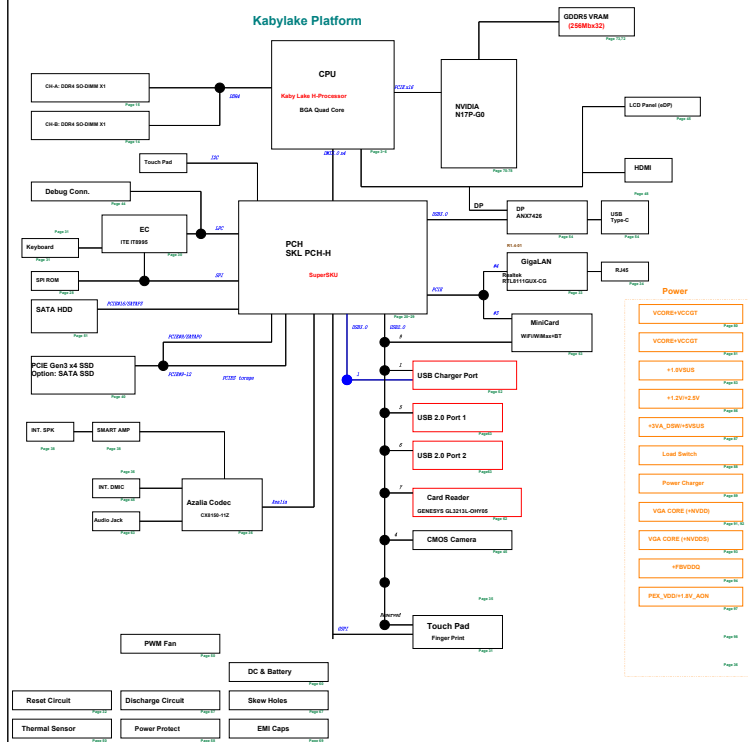


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# PCIe\_LPU\_GPIO

| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO0    | 1       | GPIO0         | Output  | GPIO    |
| GPIO1    | 2       | GPIO1         | Output  | GPIO    |
| GPIO2    | 3       | GPIO2         | Output  | GPIO    |
| GPIO3    | 4       | GPIO3         | Output  | GPIO    |
| GPIO4    | 5       | GPIO4         | Output  | GPIO    |
| GPIO5    | 6       | GPIO5         | Output  | GPIO    |
| GPIO6    | 7       | GPIO6         | Output  | GPIO    |
| GPIO7    | 8       | GPIO7         | Output  | GPIO    |
| GPIO8    | 9       | GPIO8         | Output  | GPIO    |
| GPIO9    | 10      | GPIO9         | Output  | GPIO    |
| GPIO10   | 11      | GPIO10        | Output  | GPIO    |
| GPIO11   | 12      | GPIO11        | Output  | GPIO    |
| GPIO12   | 13      | GPIO12        | Output  | GPIO    |
| GPIO13   | 14      | GPIO13        | Output  | GPIO    |
| GPIO14   | 15      | GPIO14        | Output  | GPIO    |
| GPIO15   | 16      | GPIO15        | Output  | GPIO    |
| GPIO16   | 17      | GPIO16        | Output  | GPIO    |
| GPIO17   | 18      | GPIO17        | Output  | GPIO    |
| GPIO18   | 19      | GPIO18        | Output  | GPIO    |
| GPIO19   | 20      | GPIO19        | Output  | GPIO    |
| GPIO20   | 21      | GPIO20        | Output  | GPIO    |
| GPIO21   | 22      | GPIO21        | Output  | GPIO    |
| GPIO22   | 23      | GPIO22        | Output  | GPIO    |
| GPIO23   | 24      | GPIO23        | Output  | GPIO    |
| GPIO24   | 25      | GPIO24        | Output  | GPIO    |
| GPIO25   | 26      | GPIO25        | Output  | GPIO    |
| GPIO26   | 27      | GPIO26        | Output  | GPIO    |
| GPIO27   | 28      | GPIO27        | Output  | GPIO    |
| GPIO28   | 29      | GPIO28        | Output  | GPIO    |
| GPIO29   | 30      | GPIO29        | Output  | GPIO    |
| GPIO30   | 31      | GPIO30        | Output  | GPIO    |

| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO31   | 32      | GPIO31        | Output  | GPIO    |
| GPIO32   | 33      | GPIO32        | Output  | GPIO    |
| GPIO33   | 34      | GPIO33        | Output  | GPIO    |
| GPIO34   | 35      | GPIO34        | Output  | GPIO    |
| GPIO35   | 36      | GPIO35        | Output  | GPIO    |
| GPIO36   | 37      | GPIO36        | Output  | GPIO    |
| GPIO37   | 38      | GPIO37        | Output  | GPIO    |
| GPIO38   | 39      | GPIO38        | Output  | GPIO    |
| GPIO39   | 40      | GPIO39        | Output  | GPIO    |
| GPIO40   | 41      | GPIO40        | Output  | GPIO    |
| GPIO41   | 42      | GPIO41        | Output  | GPIO    |
| GPIO42   | 43      | GPIO42        | Output  | GPIO    |
| GPIO43   | 44      | GPIO43        | Output  | GPIO    |
| GPIO44   | 45      | GPIO44        | Output  | GPIO    |
| GPIO45   | 46      | GPIO45        | Output  | GPIO    |
| GPIO46   | 47      | GPIO46        | Output  | GPIO    |
| GPIO47   | 48      | GPIO47        | Output  | GPIO    |
| GPIO48   | 49      | GPIO48        | Output  | GPIO    |
| GPIO49   | 50      | GPIO49        | Output  | GPIO    |
| GPIO50   | 51      | GPIO50        | Output  | GPIO    |
| GPIO51   | 52      | GPIO51        | Output  | GPIO    |
| GPIO52   | 53      | GPIO52        | Output  | GPIO    |
| GPIO53   | 54      | GPIO53        | Output  | GPIO    |
| GPIO54   | 55      | GPIO54        | Output  | GPIO    |
| GPIO55   | 56      | GPIO55        | Output  | GPIO    |
| GPIO56   | 57      | GPIO56        | Output  | GPIO    |
| GPIO57   | 58      | GPIO57        | Output  | GPIO    |
| GPIO58   | 59      | GPIO58        | Output  | GPIO    |
| GPIO59   | 60      | GPIO59        | Output  | GPIO    |
| GPIO60   | 61      | GPIO60        | Output  | GPIO    |
| GPIO61   | 62      | GPIO61        | Output  | GPIO    |
| GPIO62   | 63      | GPIO62        | Output  | GPIO    |

| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO63   | 64      | GPIO63        | Output  | GPIO    |
| GPIO64   | 65      | GPIO64        | Output  | GPIO    |
| GPIO65   | 66      | GPIO65        | Output  | GPIO    |
| GPIO66   | 67      | GPIO66        | Output  | GPIO    |
| GPIO67   | 68      | GPIO67        | Output  | GPIO    |
| GPIO68   | 69      | GPIO68        | Output  | GPIO    |
| GPIO69   | 70      | GPIO69        | Output  | GPIO    |
| GPIO70   | 71      | GPIO70        | Output  | GPIO    |
| GPIO71   | 72      | GPIO71        | Output  | GPIO    |
| GPIO72   | 73      | GPIO72        | Output  | GPIO    |
| GPIO73   | 74      | GPIO73        | Output  | GPIO    |
| GPIO74   | 75      | GPIO74        | Output  | GPIO    |
| GPIO75   | 76      | GPIO75        | Output  | GPIO    |
| GPIO76   | 77      | GPIO76        | Output  | GPIO    |
| GPIO77   | 78      | GPIO77        | Output  | GPIO    |
| GPIO78   | 79      | GPIO78        | Output  | GPIO    |
| GPIO79   | 80      | GPIO79        | Output  | GPIO    |
| GPIO80   | 81      | GPIO80        | Output  | GPIO    |
| GPIO81   | 82      | GPIO81        | Output  | GPIO    |
| GPIO82   | 83      | GPIO82        | Output  | GPIO    |
| GPIO83   | 84      | GPIO83        | Output  | GPIO    |
| GPIO84   | 85      | GPIO84        | Output  | GPIO    |
| GPIO85   | 86      | GPIO85        | Output  | GPIO    |
| GPIO86   | 87      | GPIO86        | Output  | GPIO    |
| GPIO87   | 88      | GPIO87        | Output  | GPIO    |
| GPIO88   | 89      | GPIO88        | Output  | GPIO    |
| GPIO89   | 90      | GPIO89        | Output  | GPIO    |
| GPIO90   | 91      | GPIO90        | Output  | GPIO    |
| GPIO91   | 92      | GPIO91        | Output  | GPIO    |
| GPIO92   | 93      | GPIO92        | Output  | GPIO    |
| GPIO93   | 94      | GPIO93        | Output  | GPIO    |
| GPIO94   | 95      | GPIO94        | Output  | GPIO    |
| GPIO95   | 96      | GPIO95        | Output  | GPIO    |
| GPIO96   | 97      | GPIO96        | Output  | GPIO    |
| GPIO97   | 98      | GPIO97        | Output  | GPIO    |
| GPIO98   | 99      | GPIO98        | Output  | GPIO    |
| GPIO99   | 100     | GPIO99        | Output  | GPIO    |

| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO100  | 101     | GPIO100       | Output  | GPIO    |
| GPIO101  | 102     | GPIO101       | Output  | GPIO    |
| GPIO102  | 103     | GPIO102       | Output  | GPIO    |
| GPIO103  | 104     | GPIO103       | Output  | GPIO    |
| GPIO104  | 105     | GPIO104       | Output  | GPIO    |
| GPIO105  | 106     | GPIO105       | Output  | GPIO    |
| GPIO106  | 107     | GPIO106       | Output  | GPIO    |
| GPIO107  | 108     | GPIO107       | Output  | GPIO    |
| GPIO108  | 109     | GPIO108       | Output  | GPIO    |
| GPIO109  | 110     | GPIO109       | Output  | GPIO    |
| GPIO110  | 111     | GPIO110       | Output  | GPIO    |
| GPIO111  | 112     | GPIO111       | Output  | GPIO    |
| GPIO112  | 113     | GPIO112       | Output  | GPIO    |
| GPIO113  | 114     | GPIO113       | Output  | GPIO    |
| GPIO114  | 115     | GPIO114       | Output  | GPIO    |
| GPIO115  | 116     | GPIO115       | Output  | GPIO    |
| GPIO116  | 117     | GPIO116       | Output  | GPIO    |
| GPIO117  | 118     | GPIO117       | Output  | GPIO    |
| GPIO118  | 119     | GPIO118       | Output  | GPIO    |
| GPIO119  | 120     | GPIO119       | Output  | GPIO    |
| GPIO120  | 121     | GPIO120       | Output  | GPIO    |
| GPIO121  | 122     | GPIO121       | Output  | GPIO    |
| GPIO122  | 123     | GPIO122       | Output  | GPIO    |
| GPIO123  | 124     | GPIO123       | Output  | GPIO    |
| GPIO124  | 125     | GPIO124       | Output  | GPIO    |
| GPIO125  | 126     | GPIO125       | Output  | GPIO    |
| GPIO126  | 127     | GPIO126       | Output  | GPIO    |
| GPIO127  | 128     | GPIO127       | Output  | GPIO    |
| GPIO128  | 129     | GPIO128       | Output  | GPIO    |
| GPIO129  | 130     | GPIO129       | Output  | GPIO    |
| GPIO130  | 131     | GPIO130       | Output  | GPIO    |
| GPIO131  | 132     | GPIO131       | Output  | GPIO    |
| GPIO132  | 133     | GPIO132       | Output  | GPIO    |
| GPIO133  | 134     | GPIO133       | Output  | GPIO    |
| GPIO134  | 135     | GPIO134       | Output  | GPIO    |
| GPIO135  | 136     | GPIO135       | Output  | GPIO    |
| GPIO136  | 137     | GPIO136       | Output  | GPIO    |
| GPIO137  | 138     | GPIO137       | Output  | GPIO    |
| GPIO138  | 139     | GPIO138       | Output  | GPIO    |
| GPIO139  | 140     | GPIO139       | Output  | GPIO    |
| GPIO140  | 141     | GPIO140       | Output  | GPIO    |
| GPIO141  | 142     | GPIO141       | Output  | GPIO    |
| GPIO142  | 143     | GPIO142       | Output  | GPIO    |
| GPIO143  | 144     | GPIO143       | Output  | GPIO    |
| GPIO144  | 145     | GPIO144       | Output  | GPIO    |
| GPIO145  | 146     | GPIO145       | Output  | GPIO    |
| GPIO146  | 147     | GPIO146       | Output  | GPIO    |
| GPIO147  | 148     | GPIO147       | Output  | GPIO    |
| GPIO148  | 149     | GPIO148       | Output  | GPIO    |
| GPIO149  | 150     | GPIO149       | Output  | GPIO    |

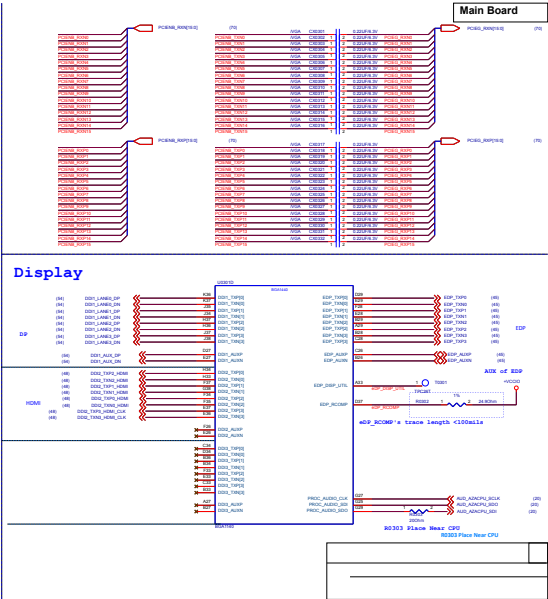
| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO150  | 151     | GPIO150       | Output  | GPIO    |
| GPIO151  | 152     | GPIO151       | Output  | GPIO    |
| GPIO152  | 153     | GPIO152       | Output  | GPIO    |
| GPIO153  | 154     | GPIO153       | Output  | GPIO    |
| GPIO154  | 155     | GPIO154       | Output  | GPIO    |
| GPIO155  | 156     | GPIO155       | Output  | GPIO    |
| GPIO156  | 157     | GPIO156       | Output  | GPIO    |
| GPIO157  | 158     | GPIO157       | Output  | GPIO    |
| GPIO158  | 159     | GPIO158       | Output  | GPIO    |
| GPIO159  | 160     | GPIO159       | Output  | GPIO    |
| GPIO160  | 161     | GPIO160       | Output  | GPIO    |
| GPIO161  | 162     | GPIO161       | Output  | GPIO    |
| GPIO162  | 163     | GPIO162       | Output  | GPIO    |
| GPIO163  | 164     | GPIO163       | Output  | GPIO    |
| GPIO164  | 165     | GPIO164       | Output  | GPIO    |
| GPIO165  | 166     | GPIO165       | Output  | GPIO    |
| GPIO166  | 167     | GPIO166       | Output  | GPIO    |
| GPIO167  | 168     | GPIO167       | Output  | GPIO    |
| GPIO168  | 169     | GPIO168       | Output  | GPIO    |
| GPIO169  | 170     | GPIO169       | Output  | GPIO    |
| GPIO170  | 171     | GPIO170       | Output  | GPIO    |
| GPIO171  | 172     | GPIO171       | Output  | GPIO    |
| GPIO172  | 173     | GPIO172       | Output  | GPIO    |
| GPIO173  | 174     | GPIO173       | Output  | GPIO    |
| GPIO174  | 175     | GPIO174       | Output  | GPIO    |
| GPIO175  | 176     | GPIO175       | Output  | GPIO    |
| GPIO176  | 177     | GPIO176       | Output  | GPIO    |
| GPIO177  | 178     | GPIO177       | Output  | GPIO    |
| GPIO178  | 179     | GPIO178       | Output  | GPIO    |
| GPIO179  | 180     | GPIO179       | Output  | GPIO    |
| GPIO180  | 181     | GPIO180       | Output  | GPIO    |
| GPIO181  | 182     | GPIO181       | Output  | GPIO    |
| GPIO182  | 183     | GPIO182       | Output  | GPIO    |
| GPIO183  | 184     | GPIO183       | Output  | GPIO    |
| GPIO184  | 185     | GPIO184       | Output  | GPIO    |
| GPIO185  | 186     | GPIO185       | Output  | GPIO    |
| GPIO186  | 187     | GPIO186       | Output  | GPIO    |
| GPIO187  | 188     | GPIO187       | Output  | GPIO    |
| GPIO188  | 189     | GPIO188       | Output  | GPIO    |
| GPIO189  | 190     | GPIO189       | Output  | GPIO    |
| GPIO190  | 191     | GPIO190       | Output  | GPIO    |
| GPIO191  | 192     | GPIO191       | Output  | GPIO    |
| GPIO192  | 193     | GPIO192       | Output  | GPIO    |
| GPIO193  | 194     | GPIO193       | Output  | GPIO    |
| GPIO194  | 195     | GPIO194       | Output  | GPIO    |
| GPIO195  | 196     | GPIO195       | Output  | GPIO    |
| GPIO196  | 197     | GPIO196       | Output  | GPIO    |
| GPIO197  | 198     | GPIO197       | Output  | GPIO    |
| GPIO198  | 199     | GPIO198       | Output  | GPIO    |
| GPIO199  | 200     | GPIO199       | Output  | GPIO    |

| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO200  | 201     | GPIO200       | Output  | GPIO    |
| GPIO201  | 202     | GPIO201       | Output  | GPIO    |
| GPIO202  | 203     | GPIO202       | Output  | GPIO    |
| GPIO203  | 204     | GPIO203       | Output  | GPIO    |
| GPIO204  | 205     | GPIO204       | Output  | GPIO    |
| GPIO205  | 206     | GPIO205       | Output  | GPIO    |
| GPIO206  | 207     | GPIO206       | Output  | GPIO    |
| GPIO207  | 208     | GPIO207       | Output  | GPIO    |
| GPIO208  | 209     | GPIO208       | Output  | GPIO    |
| GPIO209  | 210     | GPIO209       | Output  | GPIO    |
| GPIO210  | 211     | GPIO210       | Output  | GPIO    |
| GPIO211  | 212     | GPIO211       | Output  | GPIO    |
| GPIO212  | 213     | GPIO212       | Output  | GPIO    |
| GPIO213  | 214     | GPIO213       | Output  | GPIO    |
| GPIO214  | 215     | GPIO214       | Output  | GPIO    |
| GPIO215  | 216     | GPIO215       | Output  | GPIO    |
| GPIO216  | 217     | GPIO216       | Output  | GPIO    |
| GPIO217  | 218     | GPIO217       | Output  | GPIO    |
| GPIO218  | 219     | GPIO218       | Output  | GPIO    |
| GPIO219  | 220     | GPIO219       | Output  | GPIO    |
| GPIO220  | 221     | GPIO220       | Output  | GPIO    |
| GPIO221  | 222     | GPIO221       | Output  | GPIO    |
| GPIO222  | 223     | GPIO222       | Output  | GPIO    |
| GPIO223  | 224     | GPIO223       | Output  | GPIO    |
| GPIO224  | 225     | GPIO224       | Output  | GPIO    |
| GPIO225  | 226     | GPIO225       | Output  | GPIO    |
| GPIO226  | 227     | GPIO226       | Output  | GPIO    |
| GPIO227  | 228     | GPIO227       | Output  | GPIO    |
| GPIO228  | 229     | GPIO228       | Output  | GPIO    |
| GPIO229  | 230     | GPIO229       | Output  | GPIO    |
| GPIO230  | 231     | GPIO230       | Output  | GPIO    |
| GPIO231  | 232     | GPIO231       | Output  | GPIO    |
| GPIO232  | 233     | GPIO232       | Output  | GPIO    |
| GPIO233  | 234     | GPIO233       | Output  | GPIO    |
| GPIO234  | 235     | GPIO234       | Output  | GPIO    |
| GPIO235  | 236     | GPIO235       | Output  | GPIO    |
| GPIO236  | 237     | GPIO236       | Output  | GPIO    |
| GPIO237  | 238     | GPIO237       | Output  | GPIO    |
| GPIO238  | 239     | GPIO238       | Output  | GPIO    |
| GPIO239  | 240     | GPIO239       | Output  | GPIO    |
| GPIO240  | 241     | GPIO240       | Output  | GPIO    |
| GPIO241  | 242     | GPIO241       | Output  | GPIO    |
| GPIO242  | 243     | GPIO242       | Output  | GPIO    |
| GPIO243  | 244     | GPIO243       | Output  | GPIO    |
| GPIO244  | 245     | GPIO244       | Output  | GPIO    |
| GPIO245  | 246     | GPIO245       | Output  | GPIO    |
| GPIO246  | 247     | GPIO246       | Output  | GPIO    |
| GPIO247  | 248     | GPIO247       | Output  | GPIO    |
| GPIO248  | 249     | GPIO248       | Output  | GPIO    |
| GPIO249  | 250     | GPIO249       | Output  | GPIO    |

| Function | Pin No. | Function Name | IO Mode | IO Type |
|----------|---------|---------------|---------|---------|
| GPIO250  | 251     | GPIO250       | Output  | GPIO    |
| GPIO251  | 252     | GPIO251       | Output  | GPIO    |
| GPIO252  | 253     | GPIO252       | Output  | GPIO    |
| GPIO253  | 254     | GPIO253       | Output  | GPIO    |
| GPIO254  | 255     | GPIO254       | Output  | GPIO    |
| GPIO255  | 256     | GPIO255       | Output  | GPIO    |
| GPIO256  | 257     | GPIO256       | Output  | GPIO    |
| GPIO257  | 258     | GPIO257       | Output  | GPIO    |
| GPIO258  | 259     | GPIO258       | Output  | GPIO    |
| GPIO259  | 260     | GPIO259       | Output  | GPIO    |
| GPIO260  | 261     | GPIO260       | Output  | GPIO    |
| GPIO261  | 262     | GPIO261       | Output  | GPIO    |
| GPIO262  | 263     | GPIO262       | Output  | GPIO    |
| GPIO263  | 264     | GPIO263       | Output  | GPIO    |
| GPIO264  | 265     | GPIO264       | Output  | GPIO    |
| GPIO265  | 266     | GPIO265       | Output  | GPIO    |
| GPIO266  | 267     | GPIO266       | Output  | GPIO    |
| GPIO267  | 268     | GPIO267       | Output  | GPIO    |
| GPIO268  | 269     | GPIO268       | Output  | GPIO    |
| GPIO269  | 270     | GPIO269       | Output  | GPIO    |
| GPIO270  | 271     | GPIO270       | Output  | GPIO    |
| GPIO271  | 272     | GPIO271       | Output  | GPIO    |
| GPIO272  | 273     | GPIO272       | Output  | GPIO    |
| GPIO273  | 274     | GPIO273       | Output  | GPIO    |
| GPIO274  | 275     | GPIO274       | Output  | GPIO    |
| GPIO275  | 276     | GPIO275       | Output  | GPIO    |
| GPIO276  | 277     | GPIO276       | Output  | GPIO    |
| GPIO277  | 278     | GPIO277       | Output  | GPIO    |
| GPIO278  | 279     | GPIO278       | Output  | GPIO    |
| GPIO279  | 280     | GPIO279       | Output  | GPIO    |
| GPIO280  | 281     | GPIO280       | Output  | GPIO    |
| GPIO281  | 282     | GPIO281       | Output  | GPIO    |

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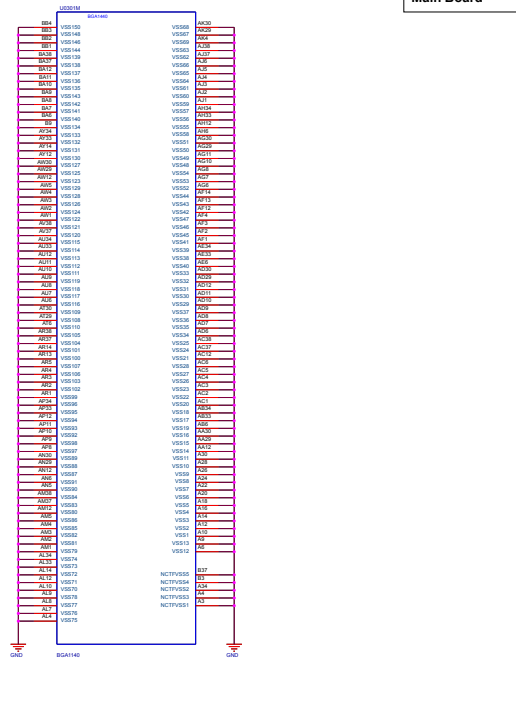
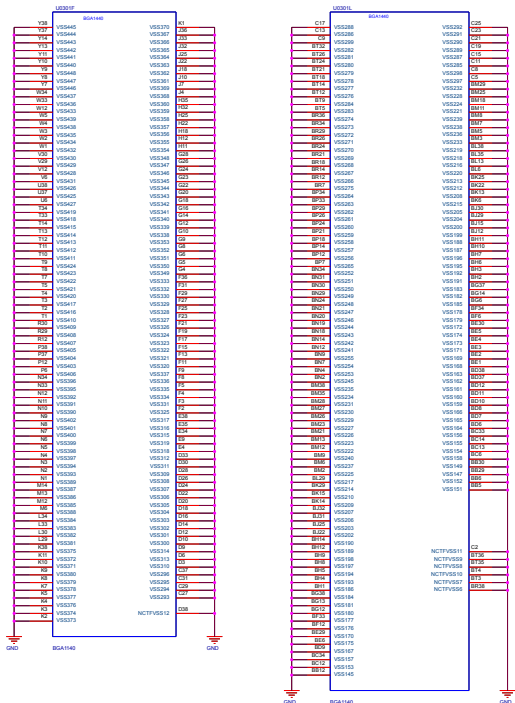
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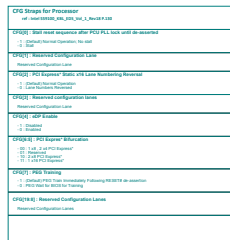
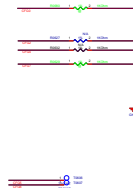
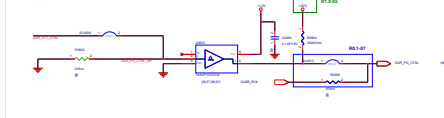
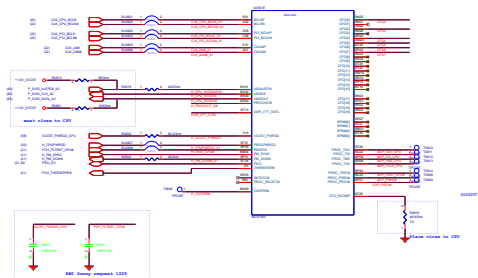
DP

DP

[illegible][illegible]

Main Board



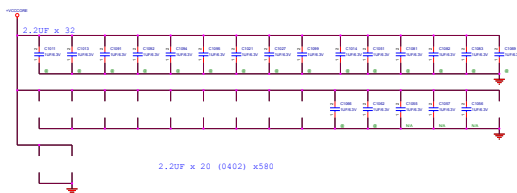
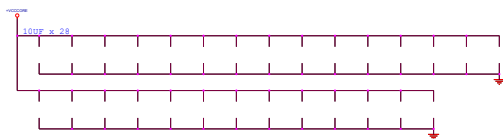






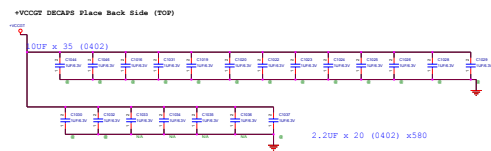


+VCCORE DECAPS Place Back Side (TOP)



Main Board

+VCC02 DECAPS Place Back Side (TOP)



```
12002-00080100
DDR4 DIMM 260P 4H STD
20160108 check
```

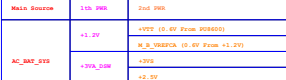
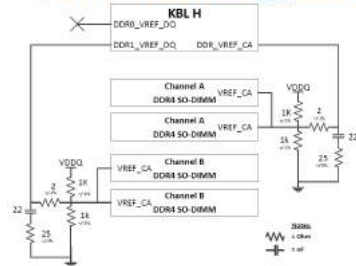
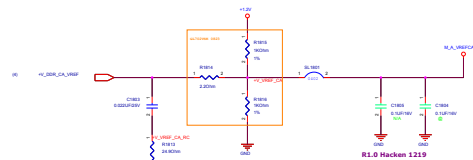


Figure 4-25. KBL-H DDR4 SO-DIMM V<sub>REF-CA</sub> Overview

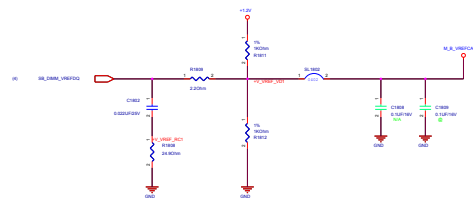


SO-DIMM Vref

Main Board



SO-DIMM Vref



\_\_\_\_\_

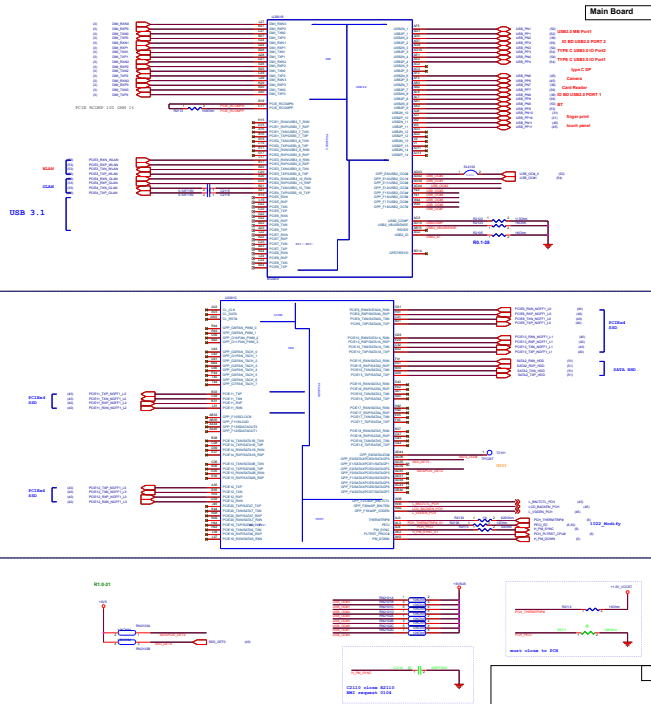
100%



PCIE Function define  
KabyLake HMI75X580VD USB Function define Kabylake HMI75

### X380VD PCIE/SATA Function define

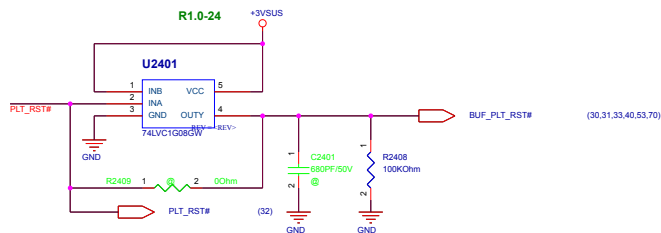
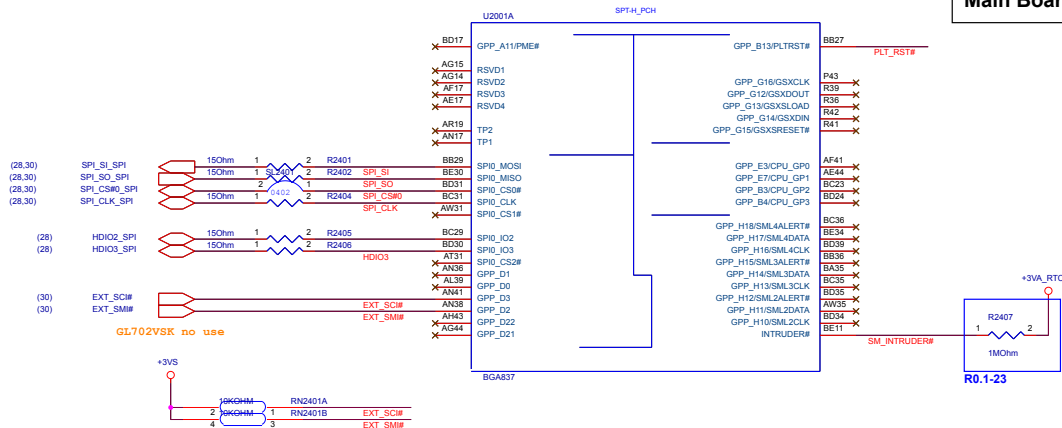
|             | Function |
|-------------|----------|
| CLDRQ-0     | DGPU     |
| CLDRQ-1     |          |
| CLDRQ-2     |          |
| CLDRQ-3     | WLAN     |
| CLDRQ-4     | GLAN     |
| CLDRQ-5     |          |
| CLDRQ-6     | PCIe SSD |
| CLDRQ-7     |          |
| CLDRQ-8     |          |
| CLDRQ-9     |          |
| CLDRQ-10~15 |          |



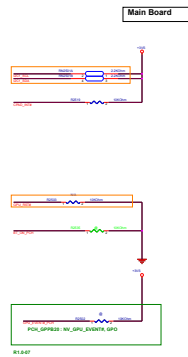
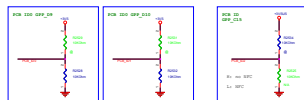




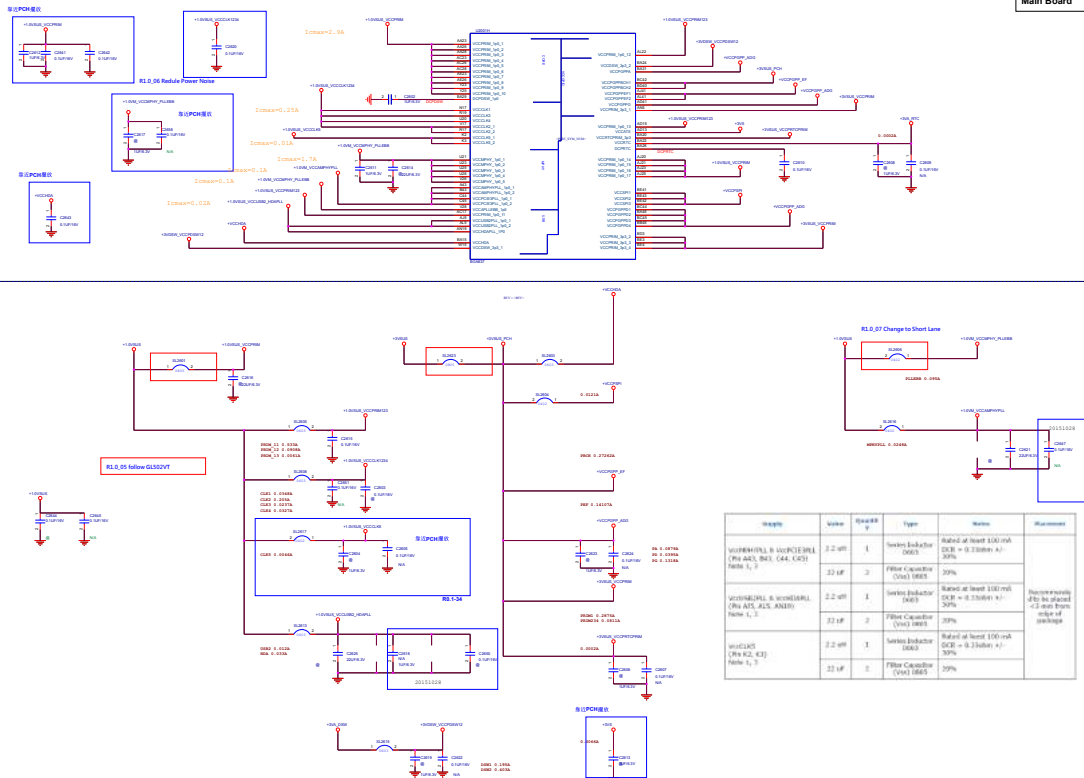
# Main Board





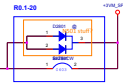


## Main Board



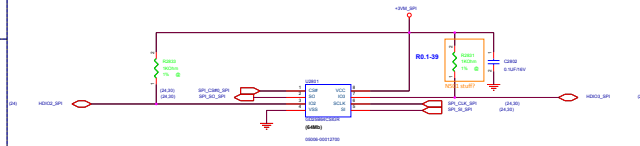


## SPI Power



## 1st SPI ROM

Main: 05006-00010500 (Fixed quad bit)



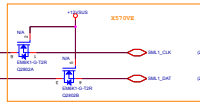
Main Board

## System Management Interface

EC  
PU to +3V3V3

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT



PU TO +VDDV3

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

## SMBus Interface

EC  
PU to +3V3V3

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

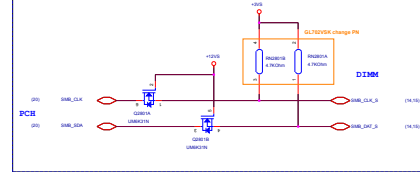
(SMB1)SMB1\_DAT

(SMB1)SMB1\_CLK

(SMB1)SMB1\_DAT

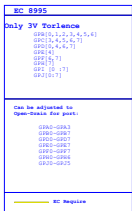
R5-1-13 R1-0-01

CPU,VGA Thermal Sensor  
Power Thermal Sensor



R5-1-13 R1-0-01

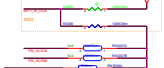
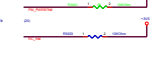
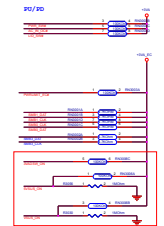
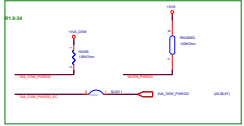
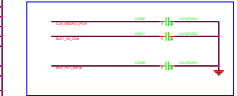
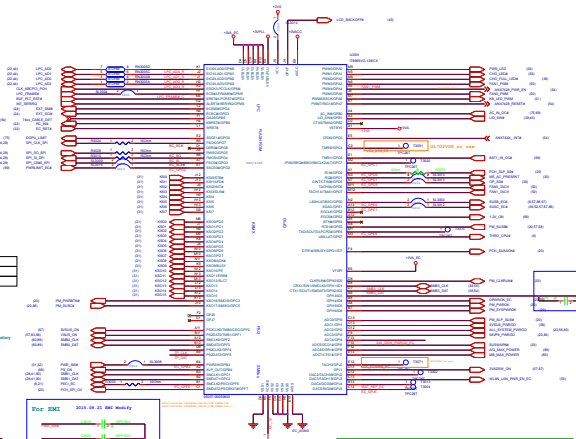
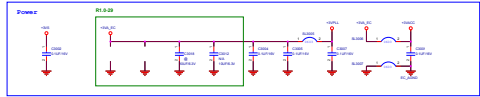
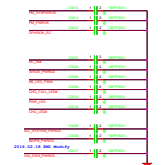
CPU,VGA Thermal Sensor  
Power Thermal Sensor

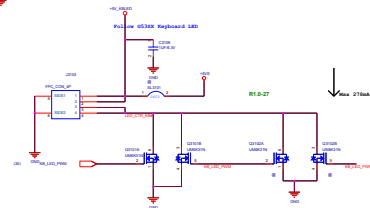
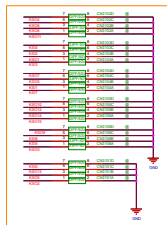
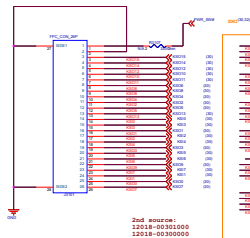


| IDE Version | ADUC P/M         |
|-------------|------------------|
| 1999/09/09  | 0000000000000000 |

2010.08.21.0000000000000000

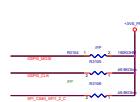
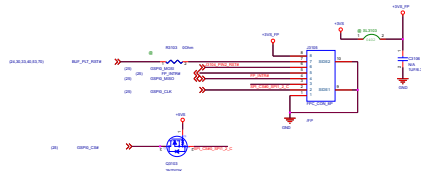
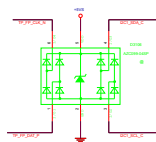
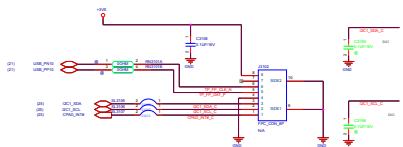
For EMI





Click touch Pad Connector

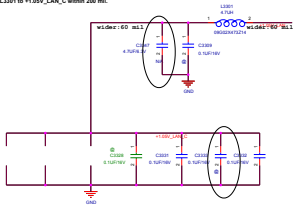
Reserved for EMI



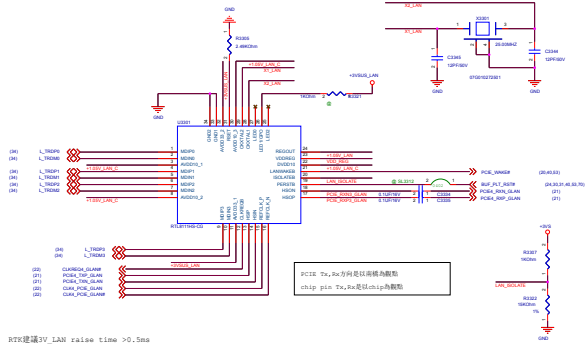
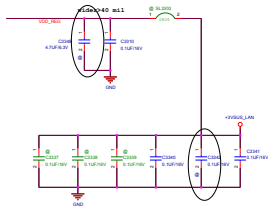


The distance from u3301.36 to L3301 within 200 mil.

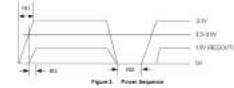
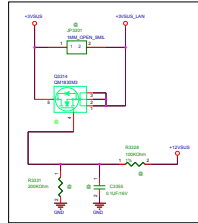
The distance from L3301 to +1.85V\_LAN\_C within 200 mil.



The distance from L3301.34, L3301.35, VDD\_REG net to SL3303 within 200 mil.



RTK建議TV\_LAN raise time >0.5ms

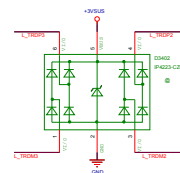
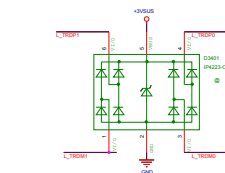
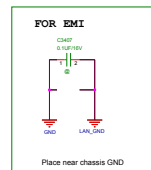
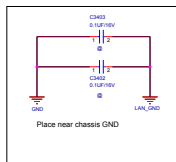
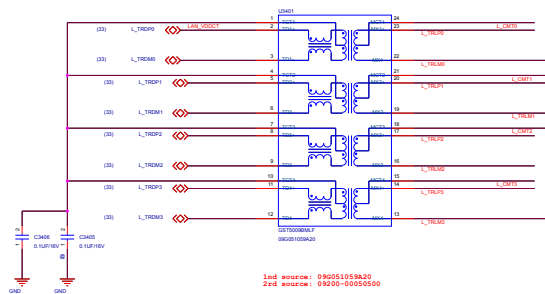


| Symbol | Revs/operation              | Min | Typical | Max | Units |
|--------|-----------------------------|-----|---------|-----|-------|
| R10    | 1.7V Reg. Rise              | 0.2 | 1.0     | 1.0 | ms    |
| R20    | 1.7V VDD Core Rise          | 0.2 | 1.0     | 1.0 | ms    |
| R30    | 1.7V VDD Core VDD Core Rise | 0.2 | 1.0     | 1.0 | ms    |

Note: Use the following notation for power sequence requirements.



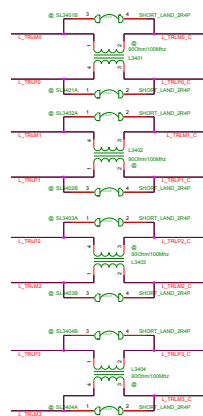
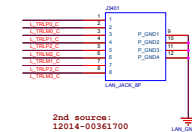
## RJ45 con.

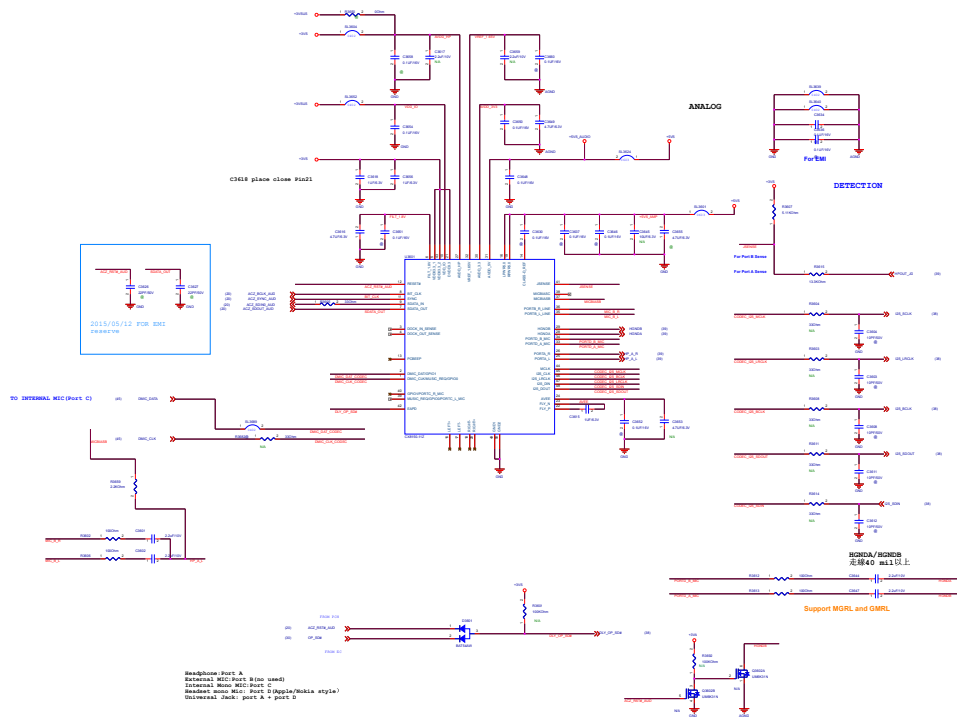


R2.2 [Chip]  
Dn1 R3401 for 非橋式Transformer 1020G

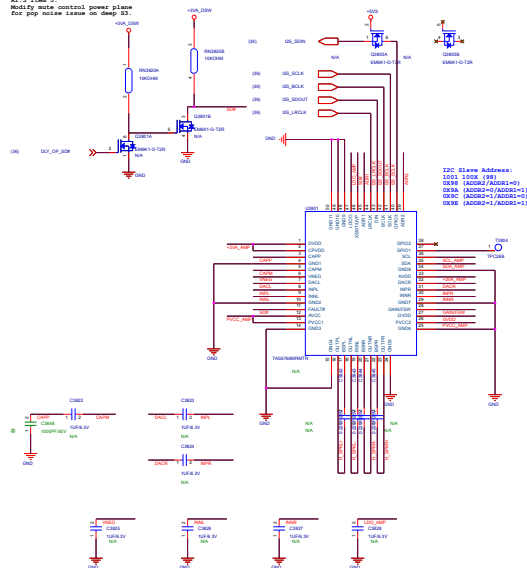


TOP, In1, In2, In3, Bottom 所有線 Lan-Gnd

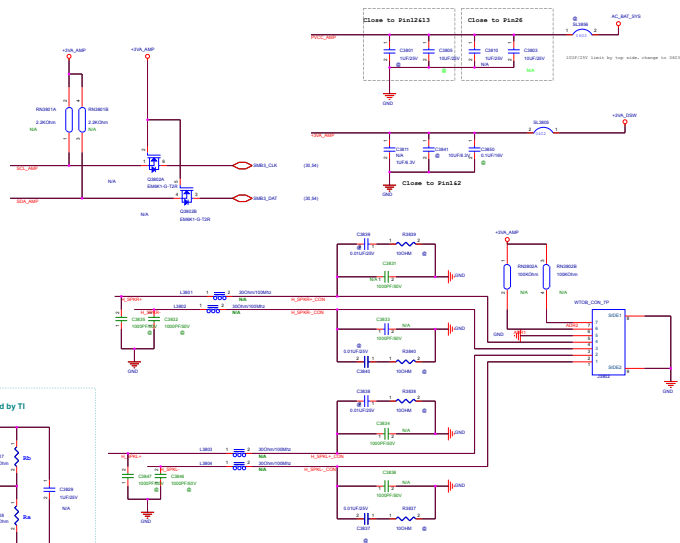
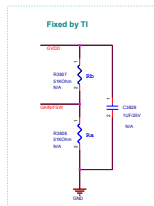


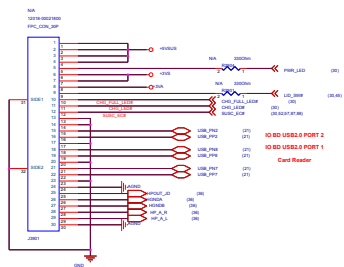


Modify mute control power plane  
for pop noise issue on deep S3.

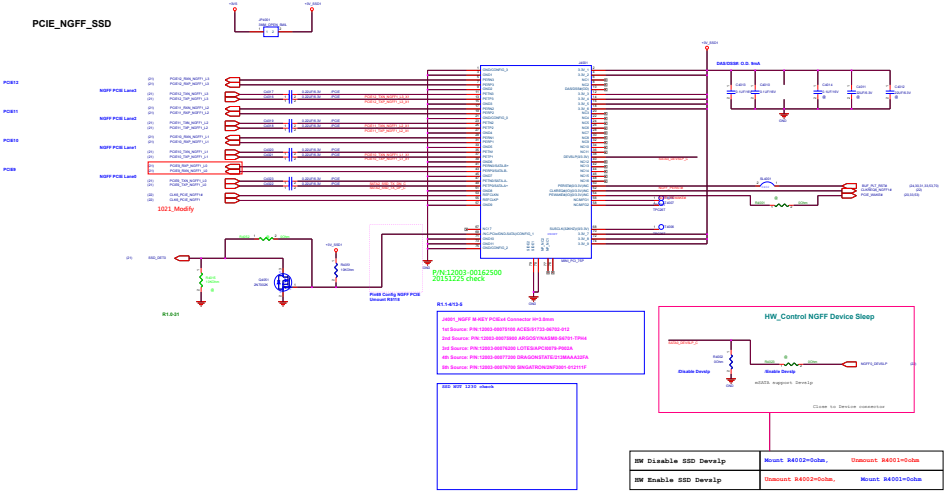


```
I2C Slave Address:
1001 100X (98)
0X98 (ADDR2=0/ADDR1=0)
0X9A (ADDR2=0/ADDR1=1)
0X9C (ADDR2=1/ADDR1=0)
0X9E (ADDR2=1/ADDR1=1)
```





PCIE\_NGFF\_SSD



| Address | 0x7E | 0x7C | 0x7A | 0x78 | 0x76 | 0x74 | 0x72 | 0x70 |
|---------|------|------|------|------|------|------|------|------|
| R4101   | 10k  | 1.5k | 2k   | 3.6k | 3.9k | 4.3k | 5.1k | 6k   |
| R4102   | Open | 8.2k | 6.2k | 6.8k | 4.7k | 3.6k | 2.7k | 2k   |

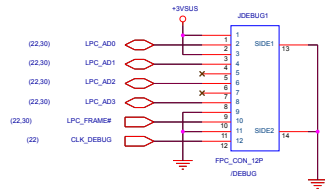
2nd UP1905  
EE線路for Thermal Team

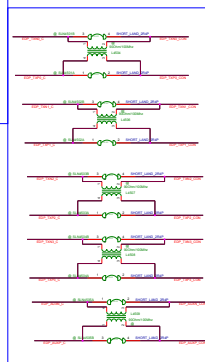
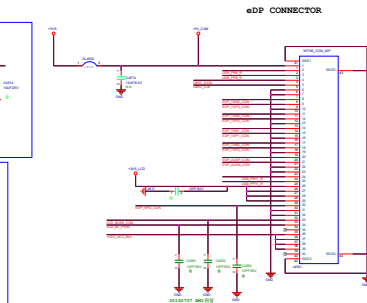
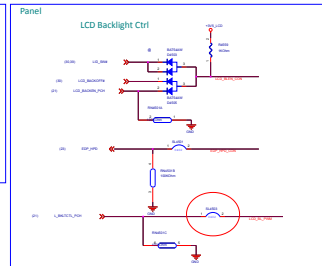
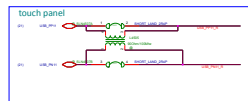
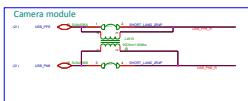
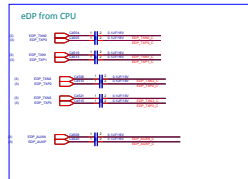
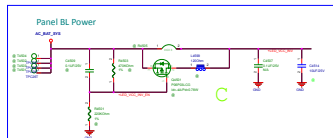
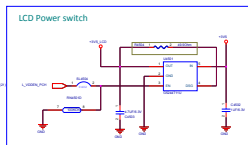
TR4101 place near DGPU VRAM ,  
SSD base on thermal RD test



TR4103 place near DGPU VRM Lwo-Side MOS

## LPC Debug Port



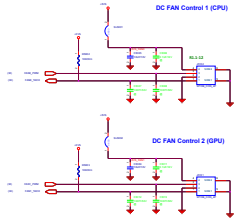
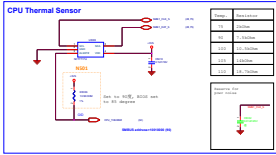




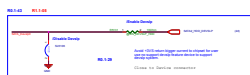
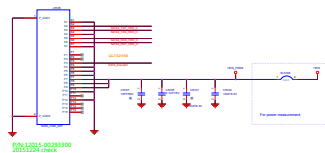
eDP to VGA

CRT D-SUB





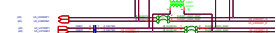




# USB 3.0 PORT 1

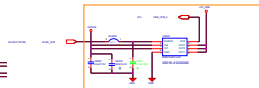
## VIDEO 0 EMI-Protection

VIDEO 0 EMI-Protection



From B20

## VIDEO 0 EMI-Protection



## VIDEO 0 EMI-Protection

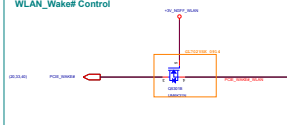


VIDEO 0 EMI-Protection

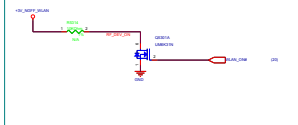
## VIDEO 0 EMI-Protection



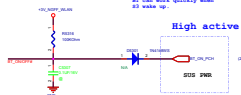
## NGFF M.2 TYPE E-KEY WIFI



## WLAN &amp; BT ON

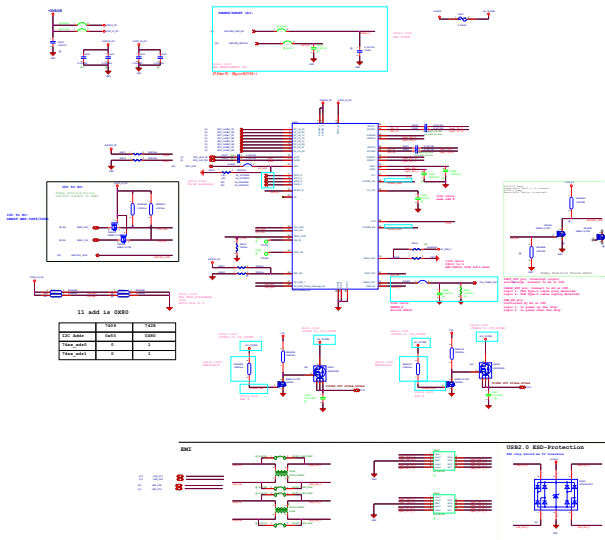


To match W89L test. Due to  
BT wake up to spend much  
time if use  
+J28.20, change to +J2, let  
BT can work quickly when  
it wake up.



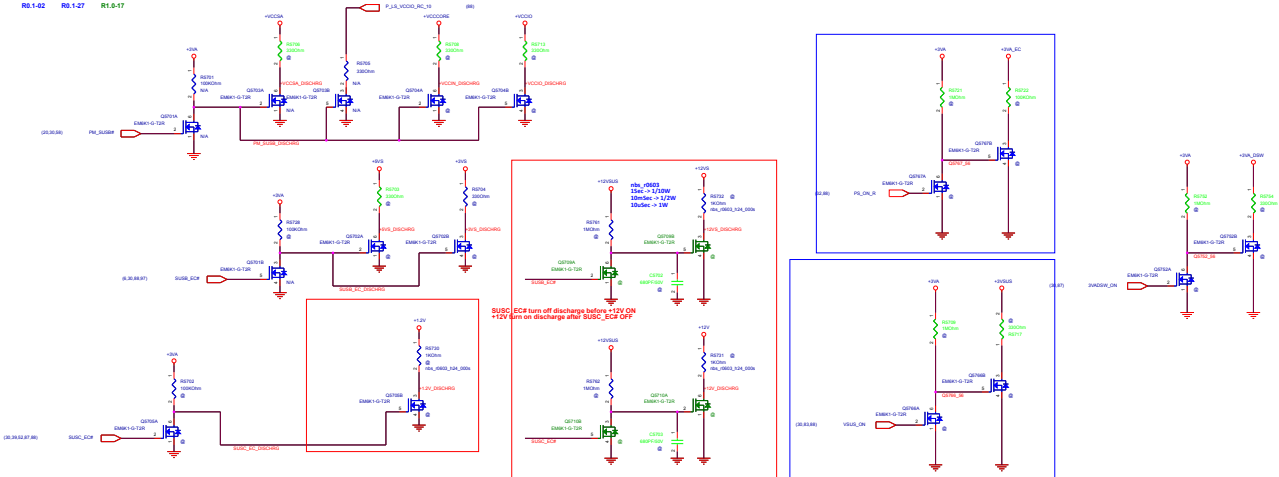
Project which use the combo card schematic should make sure that RT\_CW signal can't be High at R3/R4/R5 state to prevent leakage

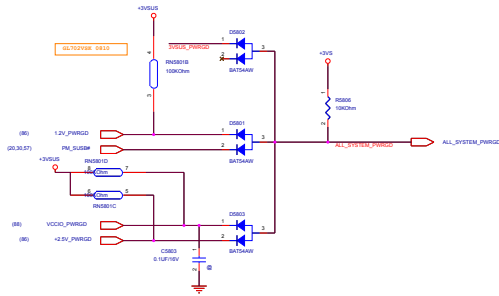
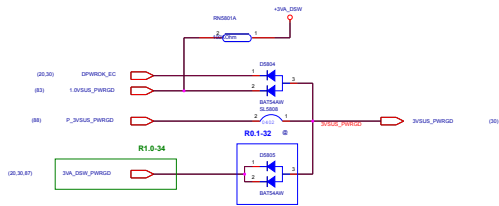
[illegible]



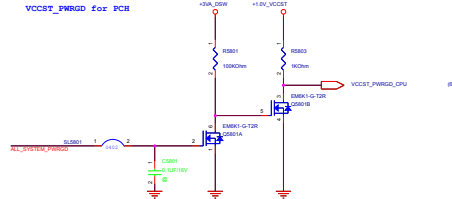


R0.1-02      R0.1-27      R1.0-17



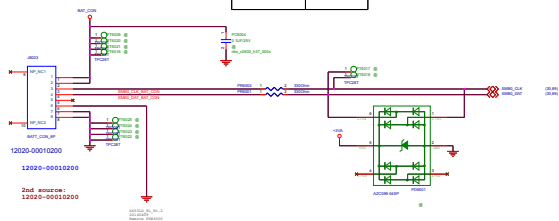
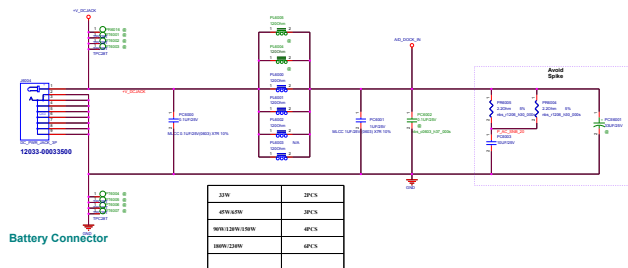


# VCCST\_PWRGD for PCB



# ALL\_SYSTEM\_PWRGD





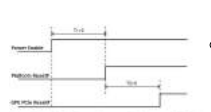
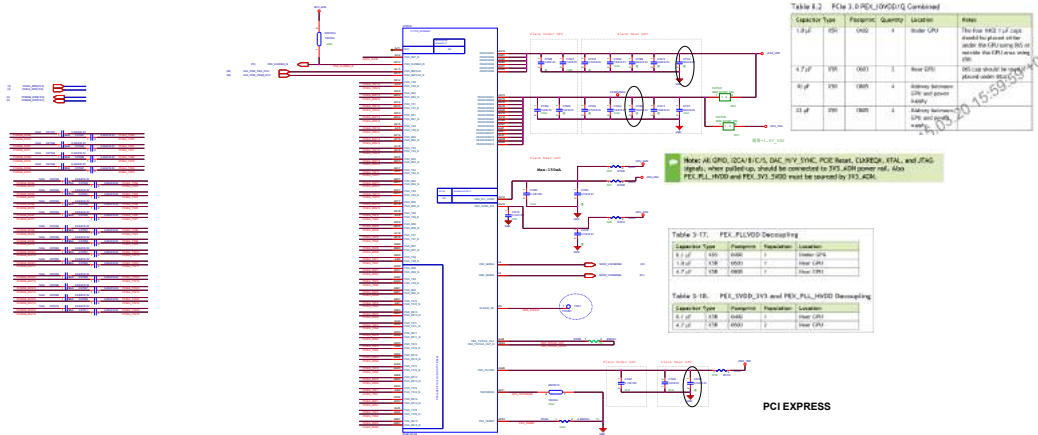
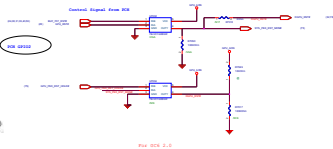
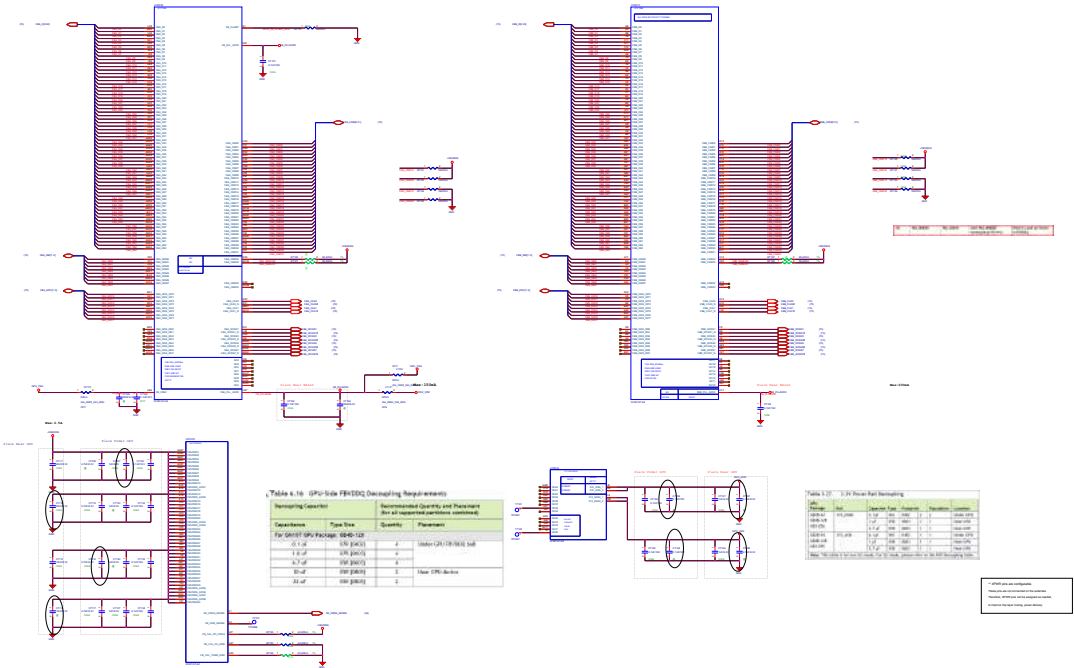


Figure 10-4. Cold Reset Sequence Requirement for Optimal

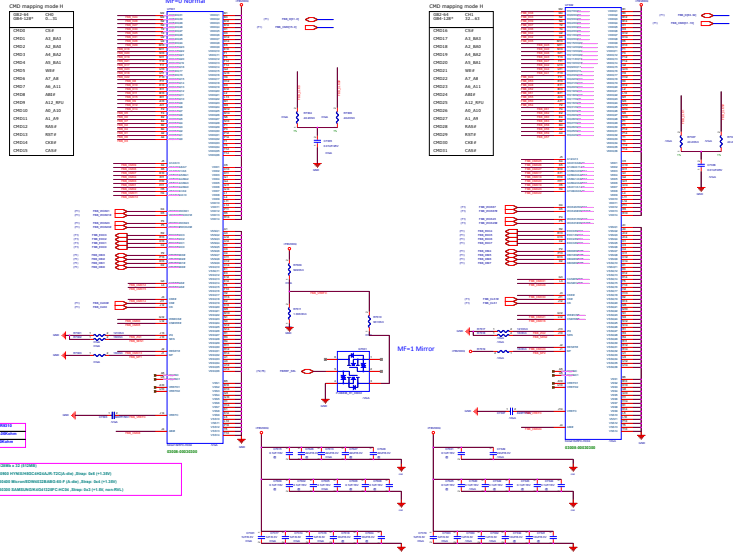


GPU MEMORY INTERFACE: PARTITION A





FBB Partition Memory (2 of 2)



CRT DAC\_A



**DP(link C)**



DVI(link D)



LVDS IFPA/B



LVDS IFPE/F

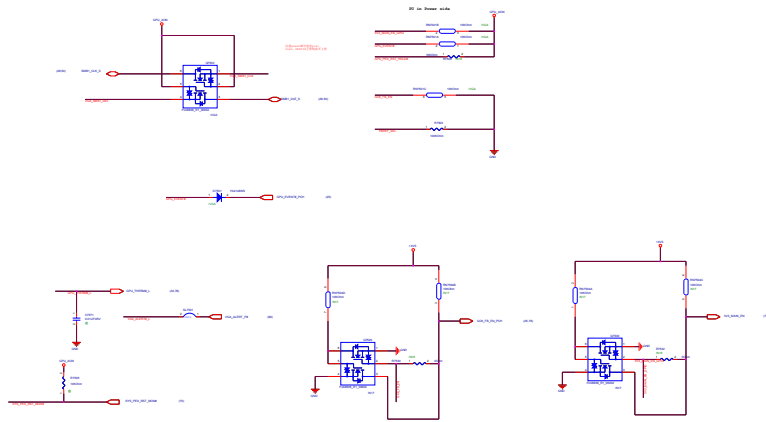
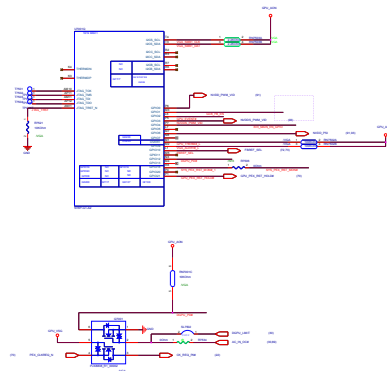




GPIO, TEMP SENSOR, JTAG  
I2C ADDRESS: 0x6Eh

Rev: G006 2.0

| GPIO Pin | MFX GPIO Function | MFX GPU Function as Co-Sensor | MFX GPIO Function | Comments                |
|----------|-------------------|-------------------------------|-------------------|-------------------------|
| GPIO0    | SCL_P8_SH         | PWR_RST                       | PWR_VDD           | NOT PWR_RST for HVD01   |
| GPIO1    | ANA_VDD_CTL       | GCN_P8_BH                     | GCN_P8_EN         |                         |
| GPIO2    | LED_BL_PWR        | GPU_EVENT0                    | GPU_EVENT0        |                         |
| GPIO3    | LED_VDD           |                               | ONVDD_PWR         | NOT PWR_VDD for HVD01   |
| GPIO4    | LED_BL_EN         | TVS_ANA_EN                    | TVS_ANA_EN        |                         |
| GPIO5    | TVS_ANA_EN        | FRAME_LOCKP                   | FRAME_LOCKP       |                         |
| GPIO6    | GPU_EVENT0        | PSI                           | PSI               |                         |
| GPIO7    | TV_VDDEN          | LED_BL_PWR                    | LED_BL_PWR        | NOT PSI for HVD01 HVD02 |
| GPIO8    | TVS_PEX_RST_M0    | PPV_PP0                       | MEM_ADR_CTL       |                         |
| GPIO9    | THRM_ALERT        | THRM_ALERT                    | THRM_ALERT        | Screen                  |
| GPIO10   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO11   | PWR_VDD           | LED_VREF                      | LED_VREF          | Screen                  |
| GPIO12   | PWR_VDD           | PWR_VDD                       | PWR_VDD           | Screen                  |
| GPIO13   | PSI               | LED_BL_EN                     | LED_BL_EN         | Screen                  |
| GPIO14   | HVD_PP0           | MEM_ADR                       | MEM_ADR           |                         |
| GPIO15   | HVD_PP0           | HVD_PP0                       | HVD_PP0           |                         |
| GPIO16   | FRAME_LOCKP       | TVS_PEX_RST_M0                | TVS_PEX_RST_M0    |                         |
| GPIO17   | HVD_PP0           | HVD_PP0                       | HVD_PP0           | Screen                  |
| GPIO18   | HVD_PP0           | HVD_PP0                       | HVD_PP0           | Screen                  |
| GPIO19   | HVD_PP0           | HVD_PP0                       | HVD_PP0           | Screen                  |
| GPIO20   | HVD_PP0           | HVD_PP0                       | HVD_PP0           | Screen                  |
| GPIO21   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO22   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO23   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO24   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO25   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO26   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |
| GPIO27   | ANA_VREF_CTL      | ANA_VREF_CTL                  | ANA_VREF_CTL      | Screen                  |



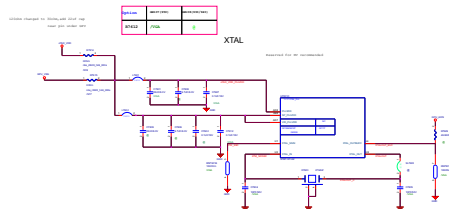
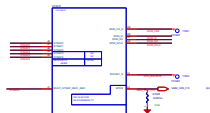


Table 3. M17P-G6/G1 GDDR5 Recommended Memories

| Memory Density | Memory Configuration | Memory Vendor | Manufacturer Part Number | Die Revision | Memory Speed Grade | Base Clock (MHz) | Qual. Pkg. | Status           |
|----------------|----------------------|---------------|--------------------------|--------------|--------------------|------------------|------------|------------------|
| 8 GB           | 256Mx32              | Micron        | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|                |                      |               | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|                |                      | Samsung       | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|                |                      |               | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
| 16 GB          | 512Mx32              | Micron        | MT91C32M64G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|                |                      |               | MT91C32M64G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|                |                      | Samsung       | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|                |                      |               | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |

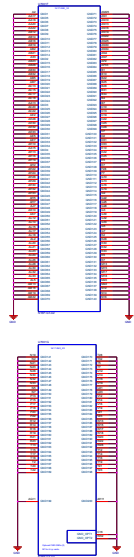
Note:  
1. For M17P-G6, the maximum allowable memory case temperature is 85 °C.  
2. M17P-G6 uses HCB up to 3000000000 Hz (1.70V dQ/dt allowed to use HCB) - 3000 MHz.

Table 7. M16P-G6/G1 GDDR5 Recommended Memories

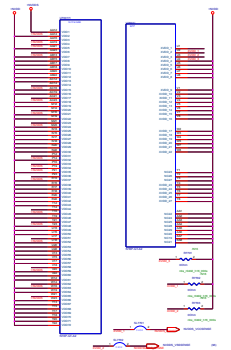
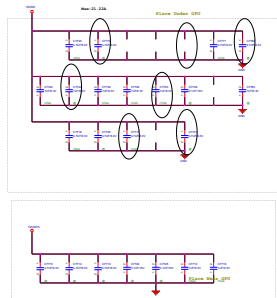
| Memory Type | Memory Density | Memory Vendor | Manufacturer Part Number | Die Revision | Memory Speed Grade | Base Clock (MHz) | Qual. Pkg. | Status           |
|-------------|----------------|---------------|--------------------------|--------------|--------------------|------------------|------------|------------------|
| GDDR5       | 1.5V           | Micron        | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                | Samsung       | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|             | 1.35V          | Micron        | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | MT91C32M32G-054          | A-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                | Samsung       | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |
|             |                |               | S32M11000-AC18           | E-000        | 7 Gbps             | 815              | Full       | Production ready |

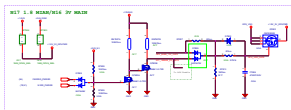
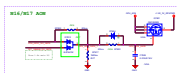
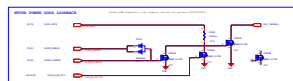
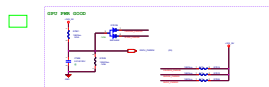
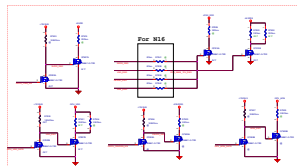
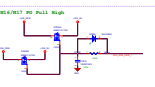
Note:  
1. For M16P-G6/G1, the maximum allowable memory case temperature is 85 °C.  
2. GDDR5 is supported up to 3000000000 Hz (1.70V dQ/dt allowed to use HCB) - 3000 MHz.

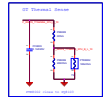
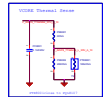
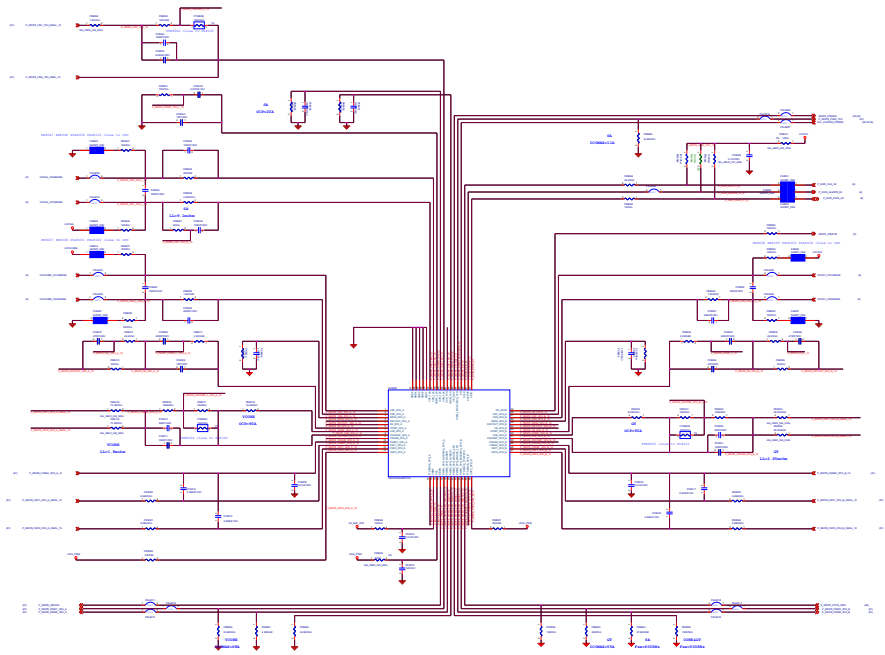
## NVDD GROUND



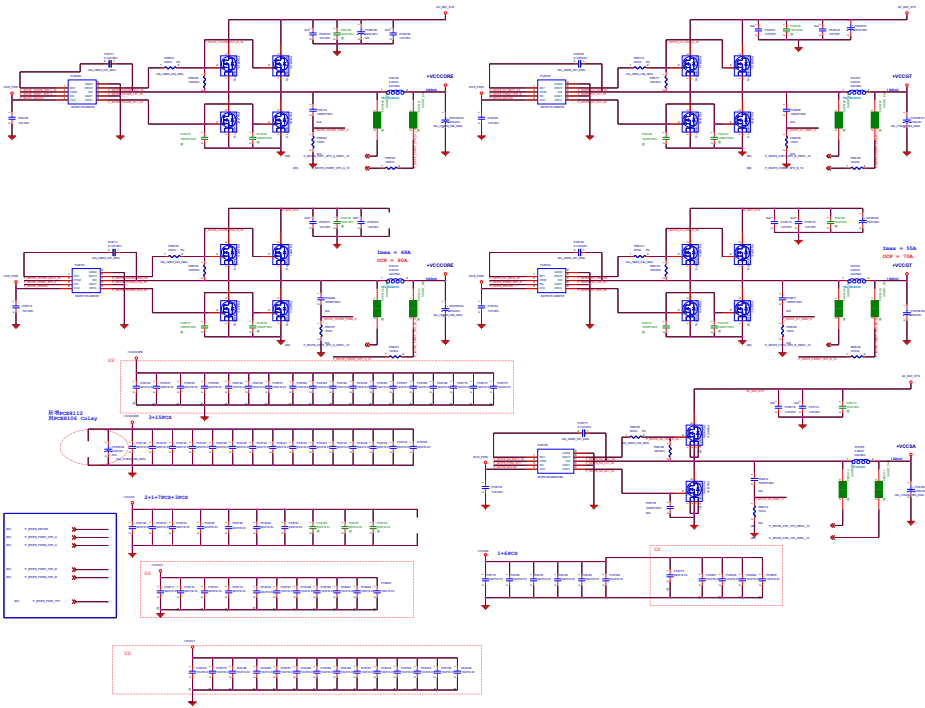
## NVDD POWER AND DECOUPLING







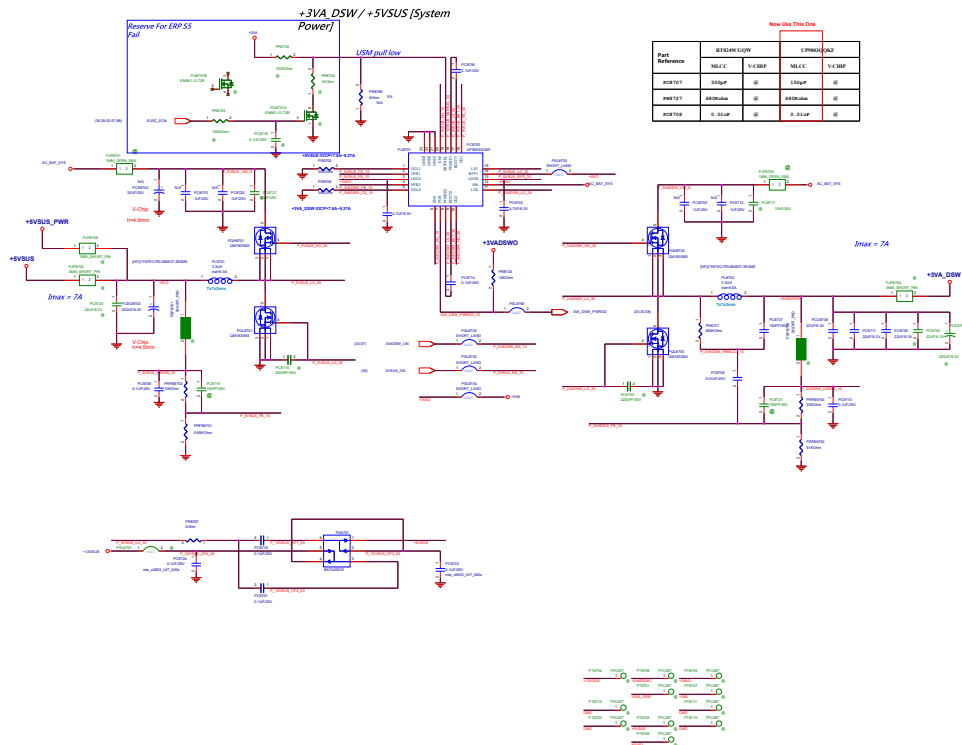
### Kabelake IMVP8 Power (For CPU)

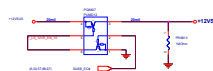
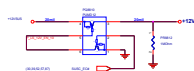
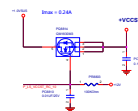
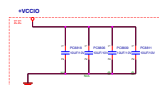
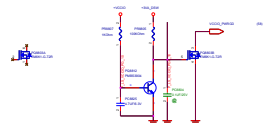
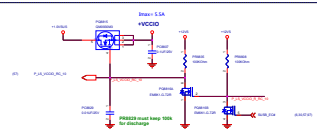
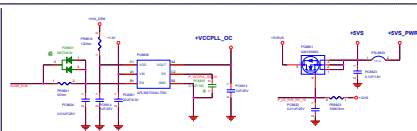
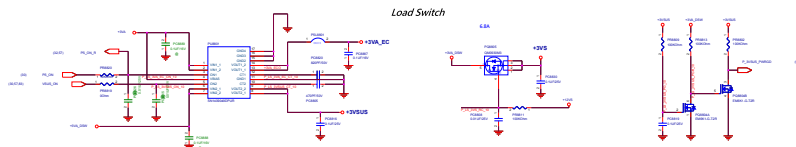


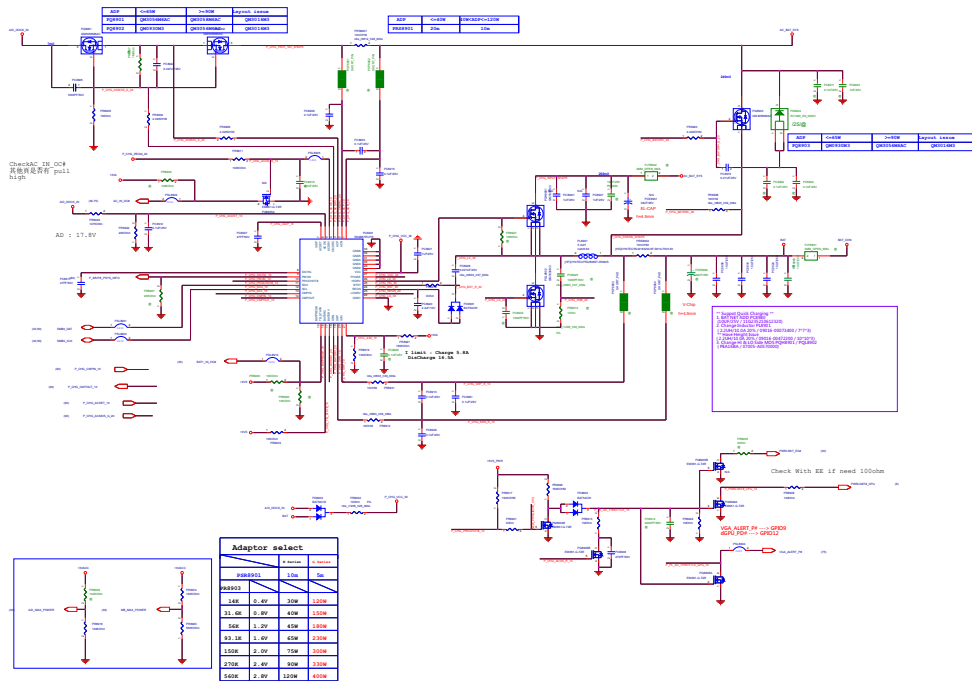






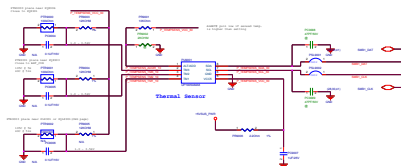




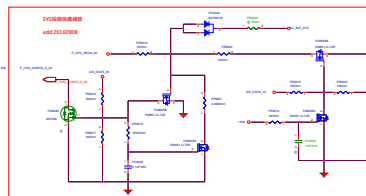
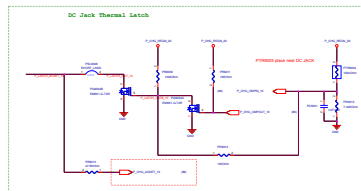


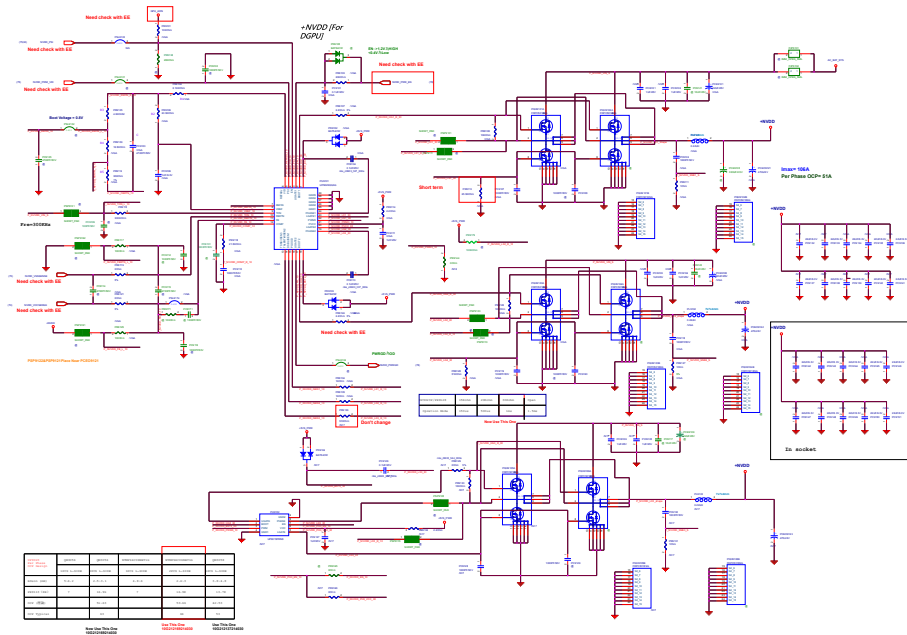
| Address |      | Revision Table |      |
|---------|------|----------------|------|
| 0x00    | 0x01 | 0x02           | 0x03 |
| 0x04    | 0x05 | 0x06           | 0x07 |
| 0x08    | 0x09 | 0x0A           | 0x0B |
| 0x0C    | 0x0D | 0x0E           | 0x0F |
| 0x10    | 0x11 | 0x12           | 0x13 |
| 0x14    | 0x15 | 0x16           | 0x17 |
| 0x18    | 0x19 | 0x1A           | 0x1B |
| 0x1C    | 0x1D | 0x1E           | 0x1F |

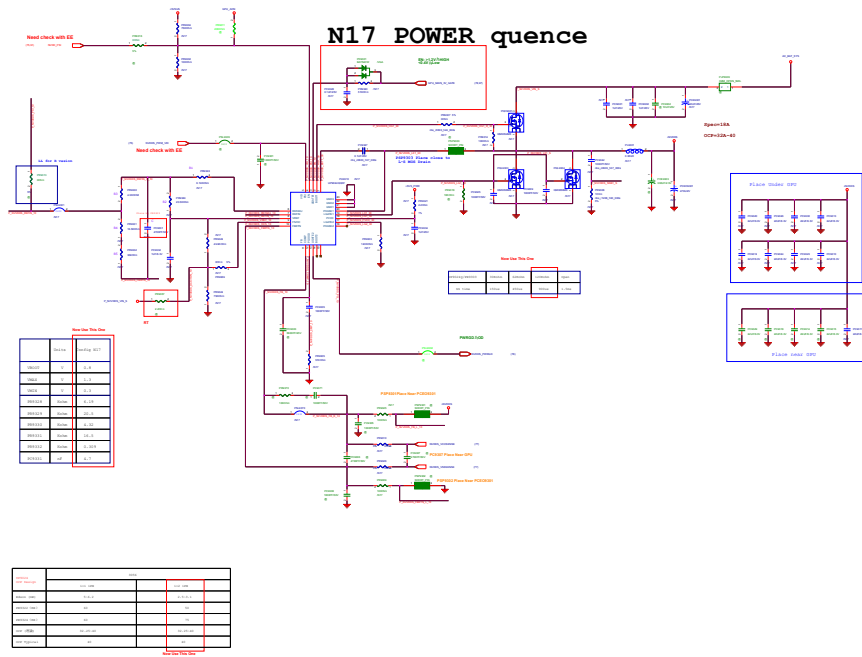
| Register Address |         |       |             |
|------------------|---------|-------|-------------|
| Register         | Address | Width | Reset Value |
| 0x00             | 0x00    | 8     | 0x00        |
| 0x01             | 0x01    | 8     | 0x00        |
| 0x02             | 0x02    | 8     | 0x00        |
| 0x03             | 0x03    | 8     | 0x00        |
| 0x04             | 0x04    | 8     | 0x00        |
| 0x05             | 0x05    | 8     | 0x00        |
| 0x06             | 0x06    | 8     | 0x00        |
| 0x07             | 0x07    | 8     | 0x00        |

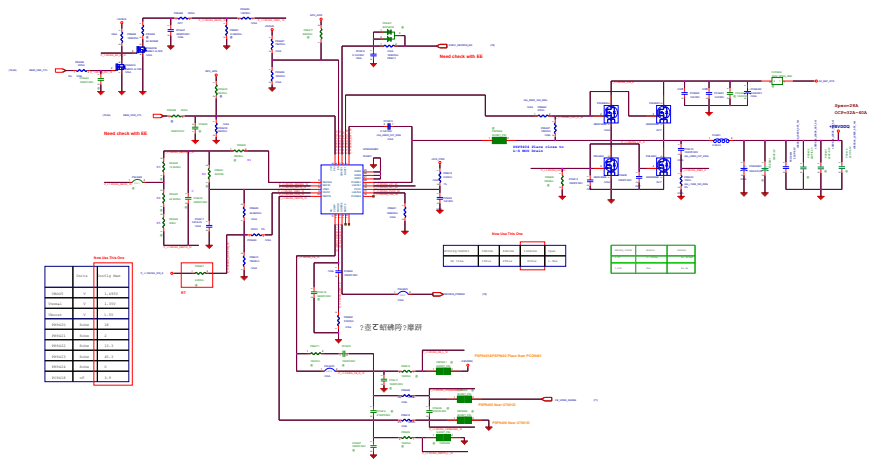


Check  
其他寄存器有 pull  
up 的 0x0A\_0C

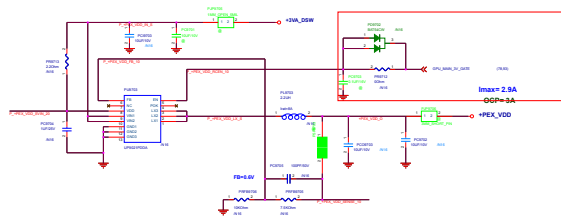




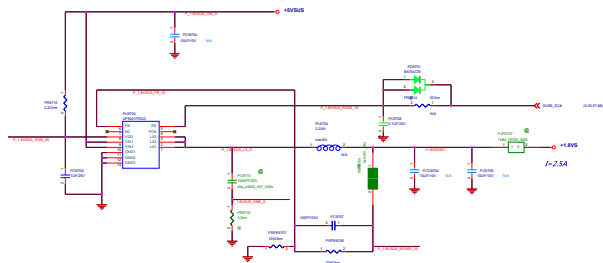




## N17 POWER quence



+1.8VS [For PCH]









[illegible]