC
+V5_AUDIO	5.0V Power rail Audio codec(off in S3-S5)	RUND
+G73M_CORE	Core Voltage for External Graphics NB8M	VGA-PGOOD
+1_8VRUN	1.8V power rail GDDRIII (off in S3-S5)	NV_DELAY_PWRON
+1_2VRUN_GFX	1.2V power rail NB8M PLL (off in S3-S5)	NV_PWRON(+1_8VRUN-LDO)

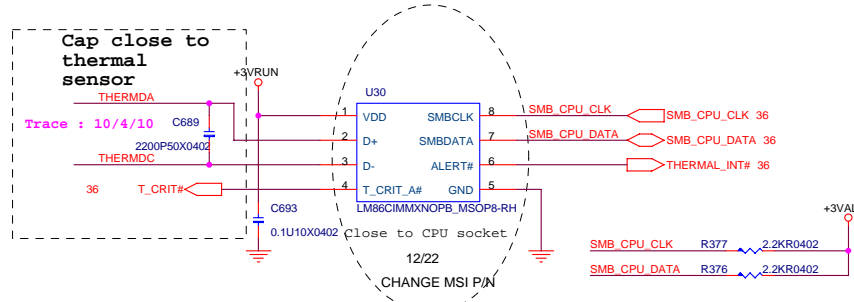
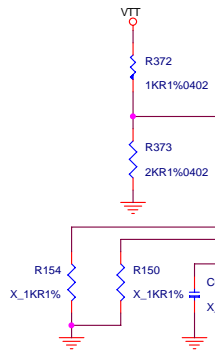
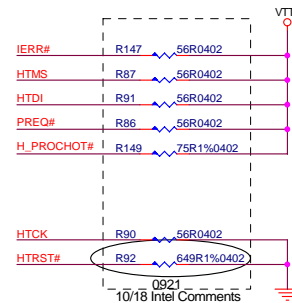
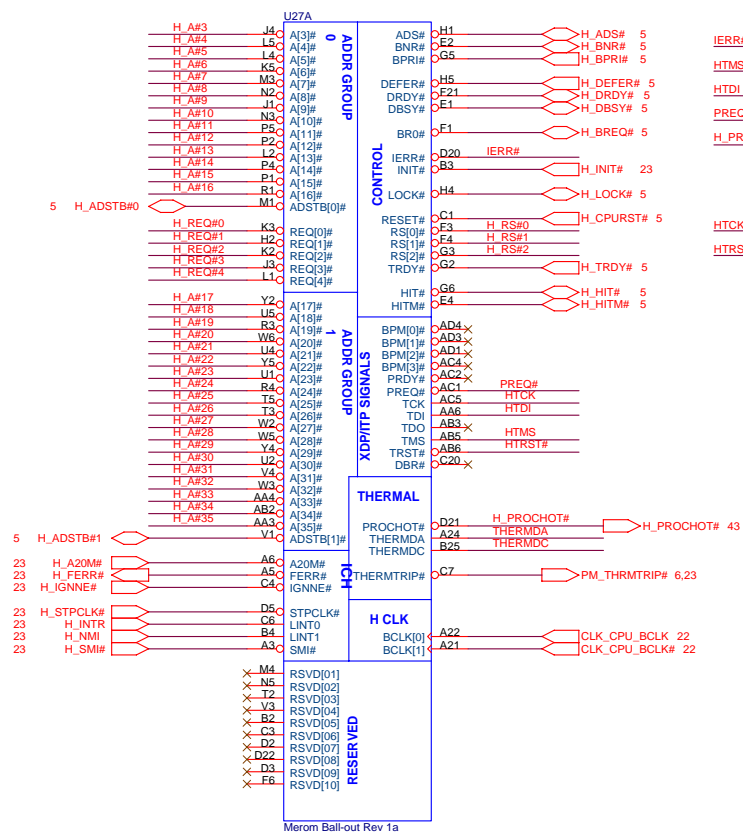
POWER STATES

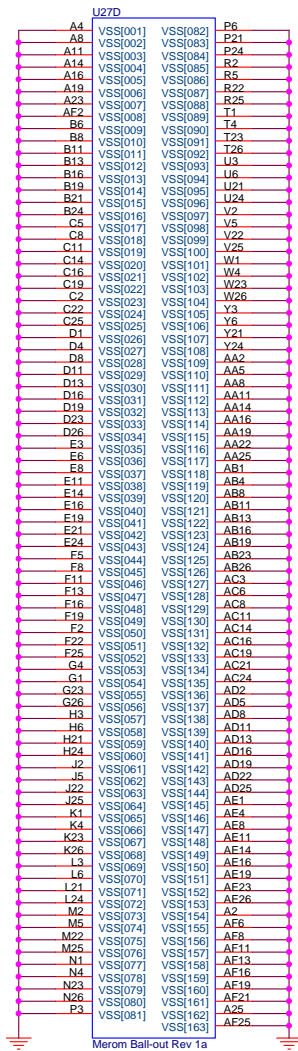
STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+V*ALWAYS	+V*SUS	+V*RUN	Clocks
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3( Suspend to RAM)	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4( Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 / Soft OFF	LOW	LOW	LOW	ON	OFF	OFF	OFF

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

5 H\_A#[35:3] H\_A#[35:3]  
5 H\_RS#[2:0] H\_RS#[2:0]  
5 H\_REQ#[4:0] H\_REQ#[4:0]

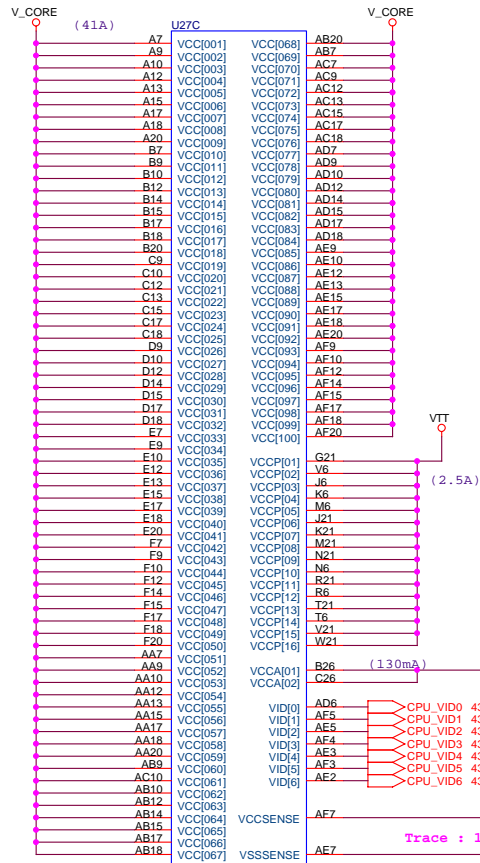
5 H\_D#[63:0] H\_D#[63:0]





Intel Recommend :  
1. 6 x 330uF (ESL = 0.8nH)  
20 x 22uF

MSI RD Recommend :  
Maybe can steal 10  
x 22uF



Trace width = 18mils  
Trace spacing = 7mils  
other spacing = 50mils  
length matched within 25mils  
Place R close to CPU within 1"

Trace > 20

Trace : 18/7/50

Trace width = 18mils

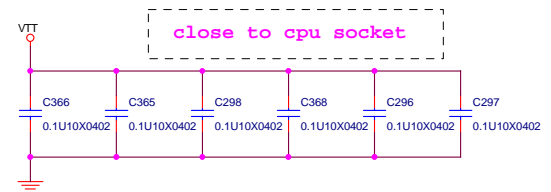
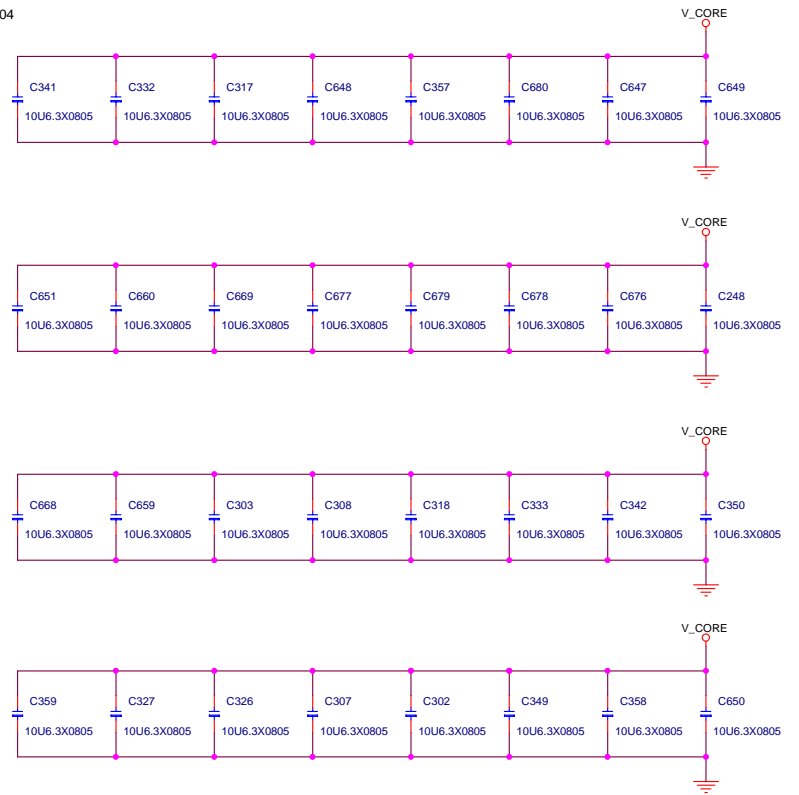
Trace spacing = 7mils

other spacing = 50mils

length matched within 25mils

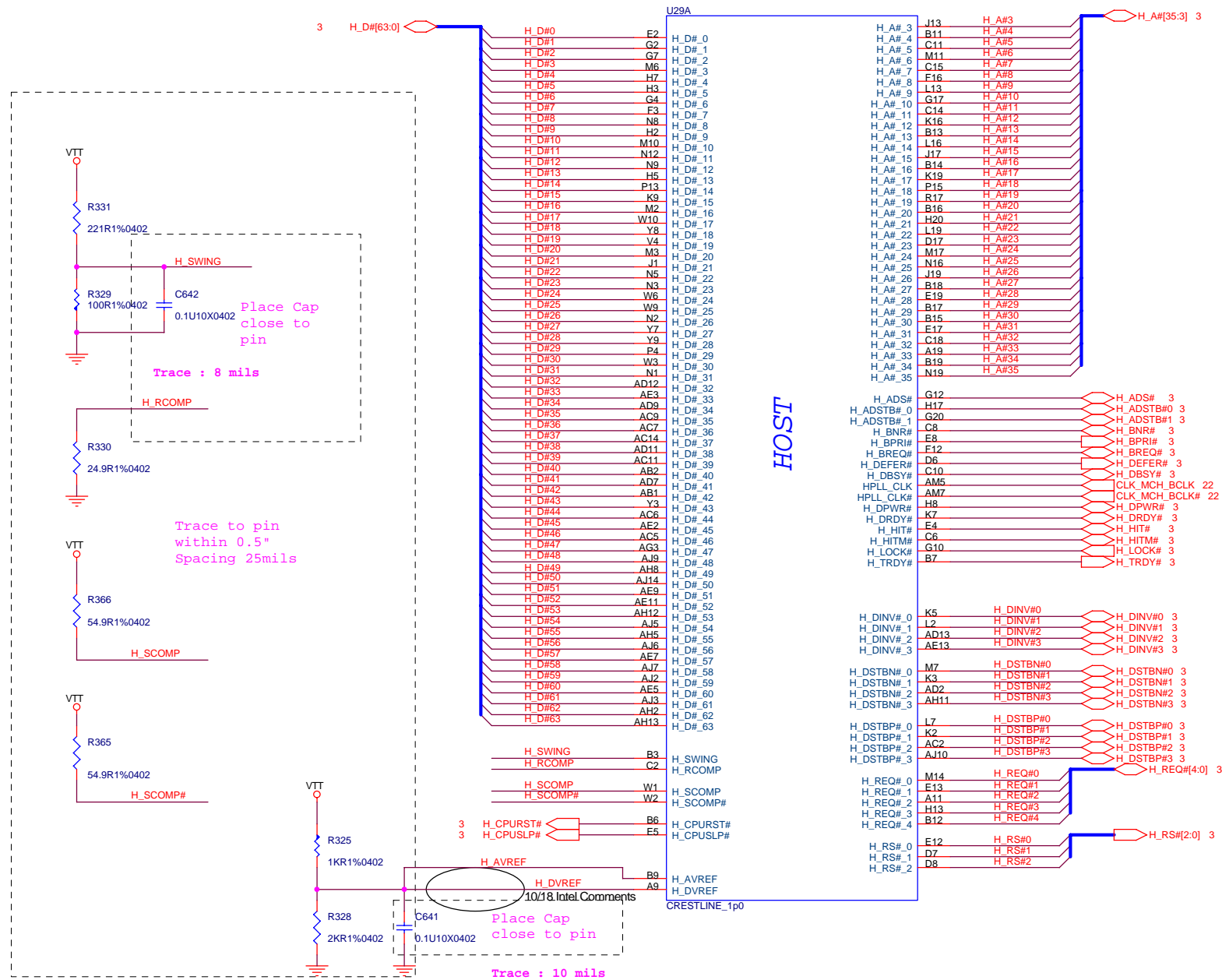
Place R close to CPU within 1"

10/04



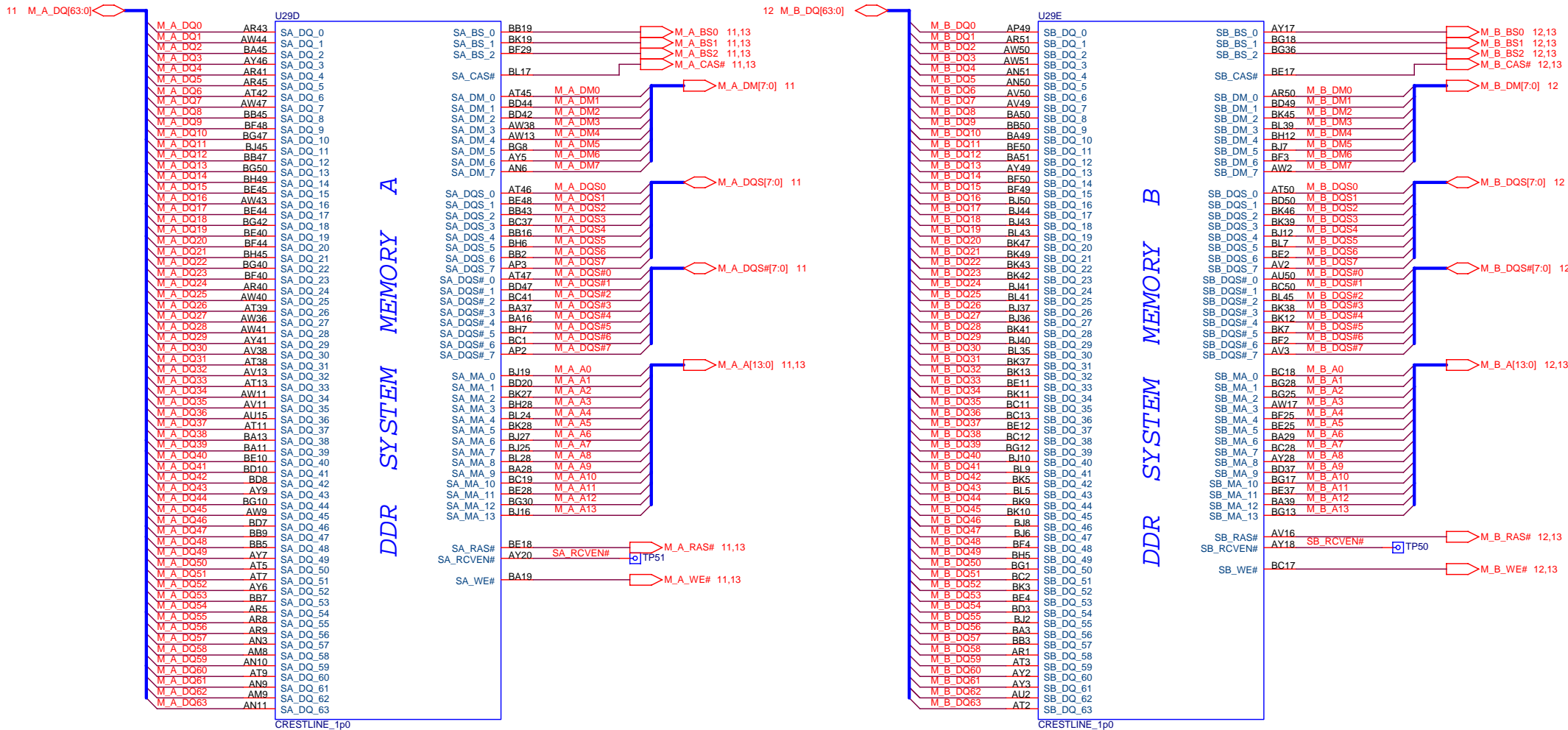
MSI CORPORATION

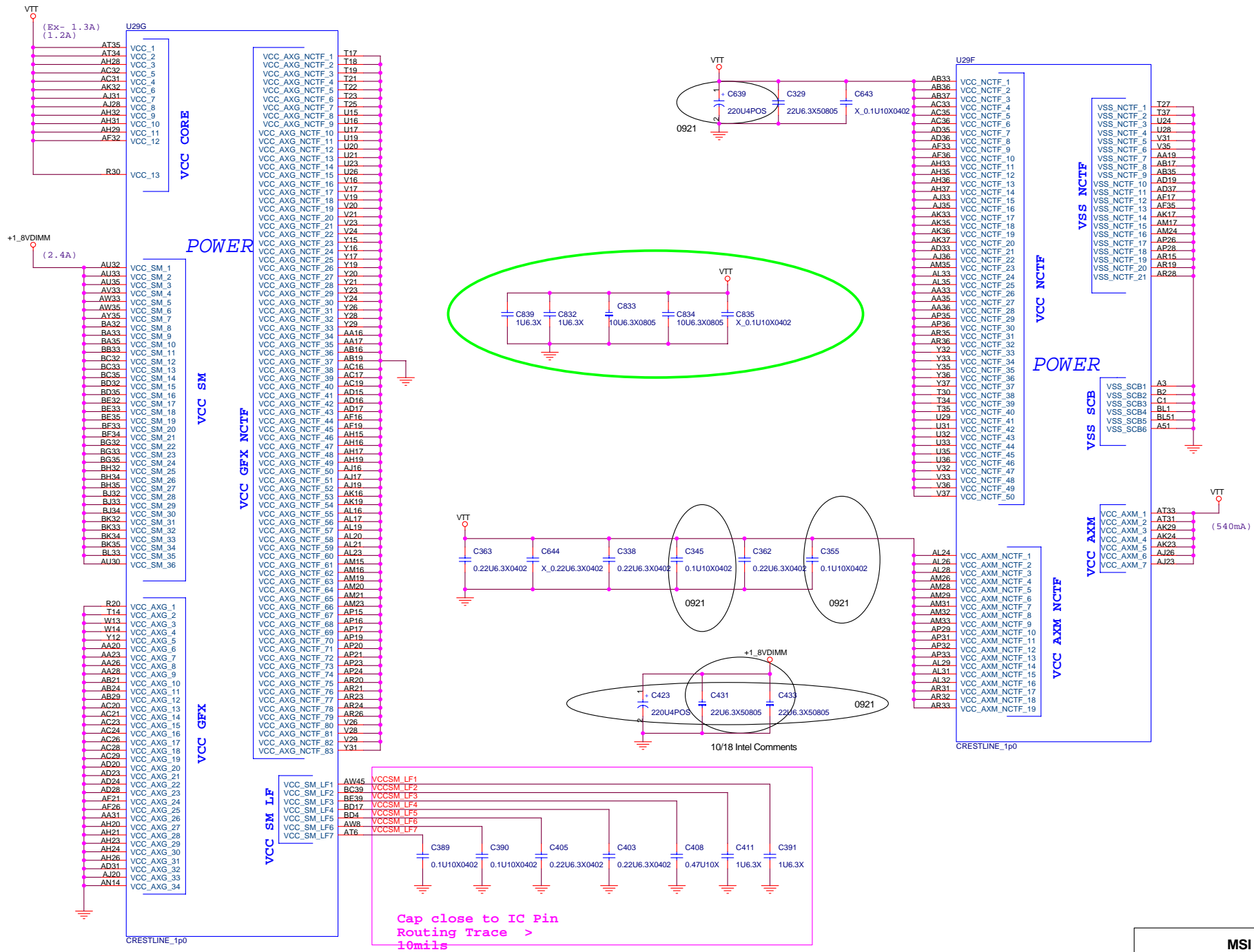
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Merom-2 (POWER/GND)			
Size	Document Number		Rev
Custom	MS-1636		0A
Date:	Tuesday, February 27, 2007	Sheet	4 of 51



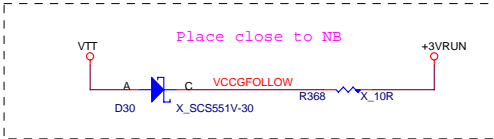


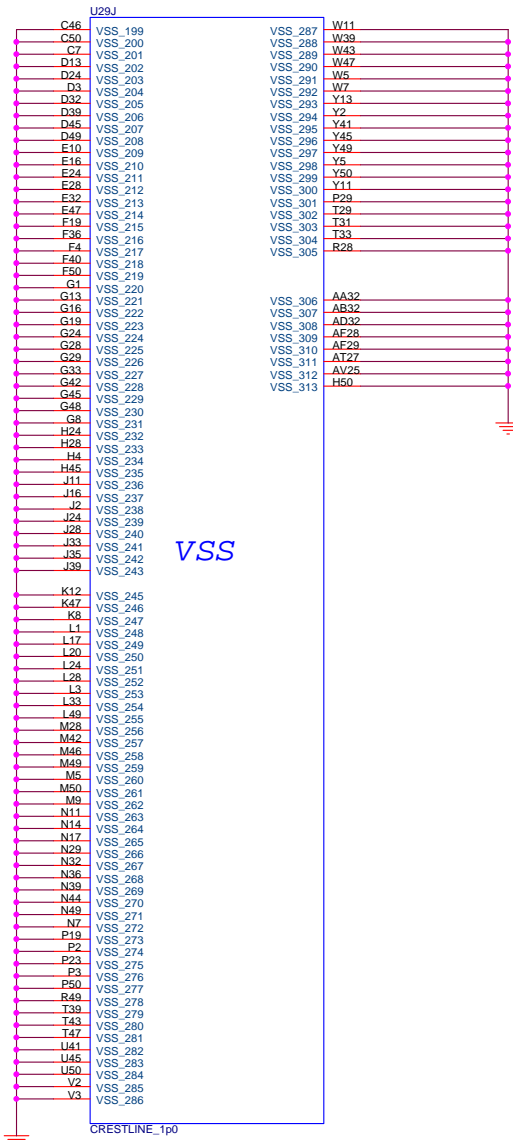
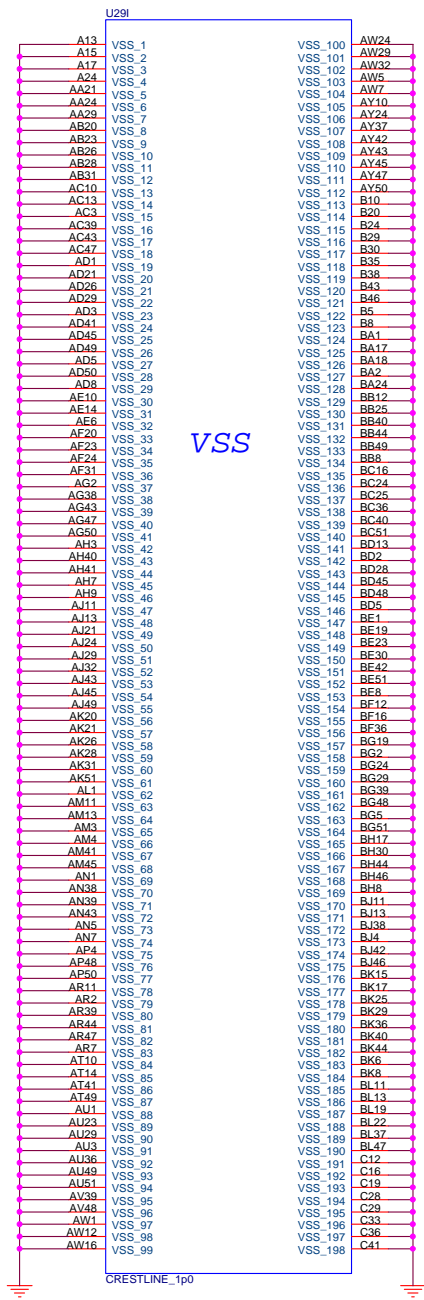


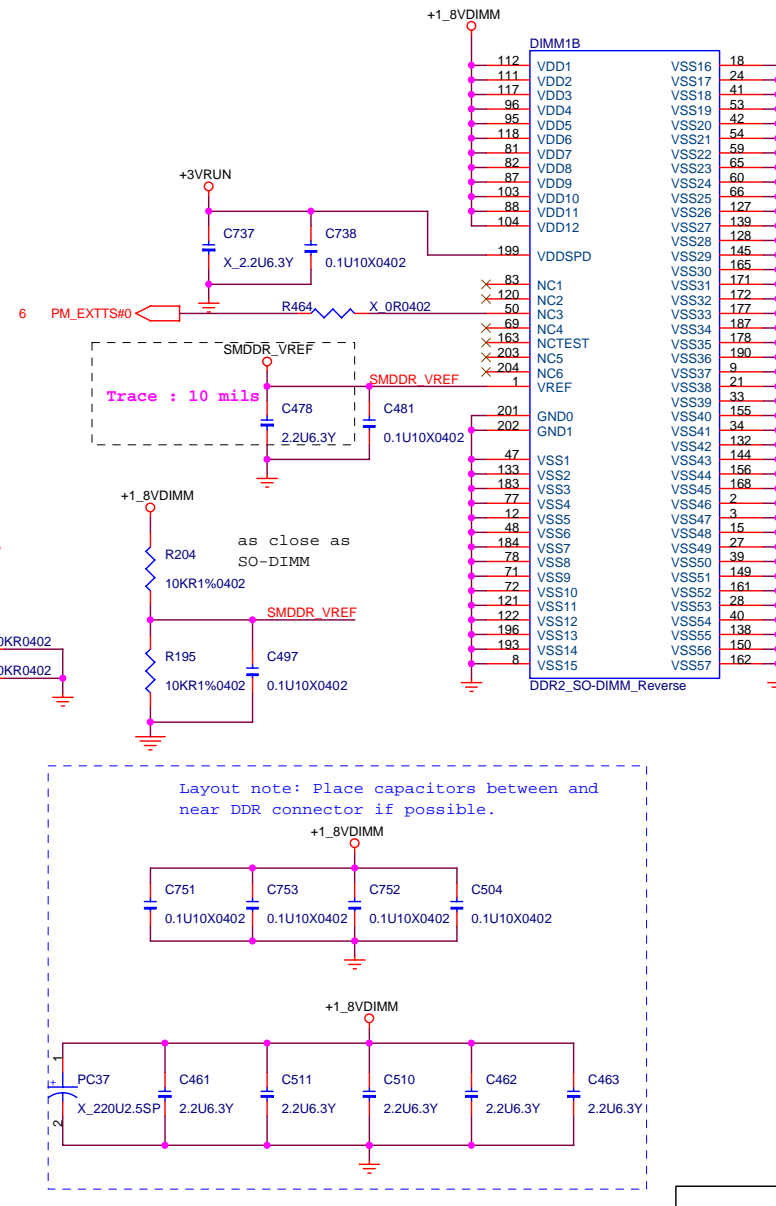


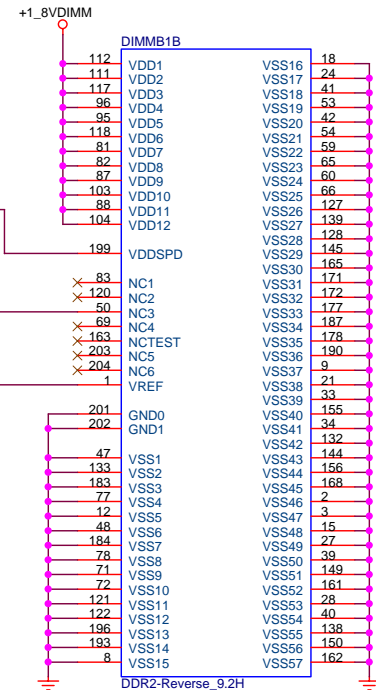
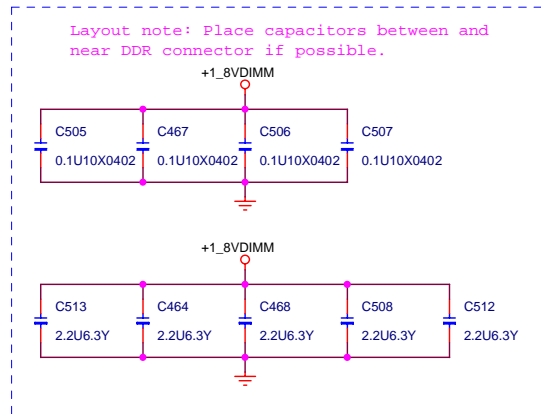
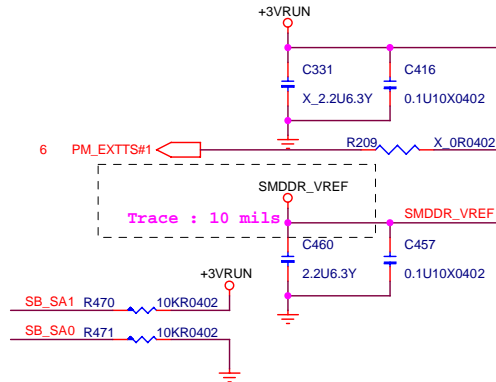
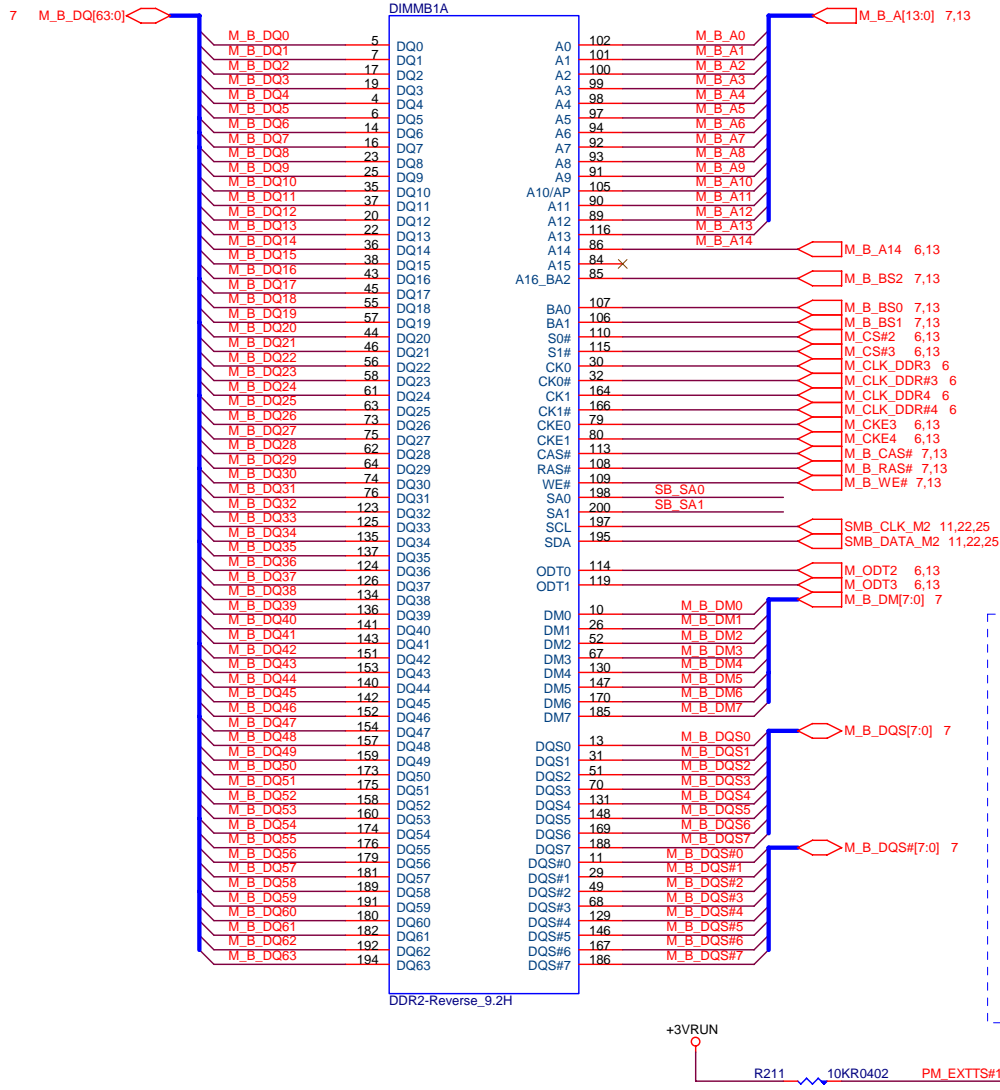


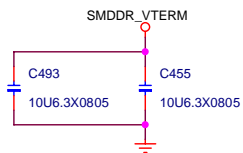






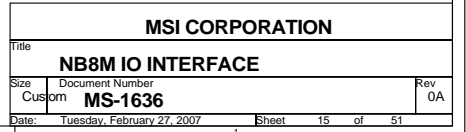




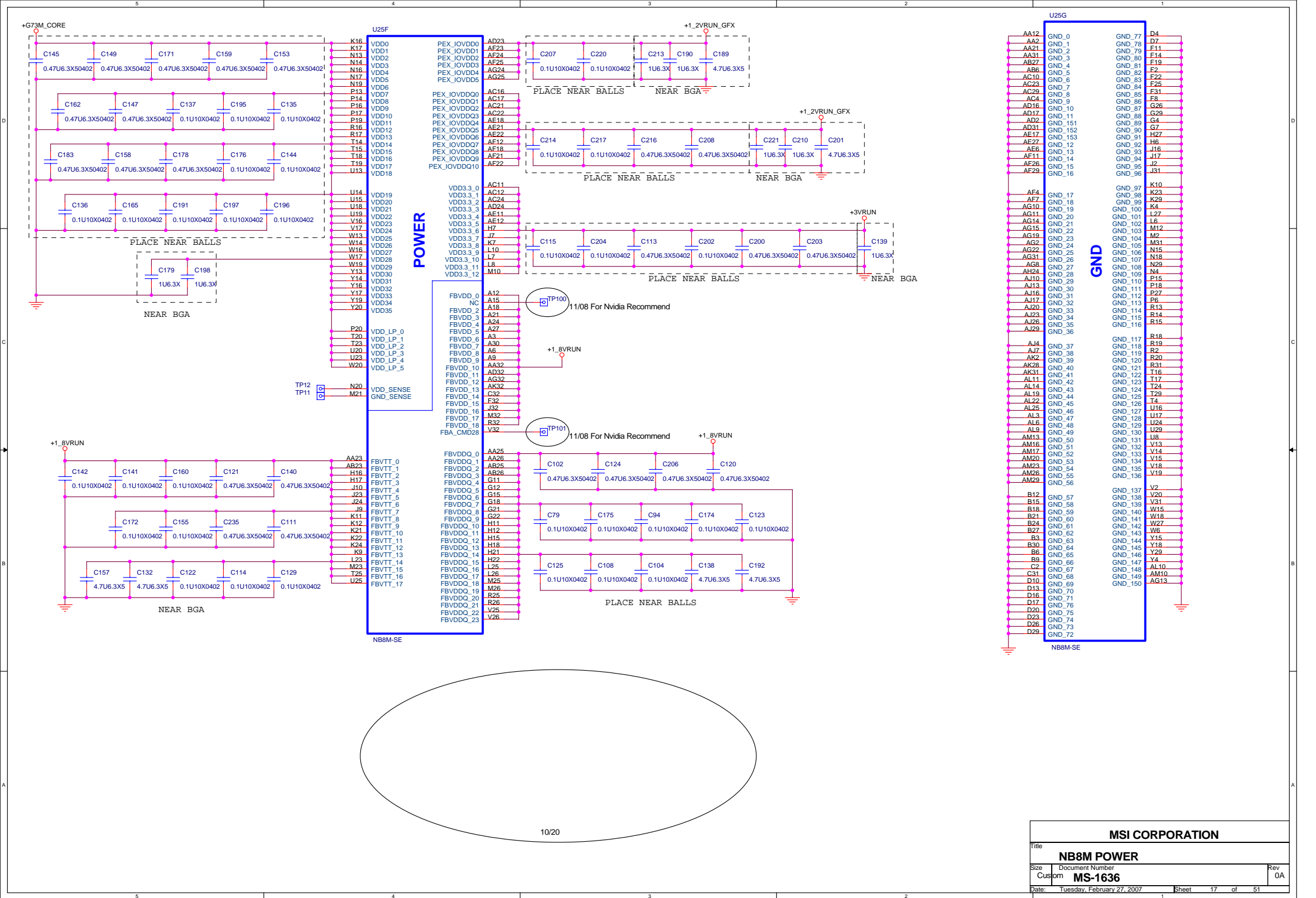




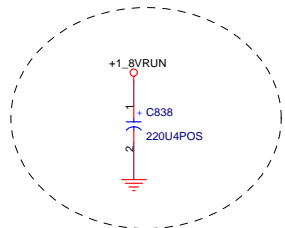
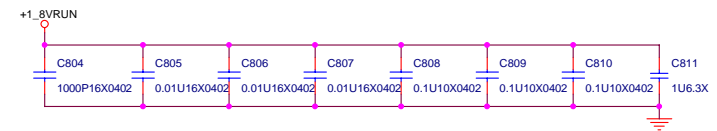
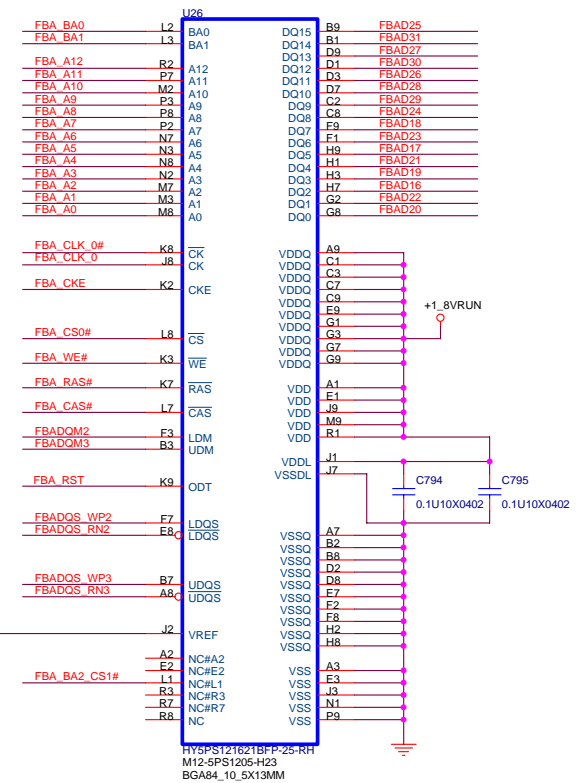




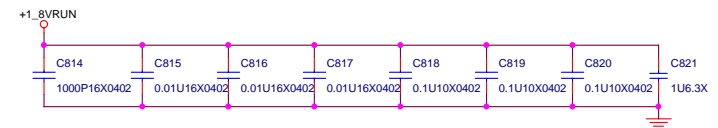
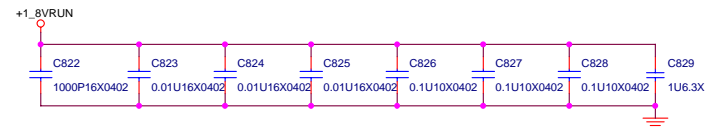
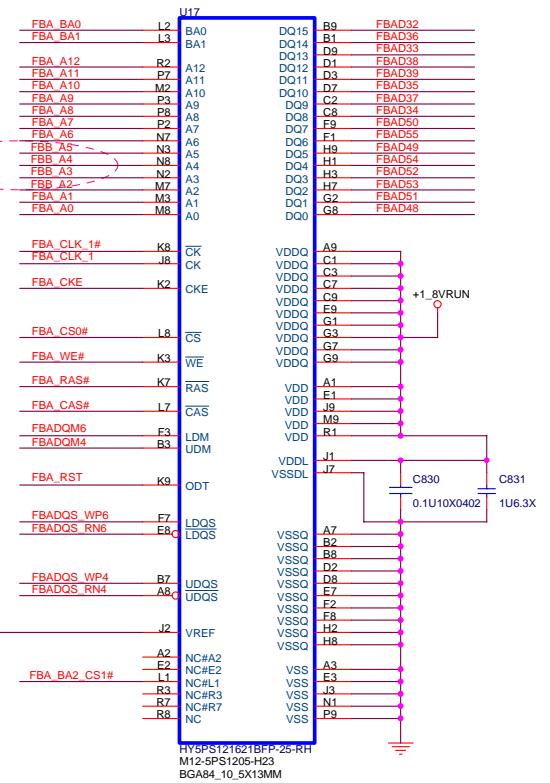
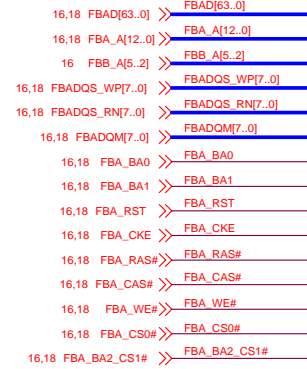




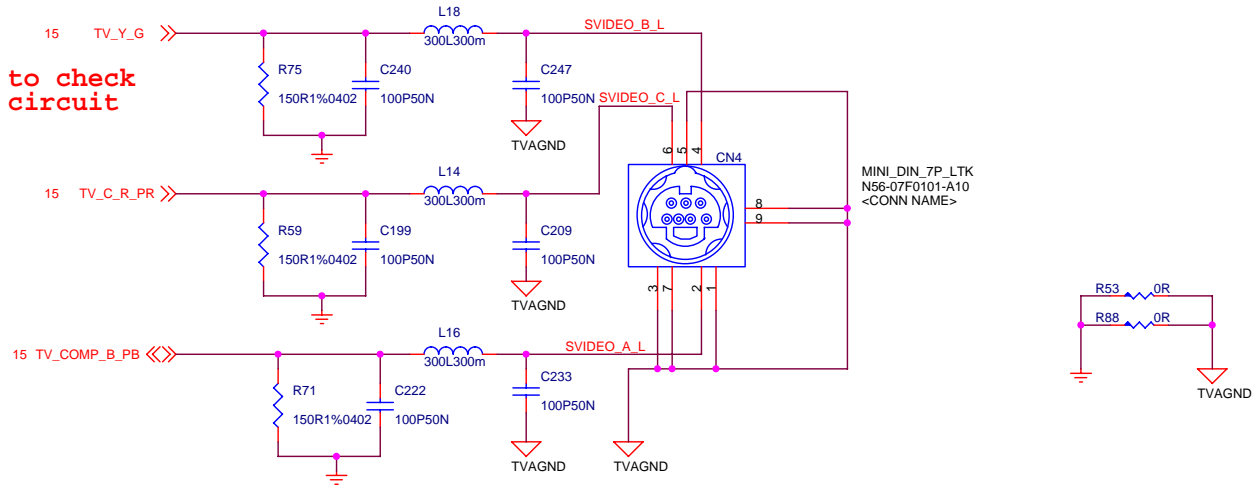
### Channel A



### Channel A



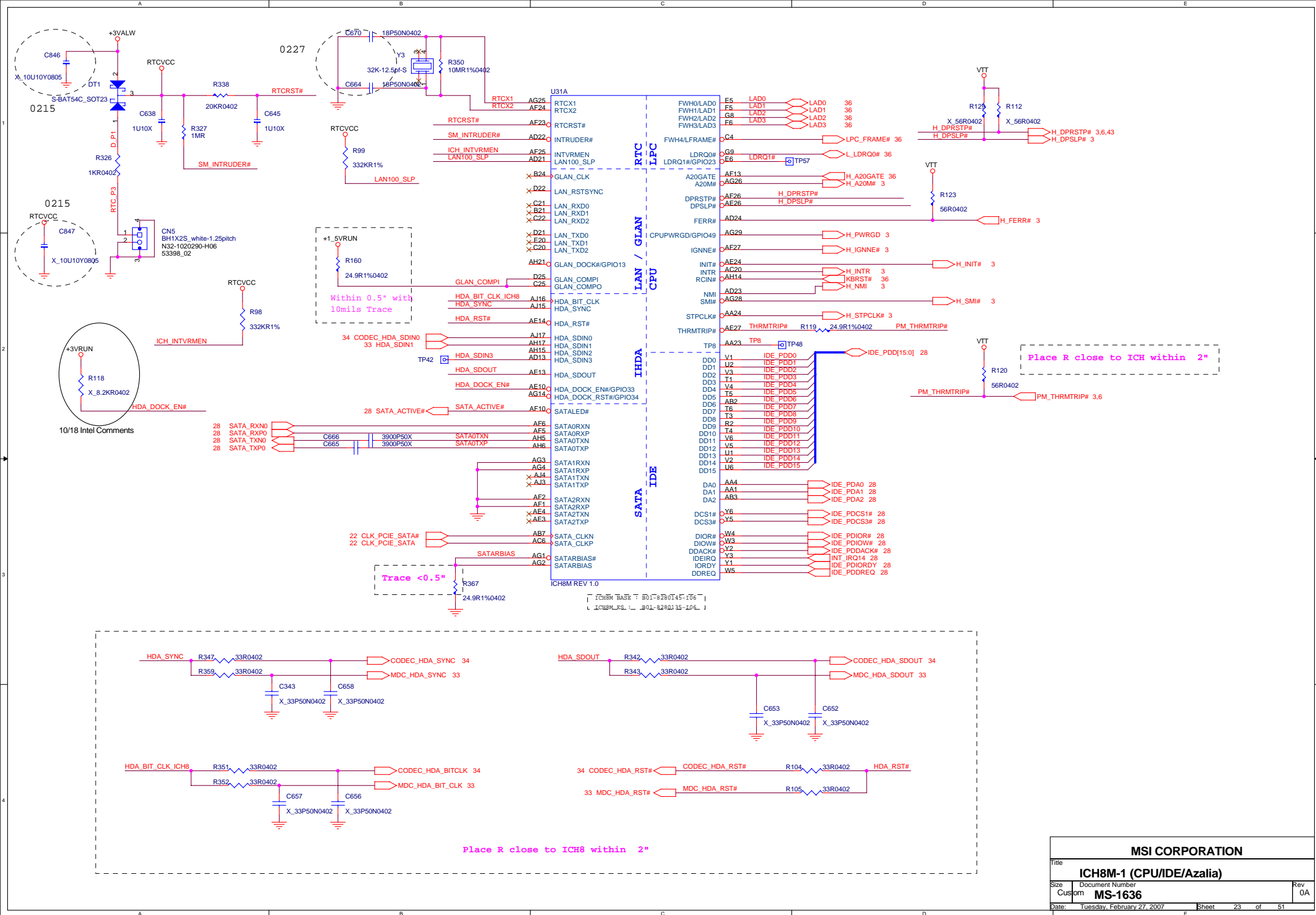
Need to check  
this circuit



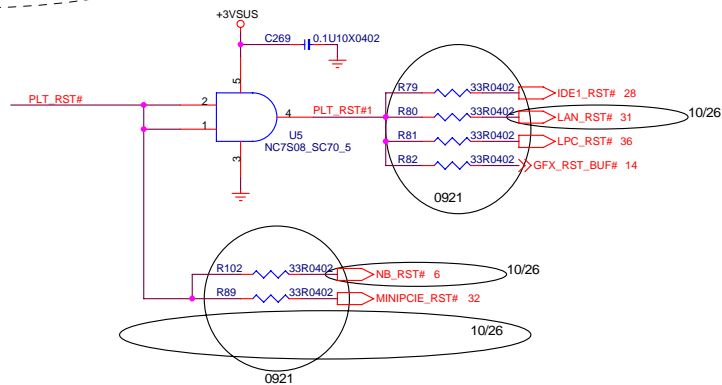
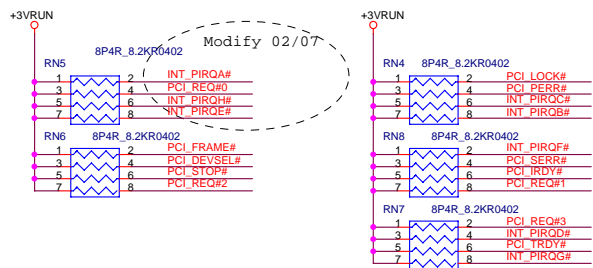
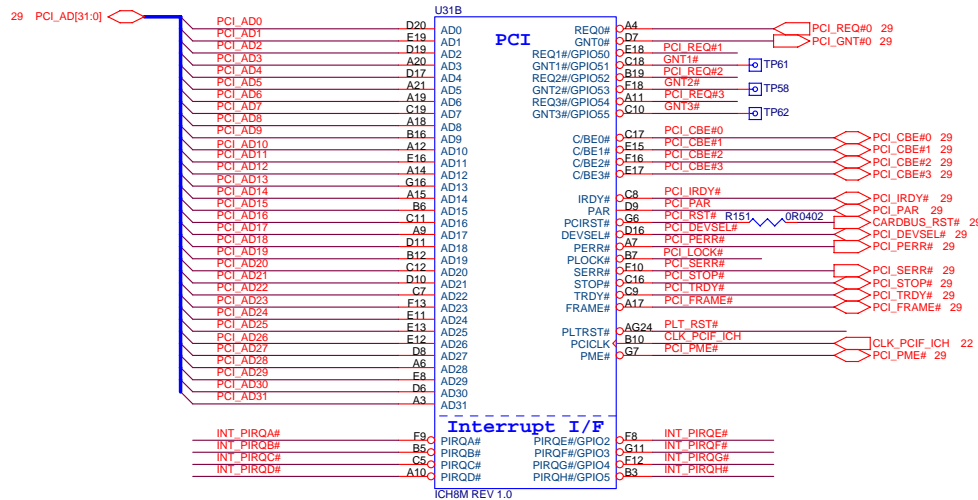
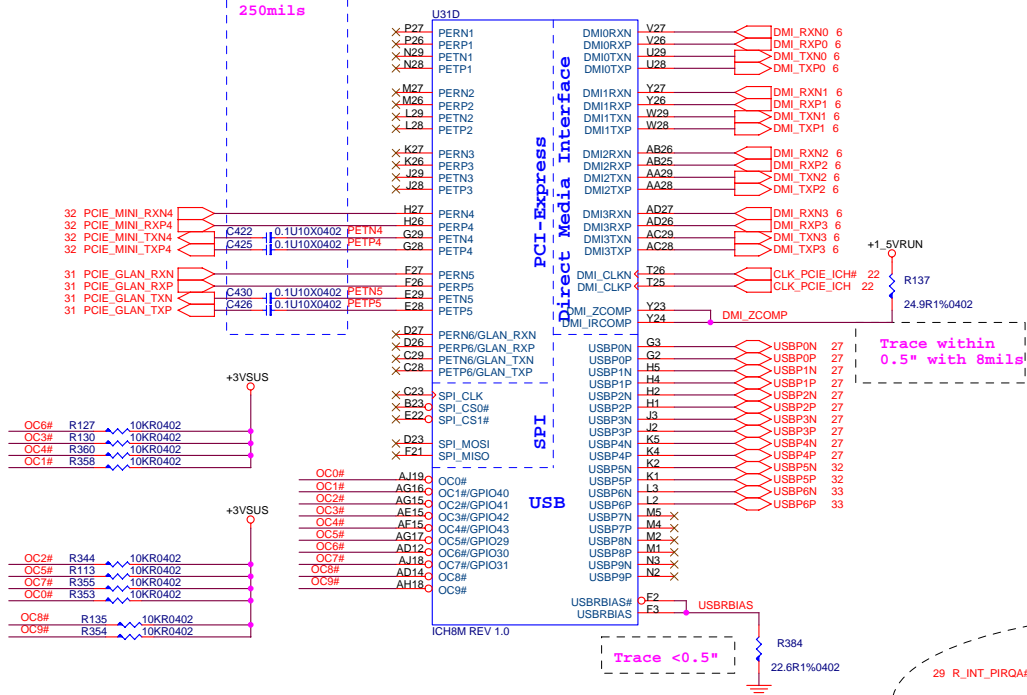


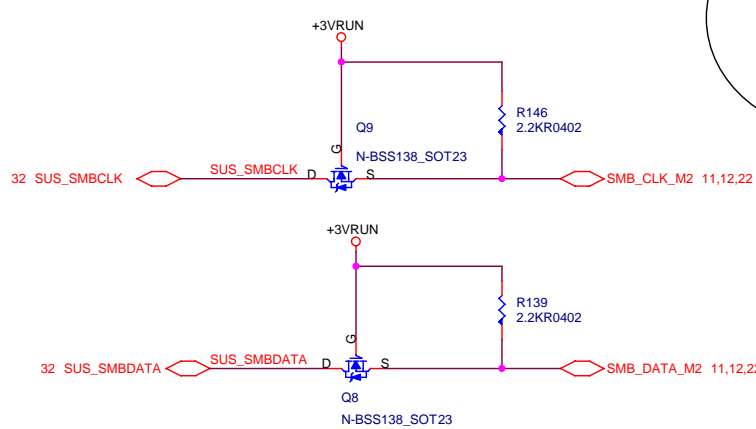
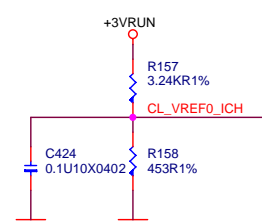
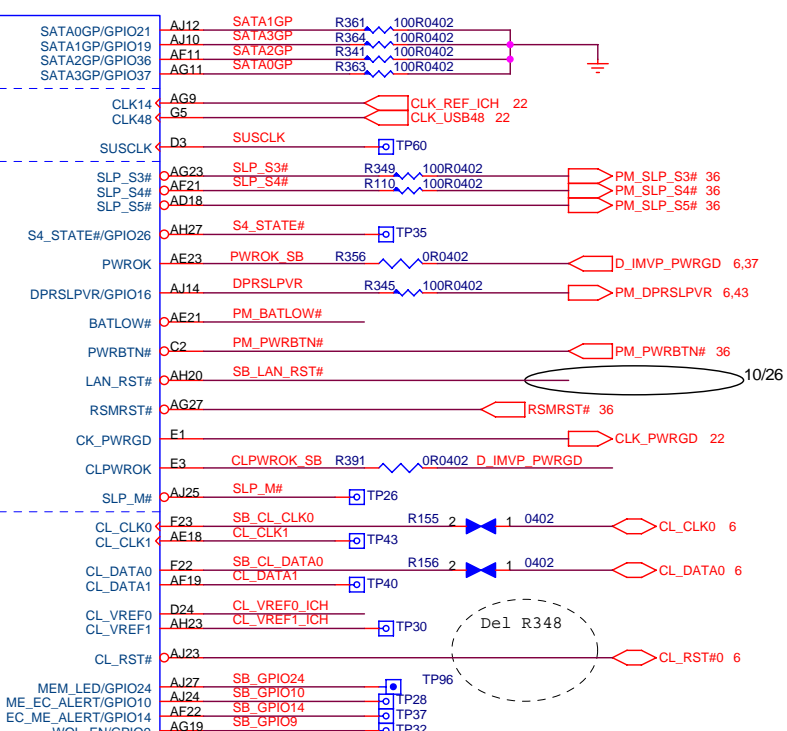
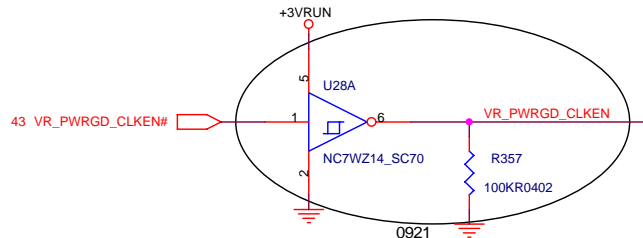






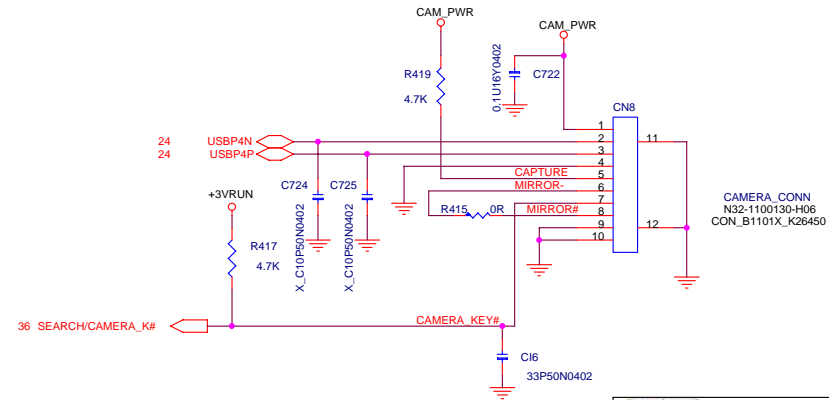
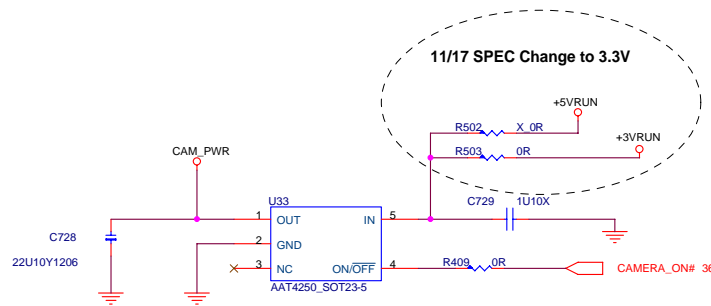
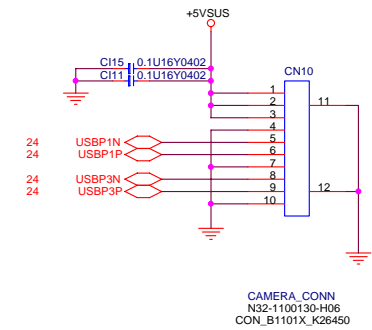
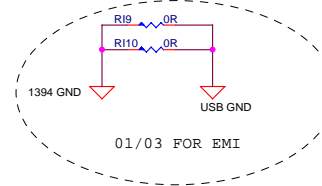
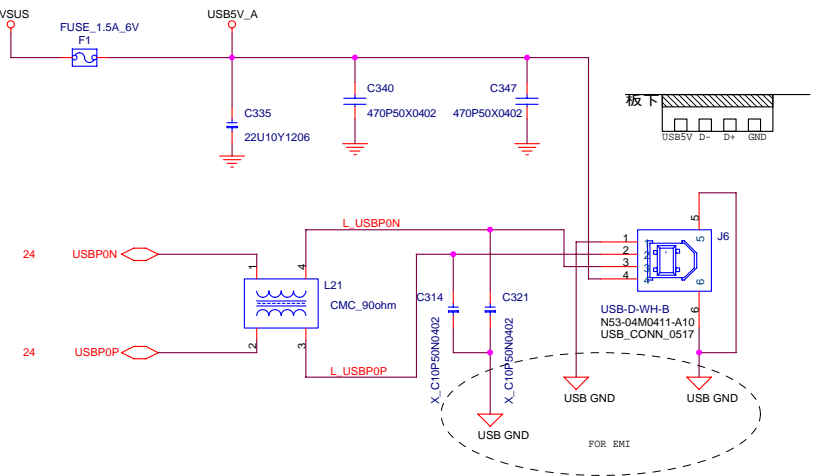
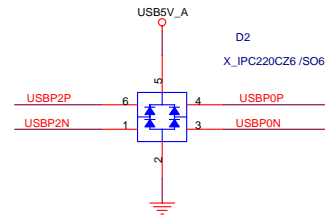
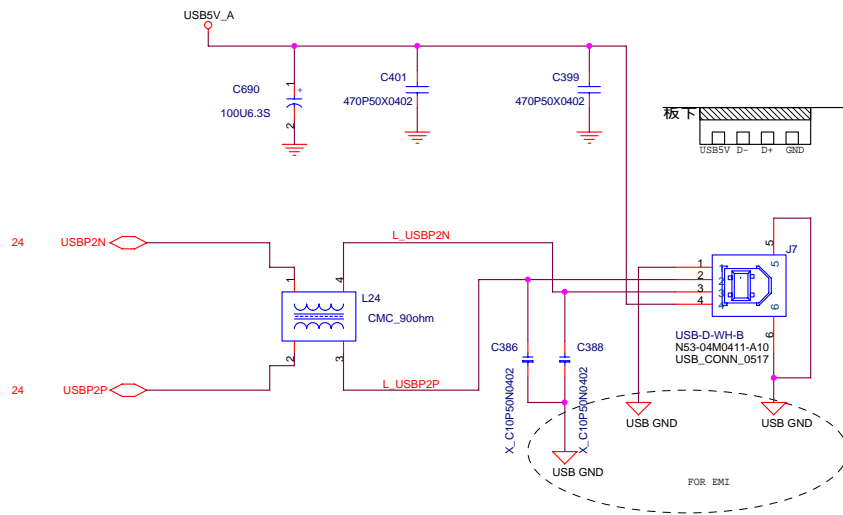
place Cap  
close to  
ICH8 within  
250mils

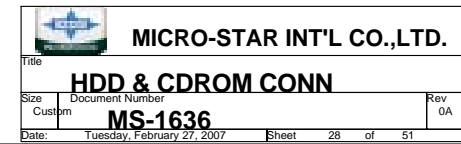
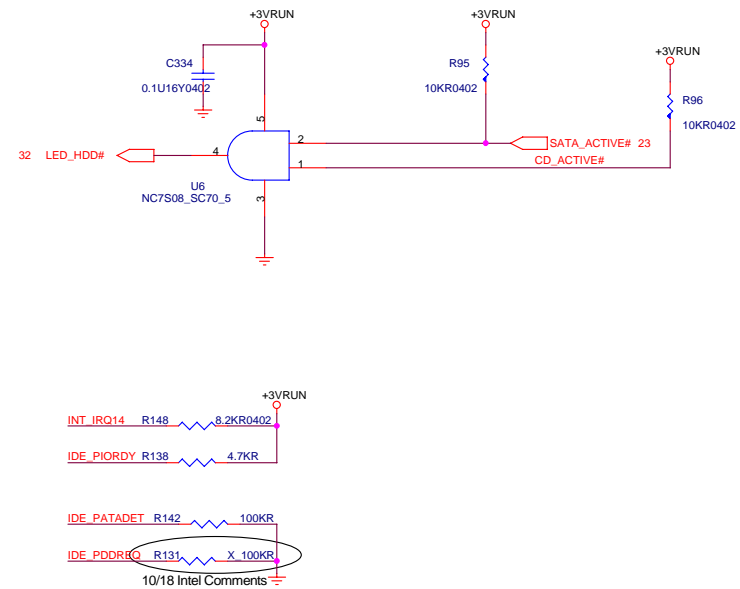














# PCMCIA SLOT

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N5D-68M0220-T01

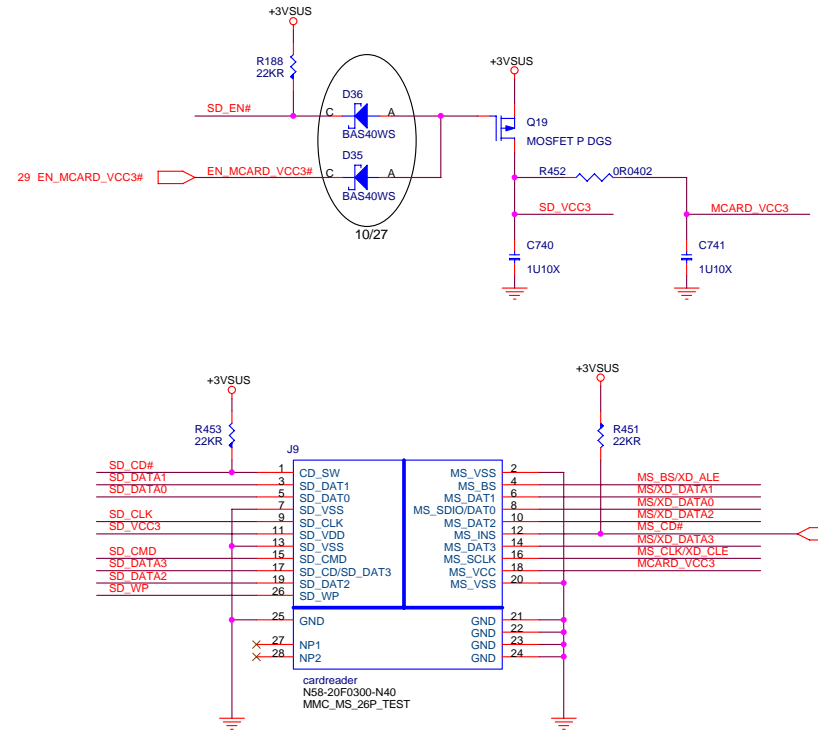
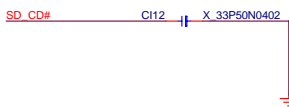
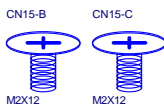
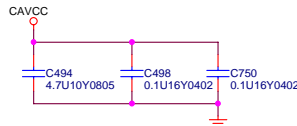
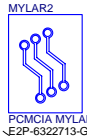
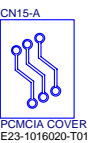
U35B

OZ711SP1

CARBUS/FLASH MEMORY CARD

OZ711SP1

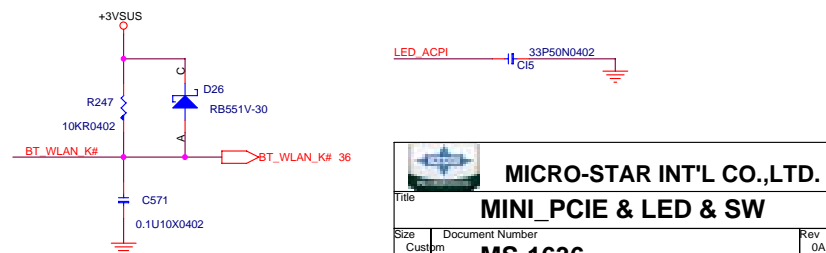
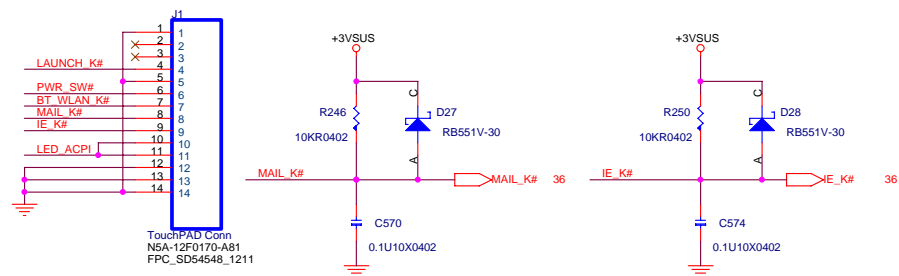
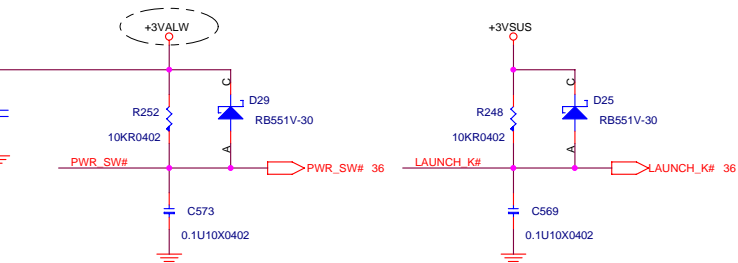
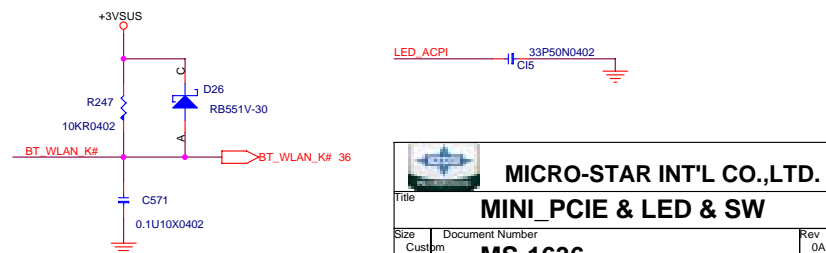
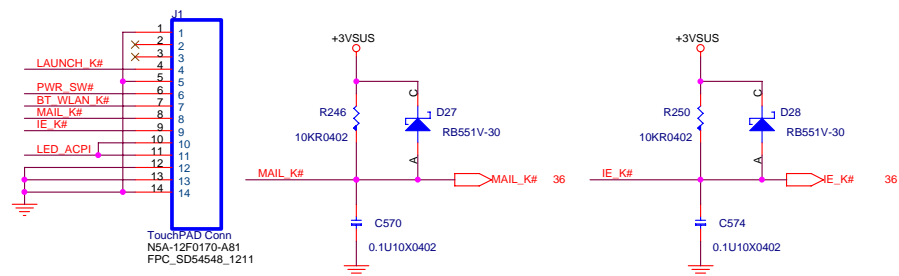
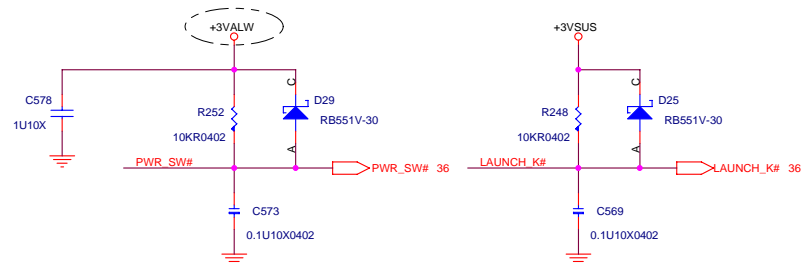
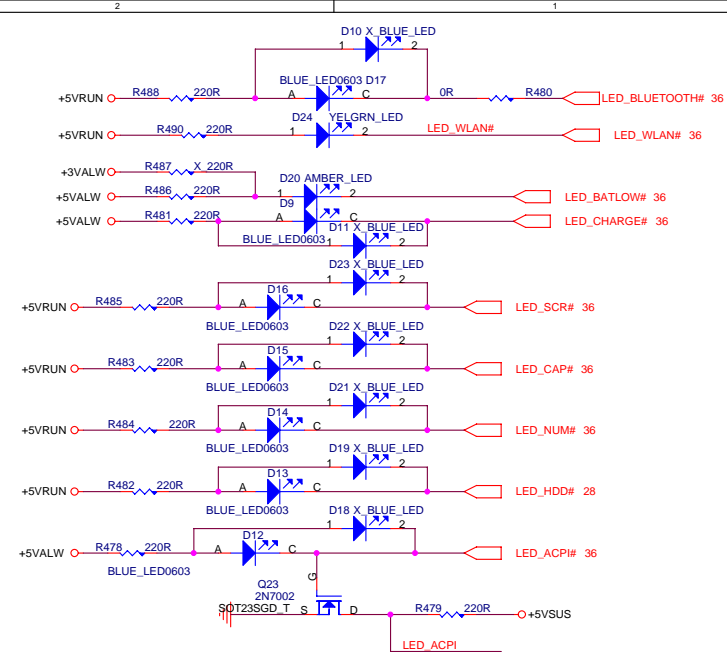
M/E 2/13  
Change P/N



MICRO-STAR INT'L CO.,LTD.

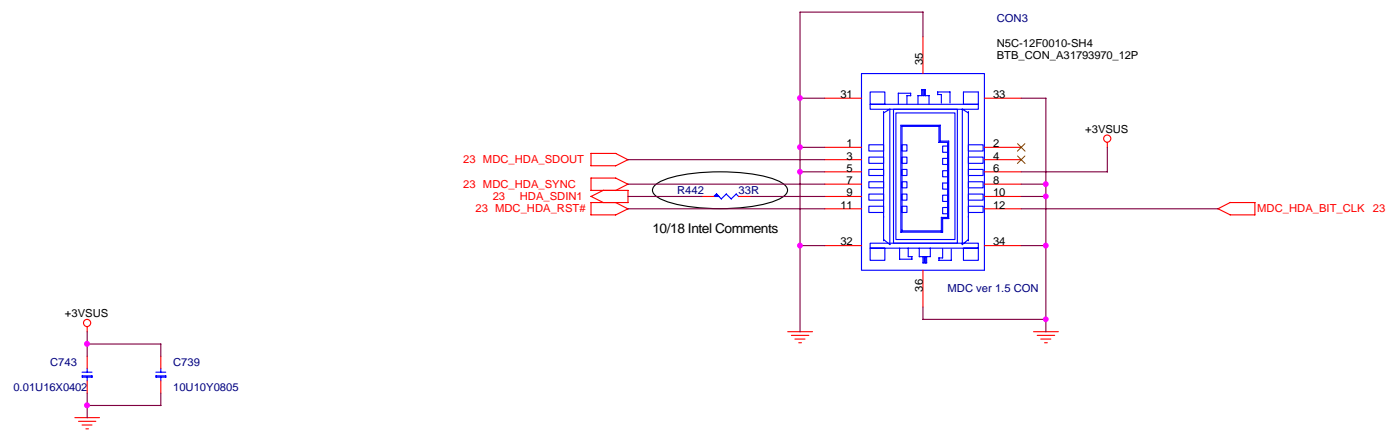
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CARDBUS/FLASH CARD			
Size	Document Number		Rev
Custom	MS-1636		0A
Date:	Tuesday, February 27, 2007	Sheet	30 of 51



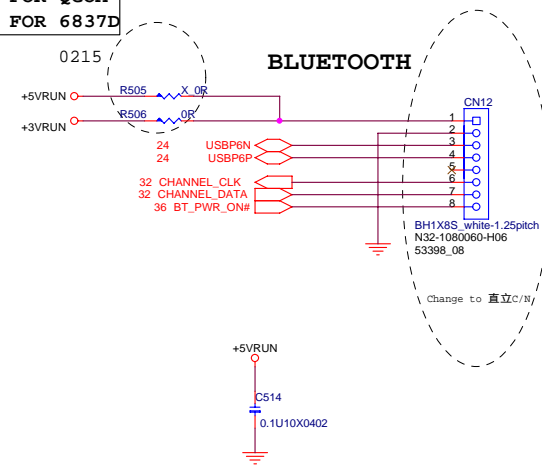




## MDC Connector

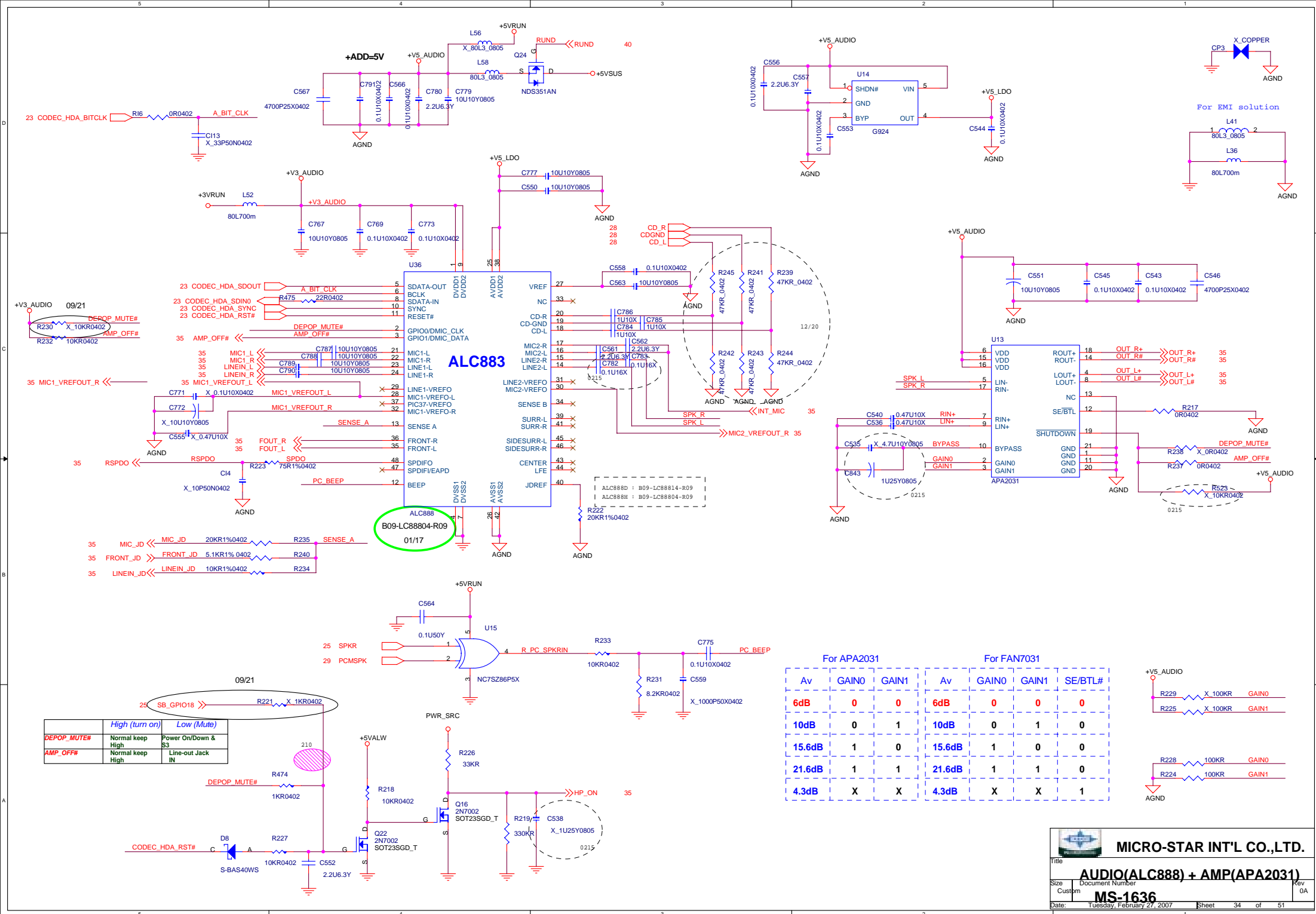


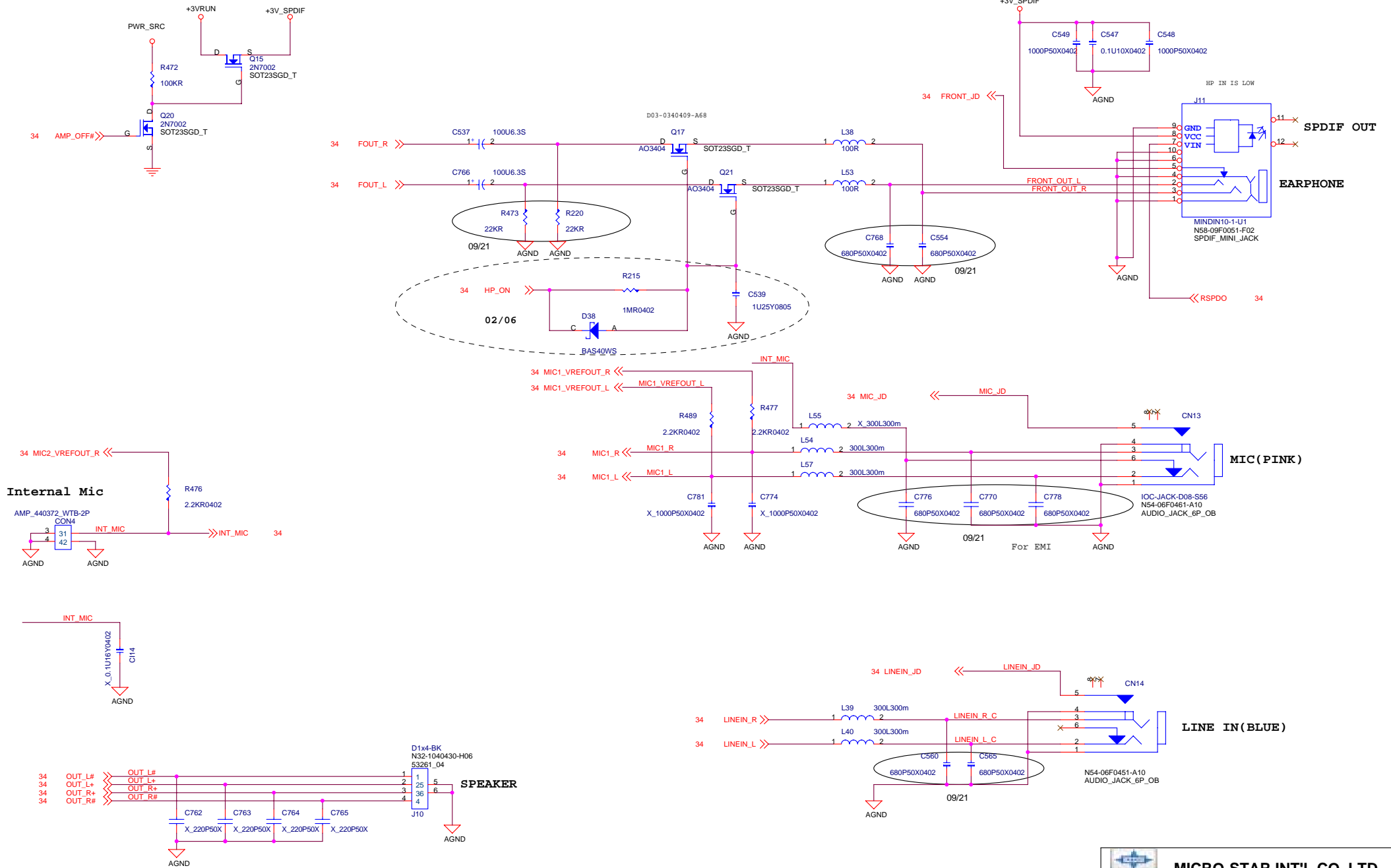
+3VRUN FOR QCOM  
+5VRUN FOR 6837D

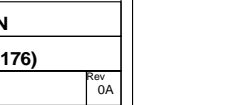
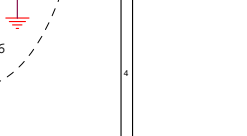
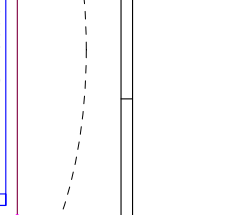
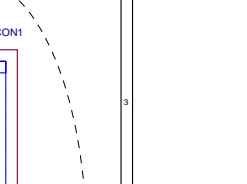
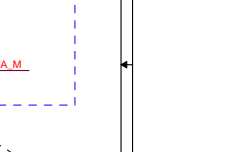
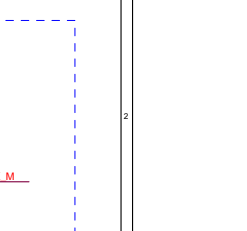
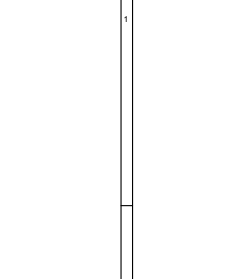
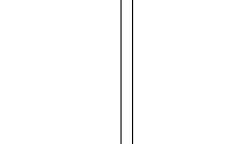
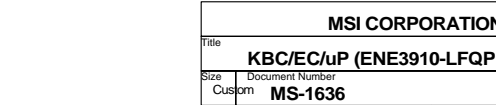
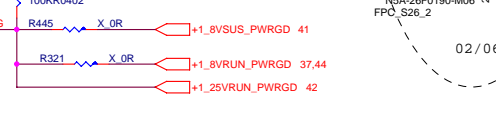
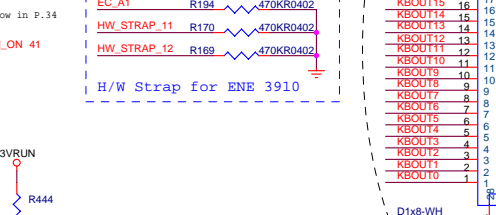
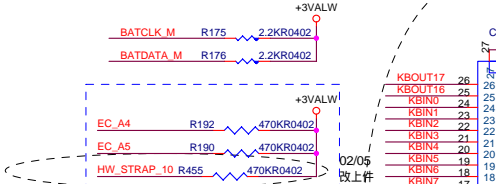
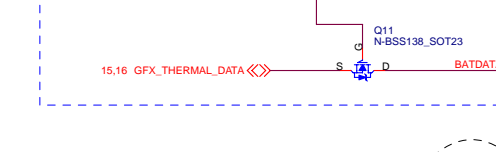
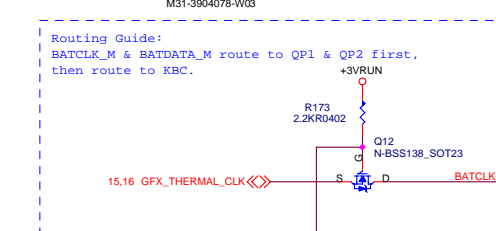
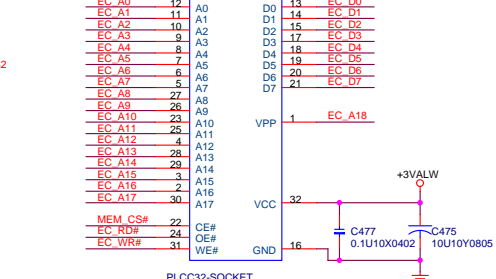
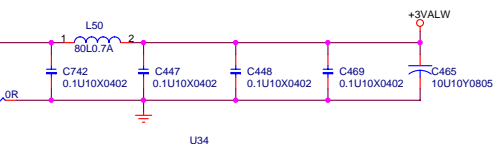
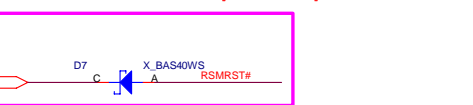
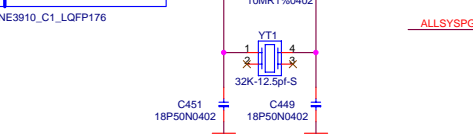
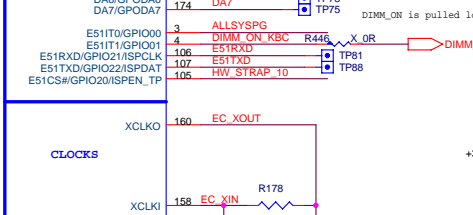
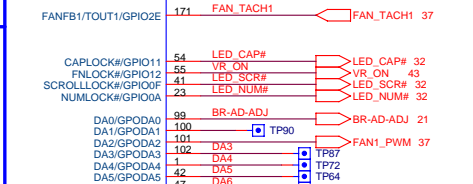
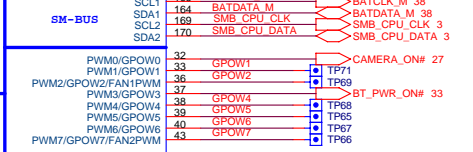
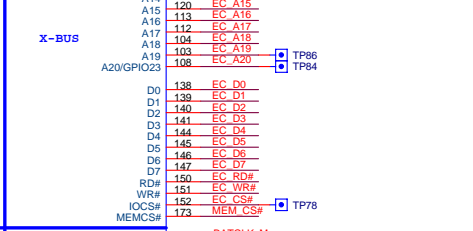
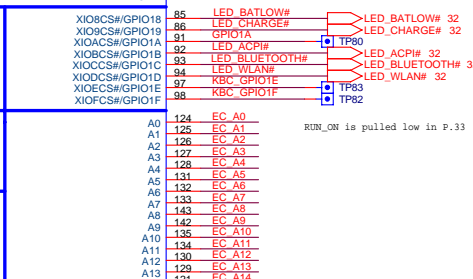
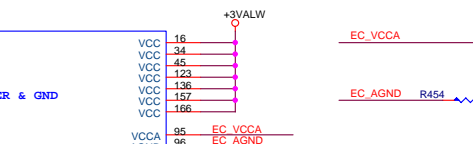
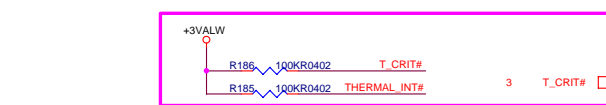
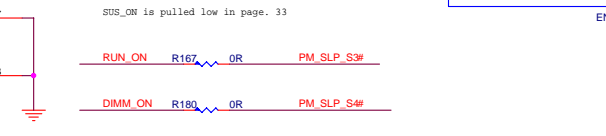
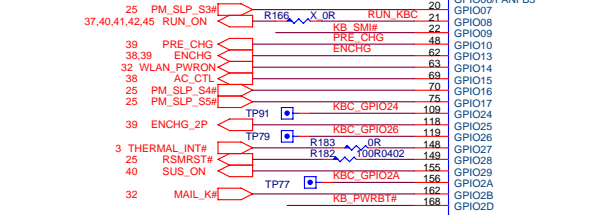
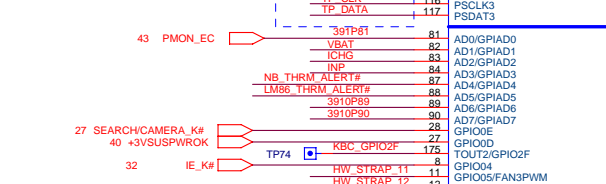
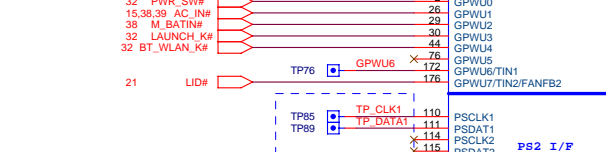
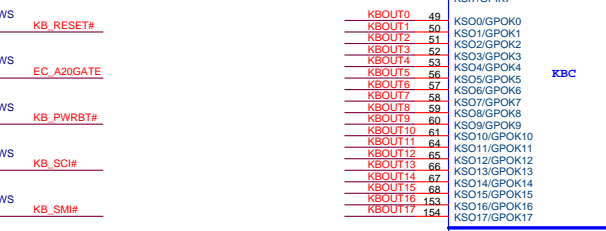
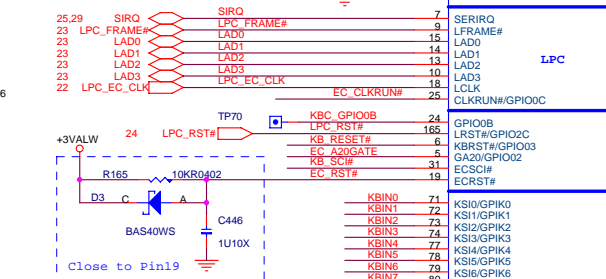
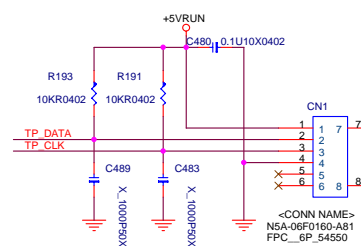
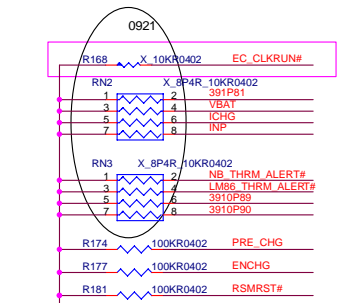
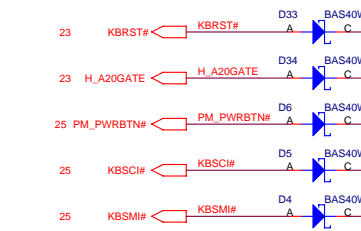
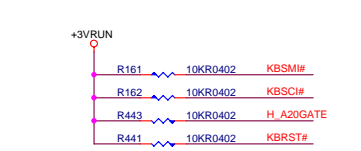
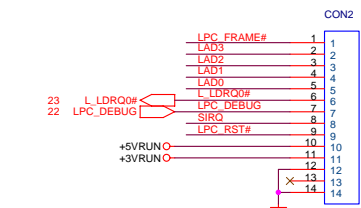


MICRO-STAR INT'L CO.,LTD.

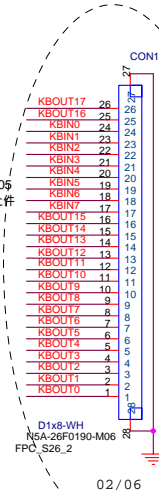
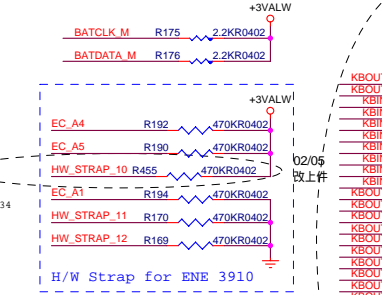
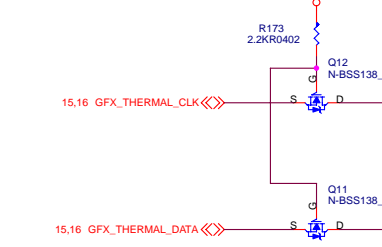
Title					
MDC&BLUETOOTH CONN					
Size	Document Number				Rev
Custom	MS-1636				0A
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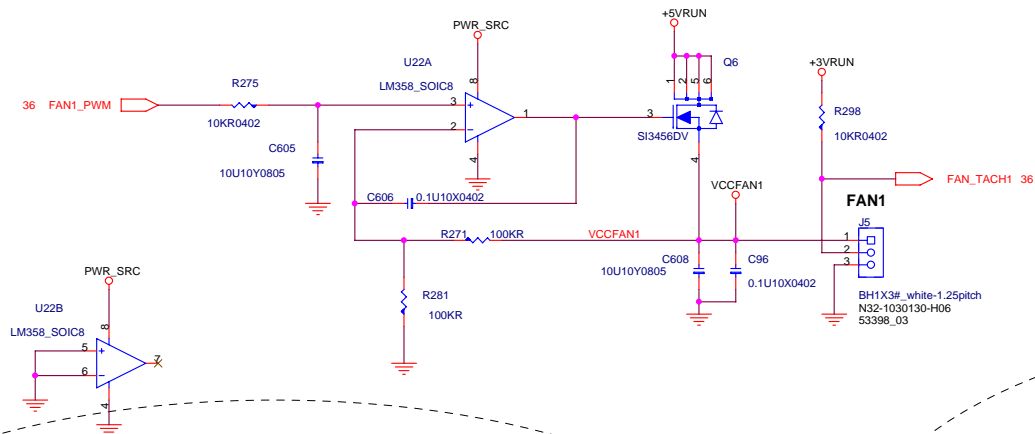




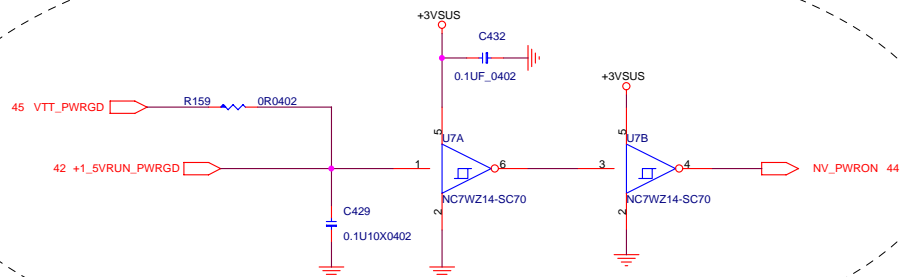


Routing Guide:  
BATCLK\_M & BATDATA\_M route to QP1 & QP2 first,  
then route to KBC.

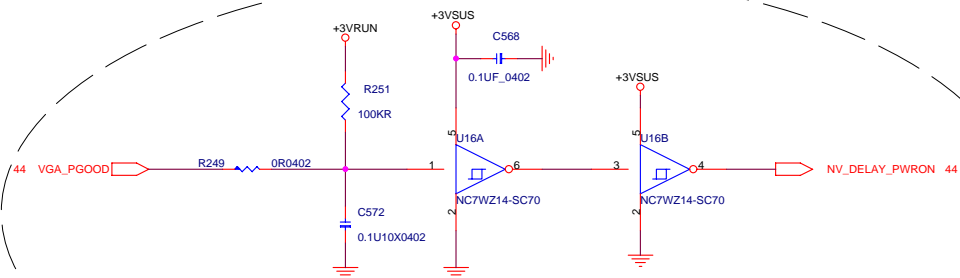
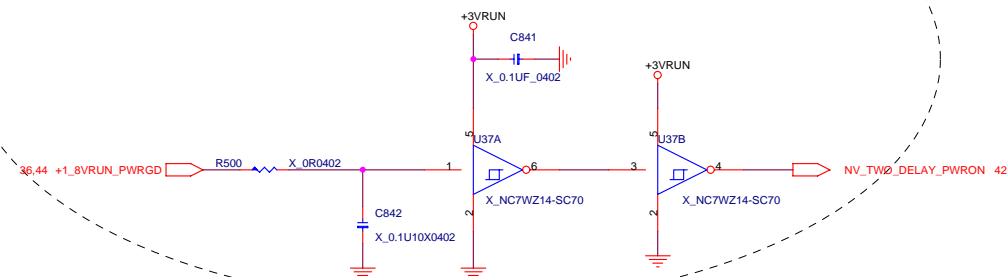




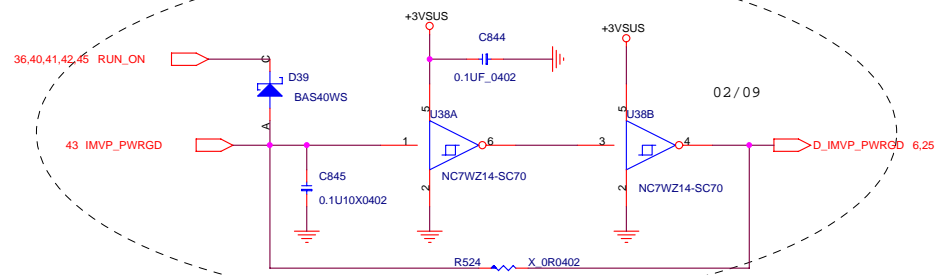
**OPEE +G73M\_CORE POWER**

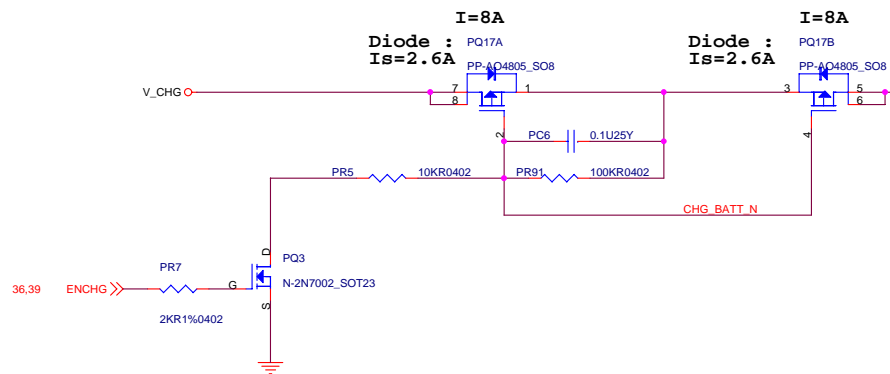
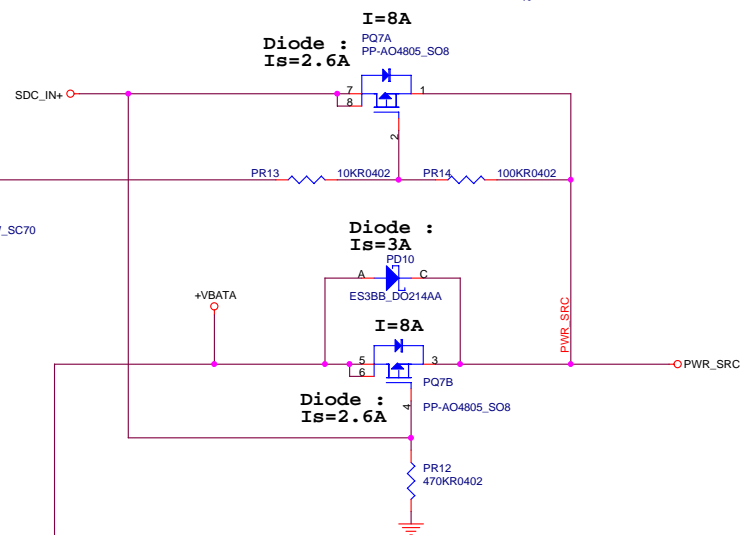
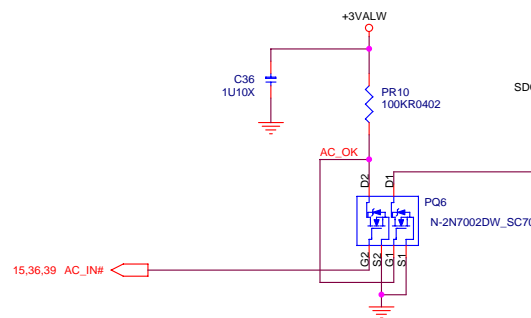
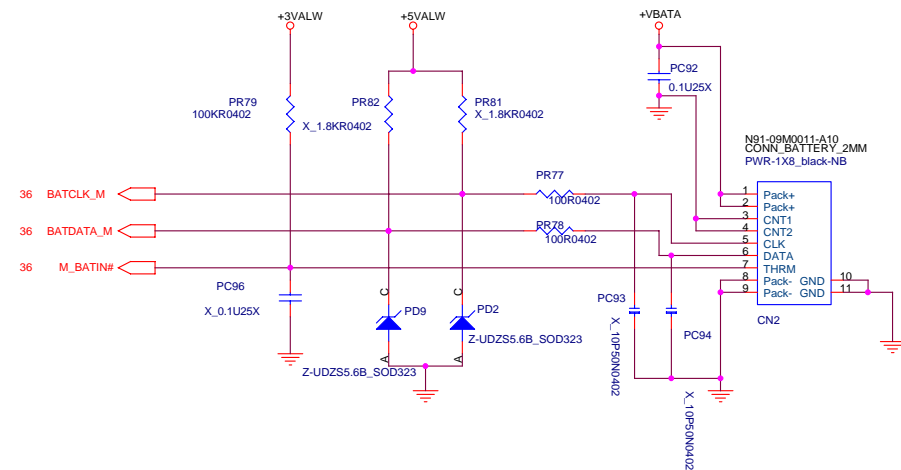
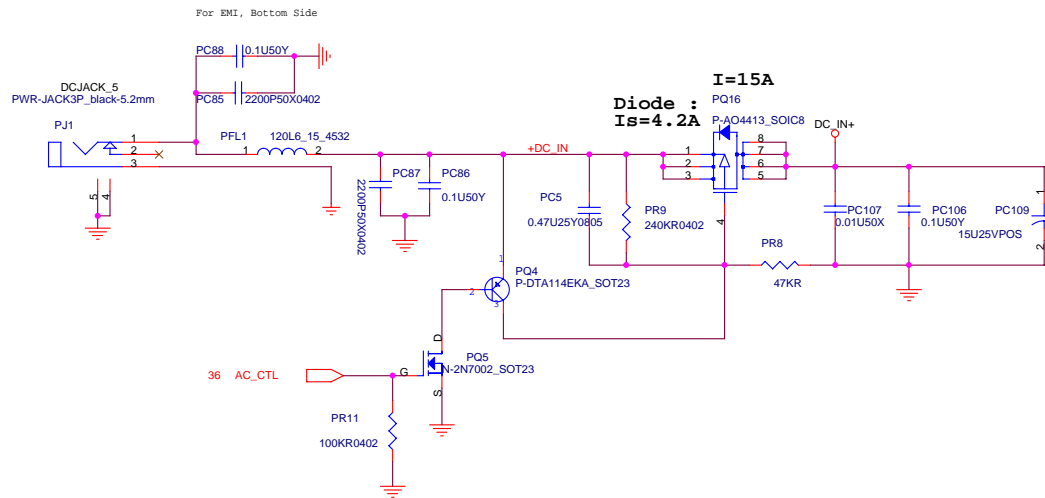


**OPEE +1\_25VRUN & +1\_2VRUN\_GFX POWER**



**OPEE +1\_8VRUN POWER**





MICRO-STAR INT'L CO.,LTD.

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Adapter= 90 W       $2.048/7.15 \times (53.6+7.15)=17.4V$

Adapter input voltage set 17.4 Voltage

DC\_IN+      SDC\_IN+

PC4  
220p\_0402YR

PC3  
0.1u\_0603

PC1  
10u\_120605

PR90  
53.6K R1%\_0603

MAX8724 ACIN

PR87  
7.15K R1%\_0402

PD1  
S-RB751V-40

PC2  
1u\_0805X7R

PC82  
0.1u\_0603

PC81  
0.1u\_0603

PR72  
10R\_0603

PR73  
0.01R\_3720

PR71  
10R\_0603

[illegible]

```
36 PRE_CHG
36 ENCHG_2P
```

36,38 ENCHG

SET Iin MAX = 4.2A



Size	D
Custom	

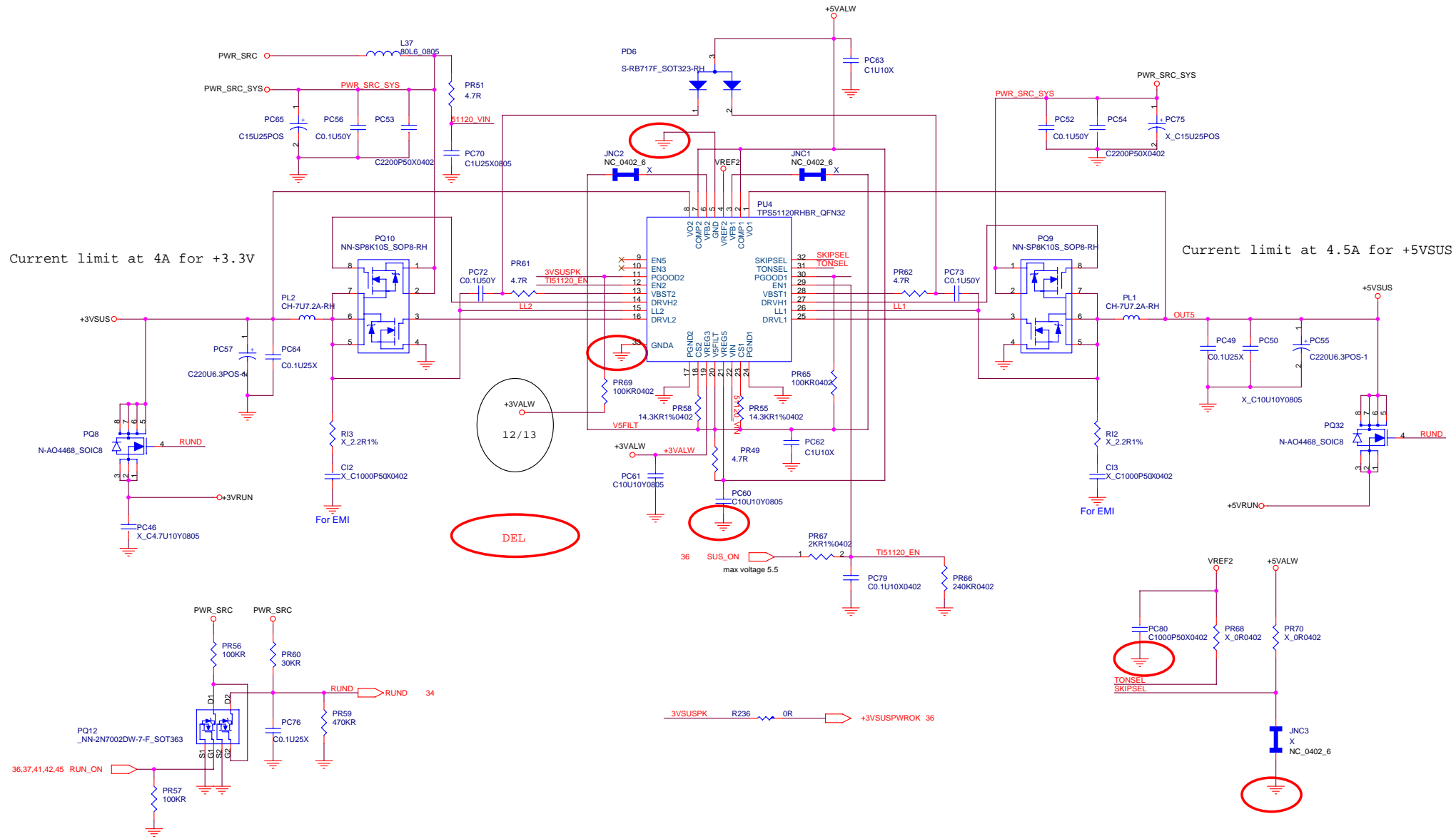
0.A

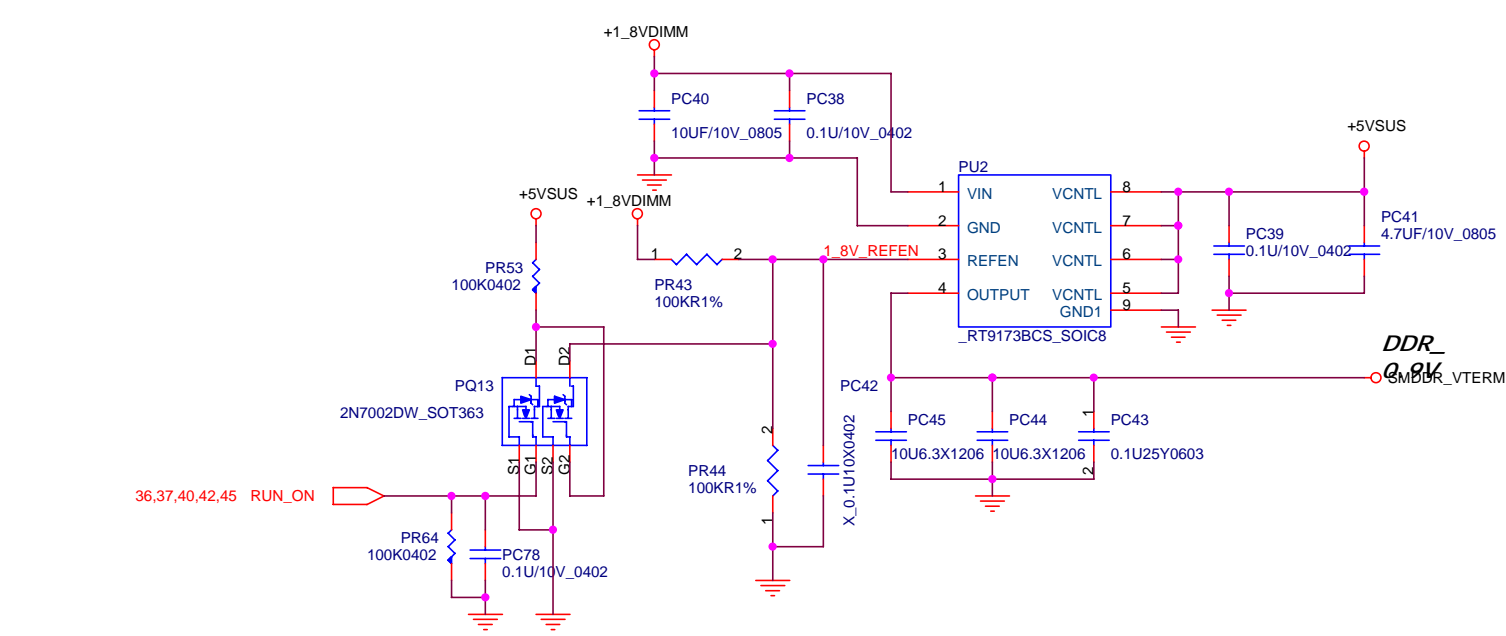
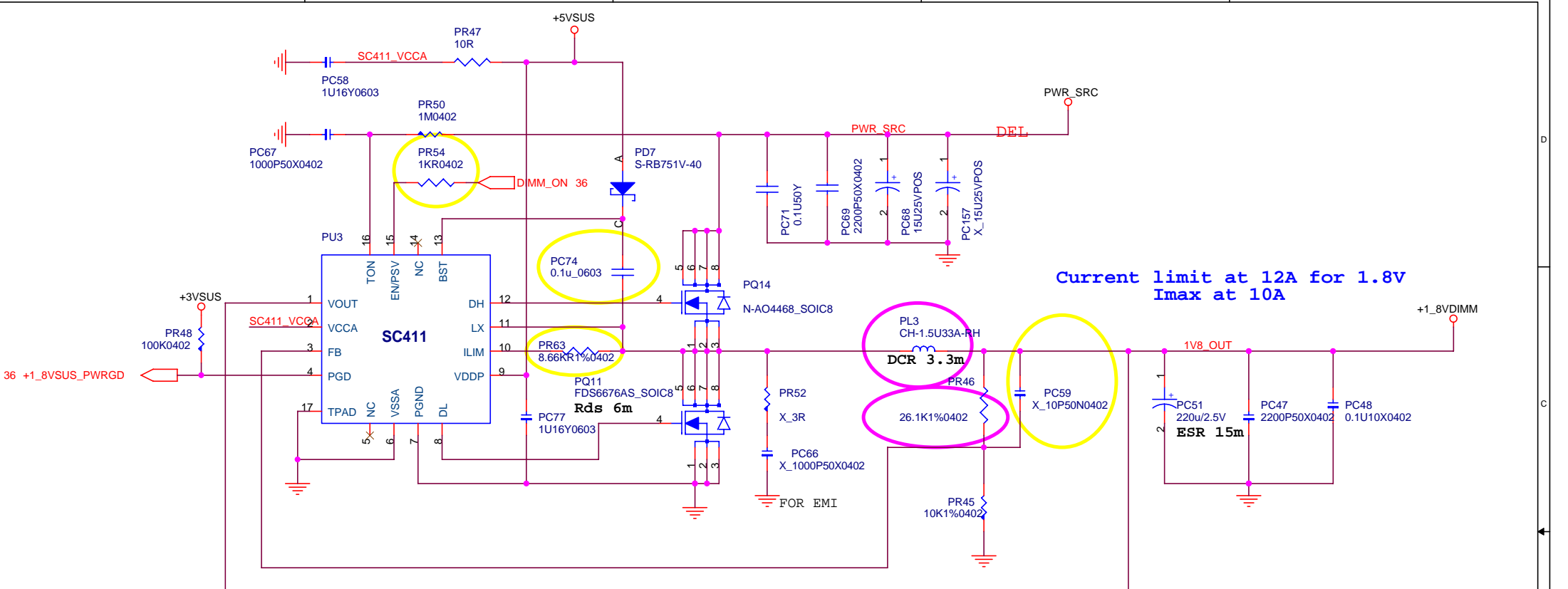
Date: Tuesday, February 27, 2007 Sheet 39 of 51

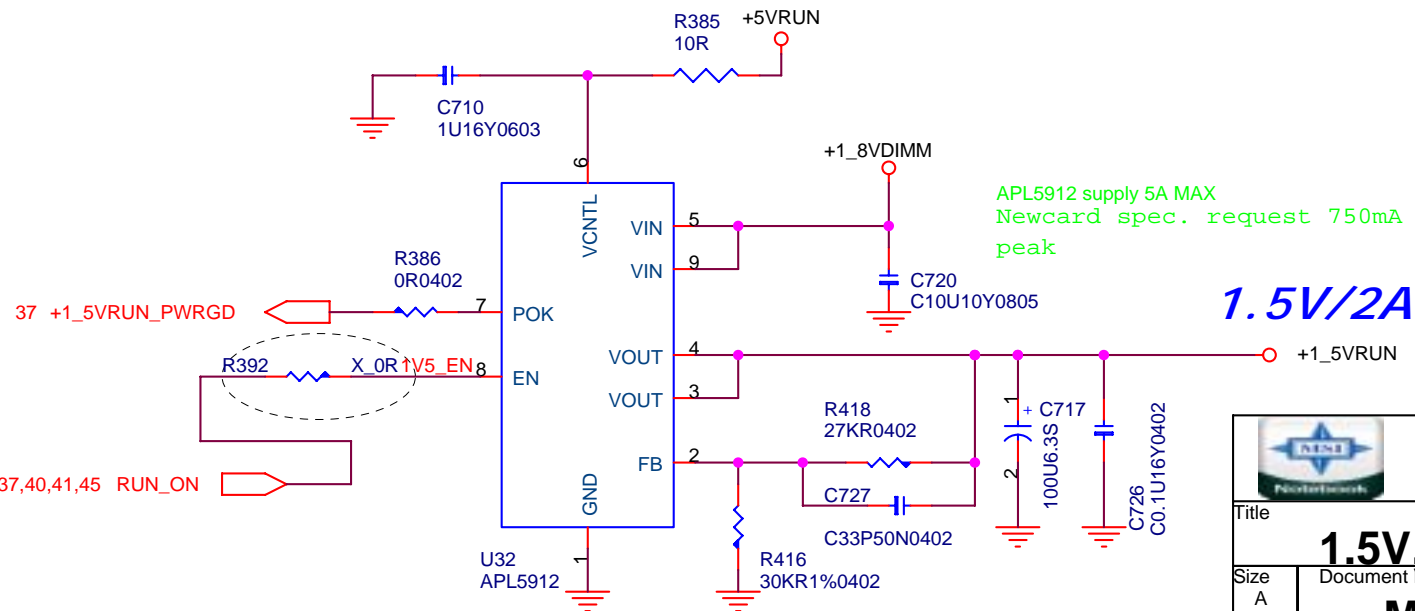
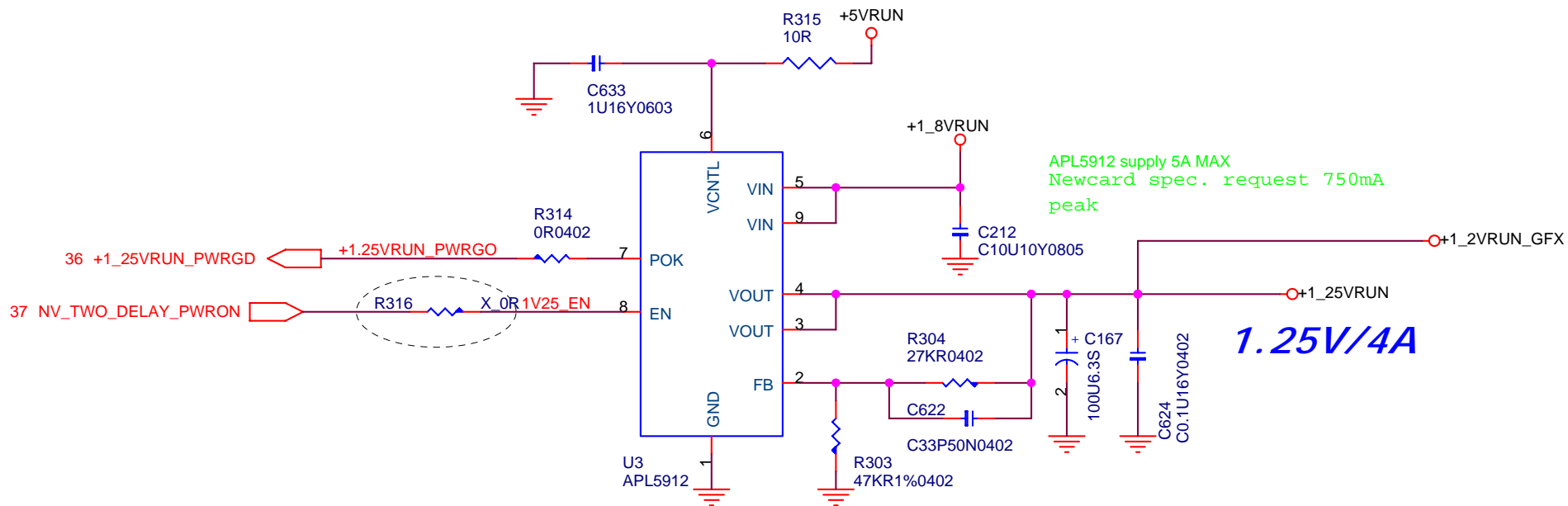



Current limit at 4A for +3.3V

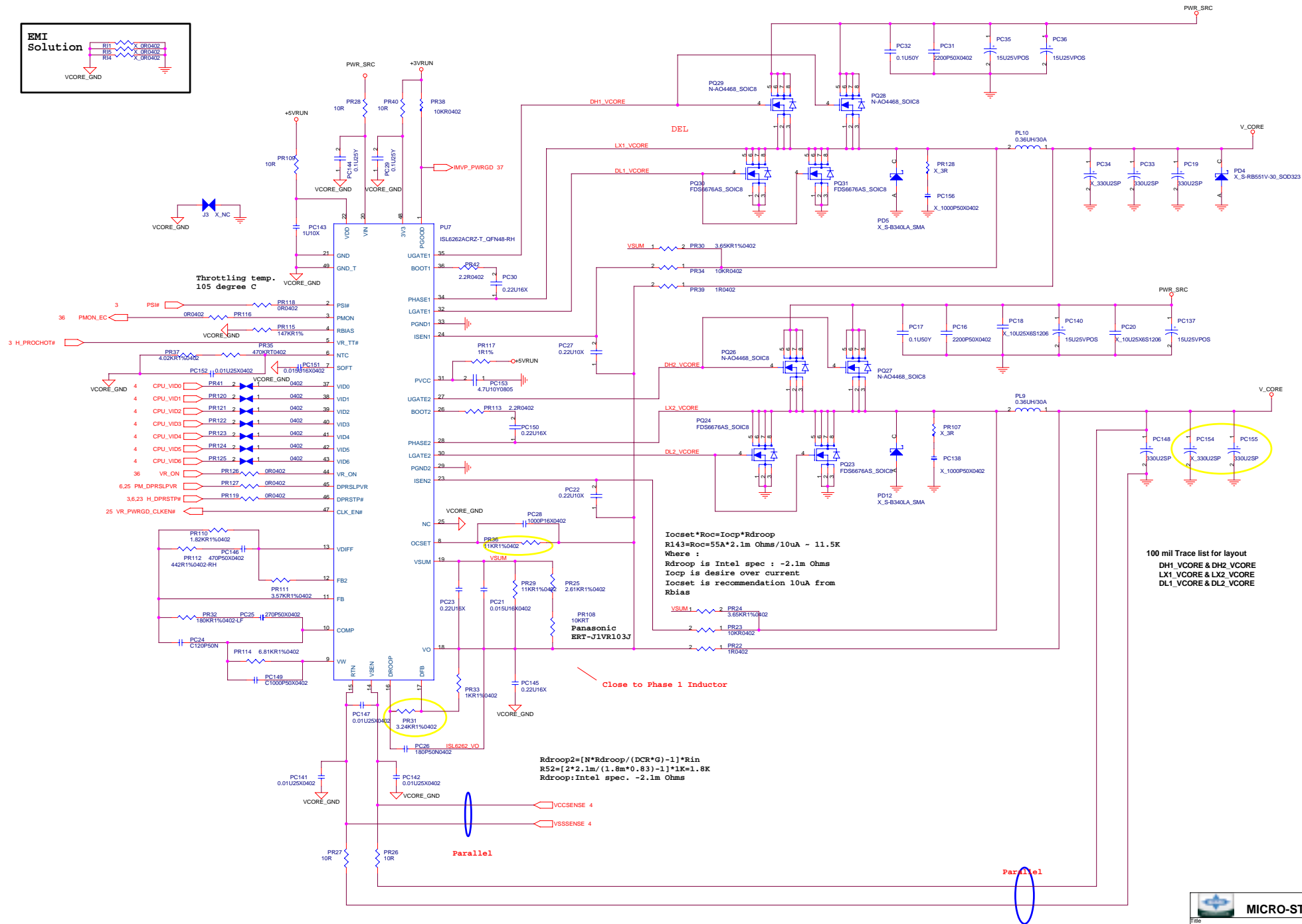
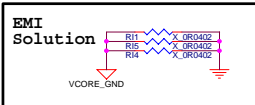
Current limit at 4.5A for +5VSUS



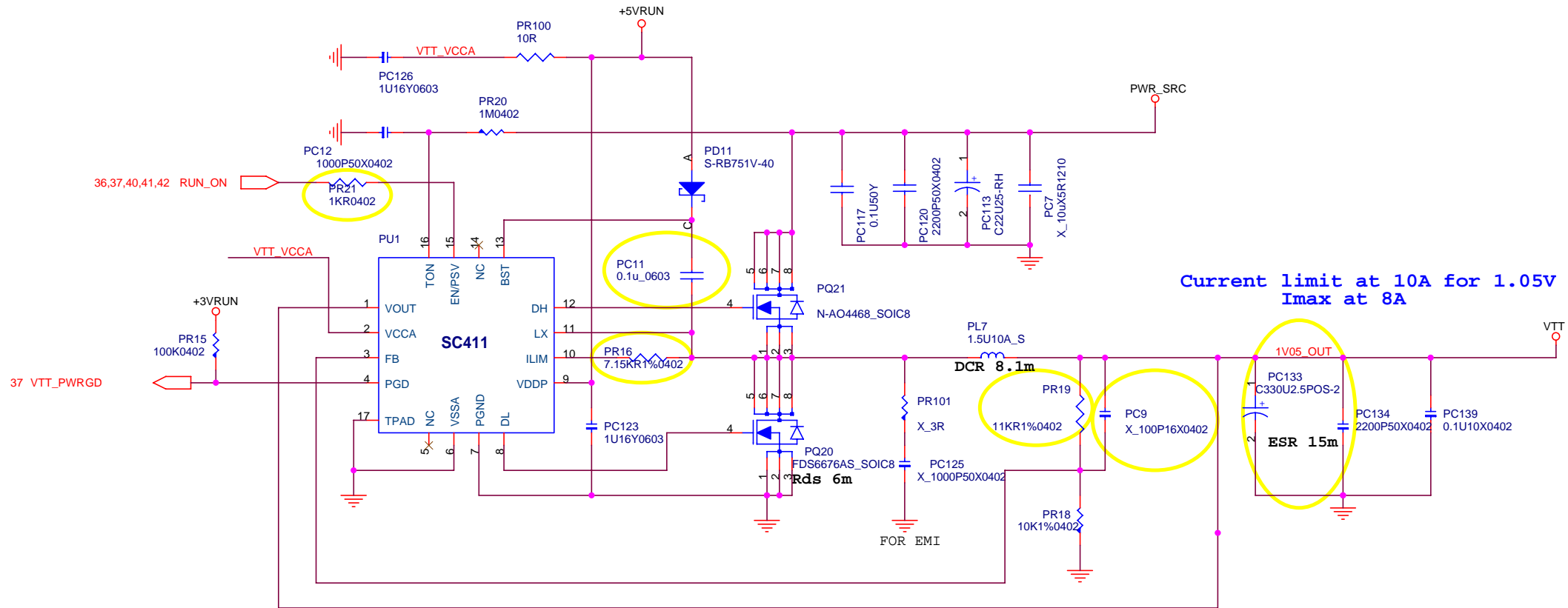




 <b>MICRO-STAR INT'L CO.,LTD.</b>		
Title		
<b>1.5V,1.25V power</b>		
Size	Document Number	Rev
A	<b>MS-1636</b>	0.A
Date:	Tuesday, February 27, 2007	Sheet 42 of 51

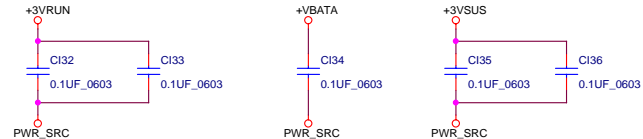
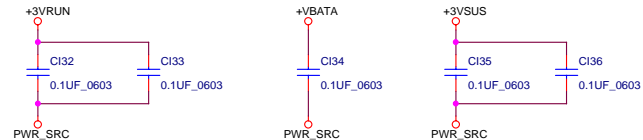
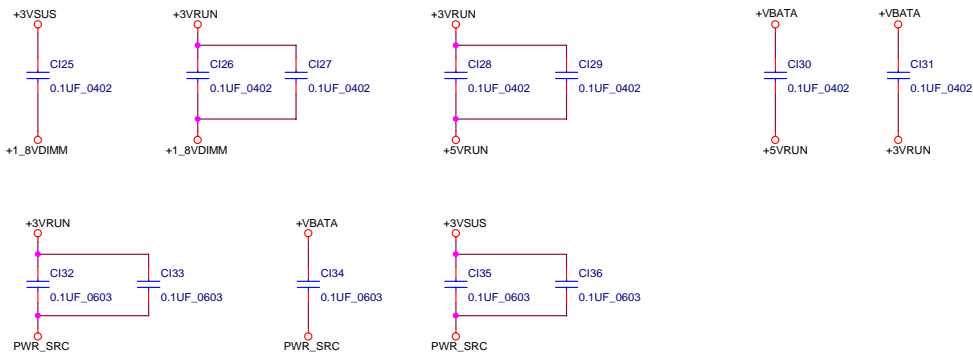
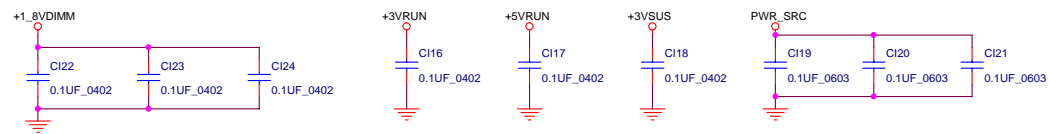


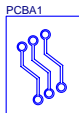
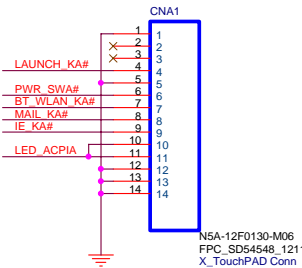
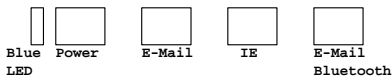
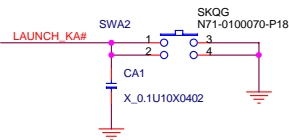
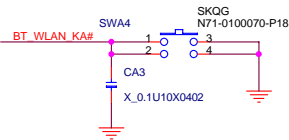
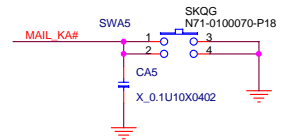
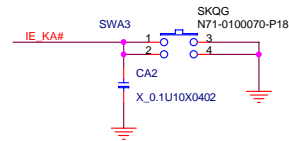
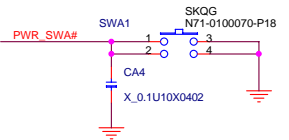
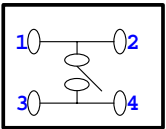




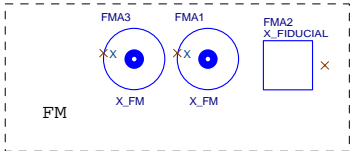




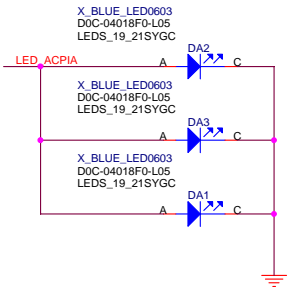
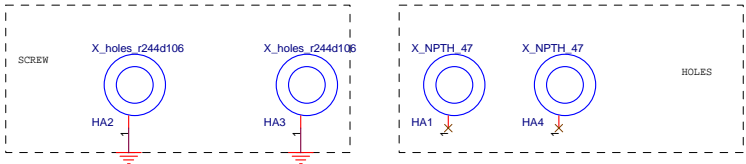




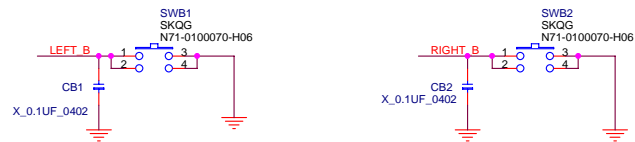
X\_PCB  
P30-1636A0B-D05



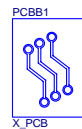
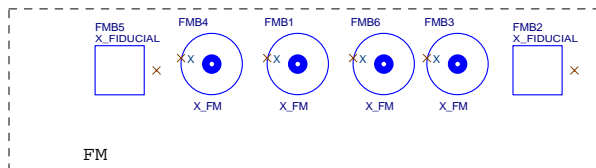
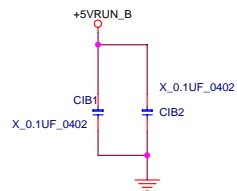
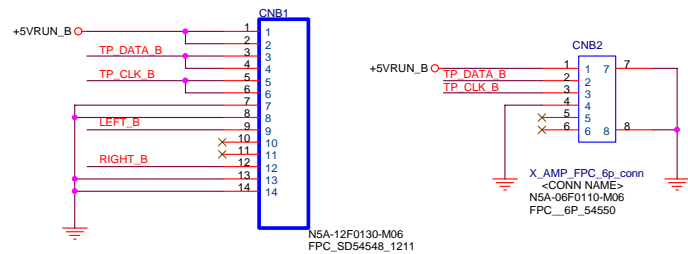
P30-1636A0B-D05, 崑穎  
P30-1636A0B-T53, 健鼎  
P30-1636A0B-H73, 瀚宇博德



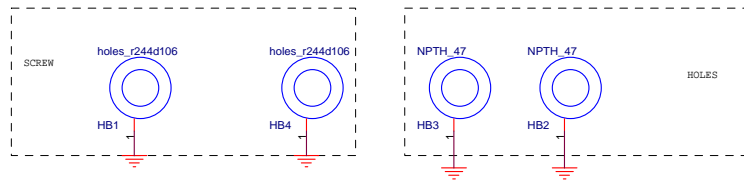
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Launch Board for MS1034			
Size	Document Number	Rev	
Custom	MS-1636A	0A	
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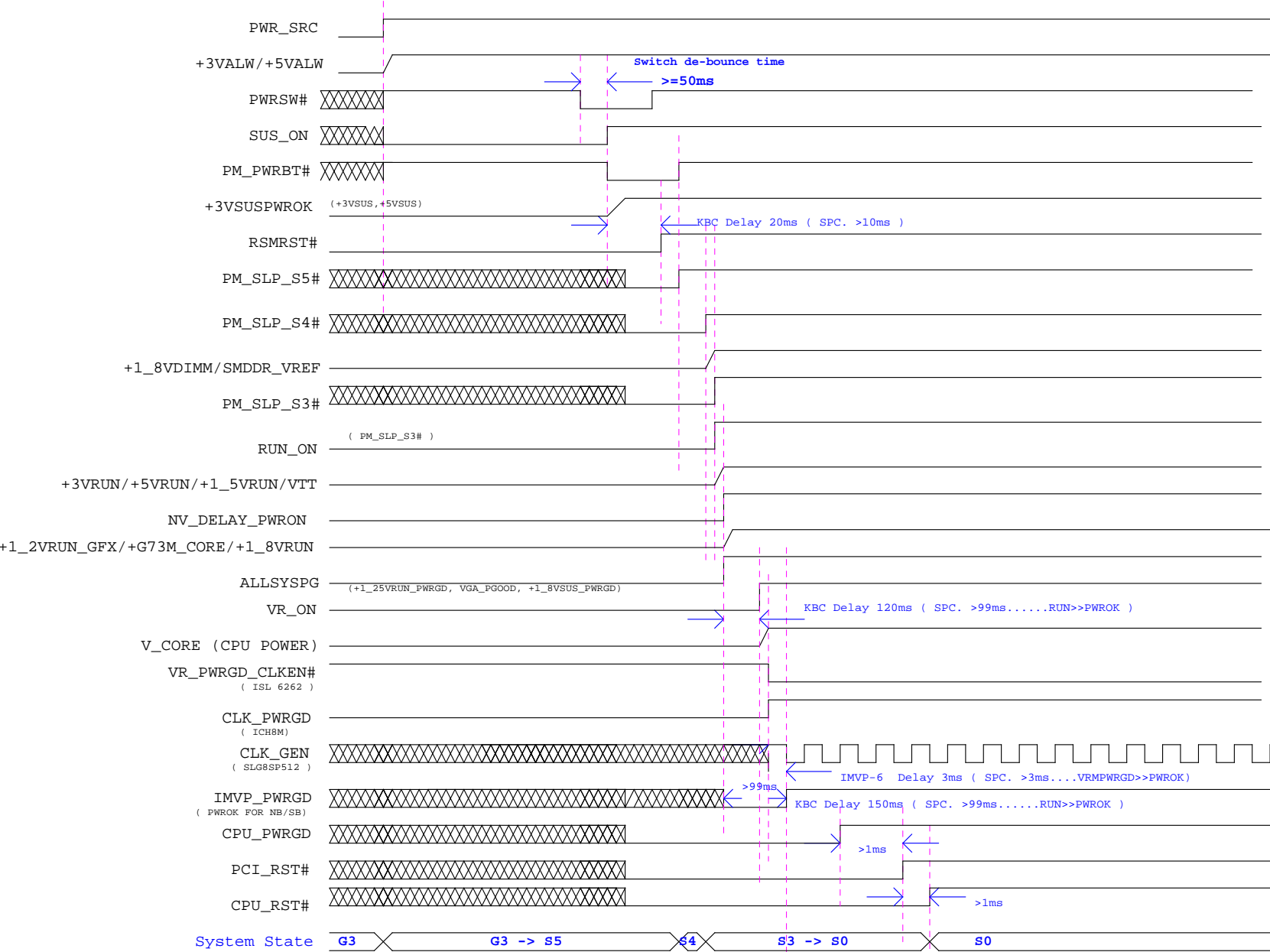
For TM61P-307 pin define



P30-1636B0B-D05, 崑崙  
P30-1636B0B-T53, 健鼎  
P30-1636B0B-H73, 瀚宇博德



SANTA ROSA System Power on Sequence for MS-1636



Ver.	date	change note
1.0	02/14/2007 by Apin	ADD Page35 D38 P/N D01-BAS400-W01 Page37 C844,C845,D39,U38 Page24 R522 Page36 R455 Page46 ME ADD Mylar MYLAR7 & MYLAR8
		DEL Page43 OR_0402 PR41,PR120,PR121,PR122, PR123,PR124,PR125 DEL Page23 OR_0402 R103,R111,R114,R128 DEL Page25 OR_0402 R155,R156,R348 DEL Page21 2.2K_0402 R2 DEL Page32 OR R381,R389 DEL Page6 OR_0402 R97,R337
	02/27/2007 by KILL	Change P/N 1uF/Y5V to 1uF/X7R C105,C20,C36,C446,C501,C578,C638,C645 C729,C740,C741,C784,C785,C786 Change P/N 2.2UF/6.3V to 0.1UF/16V Page 34 C782,C783 Change P/N 10K_0402 to 1M_0402 Page35 R215 Change P/N 22UF/10_1206 TO 100UF/6.3V Page27 C690 Change P/N PLCC32_SOCKET FLASH ROM SOCKE Change to Flash ROM Change P/N M/E Mylar MYLAR2 E2P-6322712-G40 Change to E2P-6322713-G40 Change P/N M/E Scerw E2B-1636010-L63 change to E2B-1641010-L63 Page 46 H1,H2,H3,H4