

**REV: 1.0**

**SHEET**

**TITLE**

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13	PCH_GPIO,CTRL,AUDIO
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22	CLOCK_GEN RTM885N-914
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25	CPU_VAXG_PWM ISL6314CRZ
26	CPU_VTT_PWM ISL6322G
27	VCORE_PWM ISL6334CR

[illegible]

GA-H55M-S2HP-TO Version: 1.0

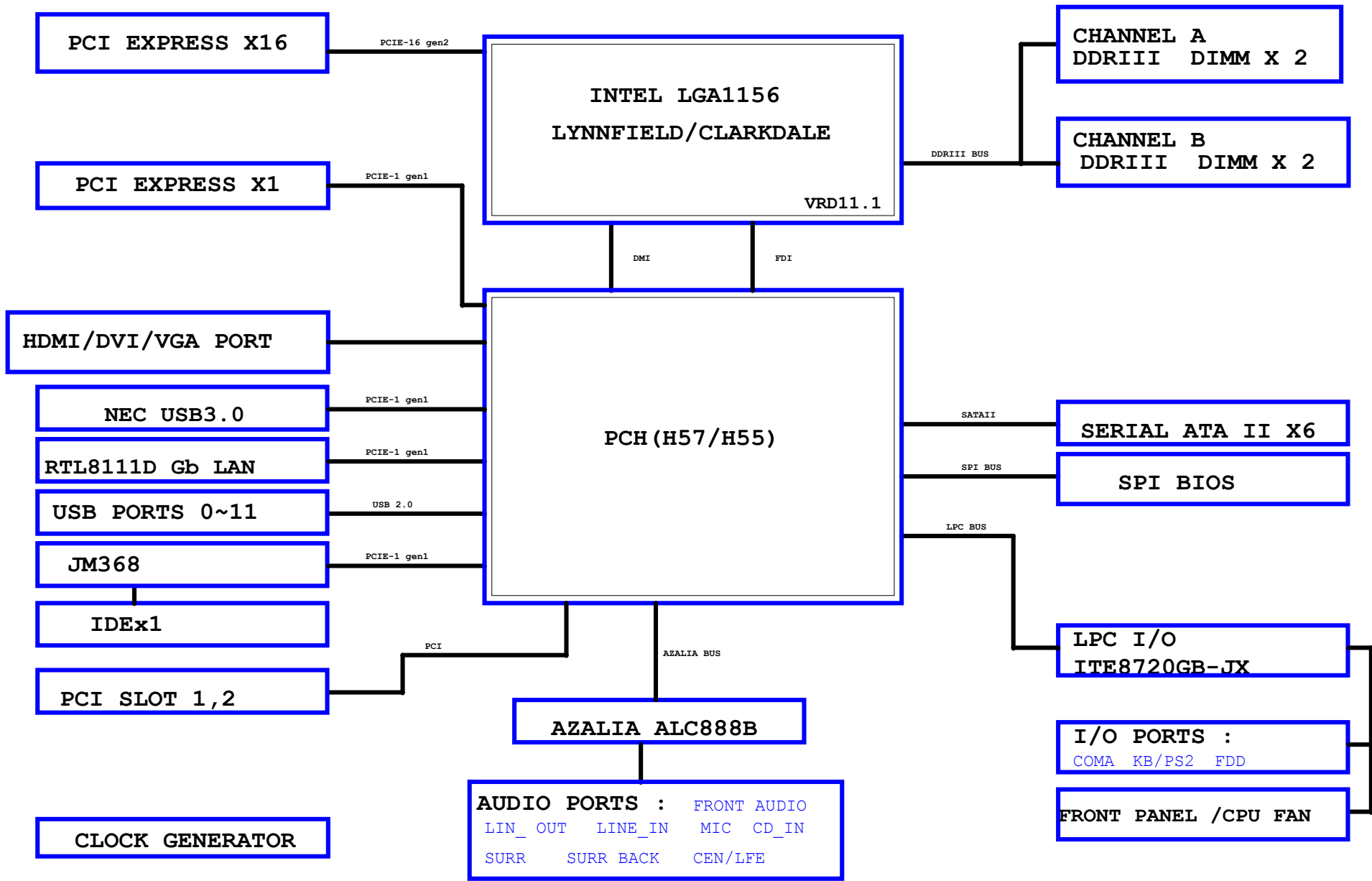
Circuit or PCB layout change  
for next version

### Component value change history

2010/01/21

[illegible][illegible]

BLOCK DIAGRAM





	FUNCTION	DEFAULT
VID0	MSI0	0
VID1	MSI1	1
VID2	MSI2	1
VID3	IMON CFG0	1
VID4	IMON CFG1	1
VID5	IMON CFG2	1
VID6	RSVD	0
VID7	VRD SEL	0
PSI#	RSVD	

POWER ON CONFIG TABLE (Default=1.2250V)

LGA1156A			
MAAA0	AW18	SA_MA[0]	AK3 DQSA0
MAAA1	AY15	SA_MA[1]	AK3 -DQSA0
MAAA2	AV15	SA_MA[2]	AK2 DMA0
MAAA3	AU15	SA_MA[3]	
MAAA4	AW14	SA_MA[4]	AH1 MDA0
MAAA5	AY13	SA_MA[5]	AJ4 MDA1
MAAA6	AV14	SA_MA[6]	AL2 MDA2
MAAA7	AW13	SA_MA[7]	AL1 MDA3
MAAA8	AU14	SA_MA[8]	AG2 MDA4
MAAA9	AW12	SA_MA[9]	AH2 MDA5
MAAA10	AT19	SA_MA[10]	AK1 MDA6
MAAA11	AU11	SA_MA[11]	AK2 MDA7
MAAA12	AW11	SA_MA[12]	
MAAA13	AU24	SA_MA[13]	AP2 DQSA1
MAAA14	AT11	SA_MA[14]	AP3 -DQSA1
MAAA15	AR10	SA_MA[15]	AN1 DMA1
[7] -SWEA	AT22	SA_WE#	AN3 MDA8
[7] -SCASA	AU22	SA_DO[8]	AN2 MDA9
[7] -SRASA	AT20	SA_DO[9]	AR3 MDA10
		SA_DO[10]	AR2 MDA11
[7] SBAA0	AV20	SA_BS[0]	AM3 MDA12
[7] SBAA1	AU19	SA_BS[1]	AM2 MDA13
[7] SBAA2	AU12	SA_BS[2]	AP1 MDA14
		SA_DO[14]	AR4 MDA15
		SA_DO[15]	
[7] -CSA0	AV21	SA_CS#[0]	AL4 DQSA2
[7] -CSA1	AW24	SA_CS#[1]	AL3 -DQSA2
[7] -CSA2	AU21	SA_CS#[2]	AU1 DMA2
[7] -CSA3	AU23	SA_CS#[3]	
[7] CKEA0	AU10	SA_CKE[0]	AT4 MDA16
[7] CKEA1	AW10	SA_CKE[1]	AU2 MDA17
[7] CKEA2	AV10	SA_CKE[2]	AW3 MDA18
[7] CKEA3	AY10	SA_CKE[3]	AW4 MDA19
		SA_DO[19]	AT3 MDA20
		SA_DO[20]	AT1 MDA21
		SA_DO[21]	AV2 MDA22
		SA_DO[22]	SA_DO[23]
		SA_DO[23]	
		SA_DO[24]	AY6 DQSA3
		SA_DO[25]	AW6 -DQSA3
		SA_DO[26]	AW6 DMA3
[7] DCLKA0	AR22	SA_CK[0]	
[7] -DCLKA0	AR21	SA_CK#[0]	
[7] DCLKA1	AP18	SA_CK[1]	
[7] -DCLKA1	AN18	SA_CK#[1]	
[7] DCLKA2	AN21	SA_CK[2]	
[7] -DCLKA2	AP21	SA_CK#[2]	
[7] DCLKA3	AP19	SA_CK[3]	
[7] -DCLKA3	AN19	SA_CK#[3]	
[7,8] -DDR3_RST	AV8	SM_DRAMRST#	
		SA_DO[31]	
TP1	AK22	SA_CS#[4]	AR28 DQSA4
TP1	AL23	SA_CS#[5]	AT29 -DQSA4
TP1	AK23	SA_CS#[6]	AN29 DMA4
		SA_CS#[7]	
		SA_DO[32]	AN27 MDA32
		SA_DO[33]	AT28 MDA33
		SA_DO[34]	AP28 MDA34
		SA_DO[35]	AP30 MDA35
		SA_DO[36]	AP27 MDA36
		SA_DO[37]	AR27 MDA37
		SA_DO[38]	AR29 MDA38
		SA_DO[39]	AN30 MDA39
		SA_DO[40]	AV32 DQSA5
		SA_DO[41]	AW32 -DQSA5
		SA_DO[42]	AW31 DMA5
		SA_DO[43]	
		SA_DO[44]	AU30 MDA40
		SA_DO[45]	AU31 MDA41
		SA_DO[46]	AV33 MDA42
		SA_DO[47]	AU34 MDA43
		SA_DO[48]	AV30 MDA44
		SA_DO[49]	AW30 MDA45
		SA_DO[50]	AU33 MDA46
		SA_DO[51]	AW33 MDA47
		SA_DO[52]	
		SA_DO[53]	AW36 DQSA6
		SA_DO[54]	AV35 -DQSA6
		SA_DO[55]	AU35 DMA6
		SA_DO[56]	
		SA_DO[57]	AW35 MDA48
		SA_DO[58]	AY35 MDA49
		SA_DO[59]	AV37 MDA50
		SA_DO[60]	AU37 MDA51
		SA_DO[61]	AY34 MDA52
		SA_DO[62]	AW34 MDA53
		SA_DO[63]	AV36 MDA54
		SA_DO[64]	AW37 MDA55
		SA_DO[65]	
		SA_DO[66]	AR30 DQSA7
		SA_DO[67]	AR38 -DQSA7
		SA_DO[68]	AT38 DMA7
		SA_DO[69]	
		SA_DO[70]	AT39 MDA56
		SA_DO[71]	AT40 MDA57
		SA_DO[72]	AN38 MDA58
		SA_DO[73]	AN39 MDA59
		SA_DO[74]	AU38 MDA60
		SA_DO[75]	AP39 MDA61
		SA_DO[76]	AP40 MDA62
		SA_DO[77]	AP40 MDA63

DDR\_A

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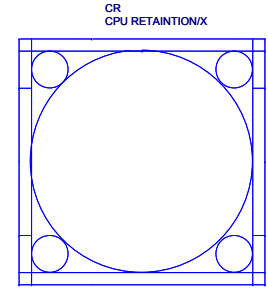
LGA1156(10SC1-F01156-01R)

LGA1156B			
MAAB0	AU20	SB_MA[0]	AF4 DQSB0
MAAB1	AU18	SB_MA[1]	AE5 -DQSB0
MAAB2	AV18	SB_MA[2]	AE4 DMB0
MAAB3	AU17	SB_MA[3]	
MAAB4	AY18	SB_MA[4]	AD7 MDB0
MAAB5	AV17	SB_MA[5]	AD6 MDB1
MAAB6	AW17	SB_MA[6]	AH8 MDB2
MAAB7	AU16	SB_MA[7]	AJ8 MDB3
MAAB8	AT17	SB_MA[8]	AC7 MDB4
MAAB9	AY16	SB_MA[9]	SB_DQ[4]
MAAB10	AY25	SB_MA[10]	SB_DQ[5]
MAAB11	AW16	SB_MA[11]	AF5 MDB6
MAAB12	AW15	SB_MA[12]	AE6 MDB7
MAAB13	AW18	SB_MA[13]	AH6 DQSB1
MAAB14	AY12	SB_MA[14]	AJ5 -DQSB1
MAAB15	AV11	SB_MA[15]	AH4 DMB1
		SB_DM[1]	
[8] -SWEB	AW26	SB_WE#	AG5 MDB8
[8] -SCASB	AW27	SB_CAS#	AH7 MDB9
[8] -SRASB	AW26	SB_RAS#	AK6 MDB10
		SB_DO[8]	AL4 MDB11
[8] SBAB0	AW25	SB_BS[0]	AG6 MDB12
[8] SBAB1	AW25	SB_BS[1]	AC4 MDB13
[8] SBAB2	AW25	SB_BS[2]	AJ7 MDB14
		SB_DO[10]	AK7 MDB15
		SB_DO[11]	
[8] -CSB0	AY27	SB_CS#[0]	AN6 DQSB2
[8] -CSB1	AW26	SB_CS#[1]	AM6 -DQSB2
[8] -CSB2	AW26	SB_CS#[2]	AM7 DMB2
[8] -CSB3	AW26	SB_CS#[3]	
[8] CKEB0	AW8	SB_CKE[0]	AL6 MDB16
[8] CKEB1	AW9	SB_CKE[1]	AN6 MDB17
[8] CKEB2	AW9	SB_CKE[2]	AP6 MDB18
[8] CKEB3	AW9	SB_CKE[3]	AR5 MDB19
		SB_DO[16]	AL5 MDB20
		SB_DO[17]	AM4 MDB21
		SB_DO[18]	AN7 MDB22
		SB_DO[19]	AP5 MDB23
		SB_DO[20]	
		SB_DO[21]	
		SB_DO[22]	
		SB_DO[23]	
		SB_DO[24]	AR8 DQSB3
		SB_DO[25]	AP8 -DQSB3
		SB_DO[26]	AT7 DMB3
		SB_DO[27]	
		SB_DO[28]	AT6 MDB24
		SB_DO[29]	AR7 MDB25
		SB_DO[30]	AP9 MDB26
		SB_DO[31]	AR8 MDB27
		SB_DO[32]	AN8 MDB28
		SB_DO[33]	AR6 MDB29
		SB_DO[34]	AL8 MDB30
		SB_DO[35]	AT9 MDB31
		SB_DO[36]	
		SB_DO[37]	AT25 DQSB4
		SB_DO[38]	AR24 -DQSB4
		SB_DO[39]	AN24 DMB4
		SB_DO[40]	
		SB_DO[41]	AN23 MDB32
		SB_DO[42]	AP23 MDB33
		SB_DO[43]	AR25 MDB34
		SB_DO[44]	AR26 MDB35
		SB_DO[45]	AT23 MDB36
		SB_DO[46]	AP22 MDB37
		SB_DO[47]	AP25 MDB38
		SB_DO[48]	AT26 MDB39
		SB_DO[49]	
		SB_DO[50]	AP32 DQSB5
		SB_DO[51]	AR32 -DQSB5
		SB_DO[52]	AN32 DMB5
		SB_DO[53]	
		SB_DO[54]	AT32 MDB40
		SB_DO[55]	AP31 MDB41
		SB_DO[56]	AR33 MDB42
		SB_DO[57]	AM32 MDB43
		SB_DO[58]	AT31 MDB44
		SB_DO[59]	AR31 MDB45
		SB_DO[60]	AR34 MDB46
		SB_DO[61]	AT33 MDB47
		SB_DO[62]	
		SB_DO[63]	AR36 DQSB6
		SB_DO[64]	AR37 -DQSB6
		SB_DO[65]	AM33 DMB6
		SB_DO[66]	
		SB_DO[67]	AR35 MDB48
		SB_DO[68]	AT36 MDB49
		SB_DO[69]	AP36 MDB50
		SB_DO[70]	AP36 MDB51
		SB_DO[71]	AP34 MDB52
		SB_DO[72]	AT35 MDB53
		SB_DO[73]	AN34 MDB54
		SB_DO[74]	AP37 MDB55
		SB_DO[75]	
		SB_DO[76]	AL37 DQSB7
		SB_DO[77]	AM36 -DQSB7
		SB_DO[78]	AK35 DMB7
		SB_DO[79]	
		SB_DO[80]	AL35 MDB56
		SB_DO[81]	AM35 MDB57
		SB_DO[82]	AJ36 MDB58
		SB_DO[83]	AJ37 MDB59
		SB_DO[84]	AN35 MDB60
		SB_DO[85]	AM34 MDB61
		SB_DO[86]	AJ35 MDB62
		SB_DO[87]	AL36 MDB63
		SB_DO[88]	

DDR\_B

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LGA1156(10SC1-F01156-01R)



Need check the new CPU ME

LGA1156\_P



PLATE+HLM(12KRC-0F0001-01R)

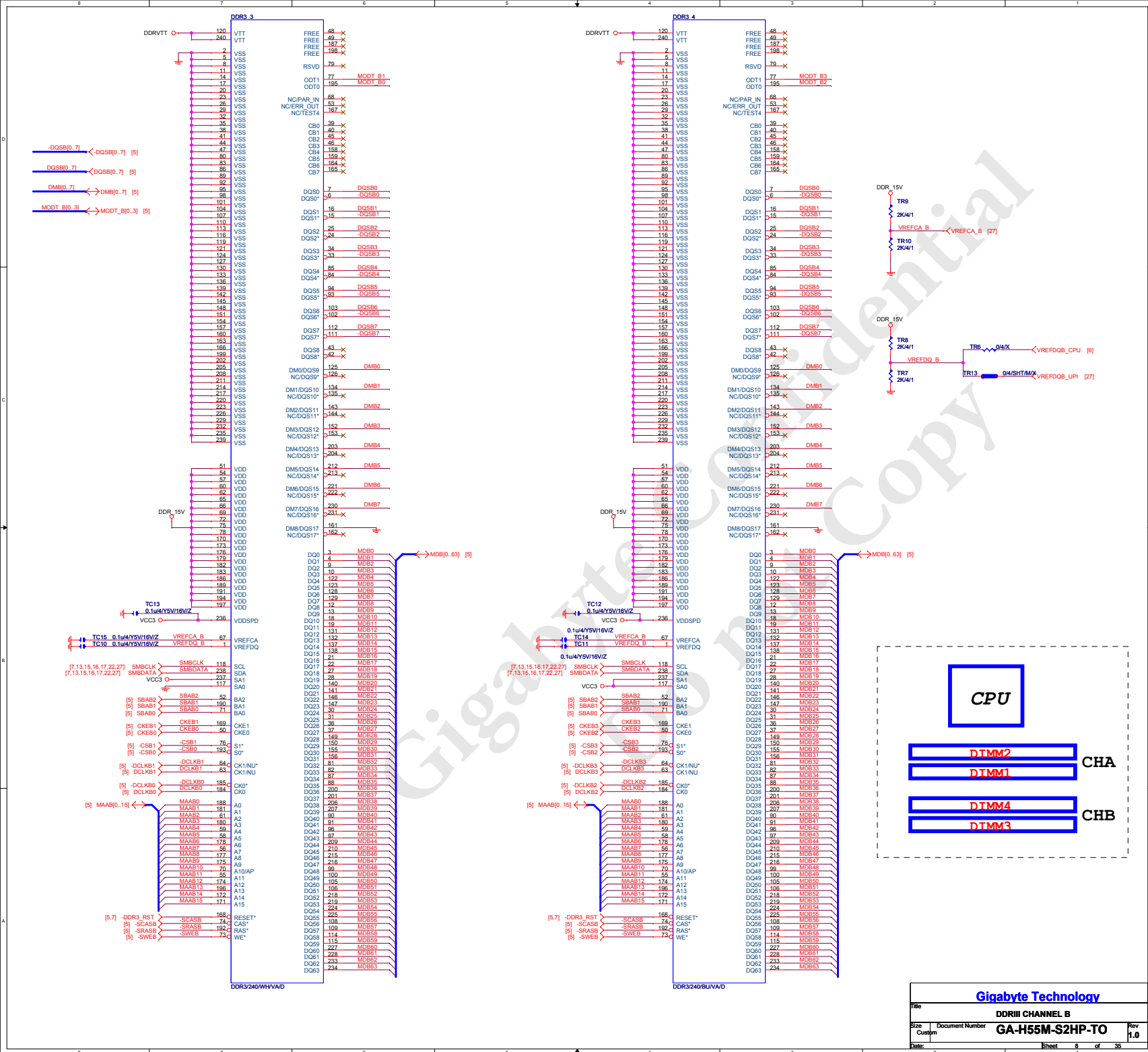
Gigabyte Technology

Title			
CPU LGA1156-B			
Size			
Custom	Document Number	G4-H55M-S2HP-TO	
Date:			Rev 1.0
Friday, January 22, 2010			
Sheet			5 of 35





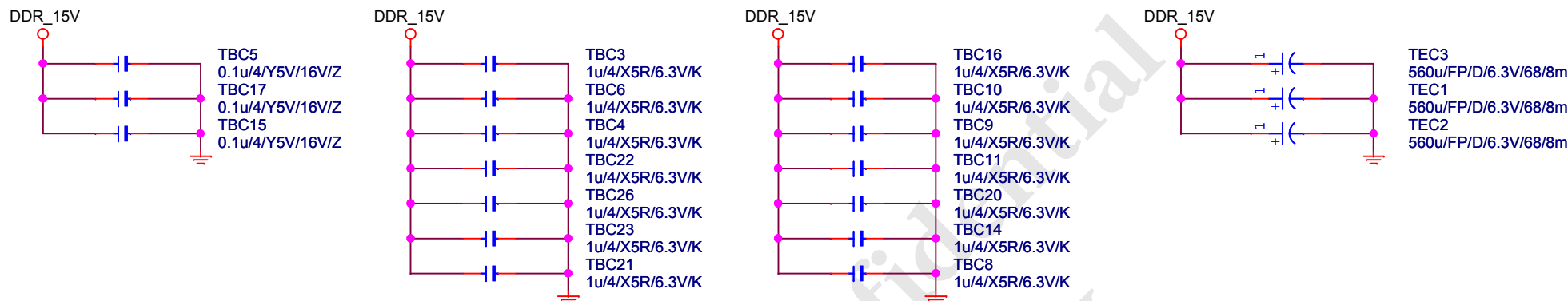




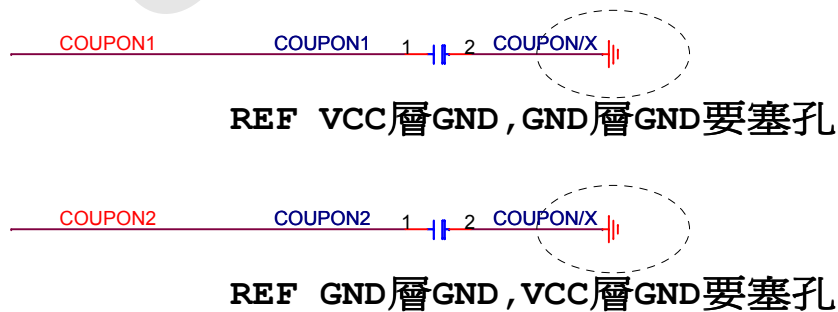
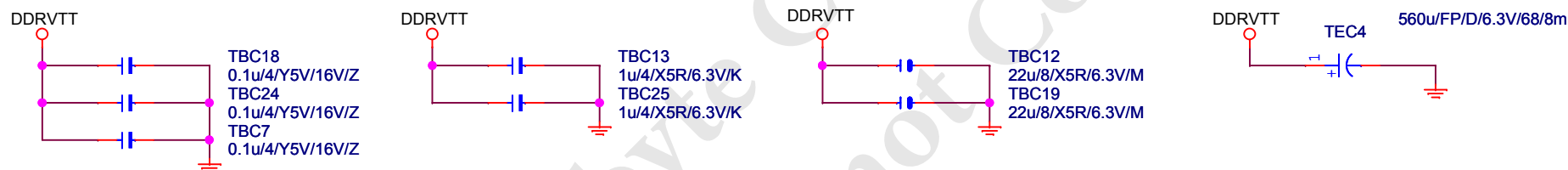


# DDR TERMINATION CHANNEL A/B

## DDR15V Decouple



## DDRVTT Decouple

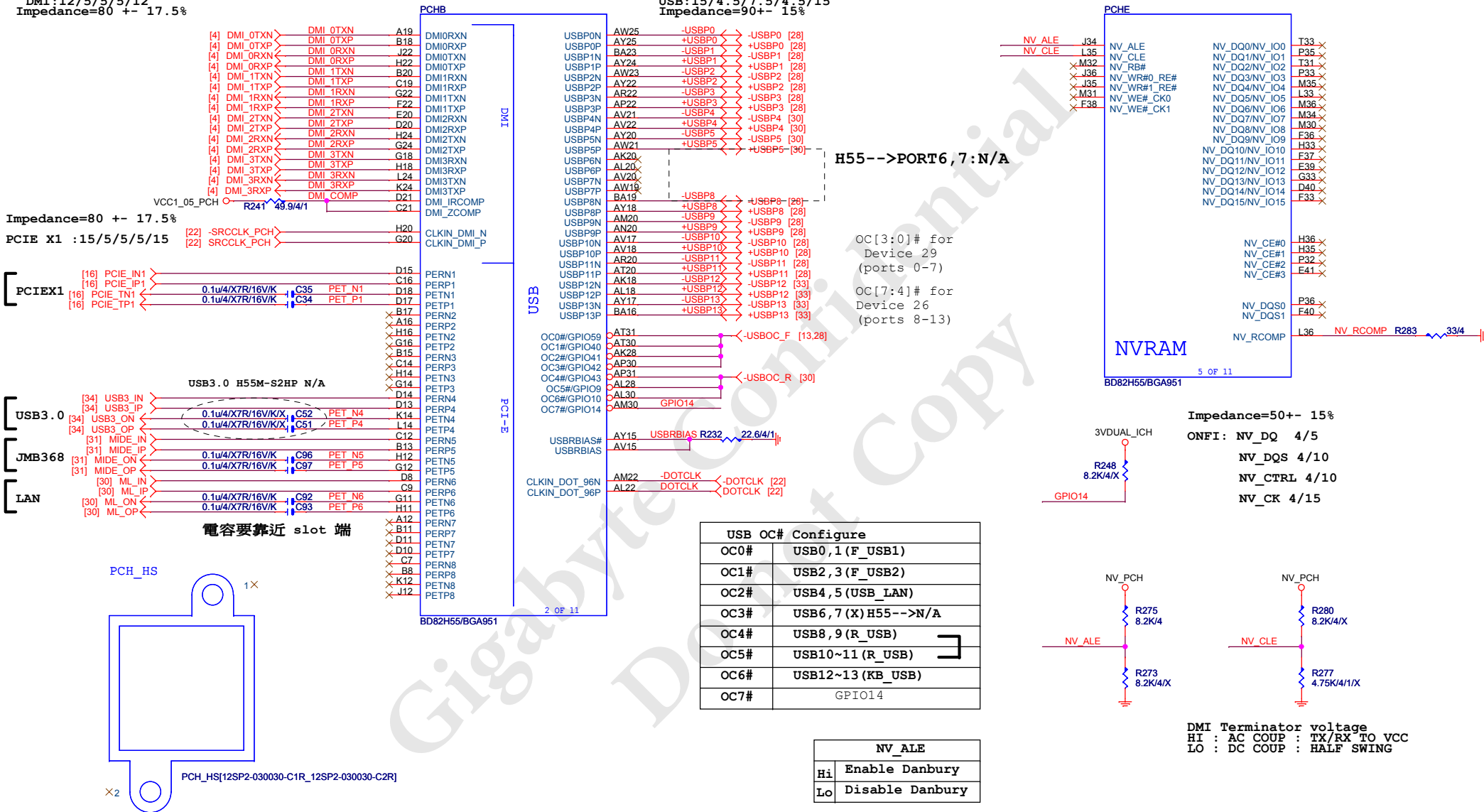


**Gigabyte Technology**

Title			DDRIII POWER CAP
Size A	Document Number	GA-H55M-S2HP-TO	
Date: Friday, January 22, 2010		Sheet 9 of 35	Rev 1.0

DMI:12/5/5/5/12  
Impedance=80 +- 17.5%

USB:15/4.5/7.5/4.5/15  
Impedance=90+- 15%



H55-->PORT6,7:N/A

OC[3:0]# for  
Device 29  
(ports 0-7)  
  
OC[7:4]# for  
Device 26  
(ports 8-13)

USB OC# Configure	
OC0#	USB0,1 (F_USB1)
OC1#	USB2,3 (F_USB2)
OC2#	USB4,5 (USB_LAN)
OC3#	USB6,7 (X) H55-->N/A
OC4#	USB8,9 (R_USB)
OC5#	USB10~11 (R_USB)
OC6#	USB12~13 (KB_USB)
OC7#	GPIO14

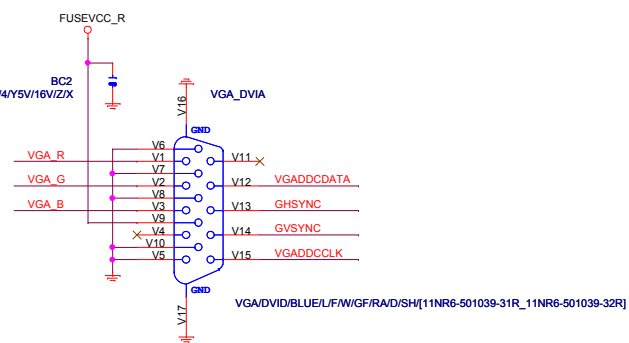
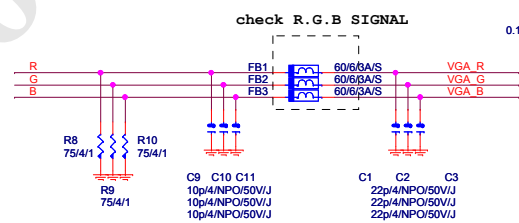
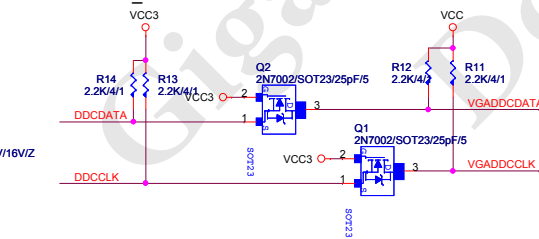
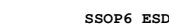
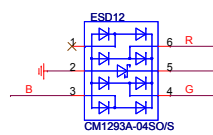
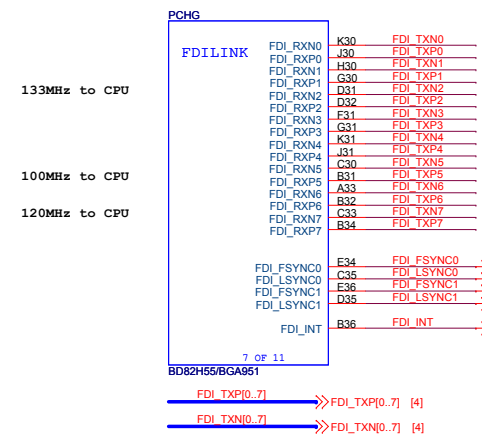
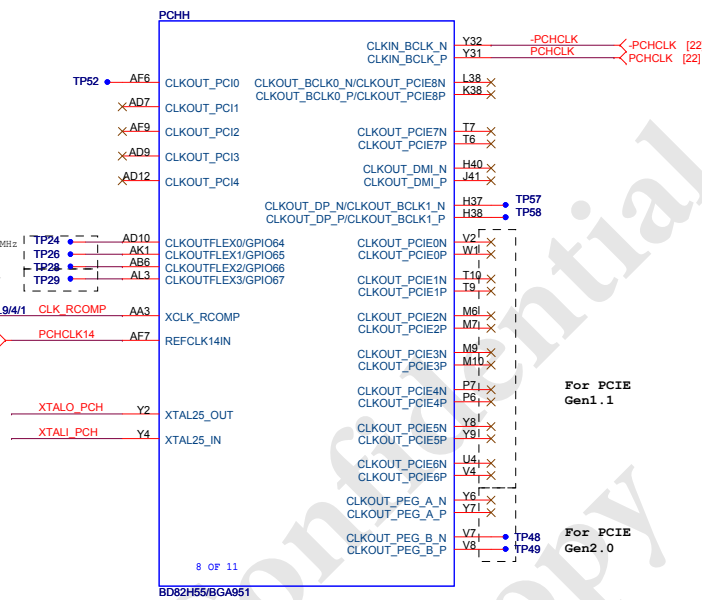
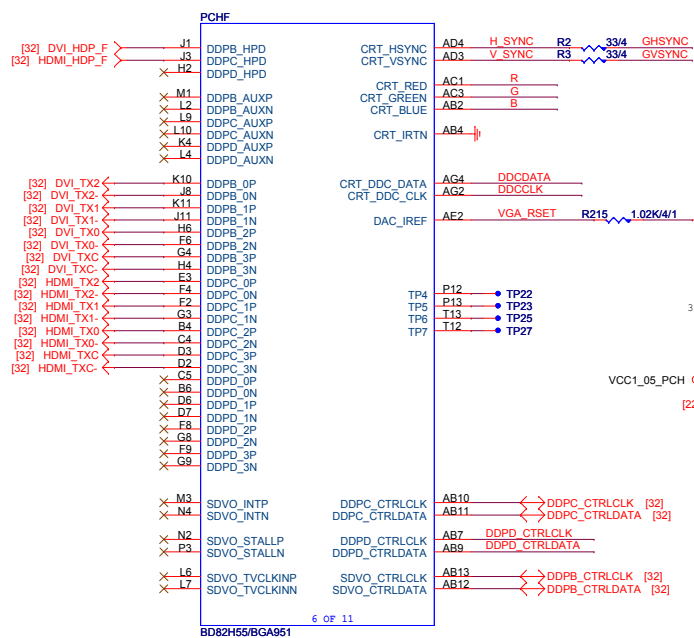
NV_ALE	
Hi	Enable Danbury
Lo	Disable Danbury

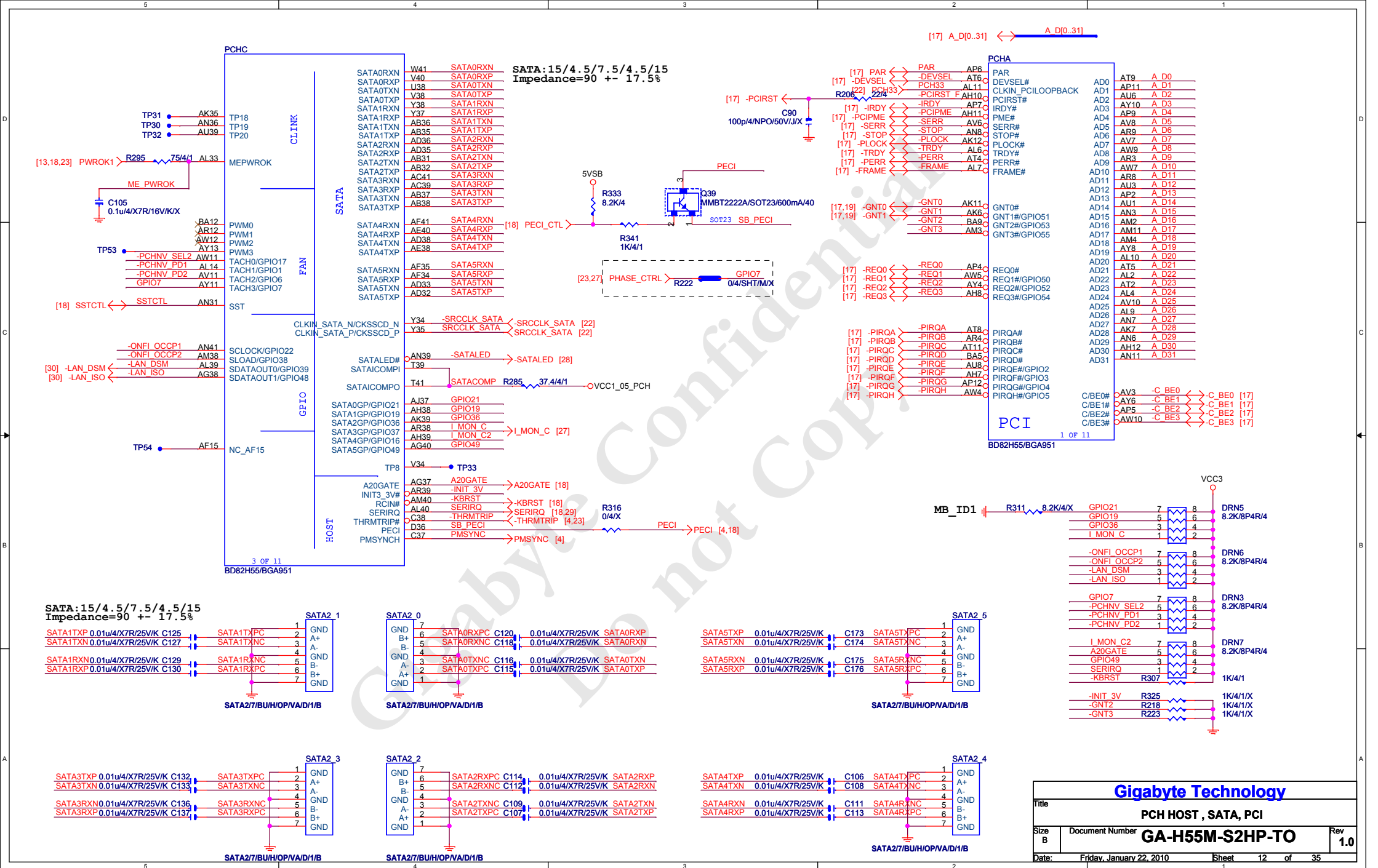
Intel anti theft techonlogy

Impedance=50+- 15%  
ONFI: NV\_DQ 4/5  
NV\_DQS 4/10  
NV\_CTRL 4/10  
NV\_CK 4/15

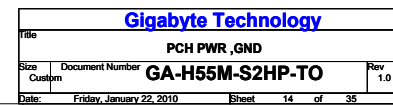
DMI Terminator voltage  
HI : AC COUP : TX/RX TO VCC  
LO : DC COUP : HALF SWING

Gigabyte Technology			
Title PCH FDI,DMI,USB,PCIE,NVRAM			
Size B	Document Number	GA-H55M-S2HP-TO	
Date:	Tuesday, February 02, 2010	Sheet	10 of 35

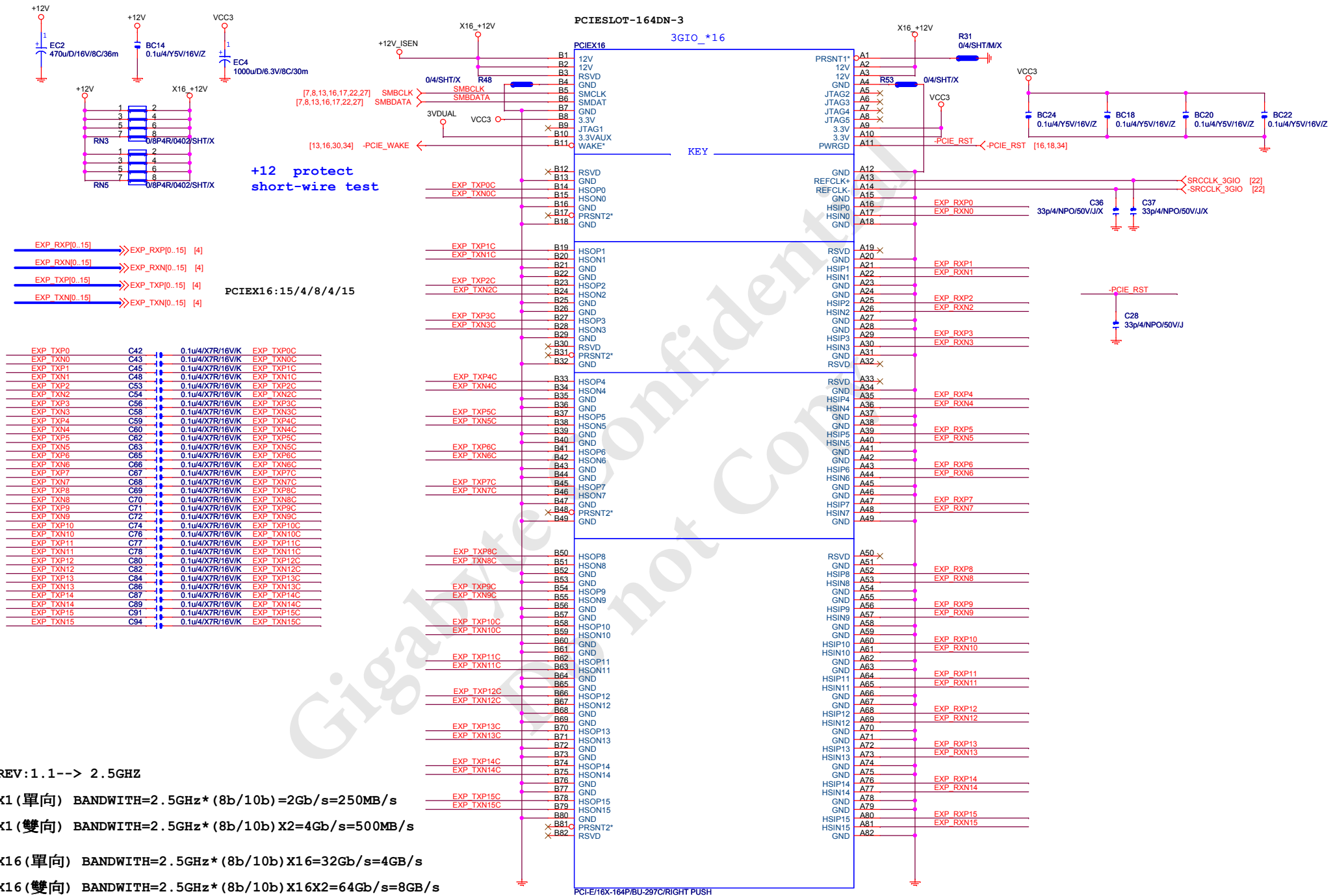


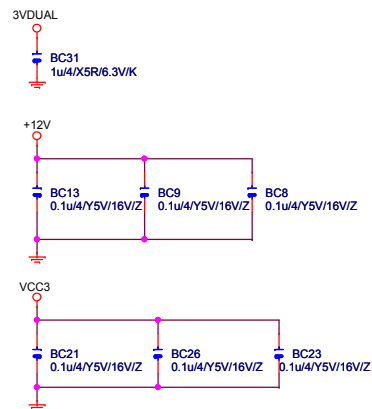
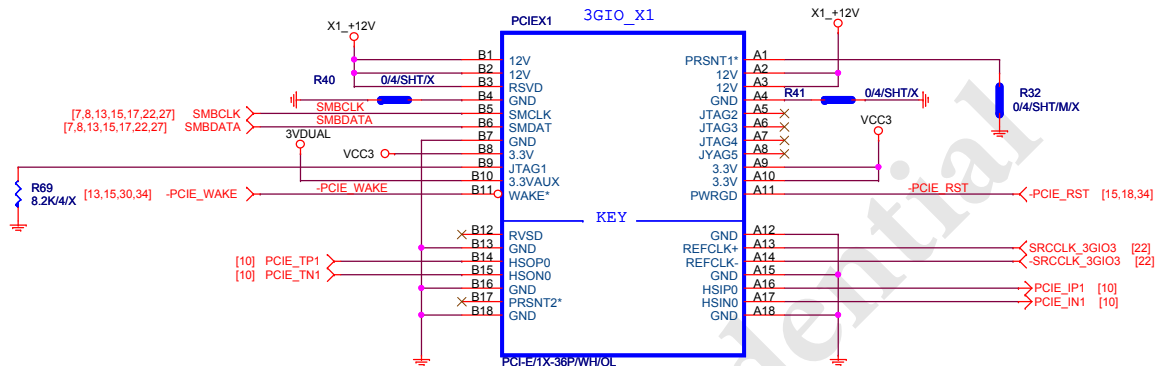
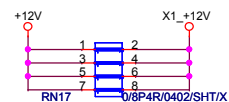




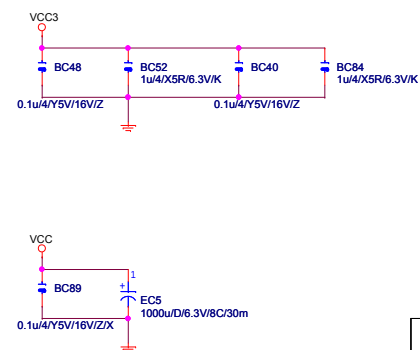
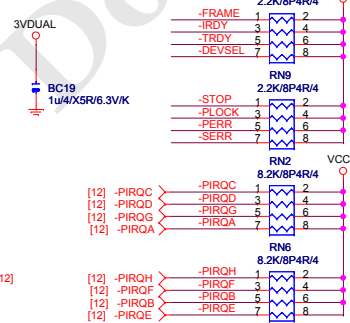
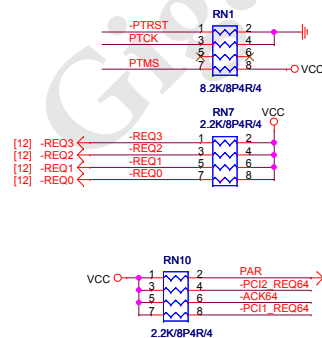
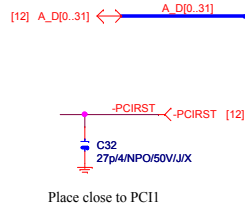
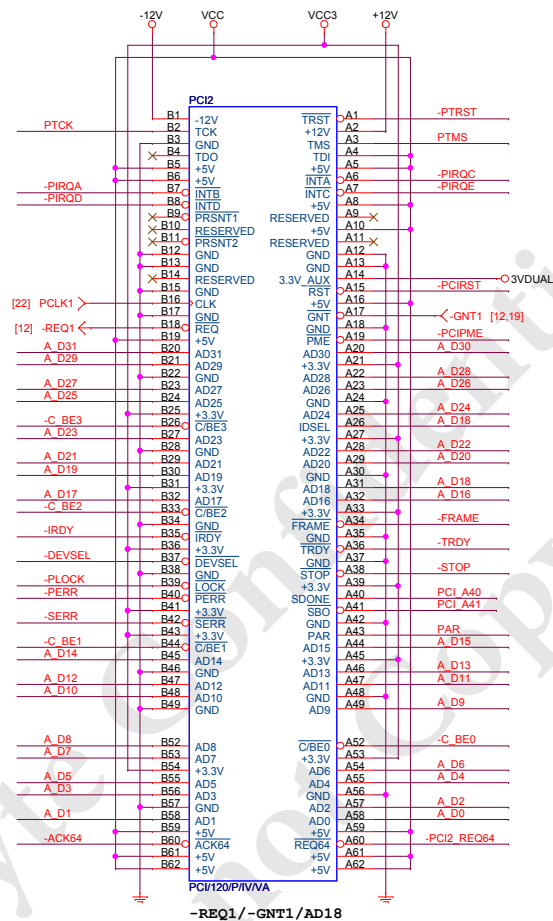
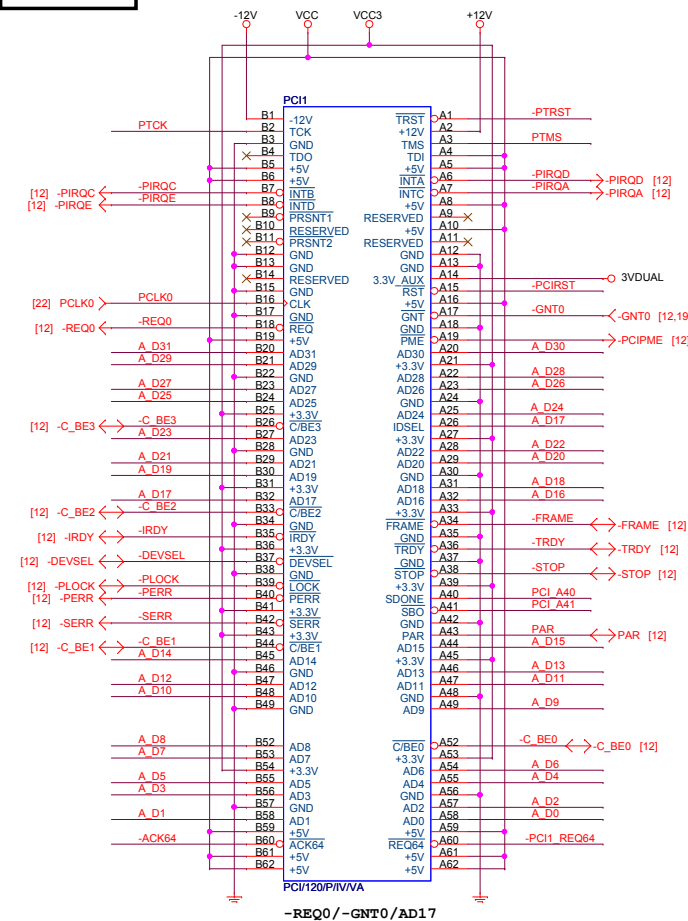








PCI1,2 SLOT
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# IT8720F ( GB )

IT8720F-S-JX/GBYS

For IT8721 to control PCH PECI

For IT8720 Power

For IT8721 Power

internal power pin for IT8721  
Must pop in IT8721

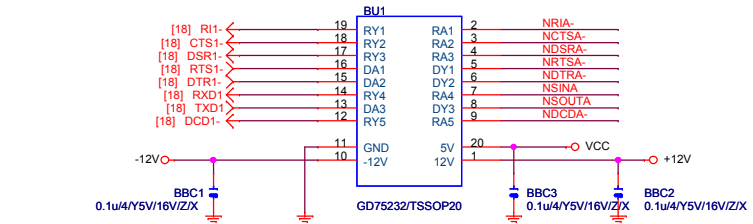
ITE8720 Power on Strapping

JP2	1	Disable VID/SVID output pins
	0	Enable VID00-7 output pins
JP3	1	SPI-Flash Disable
	0	SPI-Flash Enable
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP5	1	Disable WDT reset PWROK
	0	Enable WDT reset PWROK
JP6	1	Parallel VID output
	0	Serial VID output
JP7	1	Enable Dual BIOS Function
	0	Disable Dual BIOS Function

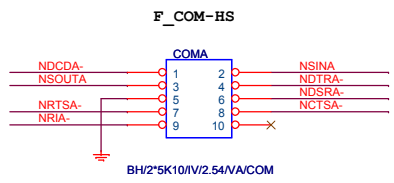
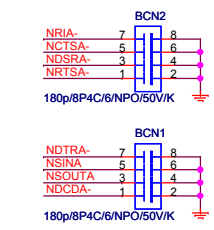
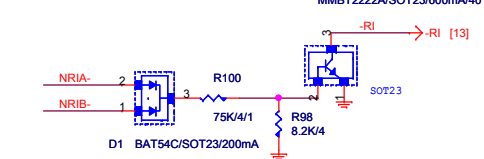
Gigabyte Technology

Title			ITE 8720 LPC IO
Size B	Document Number	GA-H55M-S2HP-TO	
		Rev	1.0
Date:	Friday, January 22, 2010	Sheet	18 of 35

# COMA

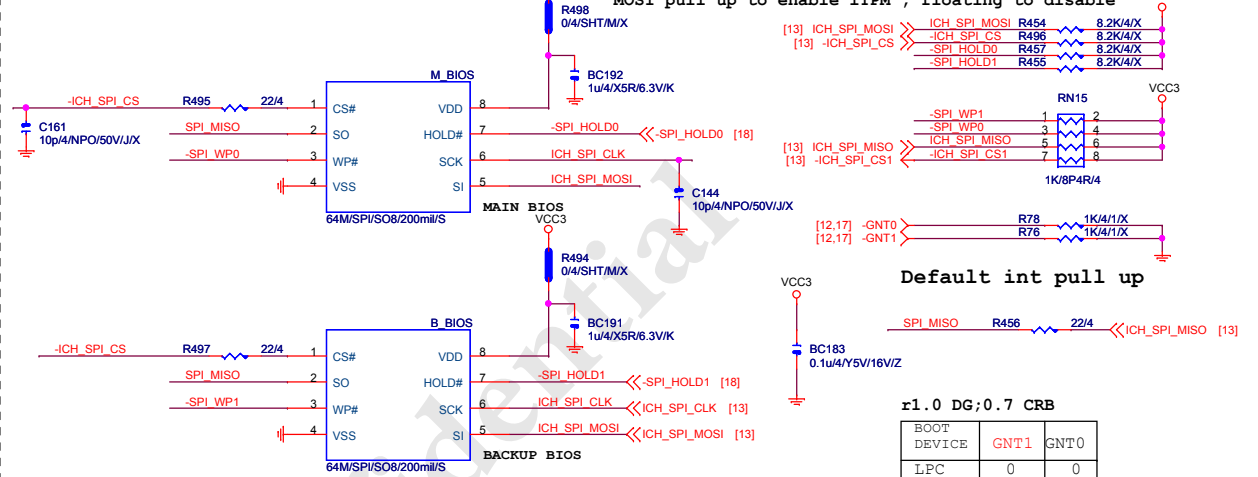


# RING IN

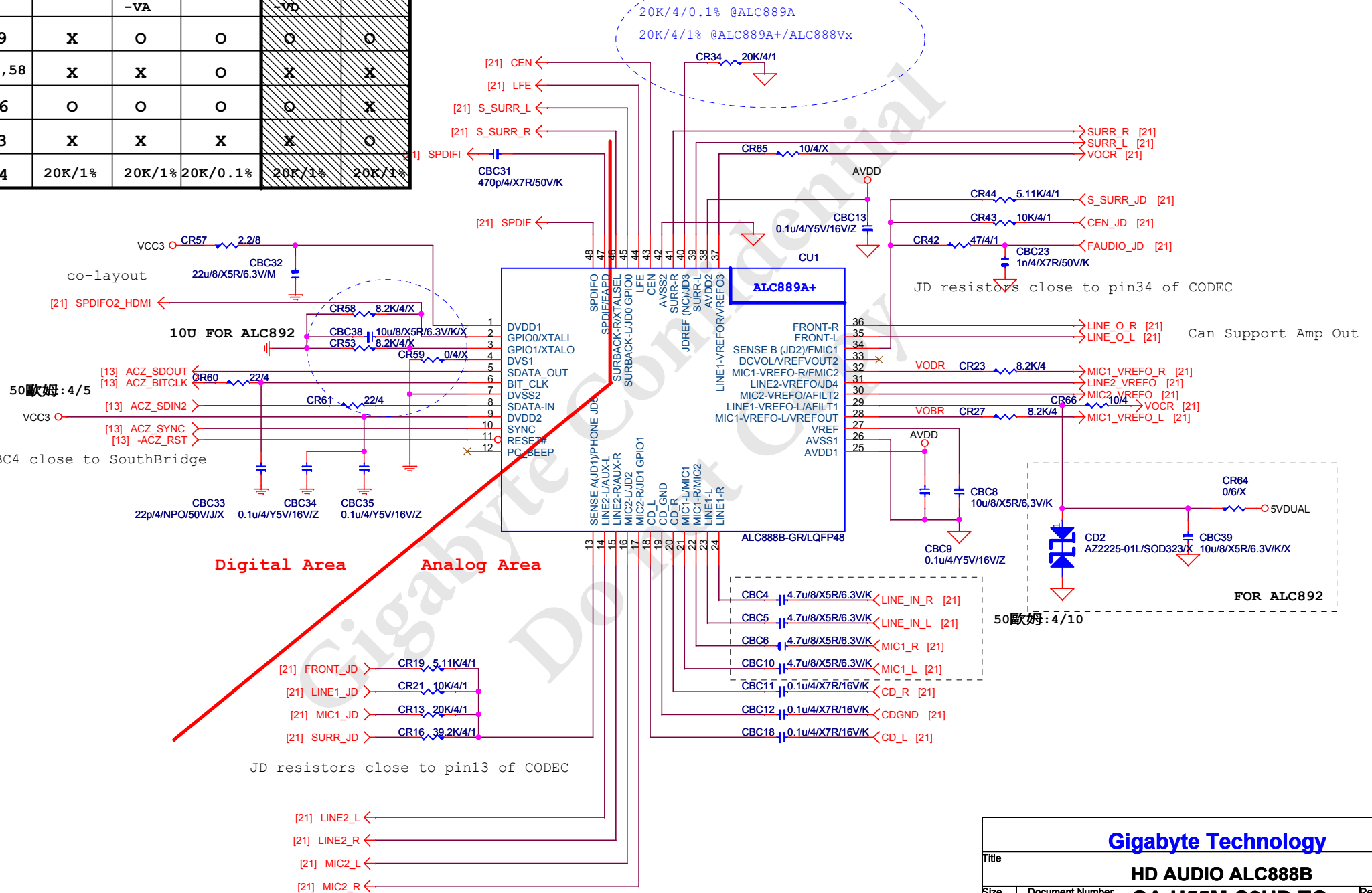


PLACE NEAR COM CONNECTOR

# DUAL BIOS



	ALC888B	ALC888 -VA	ALC889A	ALC888 -VD	ALC892
CR59	X	O	O	O	O
CR53, 58	X	X	O	X	X
CR56	O	O	O	O	X
CR63	X	X	X	X	O
CR34	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%



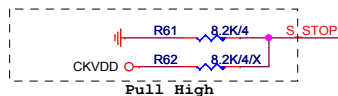
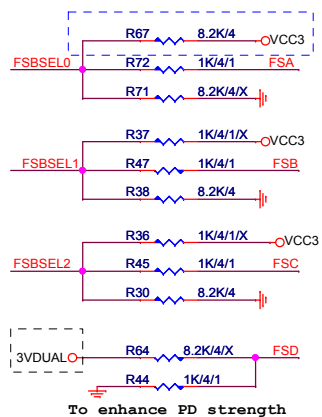
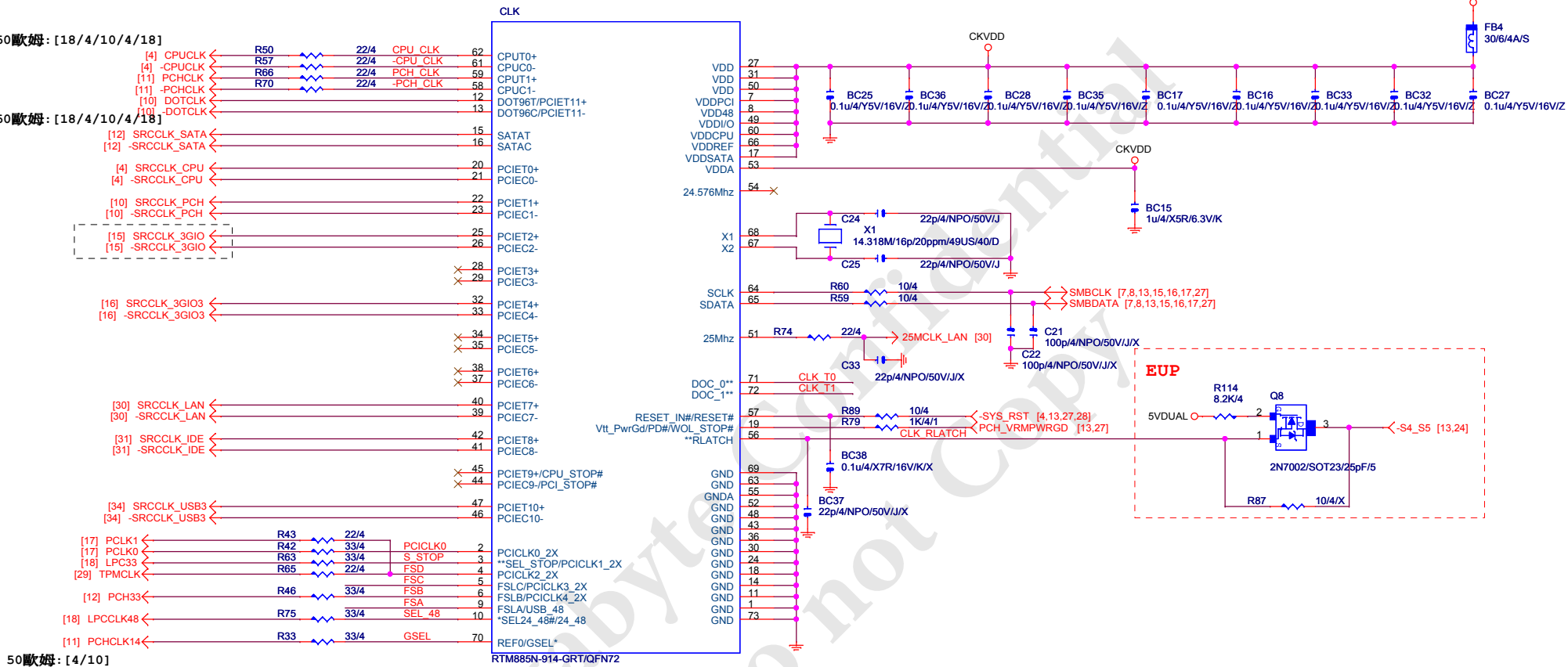
Can Support Amp Out





50歐姆:[18/4/10/4/18]

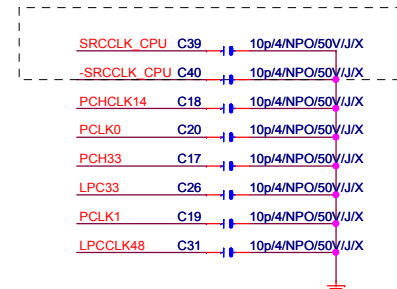
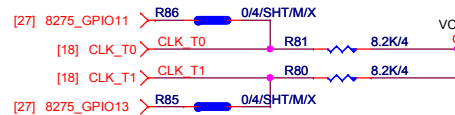
50歐姆:[18/4/10/4/18]



GSEL=1,96Mhz from 12/13  
 GSEL=0,100Mhz from12/13

SEL\_48=1, 24Mhz from pin10  
 SEL\_48=0, 48Mhz from pin10

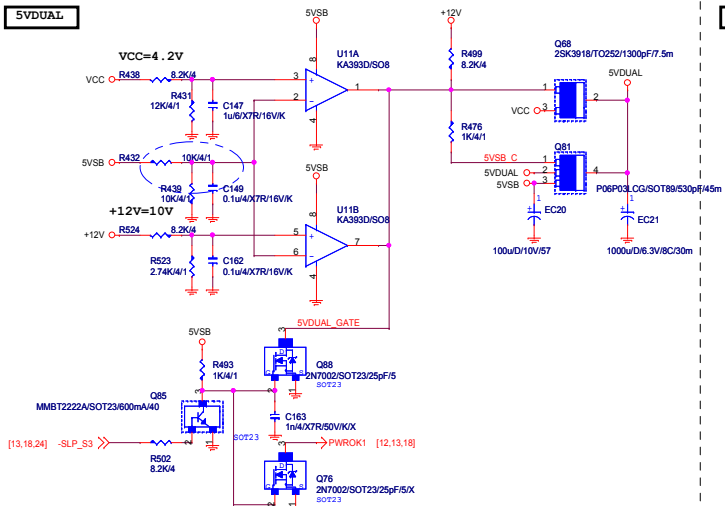
FSC	FSB	FSA	CPU
0	0	0	266MHz
0	0	1	133MHz
0	1	0	200MHz
0	1	1	166MHz
1	0	0	333MHz
1	1	0	400MHz



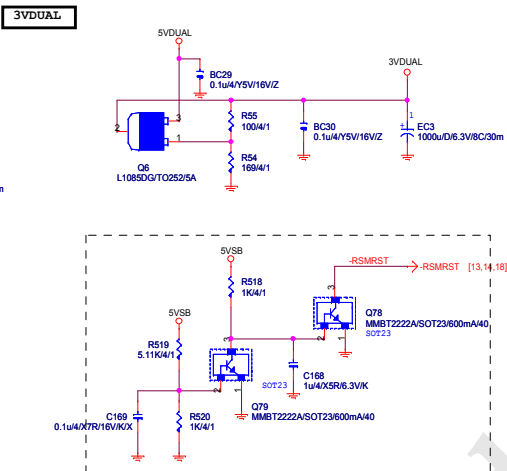
Gigabyte Technology

Title			Rev
CK505 CLK GEN			1.0
Size	Document Number	GA-H55M-S2HP-TO	
Custom			
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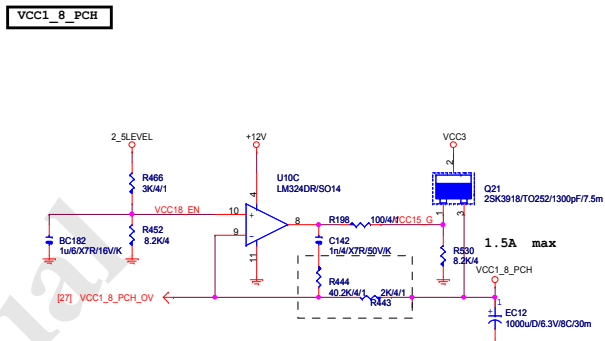
## 5VDUAL



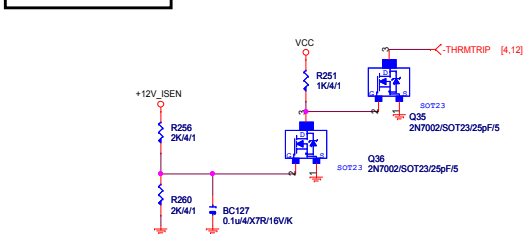
## 3VDUAL



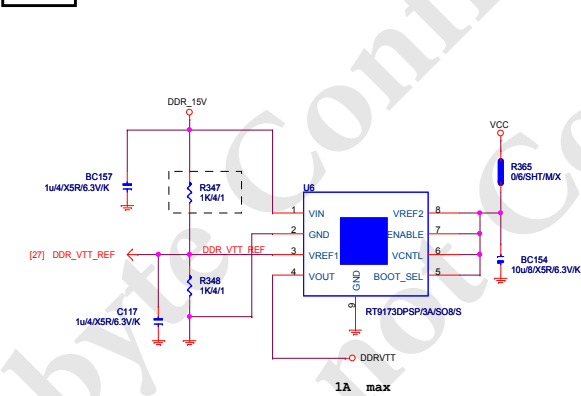
## VCC1\_8\_PCH



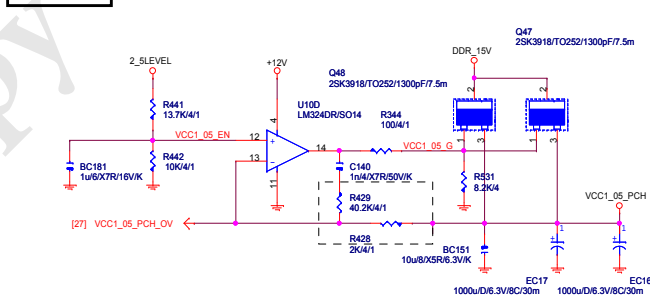
## +12V SHORT PROTECT



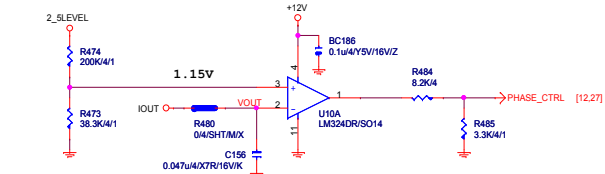
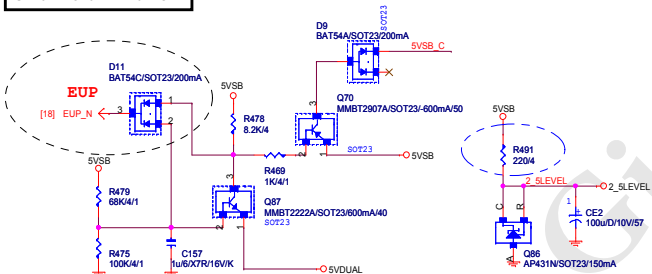
## DDR\_VTT



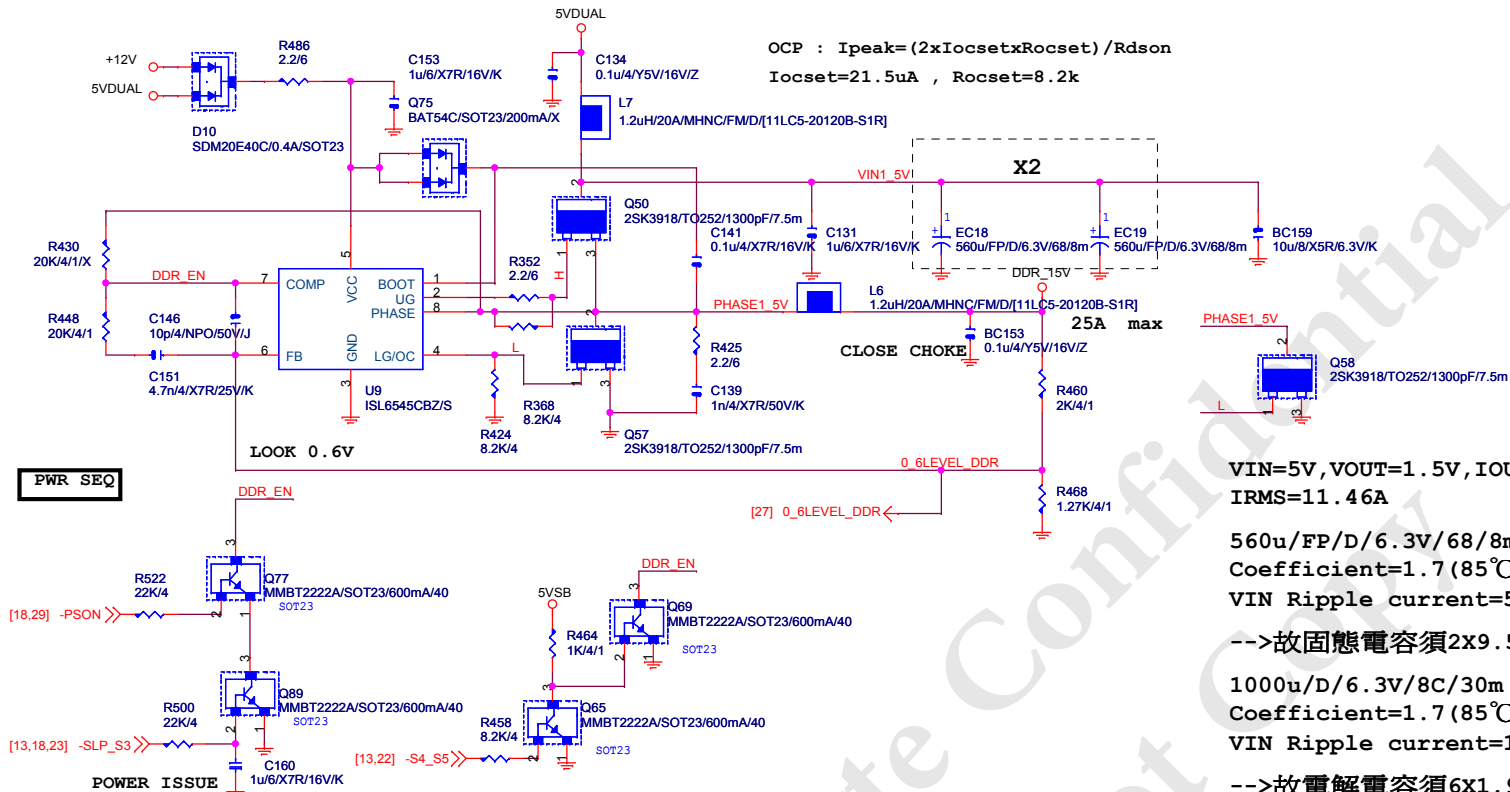
## VCC1\_05\_PCH



## 5VDUAL SHORT PROTECT



# DDR1\_5V



$$OCP : I_{peak} = (2 \times I_{ocset} \times R_{ocset}) / R_{dson}$$

$$I_{ocset} = 21.5 \mu A, R_{ocset} = 8.2 k$$

VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1  
IRMS=11.46A

560u/FP/D/6.3V/68/8m RIPPLE CURRENT=5.6A  
Coefficient=1.7(85°C), 1(105°C)  
VIN Ripple current=5.6X1.7=9.52A(85°C)

-->故固態電容須 $2 \times 9.52 = 19.04 > 11.46A$

1000u/D/6.3V/8C/30m RIPPLE CURRENT=1.14A  
Coefficient=1.7(85°C), 1(105°C)  
VIN Ripple current=1.14X1.7=1.938A(85°C)

-->故電解電容須 $6 \times 1.938 = 11.628 > 11.46A$

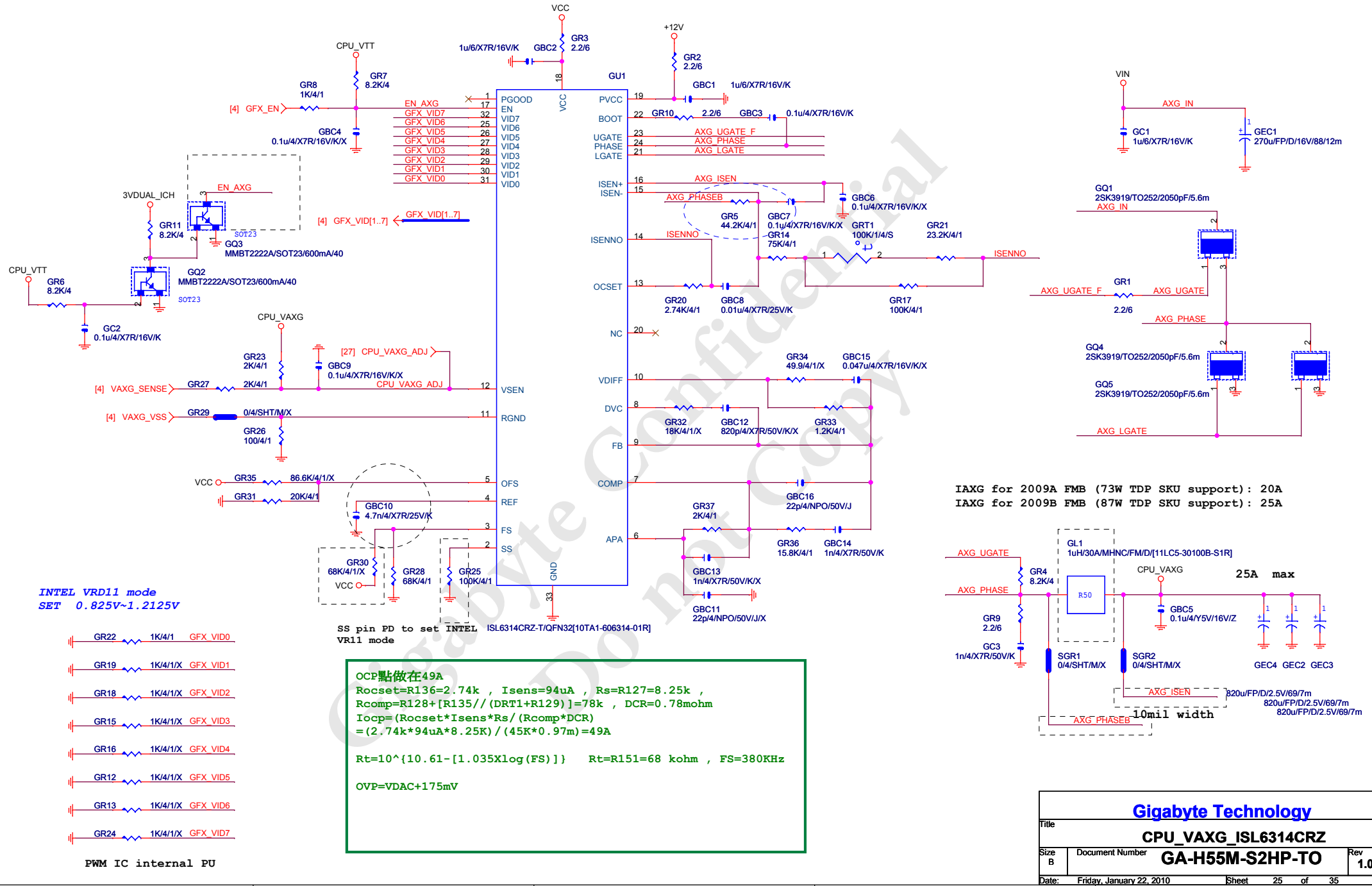
VIN=3V, VOUT=1.05V, IOUT=7.5A, PHASE=1  
IRMS=3.5A

-->故固態電容須 $1 \times 9.52 = 9.52 > 3.5A$

-->故電解電容須 $2 \times 1.938 = 3.876 > 3.5A$

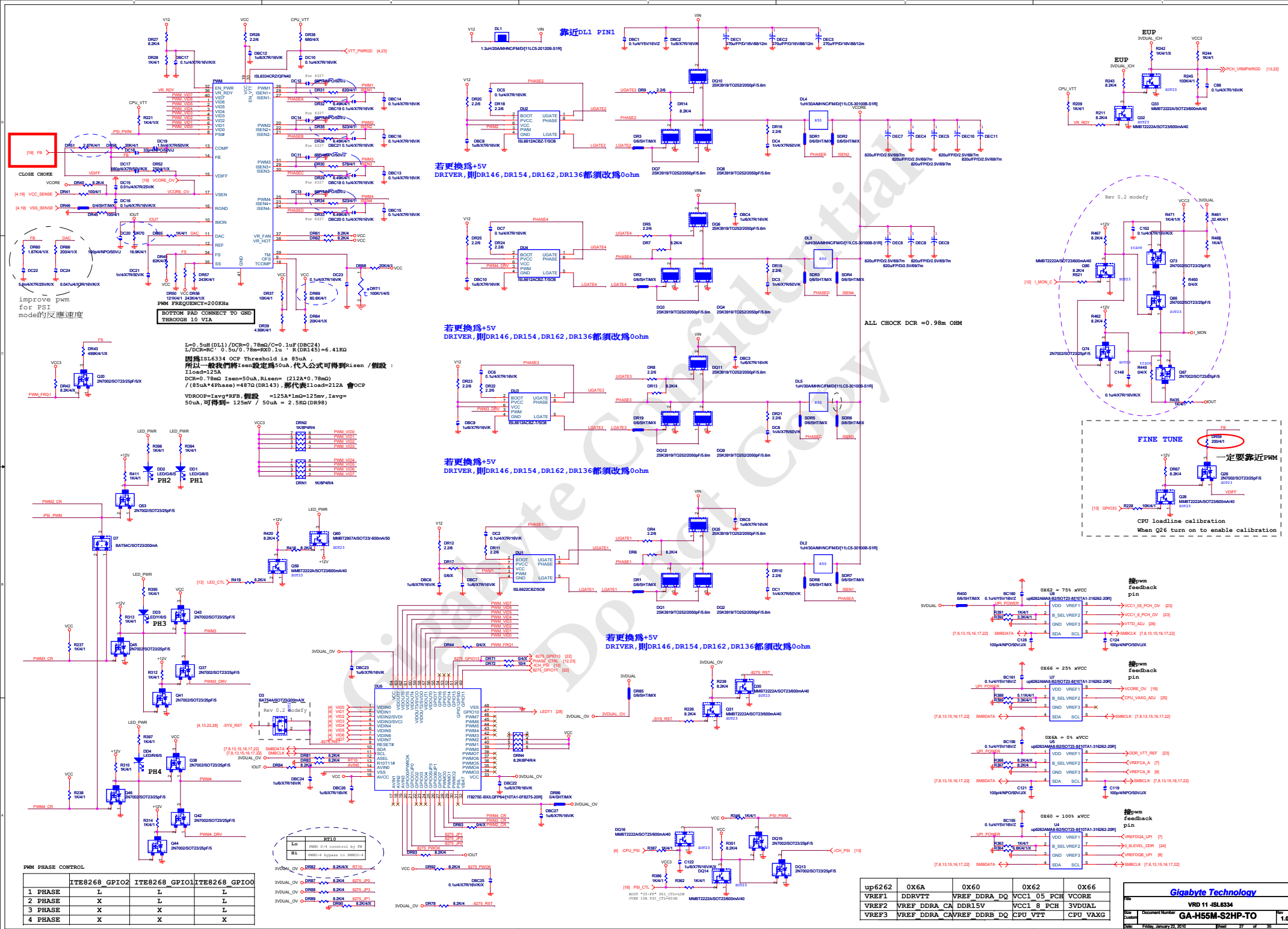
Gigabyte Technology

Title		
DDR_15V		
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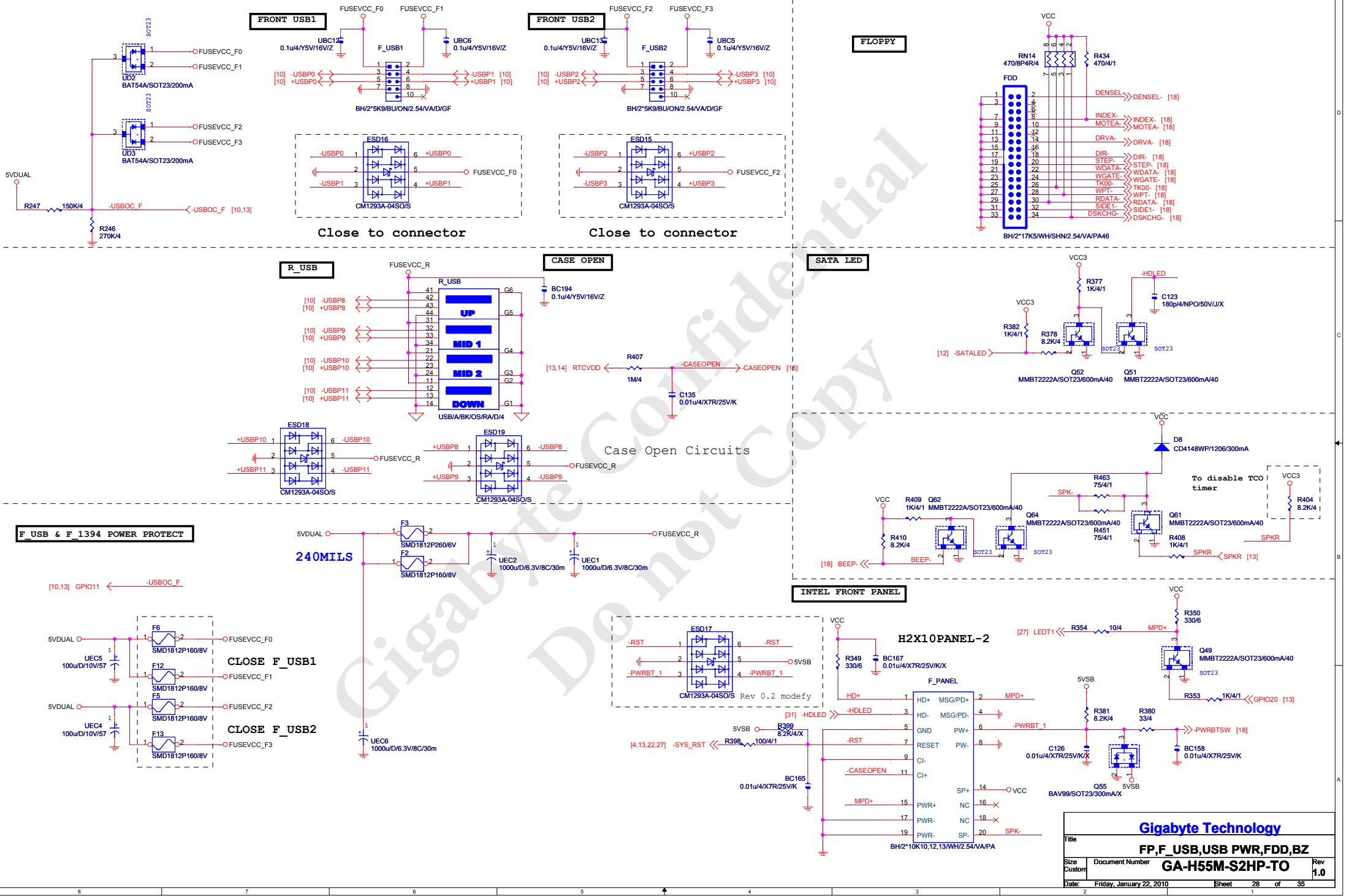




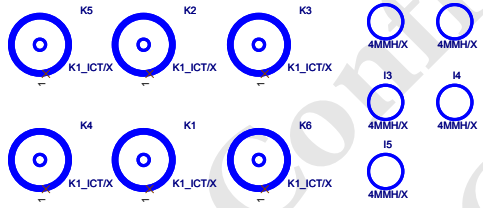
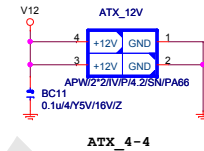




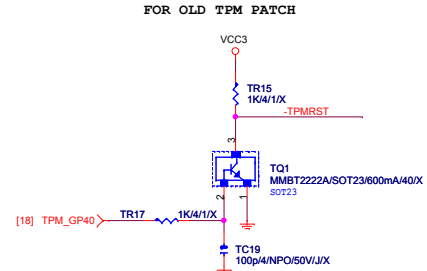
up6262	0X6A	0X60	0X62	0X66
VREF1	DDRVT	VREF DDRA DQ	VCC1_05_PCH	VCORE
VREF2	VREF DDRA CA	DDR15V	VCC1_8_PCH	3VDUAL
VREF3	VREF DDRA CAV	VREF DDRB DO	CPU VTT	CPU VAX



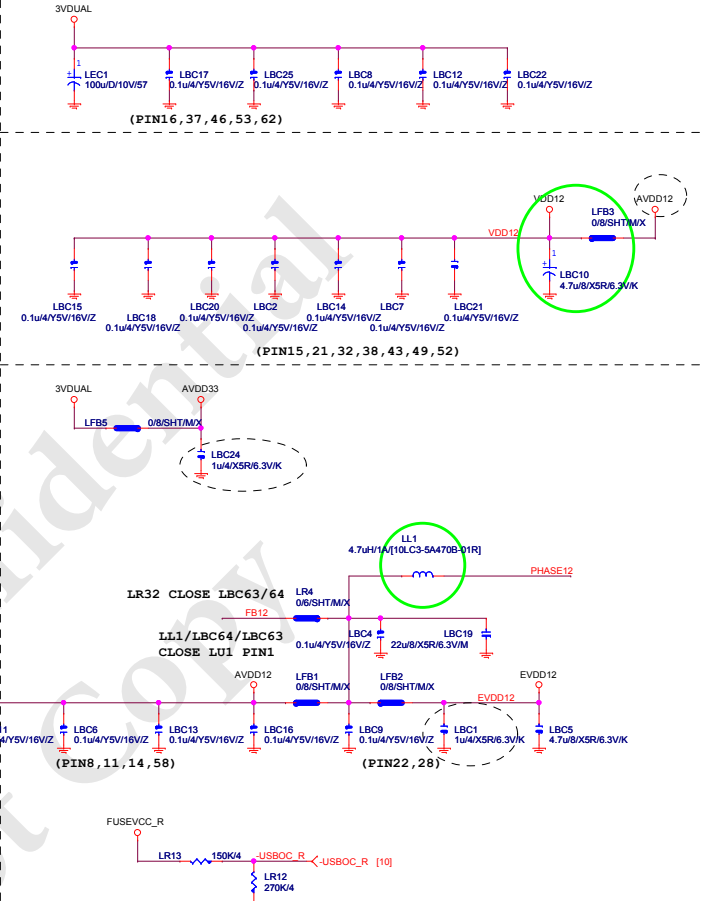
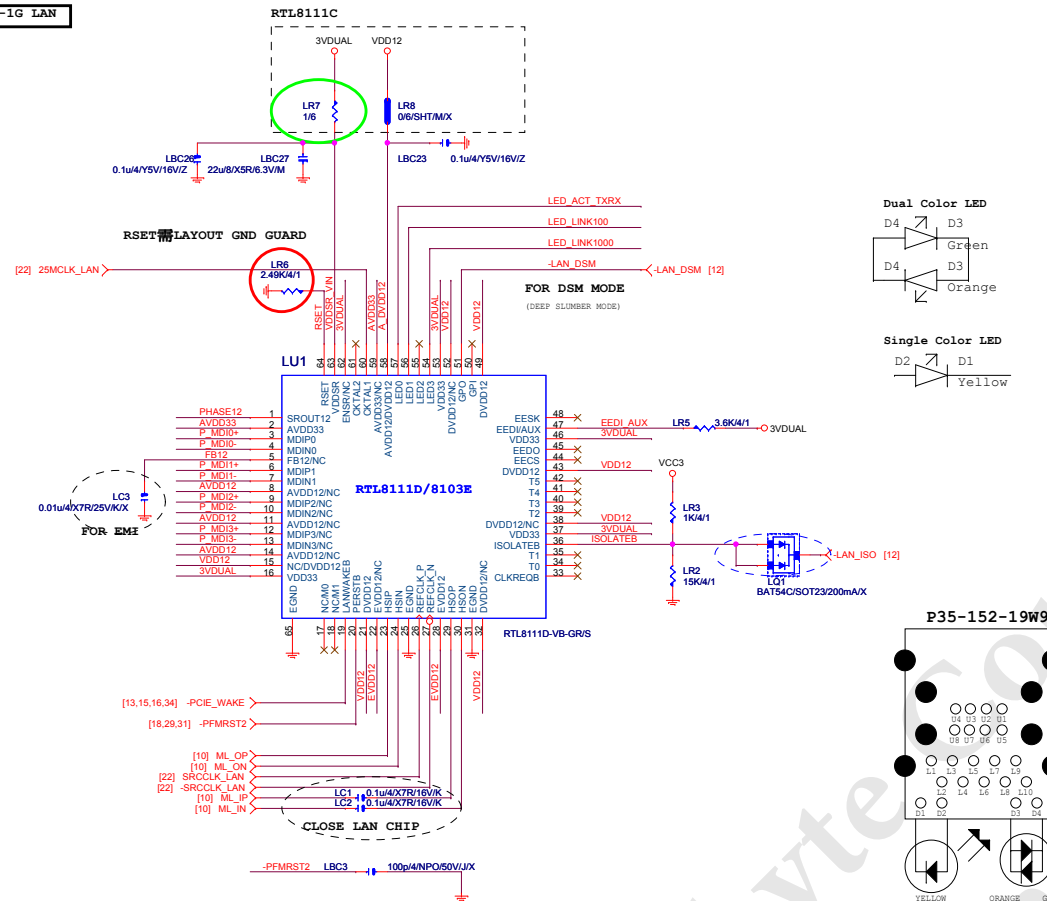
## APW/2\*12/IV/VA/SN/2SHK/PA66



The diagram shows a dashed oval labeled "EUP" containing a pin labeled "3VDUAL\_ICH". A wire connects this pin to a purple square component.

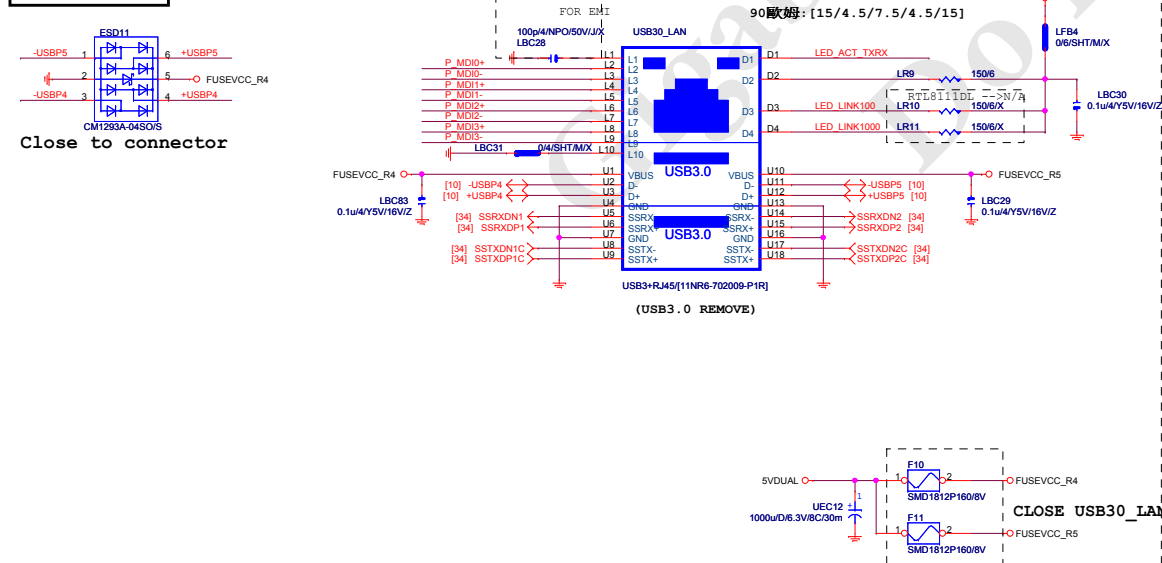


## PCIE-1G LAN

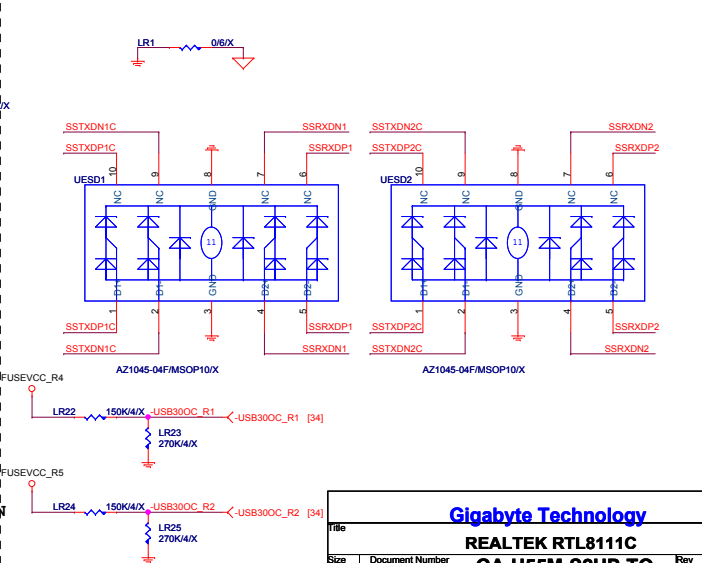


## USB\_LAN CONNECTOR

90歐姆:[20/4/8/4/20]

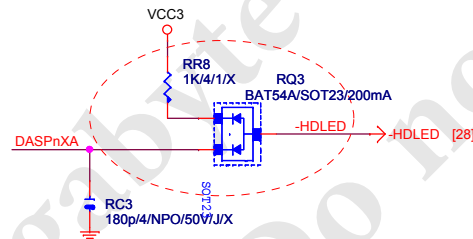
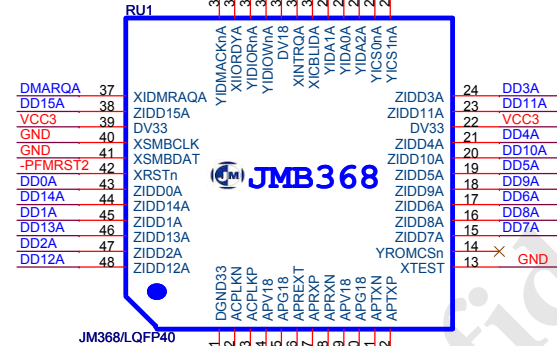
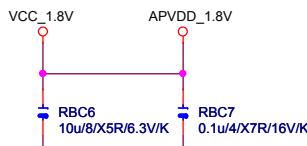
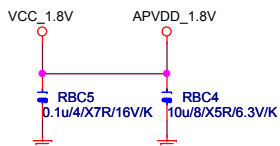
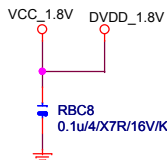
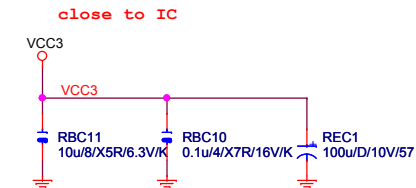
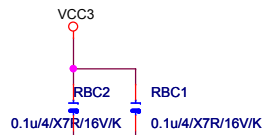
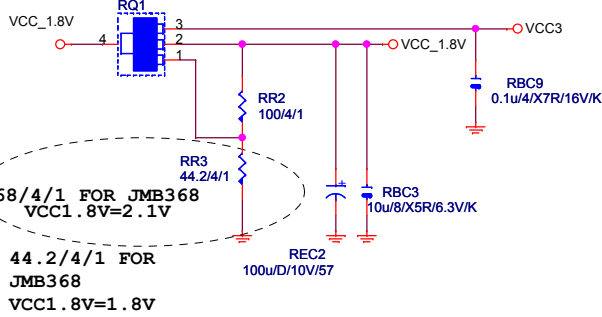


## (USB3.0 N/A)

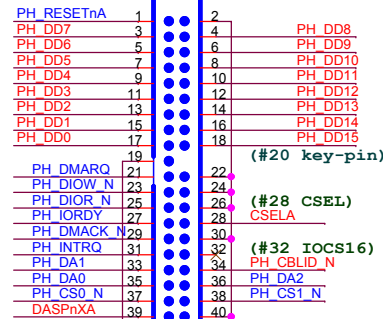


# 3.3V to 1.8V Voltage Regulator

L1117LGN/SOT223/1A



## IDE Connector



BH/2\*20K20/WH/SHN/2.54/VA/PA66

PH_DD7	DD7A
PH_DD8	DD8A
PH_DD6	DD6A
PH_DD9	DD9A

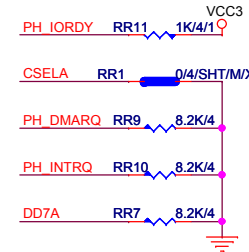
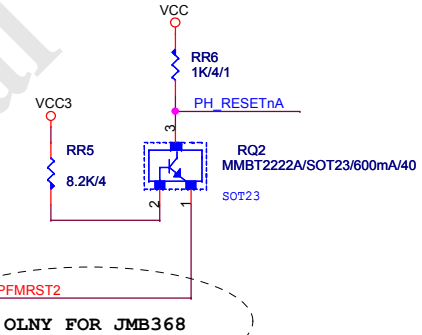
PH_DD5	DD5A
PH_DD4	DD4A
PH_DD10	DD10A
PH_DD11	DD11A

PH_DD3	DD3A
PH_DD12	DD12A
PH_DD2	DD2A
PH_DD13	DD13A

PH_DD1	DD1A
PH_DD0	DD0A
PH_DD14	DD14A
PH_DD15	DD15A

PH_DIOW_N	DIOWnA
PH_DIOR_N	DIORnA
PH_DMACK_N	DMACKnA
PH_DA1	DA1A
PH_DA0	DA0A
PH_CS0_N	CS0nA
PH_DA2	DA2A
PH_CS1_N	CS1nA

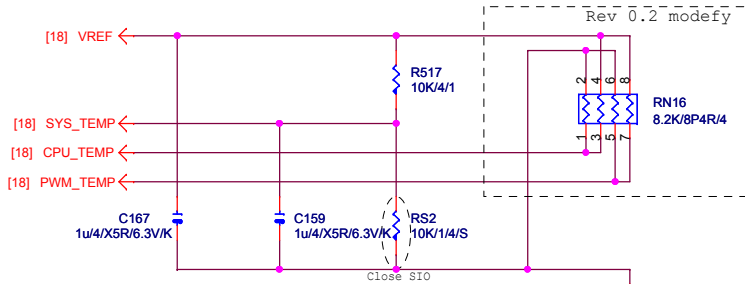
PH_IORDY	IORDYA
PH_DMARQ	DMARQA
PH_INTRQ	INTRQA
PH_CBLID_N	PDIAGnA



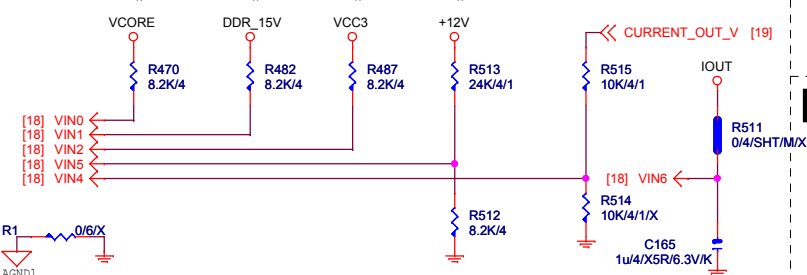




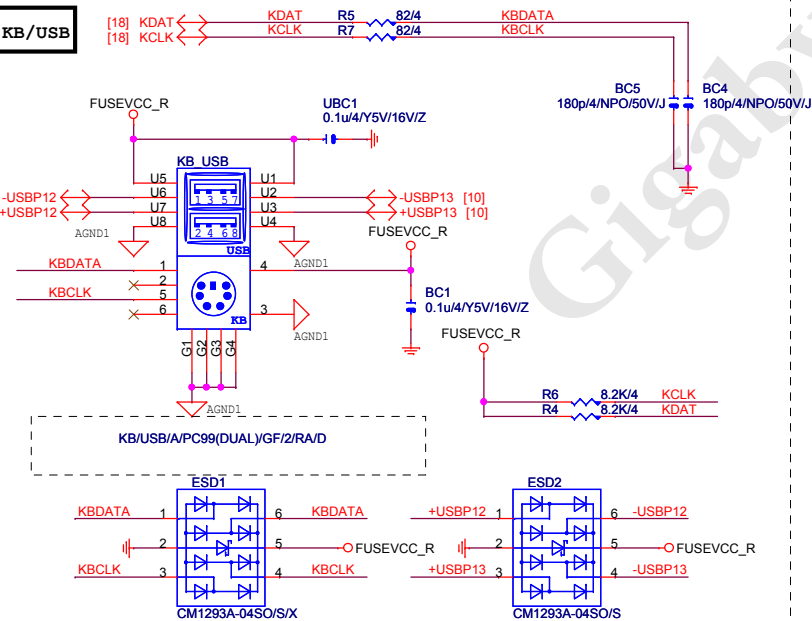
# TEMP H/W MONITOR



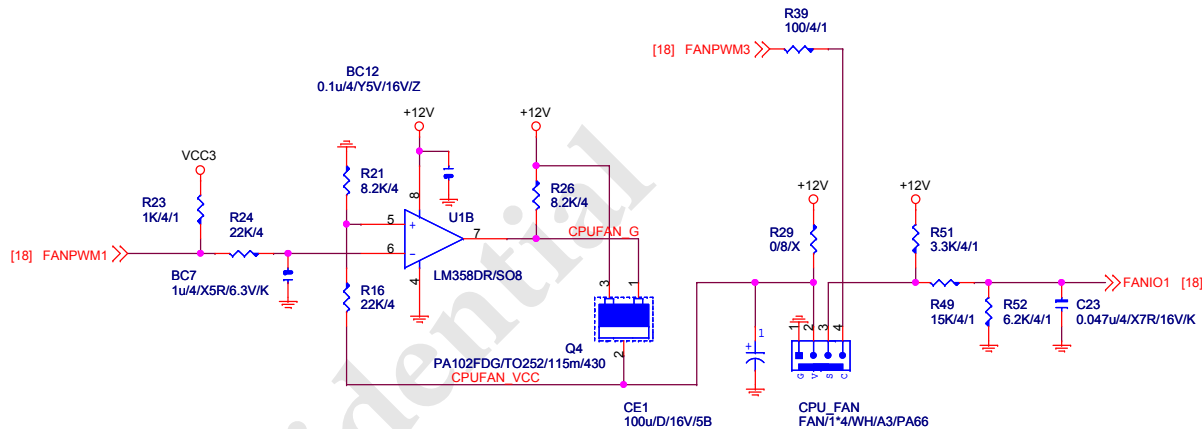
# VOLTAGE-- H/W MONITOR



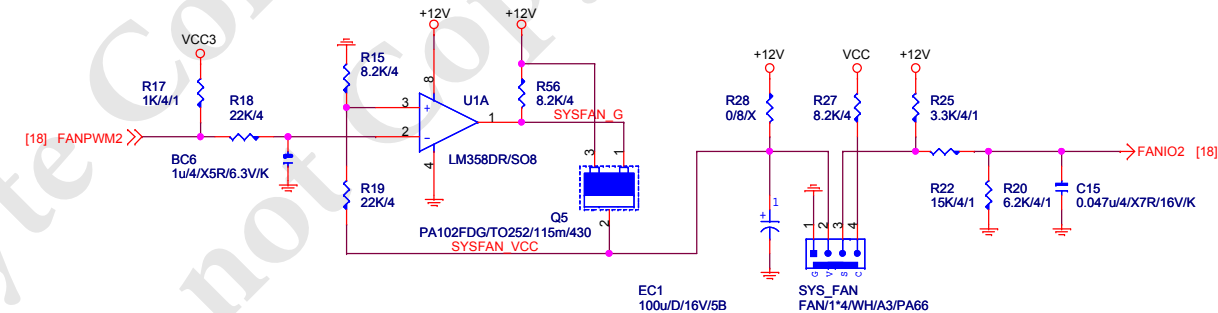
# KB/USB



# CPU SMART FAN

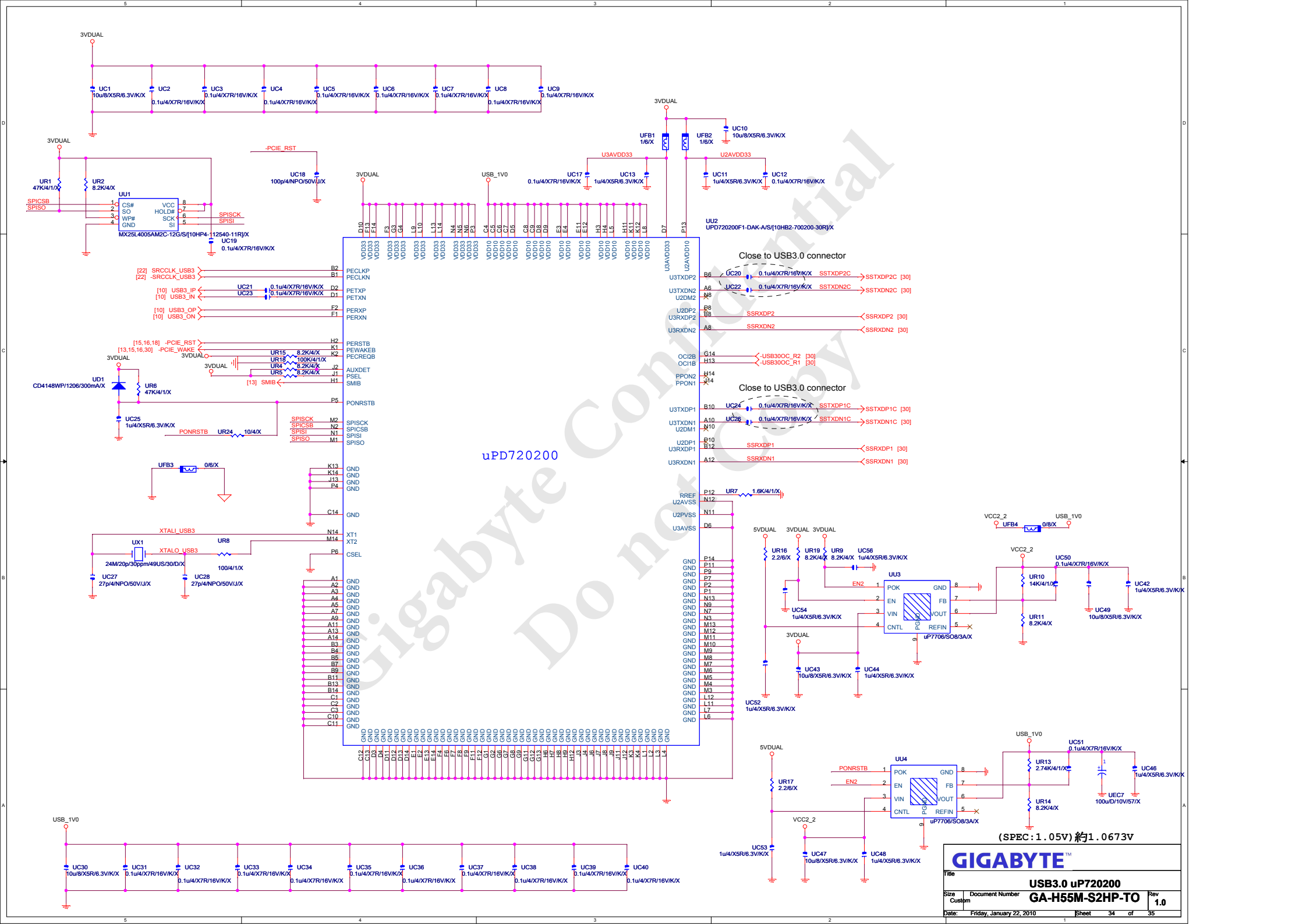


# SYS SMART FAN Linear SYS\_FAN



Gigabyte Technology

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