

SHEET

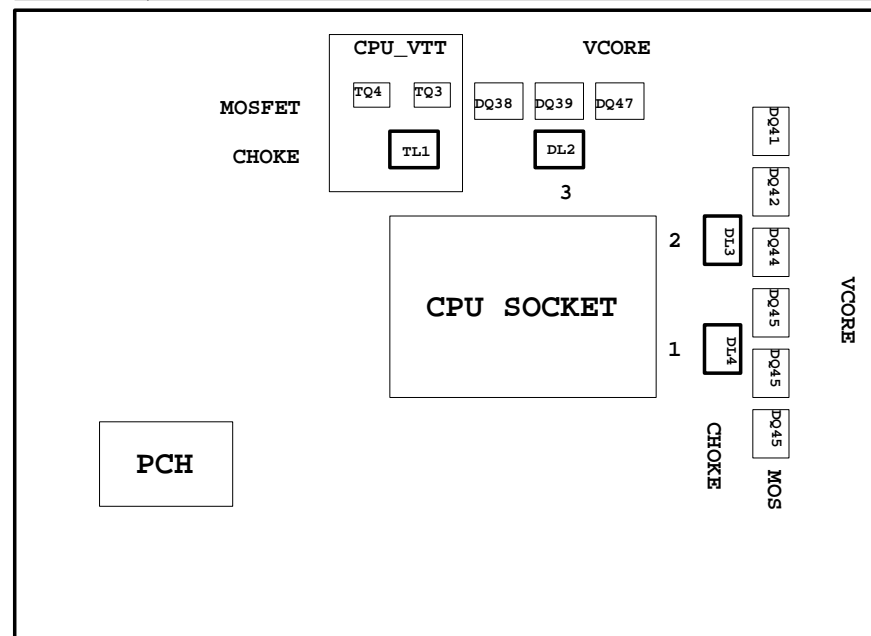
TITLE

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27	VCCSA POWER

SHEET

TITLE

28	F_PANEL , F_USB
29	ATX POWER, CLOCK GEN
30	HWM,KB/MS , FAN CTRL
31	REALTEK RTL8111F-VL
32	mSATA
33	DDR / M3 POWER
34	
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Gigabyte Technology

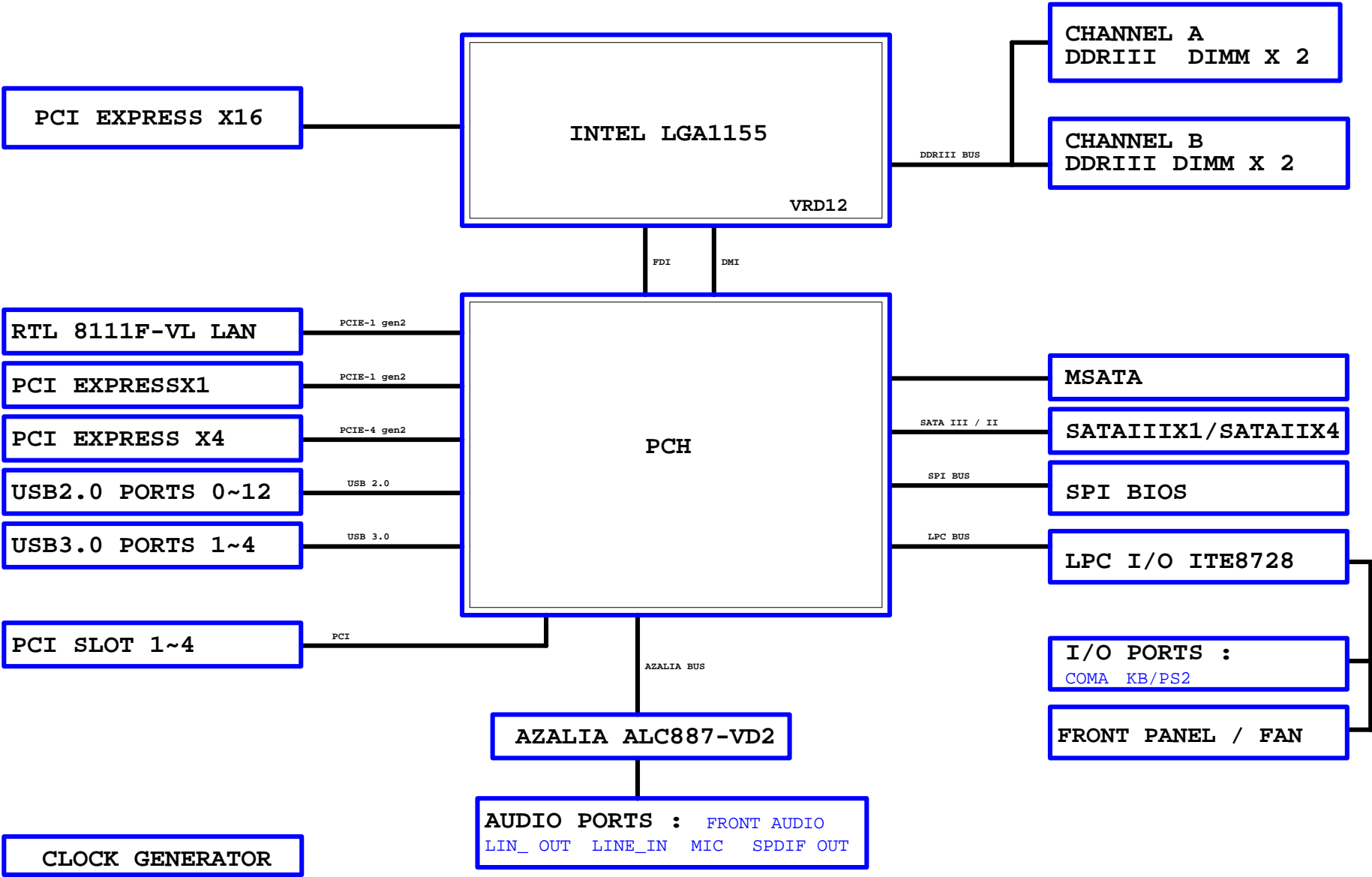
Title		
Cover Sheet		
Size	Document Number	Rev
Custom	GA-P75-D3	1.0
Date:	Monday, January 16, 2012	Sheet 1 of 33

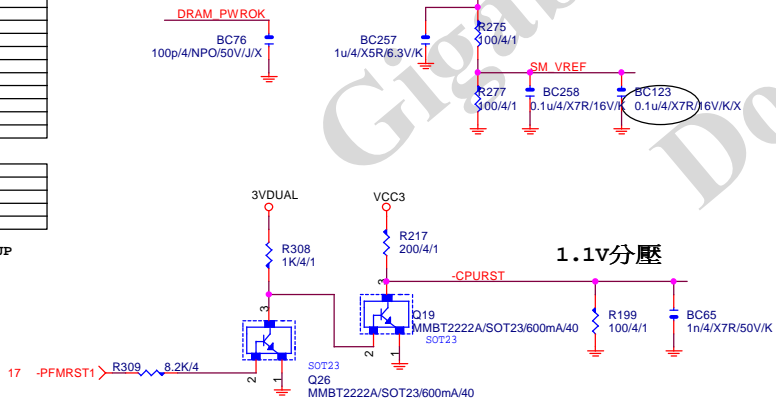
Component value change history

Circuit or PCB layout change

<i>Gigabyte Technology</i>				
Title BOM & PCB MODIFY HISTORY				
Size Custom	Document Number GA-P75-D3			Rev 1.0
Date:	Monday, January 16, 2012	Sheet	2 of 33	

BLOCK DIAGRAM





LGA1155A

MAAA0	AV27	SA_MA[0]	SA_DQS[0]	AK3	DQSA0
MAAA1	AY24	SA_MA[1]	SA_DQS[0]	AK2	-DQSA0
MAAA2	AW24	SA_MA[2]			
MAAA3	AW23	SA_MA[3]			
MAAA4	AV23	SA_MA[4]	SA_DQ[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[5]	SA_DQ[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[6]	SA_DQ[2]	AL3	MDA2
MAAA7	AU22	SA_MA[7]	SA_DQ[3]	AL4	MDA3
MAAA8	AV22	SA_MA[8]	SA_DQ[4]	AJ2	MDA4
MAAA9	AT22	SA_MA[9]	SA_DQ[5]	AJ1	MDA5
MAAA10	AV28	SA_MA[10]	SA_DQ[6]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DQ[7]	AL1	MDA7
MAAA12	AT21	SA_MA[12]			
MAAA13	AW32	SA_MA[13]	SA_DQS[1]	AP3	DQSA1
MAAA14	AU20	SA_MA[14]	SA_DQS[1]	AP2	-DQSA1
MAAA15	AT20	SA_MA[15]			

7	-SWEA	AW29	SA_WE#	AN1	MDA8
7	-SCASA	AV30	SA_CAS#	AN4	MDA9
7	-SRASA	AU28	SA_RAS#	AR3	MDA10

7	SBA00	AY29	SA_BS[0]	AN2	MDA11
7	SBA01	AW28	SA_BS[1]	AN3	MDA12
7	SBA02	AV20	SA_BS[2]	AR2	MDA13
				AR1	MDA15

7	-CSA0	AU29	SA_CS#	AW4	DQSA2
7	-CSA1	AV32	SA_CS#	AW4	DQSA2
7	-CSA2	AW30	SA_CS#	AW4	DQSA2
7	-CSA3	AU33	SA_CS#		

7	CKEA0	AV19	SA_CKE[0]	AV2	MDA16
7	CKEA1	AT19	SA_CKE[1]	AW3	MDA17
7	CKEA2	AU18	SA_CKE[2]	AV5	MDA18
7	CKEA3	AV18	SA_CKE[3]	AW5	MDA19

	MODT_A0	AV31	SA_ODT[0]	AU2	MDA20
	MODT_A1	AU32	SA_ODT[1]	AJ3	MDA21
	MODT_A2	AU30	SA_ODT[2]	AJ5	MDA22
	MODT_A3	AW33	SA_ODT[3]	AY5	MDA23

7	DCLKA0	AY25	SA_CK[0]	AV7	MDA24
7	-DCLKA0	AW25	SA_CK#	AU7	MDA25
7	DCLKA1	AU24	SA_CK[1]	AV9	MDA26
7	-DCLKA1	AU25	SA_CK#	AJ9	MDA27
7	DCLKA2	AW27	SA_CK[2]	AV7	MDA28
7	-DCLKA2	AY27	SA_CK#	AW7	MDA29
7	DCLKA3	AV26	SA_CK[3]	AW9	MDA30
7	-DCLKA3	AW26	SA_CK#	AY9	MDA31

7,8 -DDR3_RST TR1 04/SHT/M/X



SM_DRAMRST#

AV13	SA_DQS[8]
AV12	SA_DQS#
AU12	SA_ECC_CB[0]
AU14	SA_ECC_CB[1]
AW13	SA_ECC_CB[2]
AY13	SA_ECC_CB[3]
AU13	SA_ECC_CB[4]
AU11	SA_ECC_CB[5]
AY12	SA_ECC_CB[6]
AW12	SA_ECC_CB[7]

DDR_0

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CPU-SK/1155/S/15

LGA1155B

MAAB0	AK24	SB_MA[0]	SB_DQS[0]	AH7	DQSB0
MAAB1	AM20	SB_MA[1]	SB_DQS[0]	AH6	-DQSB0
MAAB2	AM19	SB_MA[2]			
MAAB3	AK18	SB_MA[3]			
MAAB4	AP19	SB_MA[4]	SB_DQ[0]	AG7	MDB0
MAAB5	AP18	SB_MA[5]	SB_DQ[1]	AG8	MDB1
MAAB6	AM18	SB_MA[6]	SB_DQ[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[7]	SB_DQ[3]	AJ8	MDB3
MAAB8	AY17	SB_MA[8]	SB_DQ[4]	AG5	MDB4
MAAB9	AY17	SB_MA[9]	SB_DQ[5]	AG6	MDB5
MAAB10	AN23	SB_MA[10]	SB_DQ[6]	AJ6	MDB6
MAAB11	AU17	SB_MA[11]	SB_DQ[7]	AJ7	MDB7
MAAB12	AT18	SB_MA[12]			
MAAB13	AR26	SB_MA[13]	SB_DQS[1]	AM8	DQSB1
MAAB14	AY16	SB_MA[14]	SB_DQS[1]	AL8	-DQSB1
MAAB15	AV16	SB_MA[15]			

8	-SWEB	AR25	SB_WE#	AM7	MDB8
8	-SCASB	AK25	SB_CAS#	AM7	MDB9
8	-SRASB	AP24	SB_RAS#	AM10	MDB10

8	SBAB0	AP23	SB_BS[0]	AM6	MDB12
8	SBAB1	AM24	SB_BS[1]	AM6	MDB13
8	SBAB2	AW17	SB_BS[2]	AM9	MDB14

8	-CSB0	AN25	SB_CS#	AP8	DQSB2
8	-CSB1	AN26	SB_CS#	AP8	-DQSB2
8	-CSB2	AL25	SB_CS#		
8	-CSB3	AT26	SB_CS#		

8	CKEB0	AU16	SB_CKE[0]	AP7	MDB16
8	CKEB1	AY15	SB_CKE[1]	AR7	MDB17
8	CKEB2	AW15	SB_CKE[2]	AP10	MDB18
8	CKEB3	AV15	SB_CKE[3]	AP10	MDB19

	MODT_B0	AL26	SB_ODT[0]	AP6	MDB20
	MODT_B1	AP26	SB_ODT[1]	AR6	MDB21
	MODT_B2	AM26	SB_ODT[2]	AR9	MDB23
	MODT_B3	AK26	SB_ODT[3]		

8	DCLKB0	AL21	SB_CK[0]	AM12	MDB24
8	-DCLKB0	AL22	SB_CK#	AM13	MDB25
8	DCLKB1	AK20	SB_CK[1]	AP13	MDB26
8	-DCLKB1	AK20	SB_CK#	AP13	MDB27
8	DCLKB2	AL23	SB_CK[2]	AL12	MDB28
8	-DCLKB2	AL23	SB_CK#	AL13	MDB29
8	DCLKB3	AP21	SB_CK[3]	AR12	MDB30
8	-DCLKB3	AN21	SB_CK#	AP12	MDB31

8	VREF_DQB	AH1	FC_AH1	AN29	DQSB4
7	VREF_DQA	AH4	FC_AH4	AN28	-DQSB4

8	AV37	DQSA4			
8	AV36	-DQSA4			
	AJ35	MDA32			
	AW37	MDA33			
	AJ39	MDA34			
	AJ36	MDA35			
	AY36	MDA36			
	AJ37	MDA37			
	AJ38	MDA38			
	AJ37	MDA39			
	AP38	DQSA5			
	AP39	-DQSA5			
	AR40	MDA40			
	AR37	MDA41			
	AN38	MDA42			
	AN37	MDA43			
	AR39	MDA44			
	AR38	MDA45			
	AN39	MDA46			
	AN40	MDA47			
	AK38	DQSA6			
	AK39	-DQSA6			
	AL40	MDA48			
	AL37	MDA49			
	AJ38	MDA50			
	AJ37	MDA51			
	AL39	MDA52			
	AL38	MDA53			
	AJ39	MDA54			
	AJ40	MDA55			
	AF38	DQSA7			
	AF39	-DQSA7			
	AG40	MDA56			
	AG37	MDA57			
	AE38	MDA58			
	AE37	MDA59			
	AG39	MDA60			
	AG38	MDA61			
	AE39	MDA62			
	AE40	MDA63			

7 MODT_A[0..3] MODT_A10..31

8 MODT_B[0..3] MODT_B10..31

7 MDA[0..63] MDA10..631

8 MDB[0..63] MDB10..631

7 DQSA[0..7] DQSA10..71

7 -DQSA[0..7] -DQSA10..71

7 MAAA[0..15] MAAA10..151

8 MAAB[0..15] MAAB10..151

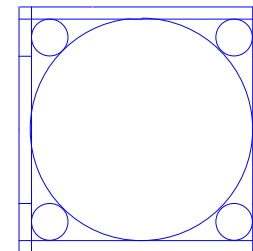
8 DQSB[0..7] DQSB10..71

8 -DQSB[0..7] -DQSB10..71

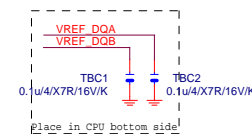
DDR_1

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CPU-SK/1155/S/15

LGA1155
ILM_BP/1156/CSP

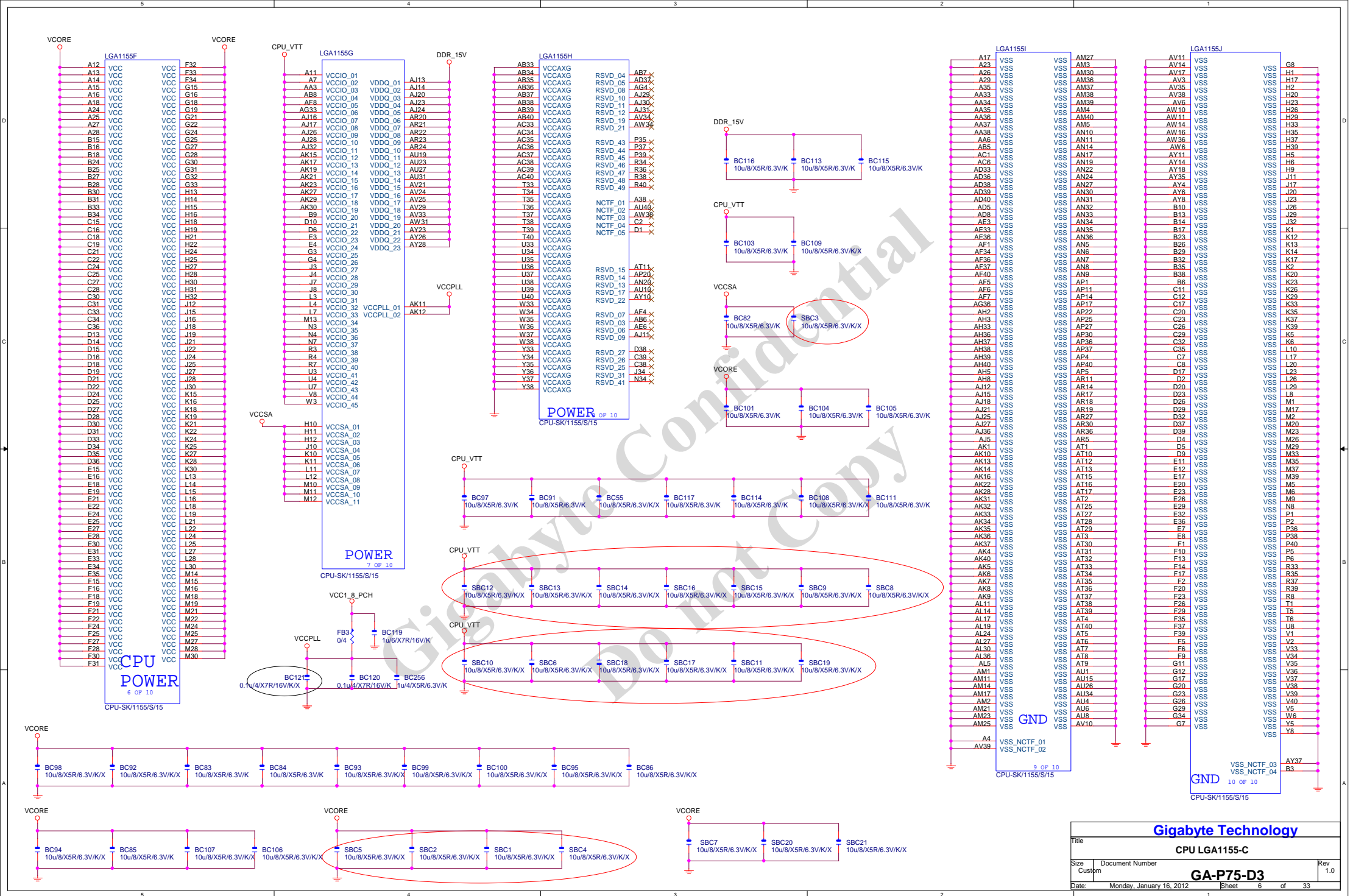
Need check the new CPU ME

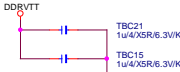
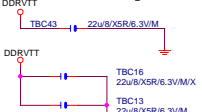
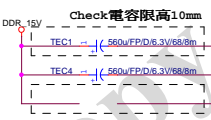


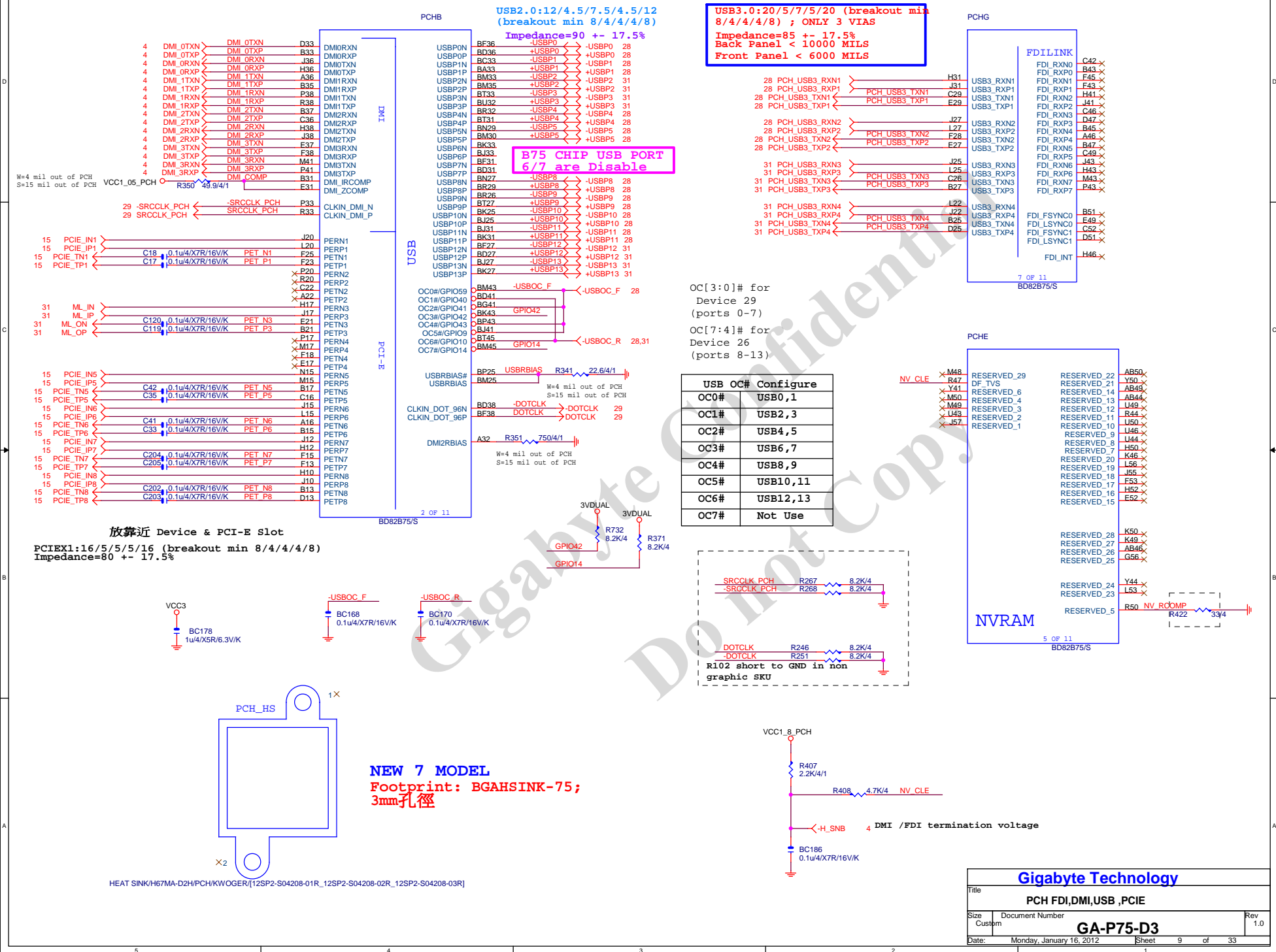
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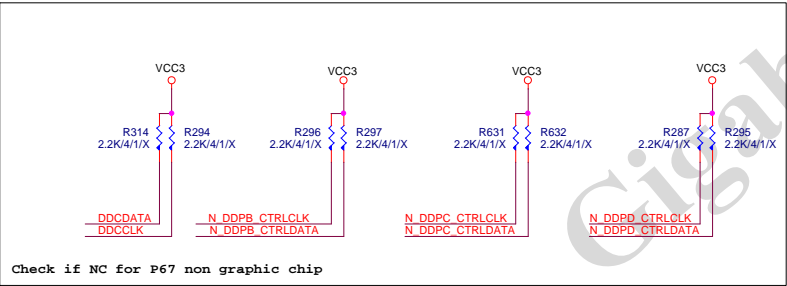
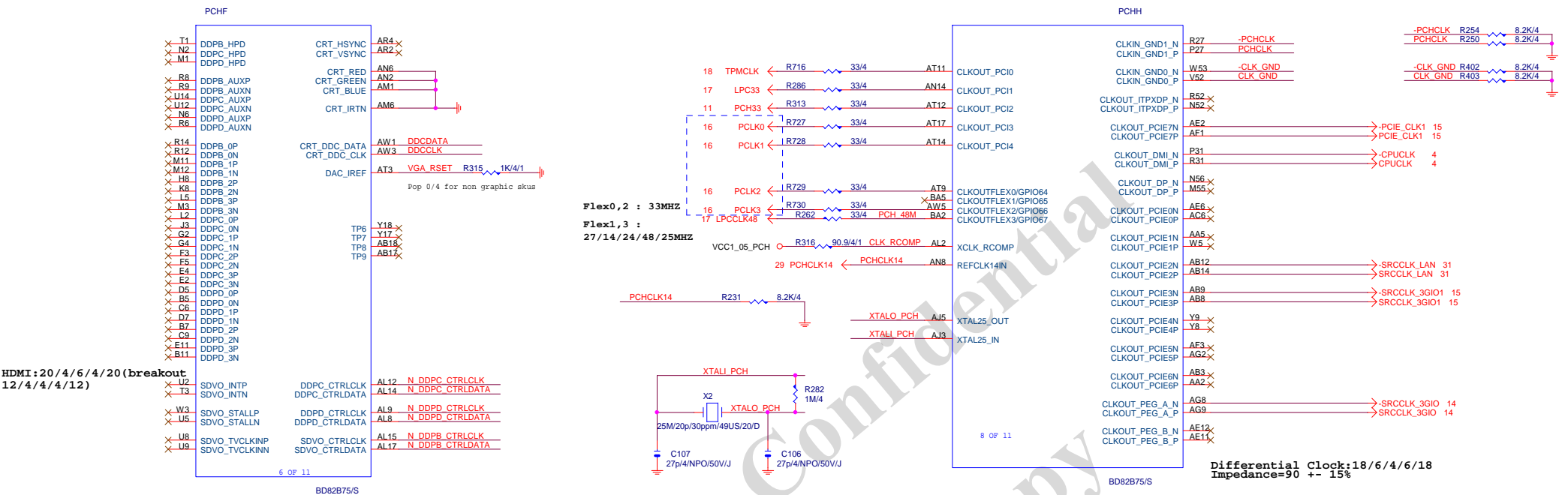
CPU LGA1155-B

Title	Document Number	Rev
Size	GA-P75-D3	1.0
Custom		
Date:	Monday, January 16, 2012	Sheet 5 of 33









SATA:20/4.5/7.5/4.5/20 (breakout min 8/4/4/4/8)

Impedance=90 +- 17.5%

PCHC

FOR WIFI

FOR M3
POWER

12,17,29 PWROK< MR1 0/4/X

ME PWROK

MBC1 100p/4/NPO/50V/J/X

NC_5

GPIO17 BT17 TACH0/GPIO17

GPIO18 BR19 TACH1/GPIO1

GPIO19 BT21 PWM0

GPIO20 BM20 PWM1

GPIO21 BN19 PWM2

GPIO22 BR16 TACH2/GPIO6

GPIO23 BU16 TACH3/GPIO7

GPIO24 BM18 TACH4_GPIO68

GPIO25 BN17 TACH5_GPIO69

GPIO26 GPIO71 TACH6_GPIO70

GPIO27 BP15 TACH7_GPIO71

GPIO28 BC43 SST

GPIO29 BA53 SCLOCK/GPIO22

GPIO30 BE54 SLOAD/GPIO38

GPIO31 BF55 SDATAOUT0/GPIO39

GPIO32 AW53 SDATAOUT1/GPIO48

GPIO33

GPIO34

GPIO35

GPIO36

GPIO37

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GPIO329

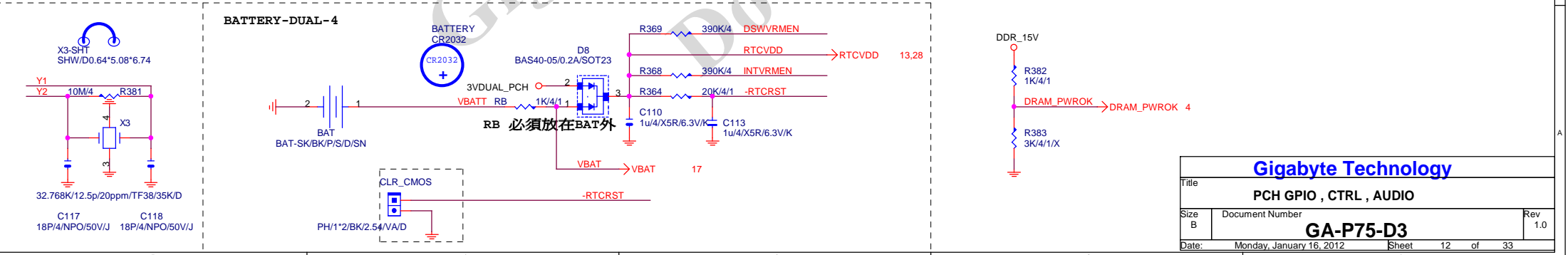
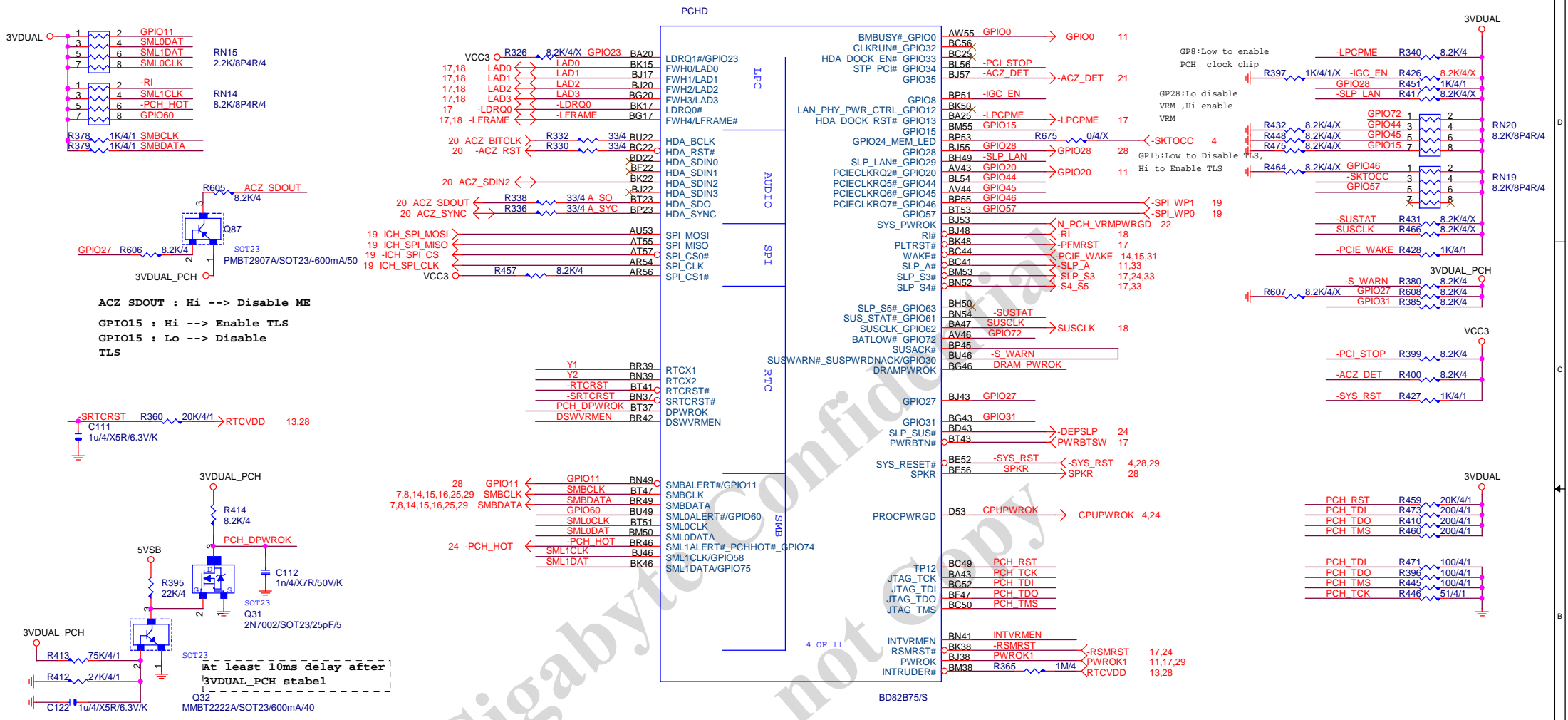
GPIO330

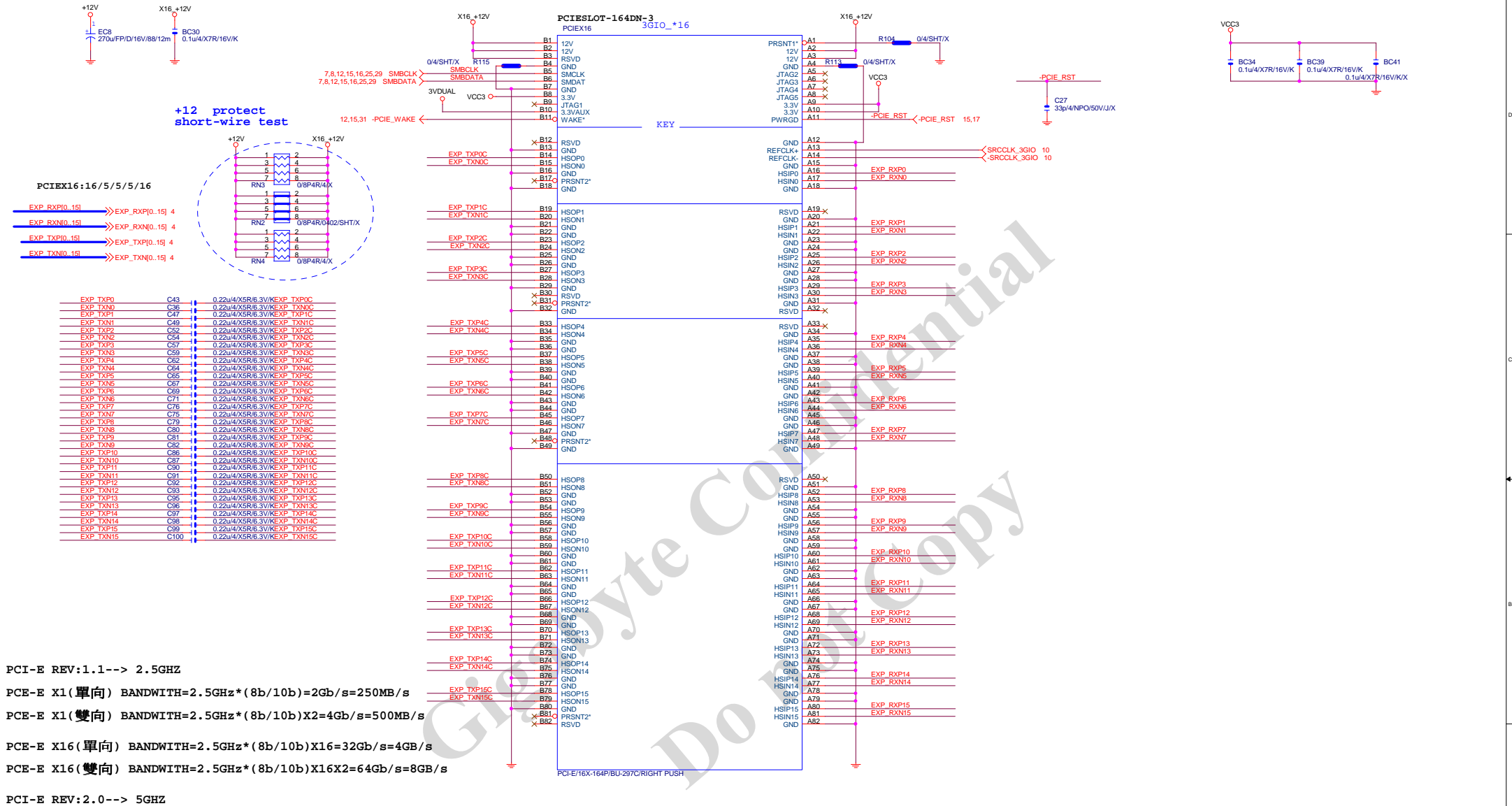
GPIO331

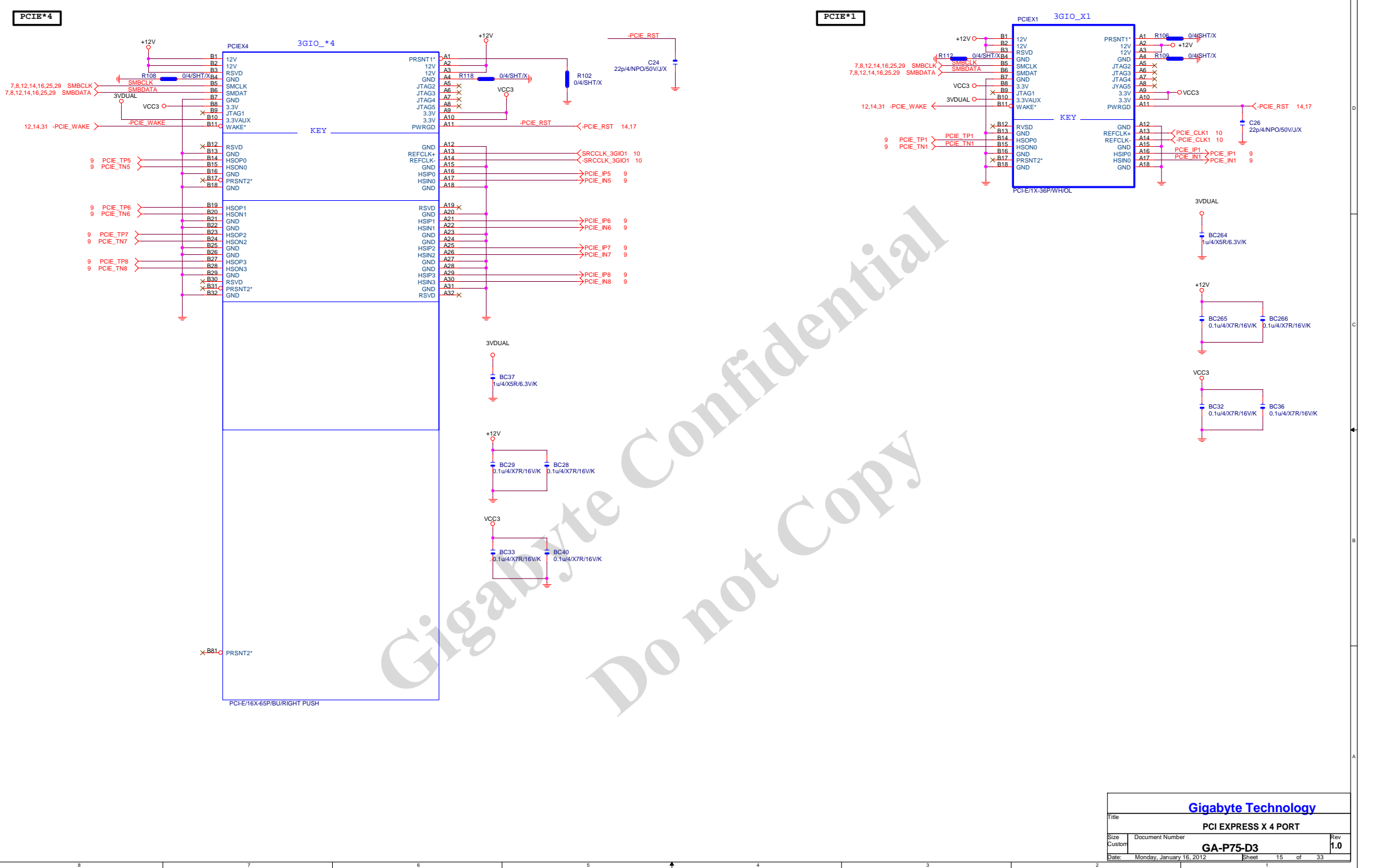
GPIO332

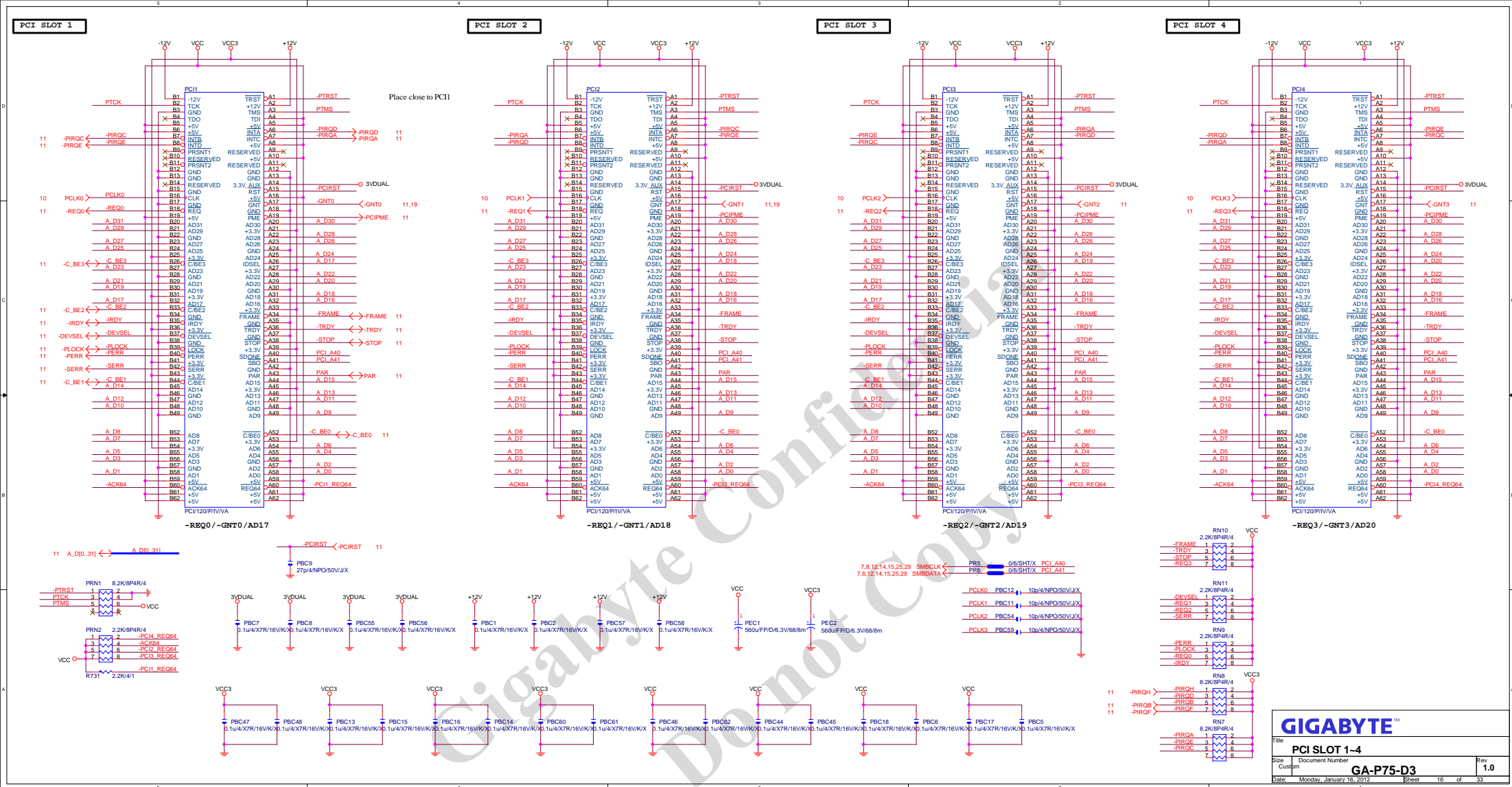
GPIO333

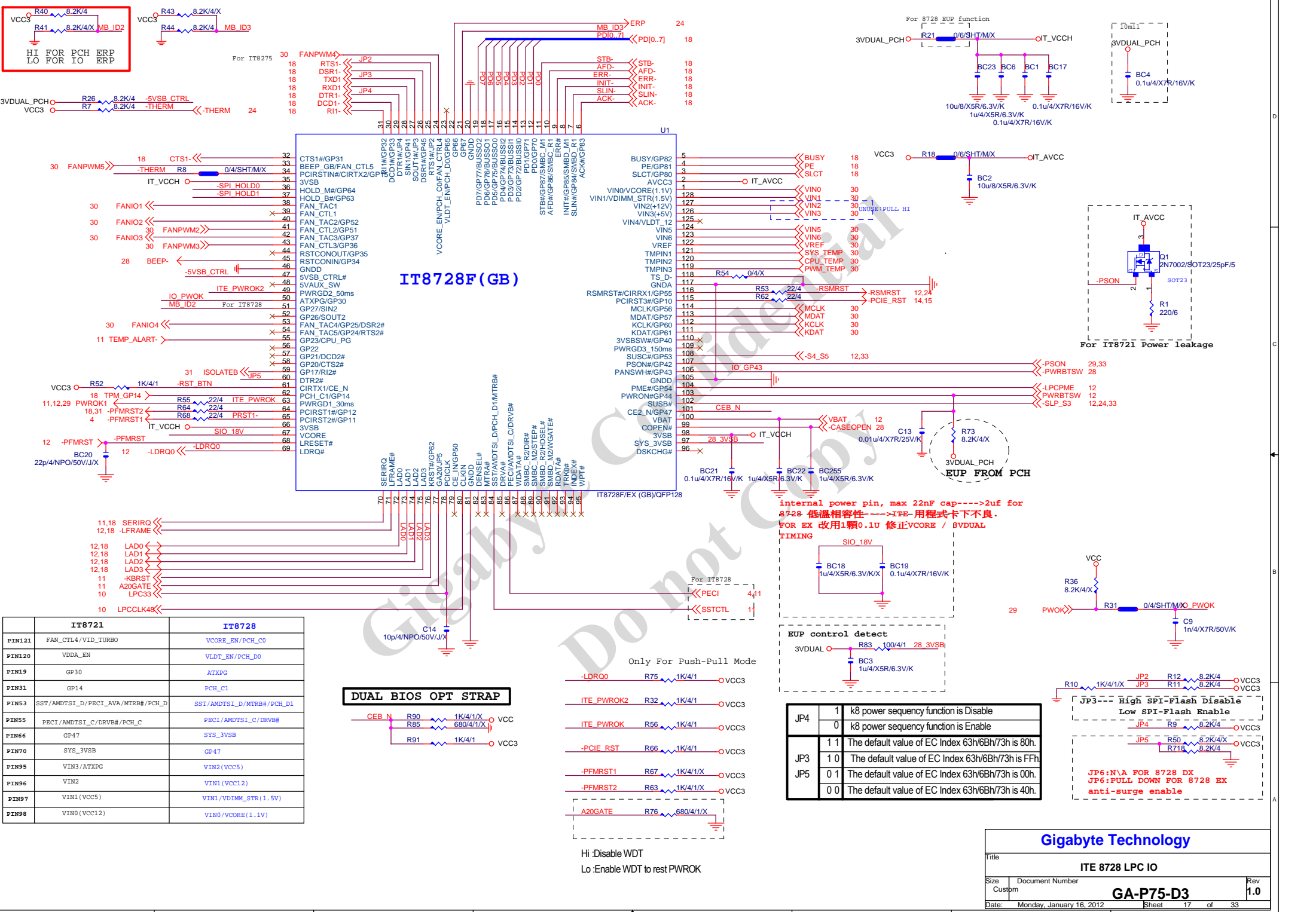
GPIO334





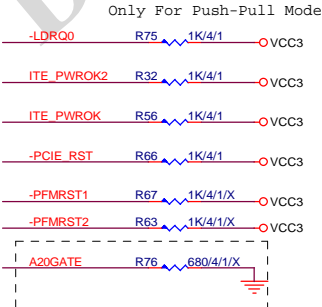






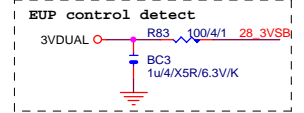
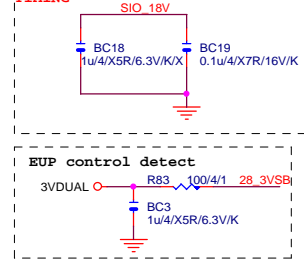
	IT8721	IT8728
PIN121	FAN_CTL4/VID_TURBO	VCORE_EN/PCH_C0
PIN120	VDDA_EN	VLDT_EN/PCH_D0
PIN19	GP30	ATXPG
PIN31	GP14	PCH_C1
PIN53	SST/AMDTSI_D/PECI_AVA/MTRB#/PCH_D	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRV8#/PCH_C	PECI/AMDTSI_C/DRV8#
PIN66	GP47	SYS_3VSB
PIN70	SYS_3VSB	GP47
PIN95	VIN3/ATXPG	VIN2(VCC5)
PIN96	VIN2	VIN1(VCC12)
PIN97	VIN1(VCC5)	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0(VCC12)	VIN0/VCORE(1.1V)

DUAL BIOS OPT STRAP

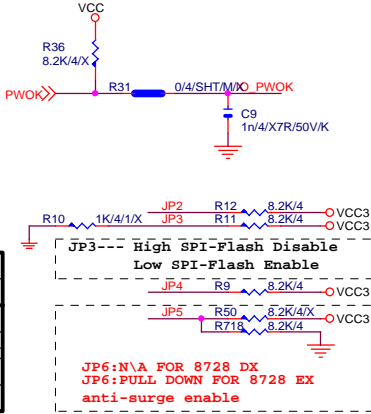


Hi :Disable WDT
Lo :Enable WDT to rest PWROK

internal power pin, max 22nF cap---->2uf for
8728 低温相容性---->ITE-用程式卡下不良.
FOR EX 改用1颗0.1u 修正VCORE / BVDDUAL
TIMING

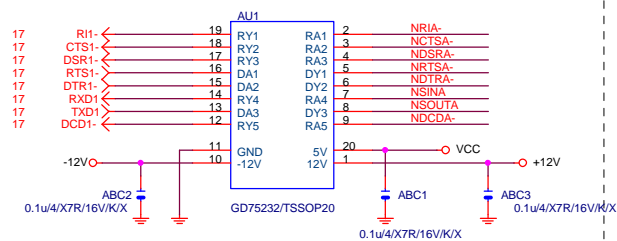


JP4	1	k8 power sequency function is Disable
JP4	0	k8 power sequency function is Enable
JP3	11	The default value of EC Index 63h/6Bh/73h is 80h.
JP3	10	The default value of EC Index 63h/6Bh/73h is FFh.
JP5	01	The default value of EC Index 63h/6Bh/73h is 00h.
JP5	00	The default value of EC Index 63h/6Bh/73h is 40h.

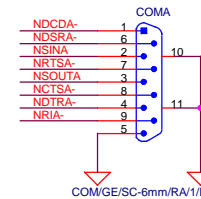
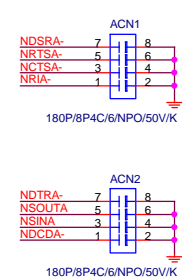
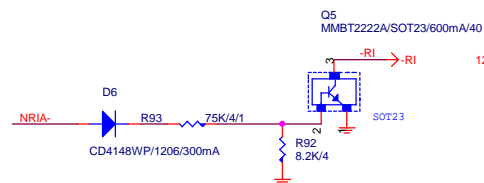


Gigabyte Technology			
Title			
ITE 8728 LPC IO			
Size	Document Number	Rev	
Custom	GA-P75-D3	1.0	
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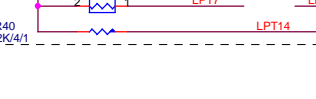
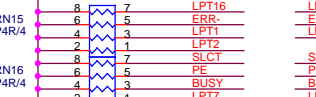
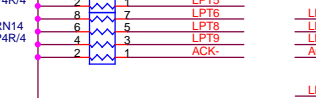
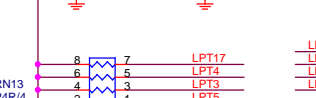
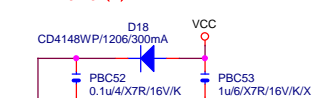
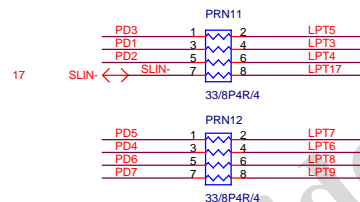
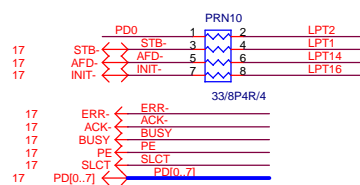
COMA

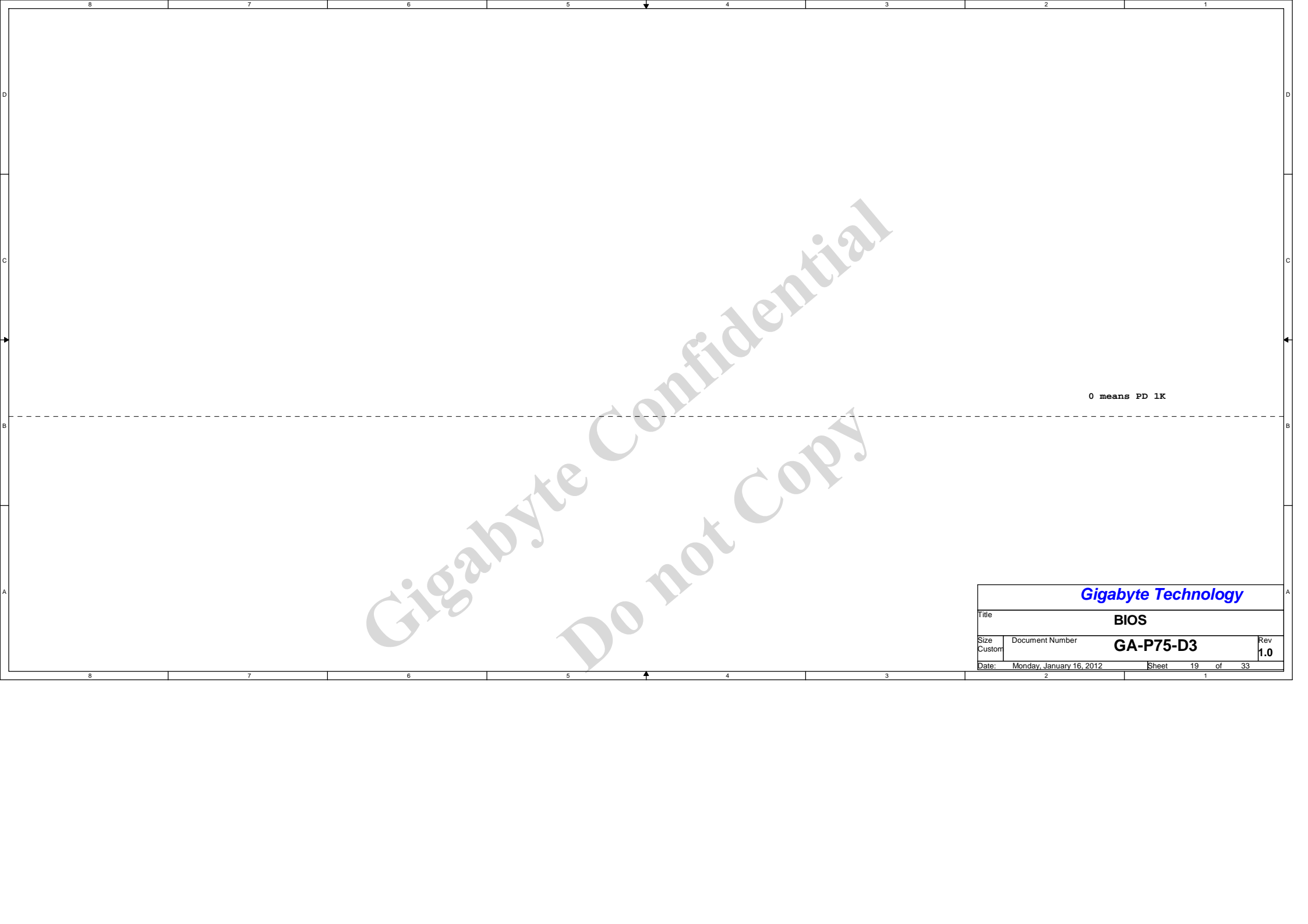


COM RI



LPT PORT



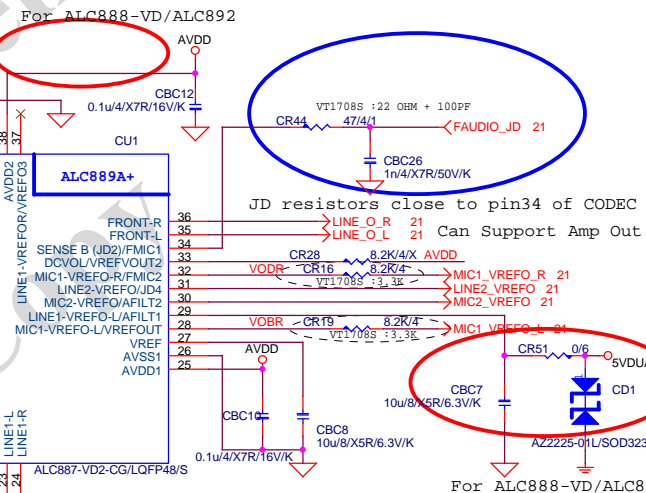


0 means PD 1K

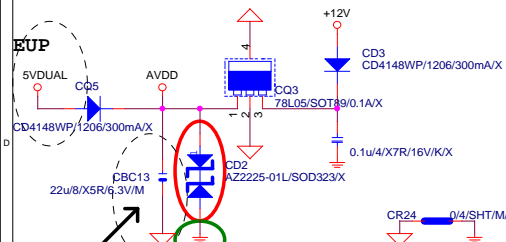
Gigabyte Technology			
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	2		1

CR26: 20K/4/0.1% @ALC889A
CR26: 20K/4/1% @others

CR34: 20K/4/1% VT1708S :5.1K + 100PF
CBC40: 100p/4/NPO/50V/J/X

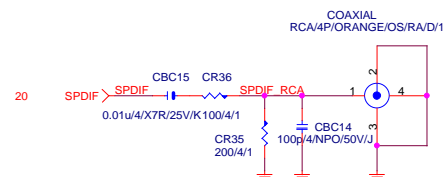
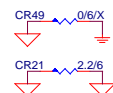


CODEC POWER/EMI PAD

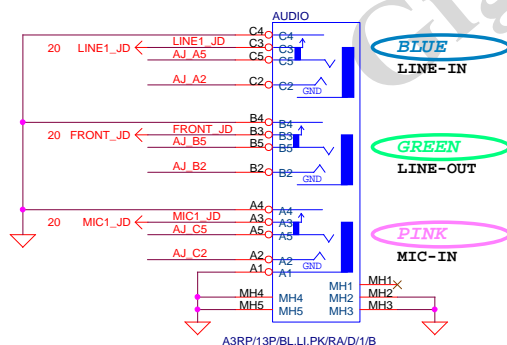
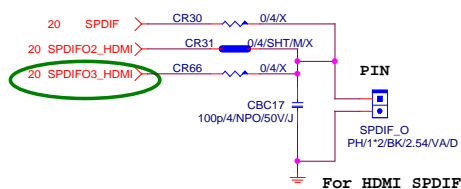


上ALC892時,此顆電容要保留

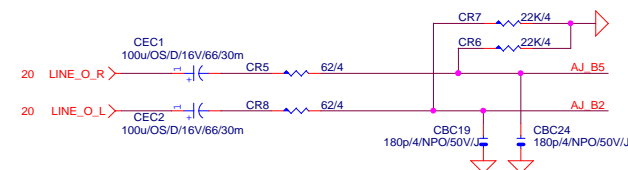
ADD CD2 For ESD PROTECT DIODE



SPDIF_OUT

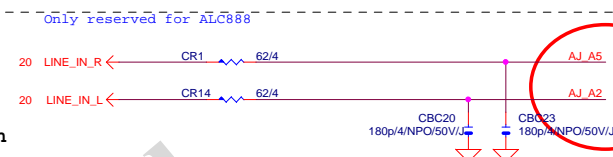
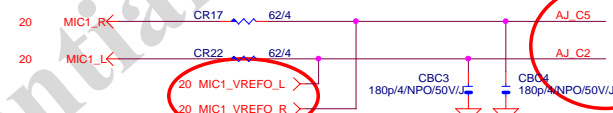


LINE-OUT

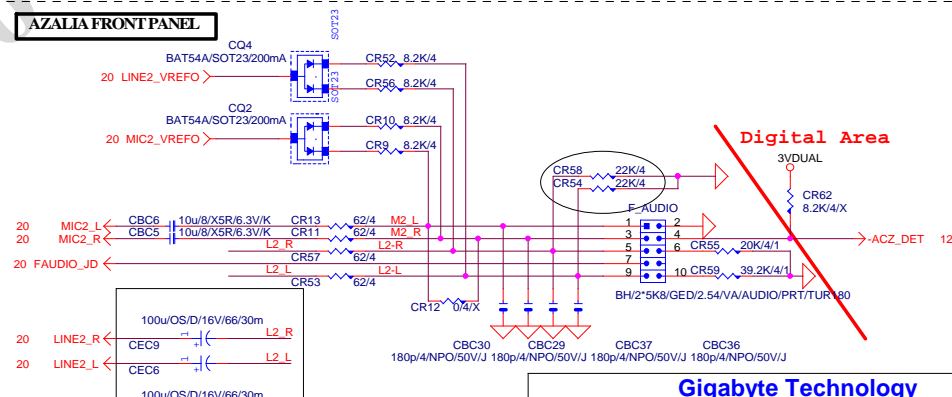


LINE-IN

Verify MIC function
in LINE-in

**MIC-IN**

AZALIA FRONT PANEL

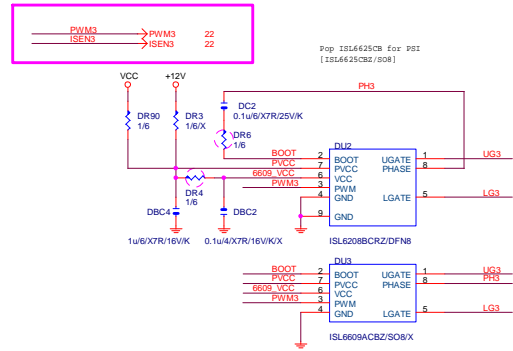


Gigabyte Technology

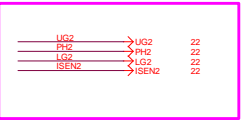
Title			
AUDIO JACK			
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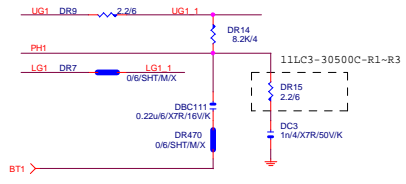
[1]



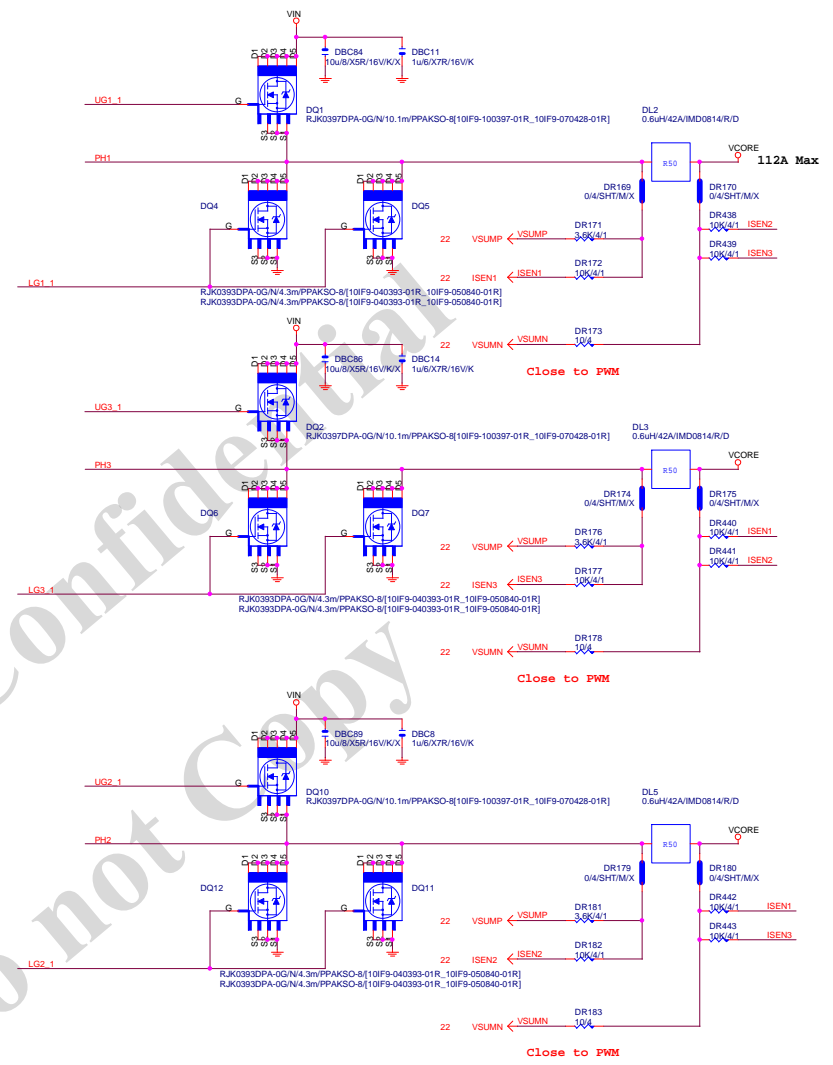
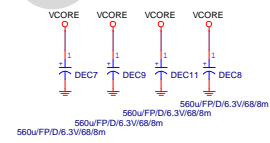
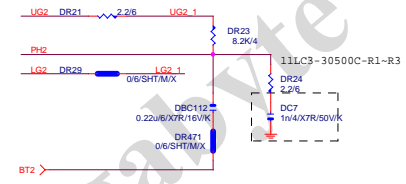
6609 colay with 6208

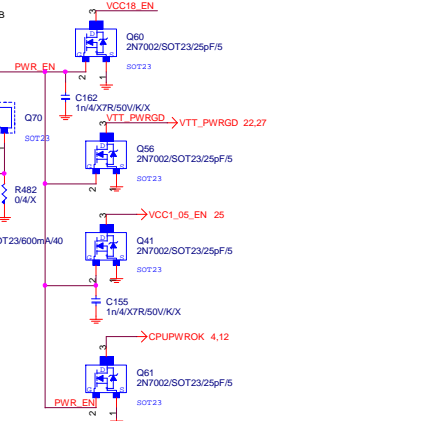
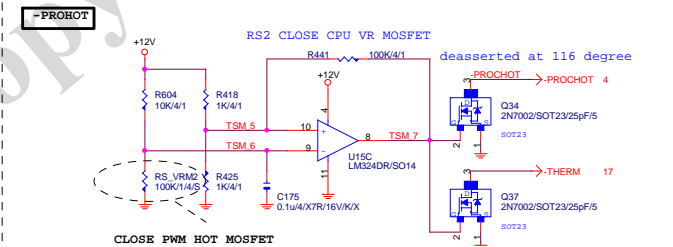
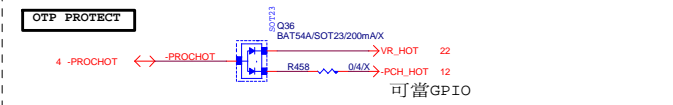
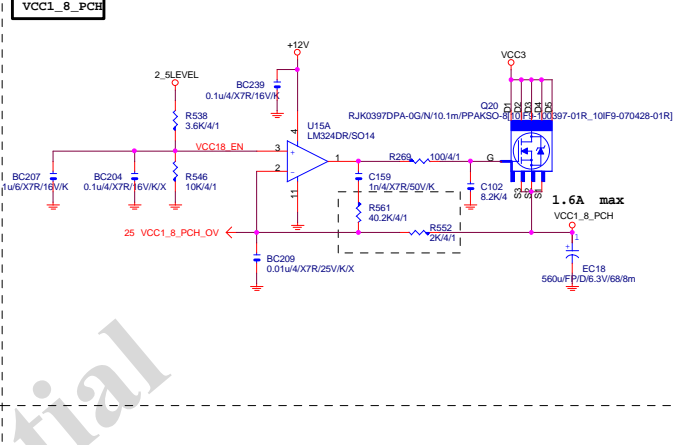


[3]

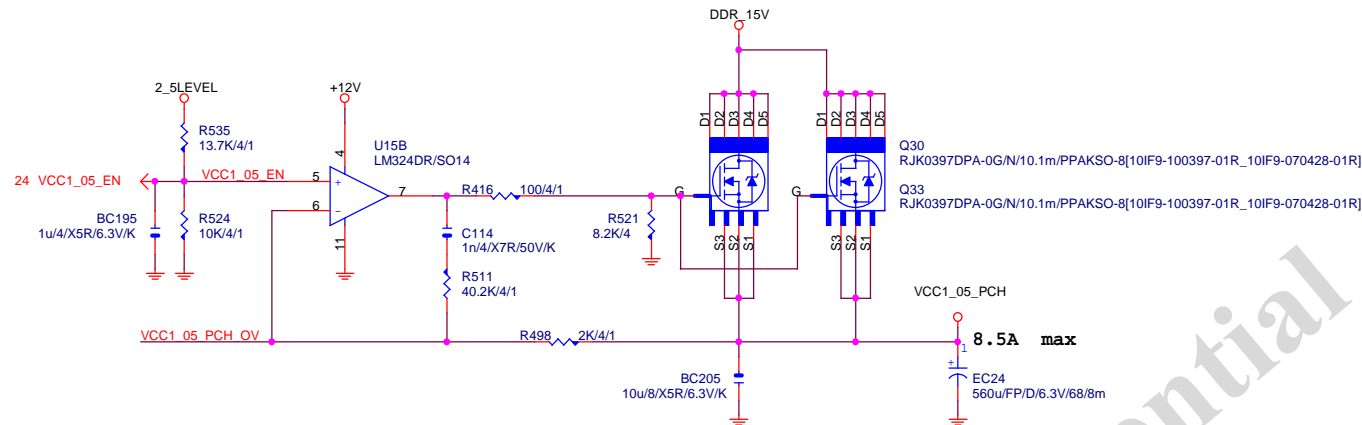


[2]



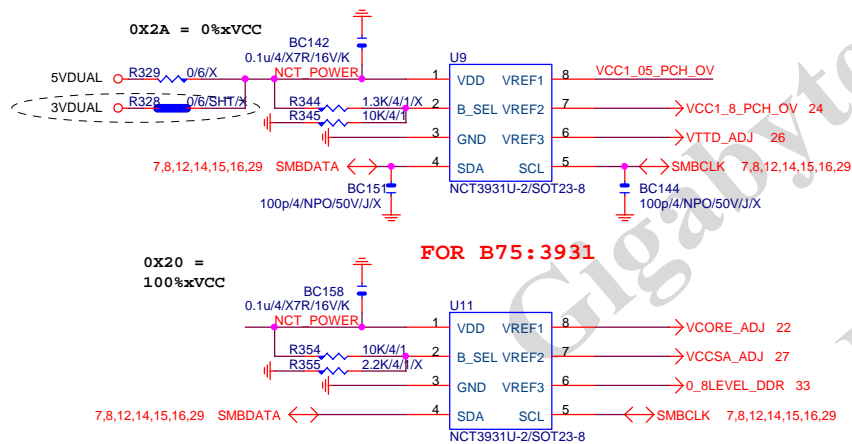


VCC1_05_PCH



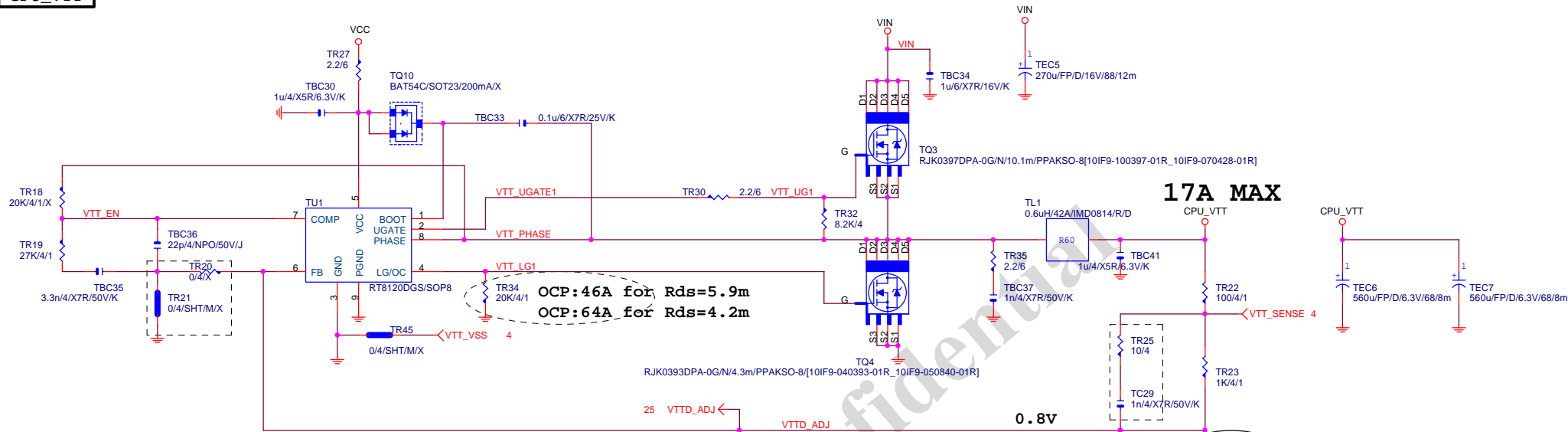
Voltage console

ADDRESS	0X2A	0X20	0X22	0X26
R1(K)	OPEN	10	1.3	3
R2(K)	10	OPEN	3.9	2.2
%VCC	0	100	75	42



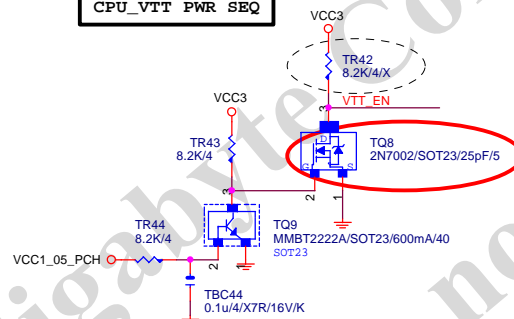
up6262	0X2A	0X20
VREF1	VCC1_05_PCH	VCORE
VREF2	VCC1_8_PCH	VCCSA
VREF3	CPU_VTT	DDR

CPU_VTT



$$OCP: 46A = \frac{R_{oset} * I_{ocset}}{R_{ds(on)}} = \frac{27K * 10uA}{5.9m}$$

CPU_VTT PWR SEQ



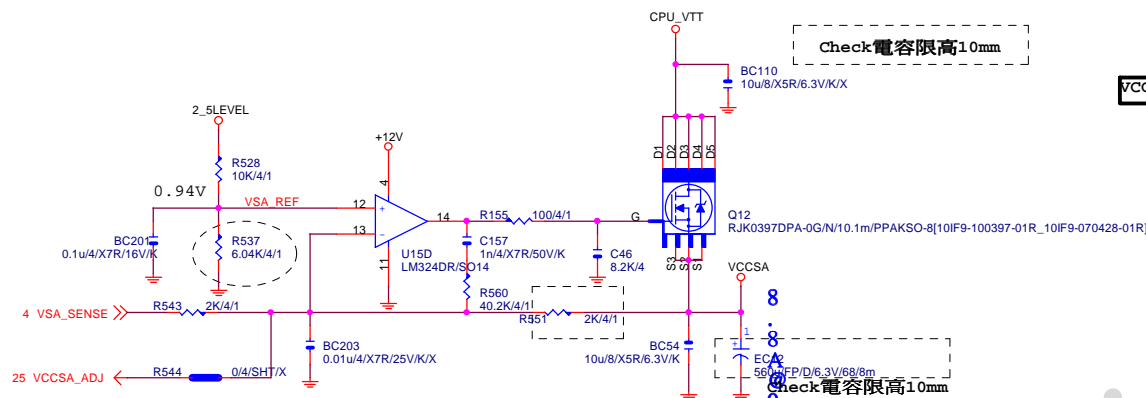
	VTT_SEL
HI	1.05V
LO	1.0V

According intel
CDI/IBP#476733, 固定1.05v

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Title RT8120 CPU_VTT		
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VCC_SA



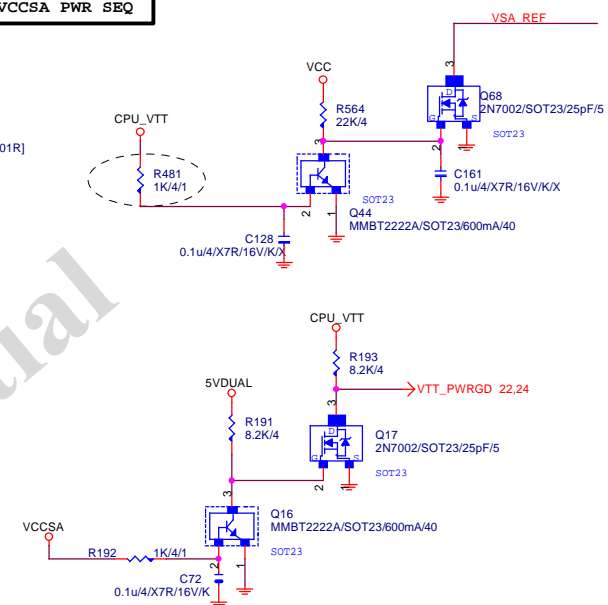
PDG 1.01

	VSA_SEL
HI	0.85V
LO	0.925V

According intel
CDI/IBP#476733, 固定0.925V

8
.
8
5
/
0
:
9
2
5
V

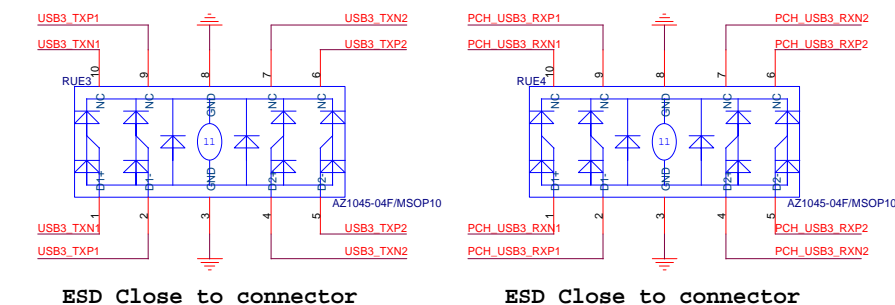
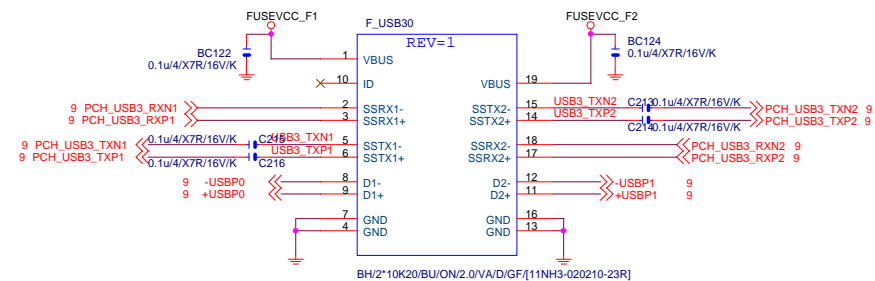
VCCSA PWR SEQ



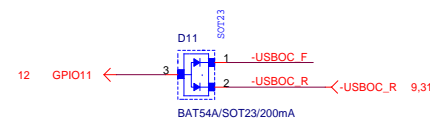
Gigabyte Technology

Title			
VCCSA POWER			
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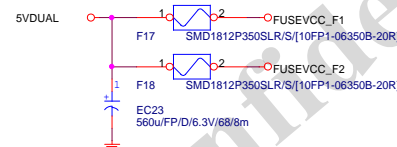
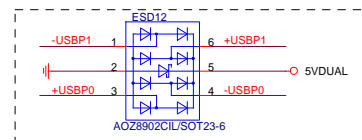
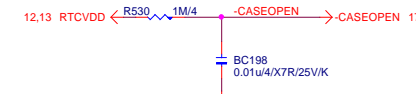
FRONT USB1



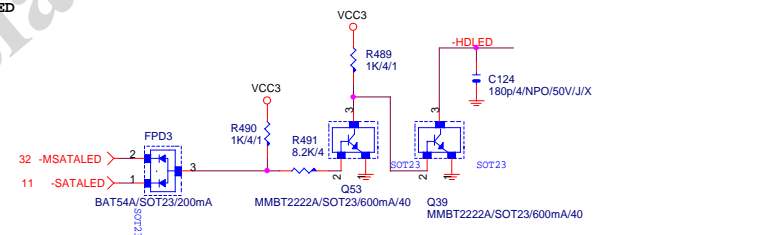
```
F_USB POWER PROTECT
```



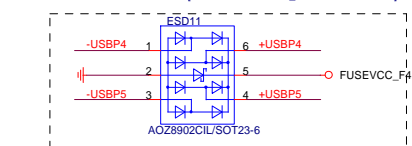
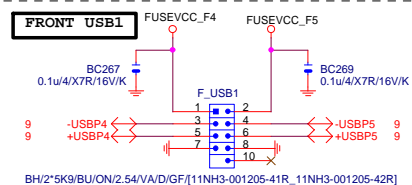
CASE OPEN



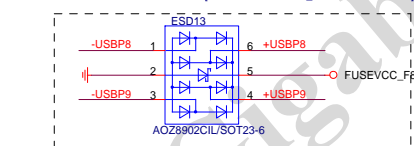
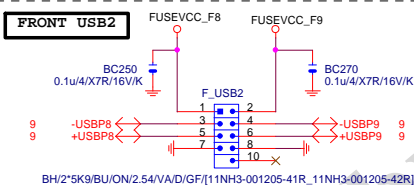
SATA LED



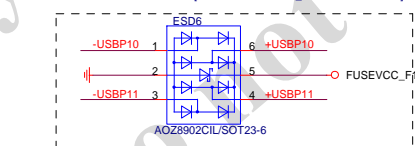
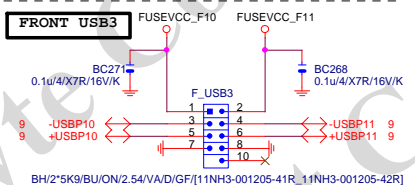
FRONT USB1



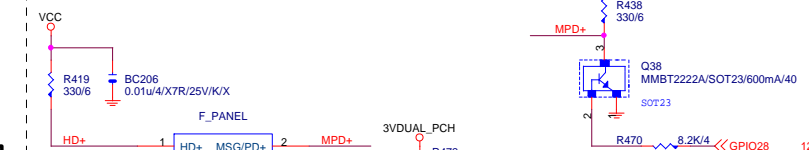
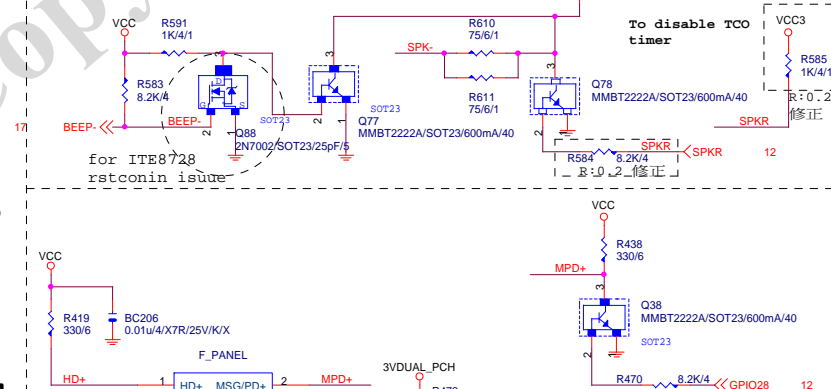
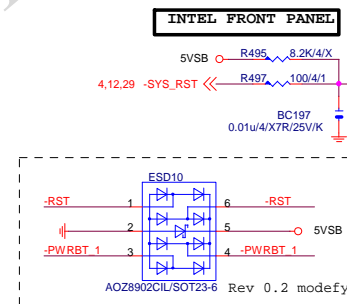
FRONT USB2



FRONT USB3



INTEL FRONT PANEL



Gigabyte Technology

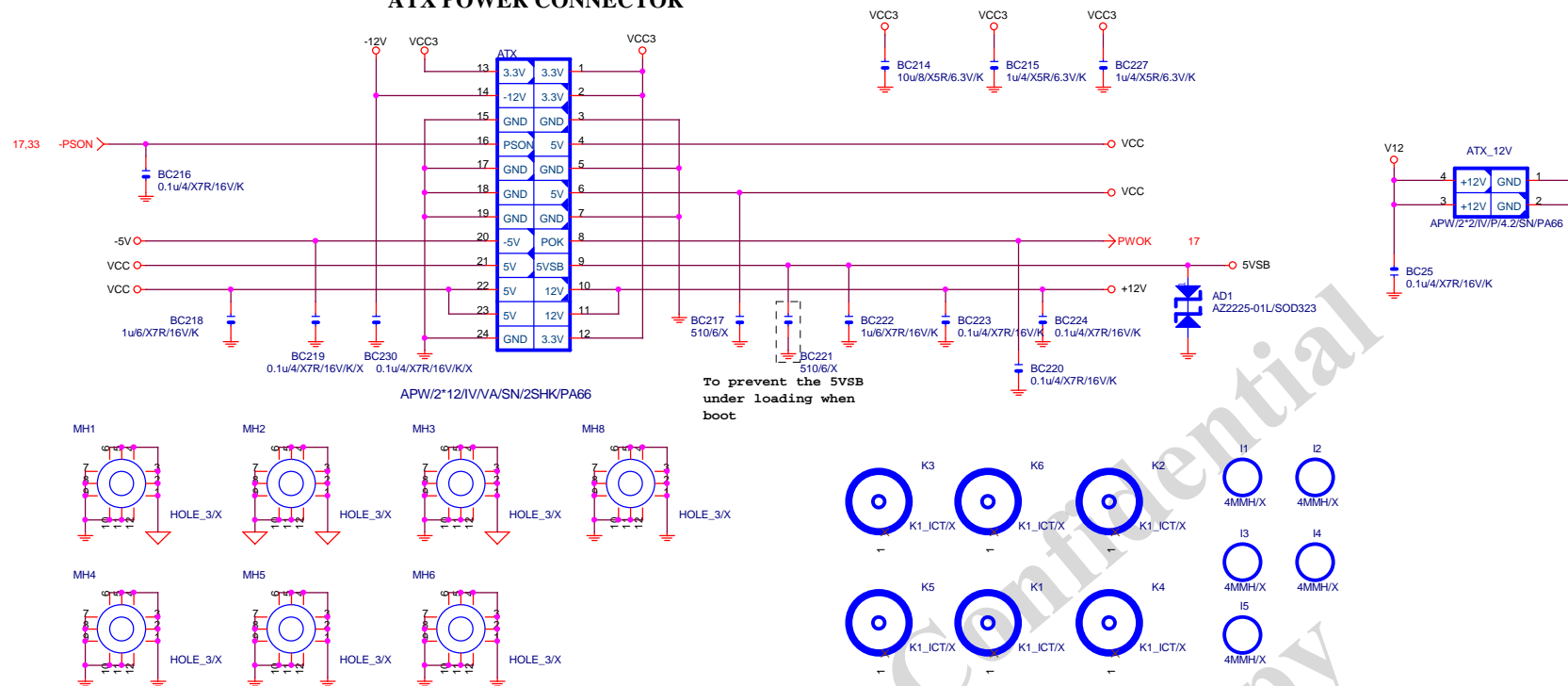
FP.F USB.USB PWR.FDD.BZ

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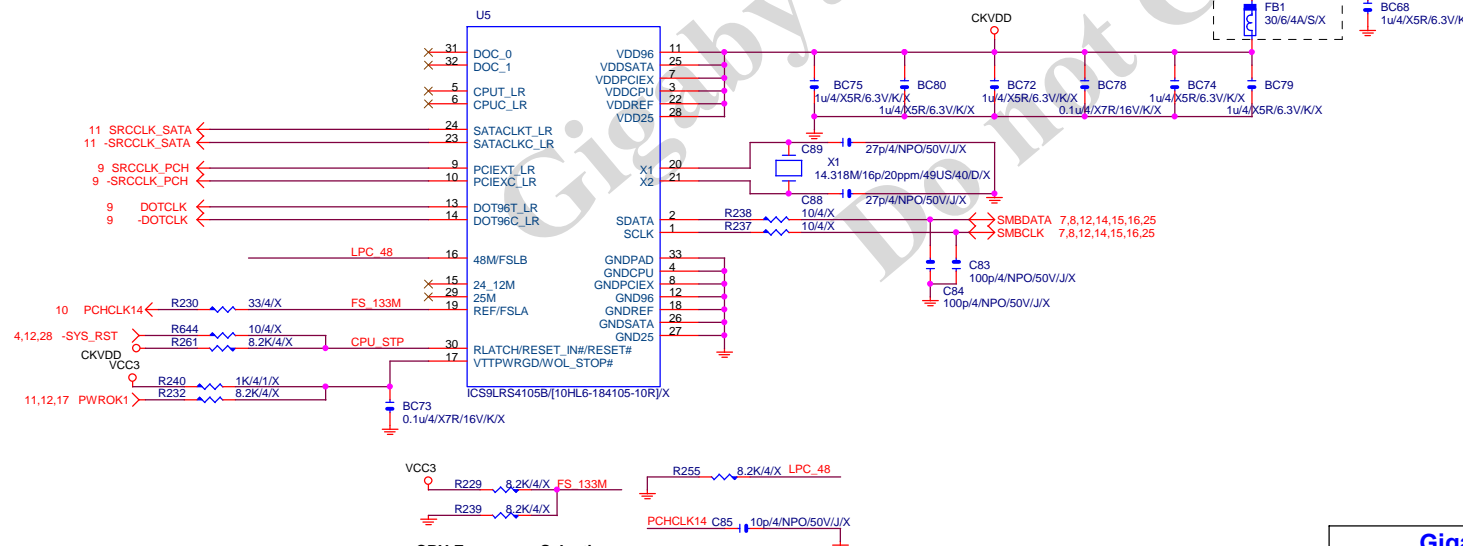
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ATX POWER CONNECTOR



CLK GEN CK505



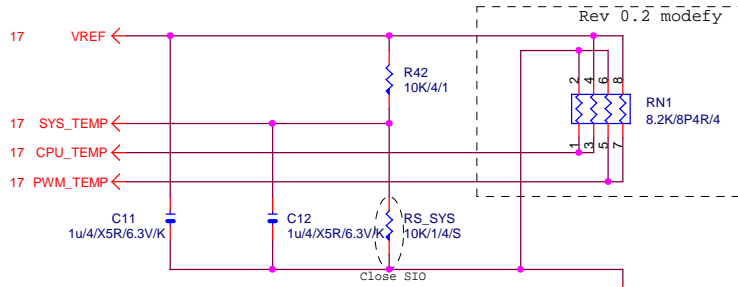
CPU Frequency Selection

FS	CPU
0	100M <Default>
1	133M

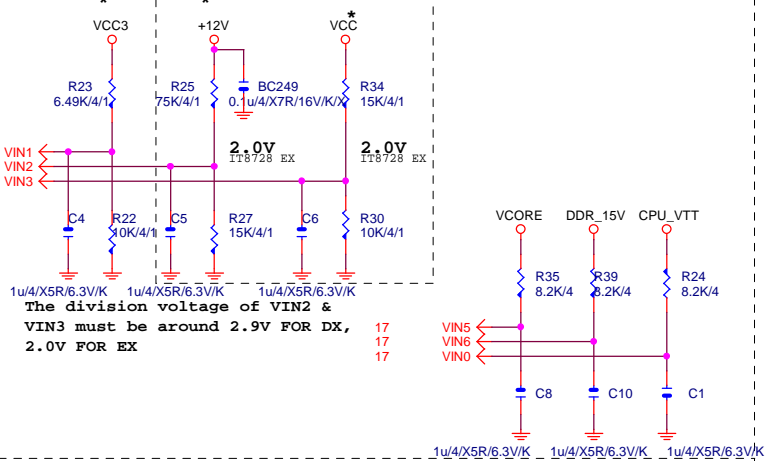
Gigabyte Technology

Title	ATX POWER CONNECTOR		
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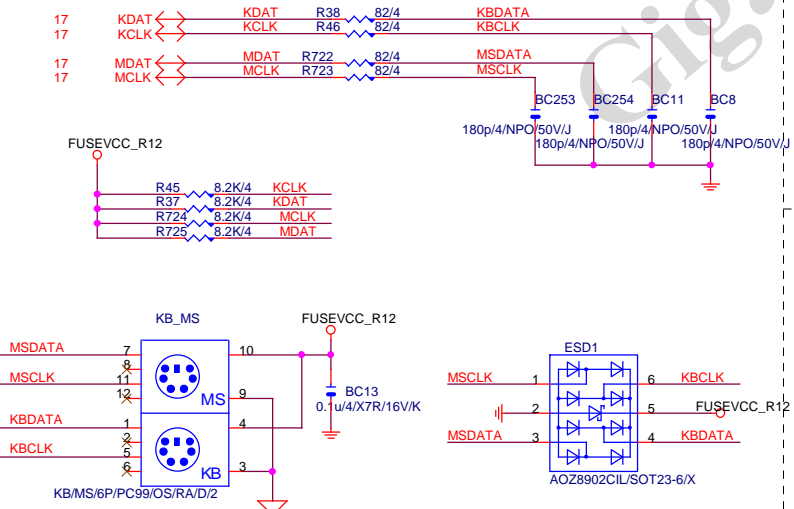
TEMP H/W MONITOR



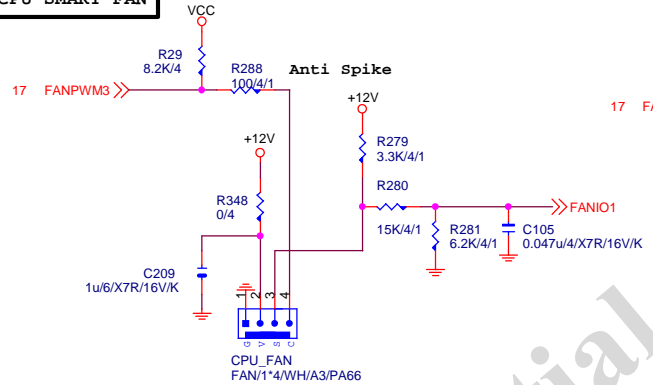
VOLTAGE-- H/W MONITOR



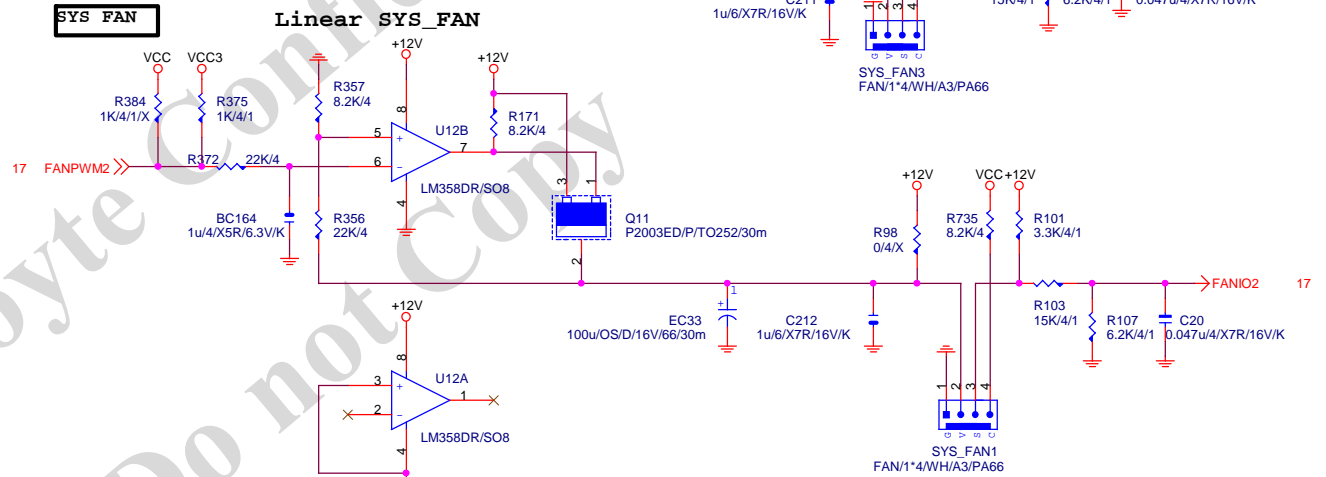
KB/USB



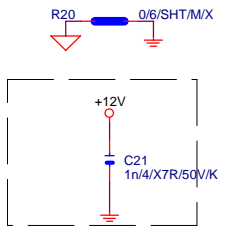
CPU SMART FAN



SYS FAN



FOR EMI ONLY



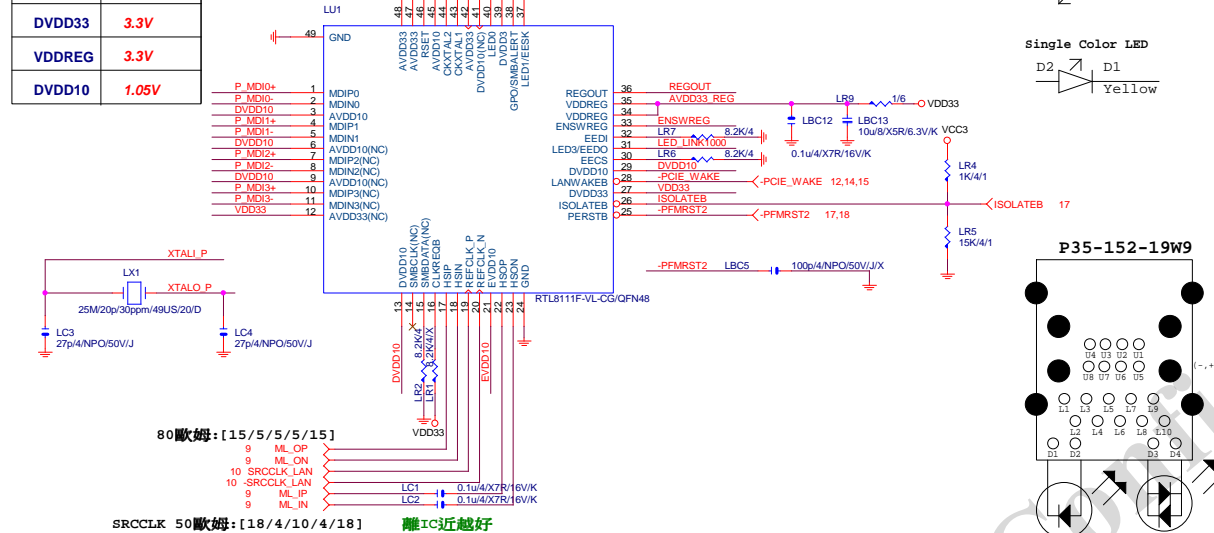
Gigabyte Technology

Title					HWM,KB/MS, FAN CTRL				
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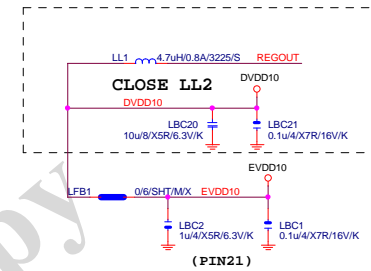
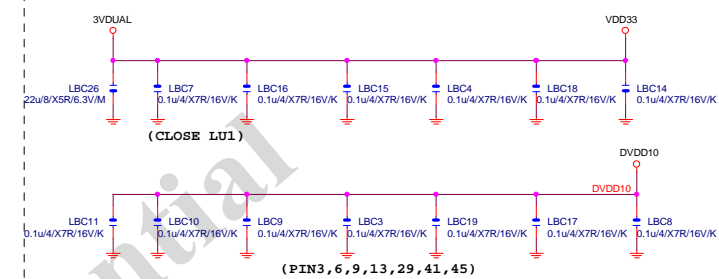
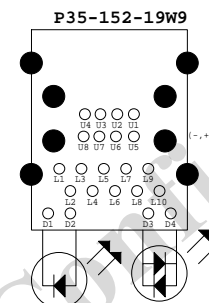
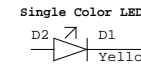
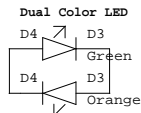
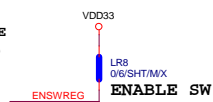
PCIE-1G LAN

Power domain chart

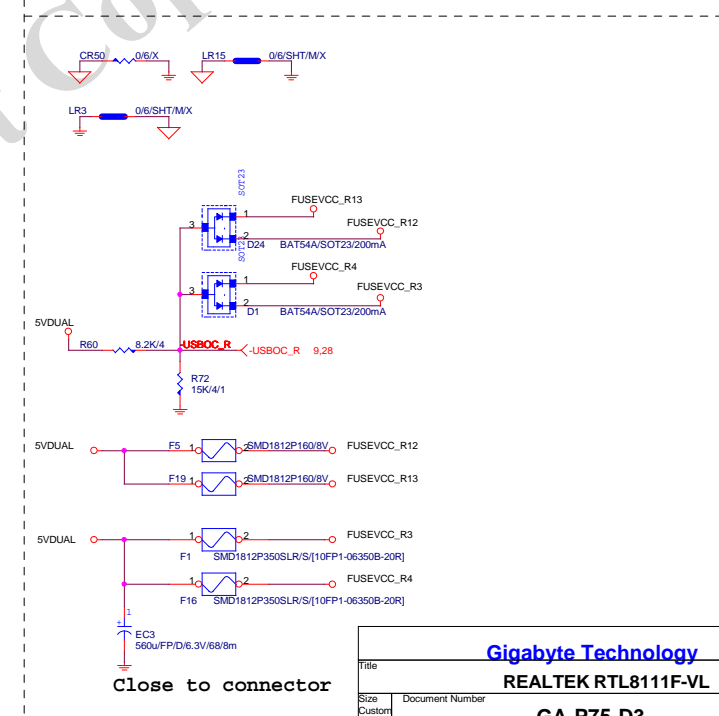
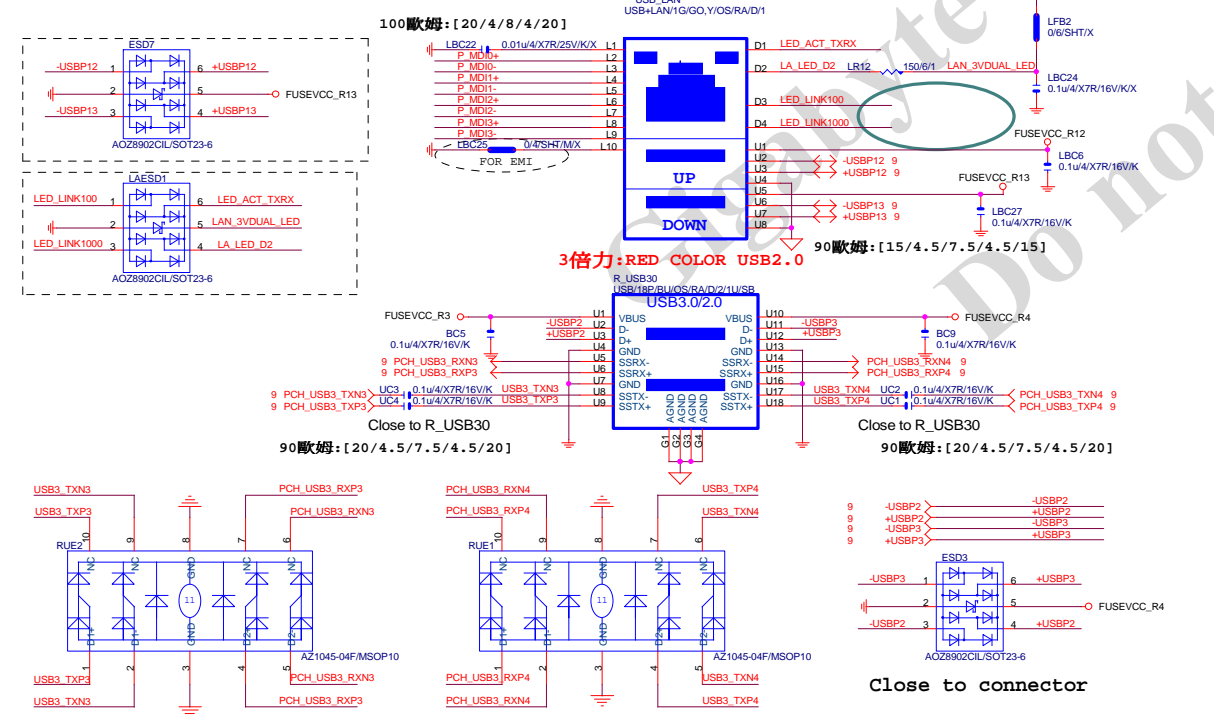
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



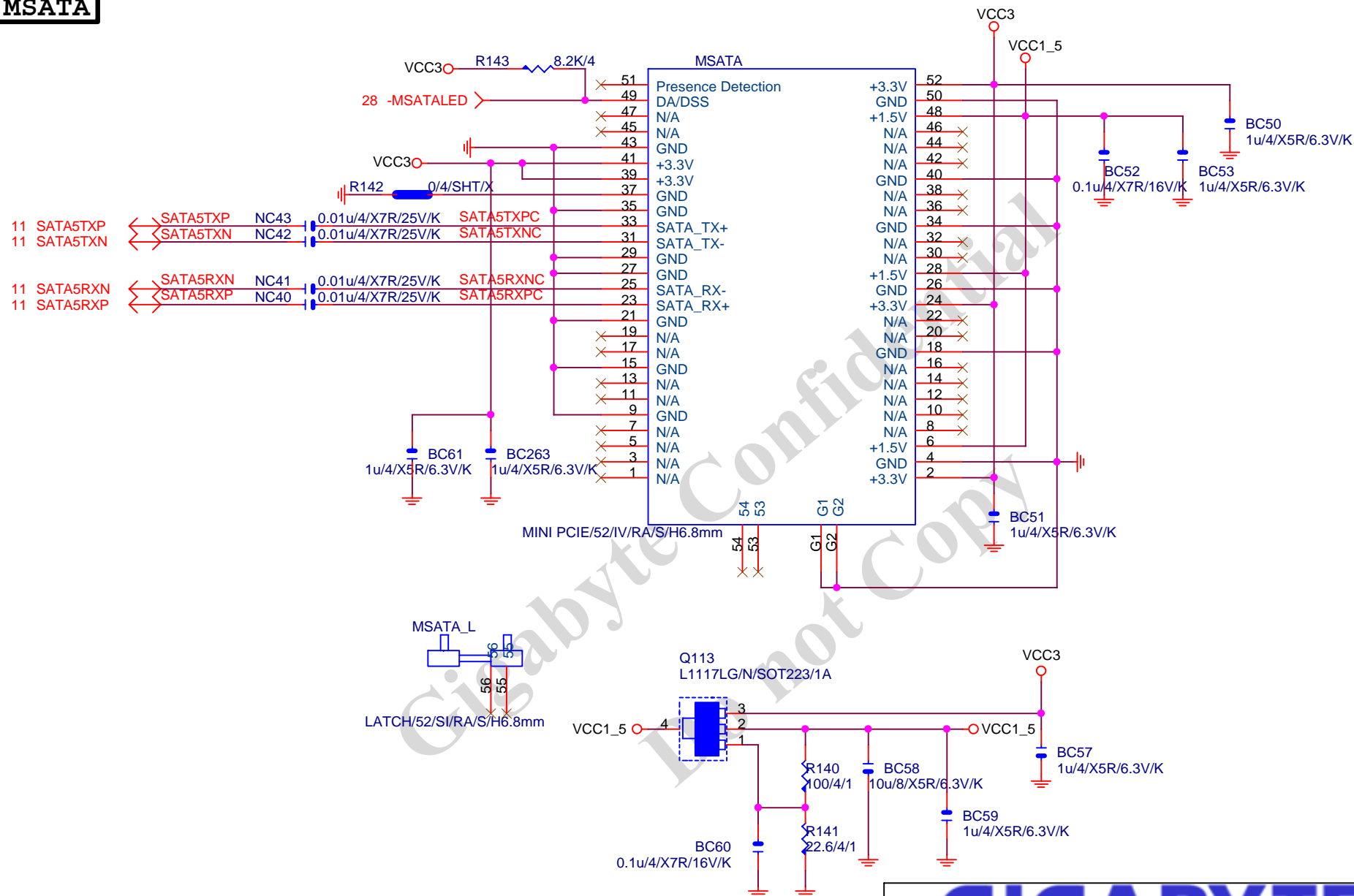
FOR DSM MODE
(DEEP SLEEP MODE)



USB30_LAN CONNECTOR

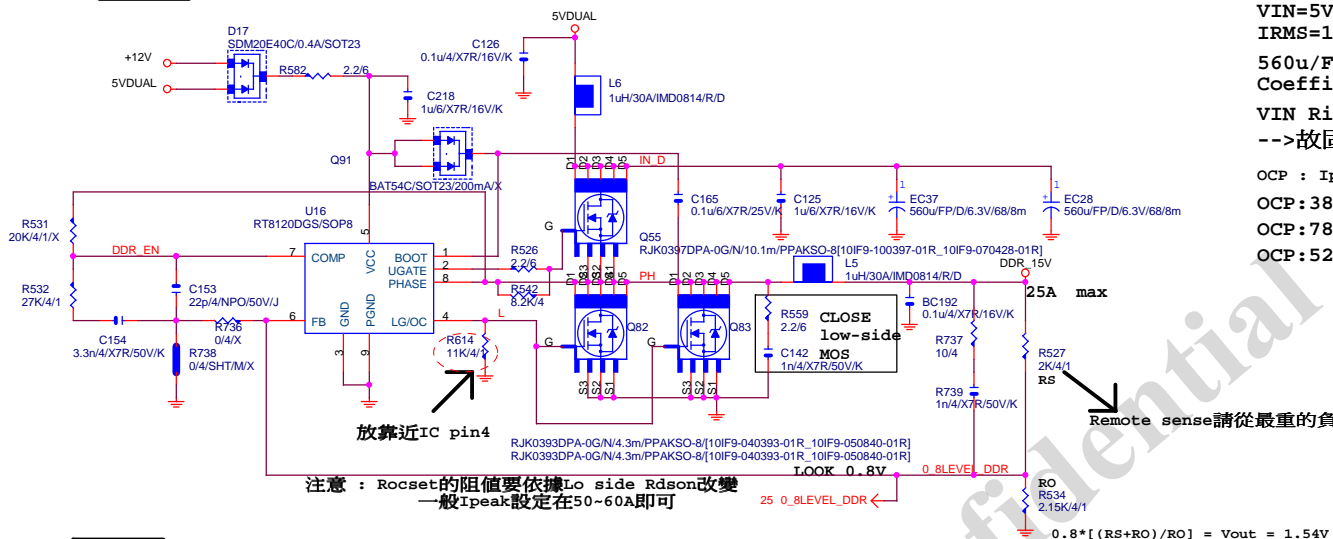


MSATA



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MSATA		
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DDR18V



VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A
560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85°C),1(105°C)
VIN Ripple current=4.7X1.7=7.99A(85°C)
-->故固態電容須2X7.99=15.98>11.45A

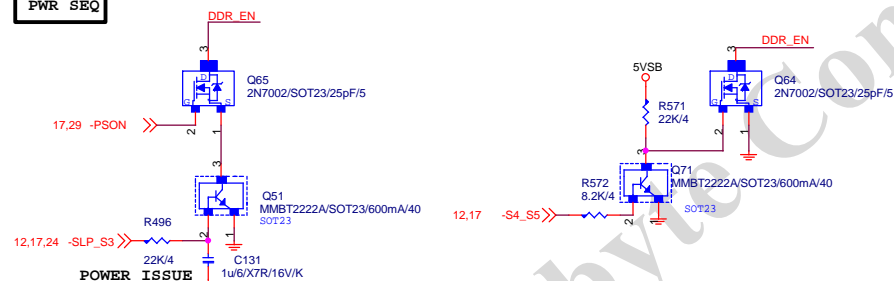
```
OCP : Ipeak=(2xIocsetxRocset)/Rdson
OCP:38.31A for Rds=6.7m for vishay@4.5V
OCP:78.78A for Rds=3.3m for renesas@10V
OCP:52A=Roset*Iocset / Rds(on)
      =13K*10uA / [5//5]
```

Remote sense請從最重的負載端點拉回

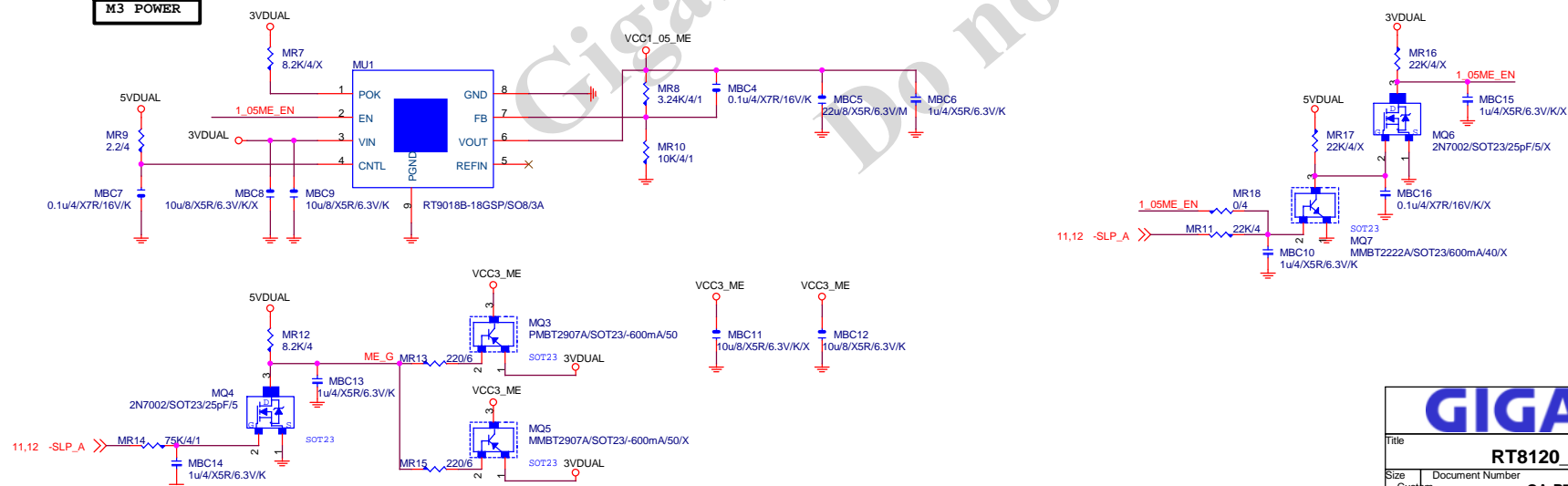
注意：Rocset的阻值要依據Lo side Rdson改變
一般Ipeak設定在50~60A即可

$$0.8 * [(R_S + R_O) / R_O] = V_{out} = 1.54V$$

PWR	SEQ
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M3 POWER



GIGABYTE™

Title			
RT8120_DDR POWER			
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