

REV: 1.0

TITLE

SHEET

TITLE

[illegible]

GA-H55M-S2HP-TO Version: 1.0

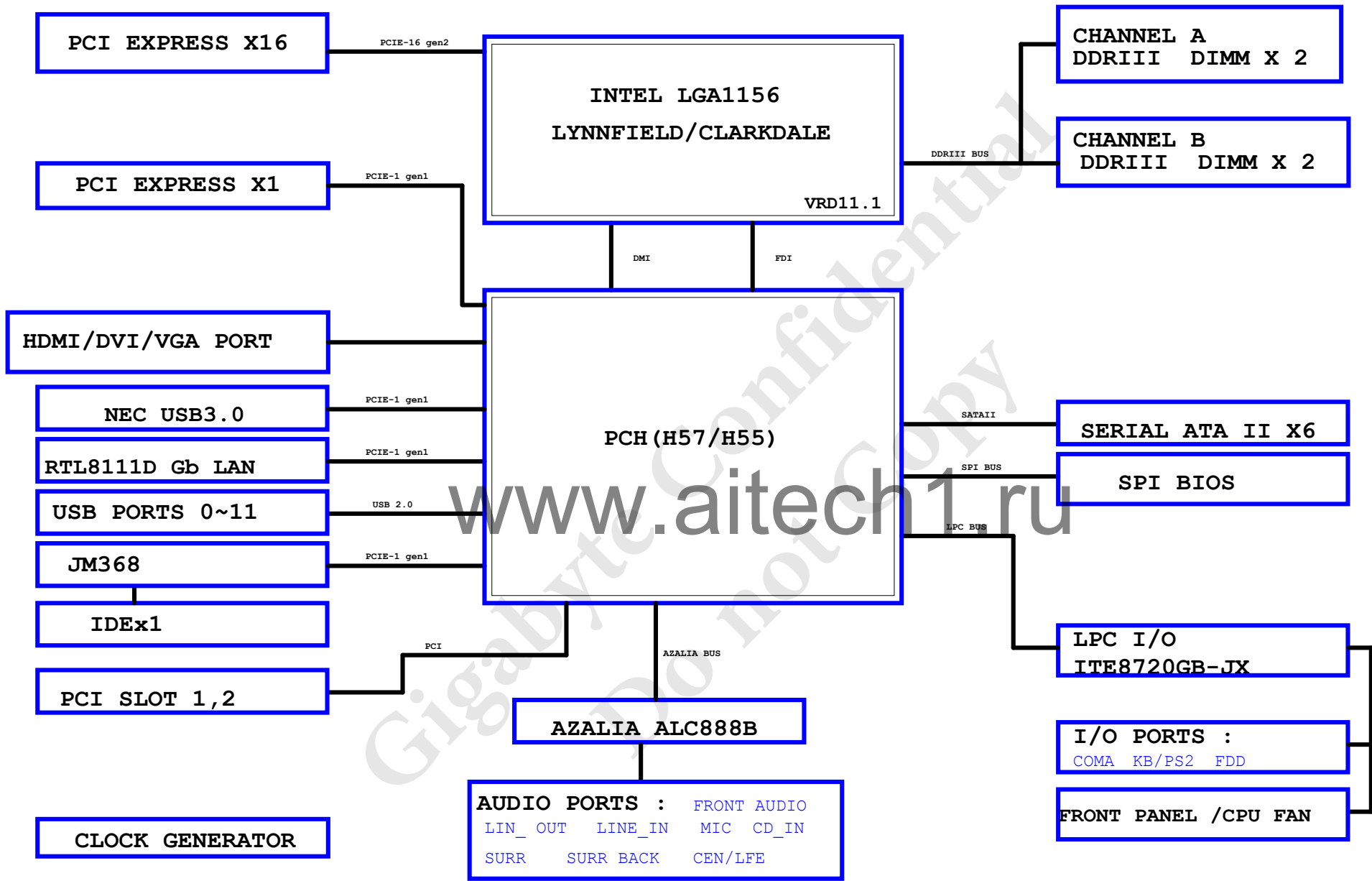
Circuit or PCB layout change
for next version

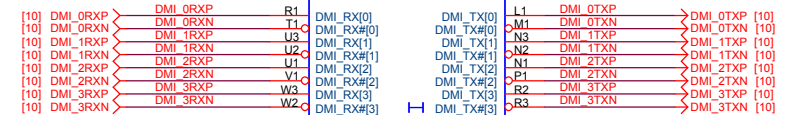
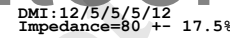
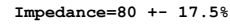
Component value change history

2010/01/21

[illegible][illegible]

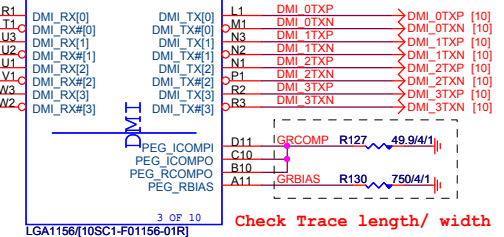
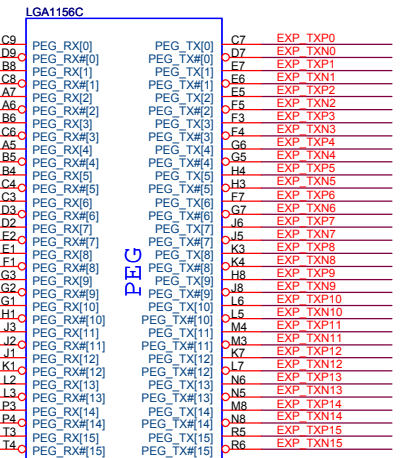
BLOCK DIAGRAM





	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)



Check Trace length/ width

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	AW11	SA_MA[11]	AK2 MDA7
MAAA12	AU13	SA_MA[12]	
MAAA13	AT11	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_CAS#	AN2 MDA9
[7] -SRASA	AT20	SA_RAS#	AR3 MDA10
[7] SBAA0	AV20	SA_BS[0]	AR2 MDA11
[7] SBAA1	AU19	SA_BS[1]	AM3 MDA12
[7] SBAA2	AU12	SA_BS[2]	AM2 MDA13
		SA_BS[14]	AP1 MDA14
		SA_BS[15]	AR4 MDA15
[7] -CSA0	AV21	SA_CS#0	
[7] -CSA1	AW24	SA_CS#1	AL4 DQSA2
[7] -CSA2	AU21	SA_CS#2	AL3 -DQSA2
[7] -CSA3	AU23	SA_CS#3	AL1 DMA2
[7] CKEA0	AU10	SA_CKE[0]	AT4 MDA16
[7] CKEA1	AW10	SA_CKE[1]	AJ2 MDA17
[7] CKEA2	AV10	SA_CKE[2]	AW3 MDA18
[7] CKEA3	AY10	SA_CKE[3]	AW4 MDA19
		SA_CKE[3]	AT3 MDA20
MODT_A0	AV23	SA_ODT[0]	AT1 MDA21
MODT_A1	AV24	SA_ODT[1]	AV2 MDA22
MODT_A2	AW23	SA_ODT[2]	SA_ODT[2]
MODT_A3	AY24	SA_ODT[3]	SA_ODT[3]
[7] DCLKA0	AR22	SA_CK[0]	AY6 DQSA3
[7] -DCLKA0	AR21	SA_CK#0	AW6 -DQSA3
[7] DCLKA1	AP18	SA_CK[1]	AW6 DMA3
[7] -DCLKA1	AN18	SA_CK#1	
[7] DCLKA2	AN21	SA_CK[2]	AW5 MDA24
[7] -DCLKA2	AP21	SA_CK#2	AY5 MDA25
[7] DCLKA3	AP19	SA_CK[3]	AJ8 MDA26
[7] -DCLKA3	AN19	SA_CK#3	AY8 MDA27
[7,8] -DDR3_RST	AV8	SM_DRAMRST#	AJ5 MDA28
			AW6 MDA29
			AV7 MDA30
			AW7 MDA31
TP1	AK22	SA_CS#4	AR28 DQSA4
TP1	AM22	SA_CS#5	AT29 -DQSA4
TP1	AL23	SA_CS#6	AN29 DMA4
TP1	AK23	SA_CS#7	
AL10		SA_DQS[8]	AN27 MDA32
AM10		SA_DQS#8	AT28 MDA33
AP10		SA_ECC_CB[0]	AP28 MDA34
AN10		SA_ECC_CB[1]	AP30 MDA35
AR11		SA_ECC_CB[2]	MDA36
AP11		SA_ECC_CB[3]	AP27 MDA37
AK9		SA_ECC_CB[4]	AR29 MDA38
AL9		SA_ECC_CB[5]	AN30 MDA39
AK11		SA_ECC_CB[6]	
AM11		SA_ECC_CB[7]	AV32 DQSA5
			AW32 -DQSA5
			AW31 DMA5
			AJ30 MDA40
			AJ31 MDA41
			AV33 MDA42
			AJ34 MDA43
			AV30 MDA44
			AJ30 MDA45
			AJ33 MDA46
			AW33 MDA47
			AW36 DQSA6
			AV35 -DQSA6
			AJ35 DMA6
			AW35 MDA48
			AY35 MDA49
			AV37 MDA50
			AJ37 MDA51
			AY34 MDA52
			AW34 MDA53
			AV36 MDA54
			AW37 MDA55
			AR30 DQSA7
			AR38 -DQSA7
			AT38 DMA7
			AT39 MDA56
			AT40 MDA57
			AN38 MDA58
			AN39 MDA59
			AJ38 MDA60
			AP39 MDA61
			AP40 MDA62
			AP40 MDA63

DDR_A

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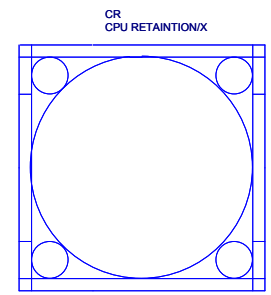
LGA1156(10SC1-F01156-01R)

LGA1156B			
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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]	AC6 MDB5
MAAB10	AY25	SB_MA[10]	AF5 MDB6
MAAB11	AW16	SB_MA[11]	AE6 MDB7
MAAB12	AW15	SB_MA[12]	AH6 DQSB1
MAAB13	AW18	SB_MA[13]	AJ5 -DQSB1
MAAB14	AY12	SB_MA[14]	AH4 DMB1
MAAB15	AV11	SB_MA[15]	
[8] -SWEB	AU26	SB_WE#	AG5 MDB8
[8] -SCASB	AW26	SB_CAS#	AH7 MDB9
[8] -SRASB	AW26	SB_RAS#	AK6 MDB10
[8] SBAB0	AW25	SB_BS[0]	AL4 MDB11
[8] SBAB1	AW25	SB_BS[1]	AG6 MDB12
[8] SBAB2	AV12	SB_BS[2]	AC4 MDB13
			AJ7 MDB14
			AK7 MDB15
[8] -CSB0	AY27	SB_CS#0	
[8] -CSB1	AW26	SB_CS#1	AN6 DQSB2
[8] -CSB2	AW26	SB_CS#2	AM6 -DQSB2
[8] -CSB3	AV29	SB_CS#3	AM7 DMB2
[8] CKEB0	AW8	SB_CKE[0]	AL6 MDB16
[8] CKEB1	AY9	SB_CKE[1]	AN6 MDB17
[8] CKEB2	AU9	SB_CKE[2]	AP6 MDB18
[8] CKEB3	AV9	SB_CKE[3]	AR5 MDB19
			AL5 MDB20
MODT_B0	AU27	SB_ODT[0]	AM4 MDB21
MODT_B1	AU29	SB_ODT[1]	AN7 MDB22
MODT_B2	AV27	SB_ODT[2]	AP5 MDB23
MODT_B3	AV28	SB_ODT[3]	
[8] DCLKB0	AR17	SB_CK[0]	AR8 DQSB3
[8] -DCLKB0	AR16	SB_CK#0	AP8 -DQSB3
[8] DCLKB1	AT15	SB_CK[1]	AT7 DMB3
[8] -DCLKB1	AR15	SB_CK#1	
[8] DCLKB2	AN17	SB_CK[2]	SB_DQ[24]
[8] -DCLKB2	AN16	SB_CK#2	SB_DQ[25]
[8] DCLKB3	AR18	SB_CK[3]	SB_DQ[26]
[8] -DCLKB3	AR18	SB_CK#3	SB_DQ[27]
			SB_DQ[28]
			SB_DQ[29]
			SB_DQ[30]
			SB_DQ[31]
TP12	AM23	SB_CS#4	AT25 DQSB4
TP13	AM24	SB_CS#5	AR24 -DQSB4
TP15	AL24	SB_CS#6	AT4 DMB4
TP17	AK24	SB_CS#7	
			SB_DQ[32]
			SB_DQ[33]
			SB_DQ[34]
			SB_DQ[35]
			SB_DQ[36]
			AP22 MDB37
			AP25 MDB38
			AT26 MDB39
AR14		SB_DQS[8]	AP32 DQSB5
AR13		SB_DQS#8	AR32 -DQSB5
			AN32 DMB5
AR12		SB_ECC_CB[0]	AT32 MDB40
AT13		SB_ECC_CB[1]	AP31 MDB41
AN15		SB_ECC_CB[2]	AR33 MDB42
AP14		SB_ECC_CB[3]	AM32 MDB43
AM12		SB_ECC_CB[4]	SB_DQ[40]
AN12		SB_ECC_CB[5]	SB_DQ[41]
AN14		SB_ECC_CB[6]	SB_DQ[42]
AP13		SB_ECC_CB[7]	SB_DQ[43]
			SB_DQ[44]
			SB_DQ[45]
			SB_DQ[46]
			SB_DQ[47]
			SB_DQS[6]
			SB_DQS#6
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			SB_DQ[53]
			SB_DQ[54]
			SB_DQ[55]
			AL37 DQSB7
			AM36 -DQSB7
			AK35 DMB7
			SB_DQ[56]
			SB_DQ[57]
			SB_DQ[58]
			SB_DQ[59]
			SB_DQ[60]
			SB_DQ[61]
			SB_DQ[62]
			SB_DQ[63]

DDR_B

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LGA1156(10SC1-F01156-01R)



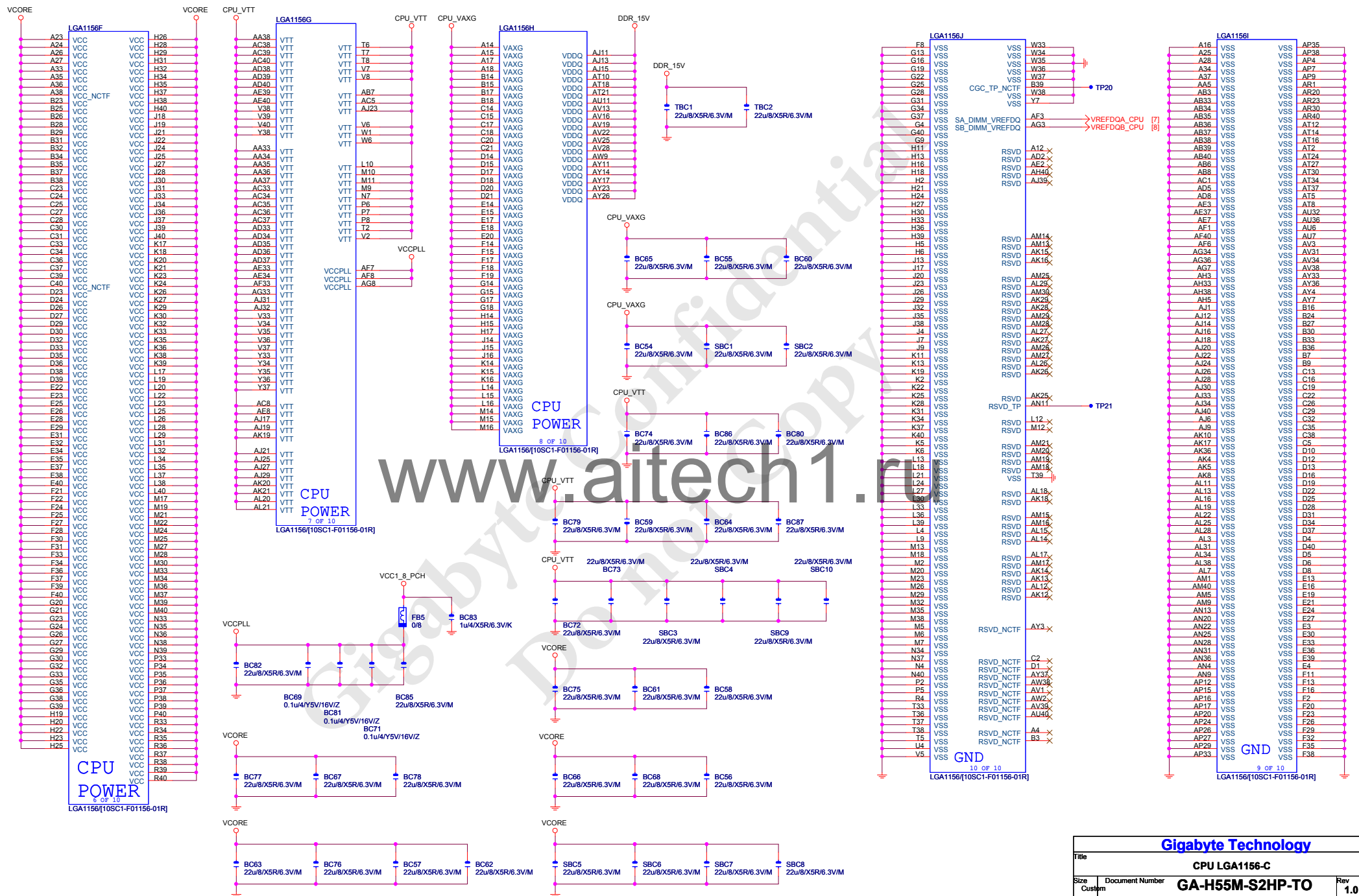
Need check the new CPU ME

LGA1156_P



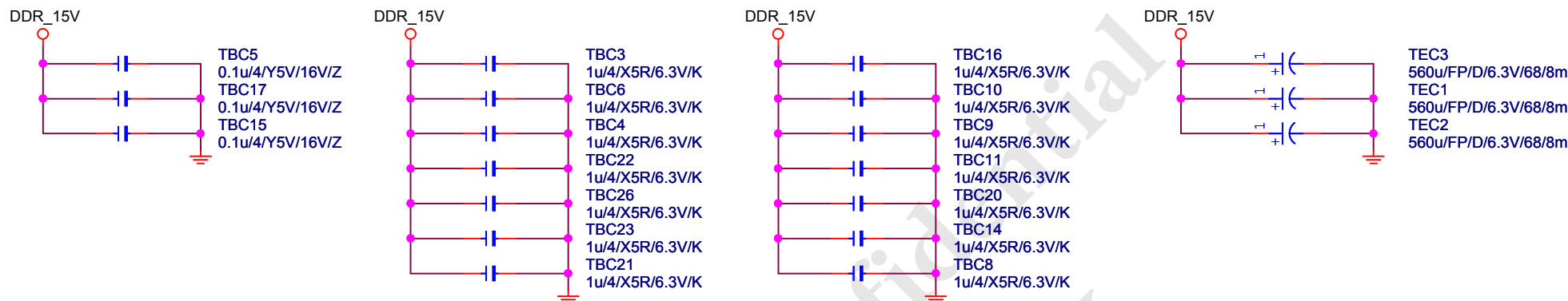
PLATE+HLM(12KRC-0F0001-01R)

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

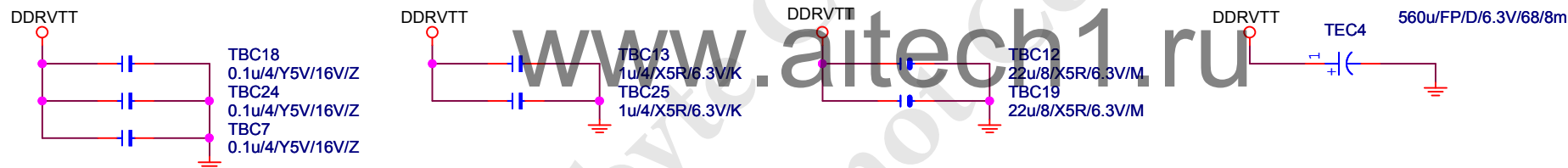


DDR TERMINATION CHANNEL A/B

DDR15V Decouple



DDRVTT Decouple



REF VCC層GND, GND層GND要塞孔



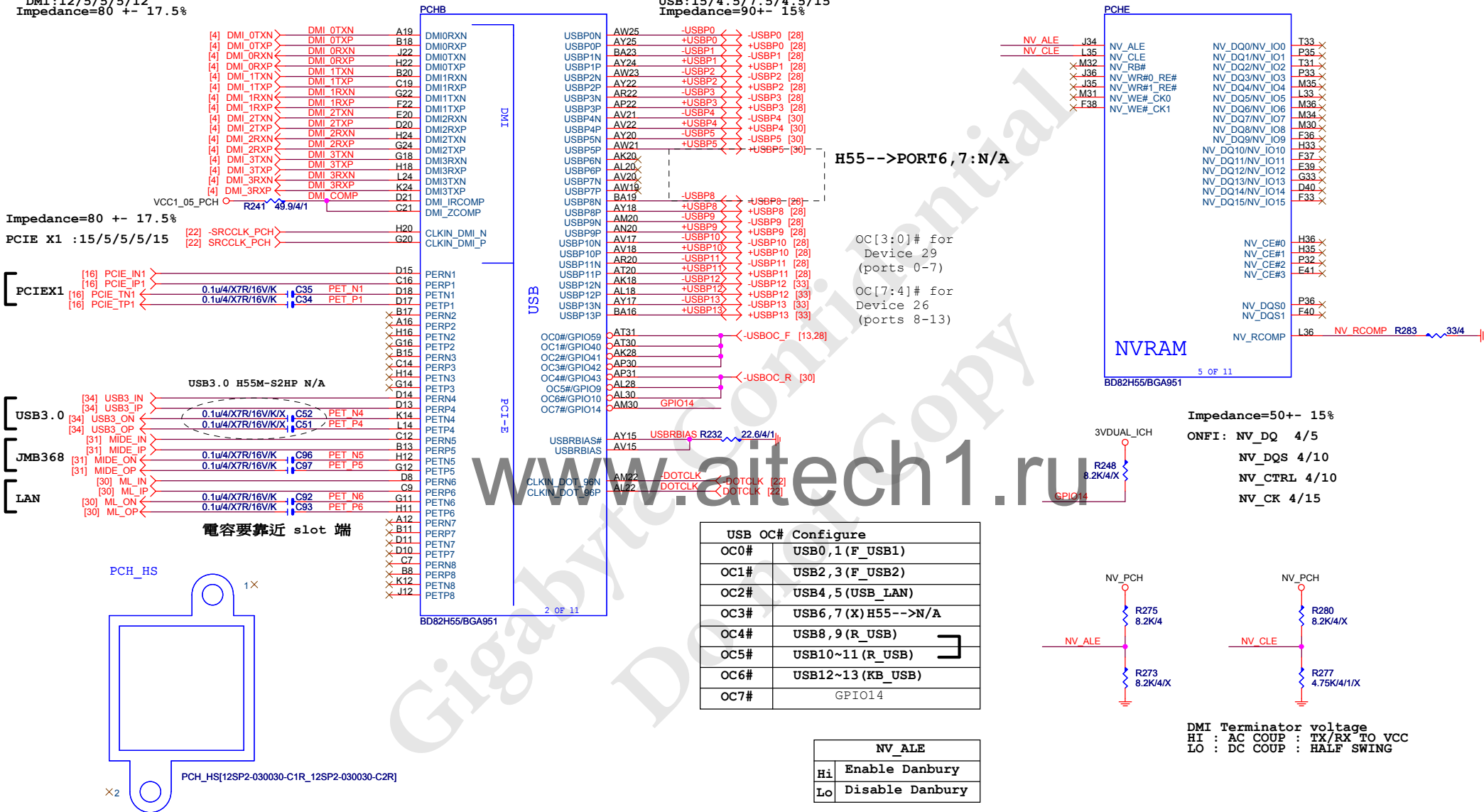
REF GND層GND, VCC層GND要塞孔

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%



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

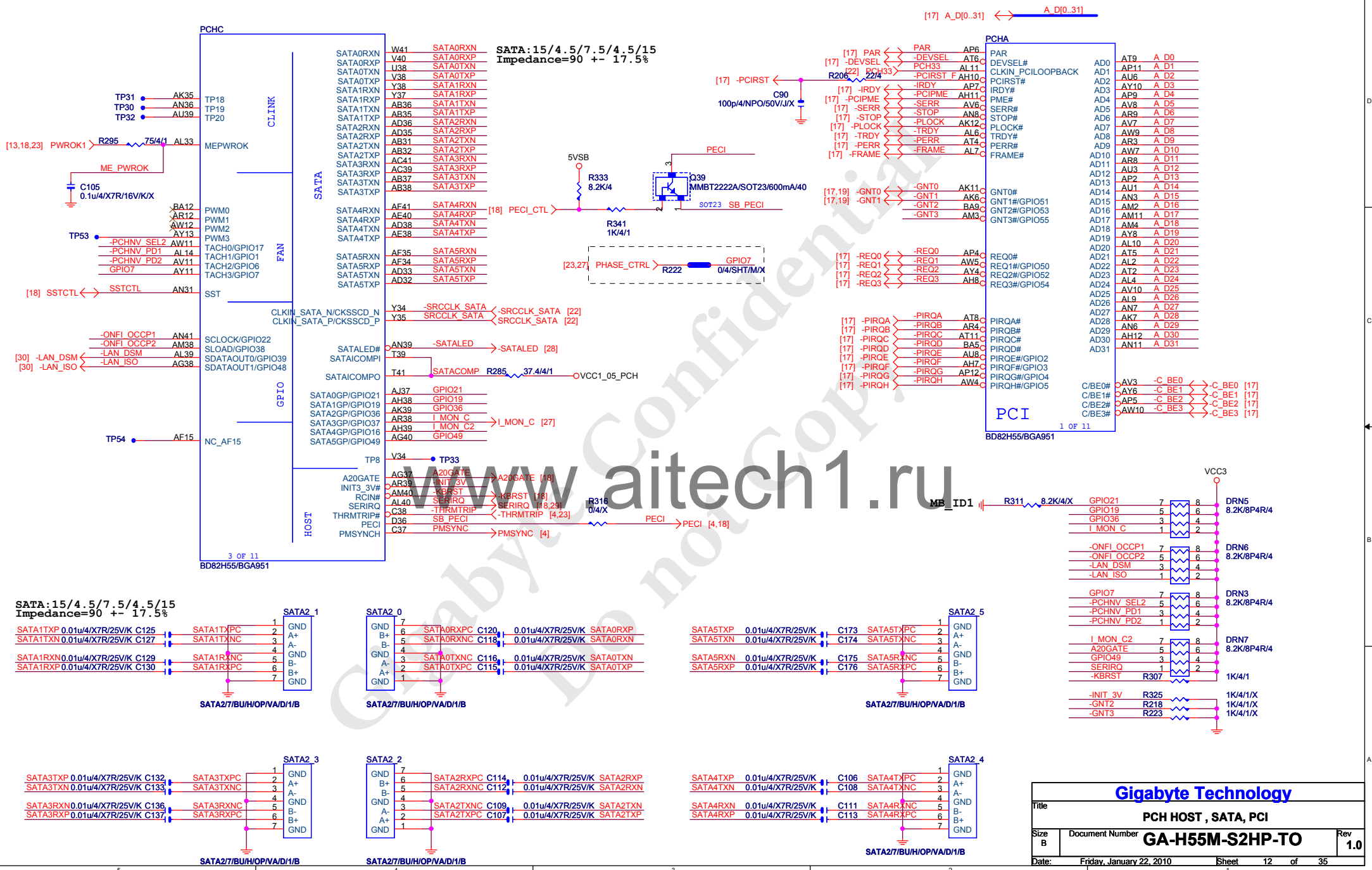
NV ALE	
Hi	Enable Danbury
Lo	Disable Danbury

Intel anti theft technology

Impedance=50+- 15%
ONFI: NV_DQ 4/5
NV_DQS 4/10
NV_CTRL 4/10
NV_CK 4/15

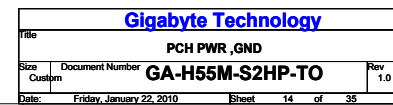
DMI Terminator voltage
HI : AC COUP : TX/RX TO VCC
LO : DC COUP : HALF SWING

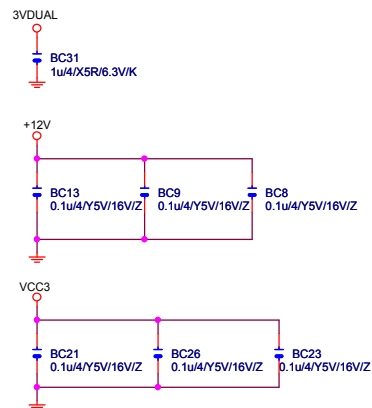
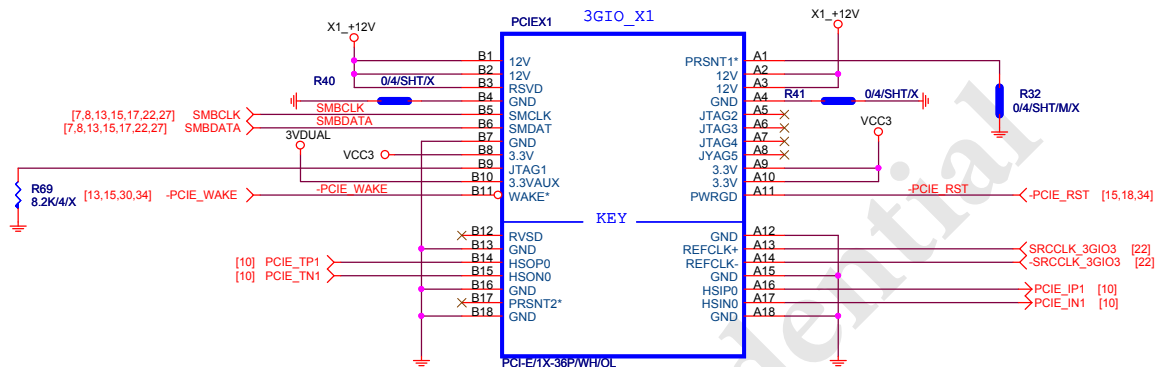
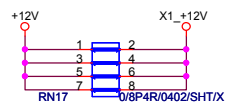
Gigabyte Technology			
Title PCH FDI,DMI,USB,PCIE,NVRAM			
Size B	Document Number	GA-H55M-S2HP-TO	
Date:	Tuesday, February 02, 2010	Sheet	10 of 35



Gigabyte Technology

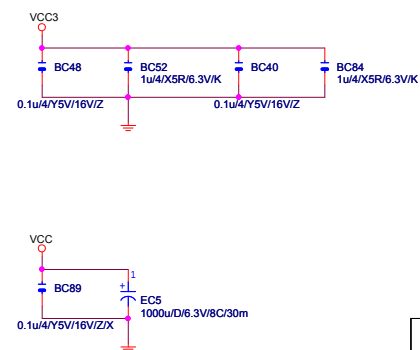
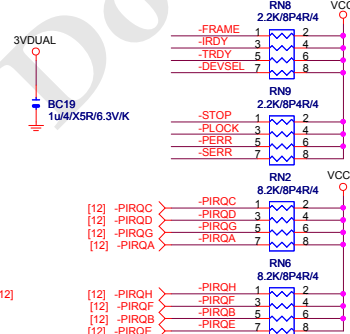
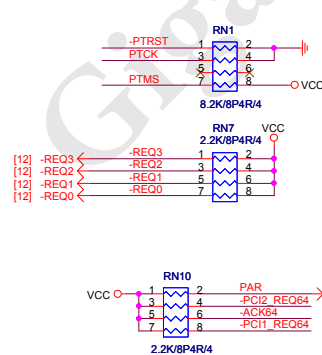
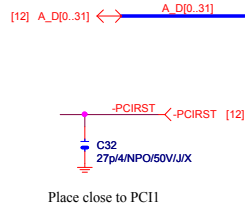
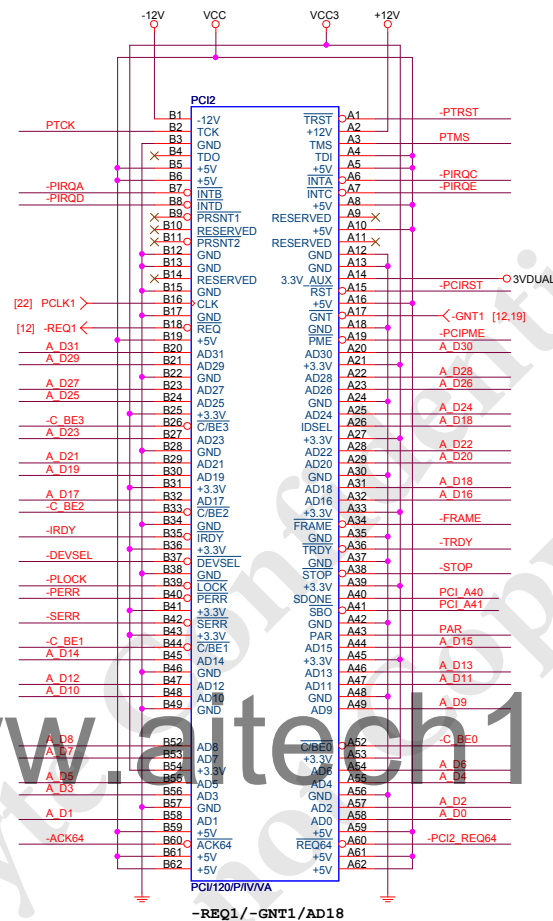
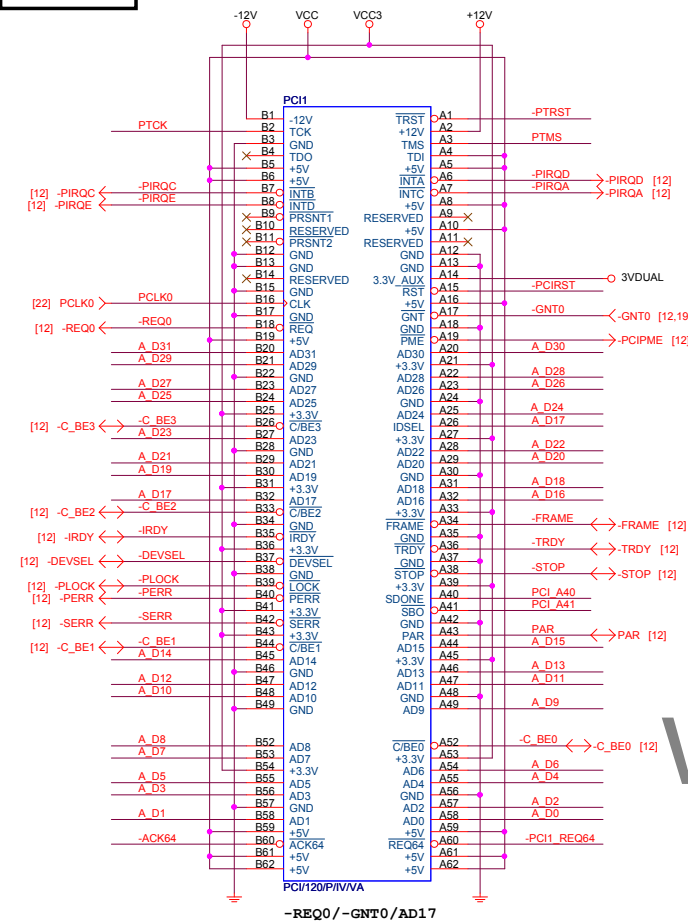
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Size	Document Number	GA-H55M-S2HP-TO	
B			Rev 1.0
Date:	Friday, January 22, 2010	Sheet 12	of 35

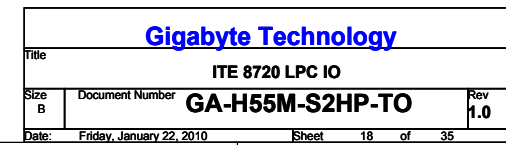




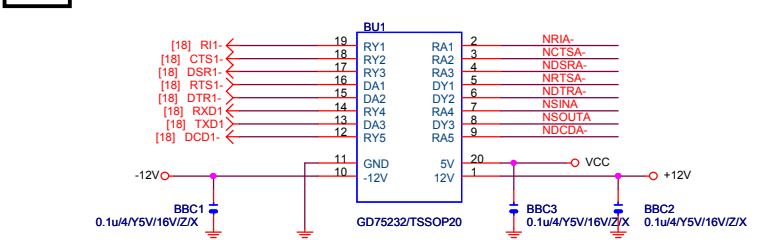
www.aitech1.ru

PCI1,2 SLOT

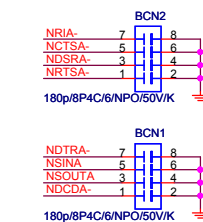
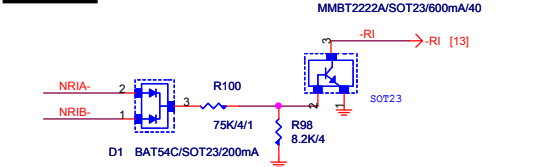




COMA

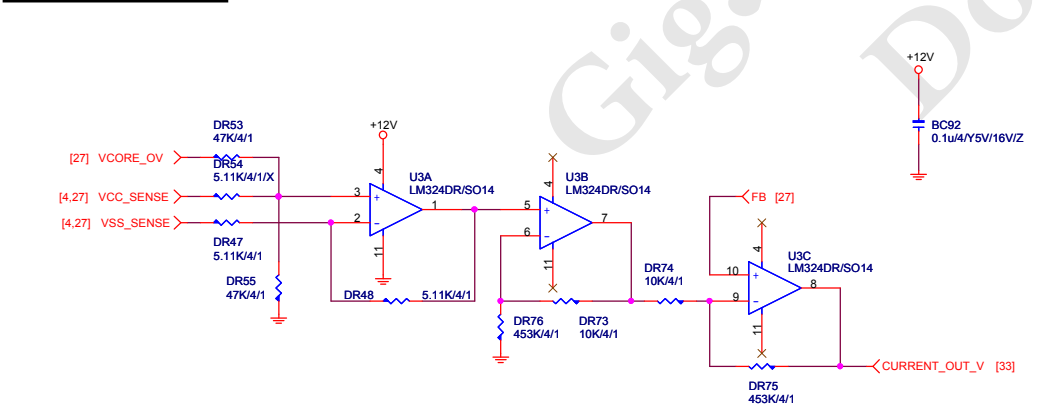


RING IN

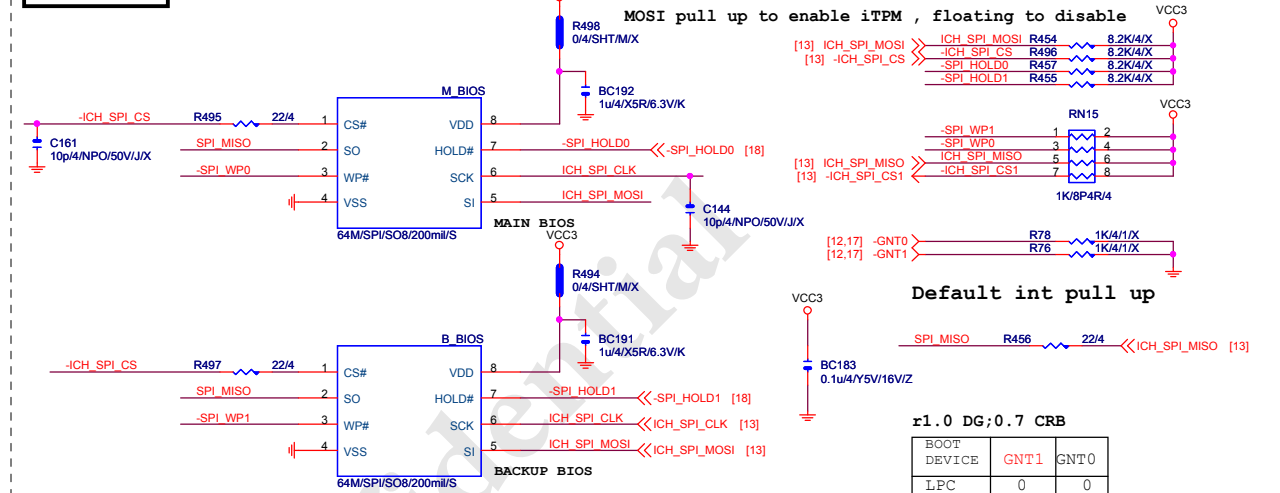


PLACE NEAR COM CONNECTOR

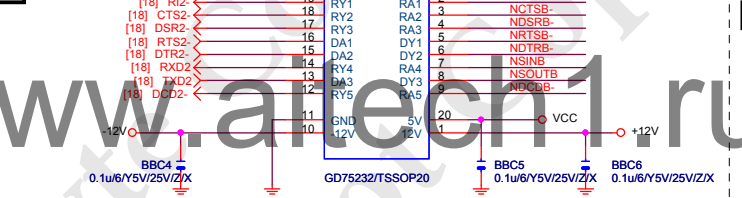
DYNAMIC CURRENT OC



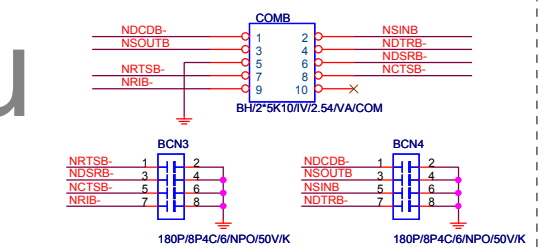
DUAL BIOS



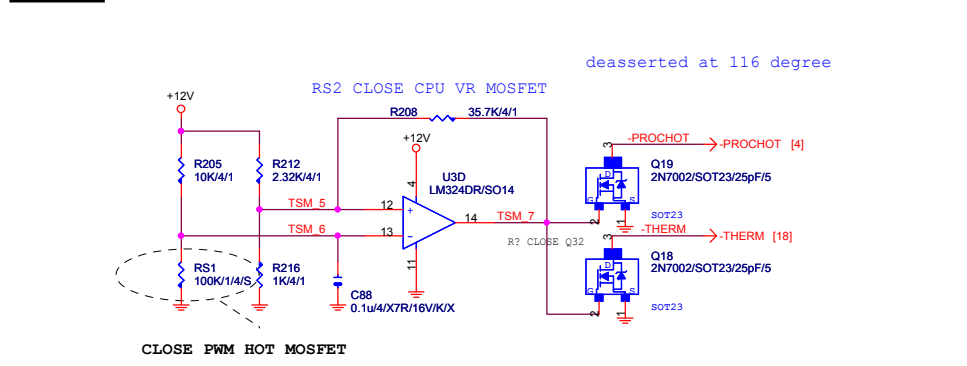
COMB



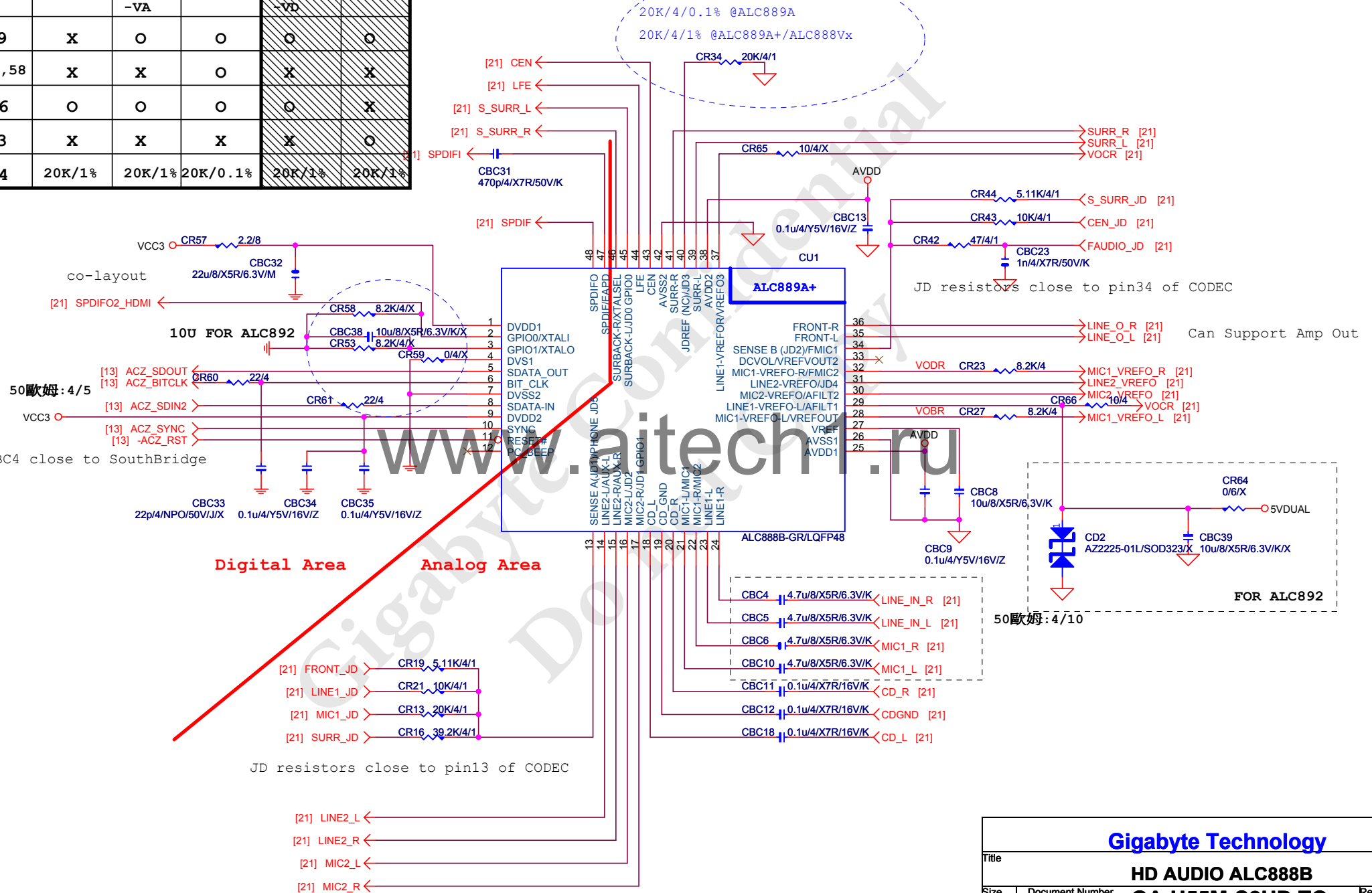
INTERNAL COMB



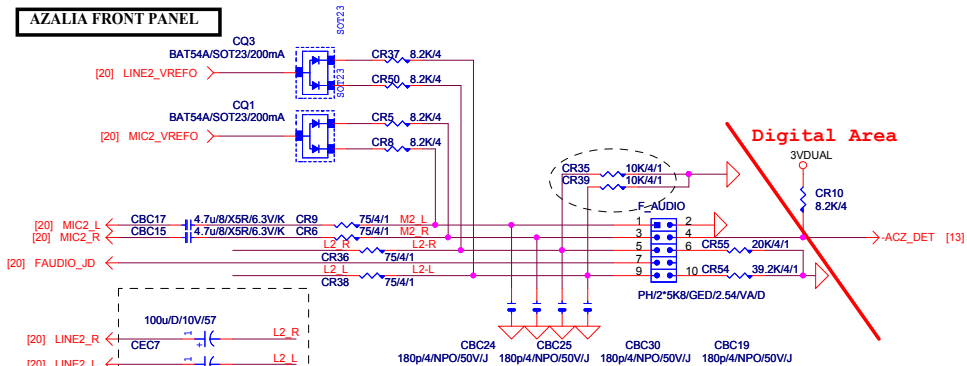
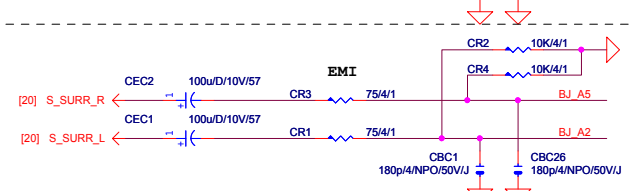
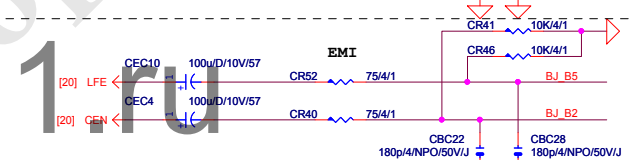
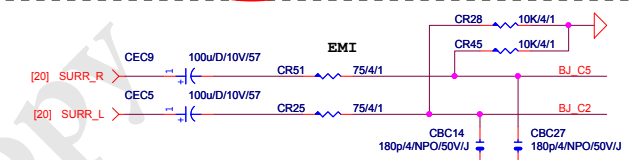
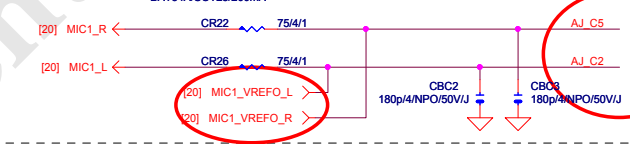
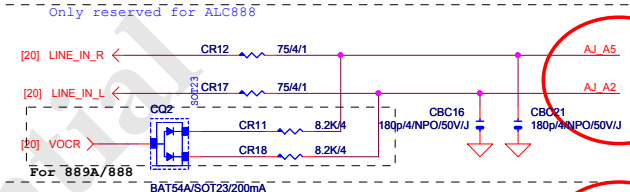
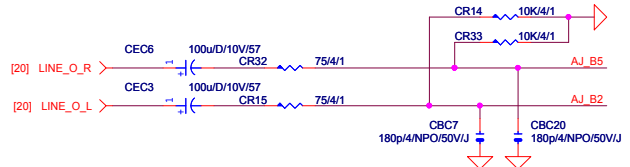
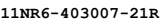
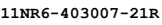
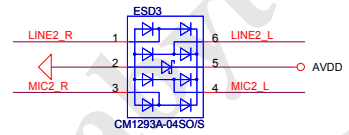
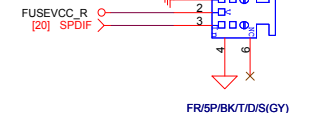
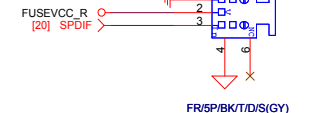
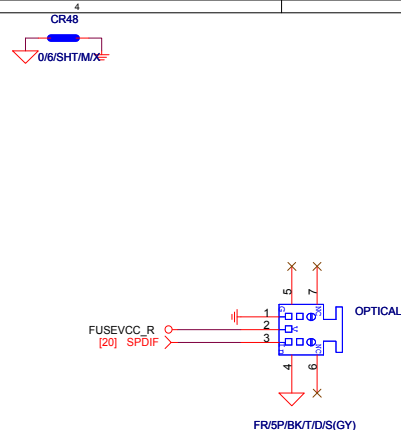
-PROHOT

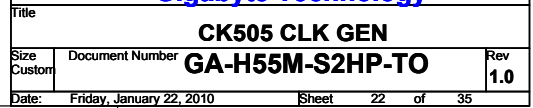


	ALC888B	ALC888 -VA	ALC889A	ALC888 -VD	ALC892
CR59	X	O	O	O	O
CR53, 58	X	X	O	X	X
CR56	O	O	O	O	X
CR63	X	X	X	X	O
CR34	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%

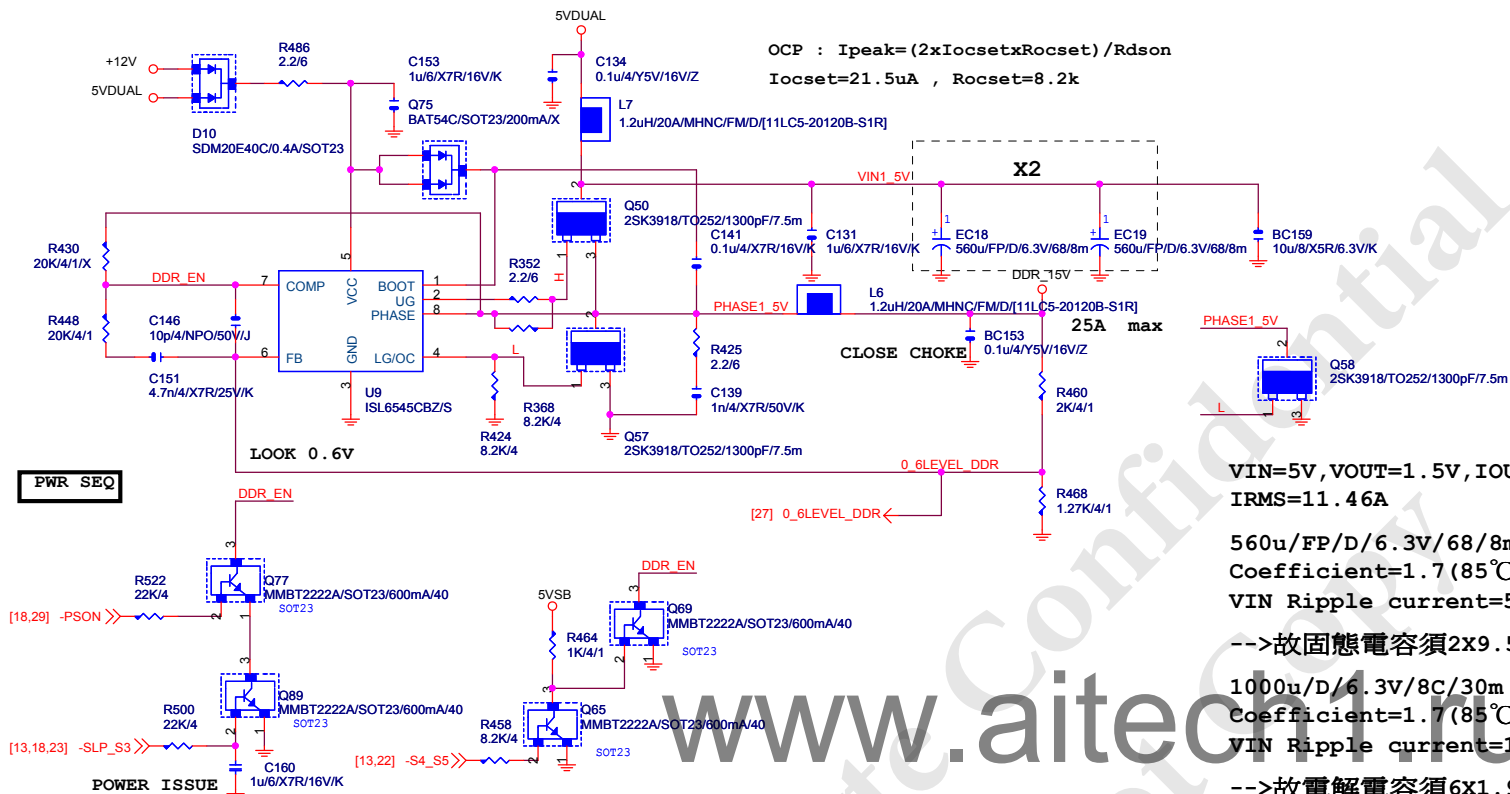


Can Support Amp Out





DDR1_5V



OCP : $I_{peak} = (2 \times I_{ocset} \times R_{ocset}) / R_{dson}$
 $I_{ocset} = 21.5 \mu A$, $R_{ocset} = 8.2k$

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 $2 \times 9.52 = 19.04 > 11.46 \text{A}$

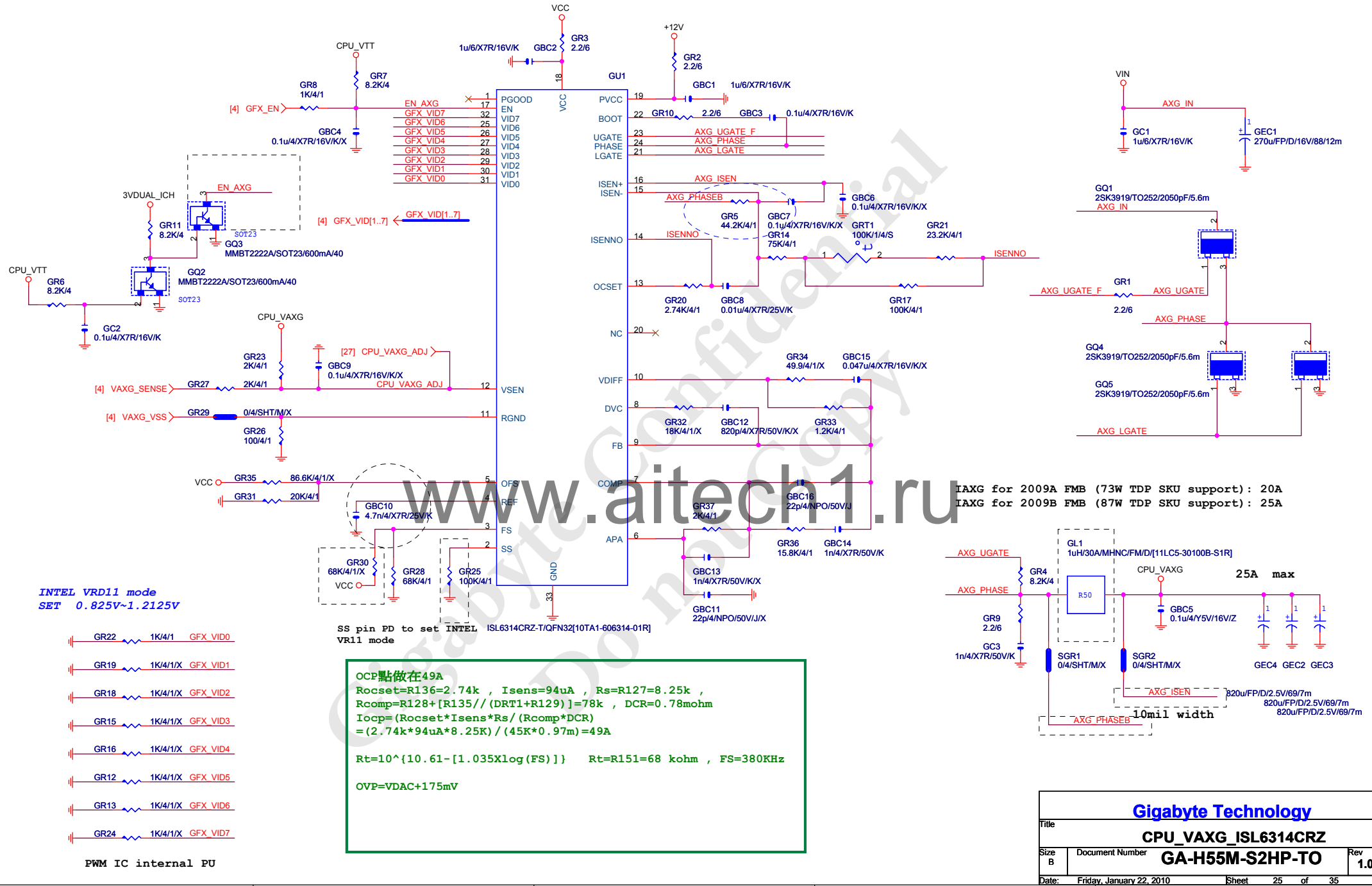
1000u/D/6.3V/8C/30m RIPPLE CURRENT=1.14A
Coefficient=1.7(85°C), 1(105°C)
VIN Ripple current=1.14X1.7=1.938A(85°C)

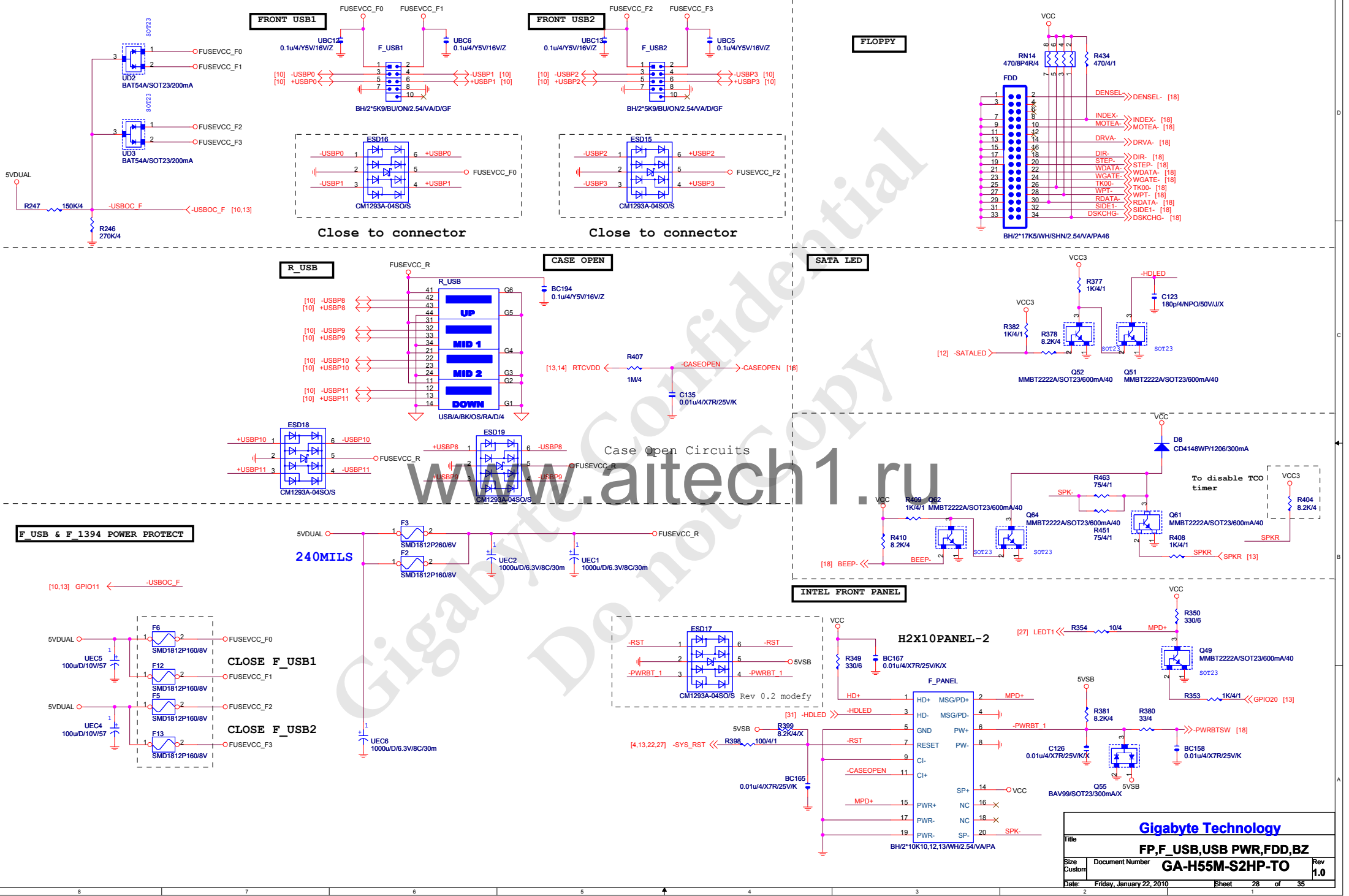
-->故電解電容須 $6 \times 1.938 = 11.628 > 11.46A$

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

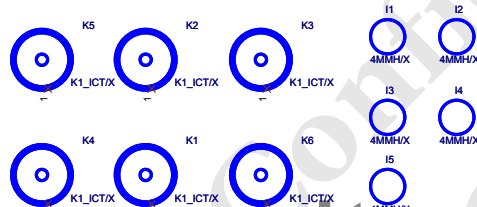
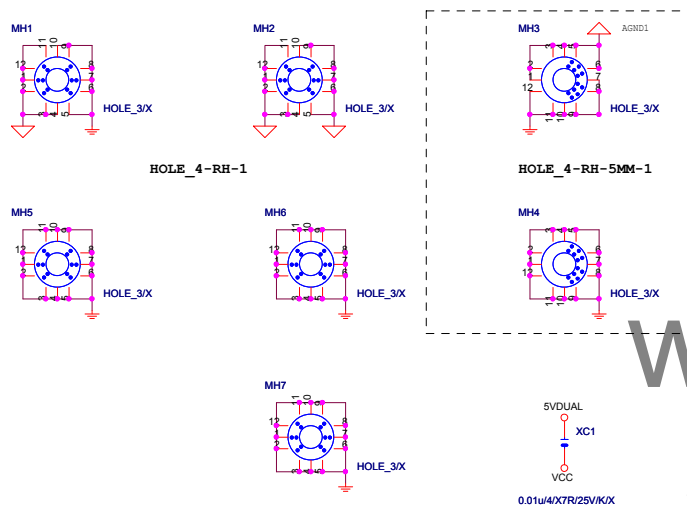
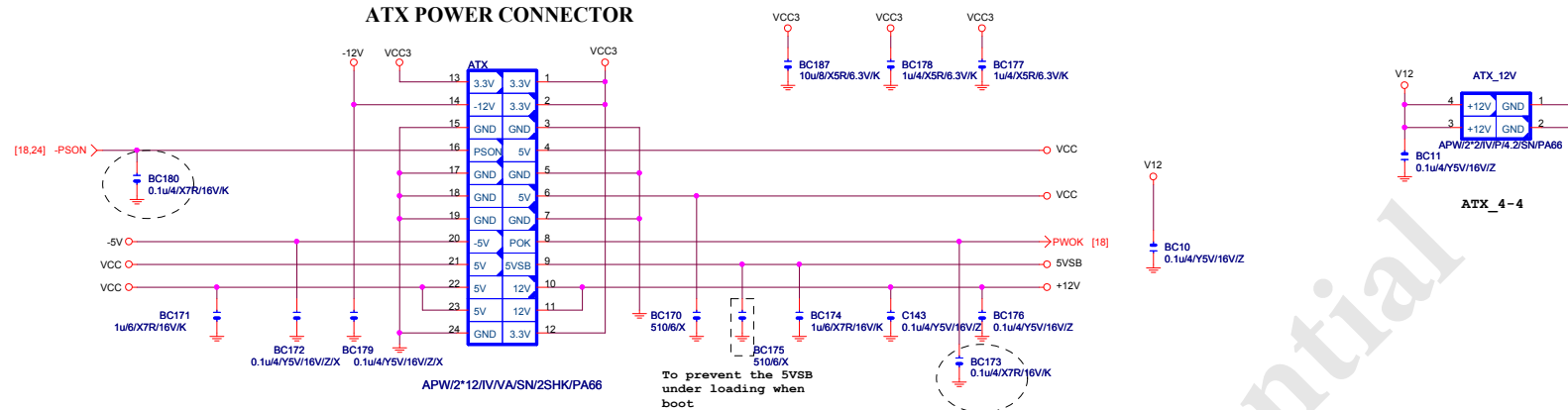
-->故固態電容須 $1 \times 9.52 = 9.52 > 3.5A$

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



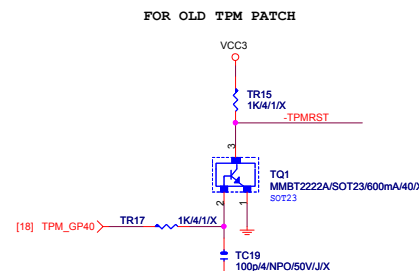
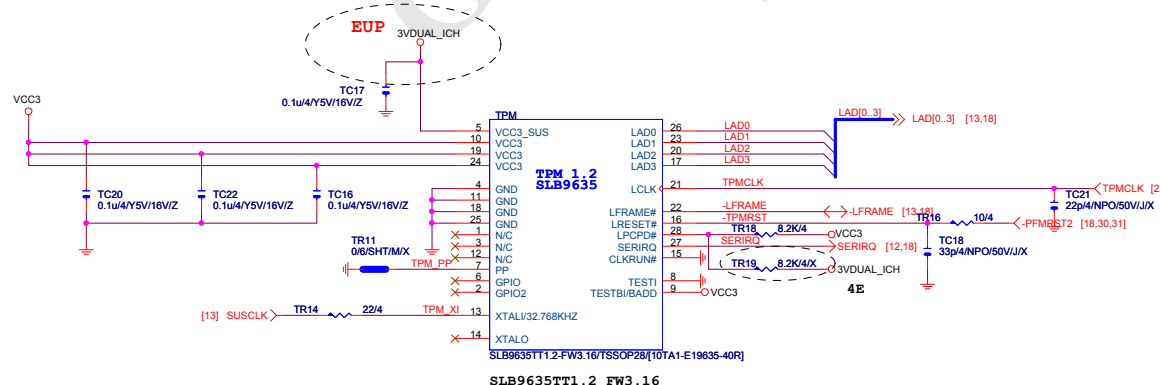


ATX POWER CONNECTOR



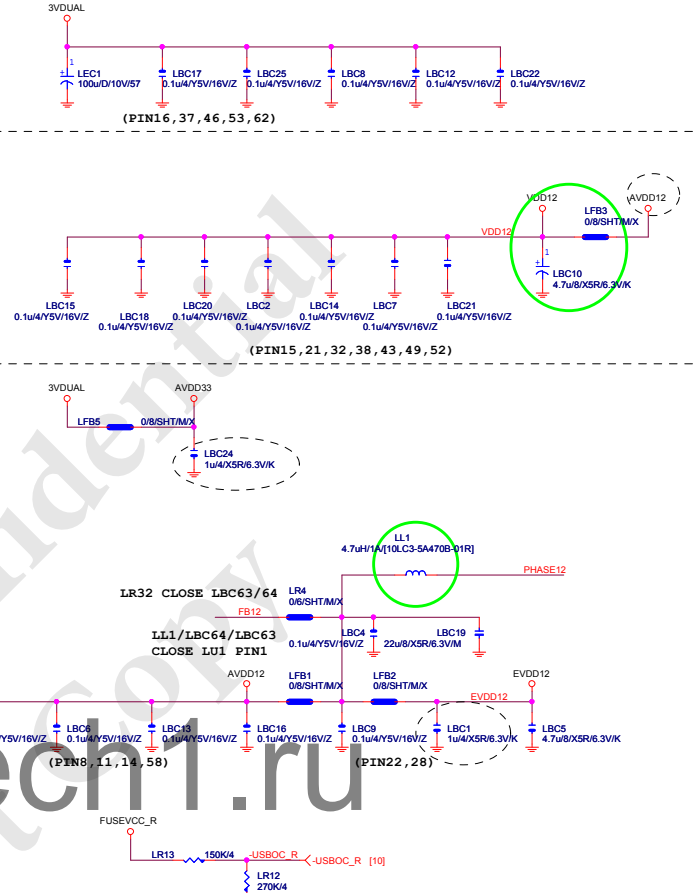
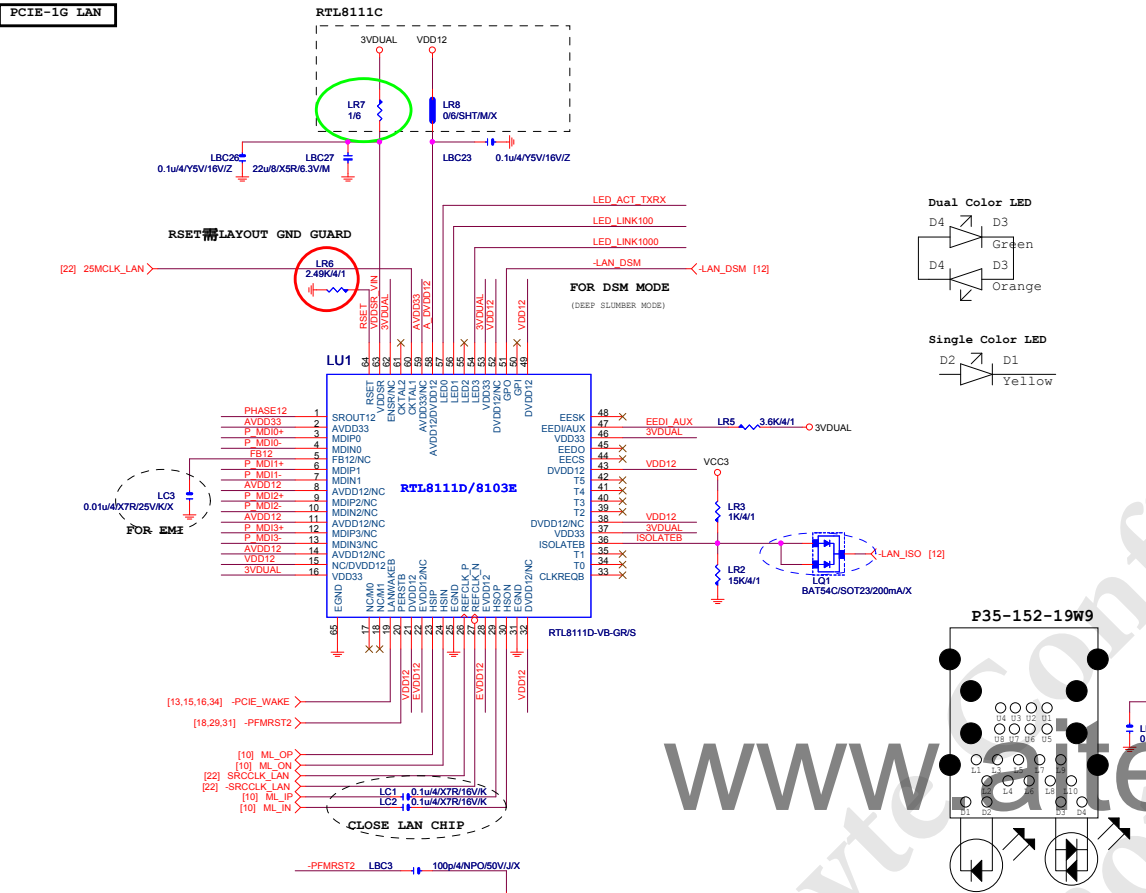
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TPM

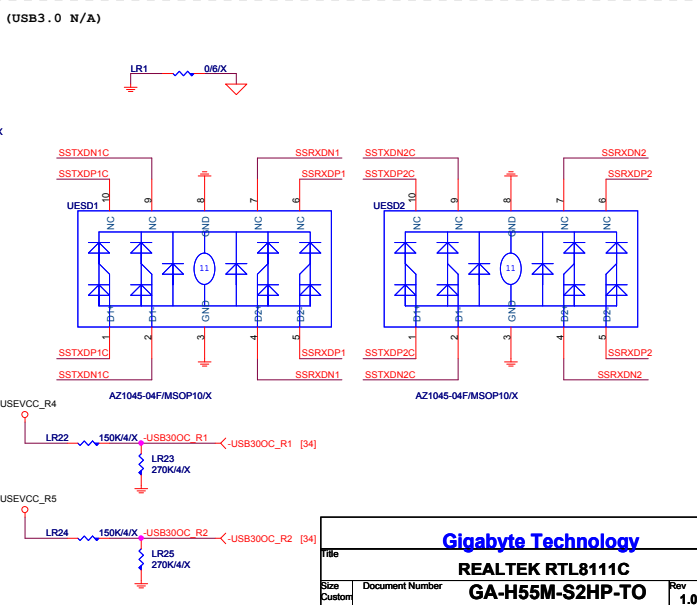
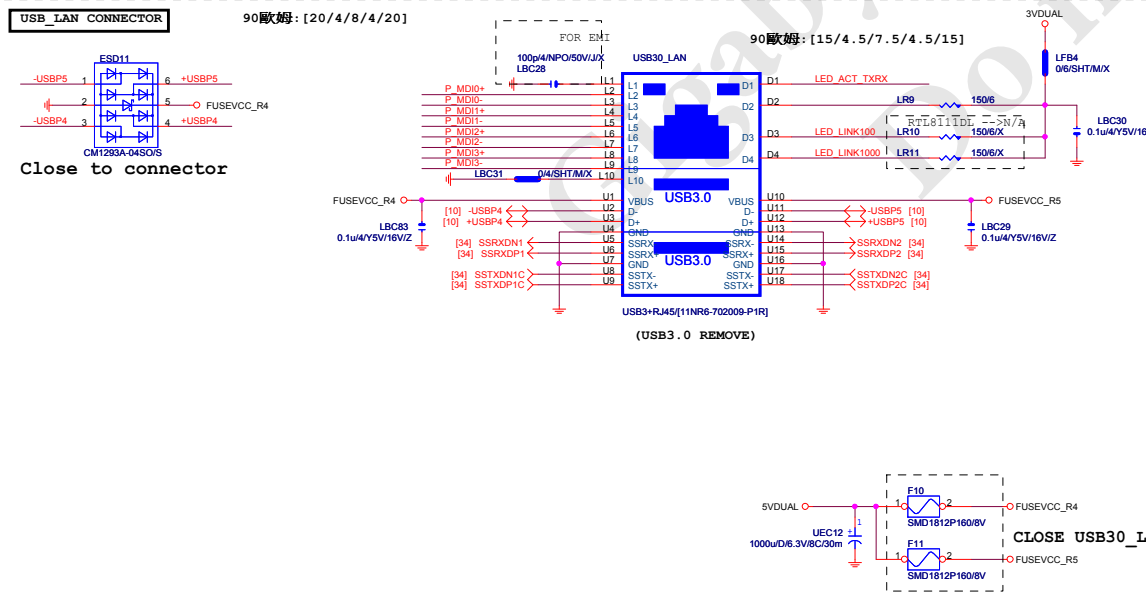


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ATX POWER CONNECTOR		
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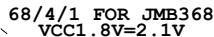
PCIE-1G LAN



USB LAN CONNECTOR

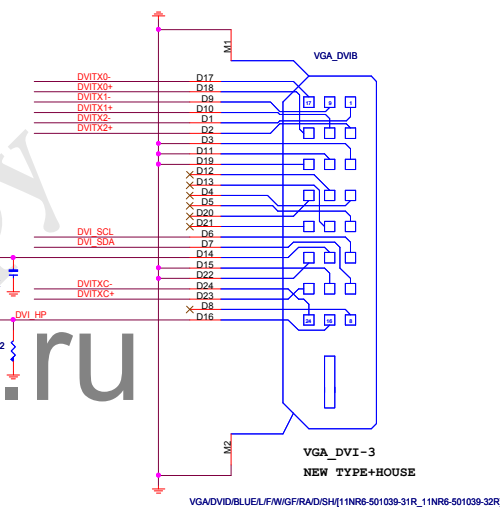
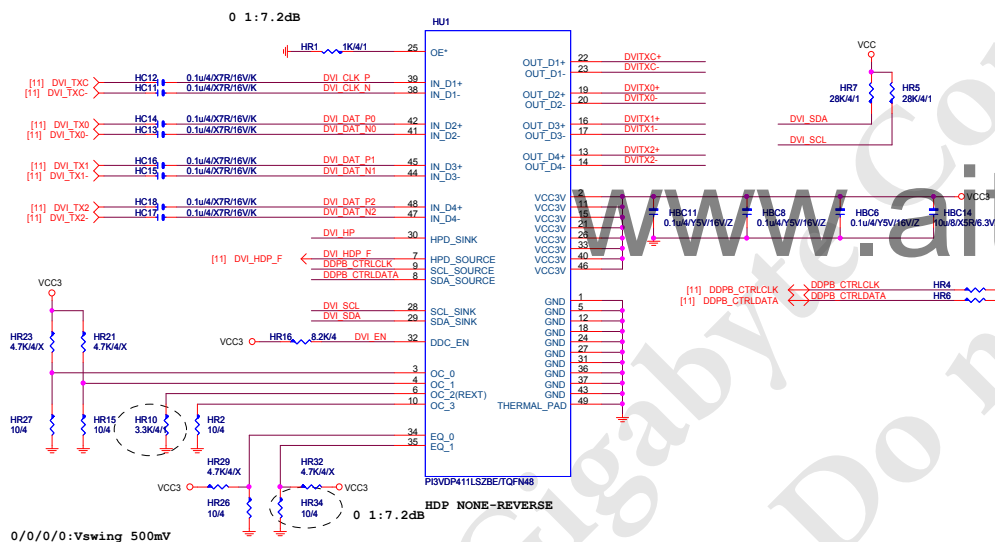


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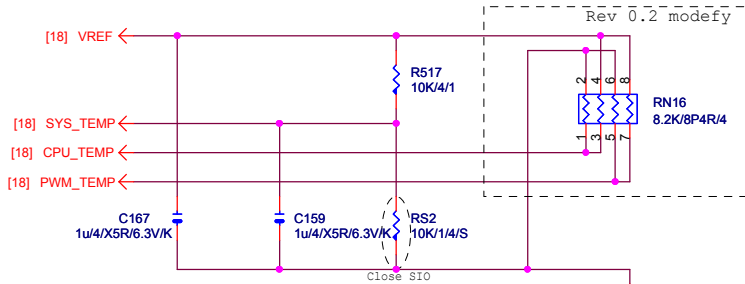


PH_IORDY	IORDYA
PH_DMARQ	DMARQA
PH_INTRQ	INTRQA
PH_CBLID_N	PDIAGnA

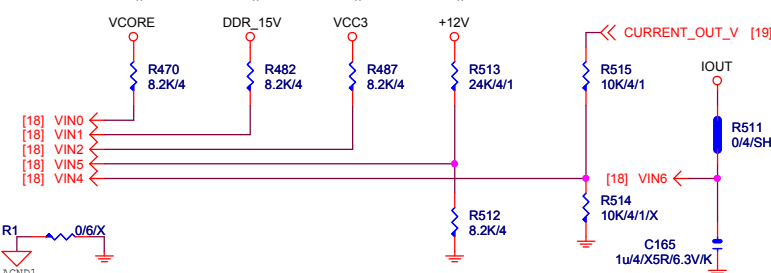
PH RESETn	1	2	
PH_D07	3	4	PH_DD8
PH_D06	5	6	PH_DD9
PH_D05	7	8	PH_DD10
PH_D04	9	10	PH_DD11
PH_DD3	11	12	PH_DD12
PH_DD2	13	14	PH_DD13
PH_DD1	15	16	PH_DD14
PH_DD0	17	18	PH_DD15
	19		(#20 key-pin)
PH_DMARQ	21	22	
PH_DIOW_N	23	24	
PH_DIOR_N	25	26	(#28 CSEL)
PH_IORDY	27	28	CSEL
PH_DMACK_N	29	30	
PH_INTRQ	31	32	(#32 IOCS16)
PH_DA1	33	34	PH_CBLID_N
PH_DA0	35	36	PH_DA2
PH_CS0_N	37	38	PH_CS1_N
DASPNxA	39	40	



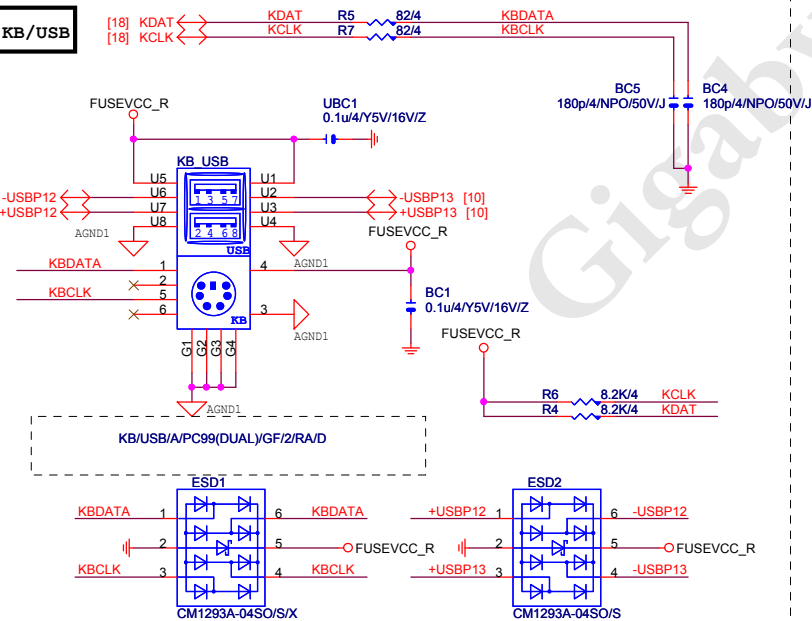
TEMP H/W MONITOR



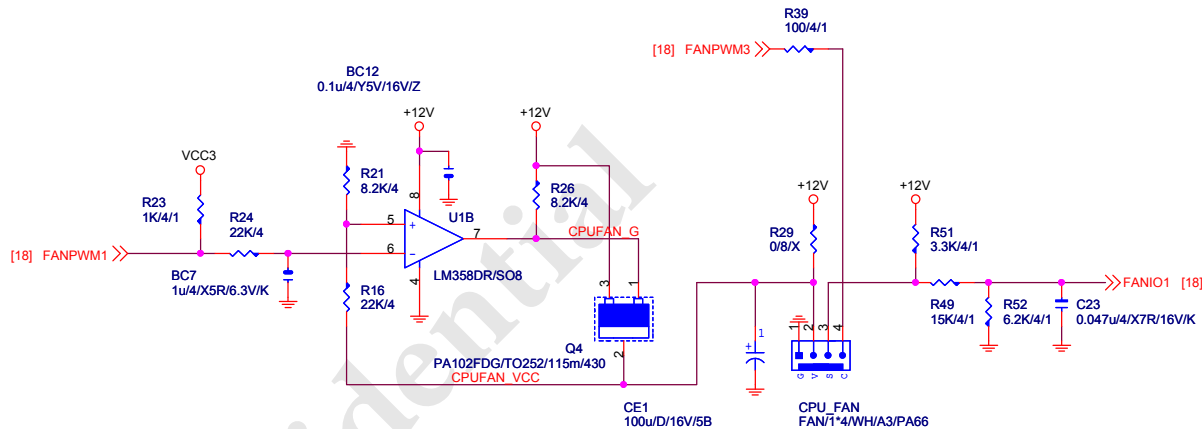
VOLTAGE-- H/W MONITOR



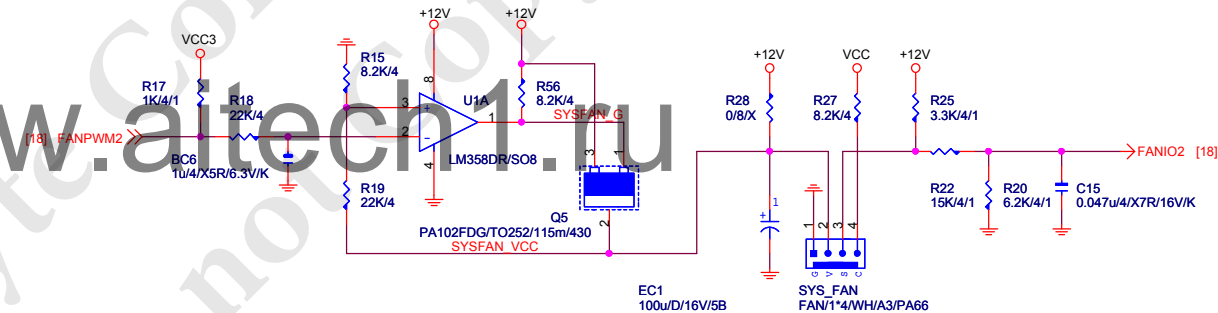
KB/USB



CPU SMART FAN



SYS SMART FAN Linear SYS_FAN



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