

Model Name: GA-P61-S3-B3

1.0

SHEET

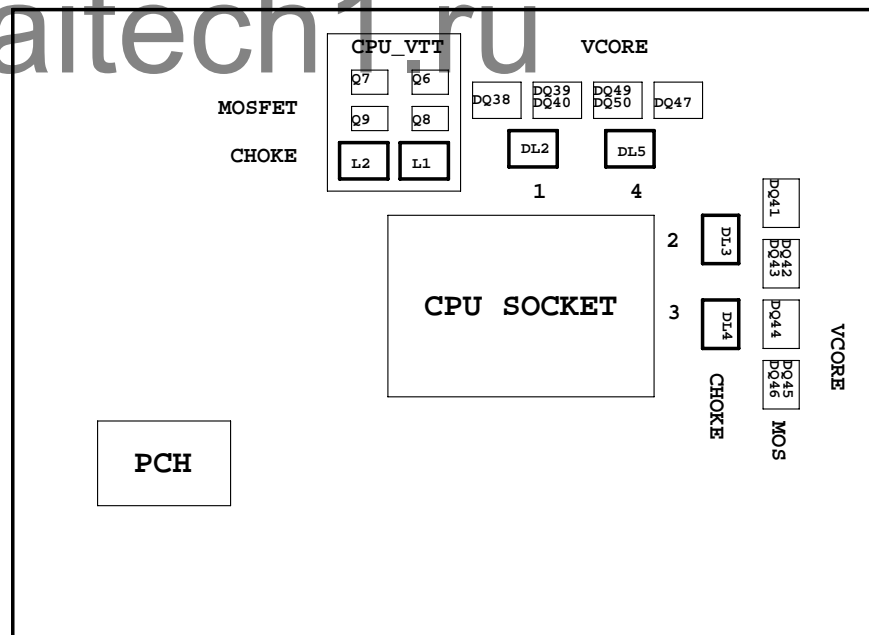
TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*4 SLOT
16	PCI EXPRESS*1 SLOTS X2
17	PCI SLOT 1&2&3
18	I/O ITE8728
19	COM, -PROHOT, ESATA CONNECT
20	Dual BIOS
21	ALC892
22	REAR AUDIO JACK
23	VCORE PWM_ISL6364CRZ-1
24	VCORE PWM_ISL6364CRZ-2
25	DISCRETE POWER
26	DDR_15V & VCC1_05_PCH PWM_ISL6545CBZ
27	CPU_VTT PWM_ISL6322G

SHEET

TITLE

28	VCCSA POWER
29	F_PANEL , F_USB
30	ATX POWER, CLOCK GEN
31	HWM,KB/MS , FAN CTRL
32	REALTEK RTL8111E
33	NEC USB3.0
34	TABLE LIST
35	
36	
37	
38	
39	
40	



Gigabyte Technology

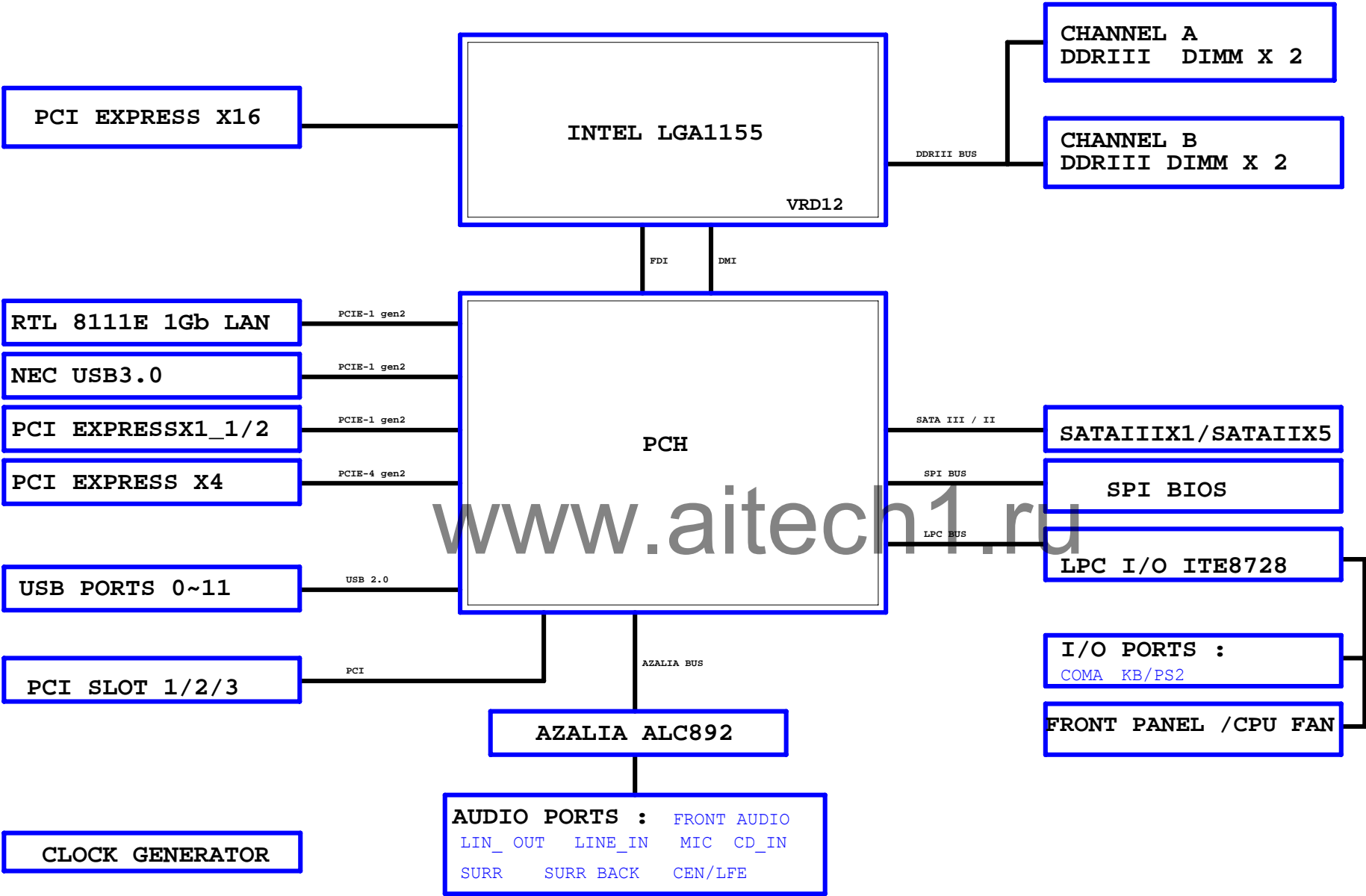
Title		
Cover Sheet		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 1 of 34

Component value change history

www.aitech1.ru

[illegible]

BLOCK DIAGRAM

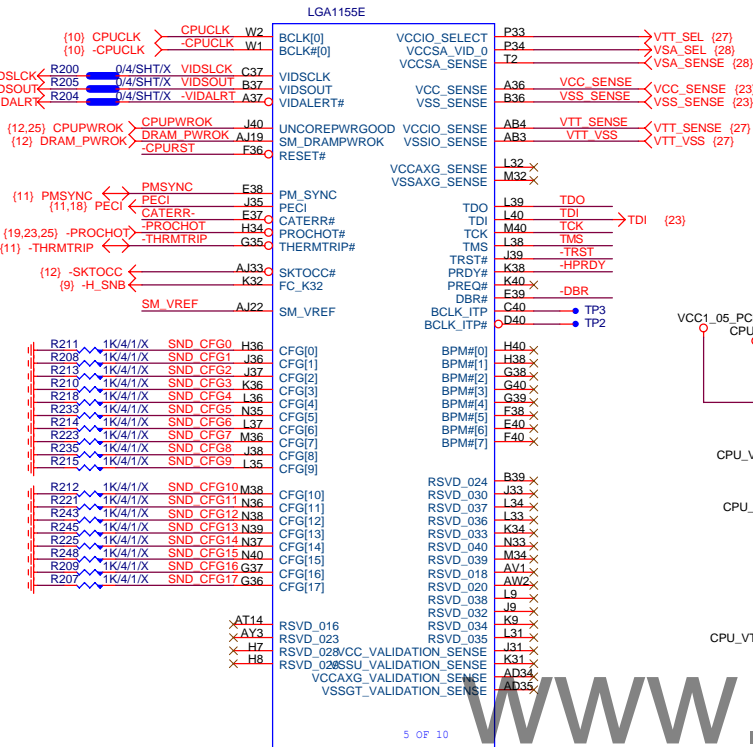


CFG5:1: 1X16 PEG
CFG5:0: 2X8 PEG

CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	NORM	Reverse	LANE REVERSAL(0), x16
3	RSVD	RSVD	RSVD
4	RSVD	RSVD	RSVD
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD

CFG6	CFG5	PCIE CONFIG
1	1	1X16, Default
1	0	2X8
0	1	RSVD
0	0	X8, X4, X4

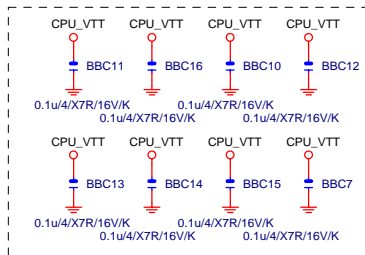
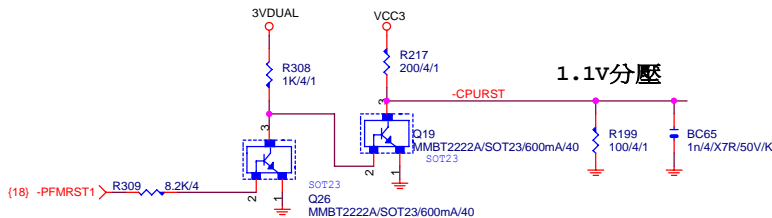
CFG 0-17 all internal PULL-UP



LGA1155[10SC1-F01155-01R]

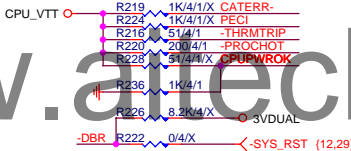
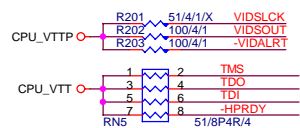
DRAM_PWROK
BC76
100p4/NPO/50V/J/X

DDR_15V
R275
100/4/1
SM_VREF
R277
100/4/1
BC123
0.1u4/X7R/16V/K/X

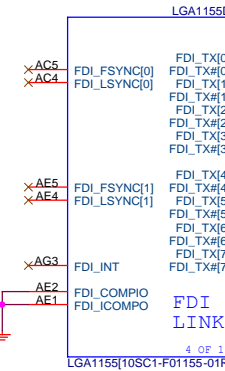
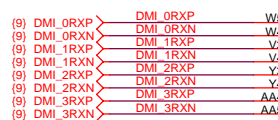


Stitching caps for PCIe, DMI bus

PCIEX16:16/5/5/5/16(breakout min 10/4/4/4/10)
Impedance=80 +/- 17.5%



DMI:12/4/5/4/12(breakout min 8/4/4/4/8)
Impedance=85 +/- 17.5%



LGA1155A

MAAA0	AV27	SA_MA[0]	SA_DQS[0]	AK3	DQSA0
MAAA1	AY24	SA_MA[1]	SA_DQS[1]	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]	AJ2	MDA4	
MAAA9	AT22	SA_MA[9]	SA_DQ[4]	AJ1	MDA5
MAAA10	AV28	SA_MA[10]	SA_DQ[5]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DQ[6]	AL1	MDA7
MAAA12	AU21	SA_MA[12]			
MAAA13	AW32	SA_MA[13]	SA_DQS[11]	AP3	DQSA1
MAAA14	AU20	SA_MA[14]	SA_DQS[11]	AP2	-DQSA1
MAAA15	AT20	SA_MA[15]			
(7) -SWEA	AW29	SA_WE#	SA_DQ[8]	AN1	MDA8
(7) -SCASA	AV30	SA_CAS#	SA_DQ[9]	AN4	MDA9
(7) -SRASA	AU28	SA_RAS#	SA_DQ[10]	AR3	MDA10
(7) SBAA0	AY29	SA_BS[0]	SA_DQ[11]	AR4	MDA12
(7) SBAA1	AW28	SA_BS[1]	SA_DQ[12]	AN2	MDA11
(7) SBAA2	AV20	SA_BS[2]	SA_DQ[13]	AN3	MDA13
			SA_DQ[14]	AR2	MDA14
			SA_DQ[15]	AR1	MDA15
(7) -CSA0	AY29	SA_CS#	SA_DQS[2]	AW4	DQSA2
(7) -CSA1	AV32	SA_CS#	SA_DQS[2]	AW4	-DQSA2
	AW30	SA_CS#	SA_DQS[2]		
	AW33	SA_CS#	SA_DQS[2]		
(7) CKEA0	AV19	SA_CKE[0]	SA_DQ[16]	AV2	MDA16
(7) CKEA1	AT19	SA_CKE[1]	SA_DQ[17]	AW3	MDA17
	AU18	SA_CKE[2]	SA_DQ[18]	AV5	MDA18
	AV18	SA_CKE[3]	SA_DQ[19]	AW5	MDA19
			SA_DQ[20]	AU2	MDA20
MODT_A0	AV31	SA_ODT[0]	SA_DQ[21]	AU3	MDA21
MODT_A1	AU32	SA_ODT[1]	SA_DQ[22]	AY5	MDA22
	AU30	SA_ODT[2]	SA_DQ[23]	AY5	MDA23
	AW33	SA_ODT[3]			
(7) DCLKA0	AY25	SA_CLK[0]	SA_DQS[3]	AV8	DQSA3
(7) -DCLKA0	AW25	SA_CLK[0]	SA_DQS[3]	AW8	-DQSA3
(7) DCLKA1	AU24	SA_CLK[1]			
(7) -DCLKA1	AU25	SA_CLK[1]	SA_DQ[24]	AY7	MDA24
	AW27	SA_CLK[2]	SA_DQ[25]	AU7	MDA25
	AY27	SA_CLK[2]	SA_DQ[26]	AV9	MDA26
	AV26	SA_CLK[3]	SA_DQ[27]	AU9	MDA27
	AW26	SA_CLK[3]	SA_DQ[28]	AV7	MDA28
			SA_DQ[29]	AW7	MDA29
			SA_DQ[30]	AV9	MDA30
			SA_DQ[31]	AY9	MDA31
(7,8) -DDR3_RST	TR1	SM_DRAMRST#			
			SA_DQS[4]	AV37	DQSA4
			SA_DQS[4]	AV36	-DQSA4
			SA_DQ[32]	AU35	MDA32
			SA_DQ[33]	AW37	MDA33
			SA_DQ[34]	AU39	MDA34
			SA_DQ[35]	AU36	MDA35
			SA_DQ[36]	AW35	MDA36
			SA_DQ[37]	AY36	MDA37
			SA_DQ[38]	AU38	MDA38
			SA_DQ[39]	AU37	MDA39
			SA_DQS[5]	AP38	DQSA5
			SA_DQS[5]	AP39	-DQSA5
			SA_DQ[40]	AR40	MDA40
			SA_DQ[41]	AR37	MDA41
			SA_DQ[42]	AN38	MDA42
			SA_DQ[43]	AN37	MDA43
			SA_DQ[44]	AR39	MDA44
			SA_DQ[45]	AR38	MDA45
			SA_DQ[46]	AN39	MDA46
			SA_DQ[47]	AN40	MDA47
			SA_DQS[6]	AK38	DQSA6
			SA_DQS[6]	AK39	-DQSA6
			SA_DQ[48]	AL40	MDA48
			SA_DQ[49]	AL37	MDA49
			SA_DQ[50]	AJ38	MDA50
			SA_DQ[51]	AJ37	MDA51
			SA_DQ[52]	AL39	MDA52
			SA_DQ[53]	AL38	MDA53
			SA_DQ[54]	AJ39	MDA54
			SA_DQ[55]	AJ40	MDA55
			SA_DQS[7]	AF38	DQSA7
			SA_DQS[7]	AF39	-DQSA7
			SA_DQ[56]	AG40	MDA56
			SA_DQ[57]	AG37	MDA57
			SA_DQ[58]	AE38	MDA58
			SA_DQ[59]	AE37	MDA59
			SA_DQ[60]	AG39	MDA60
			SA_DQ[61]	AG38	MDA61
			SA_DQ[62]	AE39	MDA62
			SA_DQ[63]	AE40	MDA63

DDR_0

1 OF 10

LGA1155[10SC1-F01155-01R]

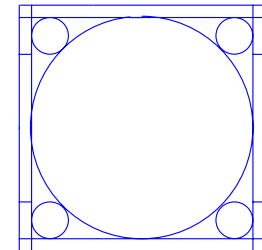
LGA1155B

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	AN18	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[11]	AM8	DQSB1
MAAB14	AY16	SB_MA[14]	SB_DQS[11]	AL8	-DQSB1
MAAB15	AV16	SB_MA[15]			
(8) -SWEB	AR25	SB_WE#	SB_DQ[8]	AL7	MDB8
(8) -SCASB	AK25	SB_CAS#	SB_DQ[9]	AM7	MDB9
(8) -SRASB	AP24	SB_RAS#	SB_DQ[10]	AM10	MDB10
(8) SBAB0	SBAB0	SB_BS[0]	SB_DQ[11]	AL6	MDB12
(8) SBAB1	SBAB1	SB_BS[1]	SB_DQ[12]	AL6	MDB13
(8) SBAB2	SBAB2	SB_BS[2]	SB_DQ[13]	AL9	MDB14
			SB_DQ[14]	AM9	MDB15
			SB_DQ[15]		
(8) -CSB0	AN25	SB_CS#	SB_DQS[2]	AR8	DQSB2
(8) -CSB1	AN26	SB_CS#	SB_DQS[2]	AP8	-DQSB2
	AL25	SB_CS#	SB_DQS[2]		
	AL26	SB_CS#	SB_DQS[2]		
(8) CKEB0	AU18	SB_CKE[0]	SB_DQ[16]	AP7	MDB16
(8) CKEB1	AY15	SB_CKE[1]	SB_DQ[17]	AR7	MDB17
	AW15	SB_CKE[2]	SB_DQ[18]	AP10	MDB18
	AV15	SB_CKE[3]	SB_DQ[19]	AR10	MDB19
MODT_B0	AL26	SB_ODT[0]	SB_DQ[20]	AP6	MDB20
MODT_B1	AP26	SB_ODT[1]	SB_DQ[21]	AP9	MDB21
	AM26	SB_ODT[2]	SB_DQ[22]	AR9	MDB22
	AK26	SB_ODT[3]	SB_DQ[23]	AR9	MDB23
			SB_DQS[3]	AN13	DQSB3
			SB_DQS[3]	AN12	-DQSB3
(8) DCLKB0	AL21	SB_CLK[0]			
(8) -DCLKB0	DCLKB0	SB_CLK[0]	SB_DQ[24]	AM12	MDB24
(8) DCLKB1	AL22	SB_CLK[1]	SB_DQ[25]	AM13	MDB25
(8) -DCLKB1	DCLKB1	SB_CLK[1]	SB_DQ[26]	AR13	MDB26
	AK20	SB_CLK[2]	SB_DQ[27]	AP13	MDB27
	AL23	SB_CLK[2]	SB_DQ[28]	AL12	MDB28
	AM22	SB_CLK[3]	SB_DQ[29]	AL13	MDB29
	AP21	SB_CLK[3]	SB_DQ[30]	AR12	MDB30
	AN21	SB_CLK[3]	SB_DQ[31]	AP12	MDB31
			SB_DQS[4]	AN28	DQSB4
			SB_DQS[4]	AN28	-DQSB4
(8) VREF_DQB	AH1	FC_AH1			
(7) VREF_DQA	AH4	FC_AH4			
			SB_DQ[32]	AR28	MDB32
			SB_DQ[33]	AR23	MDB33
			SB_DQ[34]	AL28	MDB34
			SB_DQ[35]	AL29	MDB35
			SB_DQ[36]	AP28	MDB36
			SB_DQ[37]	AP29	MDB37
			SB_DQ[38]	AM28	MDB38
			SB_DQ[39]	AM29	MDB39
			SB_DQS[5]	AP33	DQSB5
			SB_DQS[5]	AR33	-DQSB5
			SB_DQ[40]	AP32	MDB40
			SB_DQ[41]	AP31	MDB41
			SB_DQ[42]	AP35	MDB42
			SB_DQ[43]	AP34	MDB43
			SB_DQ[44]	AR31	MDB44
			SB_DQ[45]	AR32	MDB45
			SB_DQ[46]	AR33	MDB46
			SB_DQ[47]	AR34	MDB47
			SB_DQS[6]	AL33	DQSB6
			SB_DQS[6]	AM33	-DQSB6
			SB_DQ[48]	AM32	MDB48
			SB_DQ[49]	AM31	MDB49
			SB_DQ[50]	AL35	MDB50
			SB_DQ[51]	AL32	MDB51
			SB_DQ[52]	AM34	MDB52
			SB_DQ[53]	AL31	MDB53
			SB_DQ[54]	AM35	MDB54
			SB_DQ[55]	AL34	MDB55
			SB_DQS[7]	AG35	DQSB7
			SB_DQS[7]	AG34	-DQSB7
			SB_DQ[56]	AH35	MDB56
			SB_DQ[57]	AH34	MDB57
			SB_DQ[58]	AE34	MDB58
			SB_DQ[59]	AE35	MDB59
			SB_DQ[60]	AJ35	MDB60
			SB_DQ[61]	AJ34	MDB61
			SB_DQ[62]	AE33	MDB62
			SB_DQ[63]	AE33	MDB63

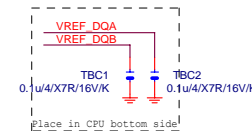
DDR_1

2 OF 10

LGA1155[10SC1-F01155-01R]

LGA1155
ILM_BP/1156/CSP

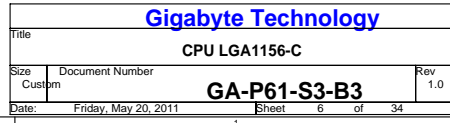
Need check the new CPU ME



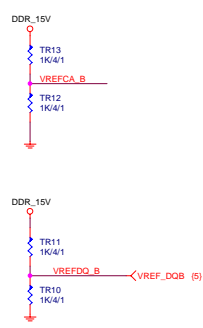
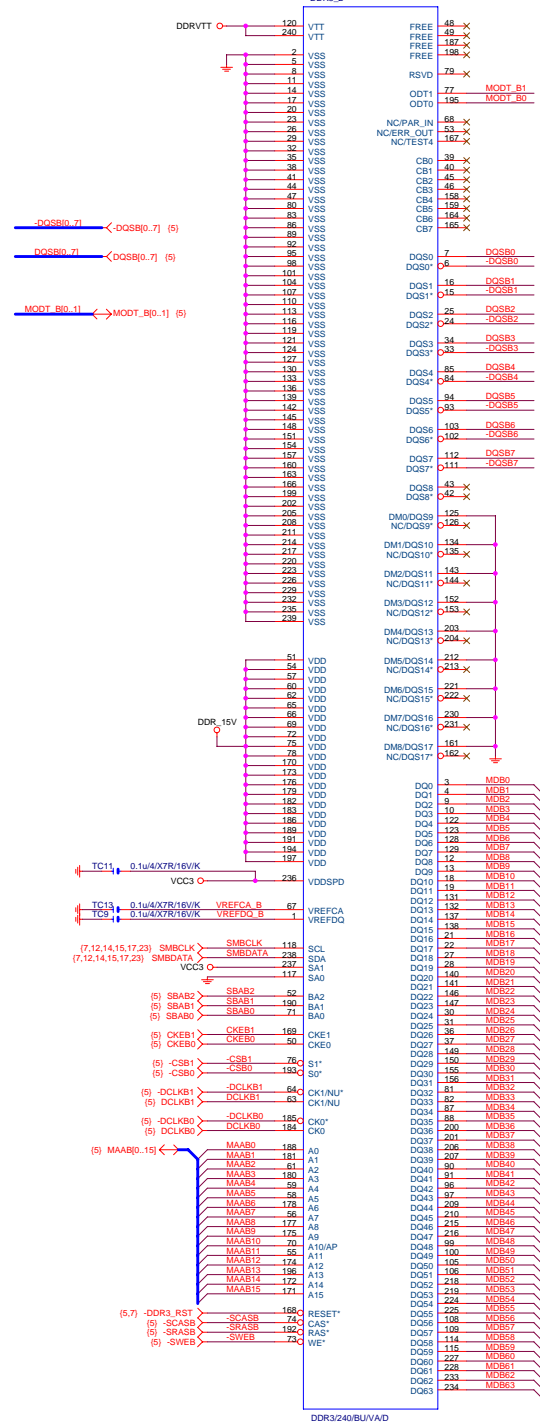
Gigabyte Technology

CPU LGA1156-B

Title	Document Number	Rev
Size	GA-P61-S3-B3	1.0
Custom		
Date:	Friday, May 20, 2011	Sheet 5 of 34







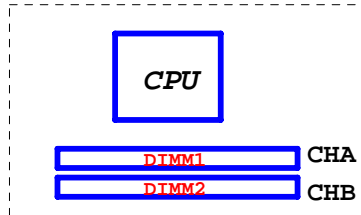
DDR3 1066,1333,1600MHZ BANDWIDTH

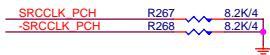
DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s

DDR3 1333MHZ
DDR3 clock=667MHZ
DDR3 single channel bandwidth=10.6GB/s
DDR3 dual channel bandwidth=21GB/s

DDR3 1600MHZ
DDR3 clock=800MHZ
DDR3 single channel bandwidth=12.8GB/s
DDR3 dual channel bandwidth=25.6GB/s

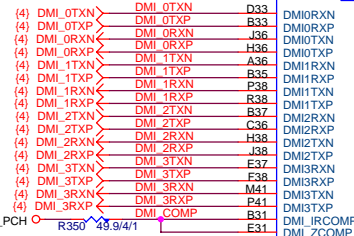
www.aitech1.ru



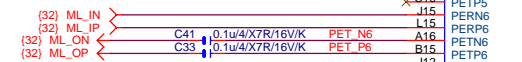
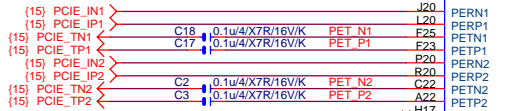


USB:12/7.5/4.5/7.5/12 (breakout min 8/4/4/4/8)
Impedance=90 +/- 17.5%

PCHB



W=4 mil out of PCH
S=15 mil out of PCH
VCC1_05_PCH

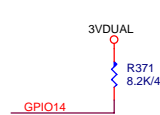
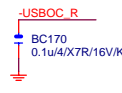
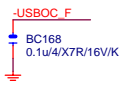
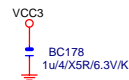


H61 CHIP PCIE PORT 7/8
are Disable

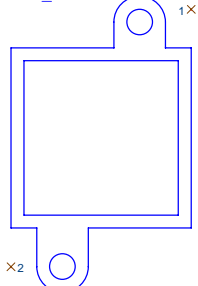
BD82H61/B3/S

放靠近 Device & PCI-E Slot

PCIEX1:16/5/5/5/16 (breakout min 8/4/4/4/8)
Impedance=80 +/- 17.5%



PCH_HS



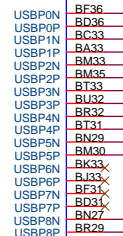
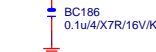
SB_HS[12SP2-030005-42R_12SP2-030005-43R]

VCC1_8_PCH



R408 8.2K/4 NV_CLE

H_SNB (4) DMI /FDI termination voltage



H61 CHIP USB PORT 6/7
are Disable

H61 CHIP USB PORT 12/13
are Disable

U3B

PCI-E

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

2 OF 11

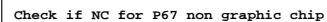
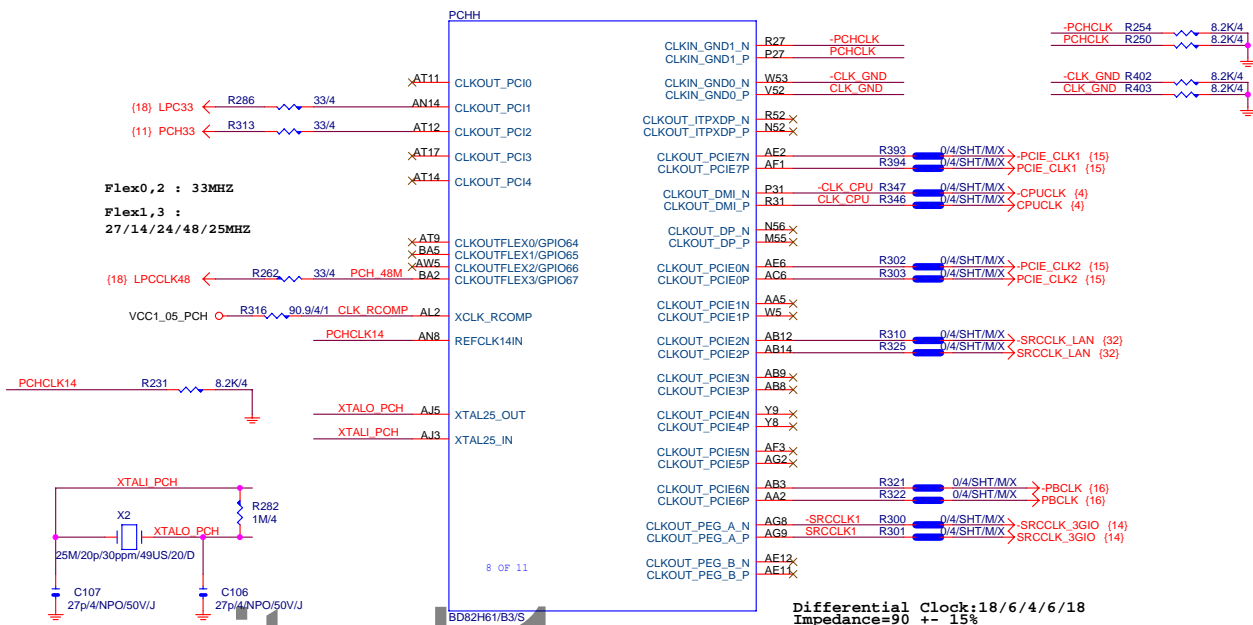
2 OF 11

2 OF 11

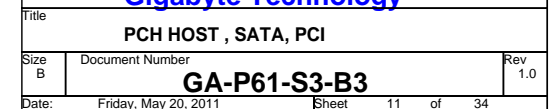
2 OF 11

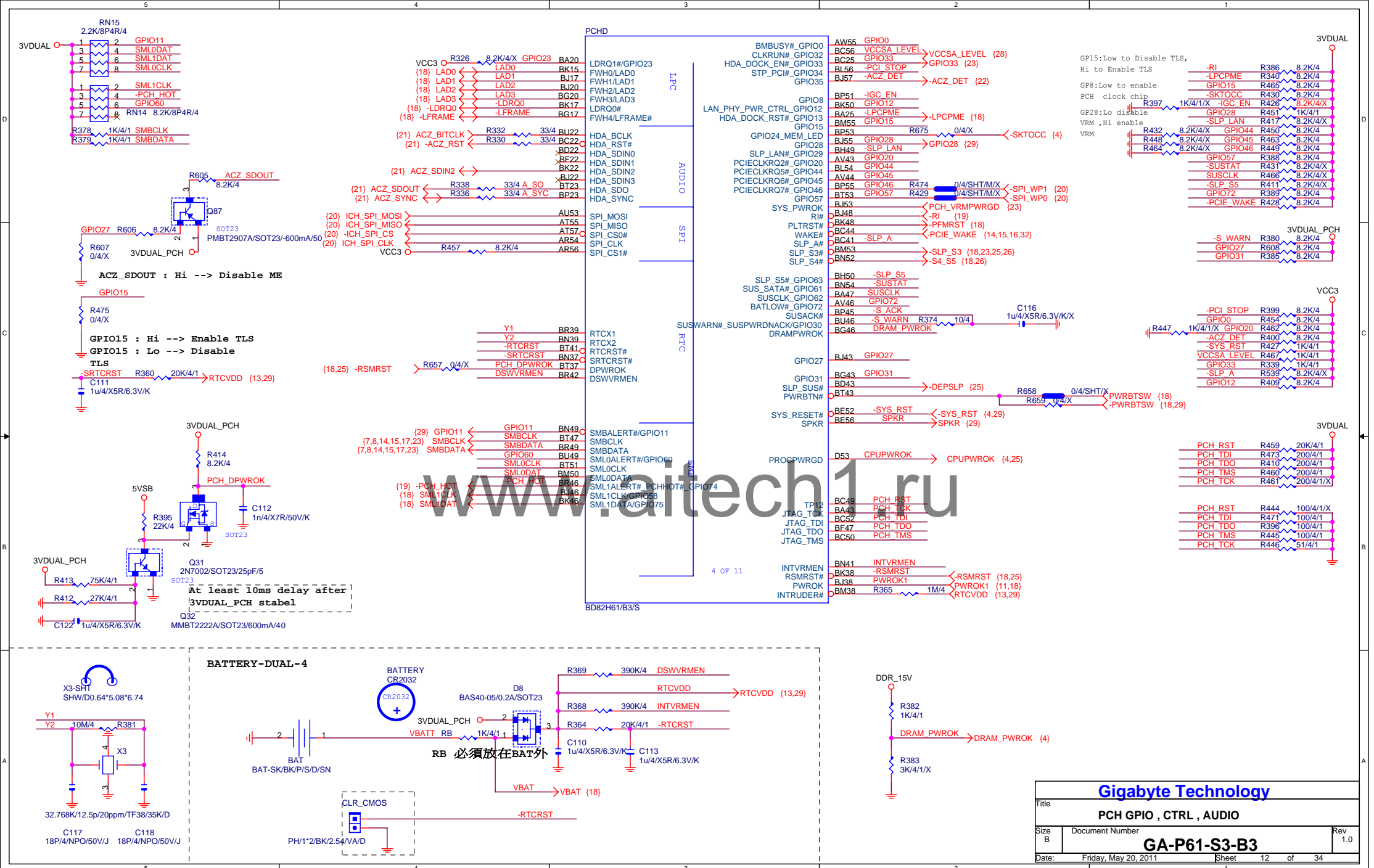
2 OF 11

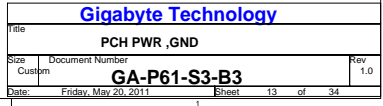
2 OF 11



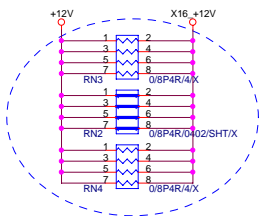
PCHC







+12 protect
short-wire test



PCIE16:16/5/5/16

EXP_RXP0_15] >> EXP_RXP0_15] (4)
EXP_RXN0_15] >> EXP_RXN0_15] (4)
EXP_TXP0_15] >> EXP_TXP0_15] (4)
EXP_TXN0_15] >> EXP_TXN0_15] (4)

EXP_TXP0	C43	0.22u/4X5R6.3V/K	EXP_TXP0C
EXP_TXN0	C36	0.22u/4X5R6.3V/K	EXP_TXN0C
EXP_TXP1	C47	0.22u/4X5R6.3V/K	EXP_TXP1C
EXP_TXN1	C49	0.22u/4X5R6.3V/K	EXP_TXN1C
EXP_TXP2	C52	0.22u/4X5R6.3V/K	EXP_TXP2C
EXP_TXN2	C54	0.22u/4X5R6.3V/K	EXP_TXN2C
EXP_TXP3	C57	0.22u/4X5R6.3V/K	EXP_TXP3C
EXP_TXN3	C59	0.22u/4X5R6.3V/K	EXP_TXN3C
EXP_TXP4	C62	0.22u/4X5R6.3V/K	EXP_TXP4C
EXP_TXN4	C64	0.22u/4X5R6.3V/K	EXP_TXN4C
EXP_TXP5	C65	0.22u/4X5R6.3V/K	EXP_TXP5C
EXP_TXN5	C67	0.22u/4X5R6.3V/K	EXP_TXN5C
EXP_TXP6	C69	0.22u/4X5R6.3V/K	EXP_TXP6C
EXP_TXN6	C71	0.22u/4X5R6.3V/K	EXP_TXN6C
EXP_TXP7	C76	0.22u/4X5R6.3V/K	EXP_TXP7C
EXP_TXN7	C75	0.22u/4X5R6.3V/K	EXP_TXN7C
EXP_TXP8	C79	0.22u/4X5R6.3V/K	EXP_TXP8C
EXP_TXN8	C80	0.22u/4X5R6.3V/K	EXP_TXN8C
EXP_TXP9	C81	0.22u/4X5R6.3V/K	EXP_TXP9C
EXP_TXN9	C82	0.22u/4X5R6.3V/K	EXP_TXN9C
EXP_TXP10	C86	0.22u/4X5R6.3V/K	EXP_TXP10C
EXP_TXN10	C87	0.22u/4X5R6.3V/K	EXP_TXN10C
EXP_TXP11	C90	0.22u/4X5R6.3V/K	EXP_TXP11C
EXP_TXN11	C91	0.22u/4X5R6.3V/K	EXP_TXN11C
EXP_TXP12	C92	0.22u/4X5R6.3V/K	EXP_TXP12C
EXP_TXN12	C93	0.22u/4X5R6.3V/K	EXP_TXN12C
EXP_TXP13	C95	0.22u/4X5R6.3V/K	EXP_TXP13C
EXP_TXN13	C96	0.22u/4X5R6.3V/K	EXP_TXN13C
EXP_TXP14	C97	0.22u/4X5R6.3V/K	EXP_TXP14C
EXP_TXN14	C98	0.22u/4X5R6.3V/K	EXP_TXN14C
EXP_TXP15	C99	0.22u/4X5R6.3V/K	EXP_TXP15C
EXP_TXN15	C100	0.22u/4X5R6.3V/K	EXP_TXN15C

PCI-E REV:1.1--> 2.5GHZ

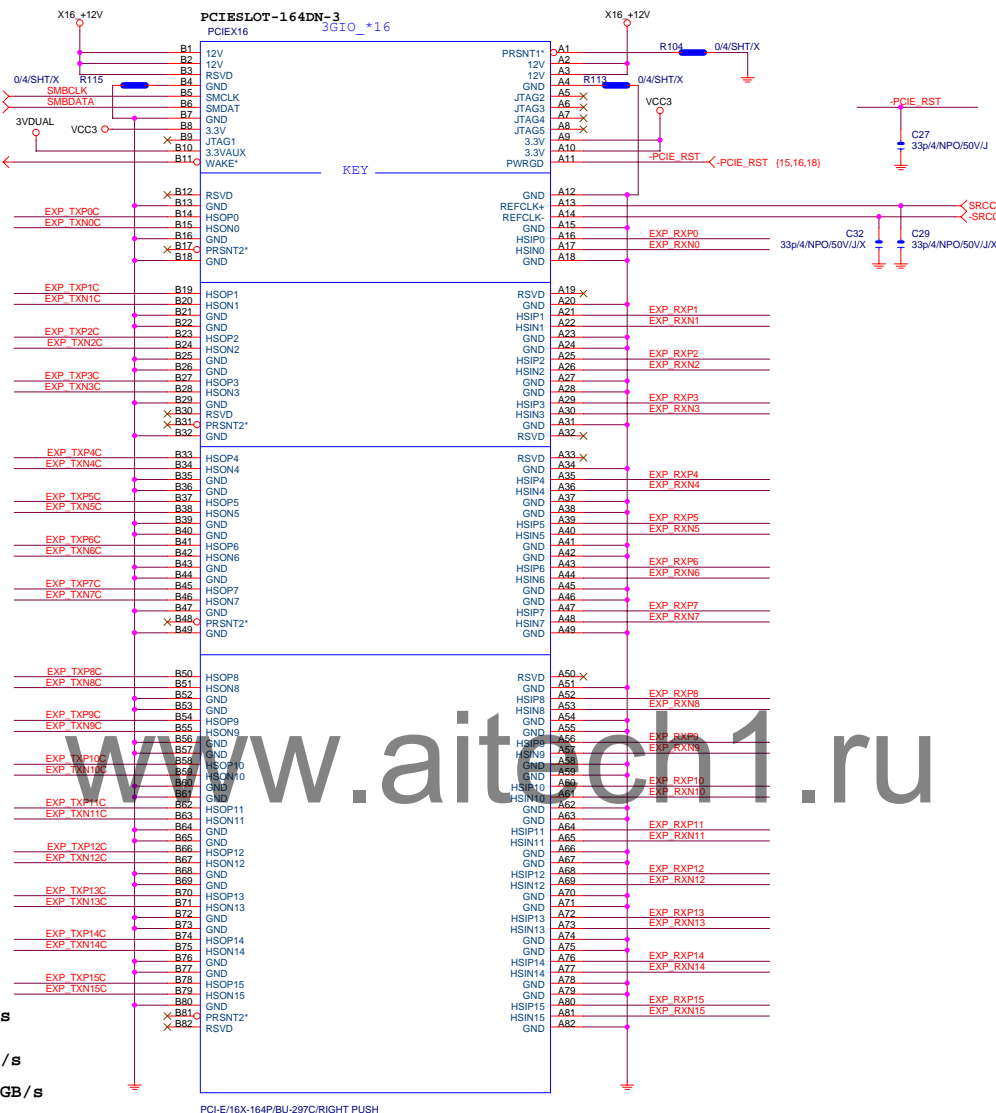
PCE-E X1(單向) BANDWITH=2.5GHZ*(8b/10b)=2Gb/s=250MB/s

PCE-E X1(雙向) BANDWITH=2.5GHZ*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWITH=2.5GHZ*(8b/10b)X16=32Gb/s=4GB/s

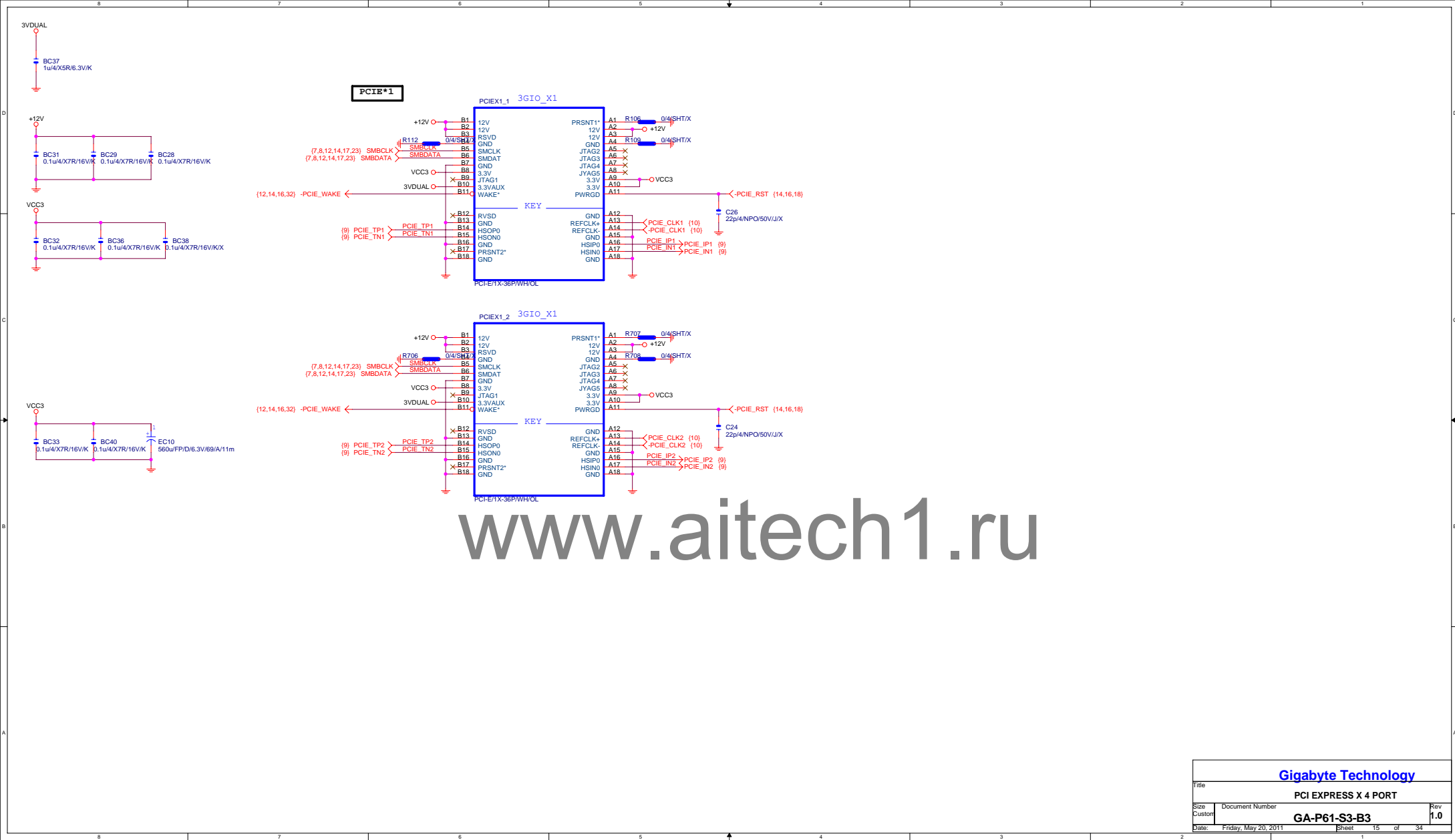
PCE-E X16(雙向) BANDWITH=2.5GHZ*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

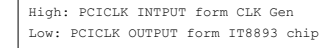


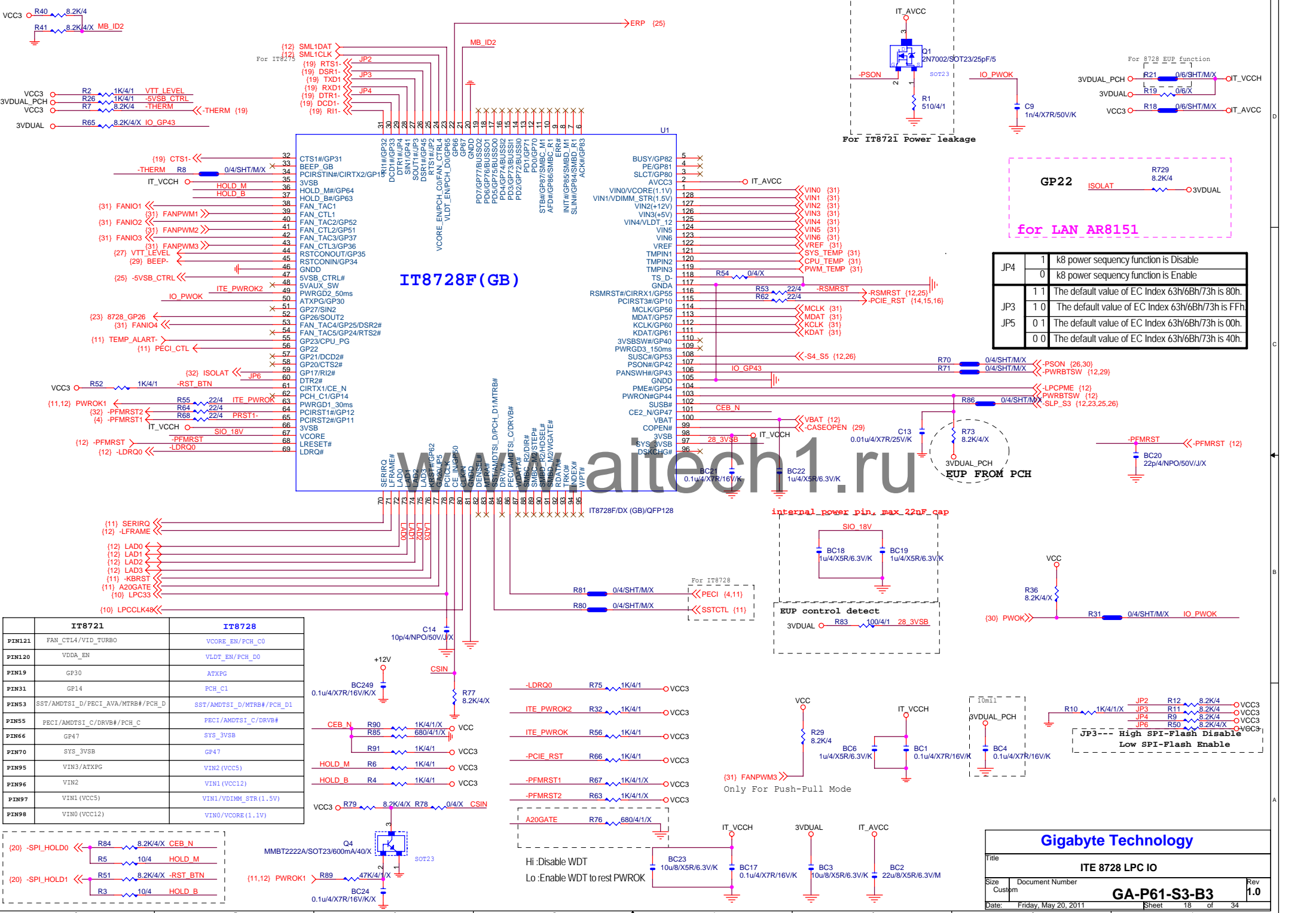
Gigabyte Technology

Title			PCI EXPRESS * 16
Size	Document Number	GA-P61-S3-B3	
Custom			Rev 1.0
Date:	Friday, May 20, 2011	Sheet	14 of 34



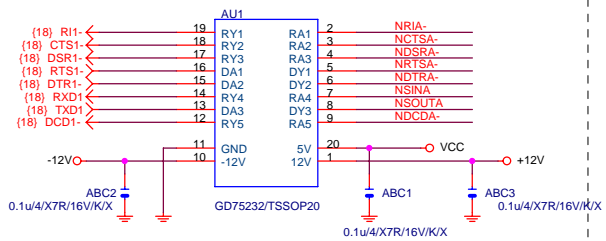
Gigabyte Technology		
PCI EXPRESS X 4 PORT		
Size Custom	Document Number	Rev 1.0
GA-P61-S3-B3		
Date: Friday, May 20, 2011	Sheet 15	of 34



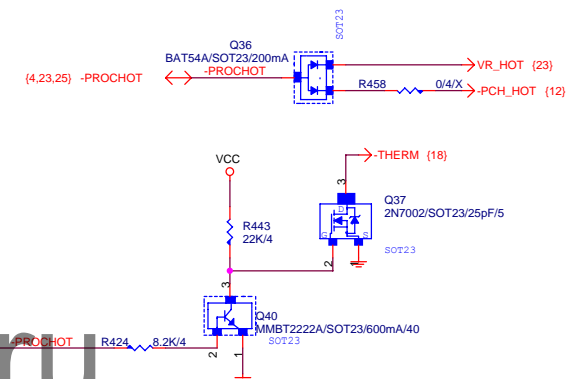
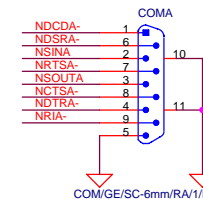
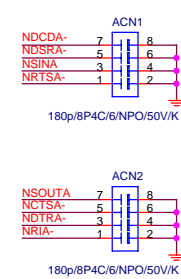
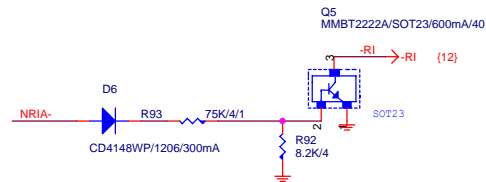


	IT8721	IT8728
PIN121	FAN_CTL4/VID_TURBO	VCORE_EN/PCH_C0
PIN120	VDDA_EN	VLDT_EN/PCH_D0
PIN19	GP30	ATXPG
PIN31	GP14	PCH_C1
PIN53	SST/AMDTSI_D/PECI_AVA/MTRB#/PCH_D	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#/PCH_C	PECI/AMDTSI_C/DRVB#
PIN66	GP47	SYS_3VSB
PIN70	SYS_3VSB	GP47
PIN95	VIN3/ATXPG	VIN2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

COMA



COM RI

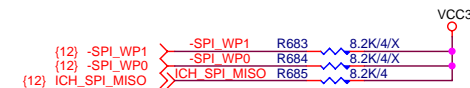
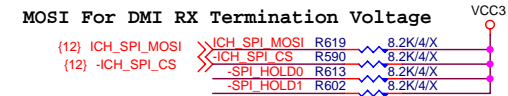
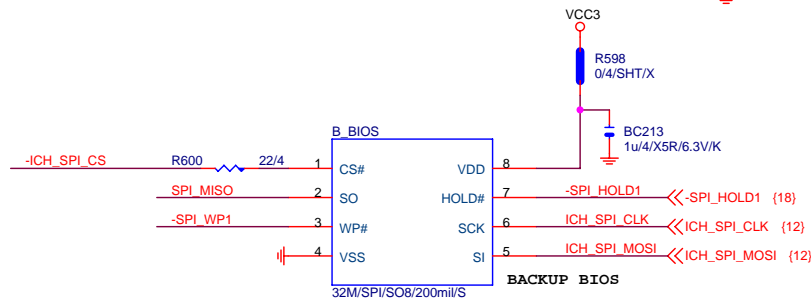
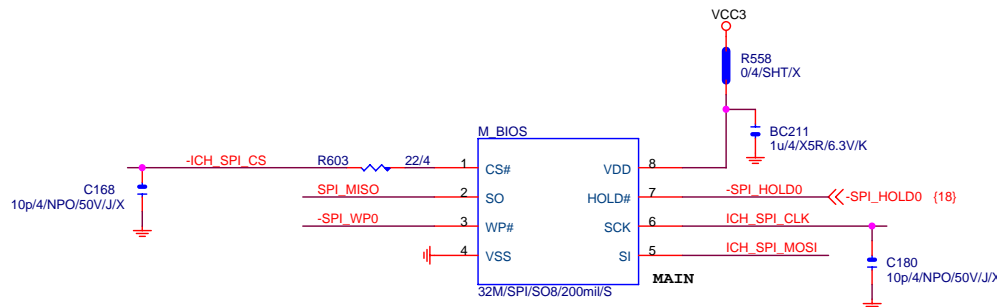
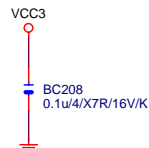


www.aitech1.ru

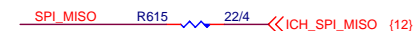
Gigabyte Technology

Title			
COM & PROHOT/Dynamic O.C.			
Size	Document Number	Rev	
Custom		1.0	
Date:	Friday, May 20, 2011	Sheet	19 of 34

GA-P61-S3-B3



Default int pull up



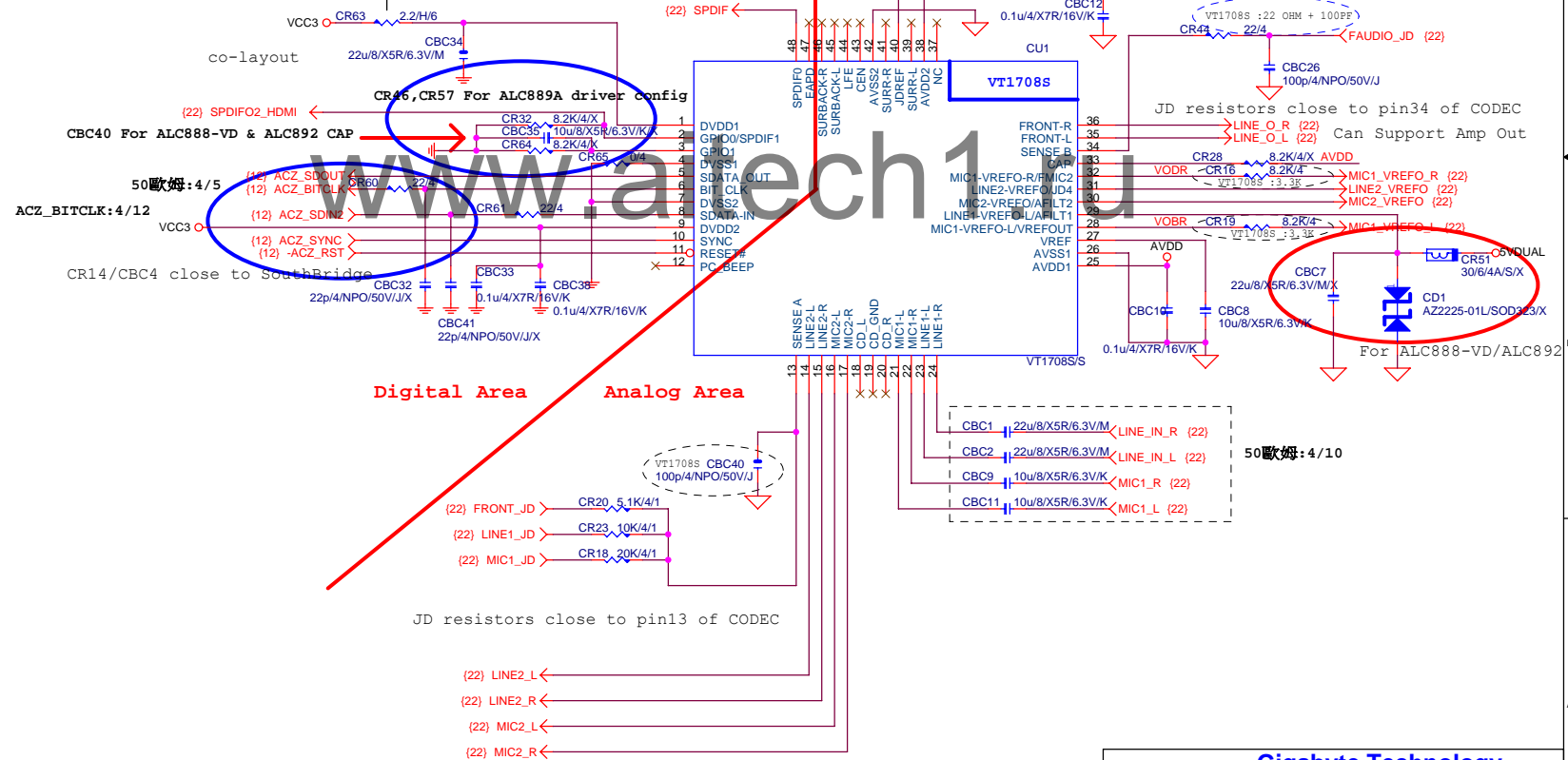
BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

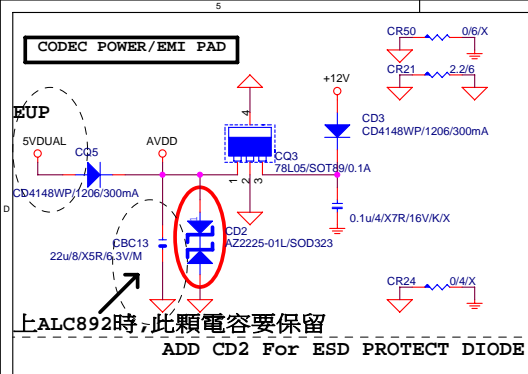
1 means floating
0 means PD 1K

www.aitech1.ru

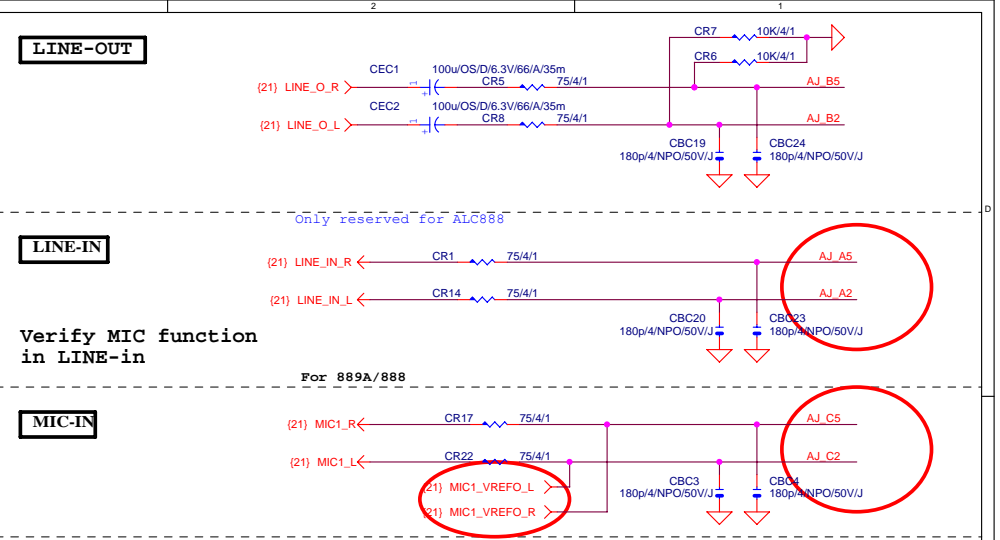
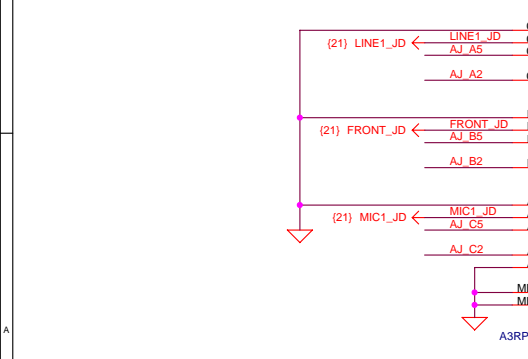
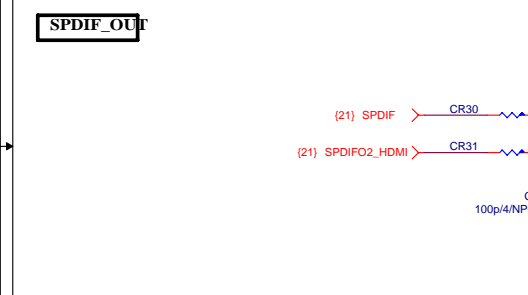
Gigabyte Technology			
Title		BIOS	
Size	Document Number	GA-P61-S3-B3	
Custom			Rev 1.0
Date:	Friday, May 20, 2011	Sheet 20	of 34

	ALC887~VD	ALC889	VT1708S	VT1708SCE
CR65	X	O	O	X
CR64	X	X	X	O
CR44/CBC6	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR34	20K/1%	20K/1%	5.1K/1%	5.1K/1%
CR31	O	O	O	O
CR30	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	5.1K/4/1	5.1K/4/1
CBC39/CBC40	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	75 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	X	X	O
CD2/CD3/CQ3/CQ5	X	O	O	X

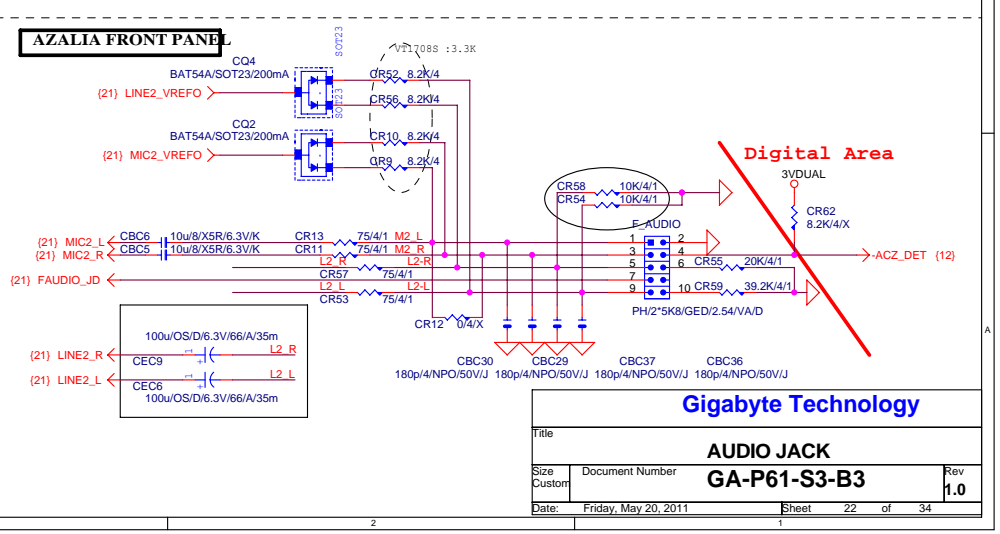




上ALC892時,此顆電容要保留



www.aitech1.ru



www.aitech1.ru

Gigabyte Technology		
Title		
CPU CORE VR-2		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 24 of 34

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

Remote sense請從最重的負載端點拉回

$$0.6 * [(R_S + R_O) / R_O] = V_{out} = 1.54V$$

放靠近IC pin4 (23) 0.6LEV

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

POWER ISSUE 1u6/X7R/16V/K

www.aitech1.ru

VIN=3.3V,VOUT=1.05V,IOUT=7.5A,PHASE=1
IRMS=3.4875A
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2X1.938=3.876>3.4875A

CPU_VTT

VTT_SEL	
HI	1.05V
LO	1.0V

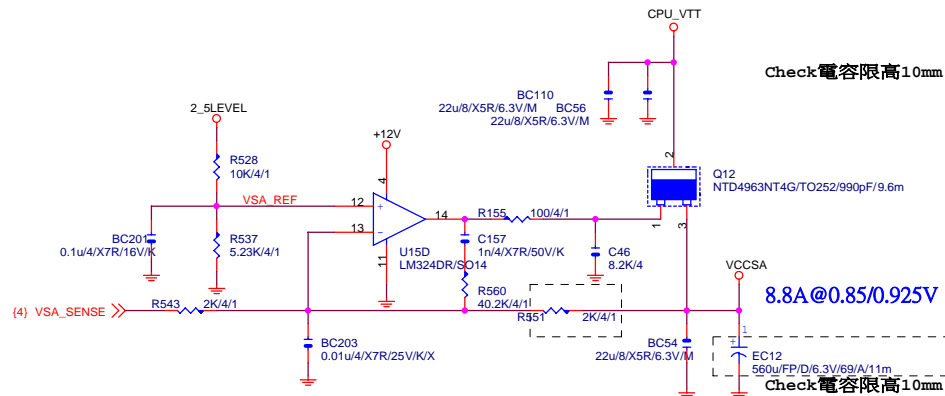
BOTTOM PAD
CONNECT TO GND
THROUGH 4 VIA

GIGABYTE™

CPU_VTT_PWM_ISL6322CRZ

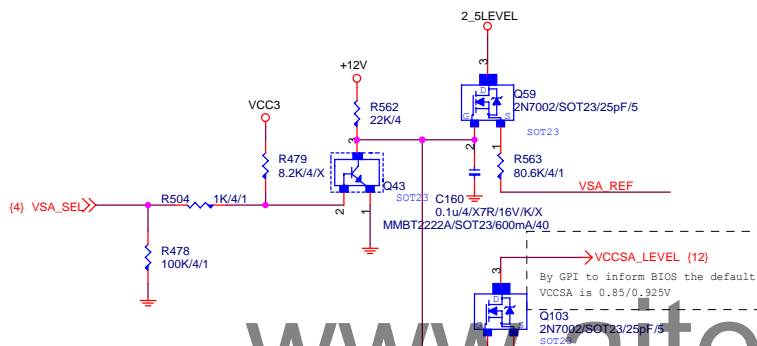
Size	Document Number	Rev
Custm	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 27 of 34

VCC_SA

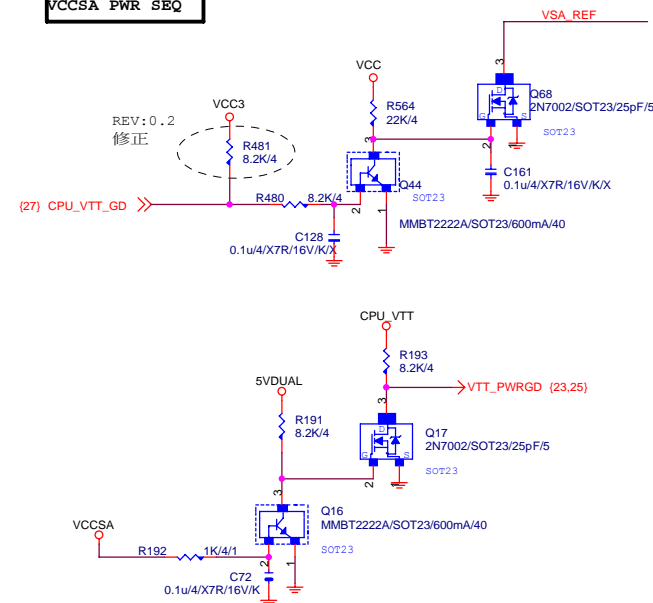


PDG 1.01

	VSA_SEL
HI	0.85V
LO	0.925V



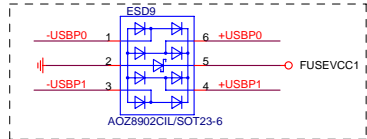
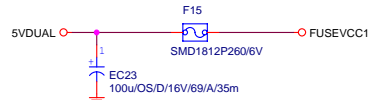
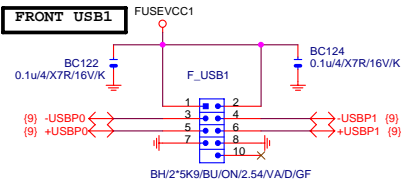
VCCSA PWR SEQ



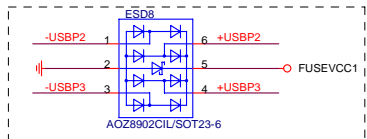
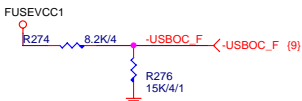
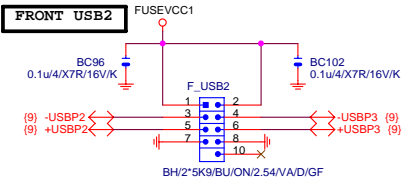
www.aitech1.ru

Gigabyte Technology

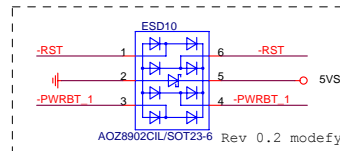
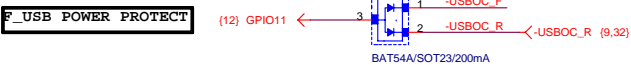
Title		
CPU VTT PWM_ISL6312		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 28 of 34



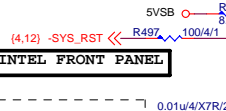
Close to connector



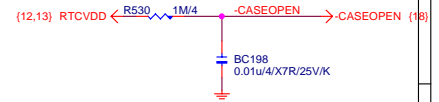
Close to connector



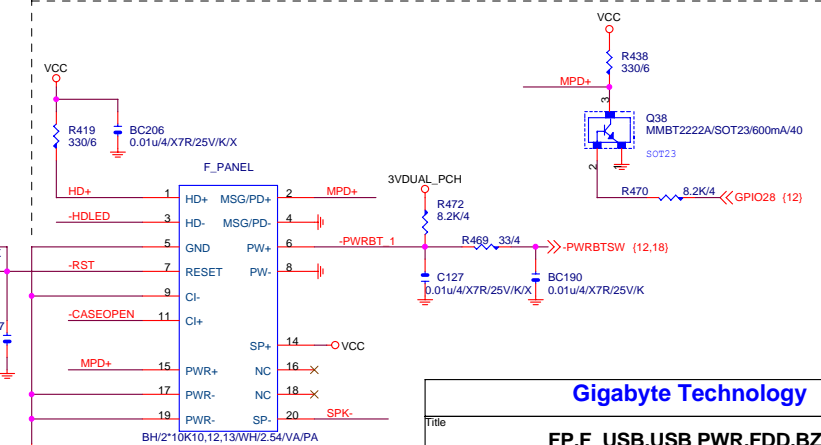
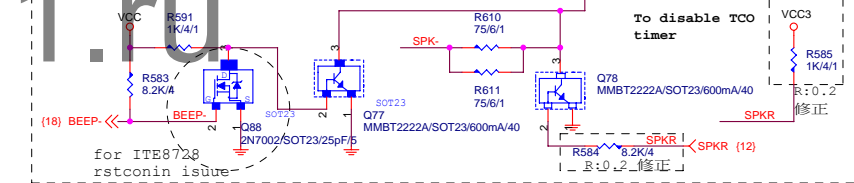
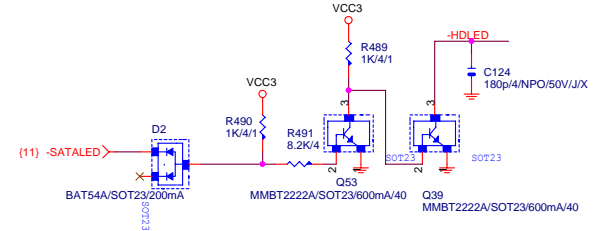
INTEL FRONT PANEL



CASE OPEN



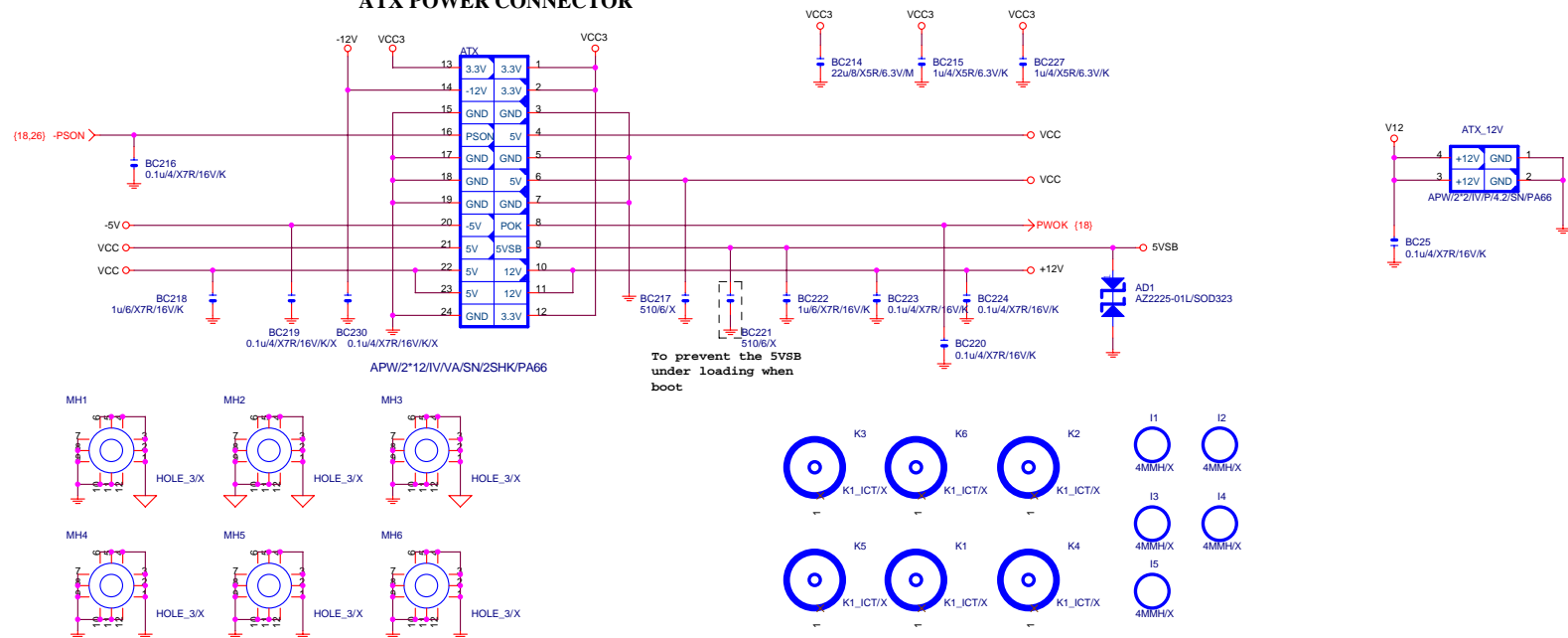
SATA LED



Gigabyte Technology

Title			FF,P_USB,USB PWR,FDD,BZ	
Size	Document Number	GA-P61-S3-B3		Rev
Custom				1.0
Date:	Friday, May 20, 2011	Sheet	29	of 34

ATX POWER CONNECTOR

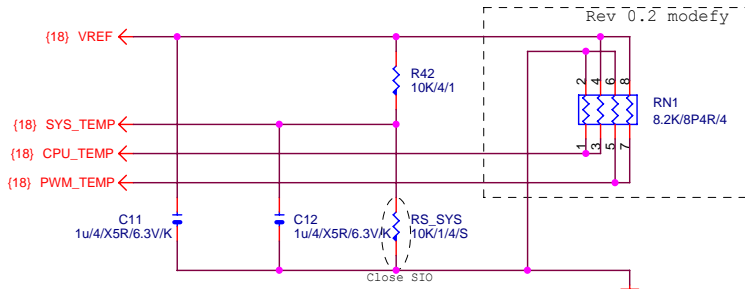


www.aitech1.ru

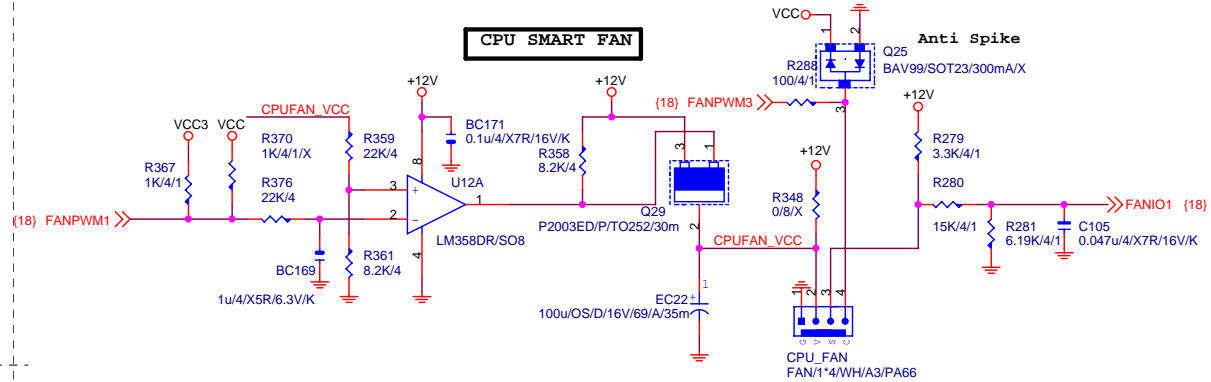
Gigabyte Technology

Title			ATX POWER CONNECTOR
Size	Document Number	GA-P61-S3-B3	
Custom			Rev 1.0
Date:	Friday, May 20, 2011	Sheet	30 of 34

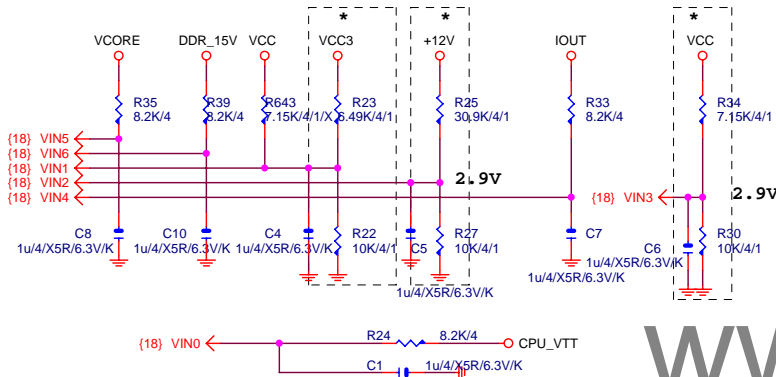
TEMP H/W MONITOR



CPU SMART FAN

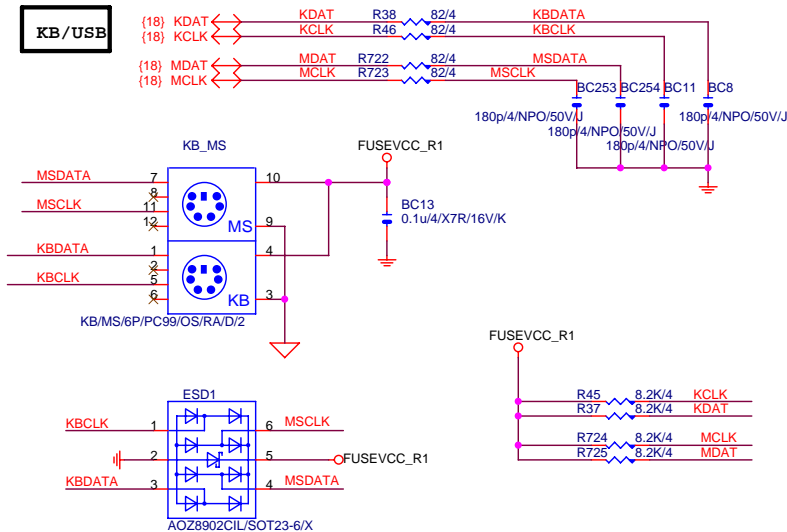


VOLTAGE-- H/W MONITOR

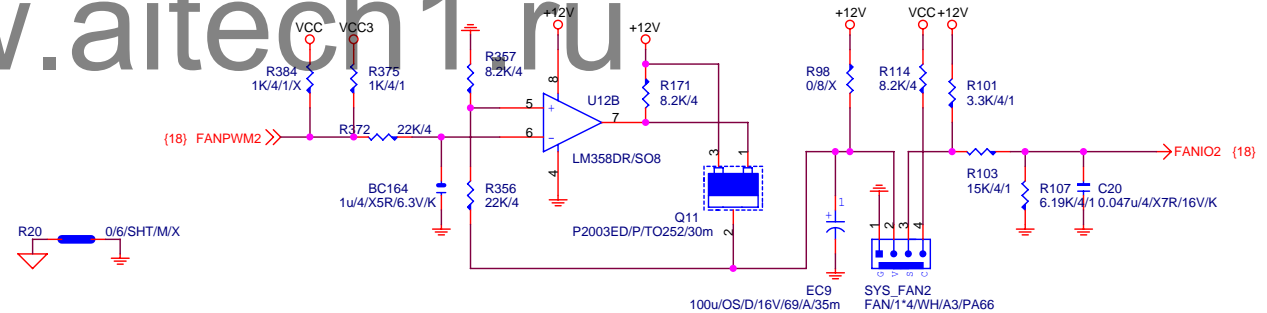


The division voltage of VIN2 & VIN3 must be around 2.9V

KB/USB

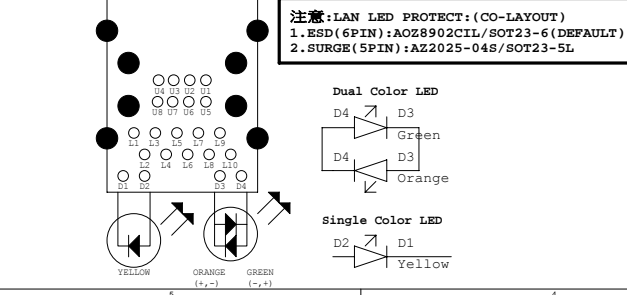
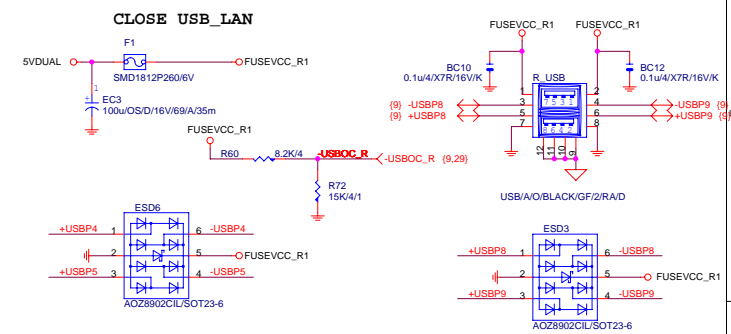
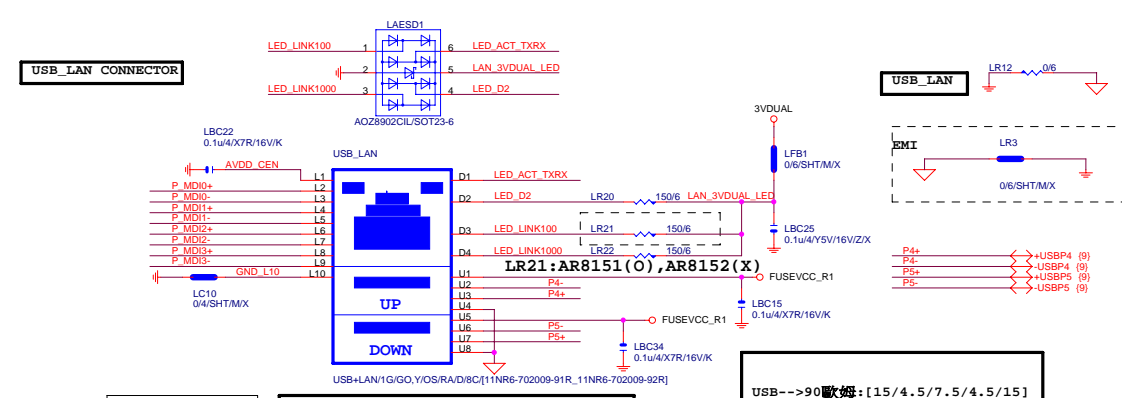
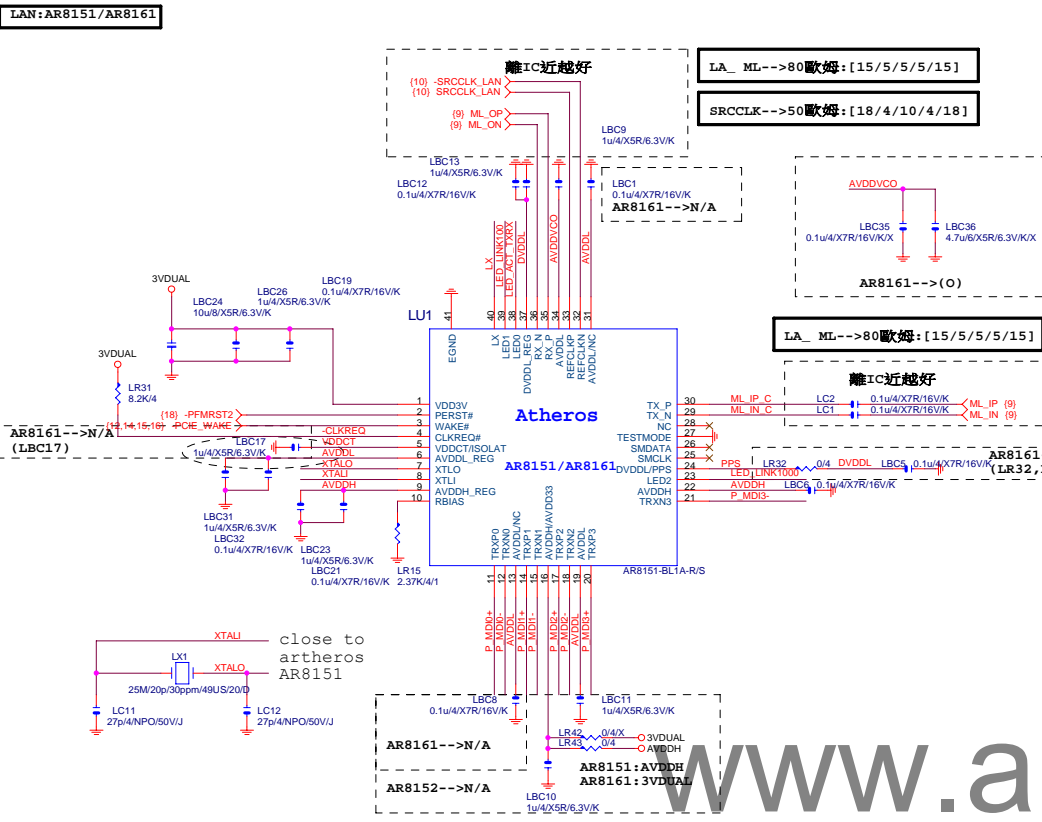
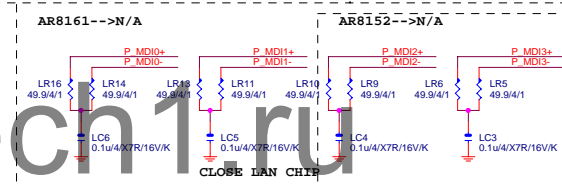
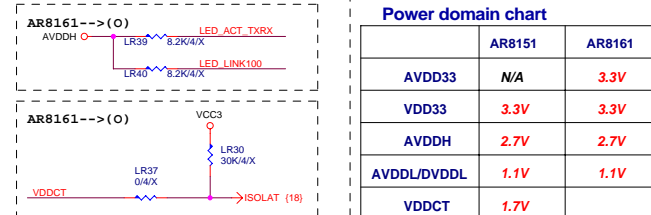
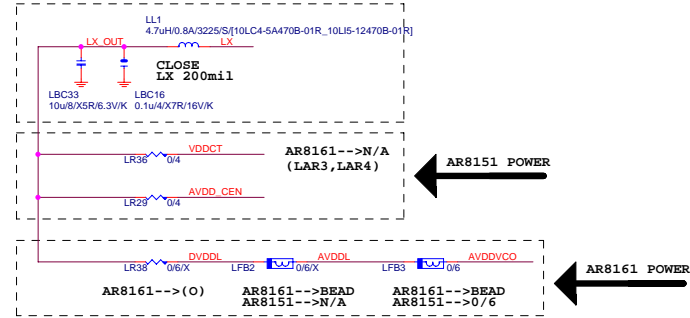
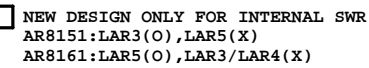


Linear SYS_FAN



Gigabyte Technology

Title		
HWM,KB/MS, FAN CTRL		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 31 of 34



料號	規格	廠商
11NR6-702009-0ER	1G LAN (12core)	UDE
11NR6-702009-91R	1G LAN(8 core)	FOXCONN
11NR6-702009-92R	1G LAN(8 core)	UDE
11NR6-702009-11R	1G LAN(12core/RED)	UDE
11NR6-702009-12R	1G LAN(8 core/RED)	FOXCONN

USB_LAN BOM區分:

1. (紅色/12CORE/三倍):USB+LAN/1G/GO,Y/OS/RA/D/1/RED
2. (黑色/12CORE):USB+LAN/1G/GO,Y/OS/RA/D/1
3. (黑色/8CORE):USB+LAN/1G/GO,Y/OS/RA/D/8C

www.aitech1.ru

GIGABYTE™

Title			EJ168	
Size	Document Number		Rev	
Custom	GA-P61-S3-B3		1.0	
Date: Friday, May 20, 2011		Sheet	33	of 34

www.aitech1.ru

GIGABYTE™		
Title Marvell 9172 SATA 3.0		
Size Custom	Document Number GA-P61-S3-B3	Rev 1.0
Date: Friday, May 20, 2011		Sheet 34 of 34