

Model Name: GA-H81M-H

Revision 1.0

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	ITE 8620
17	COM,KB_MS_USB,USB30_20
18	HWM,FAN CTRL,OV,-PROCHOT
19	DUAL BIOS
20	FP,FUSB,SPK,SATALED
21	Realtek ALC887-VD2
22	REAR AUDIO JACK
23	REALTEK RTL8111F
24	DISCRETE POWER
25	ATX , CLOCK GEN
26	VCORE ISL95812_1
27	VCORE ISL95812_2

SHEET

TITLE

28	RT8120_DDR POWER
29	HDMI
30	
31	
32	

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Cover Sheet

Title	Document Number		Rev
Size	GA-H81M-H		1.0
Custom			
Date:	Friday, September 27, 2013	Sheet	1 of 29

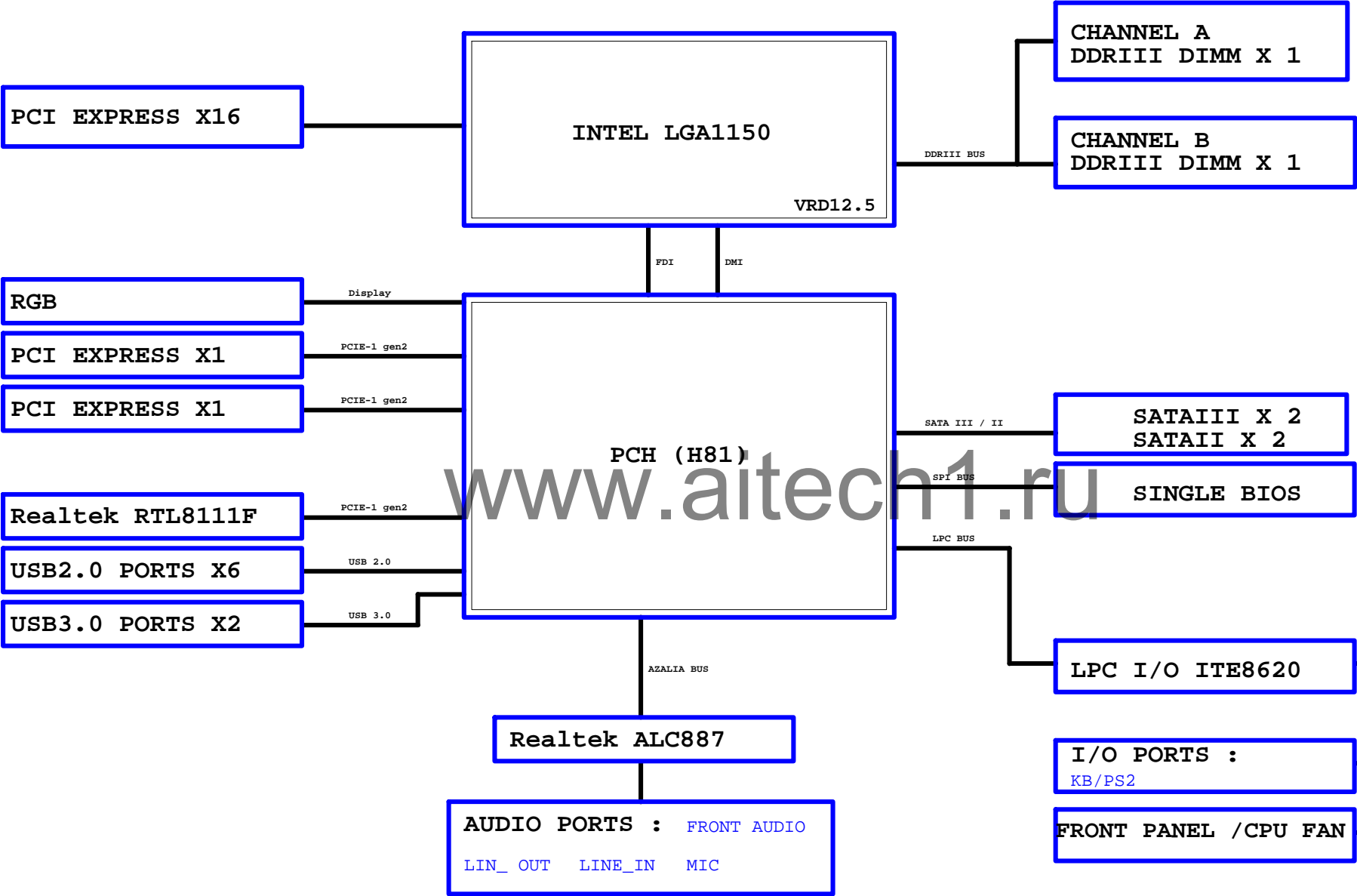
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A vertical bar is divided into four segments labeled A, B, C, and D from bottom to top. An arrow points to the boundary between segments B and C.

2013/07/04

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BLOCK DIAGRAM



[illegible]

Diagram illustrating the pinout for LGA1150D, showing connections for FDI_CSYNC, FDI_INT, FDI_RCOMP, FDI_TXN0, FDI_TXP0, FDI_TXN1, and FDI_TXP1.

Connections shown:

- FDI_CSYNC (D16) to FDI_CSYNC (E17, F17, F18, G18)
- FDI_INT (D18) to FDI_INT (G19, H19, F20, G20)
- FDI_RCOMP (R4) to DP_RCOMP (DDI1_TXP0, DDI1_TXN0, DDI1_TXP1, DDI1_TXN1)
- FDI_TXN0 (B14) to FDI_EDP_TXN0 (DDI3_TXP0, DDI3_TXN0, DDI3_TXP1, DDI3_TXN1)
- FDI_TXP0 (A14) to FDI_EDP_TXP0 (DDI3_TXP0, DDI3_TXN0, DDI3_TXP1, DDI3_TXN1)
- FDI_TXN1 (C13) to FDI_EDP_TXN1 (DDI3_TXP2, DDI3_TXN2, DDI3_TXP3, DDI3_TXN3)
- FDI_TXP1 (B13) to FDI_EDP_TXP1 (DDI3_TXP2, DDI3_TXN2, DDI3_TXP3, DDI3_TXN3)

Additional connections shown:

- WR23 (24.9/4/1) to VCCIOA_L
- N_DP_CLK (U5) to SSC_DPCLKN (DDI2_TXP0, DDI2_TXN0, DDI2_TXP1, DDI2_TXN1)
- N_DP_CLK (U6) to SSC_DPCLKP (DDI2_TXP0, DDI2_TXN0, DDI2_TXP1, DDI2_TXN1)
- EDP_DISP_UTIL (E16) to EDP_DISP_UTIL (DDI2_TXP1, DDI2_TXN1)
- RSVD_TP (K11) to RSVD_TP (DDI2_TXP2, DDI2_TXN2, DDI2_TXP3, DDI2_TXN3)
- RSVD_TP (J12) to RSVD_TP (DDI2_TXP2, DDI2_TXN2, DDI2_TXP3, DDI2_TXN3)
- HDMI_TX2 (D19) to HDMI_TX2 (29)
- HDMI_TX2 (E19) to HDMI_TX2 (29)
- HDMI_TX1 (C20) to HDMI_TX1 (29)
- HDMI_TX1 (D20) to HDMI_TX1 (29)
- HDMI_TX0 (D21) to HDMI_TX0 (29)
- HDMI_TX0 (E21) to HDMI_TX0 (29)
- HDMI_TXC (C22) to HDMI_TXC (29)
- HDMI_TXC (D22) to HDMI_TXC (29)

Summary of FDI signals:

Signal	Pin	Signal	Pin
FDI_CSYNC	D16	FDI_TXN0	B14
FDI_INT	D18	FDI_TXP0	A14
FDI_RCOMP	R4	FDI_TXN1	C13
FDI_TXN0	B14	FDI_TXP1	B13
FDI_TXP0	A14		
FDI_TXN1	C13		
FDI_TXP1	B13		

Impedance: 85 +/- 17.5%

PCIe16:16:5/5/5/16(breakout min 10/4/4/4/10)									
Impedance=80 ± 17.5%									
LGAI1500C									
PA EXP RXP0	E15	PEG_RXP0	A12	PA EXP TXP0					
PA EXP RXN0	F15	PEG_RXP0 PEG_RXN0	B12	PA EXP TXN0					
PA EXP RXP1	D14	PEG_RXP1		PA EXP TXP1					
PA EXP RXN1	E14	PEG_RXP1 PEG_RXN1	C11	PA EXP TXN1					
PA EXP RXP2	E13	PEG_RXP2		PA EXP TXP2					
PA EXP RXN2	F13	PEG_RXP2 PEG_RXN2	D10	PA EXP TXN2					
PA EXP RXP3	D12	PEG_RXP3		PA EXP TXP3					
PA EXP RXN3	E12	PEG_RXP3 PEG_RXN3	C9	PA EXP TXN3					
PA EXP RXP4	E11	PEG_RXP4		PA EXP TXP4					
PA EXP RXN4	F11	PEG_RXP4 PEG_RXN4	D8	PA EXP TXN4					
PA EXP RXP5	F10	PEG_RXP5		PA EXP TXP5					
PA EXP RXN5	G10	PEG_RXP5 PEG_RXN5	C7	PA EXP TXN5					
PA EXP RXP6	E9	PEG_RXP6		PA EXP TXP6					
PA EXP RXN6	F9	PEG_RXP6 PEG_RXN6	B6	PA EXP TXN6					
PA EXP RXP7	F8	PEG_RXP7		PA EXP TXP7					
PA EXP RXN7	G8	PEG_RXP7 PEG_RXN7	C5	PA EXP TXN7					
PA EXP RXP8	D3	PEG_RXP8		PA EXP TXP8					
PA EXP RXN8	D4	PEG_RXP8 PEG_RXN8	E1	PA EXP TXN8					
PA EXP RXP9	E4	PEG_RXP9		PA EXP TXP9					
PA EXP RXN9	E5	PEG_RXP9 PEG_RXN9	F2	PA EXP TXN9					
PA EXP RXP10	F5	PEG_RXP10		PA EXP TXP10					
PA EXP RXN10	F6	PEG_RXP10 PEG_RXN10	G1	PA EXP TXN10					
PA EXP RXP11	G4	PEG_RXP11		PA EXP TXP11					
PA EXP RXN11	G5	PEG_RXP11 PEG_RXN11	H2	PA EXP TXN11					
PA EXP RXP12	H5	PEG_RXP12		PA EXP TXP12					
PA EXP RXN12	H6	PEG_RXP12 PEG_RXN12	J1	PA EXP TXN12					
PA EXP RXP13	J4	PEG_RXP13		PA EXP TXP13					
PA EXP RXN13	J5	PEG_RXP13 PEG_RXN13	K3	PA EXP TXN13					
PA EXP RXP14	K5	PEG_RXP14		PA EXP TXP14					
PA EXP RXN14	K6	PEG_RXP14 PEG_RXN14	M3	PA EXP TXN14					
PA EXP RXP15	L4	PEG_RXP15		PA EXP TXP15					
PA EXP RXN15	L5	PEG_RXP15 PEG_RXN15	L1	PA EXP TXN15					
DML1500C									
DML_0RX0	U3	DML_RX0	AA4	DML_0TX0					
DML_0RXN	T3	DML_RX0	AA5	DML_0TXN					
DML_1RX0	U1	DML_RX1	AB3	DML_1TX0					
DML_1RXN	U1	DML_RX1	AB4	DML_1TXN					
DML_2RX0	W2	DML_RX2	AC5	DML_2TX0					
DML_2RXN	W2	DML_RX2	AC4	DML_2TXN					
DML_3RX0	W3	DML_RX3	AC1	DML_3TX0					
DML_3RXN	W3	DML_RX3	AC2	DML_3TXN					
DML1500C									
	X1	RSVD_TP							
	X2	RSVD_TP							
	B3	RSVD_TP							
	X4	RSVD_TP							
W=12 mil out of CPU									
S=15 mil out of CPU									
VCCIOA_LO	WR15	24.9/4.1	GRCOMP	P3	PEG_RCOMP				

1.1V分壓

VCC3

WR26
2K4/1/X

WR31
1K4/1/X

A_CPUREST

BC102
1n4/X7R/50V/K

A_CPUREST (11,16)

For IT8620 Ctrl

The diagram illustrates the timing relationships for CPU Power Up/Power Down (PU/PD) signals. The horizontal axis represents time, with vertical lines indicating signal transitions. The signals and their associated values are as follows:

- CPU_VTT_0R**: A signal that transitions from high to low at the start of the sequence.
- WVR3**: 80.9/4/1/X
- WVR2**: 115/4/1
- WVR4**: 75/4/1
- PVIDSLCK**: A signal that transitions from high to low.
- PVIDSOUT**: A signal that transitions from high to low.
- PVIDALRT**: A signal that transitions from high to low.
- WVR14**: 51/4/1/X
- WVR16**: 51/4/1/X
- WVR17**: 51/4/1/X
- WVR30**: 51/4/1/X
- A_TMS**: A signal that transitions from high to low.
- A_TDO**: A signal that transitions from high to low.
- A_TDI**: A signal that transitions from high to low.
- A_HPRDY**: A signal that transitions from high to low.
- WVR11**: 51/4/1
- WVR9**: 51/4/1
- A_TCK**: A signal that transitions from high to low.
- A_TRST**: A signal that transitions from high to low.
- CPU_VTT_0R**: A signal that transitions from high to low.
- WVR28**: 1K/4/1/X
- WVR10**: 1K/4/1/X
- WVR25**: 1K/4/1
- WVR56**: 51/4/1/X
- WVR55**: 1K/4/1/X
- A_PECI**: A signal that transitions from high to low.
- A_CATERR**: A signal that transitions from high to low.
- A_PROCHOT**: A signal that transitions from high to low.
- N_CPUWPWOK**: A signal that transitions from high to low.
- A_THRMTRIP**: A signal that transitions from high to low.
- WVR8**: 1K/4/1
- VCC1_05_PCH**: A signal that transitions from high to low.
- WVR34**: 150/4/1
- VCC1_05_PCH**: A signal that transitions from high to low.
- A_PWR_DEBUG**: A signal that transitions from high to low.
- WR33**: 10K/4/1/X
- WVR21**: 8.2K/4/X
- WVR20**: 0/4/X
- 3VDUAL**: A signal that transitions from high to low.
- A_DBR**: A signal that transitions from high to low.
- N_SYS_RST**: A signal that transitions from high to low.
- A_DDR_COMP0**: A signal that transitions from high to low.
- A_DDR_COMP1**: A signal that transitions from high to low.
- A_DDR_COMP2**: A signal that transitions from high to low.
- A_TESTLOW_1**: A signal that transitions from high to low.
- A_TESTLOW_2**: A signal that transitions from high to low.
- A_HSW_CFG_RCOMP**: A signal that transitions from high to low.
- WVR28**: 100/4/1
- WVR19**: 75/4/1
- WVR10**: 100/4/1
- WVR18**: 49.5/4/1
- WVR12**: 49.9/4/1
- WVR24**: 49.9/4/1

DDR_15V

WR62
100k/4%

WR60
100k/4%

A SM VREF

W/C3
0.1uF/4X7R/16V/K

LGA1150 (A)

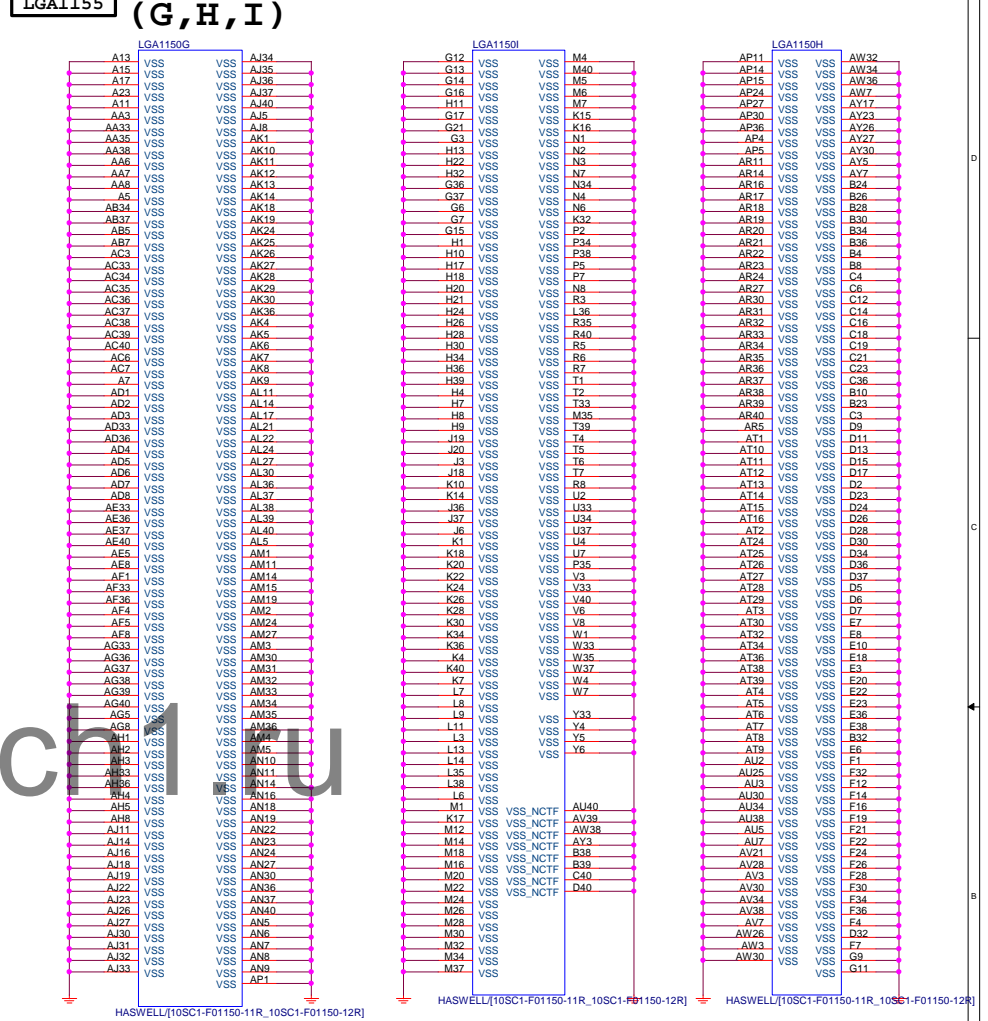
LGA1150A		DDR0_MA0	DDR0_D00	AD38	MDA0
MAAA0	AU13	DDR0_MA1	DDR0_D01	AD39	MDA1
MAAA1	AV16	DDR0_MA2	DDR0_D02	AF38	MDA2
MAAA2	AU16	DDR0_MA3	DDR0_D03	AF39	MDA3
MAAA3	AW17	DDR0_MA4	DDR0_D04	AD37	MDA4
MAAA4	AU18	DDR0_MA5	DDR0_D05	AD40	MDA5
MAAA5	AW18	DDR0_MA6	DDR0_D06	AE37	MDA6
MAAA6	AV17	DDR0_MA7	DDR0_D07	AF40	MDA7
MAAA7	AT18	DDR0_MA8	DDR0_D08	AH40	MDA9
MAAA8	AU18	DDR0_MA9	DDR0_D09	AH39	MDA10
MAAA9	AT19	DDR0_MA10	DDR0_D10	AK38	MDA11
MAAA10	AW11	DDR0_MA11	DDR0_D11	AK39	MDA12
MAAA11	AV19	DDR0_MA12	DDR0_D12	AH37	MDA12
MAAA12	AU19	DDR0_MA13	DDR0_D13	AH38	MDA14
MAAA13	AT20	DDR0_MA14	DDR0_D14	AK37	MDA15
MAAA14	AT20	DDR0_MA15	DDR0_D15	AK40	MDA15
MAAA15	AU21	DDR0_MA16	DDR0_D16	AM40	MDA17
MODT_A0	AW10	DDR0_ODT0	DDR0_ODT0	AM39	MDA21
MODT_A1	AY8	DDR0_ODT1	DDR0_ODT1	AP38	MDA18
AW8		DDR0_ODT2	DDR0_ODT2	AP39	MDA19
AW9		DDR0_ODT3	DDR0_ODT3	AM37	MDA20
AW33		DDR0_ECC0	DDR0_ECC0	AM38	MDA16
AW33		DDR0_ECC1	DDR0_ECC1	AP37	MDA22
AU31		DDR0_ECC2	DDR0_ECC2	AP40	MDA23
AU31		DDR0_ECC3	DDR0_ECC3	AW37	MDA29
AU33		DDR0_ECC4	DDR0_ECC4	AU35	MDA26
AT33		DDR0_ECC5	DDR0_ECC5	AU35	MDA27
AT31		DDR0_ECC6	DDR0_ECC6	T37	MDA28
AW31		DDR0_ECC7	DDR0_ECC7	AU37	MDA24
SBAA0	SBAA0	DDR0_BA0	DDR0_BA0	AT35	MDA30
SBAA1	SBAA1	DDR0_BA1	DDR0_BA1	AW35	MDA31
SBAA2	SBAA2	DDR0_BA2	DDR0_BA2	AY6	MDA33
CKEA0	CKEA0	DDR0_CKE0	DDR0_CKE0	AU6	MDA37
CKEA1	CKEA1	DDR0_CKE1	DDR0_CKE1	AV4	MDA34
CSA0	CSA0	DDR0_CS_N0	DDR0_CS_N0	MDA35	
CSA1	CSA1	DDR0_CS_N1	DDR0_CS_N1	AV6	MDA32
DCLKA0	DCLKA0	DDR0_CLK_P0	DDR0_CLK_P0	AW4	MDA38
DCLKA1	DCLKA1	DDR0_CLK_P1	DDR0_CLK_P1	AY4	MDA39
DCLKA2	DCLKA2	DDR0_CLK_P2	DDR0_CLK_P2	AR1	MDA41
DCLKA3	DCLKA3	DDR0_CLK_P3	DDR0_CLK_P3	AR4	MDA45
RSVD		DDR0_RSVD	DDR0_RSVD	AN3	MDA42
SRASA	SRASA	DDR0_RAS*	DDR0_RAS*	AN4	MDA43
SWEA	SWEA	DDR0_WE*	DDR0_WE*	MDA44	
SCASA	SCASA	DDR0_CAS*	DDR0_CAS*	AR2	MDA44
WR61	WR61	DDR0_RESET	DDR0_RESET	AR3	MDA40
W4	W4	DDR0_W4	DDR0_W4	AN2	MDA46
WBC34	WBC34	DDR0_WBC34	DDR0_WBC34	AN1	MDA47
WBC33	WBC33	DDR0_WBC33	DDR0_WBC33	AL1	MDA49
WBC32	WBC32	DDR0_WBC32	DDR0_WBC32	AL4	MDA53
WBC31	WBC31	DDR0_WBC31	DDR0_WBC31	AL3	MDA50
WBC30	WBC30	DDR0_WBC30	DDR0_WBC30	AJ4	MDA51
WBC29	WBC29	DDR0_WBC29	DDR0_WBC29	AL2	MDA52
WBC28	WBC28	DDR0_WBC28	DDR0_WBC28	AJ2	MDA54
WBC27	WBC27	DDR0_WBC27	DDR0_WBC27	AJ1	MDA55
WBC26	WBC26	DDR0_WBC26	DDR0_WBC26	AG1	MDA57
WBC25	WBC25	DDR0_WBC25	DDR0_WBC25	AG4	MDA61
WBC24	WBC24	DDR0_WBC24	DDR0_WBC24	AE3	MDA58
WBC23	WBC23	DDR0_WBC23	DDR0_WBC23	E4	MDA59
WBC22	WBC22	DDR0_WBC22	DDR0_WBC22	AG2	MDA60
WBC21	WBC21	DDR0_WBC21	DDR0_WBC21	AG3	MDA56
WBC20	WBC20	DDR0_WBC20	DDR0_WBC20	AE2	MDA62
WBC19	WBC19	DDR0_WBC19	DDR0_WBC19	AE1	MDA63
WBC18	WBC18	DDR0_WBC18	DDR0_WBC18	AE39	DQSA0
WBC17	WBC17	DDR0_WBC17	DDR0_WBC17	AJ39	DQSA1
WBC16	WBC16	DDR0_WBC16	DDR0_WBC16	AN39	DQSA2
WBC15	WBC15	DDR0_WBC15	DDR0_WBC15	AV36	DQSA3
WBC14	WBC14	DDR0_WBC14	DDR0_WBC14	AV5	DQSA4
WBC13	WBC13	DDR0_WBC13	DDR0_WBC13	AP3	DQSA5
WBC12	WBC12	DDR0_WBC12	DDR0_WBC12	AK3	DQSA6
WBC11	WBC11	DDR0_WBC11	DDR0_WBC11	AF3	DQSA7
WBC10	WBC10	DDR0_WBC10	DDR0_WBC10	AV32	DQSA0
WBC9	WBC9	DDR0_WBC9	DDR0_WBC9	AE38	DQSA1
WBC8	WBC8	DDR0_WBC8	DDR0_WBC8	AJ38	DQSA2
WBC7	WBC7	DDR0_WBC7	DDR0_WBC7	AN38	DQSA3
WBC6	WBC6	DDR0_WBC6	DDR0_WBC6	AJ36	DQSA4
WBC5	WBC5	DDR0_WBC5	DDR0_WBC5	AW5	DQSA5
WBC4	WBC4	DDR0_WBC4	DDR0_WBC4	AP2	DQSA6
WBC3	WBC3	DDR0_WBC3	DDR0_WBC3	AK2	DQSA7
WBC2	WBC2	DDR0_WBC2	DDR0_WBC2	AF2	DQSA7
WBC1	WBC1	DDR0_WBC1	DDR0_WBC1	AJ32	DQSA7

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

LGA1150 (B)

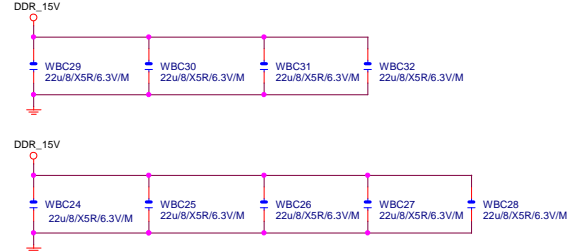
LGA1150B		DDR1_MA0	DDR1_D00	AE34	MDB0
MAAB0	AL19	DDR1_MA1	DDR1_D01	AE35	MDB1
MAAB1	AK23	DDR1_MA2	DDR1_D02	AG35	MDB2
MAAB2	AM23	DDR1_MA3	DDR1_D03	AH35	MDB3
MAAB3	AP23	DDR1_MA4	DDR1_D04	AD34	MDB4
MAAB4	AL23	DDR1_MA5	DDR1_D05	AD35	MDB5
MAAB5	AY24	DDR1_MA6	DDR1_D06	AG34	MDB6
MAAB6	AY25	DDR1_MA7	DDR1_D07	AH34	MDB7
MAAB7	AU26	DDR1_MA8	DDR1_D08	AL34	MDB8
MAAB8	AW26	DDR1_MA9	DDR1_D09	AL35	MDB9
MAAB9	AY28	DDR1_MA10	DDR1_D10	AL31	MDB10
MAAB10	AY28	DDR1_MA11	DDR1_D11	AL31	MDB11
MAAB11	AY28	DDR1_MA12	DDR1_D12	AK34	MDB12
MAAB12	AY28	DDR1_MA13	DDR1_D13	AK35	MDB13
MAAB13	AY27	DDR1_MA14	DDR1_D14	AK32	MDB14
MAAB14	AY28	DDR1_MA15	DDR1_D15	AL32	MDB15
MODT_B0	AM17	DDR1_ODT0	DDR1_ODT0	AP34	MDB17
MODT_B1	AL16	DDR1_ODT1	DDR1_ODT1	AN31	MDB19
AM16		DDR1_ODT2	DDR1_ODT2	AP31	MDB20
AK15		DDR1_ODT3	DDR1_ODT3	AP35	MDB16
AM26		DDR1_ECC0	DDR1_ECC0	AN32	MDB18
AM25		DDR1_ECC1	DDR1_ECC1	AP32	MDB22
AP25		DDR1_ECC2	DDR1_ECC2	AM29	MDB25
AP28		DDR1_ECC3	DDR1_ECC3	AM28	MDB28
AL26		DDR1_ECC4	DDR1_ECC4	AR29	MDB27
AL25		DDR1_ECC5	DDR1_ECC5	AR28	MDB30
AR26		DDR1_ECC6	DDR1_ECC6	AL28	MDB24
AR25		DDR1_ECC7	DDR1_ECC7	AL28	MDB29
AK17		DDR1_BA0	DDR1_BA0	AP29	MDB26
SBAB0	SBAB0	DDR1_BA1	DDR1_BA1	AP28	MDB31
SBAB1	SBAB1	DDR1_BA2	DDR1_BA2	AR12	MDB32
SBAB2	SBAB2	DDR1_CKE0	DDR1_CKE0	AL12	MDB35
CKEB0	CKEB0	DDR1_CKE1	DDR1_CKE1	AR13	MDB36
CKEB1	CKEB1	DDR1_CKE2	DDR1_CKE2	AP13	MDB37
CSB0	CSB0	DDR1_CS_N0	DDR1_CS_N0	AM13	MDB38
CSB1	CSB1	DDR1_CS_N1	DDR1_CS_N1	AM12	MDB39
AP17		DDR1_CS_N2	DDR1_CS_N2	AR9	MDB45
CSB1		DDR1_CS_N3	DDR1_CS_N3	AP9	MDB41
AM15		DDR1_CS_N4	DDR1_CS_N4	AR6	MDB47
AM17		DDR1_CS_N5	DDR1_CS_N5	AP6	MDB43
AL15		DDR1_CS_N6	DDR1_CS_N6	AR10	MDB44
AM20		DDR1_CLK_P0	DDR1_CLK_P0	AP10	MDB40
AM21		DDR1_CLK_P1	DDR1_CLK_P1	AR7	MDB46
AM22		DDR1_CLK_P2	DDR1_CLK_P2	AP7	MDB42
AM23		DDR1_CLK_P3	DDR1_CLK_P3	AM9	MDB52
AM24		DDR1_CLK_N0	DDR1_CLK_N0	AL9	MDB53
AM25		DDR1_CLK_N1	DDR1_CLK_N1	AL6	MDB50
AM26		DDR1_CLK_N2	DDR1_CLK_N2	AL7	MDB55
AM27		DDR1_CLK_N3	DDR1_CLK_N3	AM10	MDB48
AM28		DDR1_CLK_P4	DDR1_CLK_P4	AL10	MDB49
AM29		DDR1_CLK_P5	DDR1_CLK_P5	AM6	MDB54
AM30		DDR1_CLK_P6	DDR1_CLK_P6	AM7	MDB51
AM31		DDR1_CLK_P7	DDR1_CLK_P7	AH6	MDB61
AM32		DDR1_CLK_P8	DDR1_CLK_P8	AH7	MDB60
AM33		DDR1_CLK_P9	DDR1_CLK_P9	AE6	MDB59
AM34		DDR1_CLK_P10	DDR1_CLK_P10	AE7	MDB63
AM35		DDR1_CLK_P11	DDR1_CLK_P11	AJ6	MDB56
AM36		DDR1_CLK_P12	DDR1_CLK_P12	AJ7	MDB57
AM37		DDR1_CLK_P13	DDR1_CLK_P13	AE6	MDB58
AM38		DDR1_CLK_P14	DDR1_CLK_P14	AE7	MDB59
AM39		DDR1_CLK_P15	DDR1_CLK_P15	AE7	MDB59
AM40		DDR1_CLK_P16	DDR1_CLK_P16	AE7	MDB59
AM41		DDR1_CLK_P17	DDR1_CLK_P17	AE7	MDB59
AM42		DDR1_CLK_P18	DDR1_CLK_P18	AE7	MDB59
AM43		DDR1_CLK_P19	DDR1_CLK_P19	AE7	MDB59
AM44		DDR1_CLK_P20	DDR1_CLK_P20	AE7	MDB59
AM45		DDR1_CLK_P21	DDR1_CLK_P21	AE7	MDB59
AM46		DDR1_CLK_P22	DDR1_CLK_P22	AE7	MDB59
AM47		DDR1_CLK_P23	DDR1_CLK_P23	AE7	MDB59
AM48		DDR1_CLK_P24	DDR1_CLK_P24	AE7	MDB59
AM49		DDR1_CLK_P25	DDR1_CLK_P25	AE7	MDB59
AM50		DDR1_CLK_P26	DDR1_CLK_P26	AE7	MDB59
AM51		DDR1_CLK_P27	DDR1_CLK_P27	AE7	MDB59
AM52		DDR1_CLK_P28	DDR1_CLK_P28	AE7	MDB59
AM53		DDR1_CLK_P29	DDR1_CLK_P29	AE7	MDB59
AM54		DDR1_CLK_P30	DDR1_CLK_P30	AE7	MDB59
AM55		DDR1_CLK_P31	DDR1_CLK_P31	AE7	MDB59
AM56		DDR1_CLK_P32	DDR1_CLK_P32	AE7	MDB59
AM57		DDR1_CLK_P33	DDR1_CLK_P33	AE7	MDB59
AM58		DDR1_CLK_P34	DDR1_CLK_P34	AE7	MDB59
AM59		DDR1_CLK_P35	DDR1_CLK_P35	AE7	MDB59
AM60		DDR1_CLK_P36	DDR1_CLK_P36	AE7	MDB59
AM61		DDR1_CLK_P37	DDR1_CLK_P37	AE7	MDB59
AM62		DDR1_CLK_P38	DDR1_CLK_P38	AE7	MDB59
AM63		DDR1_CLK_P39	DDR1_CLK_P39	AE7	MDB59
AM64		DDR1_CLK_P40	DDR1_CLK_P40	AE7	MDB59
AM65		DDR1_CLK_P41	DDR1_CLK_P41	AE7	MDB59
AM66		DDR1_CLK_P42	DDR1_CLK_P42	AE7	MDB59
AM67		DDR1_CLK_P43	DDR1_CLK_P43	AE7	MDB59
AM68		DDR1_CLK_P44	DDR1_CLK_P44	AE7	MDB59
AM69		DDR1_CLK_P45	DDR1_CLK_P45	AE7	MDB59
AM70		DDR1_CLK_P46	DDR1_CLK_P46	AE7	MDB59
AM71		DDR1_CLK_P47	DDR1_CLK_P47	AE7	MDB59
AM72		DDR1_CLK_P48	DDR1_CLK_P48	AE7	MDB59
AM73		DDR1_CLK_P49	DDR1_CLK_P49	AE7	MDB59
AM74		DDR1_CLK_P50	DDR1_CLK_P50	AE7	MDB59
AM75		DDR1_CLK_P51	DDR1_CLK_P51	AE7	MDB59
AM76		DDR1_CLK_P52	DDR1_CLK_P52	AE7	MDB59
AM77		DDR1_CLK_P53	DDR1_CLK_P53	AE7	MDB59
AM78		DDR1_CLK_P54	DDR1_CLK_P54	AE7	MDB59
AM79		DDR1_CLK_P55	DDR1_CLK_P55	AE7	MDB59
AM80		DDR1_CLK_P56	DDR1_CLK_P56	AE7	MDB59
AM81		DDR1_CLK_P57	DDR1_CLK_P57	AE7	MDB59
AM82		DDR1_CLK_P58	DDR1_CLK_P58	AE7	MDB59
AM83		DDR1_CLK_P59	DDR1_CLK_P59	AE7	MDB59
AM84		DDR1_CLK_P60	DDR1_CLK_P60	AE7	MDB59
AM85		DDR1_CLK_P61	DDR1_CLK_P61	AE7	MDB59
AM86		DDR1_CLK_P62	DDR1_CLK_P62	AE7	MDB59
AM87		DDR1_CLK_P63	DDR1_CLK_P63	AE7	MDB59
AM88		DDR1_CLK_P64	DDR1_CLK_P64	AE7	MDB59
AM89		DDR1_CLK_P65	DDR1_CLK_P65	AE7	MDB59
AM90		DDR1_CLK_P66	DDR1_CLK_P66	AE7	MDB59
AM91		DDR1_CLK_P67	DDR1_CLK_P67	AE7	MDB59
AM92		DDR1_CLK_P68	DDR1_CLK_P68	AE7	MDB59
AM93		DDR1_CLK_P69	DDR1_CLK_P69	AE7	MDB59
AM94		DDR1_CLK_P70	DDR1_CLK_P70	AE7	MDB59
AM95		DDR1_CLK_P71	DDR1_CLK_P71	AE7	MDB59
AM96		DDR1_CLK_P72	DDR1_CLK_P72	AE7	MDB59
AM97		DDR1_CLK_P73	DDR1_CLK_P73	AE7	MDB59
AM98		DDR1_CLK_P74	DDR1_CLK_P74	AE7	MDB59
AM99		DDR1_CLK_P75	DDR1_CLK_P75	AE7	MDB59
AM100		DDR1_CLK_P76	DDR1_CLK_P76	AE7	MDB59
AM101		DDR1_CLK_P77	DDR1_CLK_P77	AE7	MDB59
AM102		DDR1_CLK_P78	DDR1_CLK_P78	AE7	MDB59
AM103		DDR1_CLK_P79	DDR1_CLK_P79	AE7	MDB59
AM104		DDR1_CLK_P80	DDR1_CLK_P80	AE7	MDB59
AM105		DDR1_CLK_P81	DDR1_CLK_P81	AE7	MDB59
AM106		DDR1_CLK_P82	DDR1_CLK_P82	AE7	MDB59
AM107		DDR1_CLK_P83	DDR1_CLK_P83	AE7	MDB59
AM108		DDR1_CLK_P84	DDR1_CLK_P84	AE7	MDB59
AM109		DDR1_CLK_P85	DDR1_CLK_P85	AE7	MDB59
AM110		DDR1_CLK_P86	DDR1_CLK_P86	AE7	MDB59
AM111		DDR1_CLK_P87	DDR1_CLK_P87	AE7	MDB59
AM112		DDR1_CLK_P88	DDR1_CLK_P88	AE7	MDB59
AM113		DDR1_CLK_P89	DDR1_CLK_P89	AE7	MDB59
AM114		DDR1_CLK_P90	DDR1_CLK_P90	AE7	MDB59
AM115		DDR1_CLK_P91	DDR1_CLK_P91	AE7	MDB59
AM116		DDR1_CLK_P92	DDR1_CLK_P92	AE7	MDB59
AM117		DDR1_CLK_P93	DDR1_CLK_P93	AE7	MDB59
AM118		DDR1_CLK_P94	DDR1_CLK_P94	AE7	MDB59
AM119		DDR1_CLK_P95	DDR1_CLK_P95	AE7	MDB59

LGA1155 (G,H,I)



DDR CAP

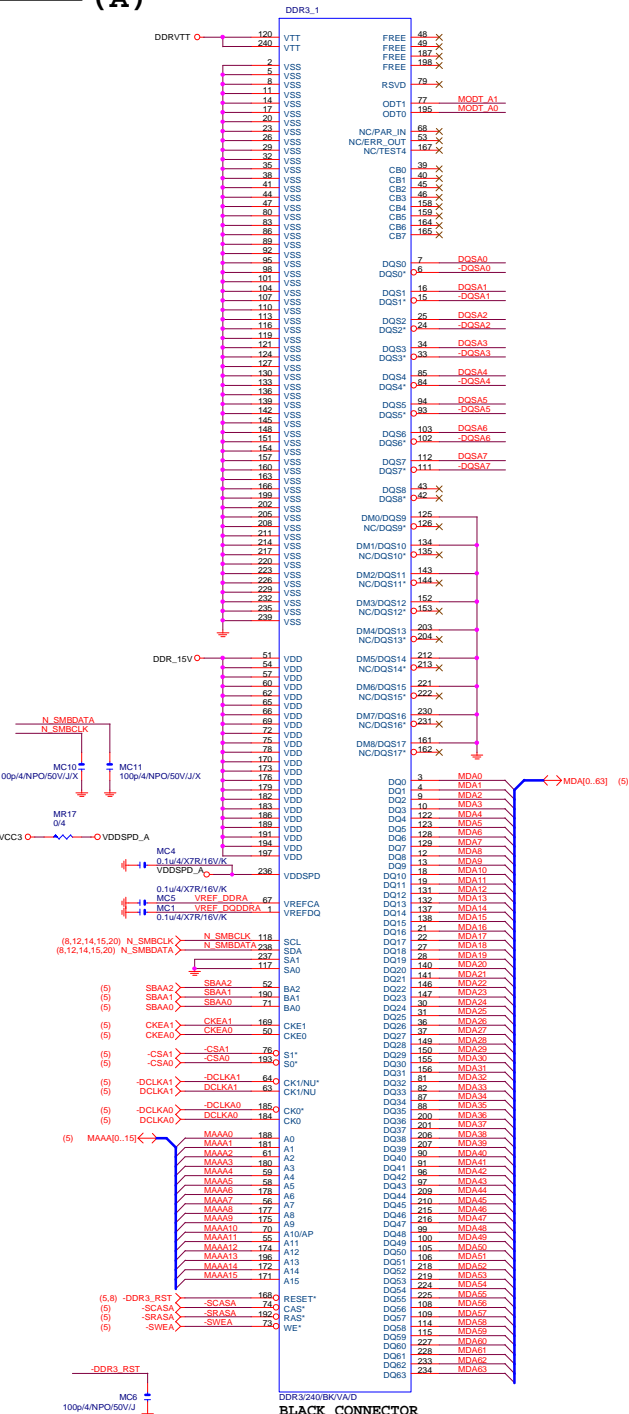
(x9)



Title			
CPU LGA1150-C			
Size	Document Number	Rev	
Custom	GA-H81M-H	1.0	
Date:	Friday, September 27, 2013	Sheet	6 of 29

DDR3

(A)

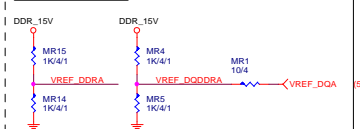


BLACK CONNECTOR

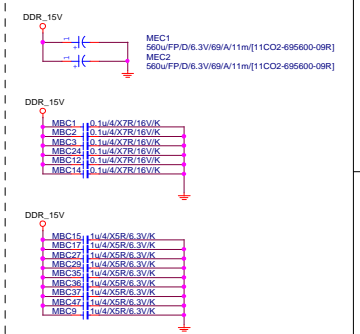
MODT_A[0..1] ↔ MODT_A[0..1] (5)
DQSA[0..7] ↔ DQSA[0..7] (5)
DQSA[0..7] ↔ DQSA[0..7] (5)

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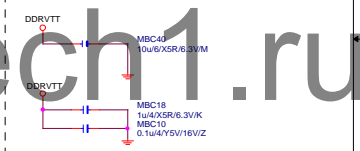
DDR3 VREF



DDR15V Decouple



DDRVTT Decouple



Gigabyte Technology

Title

Size

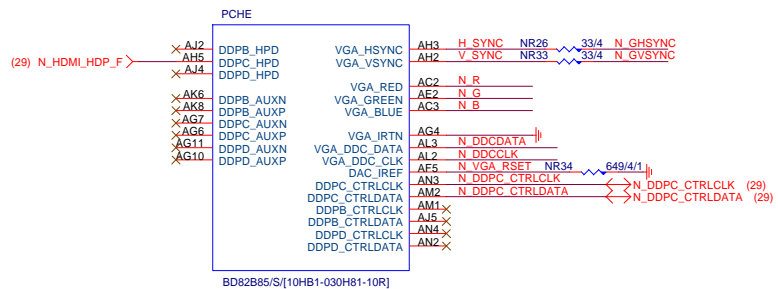
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GA-H81M-H

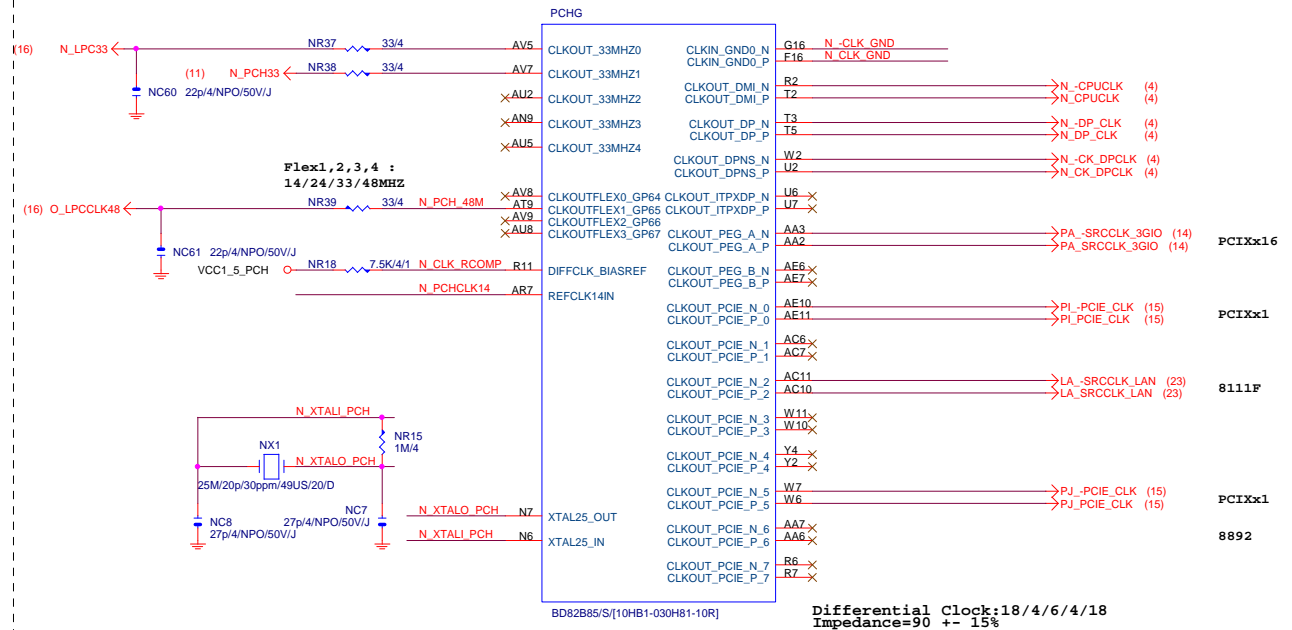
Rev

1.0

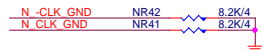
PCH (E)



PCH (G)



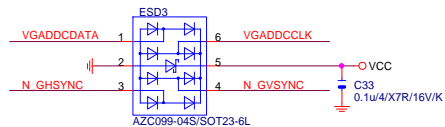
PCH CLK PD



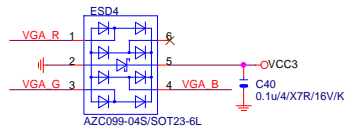
Mount for integrated clock Generation
Mode



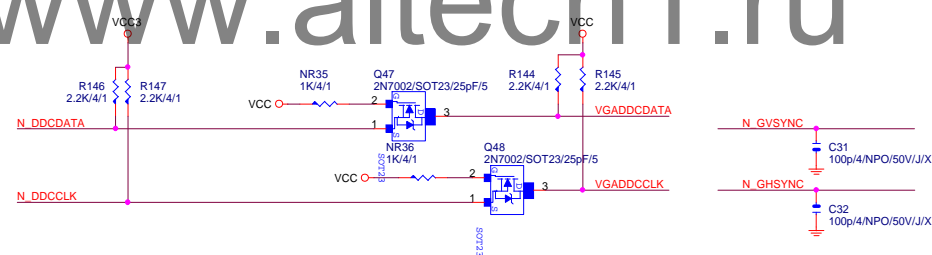
VGA ESD



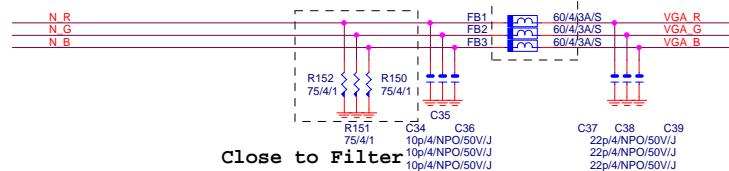
SSOP6_ESD



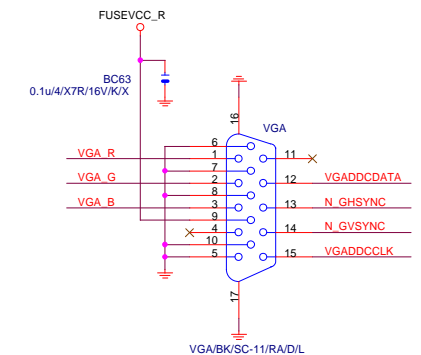
VGA DDC



VGA DDC



VGA CONNECTOR



VGA/BK/SC-11/RA/D/L
BLACK CONNECTOR

Gigabyte Technology

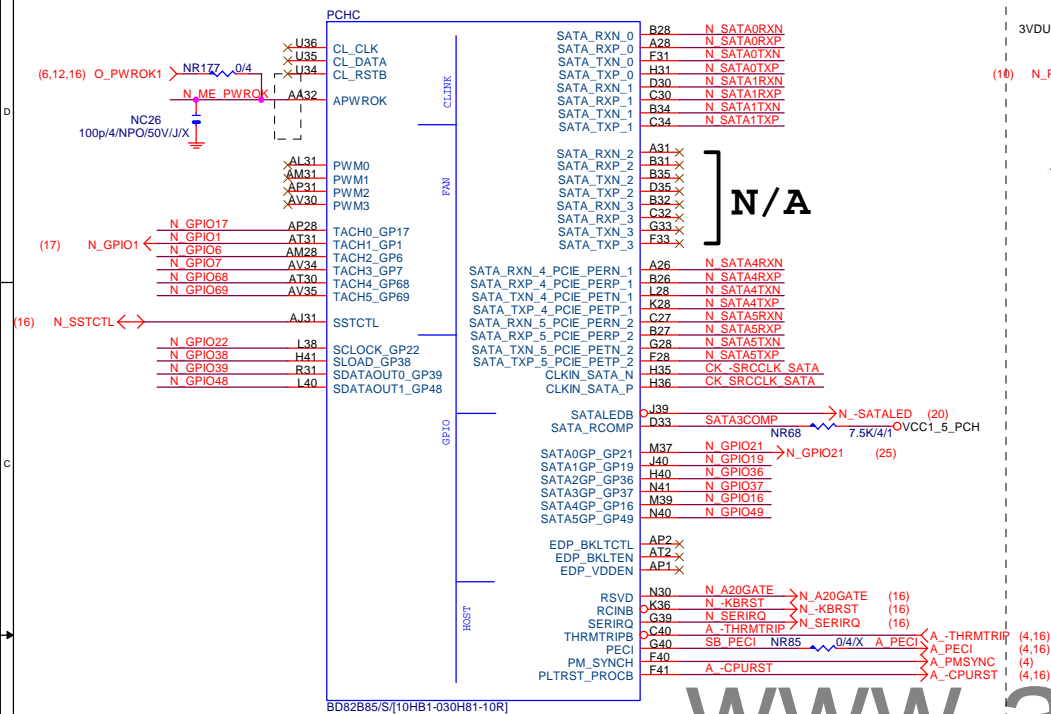
Title	PCH DISPLAY_CLK BUFFER
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Size Custom	Document Number GA-H81M-H	Rev 1.0
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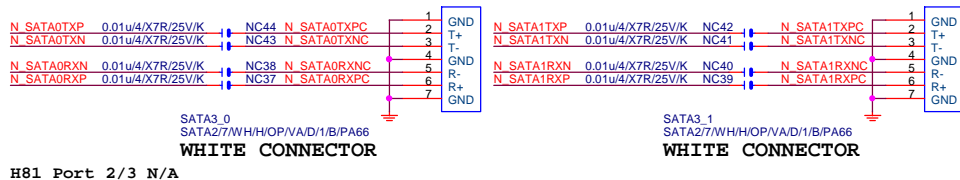
Date:	Friday, September 27, 2013	Sheet	10	of	29
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(C)

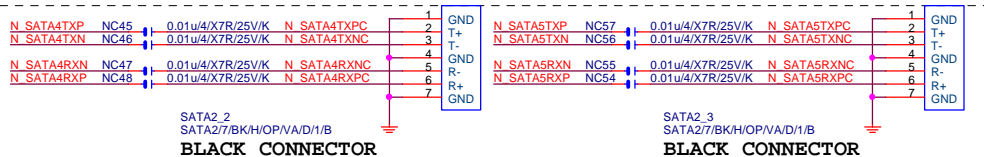
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%



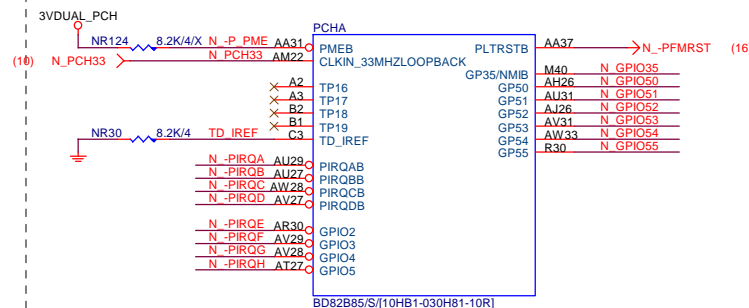
SATA CONNECTOR



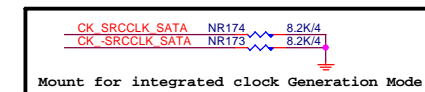
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** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0
```



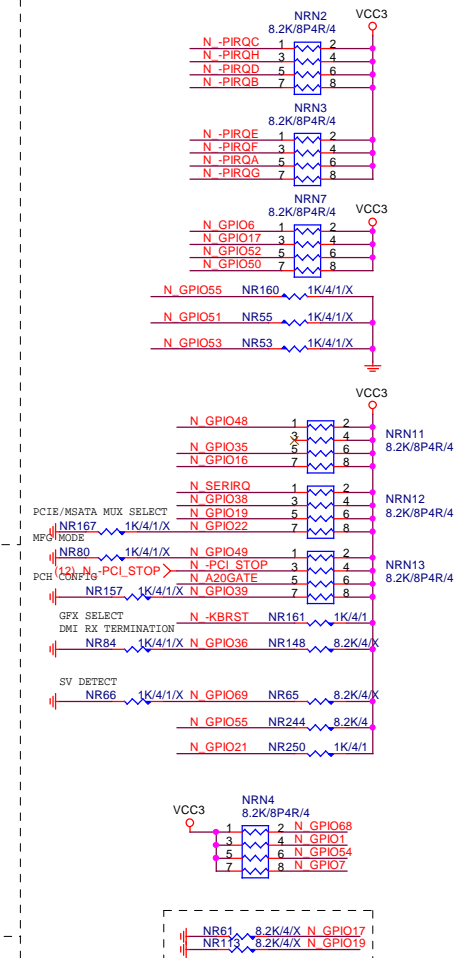
PCH (A)



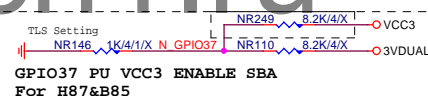
PCH	CLK	PD
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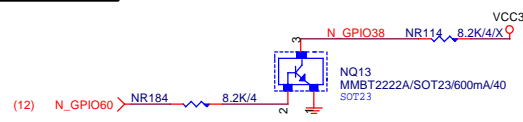
PCH	PU/PD
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ME PWROK



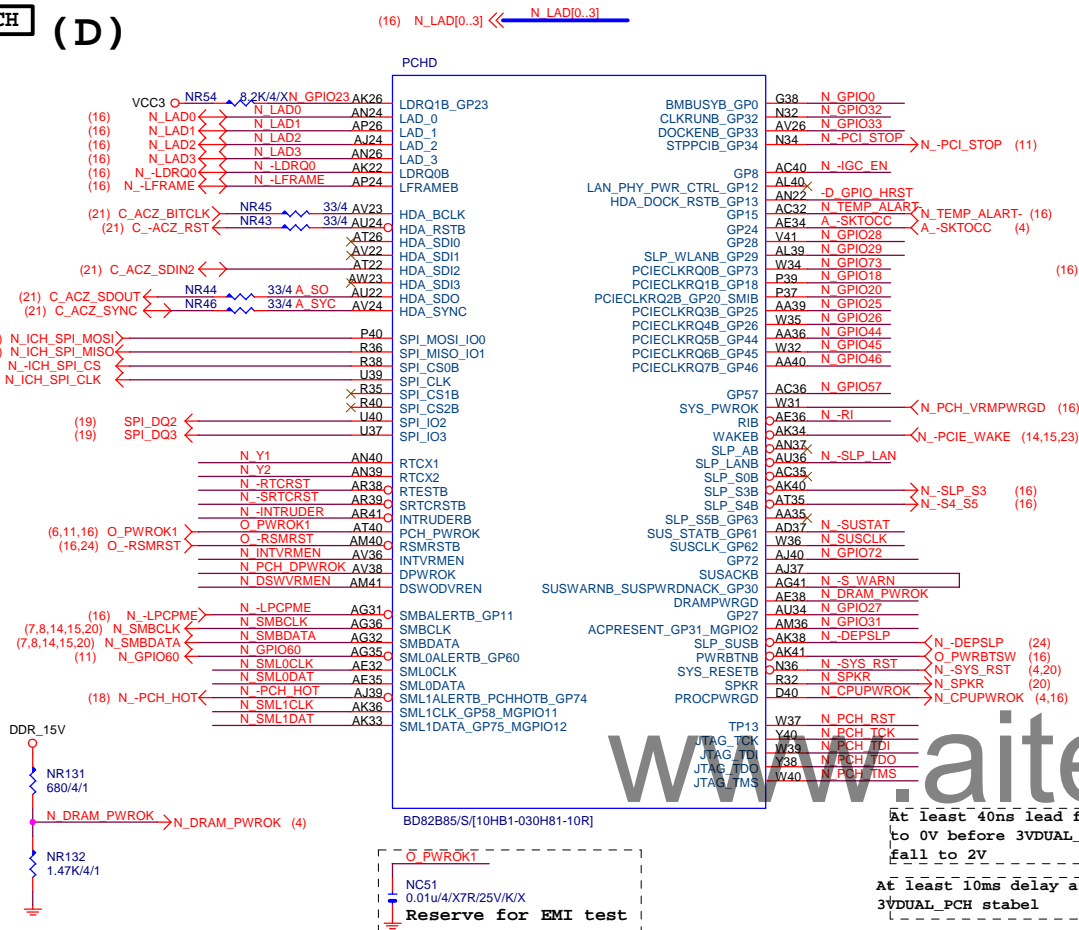
GPI038 Ctrl



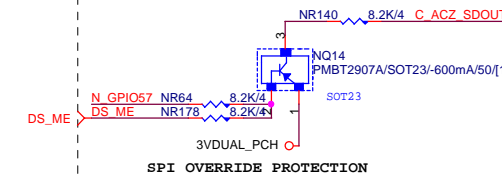
Gigabyte Technology

Title			
PCH HOST , SATA, PCI			
Size	Document Number		Rev
Custom	GA-H81M-H		1.0
Date:	Friday, September 27, 2013	Sheet	11 of 29

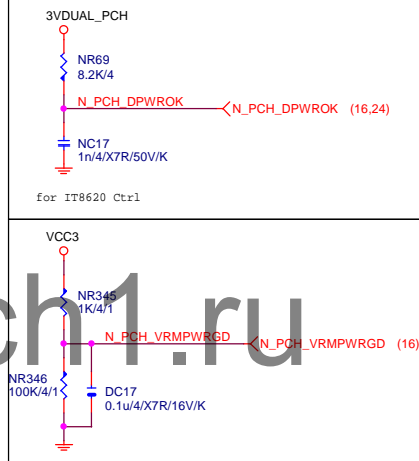
(D)



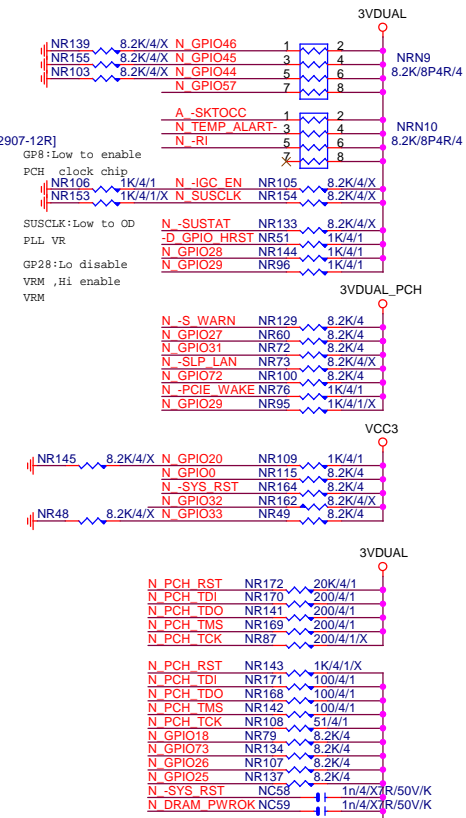
ACZ_SDOUT



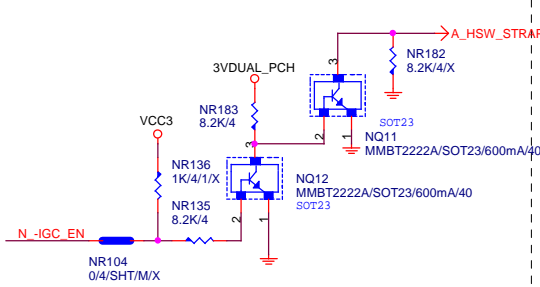
PCH_DPWROK



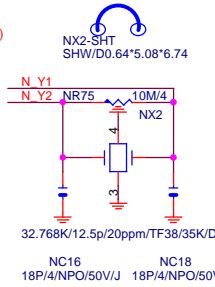
PCH	PU/PD
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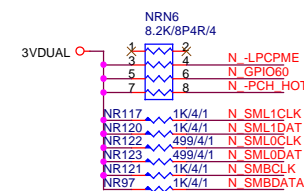
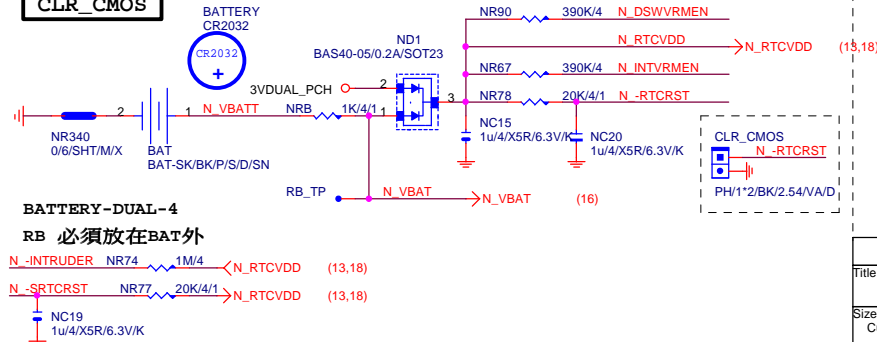
HSW STRAP13



32.768KHZ



CLR	CMOS
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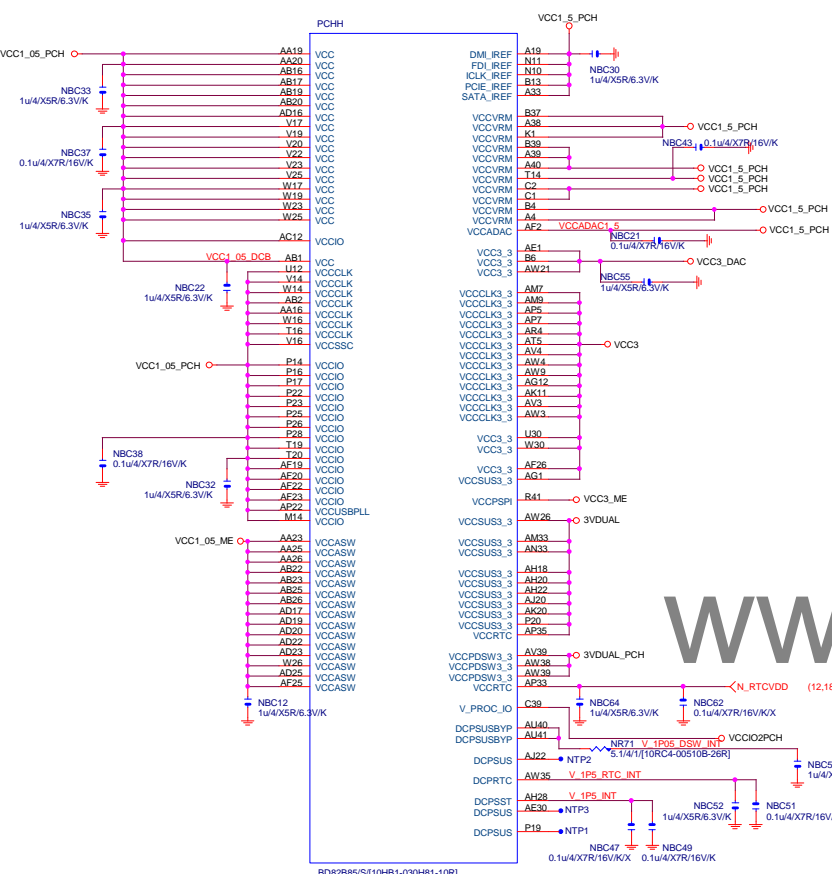


Gigabyte Technology

PCH GPIO , CTRL , AUDIO

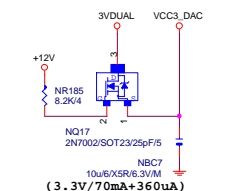
Size Custom	Document Number GA-H81M-H	Rev 1.0
Date: Friday, September 27, 2013	Sheet 12 of 29	

PCH (H)

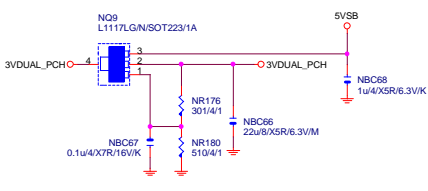


VCC3_DAC

CLOSE北橋(注意震盪水波紋)



3VDUAL_PCH



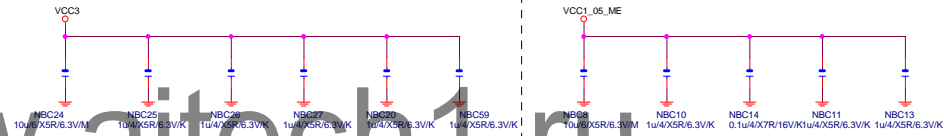
SHT_PWR



CAP

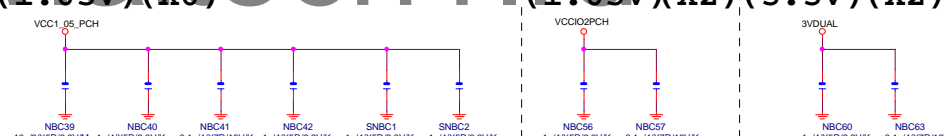
(3.3V) (X6)

(1.05V) (X5)

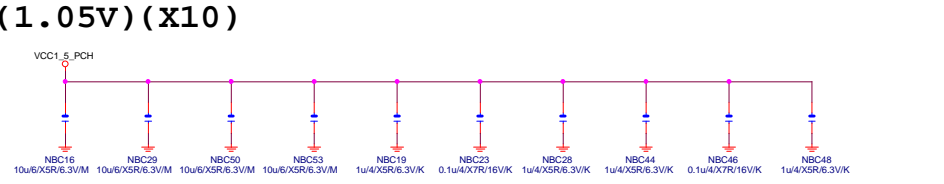


(1.05V) (X6)

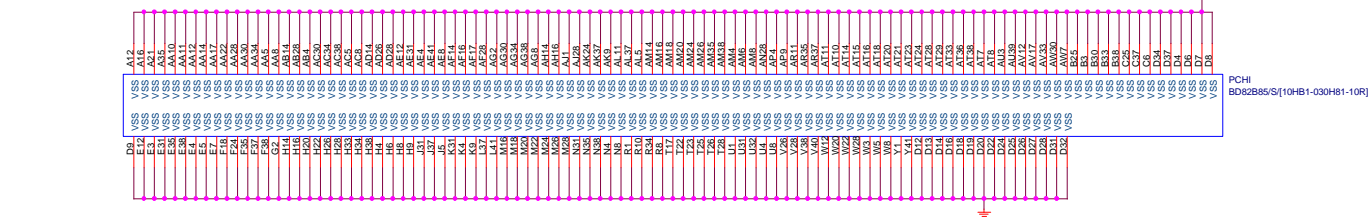
(1.05V) (X2) (3.3V) (X2)



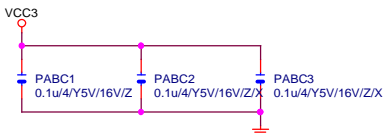
(1.05V) (X10)



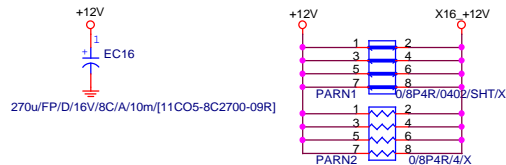
PCH (I)



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
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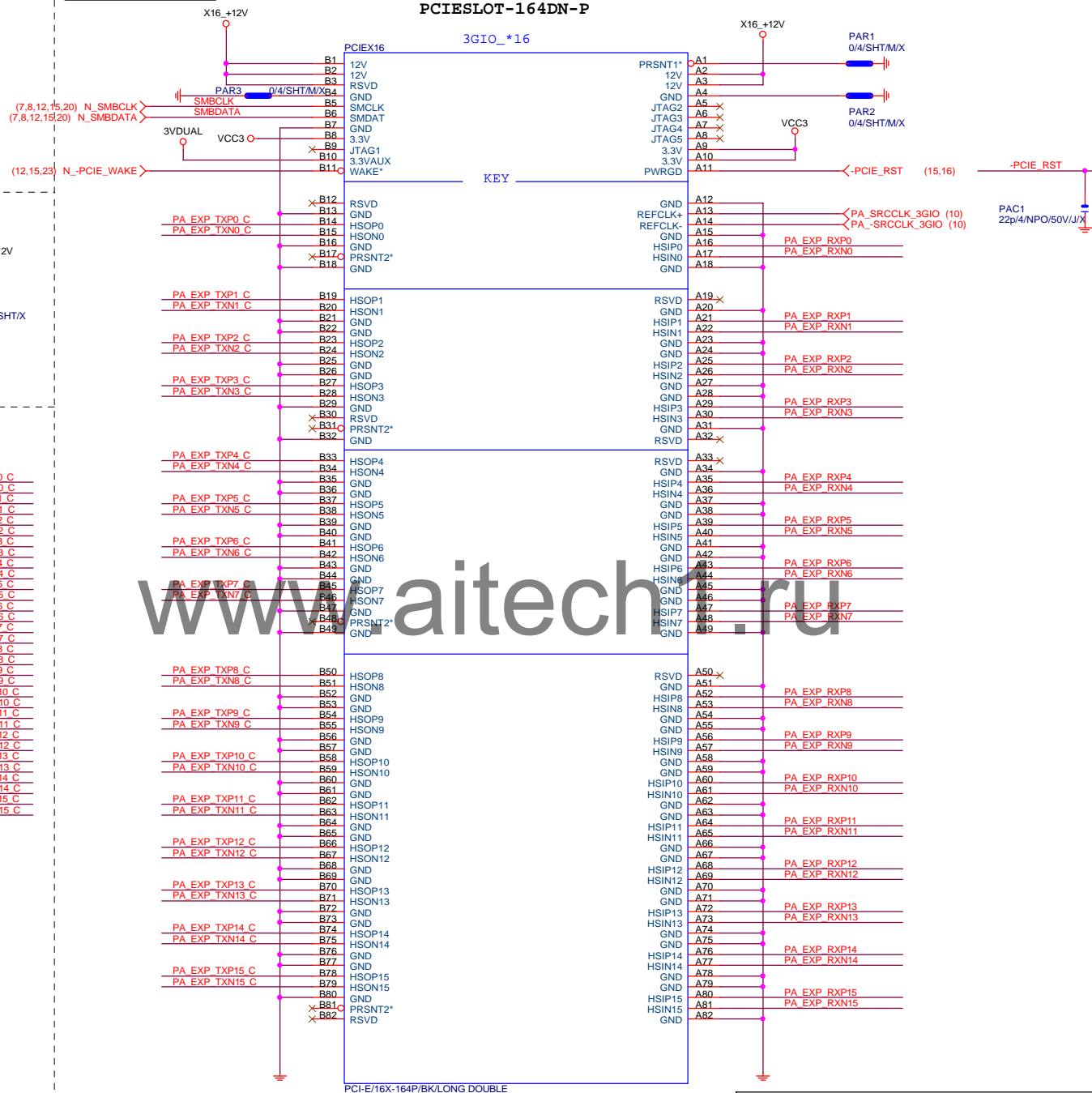
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PA EXP RXN0.[15] >>> PA_EXP_RXN[0..15] (4)

PA EXP TXP0.[15] >>> PA_EXP_TXP[0..15] (4)

PA EXP TXN0.[15] >>> PA_EXP_TXN[0..15] (4)

PCIEX16 SLOT



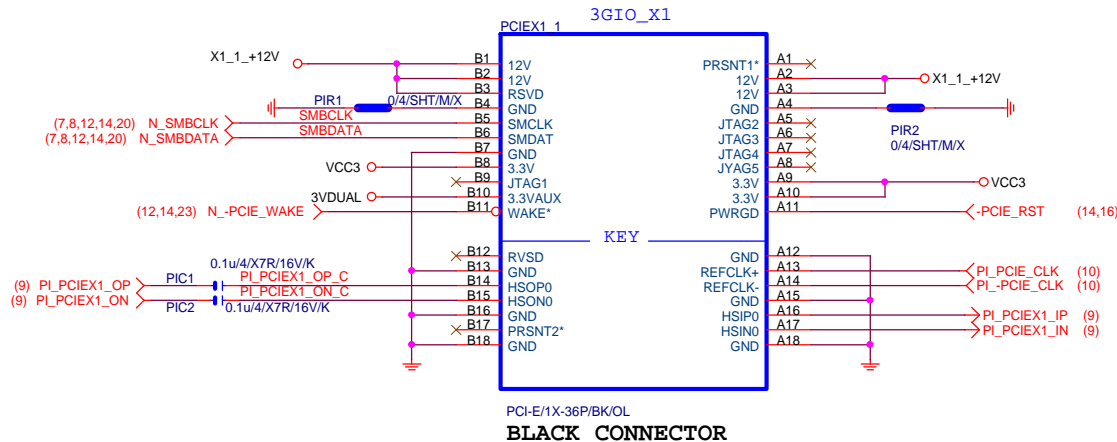
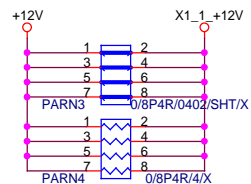
BLACK CONNECTOR

Gigabyte Technology

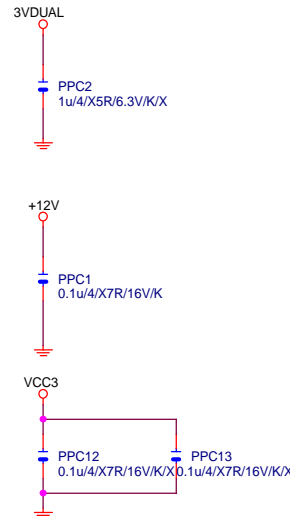
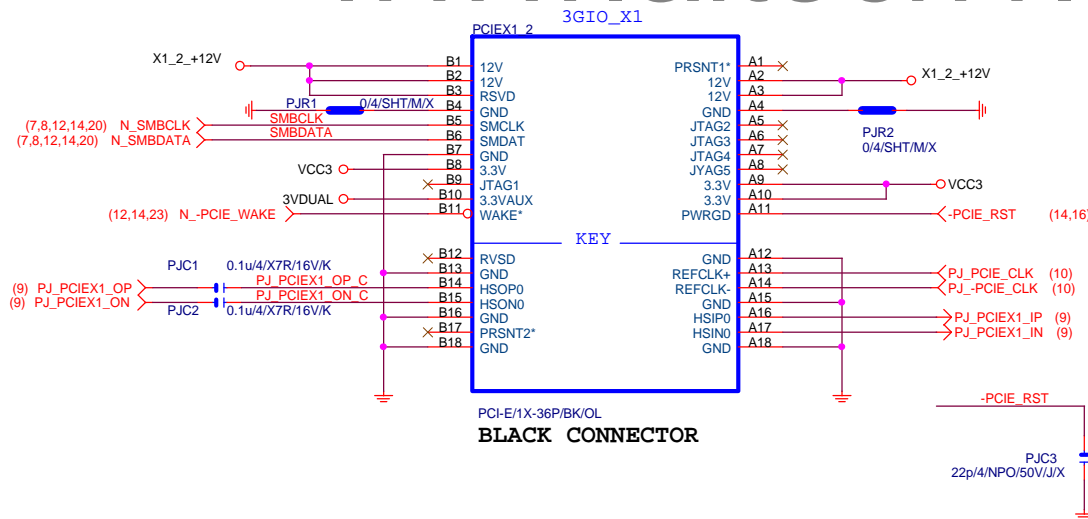
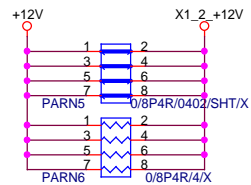
Title			PCI EXPRESS * 16	
Size			GA-H81M-H	
Custom			Rev 1.0	
Date: Friday, September 27, 2013			Sheet 14 of 29	

PCIEX1 SLOT

PCIEX1 PROTECT SHT



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Gigabyte Technology			
PCI EXPRESS X 1 PORT			
Title	Document Number	Rev	1.0
Size	Custom	GA-H81M-H	
Date:	Friday, September 27, 2013	Sheet	15 of 29

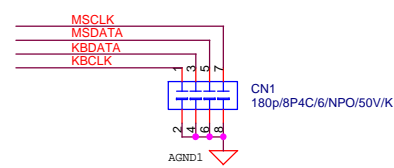
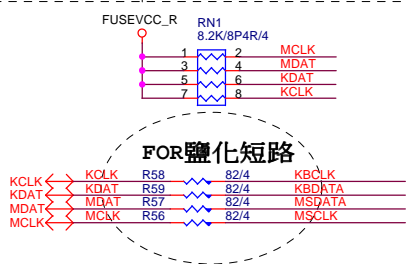
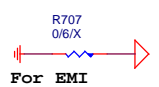
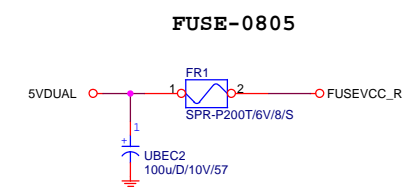
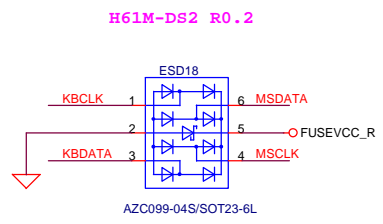
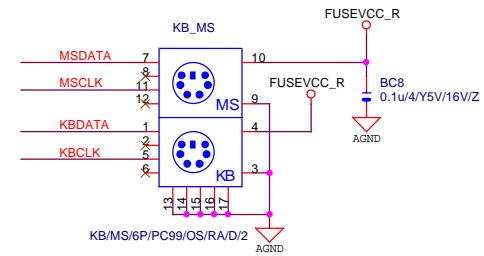
COM

KB/MS

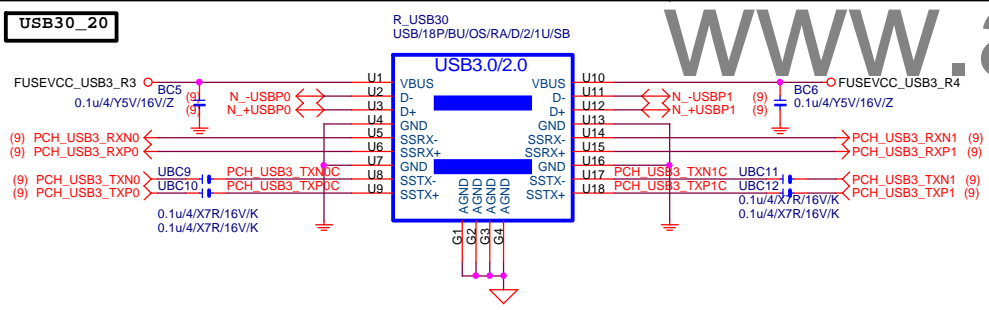
KB_MS ESD

USB2.0 PWR

COM RI

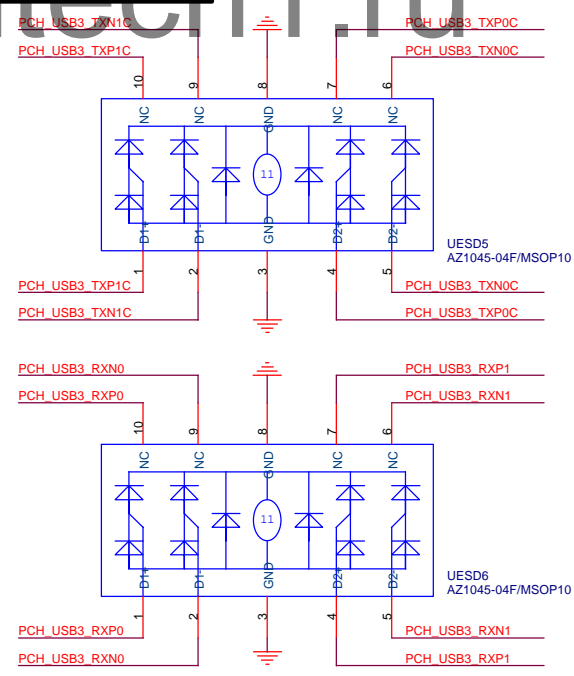


USB30_20

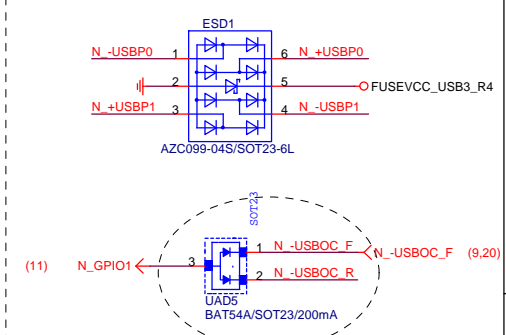


USB30_20 ESD PROTECT

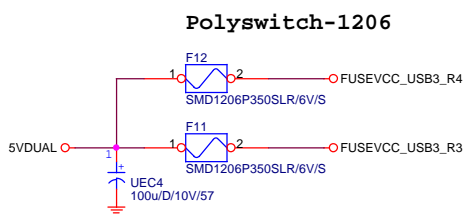
USB3.0 ESD



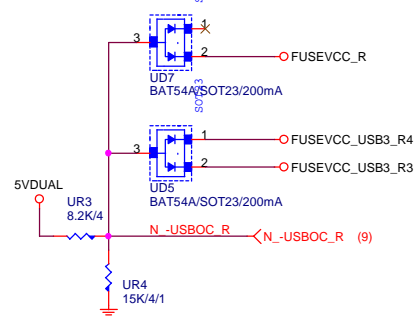
USB POWER PROTECT



USB30_20 PWR

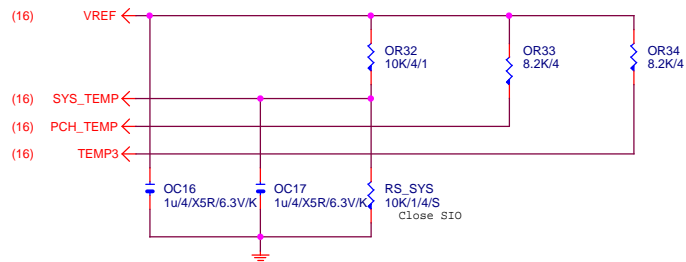


-USBOC_R

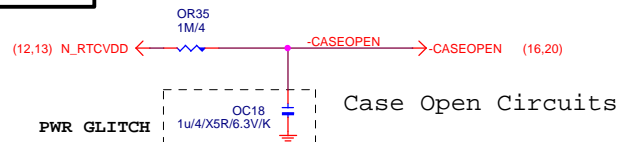


USB3.0 1Port - 1Fuse (3.5A)

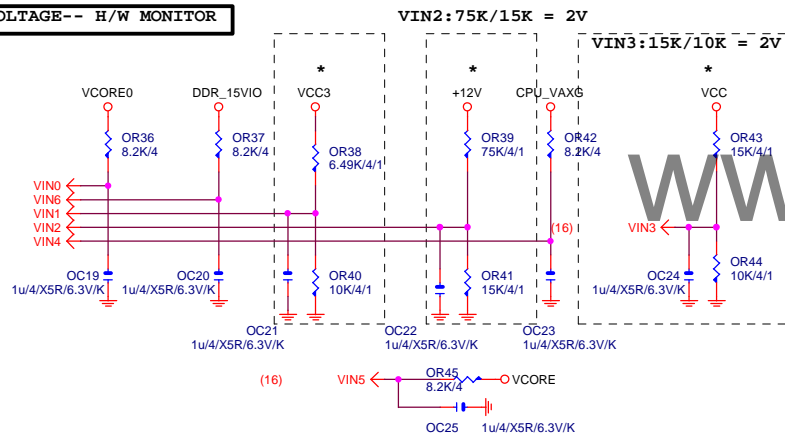
TEMP H/W MONITOR



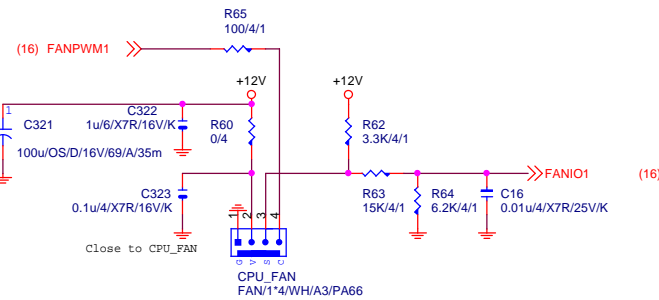
CASE OPEN



VOLTAGE-- H/W MONITOR



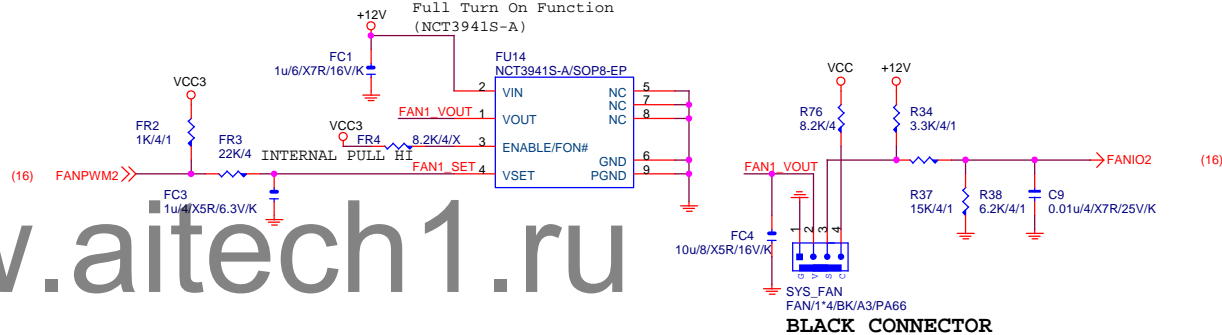
CPU SMART FAN



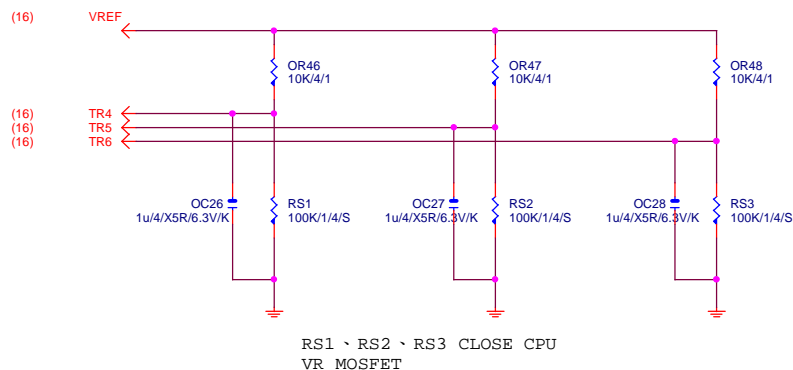
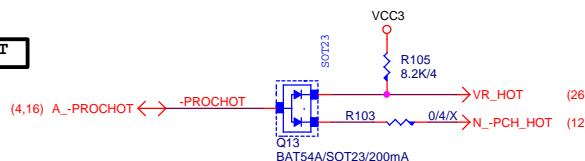
SYS SMART FAN

Linear SYS_FAN

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

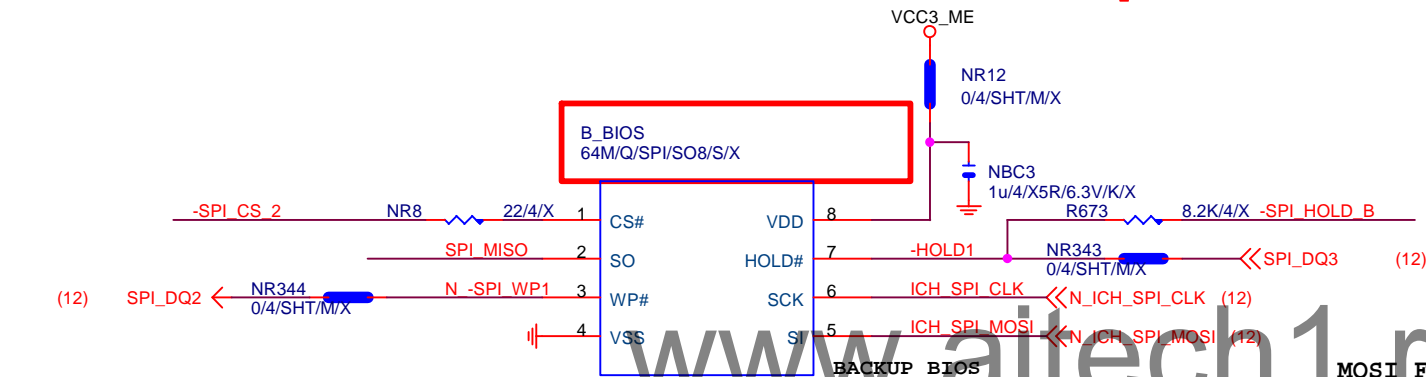
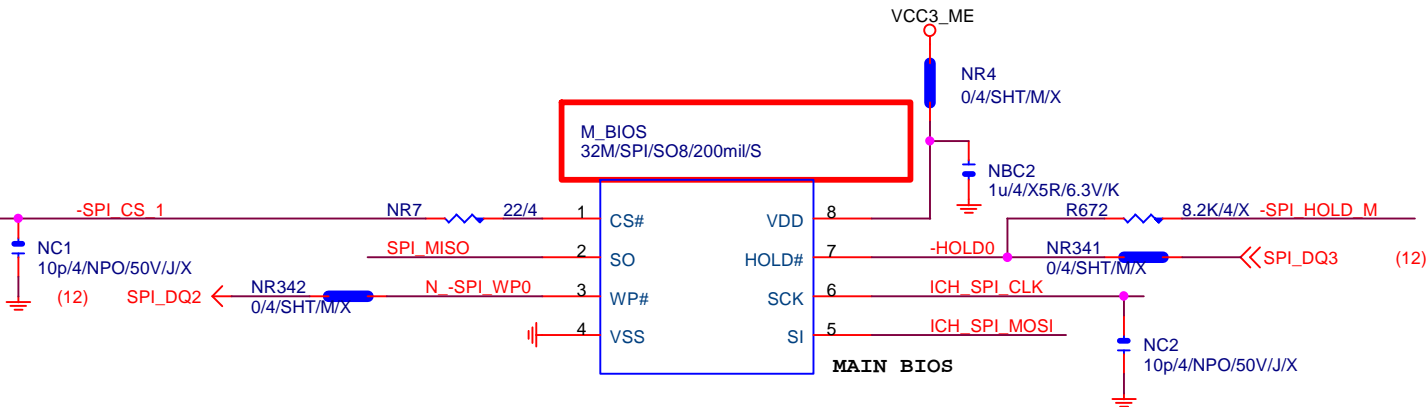


-PROHOT



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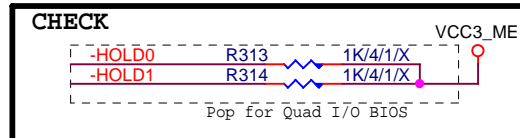
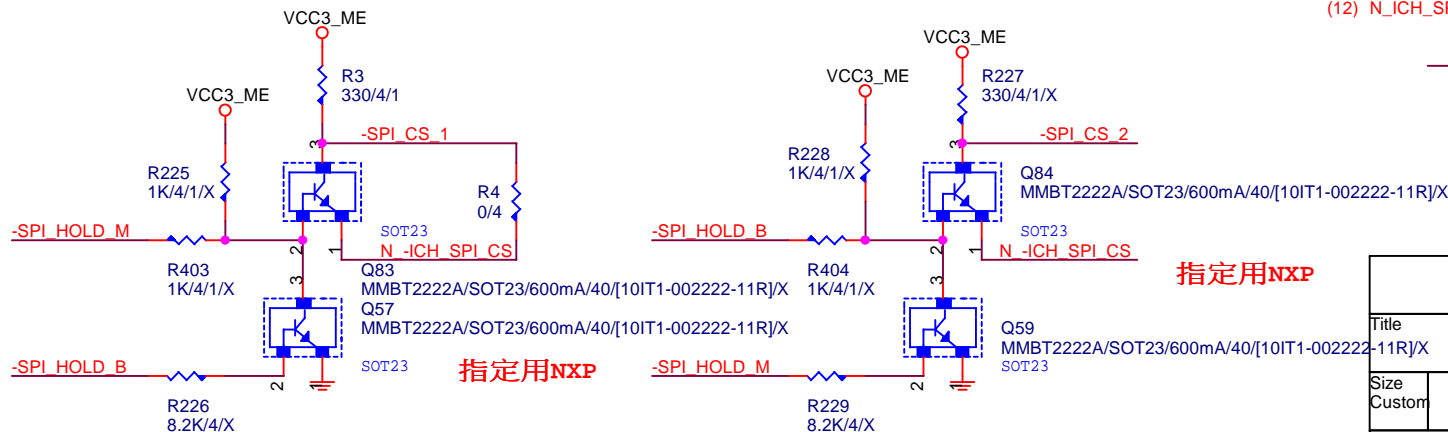
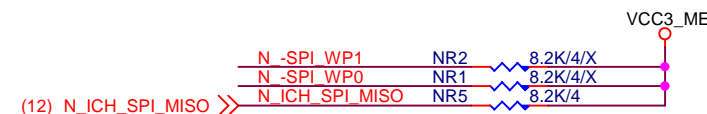
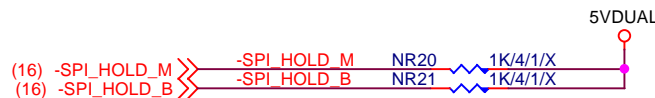
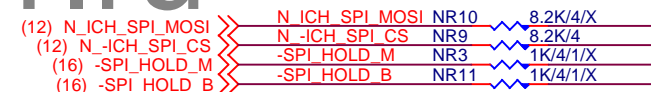
Title			HWM,FAN CTRL,OV
Size	Document Number	GA-H81M-H	
Custom		Rev 1.0	
Date:	Friday, September 27, 2013	Sheet	18 of 29



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

Gigabyte Technology

DUAL BIOS

GA-H81M-H

Rev 1.0

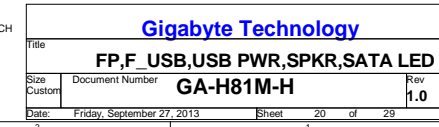
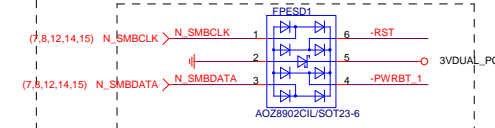
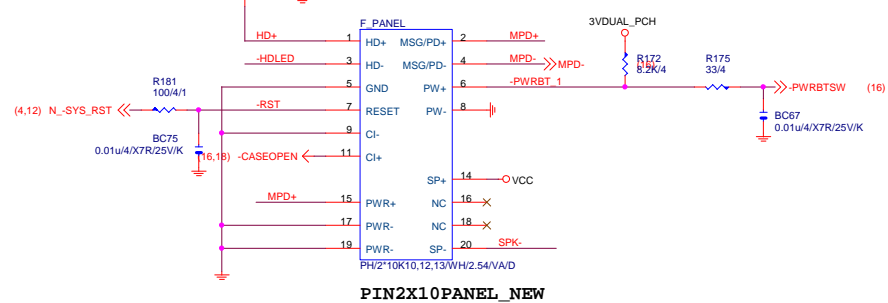
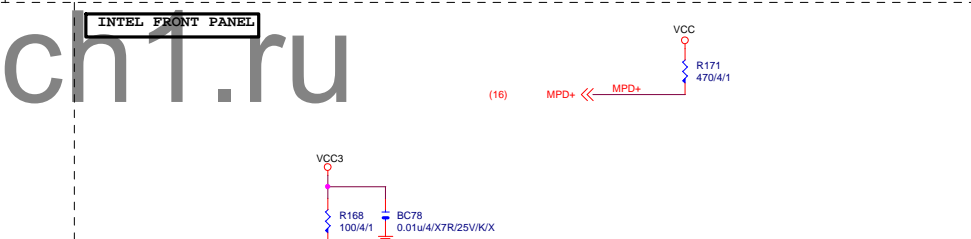
Title

Size Custom

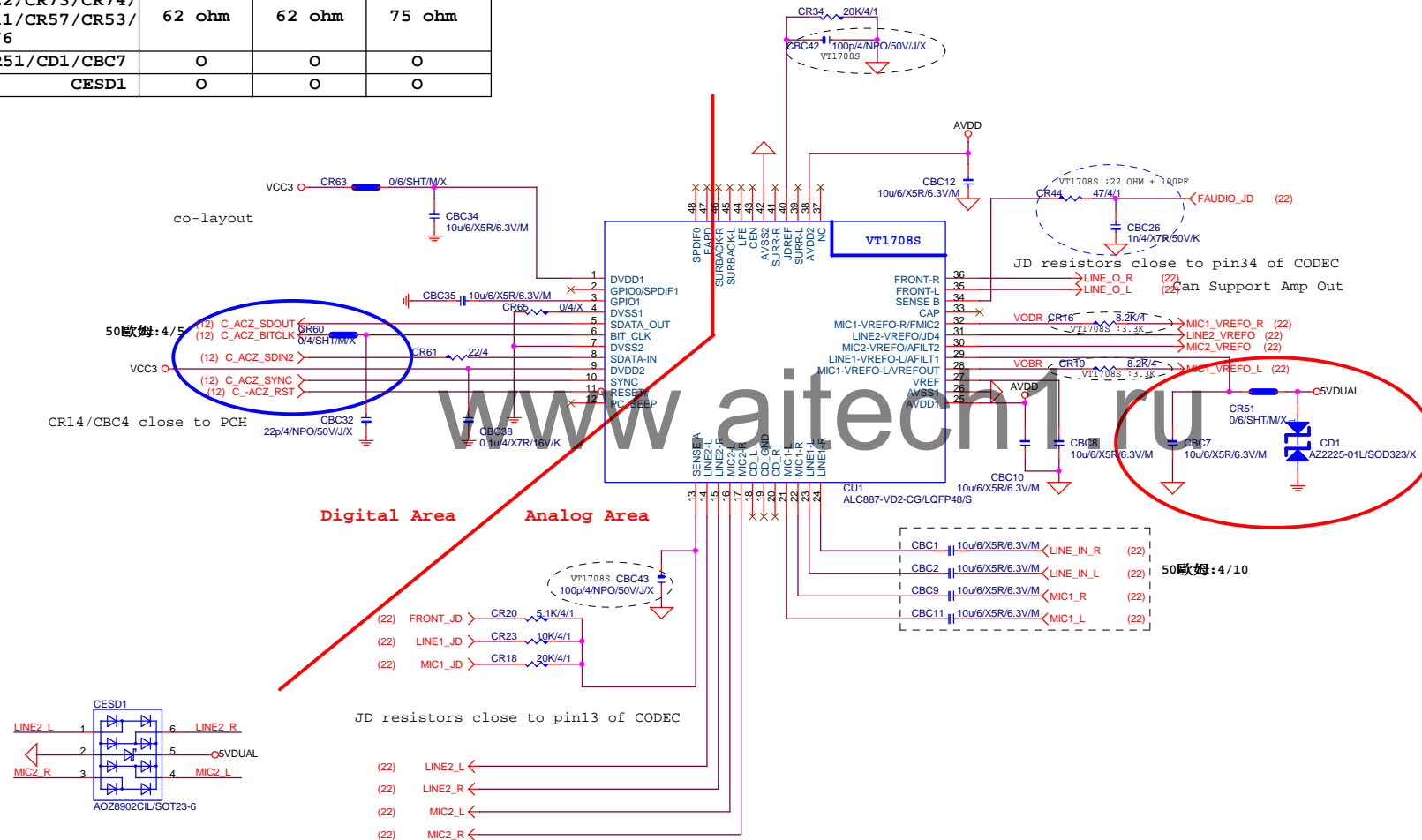
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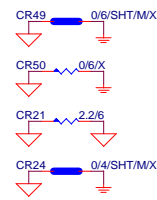
Date: Friday, September 27, 2013

Sheet 19 of 29

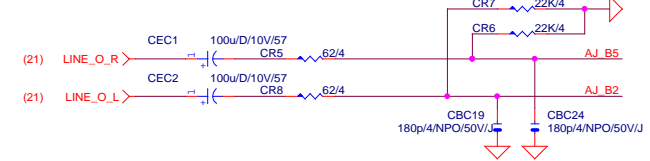


	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	O	O	O





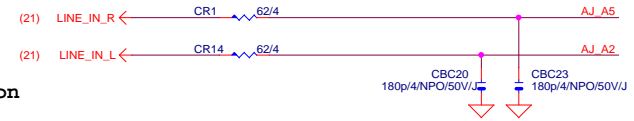
LINE-OUT



LINE-IN

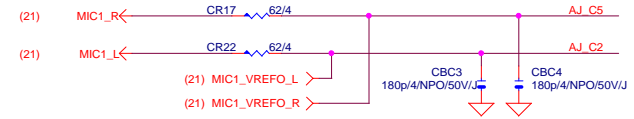
Verify MIC function
in LINE-in

Only reserved for ALC888



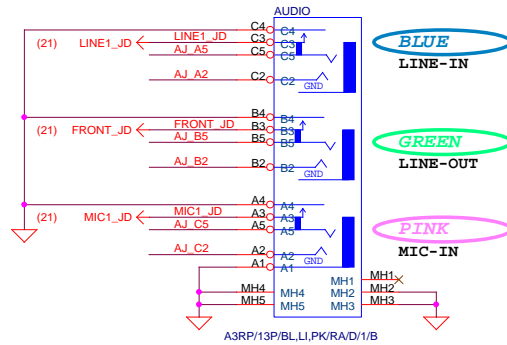
For 889A/888

MIC-IN

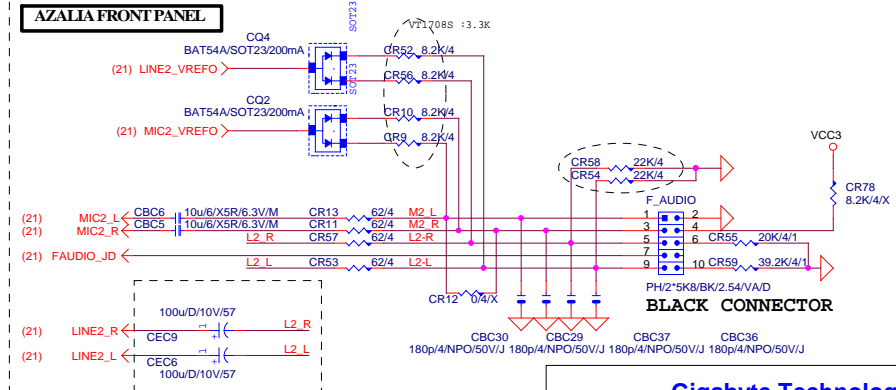


SPDIF_OUT

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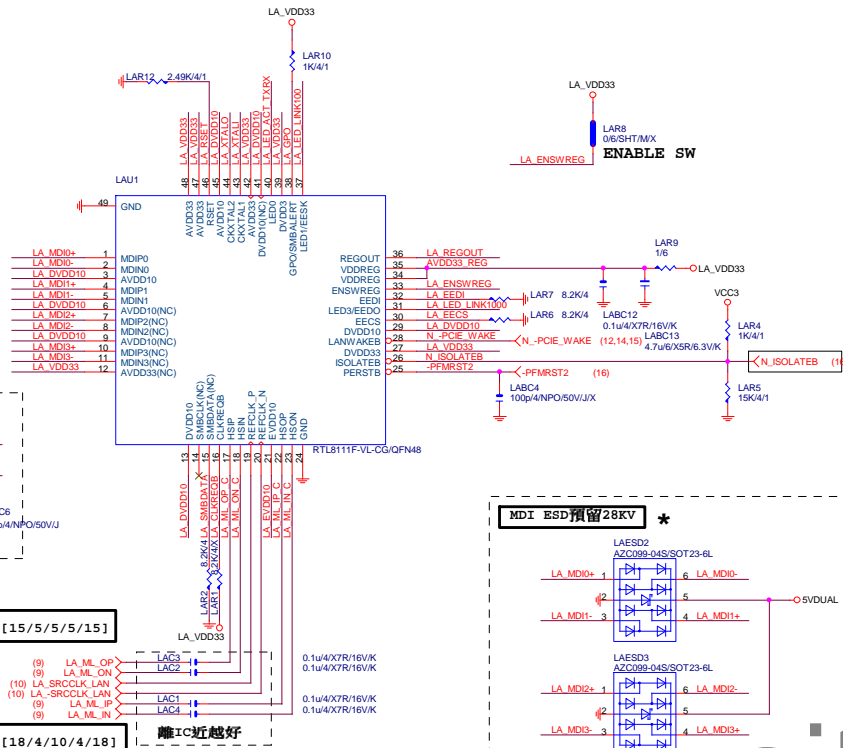
AZALIA FRONT PANEL



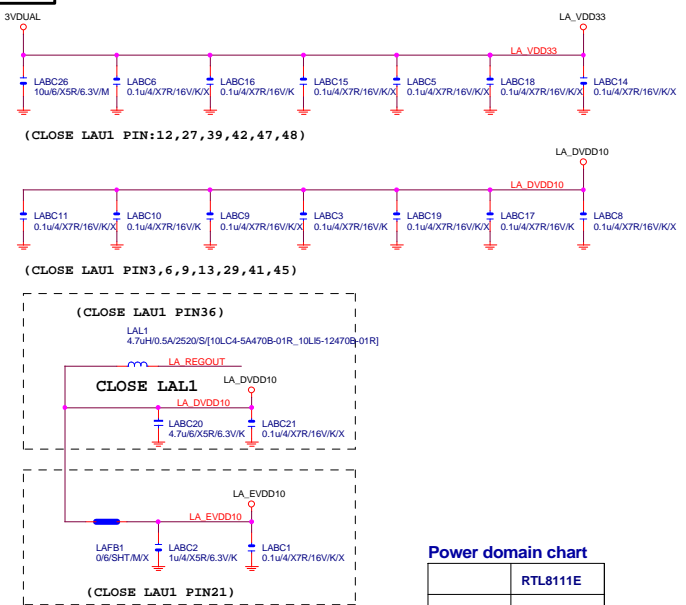
Gigabyte Technology

Title			
AUDIO JACK			
GA-H81M-H			
Size	Document Number	Rev	1.0
Custom			
Date:	Friday, September 27, 2013	Sheet	22 of 29

LAN:RTL8111F/VB/VL



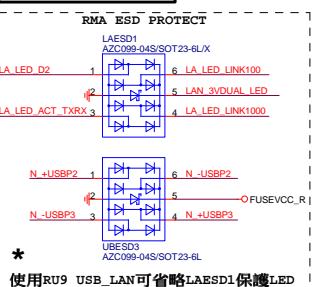
LAN POWER



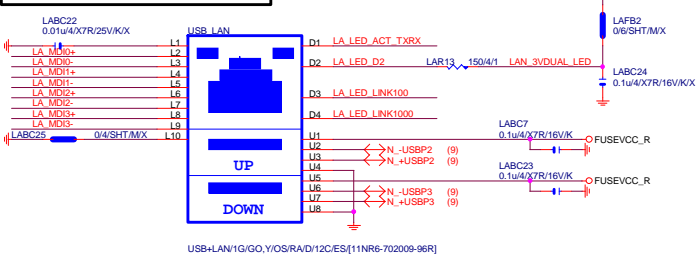
Power domain chart

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

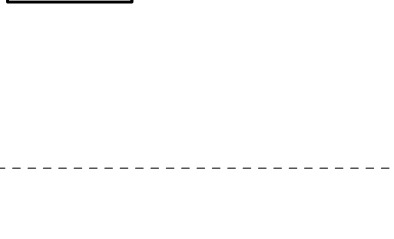
USB LAN CONNECTOR



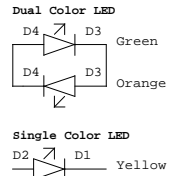
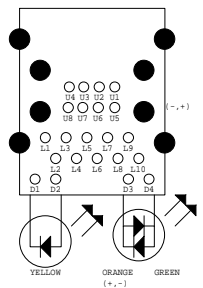
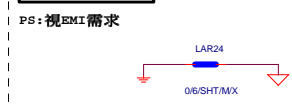
LA_MDI-->100歐姆:[20/4/8/4/20]



USB X3 POWER



EMI SHORT PAD



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

BOM NOTICE *

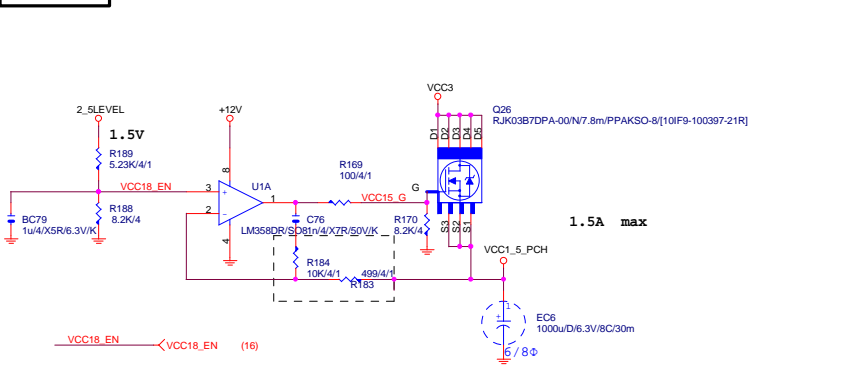
料號	規格	廠商
11NR6-702009-96R	1G LAN (12core)	UDE(RU9 ESD+)
[LED獨立走線,可省略外加AZC099料件LAESD1]		
1. 9KV ESD BOM:		
USB_LAN (RU9):11NR6-702009-96R		
2. 28KV ESD BOM:		
USB_LAN (RU9):11NR6-702009-96R		
LAESD2,LAESD3:上件AZC398-04S		

Gigabyte Technology

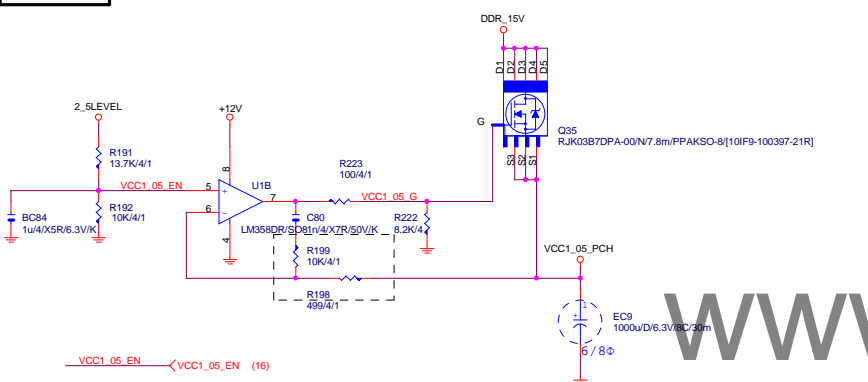
Realtek RTL8111G

Title	Document Number	Rev
Size	Custom	1.0
Date:	Friday, September 27, 2013	Sheet 23 of 29

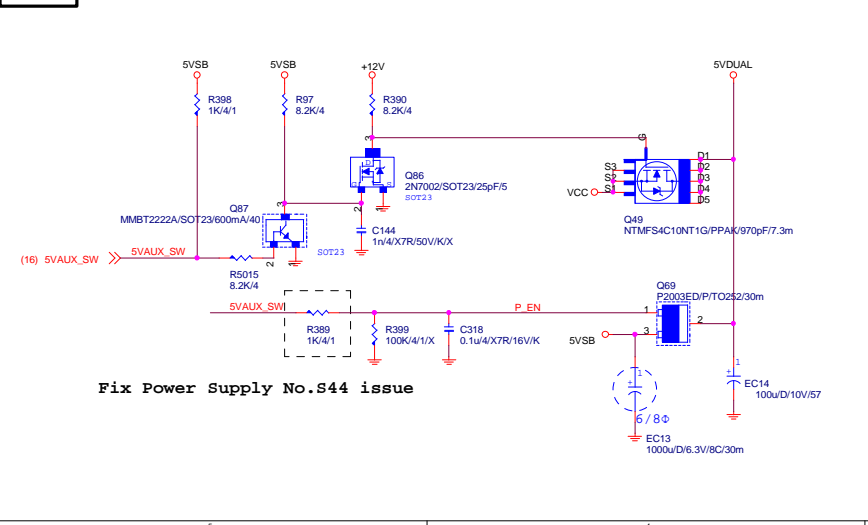
VCC1_8_PCH



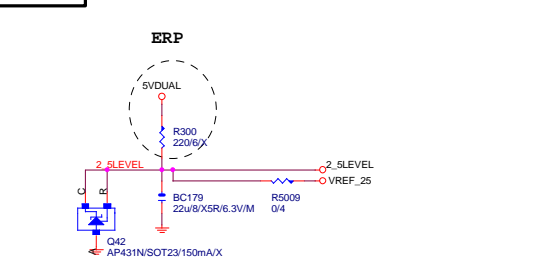
VCC1_05_PCH



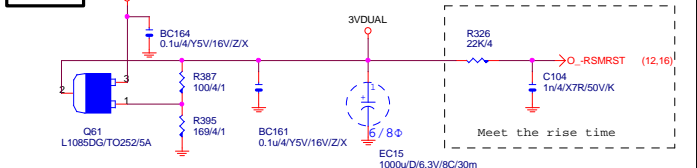
5VDUAL



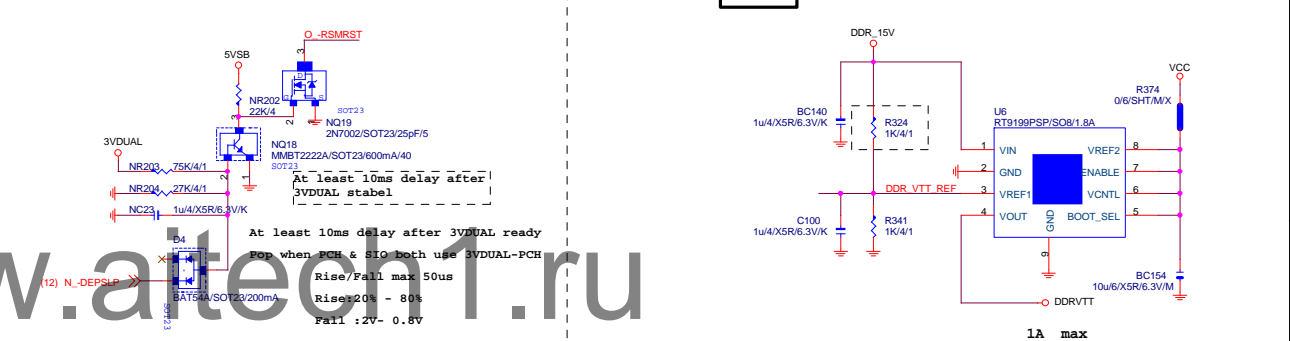
2_5LEVEL



3VDUAL

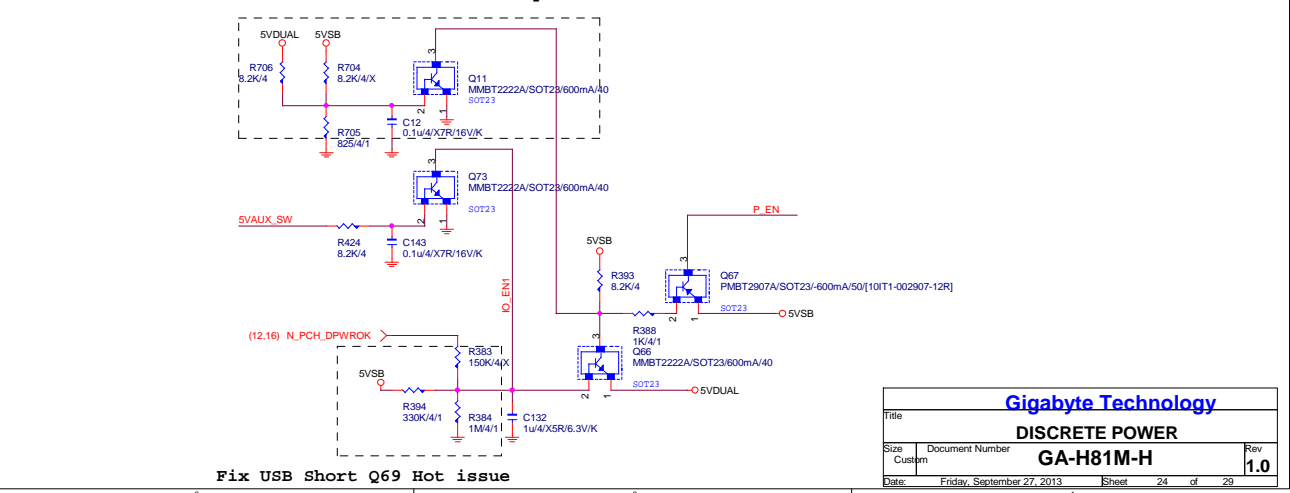


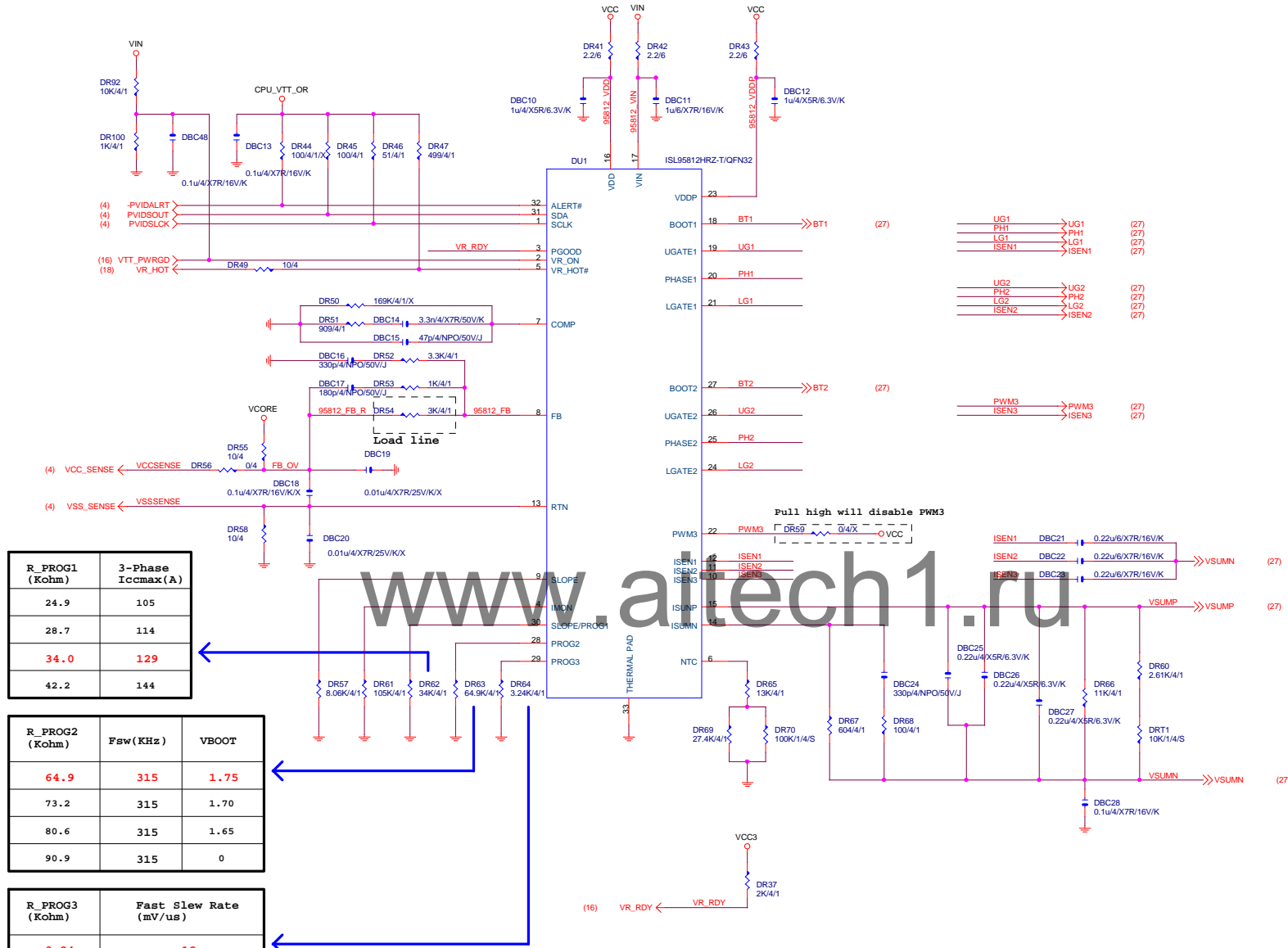
DDRVTT



5VDUAL SHORT PROTECT

5VSB OVP:7.5V protection



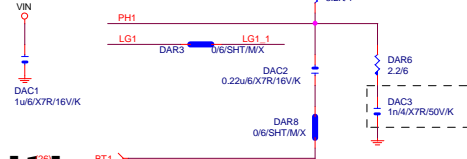
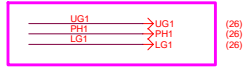


R_PROG1 (Kohm)	3-Phase Iccmax(A)
24.9	105
28.7	114
34.0	129
42.2	144

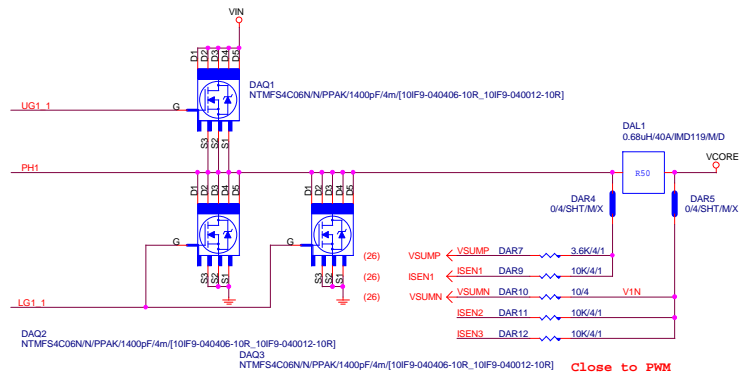
R_PROG2 (Kohm)	Fsw(KHz)	VBOOT
64.9	315	1.75
73.2	315	1.70
80.6	315	1.65
90.9	315	0

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

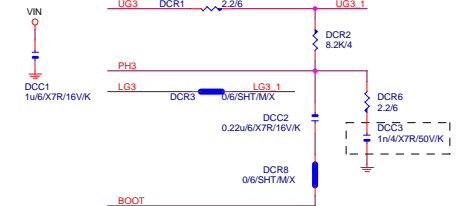
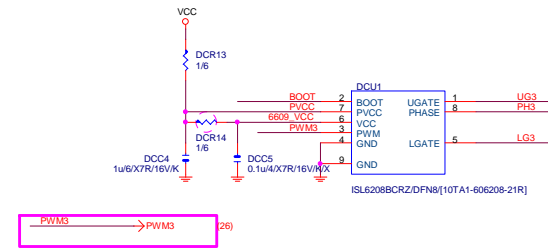
PHASE 1



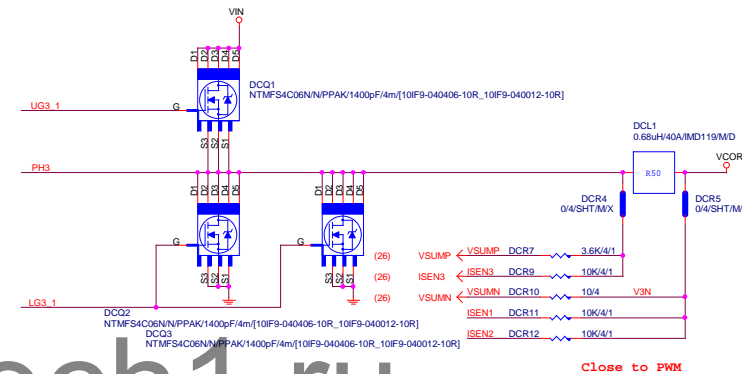
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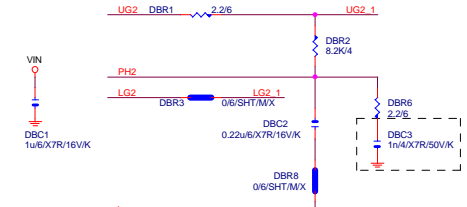
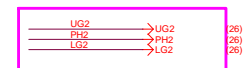
PHASE 3



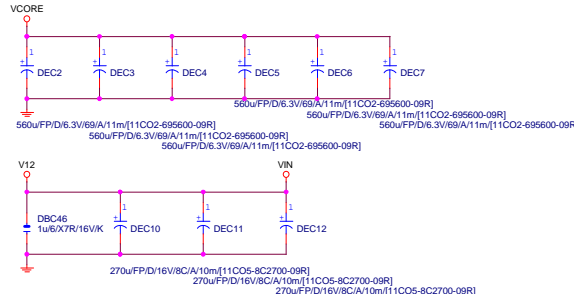
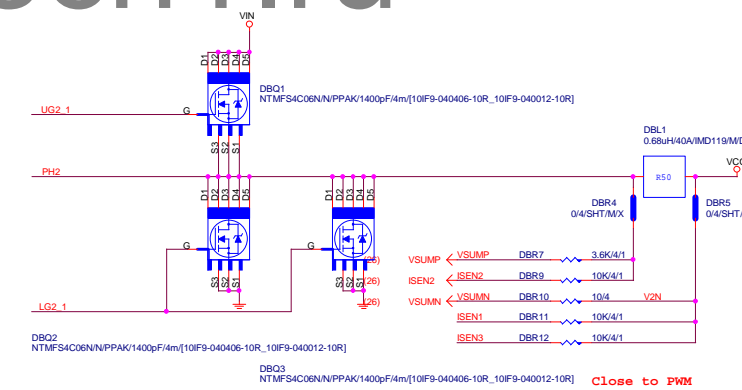
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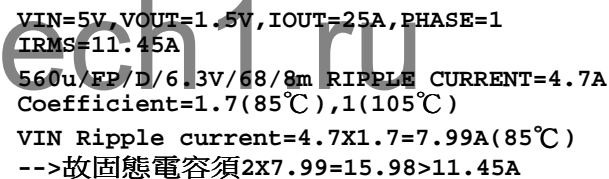
PHASE 2



[2]



Gigabyte Technology			
Title		CPU CORE VR-2	
Size	Document Number	GA-H81M-H	Rev 1.0
Date:	Friday, September 27, 2013	Sheet 27 of 29	

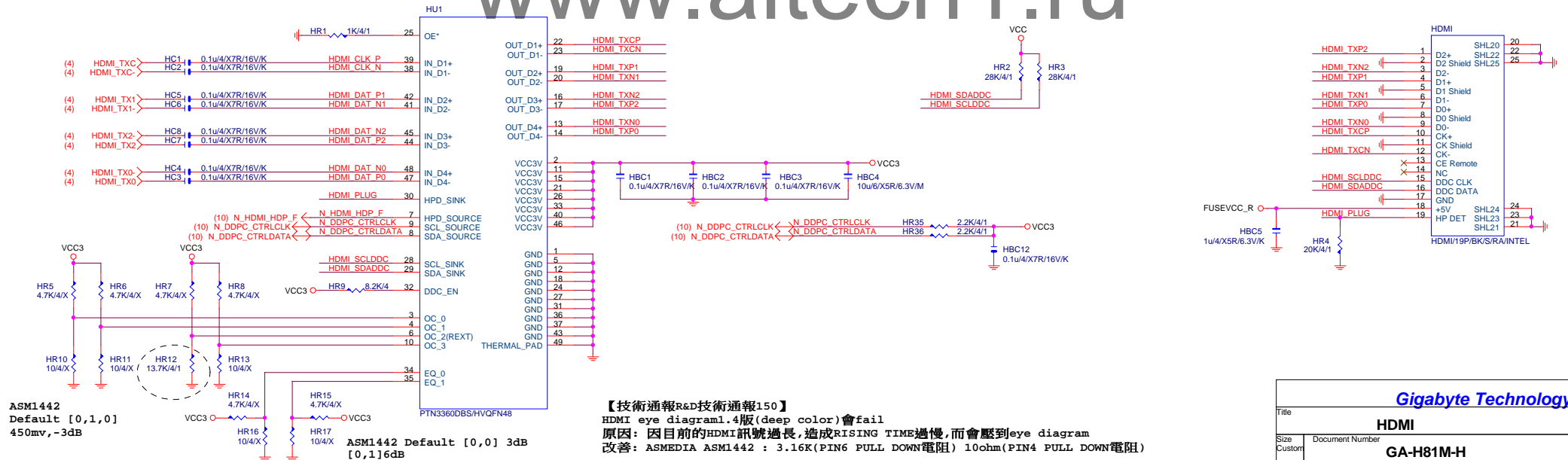


```
Rocset=(Iocp*Lgate,rdson)/Iocset
Rocset=(45A*6.7mOhm)/10uA = 30K
Iocset=10uA
```

HDMI LEVEL SHIFT

HDMI: 20/4/6/4/20

Impedance=85 \rightarrow 17.5%



Gigabyte Technology			
HDMI			
Title	Document Number	Rev	
Size	Custom	GA-H81M-H	1.0
Date:	Friday, September 27, 2013	Sheet	29 of 29