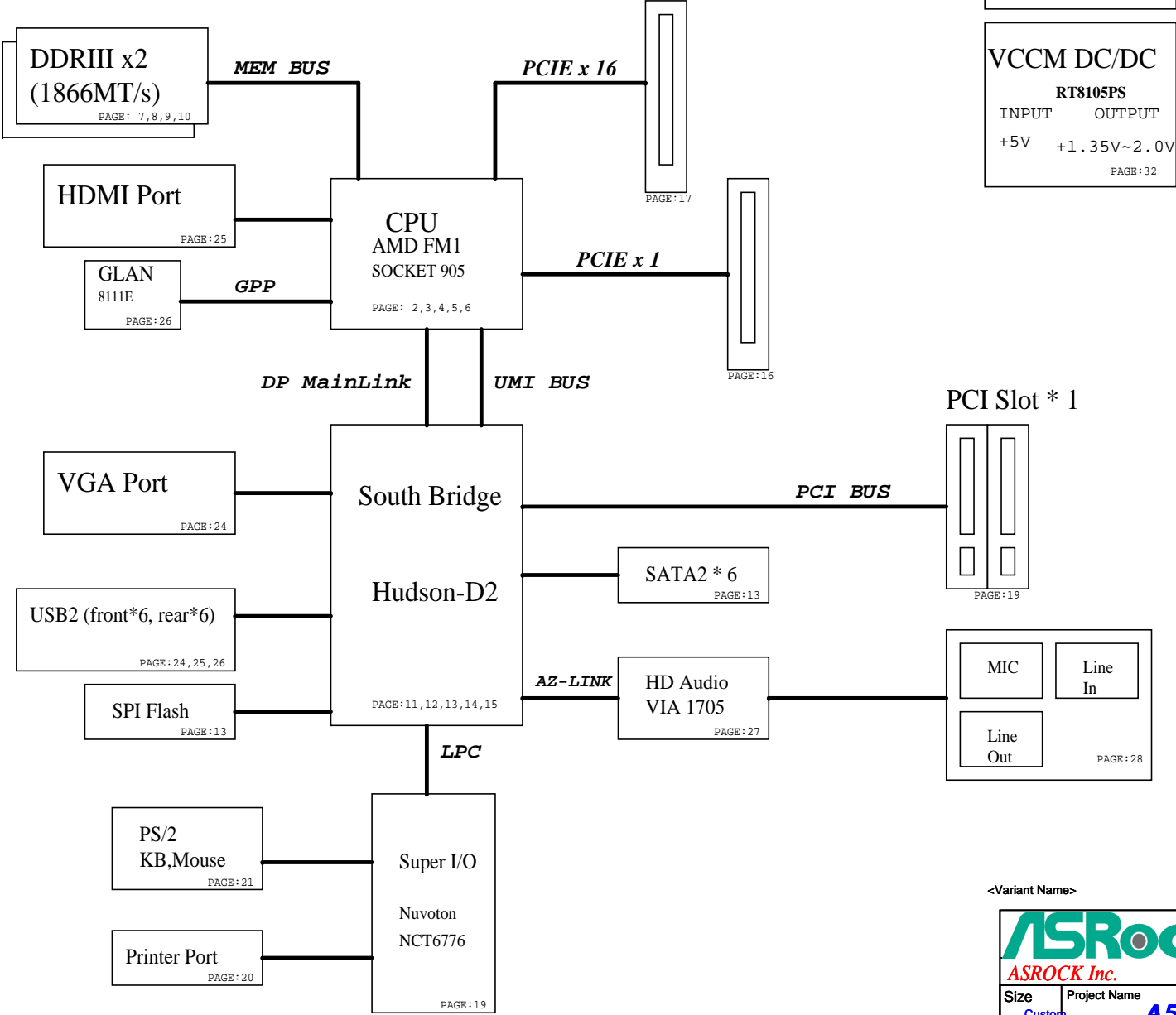


# A55M-HVS

Revision: G/A 1.03

AMD FM1 + Hudson-D2 uATX



| 1.2V DC/DC |            |
|------------|------------|
| APW7120    |            |
| INPUT      | OUTPUT     |
| +3V        | +1.1V~1.8V |
| PAGE: 33   |            |

| ATX Power |      |
|-----------|------|
| +5VSB     | +12V |
| +3.3V     | -5V  |
| +5V       | -12V |
| PAGE: 29  |      |

| VCCM DC/DC |             |
|------------|-------------|
| RT8105PS   |             |
| INPUT      | OUTPUT      |
| +5V        | +1.35V~2.0V |
| PAGE: 32   |             |

| CPU DC/DC    |            |
|--------------|------------|
| L6717        |            |
| INPUT        | OUTPUT     |
| +12V         | +1.1V~2.0V |
| PAGE: 34, 35 |            |

| System Regulator |         |
|------------------|---------|
| INPUT            | OUTPUT  |
| +5VSB            | +3VSB   |
| +3VSB            | +1.1VSB |
| +3V              | +2.5V   |
| VCCM             | VTT_DDR |
| VCCM             | +1.1VSB |
| PAGE: 30         |         |

| PCB LAYER           |  |
|---------------------|--|
| L1 : Component (S1) |  |
| L2 : VCC            |  |
| L3 : GND            |  |
| L4 : Solder (S4)    |  |

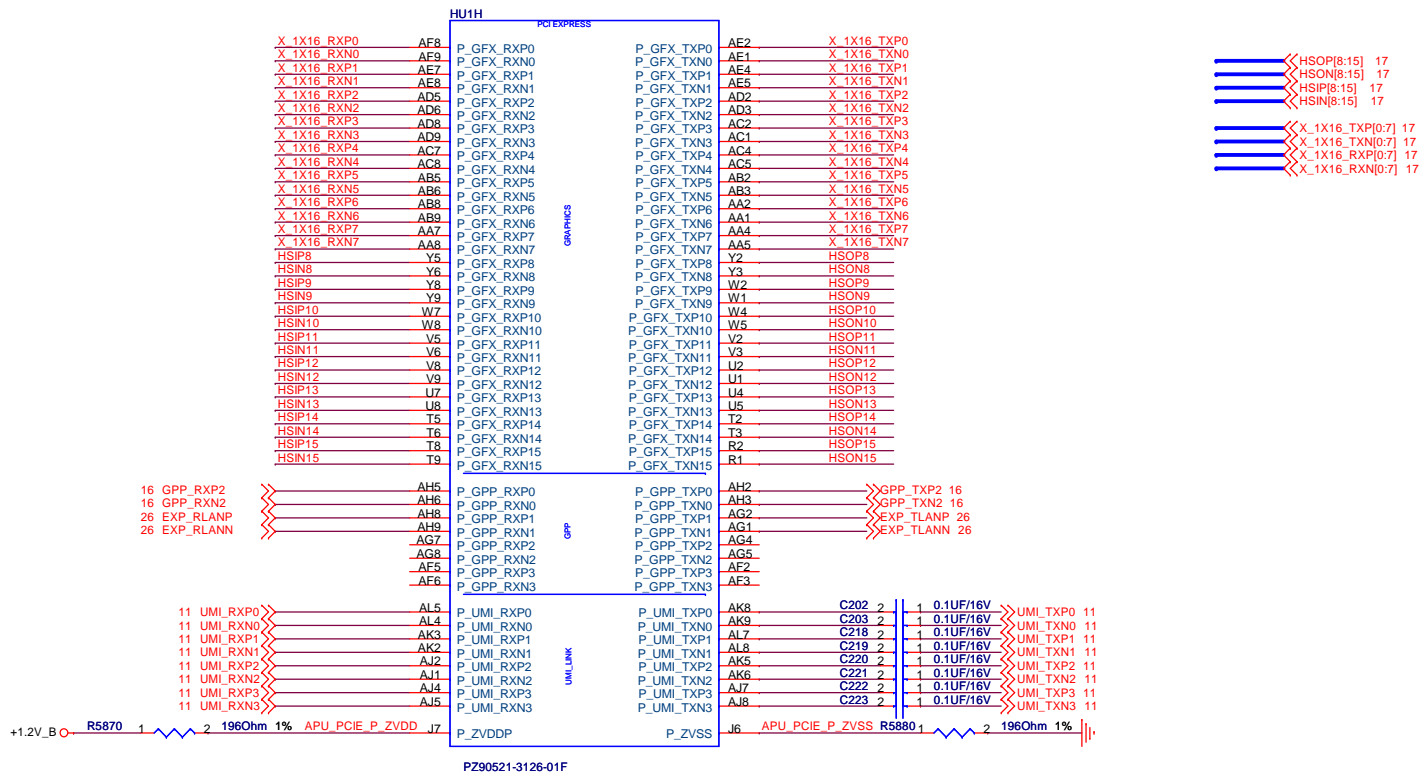
<Variant Name>

|                             |                 |                            |    |
|-----------------------------|-----------------|----------------------------|----|
| <b>ASRock</b> ™             |                 | Title : <b>BLOCK</b>       |    |
| ASROCK Inc.                 |                 | Engineer: <b>Mingus_Wu</b> |    |
| Size                        | Project Name    | Rev                        |    |
| Custom                      | <b>A55M-HVS</b> | 1.03                       |    |
| Date: Friday, July 22, 2011 |                 | Sheet                      | 39 |

**CAD Note:**  
Default Resistor and Capacitor footprint is SMD 0402 type. Different resistor footprints are showed on schematics.

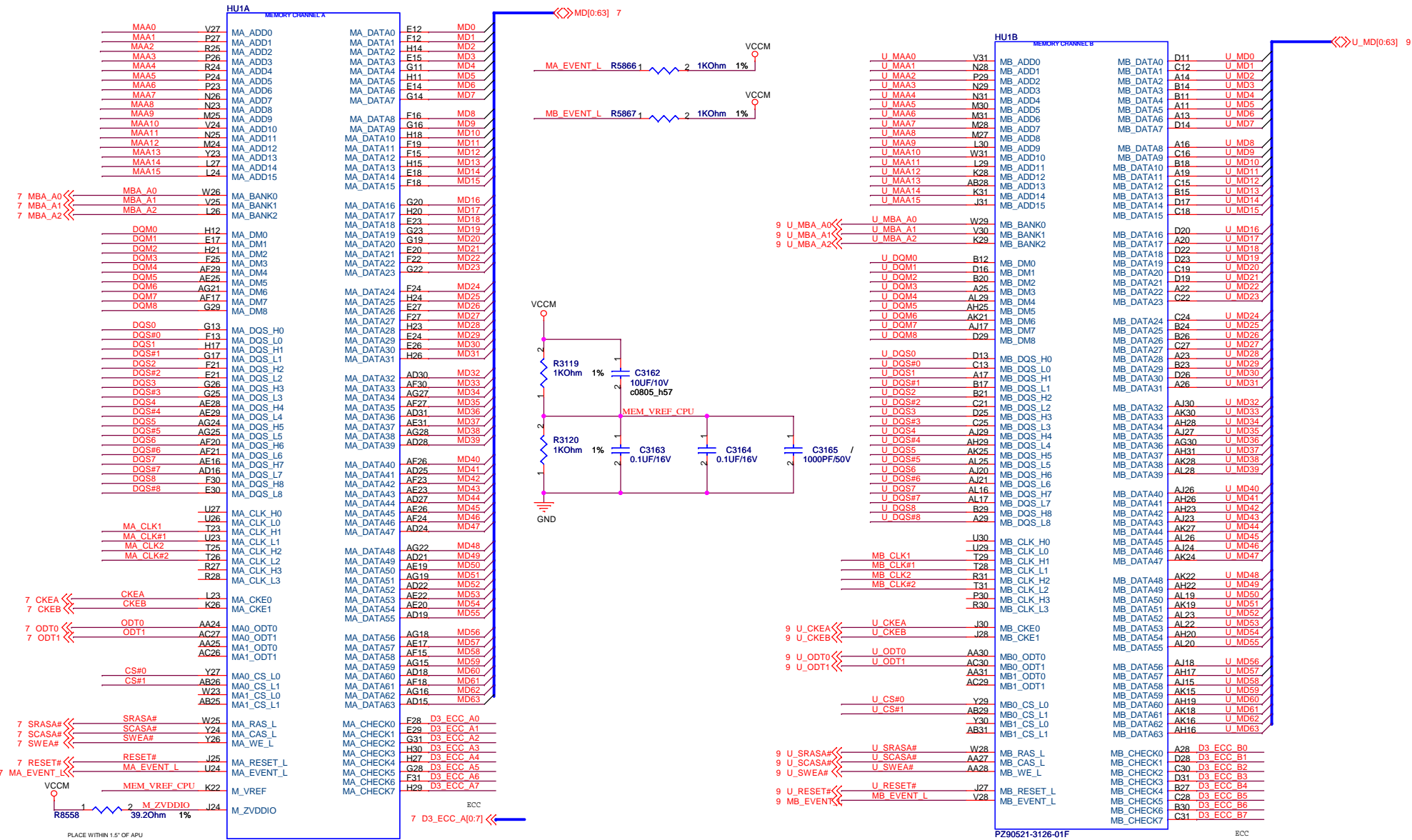
/ = Not Installed Part

CPU HyperTransport Interface



<Variant Name>

# CPU DDR3 Memory Interface



PZ90521-3126-01F

PZ90521-3126-01F

9 D3\_ECC\_B[0:7] <<<

<Variant Name>

**ASRock**  
ASROCK Inc.

Title : MD\_DDRIII  
Engineer: Mingus\_Wu

Size  
A3

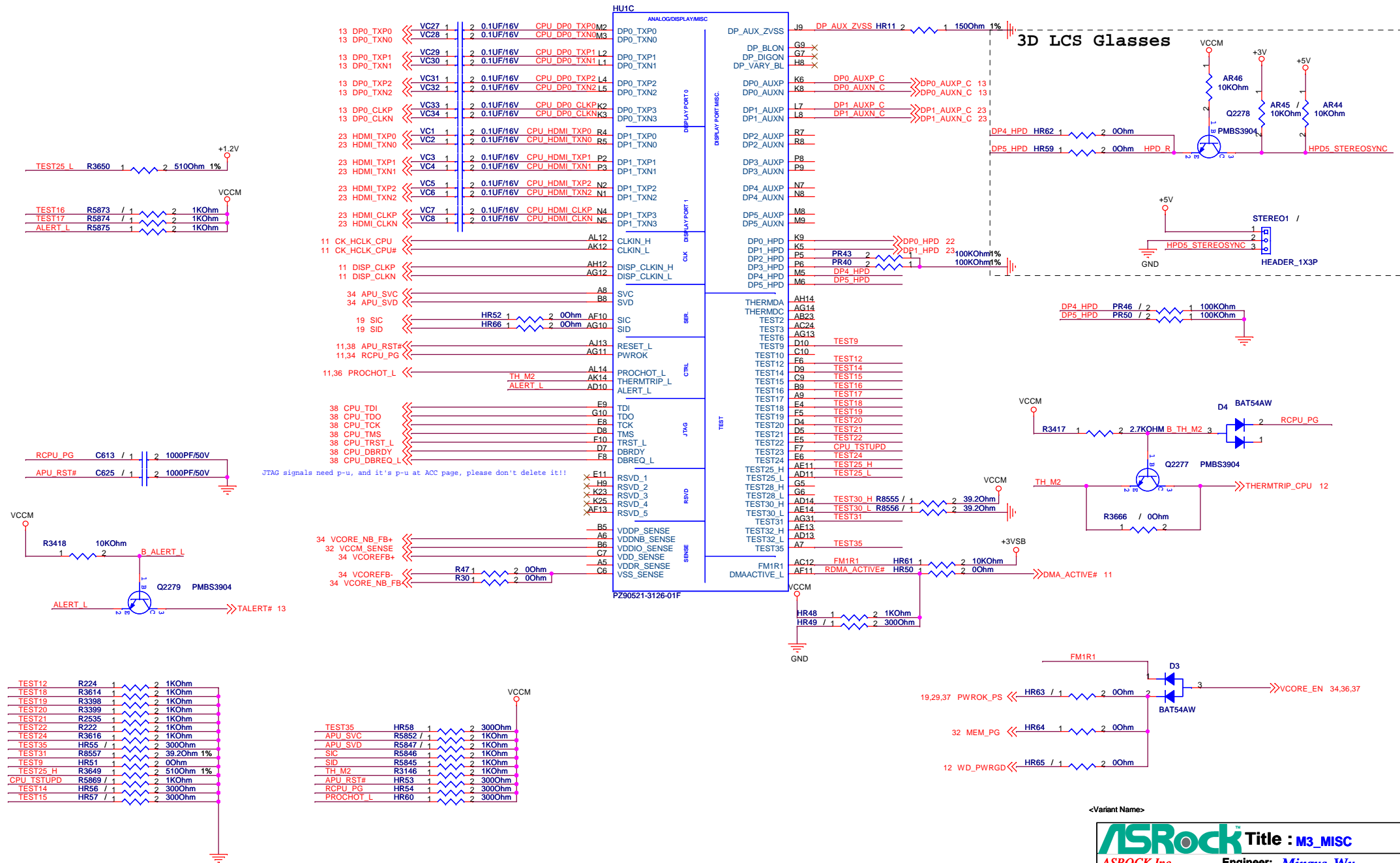
Project Name  
**A55M-HVS**

Rev  
1.03

Date  
Friday, Jul 22, 2011

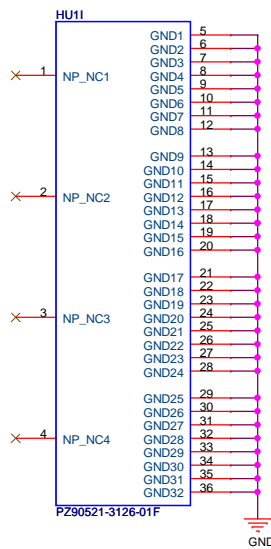
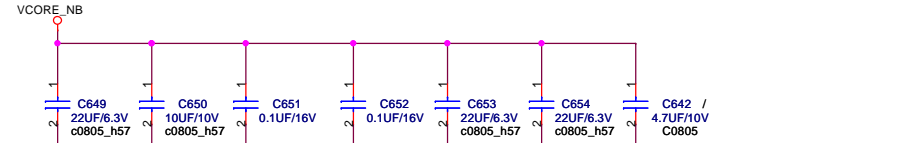
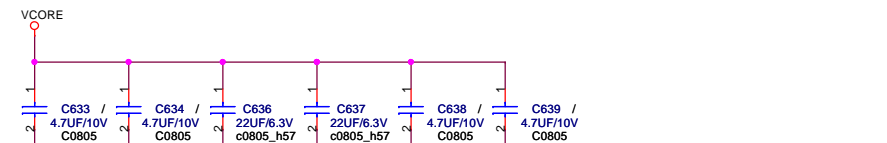
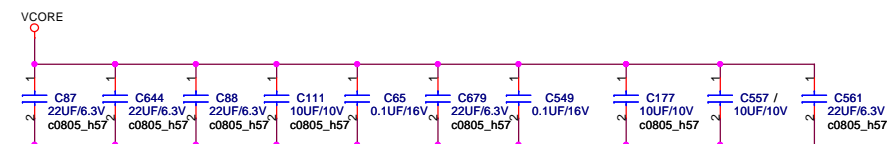
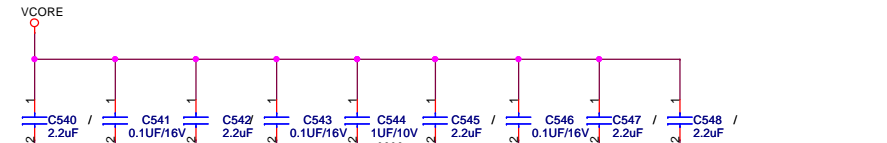
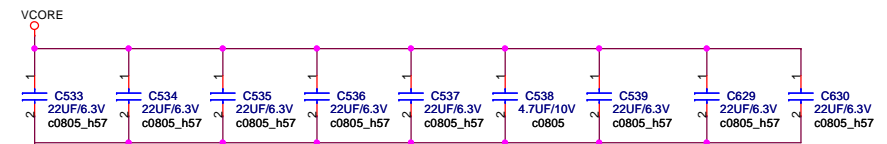
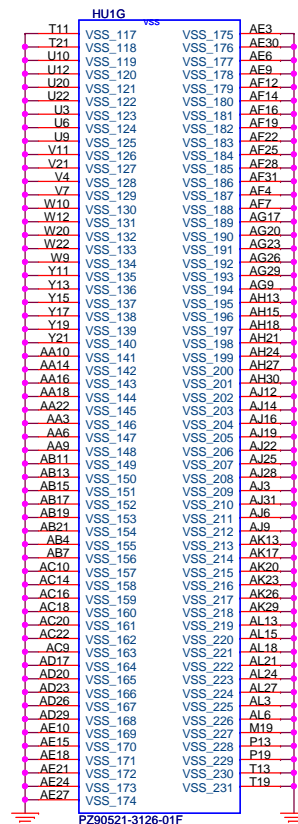
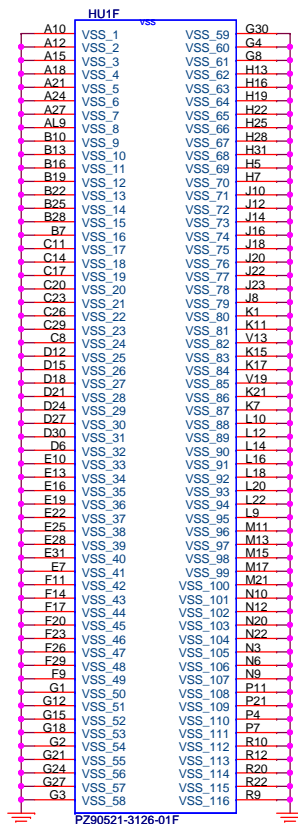
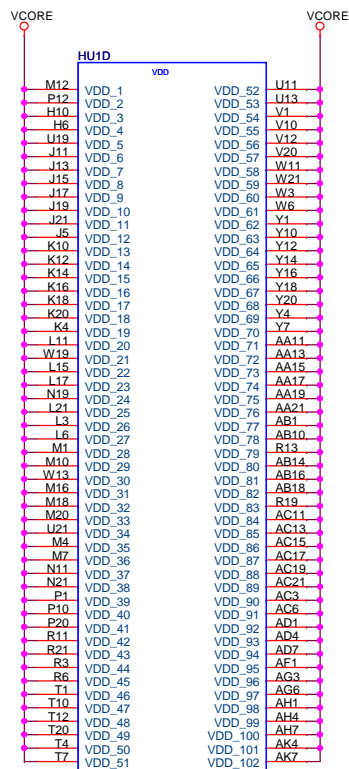
Sheet  
3 of 39

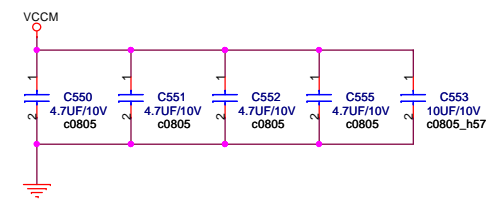
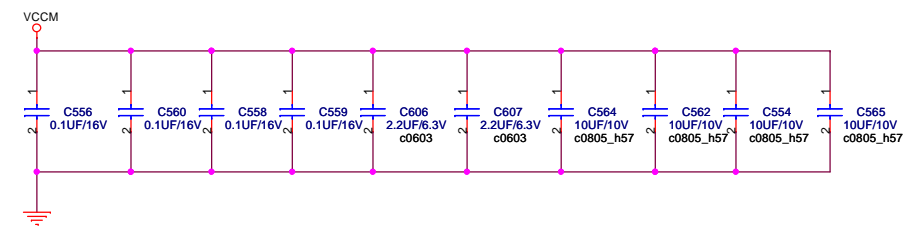
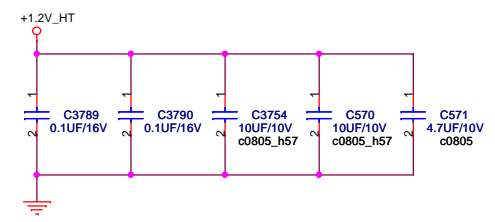
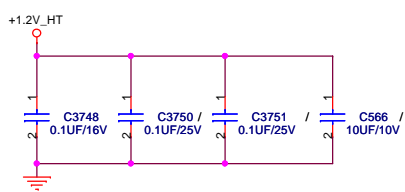
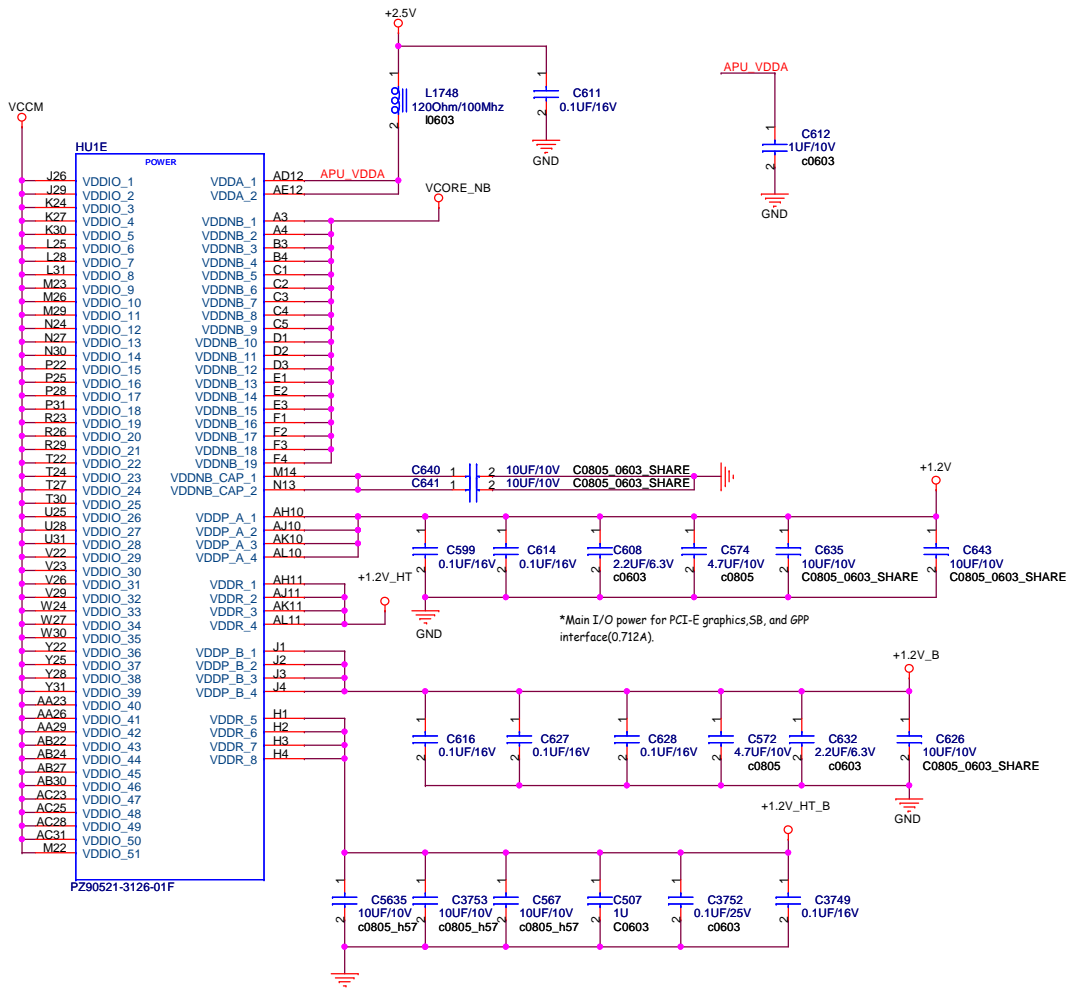
## CPU Control & Debug Interfaces



<Variant Name>

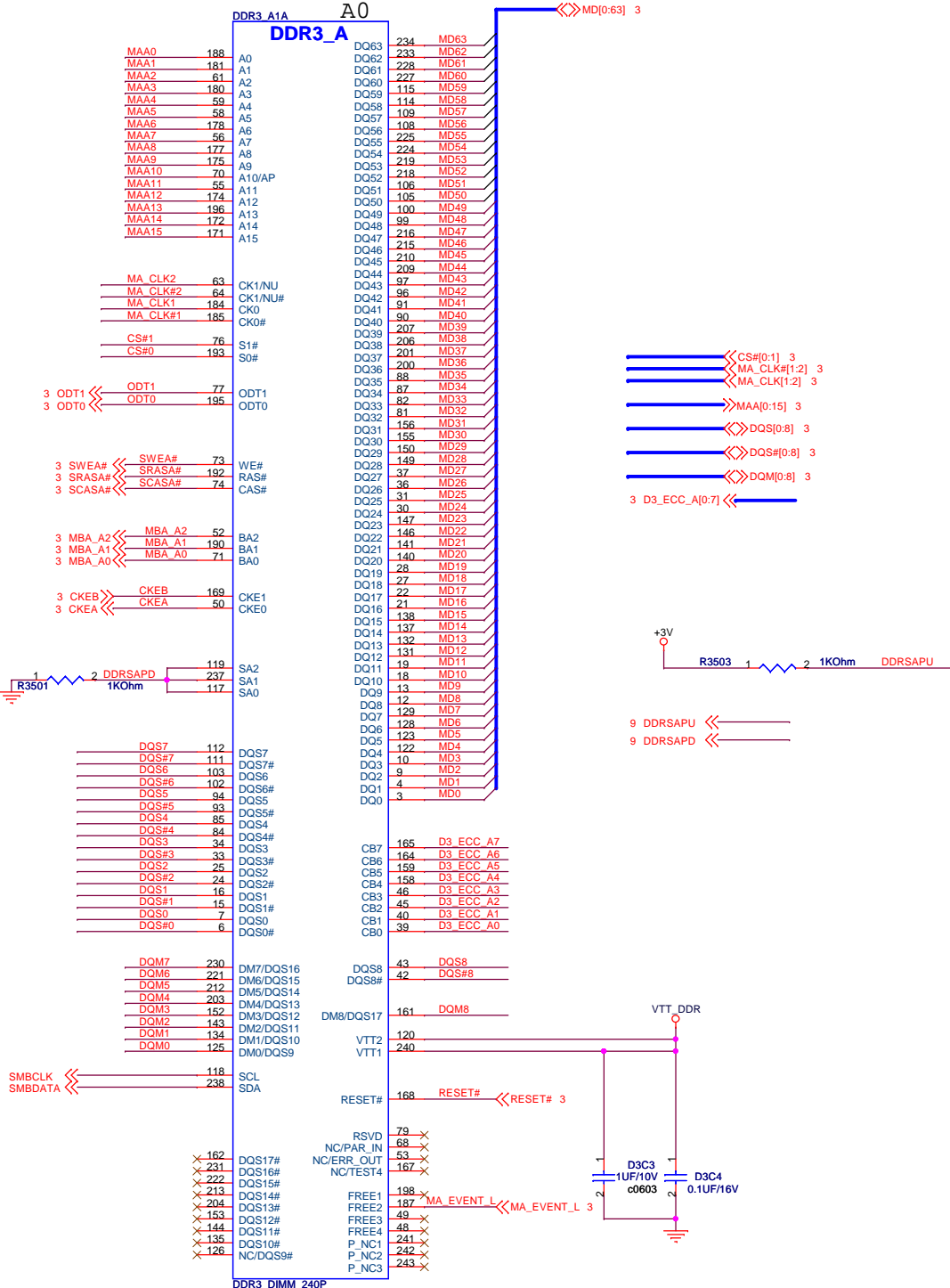
# Processor Power & Ground





<Variant Name>

DDR SLOT1

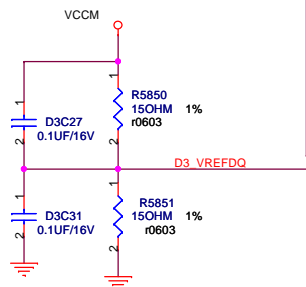
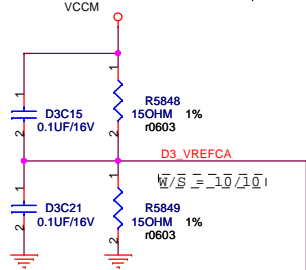


<Variant Name>

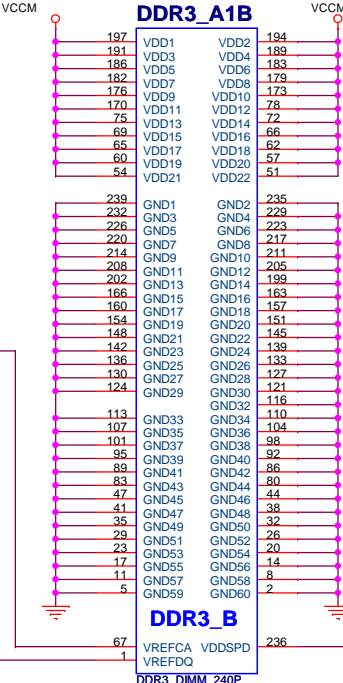
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|--|---------------------------------|
| <b>ASRock</b> Title : DDR3L DIMM1&3    |                                 |
| ASROCK Inc. Engineer: <i>Mingus_Wu</i> |                                 |
| Size<br>A3                             | Project Name<br><b>A55M-HVS</b> |
| Date: Friday, July 22, 2011            | Sheet 7 of 39                   |

10 D3\_VREFDQ  
10 D3\_VREFCA

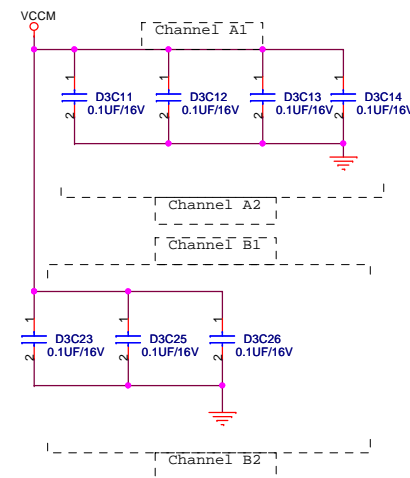
If you don't use  
MEM\_WARN, please  
connect PIN116 and  
PIN 239 to GND.



If you don't use  
MEM\_WARN, please  
connect PIN116 and  
PIN 239 to GND.



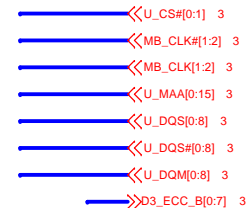
If you don't use  
MEM\_WARN, please  
connect PIN2 and  
PIN121 to GND.



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



## A2

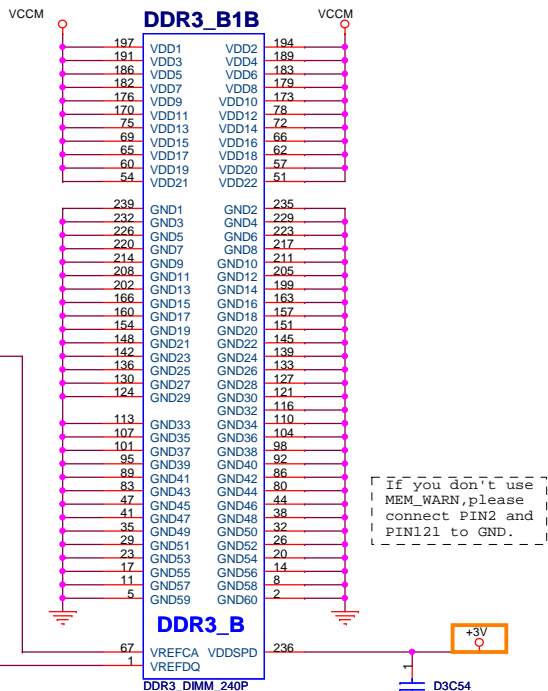


8 D3\_VREFDQ  
8 D3\_VREFCA

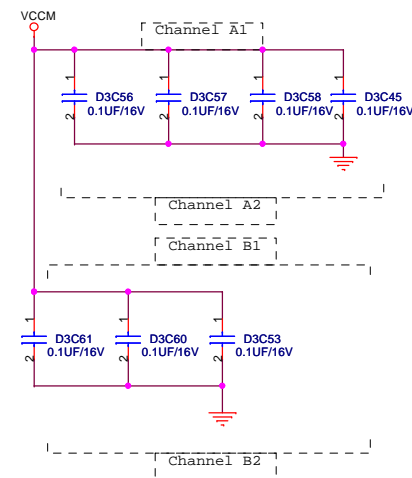
If you don't use  
MEM\_WARN, please  
connect PIN116 and  
PIN 239 to GND.



If you don't use  
MEM\_WARN, please  
connect PIN116 and  
PIN 239 to GND.



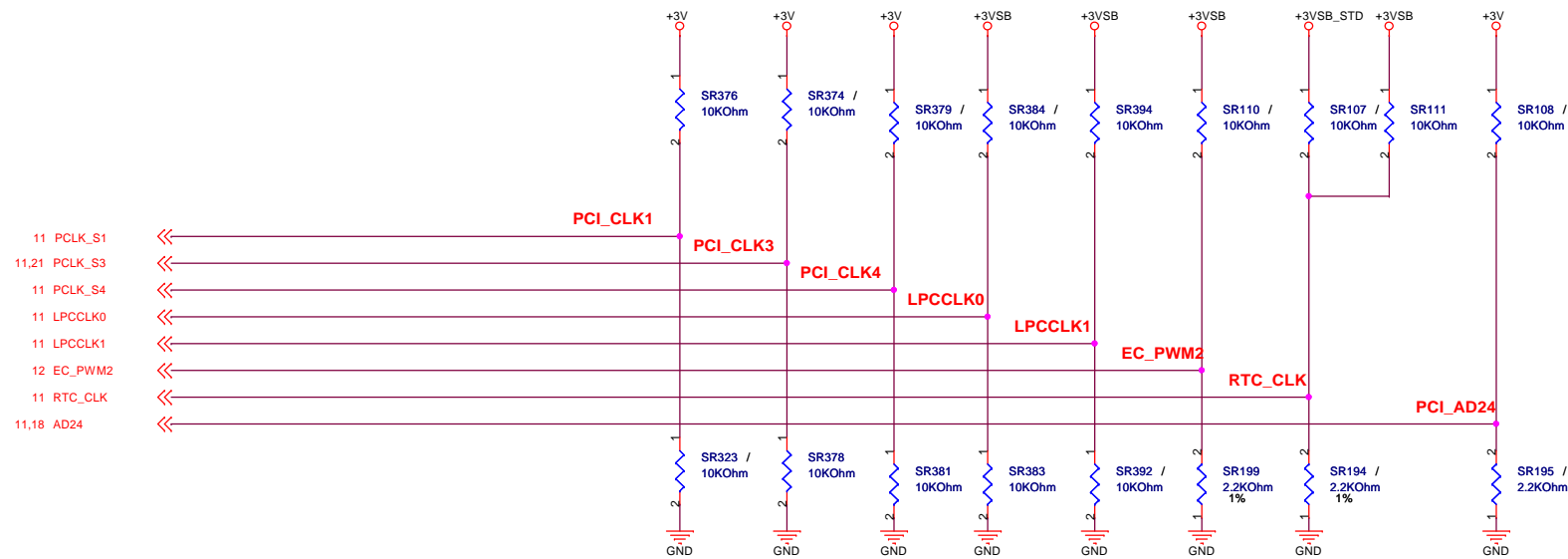
If you don't use  
MEM\_WARN, please  
connect PIN2 and  
PIN121 to GND.



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

<Variant Name>

|                             |                          |                        |             |
|-----------------------------|--------------------------|------------------------|-------------|
| <b>ASRock</b> ™             |                          | Title : DDRIII_POWER_H |             |
| ASROCK Inc.                 |                          | Engineer: Mingus Wu    |             |
| Size<br>A3                  | Project Name<br>A55M-HVS |                        | Rev<br>1.03 |
| Date: Friday, July 22, 2011 |                          | Sheet                  | 10 of 39    |



## REQUIRED STRAPS

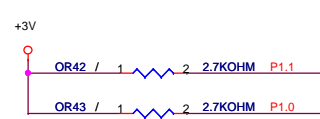
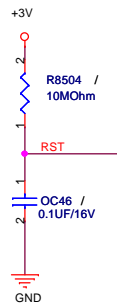
|           | PCI_CLK1                   | PCI_CLK3                         | PCI_CLK4                     | LPCCLK0                | LPCCLK1                   | RTC_CLK                | EC_PWM2                  | PCI_AD24                      |
|-----------|----------------------------|----------------------------------|------------------------------|------------------------|---------------------------|------------------------|--------------------------|-------------------------------|
| PULL HIGH | Allow PCIe Gen2<br>DEFAULT | Enabled Debug straps             | NON-FUSION CLOCK MODE        | EC ENABLED             | CLKGEN ENABLED<br>DEFAULT | S5+ DISABLE<br>DEFAULT | ROM TYPE:<br>H = LPC ROM | Default PCIe straps           |
| PULL LOW  | Force PCIe Gen1            | Disabled Debug straps<br>DEFAULT | FUSION CLOCK MODE<br>DEFAULT | EC DISABLED<br>DEFAULT | CLKGEN DISABLED           | S5+ ENABLE             | L = SPI ROM<br>DEFAULT   | EEPROM PCIe straps<br>DEFAULT |

<Variant Name>





Pin configuration diagram for the W79E4051ARG microcontroller. The diagram shows the microcontroller chip with pins 1 through 10 on the left and pins 11 through 20 on the right. Pin 1 is connected to R25 (00hm) and RST. Pin 2 is connected to RST. Pin 3 is connected to RXD/P3.0. Pin 4 is connected to XTAL2/P2.0. Pin 5 is connected to XTAL1/P2.1. Pin 6 is connected to INT0#/P3.2. Pin 7 is connected to INT1#/P3.3. Pin 8 is connected to T0/P3.4. Pin 9 is connected to PWM0/T1/P3.5. Pin 10 is connected to GND. Pin 11 is connected to GND. Pin 12 is connected to ACC\_STATE1. Pin 13 is connected to EC\_TDO. Pin 14 is connected to EC\_TMS. Pin 15 is connected to EC\_CRST\_L. Pin 16 is connected to EC\_STATE2. Pin 17 is connected to DAT. Pin 18 is connected to CLK. Pin 19 is connected to VCC. Pin 20 is connected to +3V. The microcontroller is labeled U1014 and W79E4051ARG. The text "No any crystal:11MHz/3V" is present.



11,15 AD[0..31]

11 FRAME#

11 DEVSEL#

11 IRDY#

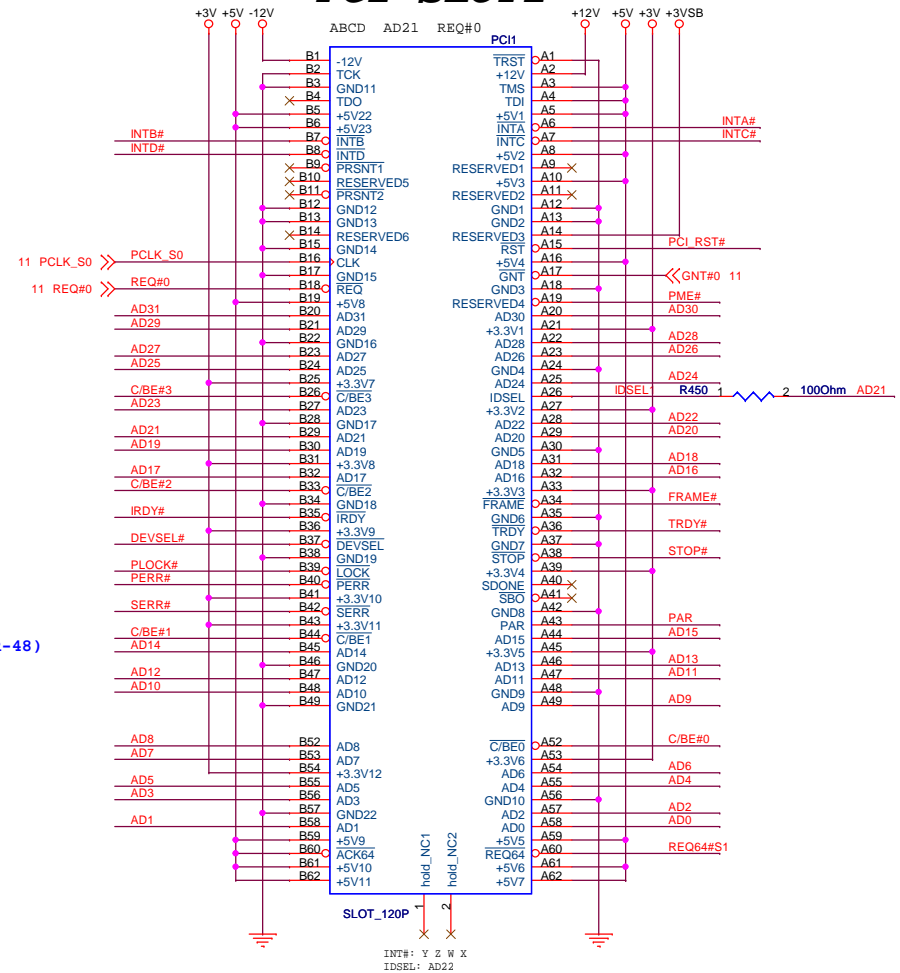
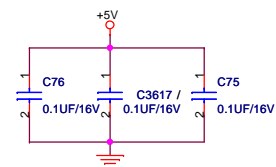
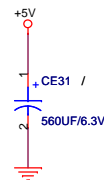
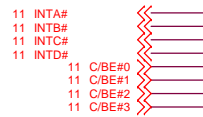
11 STOP#

11 SERR#

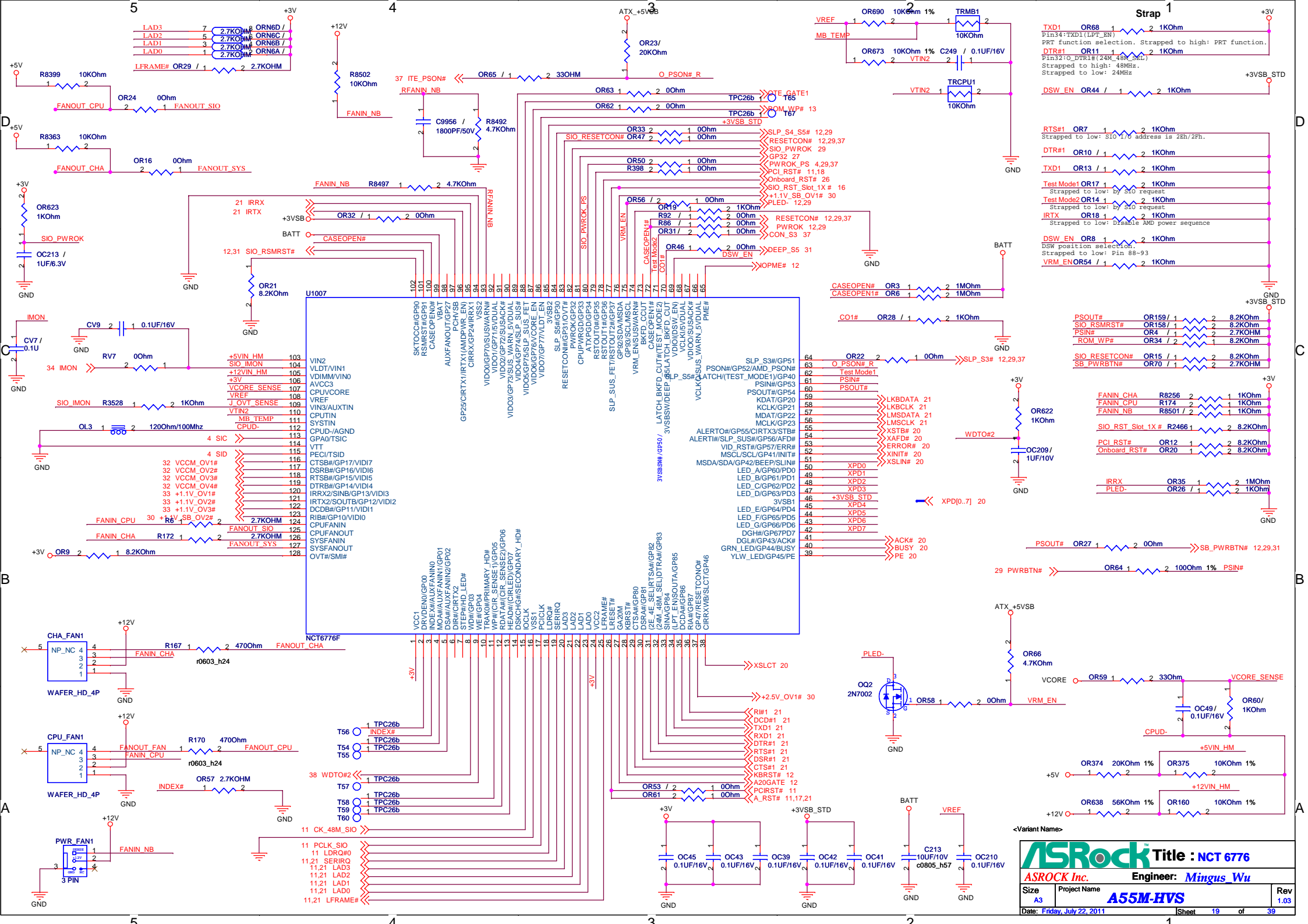
11 PAR

11 TRDY#

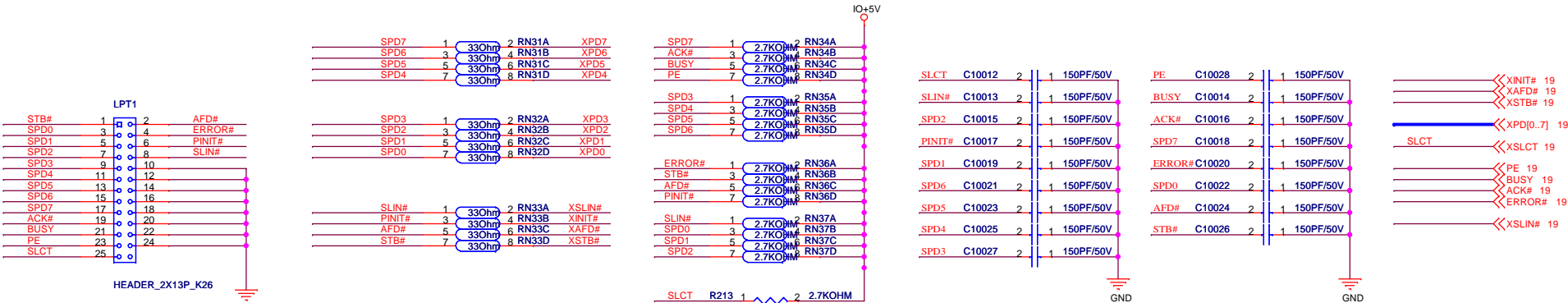
11 PLOCK#



|   |  |                                   |                     |
|---|--|-----------------------------------|---------------------|
|  |  | <b>Title : EC &amp; PCI</b>       |                     |
| <b>ASROCK Inc.</b>  |  | <b>Engineer: <u>Mingus Wu</u></b> |                     |
| <b>Size</b><br>A3   | <b>Project Name</b><br><br><b>A55M-HVS</b> | <b>Rev</b><br>1.03                |                     |
| <b>Date:</b> <u>Friday, July 22, 2011</u>   |  | <b>Sheet</b> <u>18</u>            | <b>of</b> <u>39</u> |

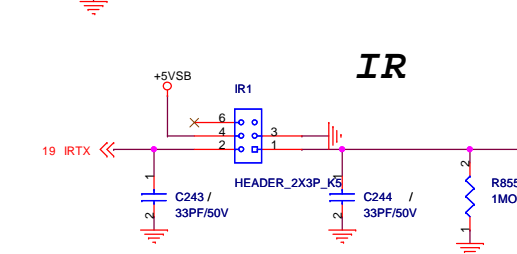
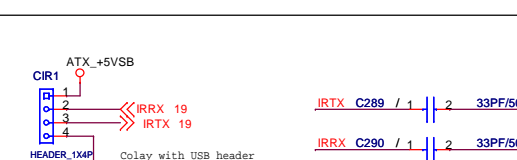
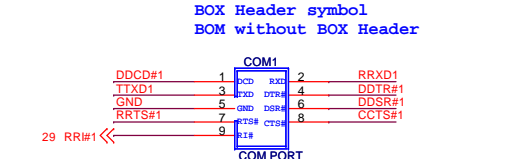
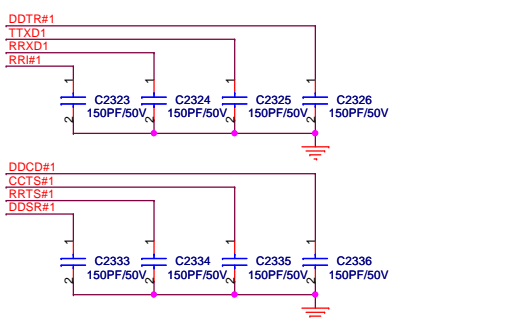
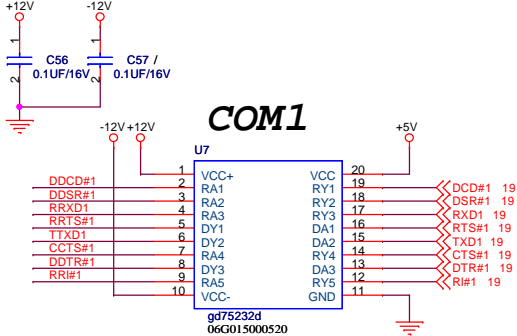


## Parallel Port

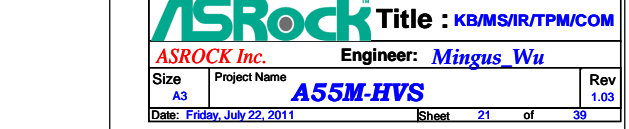
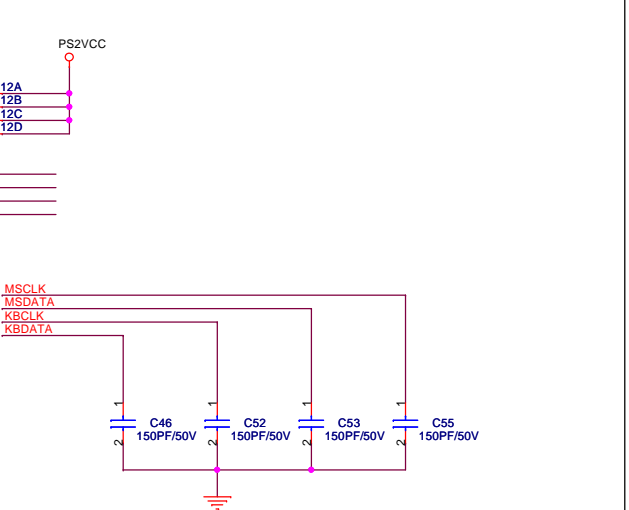
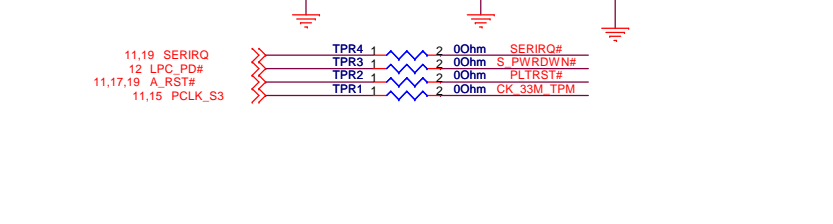
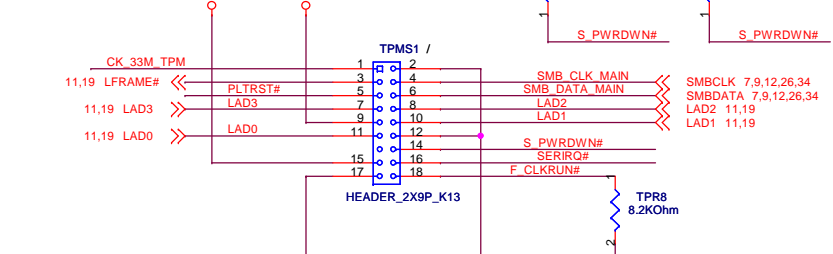
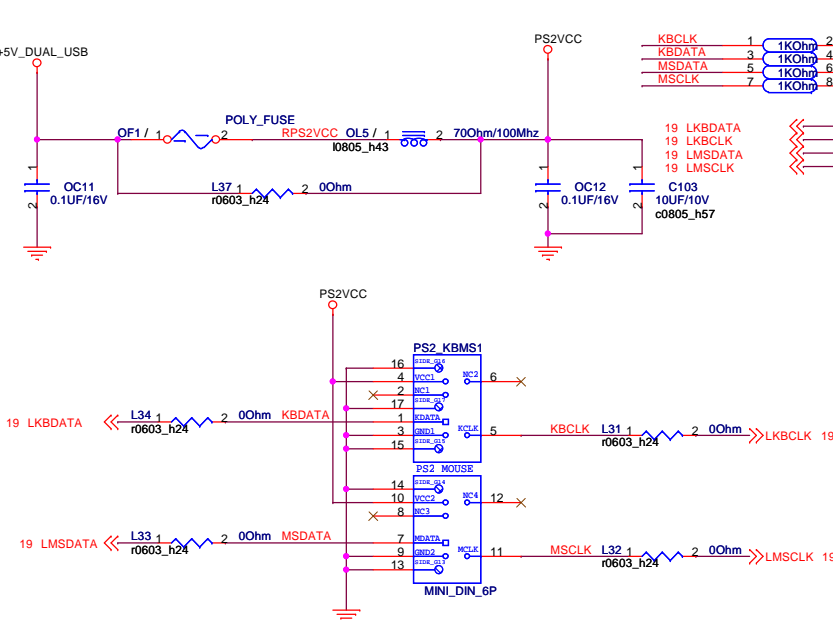


<Variant Name>

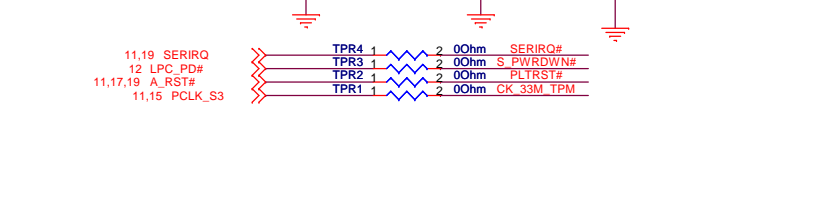
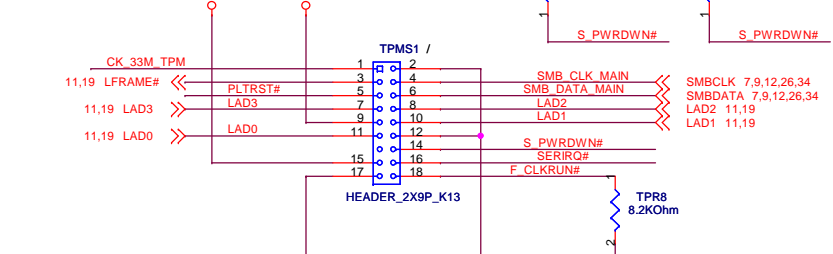
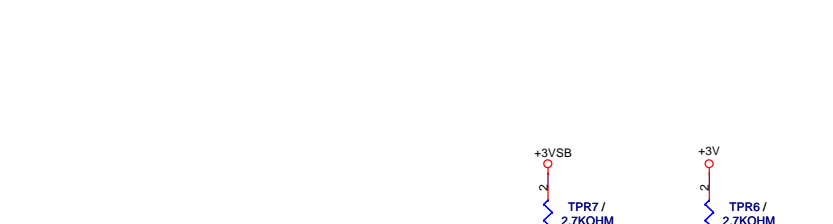


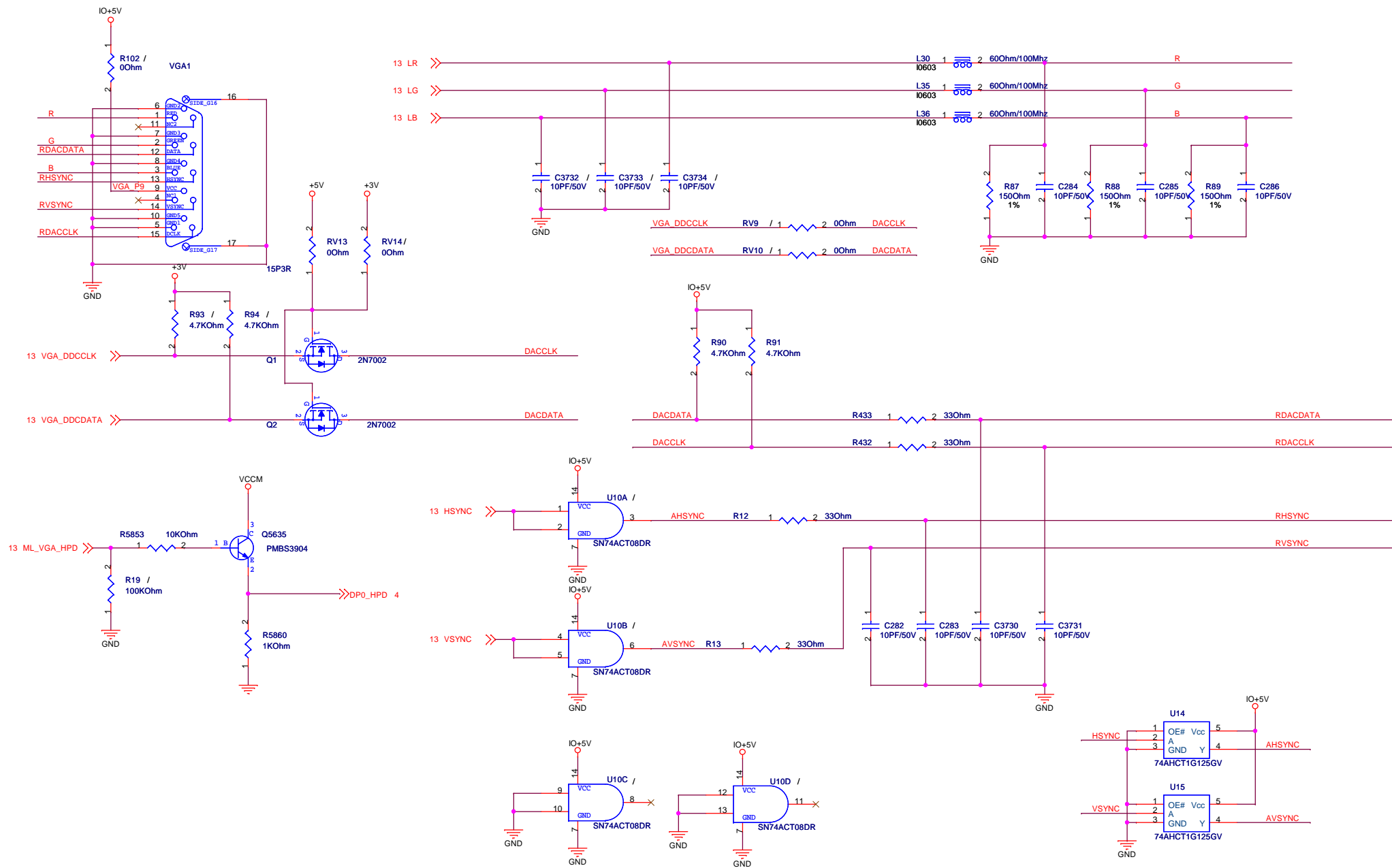


# KB/MOUSE



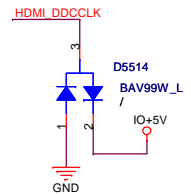
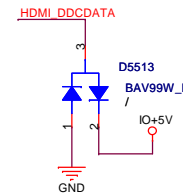
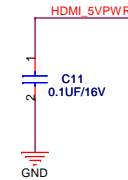
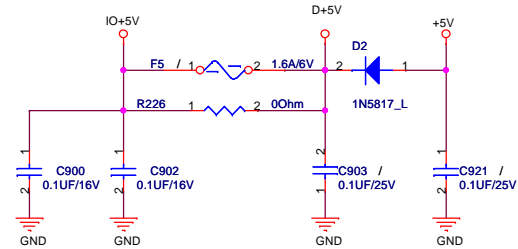
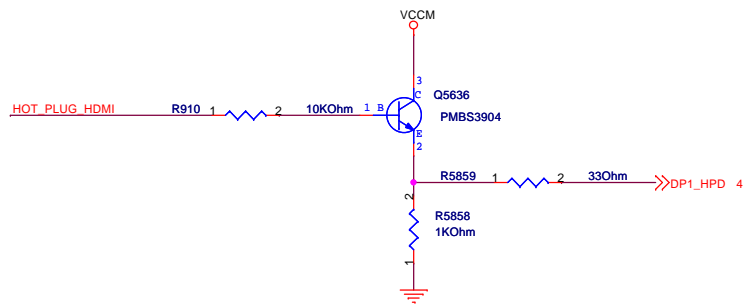
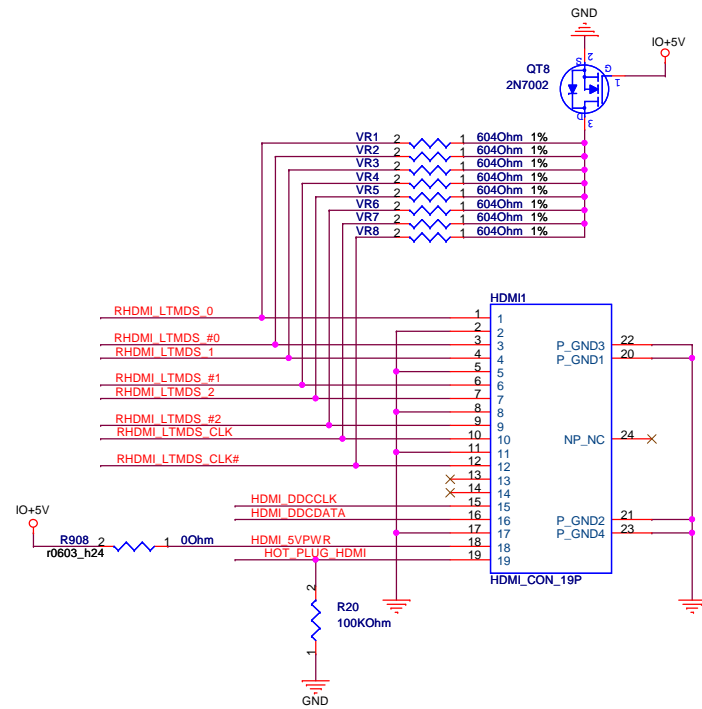
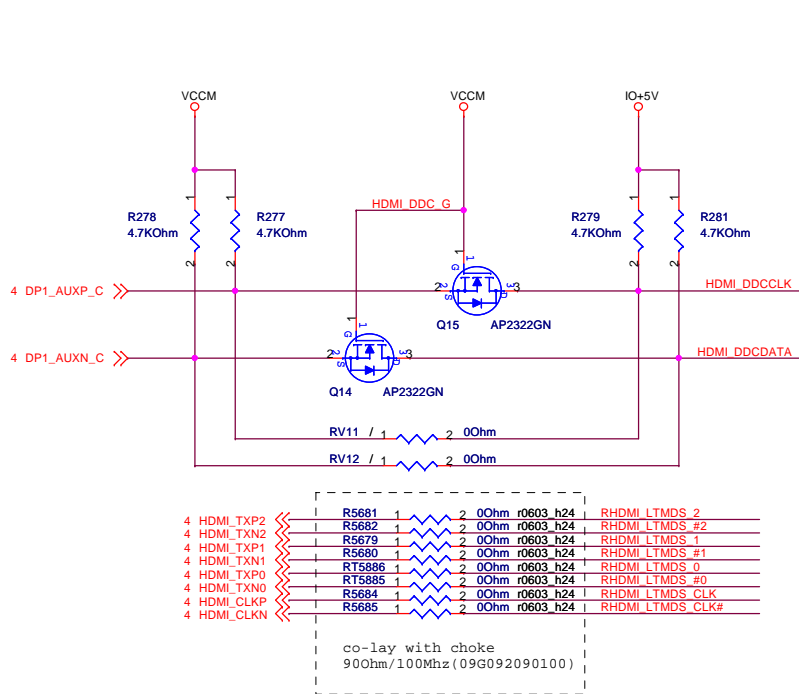
# TPM





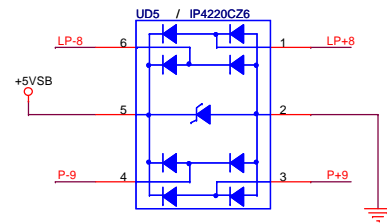
<Variant Name>

# HDMI



<Variant Name>

|                             |                                 |  |  |
|-----------------------------|---------------------------------|--|--|
| <b>ASRock</b> Title : HDMI  |                                 | ASROCK Inc. Engineer: <i>Mingus_Wu</i> |  |
| Size<br>A3                  | Project Name<br><b>A55M-HVS</b> | Rev<br>1.03                            |  |
| Date: Friday, July 22, 2011 |                                 | Sheet 23 of 39                         |  |



**USB10\_11**

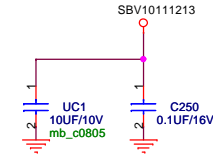
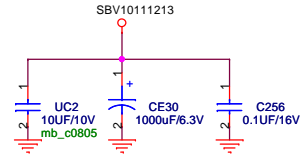
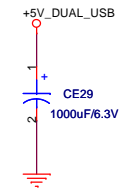
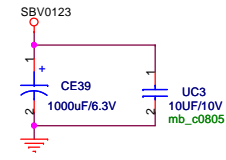
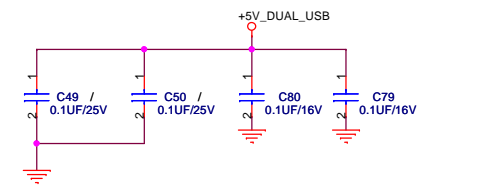
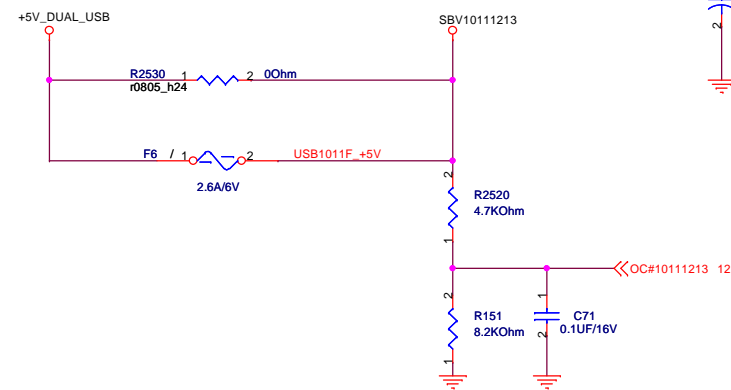
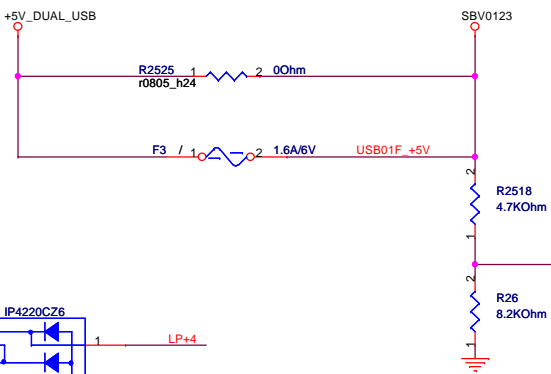
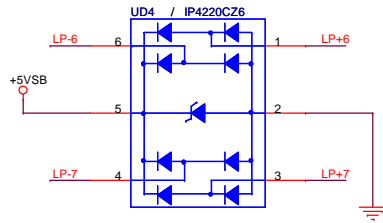
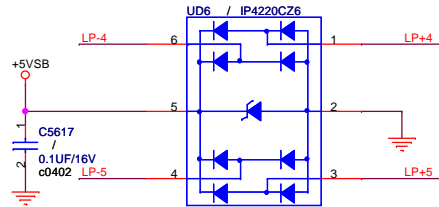
SBV10111213


1 2 3 4 5 6 7 8 9 10

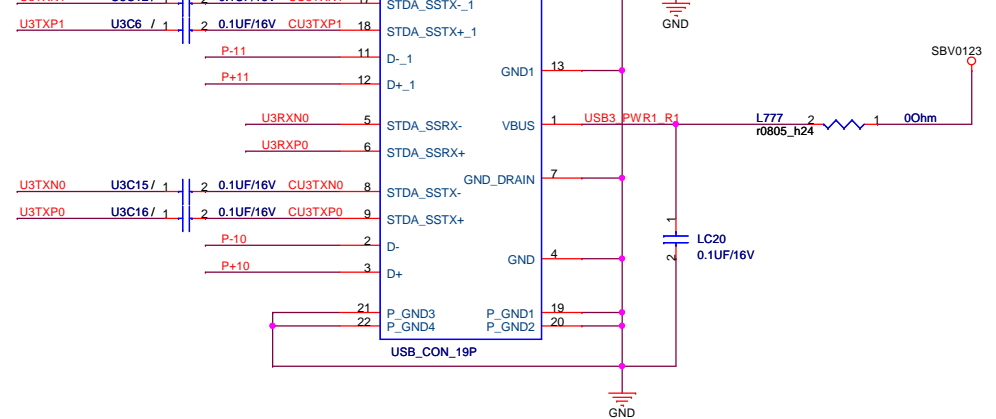
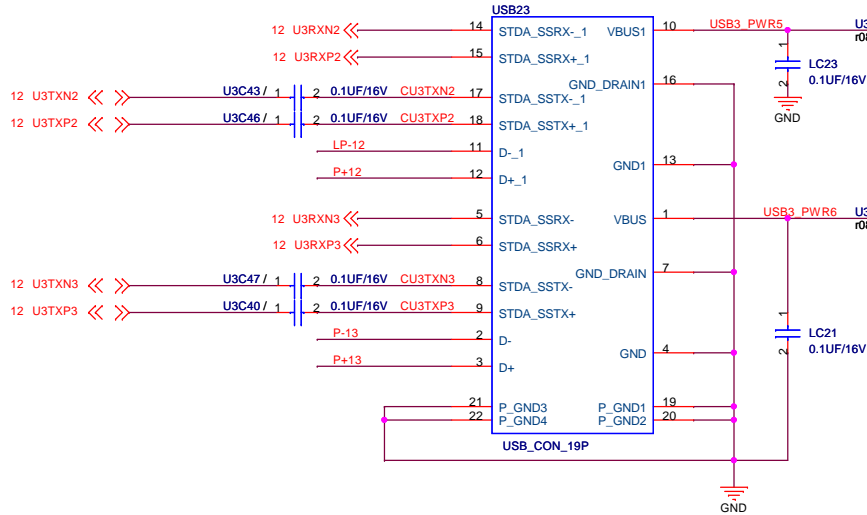
P-3 P+8 P-9 P+8

BOX\_HEAD\_2X5P\_K9

GND GND



|   |  |  |  |
|---|--|--|--|
|  |  | <b>Title :</b> <u>USB_PORT</u>             |  |
| <b>ASRock Inc.</b>  |  | <b>Engineer:</b> <u>Mingus_Wu</u>          |  |
| <b>Size</b><br>A3   | <b>Project Name</b><br><u>A55M-HVS</u> | <b>Rev</b><br>1.03                         |  |
| <b>Date:</b> <u>Friday, July 22, 2011</u>   |  | <b>Sheet</b> <u>24</u> <b>of</b> <u>39</u> |  |



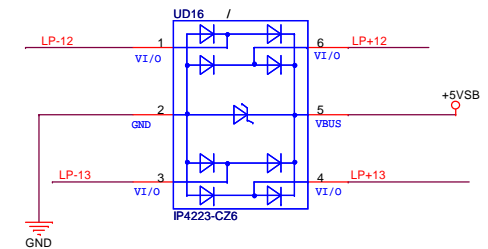
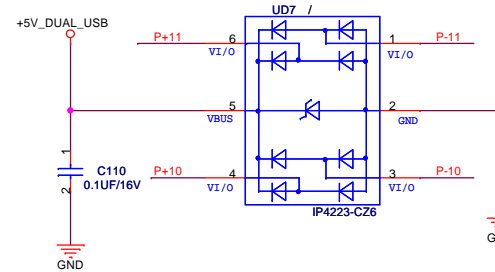
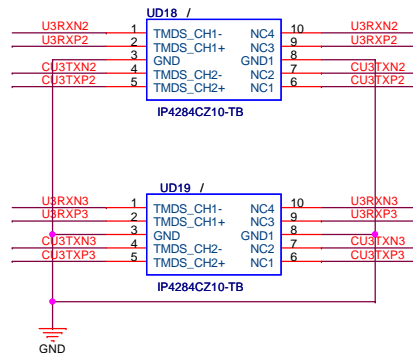
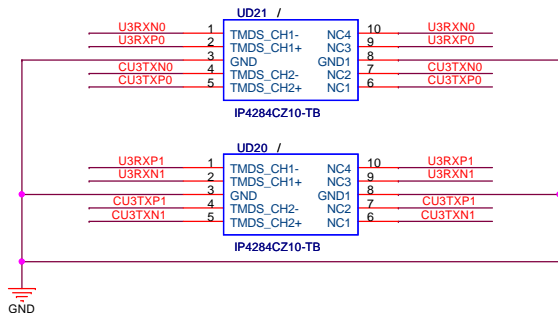
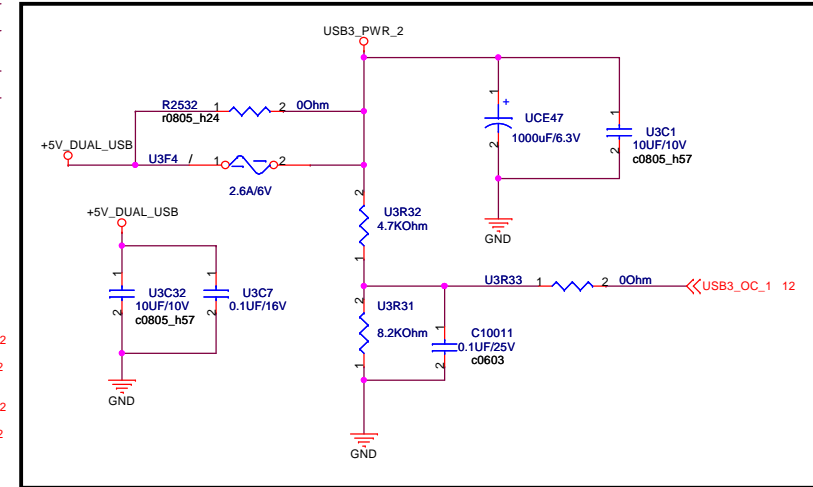
### For Hudson-D3 USB3.0

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 12 LP+13 <<>> P+13  
 12 LP-12 <<>> P-12  
 12 LP+12 <<>> P+12

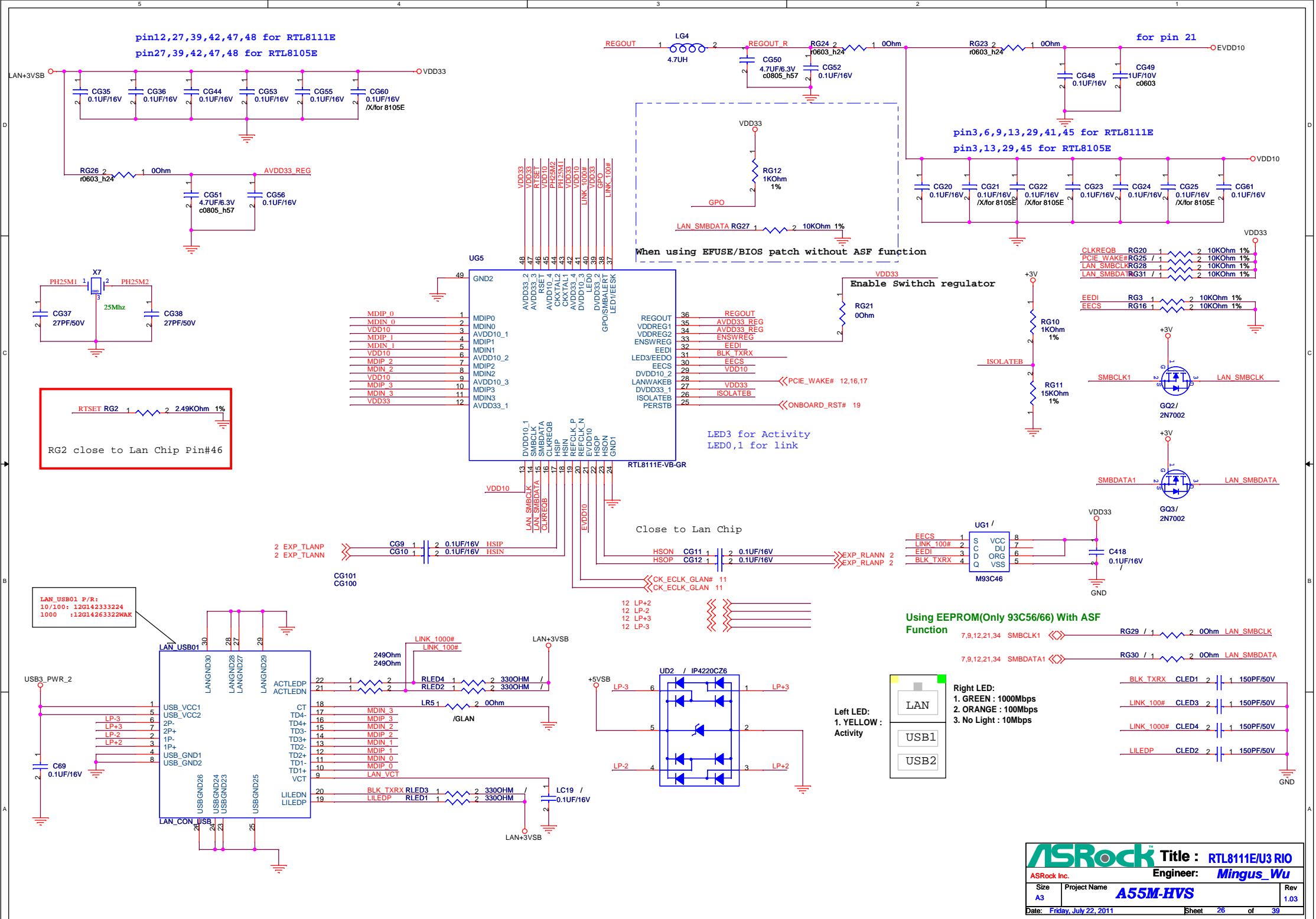
12 U3RXN1 <<>>  
 12 U3RXP1 <<>>  
 12 U3TXN1 <<>>  
 12 U3TXP1 <<>>

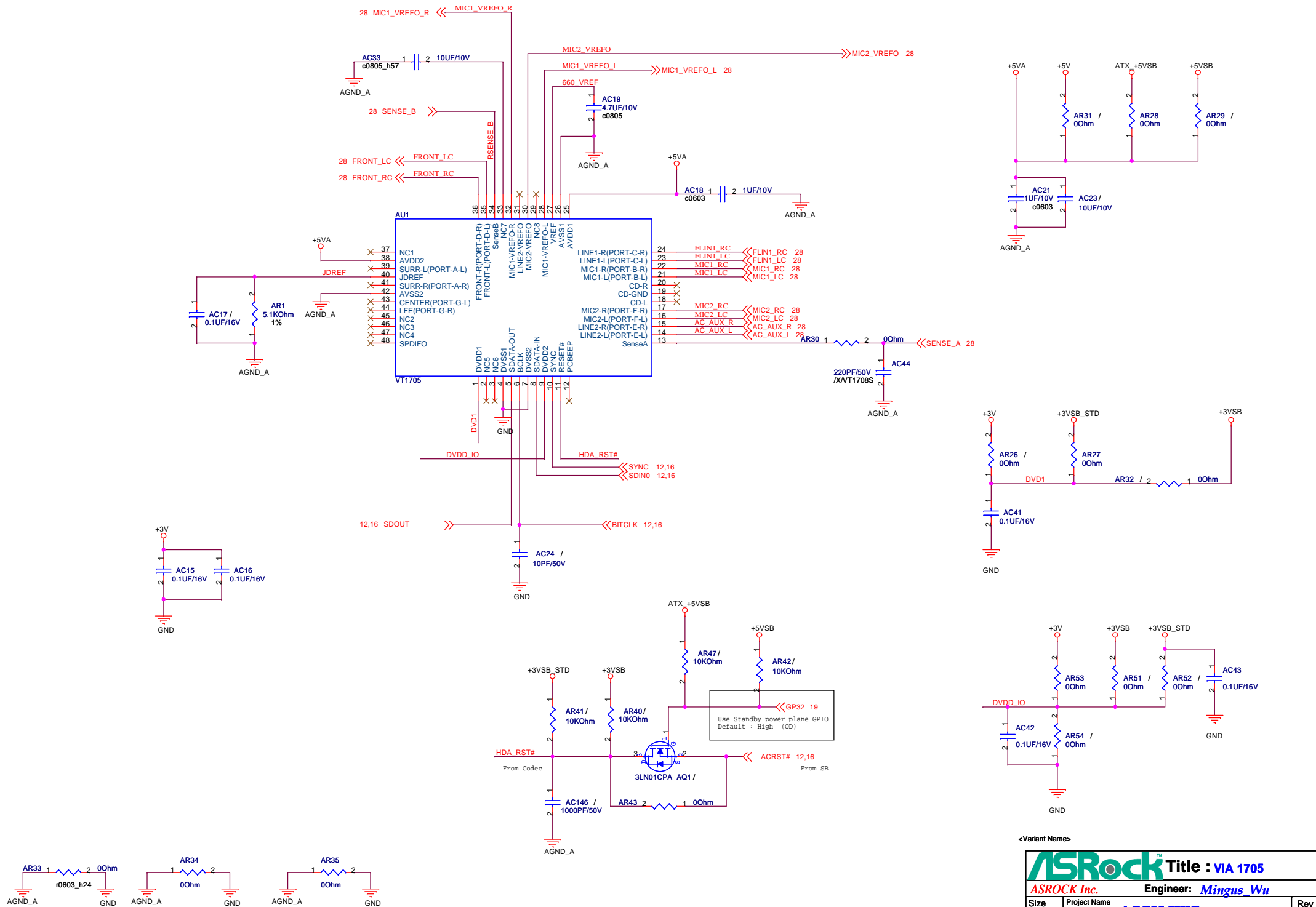
12 U3RXN0 <<>>  
 12 U3RXP0 <<>>  
 12 U3TXN0 <<>>  
 12 U3TXP0 <<>>

P+11 >>> LP+11 12  
 P-11 >>> LP-11 12  
 P+10 >>> LP+10 12  
 P-10 >>> LP-10 12



<Variant Name>

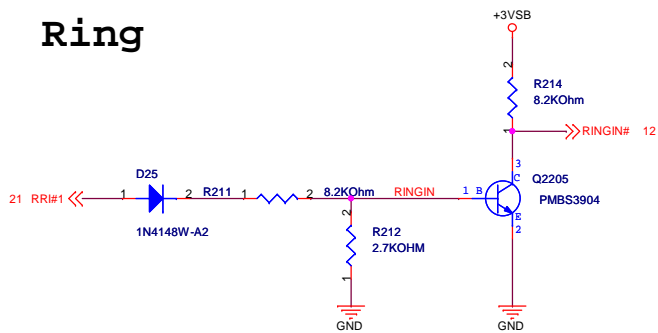




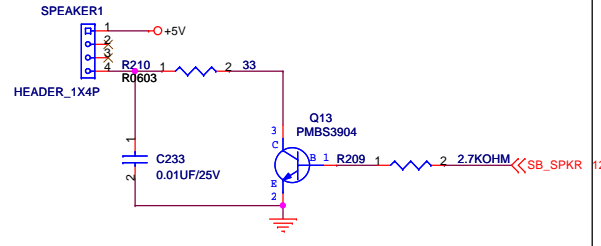




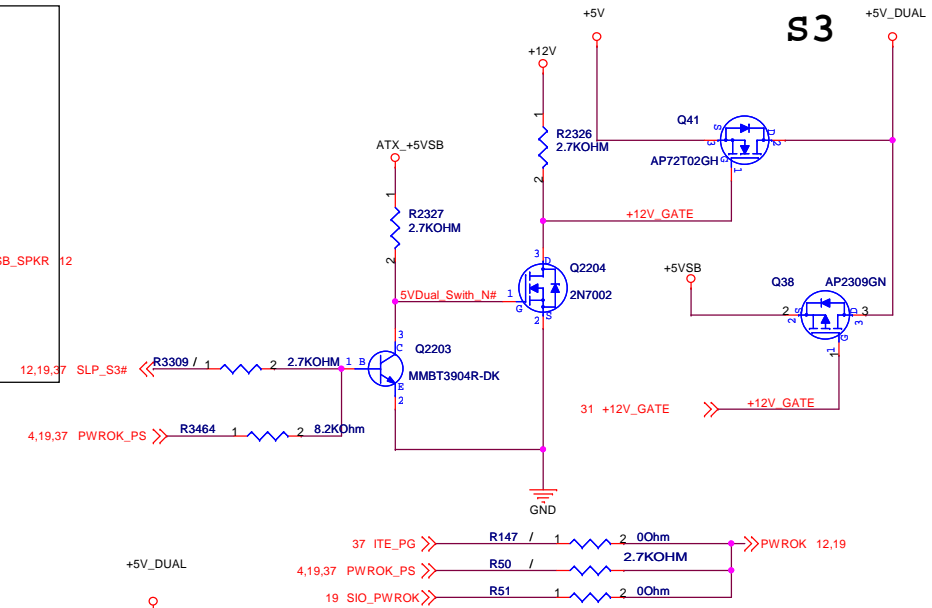
# Ring



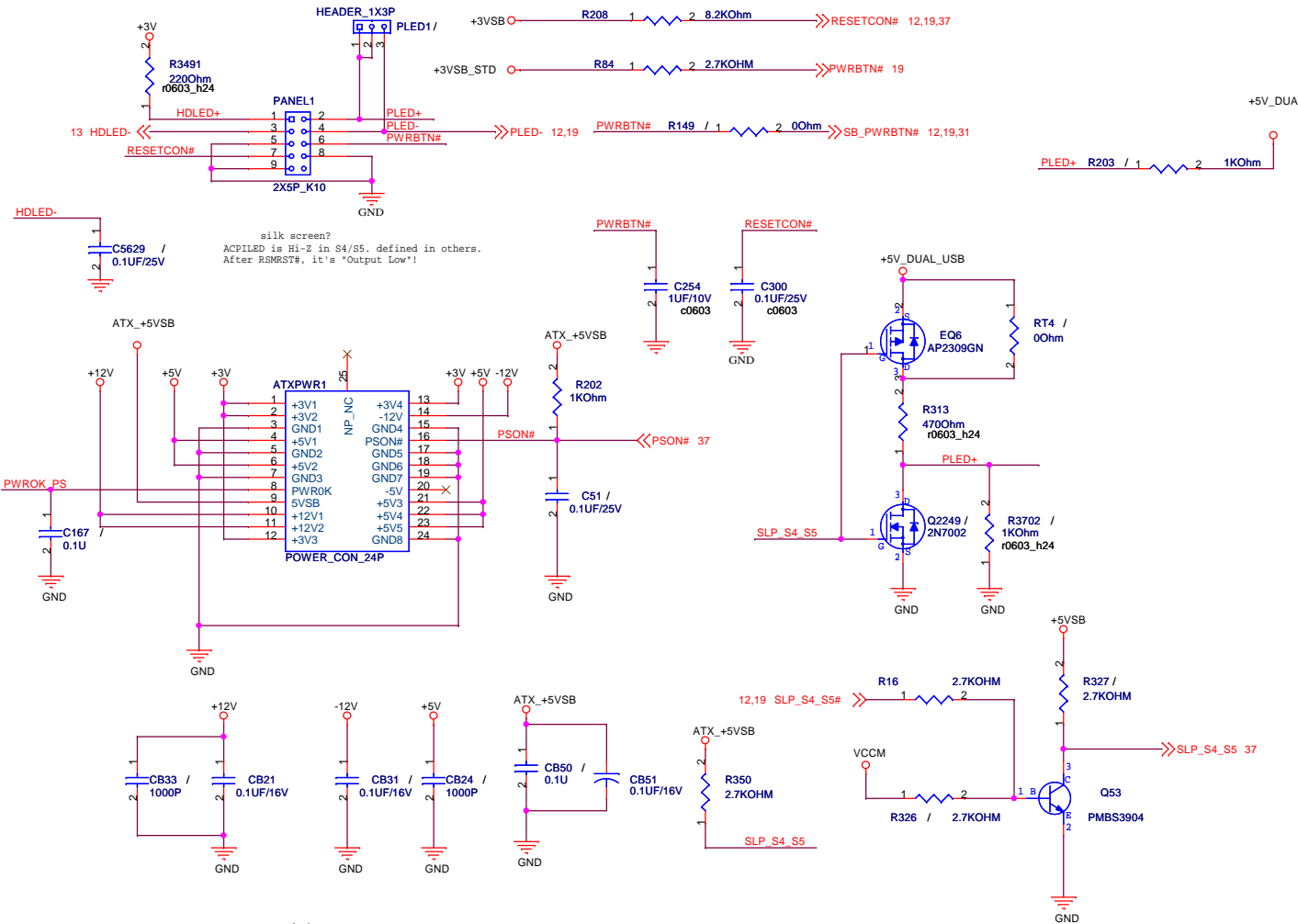
# Speak



# S3

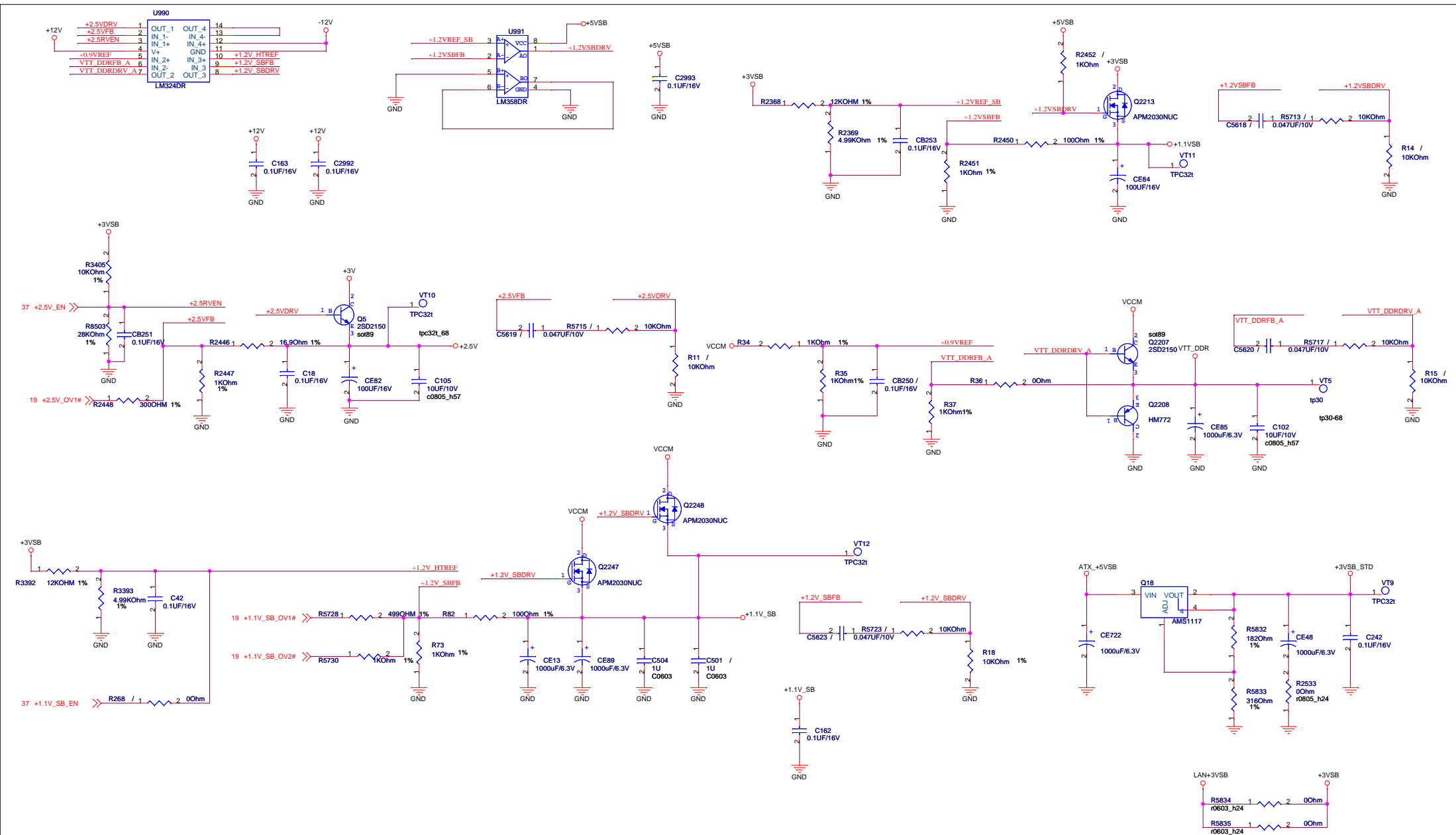


# FRONT PANEL

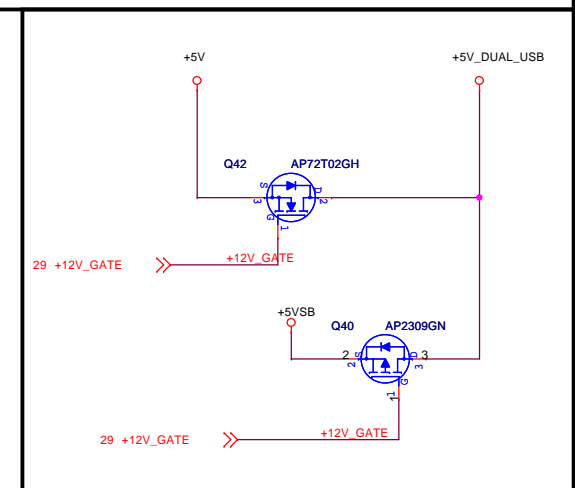
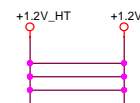
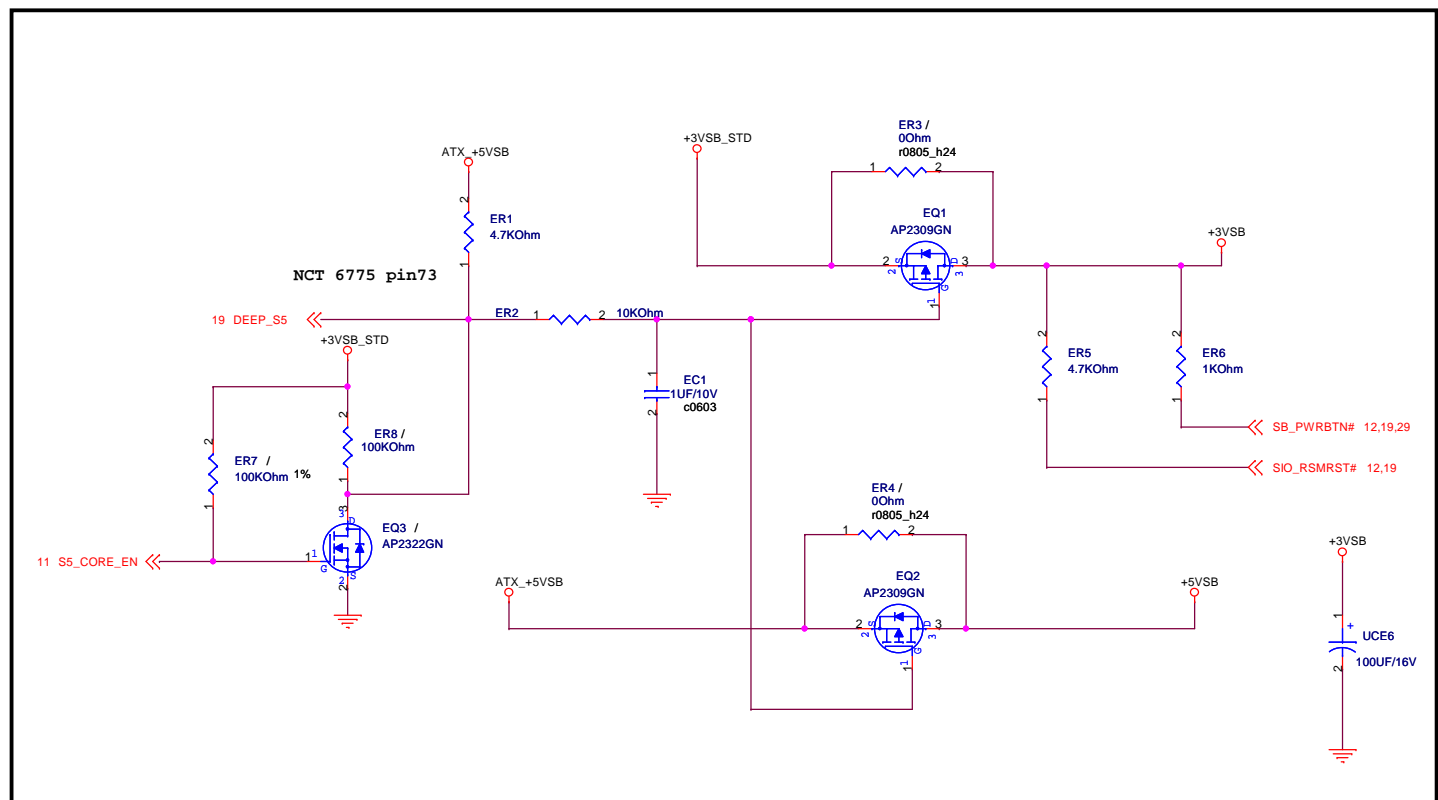


<Variant Name>

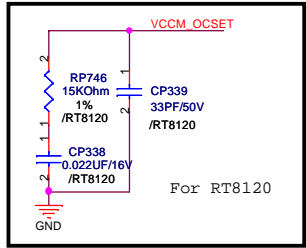
|                             |                          |                     |  |
|-----------------------------|--------------------------|---------------------|--|
| <b>ASRock</b>               |                          | Title : POK_DUALSW  |  |
| ASRock Inc.                 |                          | Engineer: Mingus_Wu |  |
| Size<br>A3                  | Project Name<br>A55M-HVS | Rev<br>1.03         |  |
| Date: Friday, July 22, 2011 | Sheet 29                 | of 39               |  |



<Variant Name>

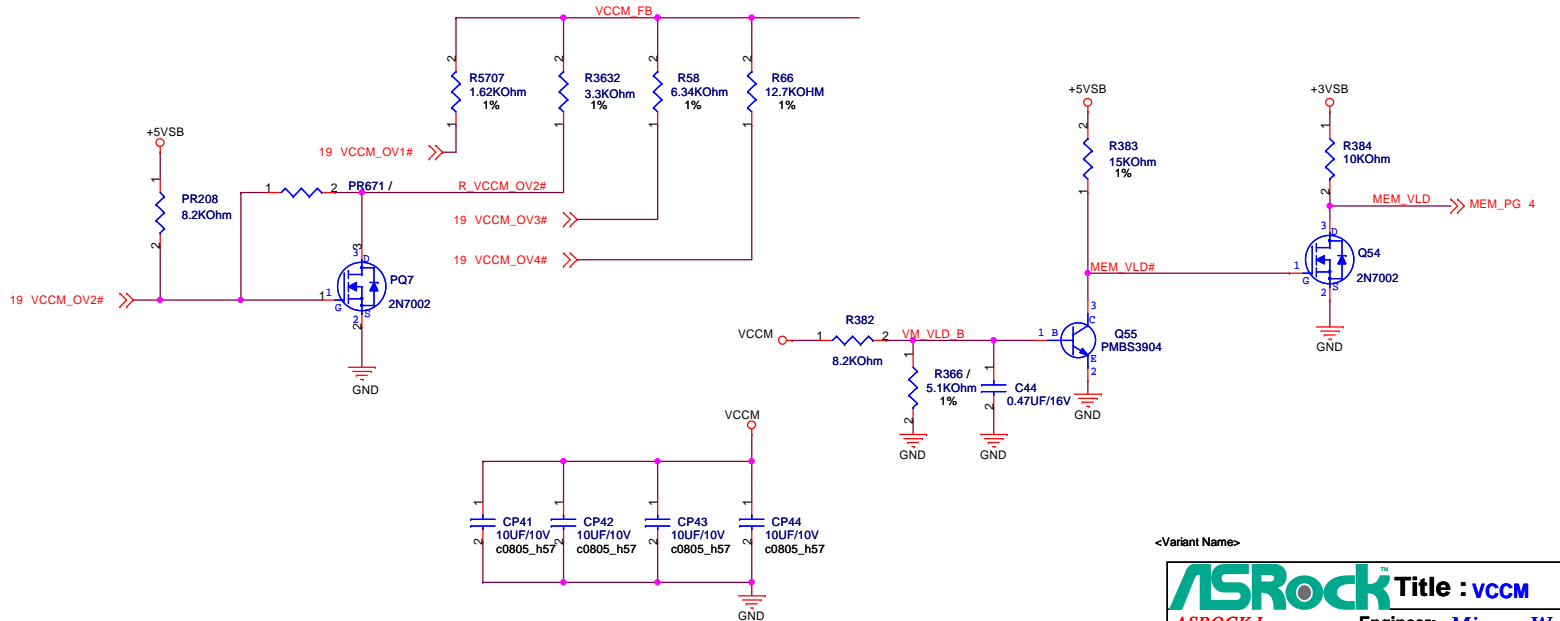


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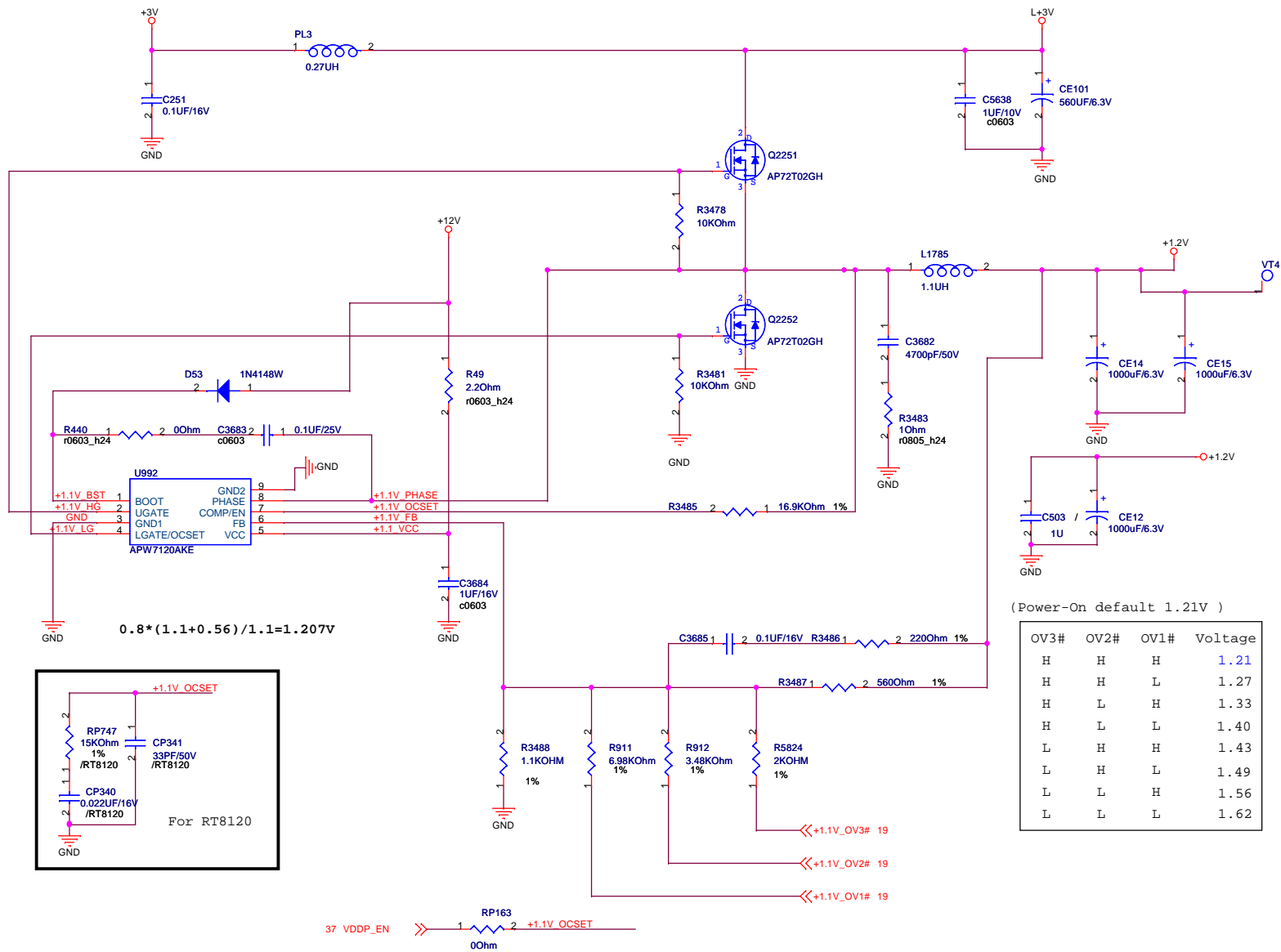


(Power-On default 1.5V )

| OV4# | OV3# | OV2# | OV1# | Voltage |
|------|------|------|------|---------|
| I    | I    | L    | I    | 1.300   |
| L    | I    | L    | I    | 1.350   |
| I    | L    | L    | I    | 1.400   |
| L    | L    | L    | I    | 1.450   |
| I    | I    | I    | I    | 1.500   |
| L    | I    | I    | I    | 1.550   |
| I    | L    | I    | I    | 1.600   |
| L    | L    | I    | I    | 1.650   |
| I    | I    | L    | L    | 1.700   |
| L    | I    | L    | L    | 1.750   |
| I    | L    | L    | L    | 1.800   |
| L    | L    | L    | L    | 1.850   |
| I    | I    | I    | L    | 1.900   |
| L    | I    | I    | L    | 1.950   |
| I    | L    | I    | L    | 2.000   |
| L    | L    | I    | L    | 2.050   |

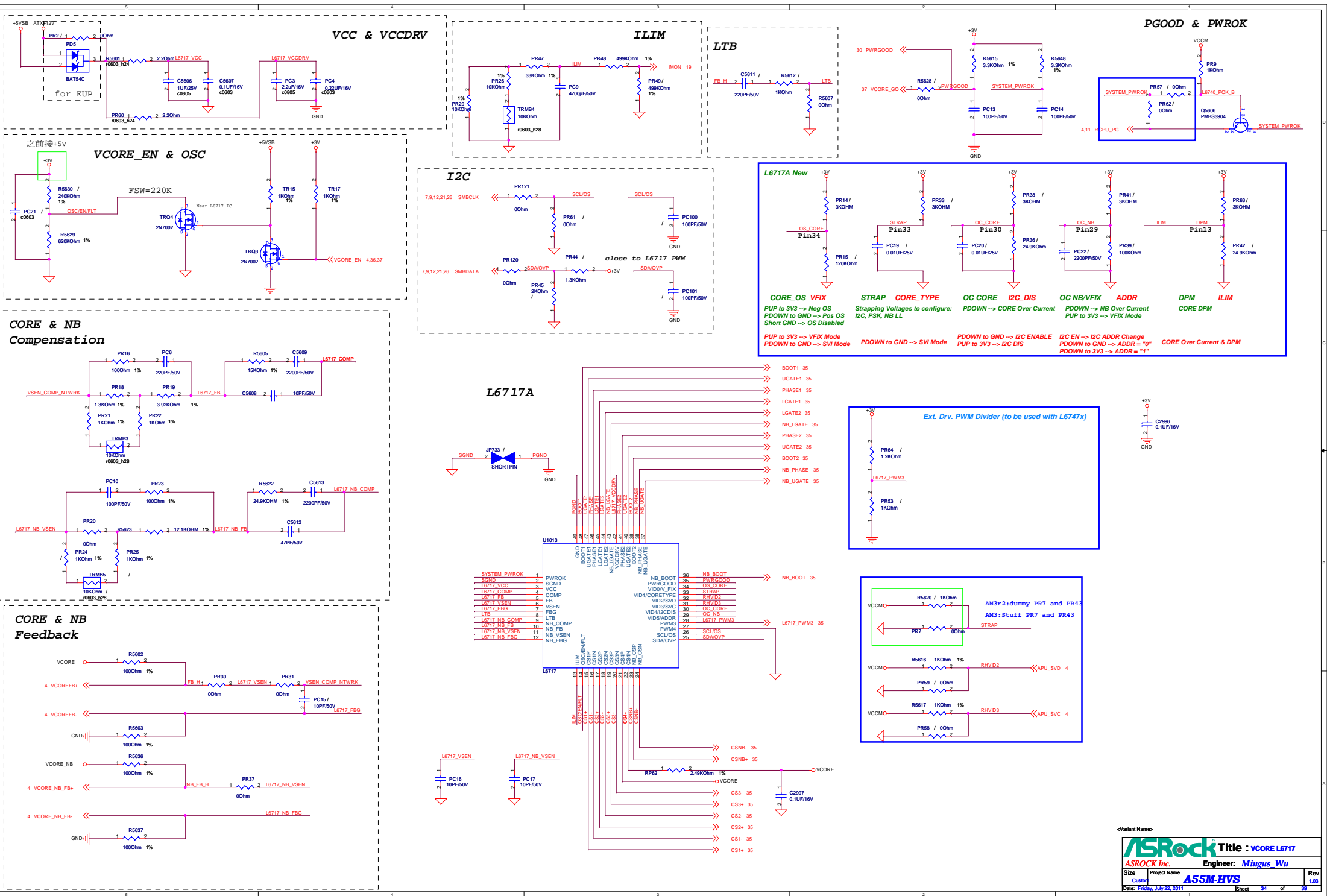


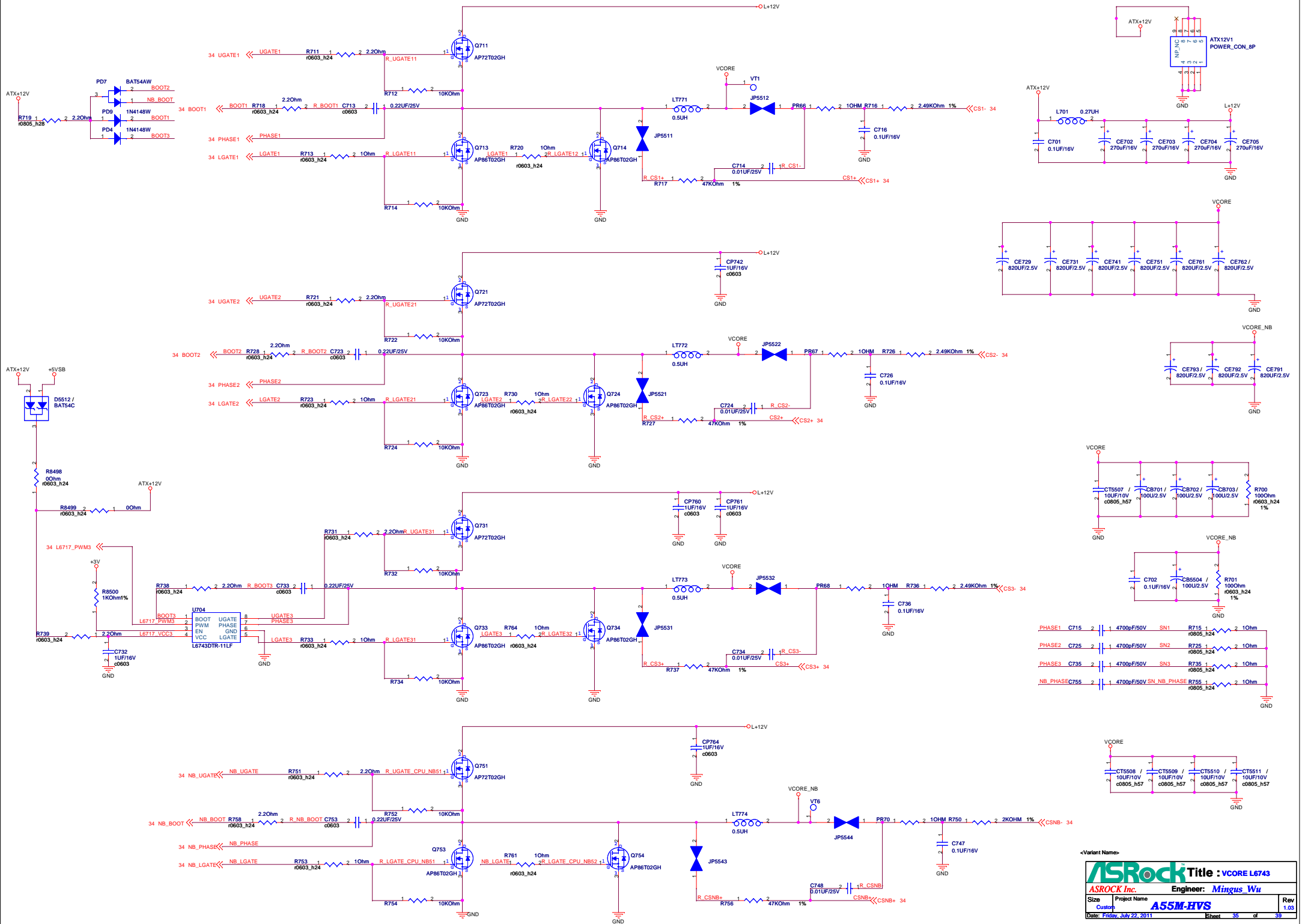
<Variant Name>

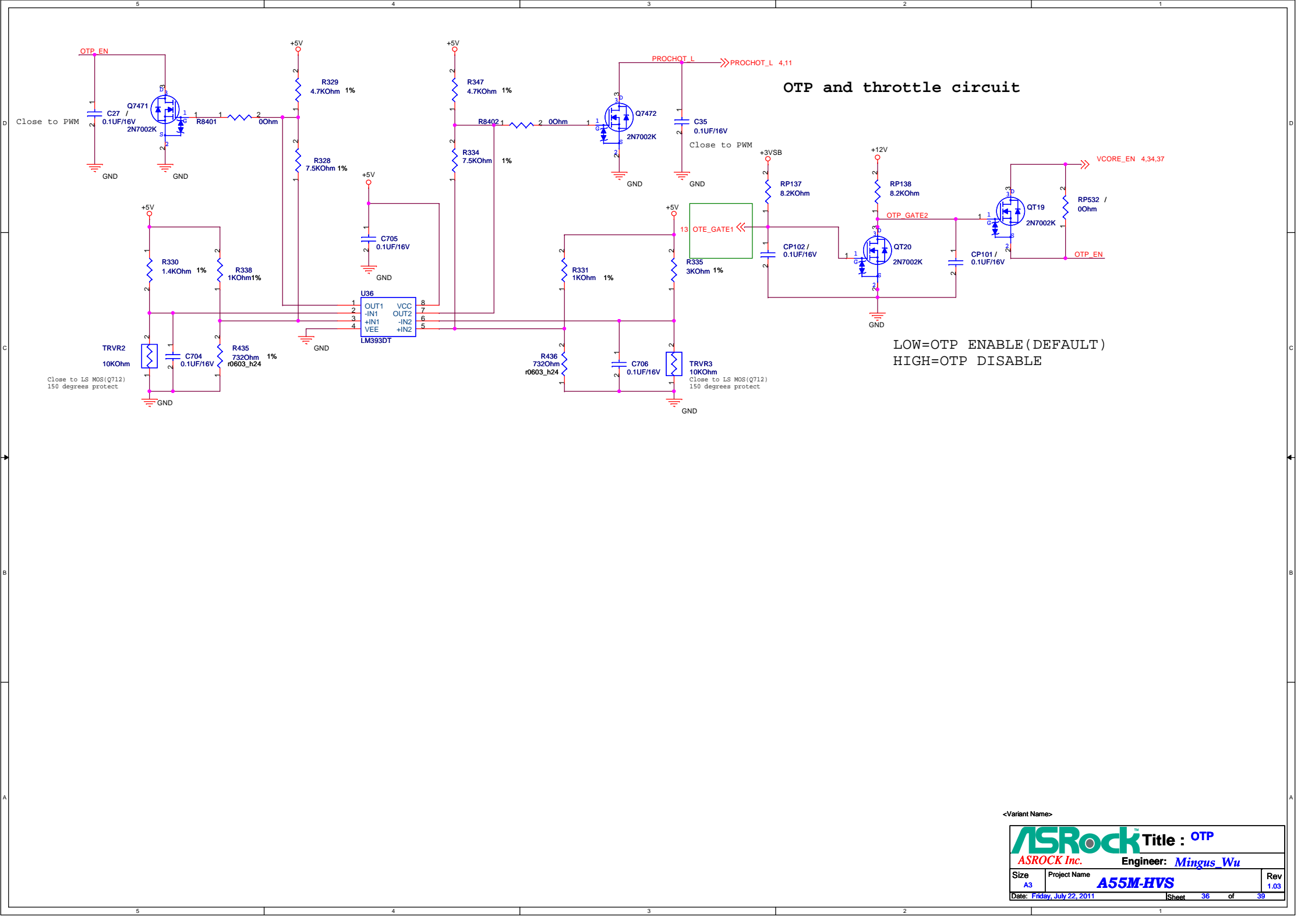


(Power-On default 1.21V)

<Variant Name>

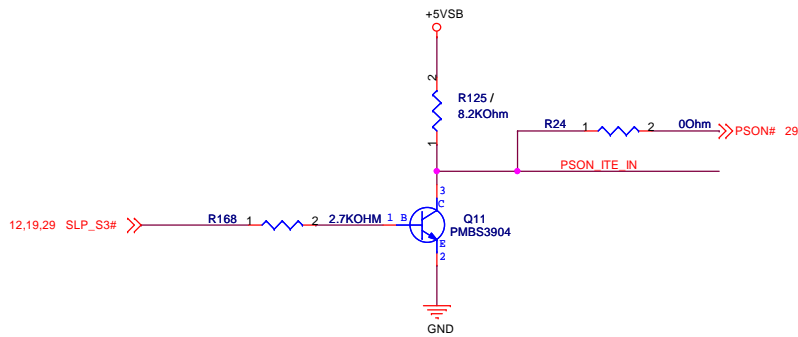
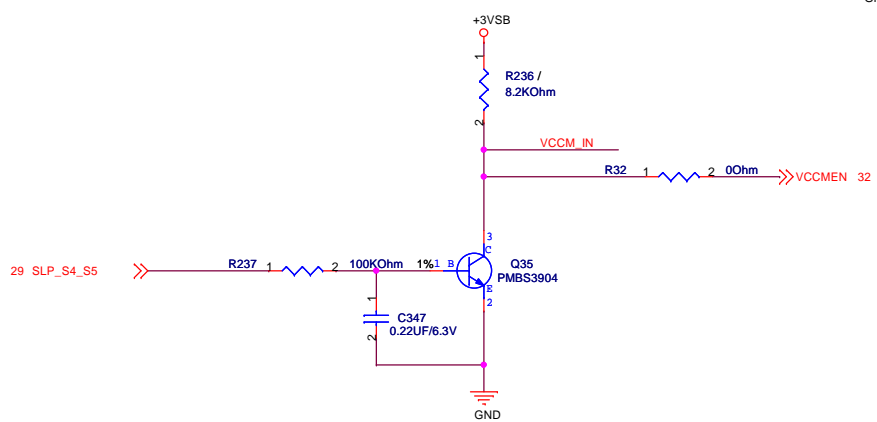
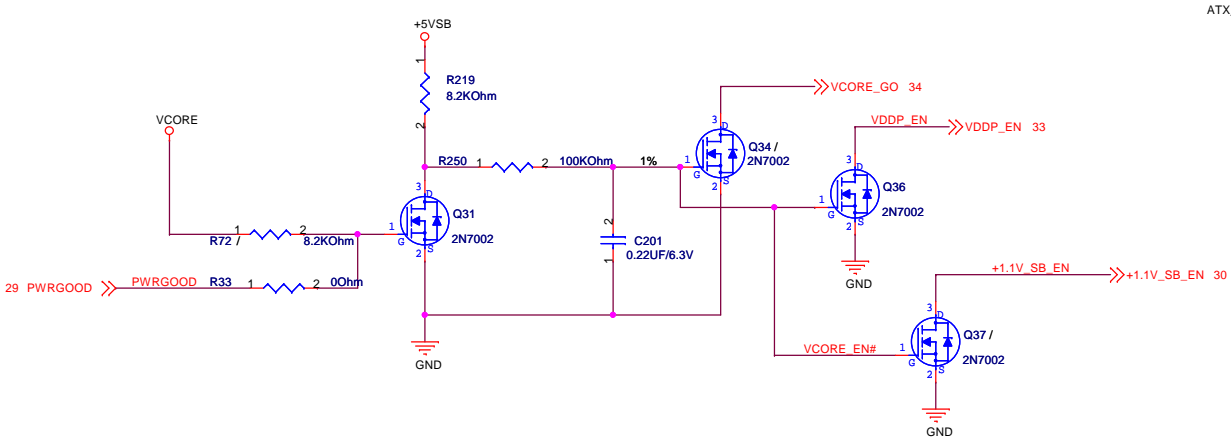
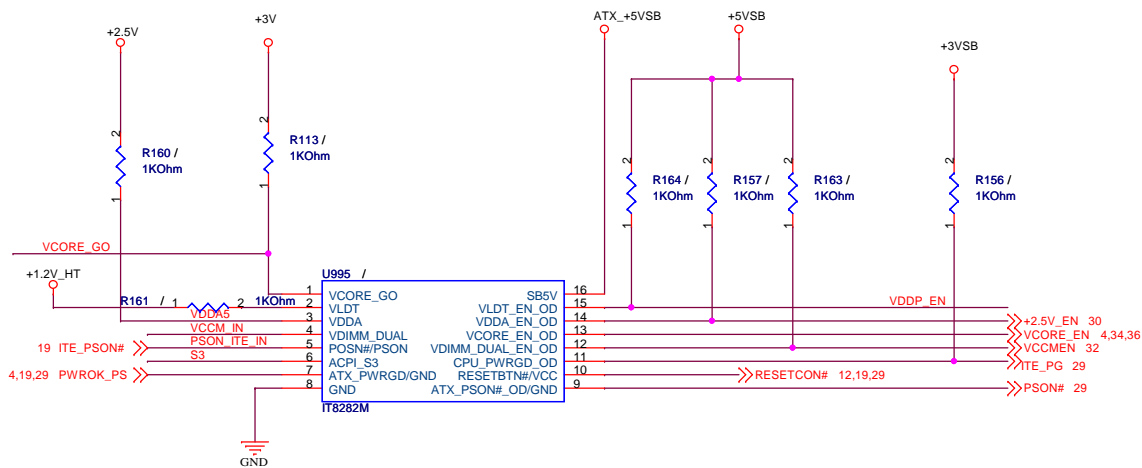






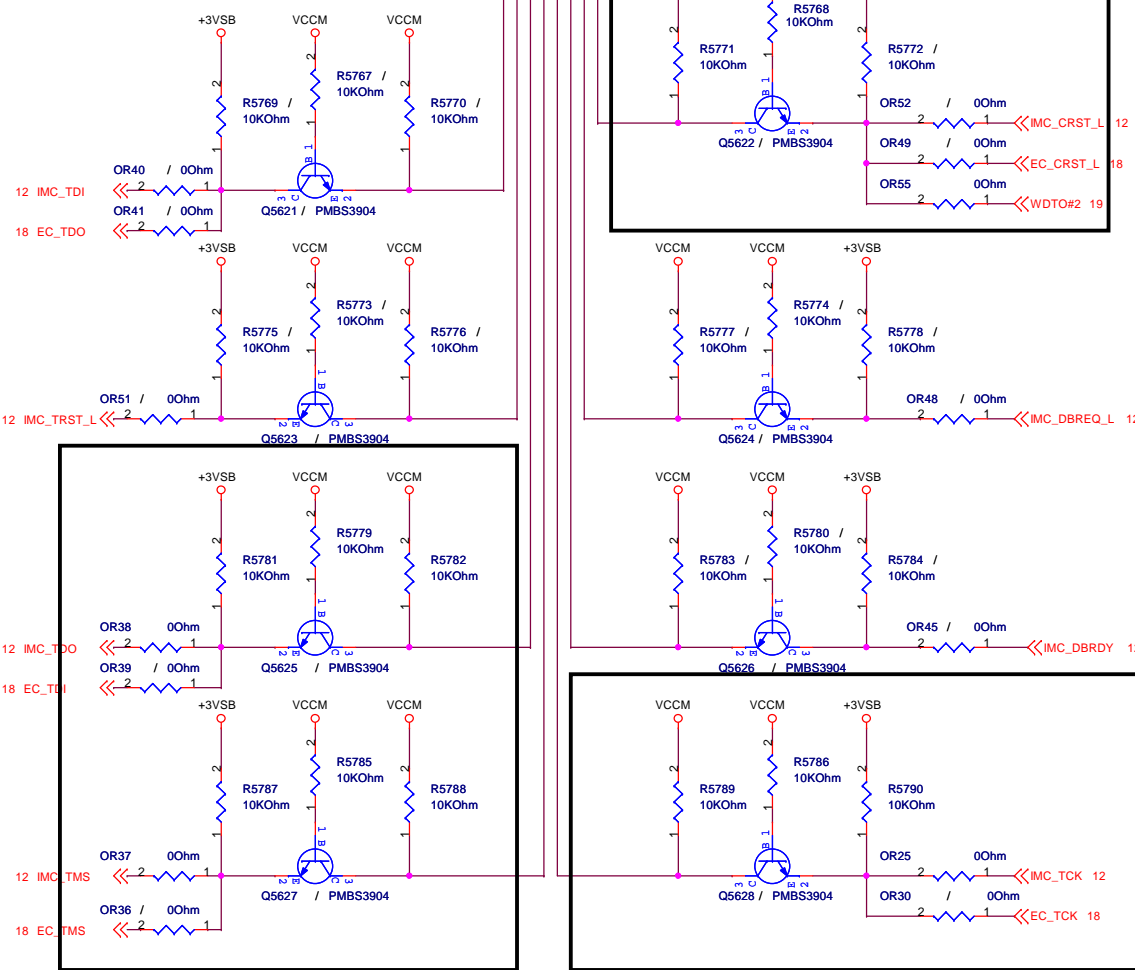
<Variant Name>





<Variant Name>

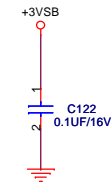
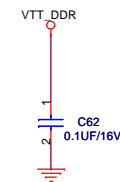
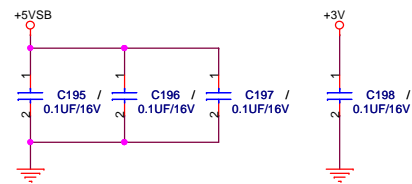
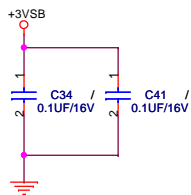
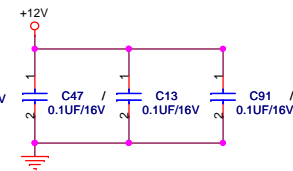
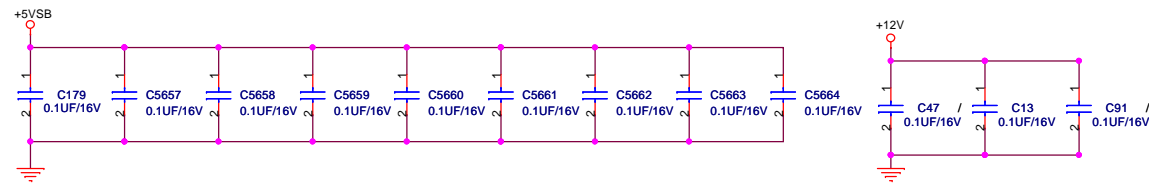
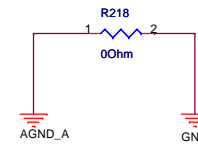
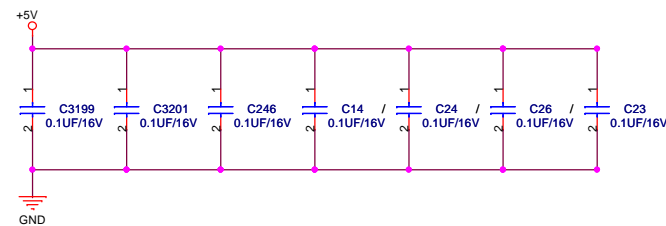
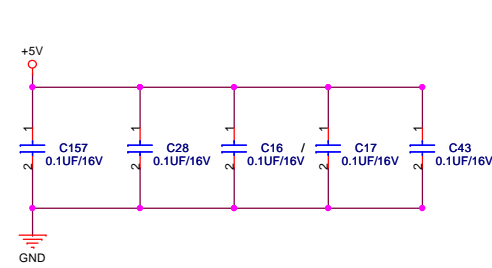
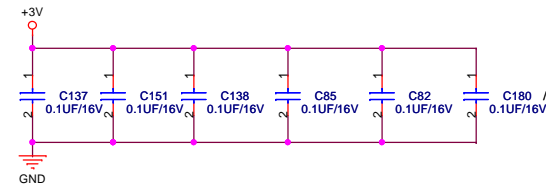
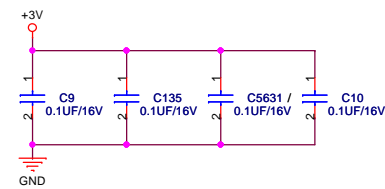
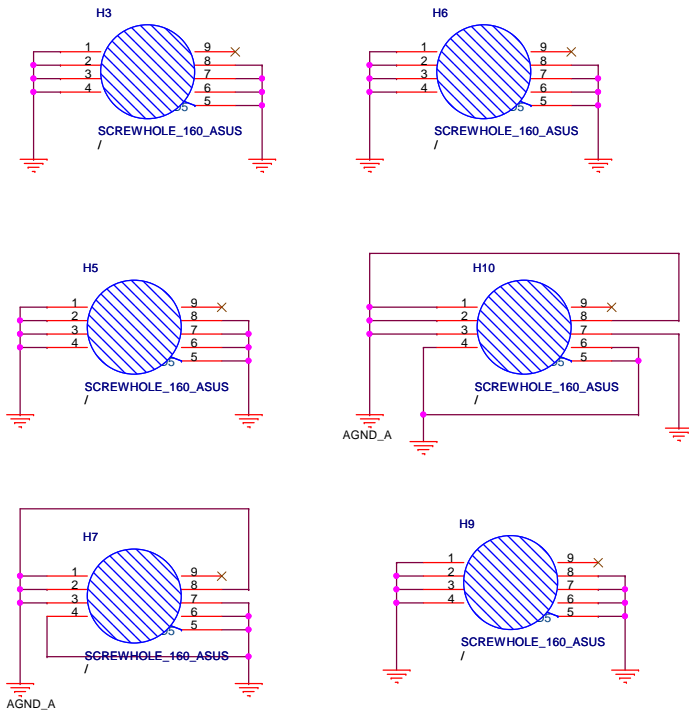
4,11 APU\_RST#  
4 CPU\_DBREQ\_L  
4 CPU\_DBRDY  
4 CPU\_TCK  
4 CPU\_TMS  
4 CPU\_TDI  
4 CPU\_TRST\_L  
4 CPU\_TDO



<Variant Name>

|                             |                                 |                         |          |
|-----------------------------|---------------------------------|-------------------------|----------|
| <b>ASRock</b> ™             |                                 | Title : ACC & EUP & IOT |          |
| ASROCK Inc.                 |                                 | Engineer: Mingus Wu     |          |
| Size<br>A3                  | Project Name<br><b>A55M-HVS</b> | Rev<br>1.03             |          |
| Date: Friday, July 22, 2011 |                                 | Sheet<br>38             | of<br>39 |

uATX scw



<Variant Name>