

Model Name: GA-H81M-HD3

Revision 1.03

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,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS X16 SLOT
15	PCI EXPRESS X1 SLOT
16	PCI SLOT 1,2
17	ITE 8620 LPC IO
18	COM,LPT,KB_MS
19	HWM,FAN CTRL,OV,-PROCHOT
20	DUAL BIOS
21	R_USB30,FP,FUSB,SPK,SATALED
22	CODEC ALC892
23	REAR AUDIO JACK
24	REALTEK RTL8111F
25	DISCRETE POWER
26	ATX
27	VCORE ISL95812_1

SHEET

TITLE

28	VCORE ISL95812_2
29	RT8120_DDR POWER
30	DVI
31	ITE IT8892E
32	USB3 VL805
33	HDMI/DP
34	F_USB30

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Cover Sheet

Size Custom	Document Number <b>GA-H81M-HD3</b>	Rev <b>1.03</b>
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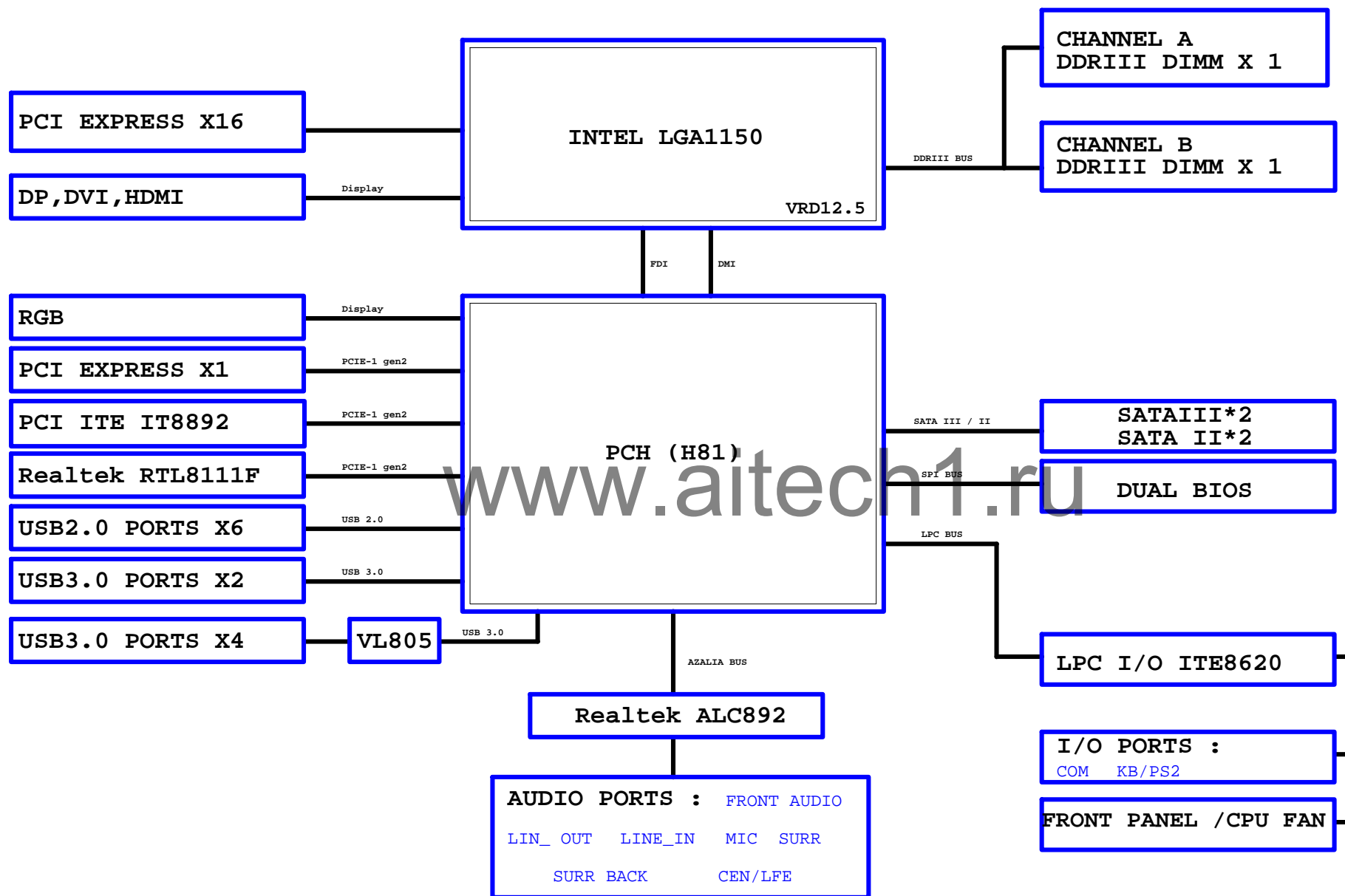
Revision 1.03

## 2013/04/22

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[illegible]

## BLOCK DIAGRAM



[illegible]

Pin-to-pin connection diagram for LGA1150D to CPU SK-1150/S/GF. The diagram shows connections for FDI\_CSXNC, FDI\_INT, FDI\_RCOMP, FDI\_TXN0, FDI\_TXP0, FDI\_TXN1, and FDI\_TXP1. It includes a table of pin numbers and signal names for both the LGA1150D and the CPU SK-1150/S/GF.

Pin	Signal	Pin	Signal
9	FDI_CSXNC	D16	FDI_CSXNC
9	FDI_INT	D18	FDI_INT
9	FDI_RCOMP	R4	FDI_RCOMP
10	N_DP_CLK	U5	SSC_DPCLKN
10	N_DP_CLK	U6	SSC_DPCLKP
		E16	EDP_DISP_UTIL
		K11	RSVD_TP
		J12	RSVD_TP
		B14	FDI_EDP_TXN0
		A14	FDI_EDP_TXP0
		C13	FDI_EDP_TXN1
		B13	FDI_EDP_TXP1

Legend:

- FDI\_CSXNC: DVI TX2, TX3, TX0, TX1
- FDI\_INT: DVI TX0, TX1, TXC, TXC-
- FDI\_RCOMP: DVI TX0, TX1, TXC, TXC-
- SSC\_DPCLKN: HDMI TX2, TX3, TX0, TX1, TXC, TXC-
- SSC\_DPCLKP: HDMI TX2, TX3, TX0, TX1, TXC, TXC-
- EDP\_DISP\_UTIL: HDMI TX0, TX1, TXC, TXC-
- RSVD\_TP: DP TX0, TX1, TX2, TX3
- FDI\_EDP\_TXN0: DP TX0, TX1, TX2, TX3
- FDI\_EDP\_TXP0: DP TX0, TX1, TX2, TX3
- FDI\_EDP\_TXN1: DP TX0, TX1, TX2, TX3
- FDI\_EDP\_TXP1: DP TX0, TX1, TX2, TX3

PCIEX16:16/5/5/5/16(breakout min 10/4/4/4/10)					
Impedance=80 +- 17.5%					
	PA EXP RXP0	E15	LGA1150C	PEG_TXP0	A12 PA EXP TXP0
	PA EXP RXN0	F15	PEG_RXP0 PEG_RXN0	PEG_TXN0	B12 PA EXP TXN0
	PA EXP RXP1	D14	PEG_RXP1	PEG_TXP1	B11 PA EXP TXP1
	PA EXP RXN1	E14	PEG_RXP1 PEG_RXN1	PEG_TXN1	C11 PA EXP TXN1
	PA EXP RXP2	E13	PEG_RXP2	PEG_TXP2	C10 PA EXP TXP2
	PA EXP RXN2	F13	PEG_RXP2 PEG_RXN2	PEG_TXN2	D10 PA EXP TXN2
	PA EXP RXP3	D12	PEG_RXP3	PEG_TXP3	B9 PA EXP TXP3
	PA EXP RXN3	E12	PEG_RXP3 PEG_RXN3	PEG_TXN3	C9 PA EXP TXN3
	PA EXP RXP4	E11	PEG_RXP4	PEG_TXP4	C8 PA EXP TXP4
	PA EXP RXN4	F11	PEG_RXP4 PEG_RXN4	PEG_TXN4	D8 PA EXP TXN4
	PA EXP RXP5	F10	PEG_RXP5	PEG_TXP5	B7 PA EXP TXP5
	PA EXP RXN5	G10	PEG_RXP5 PEG_RXN5	PEG_TXN5	C7 PA EXP TXN5
	PA EXP RXP6	F9	PEG_RXP6	PEG_TXP6	A6 PA EXP TXP6
	PA EXP RXN6	F9	PEG_RXP6 PEG_RXN6	PEG_TXN6	B6 PA EXP TXN6
	PA EXP RXP7	F8	PEG_RXP7	PEG_TXP7	B5 PA EXP TXP7
	PA EXP RXN7	G8	PEG_RXP7 PEG_RXN7	PEG_TXN7	C5 PA EXP TXN7
	PA EXP RXP8	D3	PEG_RXP8	PEG_TXP8	E1 PA EXP TXP8
	PA EXP RXN8	D4	PEG_RXP8 PEG_RXN8	PEG_TXN8	F2 PA EXP TXN8
	PA EXP RXP9	E4	PEG_RXP9	PEG_TXP9	F2 PA EXP TXP9
	PA EXP RXN9	E5	PEG_RXP9 PEG_RXN9	PEG_TXN9	F3 PA EXP TXN9
	PA EXP RXP10	F5	PEG_RXP10	PEG_TXP10	G1 PA EXP TXP10
	PA EXP RXN10	F6	PEG_RXP10 PEG_RXN10	PEG_TXN10	G2 PA EXP TXN10
	PA EXP RXP11	G4	PEG_RXP11	PEG_TXP11	H2 PA EXP TXP11
	PA EXP RXN11	G5	PEG_RXP11 PEG_RXN11	PEG_TXN11	H3 PA EXP TXN11
	PA EXP RXP12	H5	PEG_RXP12	PEG_TXP12	J1 PA EXP TXP12
	PA EXP RXN12	H6	PEG_RXP12 PEG_RXN12	PEG_TXN12	J2 PA EXP TXN12
	PA EXP RXP13	J4	PEG_RXP13	PEG_TXP13	K2 PA EXP TXP13
	PA EXP RXN13	J5	PEG_RXP13 PEG_RXN13	PEG_TXN13	K3 PA EXP TXN13
	PA EXP RXP14	K5	PEG_RXP14	PEG_TXP14	M2 PA EXP TXP14
	PA EXP RXN14	K6	PEG_RXP14 PEG_RXN14	PEG_TXN14	M3 PA EXP TXN14
	PA EXP RXP15	L4	PEG_RXP15	PEG_TXP15	L1 PA EXP TXP15
	PA EXP RXN15	L5	PEG_RXP15 PEG_RXN15	PEG_TXN15	L2 PA EXP TXN15
	A DMI ORXP	U3	DMI_RXP0	DMI_TXP0	A44 A DMI OTXP
	A DMI ORXN	T3	DMI_RXN0	DMI_TXN0	A45 A DMI OTXN
	A DMI IRXP	U1	DMI_RXP1	DMI_TXP1	A46 A DMI ITXP
	A DMI IRXN	U1	DMI_RXN1	DMI_TXN1	A47 A DMI ITXN
	A DMI 1RXP	W2	DMI_RXP2	DMI_TXP2	A48 A DMI 1TXP
	A DMI 1RXN	W2	DMI_RXN2	DMI_TXN2	A49 A DMI 1TXN
	A DMI 2RXP	W3	DMI_RXP3	DMI_TXP3	A50 A DMI 2TXP
	A DMI 2RXN	W3	DMI_RXN3	DMI_TXN3	A51 A DMI 2TXN
	A DMI 3RXP	W4	DMI_RXP4	DMI_TXP4	A52 A DMI 3TXP
	A DMI 3RXN	W4	DMI_RXN4	DMI_TXN4	A53 A DMI 3TXN
		X D1	RSVD_TP		
		X C2	RSVD_TP		
		X B3	RSVD_TP		
		X A4	RSVD_TP		
		P3	PEG_RECOMP		

(1.011v)  
al Voltage  
og Voltage  
(1.05v)  
oltage(.923v)  
gen(0.815v)  
(.35v)

W=12 mil out of CPU  
S=15 mil out of CPU

VCCIOA\_L0 WRT15 24.9/4.1 GRCOMP P3

CPU-SK1150/GF

1.1V分壓

VCC3

WR26  
2k4/1/X

A\_CPUREST

WR31  
1k4/1/X

BC102  
1n4/XTR/50V/K

11.17

For IT8620 Ctrl

CPU\_VTT\_OR

WR3	90.9/4/1/X	PVIDSLCK
WR2	115/4/1	PVIDSOUT
WR4	75/4/1	-PVIDALRT

CPU\_VTT\_OR

Register	Width	Signal
WR14	51/4/1/X	A TMS
WR16	51/4/1/X	A TDO
WR17	51/4/1/X	A TDI
WR30	51/4/1	A -HPRDY
WR11	51/4/1	A TCK
WR9	51/4/1	A -TRST

The diagram shows several digital signals over time:

- A\_THRMTRIP**: High pulse, timing parameter WR8 = 1K/4X.
- A\_PWR\_DEBUG**: High pulse, timing parameters WR34 = 150/4X and WR33 = 10K/4X.
- A\_DBR**: High pulse, timing parameters WR21 = 8.2K/4X and WR20 = 0/4X.
- A\_DDR\_COMP0**: High pulse, timing parameter WR28 = 100/4X.
- A\_DDR\_COMP1**: High pulse, timing parameter WR19 = 75/4X.
- A\_DDR\_COMP2**: High pulse, timing parameter WR22 = 100/4X.
- A\_TESTLOW\_1**: Low pulse, timing parameter WR12 = 49.9/4X.
- A\_TESTLOW\_2**: Low pulse, timing parameter WR12 = 49.9/4X.
- A\_HSW\_CFG\_RCOMP**: Low pulse, timing parameter WR24 = 49.9/4X.

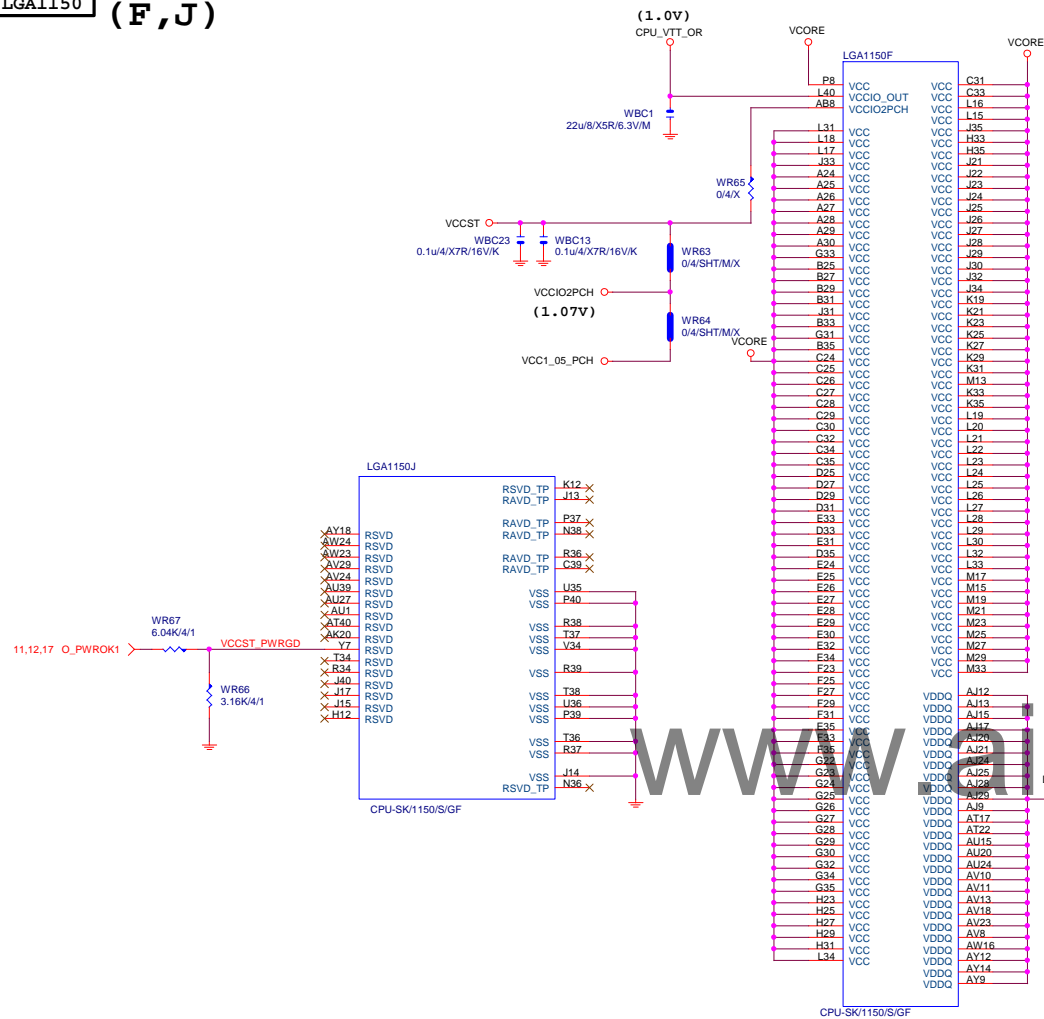
# LGA1150 (A)

# LGA1150 (B)

# LGA1150 (CR)

LGA1150A			
MAAA0	AU13	DDR0_MA0	DDR0_DQ0
MAAA1	AV16	DDR0_MA1	DDR0_DQ1
MAAA2	AU16	DDR0_MA2	DDR0_DQ2
MAAA3	AW17	DDR0_MA3	DDR0_DQ3
MAAA4	AU17	DDR0_MA4	DDR0_DQ4
MAAA5	AW18	DDR0_MA5	DDR0_DQ5
MAAA6	AV17	DDR0_MA6	DDR0_DQ6
MAAA7	AT18	DDR0_MA7	DDR0_DQ7
MAAA8	AU18	DDR0_MA8	DDR0_DQ8
MAAA9	AT19	DDR0_MA9	DDR0_DQ9
MAAA10	AW11	DDR0_MA10	DDR0_DQ10
MAAA11	AV19	DDR0_MA11	DDR0_DQ11
MAAA12	AU19	DDR0_MA12	DDR0_DQ12
MAAA13	AY10	DDR0_MA13	DDR0_DQ13
MAAA14	AT20	DDR0_MA14	DDR0_DQ14
MAAA15	AU21	DDR0_MA15	DDR0_DQ15
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ16
MODT_A1	AY8	DDR0_ODT1	DDR0_DQ17
	AW9	DDR0_ODT2	DDR0_DQ18
	AW8	DDR0_ODT3	DDR0_DQ19
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**LGA1150 (F,J)**

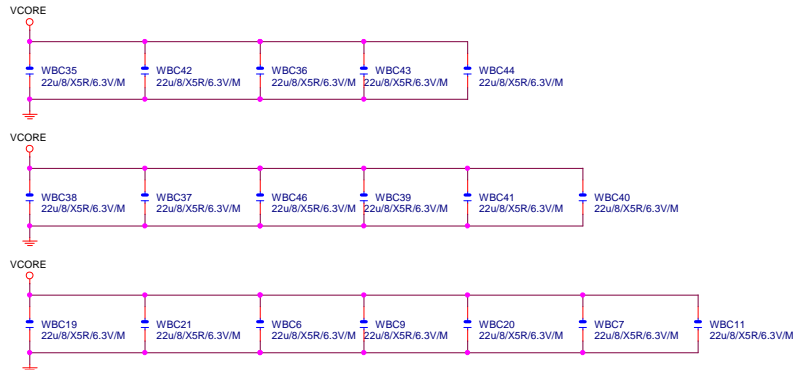


**LGA1155 (G,H,I)**



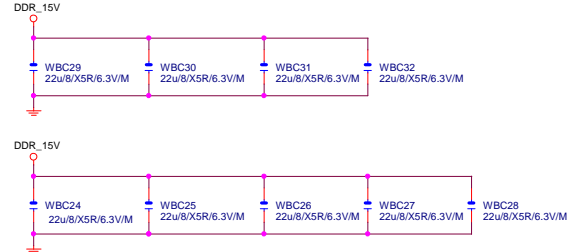
## VCore CAP

(X18)



DDR CAP

(x9)



## Gigabyte Technology

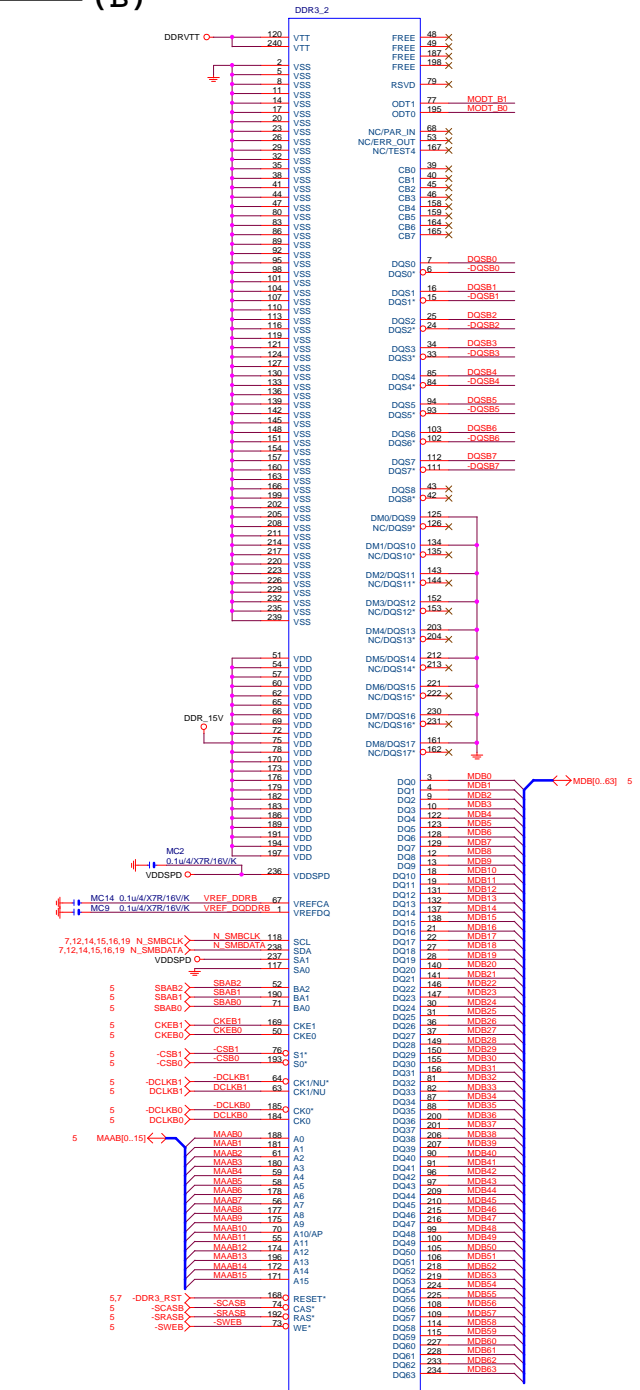
Title		CPU LGA1150-C
Size	Document Number	GA-H81M-HD3

Rev  
1.03

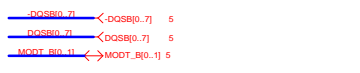


DDR3

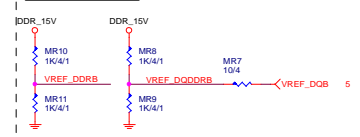
(B)



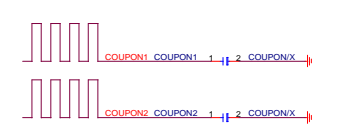
DDR3/240/BK/VA/D  
BLACK CONNECTOR



DDR3 VREF



COUPON



CPU

DTMM2 CHA

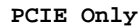
DTMM1 CHB

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

PCHB



**N/A**

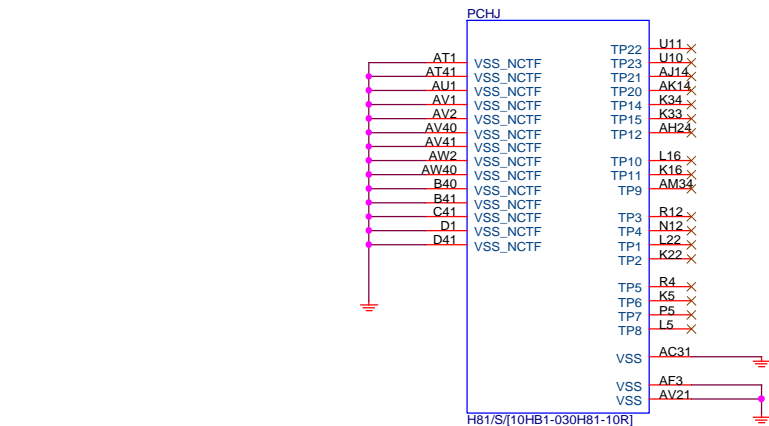
放靠近 Device & PCI-E Slot  
Impedance=80 +- 17.5%

```

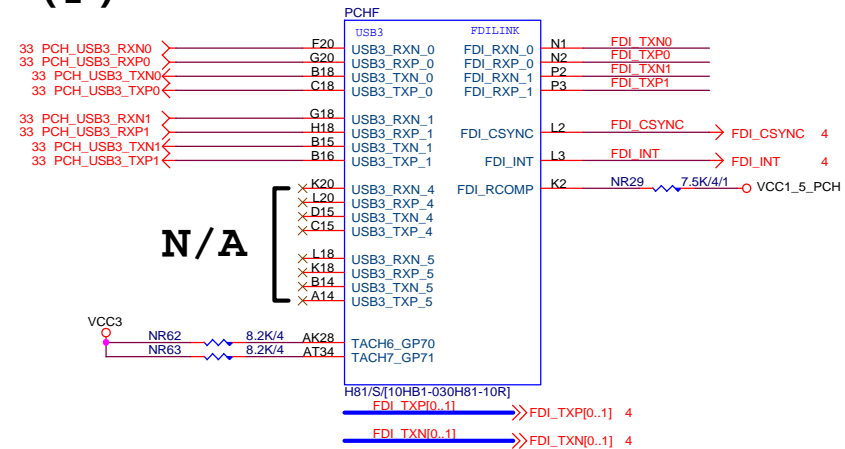
_PCIEX1:16/5/5/5/16 (breakout_min_8/4/4/4/8)

```

## PCH1



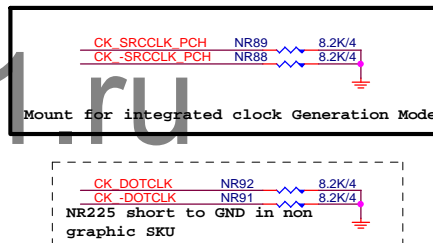
33 PCH\_USB3\_RXN0 >  
33 PCH\_USB3\_RXP0 >  
33 PCH\_USB3\_TXN0 <  
33 PCH\_USB3\_TXP0 <  
  
33 PCH\_USB3\_RXN1 >  
33 PCH\_USB3\_RXP1 >  
33 PCH\_USB3\_TXN1 <  
33 PCH\_USB3\_TXP1 <



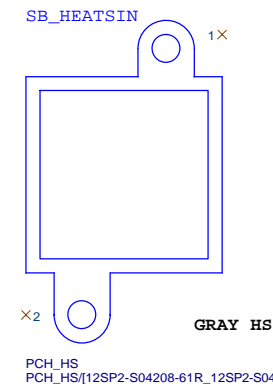
USB3.0:20/5/7/5/20 (breakout min  
8/4/4/4/8) ; ONLY 3 VIAS

Impedance=85 +- 17.5%  
Back Panel < 10000 MILS  
Front Panel < 6000 MILS

\_\_\_\_\_



LOW COST ICH7 HEATSINK



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

USB OC# Configure	
OC0#	R_USB30
OC1#	USB30_LAN
OC2#	N/A
OC3#	N/A
OC4#	F_USB1
OC5#	F_USB2
OC6#	N/A
OC7#	Not Use

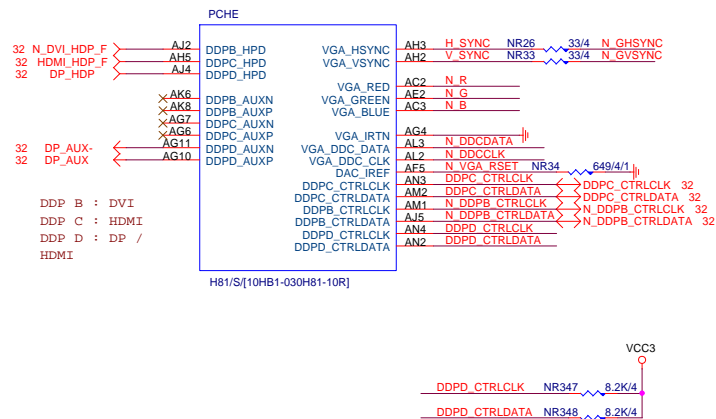
## Gigabyte Technology

Title	PCH FDI,DMI,USB ,PCIE,NVRAM
-------	-----------------------------

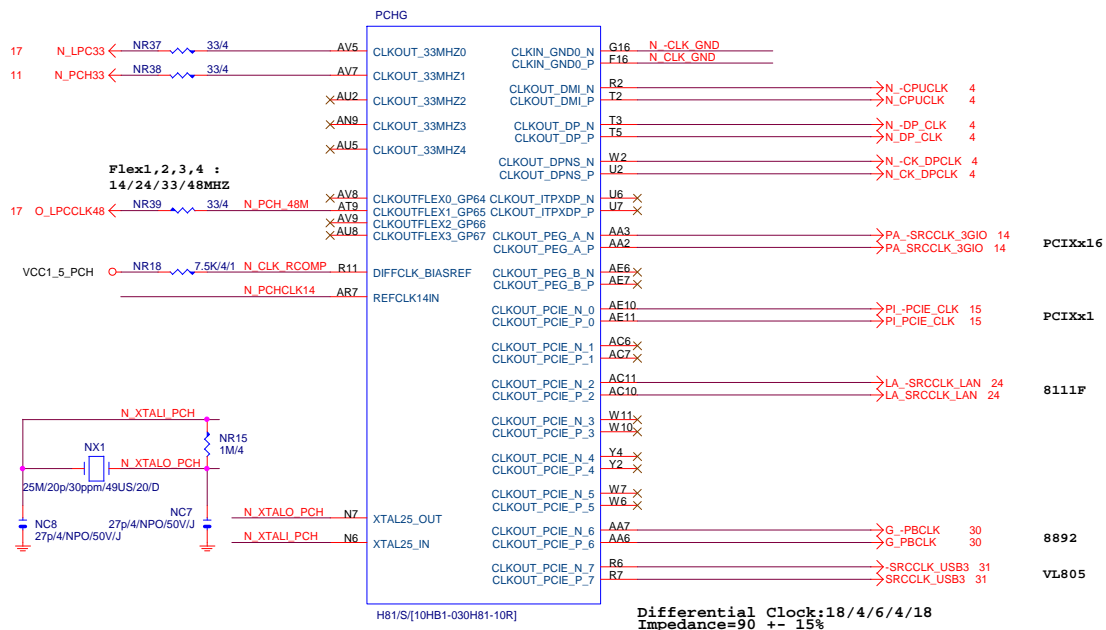
Size	Document Number	Rev
Custom	<b>GA-H81M-HD3</b>	1.03

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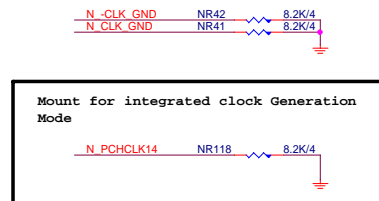
# PCH (E)



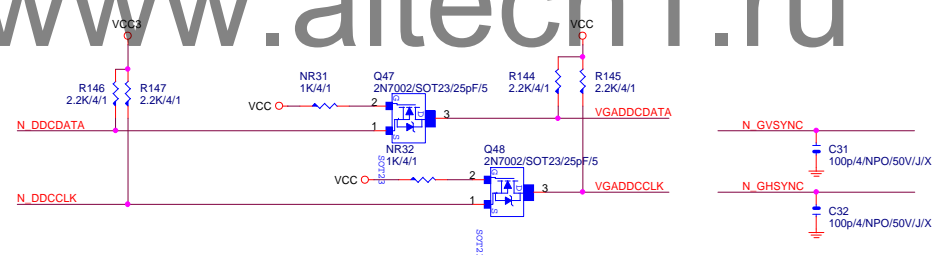
# PCH (G)



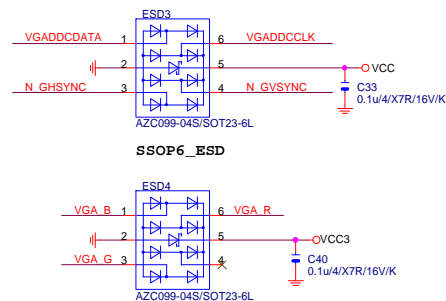
## PCH CLK PD



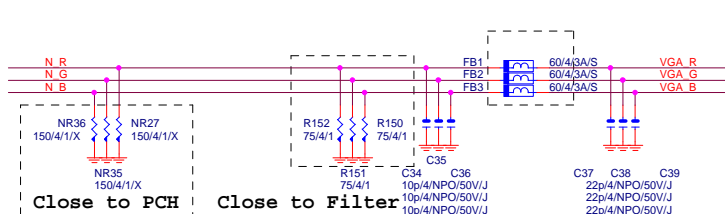
## VGA DDC



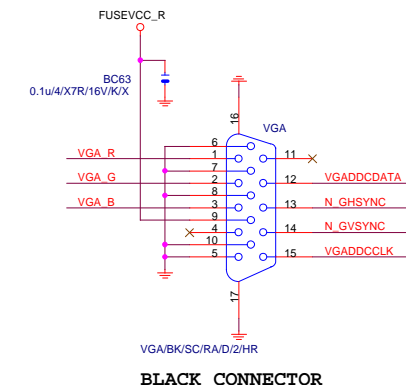
## VGA ESD



## VGA DDC



## VGA CONNECTOR



Gigabyte Technology			
Title			
PCH DISPLAY_CLK BUFFER			
Size			
Custom			
Document Number			
GA-H81M-HD3			
Date			
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1.03			

(C)

## SATA CONNECTOR

(A)

PCH	CLK	PD
-----	-----	----

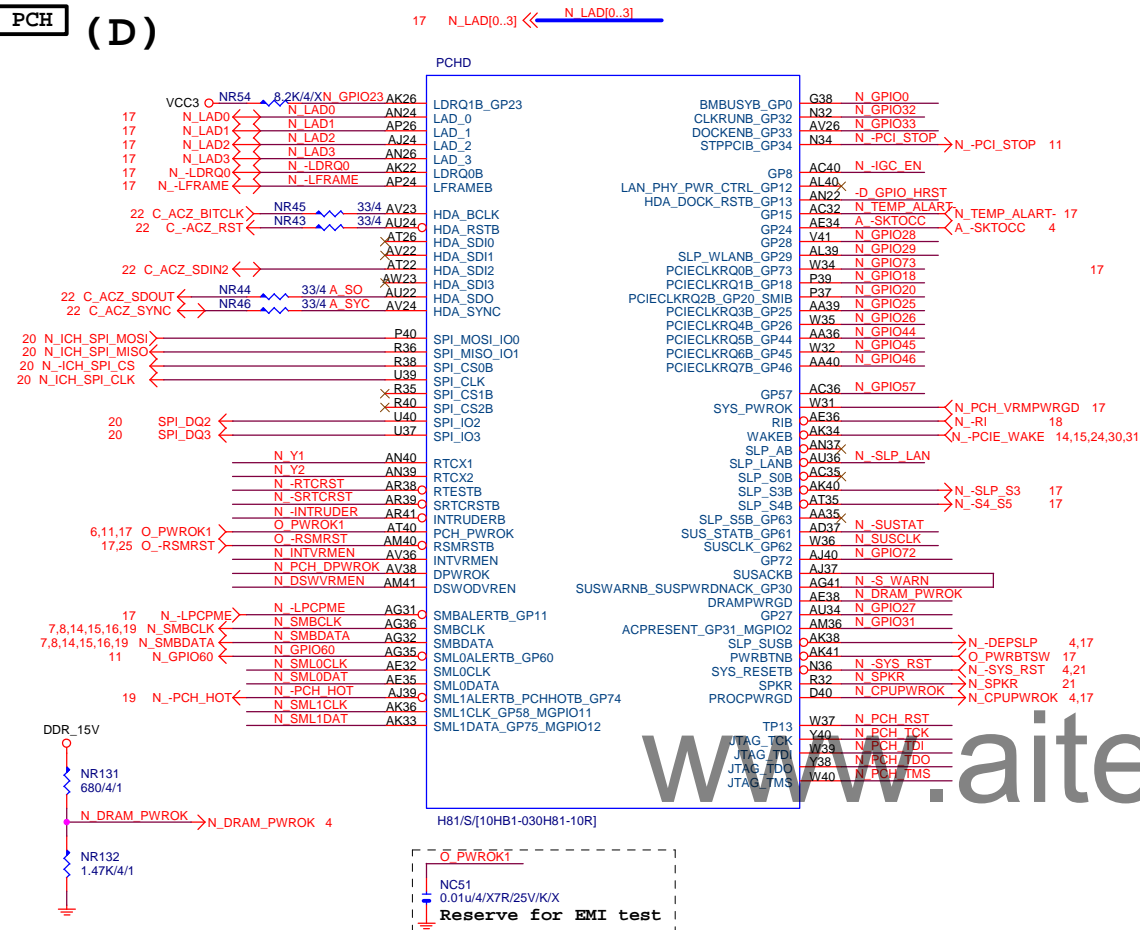
PCH	PU/PD
-----	-------

GPIO38 Ctrl

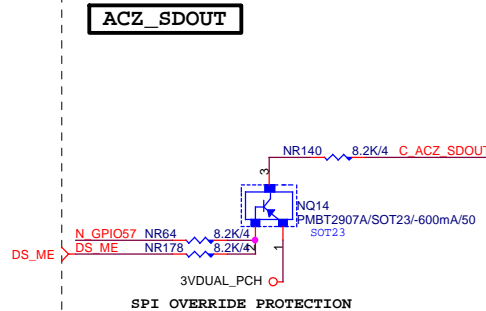
## Gigabyte Technology

Title			
PCH HOST , SATA, PCI			
Size	Document Number	Rev	
Custom	GA-H81M-HD3		1.03
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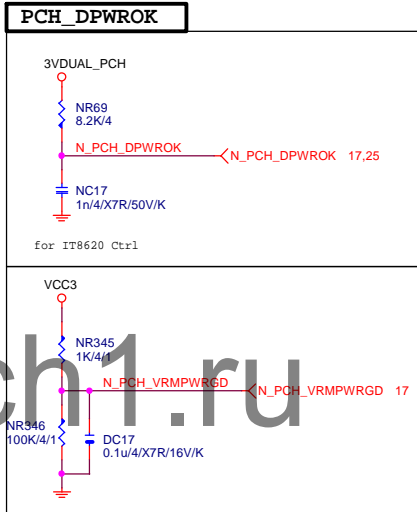
(D)



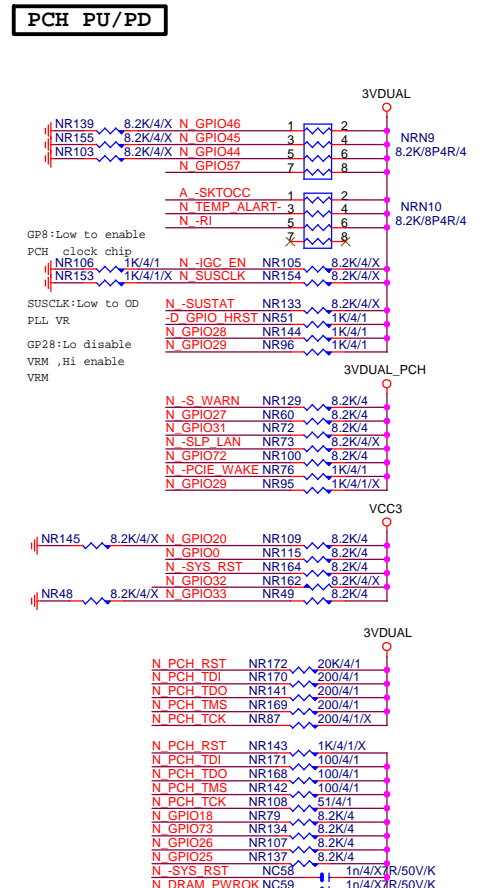
## ACZ\_SDOUT



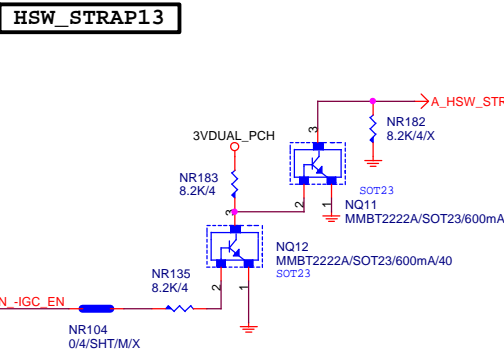
## PCH\_DPWROK



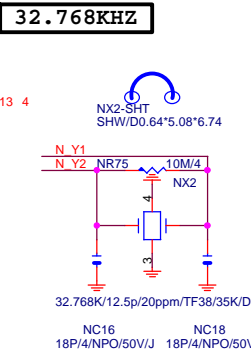
PCH	PU/PD
-----	-------



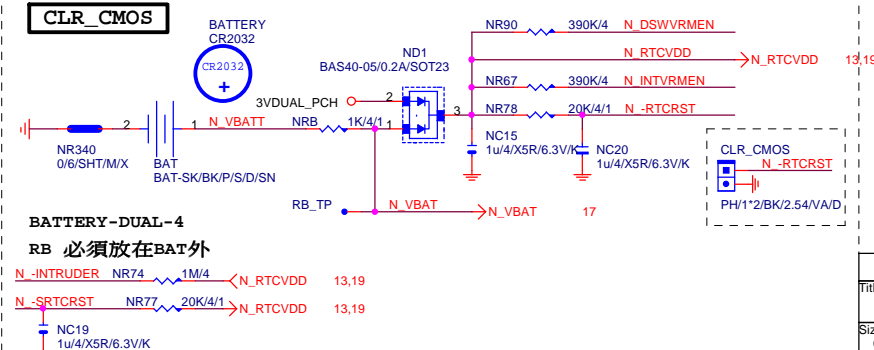
## HSW\_STRAP13



32.768KHZ



CLR_CMOS
----------



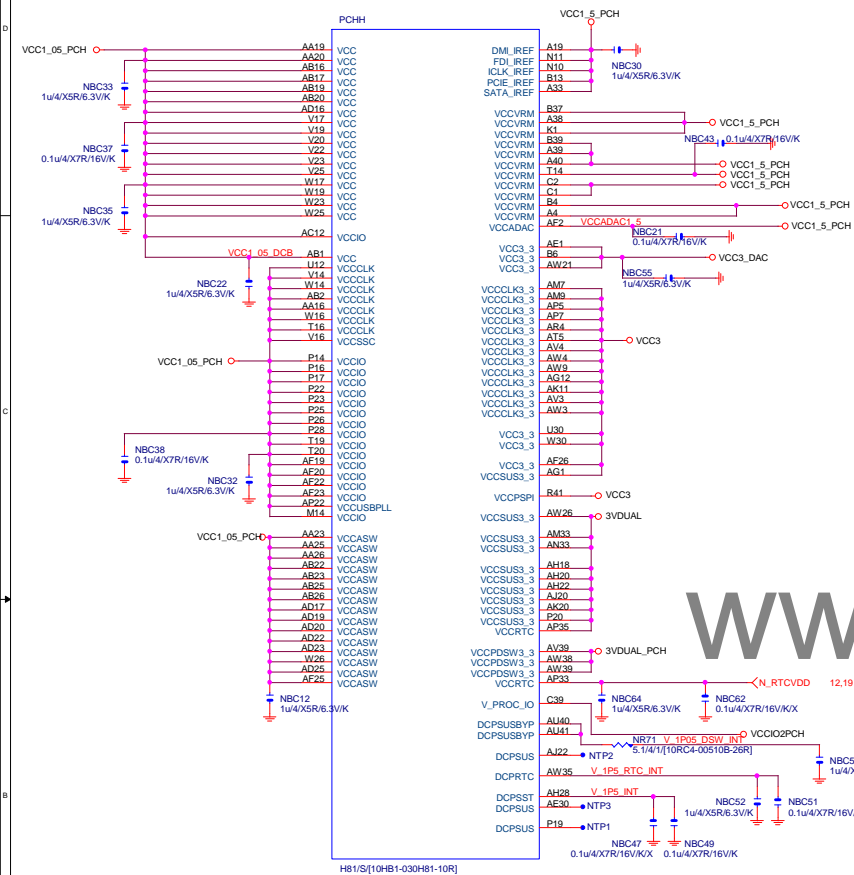
## Gigabyte Technology

PCH GPIO , CTRL , AUDIO

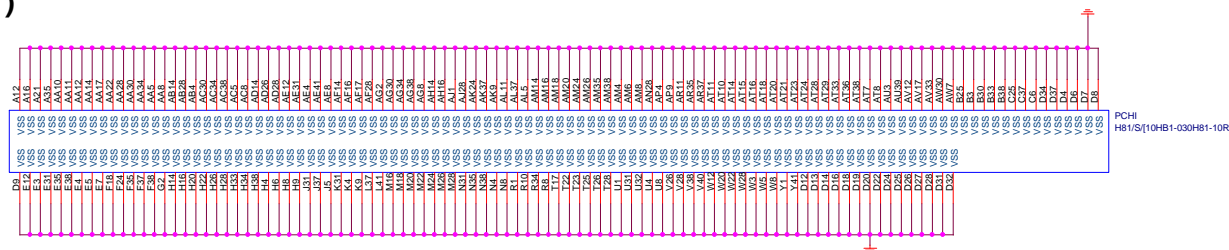
GA-H81M-HD3

Rev	1.03
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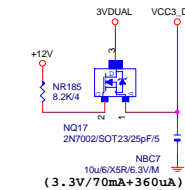
**PCH (H)**



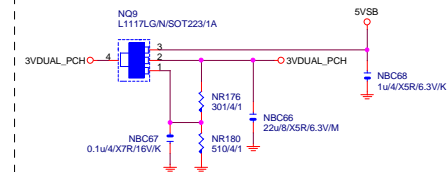
**PCH (I)**



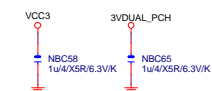
## VCC3\_DAC



## 3VDUAL\_PCH



SHT PWR



## CAP

( 3.3V ) ( X6 )

(1.05V) (x5)

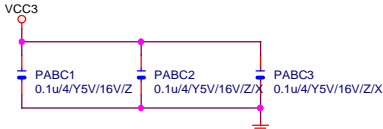
(1.05V)(x6)

$(1.05V)(x2) + (3.3V)(x2)$

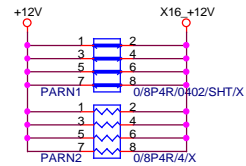
(1.05V) (x10)

VCC1\_5\_PCH

## PCIEX16 CAP



## PCIEX16 PROTECT SHT

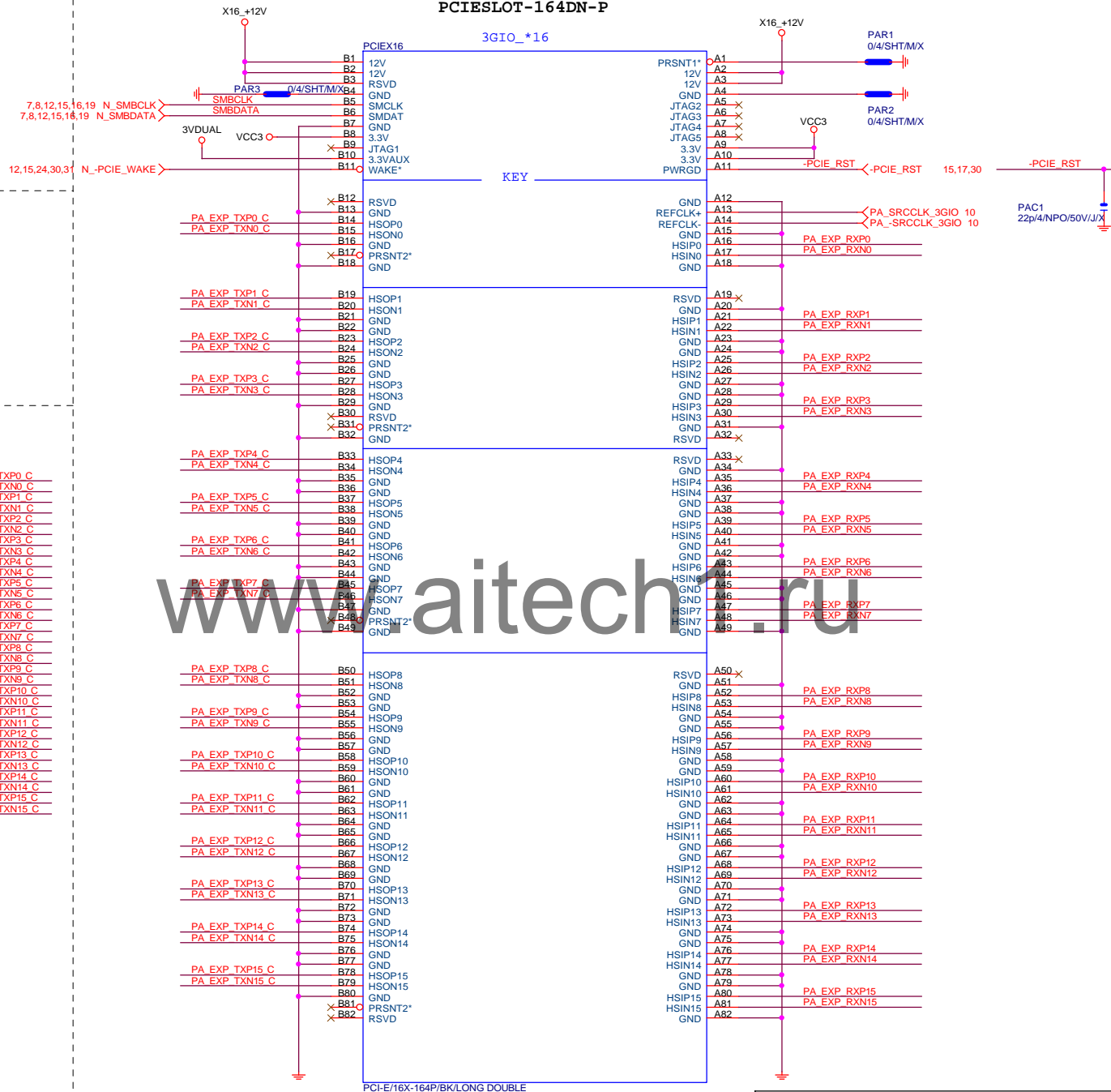


## PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22u4/X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22u4/X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22u4/X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22u4/X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10	PAC24	0.22u4/X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10	PAC25	0.22u4/X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11	PAC26	0.22u4/X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22u4/X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22u4/X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12	PAC29	0.22u4/X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13	PAC30	0.22u4/X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13	PAC31	0.22u4/X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14	PAC32	0.22u4/X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22u4/X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22u4/X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22u4/X5R/6.3V/K	PA EXP TXN15 C

PA EXP RXP0.[15] >>> PA\_EXP\_RXP[0..15] 4  
PA EXP RXN0.[15] >>> PA\_EXP\_RXN[0..15] 4  
PA EXP TXP0.[15] >>> PA\_EXP\_TXP[0..15] 4  
PA EXP TXN0.[15] >>> PA\_EXP\_TXN[0..15] 4

## PCIEX16 SLOT



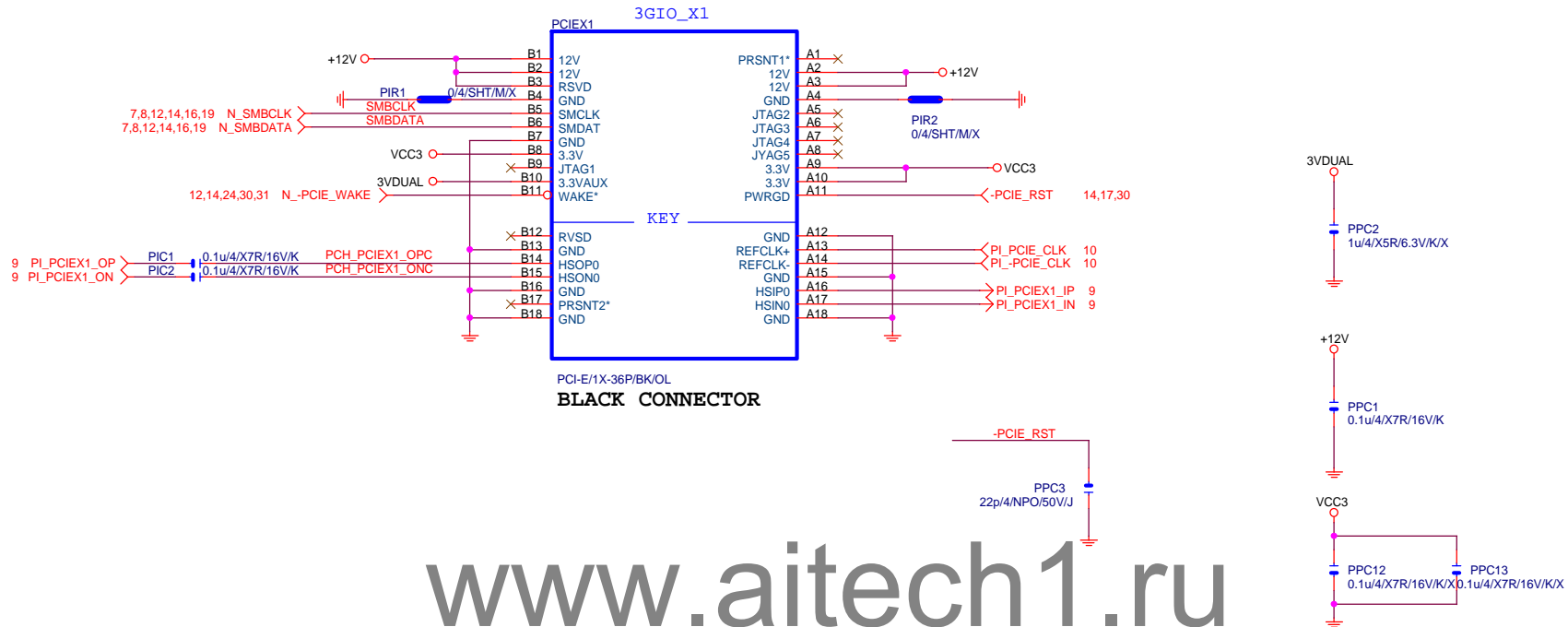
BLACK CONNECTOR

Gigabyte Technology

Title		
PCI EXPRESS * 16		
Size	Document Number	Rev
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# PCIEX1 SLOT

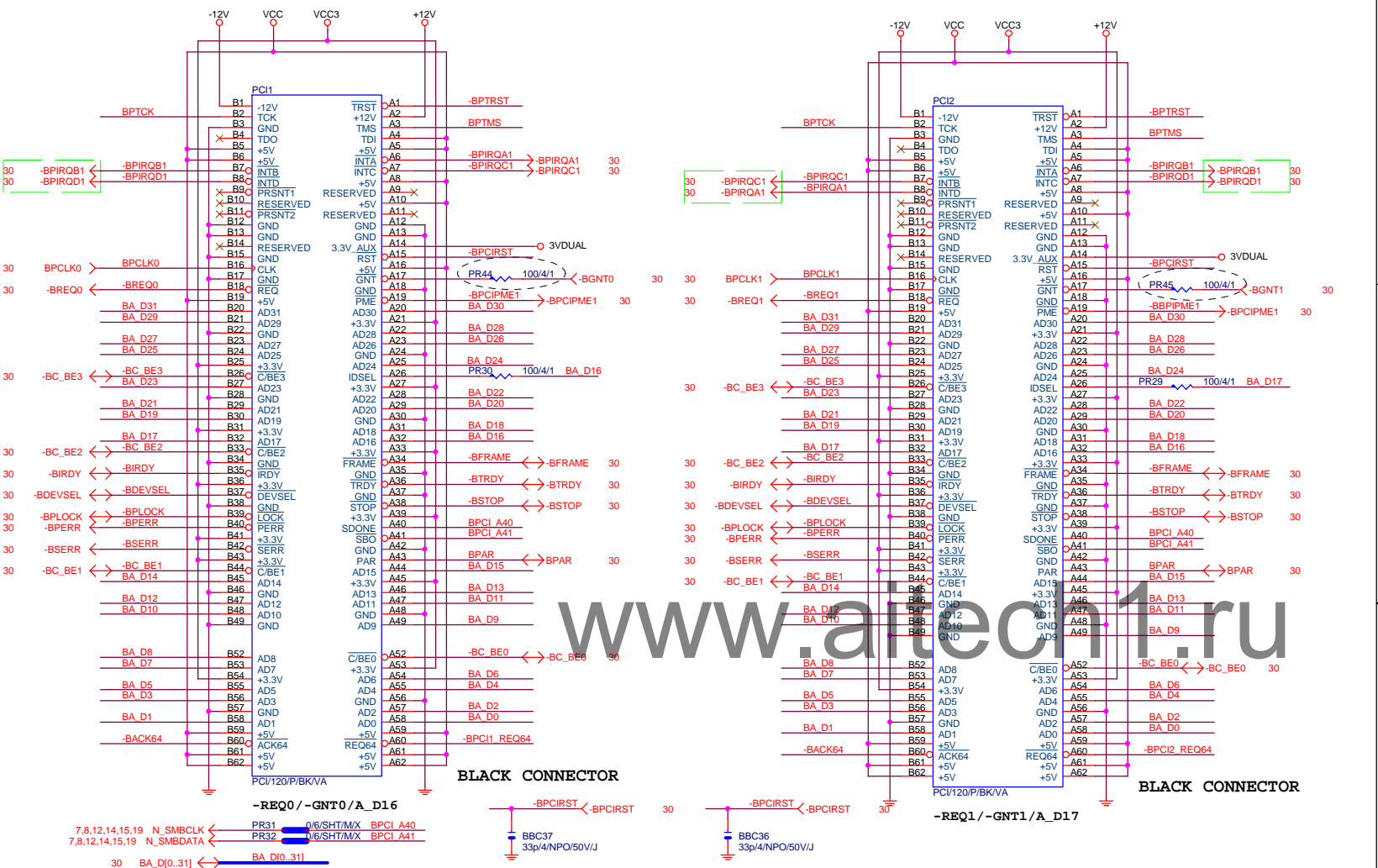


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Gigabyte Technology			
Title			
PCI EXPRESS X 1 PORT			
Size	Document Number	Rev	
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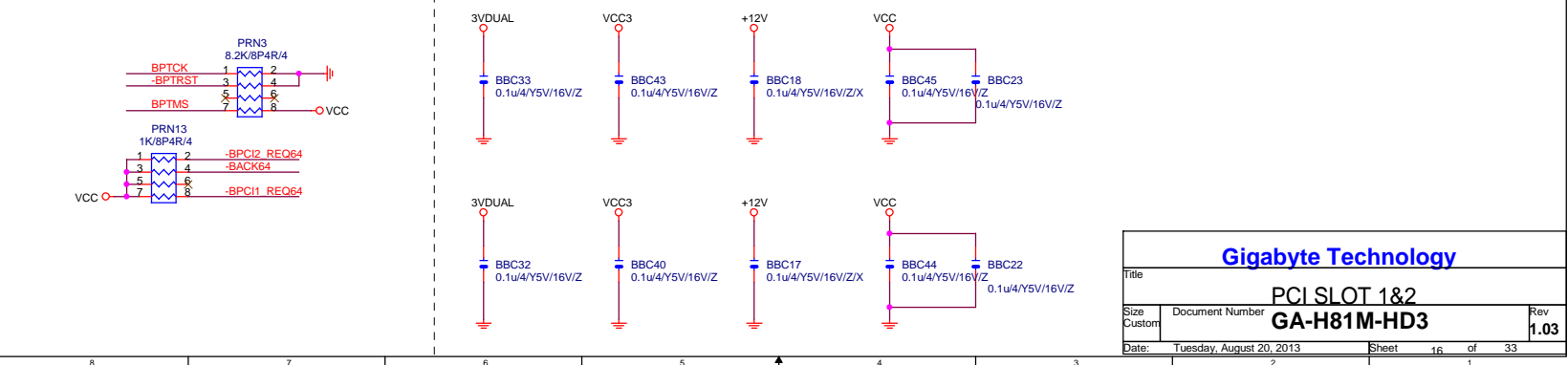
# PCI SLOT 1

# PCI SLOT 2



# PCI PU

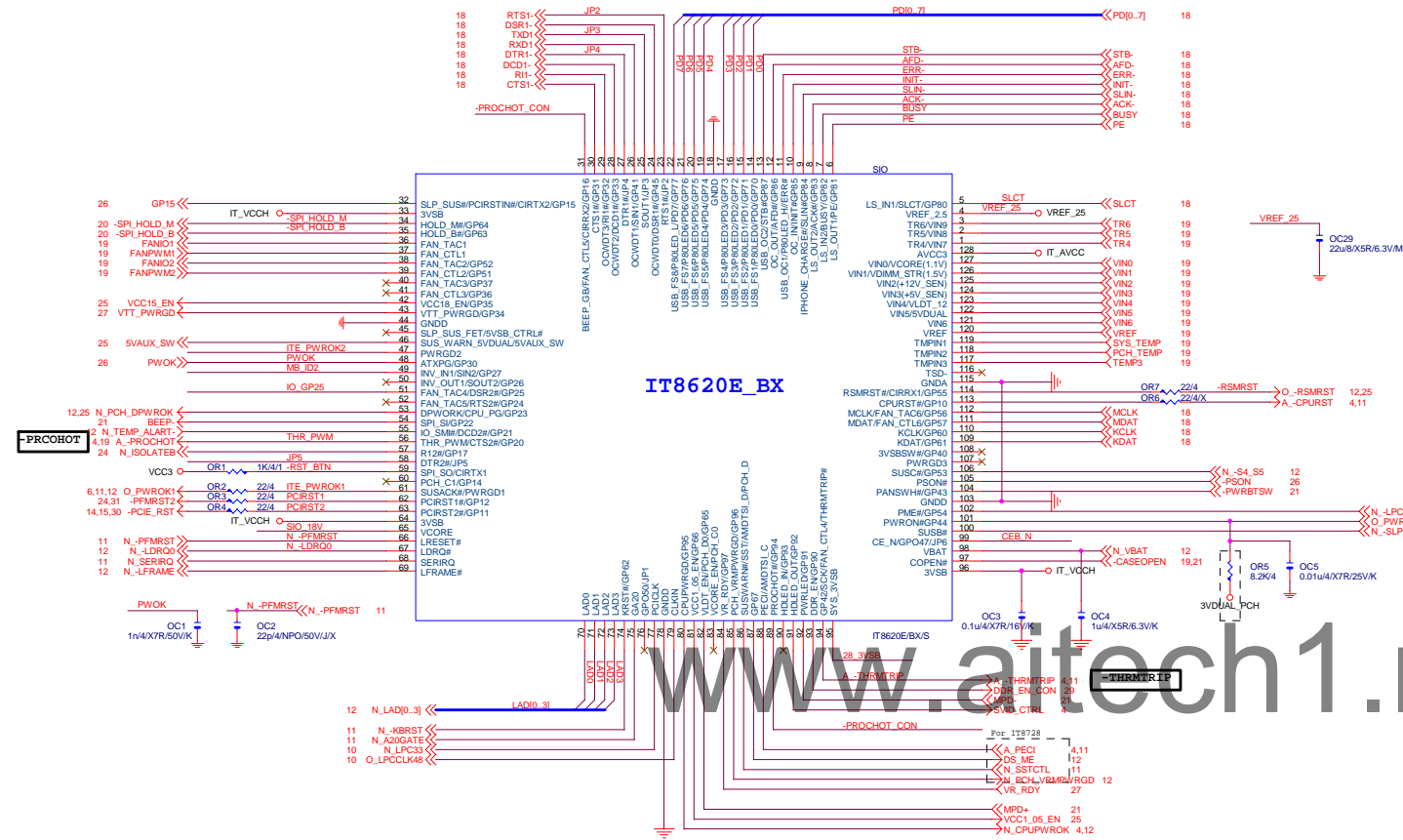
# PCI CAP



Gigabyte Technology			
Title			
PCI SLOT 1&2			
Size			
Custom			
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SIO IT8620



-PROCHOT

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

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VCC3

N\_PCH\_DPWRK

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A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

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VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

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VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

N\_TEMP\_ALARM

A\_PROCHOT

N\_ISOLATED

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A\_PROCHOT

N\_ISOLATED

VCC3

N\_PCH\_DPWRK

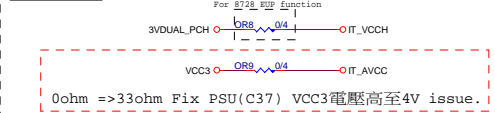
N\_TEMP\_ALARM

A\_PROCHOT

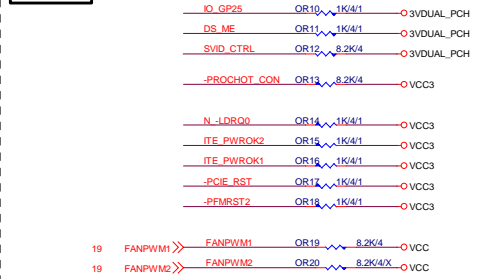
N\_ISOLATED

VCC3

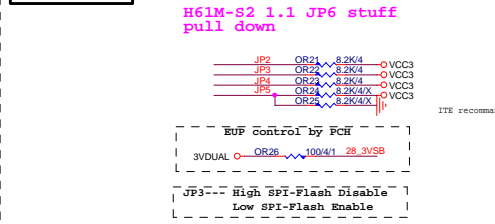
Power SHT



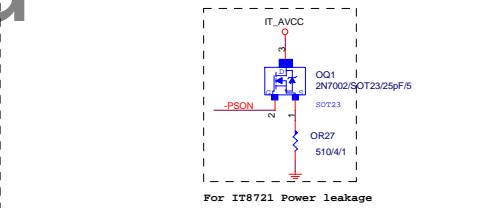
SIO PU



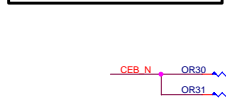
SIO STRAP



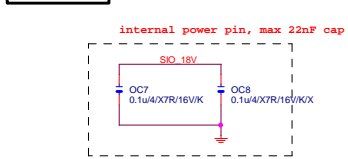
Power leakage



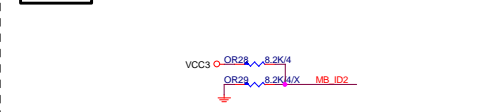
DUAL BIOS OPT STRAP



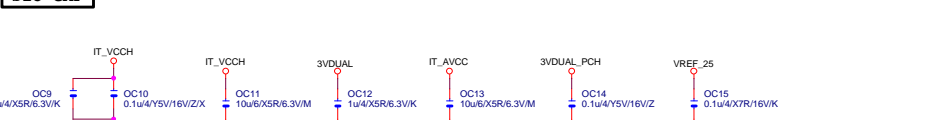
SIO\_18V

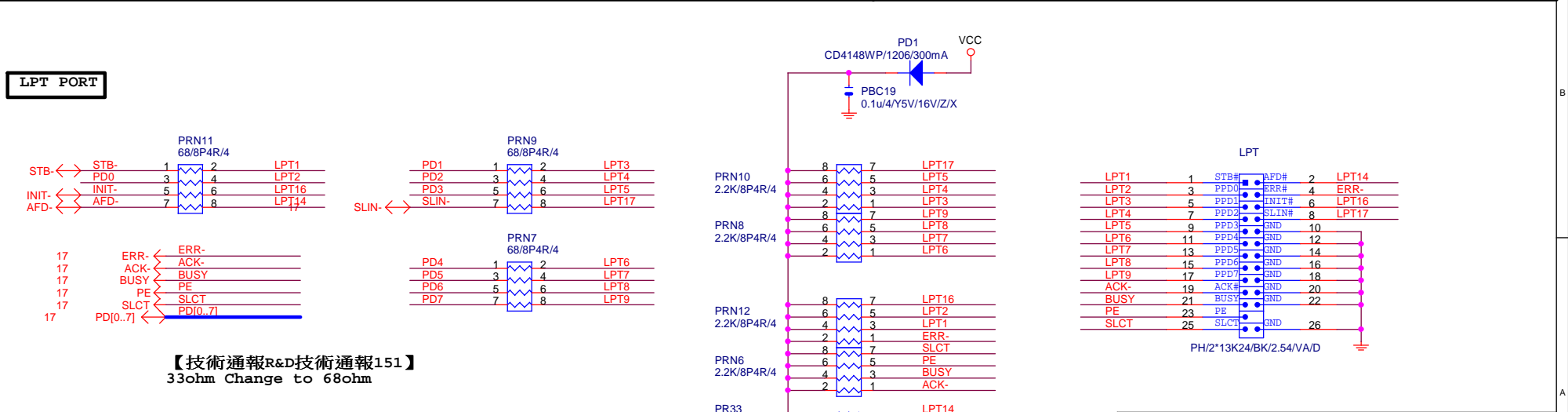
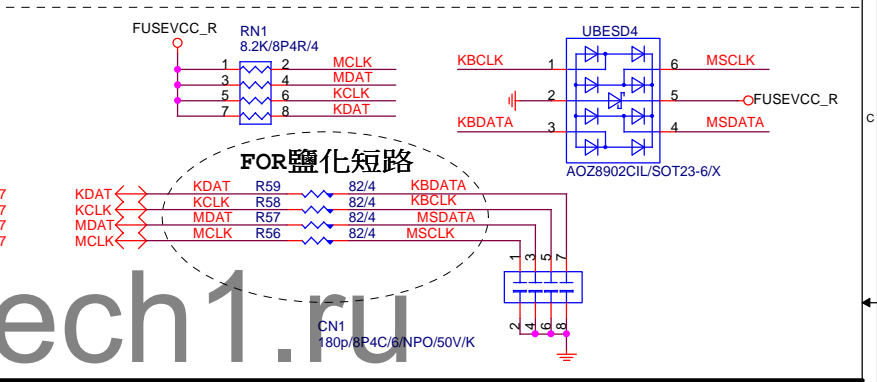
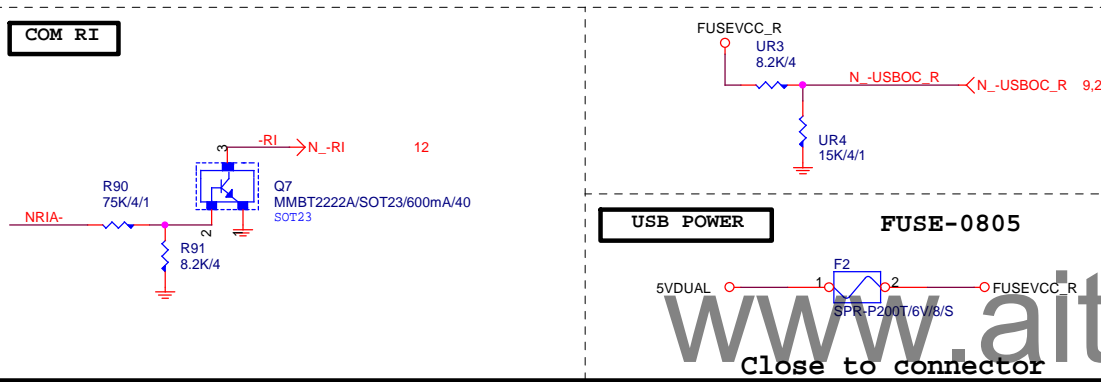
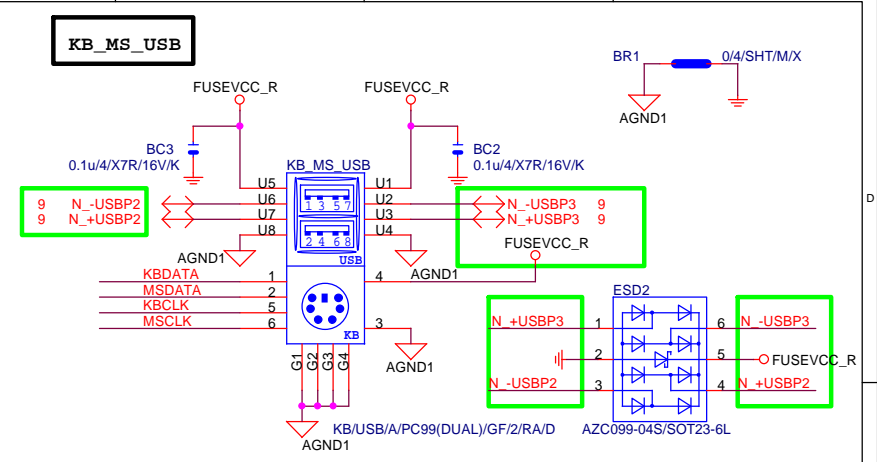
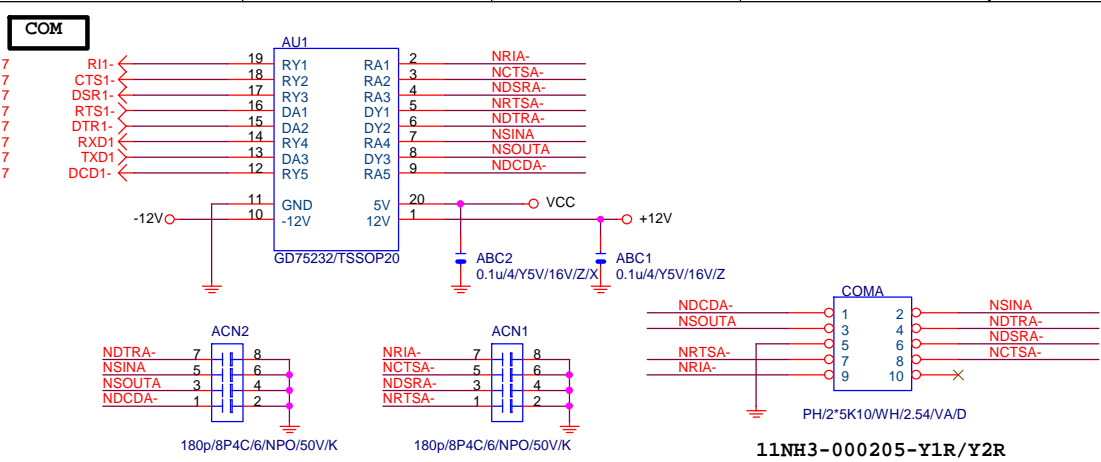


MB ID



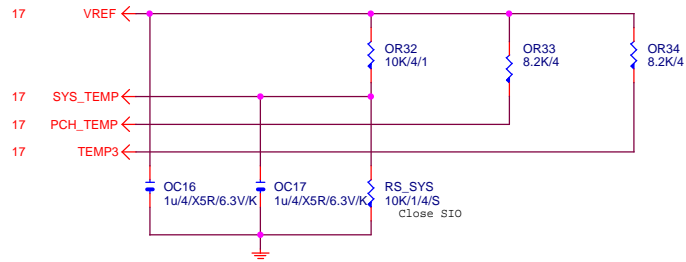
SIO CAP



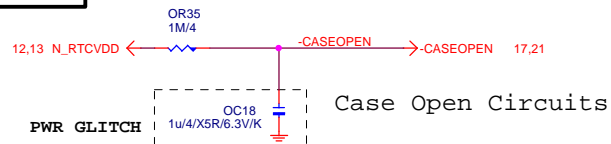


【技術通報R&D技術通報151】  
33ohm Change to 68ohm

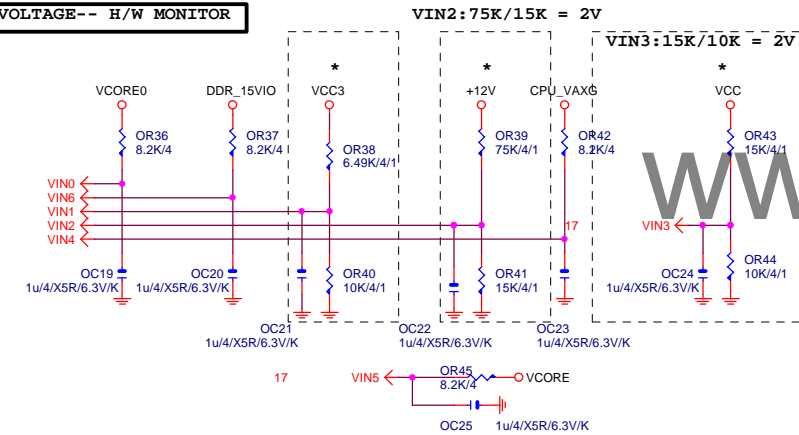
# TEMP H/W MONITOR



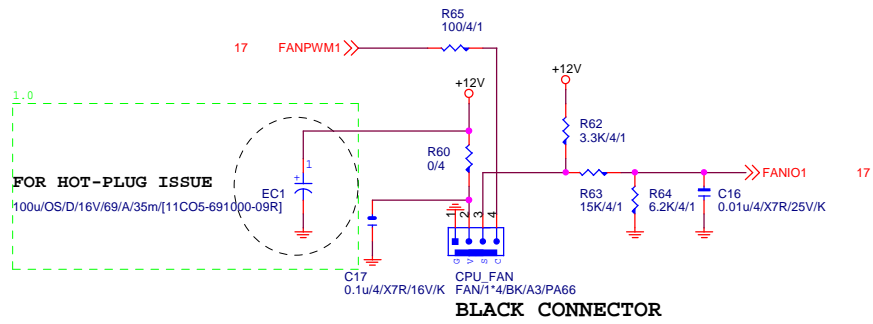
# CASE OPEN



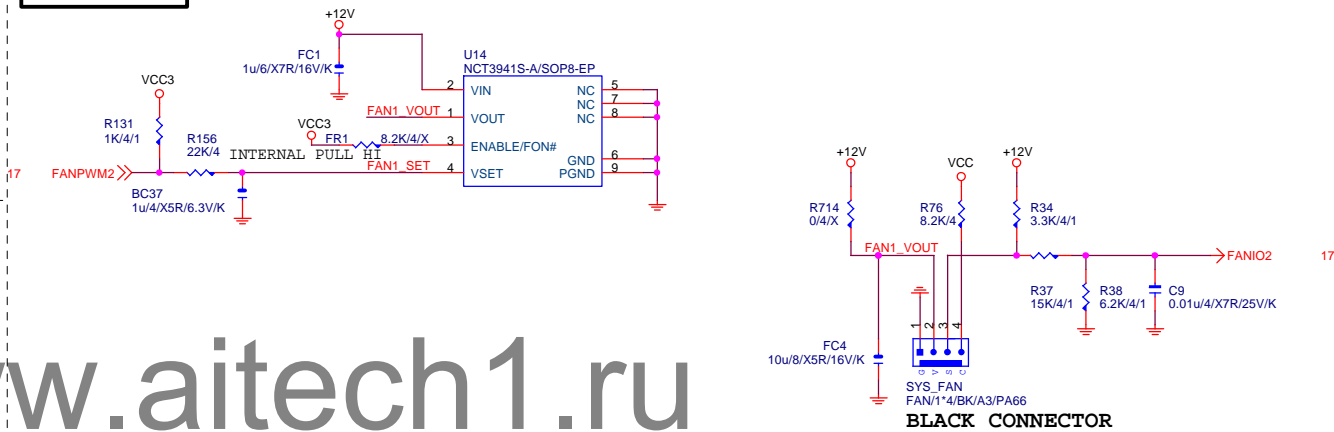
# VOLTAGE-- H/W MONITOR



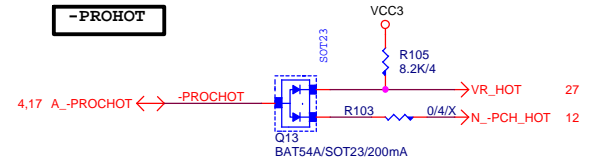
# CPU SMART FAN



# SYS SMART FAN

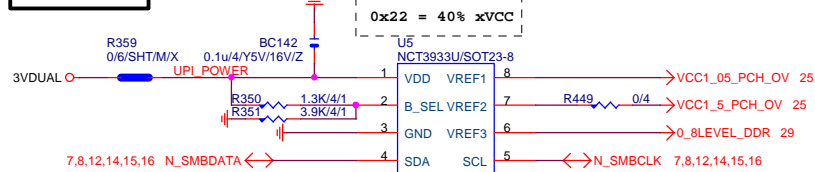


# -PROHOT



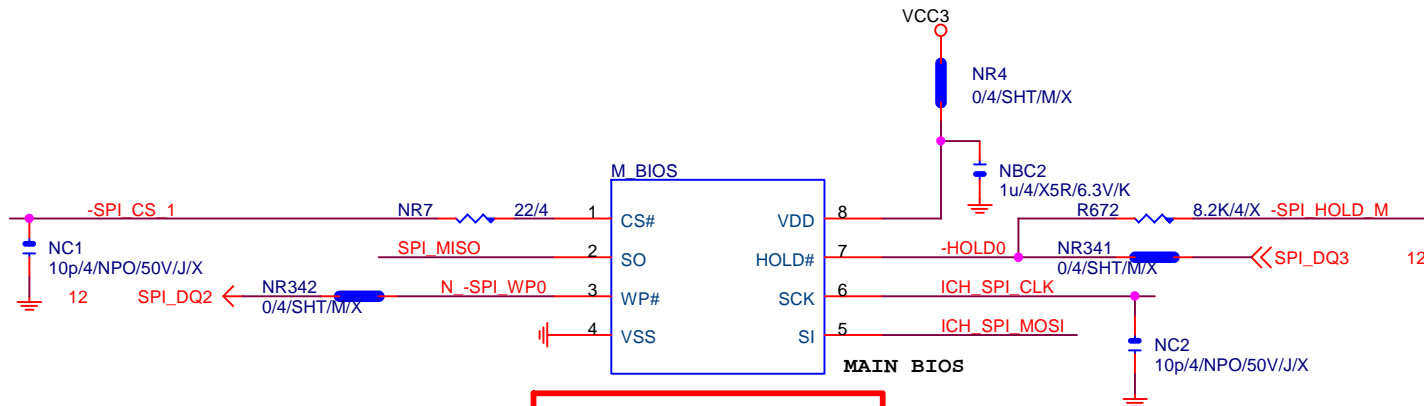
# 接pwm feedback pin

# OV NCT3933

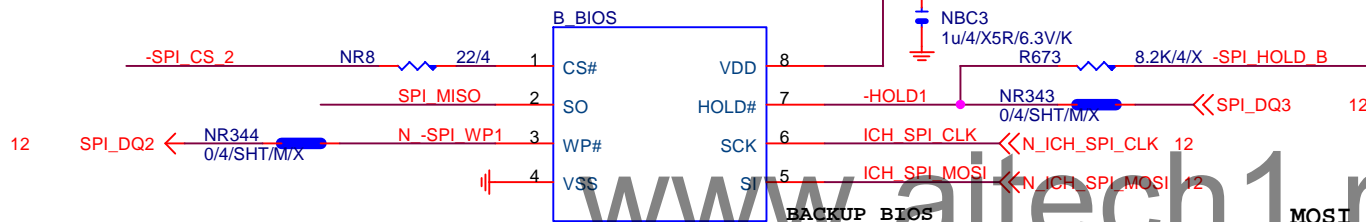


# Gigabyte Technology

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HWM,FAN CTRL.OV				
Size Custom	Document Number <b>GA-H81M-HD3</b>			
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64M/Q/SPI/SO8/S/[10HP4-112564-30R]

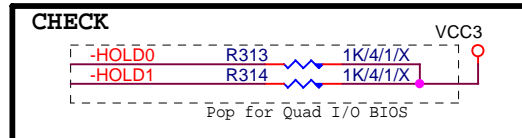
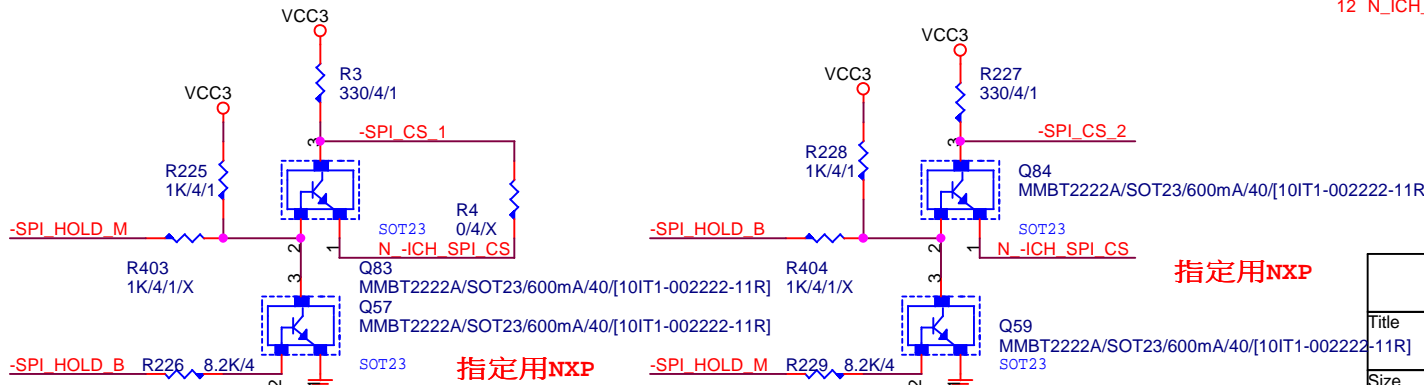
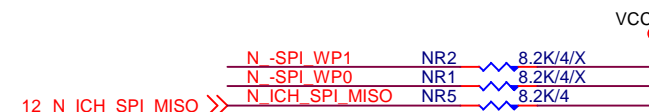
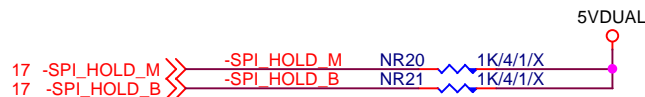
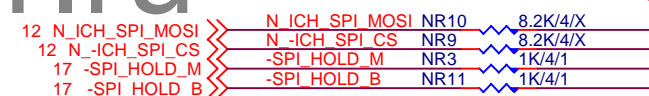


64M/Q/SPI/SO8/S/[10HP4-112564-30R]

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

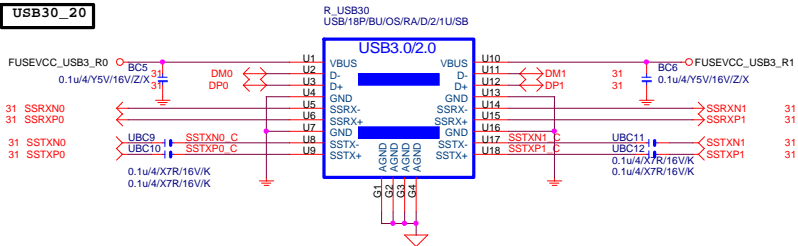
1 means floating  
0 means PD 1K

#### MOSI For DMI RX Termination Voltage

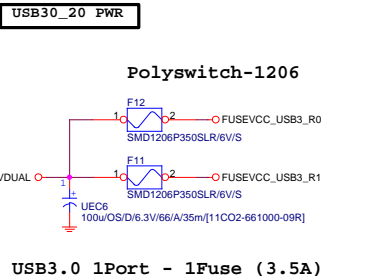


Gigabyte Technology		
DUAL BIOS		
Title	Document Number	Rev
	<b>GA-H81M-HD3</b>	<b>1.03</b>
Date:	Tuesday, August 20, 2013	Sheet 20 of 33

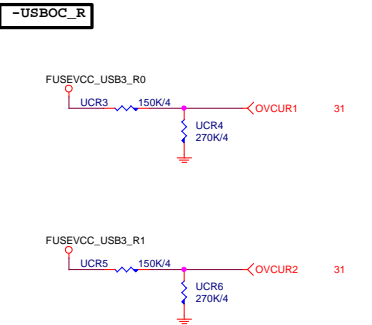
# USB30\_20



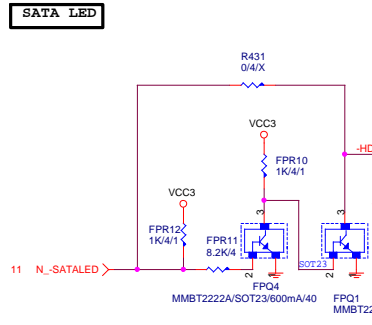
# USB30\_20 PWR



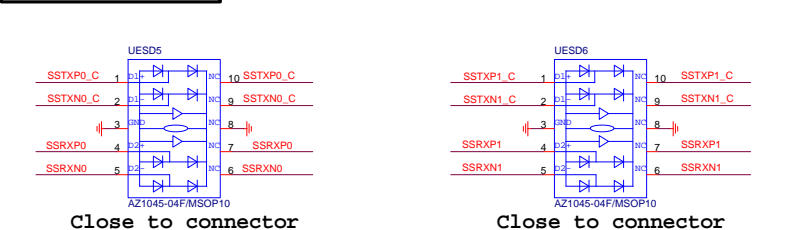
# -USB0C\_R



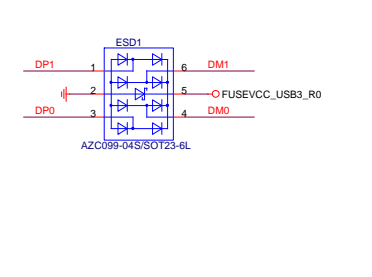
# SATA LED



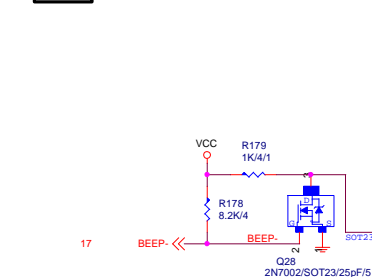
# USB30\_20 ESD PROTECT



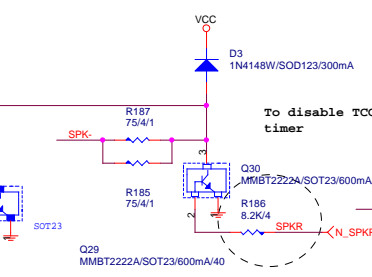
# SPKR



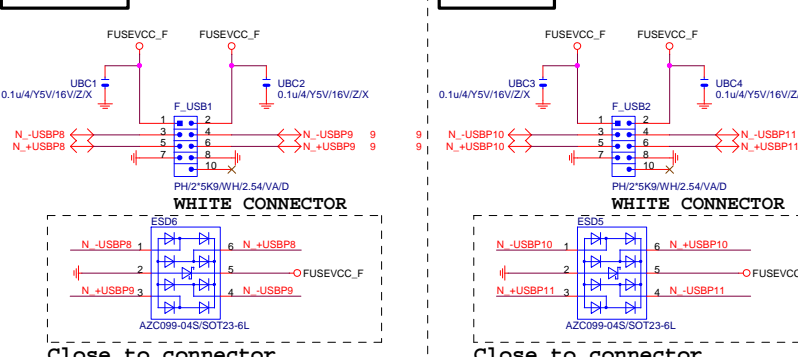
# FRONT USB1



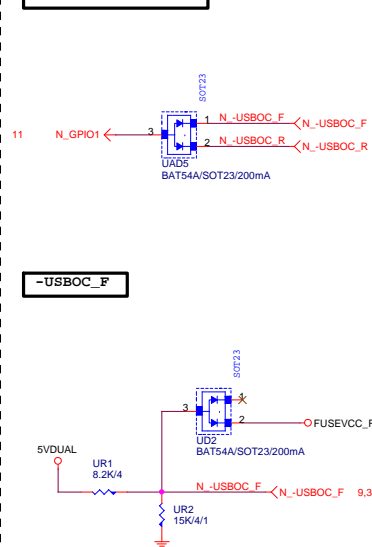
# FRONT USB2



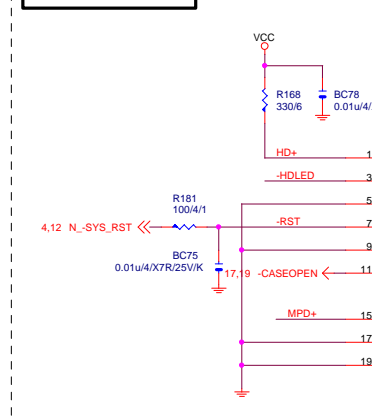
# USB POWER PROTECT



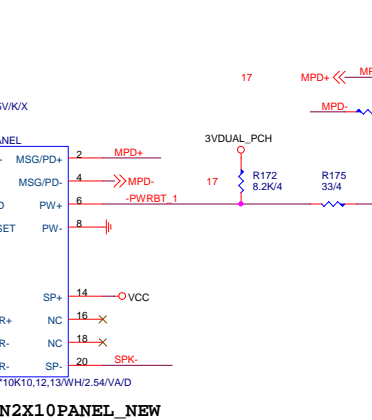
# -INUSOC\_F



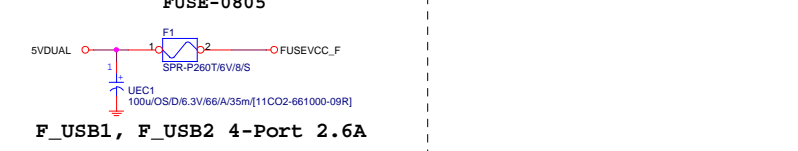
# INTEL FRONT PANEL



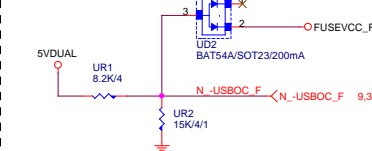
# PIN2X10PANEL\_NEW



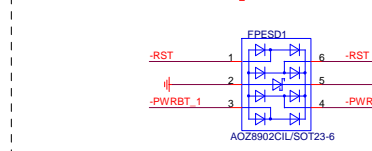
# FUSE-0805



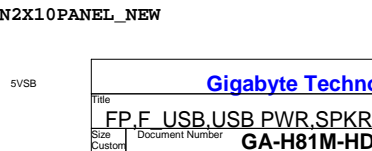
# FUSE-0805



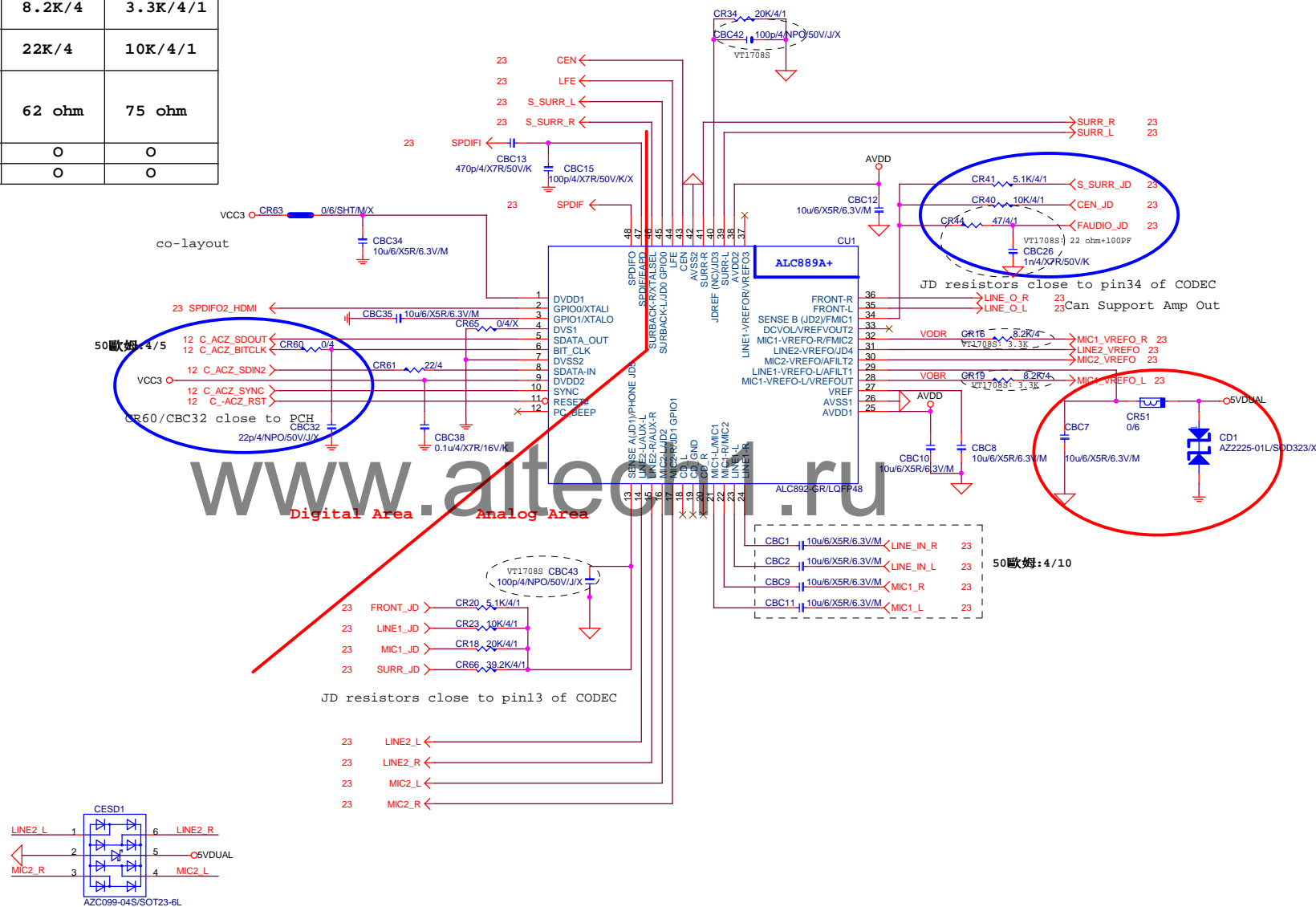
# FUSE-0805



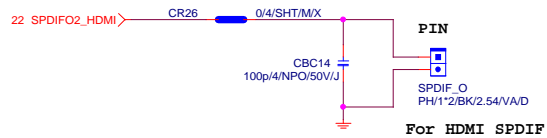
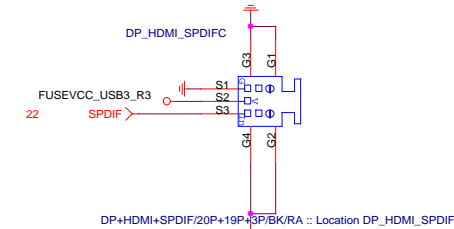
# FUSE-0805



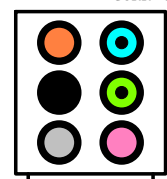
	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7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



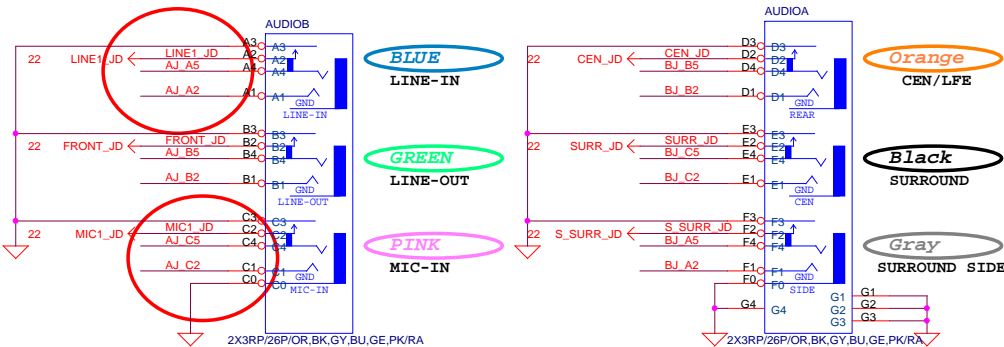
CR49 0/6/SHT/M/X → Close F\_AUDIO  
CR50 0/6/SHT/M/X → Close Codec  
CR21 2.2/6 → Audio jack <--> USB\_LAN  
CR24 0/6/X → Under Audio jack



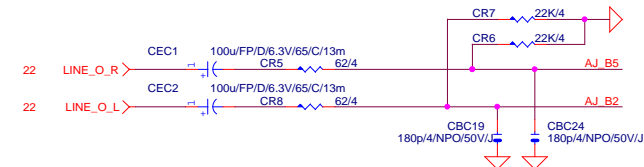
#### AZALIA JACK BTX AZALIA CONNECTOR



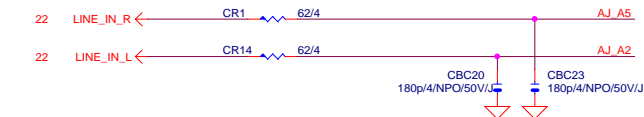
11NR6-403007-21R



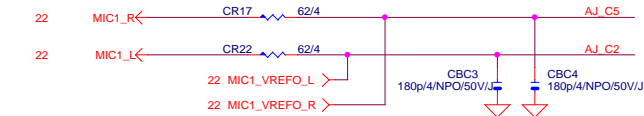
#### LINE-OUT



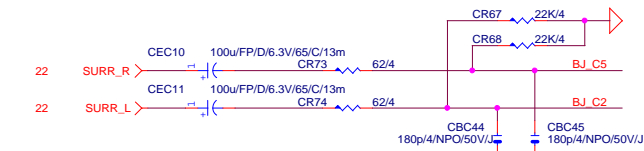
#### LINE-IN



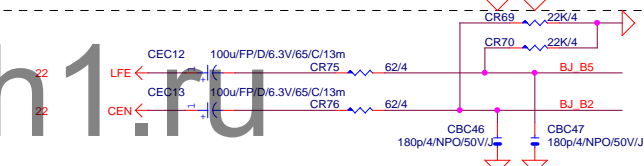
#### MIC-IN



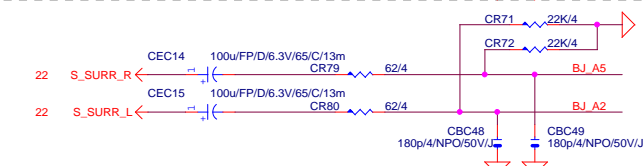
#### SURROUND



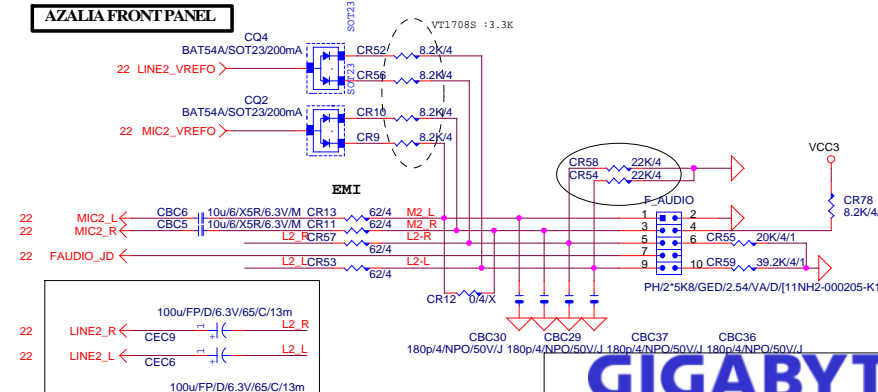
#### CEN/LFE



#### SURRBACK

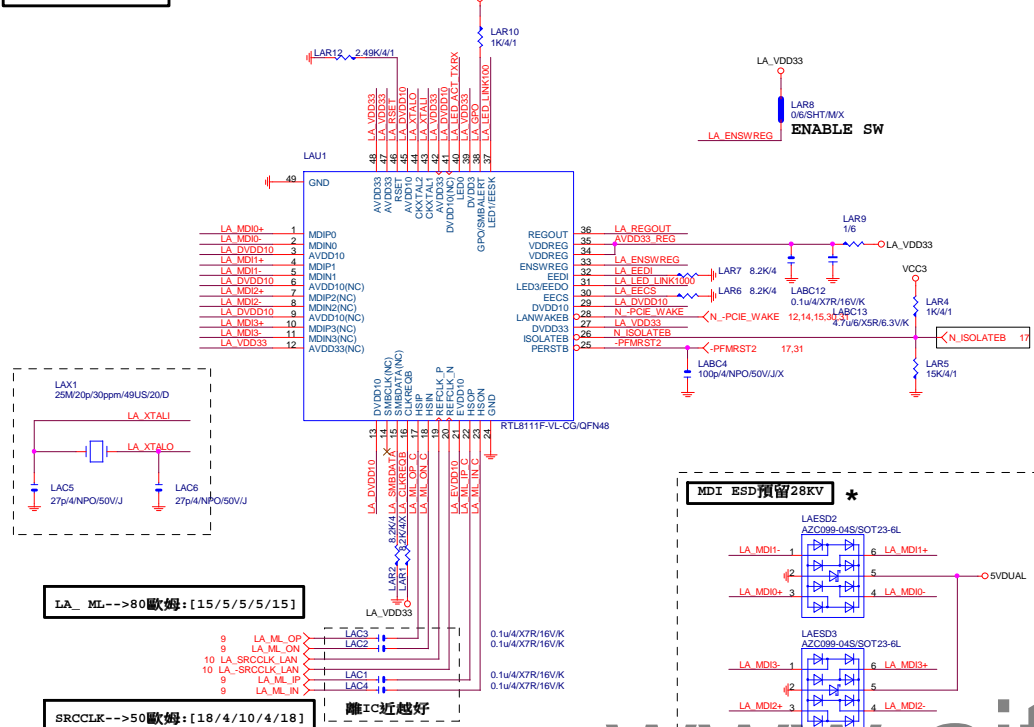


#### AZALIA FRONT PANEL

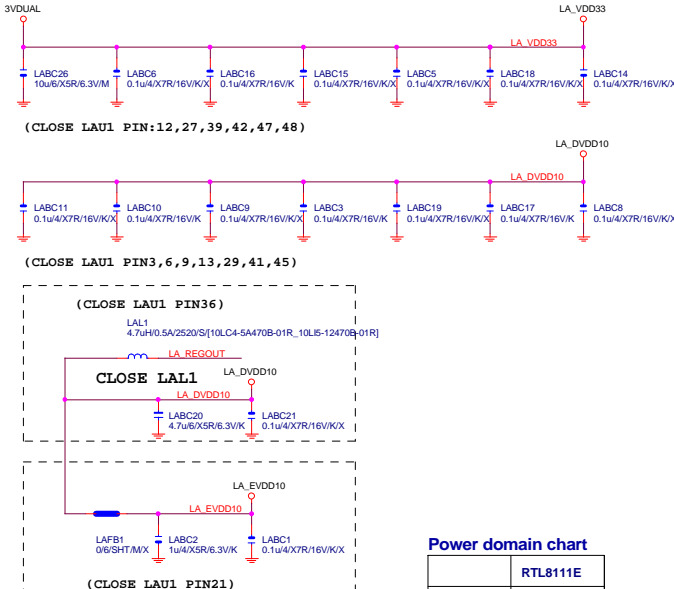


GIGABYTE™			
Title			
AUDIO JACK			
Size			
Custom			
Document Number			
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1.03			
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# LAN:RTL8111F/VB/VL



# LAN POWER

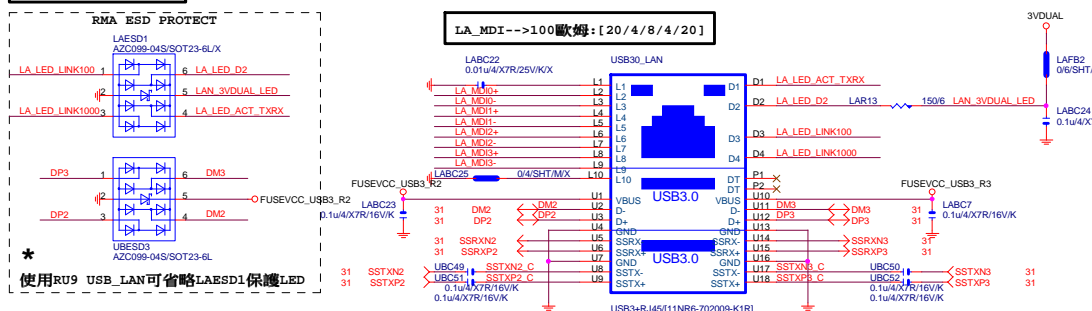


Power domain chart

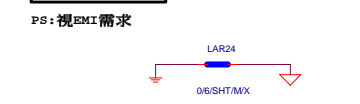
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V

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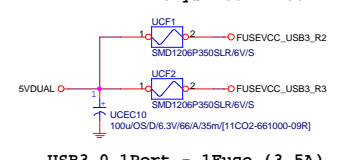
# USB\_LAN CONNECTOR



# EMI SHORT PAD

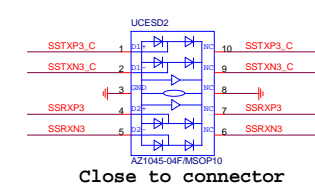


# Polyswitch-1206



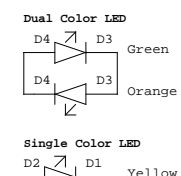
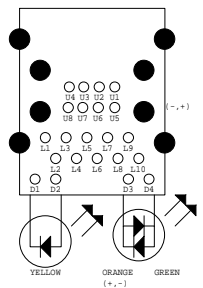
USB3.0 1Port - 1Fuse (3.5A)

# Close to connector



# Gigabyte Technology

Title	Realtek RTL8111G		
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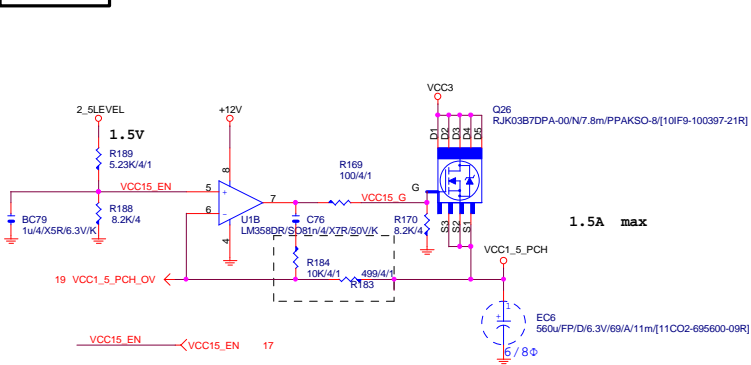
注意:USB PORT(目前:暫代6,7PORT)  
USB-->90歐姆:[15/4.5/7.5/4.5/15]

# BOM NOTICE

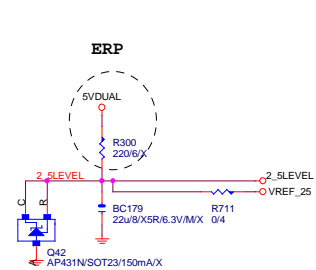
料號	規格	廠商
11NR6-702009-96R 1G LAN (12core)	UDE(RU9 ESD+)	
[LED獨立走線,可省略外加AZC099料件LAESD1]		
1. 9KV ESD BOM:		
USB_LAN (RU9):11NR6-702009-96R		
2. 28KV ESD BOM:		
USB_LAN (RU9):11NR6-702009-96R		
LAESD2,LAESD3:上件AZC398-04S		



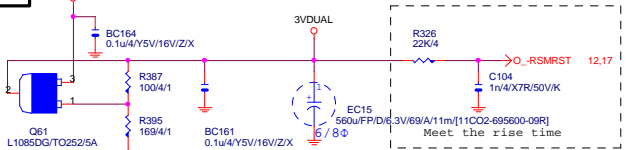
## VCC1\_5\_PCH



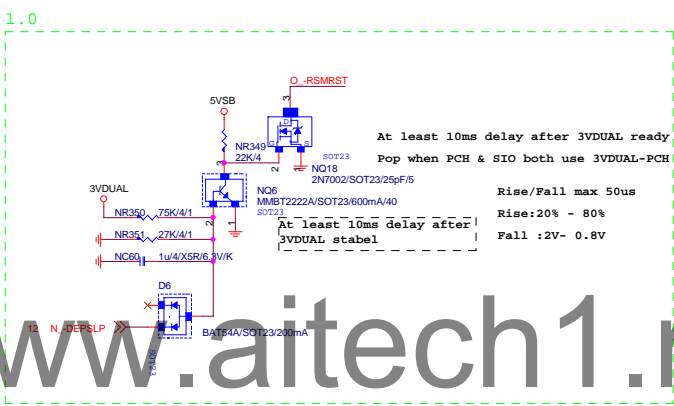
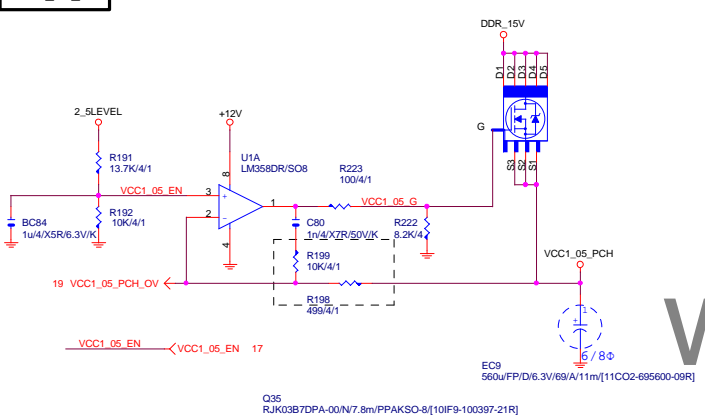
## 2\_5LEVEL



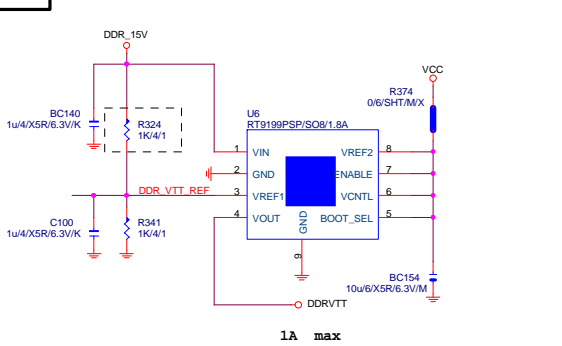
## 3VDUAL



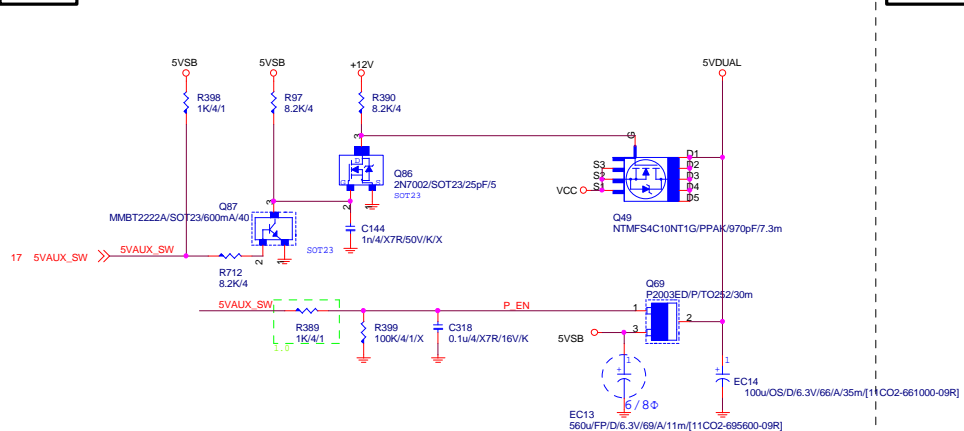
## VCC1\_05\_PCH



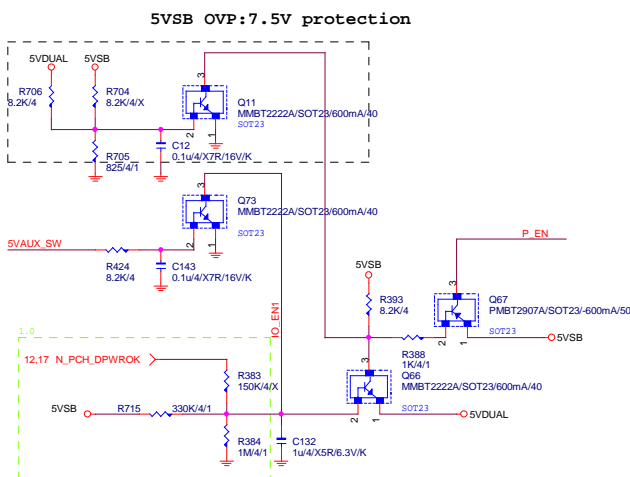
## DDRVTT



## 5VDUAL

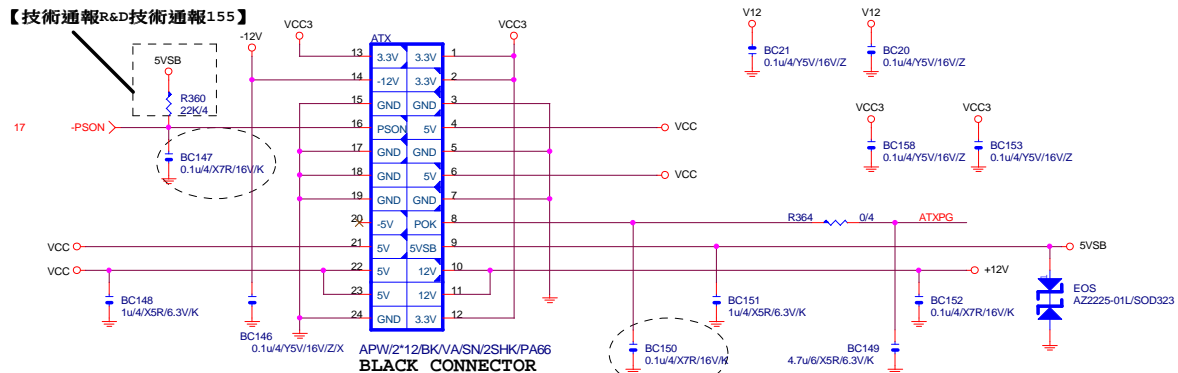


## 5VDUAL SHORT PROTECT

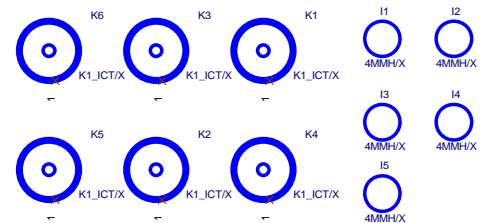
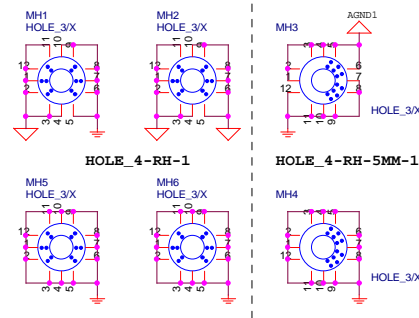
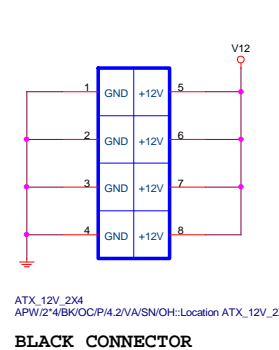


# ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】



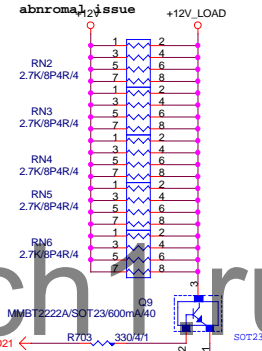
# ATXX4 POWER CONNECTOR



To prevent the 5VSB under loading when boot

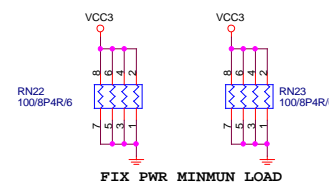
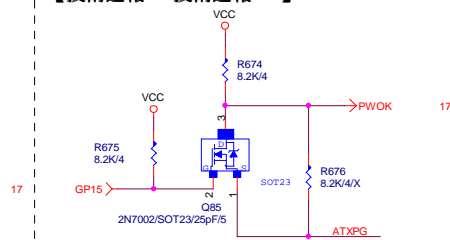
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



# PWOK PATCH

【技術通報R&D技術通報154】



FIX PWR MINMUN LOAD

Gigabyte Technology

ATX CONNECTOR

GA-H81M-HD3

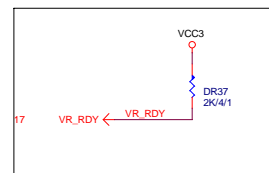
Rev 1.03

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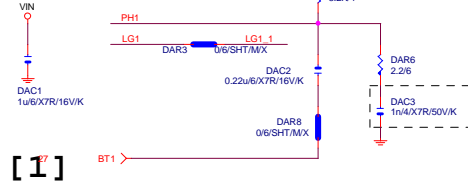
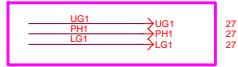
R_PROG1 (Kohm)	3-Phase Iccmax(A)
24.9	105
28.7	114
34.0	129
42.2	144

R_PROG2 (Kohm)	Fsw(KHz)	VBOOT
64.9	315	1.75
73.2	315	1.70
80.6	315	1.65
90.9	315	0

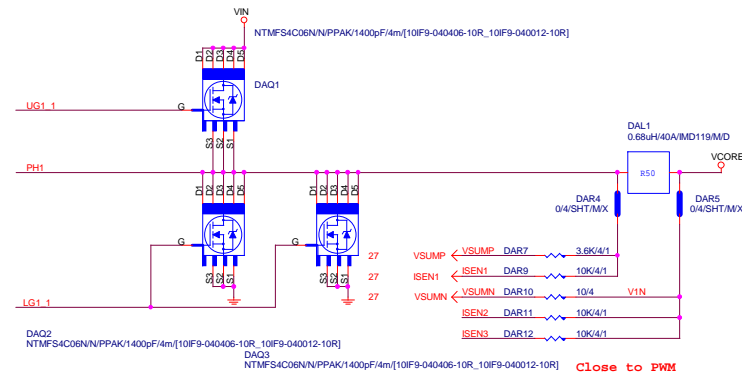
R_PROG3 (Kohm)	Fast Slew Rate (mV/us)
3.24	12
5.76	24
9.31	40
13.3	45



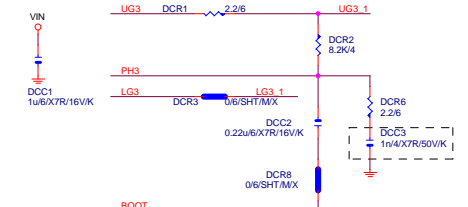
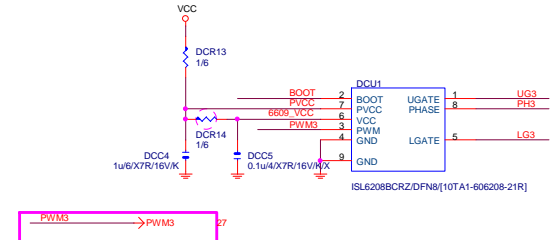
# PHASE 1



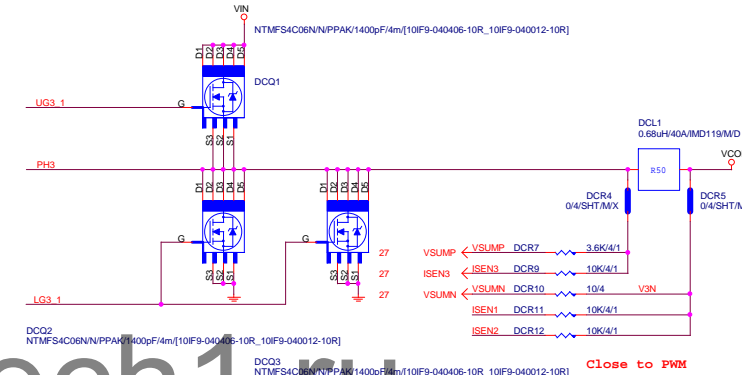
[1]



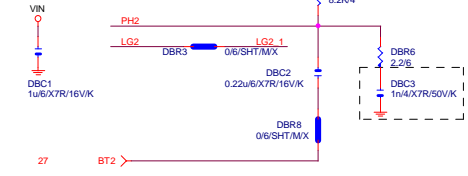
# PHASE 3



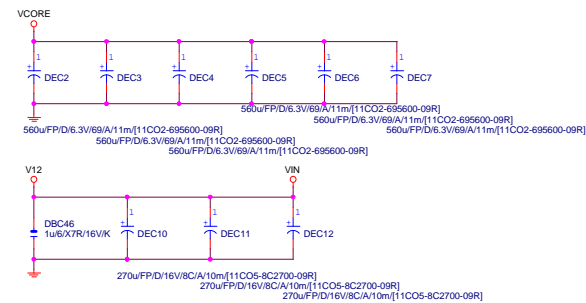
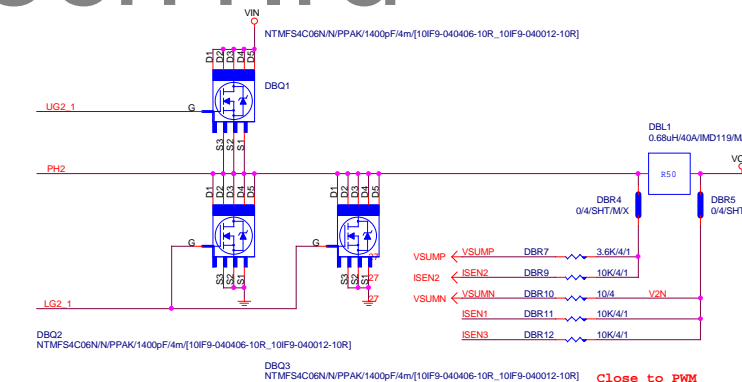
[3]



# PHASE 2

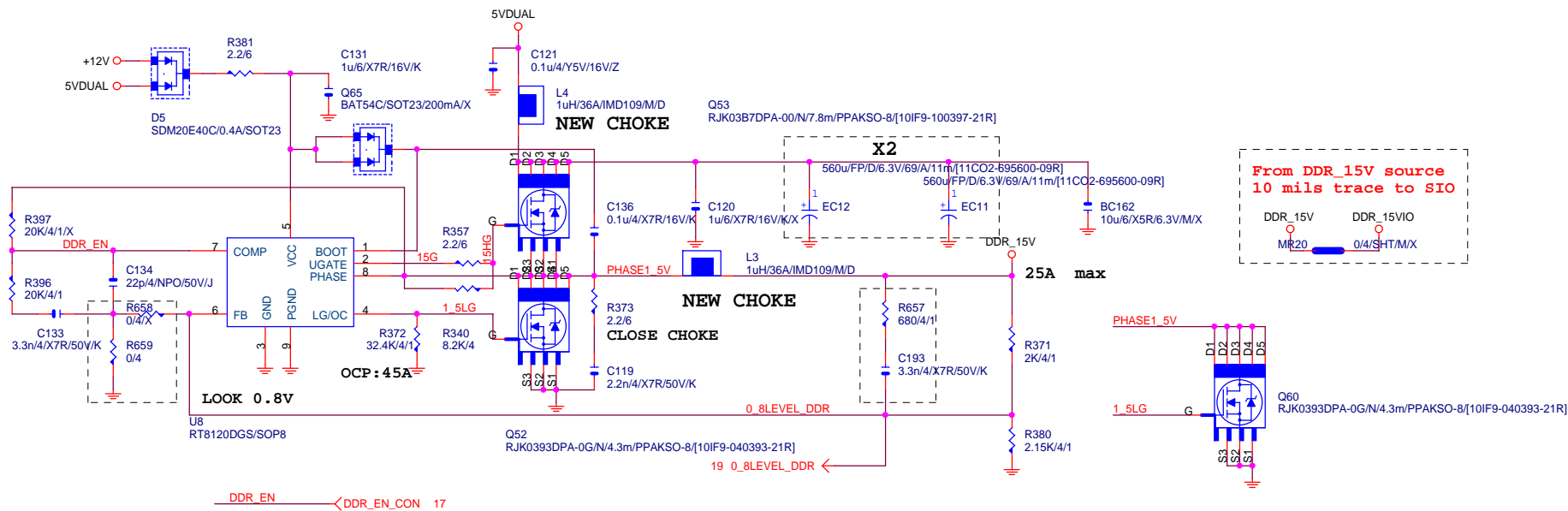


[2]



Gigabyte Technology			
CPU CORE VR-2			
Size	Document Number	GA-H81M-HD3	
Custom		Rev 1.03	
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DDR15V



PWR SEQ

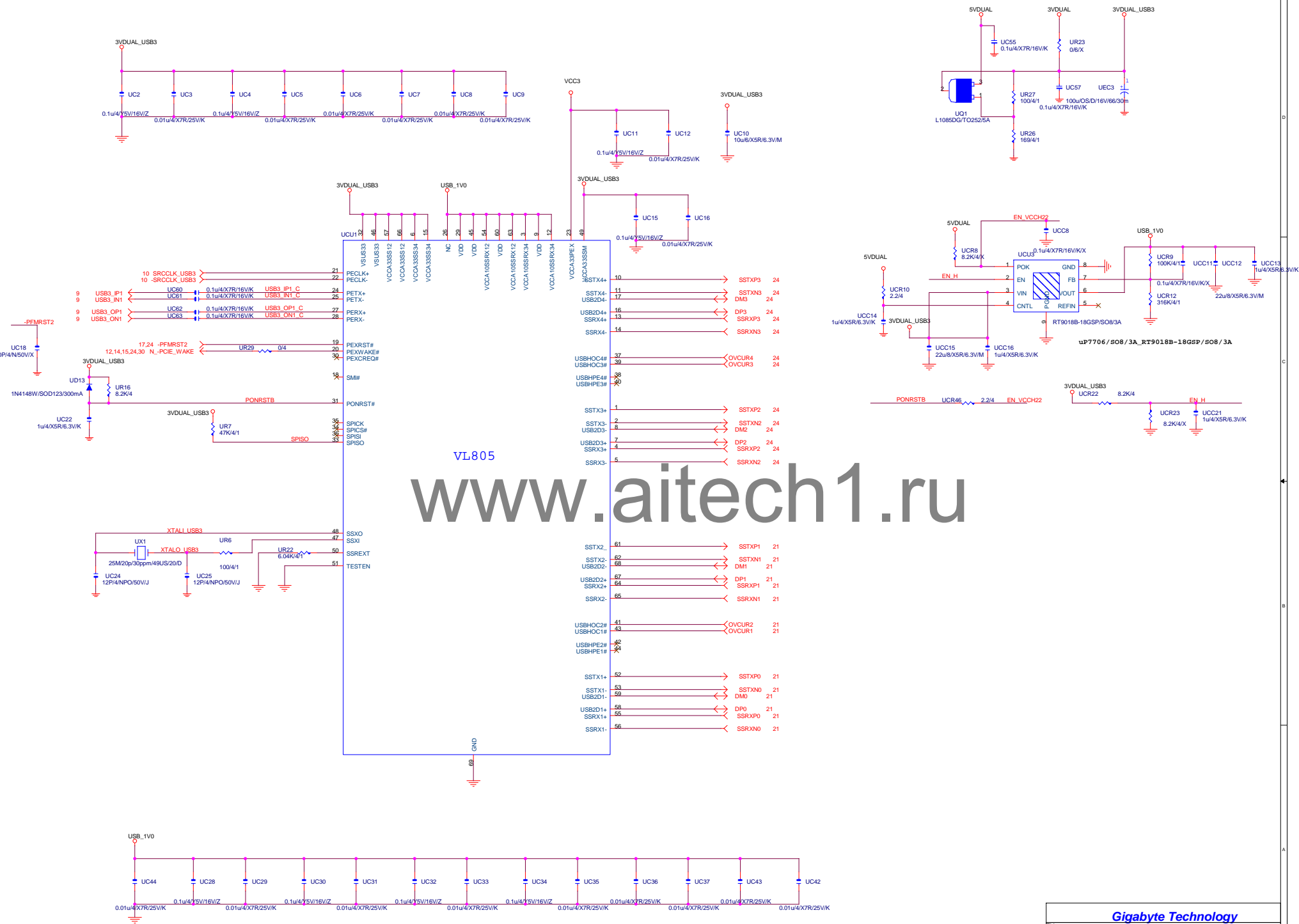
VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1  
IRMS=11.45A  
560uF/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A  
Coefficient=1.7(85°C), 1(105°C)  
VIN Ripple current=4.7X1.7=7.99A(85°C)  
-->故固態電容須2X7.99=15.98>11.45A

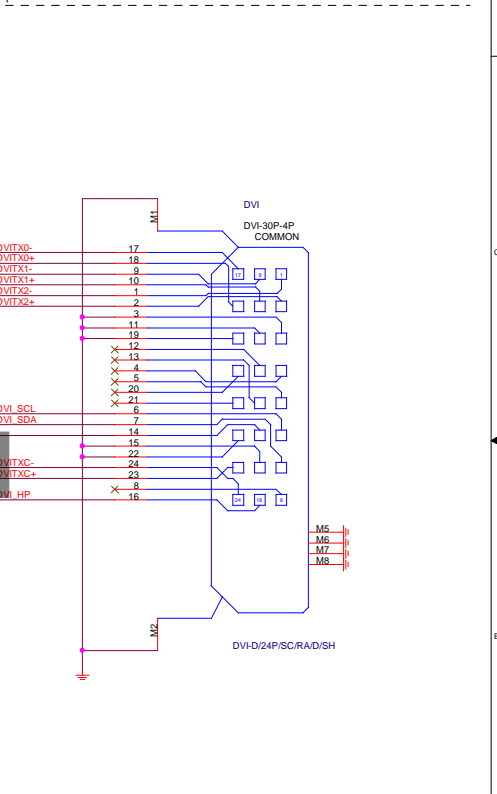
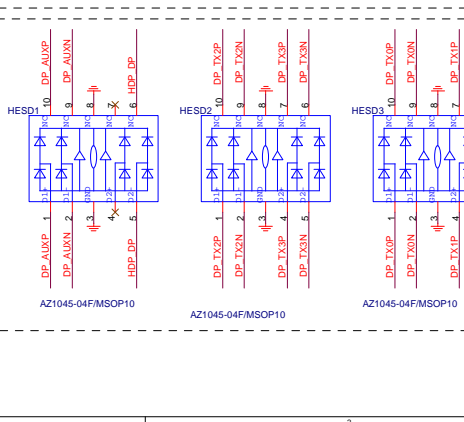
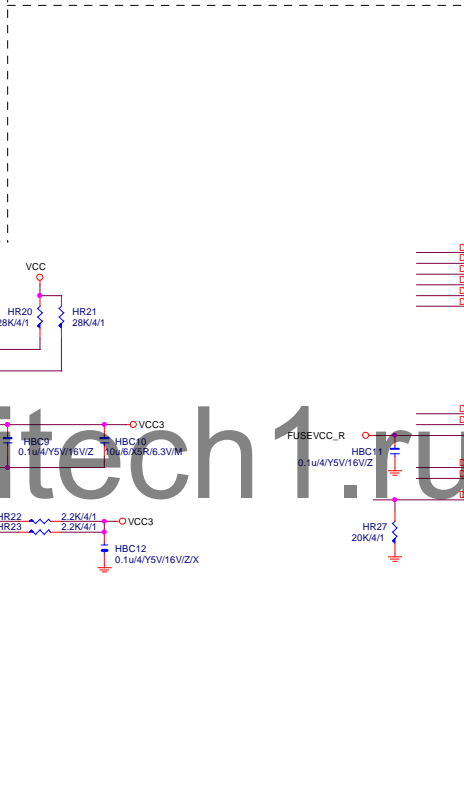
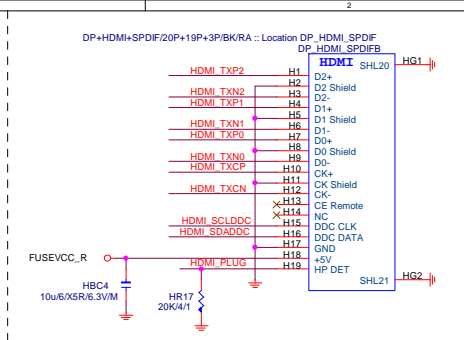
```
Rocset=(Iocp*Lgate,rdson)/Iocset
Rocset=(45A*6.7mOhm)/10uA = 30K
Iocset=10uA
```

				<b><i>Gigabyte Technology</i></b>			
Title							
RT8120 DDR POWER							
Size	Document Number						Rev
Custom	<b>GA-H81M-HD3</b>						<b>1.03</b>
Date:	Tuesday, August 20, 2013				Sheet	29	of 33



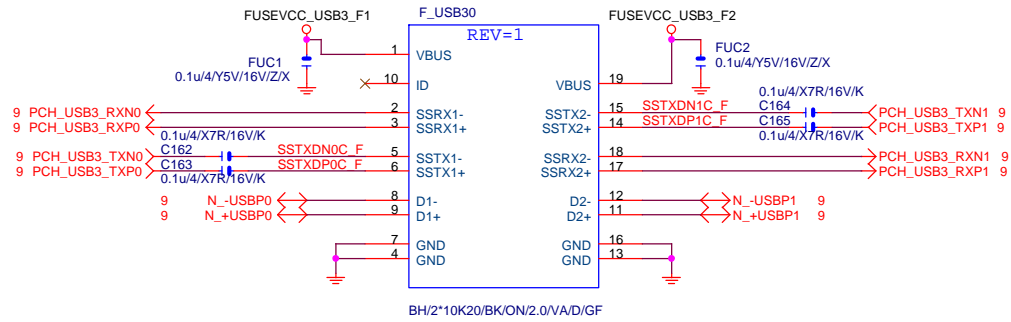
VL805  
www.aitech1.ru



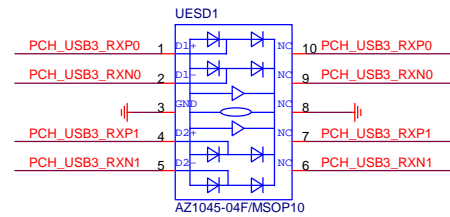




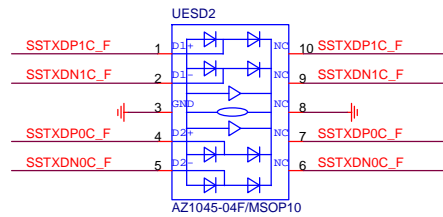
**F\_USB30**



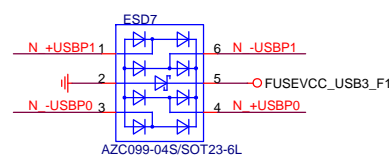
BLACK CONNECTOR



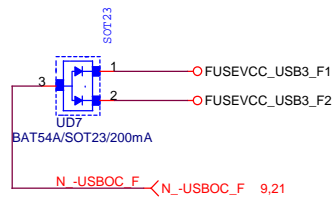
Close to connector



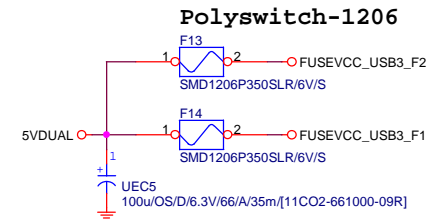
Close to connector



Close to connector



```
F_USB30 PWR
```



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