

Model Name: GA-B85M-D3V

Revision 2.01

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*16 SLOT
15	PCI EXPRESS X1 *2 SLOT
16	PCI SLOT
17	ITE 8620 LPC IO
18	COM,KB_MS_USB,USB30_20
19	HWM,FAN CTRL,OV,-PROCHOT
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	Realtek ALC887-VD2
23	REAR AUDIO JACK
24	REALTEK RTL8111F
25	DISCRETE POWER
26	ATX
27	VCORE ISL95820_1

SHEET

TITLE

28	VCORE ISL95820_2
29	RT8120_DDR POWER
30	LPT, M3 POWER
31	DVI
32	IT8892E

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Cover Sheet

Size Custom	Document Number GA-B85M-D3V	Rev 2.01
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Circuit or PCB layout change

2013/11/25

[illegible]

BLOCK DIAGRAM

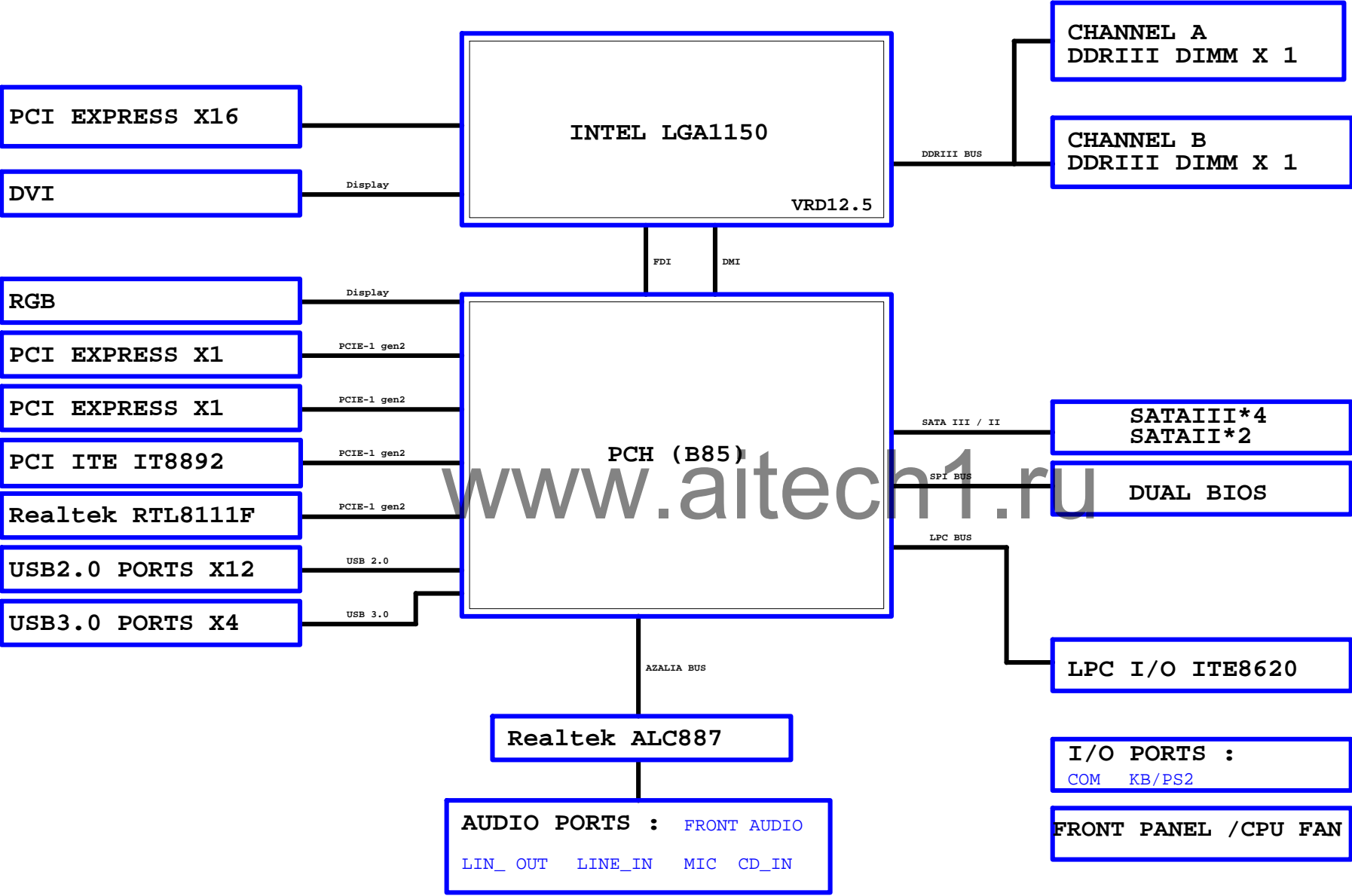


Figure 10-10: Pinmux and I/O Connections for the Haswell PCH (continued)

Diagram illustrating the pin connections for the LGA1150D package, showing connections to the board (left) and the board (right).

Left Side (Board Connections):

- [9] FDI_CS<N> → FDI_CS<N> D16
- [9] FDI_INT → FDI_INT D18
- VCCIOA_L_O → WR23 24.9/4/1
- [10] N_DP_CLK → U5
- [10] N_DP_CLK → U6
- ✗ E16
- ✗ K11
- ✗ J12
- FDI_TXN0 B14
- FDI_TXP0 A14
- FDI_TXN1 C13
- FDI_TXP1 B13

Center (LGA1150D Package Pins):

- FDI_CS<N>
- FDI_INT
- DP_RCOMP
- SSC_DPCLKN
- SSC_DPCLKP
- ✗ EDP_DISP_UTIL
- ✗ RSVD_TP
- ✗ RSVD_TP
- FDI_EDP_TXN0
- FDI_EDP_TXP0
- FDI_EDP_TXN1
- FDI_EDP_TXP1
- FDI_TXN0
- FDI_TXN1
- FDI_TXN2
- FDI_TXN3
- FDI_TXP0
- FDI_TXP1
- FDI_TXP2
- FDI_TXP3
- FDI_TXN0
- FDI_TXN1
- FDI_TXN2
- FDI_TXN3

Right Side (Board Connections):

- E17 → DVI_TX2 [31]
- E17 → DVI_TX2 [31]
- F18 → DVI_TX1 [31]
- G18 → DVI_TX1 [31]
- G19 → DVI_TX0 [31]
- H19 → DVI_TX0 [31]
- F20 → DVI_TXC [31]
- G20 → DVI_TXC [31]
- D19 ✗
- E19 ✗
- C20 ✗
- D20 ✗
- D21 ✗
- E21 ✗
- C22 ✗
- D22 ✗
- B15 ✗
- C15 ✗
- A16 ✗
- B16 ✗
- B17 ✗
- C17 ✗
- A18 ✗
- B18 ✗

Bottom Label: HASWELL[10SC1-F01150-11R_10SC1-F01150-12R]

Legend: FDI:12/4/5/4/12(breakout min 6/4/4/6/6)
Impedance=85 +- 17.5%

PCIEX16:16/5/5/16(breakout min 10/4/4/4/10)									
Impedance=80 +/- 17.5%									
LGA1150C									
PA EXP RXP0	E15	PEG_RXP0	PEG_TXP0	A12	PA EXP TXP0				
PA EXP RXN0	F15	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_RXN1	PEG_TXN1	C11	PA EXP TXN1				
PA EXP RXP2	E13	PEG_RXP2	PEG_TXP2	C10	PA EXP TXP2				
PA EXP RXN2	F13	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_RXN3	PEG_TXN3	C9	PA EXP TXN3				
PA EXP RXP4	E11	PEG_RXP4	PEG_TXP4	C8	PA EXP TXP4				
PA EXP RXN4	F11	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_RXN5	PEG_TXN5	C7	PA EXP TXN5				
PA EXP RXP6	E9	PEG_RXP6	PEG_TXP6	A6	PA EXP TXP6				
PA EXP RXN6	F9	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_RXN7	PEG_TXN7	C5	PA EXP TXN7				
PA EXP RXP8	D3	PEG_RXP8	PEG_TXP8	E1	PA EXP TXP8				
PA EXP RXN8	D4	PEG_RXN8	PEG_TXN8	E2	PA EXP TXN8				
PA EXP RXP9	E4	PEG_RXP9	PEG_TXP9	F2	PA EXP TXP9				
PA EXP RXN9	E5	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_RXN10	PEG_TXN10	G2	PA EXP TXN10				
PA EXP RXP11	G4	PEG_RXP11	PEG_TXP11	H2	PA EXP TXP11				
PA EXP RXN11	G5	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_RXN12	PEG_TXN12	J2	PA EXP TXN12				
PA EXP RXP13	J4	PEG_RXP13	PEG_TXP13	K2	PA EXP TXP13				
PA EXP RXN13	J5	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_RXN14	PEG_TXN14	M3	PA EXP TXN14				
PA EXP RXP15	L4	PEG_RXP15	PEG_TXP15	L1	PA EXP TXP15				
PA EXP RXN15	L5	PEG_RXN15	PEG_TXN15	L2	PA EXP TXN15				
PA EXP RXP16	L6	PEG_RXP16	PEG_TXP16						
PA EXP RXN16	L7	PEG_RXN16	PEG_TXN16						
PA EXP RXP17	L8	PEG_RXP17	PEG_TXP17						
PA EXP RXN17	L9	PEG_RXN17	PEG_TXN17						
PA EXP RXP18	L10	PEG_RXP18	PEG_TXP18						
PA EXP RXN18	L11	PEG_RXN18	PEG_TXN18						
PA EXP RXP19	L12	PEG_RXP19	PEG_TXP19						
PA EXP RXN19	L13	PEG_RXN19	PEG_TXN19						
PA EXP RXP20	L14	PEG_RXP20	PEG_TXP20						
PA EXP RXN20	L15	PEG_RXN20	PEG_TXN20						
PA EXP RXP21	L16	PEG_RXP21	PEG_TXP21						
PA EXP RXN21	L17	PEG_RXN21	PEG_TXN21						
PA EXP RXP22	L18	PEG_RXP22	PEG_TXP22						
PA EXP RXN22	L19	PEG_RXN22	PEG_TXN22						
PA EXP RXP23	L20	PEG_RXP23	PEG_TXP23						
PA EXP RXN23	L21	PEG_RXN23	PEG_TXN23						

Title			
CPU LGA1150-A			
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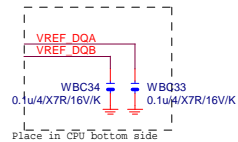
LGA1150 (A)

LGA1150A	
MAAA0 AU13	DDR0_MA0
MAAA1 AV16	DDR0_MA1
MAAA2 AU16	DDR0_MA2
MAAA3 AW17	DDR0_MA3
MAAA4 AU17	DDR0_MA4
MAAA5 AW18	DDR0_MA5
MAAA6 AV17	DDR0_MA6
MAAA7 AT18	DDR0_MA7
MAAA8 AU18	DDR0_MA8
MAAA9 AT19	DDR0_MA9
MAAA10 AW11	DDR0_MA10
MAAA11 AV19	DDR0_MA11
MAAA12 AU19	DDR0_MA12
MAAA13 AY10	DDR0_MA13
MAAA14 AT20	DDR0_MA14
MAAA15 AU21	DDR0_MA15
MODT_A0 AW10	DDR0_ODT0
MODT_A1 AY8	DDR0_ODT1
AW9	DDR0_ODT2
AW8	DDR0_ODT3
AW33	DDR0_ECC0
AW33	DDR0_ECC1
AU31	DDR0_ECC2
AW31	DDR0_ECC3
AT33	DDR0_ECC4
AU33	DDR0_ECC5
AT31	DDR0_ECC6
AW31	DDR0_ECC7
SBA00 SBAA0 AV12	DDR0_BA0
SBA01 SBAA1 AV11	DDR0_BA1
SBA02 SBAA2 AT21	DDR0_BA2
CKEA0 CKEA0 AV22	DDR0_CKE0
CKEA1 CKEA1 AT23	DDR0_CKE1
AU22	DDR0_CKE2
AW23	DDR0_CKE3
CSA0 CSA0 AU14	DDR0_CS_N0
CSA1 CSA1 AV9	DDR0_CS_N1
AU10	DDR0_CS_N2
AW8	DDR0_CS_N3
DCLKA0 DCLKA0 AY15	DDR0_CLK_P0
DCLKA0 DCLKA0 AY16	DDR0_CLK_N0
DCLKA1 DCLKA1 AW15	DDR0_CLK_P1
DCLKA1 DCLKA1 AY15	DDR0_CLK_N1
AW14	DDR0_CLK_P2
AW14	DDR0_CLK_N2
AW13	DDR0_CLK_P3
AW13	DDR0_CLK_N3
AW12	RSVD
SRASA SRASA AU12C	DDR0_RAS*
SWEA SWEA AU11C	DDR0_WE*
AW20C	RSVD
AW27C	RSVD
SCASA SCASA AU9C	DDR0_CAS*
WR61	DDR_RESET
D4/SH/TMX	
WC4	
0.1u/4/X7R/16V/K/X	

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

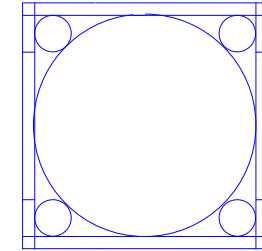
LGA1150 (B)

LGA1150B	
MAAB0 AL19	DDR1_MA0
MAAB1 AK23	DDR1_MA1
MAAB2 AM22	DDR1_MA2
MAAB3 AM23	DDR1_MA3
MAAB4 AP23	DDR1_MA4
MAAB5 AL23	DDR1_MA5
MAAB6 AY24	DDR1_MA6
MAAB7 AV25	DDR1_MA7
MAAB8 AU26	DDR1_MA8
MAAB9 AV25	DDR1_MA9
MAAB10 MDA13	DDR1_MA10
MAAB11 AY26	DDR1_MA11
MAAB12 AV26	DDR1_MA12
MAAB13 AR15	DDR1_MA13
MAAB14 AV27	DDR1_MA14
MAAB15 AY28	DDR1_MA15
MODT_B0 AM17	DDR1_ODT0
MODT_B1 AL16	DDR1_ODT1
AM16	DDR1_ODT2
AK15	DDR1_ODT3
AM26	DDR1_ECC0
AM25	DDR1_ECC1
AP25	DDR1_ECC2
AP26	DDR1_ECC3
AL26	DDR1_ECC4
AL25	DDR1_ECC5
AR26	DDR1_ECC6
AR25	DDR1_ECC7
SBAB0 SBAB0 AK17	DDR1_BA0
SBAB1 SBAB1 AL18	DDR1_BA1
SBAB2 SBAB2 AW28	DDR1_BA2
CKEB0 CKEB0 AW29	DDR1_CKE0
CKEB1 CKEB1 AY29	DDR1_CKE1
AU28	DDR1_CKE2
AW29	DDR1_CKE3
CSB0 CSB0 AP17	DDR1_CS_N0
CSB1 CSB1 AM15	DDR1_CS_N1
AM17	DDR1_CS_N2
AL15	DDR1_CS_N3
DCLKB0 DCLKB0 AM20	DDR1_CLK_P0
DCLKB0 DCLKB0 AM21	DDR1_CLK_N0
DCLKB1 DCLKB1 AP22	DDR1_CLK_P1
DCLKB1 DCLKB1 AP21	DDR1_CLK_N1
AN20	DDR1_CLK_P2
AN21	DDR1_CLK_N2
AP21	DDR1_CLK_P3
AP20	DDR1_CLK_N3
SCASB SCASB AP16C	DDR1_CAS*
SRASB SRASB AL20	RSVD
SWEB SWEB AM18C	DDR1_RAS*
SWEB	DDR1_WE*
VREF_DOA VREF DOA AR39	DDR_VREF_DQ0
VREF_DQB VREF DOB AB40	DDR_VREF_DQ1



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

LGA1150 (CR)

CR
CPU RETENTION/X

LGA1150_P



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

DDR BUS

[7] MODT_A[0..1]	MODT_A0..1
[8] MODT_B[0..1]	MODT_B0..1
[7] MDA[0..63]	MDA0..63
[8] MDB[0..63]	MDB0..63
[7] DQSA[0..7]	DQSA0..7
[7] DQSA[0..7]	DQSA0..7
[7] MAA[0..15]	MAA0..15
[8] MAB[0..15]	MAB0..15
[8] DQSB[0..7]	DQSB0..7
[8] DQSB[0..7]	DQSB0..7

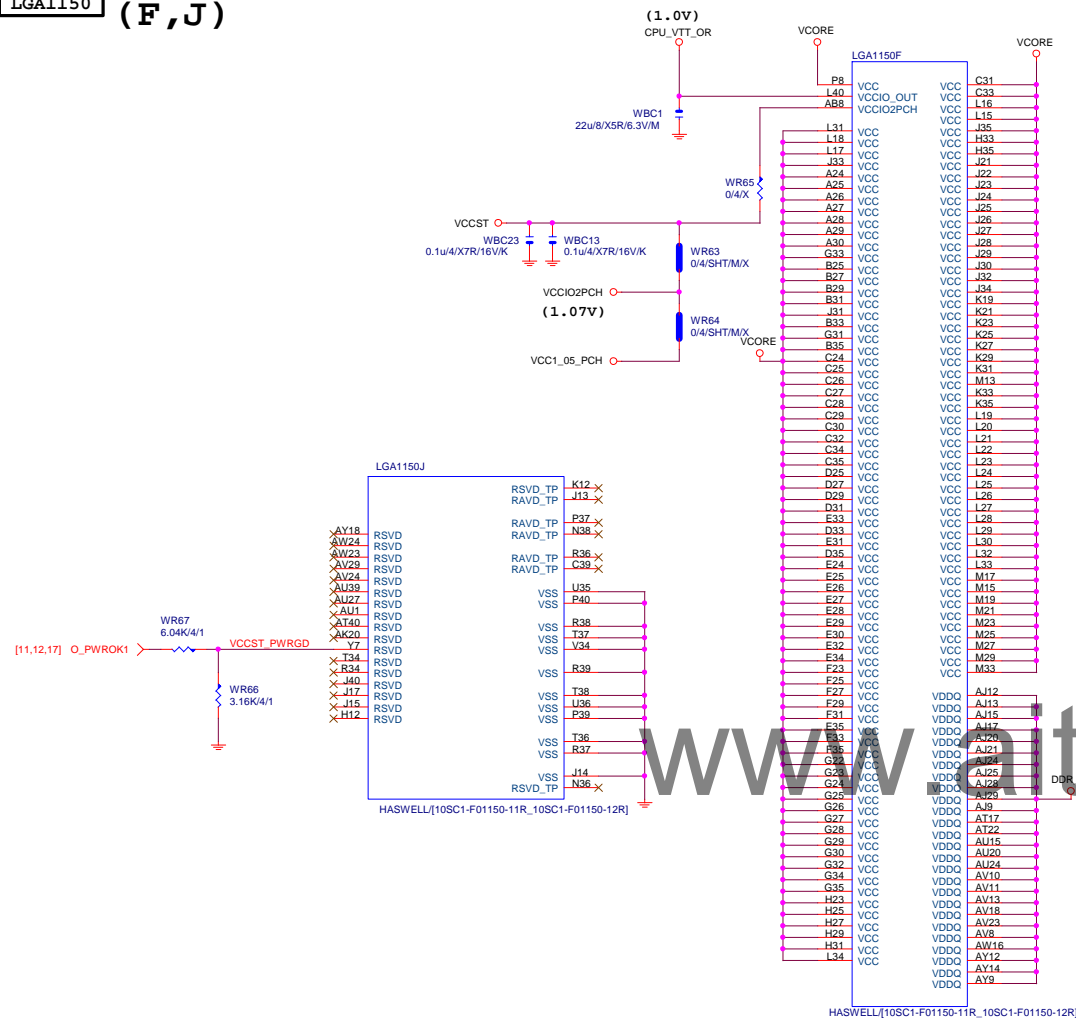
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CPU LGA1150-B

Title	Document Number	Rev
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Custom		

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LGA1150 (F,J)

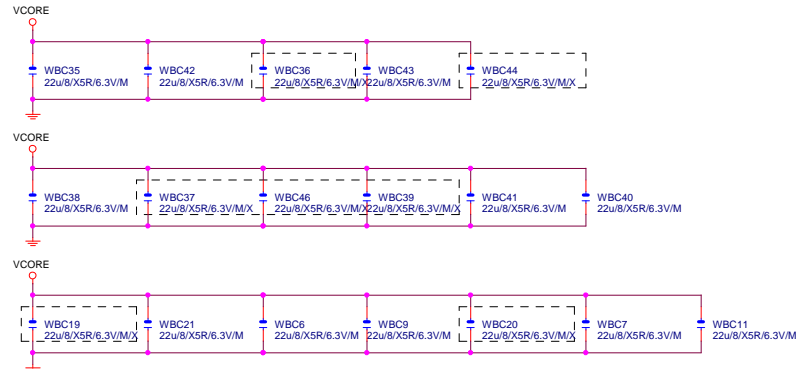


LGA1155 (G,H,I)



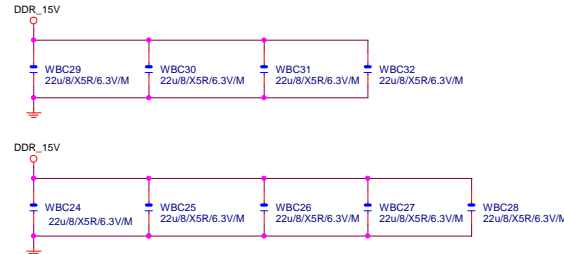
VCore CAP

(x18)



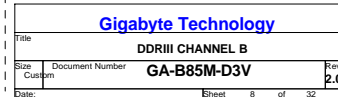
DDR CAP

(x9)



Gigabyte Technology

Title			
CPU LGA1150-C			
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DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

VCC1_5_PCH

NR50 7.5K/4/1 DMI_COMP B

NR40 7.5K/4/1 PCIE_COMP C

CK -SRCLK_PCH G

CK SRCLK_PCH F

```

8111G [ [24] LA_ML_IN [
        [24] LA_ML_IP [
        [24] LA_ML_ON [
        [24] LA_ML_OP [
        [32] G_PCIEBIN [
        [32] G_PCIEBIP [
        [32] G_PCIEBON [
        [32] G_PCIEBOP [
        [15] PI_PCIEI1_IN [
        [15] PI_PCIEI1_IP [
        [15] PI_PCIEI1_ON [
        [15] PI_PCIEI1_OP [
        [15] PJ_PCIEI1_IN [
        [15] PJ_PCIEI1_IP [
        [15] PJ_PCIEI1_ON [
        [15] PJ_PCIEI1_OP [
PCIEx1 [

```

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

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- - - - PCIEX1:16/5/5/5/16 (breakout min

```

A

AT

A

A

AV

AV

AV

E

C

D

USB2.0 : 12/4.5/7.5/4.5/12 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%

PCBH		B85: Port 6/7 N/A		H81: Port 6/7/12/13 N/A	
DMI_RXN_0	USBN_0	AV10	N -USBP0	N -USBP0	[21]
DMI_RXP_0	USBN_0	AU10	N +USBP0	N +USBP0	[21]
DMI_TXN_0	USBN_1	AV11	N -USBP1	N -USBP1	[21]
DMI_TXP_0	USBN_1	AW11	N +USBP1	N +USBP1	[21]
DMI_RXN_1	USBN_2	AN14	N -USBP2	N -USBP2	[24]
DMI_RXP_1	USBN_2	AP14	N +USBP2	N +USBP2	[24]
DMI_TXN_1	USBN_2	AJ16	N -USBP3	N -USBP3	[24]
DMI_TXP_1	USBN_3	AK16	N +USBP3	N +USBP3	[24]
DMI_RXN_2	USBN_3	AU15	N -USBP4	N +USBP3	[24]
DMI_RXP_2	USBN_4	AV15	N +USBP4	N -USBP4	[18]
DMI_TXN_2	USBN_5	AU12	N -USBP5	N +USBP4	[16]
DMI_TXP_2	USBN_5	AT12	N +USBP5	N -USBP5	[18]
DMI_RXN_3	USBN_6	AV14		N +USBP5	[18]
DMI_RXP_3	USBN_6	AW14			
DMI_TXN_3	USBN_7	AU17			
DMI_TXP_3	USBN_7	AT17			

DMI_ROMCP	USB8_N	AW16	N-USBP8 [21]
PCI_ROMCP	USB8_P	AN16	N-USBP8 [21]
	USB9_N	AW16	N-USBP9 [21]
	USB9_P	AN16	N-USBP9 [21]
CLKIN_DMI_N	USB10_N	AJ18	N-USBP10 [21]
CLKIN_DMI_P	USB10_P	AK18	N-USBP10 [21]
	USB11_N	AP18	N-USBP11 [21]
	USB11_P	AN18	N-USBP11 [21]
PCIE_PERN_1_USB3_RXN_2	USB11_P	AW18	N-USBP12 [21]
PCIE_PERN_1_USB3_RXN_2	USB12_P	AV18	N-USBP12 [21]
PCIE_PETP_1_USB3_TXP_2	USB13_N	AP20	N-USBP13 [18]
PCIE_PERN_2_USB3_RXN_3	USB13_P	AN20	N-USBP13 [18]

PCIE_PERP_2	USB3_RXM3_3	OC0B, GP58	AF47	N_USB0C_F [18]
PCIE_PETN_2	USB3_TXN3_3	OC1B, GP40	AF37	
PCIE_PERP_3	USB3_TXP_3	OC2B, GP41	AD39	N_USB0C_R [18]
PCIE_PERP_3		OC3B, GP42	AD40	
PCIE_PETN_3		OC4B, GP43	AF39	N_USB0R [18]
PCIE_PETN_3		OC5B, GP9	AC41	
PCIE_PERN_4		OC6B, GP10	AF40	N_GPIO14
PCIE_PERP_4		OC7B, GP14	AG40	

W=4 mil out of P
S=15 mil out of P

PCIE_PETN_4		AV20	N_USBRBIAS	NR47	22.6/4/1
PCIE_PETP_4	USBRBIASB	AV20			
PCIE_PERN_5	USBRBIAS				
PCIE_PERP_5					
PCIE_PETN_5	CLKIN_DOT96N	AP11	CK_DOTCLK		
PCIE_PETP_5	CLKIN_DOT96P	AM11	CK_DOTCLK		

PCIE_PERN_6
PCIE_PERP_6
PCIE_PETN_6
PCIE_PETP_6
PCIE_PERN_7
PCIE_PERP_7
PCIE_PETN_7
PCIE_PETP_7
PCIE_PERN_8
PCIE_PERP_8
PCIE_PETN_8
PCIE_PETP_8


CHIP DH82B85 C2 INTEL/[10HB1-030B85-20R]

4/4/4/8) -----

PCH H/5

PCHU		
	TP22	U11 ✗
VSS_NCTF	TP23	U10 ✗
VSS_NCTF	TP21	AJ14 ✗
VSS_NCTF	TP20	AK14 ✗
VSS_NCTF	TP14	K34 ✗
VSS_NCTF	TP15	K33 ✗
VSS_NCTF	TP12	AH24 ✗
VSS_NCTF		
VSS_NCTF	TP10	L16 ✗
VSS_NCTF	TP11	K16 ✗
VSS_NCTF	TP9	AM34 ✗
VSS_NCTF		
VSS_NCTF	TP3	R12 ✗
VSS_NCTF	TP4	N12 ✗
VSS_NCTF	TP1	L22 ✗
		K22 ✗

[illegible]

CHIP DA82B85 C2 INTEL[T0AB1-030B85-20K] 

PCHF	
USB3	FDILINK

[21]	PCH_USB3_RXN0	>	F20_	USB3_RXN_0	FDI_RXN_0
[21]	PCH_USB3_RXP0	>	G20_	USB3_RXP_0	FDI_RXP_0
[21]	PCH_USB3_TXN0	>	B18_	USB3_TXN_0	FDI_RXN_1
[21]	PCH_USB3_TXP0	<	C18_	USB3_TXP_0	FDI_RXP_1
[21]	PCH_USB3_RXN1	>	G18_	USB3_RXN_1	
[21]	PCH_USB3_RXP1	>	H18_	USB3_RXP_1	FDI_CSXNC
[21]	PCH_USB3_TXN1	>	B15_	USB3_TXN_1	
[21]	PCH_USB3_TXP1	<	B16_	USB3_TXP_1	FDI_INT
[18]	PCH_USB3_RXN4	>	K20_	USB3_RXN_4	
[18]	PCH_USB3_RXP4	>	L20_	USB3_RXP_4	FDI_RCOMP
[18]	PCH_USB3_TXN4	>	D15_	USB3_TXN_4	
[18]	PCH_USB3_TXP4	<	C15_	USB3_TXP_4	
[18]	PCH_USB3_RXN5	>	L18_	USB3_RXN_5	
[18]	PCH_USB3_RXP5	>	K18_	USB3_RXP_5	
[18]	PCH_USB3_TXN5	>	B14_	USB3_TXN_5	
[18]	PCH_USB3_TXP5	<	A14_	USB3_TXP_5	

VCC3

NR62 8.2K/4 AK28 TACH6_GP70

NR63 8.2K/4 AT34 TACH7_GP71

CHIP DH82B85 C2 INTEL[10HB1-
FDI TXPIQ..11 >> FDI
FDI TXNIQ..11 >> FDI

USB3.0:20/5/7/5/2
8/4/4/4/8) ; ONLY
Impedance=85 +- 1
Back Panel < 1000
Front Panel < 600

CK SRCCI K PCH NR89 8.2K/4

CK-SRCLK PCH NR88 8.2K/4


Mount for integrated clock Generation

NR225 short to GND in non graphic SKU

CK_DOTCLK NR92 8.2K/4
CK_DOTCLK NR91 8.2K/4

LOW COST ICH7 HEATSINK

SB_HEATSIN



PCH_HS
PCH_HS/[12SP2-030005-43R_12SP2-030005-41R_12SP2-030005-42R]

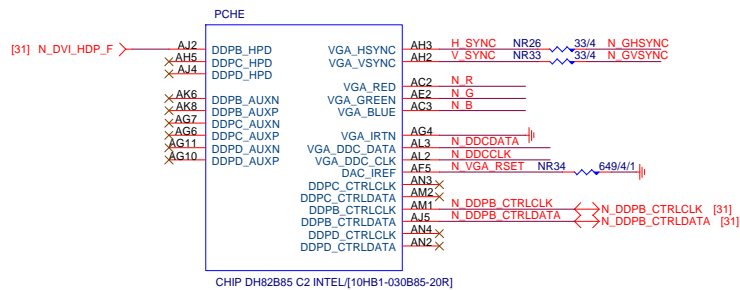
```
OC[3:0]# for Device 29 (ports 0-7)
```

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

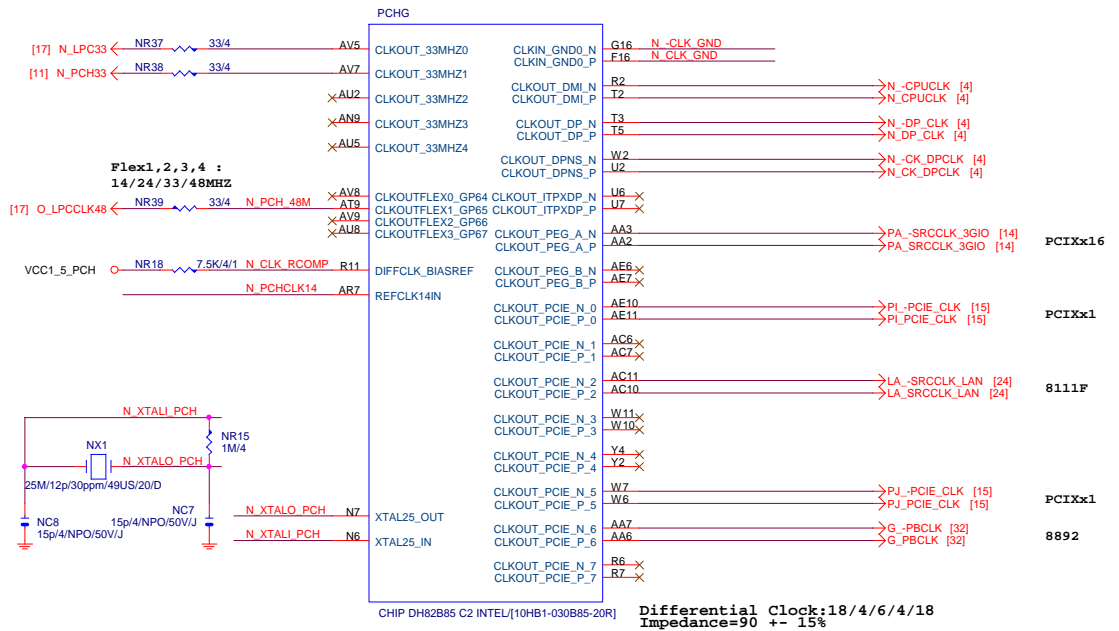
USB OC# Configure	
OC0#	F_USB30
OC1#	USB_LAN
OC2#	R_USB30
OC3#	N/A
OC4#	F_USB1
OC5#	F_USB2
OC6#	KB_MS_USB
OC7#	Not Use

Gigabyte Technology			
Title PCH FDI,DMI,USB ,PCIE,NVRAM			
Size Custom	Document Number GA-B85M-D3V		Rev 2.01
Date:	Thursday, November 28, 2013	Sheet 9 of 32	

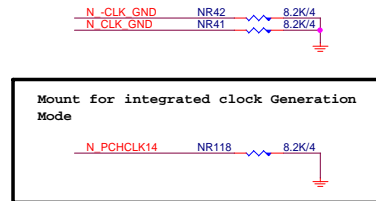
PCH (E)



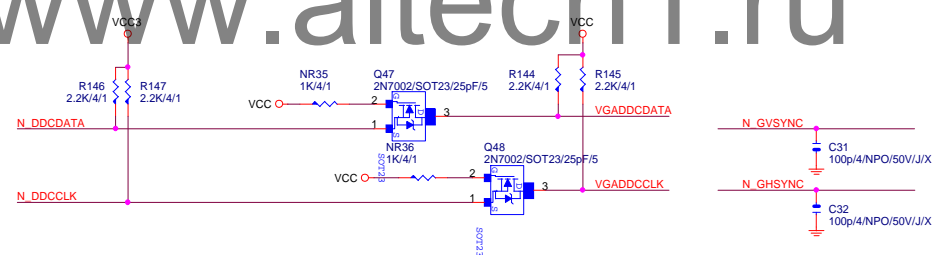
PCH (G)



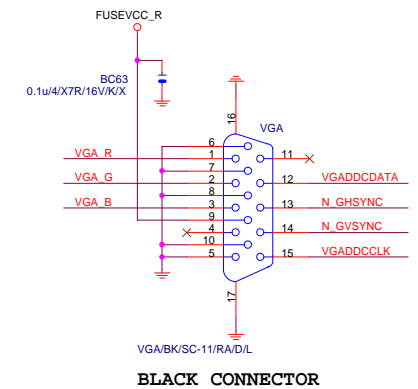
PCH CLK PD



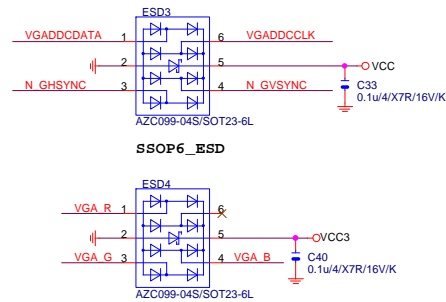
VGA DDC



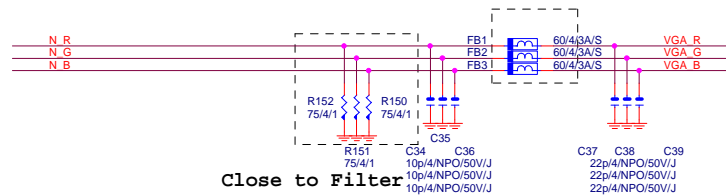
VGA CONNECTOR



VGA ESD

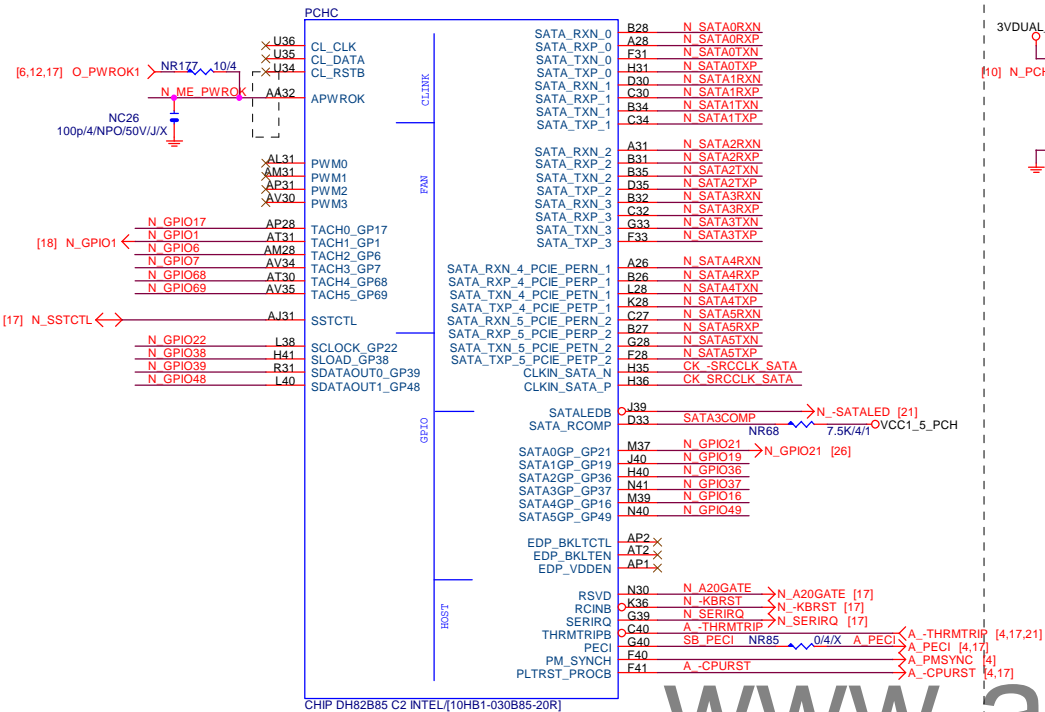


VGA DDC

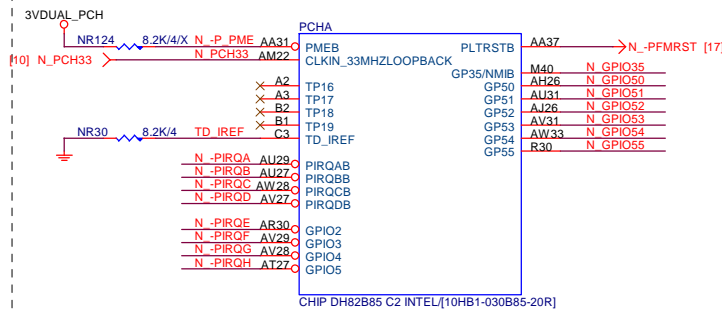


PCH (C)

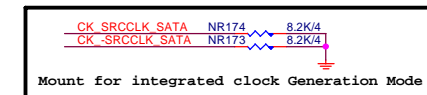
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%



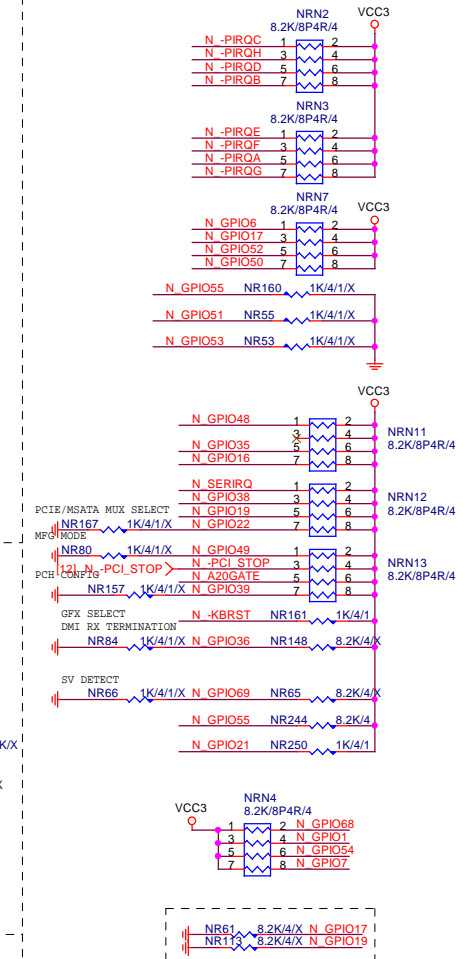
PCH (A)



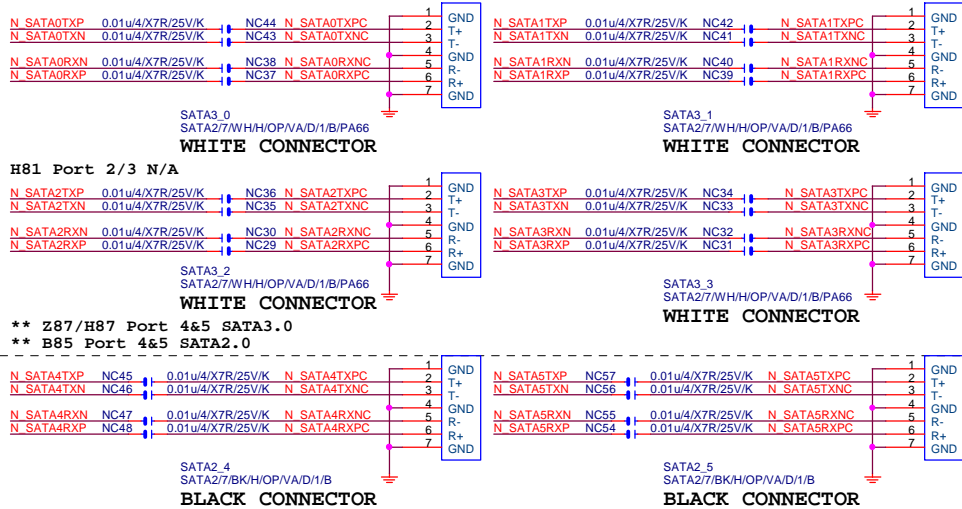
PCH CLK PD



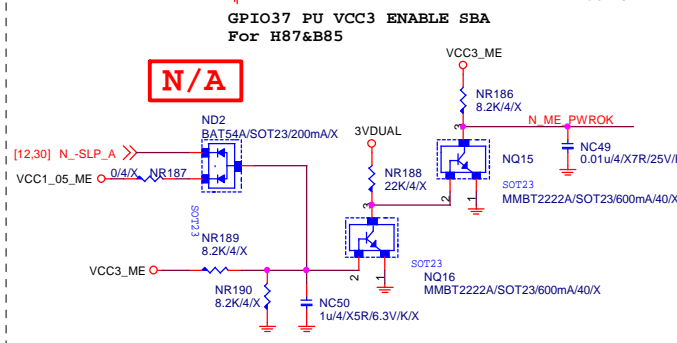
PCH PU/PD



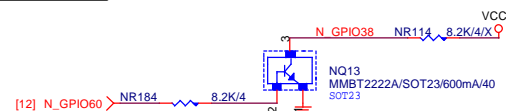
SATA CONNECTOR



ME PWROK



GPIO38 Ctrl



Gigabyte Technology

Title	Document Number	Rev
PCH HOST , SATA, PCI	GA-B85M-D3V	2.01
Date:	Thursday, November 28, 2013	Sheet 11 of 32

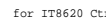
(D)



ACZ_SDOUT



PCH_DPWROK



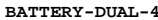
HSW_STRAP13



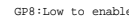
32.768KHZ



CLR_CMOS



PCH	PU/PD
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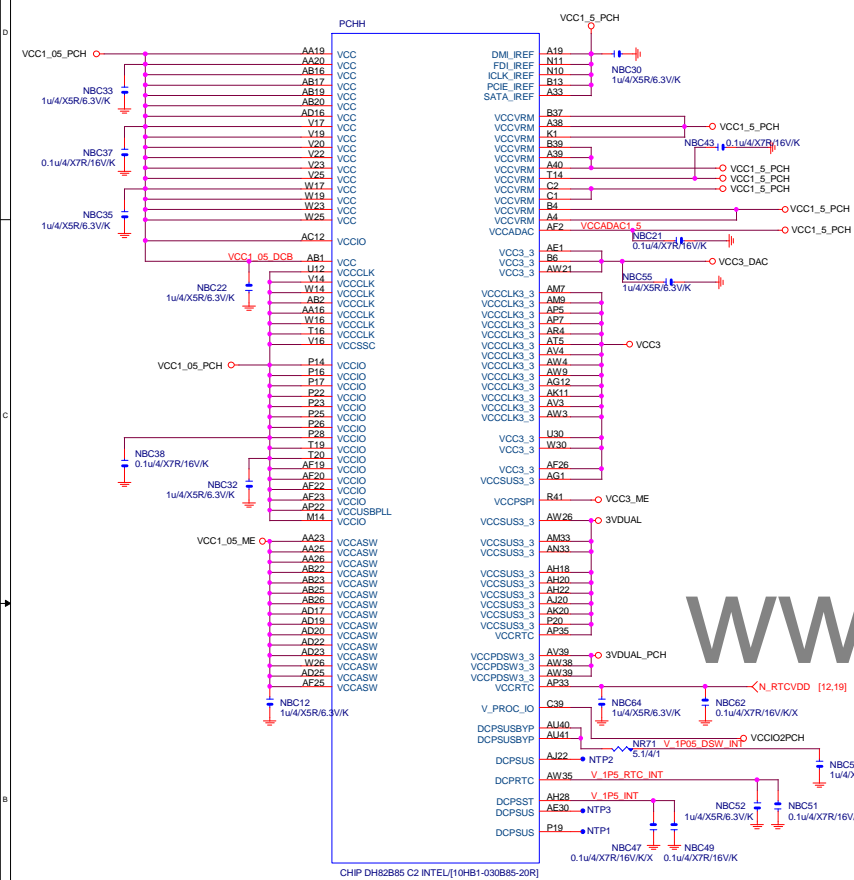
Gigabyte Technology

Title	FRANZISKA STELLINGMA
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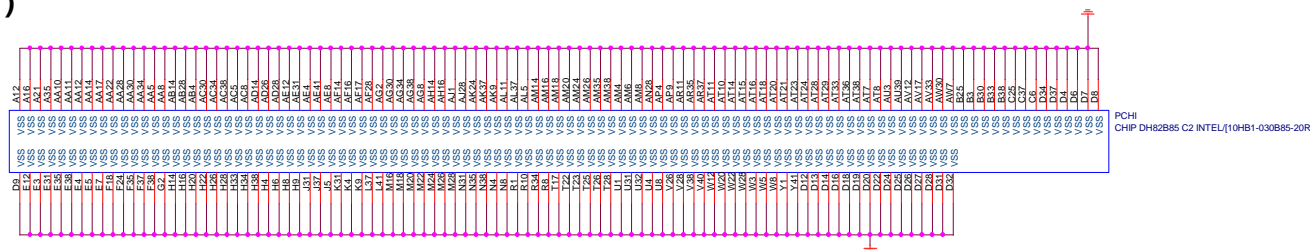
Size	Document Number	GA-B85M-D3V	Rev
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Date: Thursday, November 28, 2013 Sheet 12 of 32

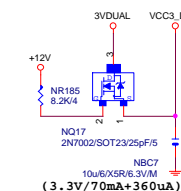
PCH (H)



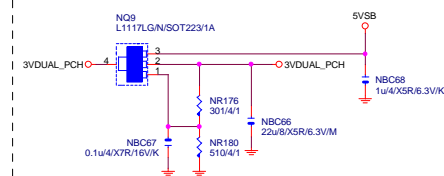
PCH (I)



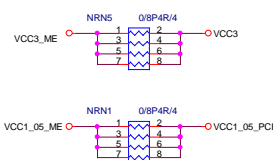
VCC3_DAC



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

NBC16 10uF/6X25V/3V/K

NBC29 10uF/6X25V/3V/K

NBC50 10uF/6X25V/3V/K

NBC53 10uF/6X25V/3V/K

NBC19 1uF/4X25V/3V/K

NBC23 0.1uF/4X77/16V/K

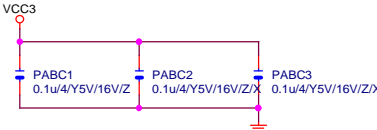
NBC28 1uF/4X25V/3V/K

NBC44 1uF/4X25V/3V/K

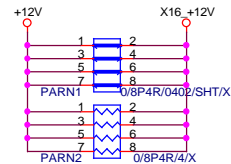
NBC46 0.1uF/4X77/16V/K

NBC48 1uF/4X25V/3V/K

PCIEX16 CAP



PCIEX16 PROTECT SHT

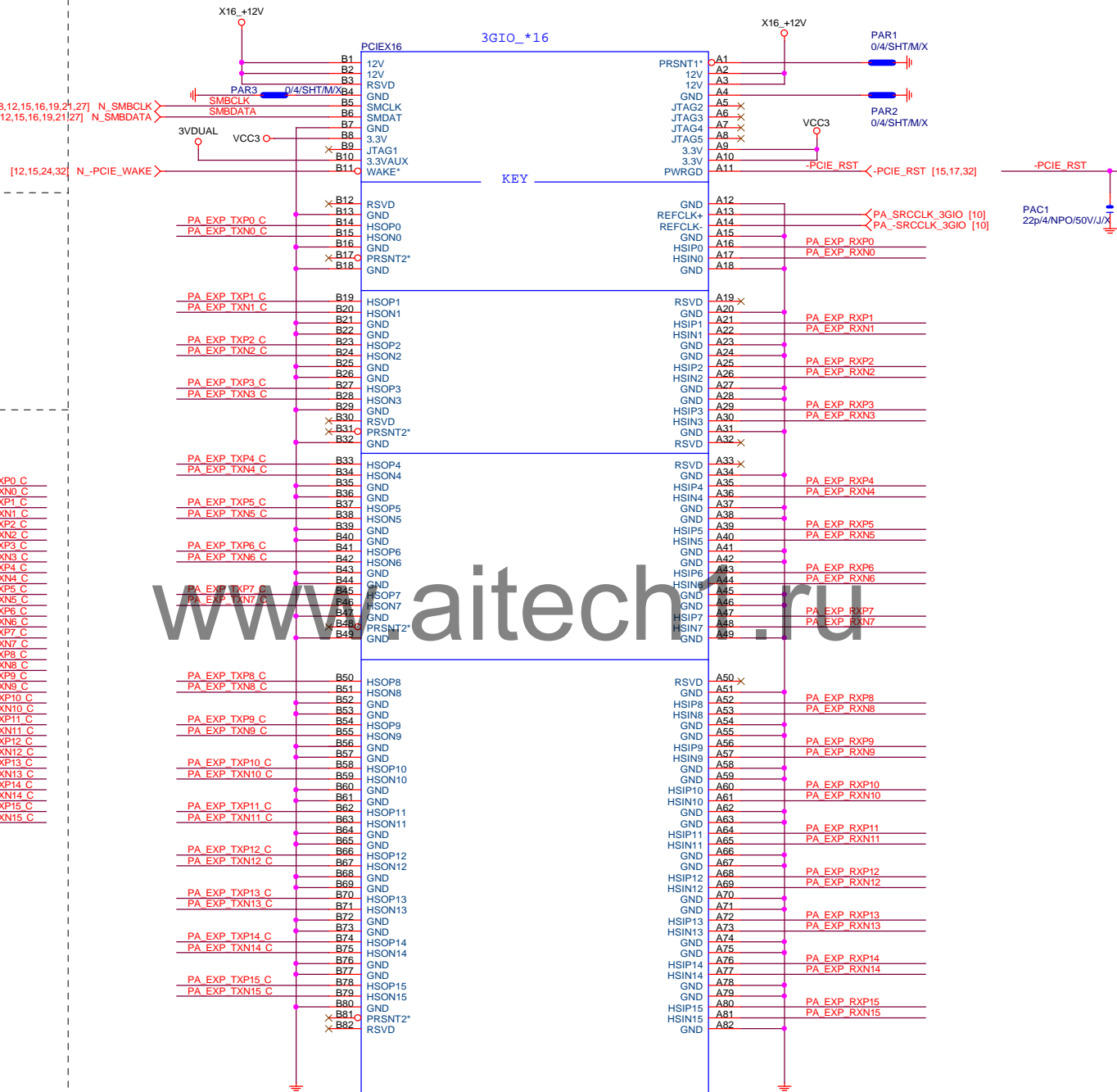


PCIEX16 AC CAP

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



PCI-E/16X-164P/BK/LONG DOUBLE

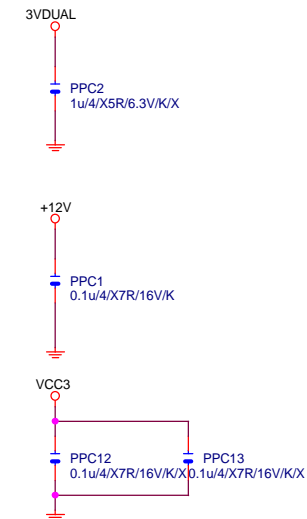
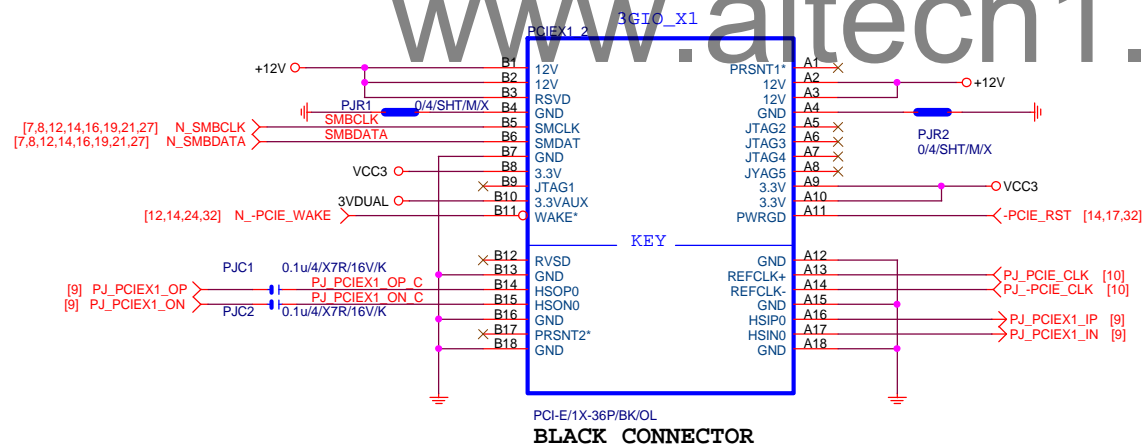
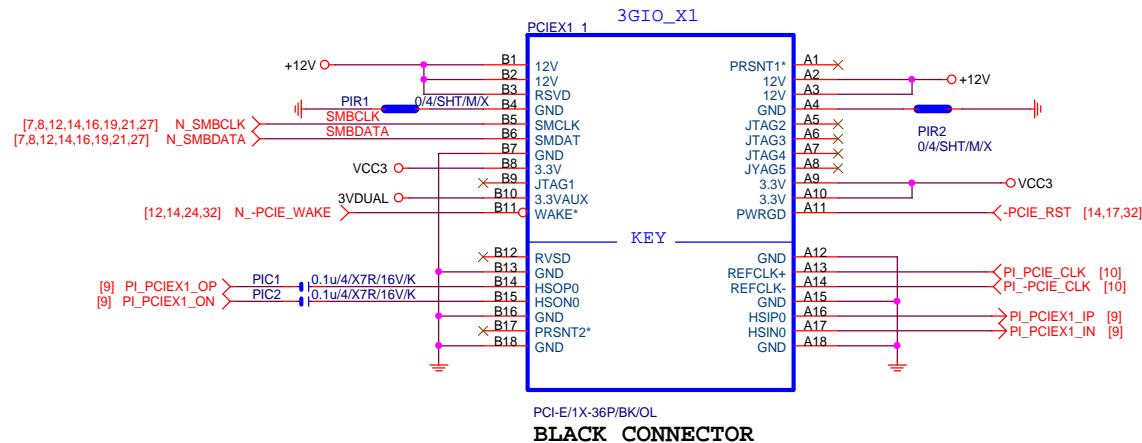
PCIESLOT-164DN-Q-1

BLACK CONNECTOR

Gigabyte Technology

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Size			GA-B85M-D3V	
Custom			Rev 2.01	
Date:			Thursday, November 28, 2013	Sheet 14 of 32

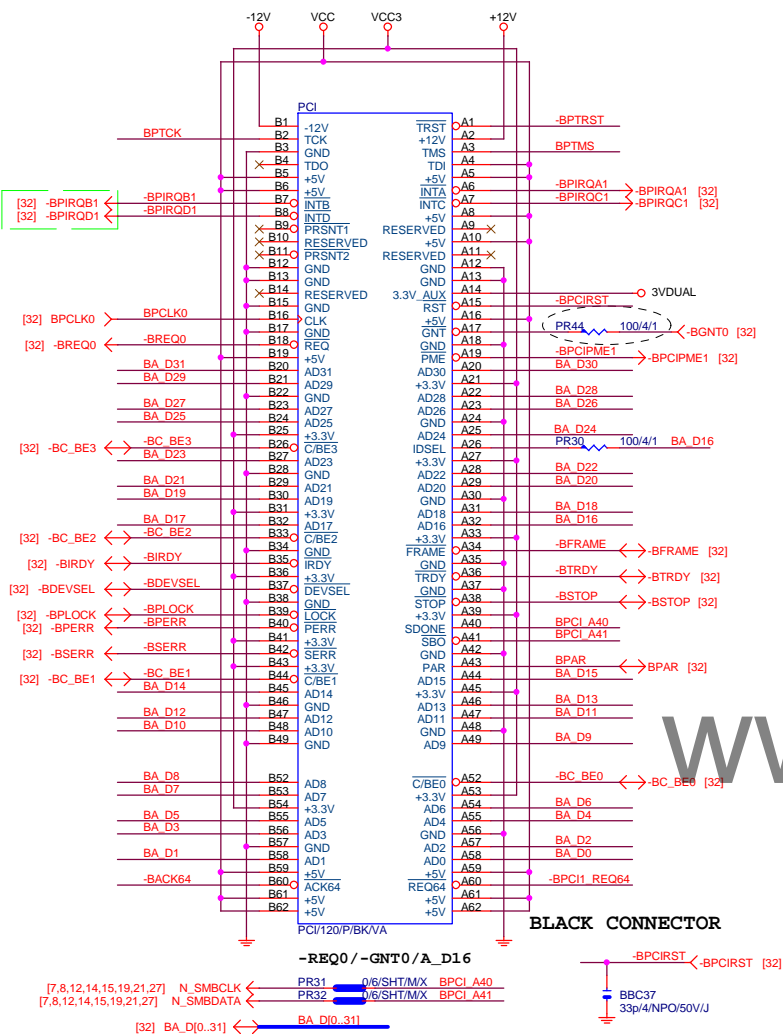
PCIEX1 SLOT



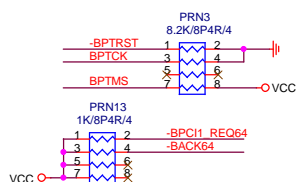
Gigabyte Technology

Title			PCI EXPRESS X 1 PORT
Size	Document Number	Rev	
Custom	GA-B85M-D3V	2.01	
Date:	Thursday, November 28, 2013	Sheet	15 of 32

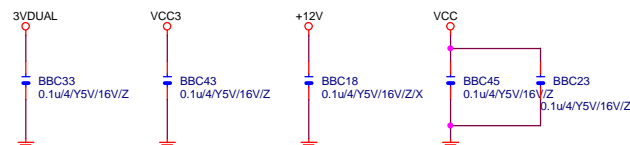
PCI SLOT 1



PCI	PU
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PCI CAP

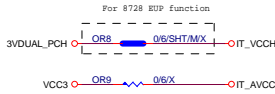


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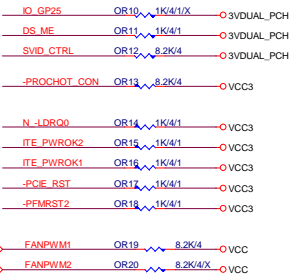
Gigabyte Technology

Title				PCI SLOT 1&2				Rev	
Size Custom		Document Number				GA-B85M-D3V		2.0	
Date: Thursday, November 28, 2013				Sheet		16		of 32	

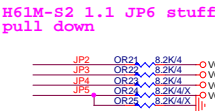
PWR SHT



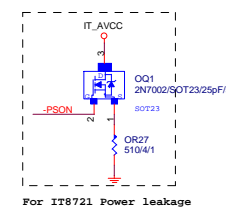
SIO PU



SIO STRAP



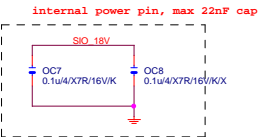
Power leakage



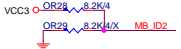
DUAL BIOS OPT STRAP



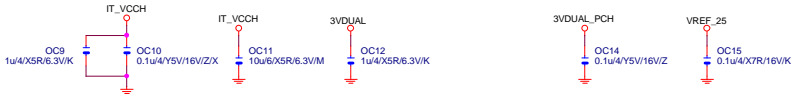
SIO_18V

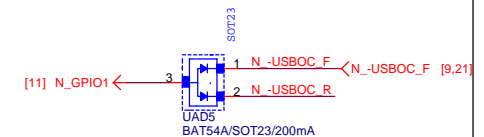
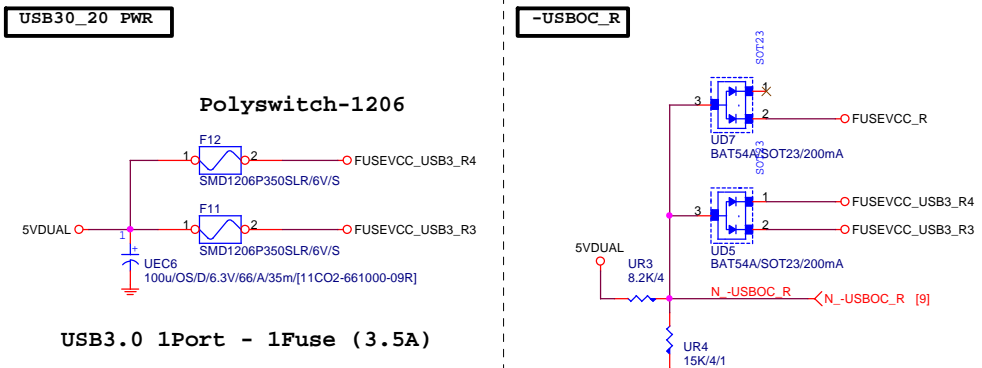
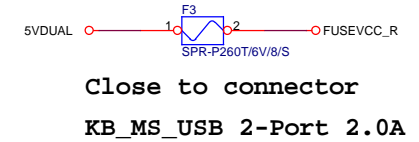
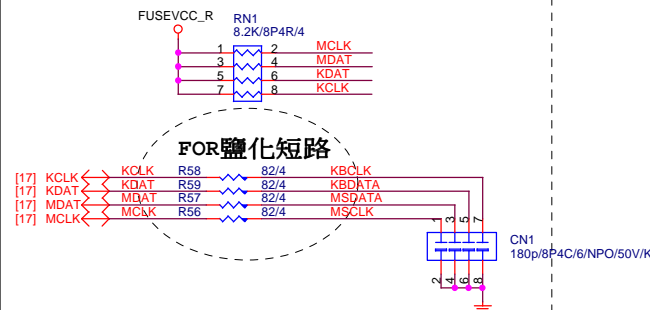
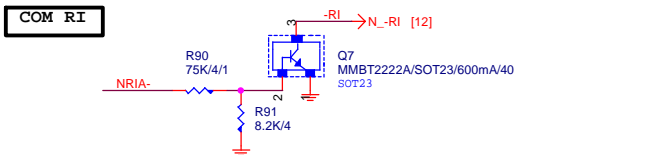


MB ID



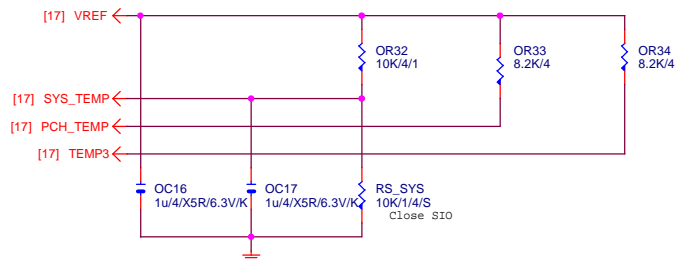
SIO CAP



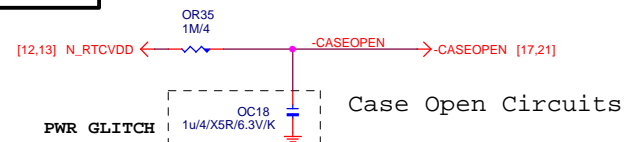


Date: Thursday, November 28, 2013 Sheet 18 of 32

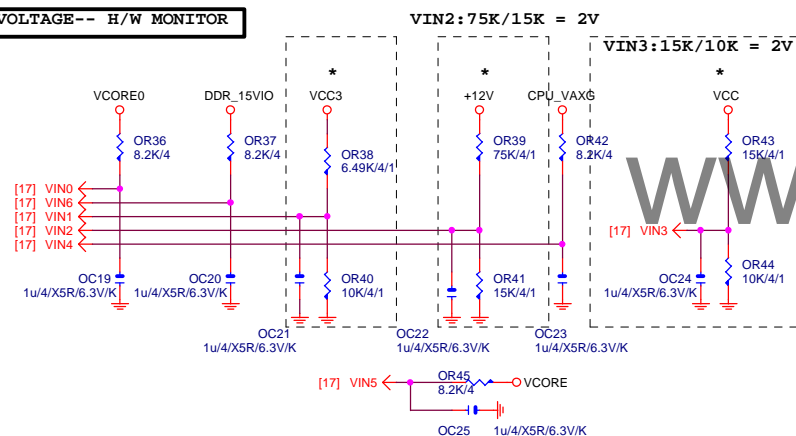
TEMP H/W MONITOR



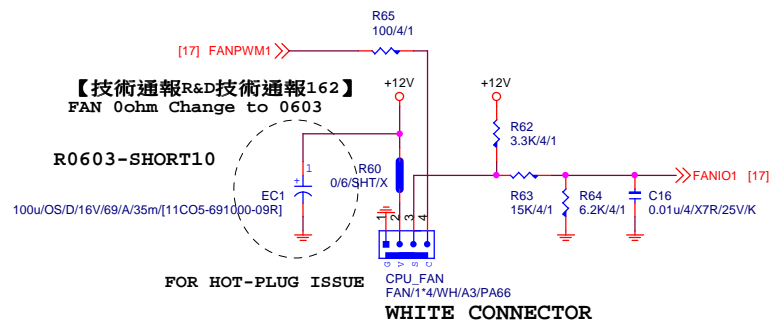
CASE OPEN



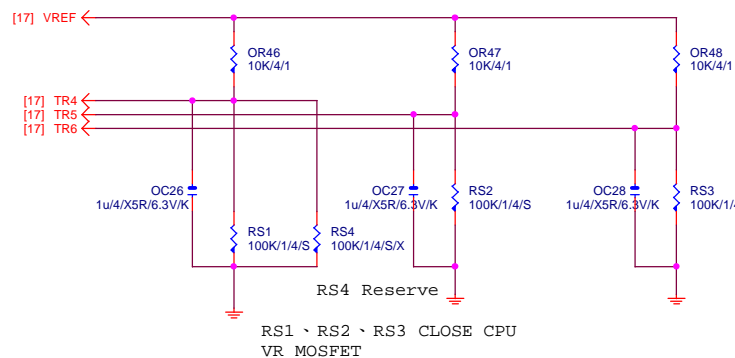
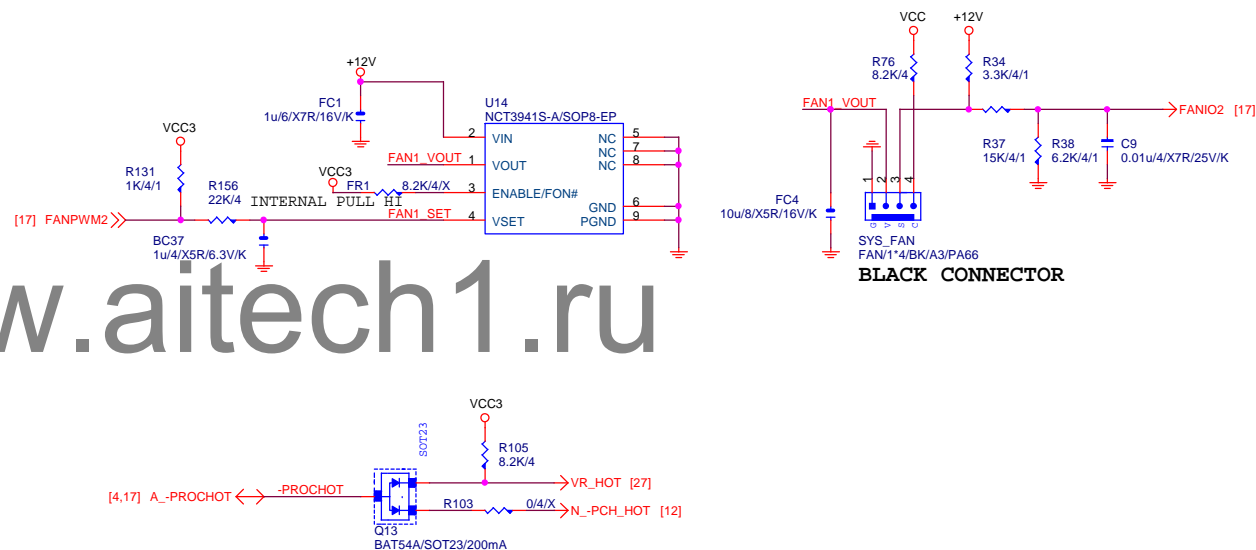
VOLTAGE--	H/W	MONITOR
-----------	-----	---------



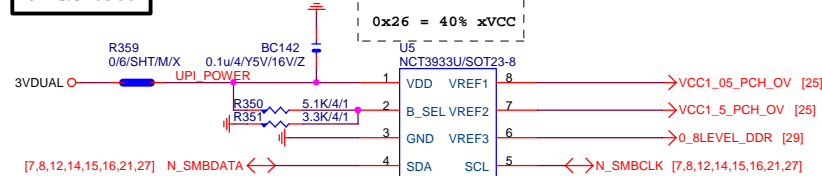
CPU SMART FAN



SYS SMART FAN

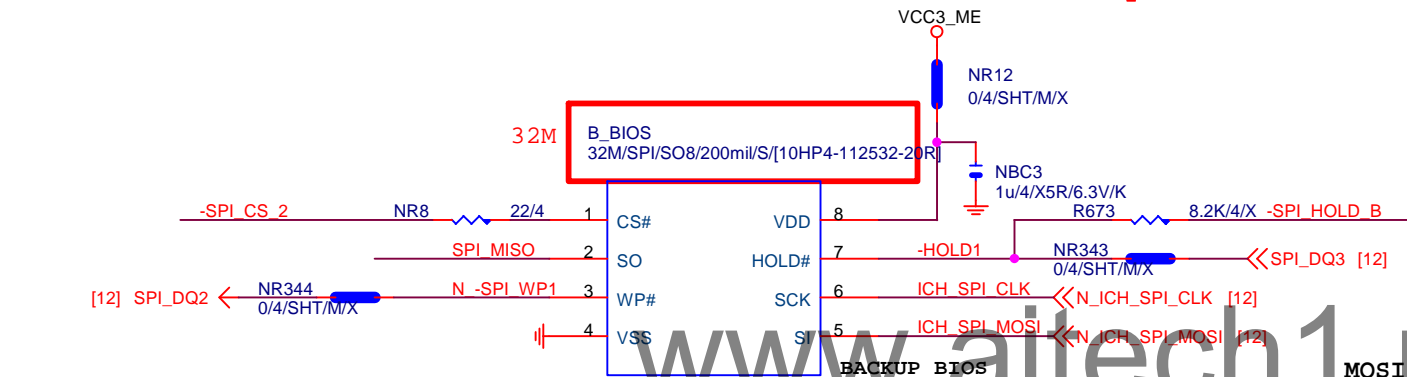
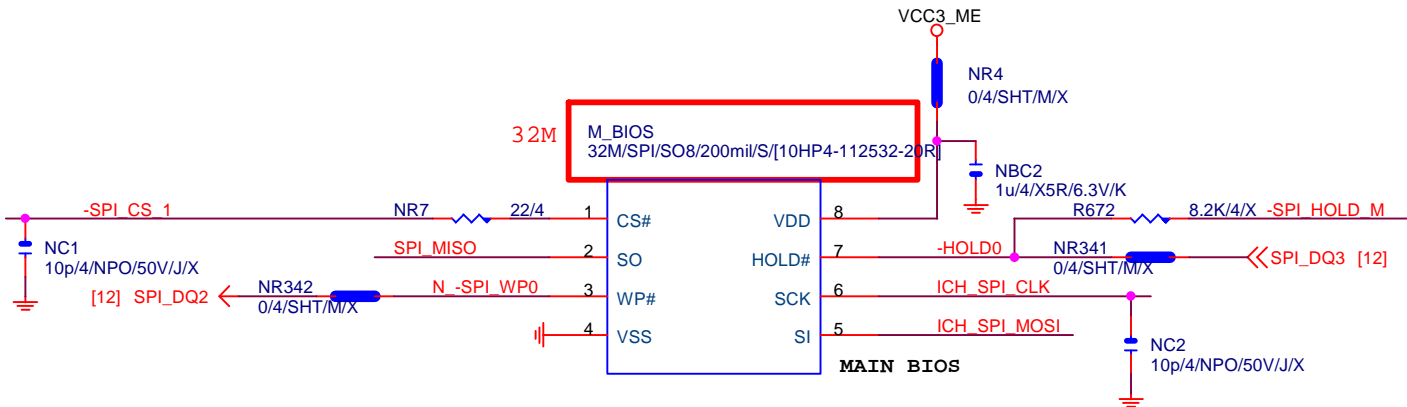


OV NCT3933



Gigabyte Technology

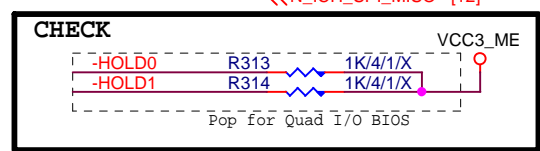
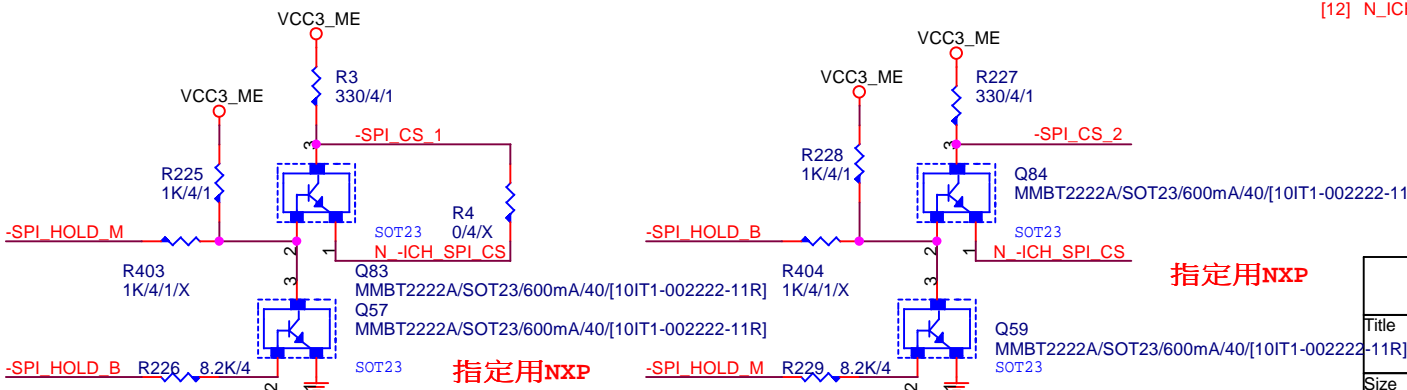
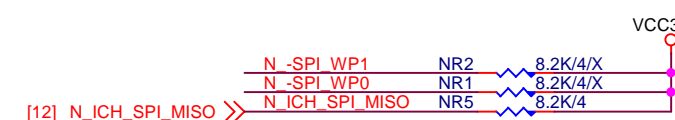
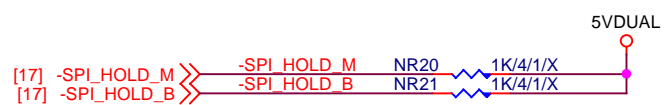
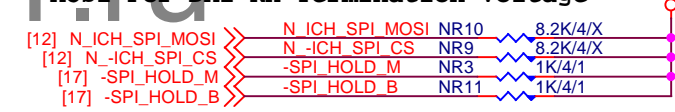
Title				HWM,FAN CTRL,OV			
Size	Document Number	GA-B85M-D3V				Rev	
Custom						2.01	
Date:	Thursday, November 28, 2013	Sheet	19	of	32		



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



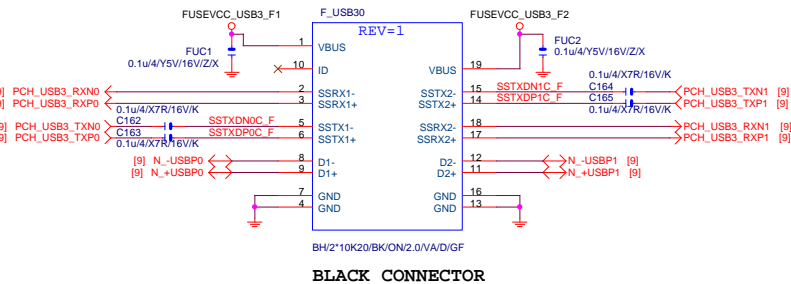
指定用NXP

DUAL BIOS

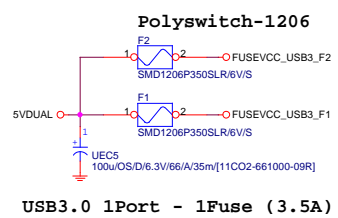
GA-B85M-D3V

Title		Rev
Size Custom		2.01
Document Number		
Date	Thursday, November 28, 2013	Sheet 20 of 32

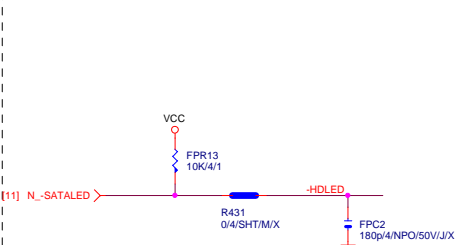
F_USB30



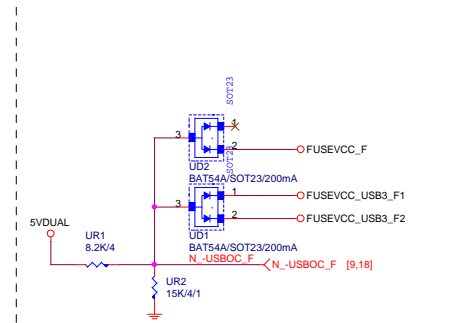
F_USB30 PWR



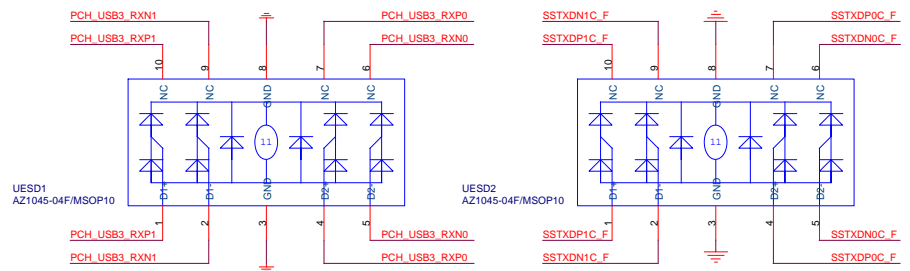
SATA LED



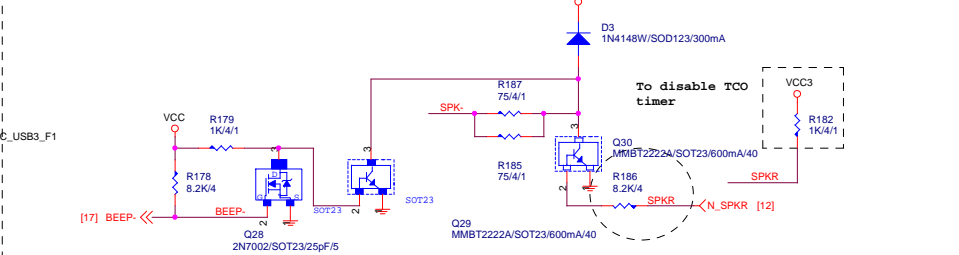
-USBOC_F



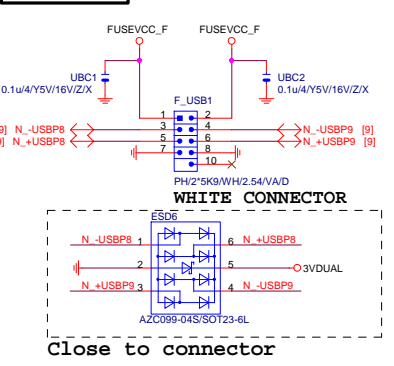
F_USB30 ESD PROTECT



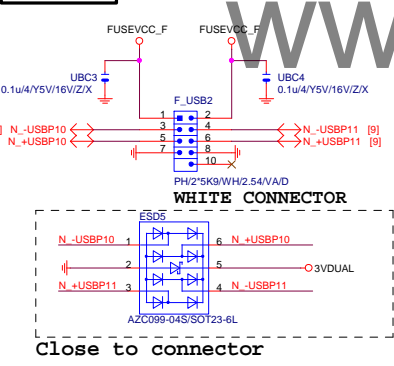
SPKR



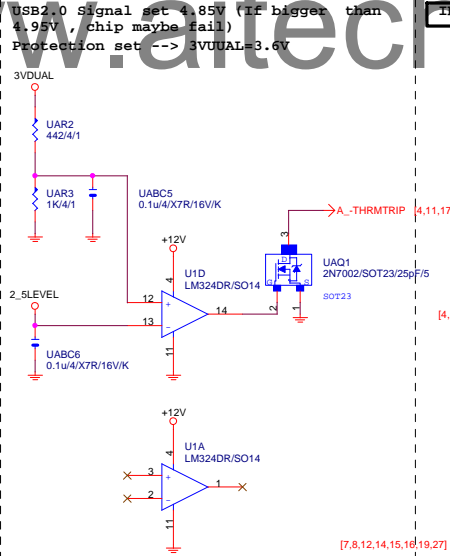
FRONT USB1



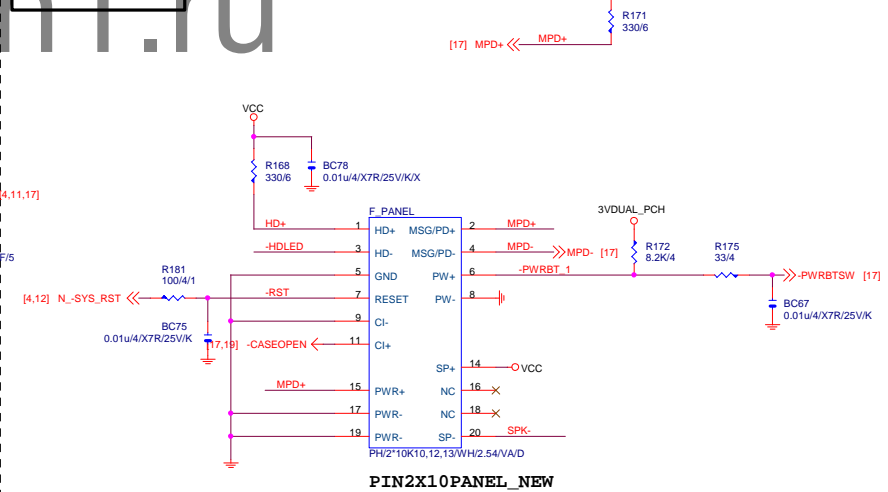
FRONT USB2



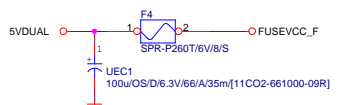
USB2.0 Signal & power short protection



INTEL FRONT PANEL



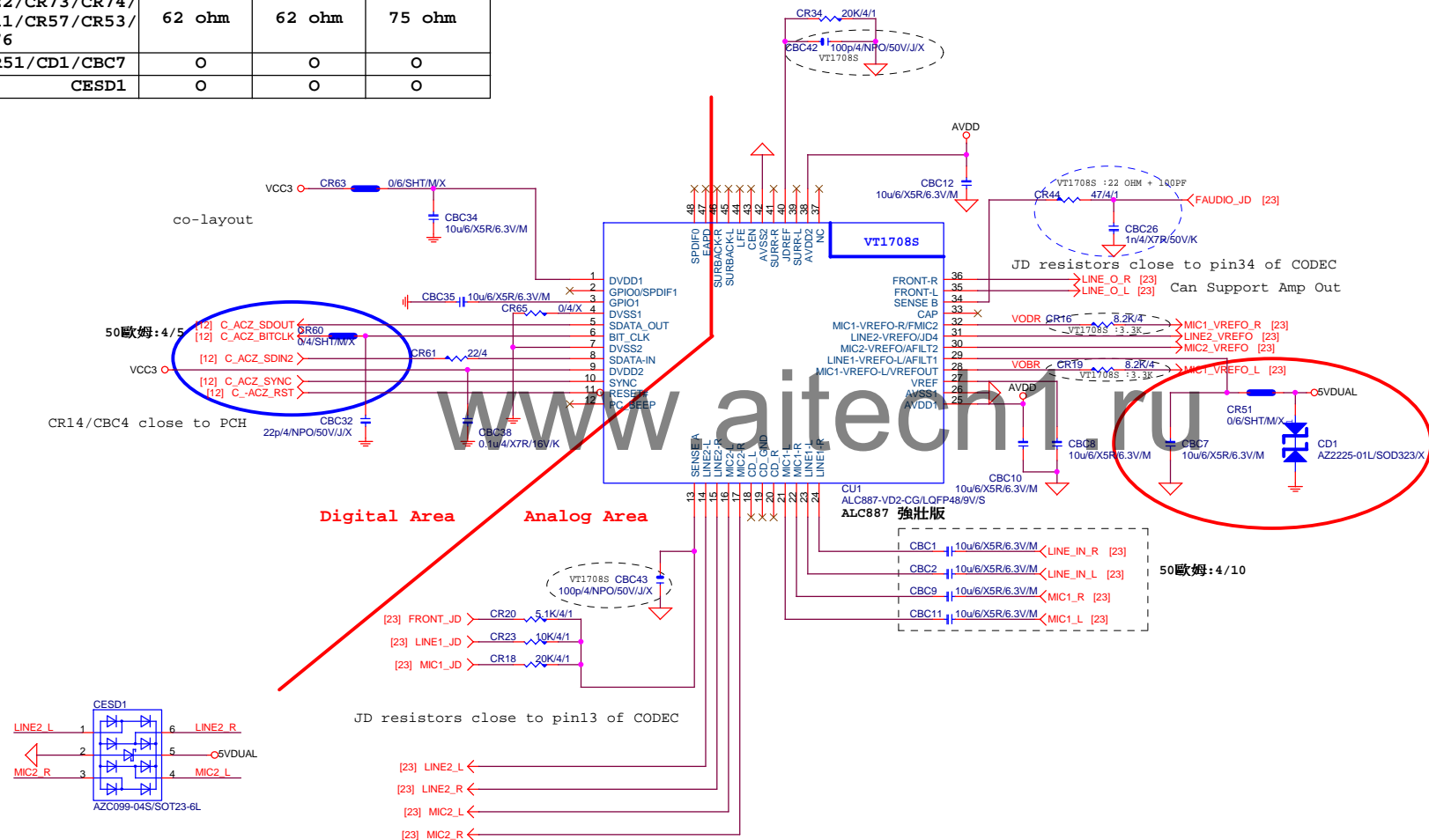
FUSE-0805 F_USB1, F_USB2 4-Port 2.6A

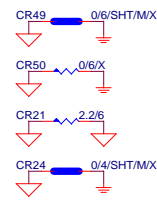


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FP_F_USB,USB PWR,SPKR,SATA LED			
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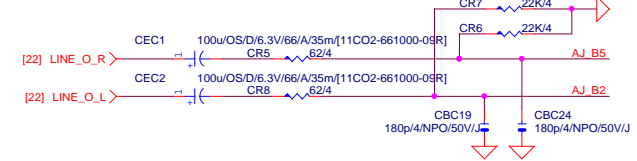
AZALIA CODEC ALC892/ALC887-VD2/VT1708-CE Colay

	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
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





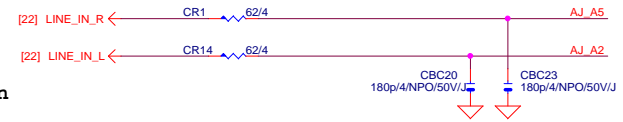
LINE-OUT



LINE-IN

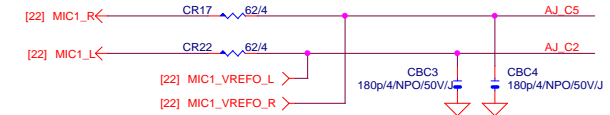
Verify MIC function
in LINE-in

Only reserved for ALC888



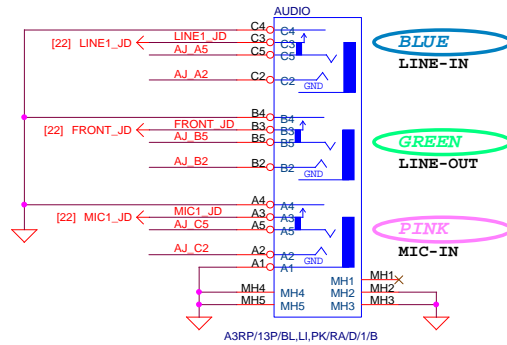
For 889A/888

MIC-IN

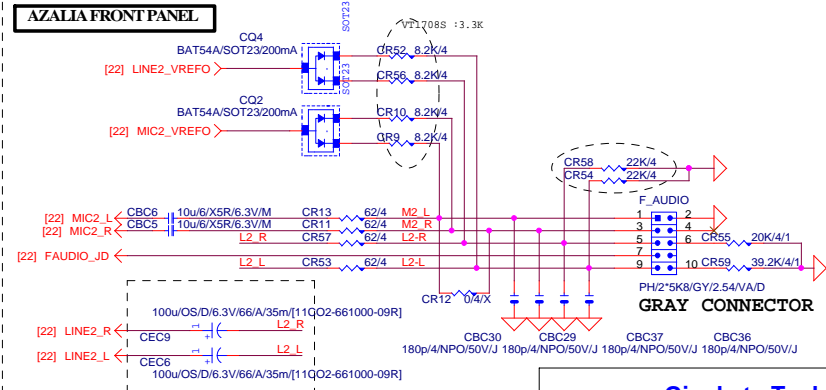


SPDIF_OUT

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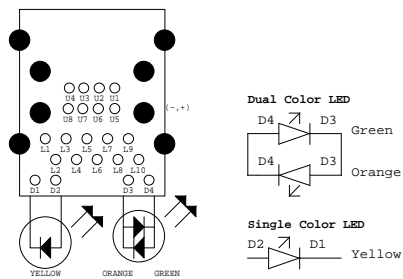
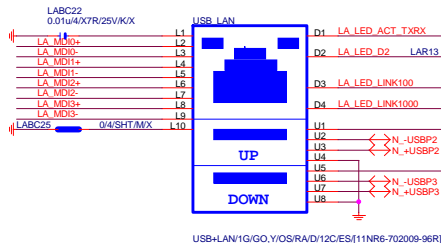
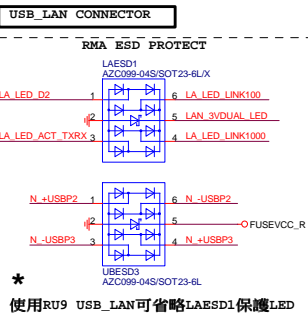
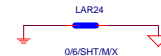
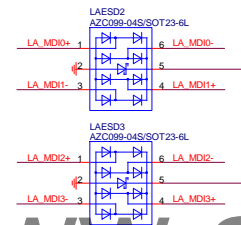
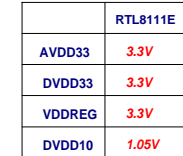
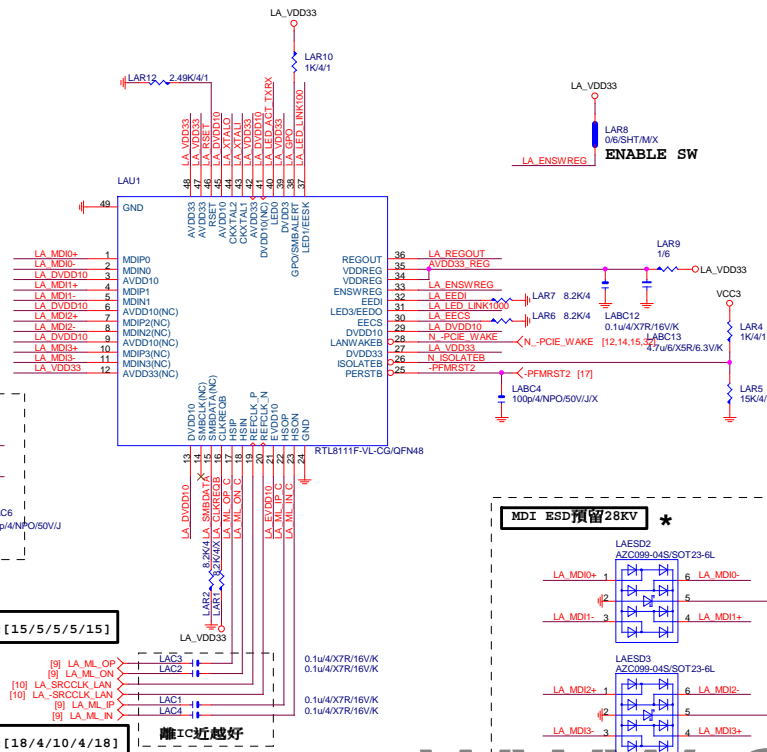


AZALIA FRONT PANEL



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AUDIO JACK			
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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]

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]		

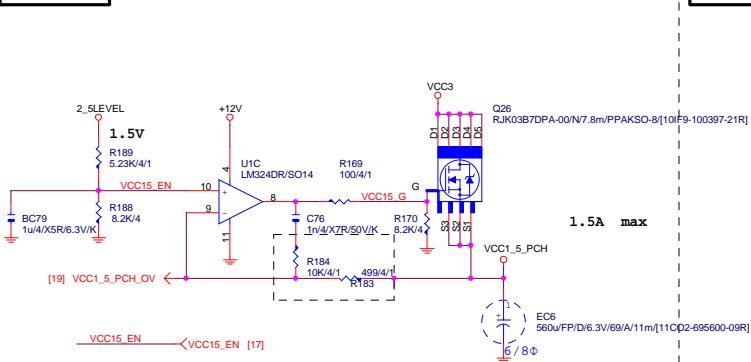
1. 9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R

2. 28KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
LAESD2, LAESD3: 上件:AZC398-04S

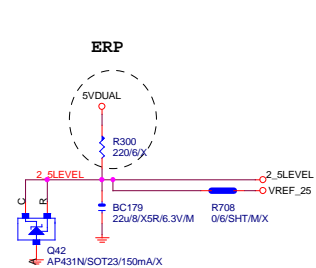
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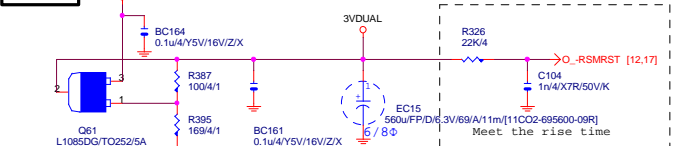
VCC1_5_PCH



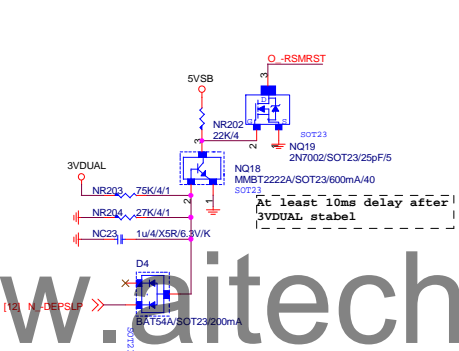
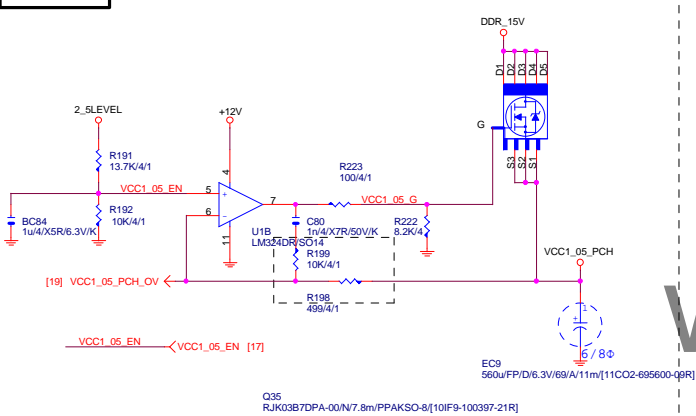
2_5LEVEL



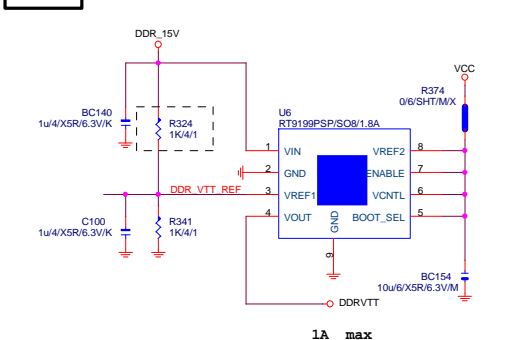
3VDUAL



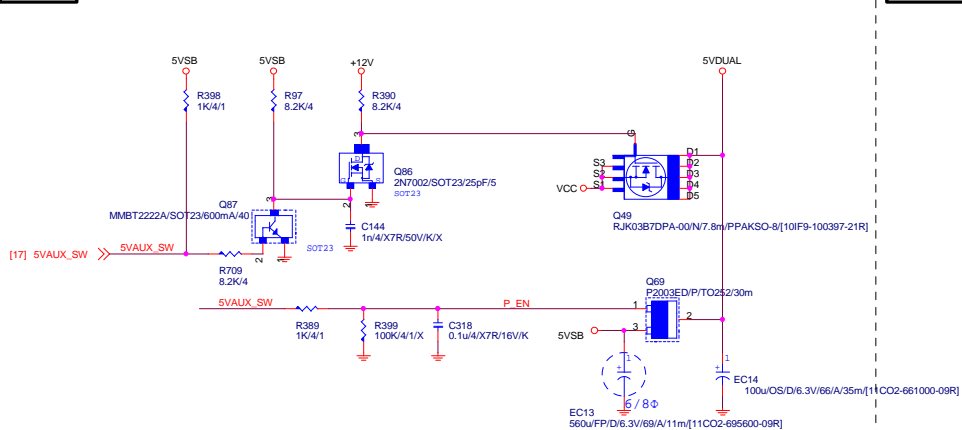
VCC1_05_PCH



DDRVTT

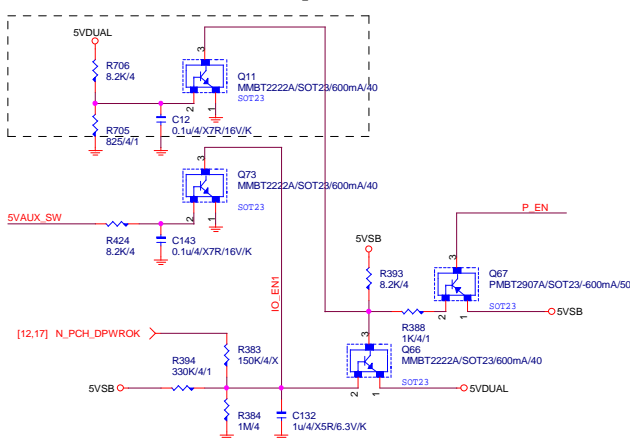


5VDUAL



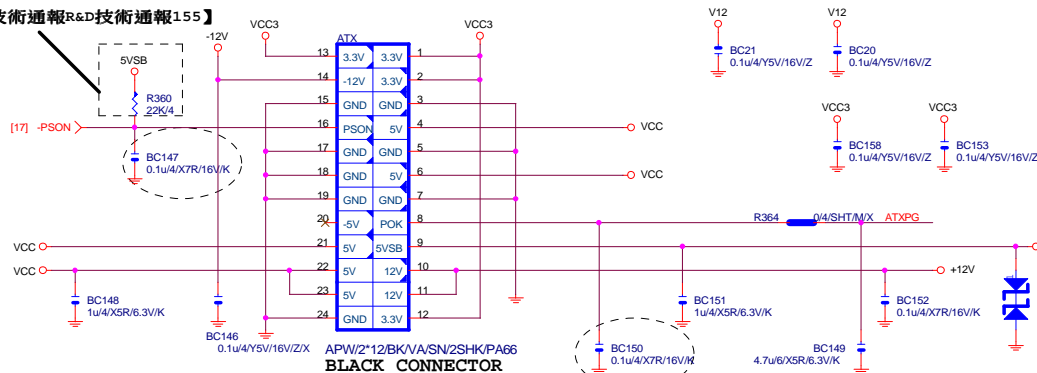
5VDUAL SHORT PROTECT

5VSB OVP:7.5V protection

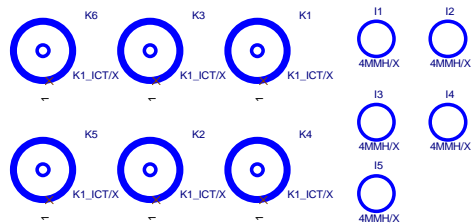
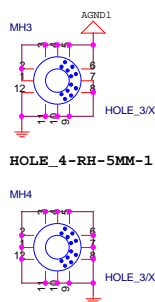
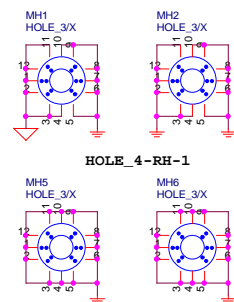


ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】



BLACK CONNECTOR

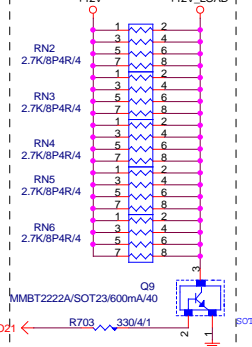


To prevent the 5VSB under loading when boot

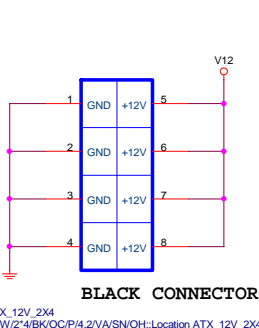
TPM

【技術通報R&D技術通報158】

To fix 12V light load abnormality issue



ATXX4 POWER CONNECTOR



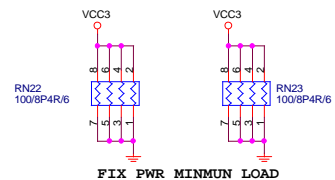
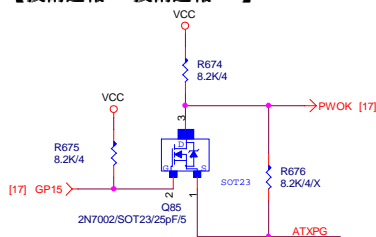
BLACK CONNECTOR

ATX_12V_2X4
APW/2'4/BK/OC/P/4.2V/A/SN/OH: Location ATX_12V_2X4

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PWOK PATCH

【技術通報R&D技術通報154】



FIX PWR MINMUN LOAD

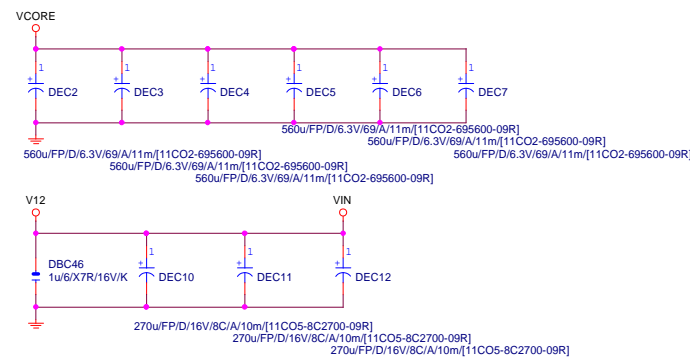
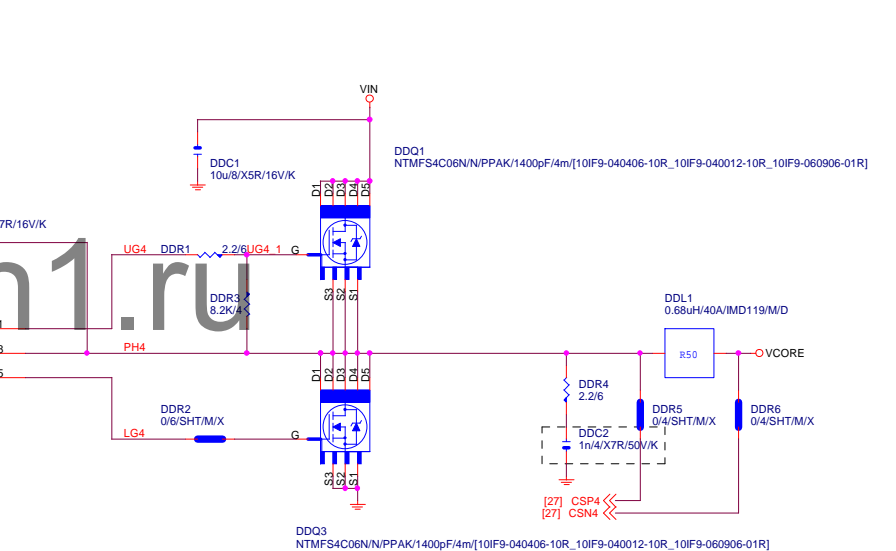
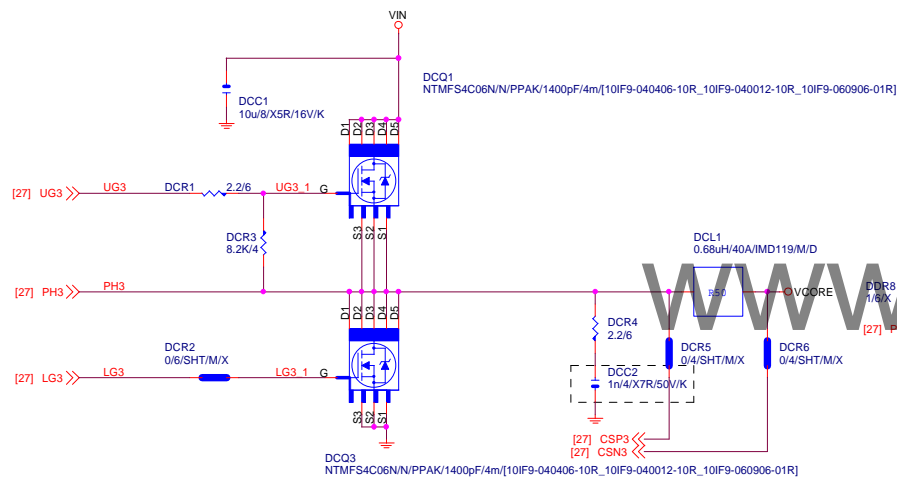
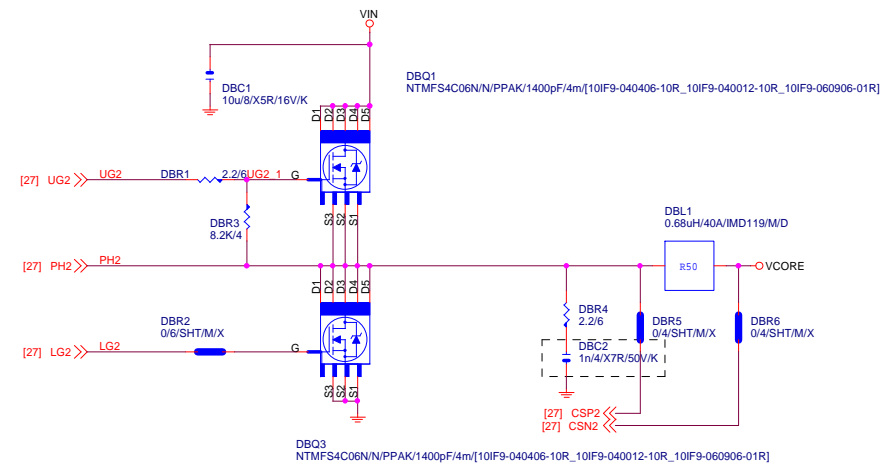
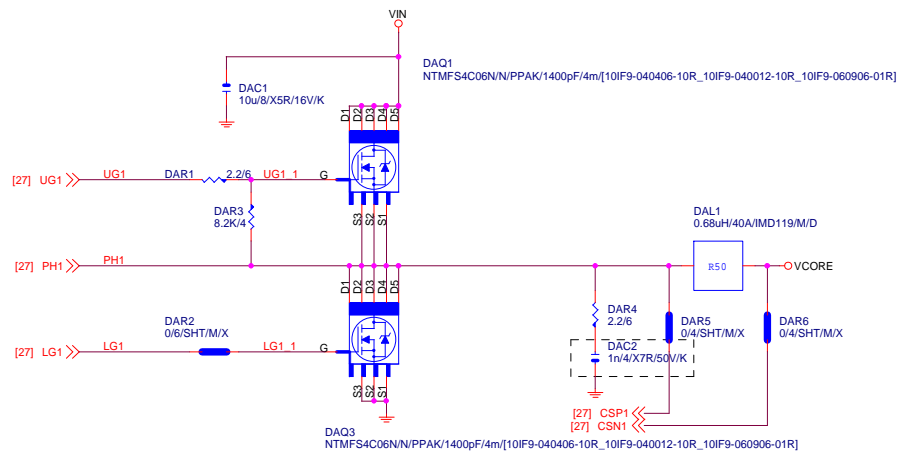
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ATX CONNECTOR

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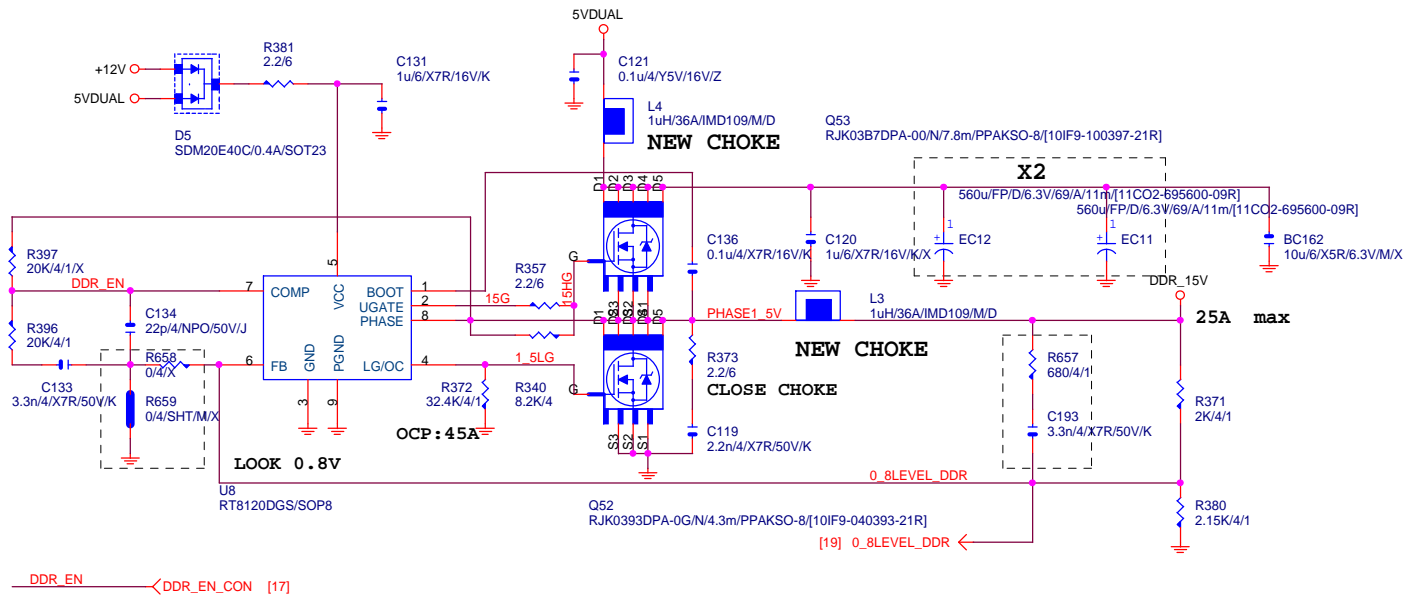
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DDR15V



PWR_SEQ

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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

$Rocset = (I_{ocp} * L_{gate}, rdson) / I_{ocset}$
 $Rocset = (45A * 6.7m\Omega) / 10uA = 30K$
 $I_{ocset} = 10uA$

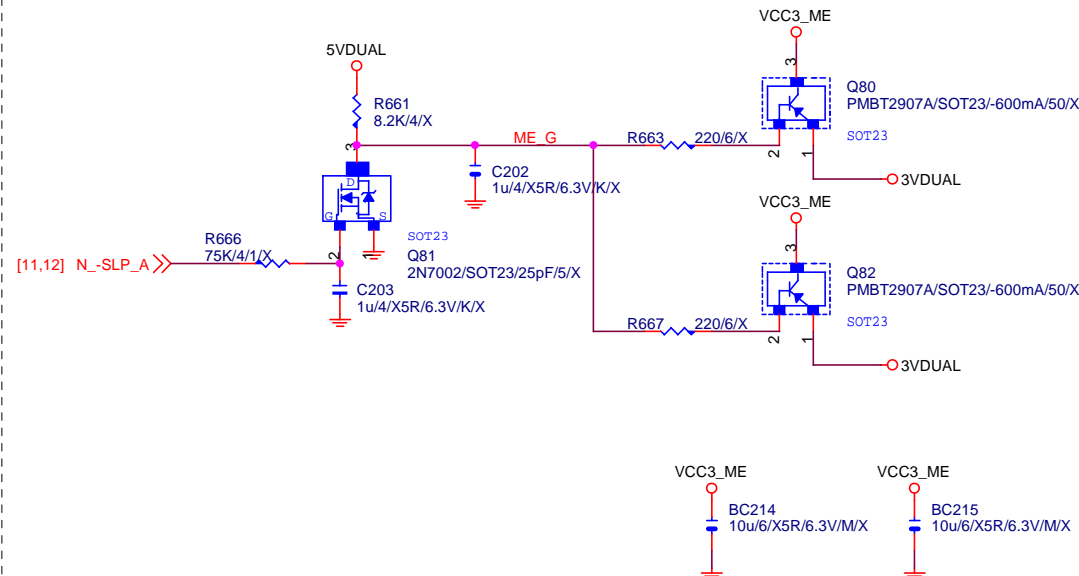
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DDR POWER			
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N/A

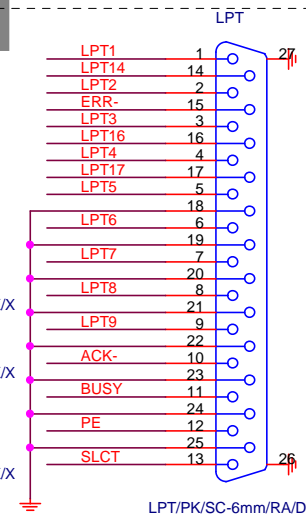
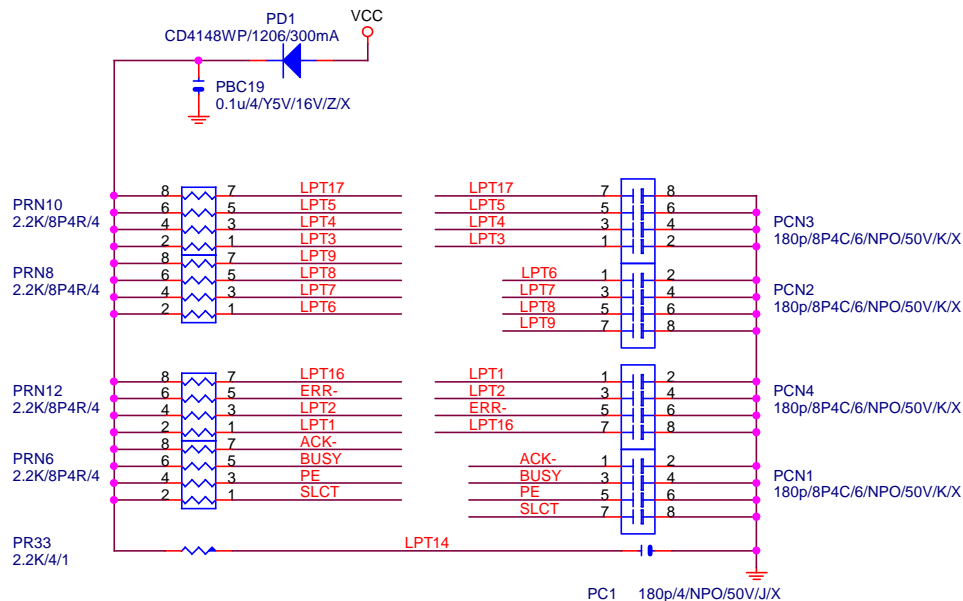
VCC3_ME

N/A

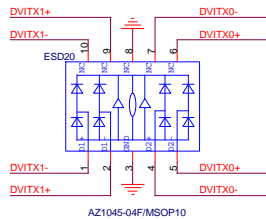
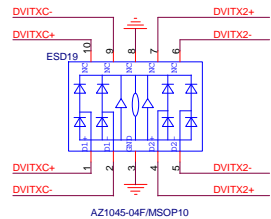
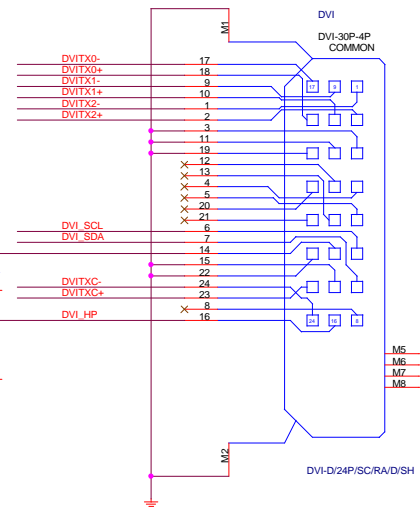
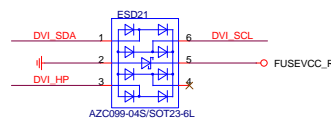
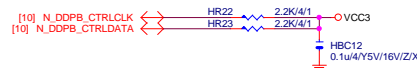
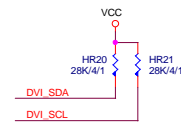
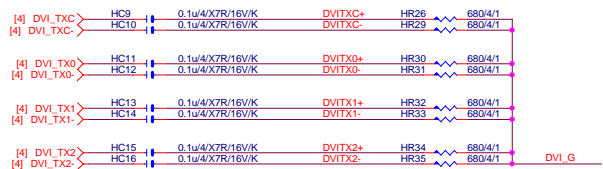


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LPT PORT

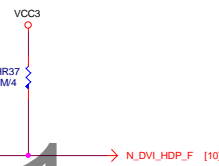
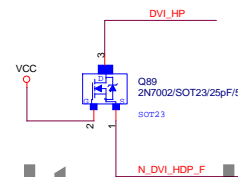
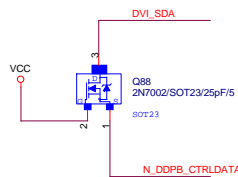
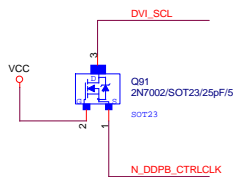
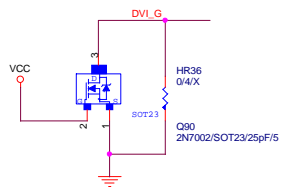


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Close to connector

Close to connector



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DVI			
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