

Model Name: GA-B85-HD3

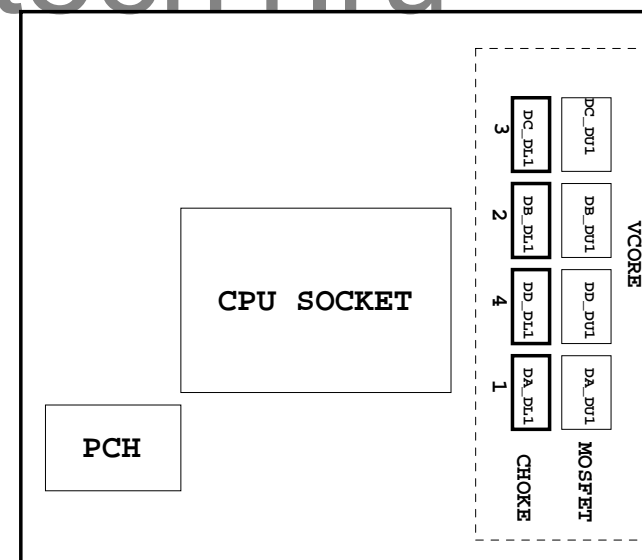
2.11

SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B
06	CPU_LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCIEX1*2 , PCIEX4 SLOT
16	ITE8892 PCI BRIDGE
17	PCI SLOT 1&2
18	I/O ITE8620
19	COM, -PROHOT, R_USB
20	Dual BIOS / LPT
21	ALC887-VD2 CODEC
22	REAR AUDIO JACK
23	VCORE_ ISL95820_1
24	VCORE_ ISL95820_2
25	DDR15V / M3 POWER
26	NCP3933 OVER VOLTAGE
27	DISCRETE POWER

SHEET TITLE

28	F_PANEL , F_USB2.0/3.0
29	ATX POWER, CLOCK GEN
30	HWM , KB/MS , FAN CTRL
31	Realtek 8111F-VL
32	DVI
33	HDMI
34	TABLE LIST
35	
36	
37	
38	
39	
40	

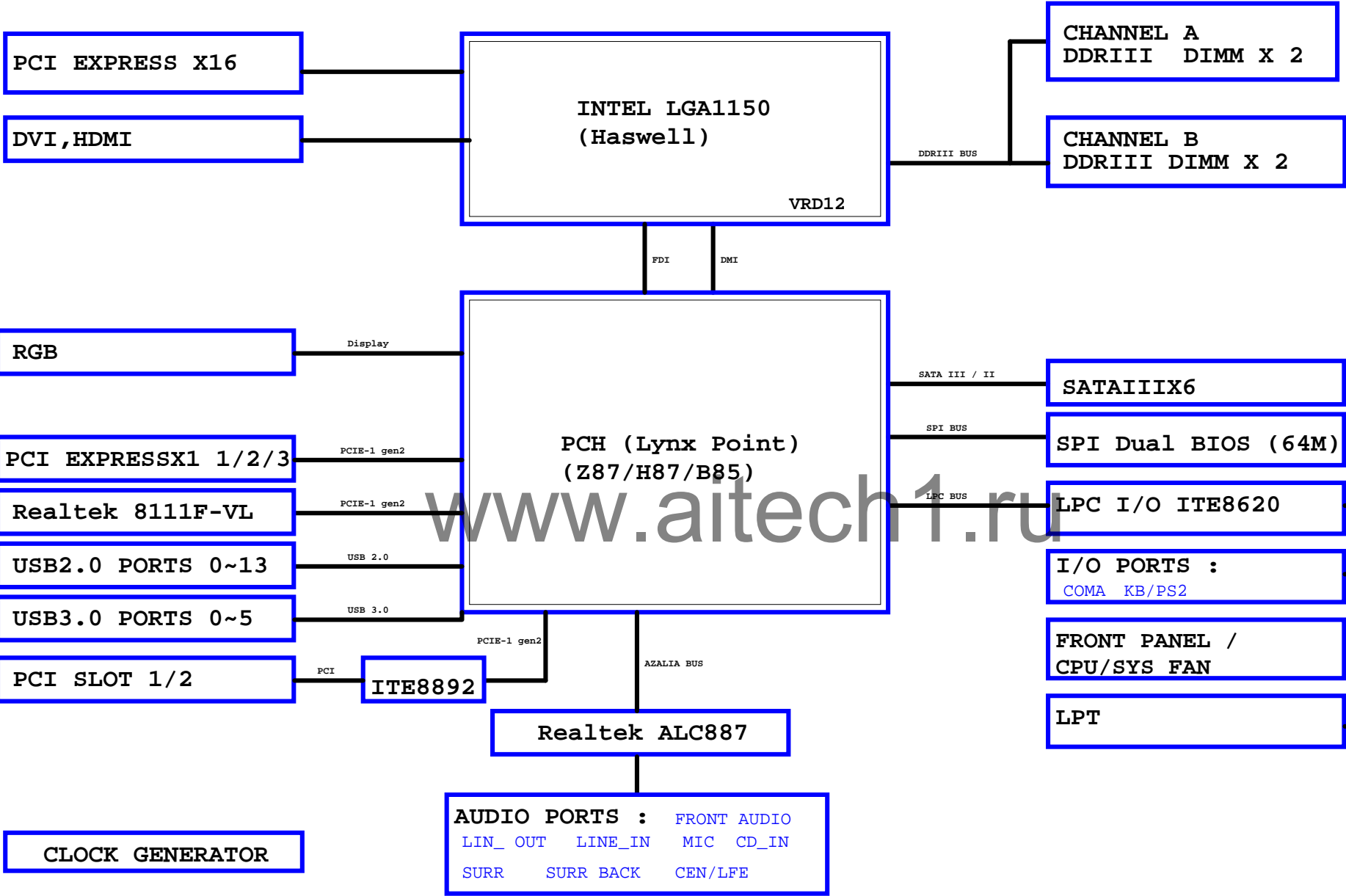


Gigabyte Technology			
Title			
Cover Sheet			
Size	Document Number	Rev	
Custom	GA-B85-HD3	2.11	
Date	Wednesday, June 18, 2014	Sheet	1 of 34

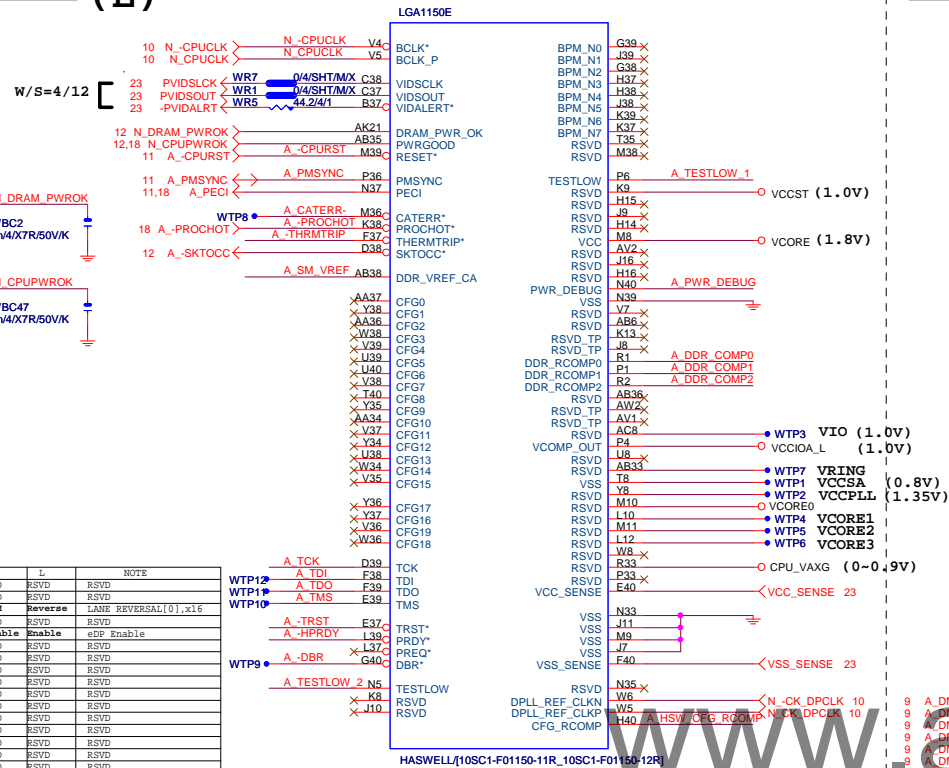
Component value change history

[illegible][illegible]

BLOCK DIAGRAM



LGA1150 (E)

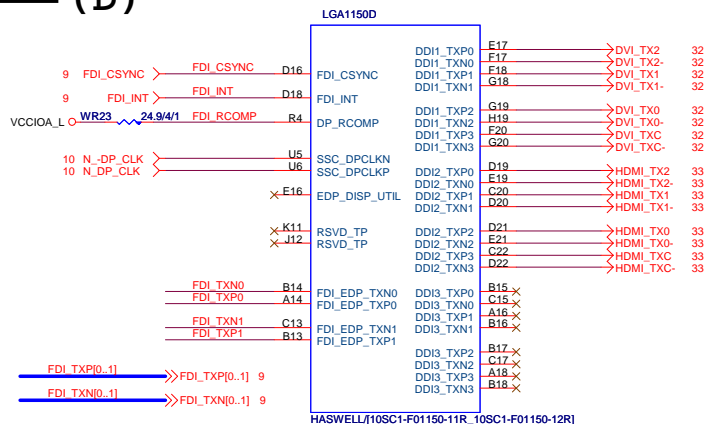


CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	Reverse	RSVD
2	NORM	Reverse	LANS REVERSAL[0,x16]
3	RSVD	RSVD	RSVD
4	Disable	Enable	cpu Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	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

LGA1150 (D)



FDI:4/4/4//15(breakout min 4/4/4//8)
Impedance=85 +- 15%

DP/HDMI 4/4/4//20 FDI 4/4/4/12

Impedance=85 +- 15%

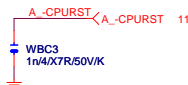
LGA1155 (C)



CPU PEG 5/5/5//20 Impedance=80 +- 15%

DMI 4/4/4//15 Impedance=85 +- 15%

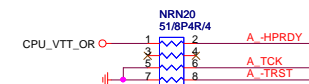
-CPURST



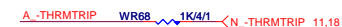
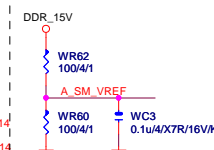
CPU SVID



CPU PU/PD



SM	REF
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LGA1150A

HASWELL/[10SC1-F01150-11R_10SC1-F01150-12R]

LGA1150B

HASWELL/[10SC1-F01150-11R_10SC1-F01150-12R

LGA1150
ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]



Diagram illustrating the alignment of 16 DNA sequences (MODT_A[0..3], MODT_B[0..3], MDA[0..63], MDB[0..63], DQSA[0..7], -DQSA[0..7], MAAA[0..15], MAAB[0..15], DQSB[0..7], -DQSB[0..7]) with their corresponding reference sequences. Each sequence is represented by a blue bar with a red double-headed arrow indicating the alignment region.

(F, J)

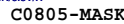


(G,H,I)



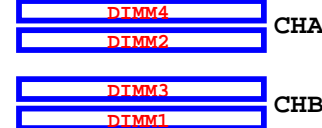
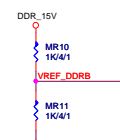
VCORE

(x18)



(x9)



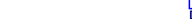


DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

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

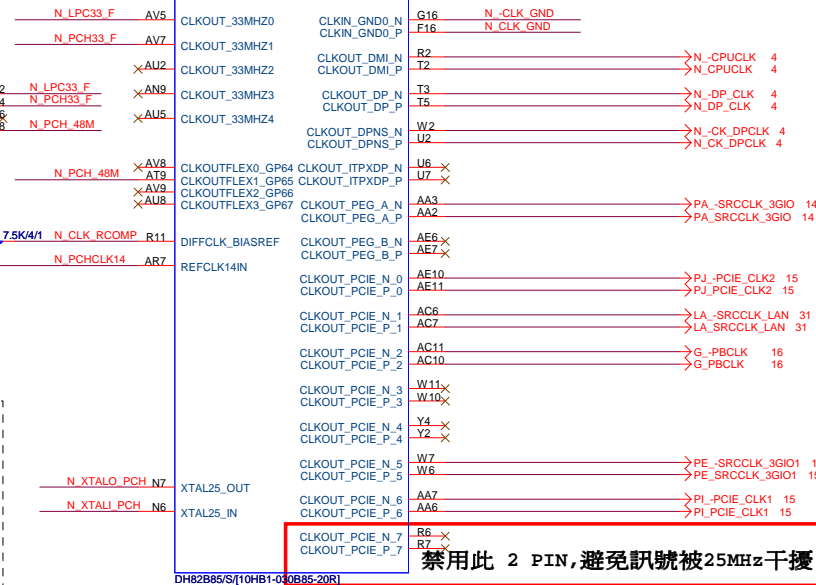
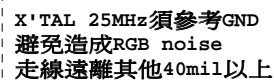


28 PCH_USB3_RXN0 >



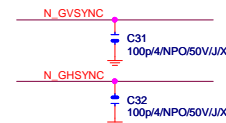
USB OC#	Configure
OC0#	USB0,1
OC1#	USB2,3
OC2#	USB4,5
OC3#	USB6,7
OC4#	USB8,9
OC5#	USB10,11
OC6#	USB12,13
OC7#	Not Use

PCH (G)

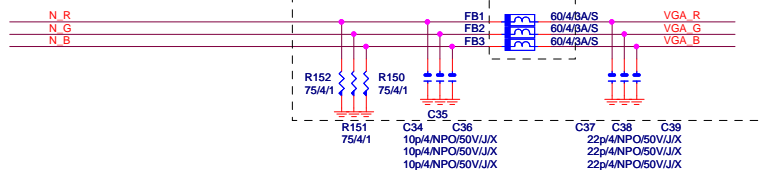


Differential Clock:18/4/6/4/18
Impedance=90 +- 15%

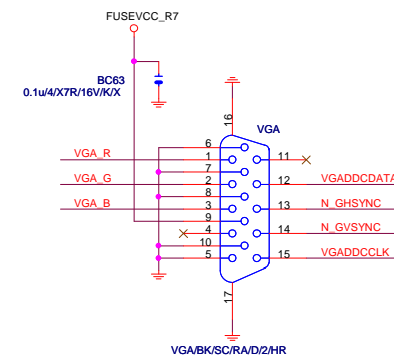
VGA DDC



VGA DDC



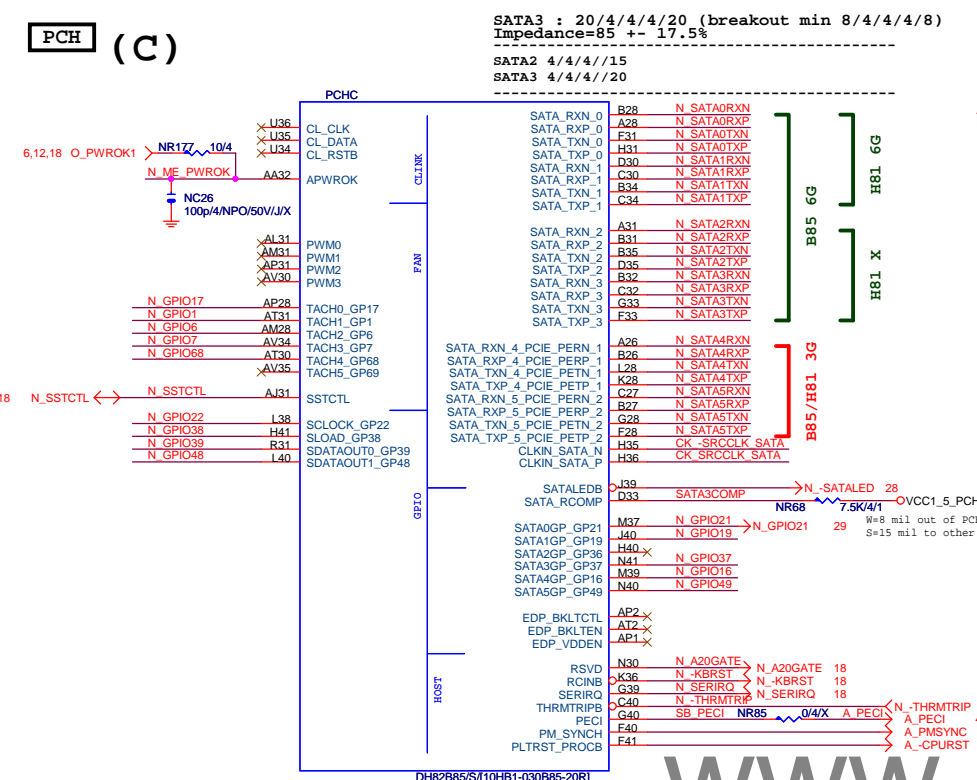
Close to VGA connector



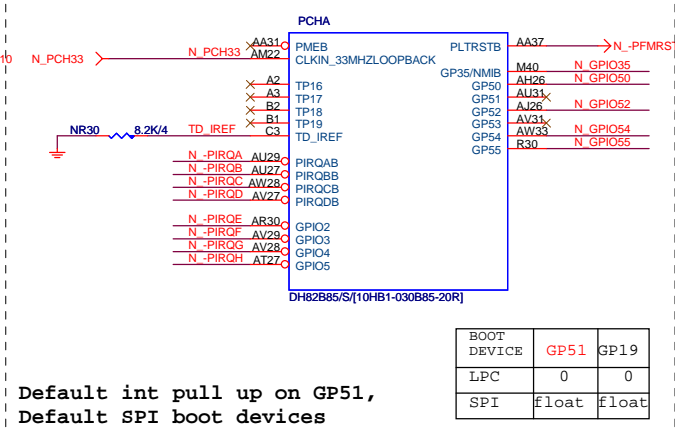
Gigabyte Technology

Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number		Rev
Custom	GA-B85-HD3		2.11
Date:	Wednesday, June 18, 2014	Sheet	10 of 34

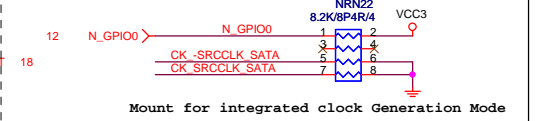
PCH (C)



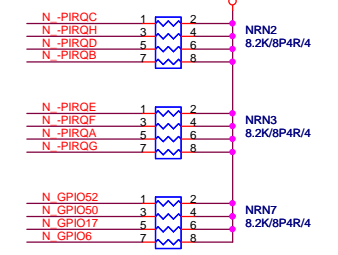
PCH (A)



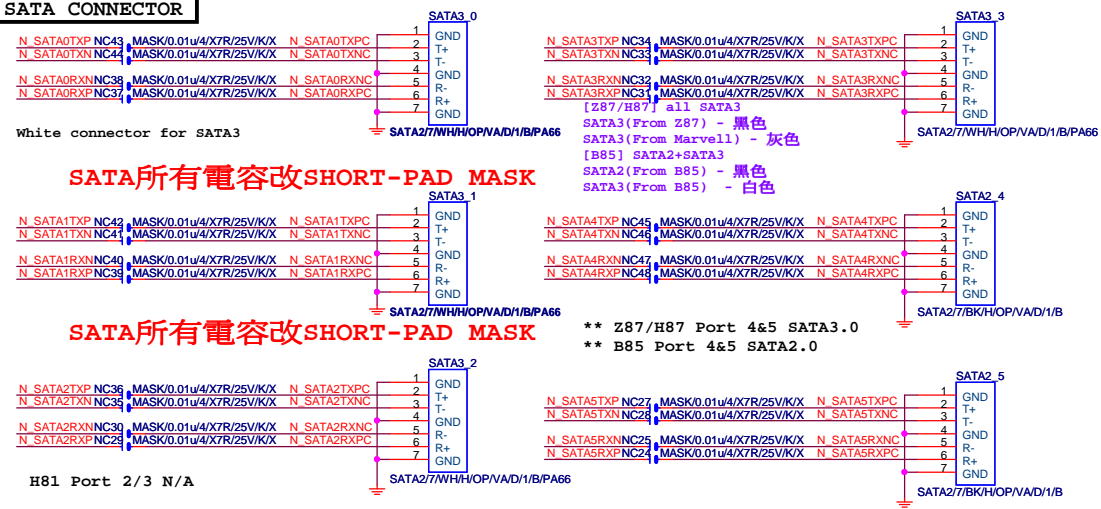
PCH CLK PD



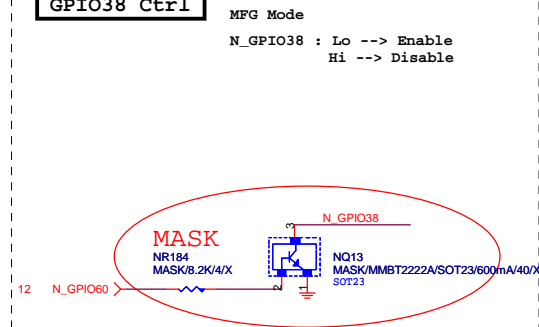
PCH PU/PD



SATA CONNECTOR



GPIO38 Ctrl



soft strap	GP16	GP49
0	pcie1	pcie2
1	sata4	sata5

Gigabyte Technology			
Title			
PCH HOST , SATA, PCI			
Size	Document Number		Rev
Custom	GA-B85-HD3		2.11
Date:	Wednesday, June 18, 2014	Sheet	11 of 34

PCH

(D)

21 C_ACZ_SDOUT
21 C_ACZ_BITCLK
21 C_ACZ_RST
21 C_ACZ_SYNC

NRN15 33/8P4R/4

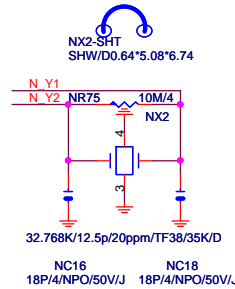
PCHD

18 N_LAD0
18 N_LAD1
18 N_LAD2
18 N_LAD3
18 N_LDRQ0
18 N_LFRAME
21 C_ACZ_SDIN2
20 N_ICH_SPL_MOSI
20 N_ICH_SPL_MISO
20 N_ICH_SPL_CS
20 N_ICH_SPL_CLK
20 SPI_DQ2
20 SPI_DQ3
6,11,18 O_PWROK1
18,27 O_RSMRST
18 N_LPCPME
7,8,14,15,17,23 N_SMBCLK
7,8,14,15,17,23 N_SMBDATA
11 N_GPIO60
N_LAD0
N_LAD1
N_LAD2
N_LAD3
N_LDRQ0
N_LFRAME
A_BCLK
A_RST
A_SO
A_SYNC
N_ICH_SPL_MOSI
N_ICH_SPL_MISO
N_ICH_SPL_CS
N_ICH_SPL_CLK
SPI_DQ2
SPI_DQ3
N_Y1
N_Y2
N_RTCRST
N_SRTCSTB
N_INTRUDER
O_PWROK1
O_RSMRST
N_INTVRMEN
N_PCH_DPWROK
N_DSWVRMEN
N_LPCPME
N_SMBCLK
N_SMBDATA
N_GPIO60
N_SMLCLK
N_SMLDAT
N_PCH_HOT
N_SMLCLK
N_SMLDAT

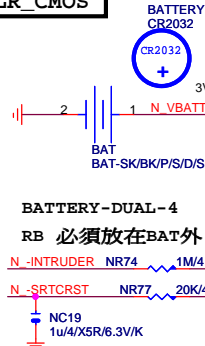
DDR_15V
NR131 680/4/1
N_DRAM_PWROK
NR132 1.47K/4/1

DH82B85/S[10HB1-030B85-20R]

32.768KHZ



CLR_CMOS

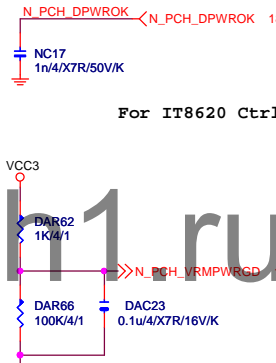


ACZ_SDOUT

N/A

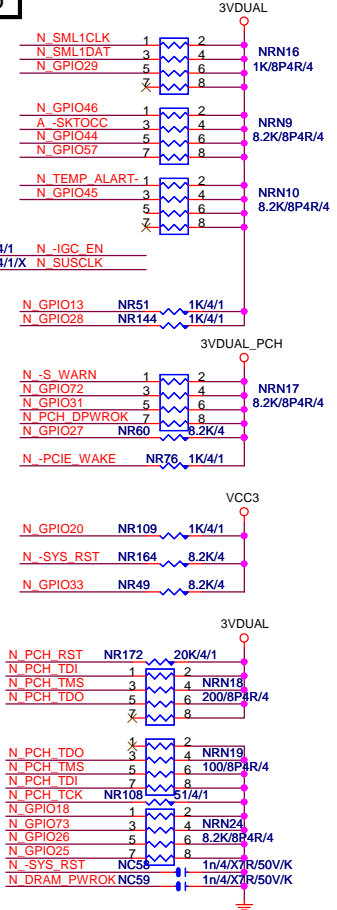
PCH_DPWROK

At least 10ms delay after 3VDUAL_PCH stable



For IT8620 Ctrl

PCH PU/PD



Gigabyte Technology

PCH GPIO , CTRL , AUDIO

Title	Document Number	Rev
Size	Custom	2.11
Date:	Wednesday, June 18, 2014	Sheet 12 of 34

GA-B85-HD3

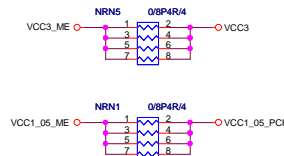
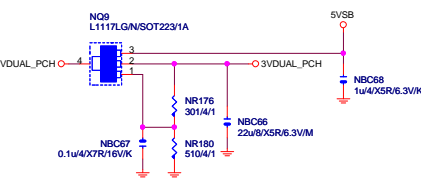
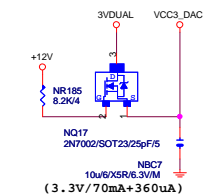
PCH (H)

VCC3_DAC

3VDUAL_PCH

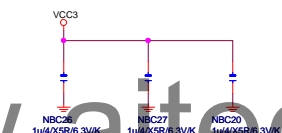
SHT_PWR

CLOSE北橋(注意質量水波紋)

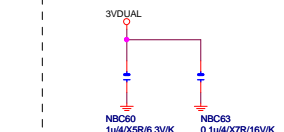
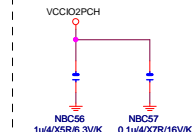


CAP

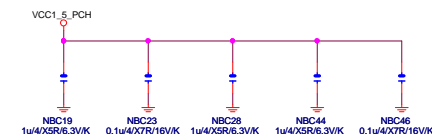
(3.3V) (X3)



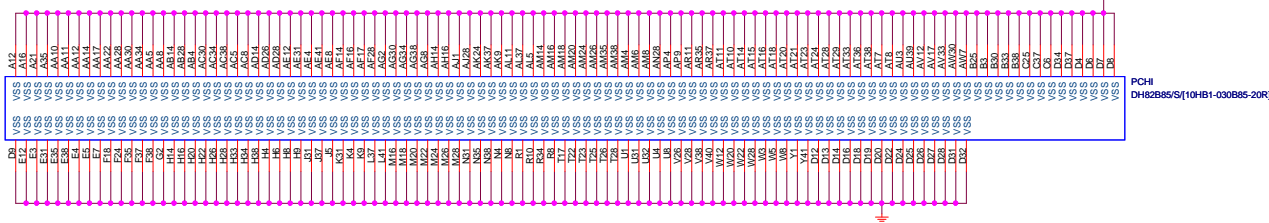
(1.05V)(X2) (3.3V) (X2)



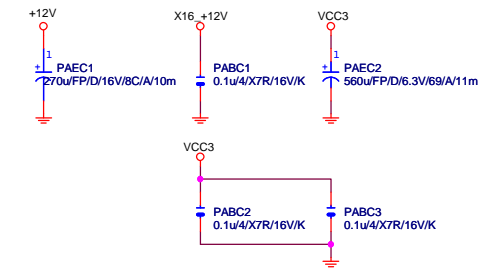
(1.5V) (X5)



PCH (I)

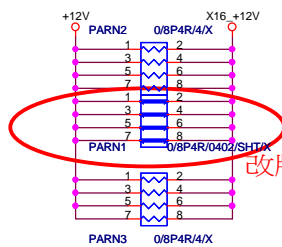


PCIEX16 CAP



PCIEX16 PROTECT SHT

+12 protect short-wire test



PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC19	0.22u/4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC18	0.22u/4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22u/4/X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA EXP TXN15 C

PCI-E REV:1.1--> 2.5GHZ

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

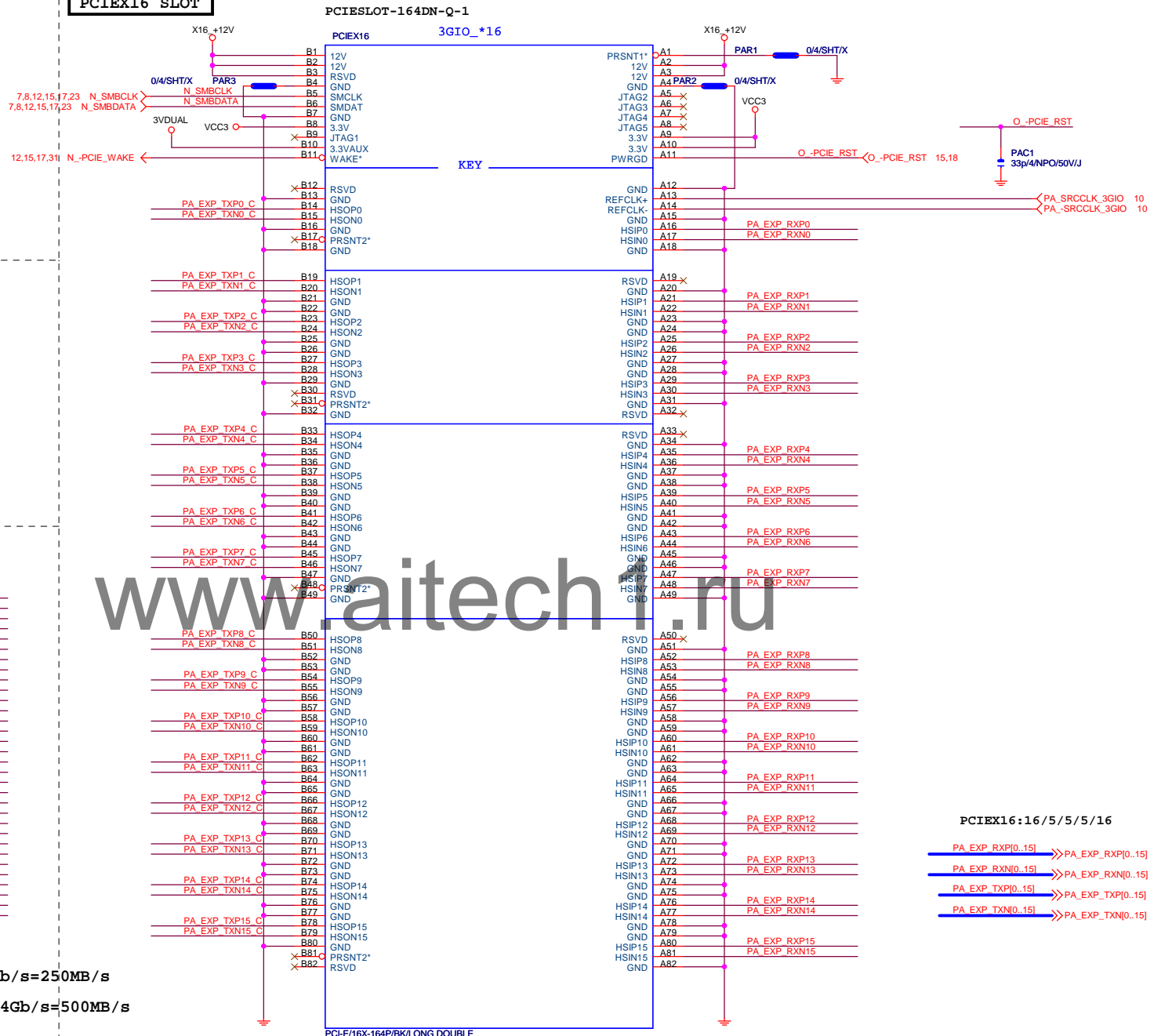
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

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

PCIEX16 SLOT



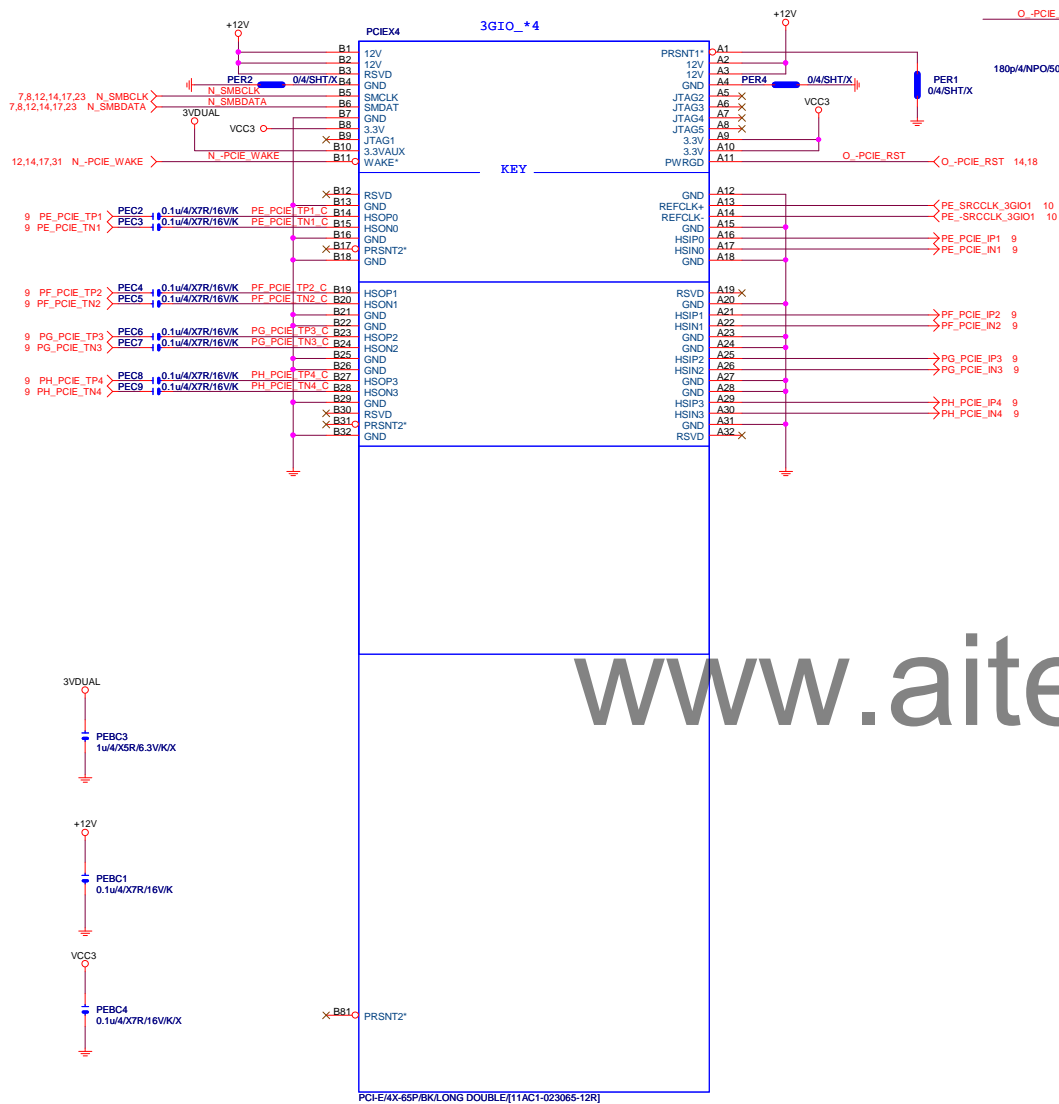
PCIEX16:16/5/5/5/16

PA EXP RXP0[0..15]	>>>PA_EXP_RXP[0..15]	4
PA EXP RXN0[0..15]	>>>PA_EXP_RXN[0..15]	4
PA EXP TXP0[0..15]	>>>PA_EXP_TXP[0..15]	4
PA EXP TXN0[0..15]	>>>PA_EXP_TXN[0..15]	4

Gigabyte Technology

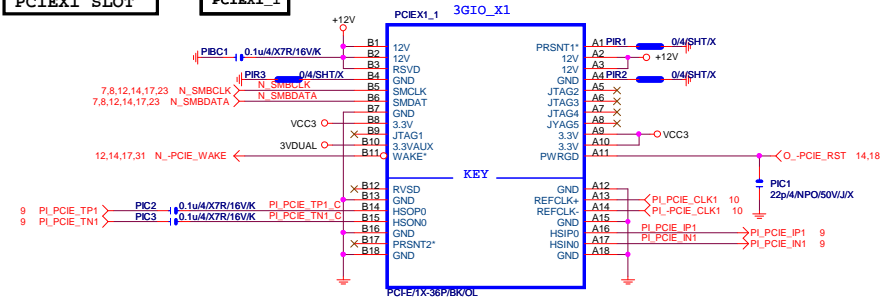
PCI EXPRESS * 16			
Size	Document Number	GA-B85-HD3	
Custom			Rev 2.11
Date:	Wednesday, June 18, 2014	Sheet	14 of 34

PCIEX4 SLOT

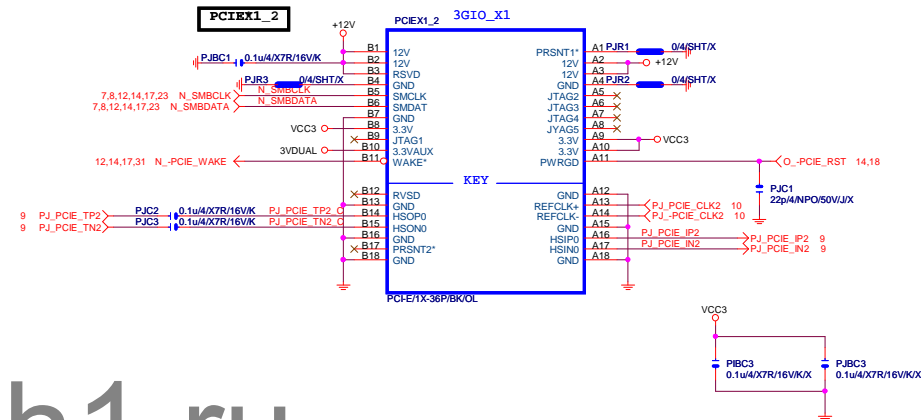


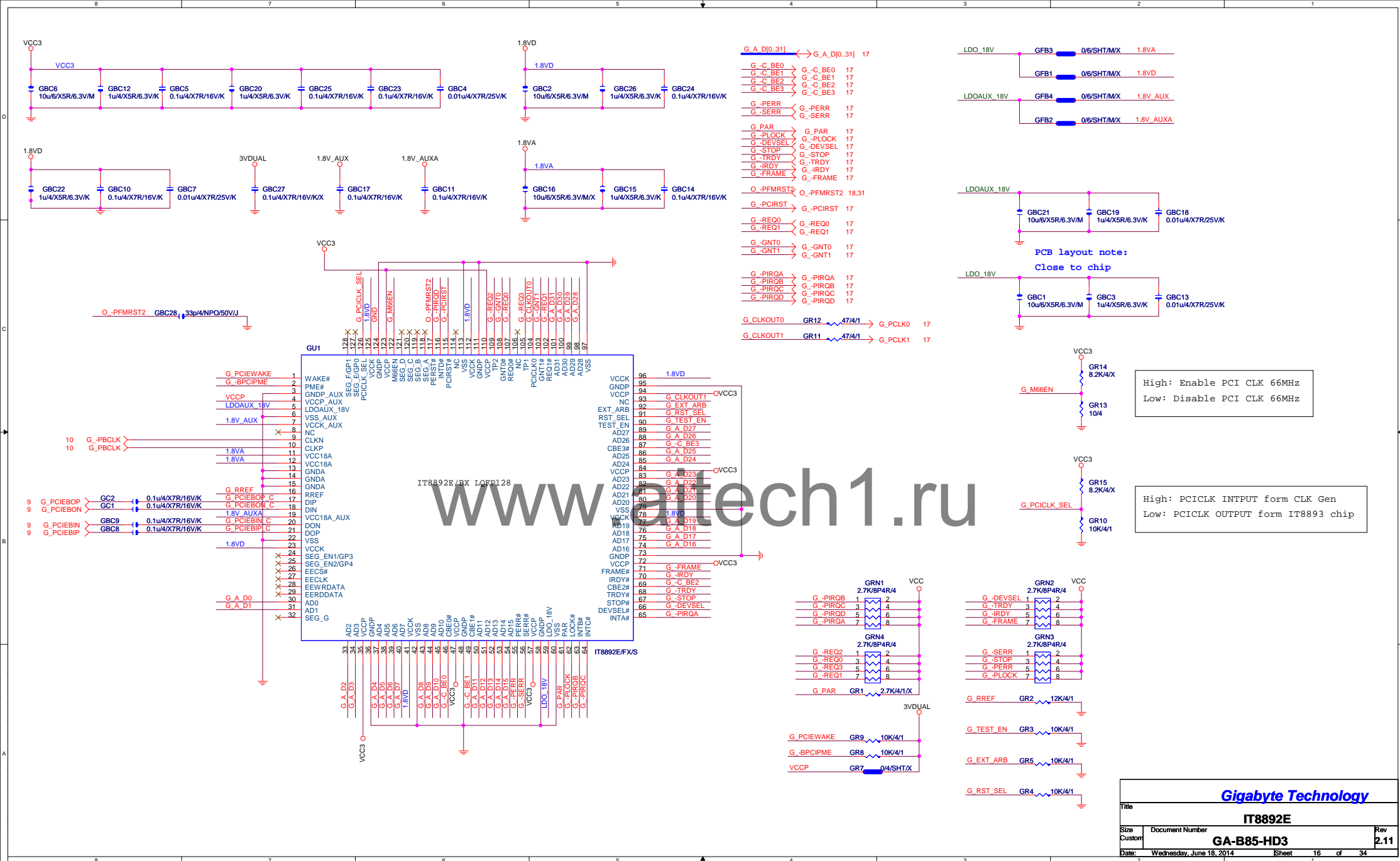
PCIEX1 SLOT

PCIE*1_1

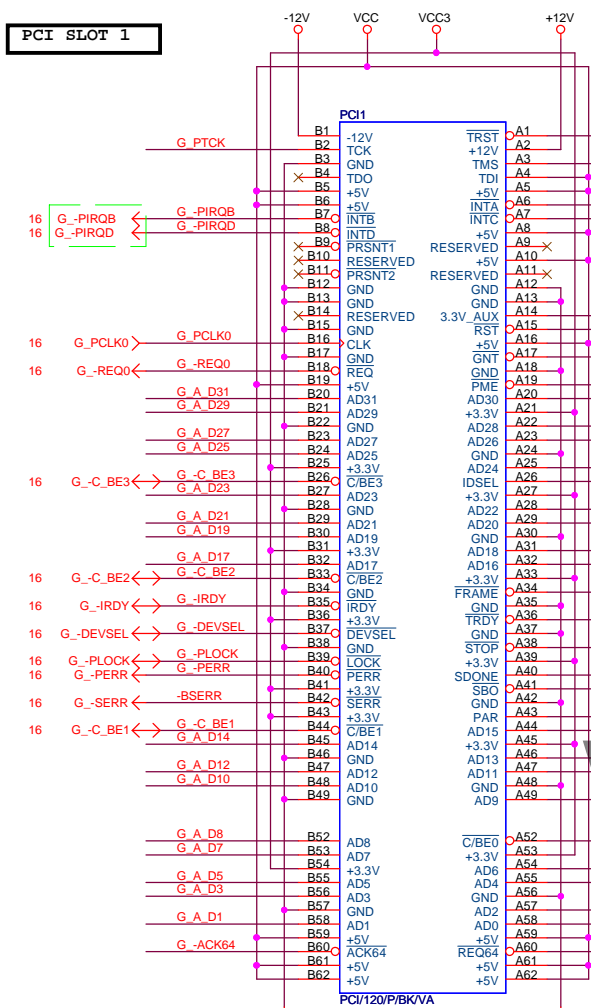


PCIEX1_2



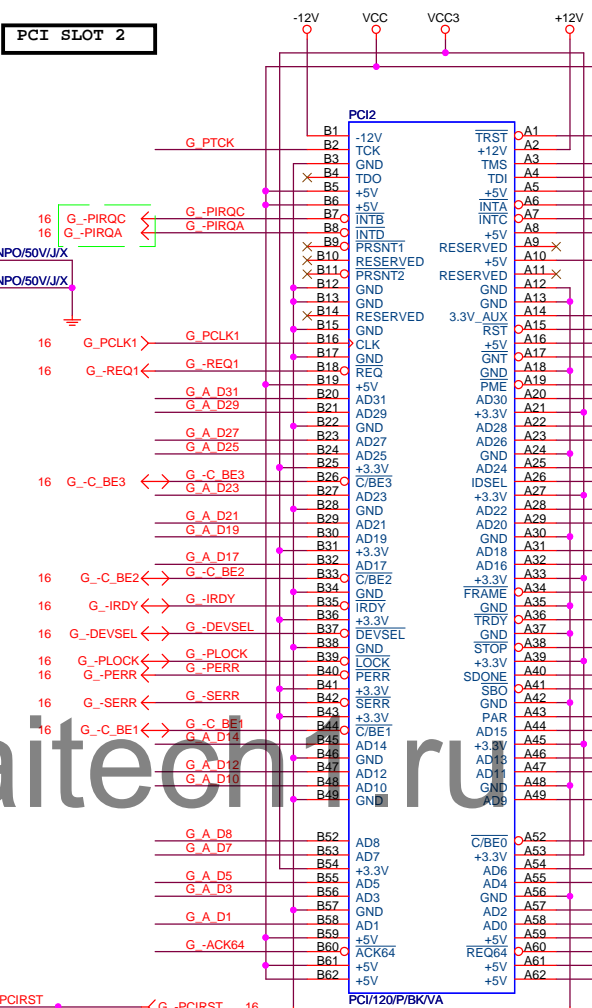


PCI SLOT 1



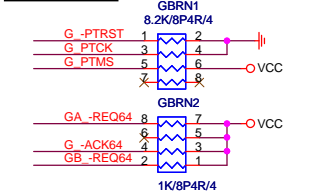
16 G_A_D[0..31] ↔ G_A_D[0..31]
 -REQ0/-GNT0/A_D16
 7,8,12,14,15,23 N_SMBCLK ↔ GBR3 0/6/SH7X G_PCI_A40
 7,8,12,14,15,23 N_SMBDATA ↔ GBR4 0/6/SH7X G_PCI_A41

PCI SLOT 2

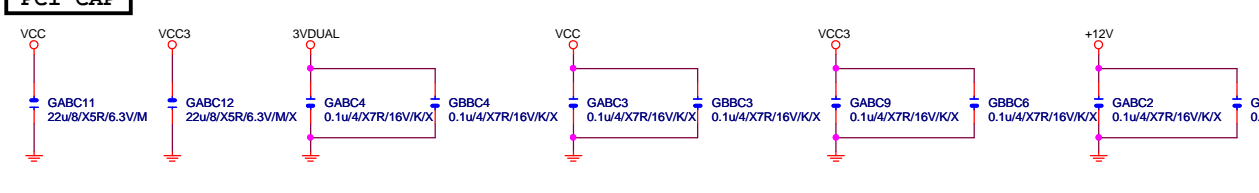


16 G_A_D[0..31] ↔ G_A_D[0..31]
 -REQ1/-GNT1/A_D17
 7,8,12,14,15,23 N_SMBCLK ↔ GBR3 0/6/SH7X G_PCI_A40
 7,8,12,14,15,23 N_SMBDATA ↔ GBR4 0/6/SH7X G_PCI_A41

PCI PU

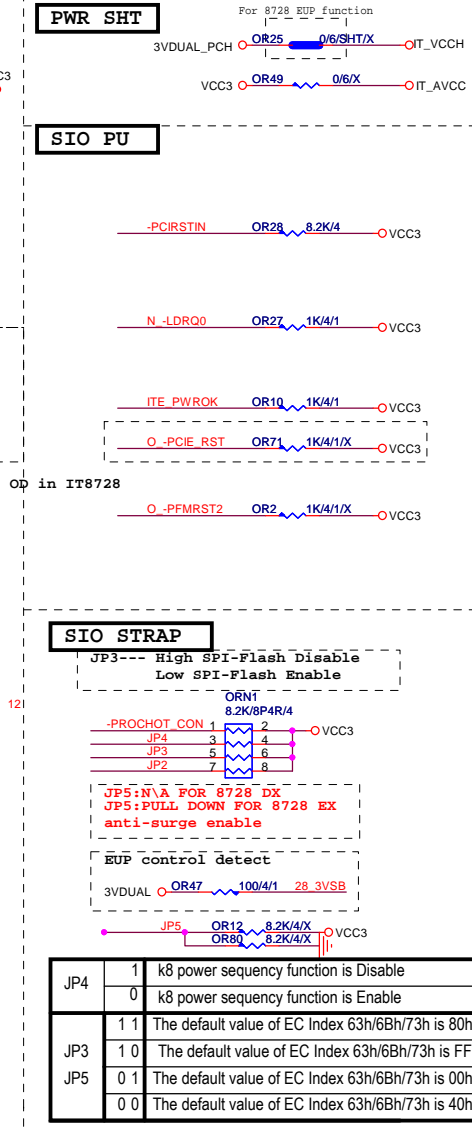


PCI CAP

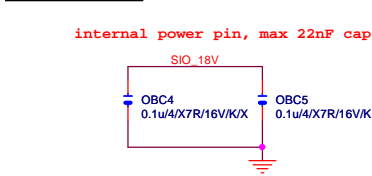


GIGABYTE™

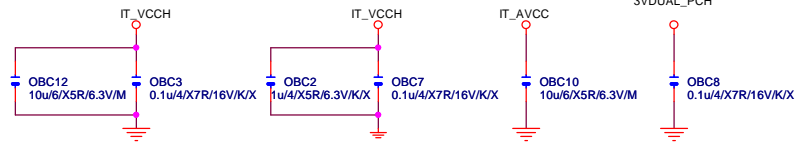
PCI SLOT 1&2		
Size	Document Number	Rev
Custom	GA-B85-HD3	2.11
Date:	Wednesday, June 18, 2014	Sheet 17 of 34



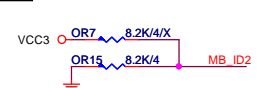
SIO_18V



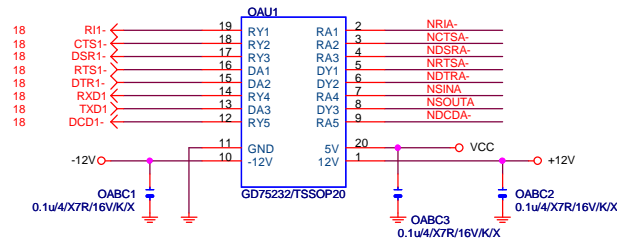
SIO CAP



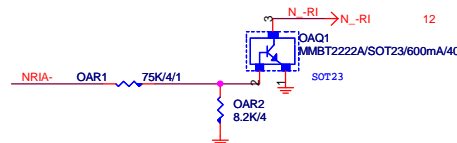
MB ID



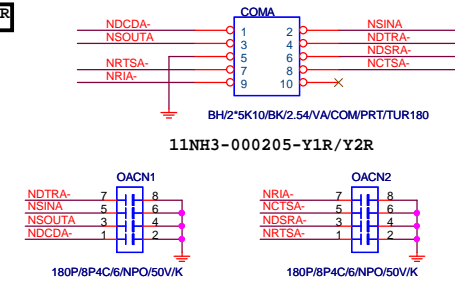
COMA



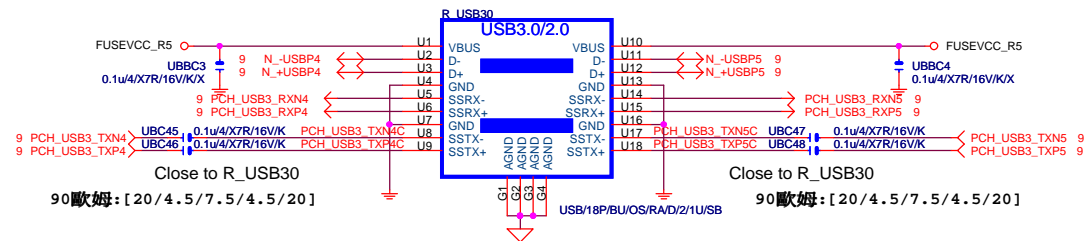
COM RI



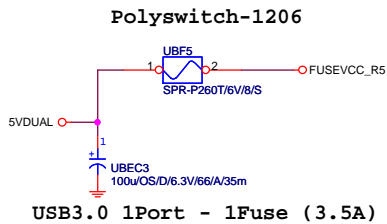
COM BUFFER



USB30_20 CONNECT

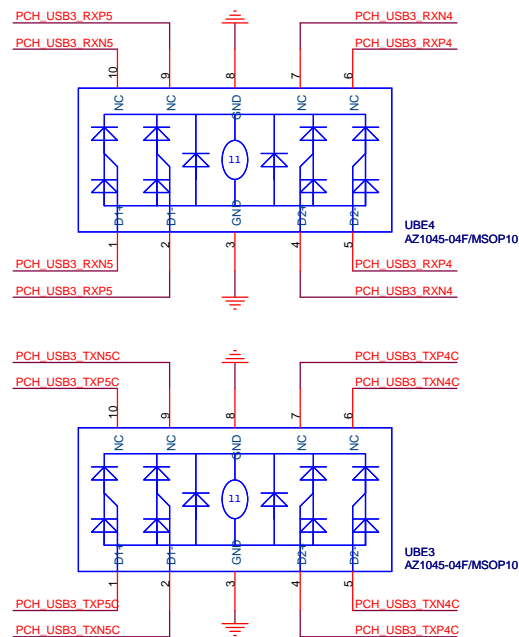


USB30 PWR

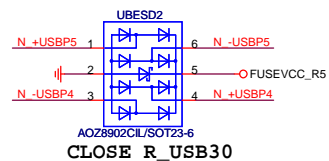


USB3.0 1Port - 1Fuse (3.5A)

USB30 ESD PROTECT



USB20 ESD PROTECT



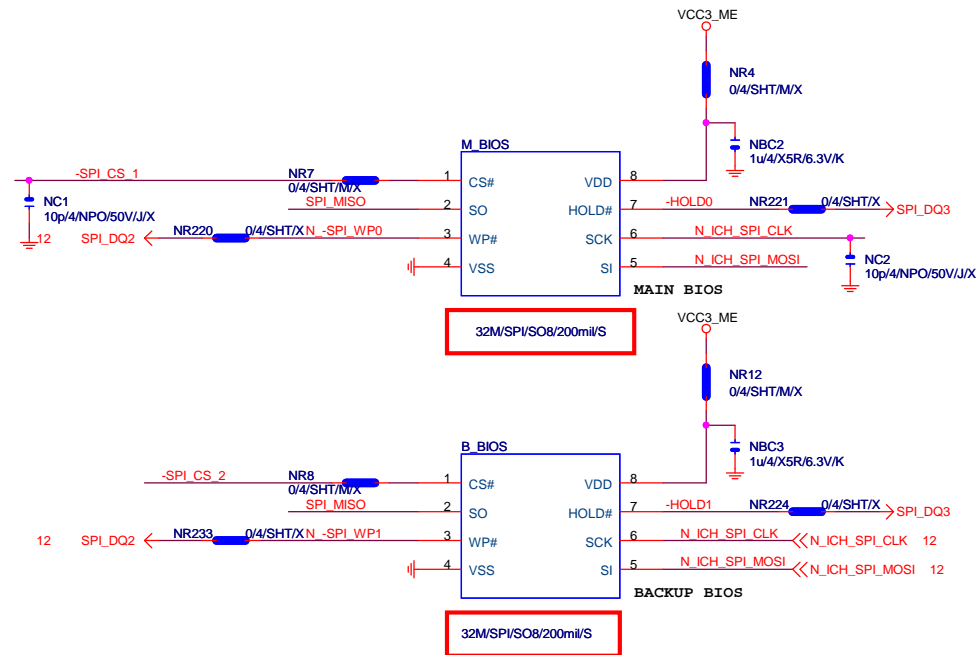
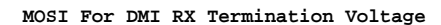
CLOSE R_USB30

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Gigabyte Technology

Title			COM/ PROHOT/ R_USB
Size	Document Number	Rev	
Custom		GA-B85-HD3	
Date:	Wednesday, June 18, 2014	Sheet	19 of 34

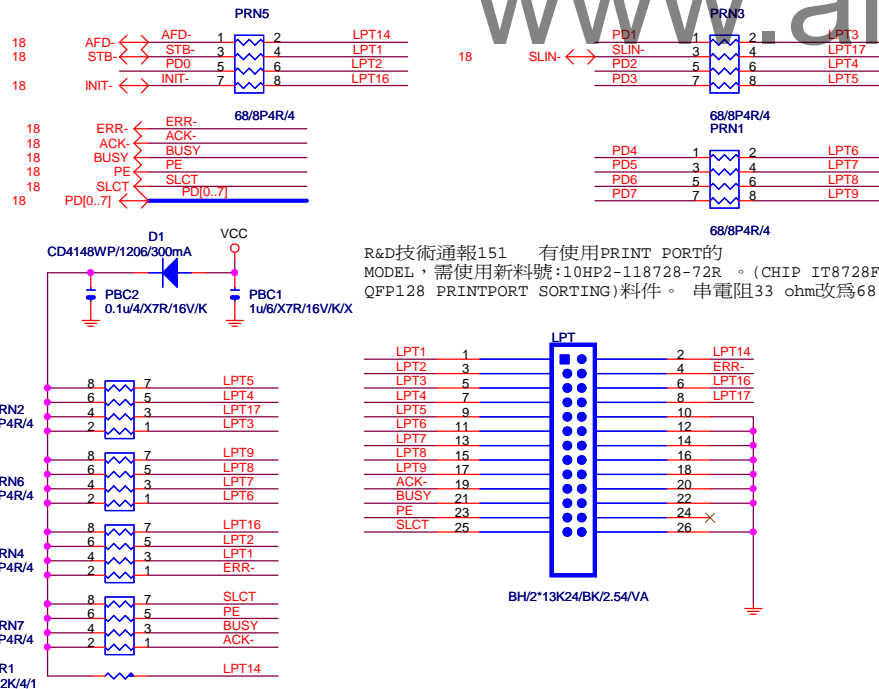
DUAL BIOS



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

1 means floating
0 means PD 1K

LPT PORT



R&D技術通報151 有使用PRINT PORT的
MODEL，需使用新料號：10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。串電阻33 ohm改為68 ohm。

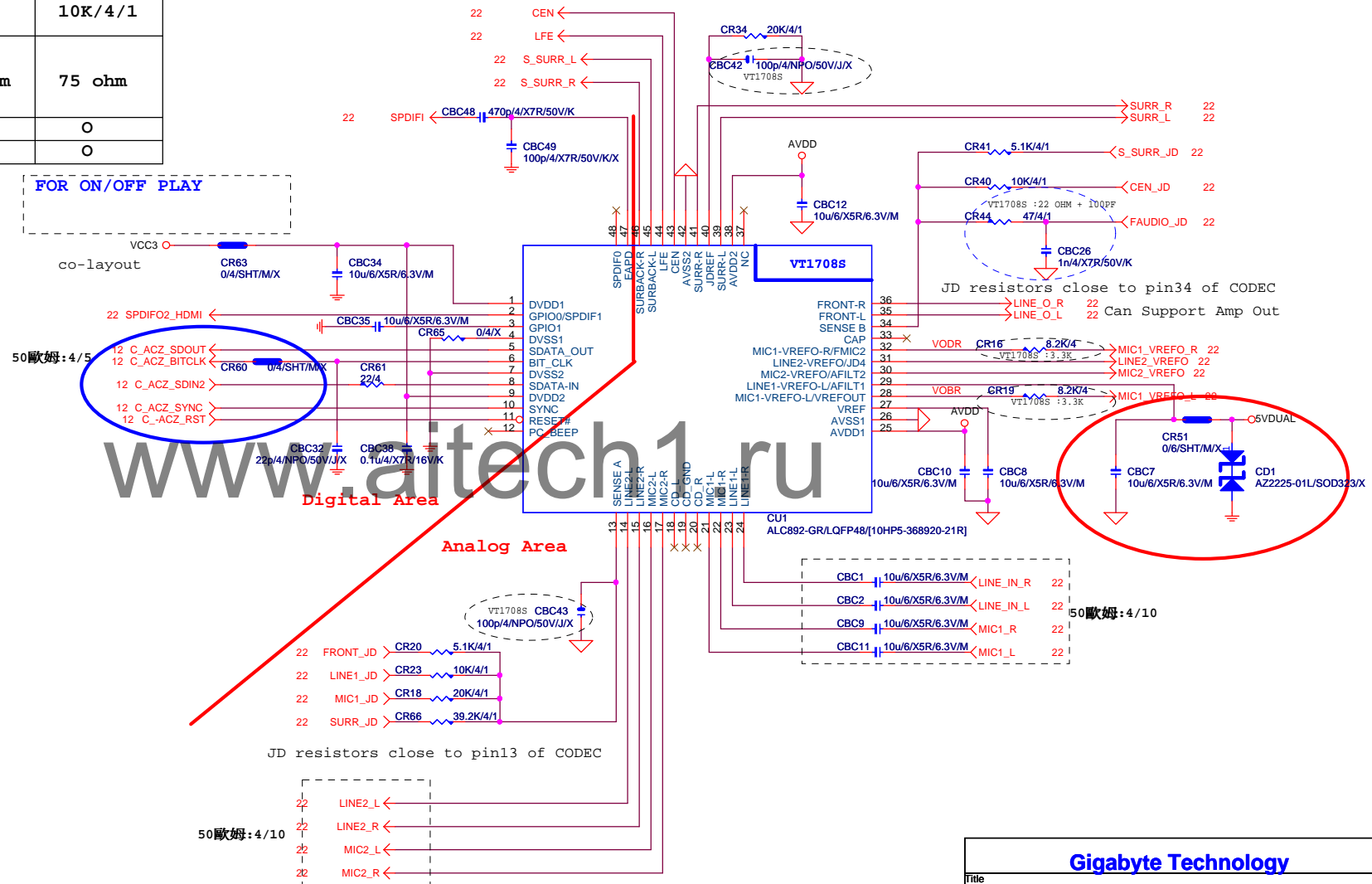
www.aitech1.ru

Gigabyte Technology

Title		BIOS	
Size Custom	Document Number	GA-B85-HD3	Rev 2.11
Date:	Wednesday, June 18, 2014	Sheet	20 of 34

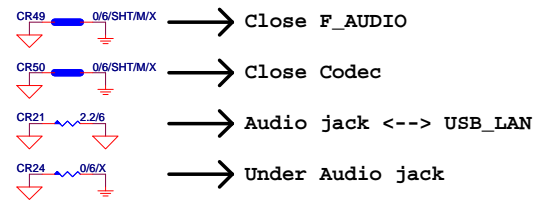
	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	X	O	O

FOR ON/OFF PLAY

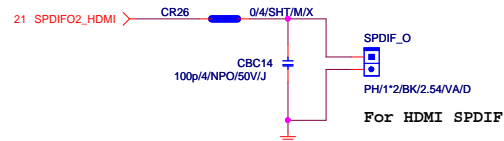


Gigabyte Technology

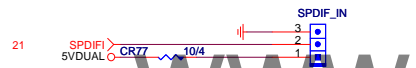
Title			
HD AUDIO ALC887			
Size Custom	Document Number	GA-B85-HD3	Rev 2.11
Date:	Wednesday, June 18, 2014	Sheet 21 of 34	



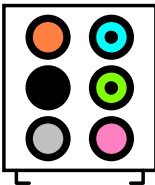
SPDIF_OUT



SPDIF_IN



AZALIA JACK

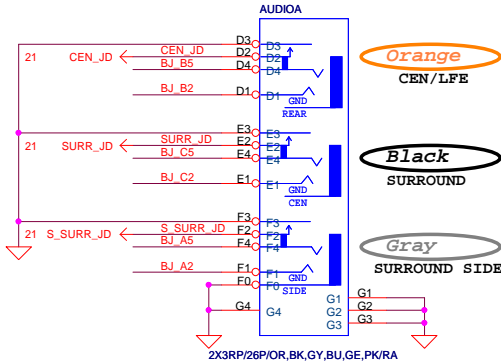
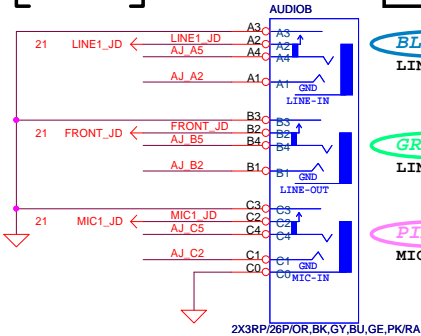


AZALIA JACK

BLUE
LINE-IN

GREEN
LINE-OUT

PINK
MIC-IN

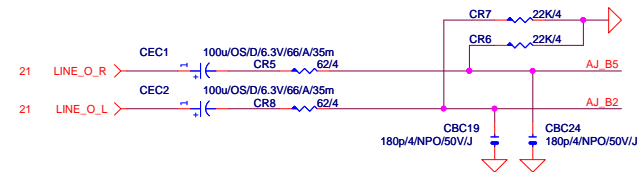


Orange
CEN/LFE

Black
SURROUND

Gray
SURROUND SIDE

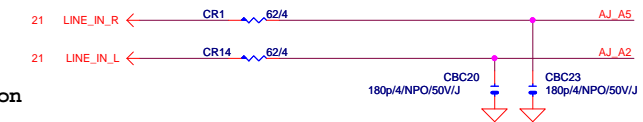
LINE-OUT



LINE-IN

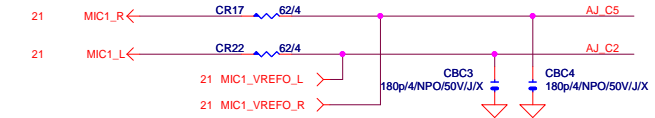
Verify MIC function
in LINE-in

Only reserved for ALC888

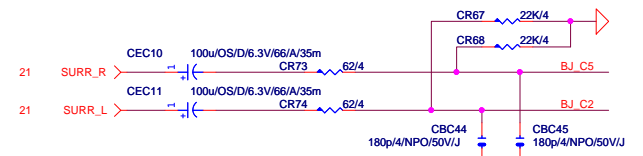


For 889A/888

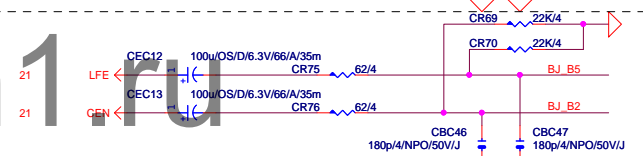
MIC-IN



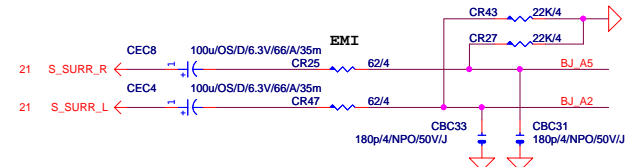
SURROUND



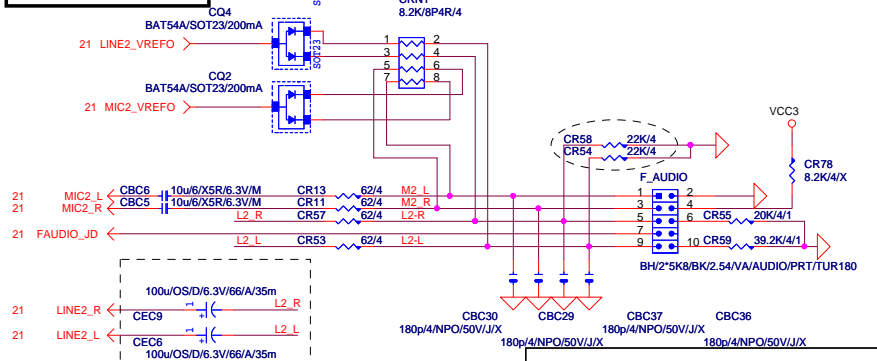
CEN/LFE



SURR BACK



AZALIA FRONT PANEL

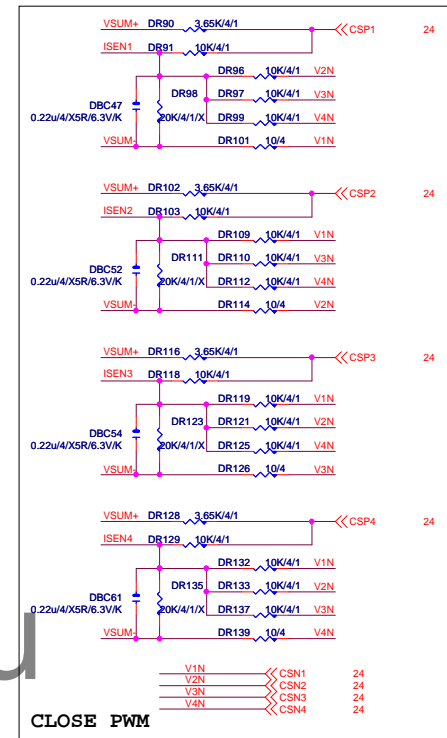
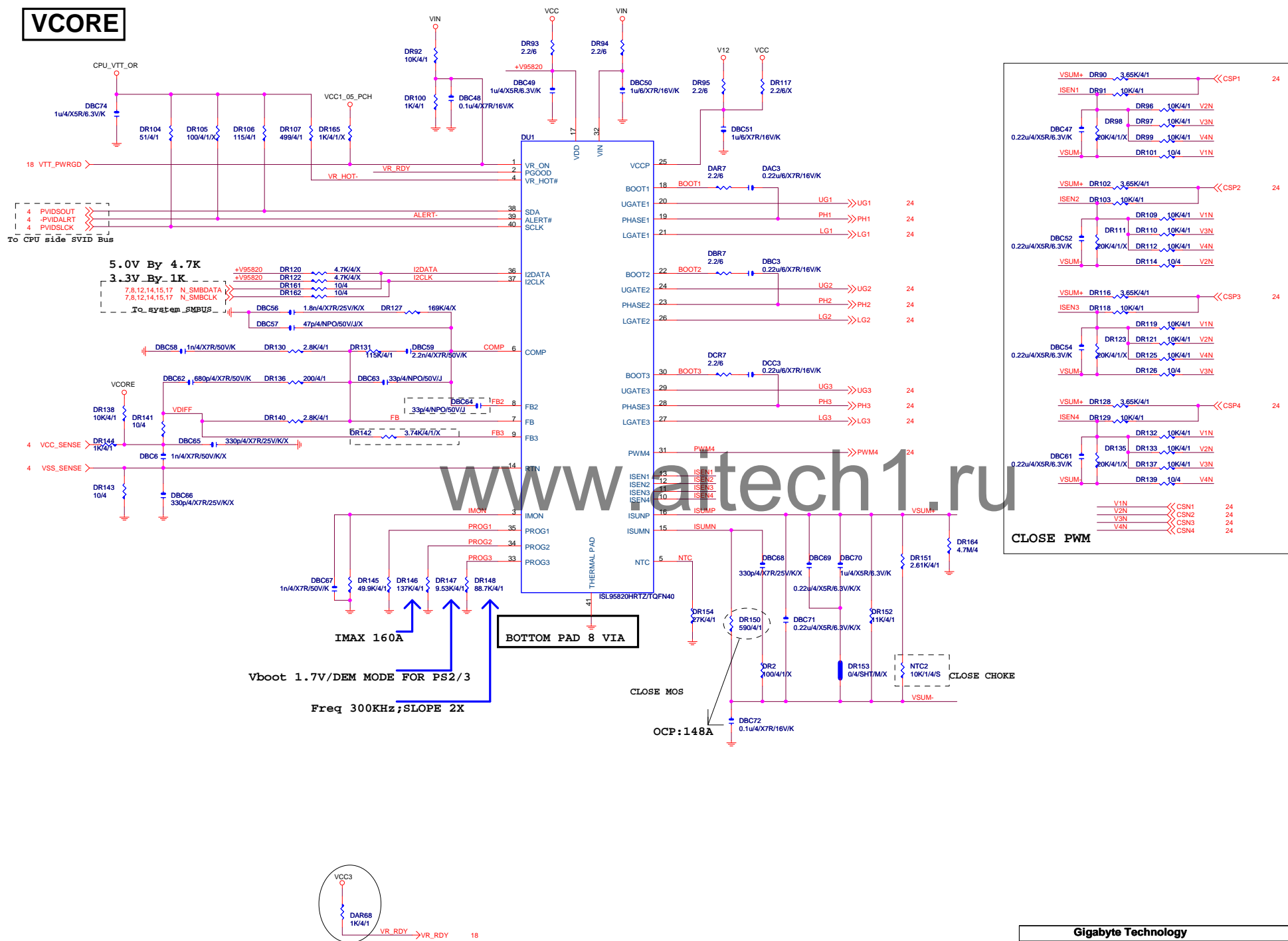


Gigabyte Technology

AUDIO JACK

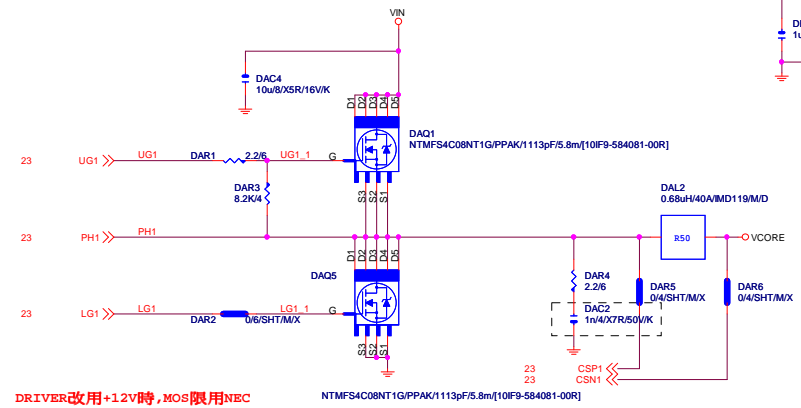
GA-B85-HD3

Title	Document Number	Rev
Size	Custom	2.11
Date	Wednesday, June 18, 2014	Sheet 22 of 34

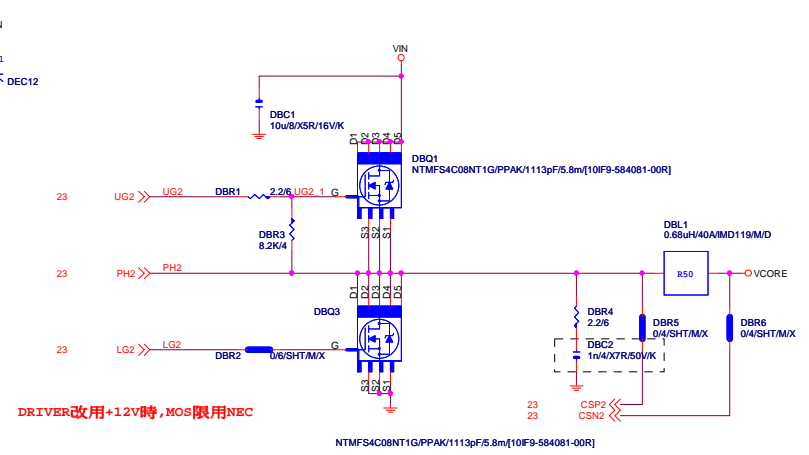
VCORE

VCORE

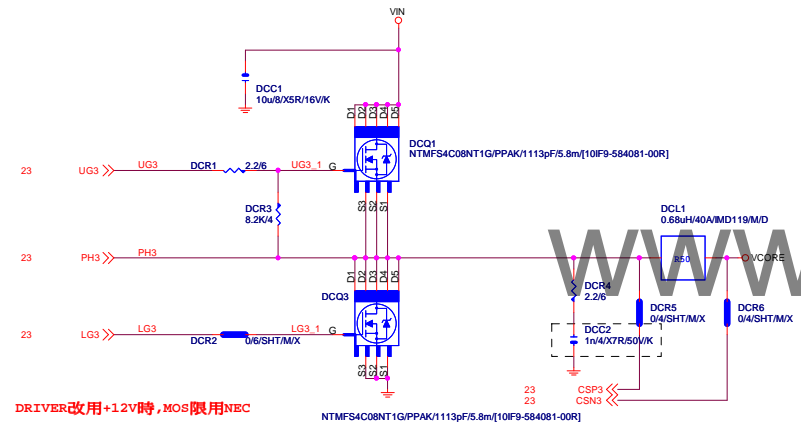
[1]



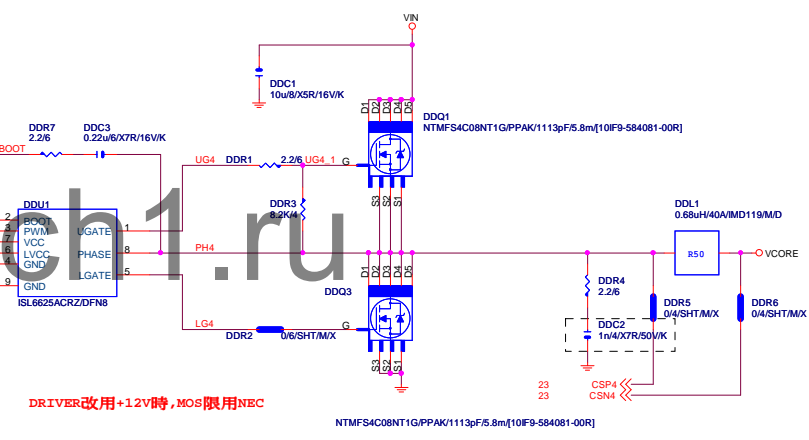
[2]



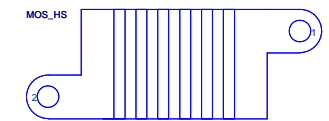
[3]



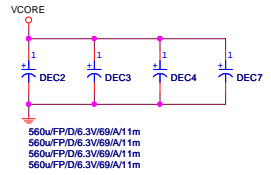
[4]



MOSFET HEATSINK

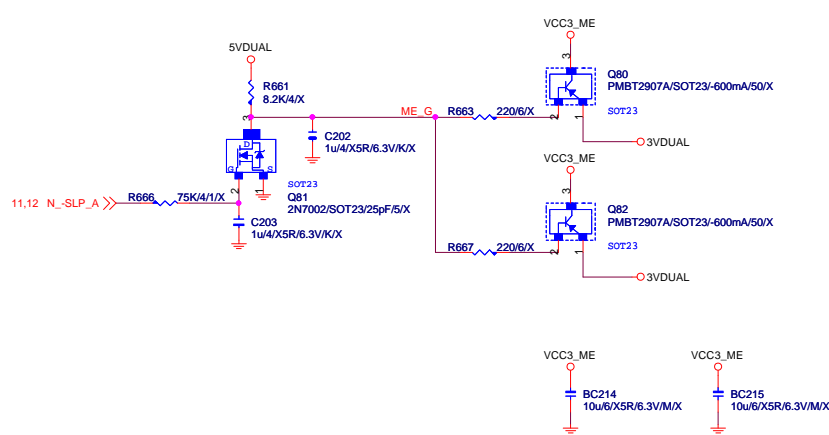


MOS_HeatSink[12SP2-S07517-01R_12SP2-S07517-02R_12SP2-S07517-03R]

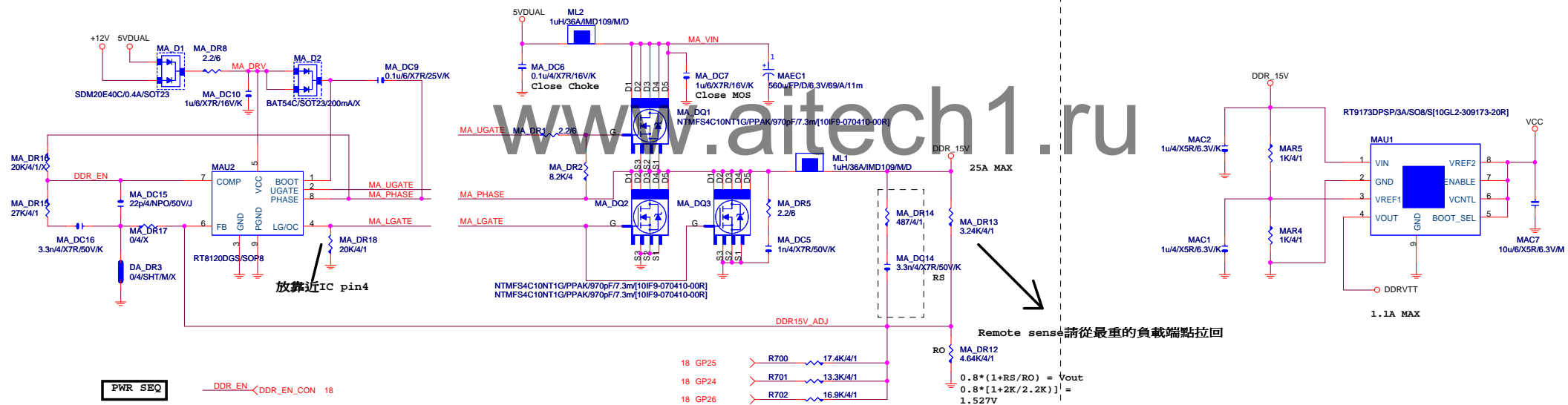


Gigabyte Technology		
Title	ISL95820_2	
Size	Document Number	GA-B85-HD3
Custom		Rev 2.11
Date	Wednesday, June 18, 2014	Sheet 24 of 34

VCC3_ME



DDRVTT



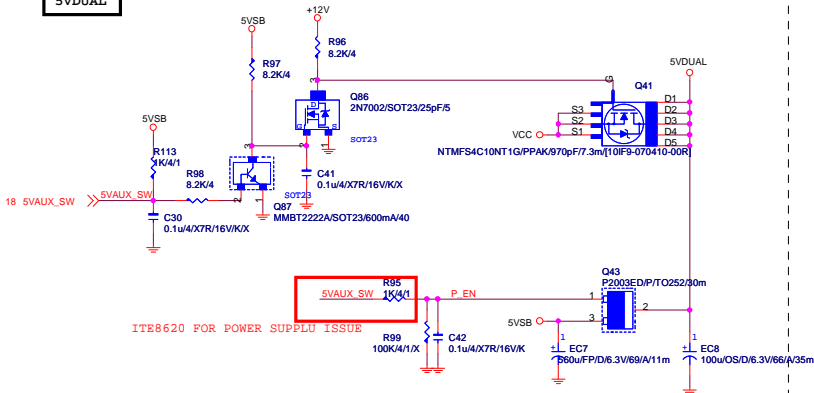
OCP:40A for Rds=8.9~10.8m for on@4.5V
OCP:40A for Rds=5.8~6.95m for on@10V
OCP:66.67~37.A=Roset*Iocset / Rds(on)
=20K*10uA / 3~5.4m

	5	4	3	2	1
D					
C					
B					
A					

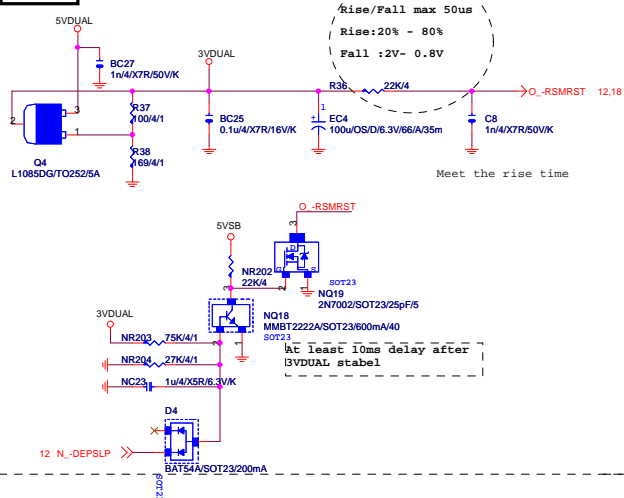
www.aitech1.ru

Gigabyte Technology				
Title		CPU CORE VR-2		
Size Custom	Document Number		GA-B85-HD3	Rev 2.11
Date:	Wednesday, June 18, 2014		Sheet	26 of 34
	5	4	3	2

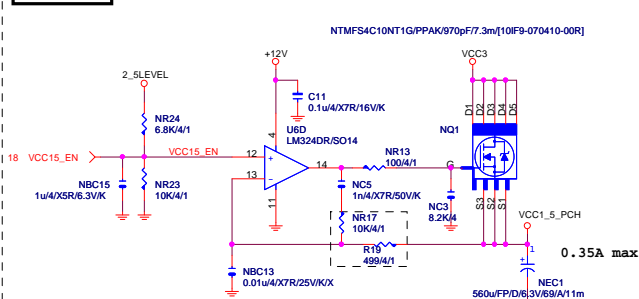
5VDUAL



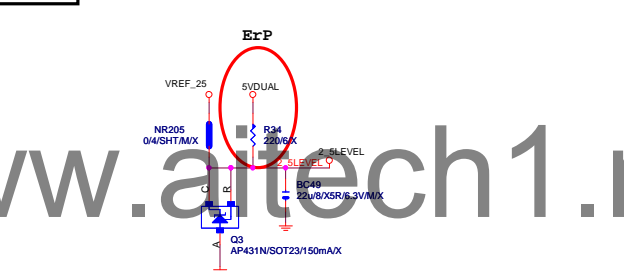
3VDUAL



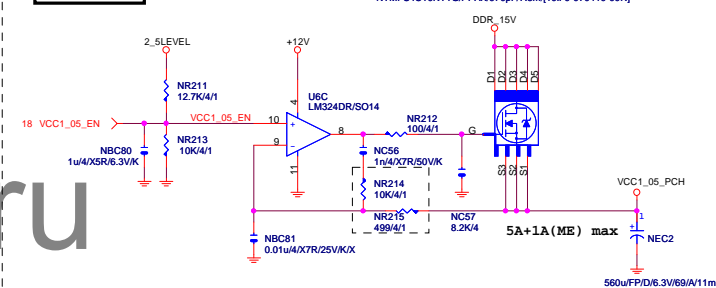
VCC1_5_PCH



2_5LEVEL



VCC1_05_PCH



PWR_SEQ



Gigabyte Technology

Title			
DISCRETE POWER			
Size	Document Number		Rev
Custom	GA-B85-HD3		2.11
Date:	Wednesday, June 18, 2014	Sheet	27 of 34

BLUE

UASB04

N+USBP0 1 6 N-USBP0

N-USBP1 3 5 N+USBP1

3VDUAL

AZC09B-04S RTG/SOT23-6L[10DEF-55009R-20R_10T1_A 38902-10R]

5VDUAL

UAFB1

SPR-P26076V8/S

FUSEVCC_USB3_F

100uS/D/6.3K/66A/35m

UACU3

FUSEVCC_F

FUSEVCC_F

UABC1
0.1u4X7R/16V/K

UABC2
0.1u4X7R/16V/K

F_USB1

9 N_+USBP13

9 N_+USBP13

9 N_+USBP12

9 N_+USBP12

BH2*5K9B/ON2.54/VA/PS/PT/TUR180

Figure 1: USB2 pin connections. The diagram shows a USB2 connector with pins 1 through 10. Pin 1 is connected to FUSEVCC_F and UAB3 (0.1u4/X7R/16V/K). Pin 2 is connected to FUSEVCC_F and UAB4 (0.1u4/X7R/16V/K). Pin 3 is connected to N_USBP11. Pin 4 is connected to N_USBP11. Pin 5 is connected to N_USBP11. Pin 6 is connected to N_USBP11. Pin 7 is connected to N_USBP11. Pin 8 is connected to N_USBP11. Pin 9 is connected to N_USBP11. Pin 10 is connected to N_USBP11. The component is labeled BH25K9/BK/ON2.54V/USB/PRT/TUR180.

UAESD1

1 N_USBP13

2

3 N_USBP12

4 N_USBP12

5 3VDDUAL

6 N_USBP13

AZC099-04S R7G/SOT23-6L/10DEF-550098-20R_10TA1-01892-10R1

The schematic diagram illustrates the USB3_F fuse circuit. A 5VDDIUAL supply is connected to a network of resistors (UAR1, UAR14) and a fuse (UAD1) to the FUSEVCC_USB3_F and FUSEVCC_F nodes. The fuse is a BAT54A/SOT23/200mA diode. The circuit is connected to the N_USBOC_F and N_USBOC_F_9 nodes.

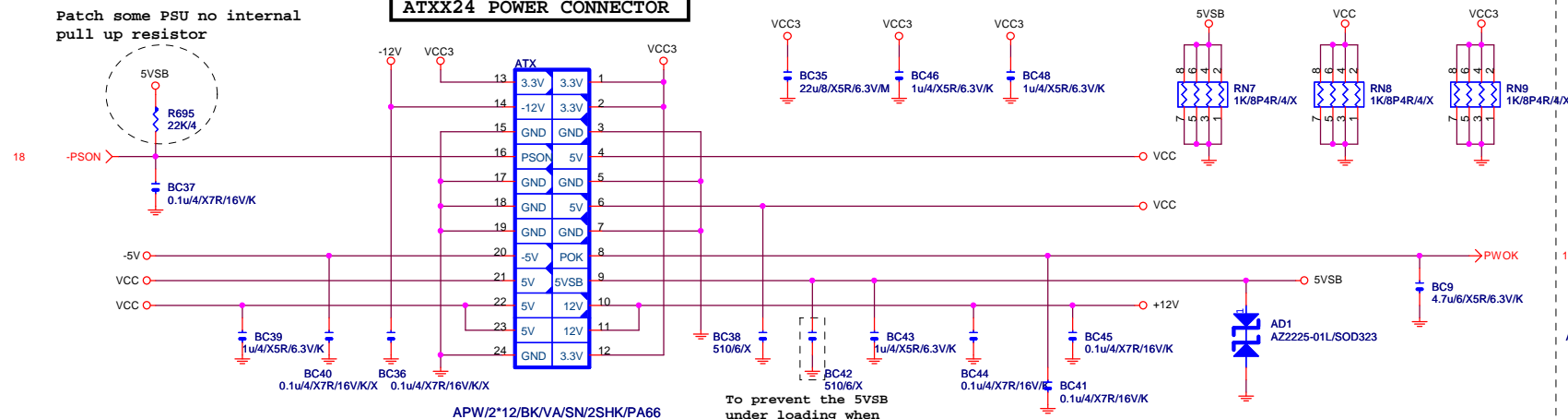
11 N_SATALED > HDLED

Remove Level shift

[illegible]

Patch some PSU no internal pull up resistor

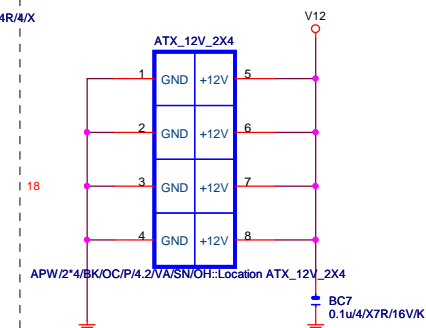
ATXX24 POWER CONNECTOR



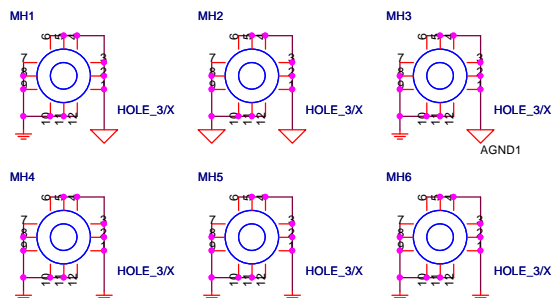
APW/2*12/BK/VA/SN/2SHK/PA66

To prevent the 5VSB under loading when boot

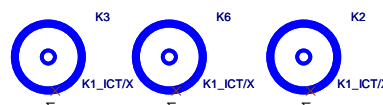
ATXX4 POWER CONNECTOR



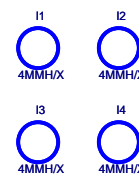
APW/2*4/BK/OC/P/4.2VA/SN/OH:Location ATX_12V_2X4



HOLE_4-RH-1



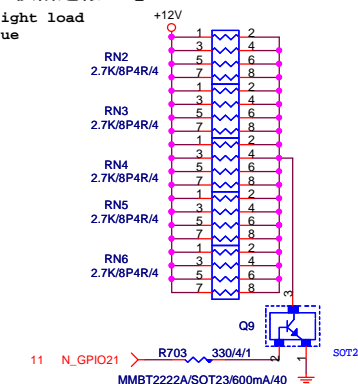
K1-ICT



4MMH

【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



CLK GEN

CPU Frequency Selection

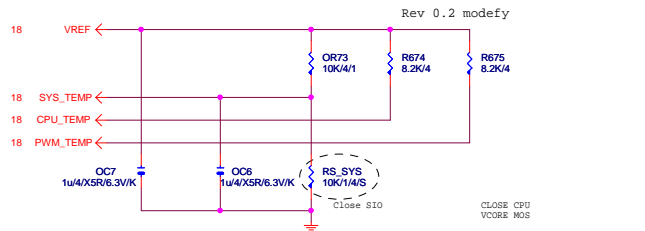
FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M

PWOK PATCH

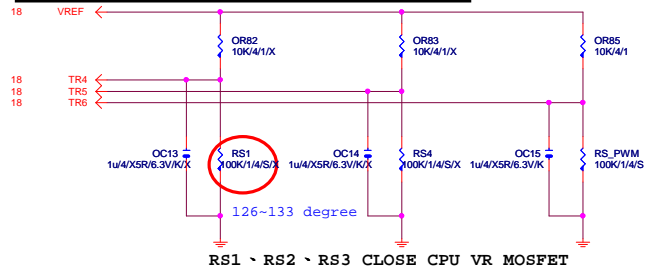
Gigabyte Technology

Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-B85-HD3	2.11
Date:	Wednesday, June 18, 2014	Sheet 29 of 34

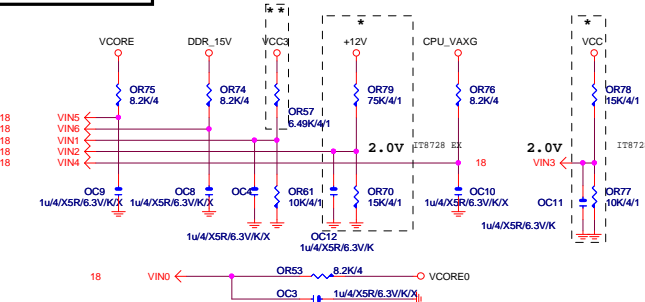
TEMP H/W MONITOR



-PROCHOT:有mos heartsink不用prochot function

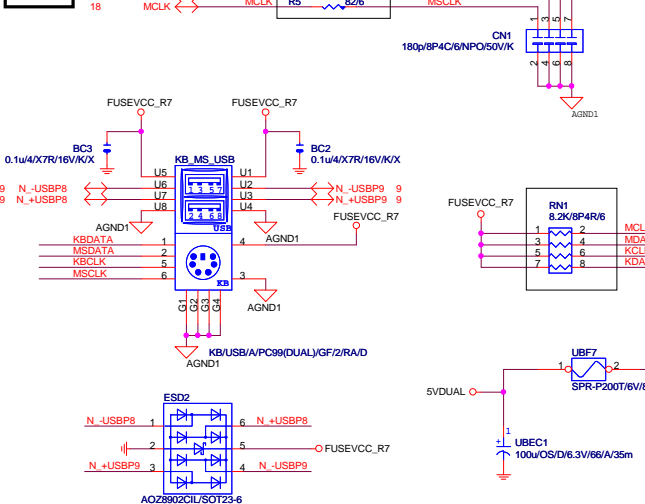


VOLTAGE-- H/W	
MONITOR	

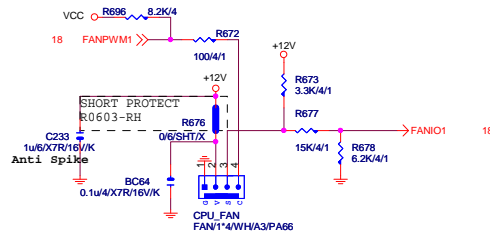


The division voltage of VIN2 & VIN3 must be around 2.9V

KB/USB

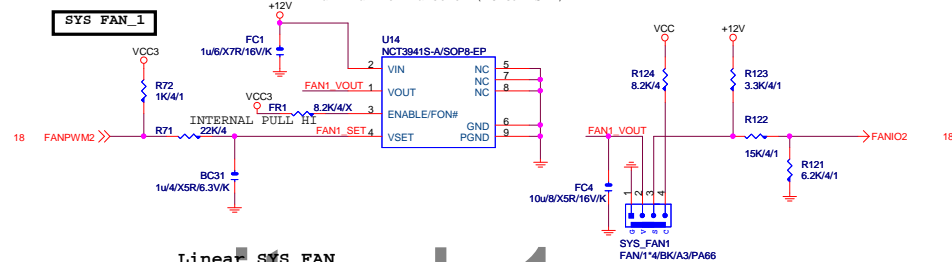


CPU SMART FAN

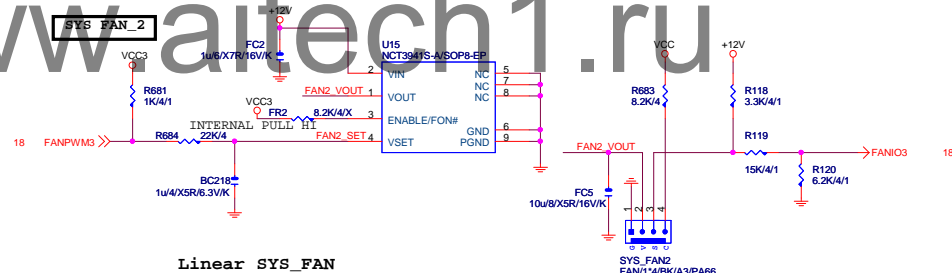


Linear SYS_FAN

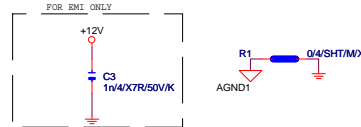
Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)



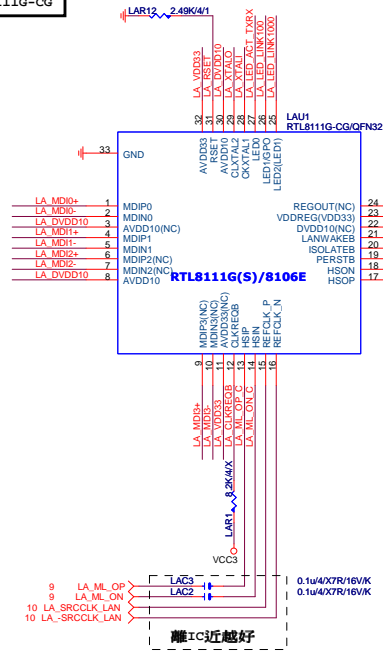
Linear SYS_FAN



Linear SYS_FAN

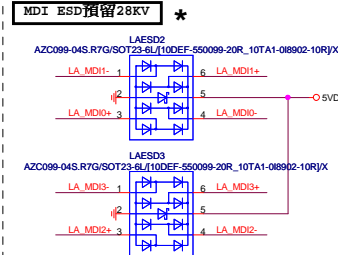


LAN RTL8111G-CG

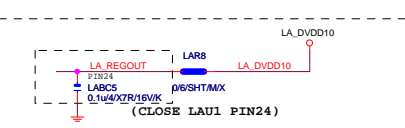
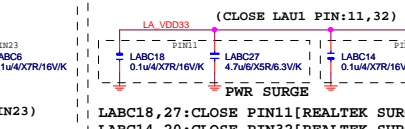
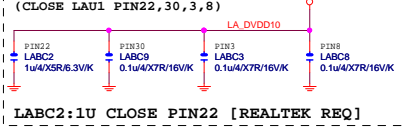


SRCCLK-->50歐姆:[18/4/10/4/18]

LA_ML-->80歐姆:[15/5/5/5/15]



LAN POWER



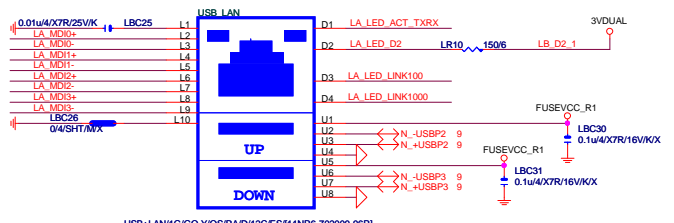
NOTE:
RT8106E:PIN3,11,22,24-->NC
LABC2LABC3,LABC5,LABC18,LABC27-->N/A

BOM NOTICE

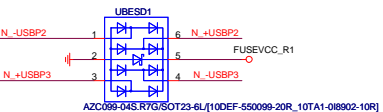
- 料號 規格 廠商
- 11NR6-702009-96R 1G LAN (12core) UDE(RU9 ESD+)
- [LED獨立走線,可省略外加AZC099-04S材料LAESD1]
- 1. 9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
- 2. 28KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
- LAESD2, LAESD3: 上件AZC398-04S

USB30_LAN CONNECTOR

100歐姆:[20/4/10/4/20]

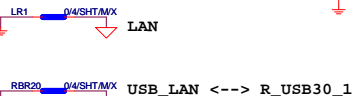
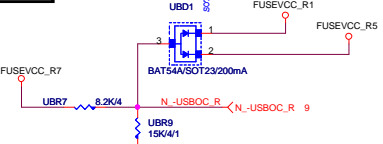


90歐姆:[12/5/7/5/12]

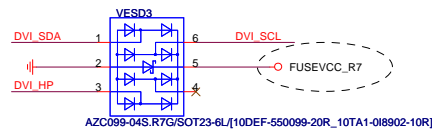
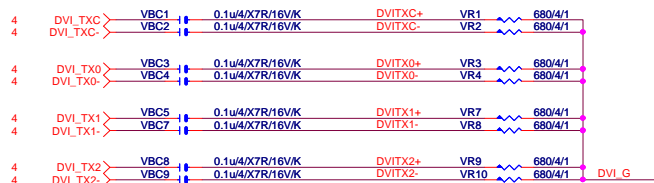


CLOSE USB30_LAN

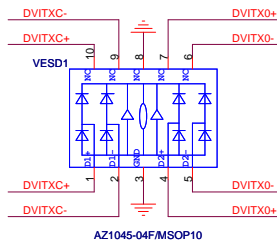
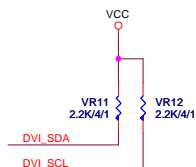
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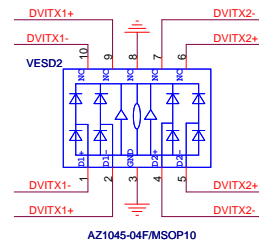
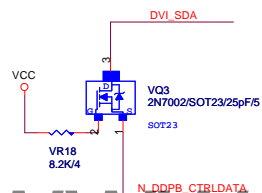
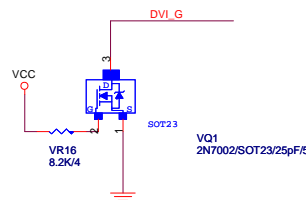
Gigabyte Technology			
File	8111G		
Size	Document Number	GA-B85-HD3	
Custom		Rev	2.1
Date	Wednesday, June 18, 2014	Sheet	31 of 34



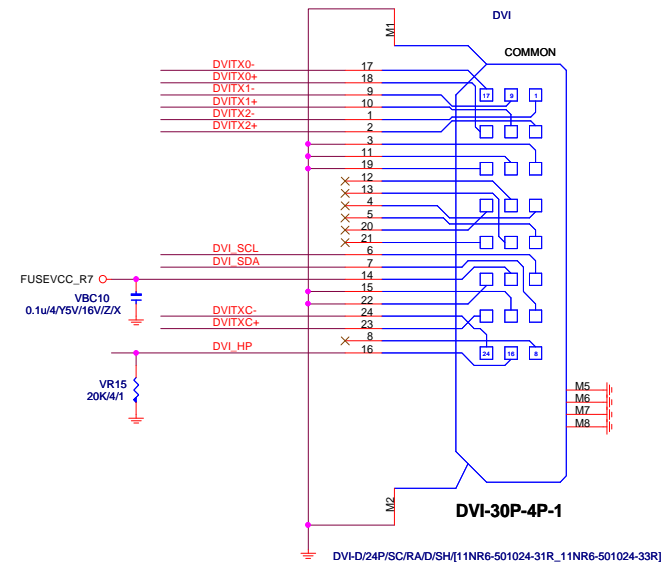
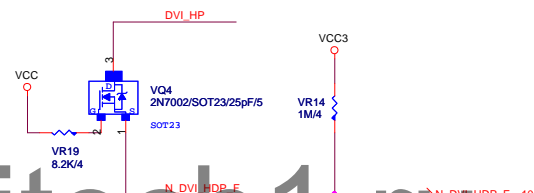
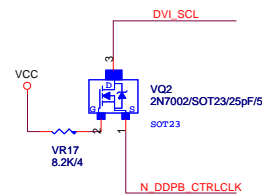
Close to connector



Close to connector



Close to connector



DVI-30P-4P-1

DVI-D/24P/SC/RA/D/SH[11NR6-501024-31R_11NR6-501024-33R]

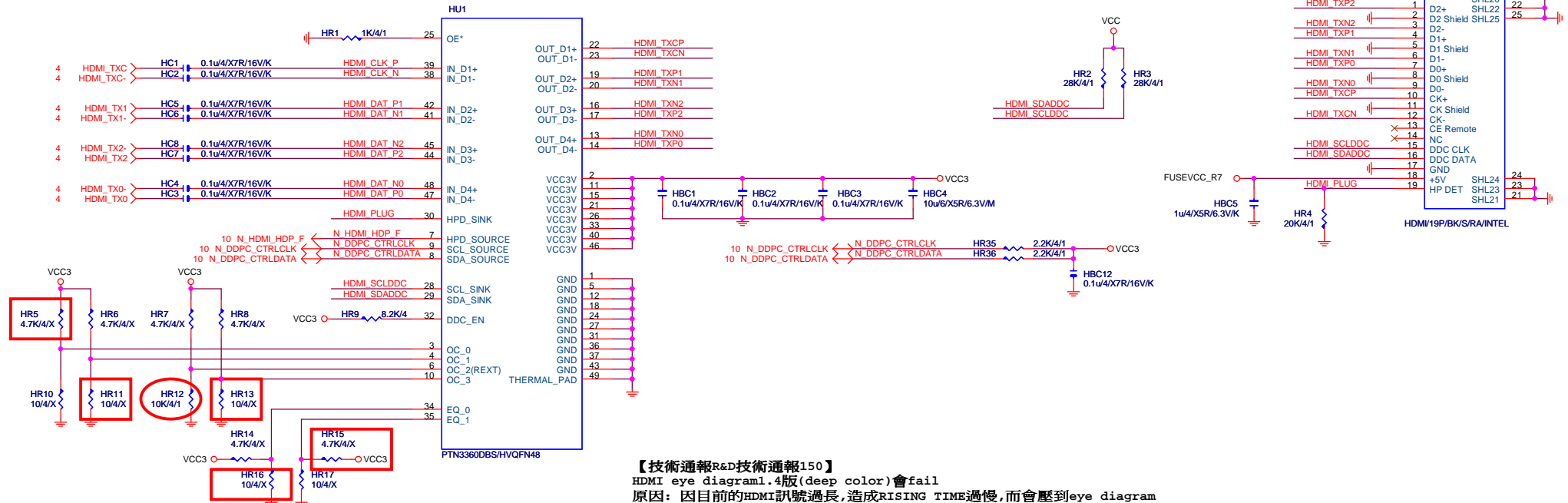
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Title		
DVI		
Size	Document Number	Rev
Custom	GA-B85-HD3	2.11
Date:	Wednesday, June 18, 2014	Sheet 32 of 34

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HDMI LEVEL SHIFT

HDMI:20/4/6/4/20
Impedance=85 +- 17.5%



PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K
ASM1442:紅色框要上,HR12:3.16K

【技術通報R&D技術通報150】
HDMI eye diagram.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMDIE ASM1442: 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

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Title			
HDMI			
Size	Document Number	Rev	
Custom	GA-B85-HD3	2.11	
Date:	Wednesday, June 18, 2014	Sheet	33 of 34

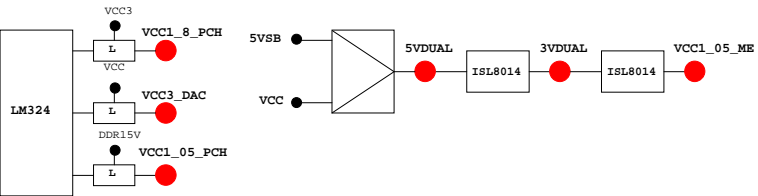
PCB GPIO LIST TABLE

PIN NAME	PWR	AFTER PLUG/TEST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQE#	MAIN		GPI	~PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	~PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	~PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	~PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	PCIE1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	~PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	~ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
GP50	MAIN		NATIVE	~REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	~GNT1	N/A
GP52	MAIN		NATIVE	~REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	~GNT2	N/A
GP54	MAIN		NATIVE	~REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	~GNT3	N/A
GP56	STBY		NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	~SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY			Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

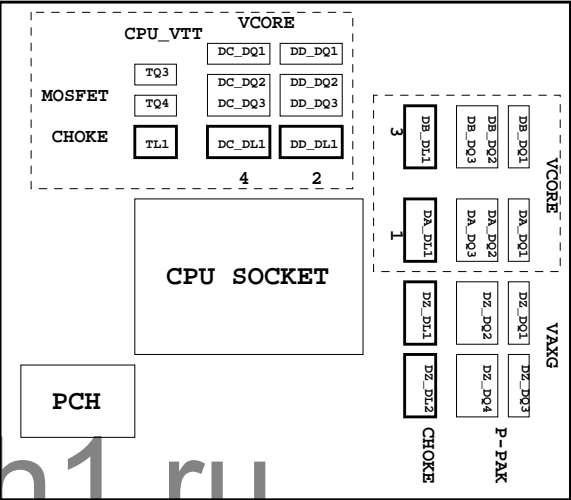
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SEN	LOW_PWR_1	
VID05/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VID00/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	🔌 PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#/GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	-THERM	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Termination
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

Z77-D3H :
PCH :
12SP2-S05511-01R/02R/03R
MOSFET :
12SP2-S08924-01R/02R/03R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

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TABLE LIST			
Size C	Document Number	Rev	
	GA-B85-HD3	2.11	
Date:	Wednesday, June 18, 2014	Sheet	34 of 34