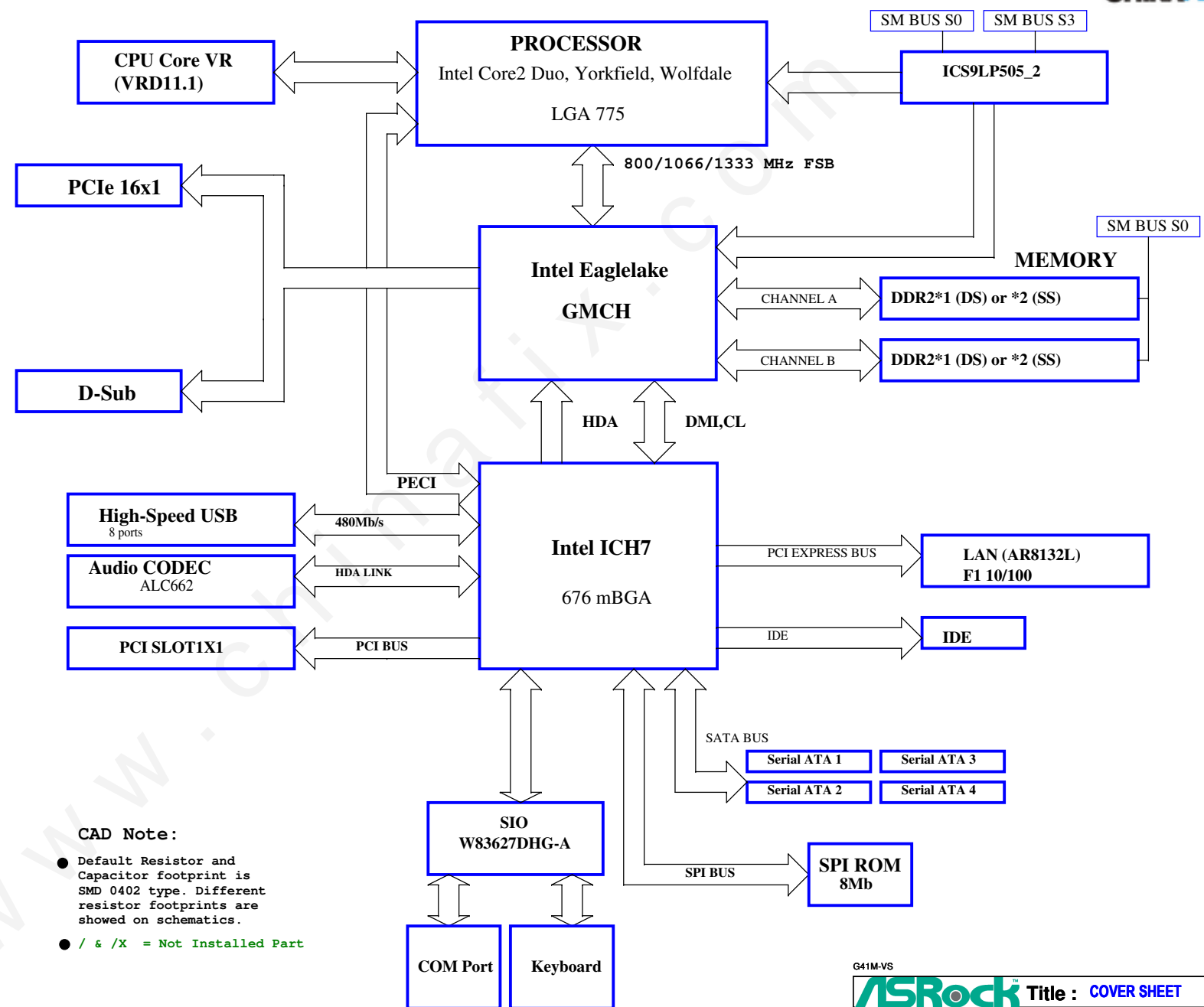
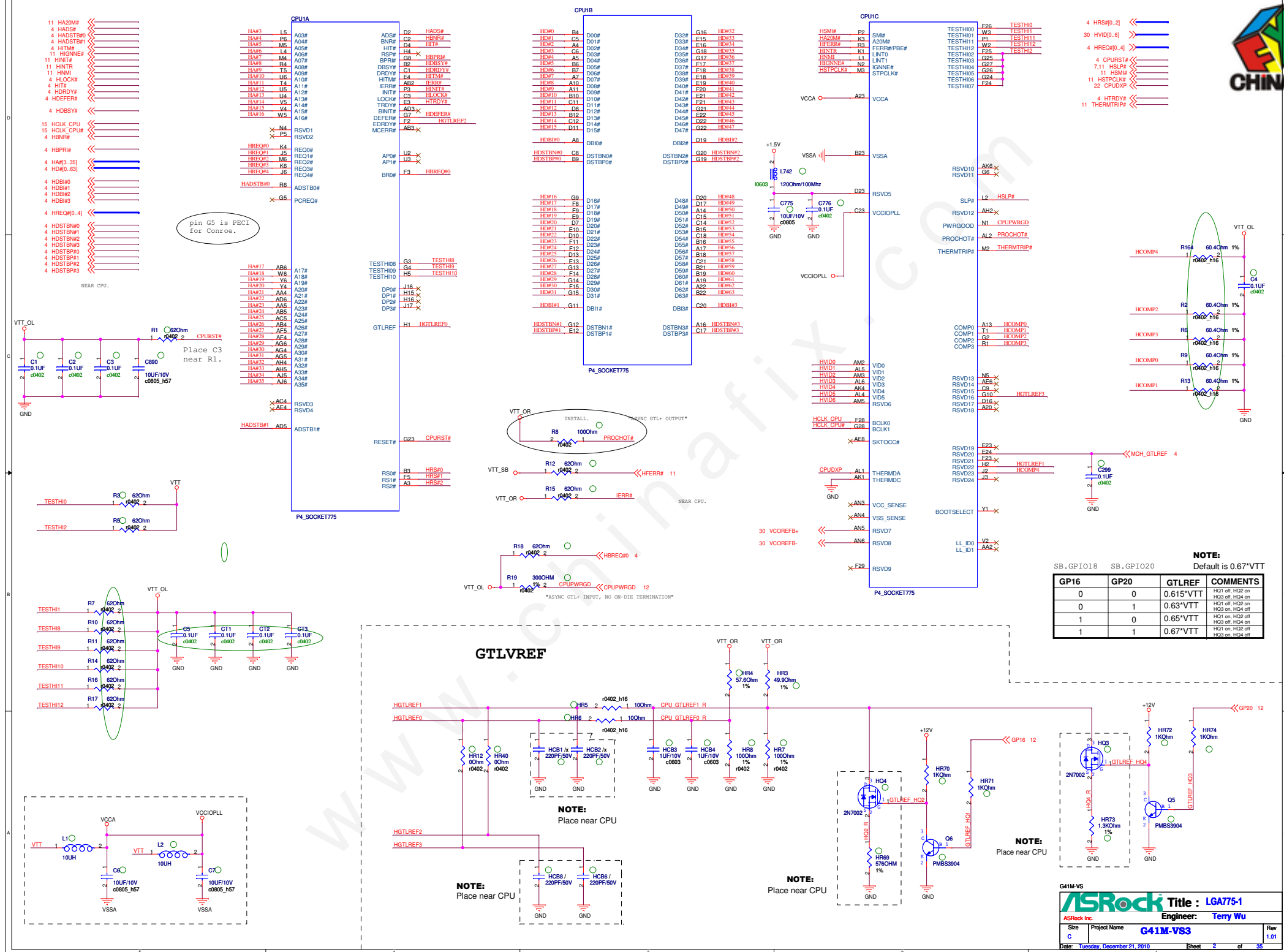
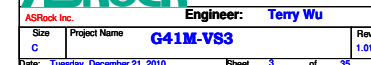
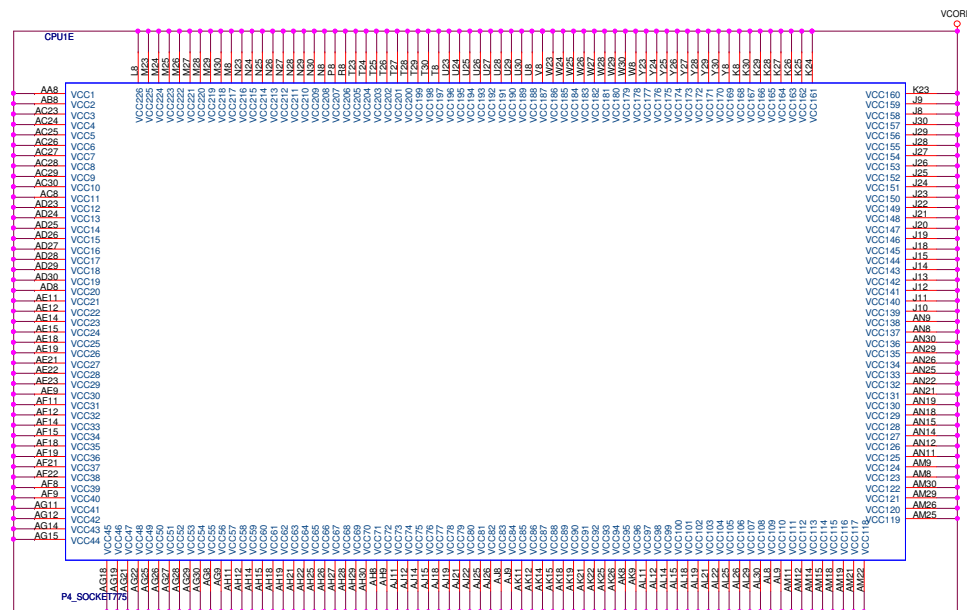
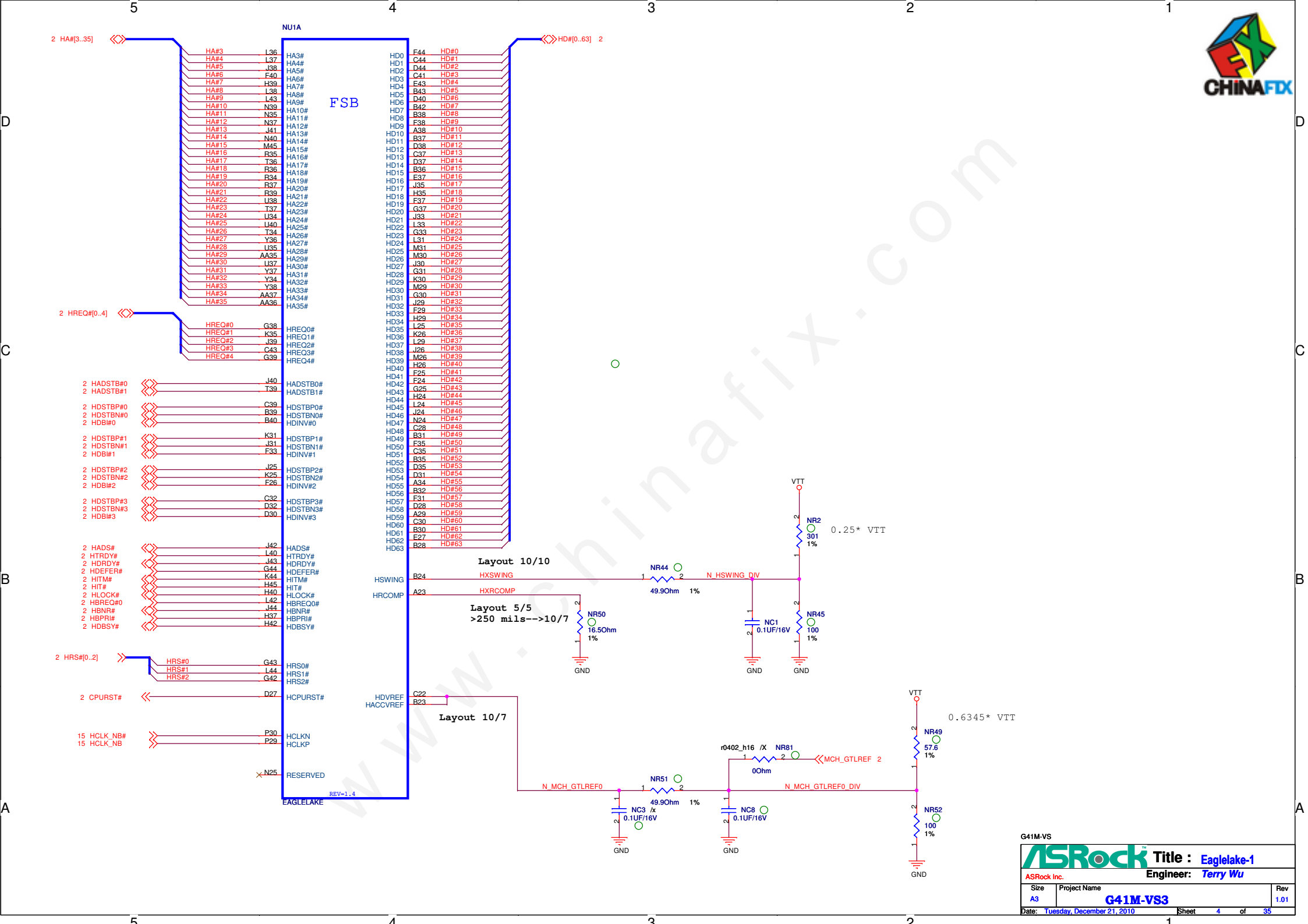


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SOUTH BRIDGE (ICH7)	11~14
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VCORE_ST L6716	30
+1.10V_NB	31
VCCM	32
LAN_AR8132L	33
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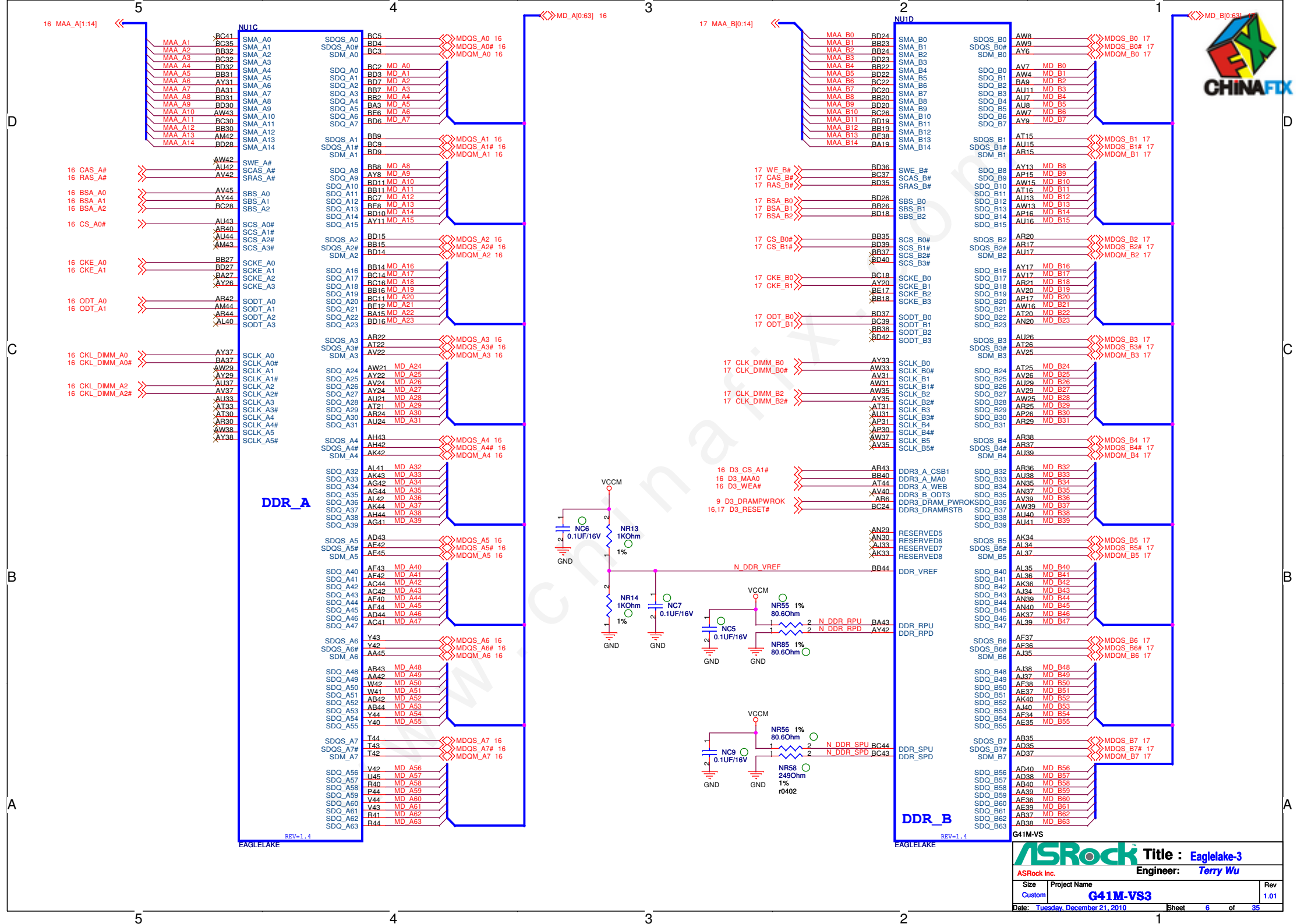




### SDVO STRAPS

#### SDVO CTRL DATA

1: SDVO CARD PRESENT, PEG DISABLE  
0: SDVO DISABLE (DEFAULT)





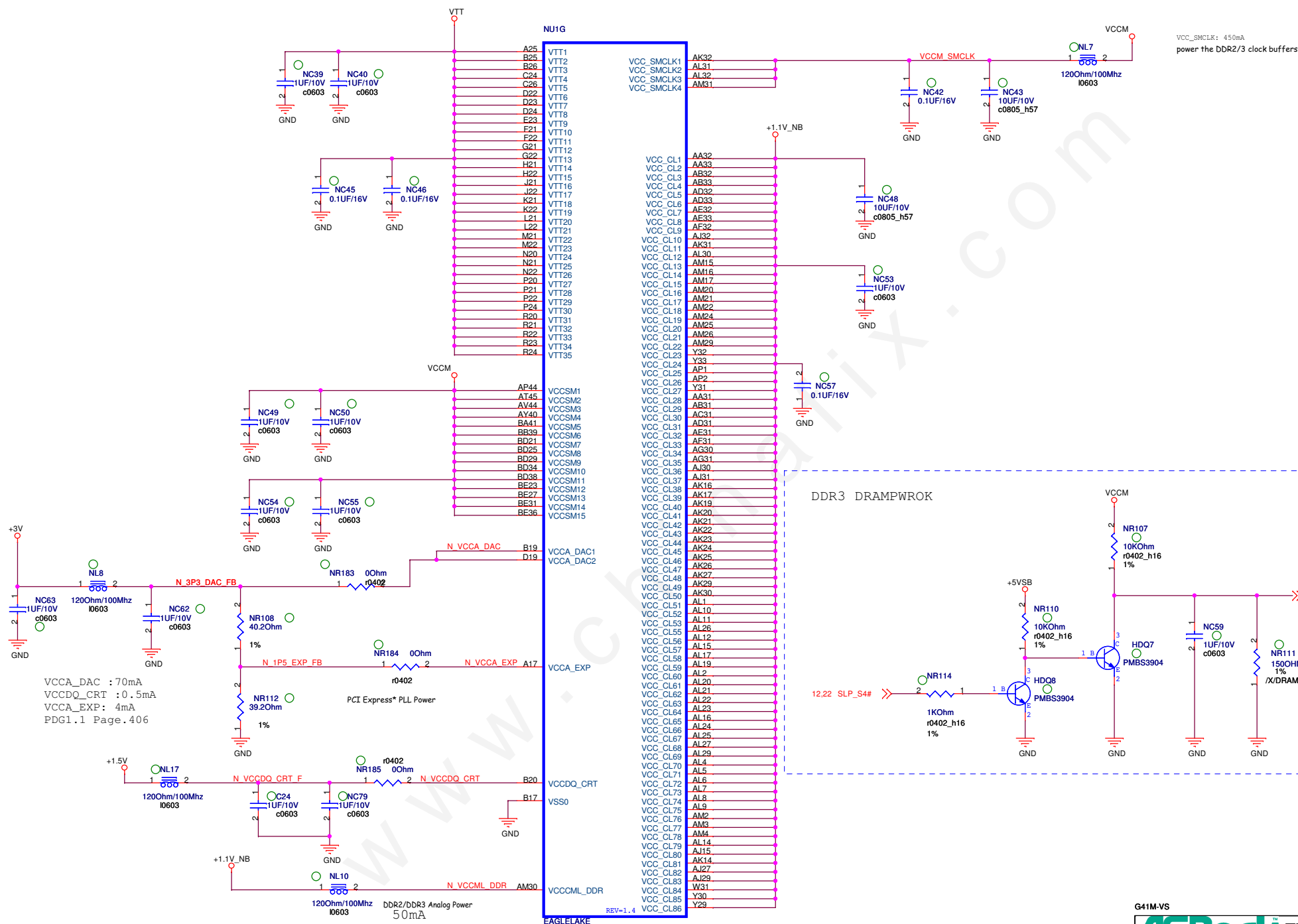




avoid VCC\_EXP plane can not be  
connected directly to the VCC\_Core

Backside caps

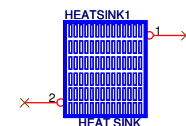
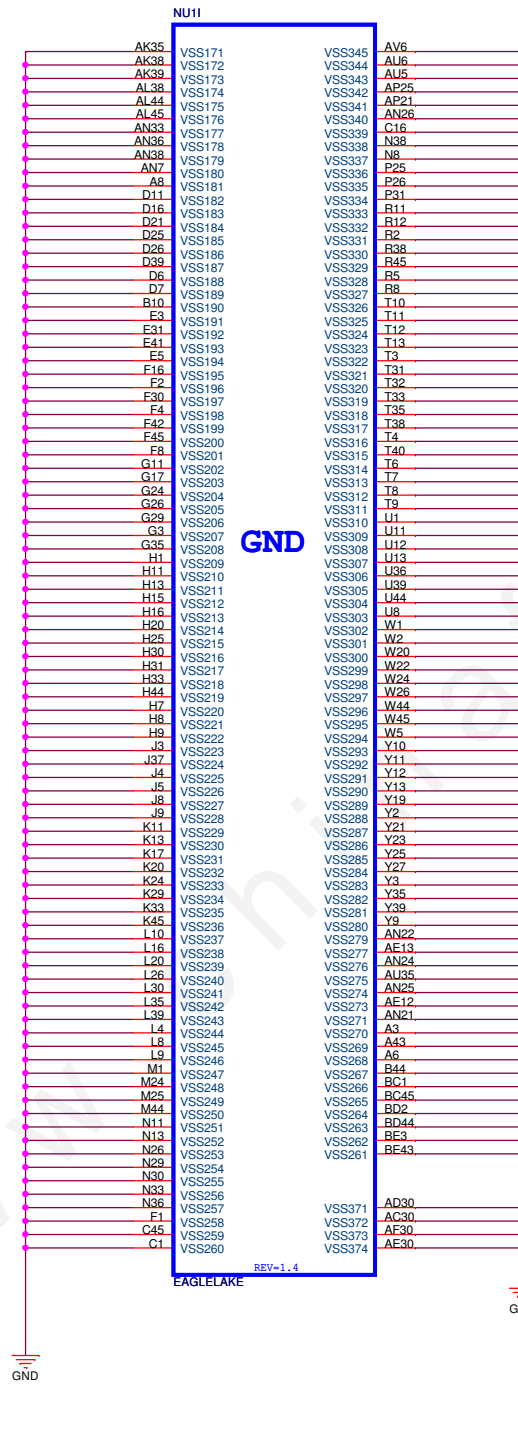
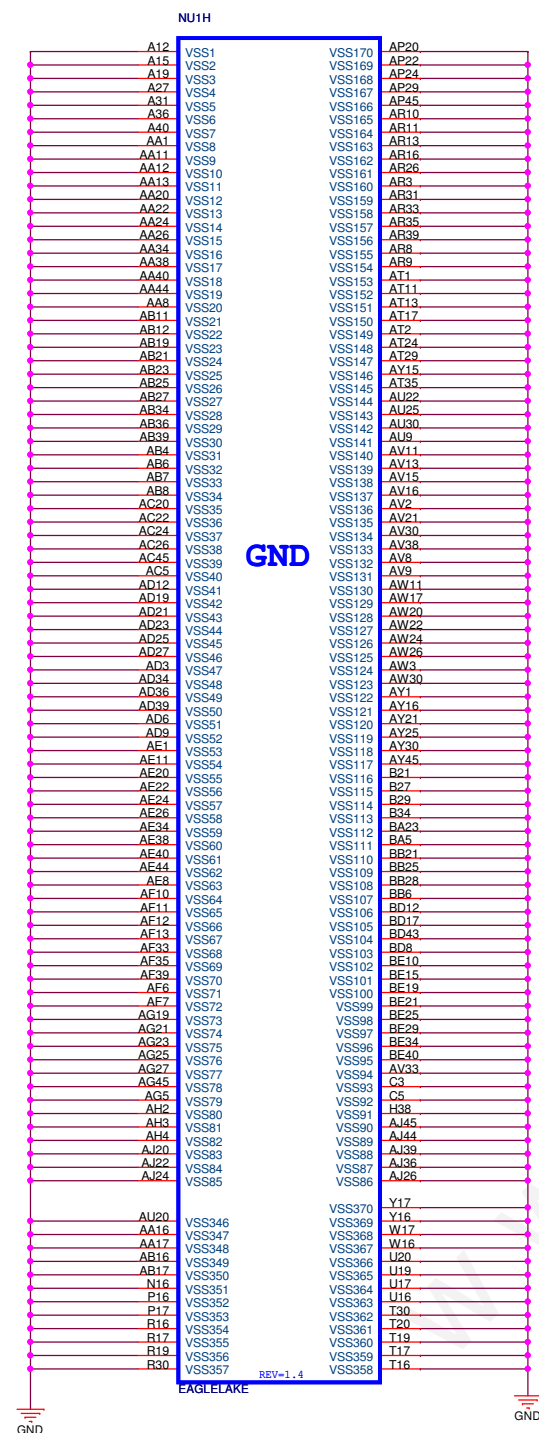




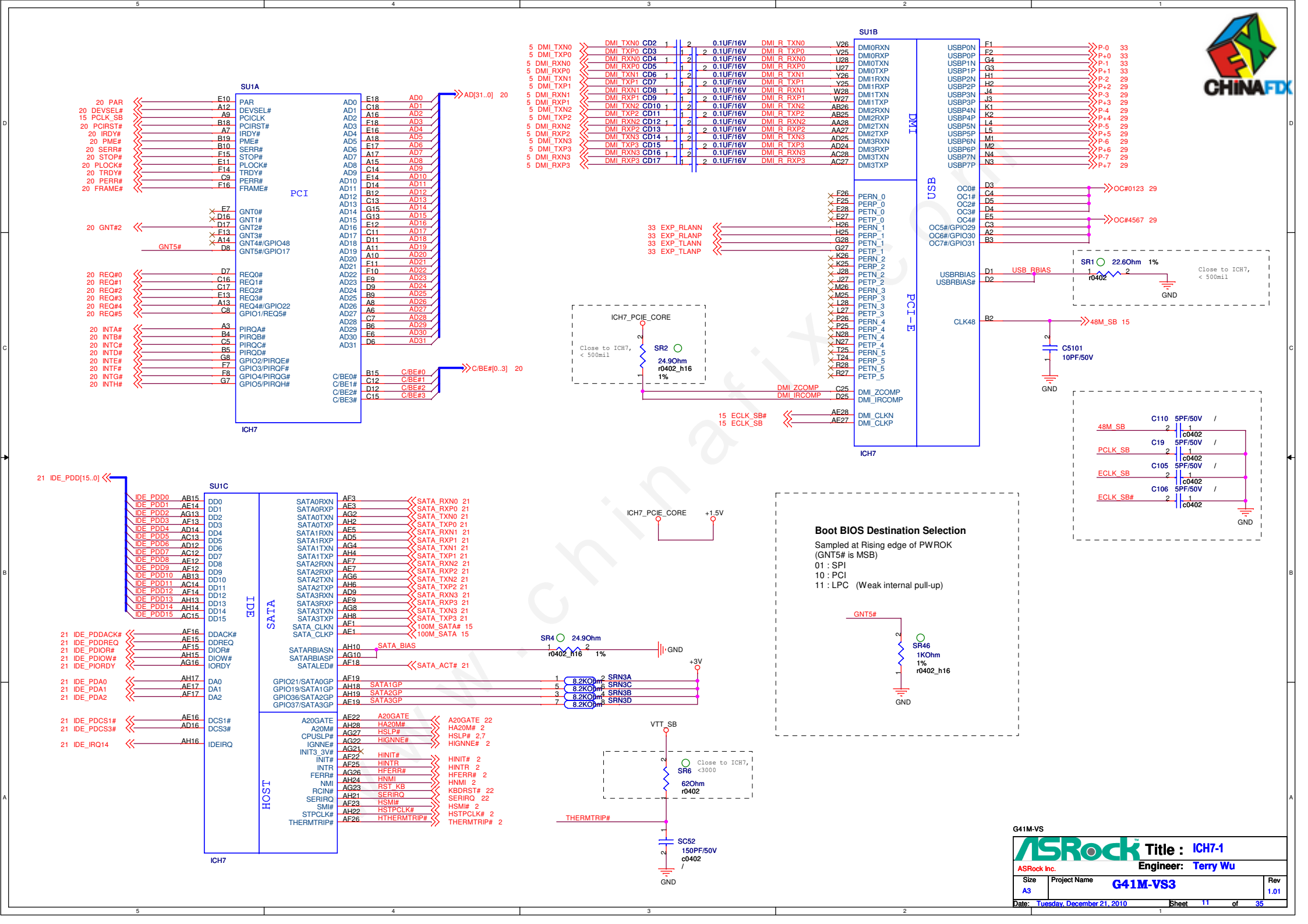
**G41M-VS**

ASRock™ Title : Eaglelake-6

ASRock Inc.		Engineer: Terry Wu	
Size A3	Project Name <b>G41M-VS3</b>	Rev 1.01	
Date: <u>Tuesday, December 21, 2010</u>		Sheet	9 of 35



G41M-VS

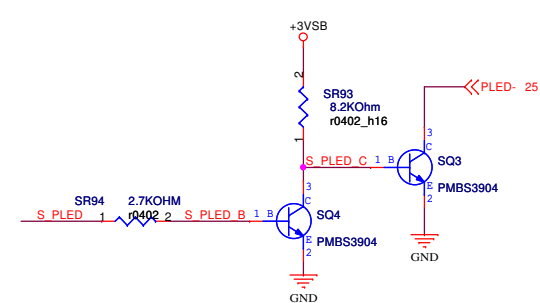


## SMBus Switch

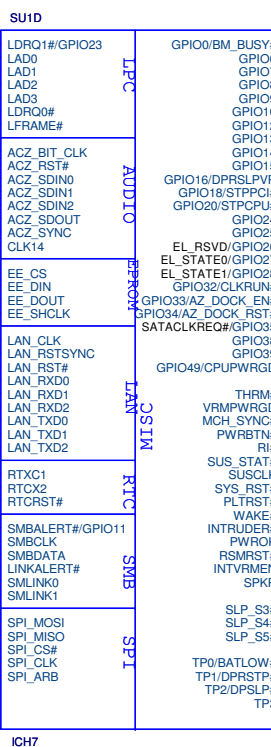
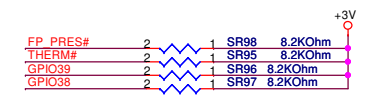
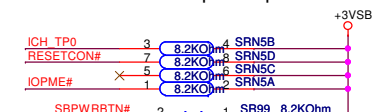


1.00 SMBus connect to two kind of devices, one use Main power, another use Standby power, so use this switch circuit to isolate those two device.  
SMB\_CLK and SMB\_DATA for Standby device.  
SMB\_CLK\_MAIN and SMB\_DATA\_MAIN for Main power device.

1.00 SMBus connect to two kind of devices, one use Main power, another use Standby power, so use this switch circuit to isolate those two device.  
SMB\_CLK and SMB\_DATA for Standby device.  
SMB\_CLK\_MAIN and SMB\_DATA\_MAIN for Main power device.

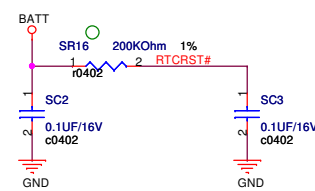


Un-used GPIO pull-high to the relative power plane

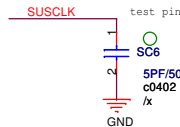


## RTC Power

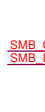
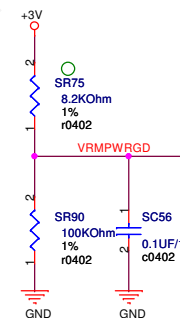
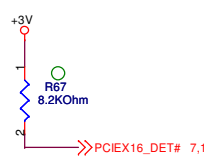
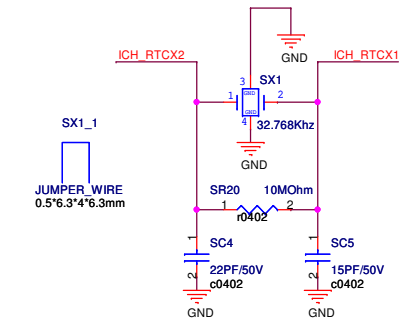
1.00 RST\_RTC\_SB# asserted, clear CMOS

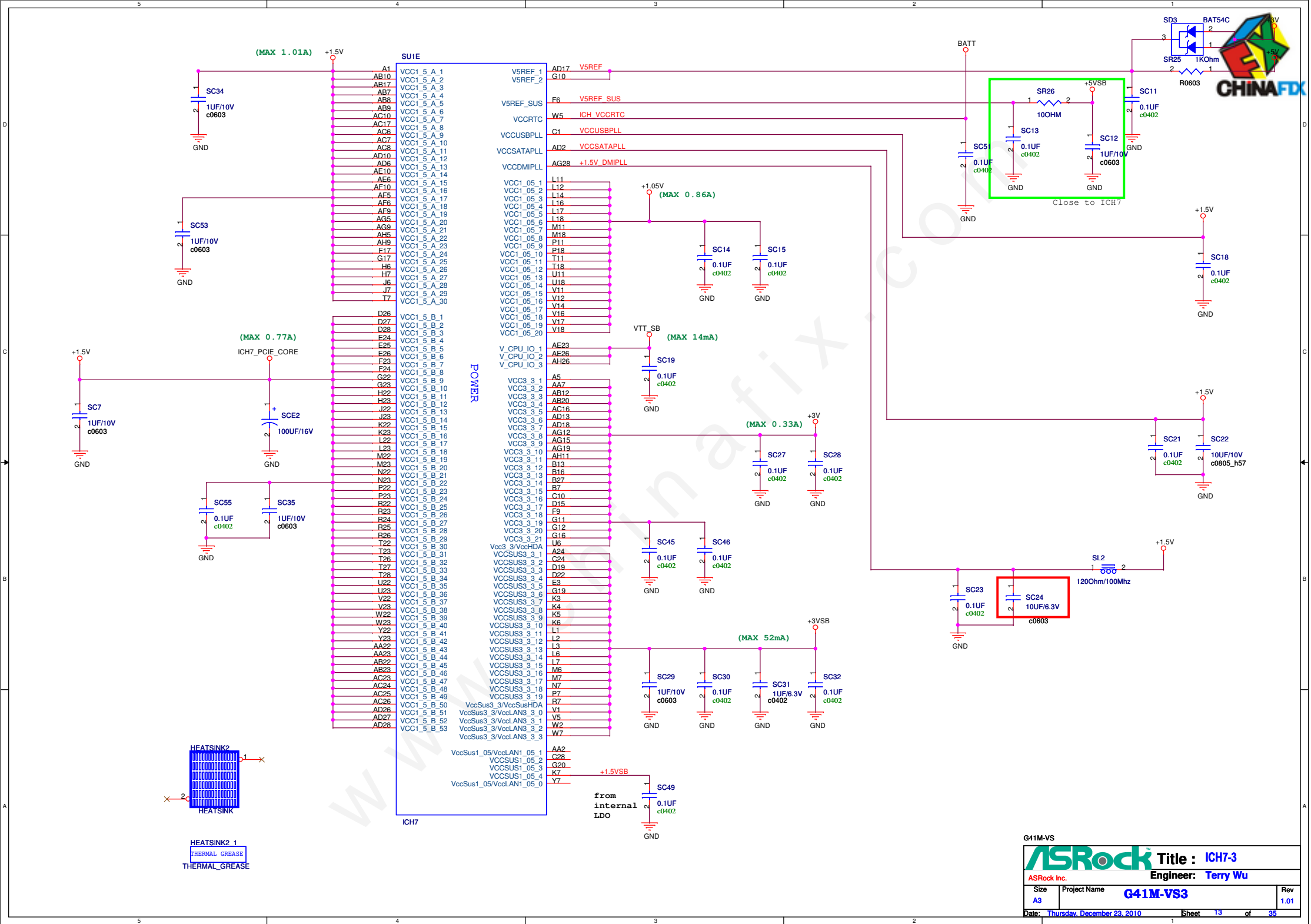


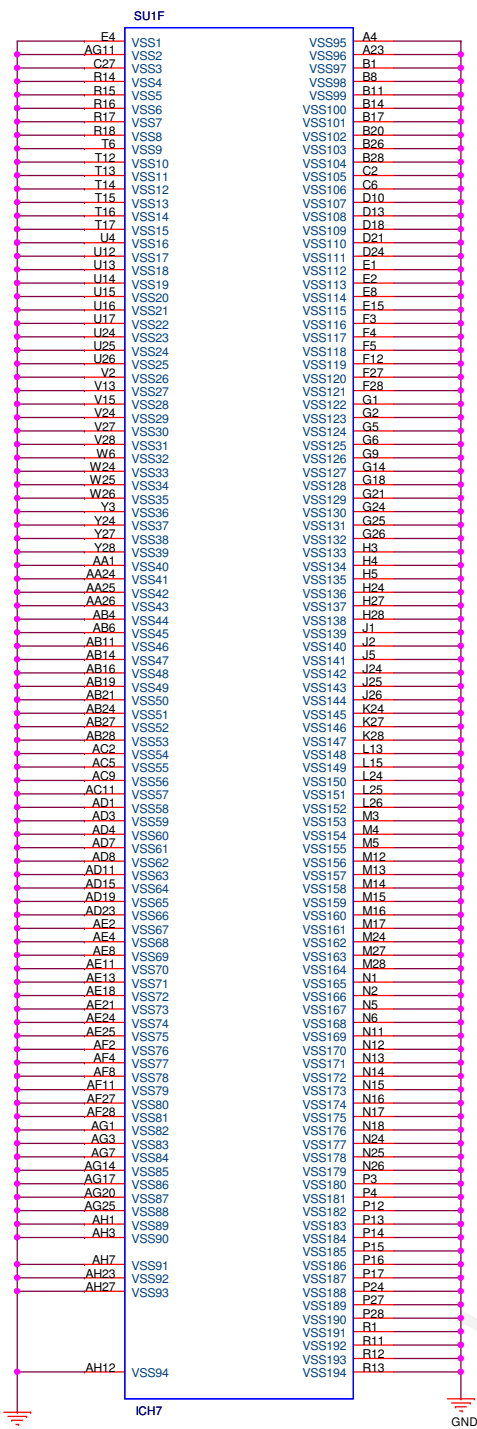
1.00 SUSCLK For test RTC frequency.



## RTC Crystal







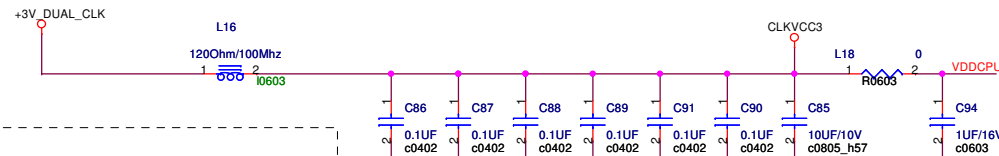
G41M-VS

<b>ASRock</b>		<b>Title : ICH7-4</b>	
ASRock Inc.		Engineer: Terry Wu	
Size A3	Project Name G41M-VS3	Rev 1.01	
Date: Tuesday, December 21, 2010		Sheet 14	of 35

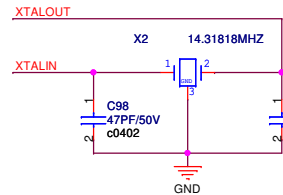




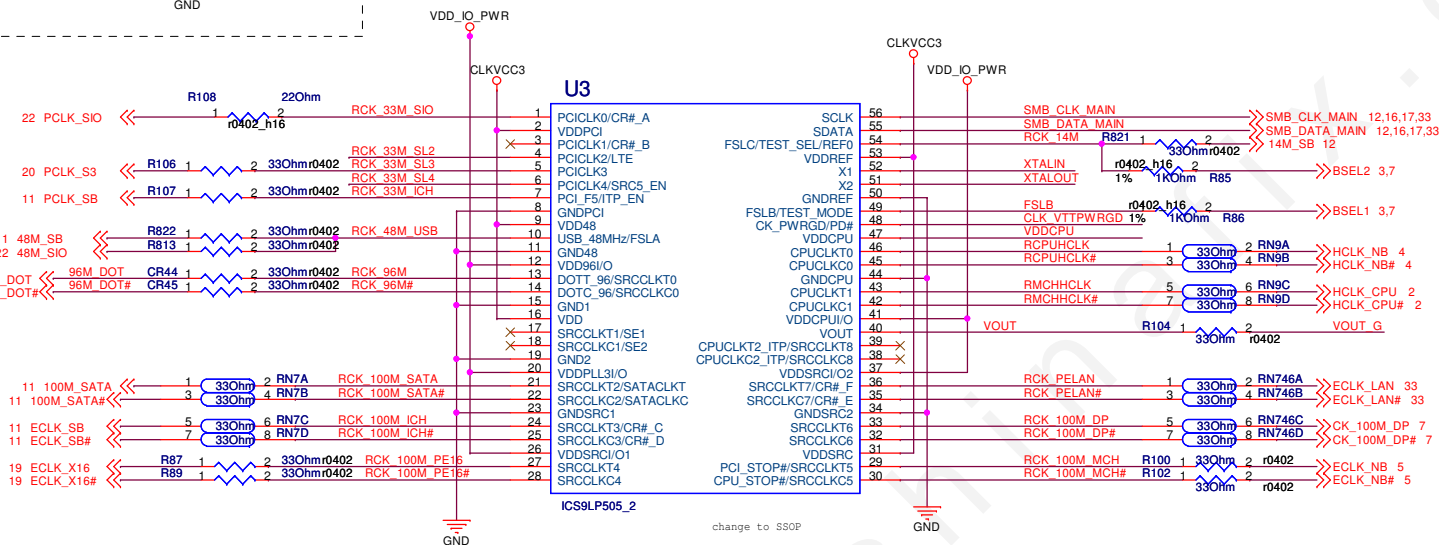
Clock gen. Power



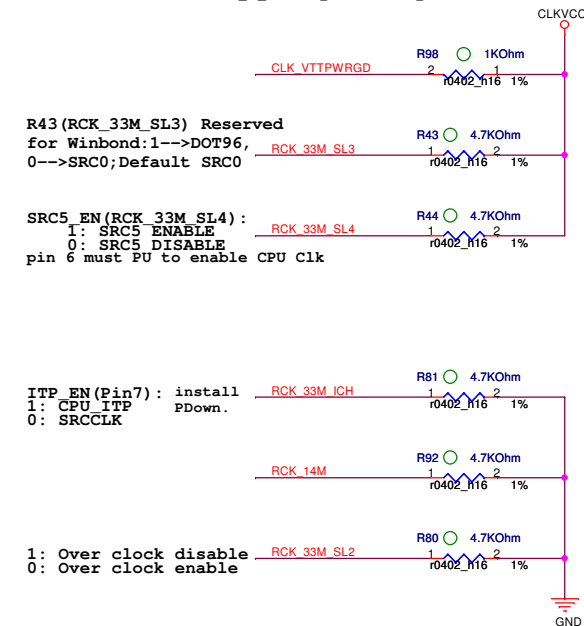
14.318MHz Crystal



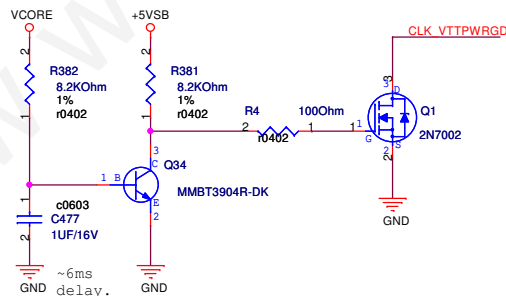
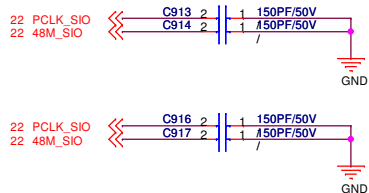
# ICS 505



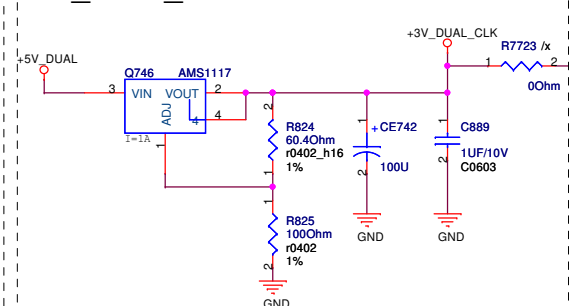
## Strapping Ping



*EMI Cap.*



## +3V DUAL CLK



FSBSEL2	FSBSEL1	FSBSELO	CPU
0	0	0	266
0	1	0	200
0	0	1	133

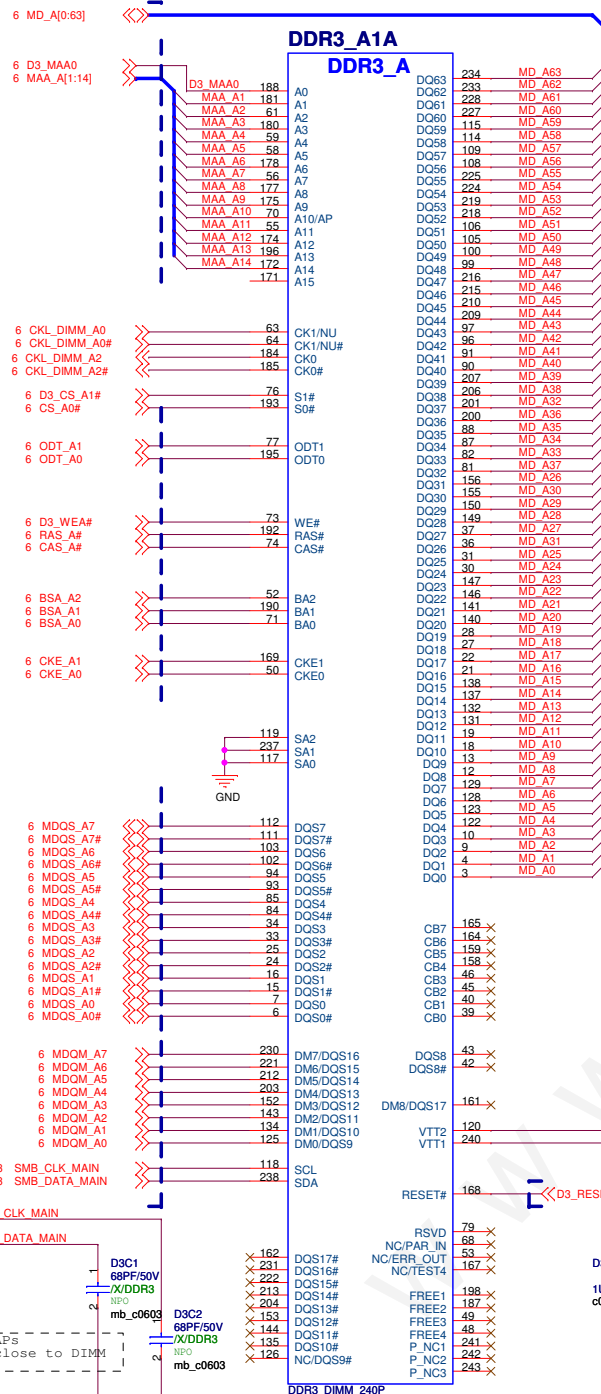
**G41M-VS**

ASRock™ Title : CLOCK

ASRock Inc. Engineer: Terry Wu

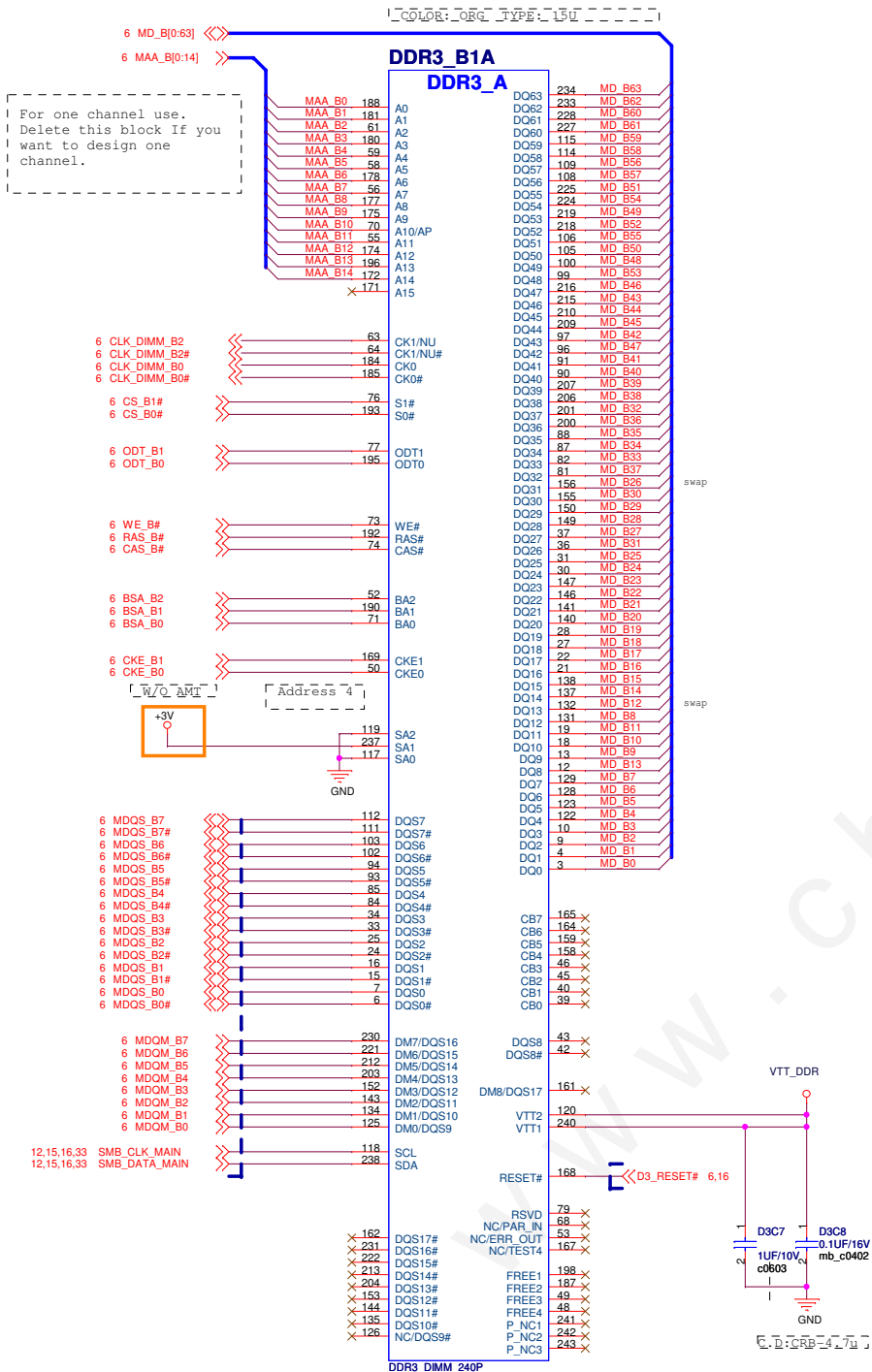
Size	Project Name	<b>G41M-VS3</b>
------	--------------	-----------------

Date: Tuesday, December 21, 2010 Sheet 15 of 35



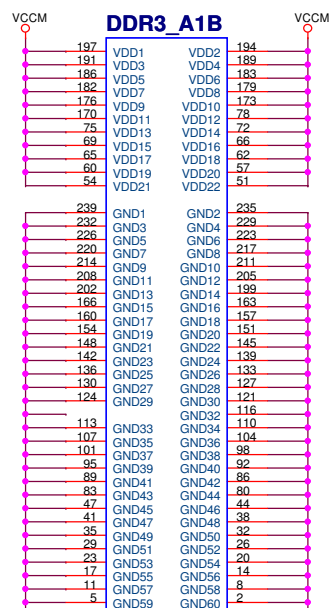
For one channel use.  
Delete this block If you  
want to design one  
channel.

G41M-VS



G41M-VS

<b>ASRock</b>		<b>Title : DDR2-CHB Control</b>	
ASRock Inc.		Engineer: Terry Wu	
Size Custom	Project Name <b>G41M-VS3</b>	Rev 1.01	
Date: Tuesday, December 21, 2010	Sheet 17	of 35	



**DDR3\_B**

VREFCA VDDSPD  
VREFDQ

DDR3\_DIMM\_240P

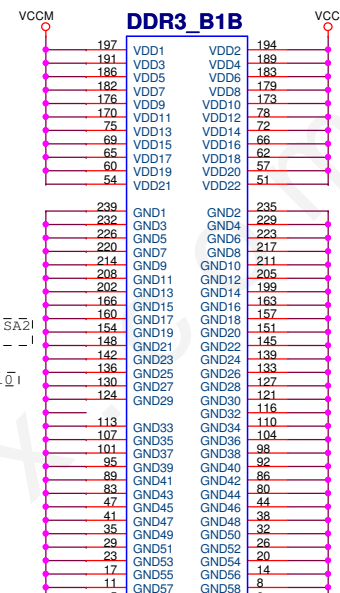
+3V

W/O AMT

0.1UF/16V

With AMT -- W/O AMT  
+3V\_CL +3V  
S0-S5有電 S0有電

For one channel use.  
Delete this block if you  
want to design one  
DIMM/channel.



**DDR3\_B**

VREFCA VDDSPD  
VREFDQ

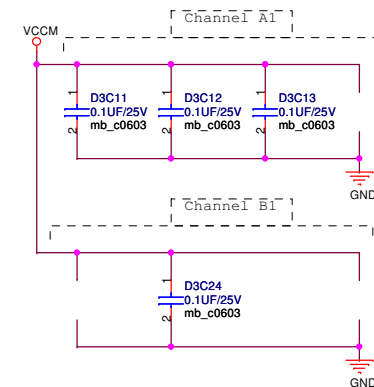
DDR3\_DIMM\_240P

+3V

W/O AMT

0.1UF/16V

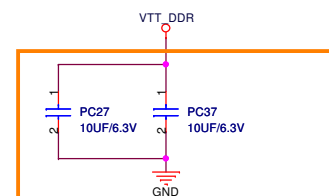
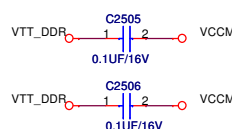
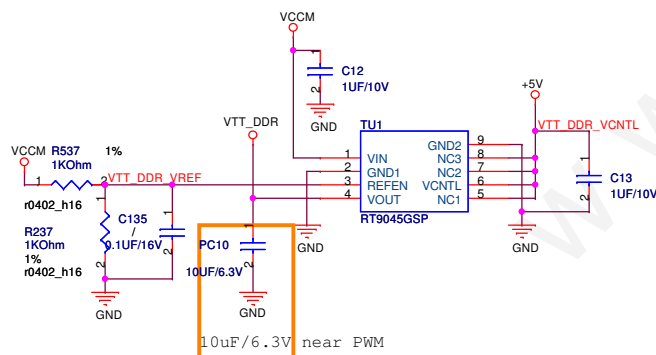
DIMM\_A1B: CLOSEST TO CPU  
COLOR: BLACK  
TYPE: 15U



## VTT\_DDR

For one channel use.  
Delete this block if you  
want to design one  
DIMM/channel.

With AMT -- W/O AMT  
+3V\_CL +3V  
S0-S5有電 S0有電



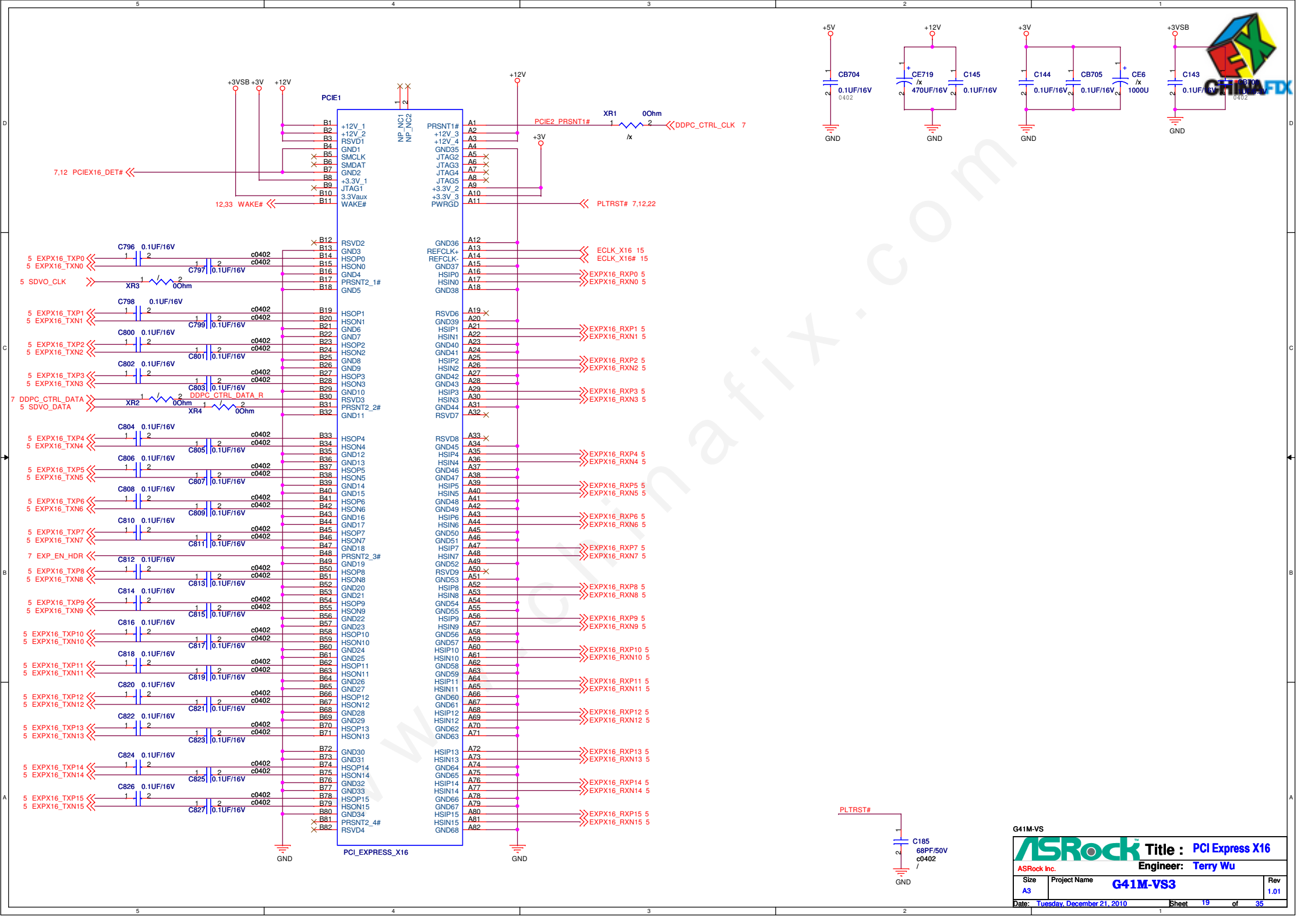
10uF/6.3V 1 DIMM 1 pcs, near DIMM slot

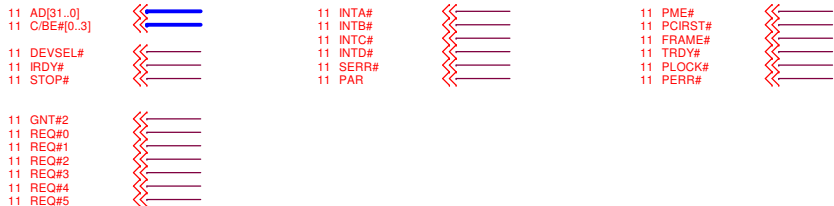
G41M-VS

**ASRock** Title: **DDR2-CHB Power**  
ASRock Inc. Engineer: **Terry Wu**

Size A3 Project Name **G41M-VS3** Rev 1.01

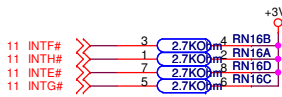
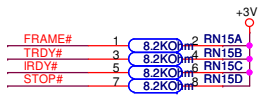
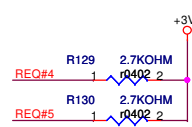
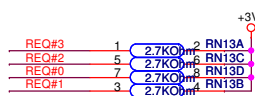
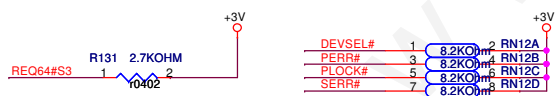
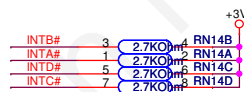
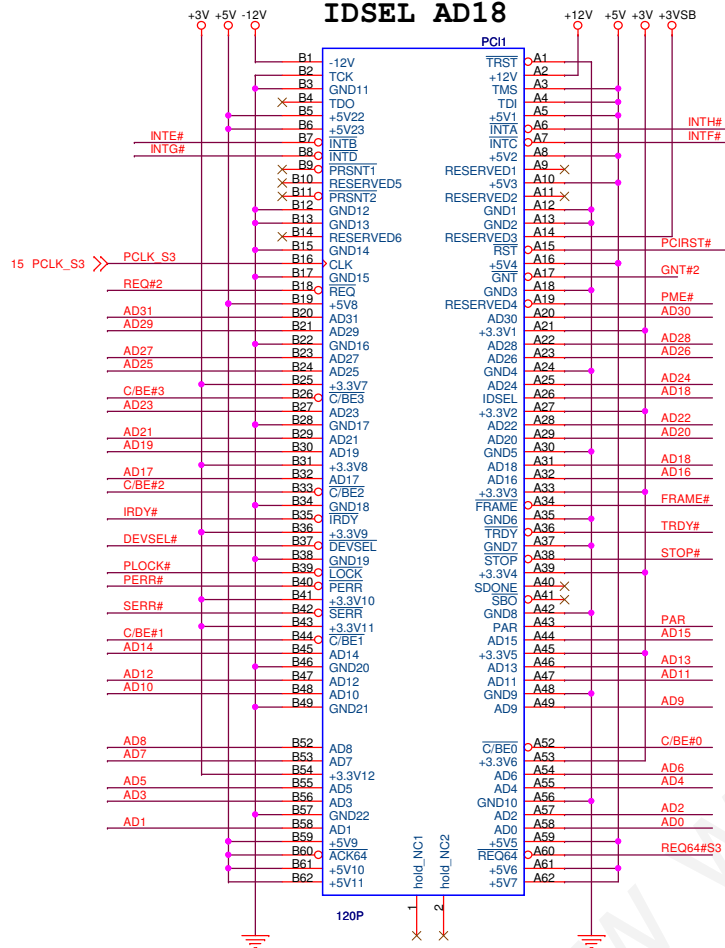
Date: Tuesday, December 21, 2010 Sheet 18 of 35





## PCI SLOT1

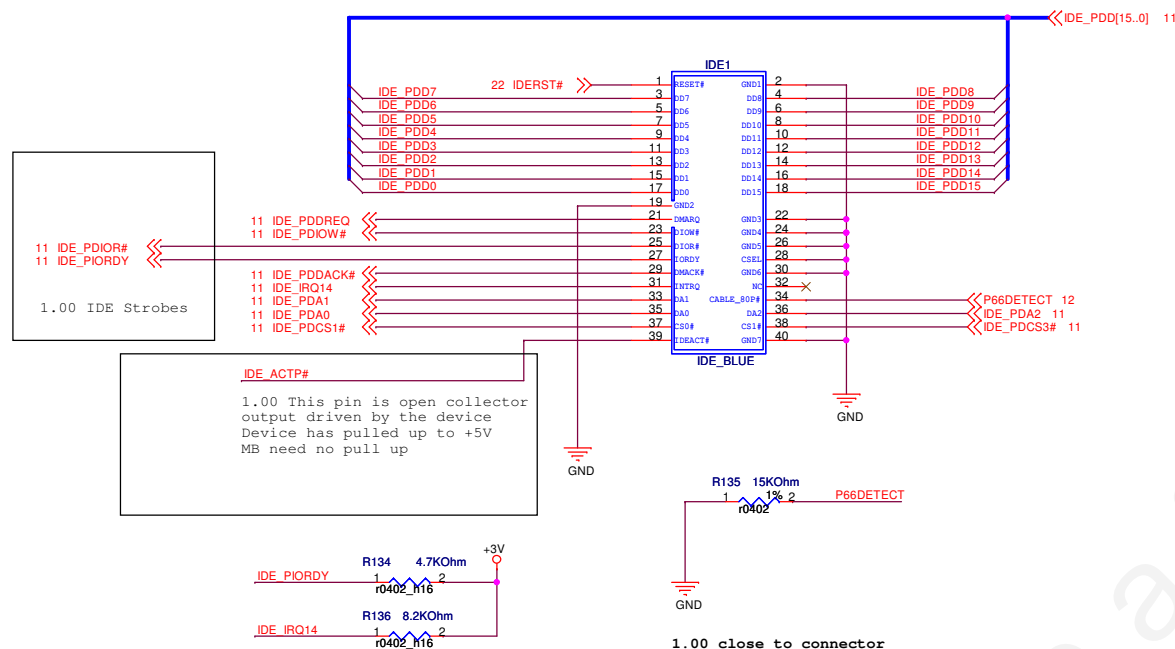
### HEFG IDSEL AD18



G41M-VS

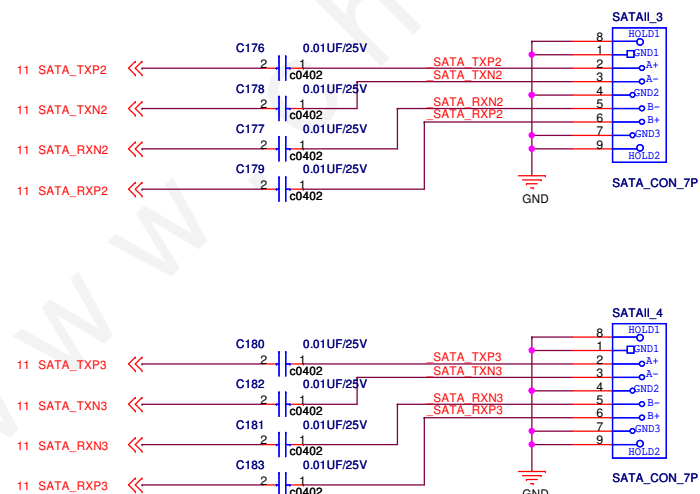
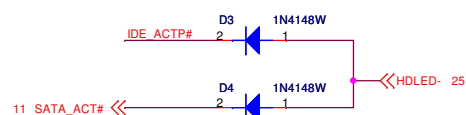


**IDE**

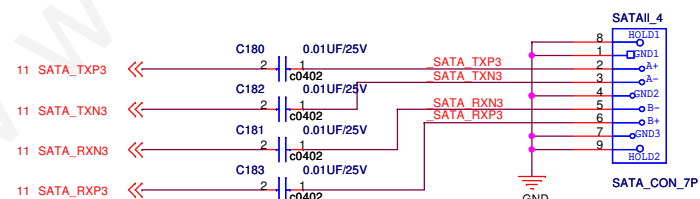
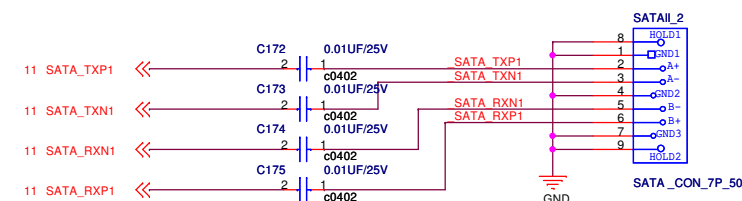
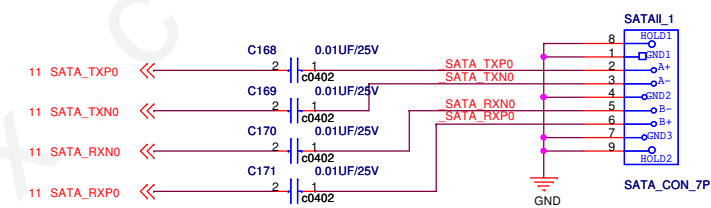


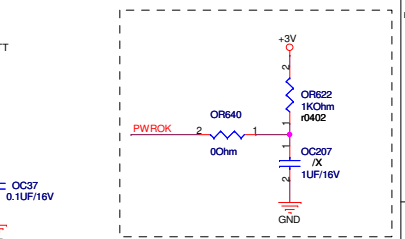
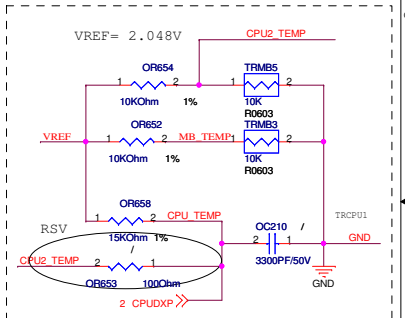
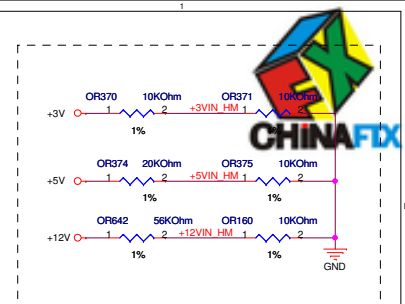
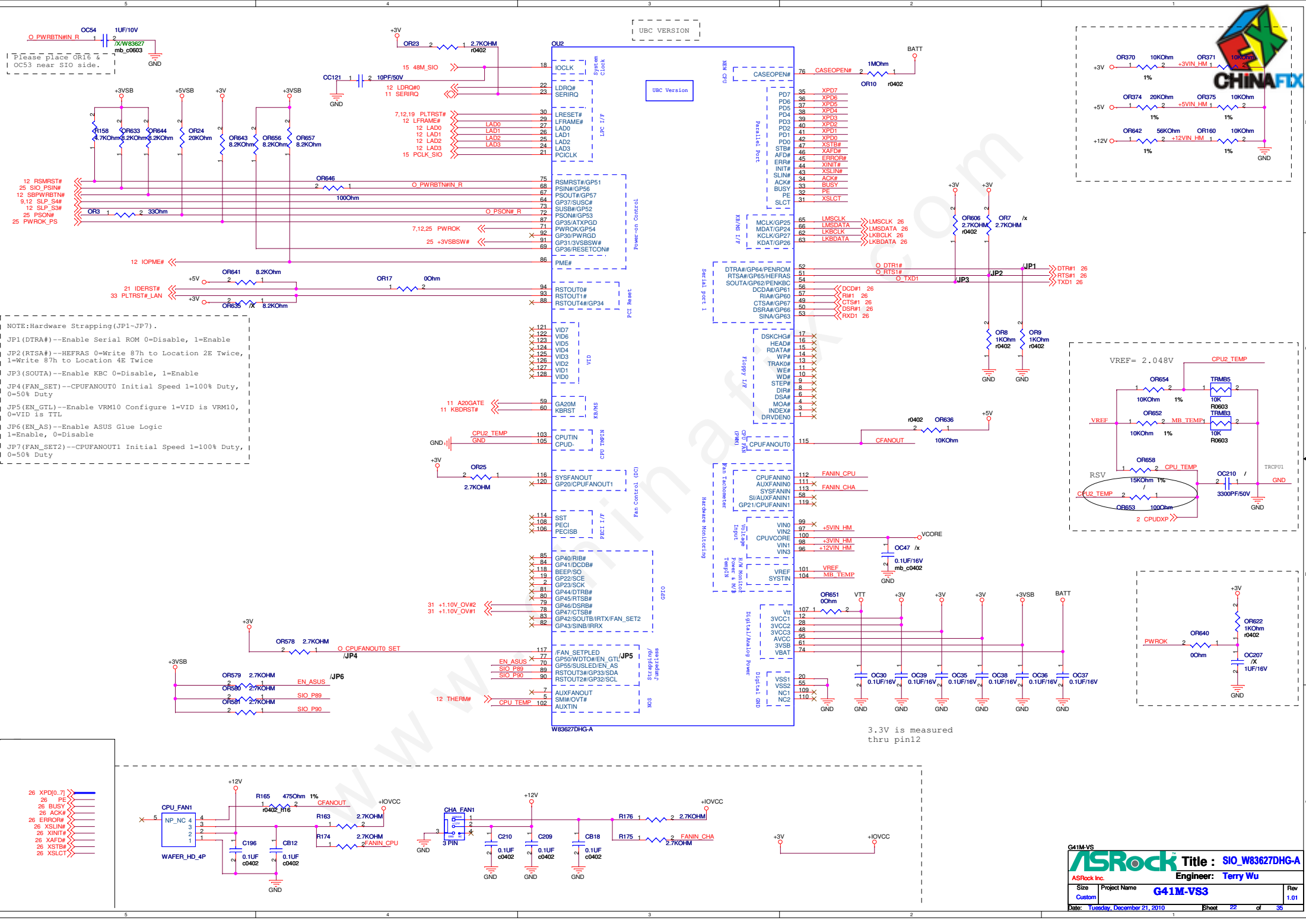
## IDE & SATA LED

```
1.00 Internal Pull UP
1.00 If need pul up,
check +3.3V or +5V
```

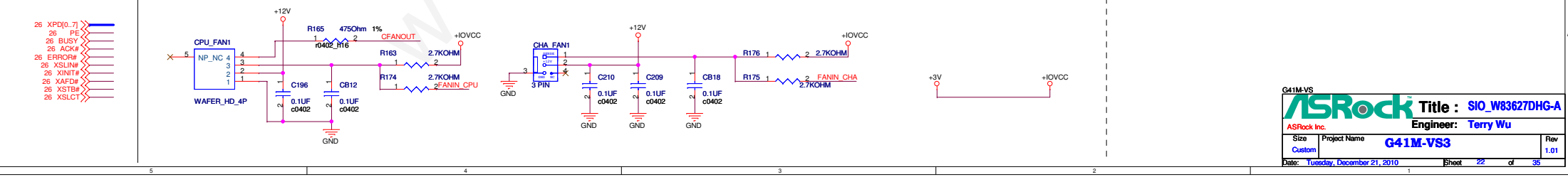


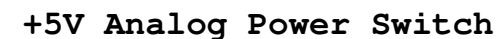
## Serial ATA





- 26 XPD0\_7
- 26 PE
- 26 BUSY
- 26 ACK
- 26 ERROR
- 26 XSLIN
- 26 XINTN
- 26 XAFD
- 26 XSTB
- 26 XSLCT

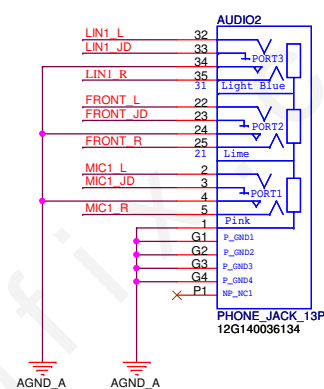




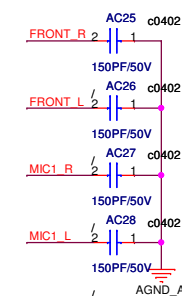
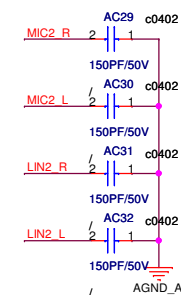
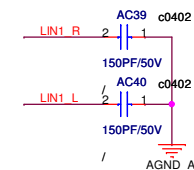
ASRock Title : ALC660VD-A

ASRock Inc.		Engineer: Terry Wu	
Size Custom	Project Name <b>G41M-VS3</b>		Rev 1.01
Date: Tuesday, December 21, 2010		Sheet 23 of 35	

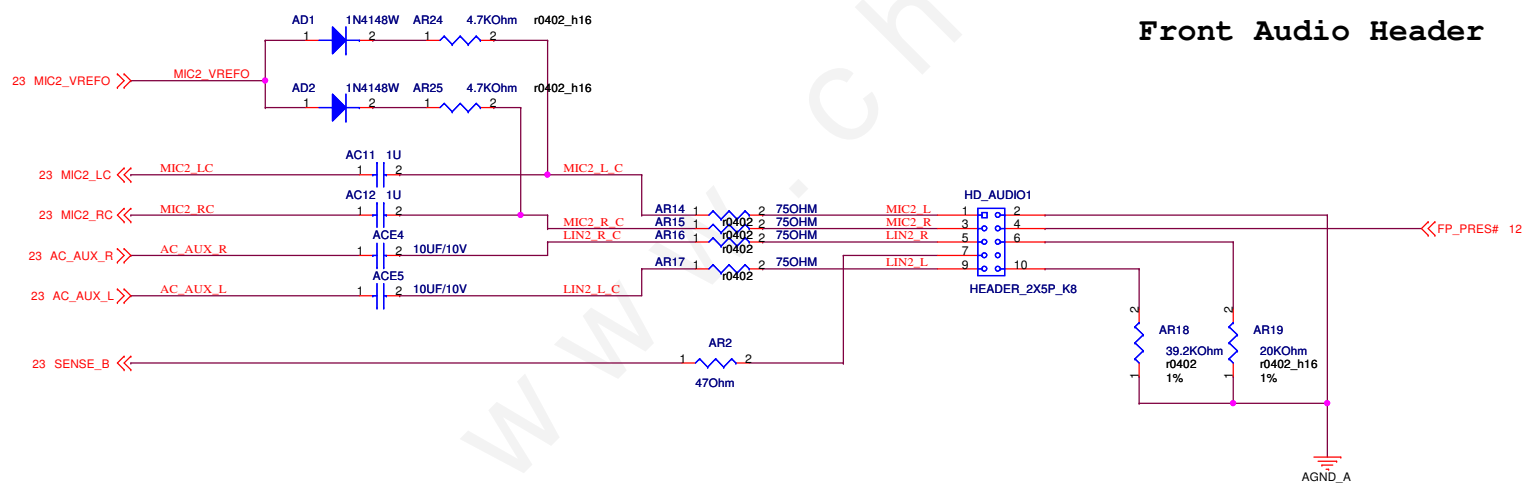
## Rear Audio Jack



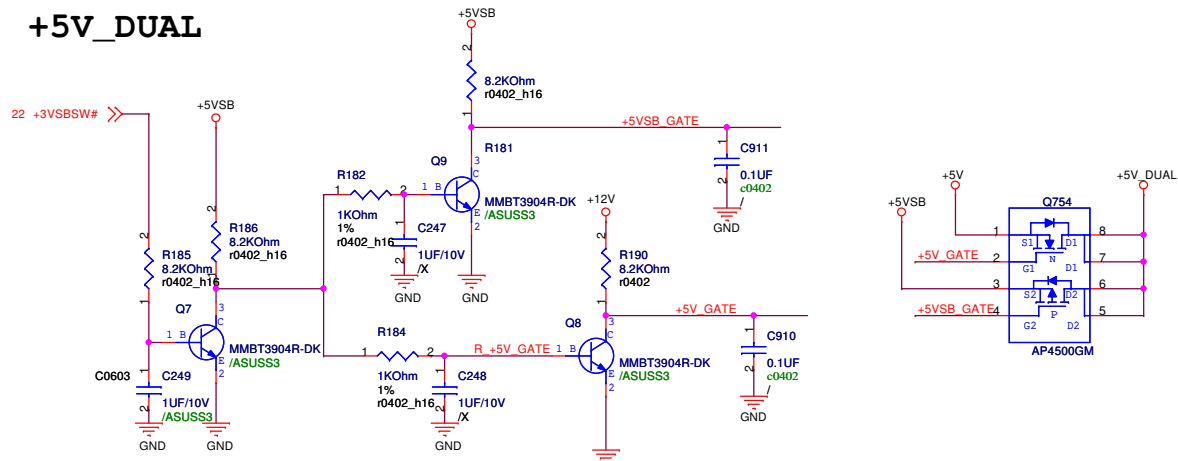
## EMI Cap.



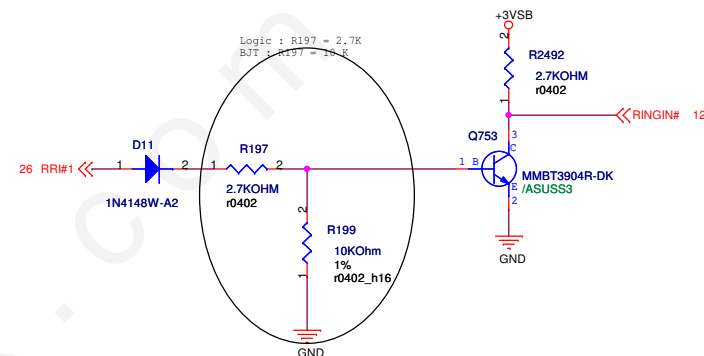
## Front Audio Header



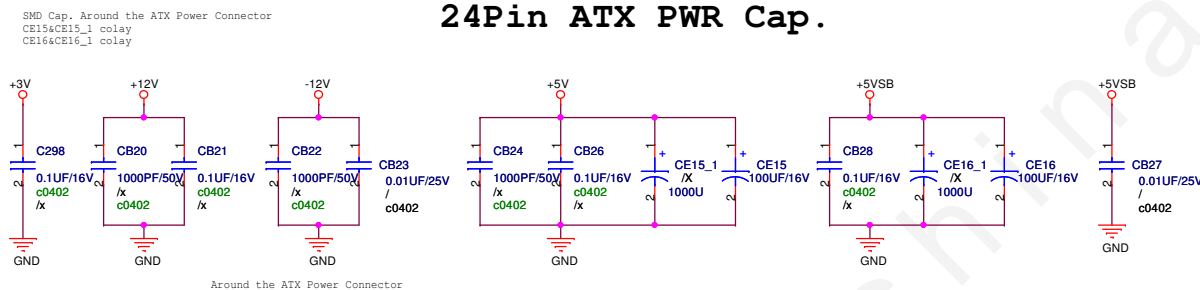
## +5V\_DUAL



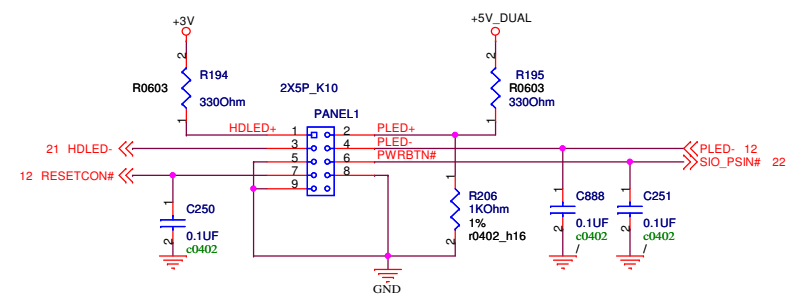
## COM Port RingIn



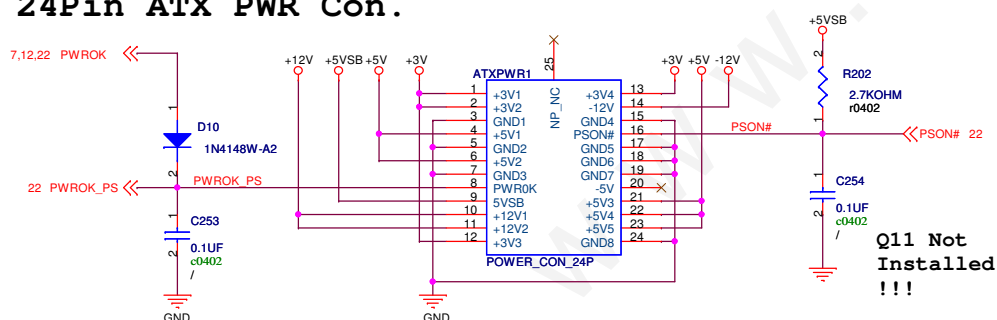
## 24Pin ATX PWR Cap.



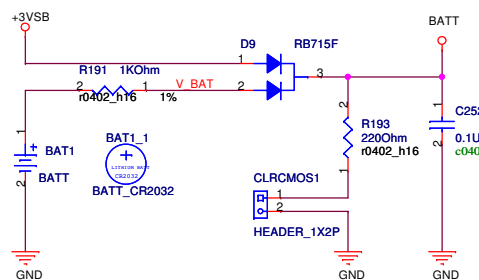
## Front Panel



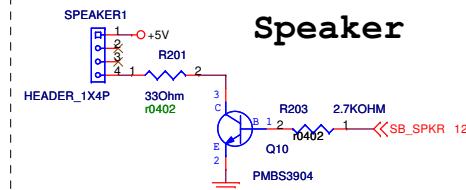
## 24Pin ATX PWR Con.



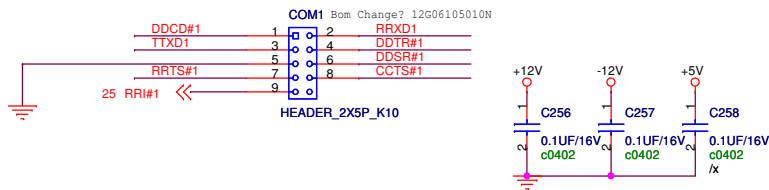
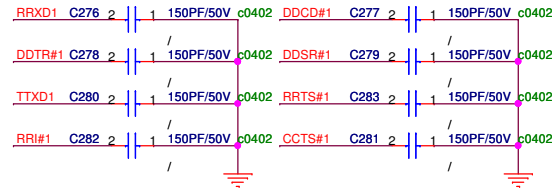
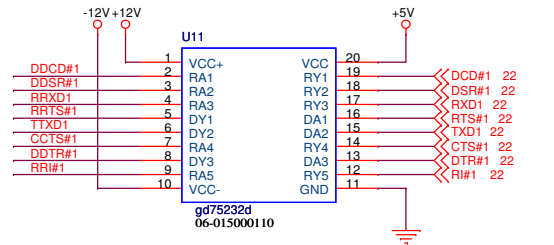
## RTC Power



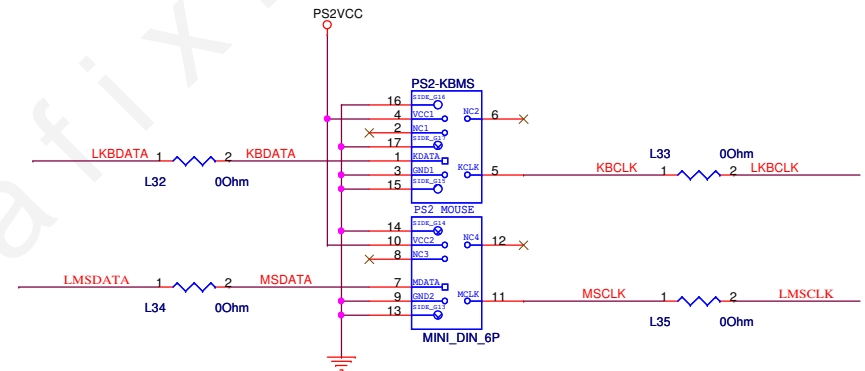
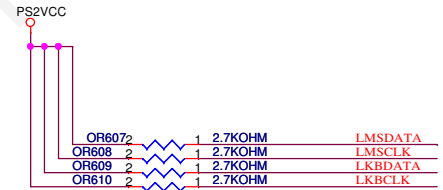
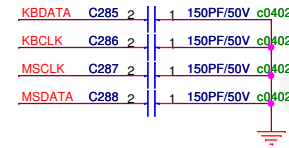
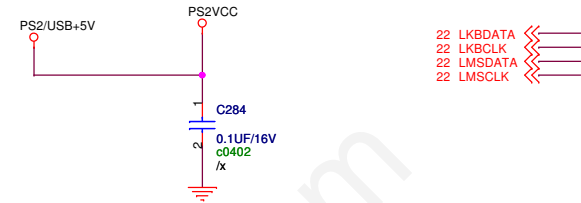
## Speaker



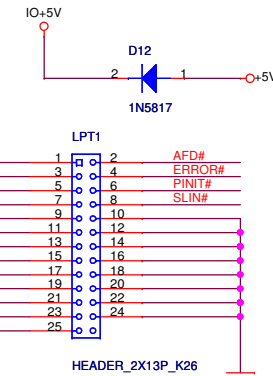
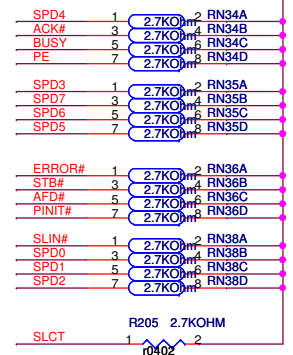
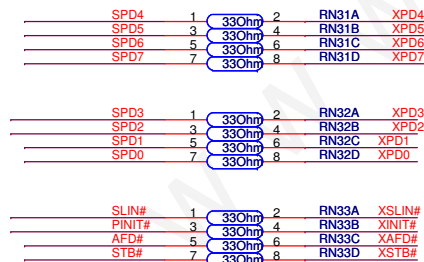
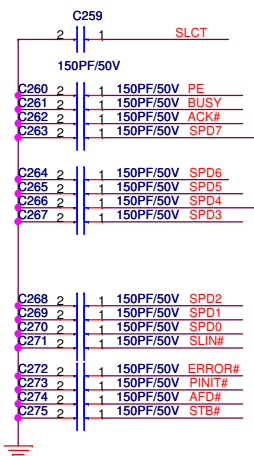
# COM



# KB/MOUSE

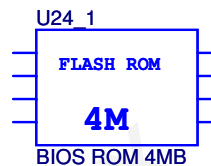
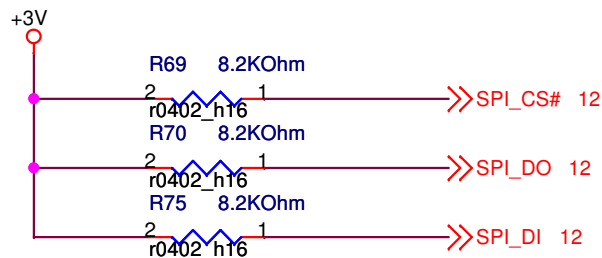


# Parallel Port

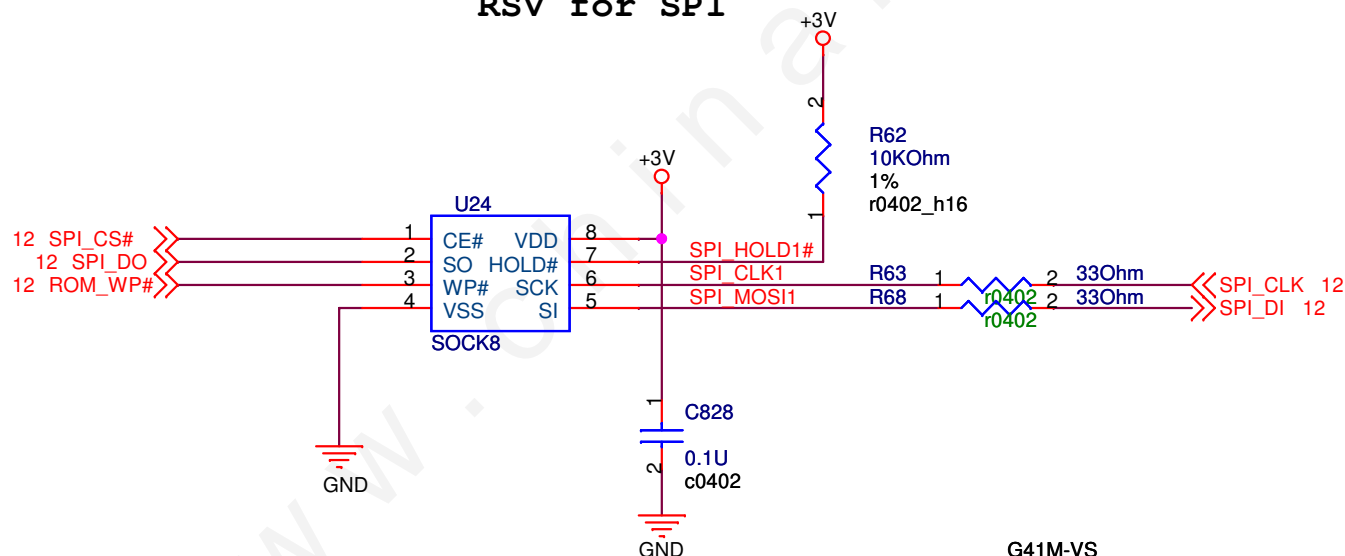




# Serial Peripheral Interface



## RSV for SPI



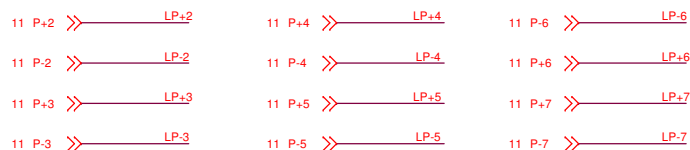
G41M-VS

<b>ASRock</b>		Title : SPI	
ASRock Inc.		Engineer: Terry Wu	
Size Custom	Project Name <b>G41M-VS3</b>		Rev 1.01

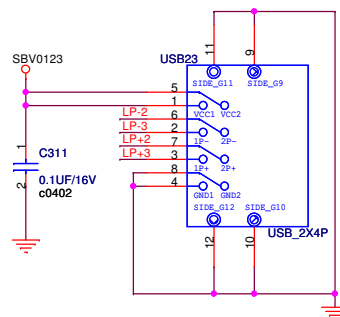
Date: Tuesday, December 21, 2010

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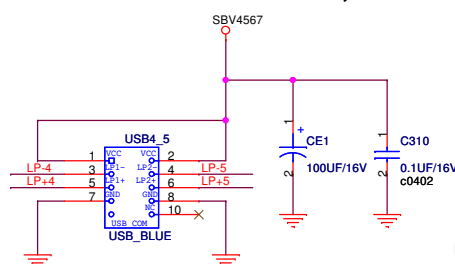




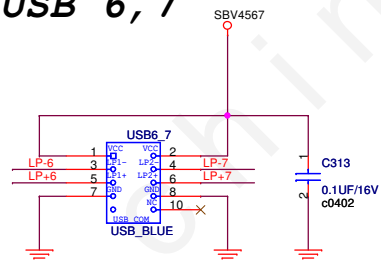
## USB 2, 3



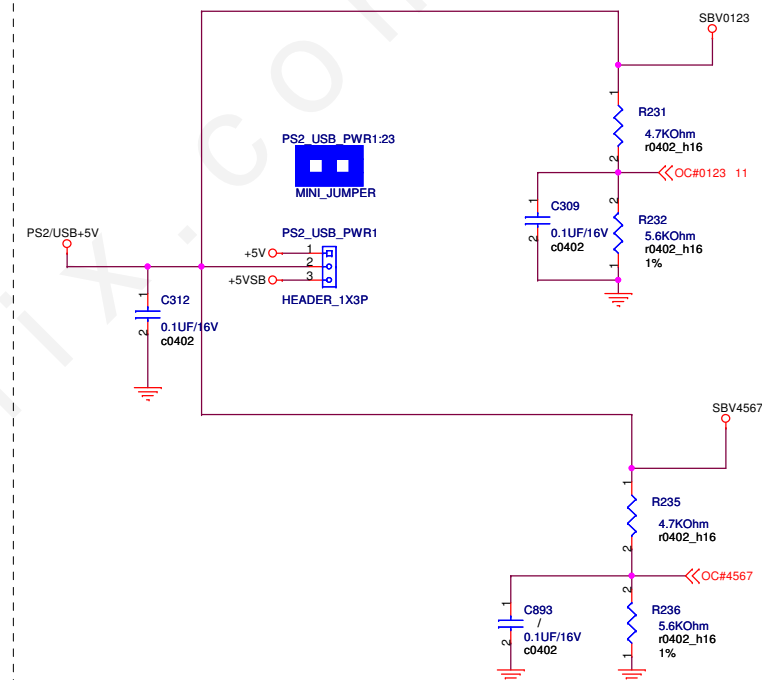
## USB 4, 5



## USB 6, 7

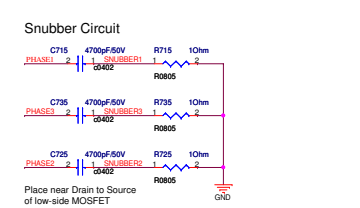
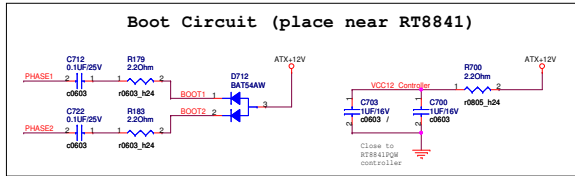
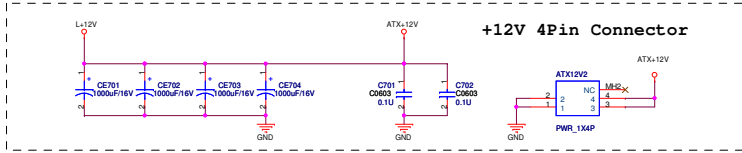


## PS2 / USB Power Source

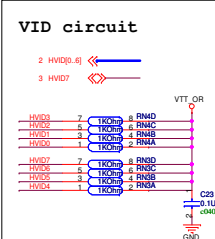
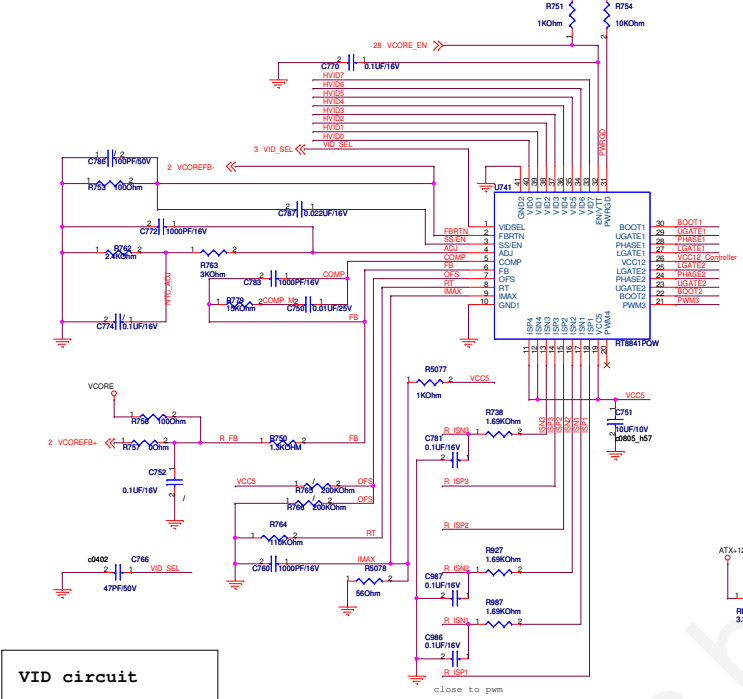


G41M-VS

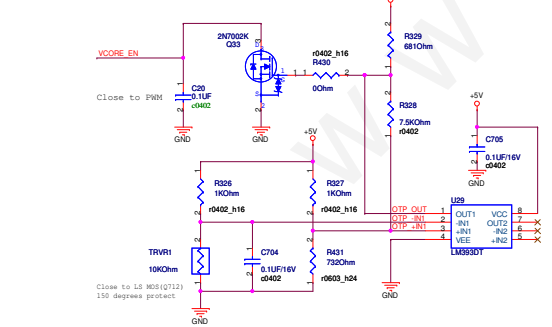
<b>ASRock</b>		<b>Title : USB PORT</b>	
ASRock Inc.		Engineer: Terry Wu	
Size	Project Name	<b>G41M-VS3</b>	Rev
Custom			
Date: Tuesday, December 21, 2010		Sheet 29	of 35



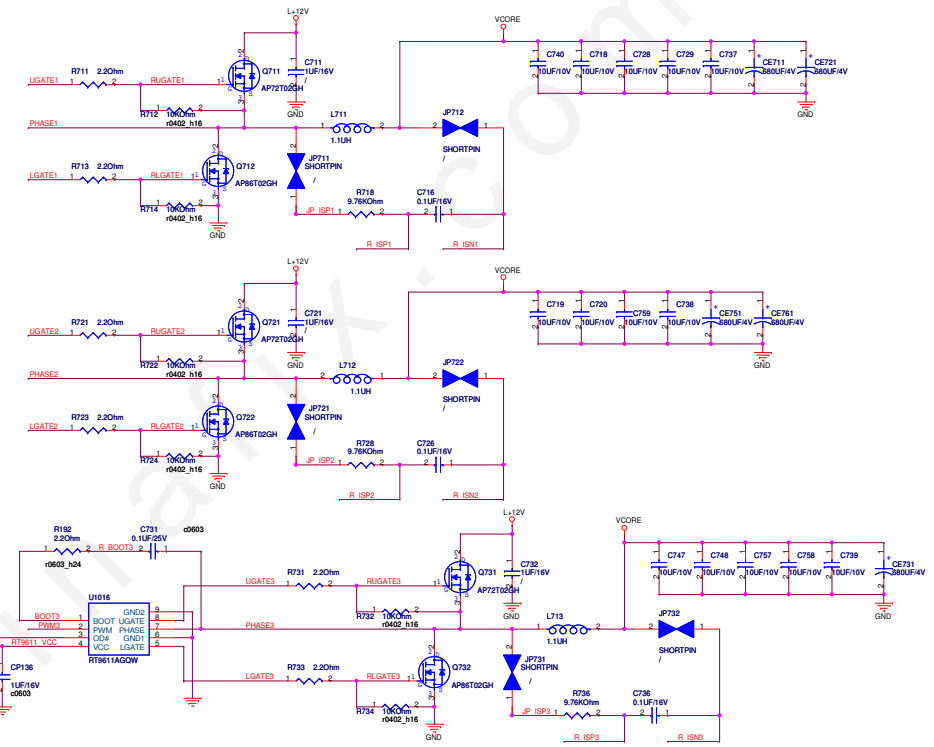
## Vcore PWM RT8841(For VR10 and VR11) 3 Phase solution



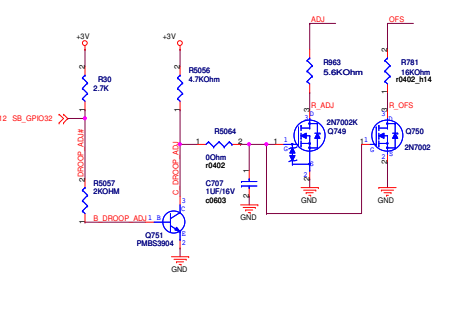
## OTP and throttle circuit

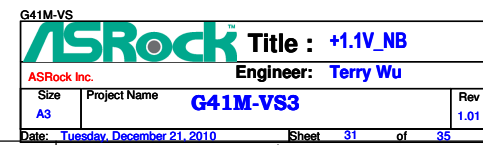
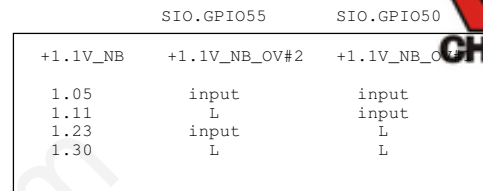


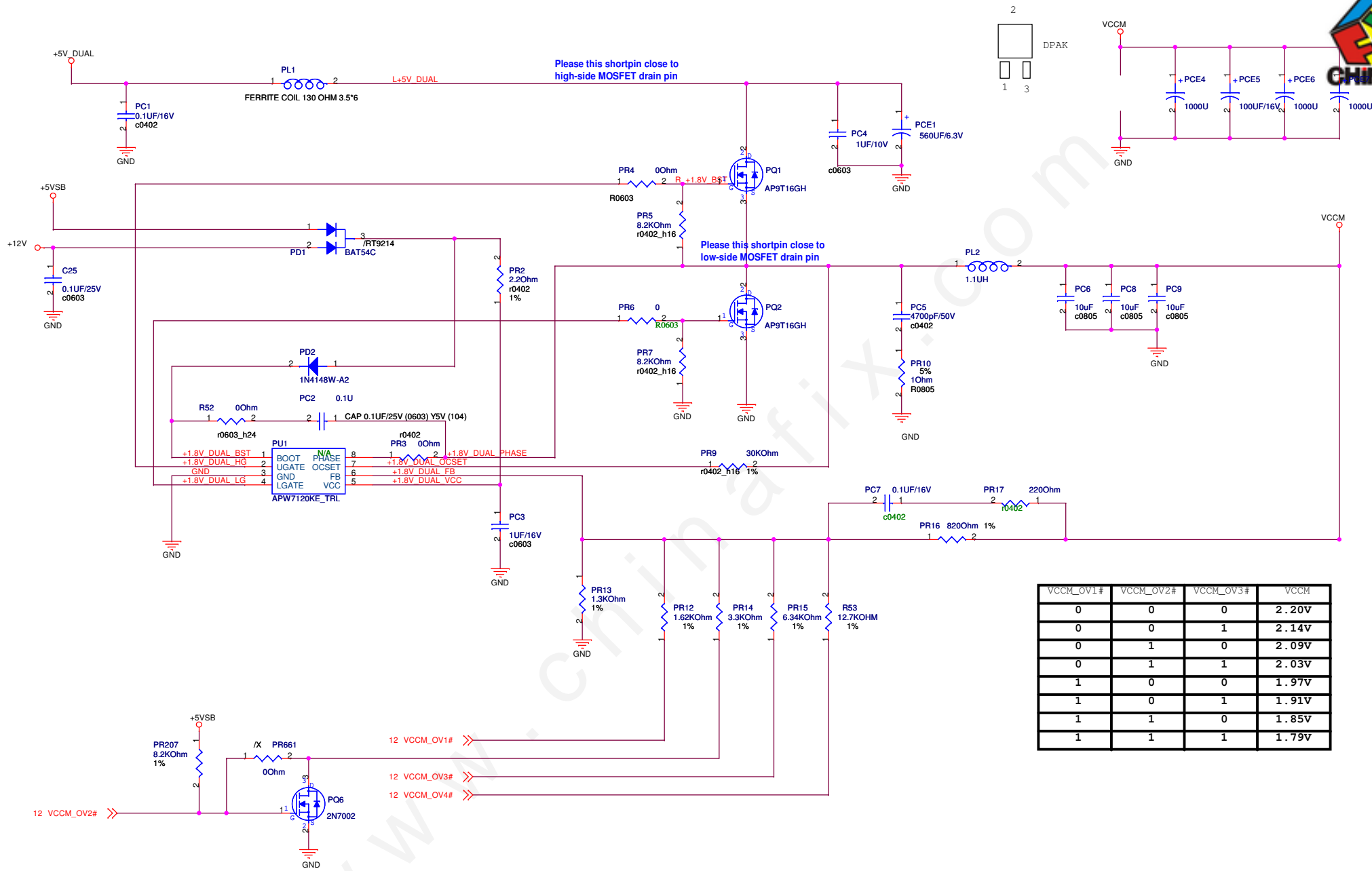
## Three Phases Vcore Source



## Drop Adjust







VCCM_OV1#	VCCM_OV2#	VCCM_OV3#	VCCM
0	0	0	2.20V
0	0	1	2.14V
0	1	0	2.09V
0	1	1	2.03V
1	0	0	1.97V
1	0	1	1.91V
1	1	0	1.85V
1	1	1	1.79V

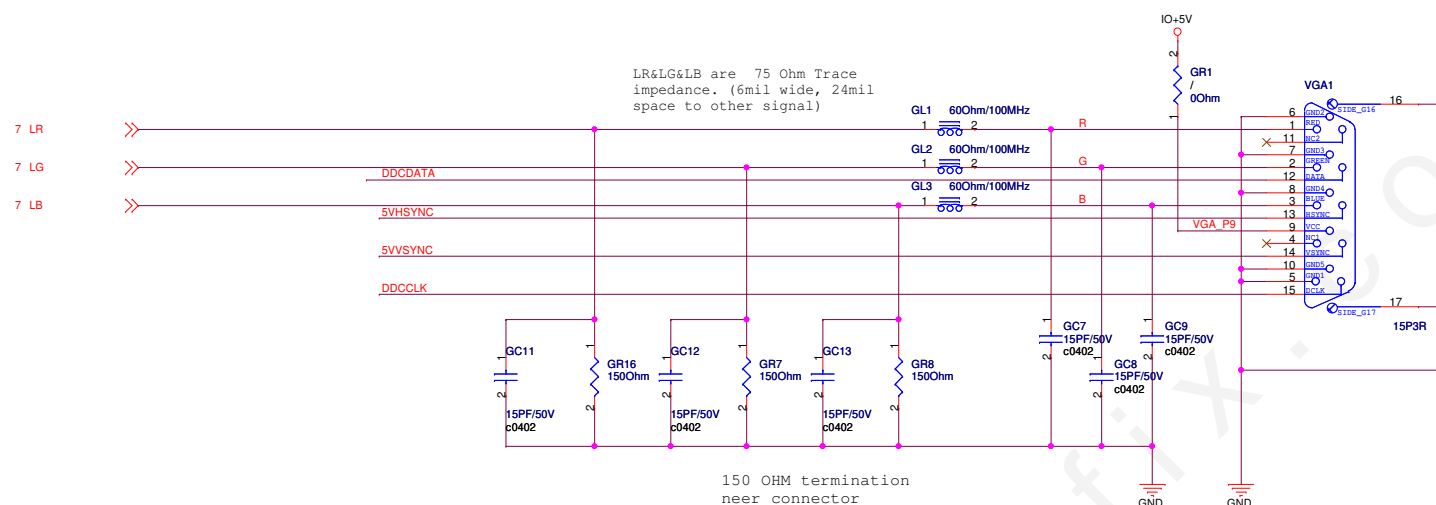
G41M-VS

<b>ASRock Inc.</b>		<b>Title : +1.8V_Dual</b>	
<b>Engineer: Terry Wu</b>			
Size	Project Name	<b>G41M-VS3</b>	
Custom			Rev 1.01
Date: Tuesday, December 21, 2010		Sheet 32 of 35	

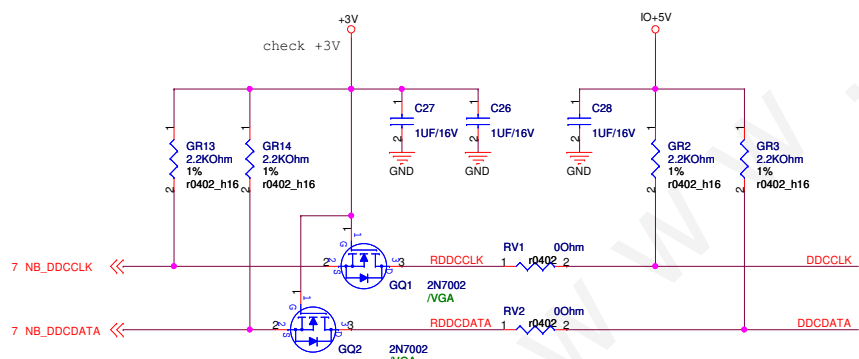




## VGA D-Sub Connector



## +5V/+3V Level shift



## Line Driver

