

GIGABYTE GA-M55SLI-S4 Schematics

Revision:1.0

SHEET

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03	BLOCK DIAGRAM
04	M2 CPU Hyper Transport
05	M2 CPU DDR II
06	M2 CPU Control
07	M2 CPU POWER & GND
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09	DDRII A1,B1
10	DDRII TERMINATION
11	CK804 HT
12	CK804 PCI-EXPRESS
13	CK804 PCI, LPC, CLOCK
14	CK804 IDE,SATA
15	CK804 AC97,USB,MII,GPIO
16	CK804 POWER,GND
17	PCI EXPRESS X16 SLOT
18	PCI EXPRESS X8 SLOT
19	PCI EXPRESS X1 SLOT1,2
20	PCI 1,2 SLOT
21	CODEC 850/655/658
22	AUDIO JACK, F_AUDIO
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SHEET

TITLE

26	IDE, FDD
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32	FRONT PANEL
33	MARVELL 88E1116 GbE Phy
34	TI 1394A
35	NV-SLI Swirch Board
36	COMA , LPT
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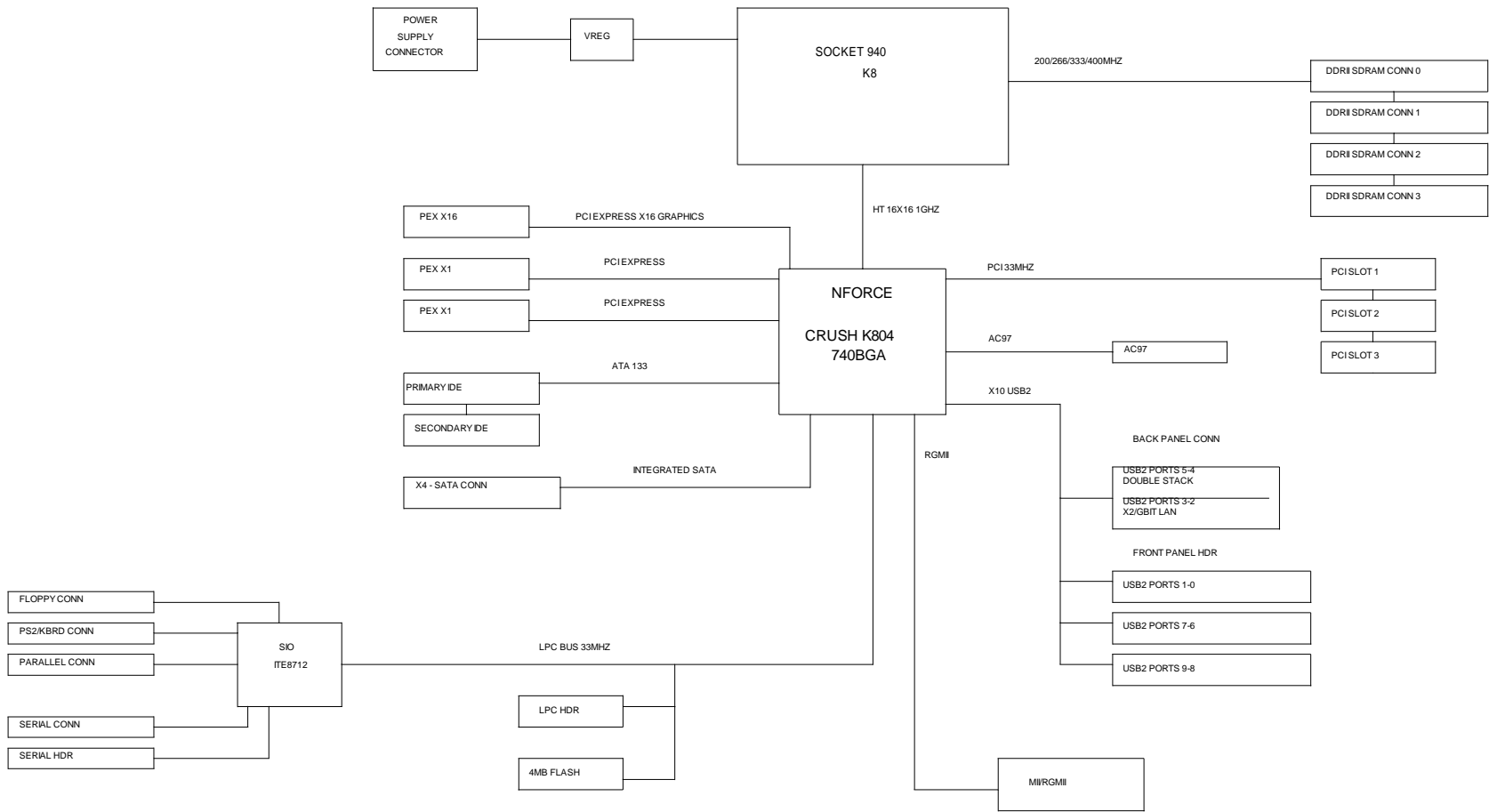
GIGABYTE Technology

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Size	Document Number	GA-M55SLI-S4	Rev 1.0
Custom			
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Component value change history

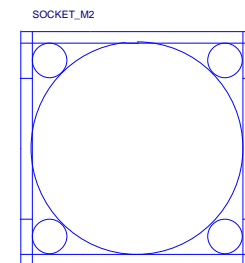
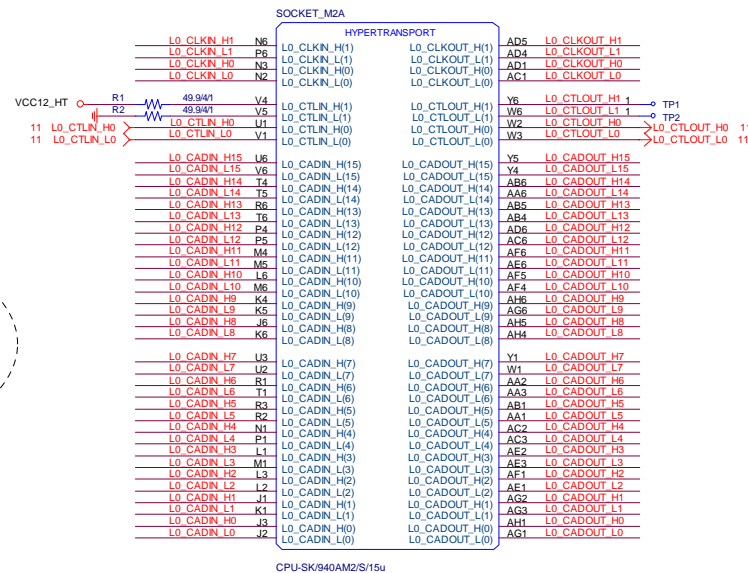
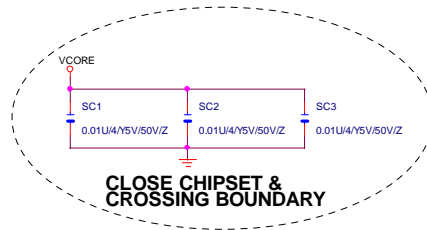
[illegible][illegible]

BLOCK DIAGRAM



CPU_VDD_RUN = VCORE
CPU_VDDA_RUN = VDDA25
VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR18V
CPU_VTT_SUS = DDRVTT

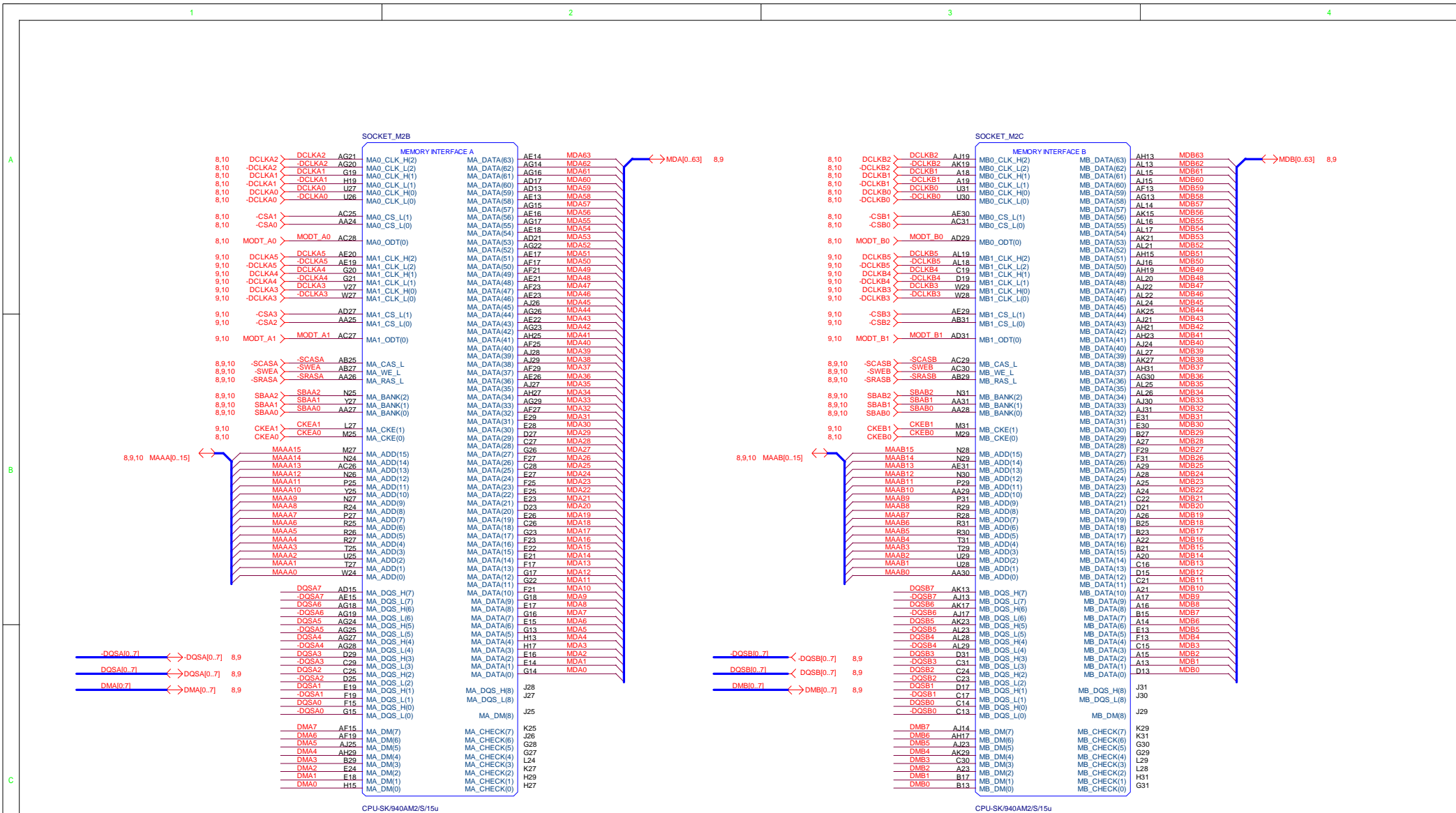
VLDT_A = VCC12_HT
VLDT_B = HT12B



K8-940AM2/RMBP-MSC/BK3M[12KRC-04K807-41R]

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Title				CPU HYPER TRANSPORT	
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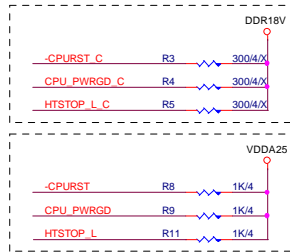
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1

2

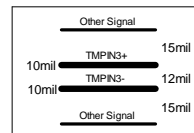
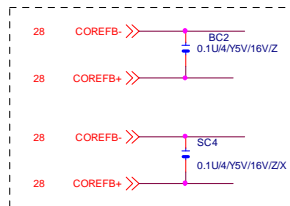
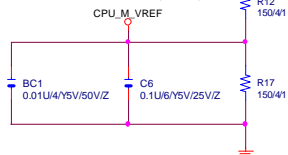
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4

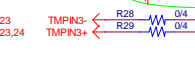
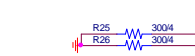
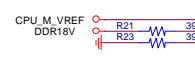
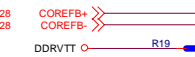
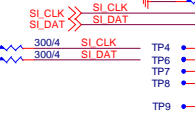
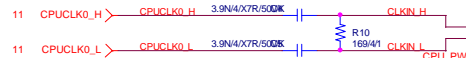
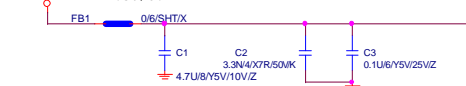


CPUVREF

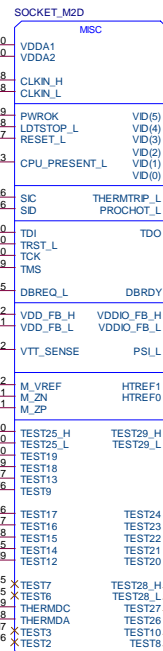
20/15/20 (< 6")



VDDA25 2.5V/0.11A



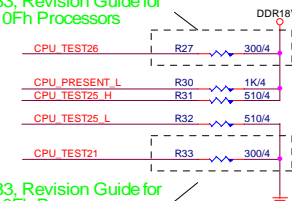
CPU-SK/940AM2/S15u



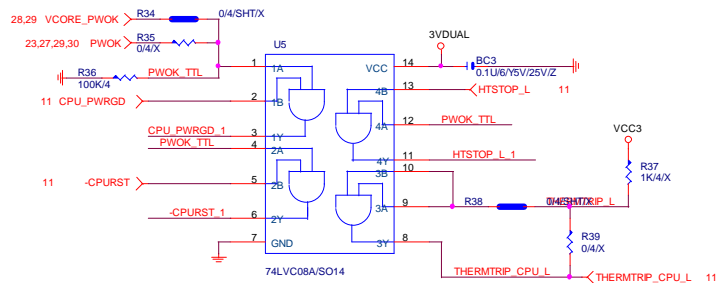
LAYOUT: Route trace 50 mils wide and 500 to 750 mils long between these caps.

Route as 80-Ohm differential impedance
Keep trace to resistor less than 1" from CPU pin

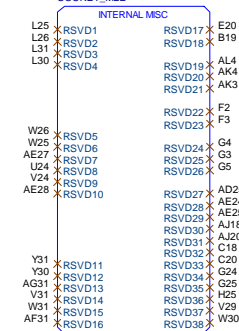
Erratum 133, Revision Guide for
AMD NPT 0Fh Processors



Erratum 133, Revision Guide for
AMD NPT 0Fh Processors



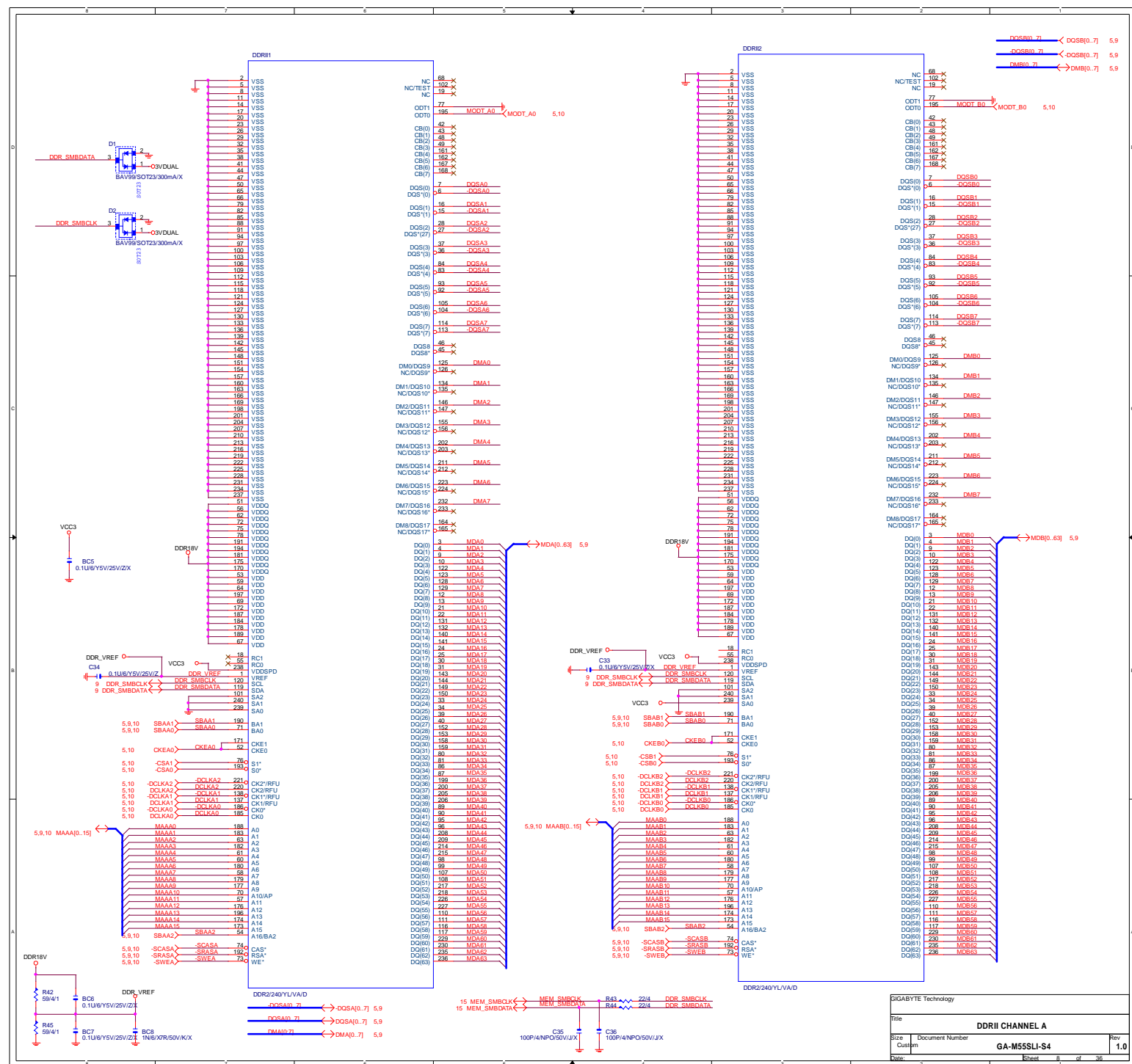
SOCKET_M2E

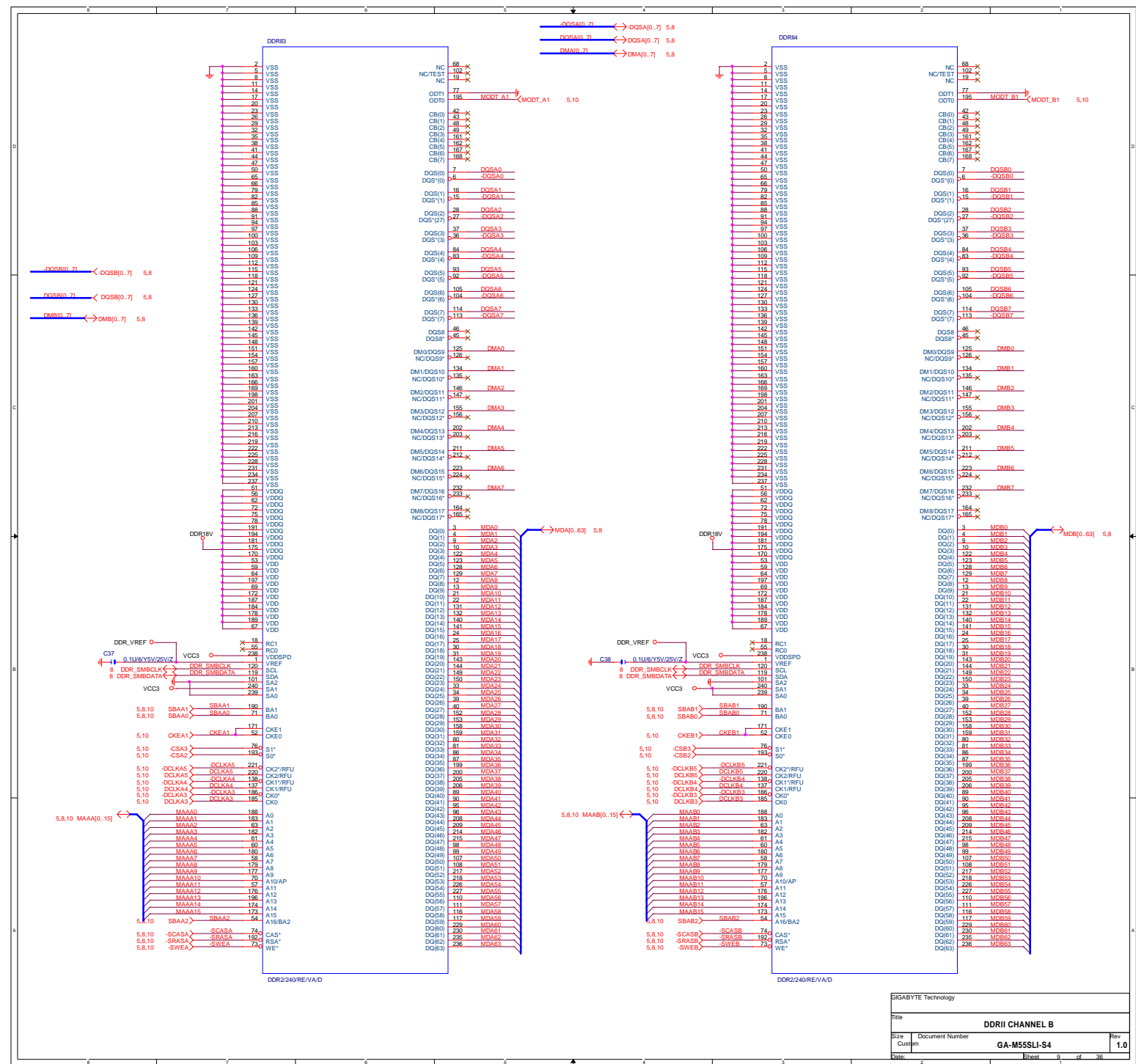


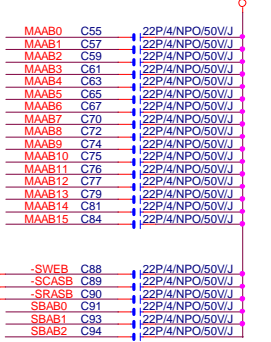
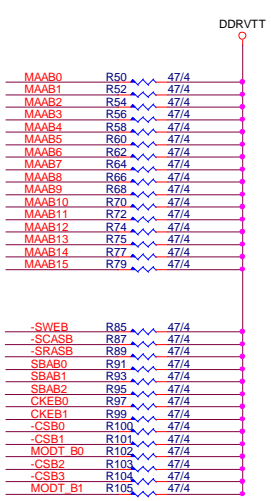
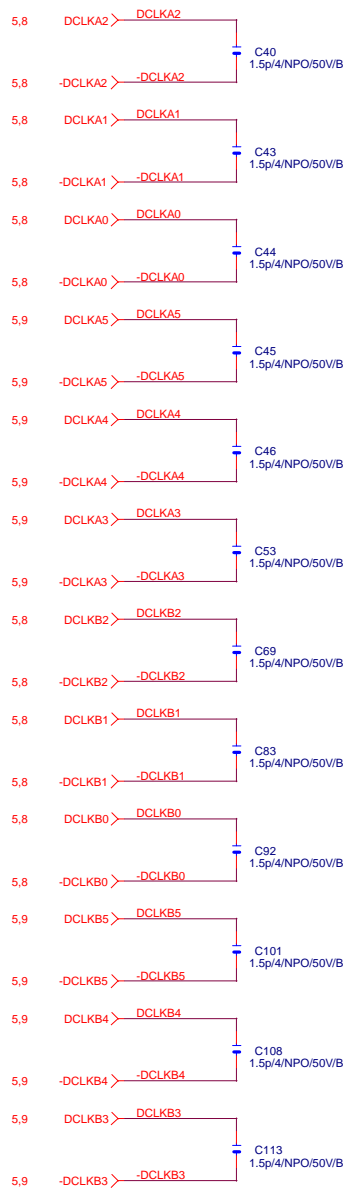
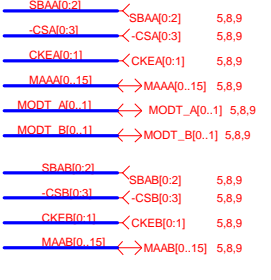
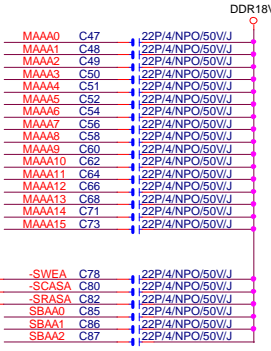
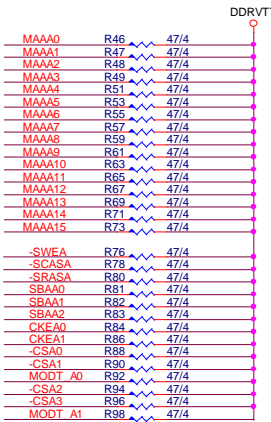
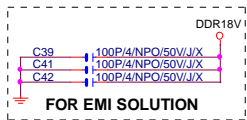
CPU-SK/940AM2/S15u

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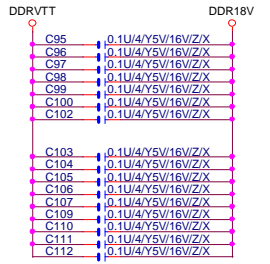
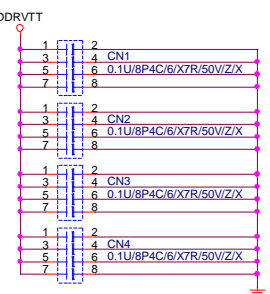
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CPU CONTROL				
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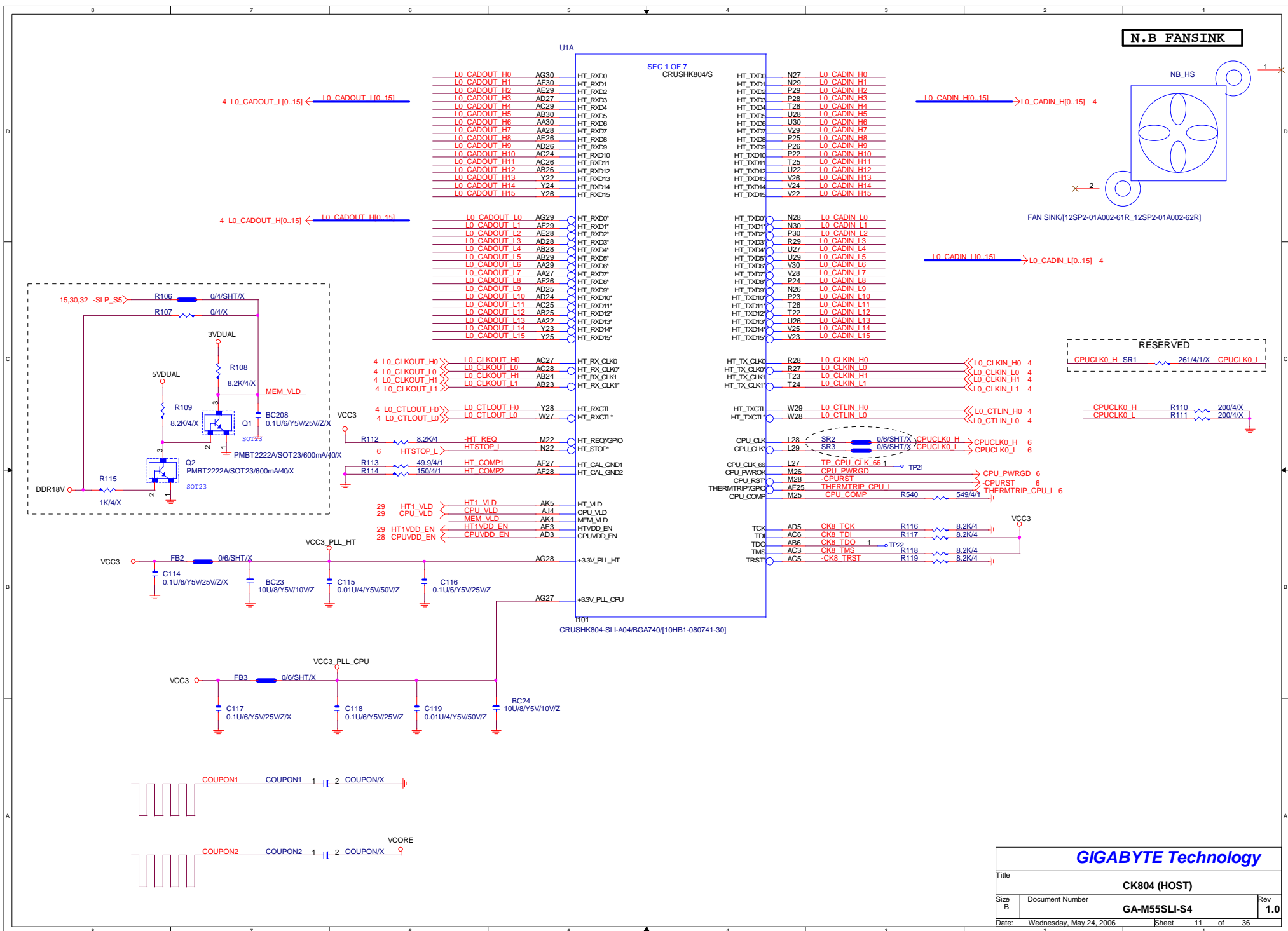


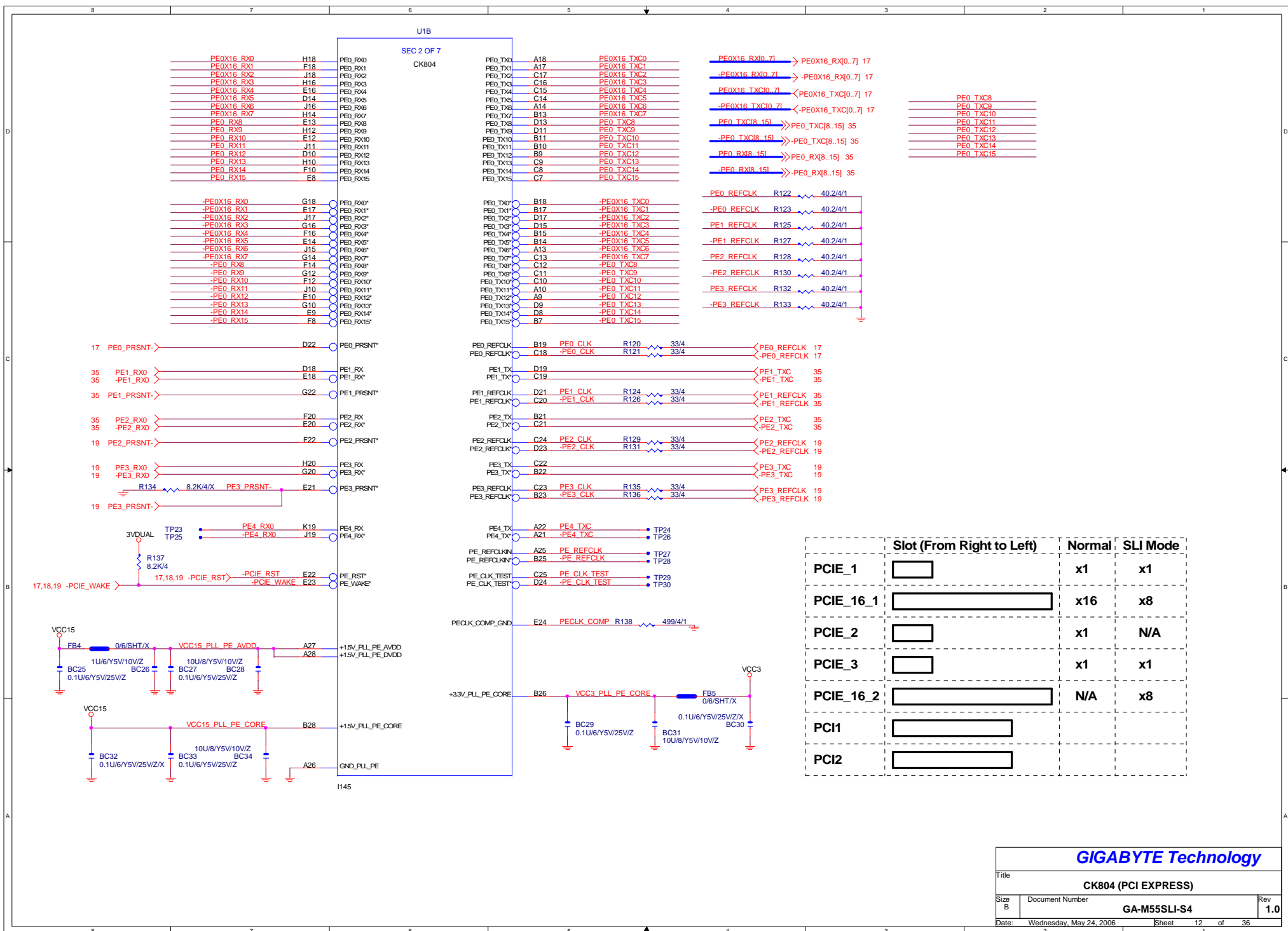


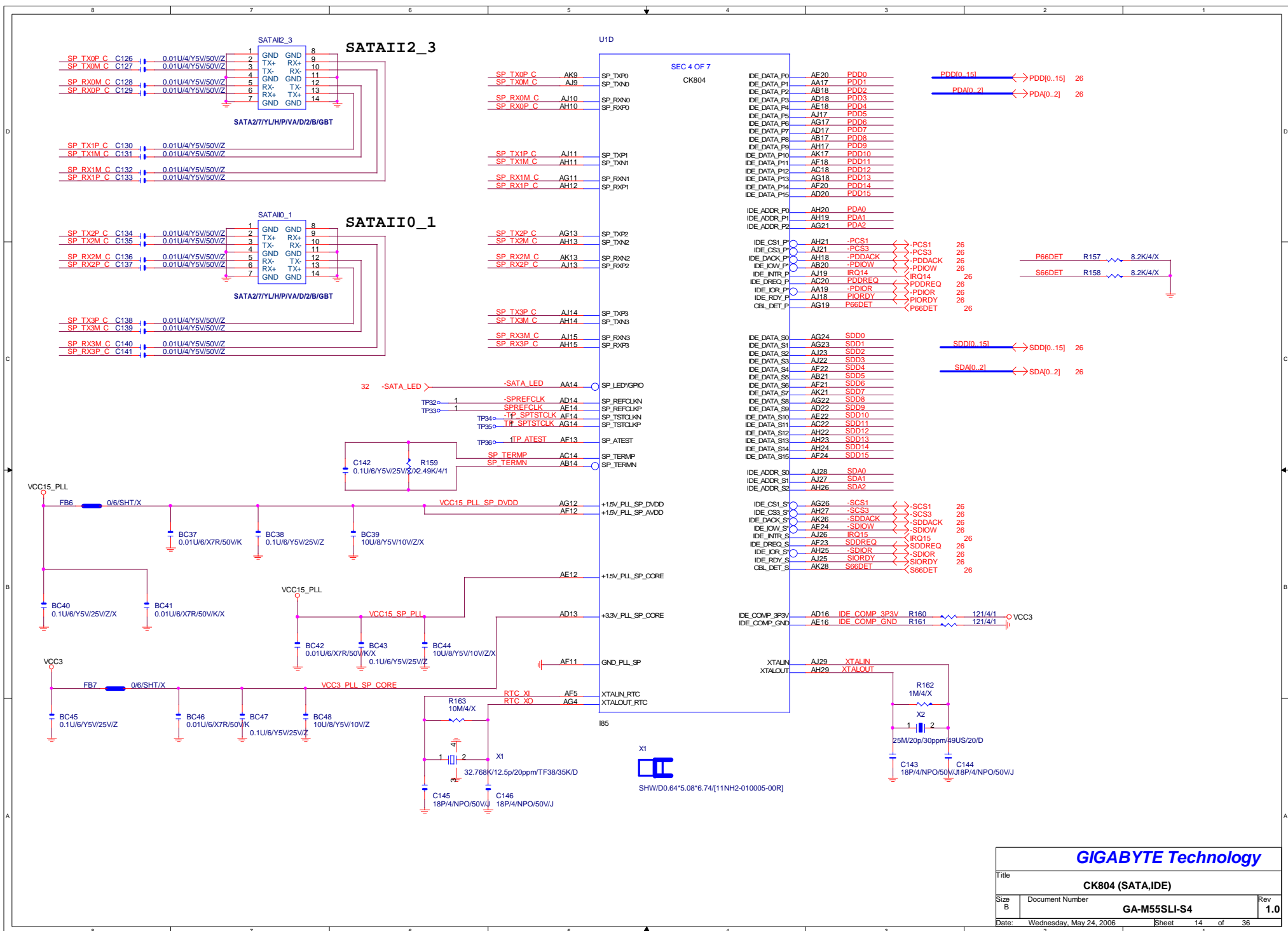


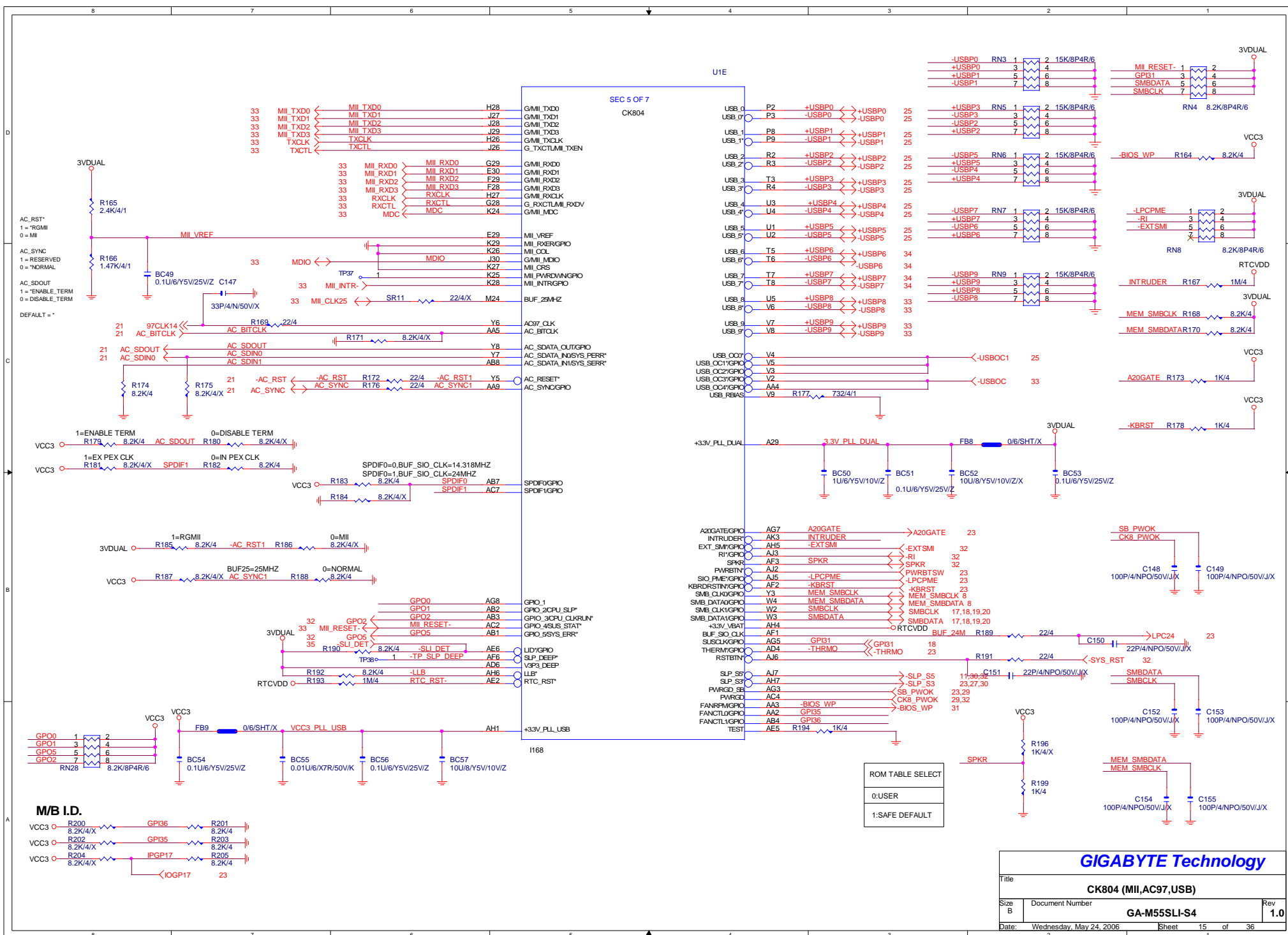
5,8,9 -SWEB
5,8,9 -SCASB
5,8,9 -SRASB

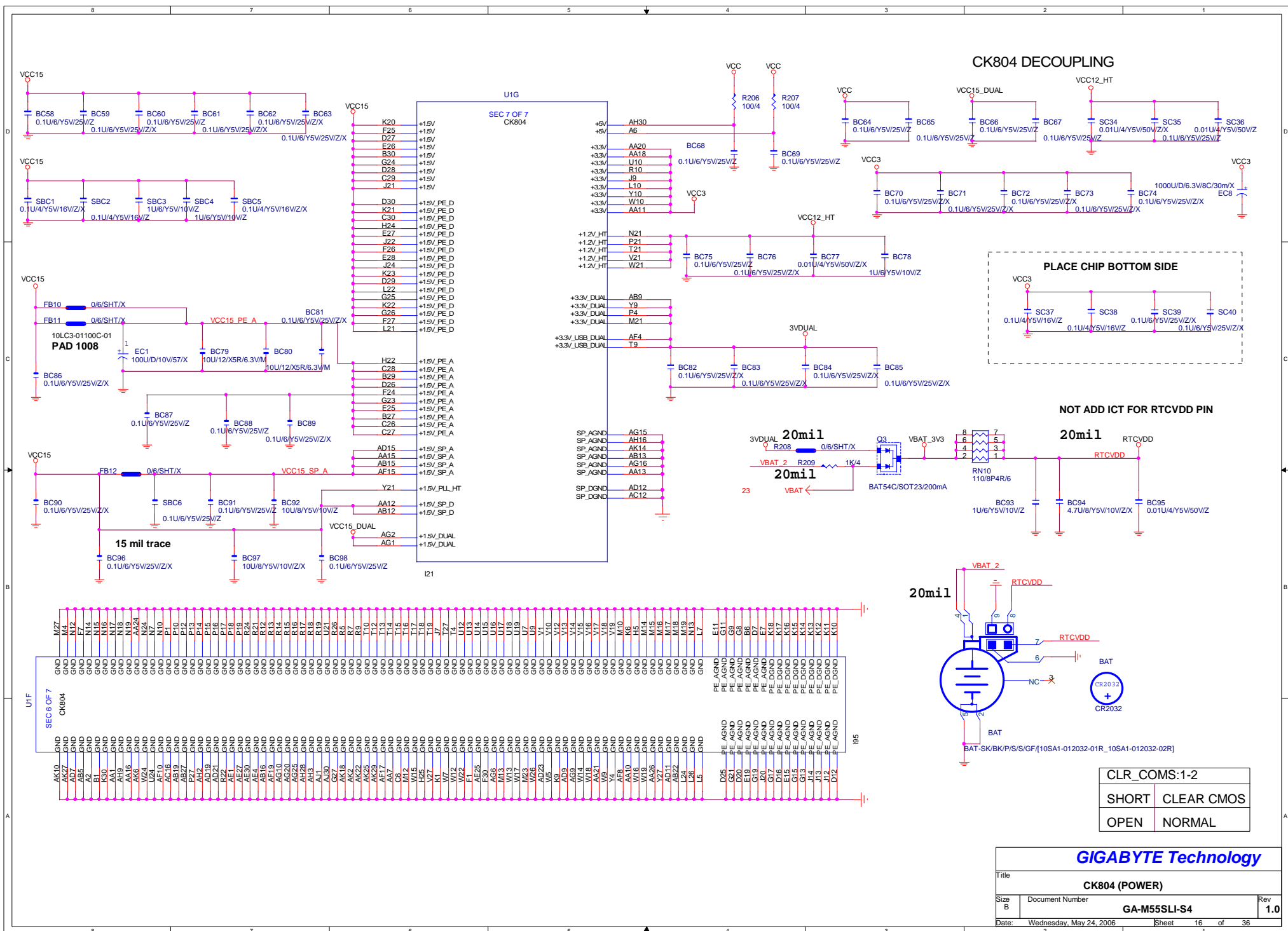


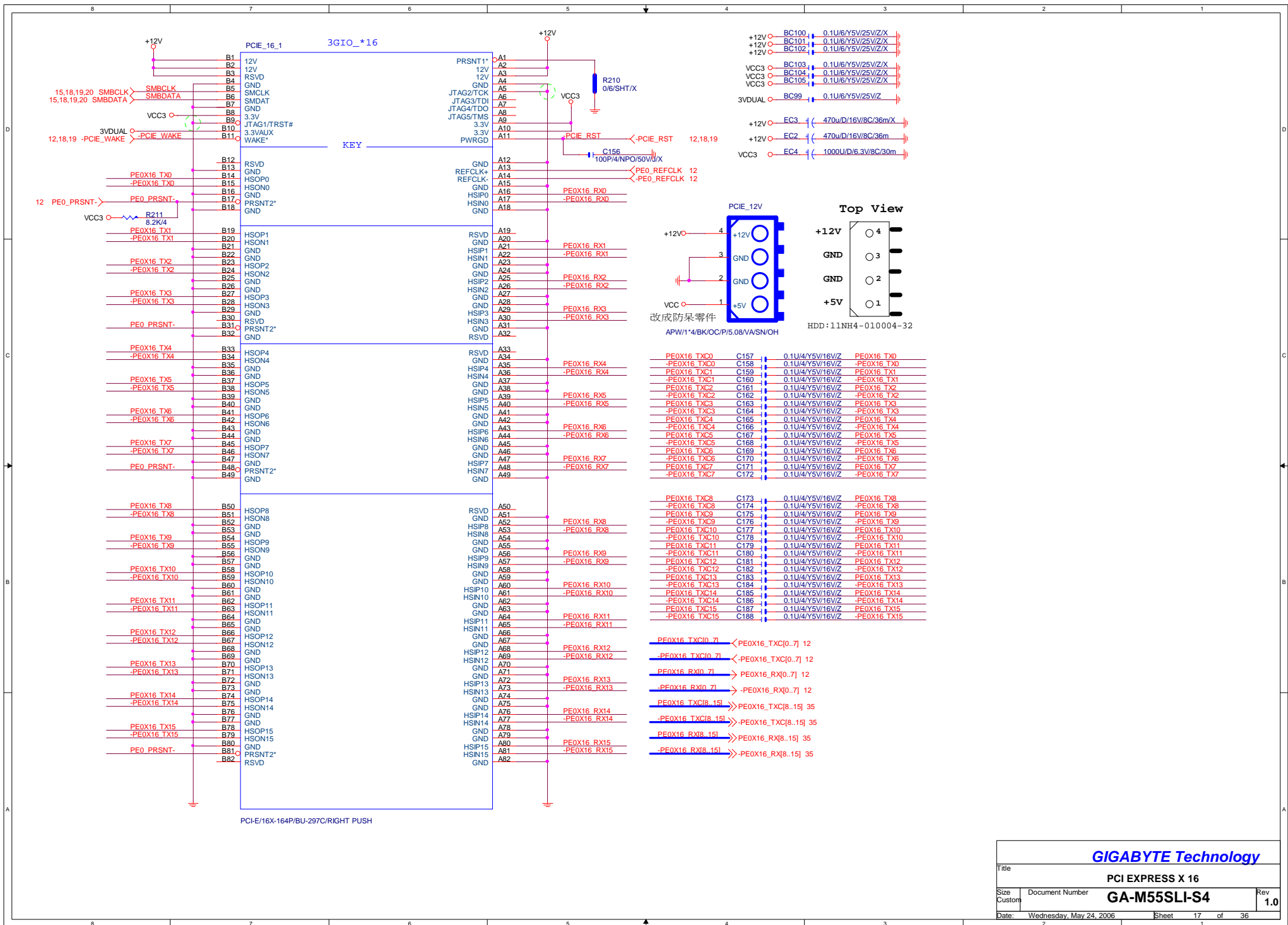






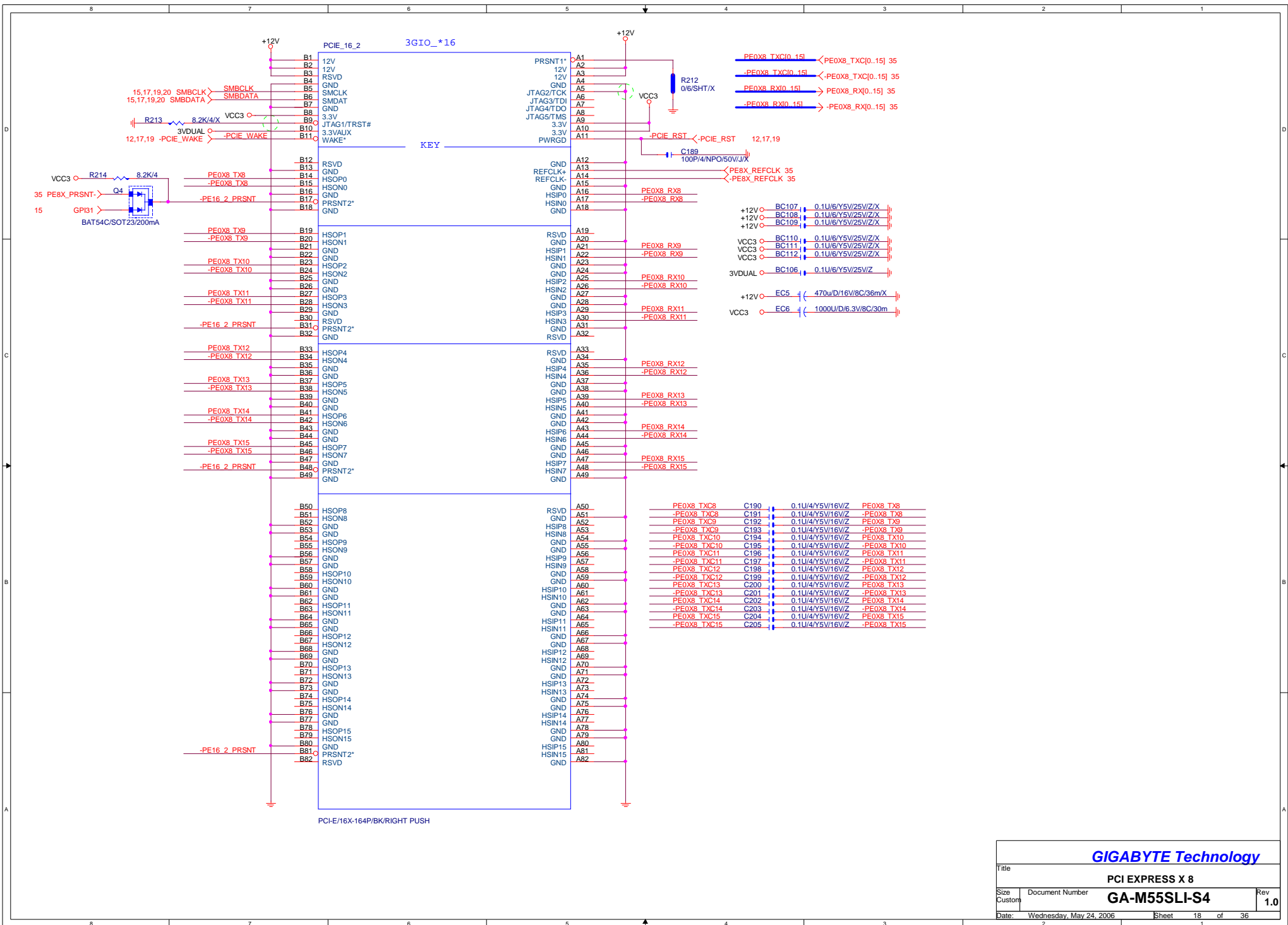






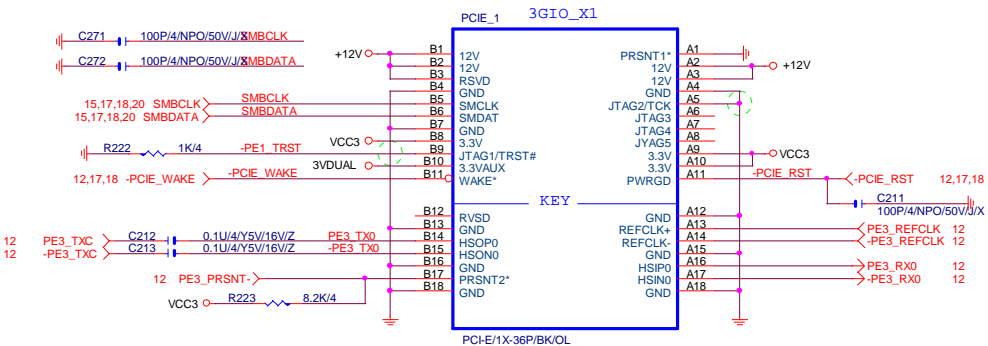
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Title			
PCI EXPRESS X 8			
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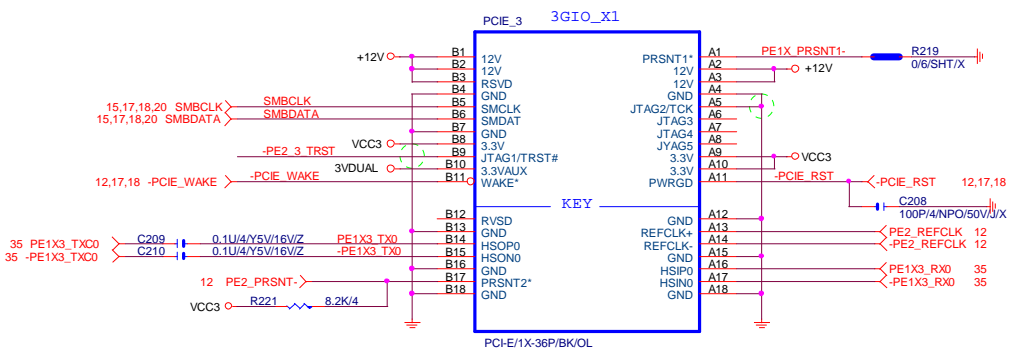
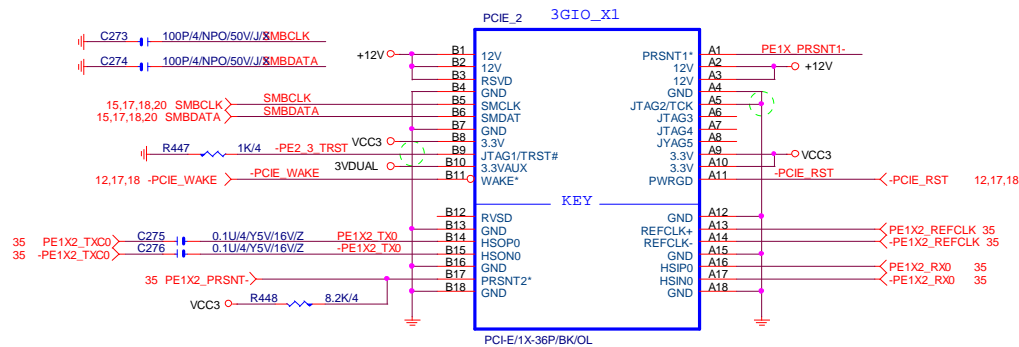


Normal Mode

Right to Left	PRSNT#	LANE(Tx/Rx)	REFCLK
PCIE_1	PE3_PRSNT#	PE3	PE3_REFCLK
PCIE_16_1	PE0_PRSNT#	PE0[0..15]	PE0_REFCLK
PCIE_2	PE1_PRSNT#	PE1	PE1_REFCLK
PCIE_3	PE2_PRSNT#	PE2	PE2_REFCLK
PCIE_16_2	---	---	---

SLI Mode

Right to Left	PRSNT#	LANE(Tx/Rx)	REFCLK
PCIE_1	PE3_PRSNT#	PE3	PE3_REFCLK
PCIE_16_1	PE0_PRSNT#	PE0[0..7]	PE0_REFCLK
PCIE_2	---	---	---
PCIE_3	PE2_PRSNT#	PE1	PE2_REFCLK
PCIE_16_2	PE1_PRSNT#	PE0[8..15]	PE1_REFCLK



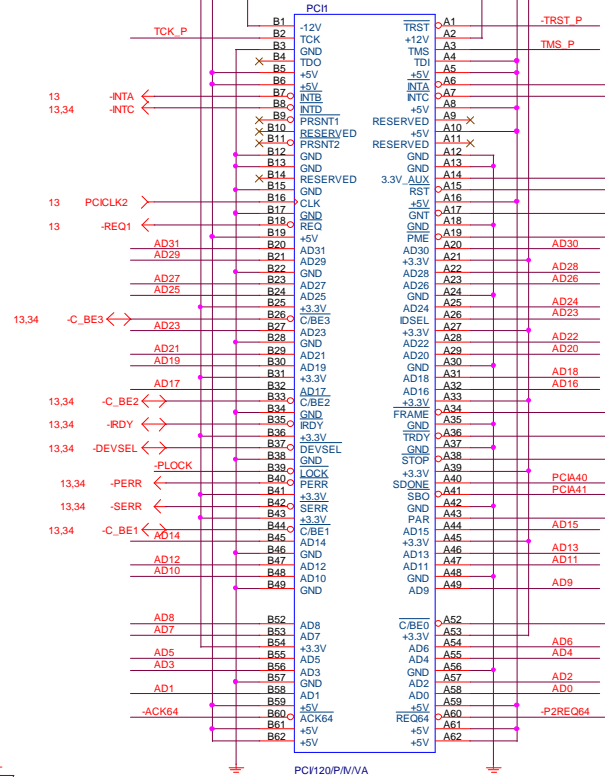
GIGABYTE Technology

Title		
PCI-E X1		
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PCI SLOT 1,2

13,34 AD[0..31] <-> AD[0..31]

PCI SLOT1

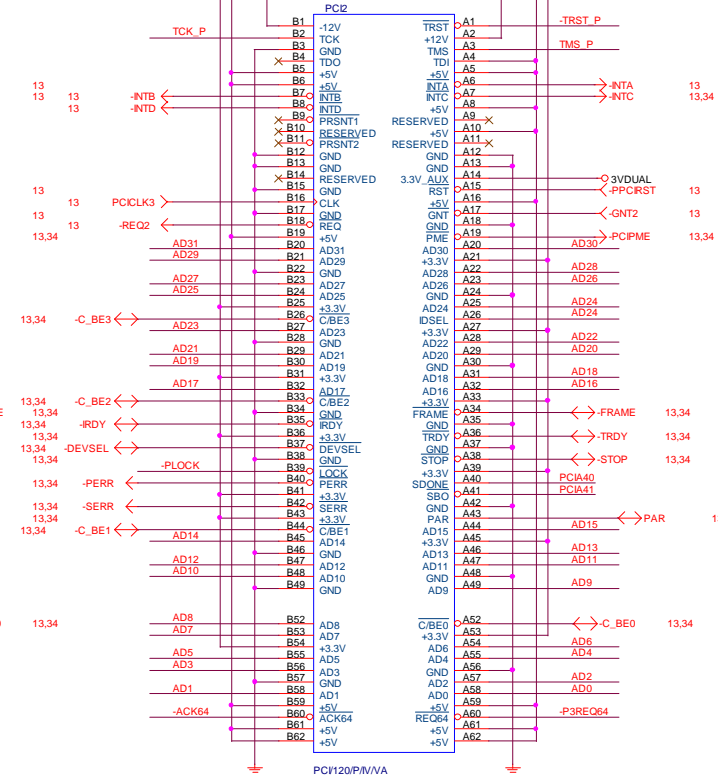


-PPCIRST
Close PCI Slot1
C214
100P4/NPO/50V/J/X

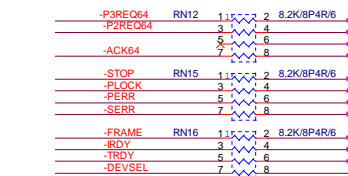
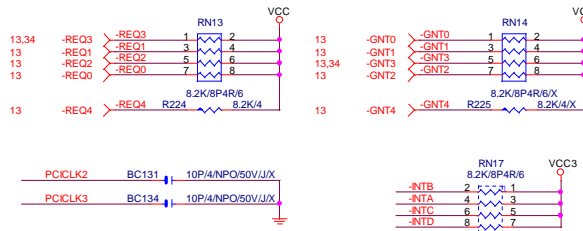
IDSEL(A23) (D)

RN11
8.2K/8P4R/6
-TRST_P
TCK_P
TMS_P
VCC

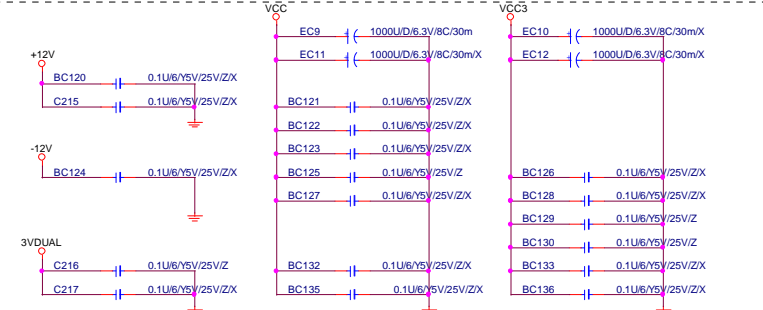
PCI SLOT2



IDSEL(A24) (A)



R226
04/X
-PCIA40
PCIA41
SMBCLK
SMBDATA
15,17,18,19
15,17,18,19



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PCI SLOT 1,2

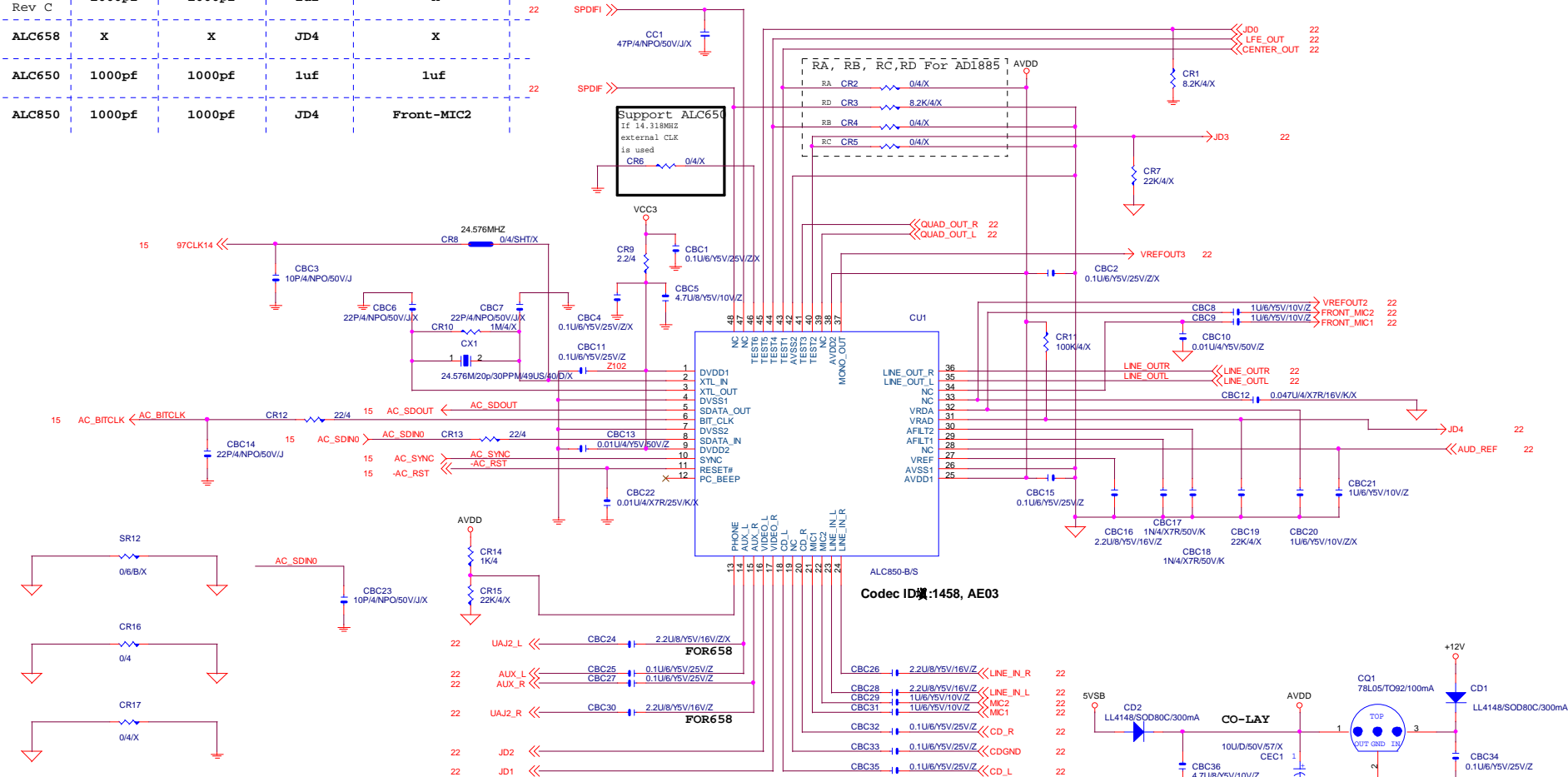
GA-M55SLI-S4

Rev
1.0

Title	Document Number	Rev
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Filter Cap design:

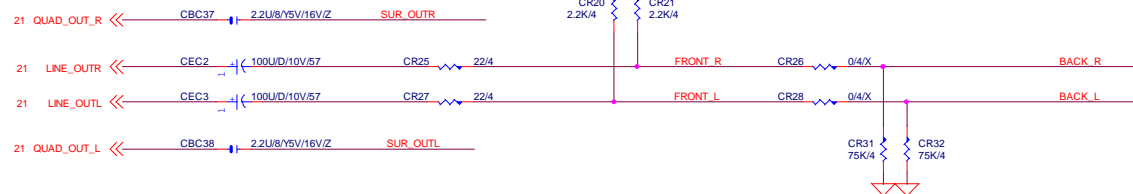
	Pin-29	Pin-30	Pin-31	Pin-32
ALC655 Rev D	1000pf	1000pf	1uf	Front-MIC2
ALC655 Rev C	1000pf	1000pf	1uf	X
ALC658	X	X	JD4	X
ALC650	1000pf	1000pf	1uf	1uf
ALC850	1000pf	1000pf	JD4	Front-MIC2



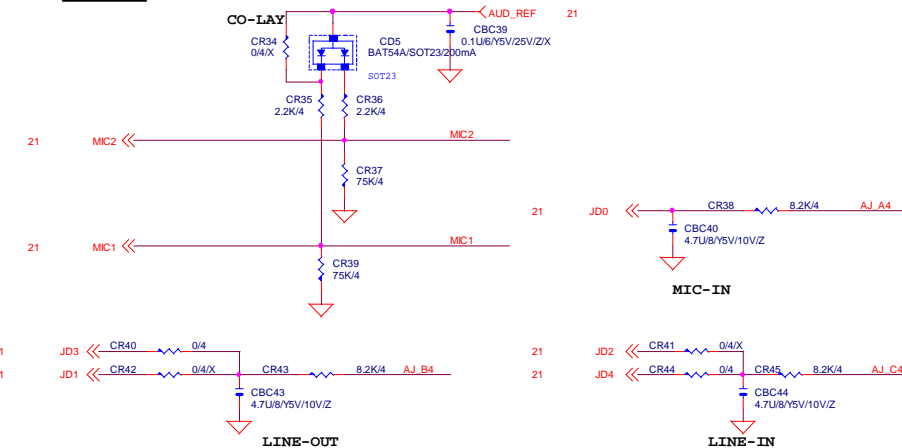
Arrangement of Jack detection Pin:

	Pin-45(JD0)	Pin-17(JD1)	Pin-16(JD2)	Pin-40(JD3)	Pin-31(JD4)	Pin-13(JD5)
ALC655	for MIC-IN	for FRONT-OUT	for LINE-IN			
ALC658	for MIC-IN	for UAJ1	for UAJ2	for FRONT-OUT External pull high is needed	for LINE-IN External pull high is needed	
ALC850	for MIC-IN	for Front Pannel OUT	for Front Pannel IN	for FRONT-OUT	for LINE-IN	for SurrBack Out

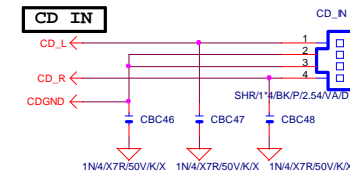
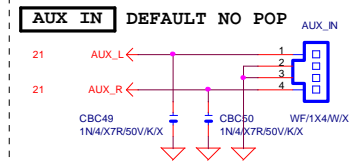
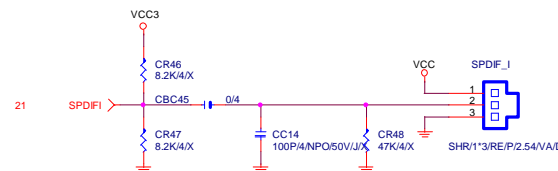
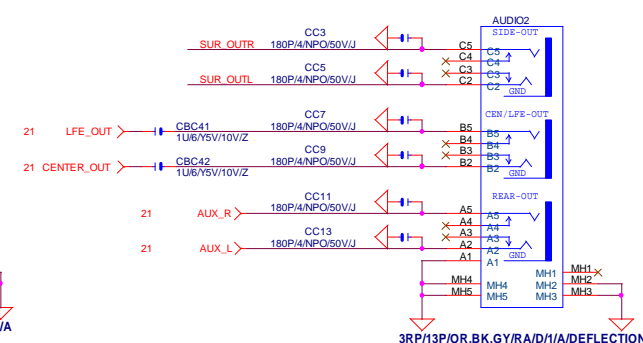
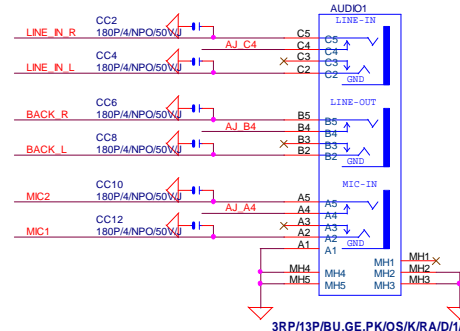
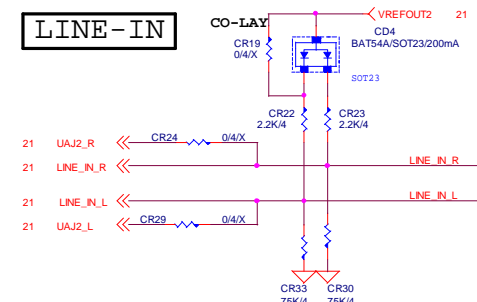
LINE OUT



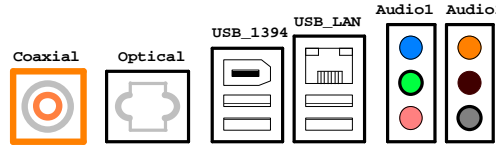
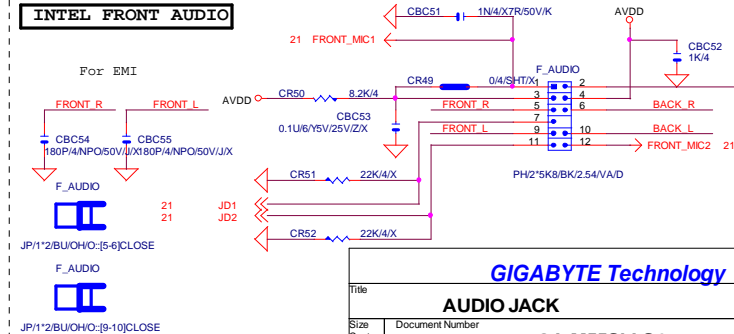
MIC



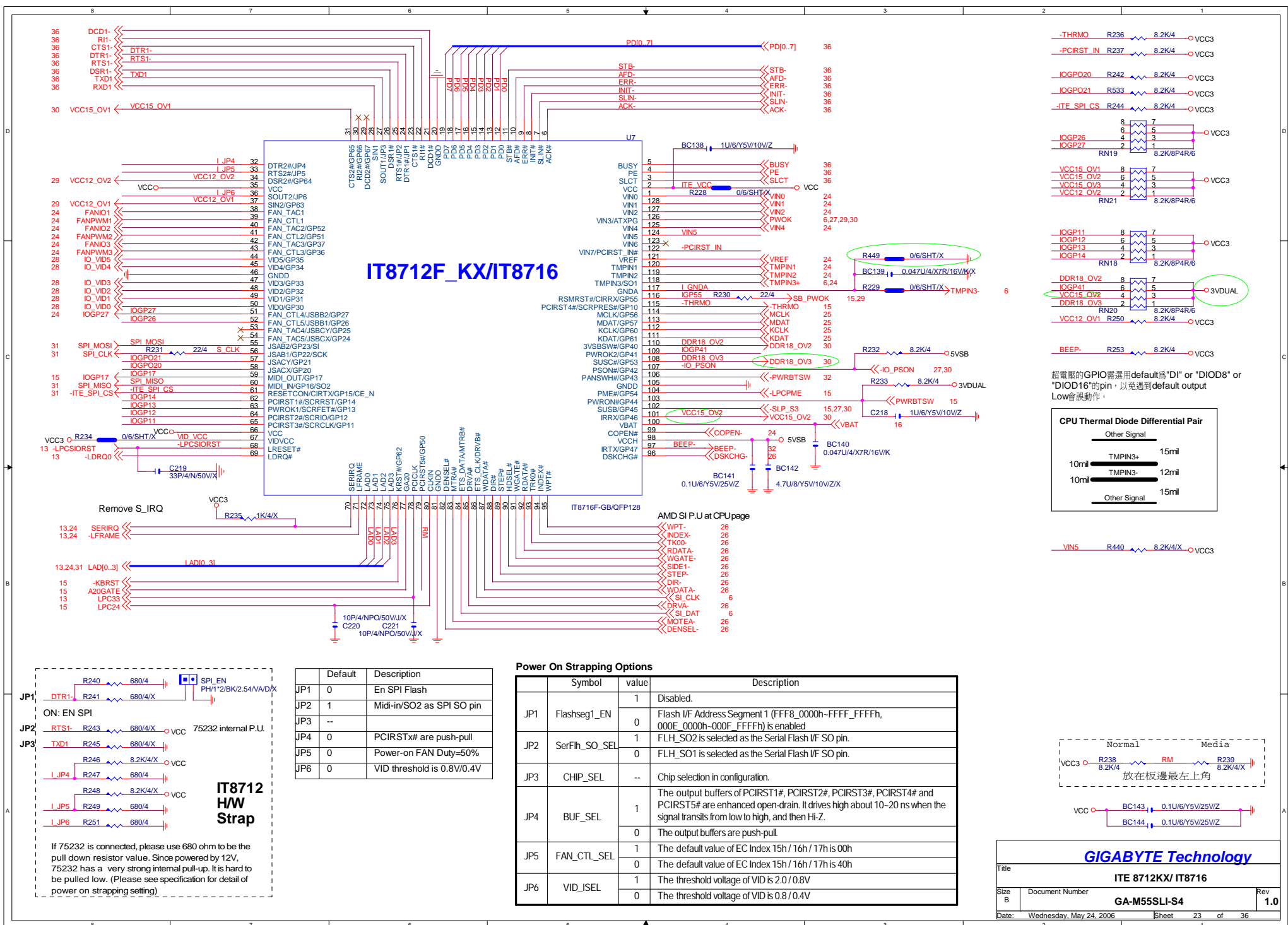
LINE-IN

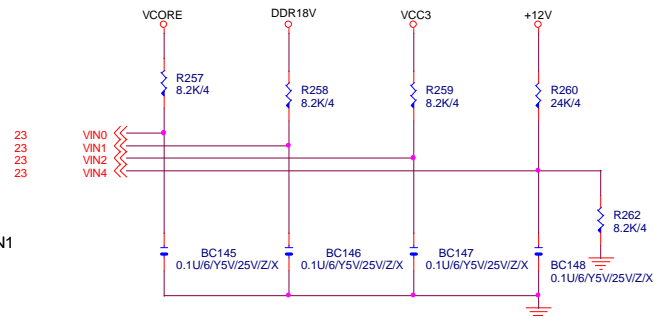
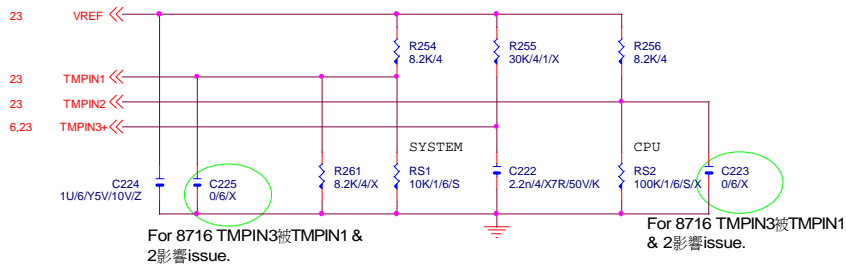


INTEL FRONT AUDIO

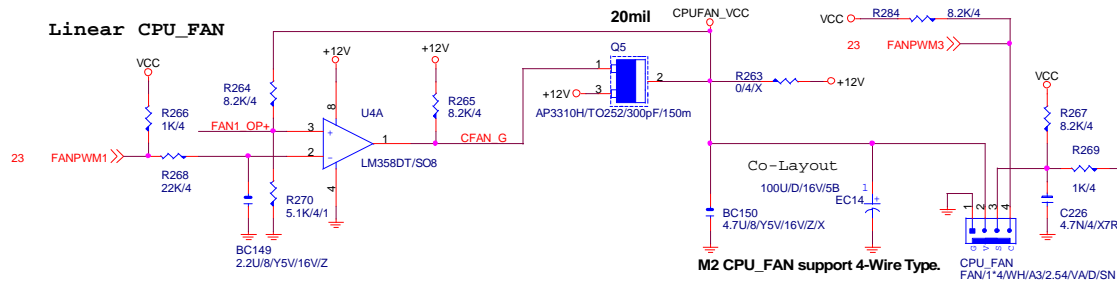


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AUDIO JACK			
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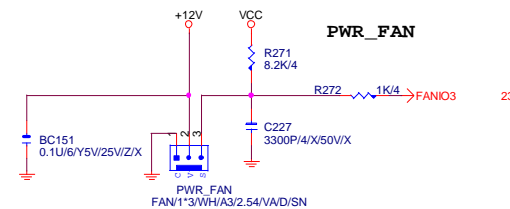




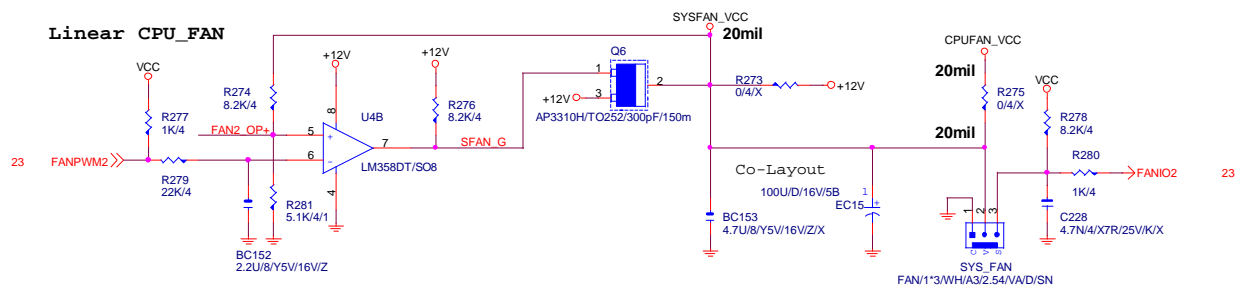
Linear CPU_FAN



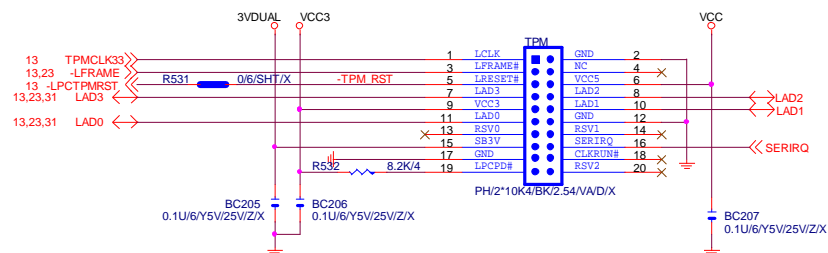
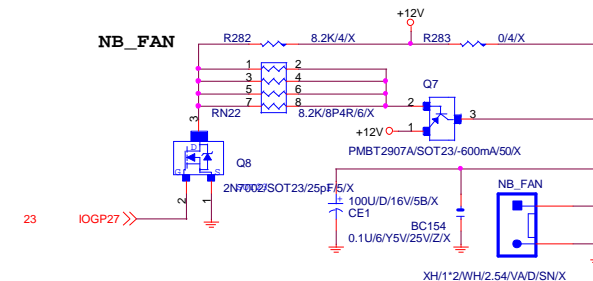
PWR_FAN



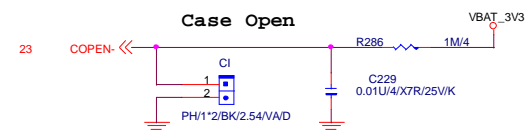
Linear CPU_FAN



NB_FAN



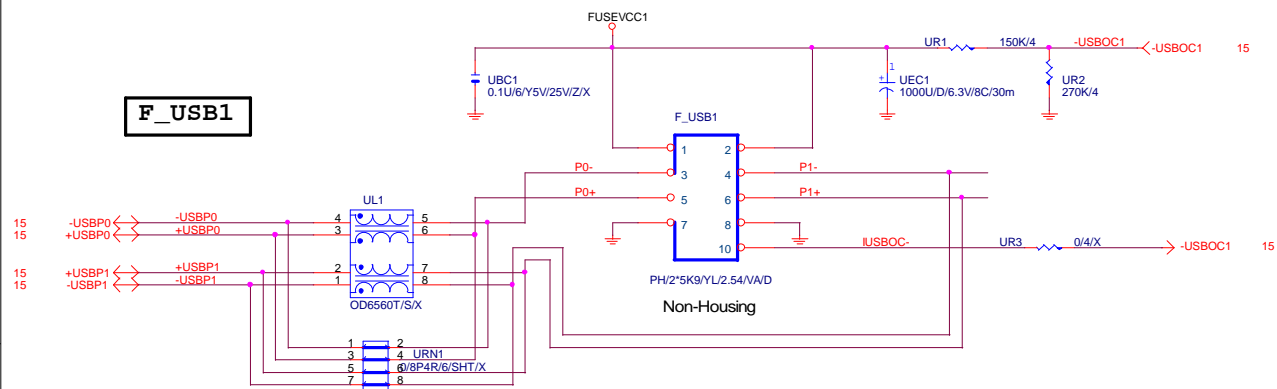
Case Open



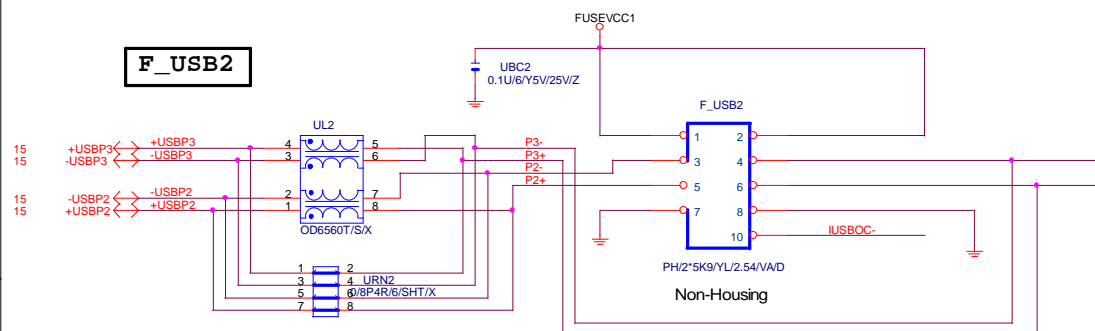
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Title			FAN/HWMO/TPM
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B	GA-M55SLI-S4		
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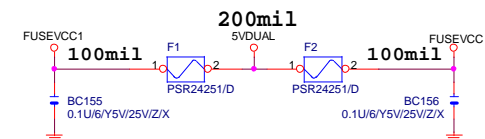
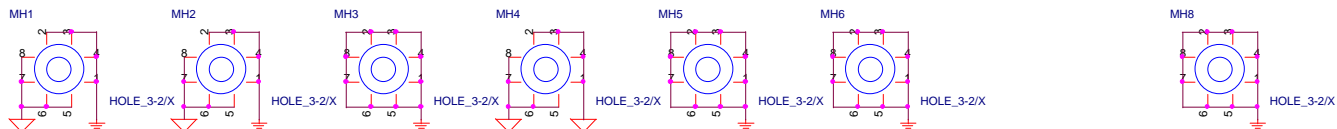
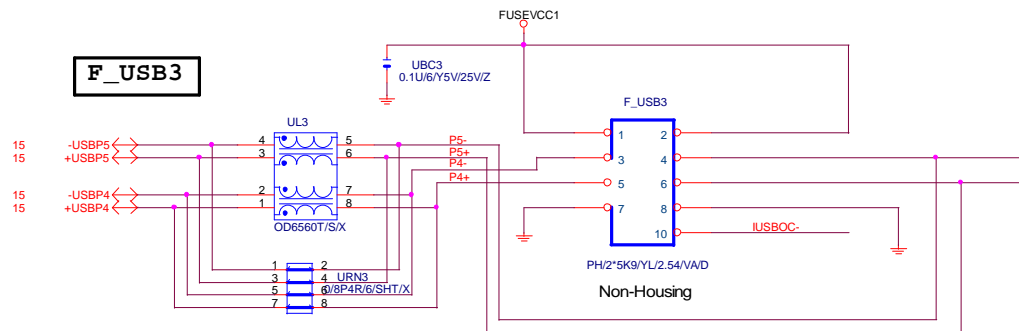
F_USB1



F_USB2

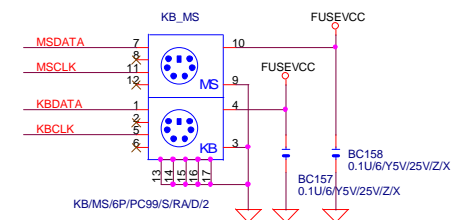


F_USB3



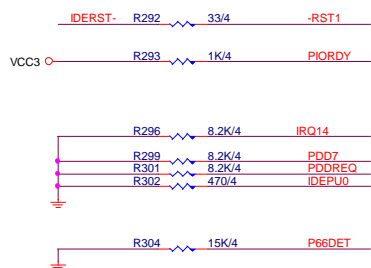
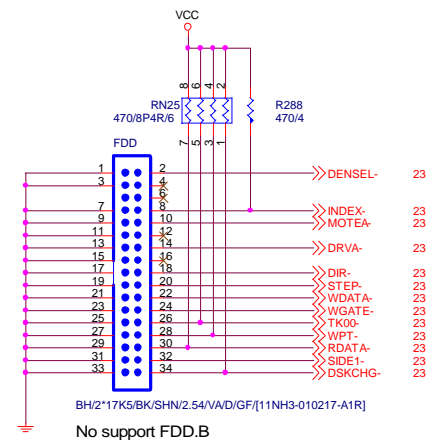
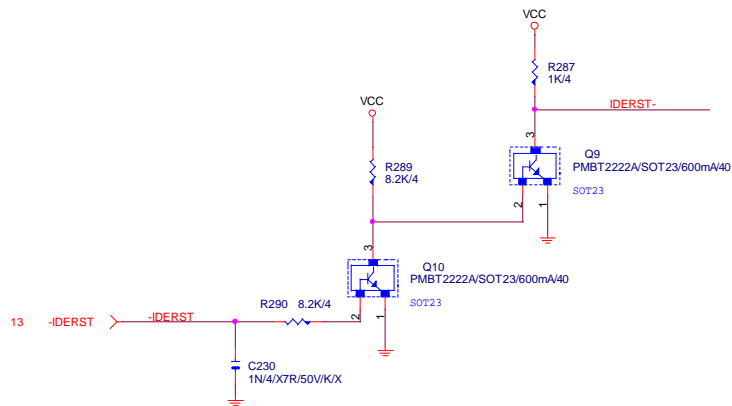
需放置在 F_USB

需放置在 F_USB

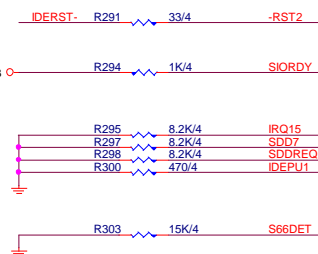
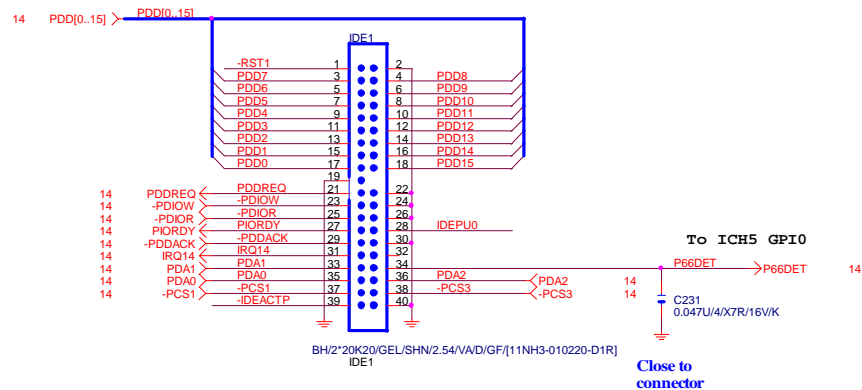


GIGABYTE Technology

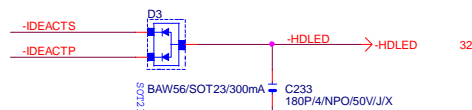
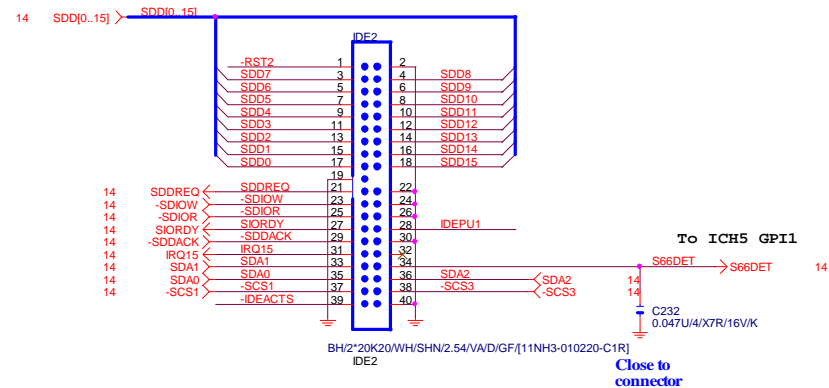
Title		
KB & PS2 & USB & FUSE		
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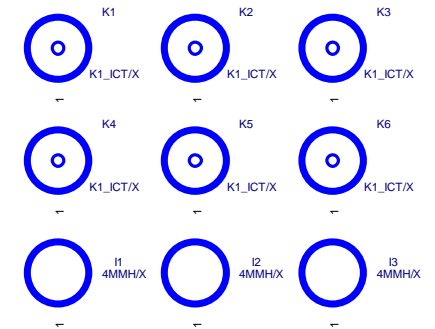
PRIMARY IDE CONNECTOR

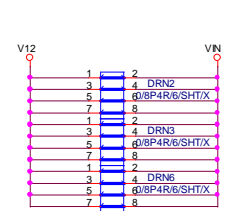
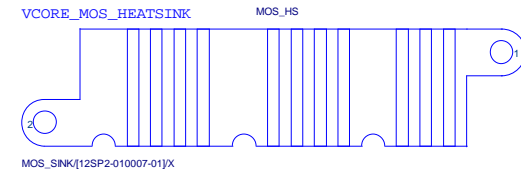
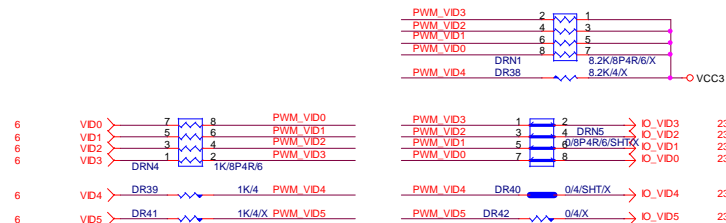
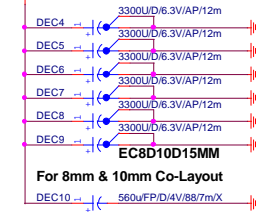
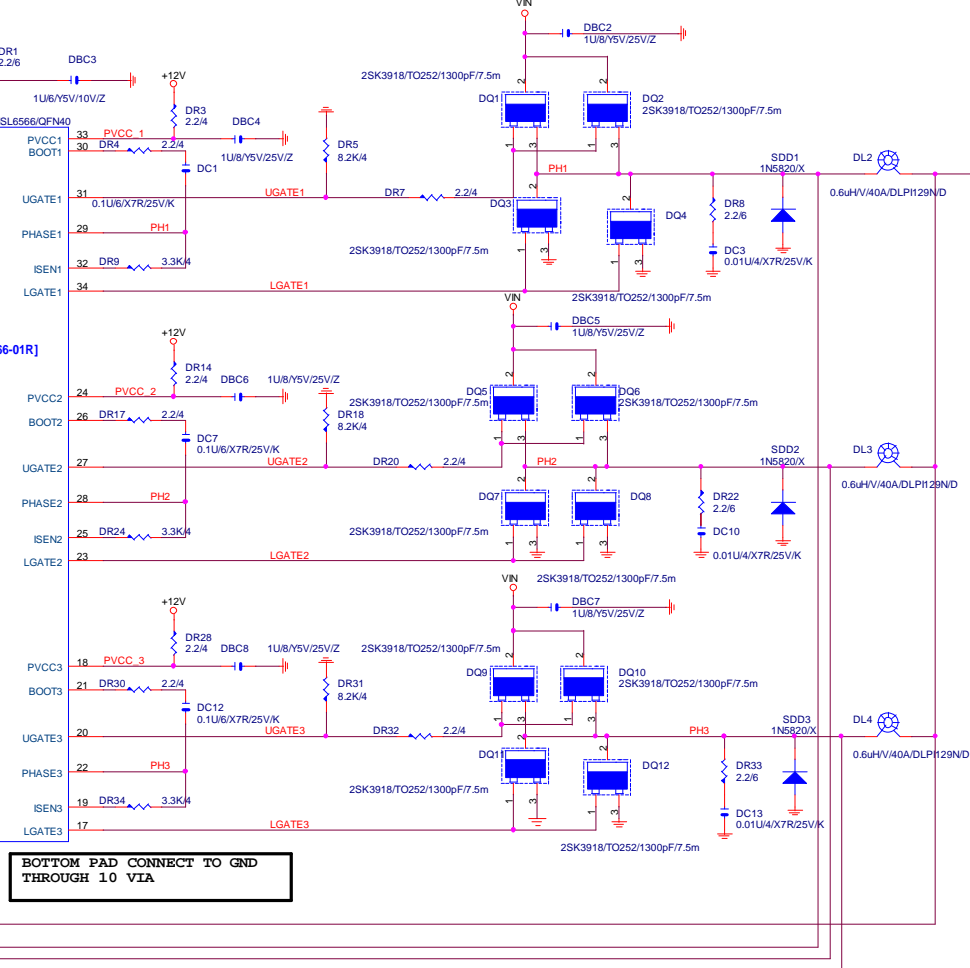
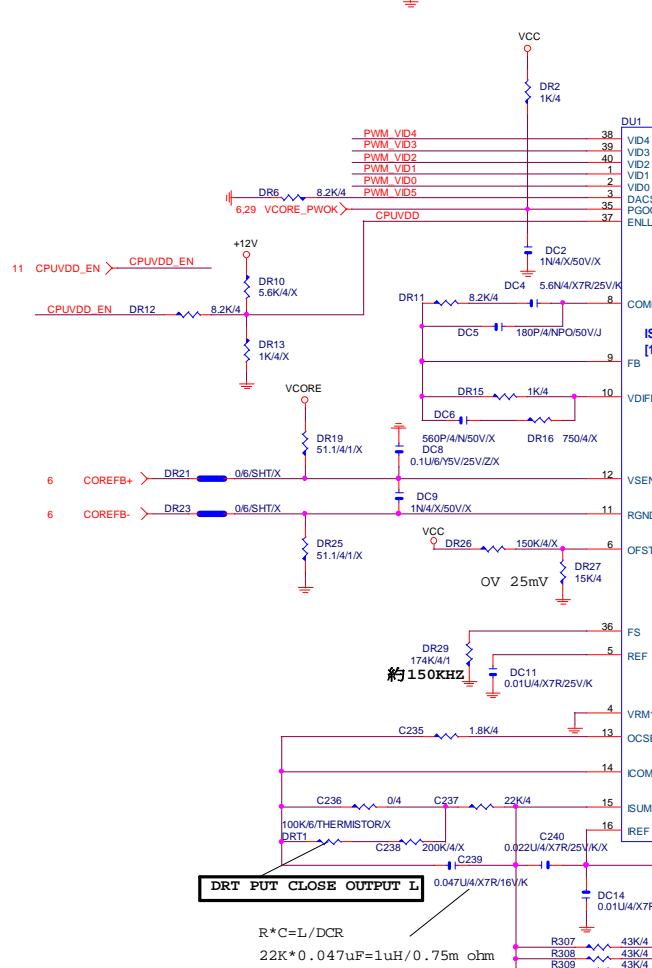
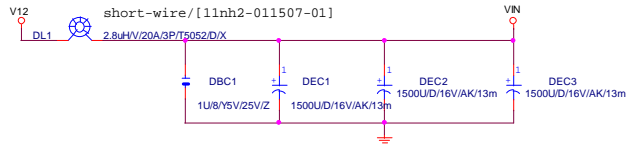


SECONDARY IDE CONNECTOR



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IDE / FDD		
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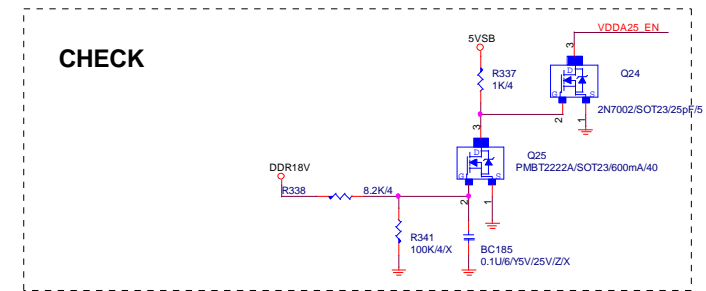
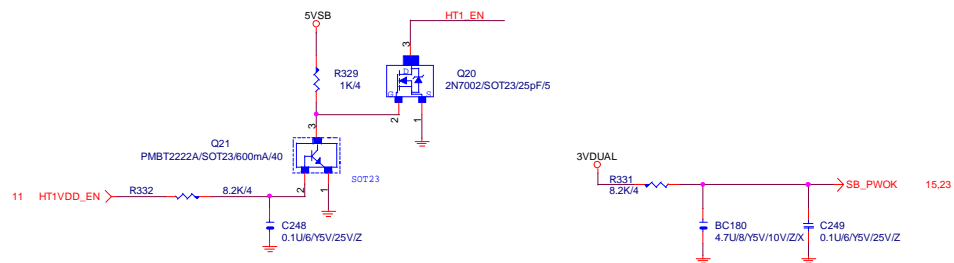
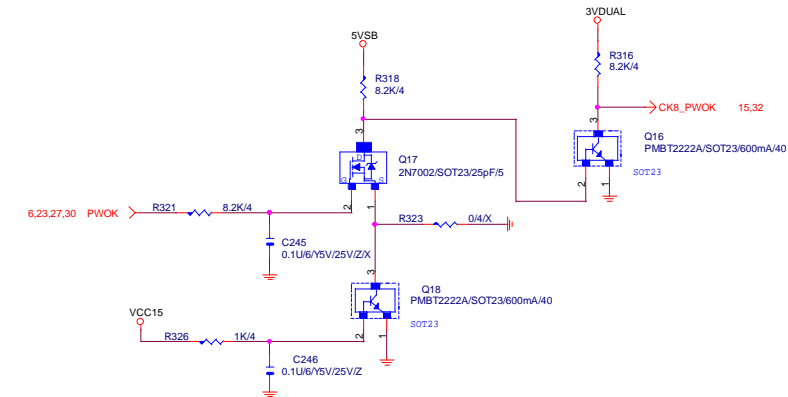
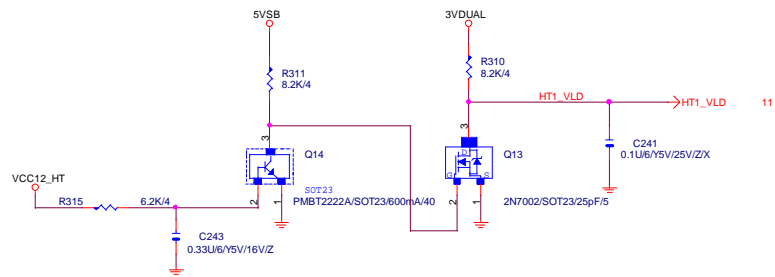


5VSB

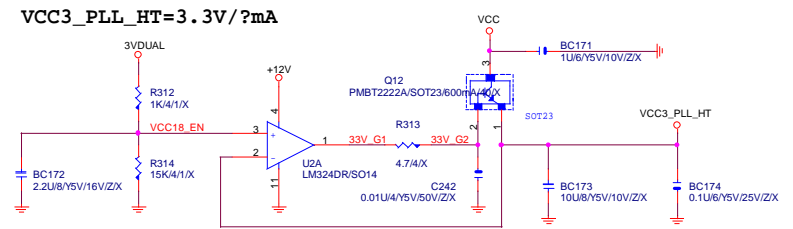
LGATE1 DR35 1K4/X
 LGATE2 DR36 1K4/X
 LGATE3 DR37 1K4/X

For Vcore在開機之前已經對地短路的保護，限制Vcore不會高於2.xV。

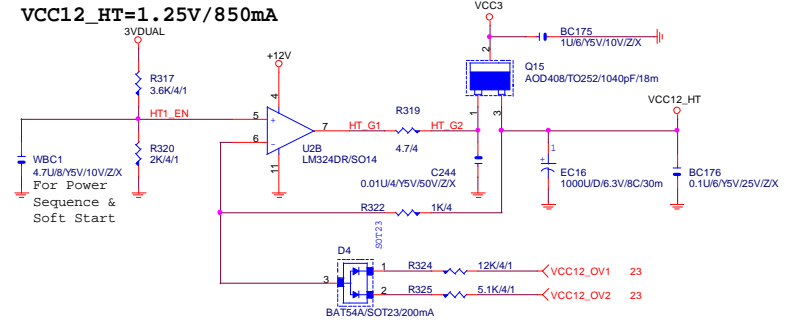
GIGABYTE Technology			
Title VCore ISL6566			
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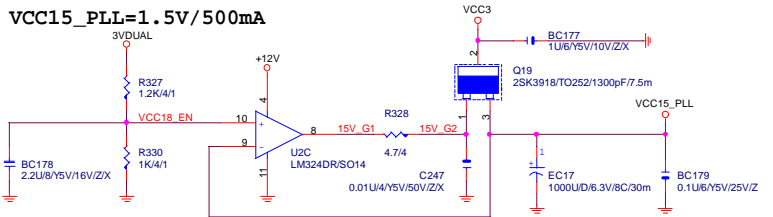
VCC3_PLL_HT=3.3V/?mA



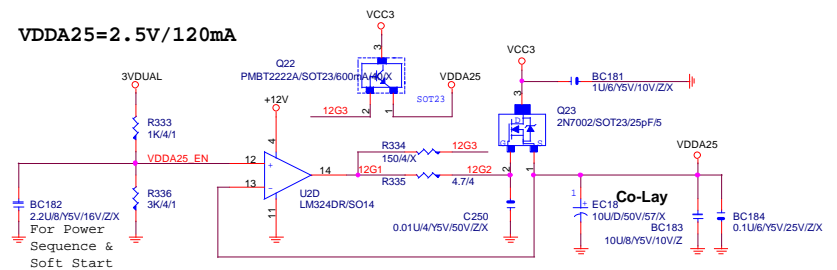
VCC12_HT=1.25V/850mA



VCC15_PLL=1.5V/500mA



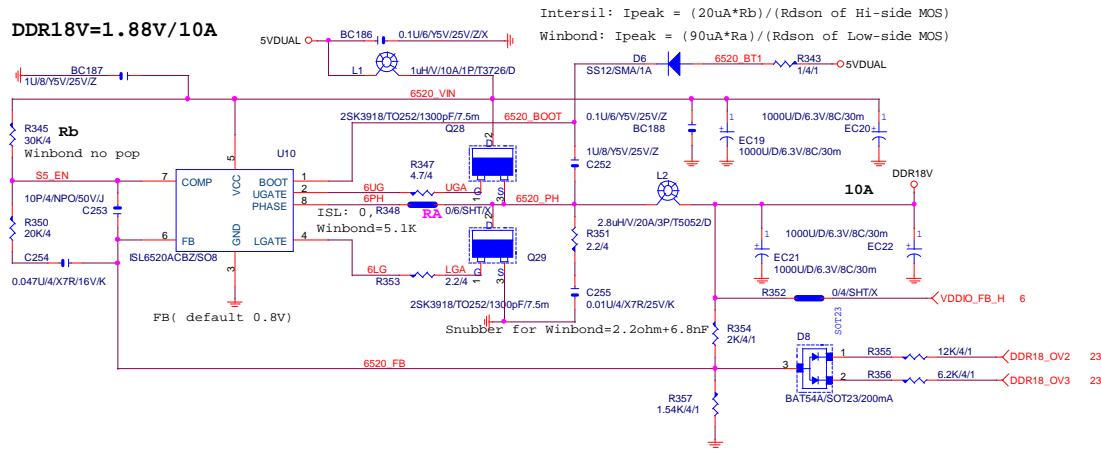
VDDA25=2.5V/120mA



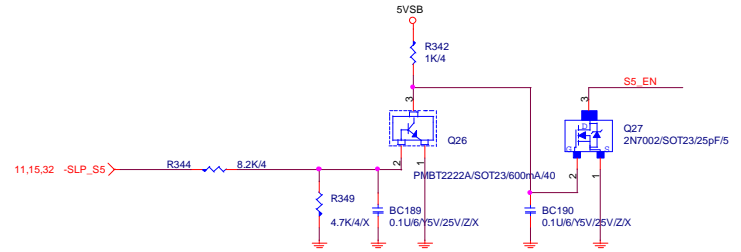
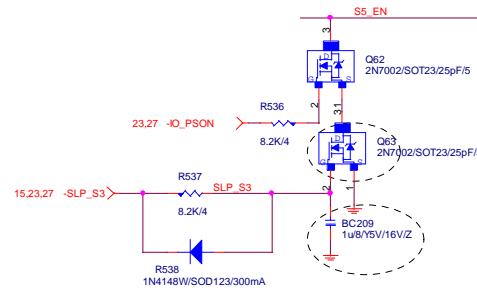
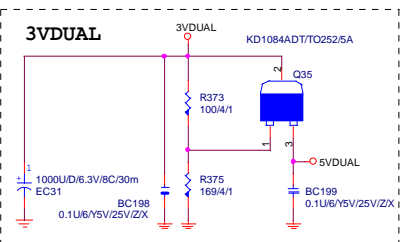
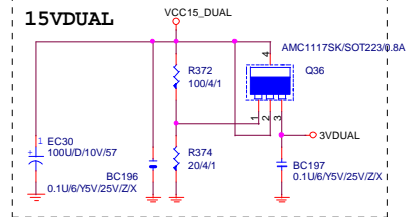
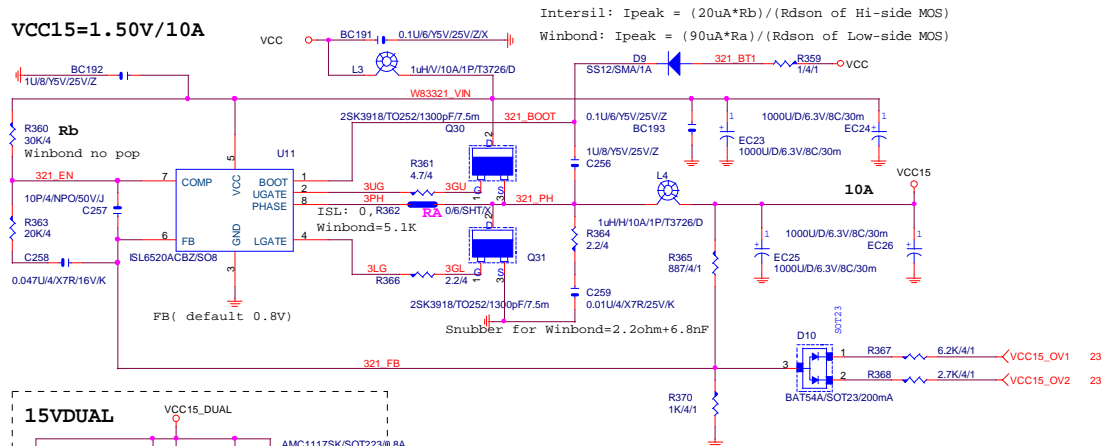
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Discrete POWER		
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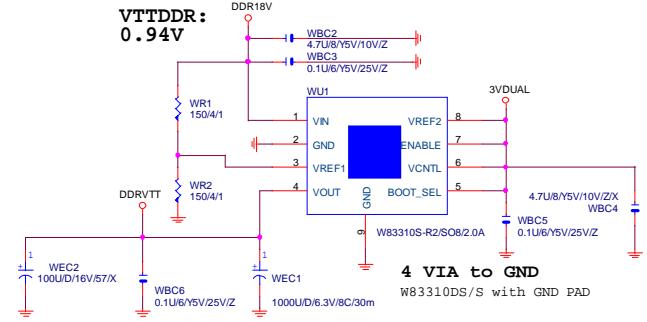
DDR18V=1.88V/10A



VCC15=1.50V/10A

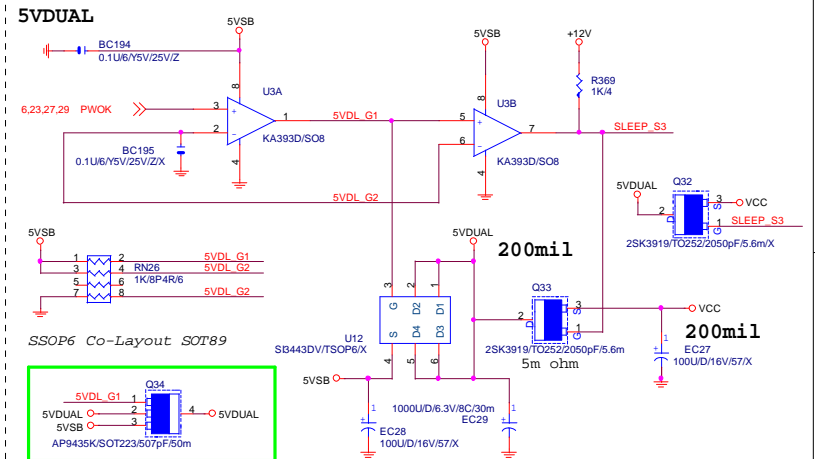


VTDDR:
0.94V



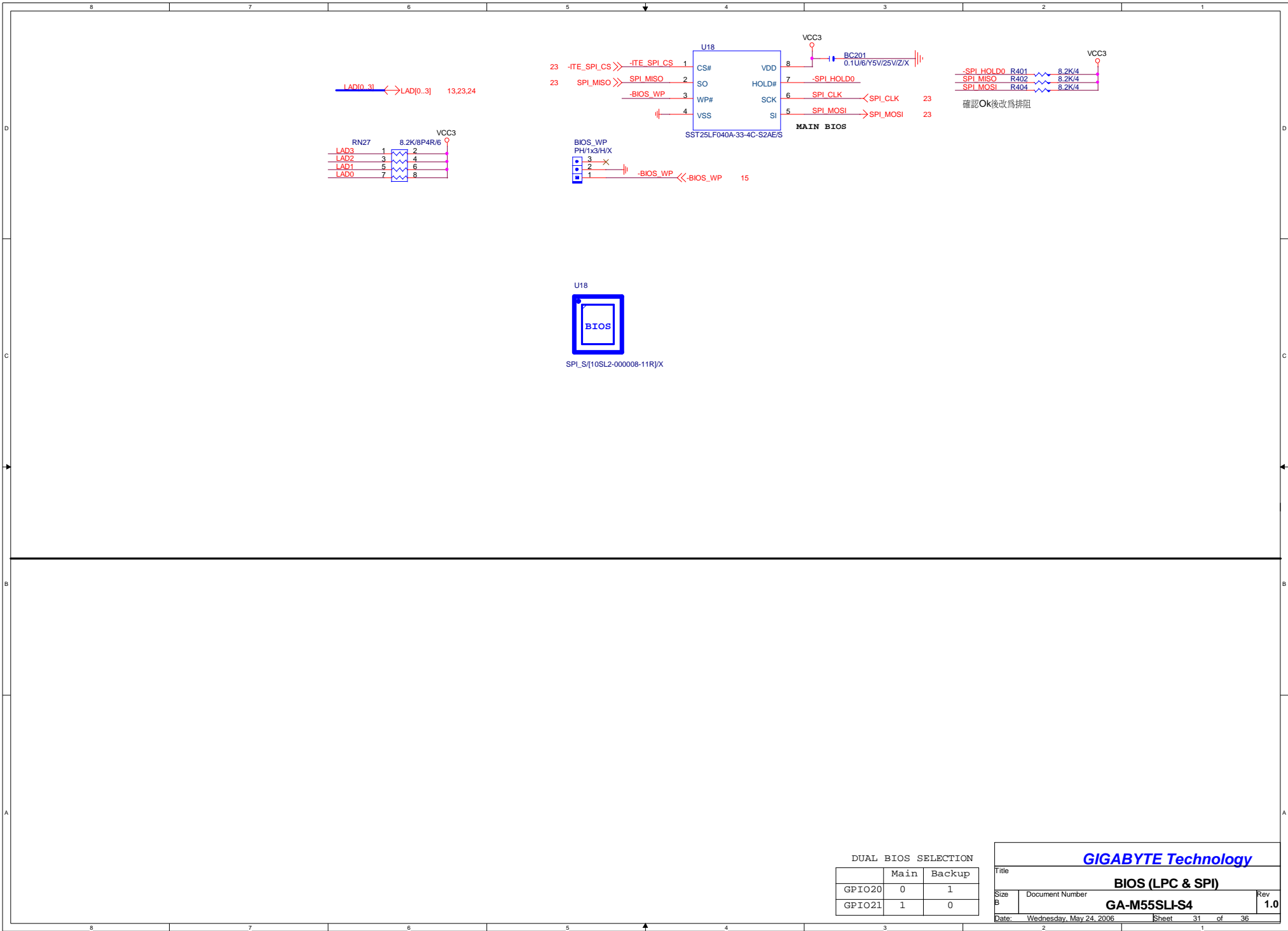
4 VIA to GND
W83310DS/S with GND PAD

5VDUAL



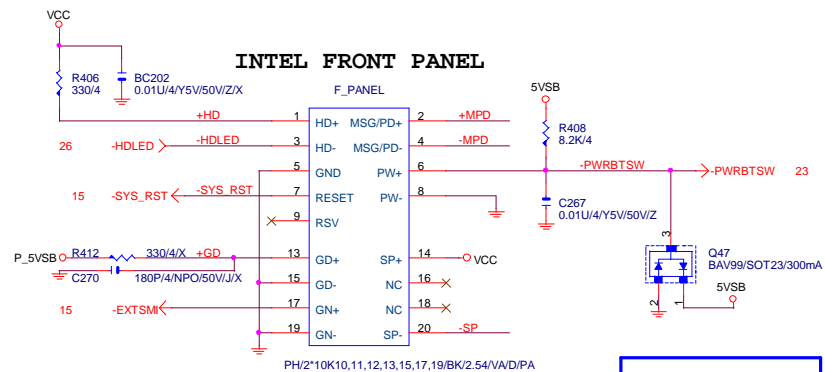
GIGABYTE Technology

Title		
DDR11 & STAND-BY POWER		
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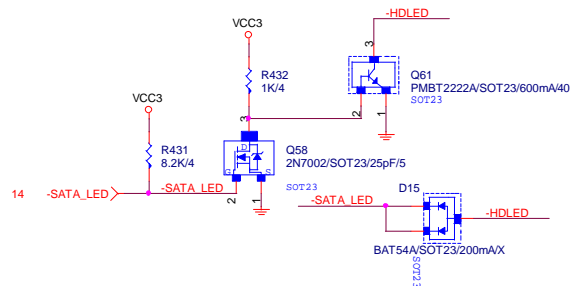
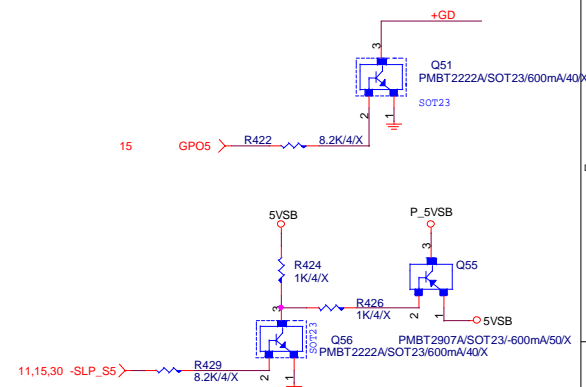
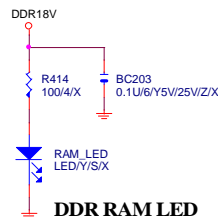
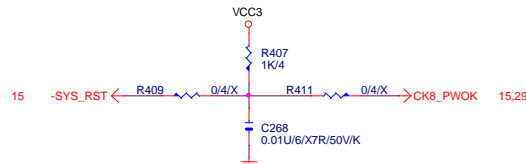
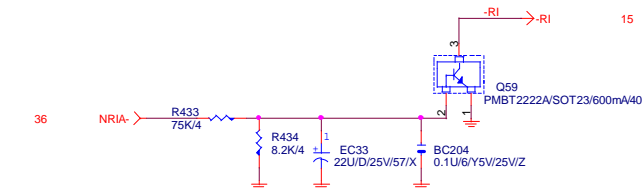
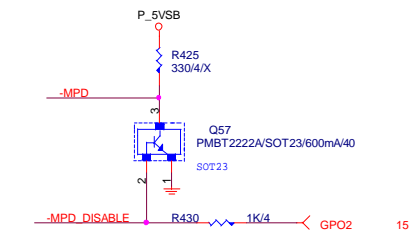
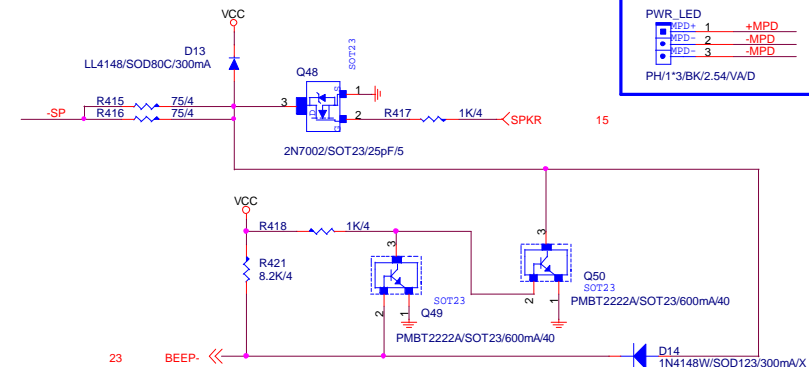
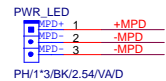


INTEL FRONT PANEL

F_PANEL

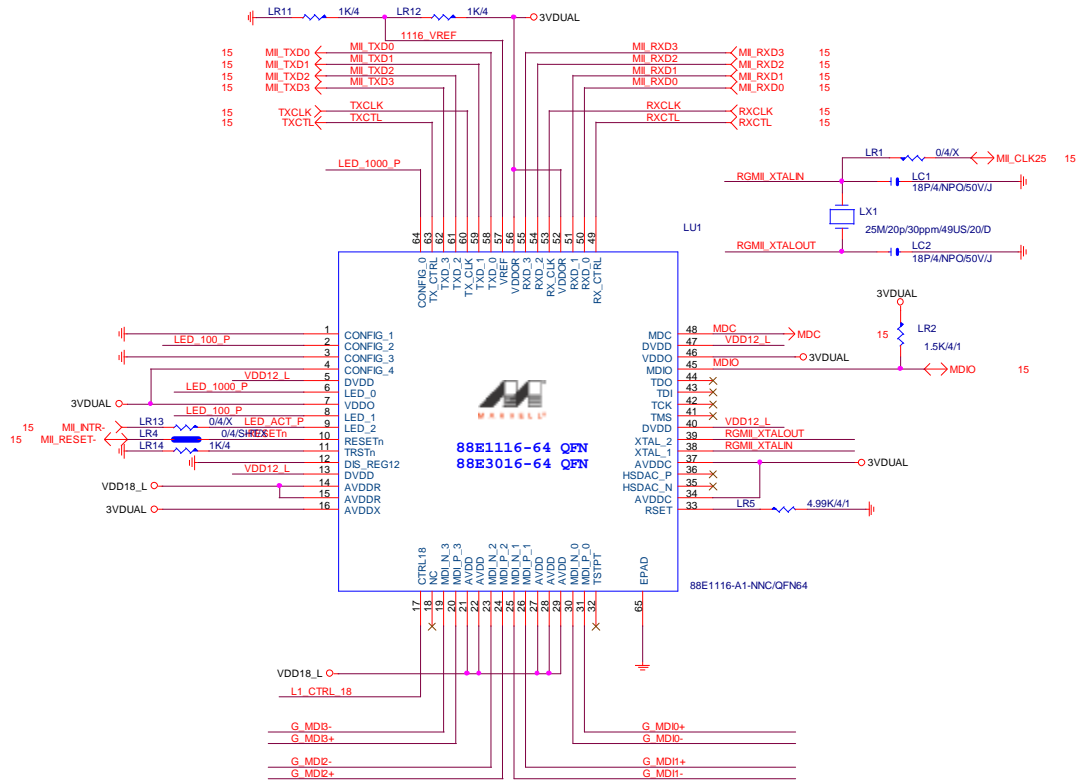


3 PIN POWER LED



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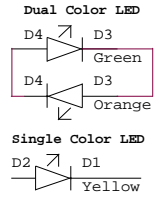
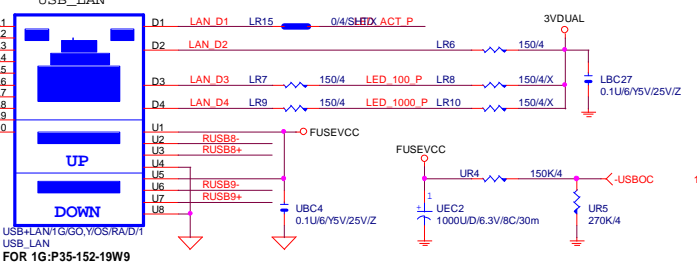
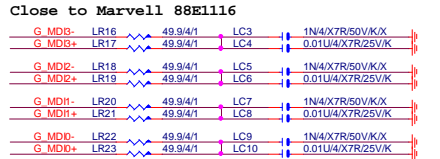
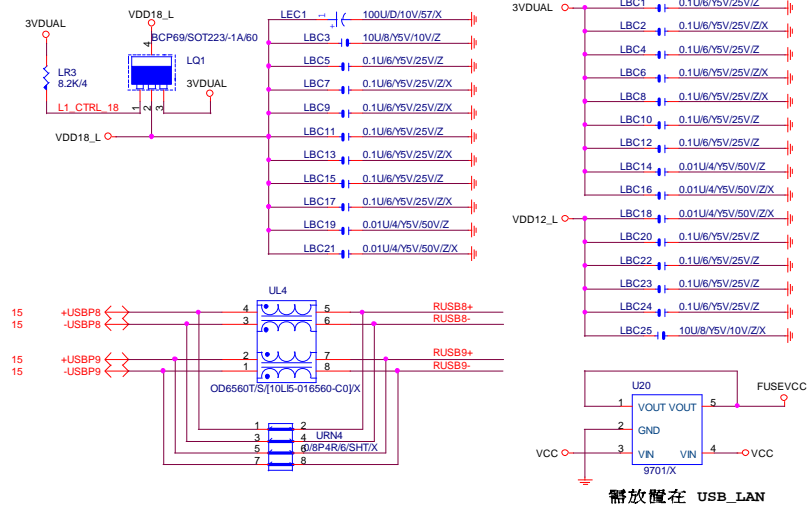
Title			F_PANEL & RI
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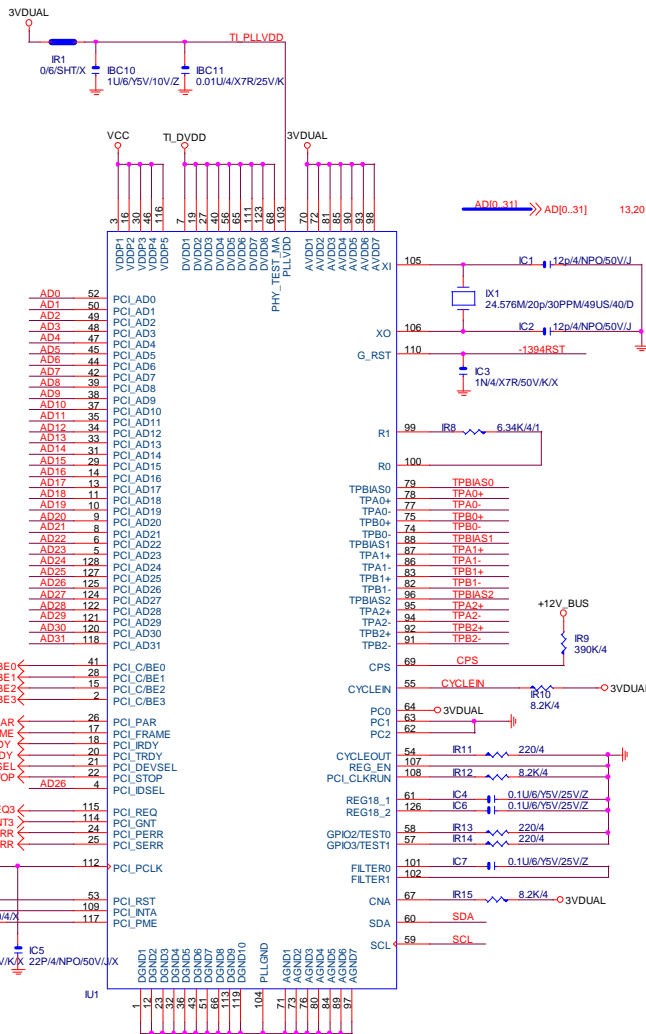
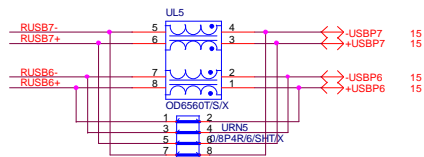
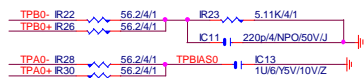
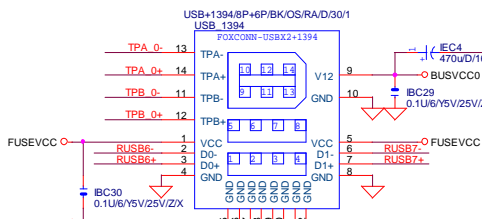
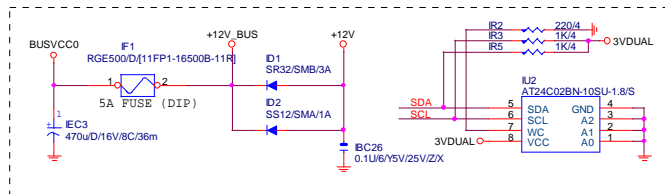
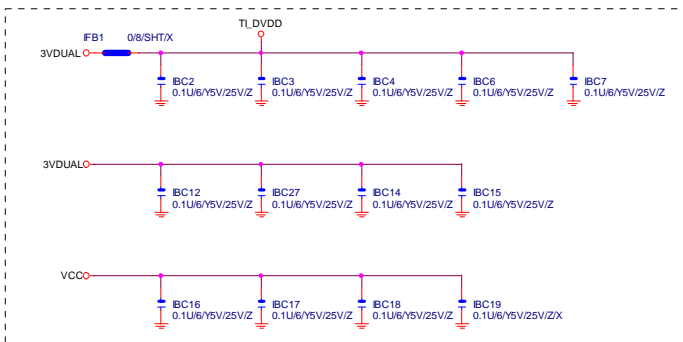


Hardware Configuration: See config_0:4

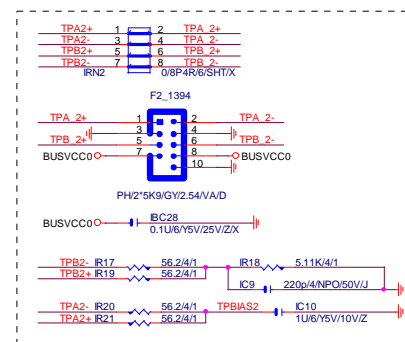
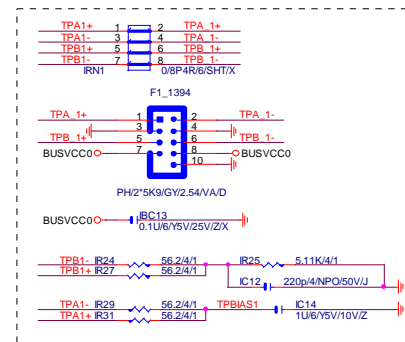
1. PHY address:00001
2. ENA_XC:Enable Auto-Crossover
3. RGMII_TX:Transmit clock not internally delayed
4. RGMII_RX:Receive clock transition when data transitions
5. Advertise all capabilities

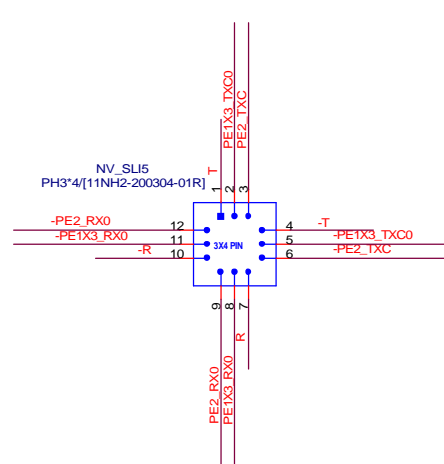
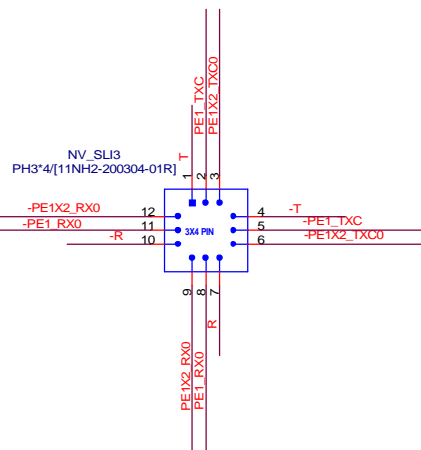
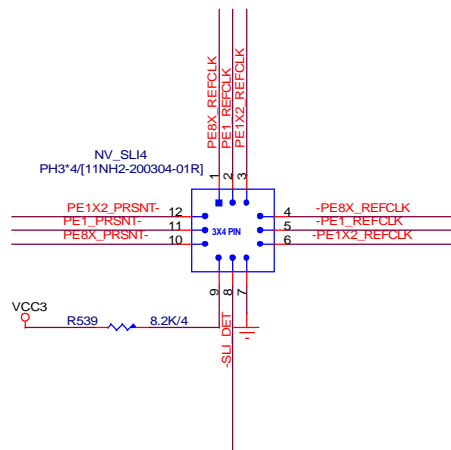
E1116 use external 2.5V single power supply.
1.8V create by PNP and 1.2V use internal reg.





-REQ3, -GNT3, IDSEL AD26, -INTC





PE0X16_TXC[8..15] → PE0X16_TXC[8..15] 17
 -PE0X16_TXC[8..15] → -PE0X16_TXC[8..15] 17
 PE0X16_RX[8..15] → PE0X16_RX[8..15] 17
 -PE0X16_RX[8..15] → -PE0X16_RX[8..15] 17

To PCIE_16_1

-SLI_DET → -SLI_DET 15
 -SLI_DET pull-up at NB page.

Pin80: -SLI_DET (inform to NB)
 Hi: Normal Mode
 Lo: SLI Mode

PE0_TXC[8..15] → PE0_TXC[8..15] 12
 -PE0_TXC[8..15] → -PE0_TXC[8..15] 12
 PE0_RX[8..15] → PE0_RX[8..15] 12
 -PE0_RX[8..15] → -PE0_RX[8..15] 12

From CK804

PE0X8_TXC[8..15] → PE0X8_TXC[8..15] 18
 -PE0X8_TXC[8..15] → -PE0X8_TXC[8..15] 18
 PE0X8_RX[8..15] → PE0X8_RX[8..15] 18
 -PE0X8_RX[8..15] → -PE0X8_RX[8..15] 18

To PCIE_16_2

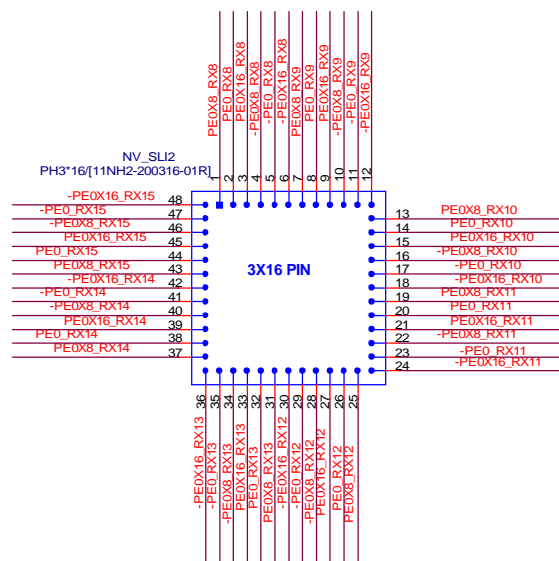
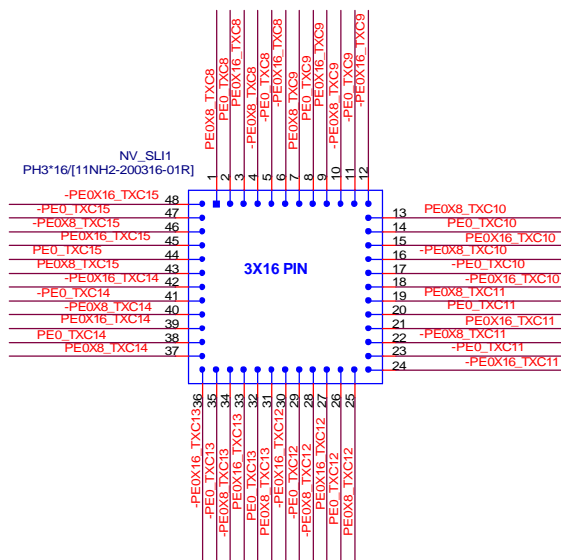
PE1X2_TXC0 → PE1X2_TXC0 19
 -PE1X2_TXC0 → -PE1X2_TXC0 19
 PE1X2_RX0 → PE1X2_RX0 19
 -PE1X2_RX0 → -PE1X2_RX0 19
 PE1X3_TXC0 → PE1X3_TXC0 19
 -PE1X3_TXC0 → -PE1X3_TXC0 19
 PE1X3_RX0 → PE1X3_RX0 19
 -PE1X3_RX0 → -PE1X3_RX0 19

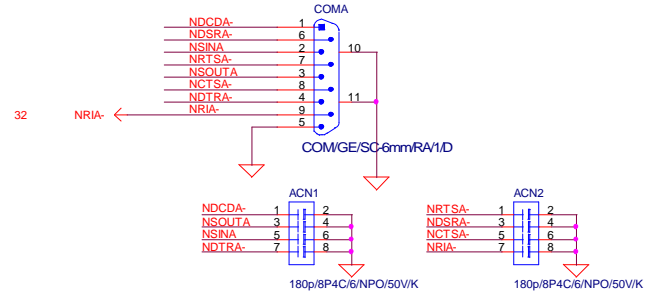
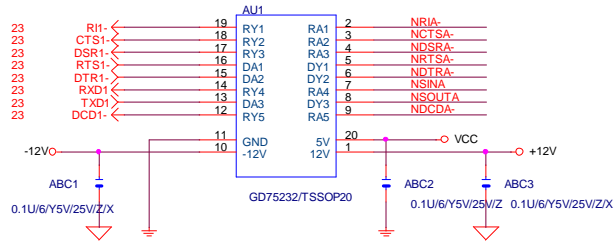
PE2_TXC → PE2_TXC 12
 -PE2_TXC → -PE2_TXC 12
 PE2_RX0 → PE2_RX0 12
 -PE2_RX0 → -PE2_RX0 12

PE1_TXC → PE1_TXC 12
 -PE1_TXC → -PE1_TXC 12
 PE1_RX0 → PE1_RX0 12
 -PE1_RX0 → -PE1_RX0 12

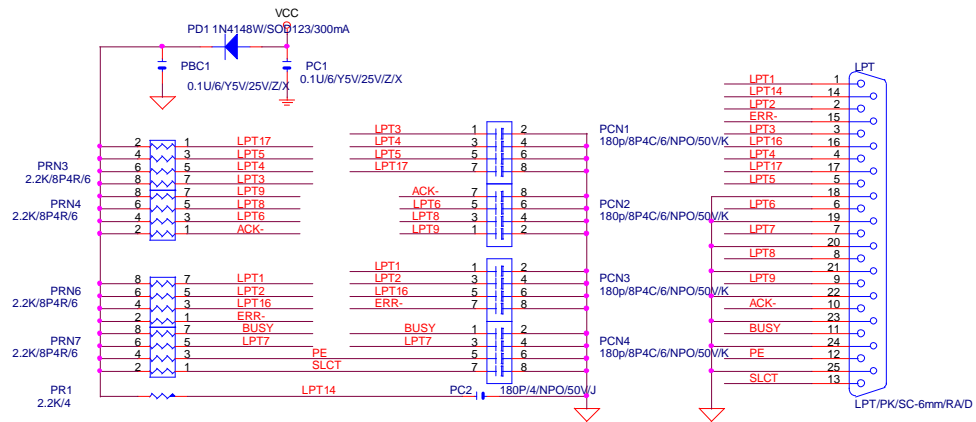
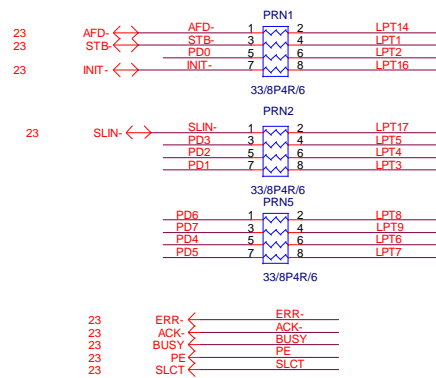
PE8X_REFCLK → PE8X_REFCLK 18
 -PE8X_REFCLK → -PE8X_REFCLK 18
 PE1_REFCLK → PE1_REFCLK 12
 -PE1_REFCLK → -PE1_REFCLK 12
 PE1X2_REFCLK → PE1X2_REFCLK 19
 -PE1X2_REFCLK → -PE1X2_REFCLK 19

PE1X2_PRSNT- → PE1X2_PRSNT- 19
 PE1_PRSNT- → PE1_PRSNT- 12
 PE8X_PRSNT- → PE8X_PRSNT- 18





23 PD[0..7] <-> PD[0..7]



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