

Model Name: P35-DS3 Rev1.01

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03	BLOCK DIAGRAM
04	POWER MAP
05	P4 LGA775 A
06	P4 LGA775 B
07	P4 LGA775 C
08	P4 LGA775 D
09	GMCH-BEARLAKE HOST
10	GMCH-BEARLAKE DDRII
11	GMCH-BEARLAKE PCI E, DMI
12	GMCH-BEARLAKE INT VGA
13	GMCH-BEARLAKE GND
14	GMCH-BEARLAKE PWR
15	DDRII CHANNEL A 1,2
16	DDRII CHANNEL B 1,2
17	DDRII TERMINATION
18	PCI EXPRESS*16 SLOT
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21	ICH9 SATA, FAN PWM
22	ICH9 VCC, GND
23	CLOCK GEN CK505
24	PCI EXPRESS*1 ,PCI SLOT 1,2
25	ITE8718/GB,RESET DRIVE
26	COM,LPT
27	BIOS,CI ,HWM,KB/MS

SHEET TITLE

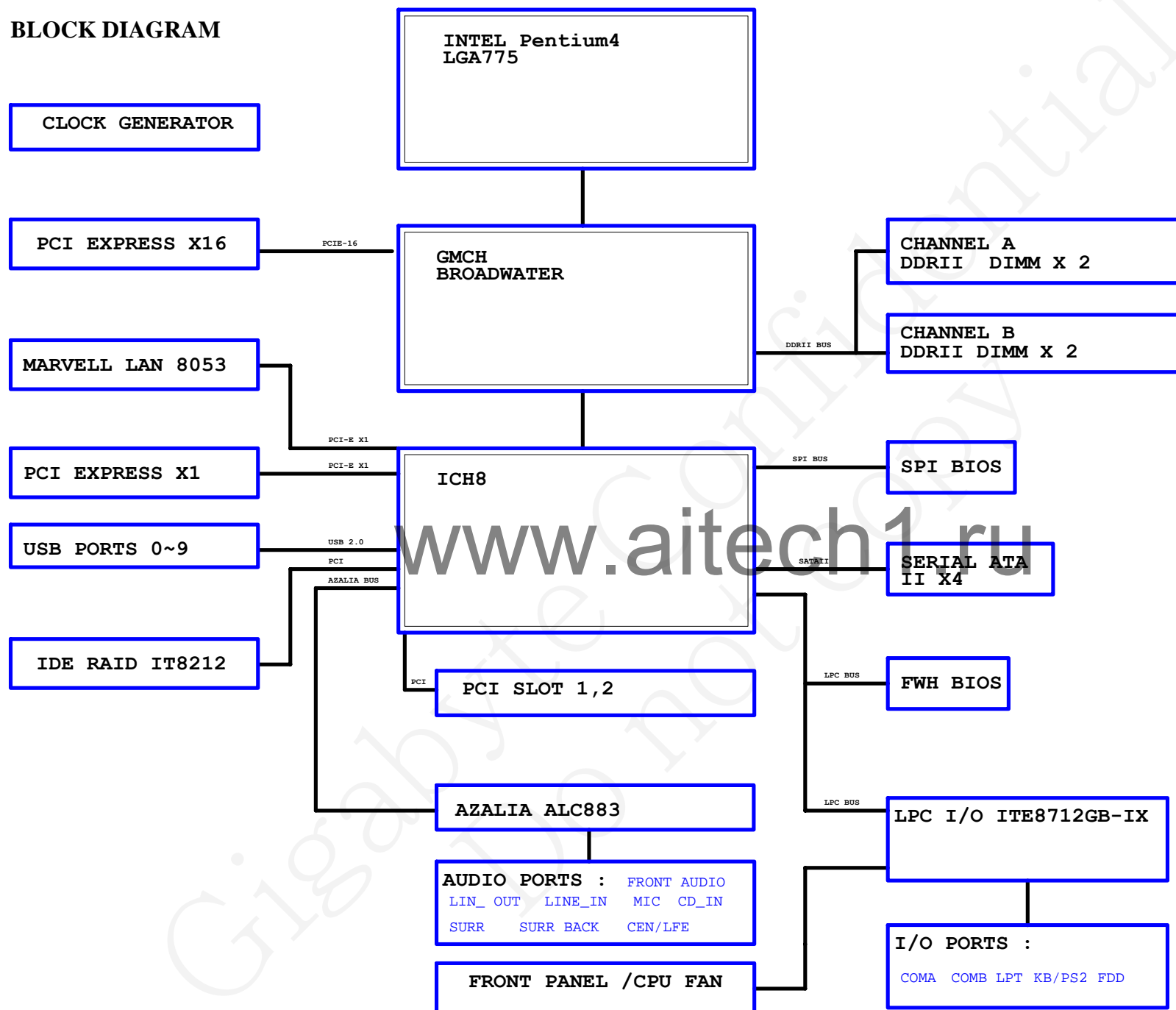
28	AZALIA ALC889A
29	AUDIO JACK
30	VCORE PWM ISL6327
31	DISCRETE POWER
32	ATX POWER
33	JMicron JMB363
34	LAN REALTEK RTL8111B
35	FRONT PANEL ,FUSB ,FDD

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Title			
Cover Sheet			
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[illegible][illegible]

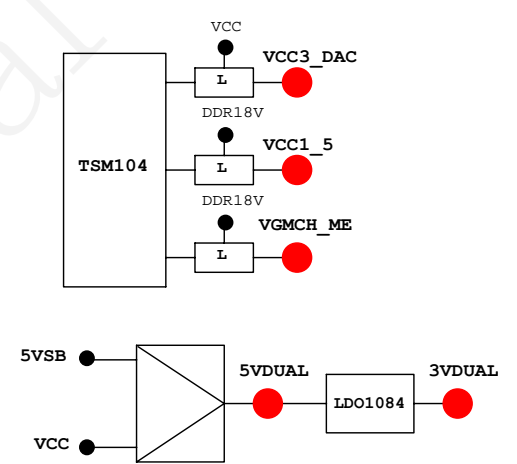
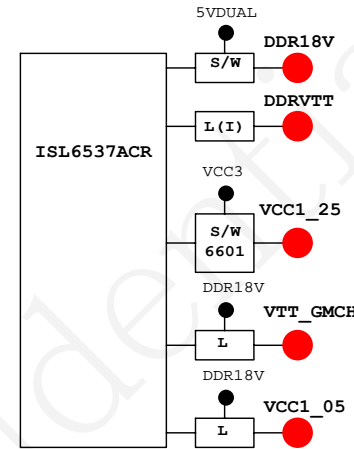
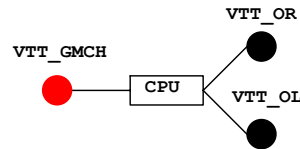
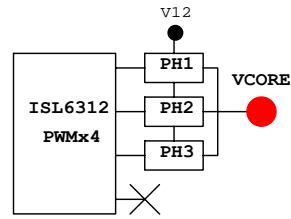
BLOCK DIAGRAM



ICH8 GPIO LIST TABLE

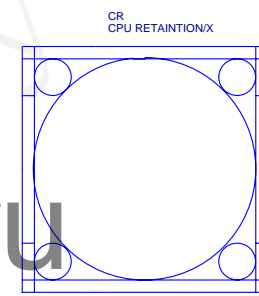
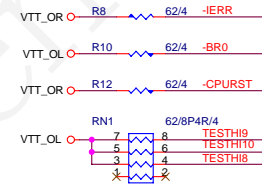
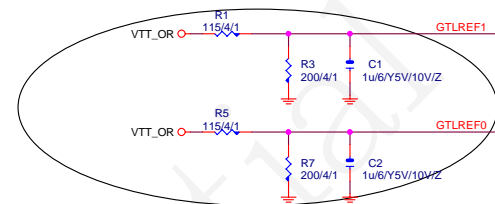
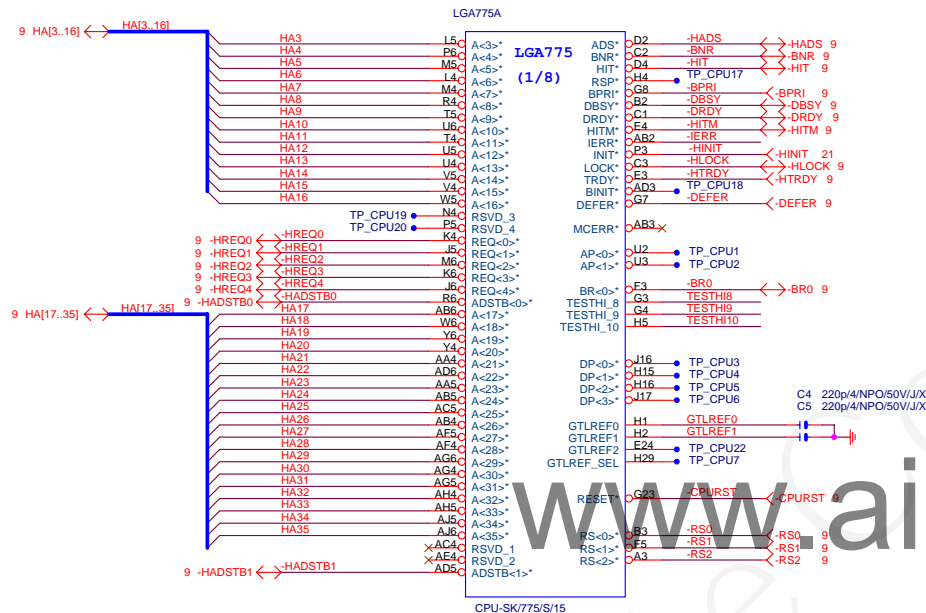
PIN NAME	PWR WELL	AFTER/ PLTRST	USAGE	NOTE
GP0	MAIN	IN	-ACZ_DET	P/U 8.2K VCC3
GP1/TACH1	MAIN	IN	ICH_FAN_TACH1	P/U 8.2K VCC3
GP2/PIRQE#	MAIN	IN	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN	IN	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN	IN	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN	IN	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN	IN	ICH_FAN_TACH2	P/U 8.2K VCC3
GP7/TACH3	MAIN	IN	ICH_FAN_TACH3	P/U 8.2K VCC3
GP8	STBY	IN	GPIO8 (DUALBIOS_INPUT)	P/U 8.2K 3VDUAL
GP9	STBY	OUT	WOL_ONLY	P/D 100K GND
GP10	STBY	IN	CLGPIO1	P/U 8.2K 3VDUAL
GP11/SMBALERT#	STBY	OUT	-SMBALRT	P/U 8.2K 3VDUAL
GP12	STBY	IN	MB_ID0	P/U 8.2K 3VDUAL
GP13	STBY	IN	-LPCPME	P/U 8.2K 3VDUAL
GP14	STBY	IN	CLGPIO2	P/U 8.2K 3VDUAL
GP15	STBY	OUT	LAN_DISABLE (STP_PCI-)	N/A
GP16	MAIN	OUT/LOW	RESET	N/A
GP17/TACH0	MAIN	IN	ICH_FAN_TACH0	P/U 8.2K VCC3
GP18	MAIN	OUT	MB_ID1	P/U 8.2K VCC3
GP19	MAIN	IN	SATA1GP	P/U 8.2K VCC3
GP20	MAIN	OUT	-SPI_WP0	P/U 1K 3VCL
GP21	MAIN	IN	SATA0GP	P/U 8.2K VCC3
GP22	MAIN	IN	SCLOCK	P/U 8.2K VCC3
GP23	MAIN	OUT	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	OUT	CLGPIO0	P/U 8.2K 3VDUAL
GP25	STBY	IN	MB_ID2 (STP_CPU-)	P/U 8.2K 3VDUAL
GP26/S4_STATE#	STBY	OUT	S4_STATE#	P/U 8.2K 3VDUAL
GP27	STBY	OUT/LOW	GPIO27 (EL_STATE0)	P/U 8.2K 3VDUAL
GP28	STBY	OUT/LOW	PWR_LED (EL_STATE1)	N/A
GP29/OC5#	STBY	IN	-USBOC_R	P/U FUSEVCC
GP30/OC6#	STBY	IN	-USBOC_R	P/U FUSEVCC
GP31/OC7#	STBY	IN	-USBOC_R	P/U FUSEVCC
GP32	MAIN	OUT	DUAL_BIOS	P/U 100K+1M VCC3
GP33	MAIN	OUT	DUAL_BIOS	P/U 8.2K VCC3
GP34	MAIN	OUT/LOW	GPIO34/SMB_RST	N/A
GP35	MAIN	OUT	SATACLKREQ#	N/A
GP36	MAIN	IN	SATA2GP	P/U 8.2K VCC3
GP37	MAIN	IN	SATA3GP	P/U 8.2K VCC3
GP38	MAIN	IN	SLOAD	P/U 8.2K VCC3
GP39	MAIN	IN	GPIO39	P/D 8.2K GND
GP48	MAIN	IN	GPIO48	P/U 8.2K VCC3
GP49	MAIN	IN	CPUPWROK	P/U 100 VTT_OL

VCORE:3 PHASE PWM--ISL6312

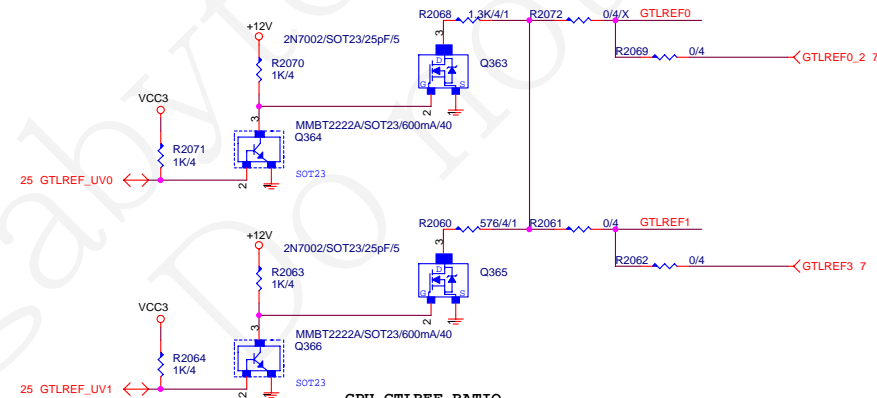
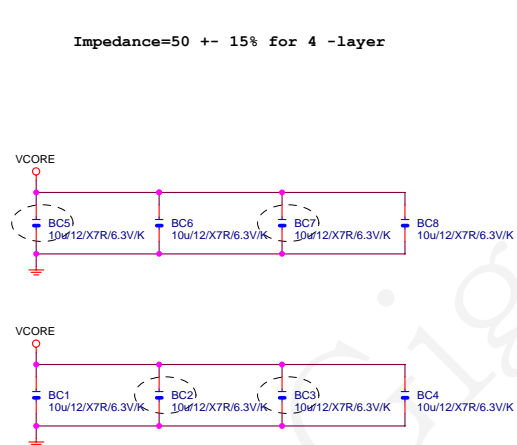


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Size B	Document Number	P35-DS3	Rev 1.0
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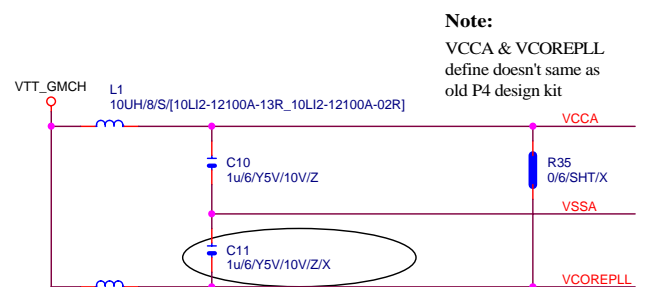
HA/REQ:4/11 50+-15%
ADSTB:4/14 50+-15%



Impedance=50 +- 15% for 4 -layer

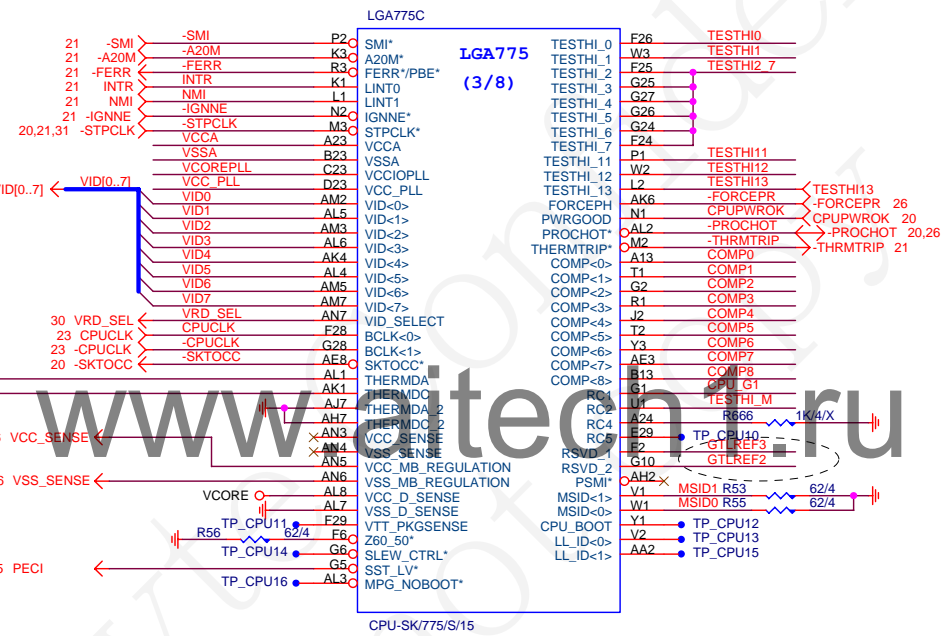
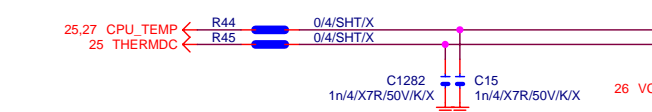
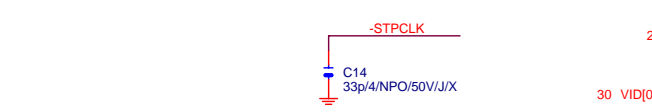


GTLREF_UV0	GTLREF_UV1	Ratio Set
HIGH	HIGH	0.67
LOW	HIGH	0.65
HIGH	LOW	0.63
LOW	LOW	0.615

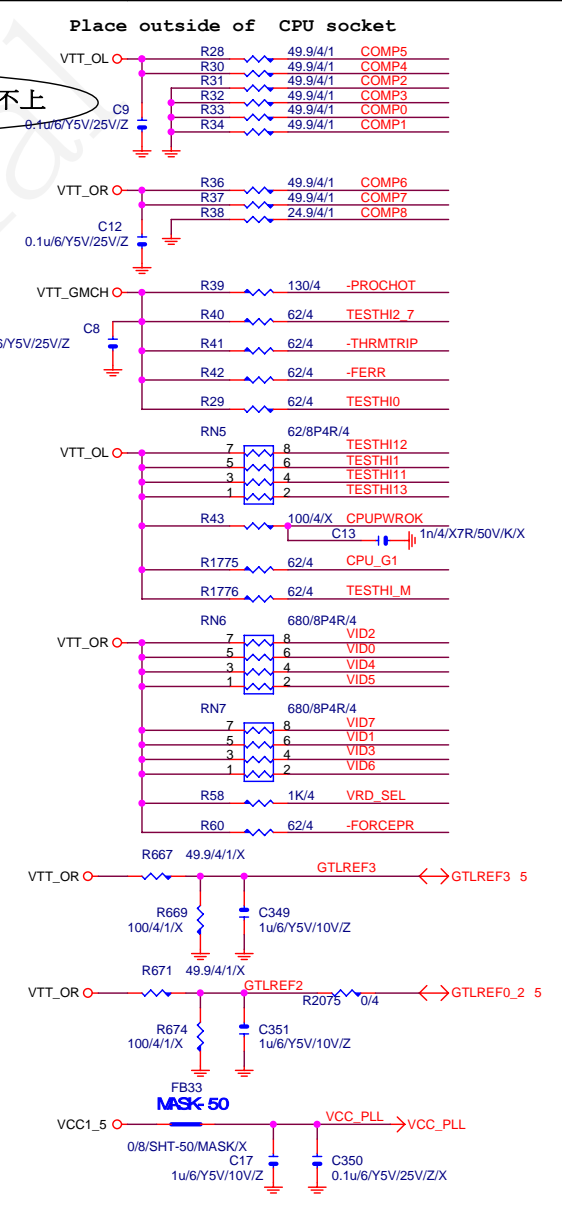


Trace width doesn't
less than 12 Mil

As close as possible to
CPU socket



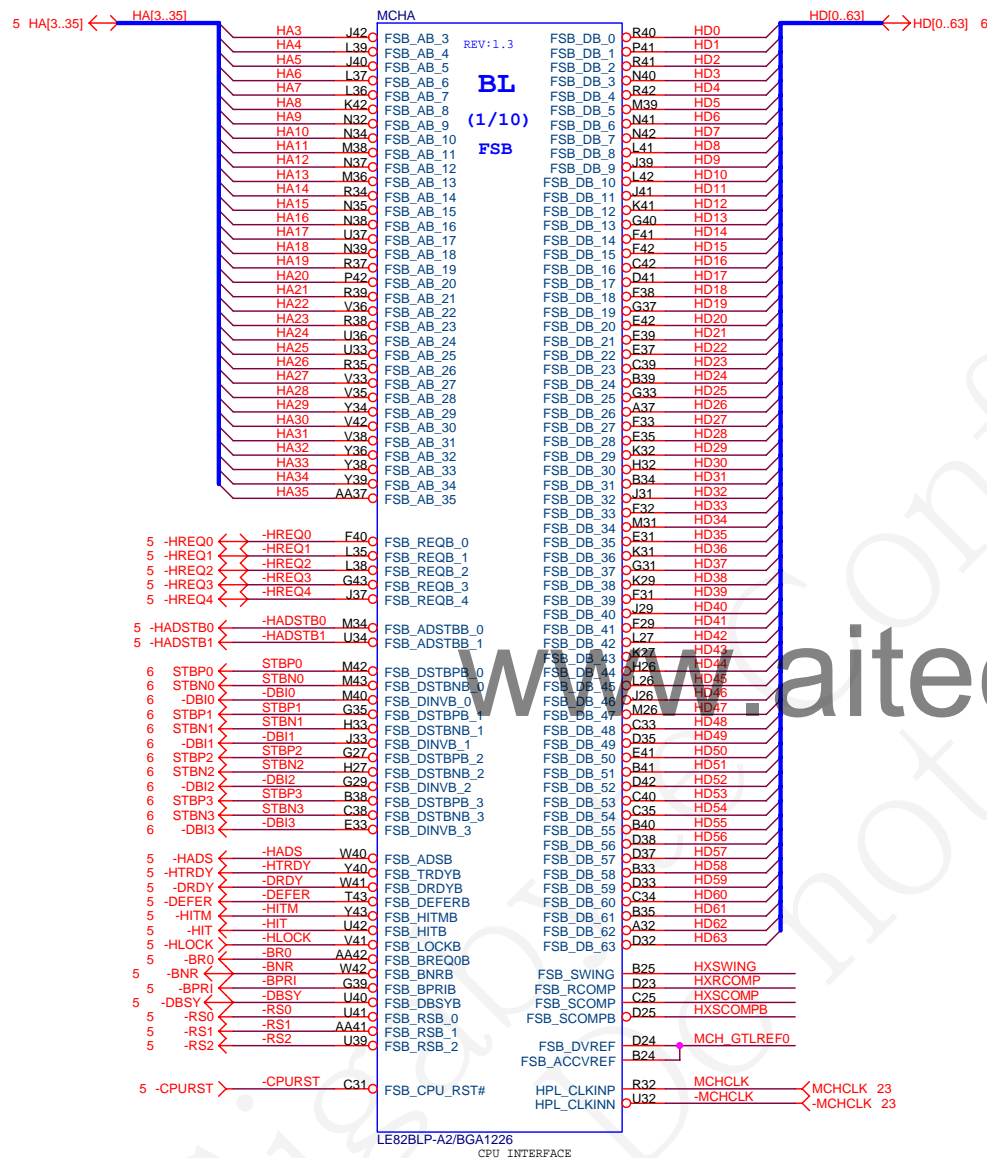
COMP4~7 可以不上



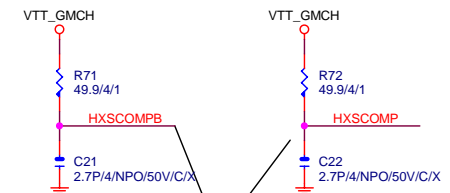
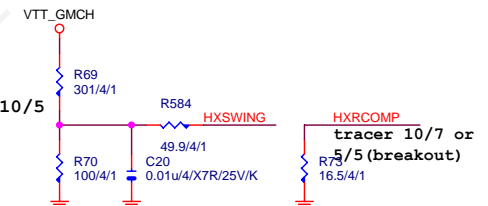
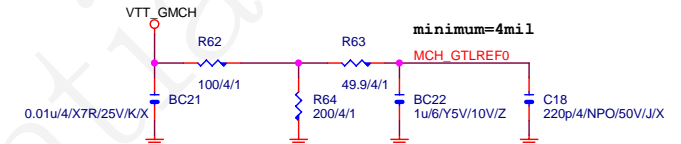
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P4_LGA775-C			
Size			
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PECI:Platform Environment Control Interface



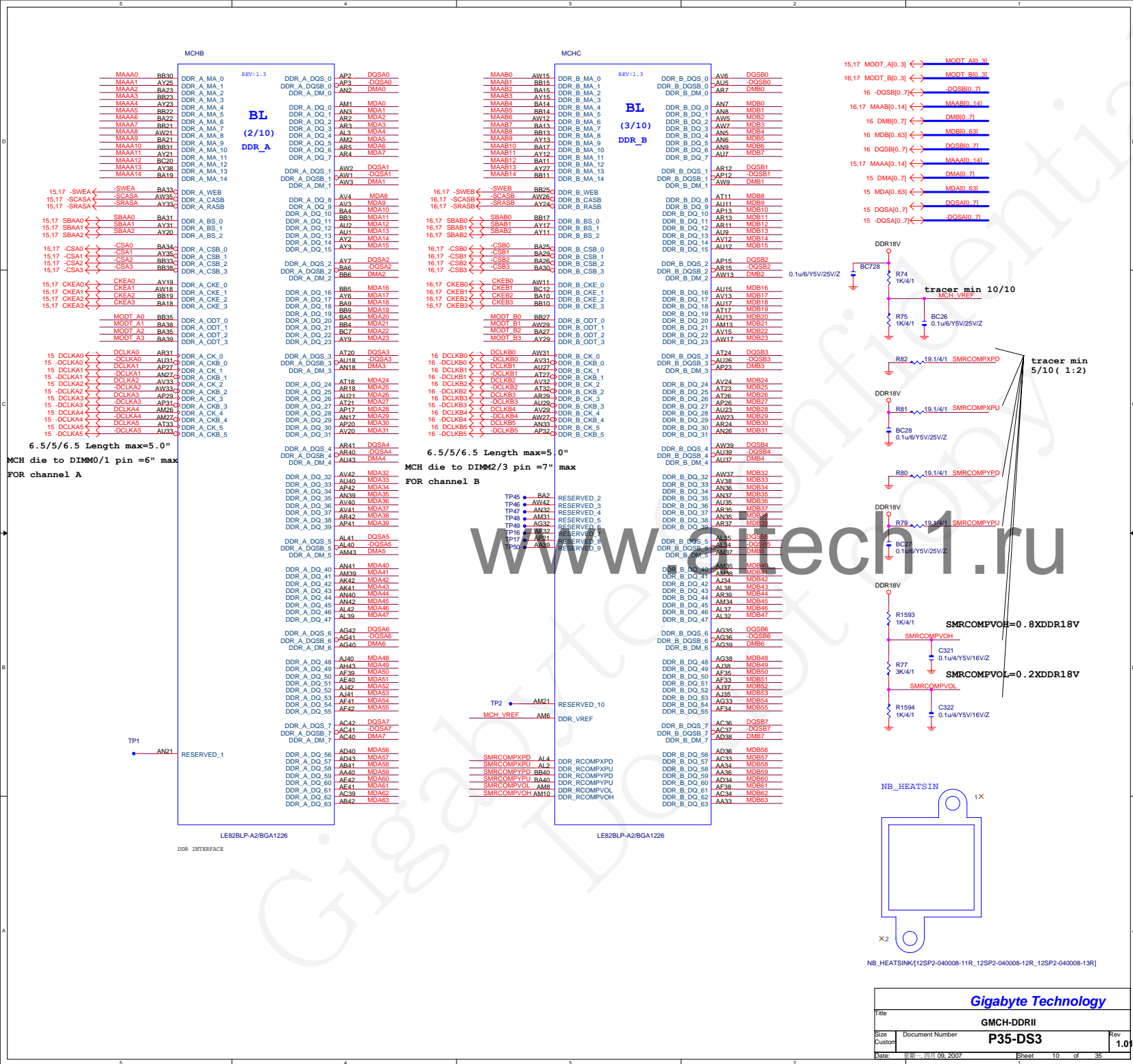


tracer min 10/10 or (10/5
breakout) ,L1<3"



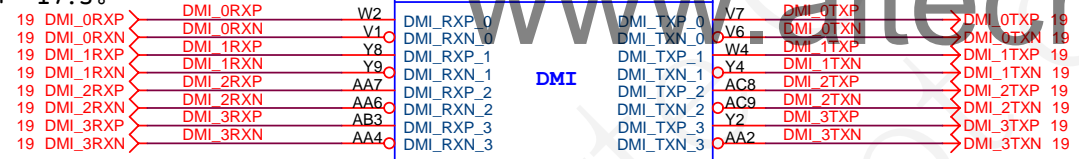
Gigabyte Technology

Title			GMCH-HOST
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PCIEX16:15/4/8/4/15
Impedance=95 +- 17.5%

DMI:12/4/8/4/12
Impedance=95 +- 17.5%



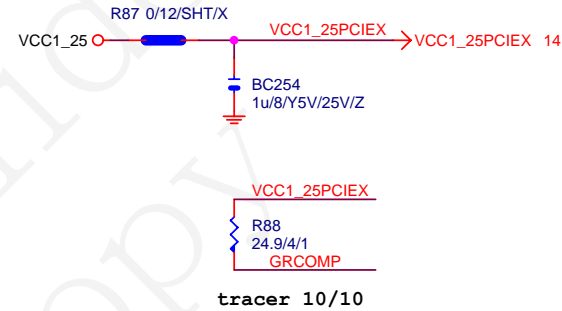
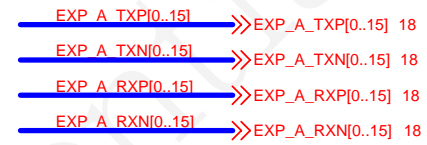
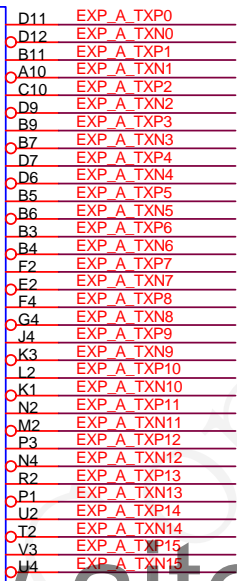
MCHD

REV:1.3
BL
(4/10)

PCI E

DMI

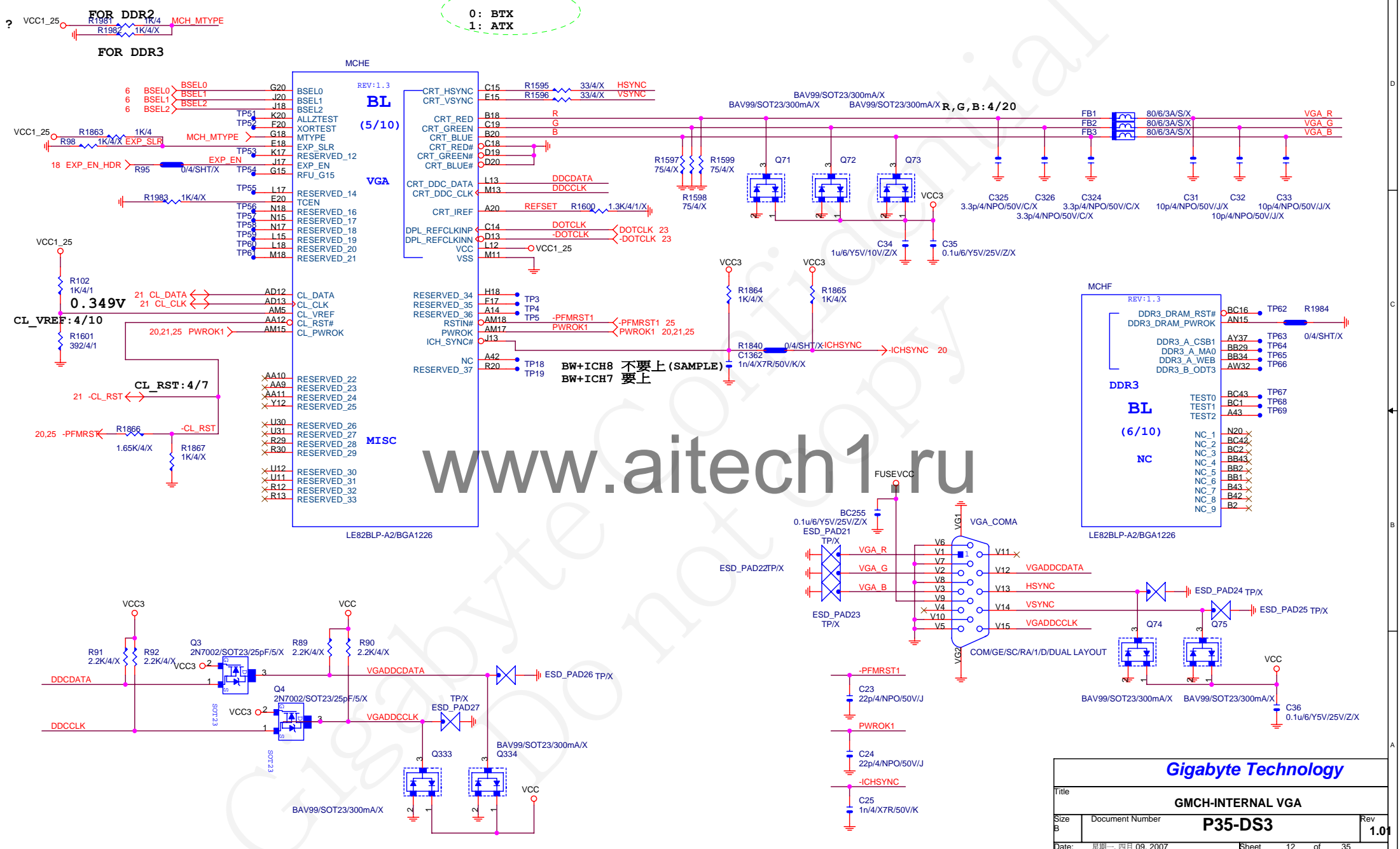
LE82BLP-A2/BGA1226

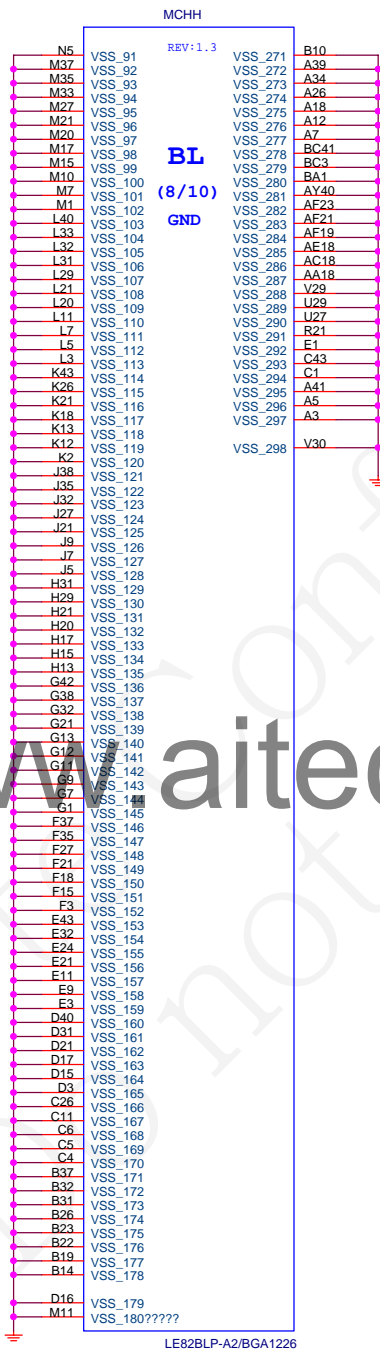
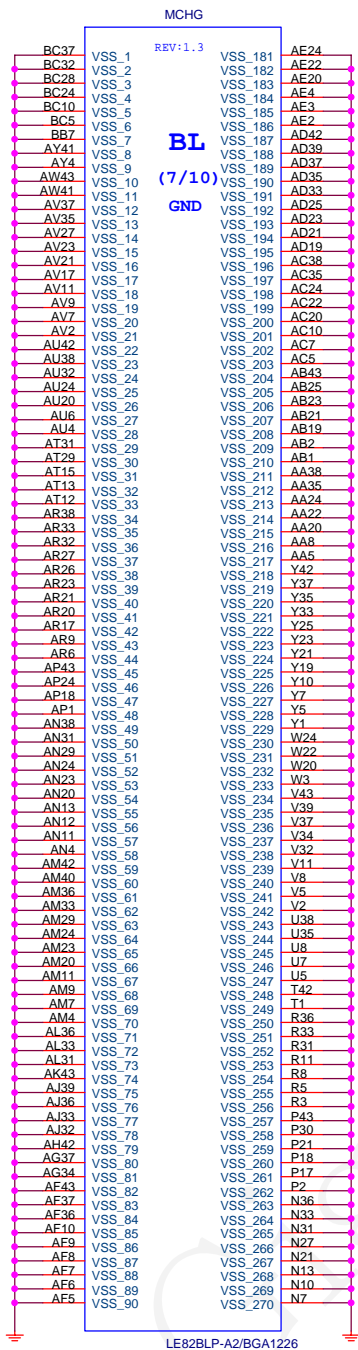


tracer 10/10

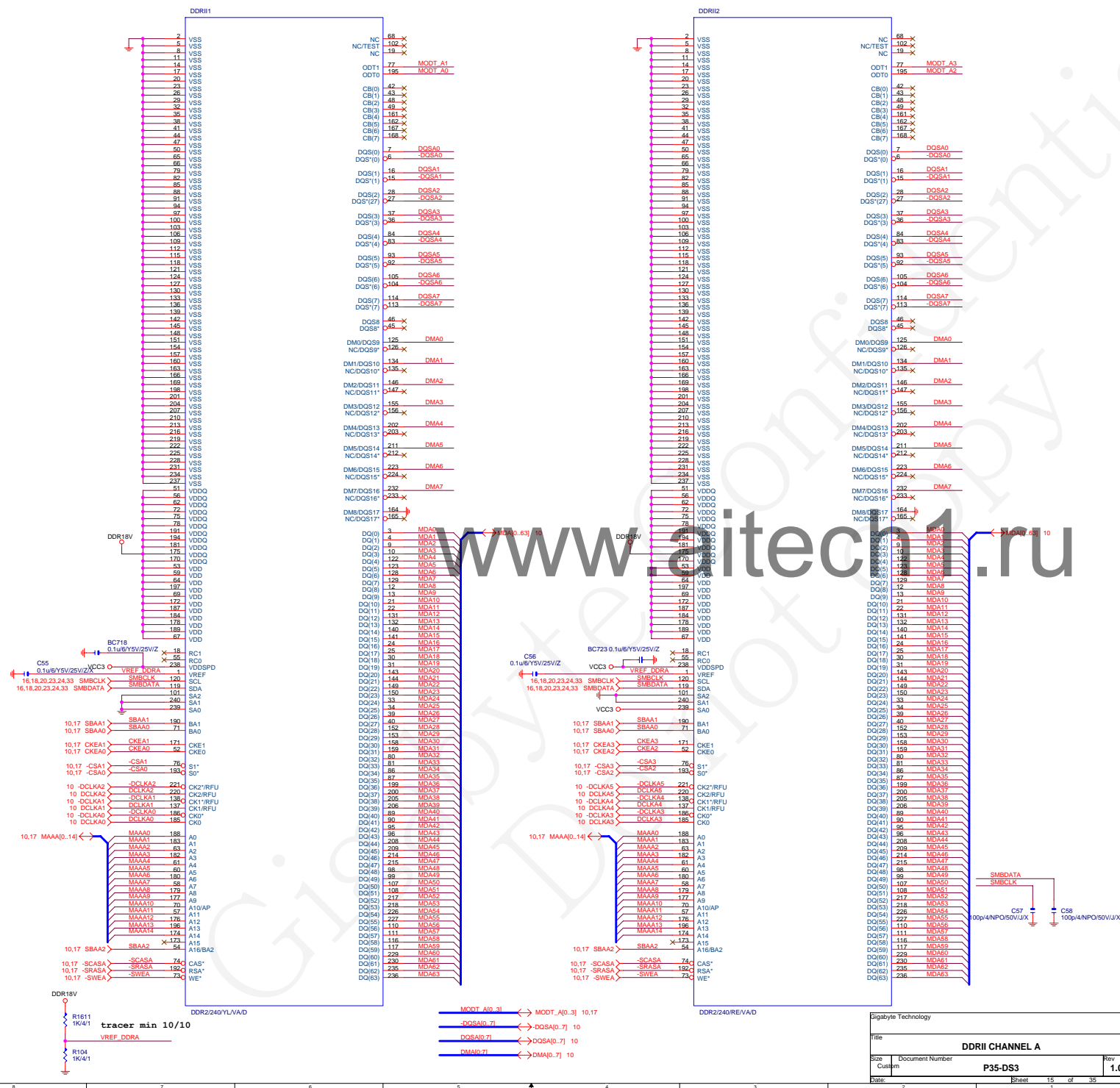
Gigabyte Technology

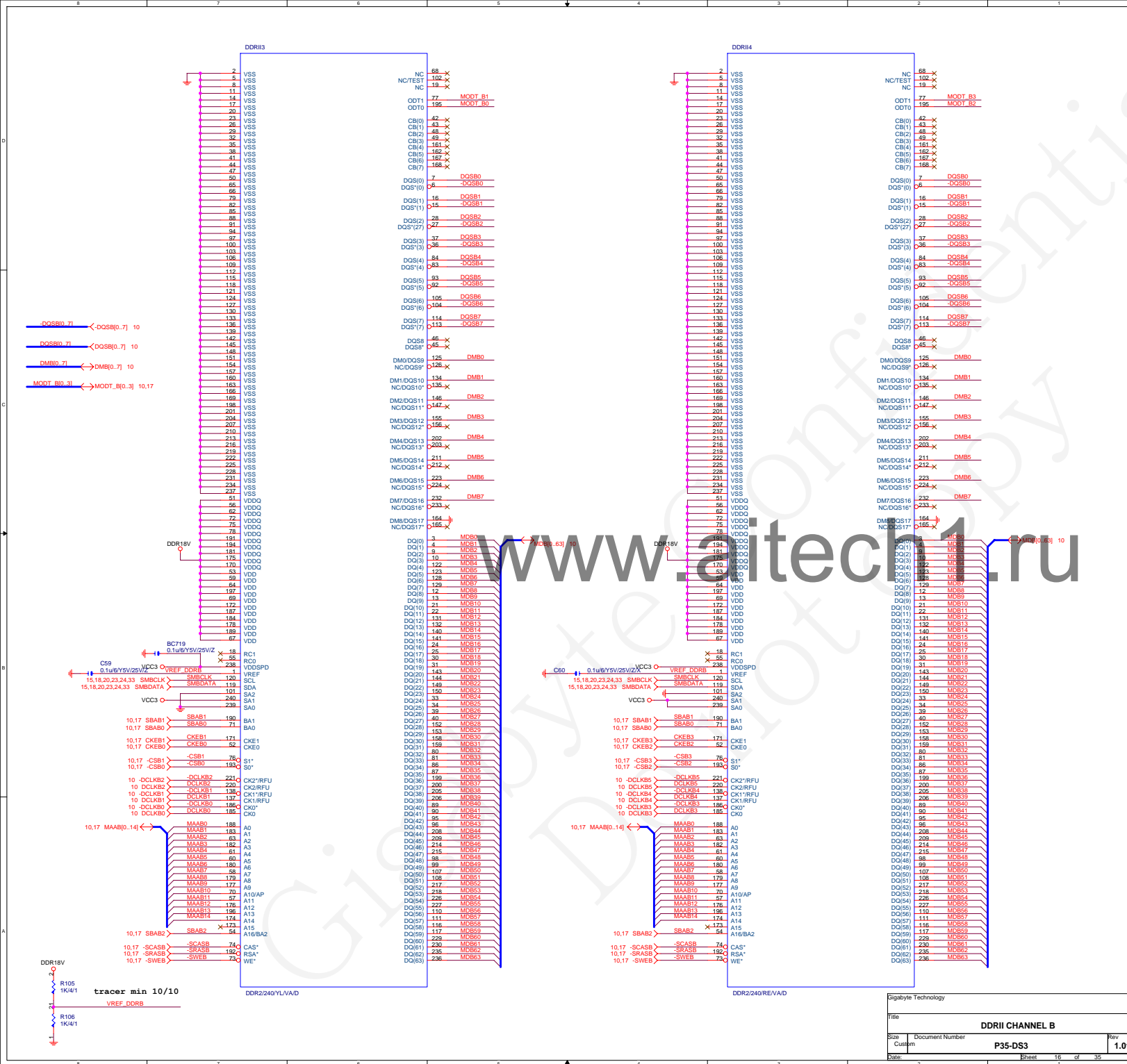
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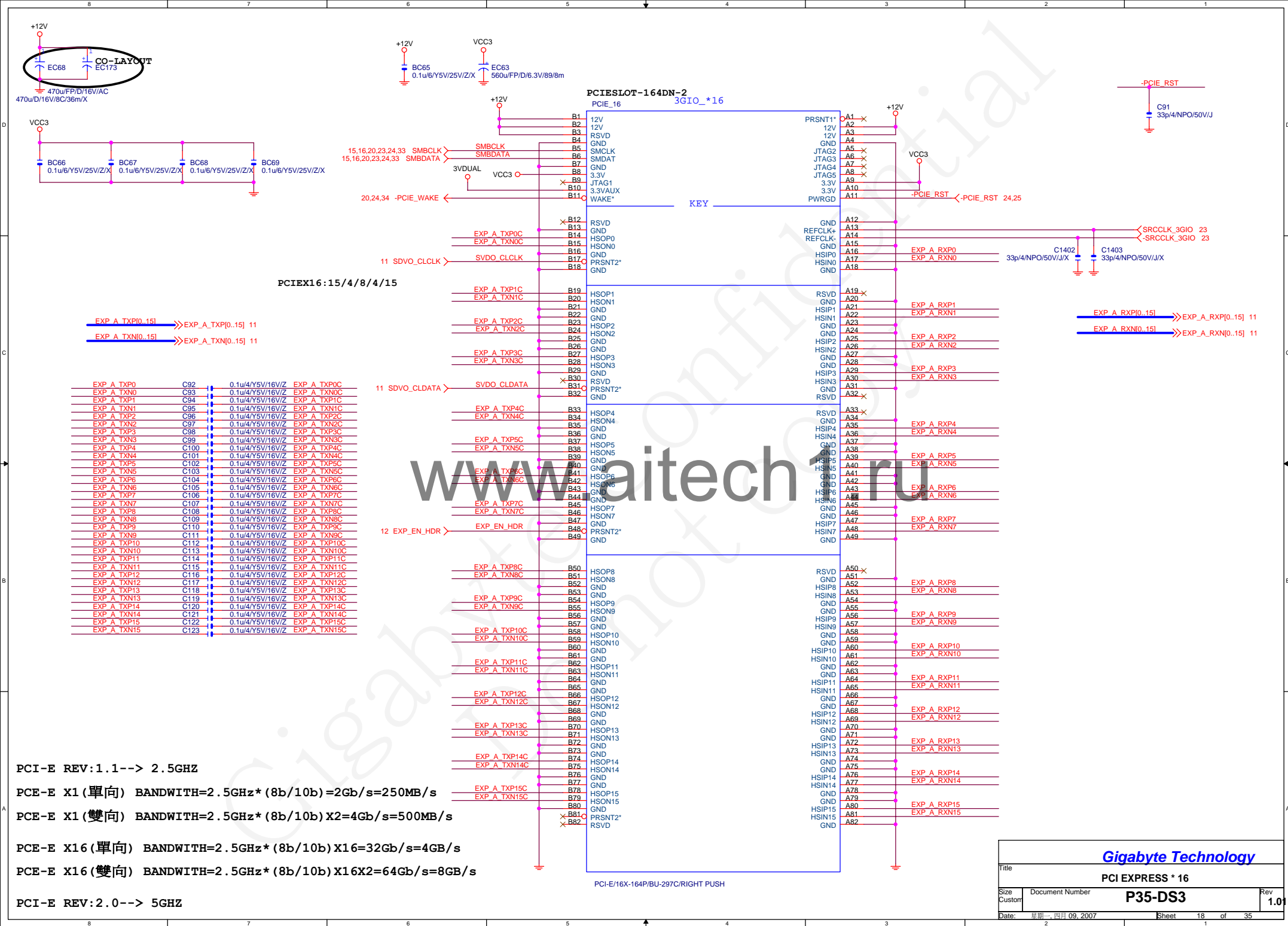


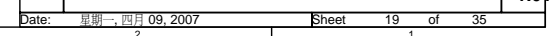


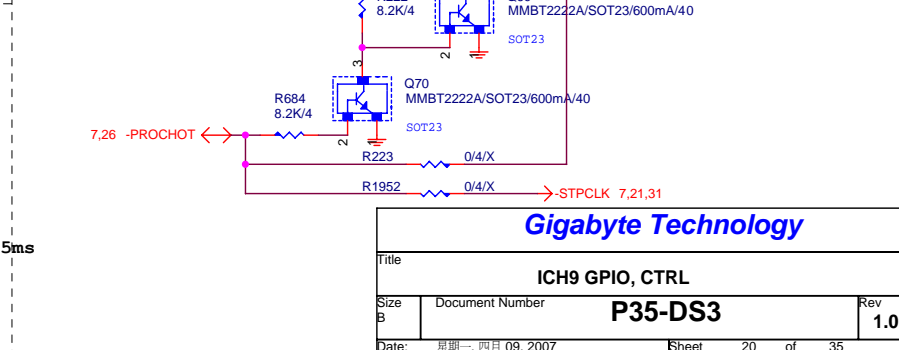
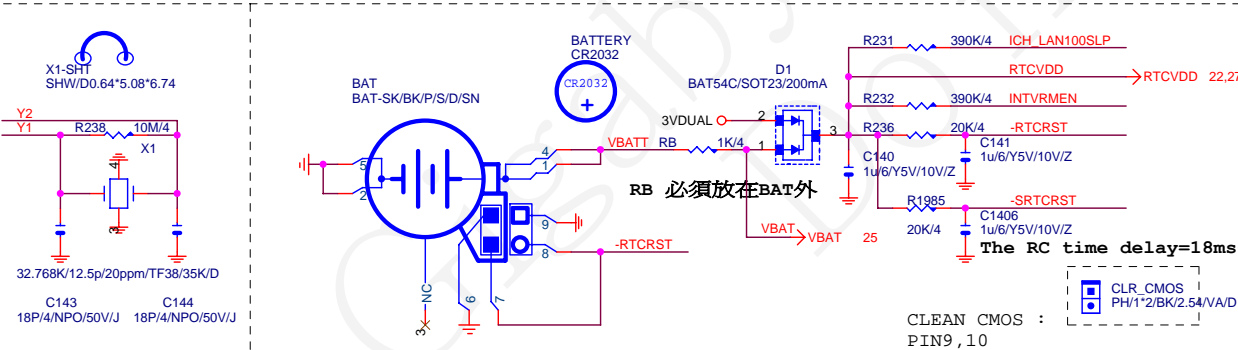
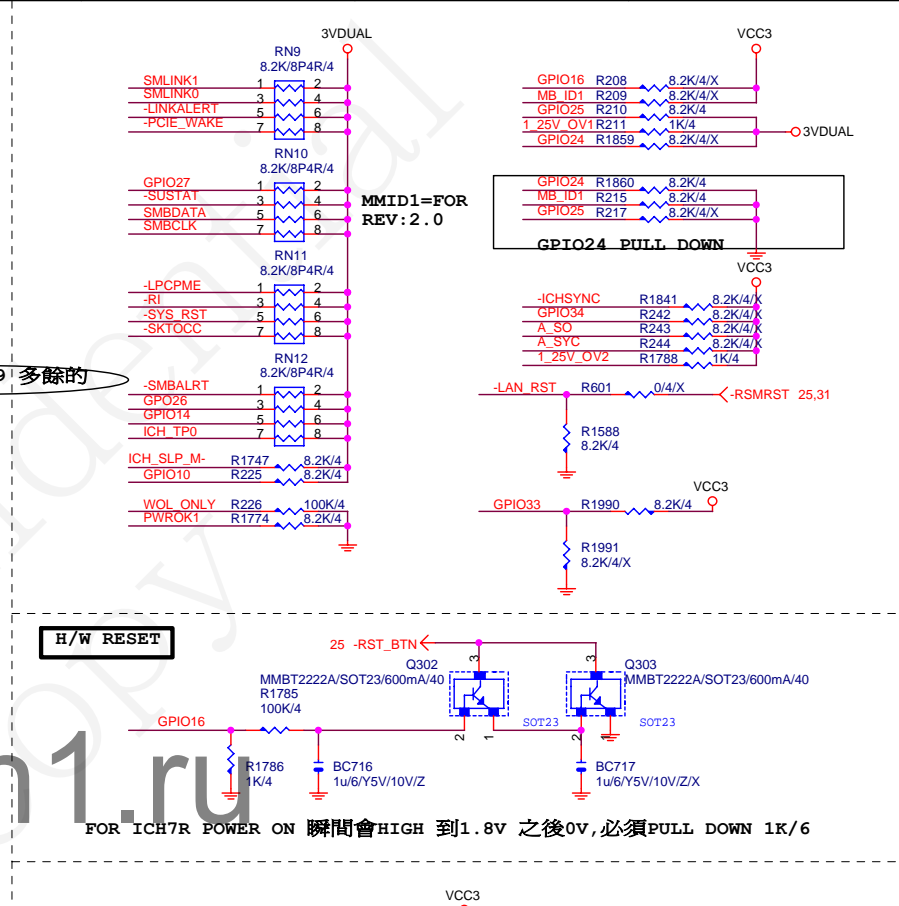
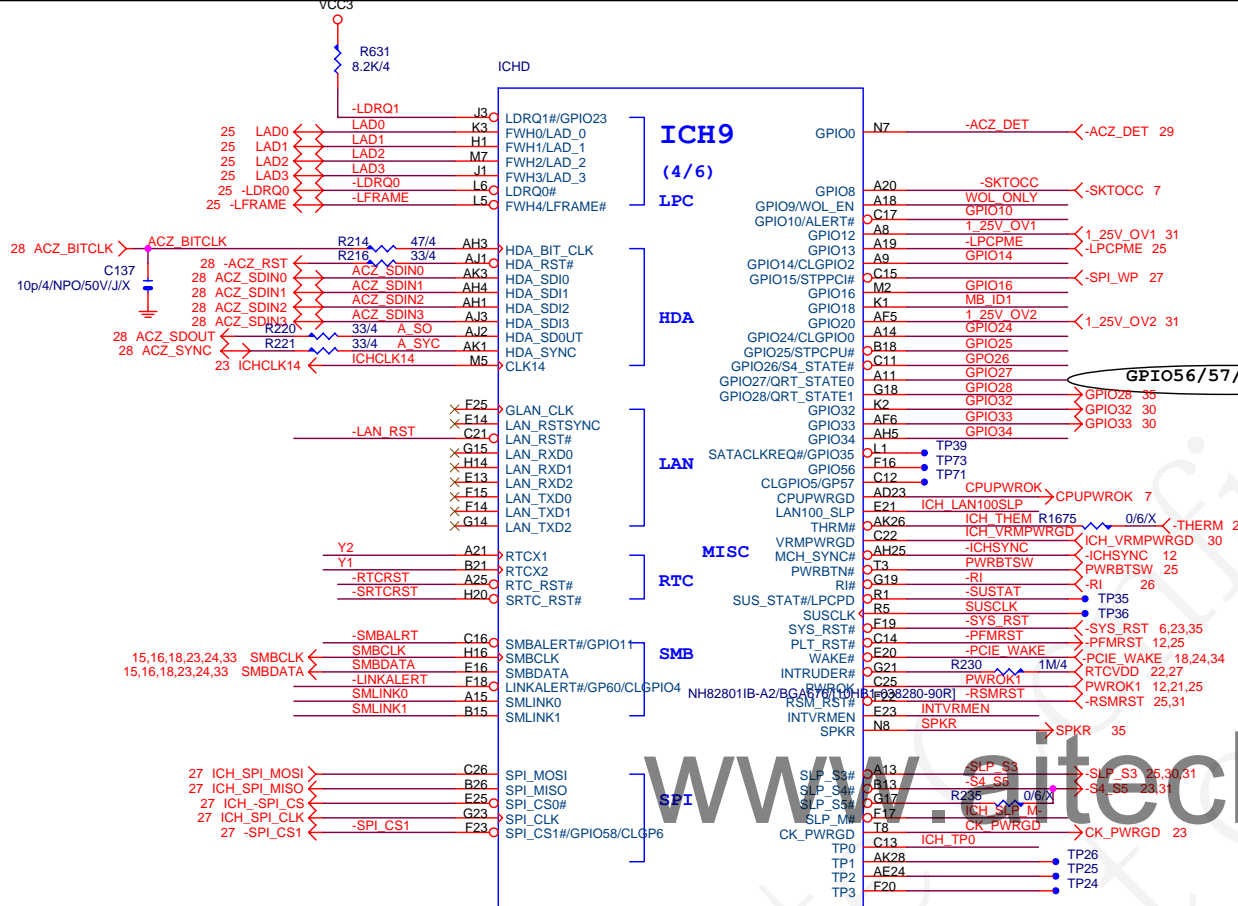
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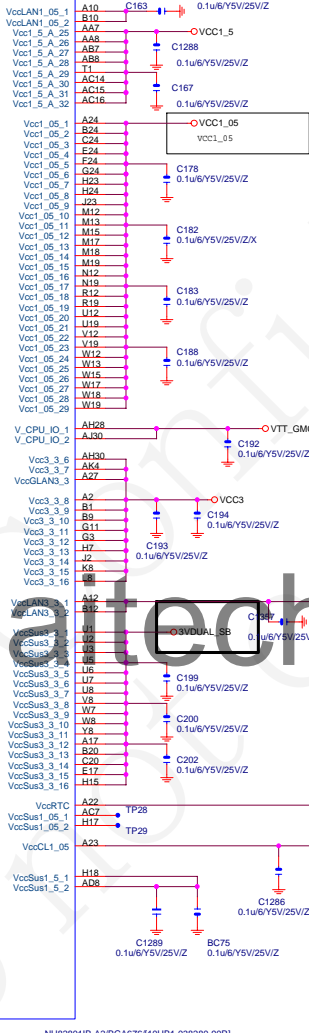
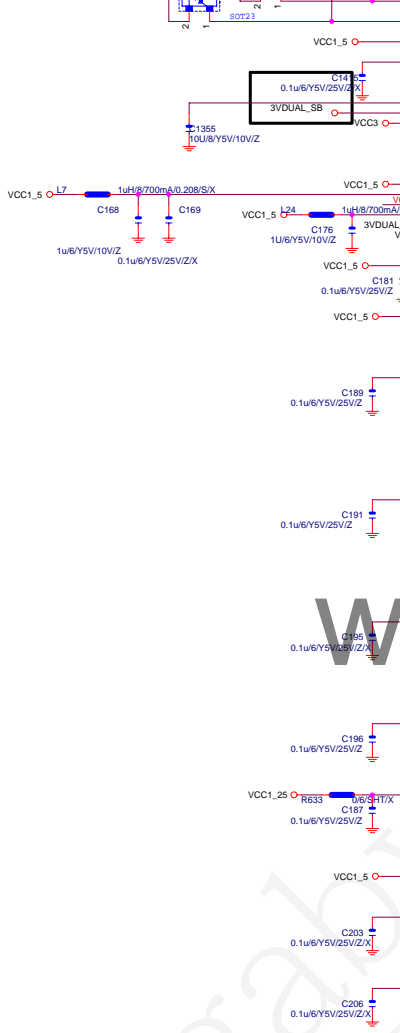








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Title			
ICH9 GPIO, CTRL			
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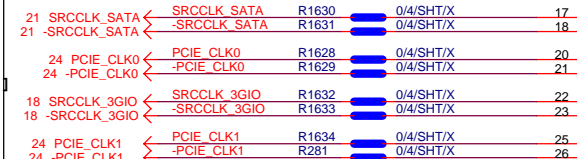


CLK GEN CK505

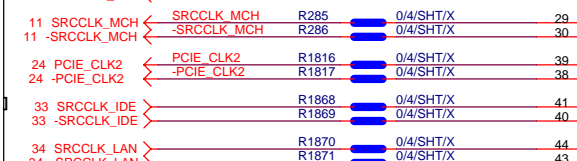
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50歐姆: [18/4/10/4/18]



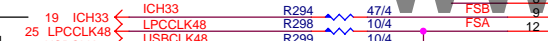
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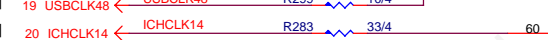
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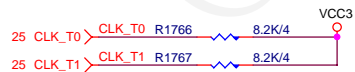
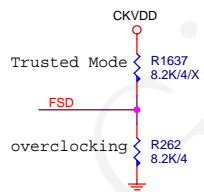
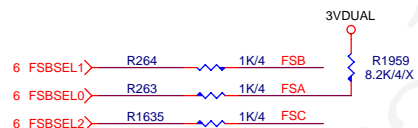
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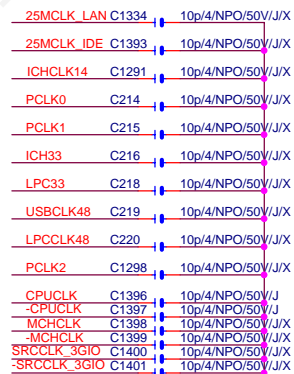
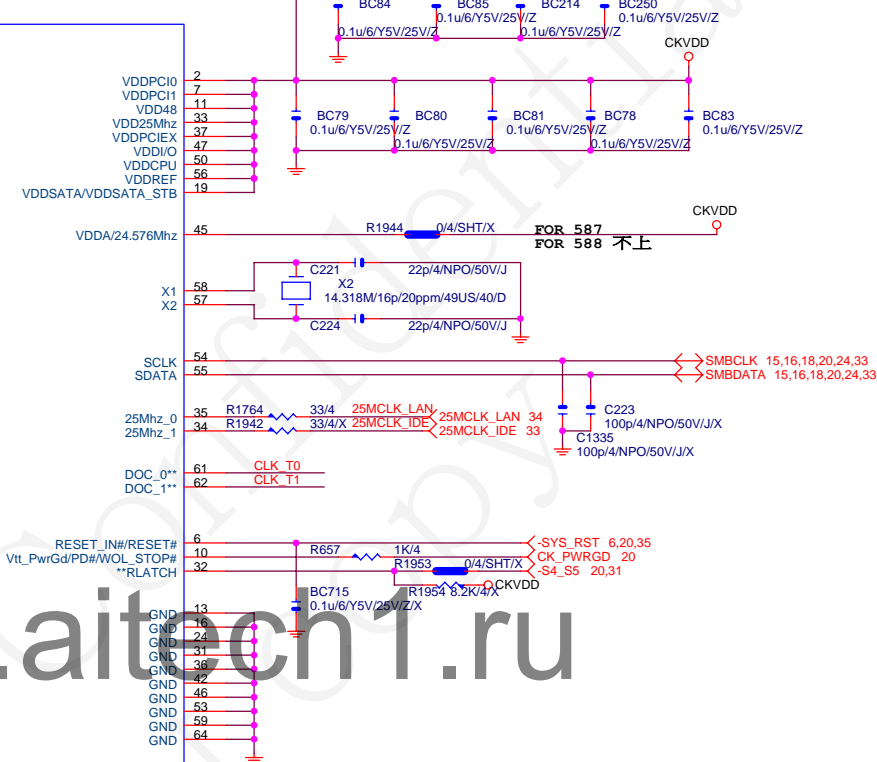
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GSEL=1,96Mhz from 14/15,SATACLK from 17/18
GSEL=0,SATACLK from 14/15,PCIECLK from 17/18



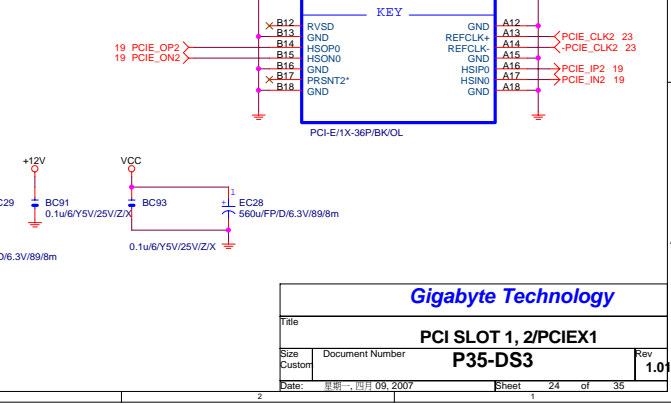
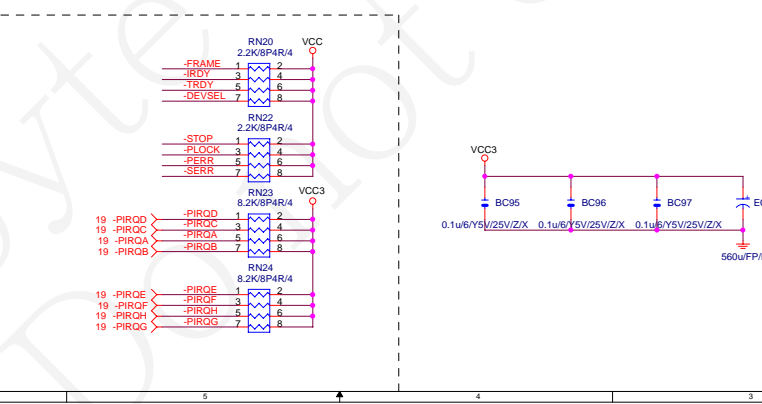
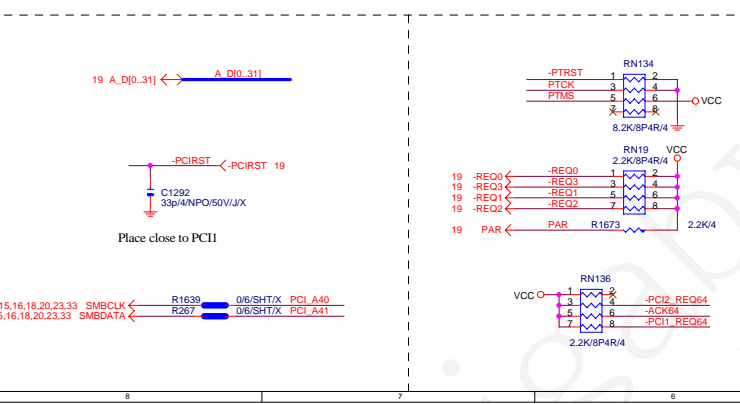
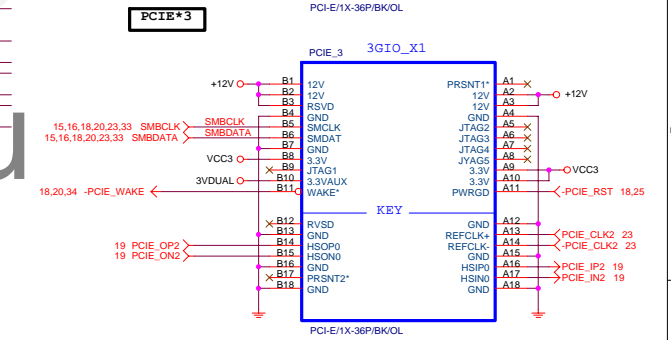
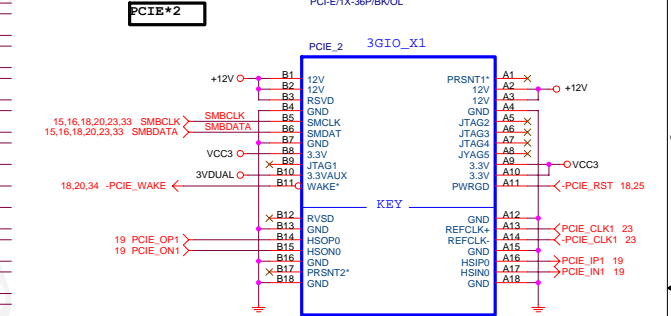
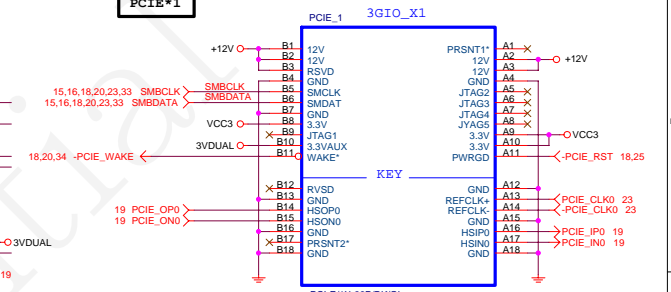
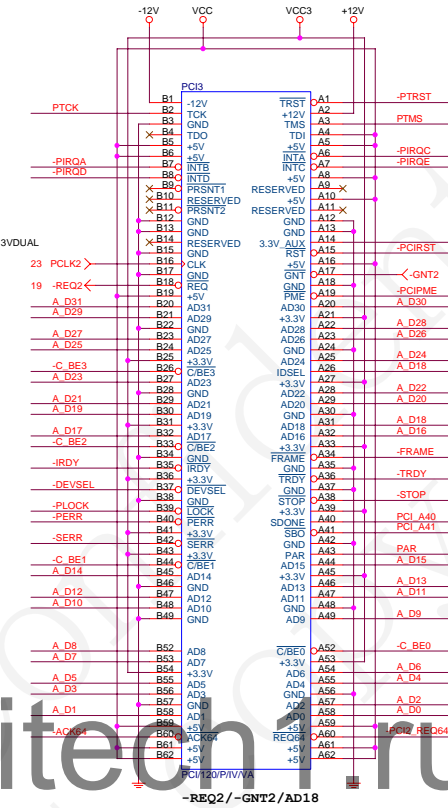
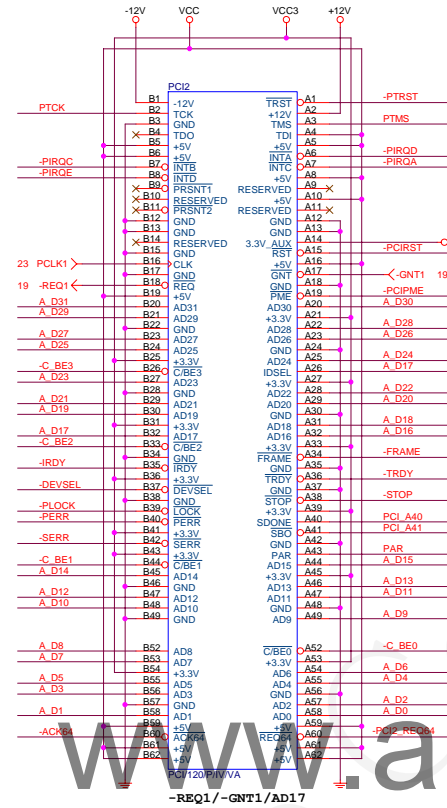
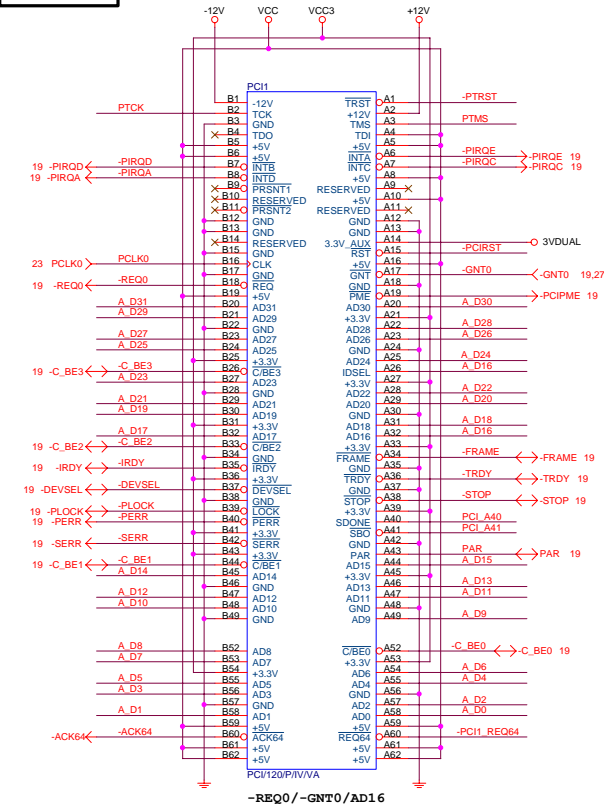
GSEL=1,96Mhz from 14/15,SATACLK from 17/18
GSEL=0,SATACLK from 14/15,PCIECLK from 17/18



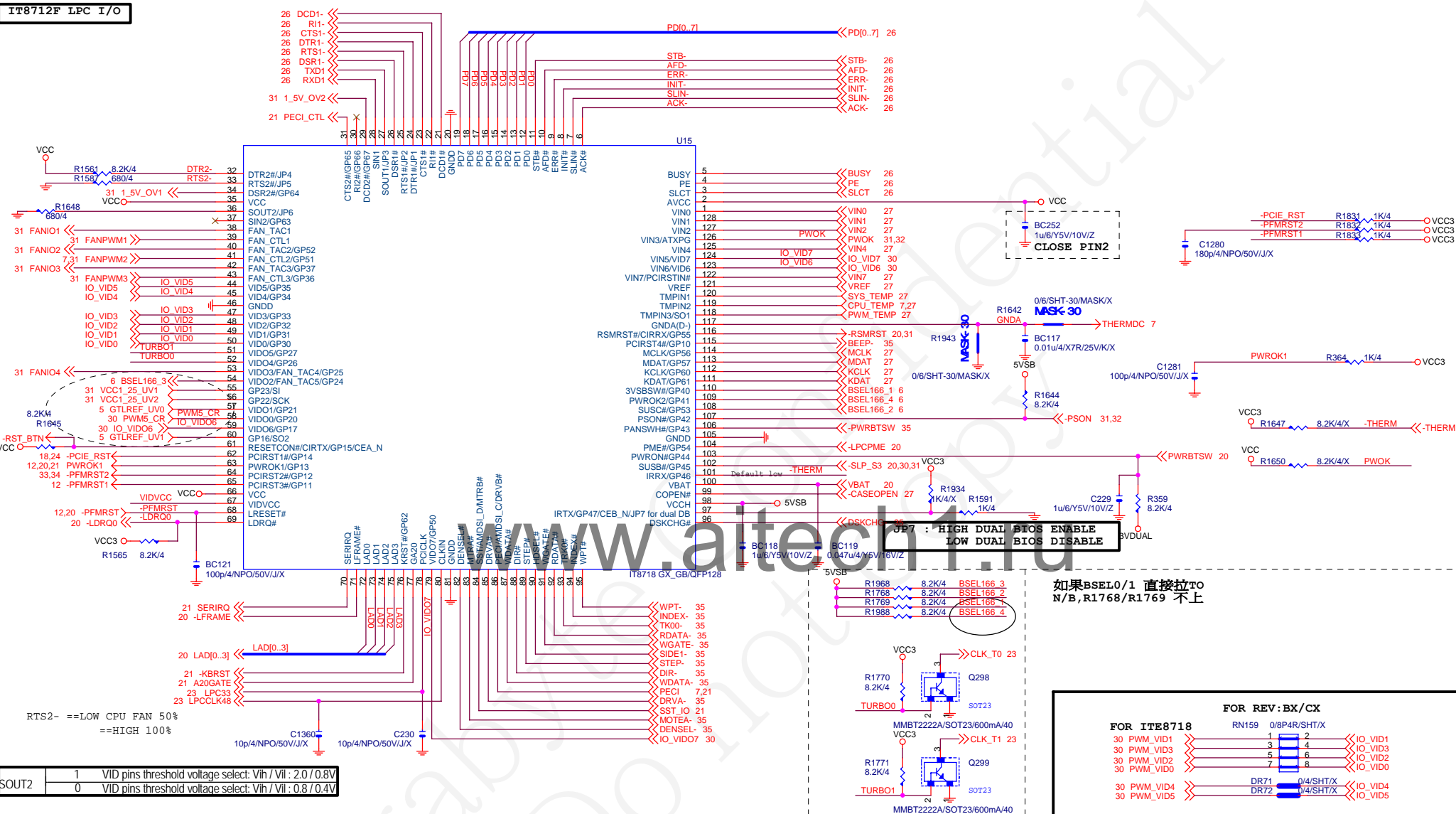
Gigabyte Technology

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PCI1,2 SLOT



IT8712F LPC I/O



```
1.2V or 3.3V tolerance select.  
1.2V OUTPUT 接 VTT_GMCH  
3.3V OUTPUT 接3.3V  
LPCPD#=VIDVCC
```

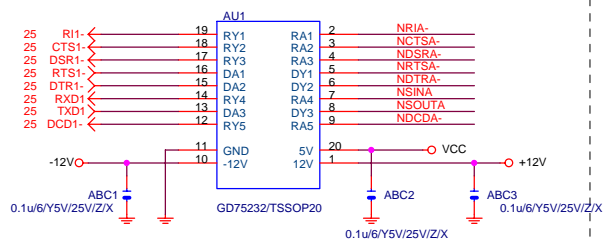
VCC3 R1946 0/4/SHT/X VIDVCC
VTT_GMCH R1947 0/4/X
VTT_GMCH/VCC3/VIDVCC 請走20~30

FOR REV: BX/CX

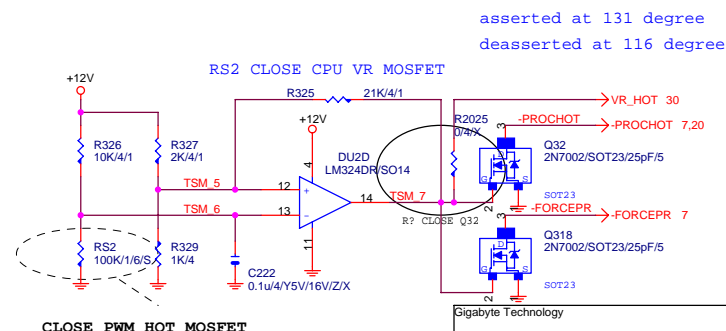
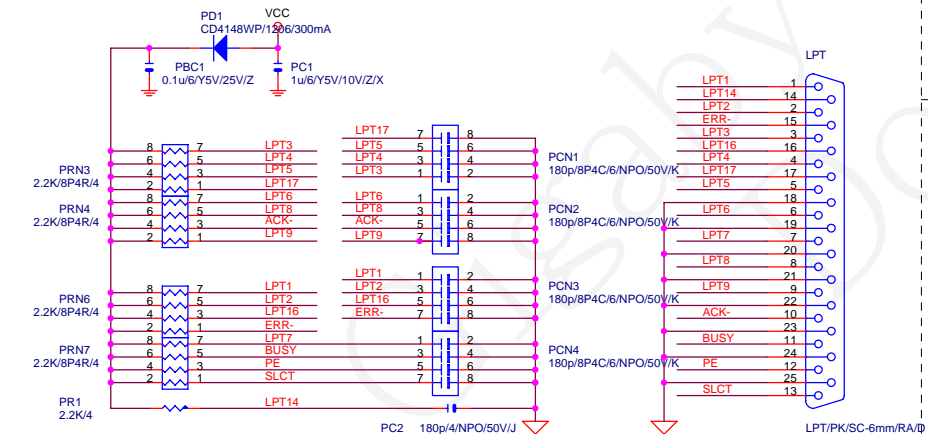
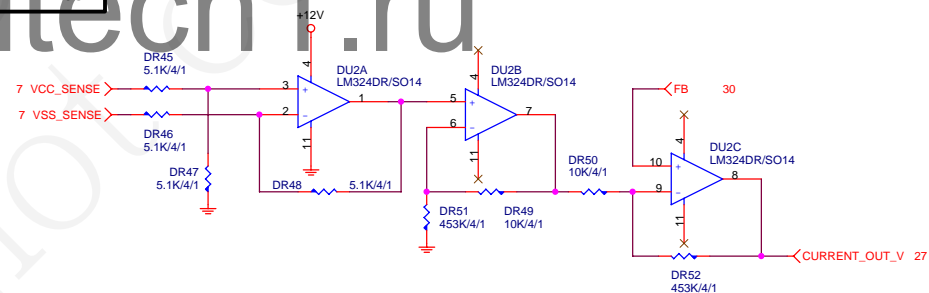
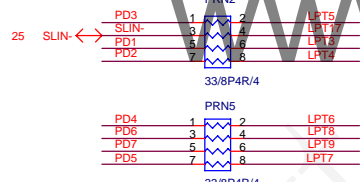
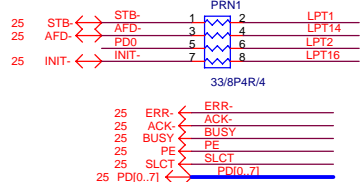
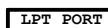
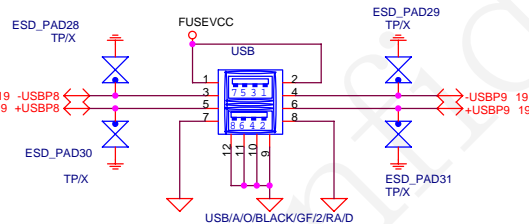
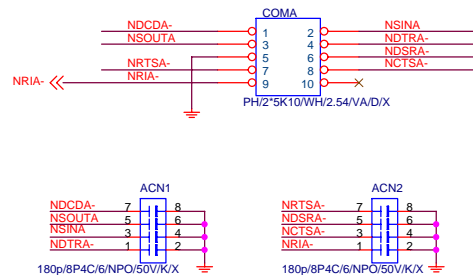
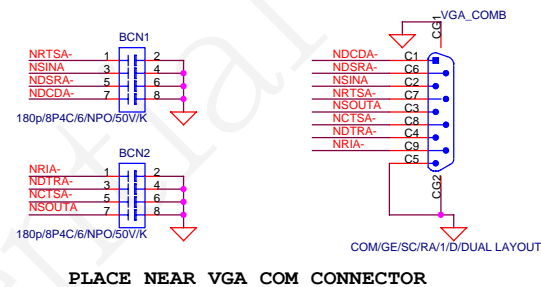
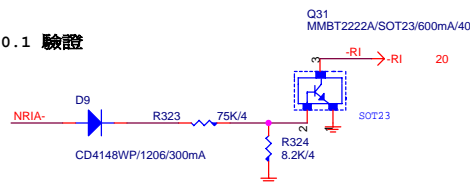
FOR ITE8718

30 PWM_VID1 1 2 IO_VID1
30 PWM_VID3 3 4 IO_VID3
30 PWM_VID2 5 6 IO_VID2
30 PWM_VID0 7 8 IO_VID0

30 PWM_VID4 DR71 04/SHT/X IO_VID4
30 PWM_VID5 DR72 04/SHT/X IO_VID5

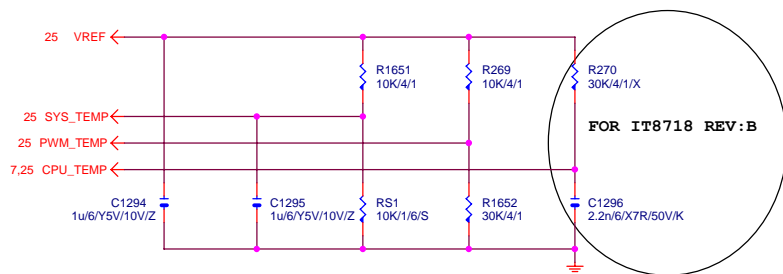


REV:0.1 驗證

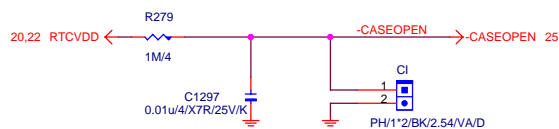


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TEMP H/W MONITOR

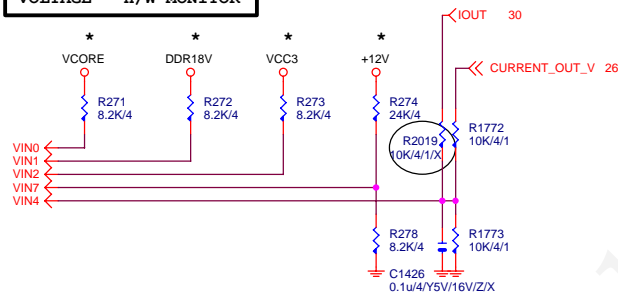


CASE OPEN

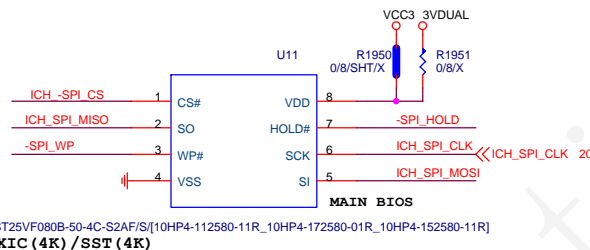
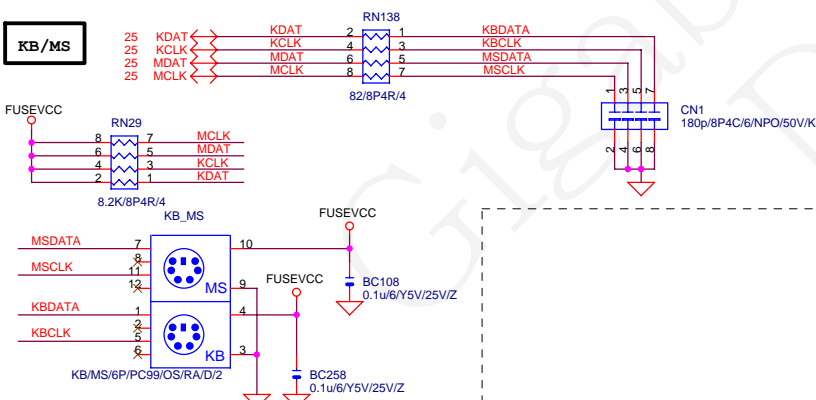


Case Open Circuits

VOLTAGE-- H/W MONITOR



KB/MS



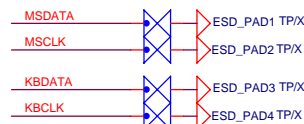
BOOT DEVICE	GNT0	CS1
SPI	0	1
PCI	1	0
F'WH	1	1



JP/1*2/BU/OH/O-[1-2]CLOSE/X

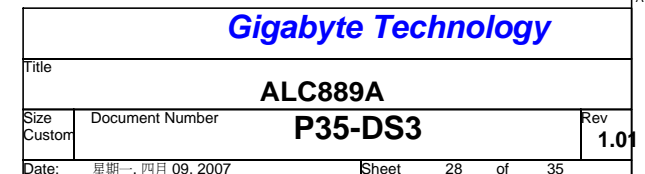
因ICH9 内部PULL HIGH 20K

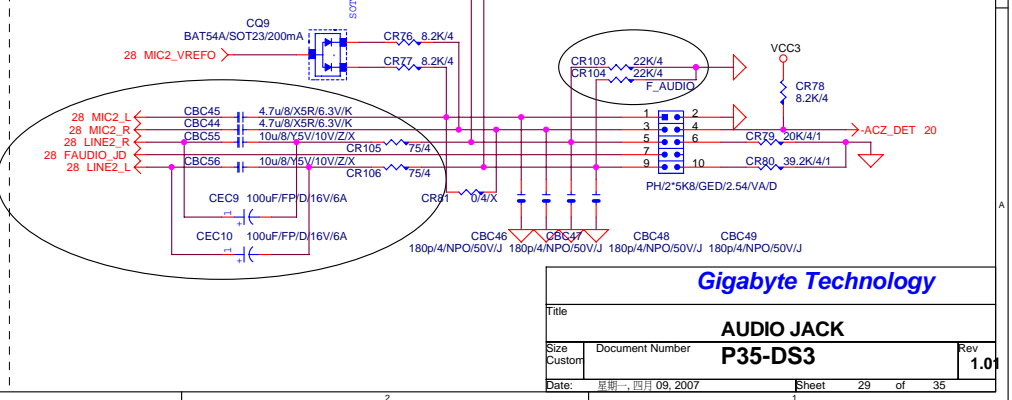
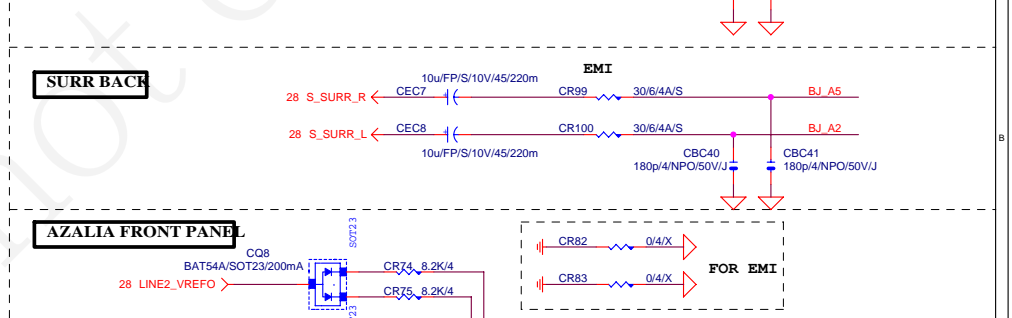
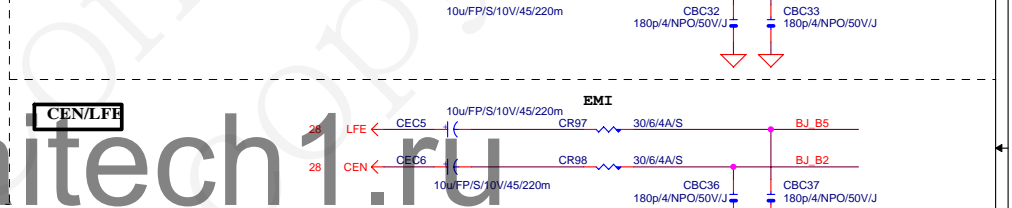
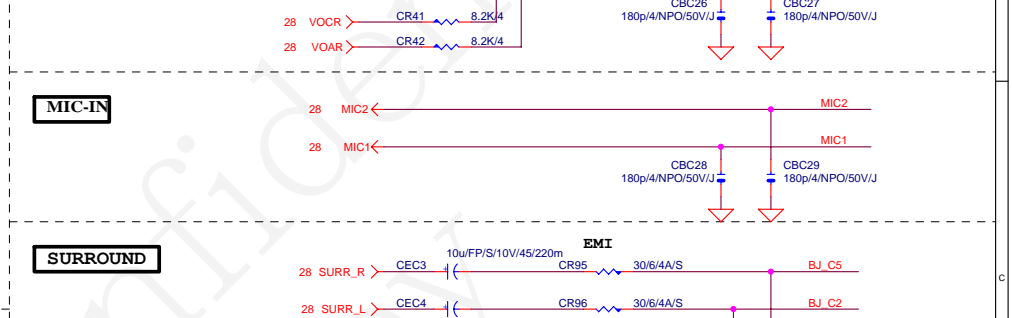
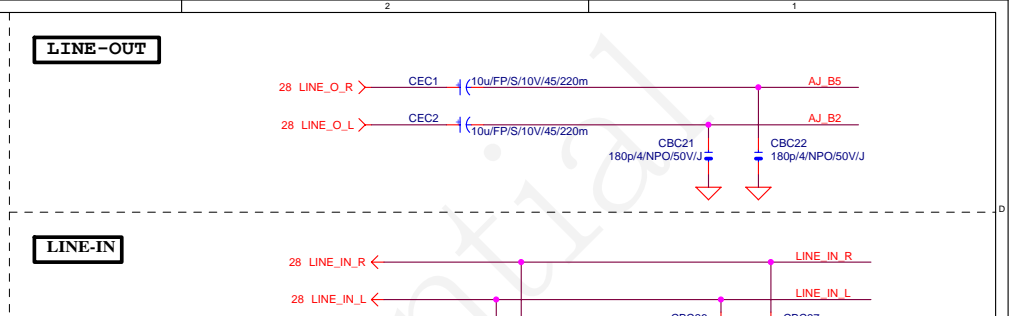
FOR DEBUG

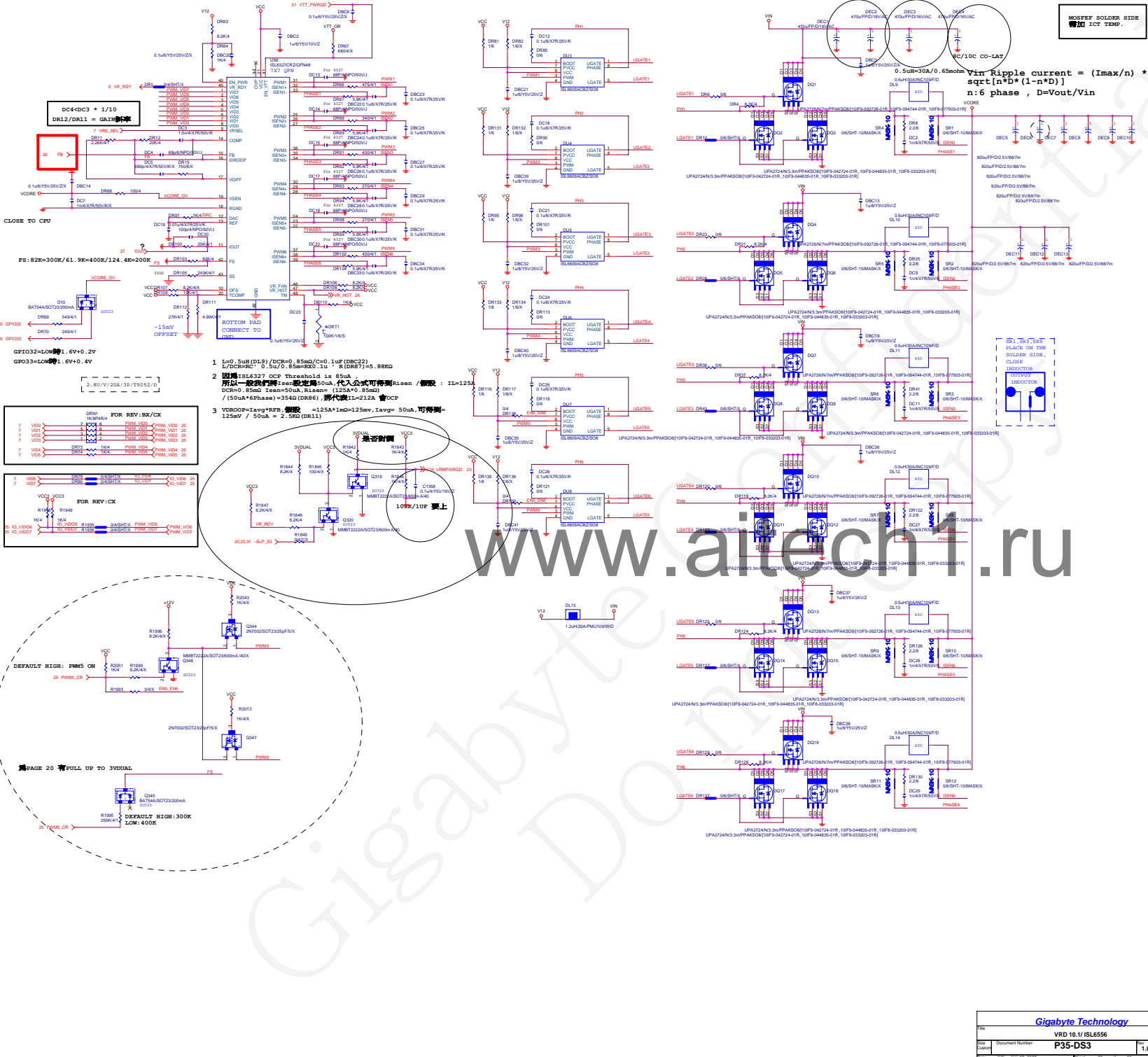


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MOSFET SOLDER SIDE
增加 IOT TEMP.

$$V_{in} \text{ Ripple current} = (I_{max}/n) \cdot \sqrt{n \cdot D \cdot (1 - n \cdot D)}$$

$$n: 6 \text{ phase}, D = V_{out}/V_{in}$$

DC4<DC3 = 1/10
DR12/DR11 = GAIN調整

25 FS

CLOSE TO CPU

FS: 82K=300K/61.9K=400K/124.4K=200K

VR HOT 25

VR HOT 25

VR HOT 25

VR HOT 25

VR HOT 25

VR HOT 25

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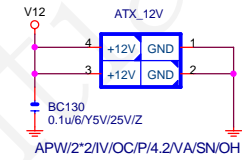
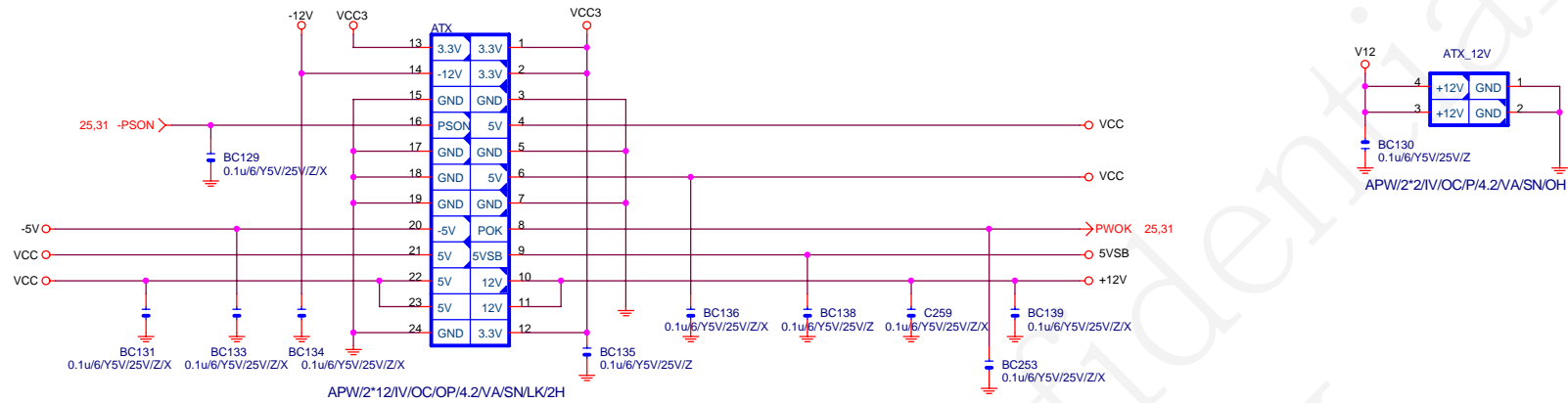
Gigabyte Technology

VRD 10.1/ISL6556

Document Number: P3S-DS3

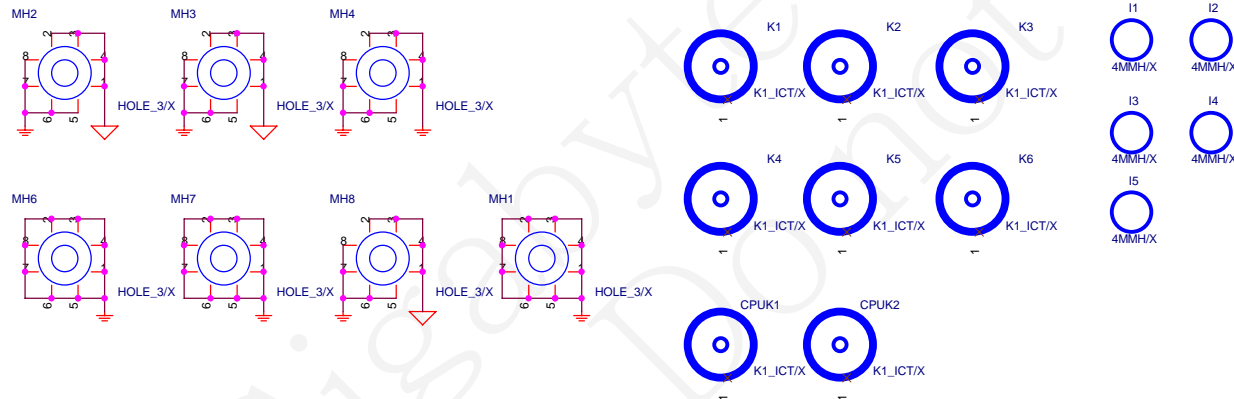
Rev: 1.0

ATX POWER CONNECTOR



HOLE_3-2--->有鉛

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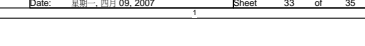
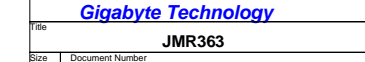
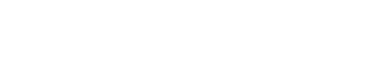
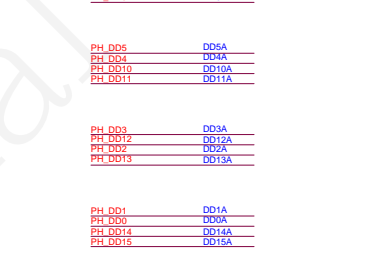
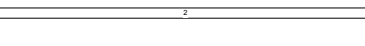
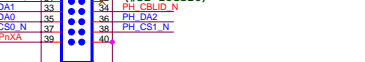
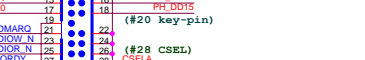
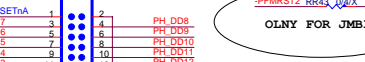
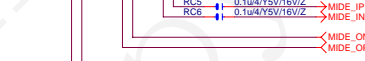
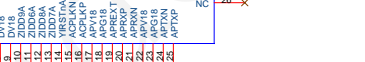
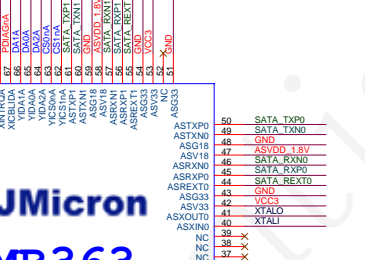
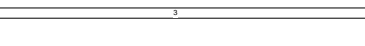
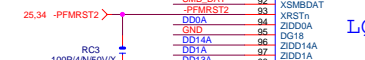
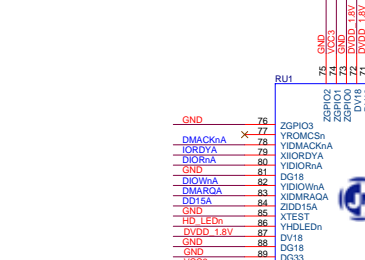
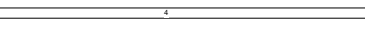
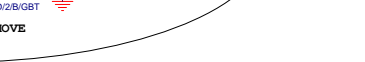
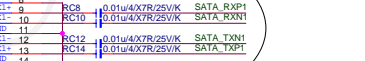
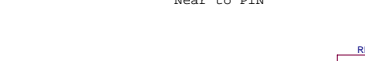
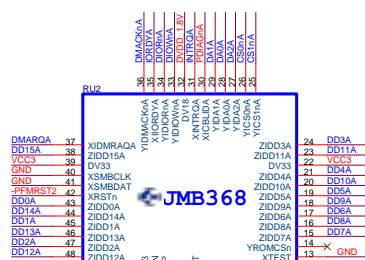
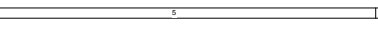
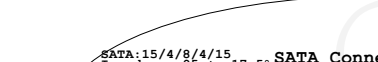
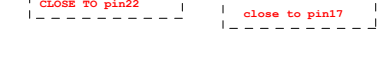
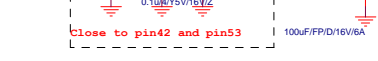
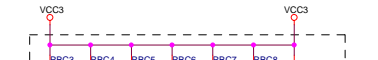
Gigabyte Technology

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3.3V to 1.8V Voltage Regulator

APL1117/SOT223/0.8A

RS1



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PH_IORDY

CSEL_A

PH_DMARQ

PH_INTRQ

DO7A

VCC3

RR29

RR30

RR31

RR32

RR33

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RR36

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RR38

RR39

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RR41

RR42

RR43

RR44

RR45

RR46

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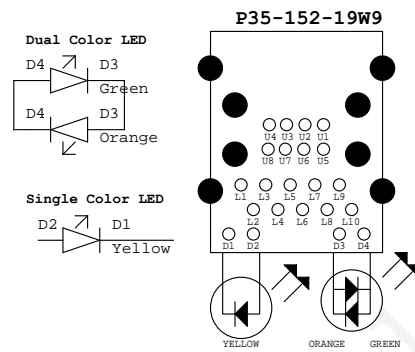
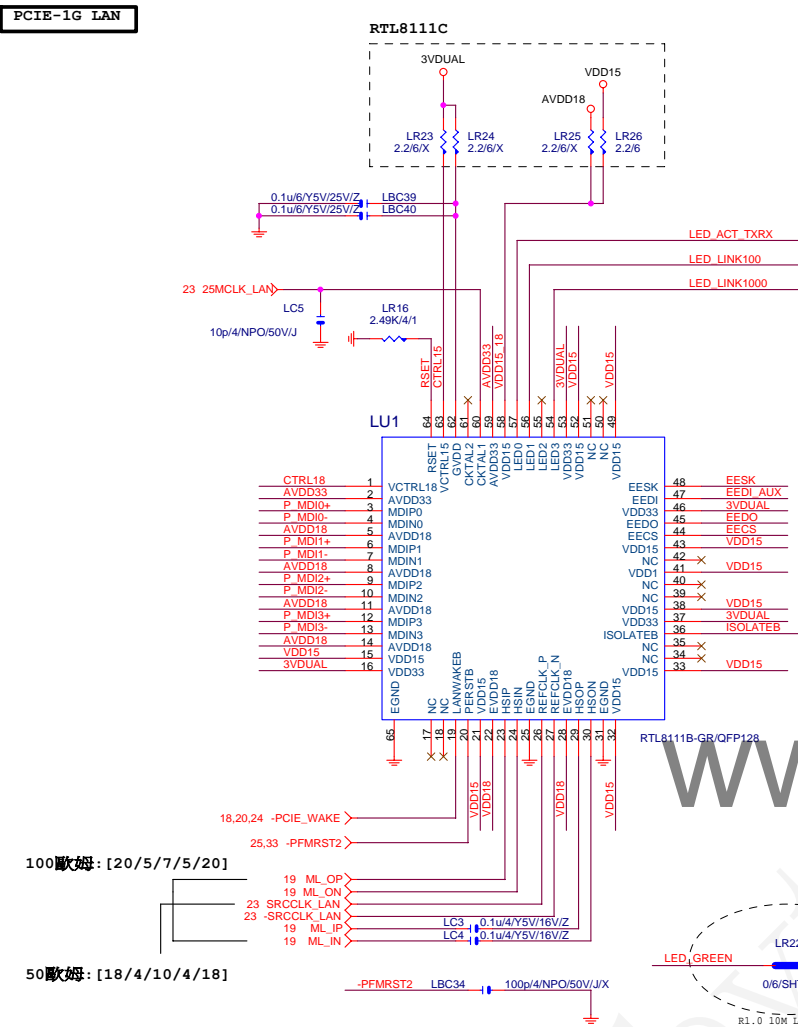
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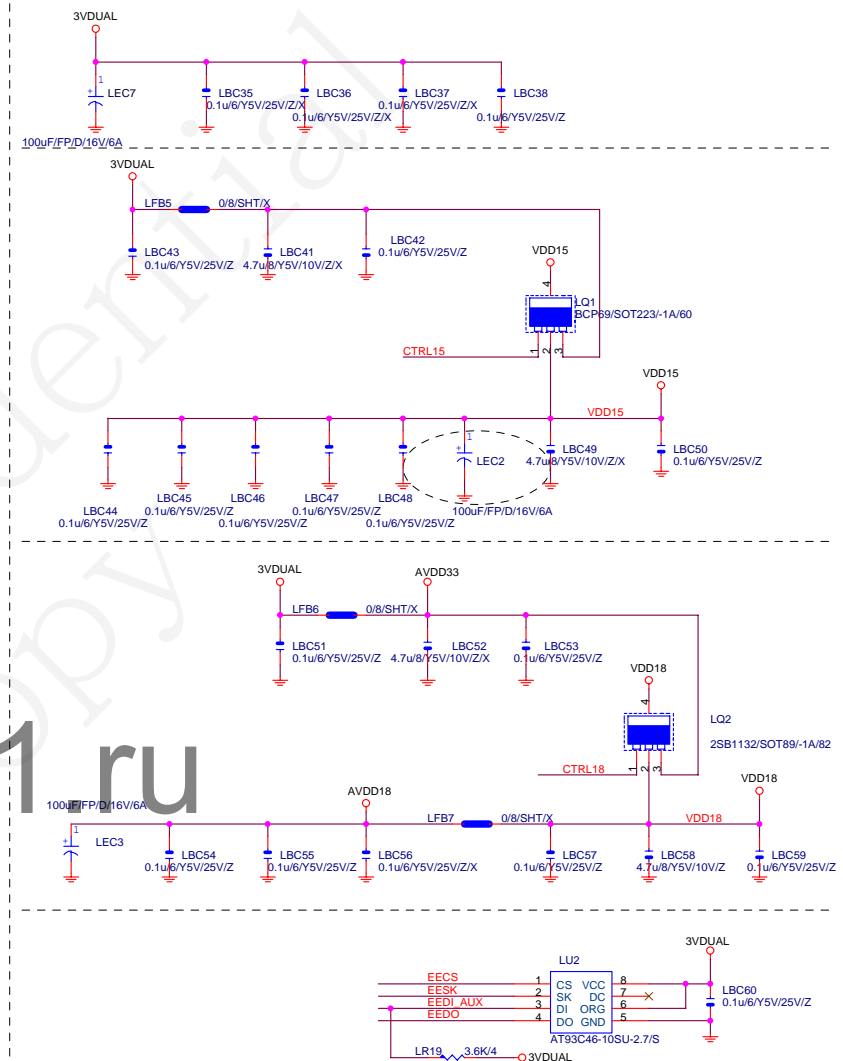
Gigabyte Technology

PCIE-1G LAN

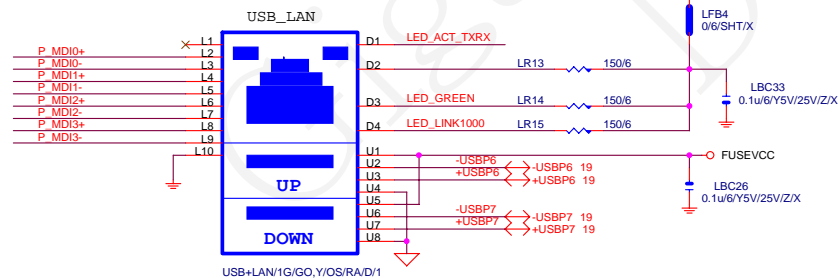
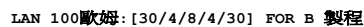


Power domain chart

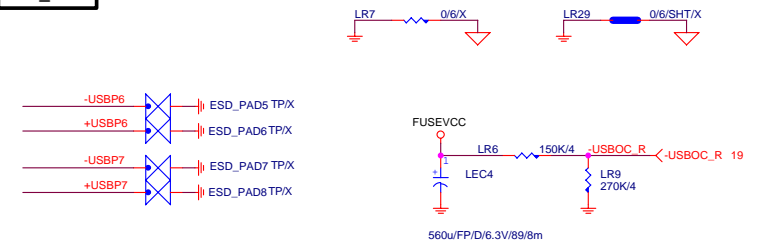
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AVDD33	3.3V	3.3V	
AVDD18	1.8V	1.2V	
EVDD18	1.8V	1.2V	
DVDD15	1.5V	1.2V	



USB_LAN_CONNECTOR



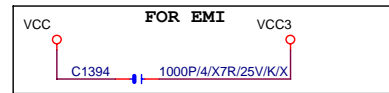
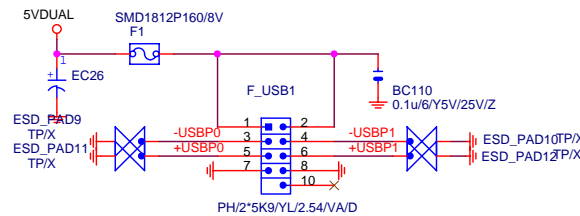
USB_LAN



FRONT USB1

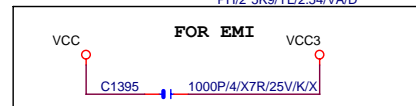
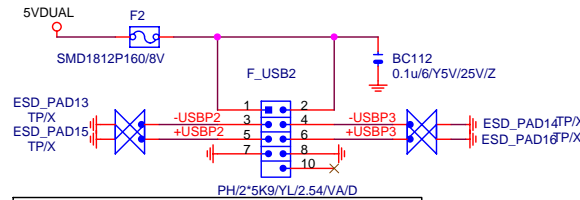
19 +USBP0 <-> +USBP0
19 -USBP0 <-> -USBP0
19 +USBP1 <-> +USBP1
19 -USBP1 <-> -USBP1

560uF/FP/D/6.3V/89/8m



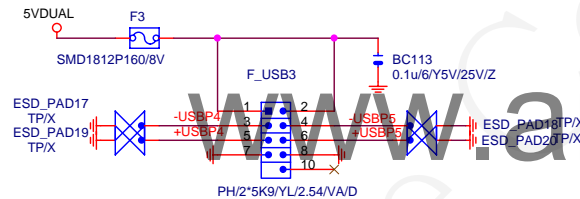
FRONT USB2

19 +USBP2 <-> +USBP2
19 -USBP2 <-> -USBP2
19 +USBP3 <-> +USBP3
19 -USBP3 <-> -USBP3



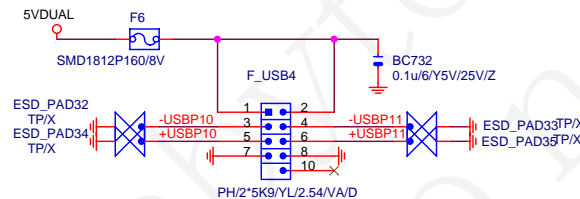
FRONT USB3

19 -USBP4 <-> -USBP4
19 +USBP4 <-> +USBP4
19 -USBP5 <-> -USBP5
19 +USBP5 <-> +USBP5

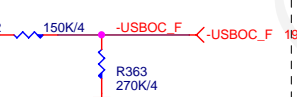


FRONT USB4

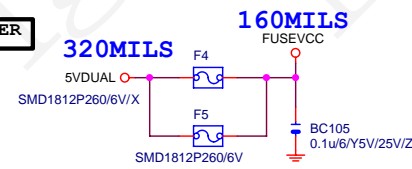
19 -USBP10 <-> -USBP10
19 +USBP10 <-> +USBP10
19 -USBP11 <-> -USBP11
19 +USBP11 <-> +USBP11



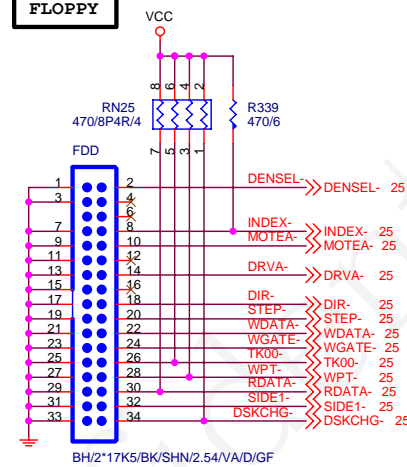
FRONT USB OC1



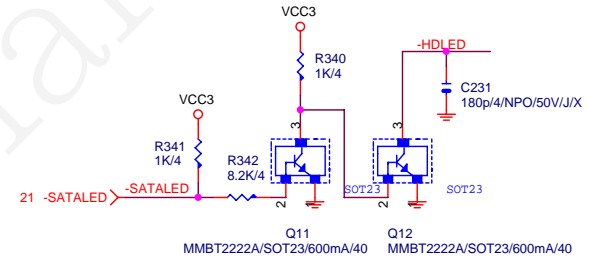
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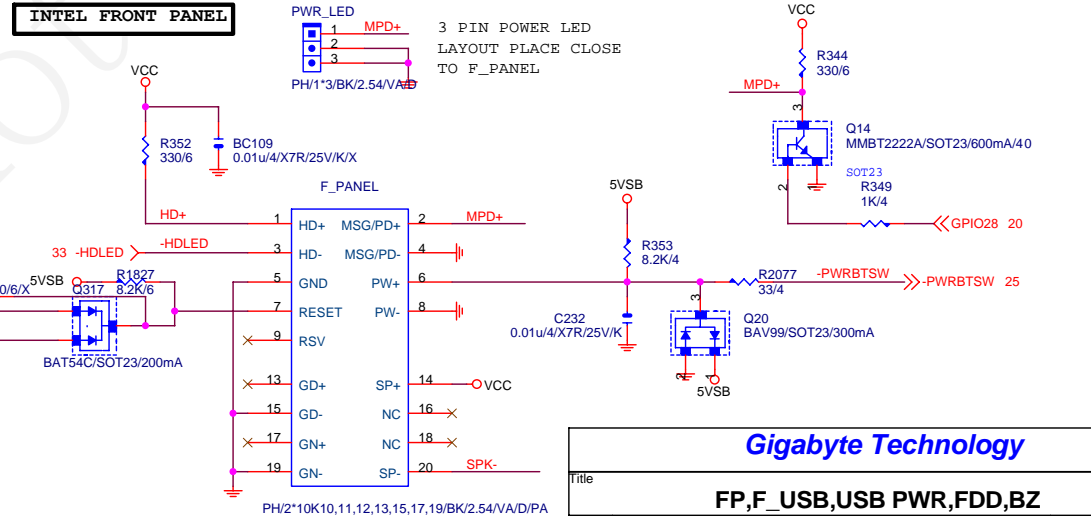
FLOPPY



SATA LED



INTEL FRONT PANEL



Gigabyte Technology

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