Model Name: GA-B75M-D3V

Revision 2.02

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*1 X2 SLOT
16	PCI SLOT1
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-VL
25	DISCRETE POWER
26	ATX, M3 POWER
27	RT8120_CPU_VTT

SHEET	TITLE
28	VCORE ISL95836_1
29	VCORE ISL95836_2
30	RT8120_DDR POWER
31	LPT
32	DVI

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 1 of 32

Model Name: GA-B75M-D3V

Revision 2.02

Component value change history

2014/06/20

Data	Change Item	Reason
2011/11/16	SWAP NET	
2011/11/28	MODIFY SATA3_0,SATA2_1 CONNECTOR 90.	
2011/12/22	Modify to R0.2	
	ADD M3 Power	
2012/01/16	Modify to R1.0	
2012/02/20	Update to R1.1	
	LAN Change to Realtek RTL8111F	
2012/03/12	FIX USB_LAN USB Power	
2012/04/26	FIX ISL95836 OVP ISSUE	9MB75MD3V-00-11C
	Remove IT8728-EX OVP Function (R433)	
	Modify R23, R22 (75K/15K)	
2012/06/26	C11 & BC150 Change to 1u, fix China PSU	9MB75MD3V-00-11D
	CPUPWROK R146 1K Change to 1n	
2012/09/19	Add FAN 0ohm Burn Out Protection	
2012/11/09	R2.0, I/O IT8620.POWER COST DOWN,9KV SUPPORT,CPU COVER,ALL TW CAPs ,2 PS2 DEVICE.	
2013/02/20	R2.01 MODIFY ERP CICUIT.	
2013/04/11	PBOM.	PBOM:9MB75MD3V-00-20C
2013/08/13	ADD MOSFET VISHAY/ON.	EBOM:9MB75MD3V-00-20D
2013/10/02	PBOM	PBOM:9MB75MD3V-00-20D
2013/10/29	Modify codec ALC887-VD2 enhance.	PBOM:9MB75MD3V-00-20E
2013/10/29	REMOVE CODEC CD1.	PBOM:9MB75MD3V-00-20F
2014/01/13	ADD CODEC CD1.	PBOM:9MB75MD3V-00-20G.
2014/06/19	R2.02.REMOVE SATA CAP,FOOTPRINT MODIFY MASK SHORT PAD.	PBOM:9MB75MD3V-00-20H.

Circuit or PCB layout change

DATE	Change Item	Reason

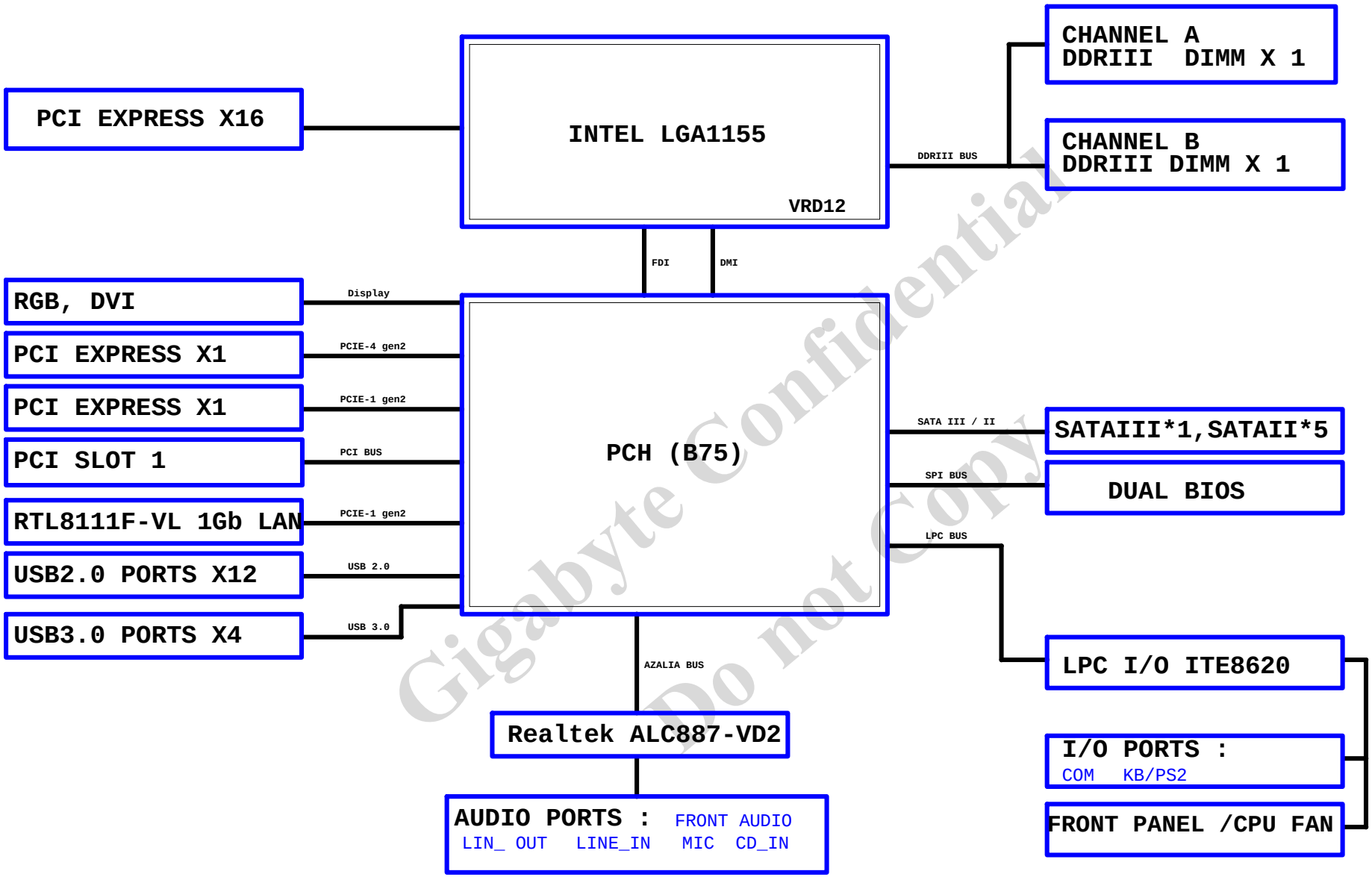
Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 2 of 32

BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 3 of 32	

LGA1155 (E)

LGA1155E

[10] CPUCLK	CPUCLK	W2	BCLK[0]	VCCIO_SELECT	P33
[10] -CPUCLK	-CPUCLK	W1	BCLK#[0]	VCCSA_VID_0	P34
				VCCSA_SENSE	T2 → VSA_SENSE [27]
[28] VIDSLCK	VIDSLCK	C37	VIDSCLK		
[28] VIDSOUT	VIDSOUT	B37	VIDSOUT	VCC_SENSE	A36 → VCC_SENSE [28]
[28] -VIDALRT	-VIDALRT	A37	VIDALERT#	VSS_SENSE	B36 → VSS_SENSE [28]
[12,17] CPUPWROK	CPUPWROK	J40			
[12] DRAM_PWROK	DRAM_PWROK	AJ19	UNCOREPWRGOOD	VCCIO_SENSE	AB4 → VTT_SENSE [27]
	-CPURST	F36	SM_DRAMPWROK	VSSIO_SENSE	AB3 → VTT_VSS [27]
			RESET#		
				VCCAXG_SENSE	L32 → VAXG_SENSE [28]
				VSSAXG_SENSE	M32 → VAXG_VSS [28]
[11] PMSYNC	PMSYNC	E38	PM_SYNC		
[11,17] PECI	PECI	J35	PECI	TDO	L39 → TDO
		E37	CATERR#	TDI	L40 → TDI [28]
[19] -PROCHOT	-PROCHOT	H34	PROCHOT#	TCK	M40 → TCK
[11,19] -THRMTRIP	-THRMTRIP	G35	THERMTRIP#	TMS	L38 → TMS
				TRST#	J39 → -TRST
				PRDY#	K38 → -HPRDY
[12] -SKTOCC	-SKTOCC	AJ33	SKTOCC#	PREQ#	K40
[9] -H_SNB	-H_SNB	K32	FC_K32	DBR#	E39
SM_VREF		AJ22	SM_VREF	BCLK_ITP	C40 → ITPCLK [10]
				BCLK_ITP#	D40 → -ITPCLK [10]
		H36	CFG[0]	BPM#[0]	H40
		J36	CFG[1]	BPM#[1]	H38
		J37	CFG[2]	BPM#[2]	G38
		K36	CFG[3]	BPM#[3]	G40
		L36	CFG[4]	BPM#[4]	G39
		N35	CFG[5]	BPM#[5]	F38
		L37	CFG[6]	BPM#[6]	E40
		M36	CFG[7]	BPM#[7]	F40
		J38	CFG[8]		
		L35	CFG[9]		
				RSVD_024	B39
		M38	CFG[10]	RSVD_030	J33
		N36	CFG[11]	RSVD_037	L34
		N38	CFG[12]	RSVD_036	L33
		N39	CFG[13]	RSVD_033	K34
		N37	CFG[14]	RSVD_040	N33
		N40	CFG[15]	RSVD_039	M34
		G37	CFG[16]	RSVD_018	AV1
		G36	CFG[17]	RSVD_020	AW2
				RSVD_038	L9
				RSVD_032	J9
		AT14	RSVD_016	RSVD_034	K9
		AY3	RSVD_023	RSVD_035	L31
		H7	RSVD_028	VCC_VALIDATION_SENSE	J31
		H8	RSVD_029	VSSU_VALIDATION_SENSE	K31
				VCCAXG_VALIDATION_SENSE	AD34
				VSSGT_VALIDATION_SENSE	AD35

5 OF 10

LGA1155/[10SC1-F01155-23R_10SC1-F01155-22R]

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

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

CFG 0-17 all internal PULL-UP

DRAM_PWROK — BC81 22p/4/NPO/50V/J/X

LGA1155 (D)

LGA1155D

[9] FDI_FSYNC0	FDI_FSYNC0	AC5	FDI_FSYNC[0]	FDI_TX[0]	AC8 FDI_TXP0
[9] FDI_LSYNC0	FDI_LSYNC0	AC4	FDI_LSYNC[0]	FDI_TX#[0]	AC7 FDI_TXN0
				FDI_TX[1]	AC2 FDI_TXP1
				FDI_TX#[1]	AC3 FDI_TXN1
				FDI_TX[2]	AD2 FDI_TXP2
				FDI_TX#[2]	AD1 FDI_TXN2
				FDI_TX[3]	AD4 FDI_TXP3
				FDI_TX#[3]	AD3 FDI_TXN3
[9] FDI_FSYNC1	FDI_FSYNC1	AE5	FDI_FSYNC[1]	FDI_TX[4]	AD7 FDI_TXP4
[9] FDI_LSYNC1	FDI_LSYNC1	AE4	FDI_LSYNC[1]	FDI_TX#[4]	AD6 FDI_TXN4
				FDI_TX[5]	AE7 FDI_TXP5
				FDI_TX#[5]	AE8 FDI_TXN5
				FDI_TX[6]	AF3 FDI_TXP6
				FDI_TX#[6]	AF2 FDI_TXN6
				FDI_TX[7]	AG2 FDI_TXP7
				FDI_TX#[7]	AG1 FDI_TXN7
[9] FDI_INT	FDI_INT	AG3	FDI_INT		
CPU_VTT	FDI_RCOMP	AE2	FDI_COMPIO		
R174 24.9/4/1		AE1	FDI_ICOMPO		

FDI LINK

4 OF 10

LGA1155/[10SC1-F01155-23R_10SC1-F01155-22R]

FDI_TXP[0..7] → FDI_TXP[0..7] [9]

FDI_TXN[0..7] → FDI_TXN[0..7] [9]

LGA1155 (C)

LGA1155C

EXP_A_RXP0	B11	PEG_RX[0]	PEG_TX[0]	C13	EXP_A_TXP0
EXP_A_RXN0	B12	PEG_RX#[0]	PEG_TX#[0]	C14	EXP_A_TXN0
EXP_A_RXP1	D12	PEG_RX[1]	PEG_TX[1]	E14	EXP_A_TXP1
EXP_A_RXN1	D11	PEG_RX#[1]	PEG_TX#[1]	E13	EXP_A_TXN1
EXP_A_RXP2	C10	PEG_RX[2]	PEG_TX[2]	G14	EXP_A_TXP2
EXP_A_RXN2	C9	PEG_RX#[2]	PEG_TX#[2]	G13	EXP_A_TXN2
EXP_A_RXP3	E10	PEG_RX[3]	PEG_TX[3]	F12	EXP_A_TXP3
EXP_A_RXN3	E9	PEG_RX#[3]	PEG_TX#[3]	F11	EXP_A_TXN3
EXP_A_RXP4	B8	PEG_RX[4]	PEG_TX[4]	J14	EXP_A_TXP4
EXP_A_RXN4	B7	PEG_RX#[4]	PEG_TX#[4]	J13	EXP_A_TXN4
EXP_A_RXP5	C6	PEG_RX[5]	PEG_TX[5]	D8	EXP_A_TXP5
EXP_A_RXN5	C5	PEG_RX#[5]	PEG_TX#[5]	D7	EXP_A_TXN5
EXP_A_RXP6	A5	PEG_RX[6]	PEG_TX[6]	D3	EXP_A_TXP6
EXP_A_RXN6	A6	PEG_RX#[6]	PEG_TX#[6]	C3	EXP_A_TXN6
EXP_A_RXP7	E2	PEG_RX[7]	PEG_TX[7]	E6	EXP_A_TXP7
EXP_A_RXN7	E1	PEG_RX#[7]	PEG_TX#[7]	E5	EXP_A_TXN7
EXP_A_RXP8	F4	PEG_RX[8]	PEG_TX[8]	F8	EXP_A_TXP8
EXP_A_RXN8	F3	PEG_RX#[8]	PEG_TX#[8]	F7	EXP_A_TXN8
EXP_A_RXP9	G2	PEG_RX[9]	PEG_TX[9]	G10	EXP_A_TXP9
EXP_A_RXN9	G1	PEG_RX#[9]	PEG_TX#[9]	G9	EXP_A_TXN9
EXP_A_RXP10	H3	PEG_RX[10]	PEG_TX[10]	G5	EXP_A_TXP10
EXP_A_RXN10	H4	PEG_RX#[10]	PEG_TX#[10]	G6	EXP_A_TXN10
EXP_A_RXP11	J1	PEG_RX[11]	PEG_TX[11]	K7	EXP_A_TXP11
EXP_A_RXN11	J2	PEG_RX#[11]	PEG_TX#[11]	K8	EXP_A_TXN11
EXP_A_RXP12	K3	PEG_RX[12]	PEG_TX[12]	J5	EXP_A_TXP12
EXP_A_RXN12	K4	PEG_RX#[12]	PEG_TX#[12]	J6	EXP_A_TXN12
EXP_A_RXP13	L1	PEG_RX[13]	PEG_TX[13]	M8	EXP_A_TXP13
EXP_A_RXN13	L2	PEG_RX#[13]	PEG_TX#[13]	M7	EXP_A_TXN13
EXP_A_RXP14	M3	PEG_RX[14]	PEG_TX[14]	L6	EXP_A_TXP14
EXP_A_RXN14	M4	PEG_RX#[14]	PEG_TX#[14]	L5	EXP_A_TXN14
EXP_A_RXP15	N1	PEG_RX[15]	PEG_TX[15]	N5	EXP_A_TXP15
EXP_A_RXN15	N2	PEG_RX#[15]	PEG_TX#[15]	N6	EXP_A_TXN15

PEG

[9] DMI_0RXP	DMI_0RXP	W5	DMI_RX[0]	DMI_TX[0]	V7 DMI_0TXP → DMI_0TXP [9]
[9] DMI_0RXN	DMI_0RXN	W4	DMI_RX#[0]	DMI_TX#[0]	V6 DMI_0TXN → DMI_0TXN [9]
[9] DMI_1RXP	DMI_1RXP	V3	DMI_RX[1]	DMI_TX[1]	W7 DMI_1TXP → DMI_1TXP [9]
[9] DMI_1RXN	DMI_1RXN	V4	DMI_RX#[1]	DMI_TX#[1]	W8 DMI_1TXN → DMI_1TXN [9]
[9] DMI_2RXP	DMI_2RXP	Y3	DMI_RX[2]	DMI_TX[2]	Y6 DMI_2TXP → DMI_2TXP [9]
[9] DMI_2RXN	DMI_2RXN	Y4	DMI_RX#[2]	DMI_TX#[2]	Y7 DMI_2TXN → DMI_2TXN [9]
[9] DMI_3RXP	DMI_3RXP	AA4	DMI_RX[3]	DMI_TX[3]	AA7 DMI_3TXP → DMI_3TXP [9]
[9] DMI_3RXN	DMI_3RXN	AA5	DMI_RX#[3]	DMI_TX#[3]	AA8 DMI_3TXN → DMI_3TXN [9]

DMI

		P1	PE_RX[0]	PE_TX[0]	P8
		P4	PE_RX#[0]	PE_TX#[0]	P7
		R2	PE_RX[1]	PE_TX[1]	T7
		R1	PE_RX#[1]	PE_TX#[1]	T8
		T4	PE_RX[2]	PE_TX[2]	R6
		T3	PE_RX#[2]	PE_TX#[2]	R5
		U2	PE_RX[3]	PE_TX[3]	U5
		U1	PE_RX#[3]	PE_TX#[3]	U6

GEN

PEG_ICOMPO	B5	GRCOMP	R130 24.9/4/1 → CPU_VTT
PEG_RCOMPO	C4		W=12 mil out of CPU
PEG_ICOMPI	B4		S=15 mil out of CPU

3 OF 10

LGA1155/[10SC1-F01155-23R_10SC1-F01155-22R]

EXP_A_TXP[0..15] → EXP_A_TXP[0..15] [14]

EXP_A_TXN[0..15] → EXP_A_TXN[0..15] [14]

EXP_A_RXP[0..15] → EXP_A_RXP[0..15] [14]

EXP_A_RXN[0..15] → EXP_A_RXN[0..15] [14]

-CPURST

FOR IT8620 Ctrl

1.1V分壓

VCC3 — R215 2K/4/1 — -CPURST → -CPURST [17] — R216 1K/4/1 — BC98 1n/4/X7R/50V/K

CPU PU/PD

CPU_VTT — R204 1K/4/1 -THRMTRIP — R120 1K/4/1 -PROCHOT

R677 1K/4/1 CPUPWROK — C209 1n/4/X7R/50V/K

RN5 51/8P4R/4

CPU_VTT — 1 TDI, 3 TDO, 5 TMS, 7 -HPRDY

R165 51/4/1 TCK — R164 51/4/1 -TRST

CPU SVID

CPU_VTT — R116 90.9/4/1/X VIDSLCK — R117 100/4/1 VIDSOUT — R118 100/4/1 -VIDALRT

BC180 1u/4/X5R/6.3V/K

SM REF

DDR_15V — R193 100/4/1 — SM_VREF — R190 100/4/1 — C79 0.1u/4/X7R/16V/K

Gigabyte Technology

Title: CPU LGA1155-A

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 4 of 32

LGA1155 (A)

LGA1155A

MAAA0	AV27	SA_MA[0]	SA_DQS[0]	AK3	DQSA0
MAAA1	AY24	SA_MA[1]	SA_DQS#[0]	AK2	-DQSA0
MAAA2	AW24	SA_MA[2]			
MAAA3	AW23	SA_MA[3]			
MAAA4	AV23	SA_MA[4]	SA_DQ[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[5]	SA_DQ[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[6]	SA_DQ[2]	AL3	MDA2
MAAA7	AU22	SA_MA[7]	SA_DQ[3]	AL4	MDA3
MAAA8	AV22	SA_MA[8]	SA_DQ[4]	AJ2	MDA4
MAAA9	AT22	SA_MA[9]	SA_DQ[5]	AJ1	MDA5
MAAA10	AV28	SA_MA[10]	SA_DQ[6]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DQ[7]	AL1	MDA7
MAAA12	AT21	SA_MA[12]			
MAAA13	AW32	SA_MA[13]	SA_DQS[1]	AP3	DQSA1
MAAA14	AU20	SA_MA[14]	SA_DQS#[1]	AP2	-DQSA1
MAAA15	AT20	SA_MA[15]			
-SWEA	AW29	SA_WE#	SA_DQ[8]	AN1	MDA8
-SCASA	AV30	SA_CAS#	SA_DQ[9]	AN4	MDA9
-SRASA	AU28	SA_RAS#	SA_DQ[10]	AR3	MDA10
			SA_DQ[11]	AR4	MDA11
SBAA0	AY29	SA_BS[0]	SA_DQ[12]	AN2	MDA12
SBAA1	AW28	SA_BS[1]	SA_DQ[13]	AN3	MDA13
SBAA2	AV20	SA_BS[2]	SA_DQ[14]	AR2	MDA14
			SA_DQ[15]	AR1	MDA15
-CSA0	AU29	SA_CS#[0]			
-CSA1	AV32	SA_CS#[1]	SA_DQS[2]	AW4	DQSA2
	AW30	SA_CS#[2]	SA_DQS#[2]	AV4	-DQSA2
	AU33	SA_CS#[3]			
CKEA0	AV19	SA_CKE[0]	SA_DQ[16]	AV2	MDA16
CKEA1	AT19	SA_CKE[1]	SA_DQ[17]	AW3	MDA17
	AU18	SA_CKE[2]	SA_DQ[18]	AV5	MDA18
	AV18	SA_CKE[3]	SA_DQ[19]	AW5	MDA19
			SA_DQ[20]	AU2	MDA20
MODT_A0	AV31	SA_ODT[0]	SA_DQ[21]	AU3	MDA21
MODT_A1	AU32	SA_ODT[1]	SA_DQ[22]	AU5	MDA22
	AU30	SA_ODT[2]	SA_DQ[23]	AY5	MDA23
	AW33	SA_ODT[3]			
			SA_DQS[3]	AV8	DQSA3
			SA_DQS#[3]	AW8	-DQSA3
DCLKA0	AY25	SA_CK[0]			
-DCLKA0	AW25	SA_CK#[0]			
DCLKA1	AU24	SA_CK[1]	SA_DQ[24]	AY7	MDA24
-DCLKA1	AU25	SA_CK#[1]	SA_DQ[25]	AU7	MDA25
	AW27	SA_CK[2]	SA_DQ[26]	AV9	MDA26
	AY27	SA_CK#[2]	SA_DQ[27]	AU9	MDA27
	AV26	SA_CK[3]	SA_DQ[28]	AY7	MDA28
	AW26	SA_CK#[3]	SA_DQ[29]	AW7	MDA29
			SA_DQ[30]	AW9	MDA30
-DDR3_RST	AW18	SM_DRAMRST#	SA_DQ[31]	AY9	MDA31
			SA_DQS[4]	AV37	DQSA4
			SA_DQS#[4]	AV36	-DQSA4
			SA_DQ[32]	AU35	MDA32
			SA_DQ[33]	AW37	MDA33
			SA_DQ[34]	AU39	MDA34
			SA_DQ[35]	AU36	MDA35
			SA_DQ[36]	AW35	MDA36
			SA_DQ[37]	AY36	MDA37
			SA_DQ[38]	AU38	MDA38
			SA_DQ[39]	AU37	MDA39
			SA_DQS[5]	AP38	DQSA5
			SA_DQS#[5]	AP39	-DQSA5
			SA_DQ[40]	AR40	MDA40
			SA_DQ[41]	AR37	MDA41
			SA_DQ[42]	AN38	MDA42
			SA_DQ[43]	AN37	MDA43
			SA_DQ[44]	AR39	MDA44
			SA_DQ[45]	AR38	MDA45
			SA_DQ[46]	AN39	MDA46
			SA_DQ[47]	AN40	MDA47
			SA_DQS[6]	AK38	DQSA6
			SA_DQS#[6]	AK39	-DQSA6
			SA_DQ[48]	AL40	MDA48
			SA_DQ[49]	AL37	MDA49
			SA_DQ[50]	AJ38	MDA50
			SA_DQ[51]	AJ37	MDA51
			SA_DQ[52]	AL39	MDA52
			SA_DQ[53]	AL38	MDA53
			SA_DQ[54]	AJ39	MDA54
			SA_DQ[55]	AJ40	MDA55
			SA_DQS[7]	AF38	DQSA7
			SA_DQS#[7]	AF39	-DQSA7
			SA_DQ[56]	AG40	MDA56
			SA_DQ[57]	AG37	MDA57
			SA_DQ[58]	AE38	MDA58
			SA_DQ[59]	AE37	MDA59
			SA_DQ[60]	AG39	MDA60
			SA_DQ[61]	AG38	MDA61
			SA_DQ[62]	AE39	MDA62
			SA_DQ[63]	AE40	MDA63

[7,8] -DDR3_RST

[7] MODT_A[0..1]
[8] MODT_B[0..1]
[7] MDA[0..63]
[8] MDB[0..63]
[7] DQSA[0..7]
[7] -DQSA[0..7]
[7] MAAA[0..15]
[8] MAAB[0..15]
[8] DQSB[0..7]
[8] -DQSB[0..7]

DDR_0
1 OF 10

LGA1155/[10SC1-F01155-23R_10SC1-F01155-22R]

LGA1155 (B)

LGA1155B

MAAB0	AK24	SB_MA[0]	SB_DQS[0]	AH7	DQSB0
MAAB1	AM20	SB_MA[1]	SB_DQS#[0]	AH6	-DQSB0
MAAB2	AM19	SB_MA[2]			
MAAB3	AK18	SB_MA[3]			
MAAB4	AP19	SB_MA[4]	SB_DQ[0]	AG7	MDB0
MAAB5	AP18	SB_MA[5]	SB_DQ[1]	AG8	MDB1
MAAB6	AM18	SB_MA[6]	SB_DQ[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[7]	SB_DQ[3]	AJ8	MDB3
MAAB8	AN18	SB_MA[8]	SB_DQ[4]	AG5	MDB4
MAAB9	AY17	SB_MA[9]	SB_DQ[5]	AG6	MDB5
MAAB10	AN23	SB_MA[10]	SB_DQ[6]	AJ6	MDB6
MAAB11	AU17	SB_MA[11]	SB_DQ[7]	AJ7	MDB7
MAAB12	AT18	SB_MA[12]			
MAAB13	AP26	SB_MA[13]	SB_DQS[1]	AM8	DQSB1
MAAB14	AY16	SB_MA[14]	SB_DQS#[1]	AL8	-DQSB1
MAAB15	AV16	SB_MA[15]			
-SWEB	AR25	SB_WE#	SB_DQ[8]	AL7	MDB8
-SCASB	AK25	SB_CAS#	SB_DQ[9]	AM7	MDB9
-SRASB	AP24	SB_RAS#	SB_DQ[10]	AM10	MDB10
			SB_DQ[11]	AL10	MDB11
SBAB0	AP23	SB_BS[0]	SB_DQ[12]	AL6	MDB12
SBAB1	AM24	SB_BS[1]	SB_DQ[13]	AM6	MDB13
SBAB2	AW17	SB_BS[2]	SB_DQ[14]	AL9	MDB14
			SB_DQ[15]	AM9	MDB15
-CSB0	AN25	SB_CS#[0]			
-CSB1	AN26	SB_CS#[1]	SB_DQS[2]	AR8	DQSB2
	AL25	SB_CS#[2]	SB_DQS#[2]	AP8	-DQSB2
	AT26	SB_CS#[3]			
CKEB0	AU16	SB_CKE[0]	SB_DQ[16]	AP7	MDB16
CKEB1	AY15	SB_CKE[1]	SB_DQ[17]	AR7	MDB17
	AW15	SB_CKE[2]	SB_DQ[18]	AP10	MDB18
	AV15	SB_CKE[3]	SB_DQ[19]	AR10	MDB19
			SB_DQ[20]	AP6	MDB20
MODT_B0	AL26	SB_ODT[0]	SB_DQ[21]	AR6	MDB21
MODT_B1	AP26	SB_ODT[1]	SB_DQ[22]	AP9	MDB22
	AM26	SB_ODT[2]	SB_DQ[23]	AR9	MDB23
	AK26	SB_ODT[3]			
			SB_DQS[3]	AN13	DQSB3
			SB_DQS#[3]	AN12	-DQSB3
DCLKB0	AL21	SB_CK[0]			
-DCLKB0	AL22	SB_CK#[0]	SB_DQ[24]	AM12	MDB24
DCLKB1	AL20	SB_CK[1]	SB_DQ[25]	AM13	MDB25
-DCLKB1	AK20	SB_CK#[1]	SB_DQ[26]	AR13	MDB26
	AL23	SB_CK[2]	SB_DQ[27]	AP13	MDB27
	AM22	SB_CK#[2]	SB_DQ[28]	AL12	MDB28
	AP21	SB_CK[3]	SB_DQ[29]	AL13	MDB29
	AN21	SB_CK#[3]	SB_DQ[30]	AR12	MDB30
			SB_DQ[31]	AP12	MDB31
			SB_DQS[4]	AN29	DQSB4
			SB_DQS#[4]	AN28	-DQSB4
VREF_DQB	AH1	FC_AH1			
VREF_DQA	AH4	FC_AH4			
			SB_DQ[32]	AR28	MDB32
			SB_DQ[33]	AR29	MDB33
			SB_DQ[34]	AL28	MDB34
			SB_DQ[35]	AL29	MDB35
			SB_DQ[36]	AP28	MDB36
			SB_DQ[37]	AP29	MDB37
			SB_DQ[38]	AM28	MDB38
			SB_DQ[39]	AM29	MDB39
			SB_DQS[5]	AP33	DQSB5
			SB_DQS#[5]	AR33	-DQSB5
			SB_DQ[40]	AP32	MDB40
			SB_DQ[41]	AP31	MDB41
			SB_DQ[42]	AP35	MDB42
			SB_DQ[43]	AP34	MDB43
			SB_DQ[44]	AR32	MDB44
			SB_DQ[45]	AR31	MDB45
			SB_DQ[46]	AR35	MDB46
			SB_DQ[47]	AR34	MDB47
			SB_DQS[6]	AL33	DQSB6
			SB_DQS#[6]	AM33	-DQSB6
			SB_DQ[48]	AM32	MDB48
			SB_DQ[49]	AM31	MDB49
			SB_DQ[50]	AL35	MDB50
			SB_DQ[51]	AL32	MDB51
			SB_DQ[52]	AM34	MDB52
			SB_DQ[53]	AL31	MDB53
			SB_DQ[54]	AM35	MDB54
			SB_DQ[55]	AL34	MDB55
			SB_DQS[7]	AG35	DQSB7
			SB_DQS#[7]	AG34	-DQSB7
			SB_DQ[56]	AH35	MDB56
			SB_DQ[57]	AH34	MDB57
			SB_DQ[58]	AE34	MDB58
			SB_DQ[59]	AE35	MDB59
			SB_DQ[60]	AJ35	MDB60
			SB_DQ[61]	AJ34	MDB61
			SB_DQ[62]	AF33	MDB62
			SB_DQ[63]	AF35	MDB63

VREF_DQA
VREF_DQB
BC80
BC82
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K

DDR_1
2 OF 10

LGA1155/[10SC1-F01155-23R_10SC1-F01155-22R]

LGA1155 (CR)

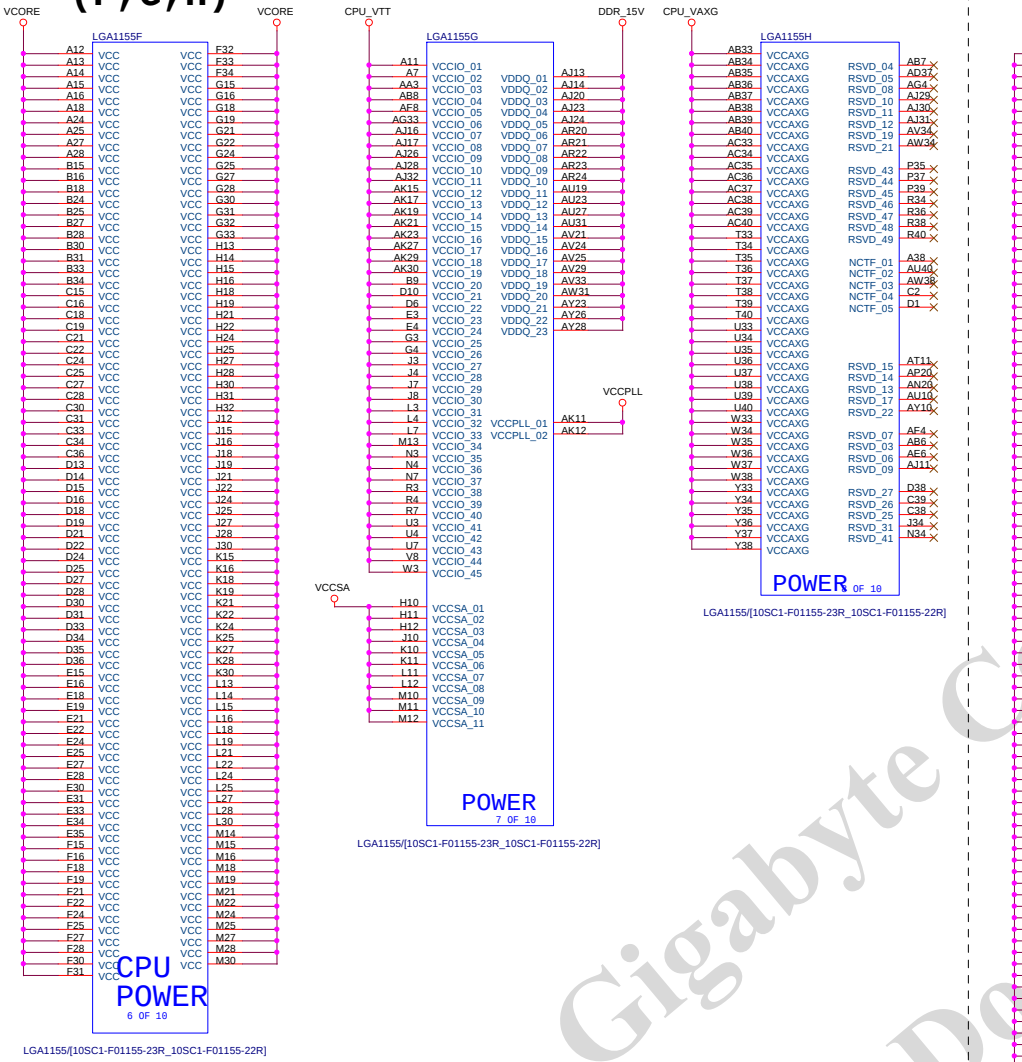
CR
CPU RETAINTION/X

LGA1155_P

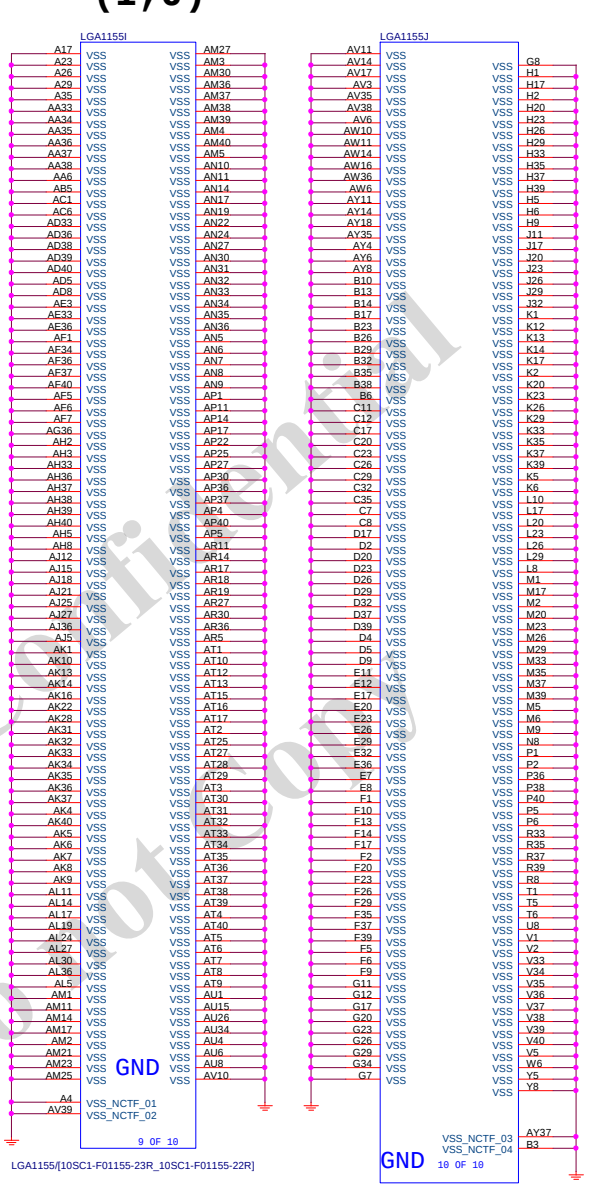
ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]

Gigabyte Technology			
Title: CPU LGA1156-B			
Size: Custom	Document Number: GA-B75M-D3V		Rev: 2.02
Date: Friday, June 20, 2014	Sheet 5 of 32		

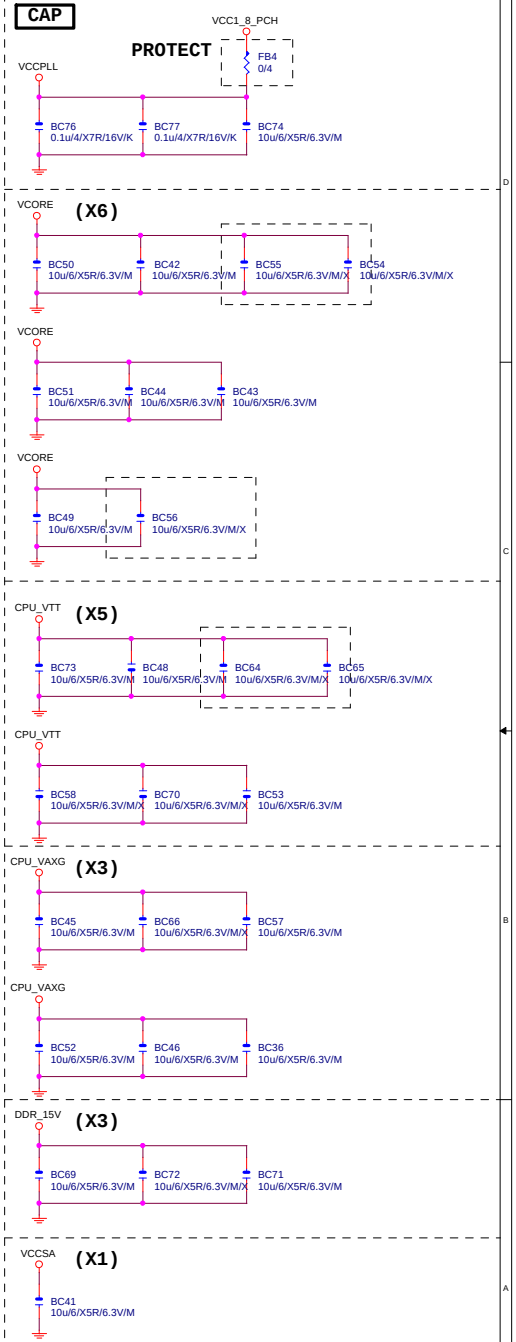
LGA1155 (F,G,H)



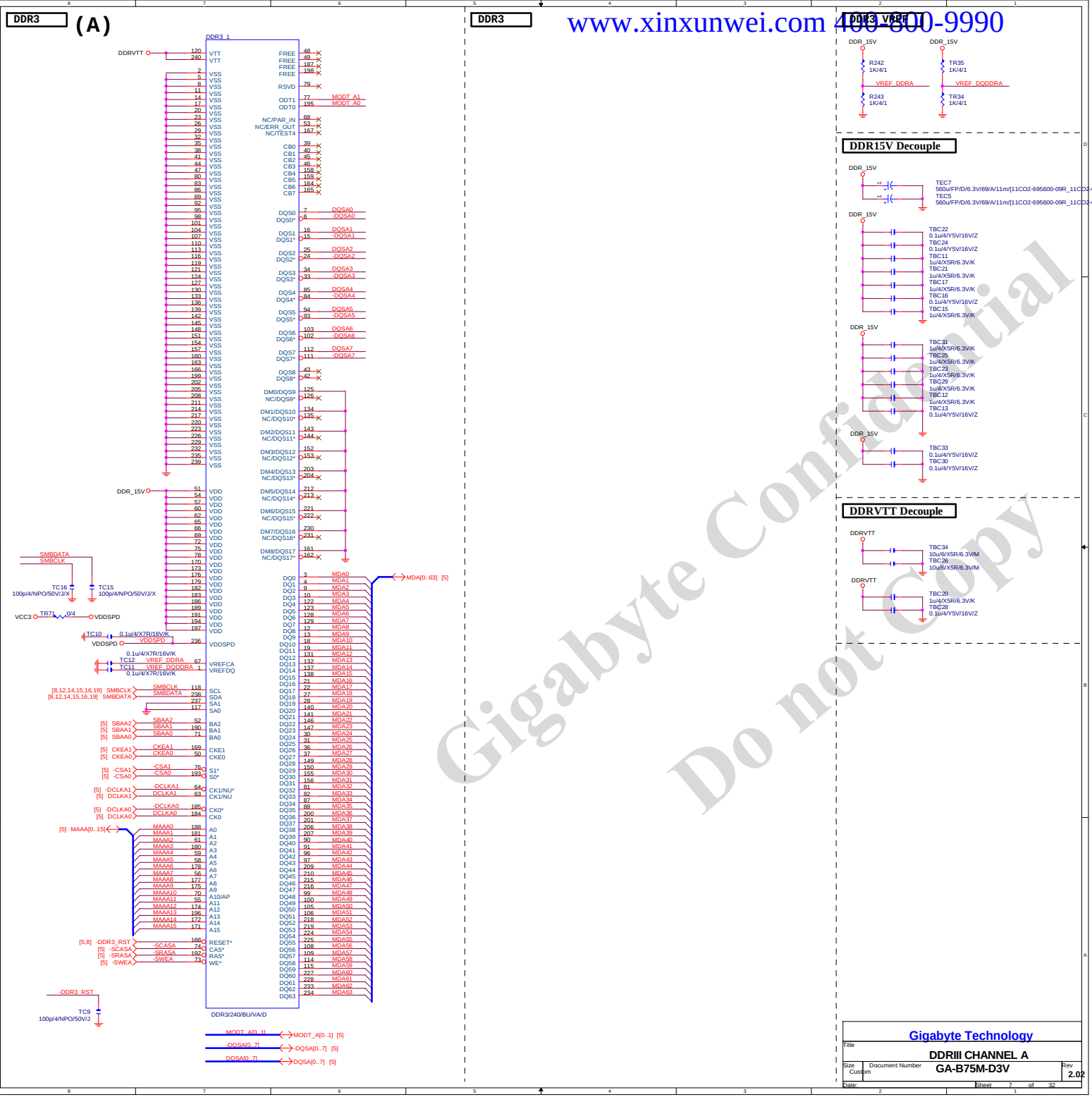
LGA1155 (I,J)



CAP



Gigabyte Technology			
Title: CPU LGA1156-C			
Size: Custom	Document Number: GA-B75M-D3V		Rev: 2.02
Date: Friday, June 20, 2014	Sheet 6 of 32		



Gigabyte Technology

Title: DDRIII CHANNEL A

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: | Sheet 7 of 32

DDR3 (B)

DDR3_2

DDRVTT

VTT ×2, VSS ×84, VDD ×28

FREE ×4, RSVD, ODT1 (MODT_B1), ODT0 (MODT_B0), NC/PAR_IN, NC/ERR_OUT, NC/TEST4, CB0–CB7

DQS0–DQS8, DQS0*–DQS8*

DM0/DQS9–DM8/DQS17, NC/DQS9*–NC/DQS17*

DDR_15V

TC14 0.1u/4/X7R/16V/K

VDDSPD

TC17 0.1u/4/X7R/16V/K VREF_DDRB

TC13 0.1u/4/X7R/16V/K VREF_DQDDRB

VREFCA, VREFDQ

[7,12,14,15,16,19] SMBCLK, [7,12,14,15,16,19] SMBDATA

SCL, SDA, SA1, SA0

[5] SBAB2, [5] SBAB1, [5] SBAB0 → BA2, BA1, BA0

[5] CKEB1, [5] CKEB0 → CKE1, CKE0

[5] -CSB1, [5] -CSB0 → S1*, S0*

[5] -DCLKB1, [5] DCLKB1 → CK1/NU*, CK1/NU

[5] -DCLKB0, [5] DCLKB0 → CK0*, CK0

[5] MAAB[0..15] → A0–A15, A10/AP

[5,7] -DDR3_RST → RESET*

[5] -SCASB → CAS*

[5] -SRASB → RAS*

[5] -SWEB → WE*

DQ0–DQ63 → MDB0–MDB63 [5]

DDR3/240/BU/VA/D

-DQSB[0..7] → -DQSB[0..7] [5]

DQSB[0..7] → DQSB[0..7] [5]

MODT_B[0..1] → MODT_B[0..1] [5]

DDR3 VREF

DDR_15V

R302 1K/4/1 — VREF_DDRB — R303 1K/4/1

TR37 1K/4/1 — VREF_DQDDRB — TR36 1K/4/1

COUPON

COUPON1 COUPON1 1 2 COUPON/X → DDR_15V

COUPON2 COUPON2 1 2 COUPON/X

CPU

DIMM1 CHA

DIMM2 CHB

Gigabyte Technology

Title: DDRIII CHANNEL B

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: | Sheet 8 of 32

PCH (B)

PCHB

DMI_0TXN DMI_0TXP DMI_0RXN DMI_0RXP DMI_1TXN DMI_1TXP DMI_1RXN DMI_1RXP DMI_2TXN DMI_2TXP DMI_2RXN DMI_2RXP DMI_3TXN DMI_3TXP DMI_3RXN DMI_3RXP DMI_COMP

VCC1_05_PCH R232 49.9/4/1

-SRCCLK_PCH SRCCLK_PCH

DMI_IRCOMP DMI_ZCOMP CLKIN_DMI_N CLKIN_DMI_P

DMI

USB

PCIE

PCIEX1_2

PCIE_IN1 PCIE_IP1 PCIE_TN1 PCIE_TP1

0.1u/4/X7R/16V/K C170 PET_N1 C171 PET_P1

PCIEX1_1 LAN

LA_ML_IN LA_ML_IP LA_ML_ON LA_ML_OP PCIE_IN6 PCIE_IP6 PCIE_TN6 PCIE_TP6

0.1u/4/X7R/16V/K C33 PET_N6 C31 PET_P6

USBP0N USBP0P USBP1N USBP1P USBP2N USBP2P USBP3N USBP3P USBP4N USBP4P USBP5N USBP5P USBP6N USBP6P USBP7N USBP7P USBP8N USBP8P USBP9N USBP9P USBP10N USBP10P USBP11N USBP11P USBP12N USBP12P USBP13N USBP13P

-USBP0 +USBP0 -USBP1 +USBP1 -USBP2 +USBP2 -USBP3 +USBP3 -USBP4 +USBP4 -USBP5 +USBP5

B75: USB2.0 X12 [6/7 PORT-->N/A]

-USBP8 +USBP8 -USBP9 +USBP9 -USBP10 +USBP10 -USBP11 +USBP11 -USBP12 +USBP12 -USBP13 +USBP13

OC0#/GPIO59 OC1#/GPIO40 OC2#/GPIO41 OC3#/GPIO42 OC4#/GPIO43 OC5#/GPIO9 OC6#/GPIO10 OC7#/GPIO14

-USBOC_F -USBOC_R GPIO14

BC121 0.1u/4/X7R/16V/K BC126 0.1u/4/X7R/16V/K

USBRBIAS# USBRBIAS USBRBIAS R229 22.6/4/1

CLKIN_DOT_96N CLKIN_DOT_96P -DOTCLK DOTCLK

DMI2RBIAS R233 750/4/1

2 OF 11

BD82B75/S/[10HB1-030B75-10R]

PCH (G)

PCHG

FDILINK

USB3_RXN1 USB3_RXP1 USB3_TXN1 USB3_TXP1 USB3_RXN2 USB3_RXP2 USB3_TXN2 USB3_TXP2 USB3_RXN3 USB3_RXP3 USB3_TXN3 USB3_TXP3 USB3_RXN4 USB3_RXP4 USB3_TXN4 USB3_TXP4

PCH_USB3_RXN1 PCH_USB3_RXP1 PCH_USB3_TXN1 PCH_USB3_TXP1 PCH_USB3_RXN2 PCH_USB3_RXP2 PCH_USB3_TXN2 PCH_USB3_TXP2 PCH_USB3_RXN3 PCH_USB3_RXP3 PCH_USB3_TXN3 PCH_USB3_TXP3 PCH_USB3_RXN4 PCH_USB3_RXP4 PCH_USB3_TXN4 PCH_USB3_TXP4

FDI_RXN0 FDI_RXP0 FDI_RXN1 FDI_RXP1 FDI_RXN2 FDI_RXP2 FDI_RXN3 FDI_RXP3 FDI_RXN4 FDI_RXP4 FDI_RXN5 FDI_RXP5 FDI_RXN6 FDI_RXP6 FDI_RXN7 FDI_RXP7

FDI_TXN0 FDI_TXP0 FDI_TXN1 FDI_TXP1 FDI_TXN2 FDI_TXP2 FDI_TXN3 FDI_TXP3 FDI_TXN4 FDI_TXP4 FDI_TXN5 FDI_TXP5 FDI_TXN6 FDI_TXP6 FDI_TXN7 FDI_TXP7

FDI_FSYNC0 FDI_LSYNC0 FDI_FSYNC1 FDI_LSYNC1 FDI_INT

FDI_TXP[0..7] FDI_TXN[0..7]

7 OF 11

BD82B75/S/[10HB1-030B75-10R]

-USBOC F/R PROTECT

GPIO11 D4 BAT54A/SOT23/200mA -USBOC_F -USBOC_R

R238 8.2K/4 GPIO14 3VDUAL

PCH CLK PD

SRCCLK_PCH R414 8.2K/4

-SRCCLK_PCH R416 8.2K/4

DOTCLK R417 8.2K/4

-DOTCLK R419 8.2K/4

short to GND in non graphic SKU

PCH H/S

LOW COST ICH7 HEATSINK
BGAHSINK_SB-N

SB_HEATSIN

PCH_HS GRAY HS

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

PCH (E)

PCHE

NV_CLE

RESERVED_29 DF_TVS RESERVED_6 RESERVED_4 RESERVED_3 RESERVED_2 RESERVED_1

RESERVED_22 RESERVED_21 RESERVED_14 RESERVED_13 RESERVED_12 RESERVED_11 RESERVED_10 RESERVED_9 RESERVED_8 RESERVED_7 RESERVED_20 RESERVED_19 RESERVED_18 RESERVED_17 RESERVED_16 RESERVED_15

RESERVED_28 RESERVED_27 RESERVED_26 RESERVED_25

RESERVED_24 RESERVED_23

RESERVED_5 NV_RCOMP R256 33/4

32.4/4/1 for ONFI enable

NVRAM

5 OF 11

BD82B75/S/[10HB1-030B75-10R]

NVRAM PU

VCC1_8_PCH R282 1K/4/1 NV_CLE R257 8.2K/4 -H_SNB [4] BC139 0.1u/4/X7R/16V/K

USB TABLE

USB OC#	Configure
OC0#	USB0,1(F_USB30)
OC1#	USB2,3(USB30_20)
OC2#	USB4,5(F_USB1)
OC3#	USB6,7(B75:N/A)
OC4#	USB8,9(F_USB2)
OC5#	USB10,11(USB_LAN)
OC6#	USB12,13(KB_USB)
OC7#	N/A

Gigabyte Technology

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

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 9 of 32

PCH (F)

PCHF

[32] DVI_HDP_F → T1 DDPB_HPD
N2 DDPC_HPD
M1 DDPD_HPD
R8 DDPB_AUXP
R9 DDPB_AUXN
U14 DDPC_AUXP
U12 DDPC_AUXN
N6 DDPD_AUXP
R6 DDPD_AUXN

[32] DVI_TX2 → R14 DDPB_0P
[32] DVI_TX2- → R12 DDPB_0N
[32] DVI_TX1 → M11 DDPB_1P
[32] DVI_TX1- → M12 DDPB_1N
[32] DVI_TX0 → H8 DDPB_2P
[32] DVI_TX0- → K8 DDPB_2N
[32] DVI_TXC → L5 DDPB_3P
[32] DVI_TXC- → M3 DDPB_3N
L2 DDPC_0P
J3 DDPC_0N
G2 DDPC_1P
G4 DDPC_1N
F3 DDPC_2P
F5 DDPC_2N
E4 DDPC_3P
E2 DDPC_3N
D5 DDPD_0P
B5 DDPD_0N
C6 DDPD_1P
D7 DDPD_1N
B7 DDPD_2P
C9 DDPD_2N
E11 DDPD_3P
B11 DDPD_3N

U2 SDVO_INTP
T3 SDVO_INTN
W3 SDVO_STALLP
U5 SDVO_STALLN
U8 SDVO_TVCLKINP
U9 SDVO_TVCLKINN

CRT_HSYNC AR4 H_SYNC R212 33/4 GHSYNC
CRT_VSYNC AR2 V_SYNC R213 33/4 GVSYNC
CRT_RED AN6 R
CRT_GREEN AN2 G
CRT_BLUE AM1 B
CRT_IRTN AM6
CRT_DDC_DATA AW1 DDCDATA
CRT_DDC_CLK AW3 DDCCLK
DAC_IREF AT3 VGA_RSET R211 1K/4/1
Pop 0/4 for non graphic skus

TP6 Y18
TP7 Y17
TP8 AB18
TP9 AB17

DDPC_CTRLCLK AL12
DDPC_CTRLDATA AL14
DDPD_CTRLCLK AL9
DDPD_CTRLDATA AL8
SDVO_CTRLCLK AL15 DDPB_CTRLCLK → DDPB_CTRLCLK [32]
SDVO_CTRLDATA AL17 DDPB_CTRLDATA → DDPB_CTRLDATA [32]

6 0F 11
BD82B75/S/[10HB1-030B75-10R]

PCH (F)

PCHH

[17] LPC33 R201 33/4 → AT11 CLKOUT_PCI0
[11] PCH33 R405 33/4 → AN14 CLKOUT_PCI1
[16] PCLK0 R453 33/4 → AT12 CLKOUT_PCI2
AT17 CLKOUT_PCI3
AT14 CLKOUT_PCI4

Flex0,2 : 33MHZ
Flex1,3 : 27/14/24/48/25MHZ

[17] LPCCLK48 R209 33/4 native 48Mhz PCH_48M → AT9 CLKOUTFLEX0/GPIO64
BA5 CLKOUTFLEX1/GPIO65
AW5 CLKOUTFLEX2/GPIO66
BA2 CLKOUTFLEX3/GPIO67

VCC1_05_PCH R206 90.9/4/1 CLK_RCOMP → AL2 XCLK_RCOMP
PCHCLK14 → AN8 REFCLK14IN

XTALO_PCH → AJ5 XTAL25_OUT
XTALI_PCH → AJ3 XTAL25_IN

XTALI_PCH — R197 1M/4 — X1 — XTALO_PCH
25M/20p/30ppm/49US/20/D
C81 27p/4/NPO/50V/J
C82 27p/4/NPO/50V/J

CLKIN_GND1_N R27 -PCHCLK
CLKIN_GND1_P P27 PCHCLK
CLKIN_GND0_N W53 -CLK_GND
CLKIN_GND0_P V52 CLK_GND
CLKOUT_ITPXDP_N R52 -CLK_ITP → -ITPCLK [4]
CLKOUT_ITPXDP_P N52 CLK_ITP → ITPCLK [4]
CLKOUT_PCIE7N AE2
CLKOUT_PCIE7P AF1
CLKOUT_DMI_N P31 -CLK_CPU → -CPUCLK [4]
CLKOUT_DMI_P R31 CLK_CPU → CPUCLK [4]
CLKOUT_DP_N N56
CLKOUT_DP_P M55

CLKOUT_PCIE0N AE6 -SRCCLK0 → -SRCCLK_PCIEX11 [15]
CLKOUT_PCIE0P AC6 SRCCLK0 → SRCLK_PCIEX11 [15]
CLKOUT_PCIE1N AA5 -SRCCLK1 → -SRCCLK_PCIEX12 [15]
CLKOUT_PCIE1P W5 SRCCLK1 → SRCLK_PCIEX12 [15]
CLKOUT_PCIE2N AB12
CLKOUT_PCIE2P AB14
CLKOUT_PCIE3N AB9 -SRCCLK3 → LA_-SRCCLK_LAN [24]
CLKOUT_PCIE3P AB8 SRCCLK3 → LA_SRCCLK_LAN [24]
CLKOUT_PCIE4N Y9
CLKOUT_PCIE4P Y8
CLKOUT_PCIE5N AF3
CLKOUT_PCIE5P AG2
CLKOUT_PCIE6N AB3
CLKOUT_PCIE6P AA2
CLKOUT_PEG_A_N AG8 -SRCCLKA → -SRCCLK_PCIEX16 [14]
CLKOUT_PEG_A_P AG9 SRCCLKA → SRCLK_PCIEX16 [14]
CLKOUT_PEG_B_N AE12
CLKOUT_PEG_B_P AE11

PCIEX1_1
PCIEX1_2
LAN
PCIEX16 FOR OC

8 0F 11
BD82B75/S/[10HB1-030B75-10R]

PCH CLK PD

PCHCLK14 R210 8.2K/4
-CLK_GND R278 8.2K/4
CLK_GND R279 8.2K/4
-PCHCLK R412 8.2K/4
PCHCLK R411 8.2K/4

VGA DDC

VCC3 — R70 2.2K/4/1 — R73 2.2K/4/1
VCC — R68 1K/4/1 — Q2 2N7002/SOT23/25pF/5 — R69 2.2K/4/1 — R72 2.2K/4/1
DDCDATA
VGADDCDATA
GVSYNC — C22 100p/4/NPO/50V/J
VCC — Q3 2N7002/SOT23/25pF/5
DDCCLK
VGADDCCLK
GHSYNC — C20 100p/4/NPO/50V/J
R71 1K/4/1
SOT23

VGA CONNECTOR

FUSEVCC_R
BC9 0.1u/4/X7R/16V/K/X
VGA
VGA_R
VGA_G
VGA_B
VGADDCDATA
GHSYNC
GVSYNC
VGADDCCLK
VGA/BU/SC-11/RA/D/L/[11NR6-101015-3FR_11NR6-101015-3MR]

VGA ESD

ESD3
VGADDCDATA 1 — 6 VGADDCCLK
2 — 5 VCC
GHSYNC 3 — 4 GVSYNC
AOZ8902CIL/SOT23-6
SSOP6_ESD

ESD4
1 — 6 VGA_R
2 — 5 VCC3
VGA_B 3 — 4 VGA_G
AOZ8902CIL/SOT23-6

VGA DDC

R
G
B
FB1 60/4/3A/S VGA_R
FB2 60/4/3A/S VGA_G
FB3 60/4/3A/S VGA_B
R53 75/4/1
R55 75/4/1
R54 75/4/1
C17 C18 C19 10p/4/NPO/50V/J 10p/4/NPO/50V/J 10p/4/NPO/50V/J
C13 C14 C15 22p/4/NPO/50V/J 22p/4/NPO/50V/J 22p/4/NPO/50V/J

Close to Filter

Gigabyte Technology		
Title: PCH DISPLAY ,CLK BUFFER		
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 10 of 32	

PCH (C)

B75 SATA3.0 ONLY PORT0
B75 Not Support RAID

PCHC

For WIFI

CL_CLK1 BA50
CL_DATA1 BF50
CL_RST1# BF49
CLINK

[12,17] PWROK1 R514 0/4/X
ME_PWROK BC46
APWROK

PWM0 BN21
PWM1 BT21
PWM2 BM20
PWM3 BN19

TACH0/GPIO17 BT17
TACH1/GPIO1 BR19
TACH2/GPIO6 BA22
TACH3/GPIO7 BR16
TACH4_GPIO68 BU16
TACH5_GPIO69 BM18
TACH6_GPIO70 BN17
TACH7_GPIO71 BP15
FAN

[17] SSTCTL BC43
SST

GPIO22 BA53
GPIO38 BE54
GPIO39 BE55
GPIO48 AW53
SCLOCK/GPIO22
SLOAD/GPIO38
SDATAOUT0/GPIO39
SDATAOUT1/GPIO48
GPIO

AY20 NC_5

SATA3 (AC56–AG47):
SATA0RXN AC56 SATA0RXN
SATA0RXP AB55 SATA0RXP
SATA0TXN AE46 SATA0TXN
SATA0TXP AE44 SATA0TXP
SATA1RXN AA53 SATA1RXN
SATA1RXP AA56 SATA1RXP
SATA1TXN AG49 SATA1TXN
SATA1TXP AG47 SATA1TXP

SATA2 (AL50–AT49):
SATA2RXN AL50 SATA2RXN
SATA2RXP AL49 SATA2RXP
SATA2TXN AL56 SATA2TXN
SATA2TXP AL53 SATA2TXP
SATA3RXN AN46 SATA3RXN
SATA3RXP AN44 SATA3RXP
SATA3TXN AN56 SATA3TXN
SATA3TXP AM55 SATA3TXP
SATA4RXN AN49 SATA4RXN
SATA4RXP AN50 SATA4RXP
SATA4TXN AT50 SATA4TXN
SATA4TXP AT49 SATA4TXP
SATA5RXN AT46 SATA5RXN
SATA5RXP AT44 SATA5RXP
SATA5TXN AV50 SATA5TXN
SATA5TXP AV49 SATA5TXP

CLKIN_SATA_N AF55 -SRCCLK_SATA
CLKIN_SATA_P AG56 SRCCLK_SATA

SATALED# BF57 -SATALED [21]
SATAICOMPI AJ55
SATAICOMPO AJ53 SATACOMP R286 37.4/4/1 VCC1_05_PCH

SATA0GP/GPIO21 BC54 GPIO21
SATA1GP/GPIO19 AY52 GPIO19
SATA2GP/GPIO36 BB55
SATA3GP/GPIO37 BG53
SATA4GP/GPIO16 AU56 GPIO16
SATA5GP/GPIO49 BA56 TEMP_ALERT-

SATA3COMPI AE54
SATA3RCOMPO AE52 SATA3COMP R287 49.9/4/1 VCC1_05_PCH

TP16 AE50

SATA3RBIAS AC52 SATA3BIAS R288 750/4/1

HOST:
A20GATE BB57 A20GATE [17]
INIT3_3V# BN56
RCIN# BG56 -KBRST [17]
SERIRQ AV52 SERIRQ [17]
THRMTRIP# E56 -THRMTRIP -THRMTRIP [4,19]
PECI H48 SB_PECI R283 0/4/X -PECI PECI [4,17]
PMSYNCH F55 PMSYNC PMSYNC [4]

3 OF 11
BD82B75/S/[10HB1-030B75-10R]

PCH (A)

PCHA

R448 22/4
[16] PAR PAR BH8
[16] -DEVSEL -DEVSEL BH9
[10] PCH33 PCH33 BD15
[16] -PCIRST PCIRST# -PCIRST_F AV14
C153 100p/4/NPO/50V/J/X

[16] -IRDY -IRDY BF11
[16] -PCIPME -PCIPME AV15
[16] -SERR -SERR BR6
[16] -STOP -STOP BC12
[16] -PLOCK -PLOCK BA17
[16] -TRDY -TRDY BC8
[16] -PERR -PERR BM3
[16] -FRAME -FRAME BC11

[16,20] -GNT0 -GNT0 BA15
[20] -GNT1 -GNT1 AV8
BU12
BE2

[16] -REQ0 -REQ0 BG5
[16] -REQ1 -REQ1 BT5
[16] -REQ2 -REQ2 BK8
[16] -REQ3 -REQ3 AV11

[16] -PIRQA -PIRQA BK10
[16] -PIRQB -PIRQB BJ5
[16] -PIRQC -PIRQC BM15
[16] -PIRQD -PIRQD BP5
[16] -PIRQE -PIRQE BN9
[16] -PIRQF -PIRQF AV9
-PIRQG -PIRQG BT15
[16] -PIRQH -PIRQH BR4

PCI

PAR
DEVSEL#
CLKIN_PCILOOPBACK
PCIRST#
IRDY#
PME#
SERR#
STOP#
PLOCK#
TRDY#
PERR#
FRAME#

GNT0#
GNT1#/GPIO51
GNT2#/GPIO53
GNT3#/GPIO55

REQ0#
REQ1#/GPIO50
REQ2#/GPIO52
REQ3#/GPIO54

PIRQA#
PIRQB#
PIRQC#
PIRQD#
PIRQE#/GPIO2
PIRQF#/GPIO3
PIRQG#/GPIO4
PIRQH#/GPIO5

AD0 BF15 A_D0
AD1 BF17 A_D1
AD2 BT7 A_D2
AD3 BT13 A_D3
AD4 BG12 A_D4
AD5 BN11 A_D5
AD6 BJ12 A_D6
AD7 BU9 A_D7
AD8 BR12 A_D8
AD9 BJ3 A_D9
AD10 BR9 A_D10
AD11 BJ10 A_D11
AD12 BM8 A_D12
AD13 BF3 A_D13
AD14 BN2 A_D14
AD15 BE4 A_D15
AD16 BE6 A_D16
AD17 BG15 A_D17
AD18 BC6 A_D18
AD19 BT11 A_D19
AD20 BA14 A_D20
AD21 BL2 A_D21
AD22 BC4 A_D22
AD23 BL4 A_D23
AD24 BC2 A_D24
AD25 BM13 A_D25
AD26 BA9 A_D26
AD27 BF9 A_D27
AD28 BA8 A_D28
AD29 BF8 A_D29
AD30 AV17 A_D30
AD31 BK12 A_D31

C/BE0# BN4 -C_BE0 -C_BE0 [16]
C/BE1# BP7 -C_BE1 -C_BE1 [16]
C/BE2# BG2 -C_BE2 -C_BE2 [16]
C/BE3# BP13 -C_BE3 -C_BE3 [16]

1 OF 11
BD82B75/S/[10HB1-030B75-10R]

[16] A_D[0..31] A_D[0..31]

PCH CLK PD

SRCCLK_SATA R261 8.2K/4
-SRCCLK_SATAR262 8.2K/4

PCH PU/PD

VCC3

FDI RX
[17] TEMP_ALART- R310 1K/4/1/X
GPIO19 TEMP_ALART- GPIO22 A20GATE RN16 8.2K/8P4R/4

GPIO16 SERIRQ GPIO48 GPIO0 RN17 8.2K/8P4R/4
[12] GPIO0

GPIO21 GPIO38 GPIO39 GPIO20 RN18 8.2K/8P4R/4
[12] GPIO20

-KBRST R304 1K/4/1

MB-ID
R224 8.2K/4/X GPIO17
R333 8.2K/4/X GPIO19

VCC3
RN12 8.2K/8P4R/4
GPIO70 GPIO6 GPIO17 GPIO1
-PIRQG GPIO71 GPIO68 GPIO7
RN11 8.2K/8P4R/4

SATA CONNECTOR

Remove SATA CAP [Footprint: C0402-SHORT4_5-MASK]

B75 SATA 3.0

SATA0TXP SHORT4_5-MASK/X C114 SATA0TXPC
SATA0TXN SHORT4_5-MASK/X C118 SATA0TXNC
SATA0RXN SHORT4_5-MASK/X C125 SATA0RXNC
SATA0RXP SHORT4_5-MASK/X C129 SATA0RXPC

WHITE COLOR

SATA3_0_1
SATA1TXPC SATA1TXNC SATA1RXNC SATA1RXPC
SATA0TXPC SATA0TXNC SATA0RXNC SATA0RXPC
SATA/14/W/H/H/OP/RA/D/2

B75 SATA 2.0

SATA1TXP SHORT4_5-MASK/X C113 SATA1TXPC
SATA1TXN SHORT4_5-MASK/X C117 SATA1TXNC
SATA1RXN SHORT4_5-MASK/X C124 SATA1RXNC
SATA1RXP SHORT4_5-MASK/X C128 SATA1RXPC

SATA2_2
SATA2TXP SHORT4_5-MASK/X C112 SATA2TXPC
SATA2TXN SHORT4_5-MASK/X C116 SATA2TXNC
SATA2RXN SHORT4_5-MASK/X C123 SATA2RXNC
SATA2RXP SHORT4_5-MASK/X C127 SATA2RXPC
SATA2/7/BU/H/OP/VA/D/1/B/[11NH5-110307-E2R]

SATA2_4
SATA4TXP SHORT4_5-MASK/X C154 SATA4TXPC
SATA4TXN SHORT4_5-MASK/X C155 SATA4TXNC
SATA4RXN SHORT4_5-MASK/X C156 SATA4RXNC
SATA4RXP SHORT4_5-MASK/X C157 SATA4RXPC
SATA2/7/BU/H/OP/VA/D/1/B/[11NH5-110307-E2R]

SATA2_3
SATA3TXP SHORT4_5-MASK/X C111 SATA3TXPC
SATA3TXN SHORT4_5-MASK/X C115 SATA3TXNC
SATA3RXN SHORT4_5-MASK/X C122 SATA3RXNC
SATA3RXP SHORT4_5-MASK/X C126 SATA3RXPC
SATA2/7/BU/H/OP/VA/D/1/B/[11NH5-110307-E2R]

SATA2_5
SATA5TXP SHORT4_5-MASK/X C158 SATA5TXPC
SATA5TXN SHORT4_5-MASK/X C159 SATA5TXNC
SATA5RXN SHORT4_5-MASK/X C160 SATA5RXNC
SATA5RXP SHORT4_5-MASK/X C161 SATA5RXPC
SATA2/7/BU/H/OP/VA/D/1/B/[11NH5-110307-E2R]

ME PWROK

VCC3_ME
R673 8.2K/4
ME_PWROK
C206 0.01u/4/X7R/25V/K

[12,26] -SLP_A
VCC1_05_ME
D9 BAT54A/SOT23/200mA SOT23

3VDUAL
R674 22K/4
Q85 S0T23 MMBT2222A/SOT23/600mA/40

Q86 MMBT2222A/SOT23/600mA/40 S0T23

VCC3_ME
R675 8.2K/4
R676 8.2K/4/X
C207 1u/4/X5R/6.3V/K

Gigabyte Technology

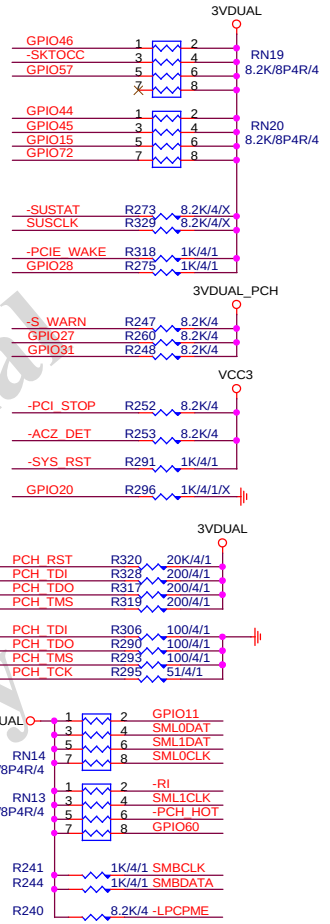
Title: PCH HOST , SATA, PCI

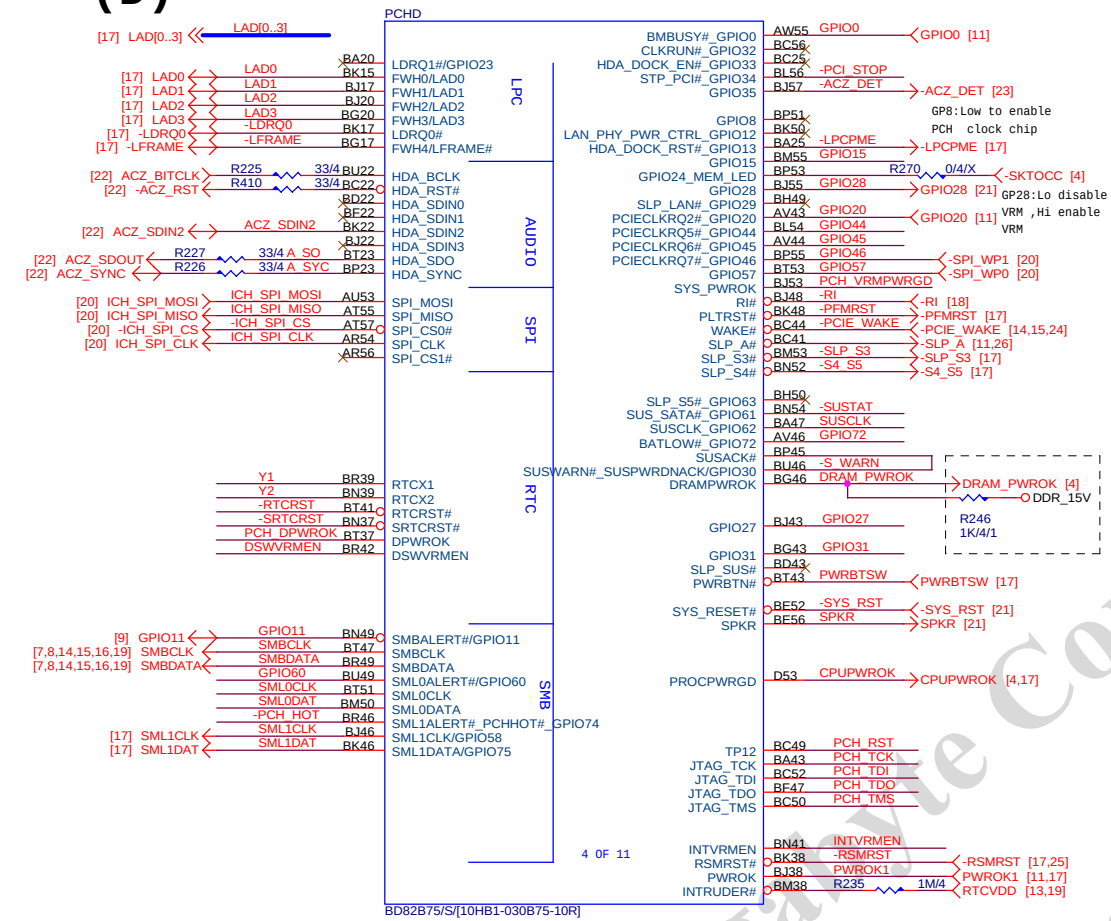
Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 11 of 32

PCH (D)

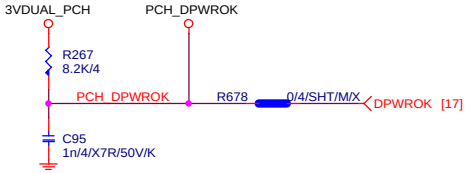
PCH PU/PD



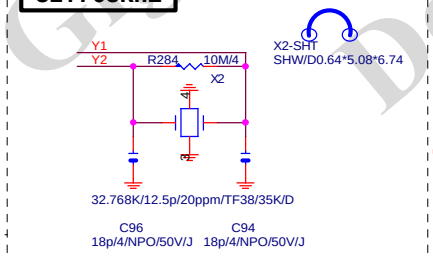


PCH_DPWROK

At least 10ms delay after 3VDUAL_PCH stabel



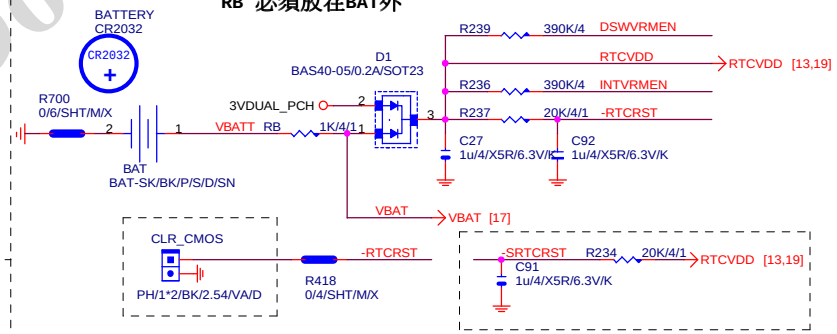
32.768KHZ



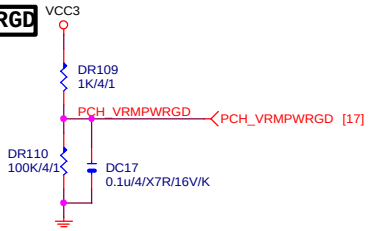
CLR_CMOS

BATTERY-DUAL-4

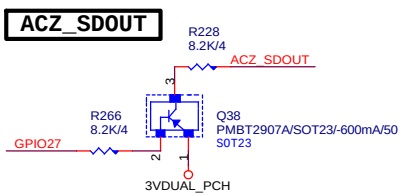
RB 必须放在BAT外



PCH_VRMPWRGD



ACZ_SDOUT



Gigabyte Technology			
Title: PCH GPIO , CTRL , AUDIO			
Size: Custom	Document Number: GA-B75M-D3V		Rev: 2.02
Date: Friday, June 20, 2014	Sheet 12 of 32		

PCH (I)

PCH (J)

SHT PWR

3VDUAL_PCH

VCC3_DAC

CAP

PCH (I)

CLOSE北橋(注意震盪水波紋)

Need isolation

Need isolation

CD

CD

CD

EMI

Title	PCH PWR ,GND
Size	Custom
Document Number	GA-B75M-D3V
Rev	2.02
Date:	Friday, June 20, 2014
Sheet	13 of 32

Gigabyte Technology

PCIEX16 CAP

+12V

EC1 1

270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]

FOR PCIEX16 & CPU_FAN

VCC3

BC30 0.1u/4/Y5V/16V/Z

BC26 0.1u/4/Y5V/16V/Z/X

BC28 0.1u/4/Y5V/16V/Z/X

PCIEX16 PROTECT SHT

+12V X16_+12V

RN4 0/8P4R/0402/SHT/X

RN2 0/8P4R/4/X

PCIEX16 AC CAP

EXP_A_TXP0	C32	0.22u/4/X5R/6.3V/K	EXP_A_TXP0C
EXP_A_TXN0	C30	0.22u/4/X5R/6.3V/K	EXP_A_TXN0C
EXP_A_TXP1	C35	0.22u/4/X5R/6.3V/K	EXP_A_TXP1C
EXP_A_TXN1	C37	0.22u/4/X5R/6.3V/K	EXP_A_TXN1C
EXP_A_TXP2	C39	0.22u/4/X5R/6.3V/K	EXP_A_TXP2C
EXP_A_TXN2	C41	0.22u/4/X5R/6.3V/K	EXP_A_TXN2C
EXP_A_TXP3	C43	0.22u/4/X5R/6.3V/K	EXP_A_TXP3C
EXP_A_TXN3	C45	0.22u/4/X5R/6.3V/K	EXP_A_TXN3C
EXP_A_TXP4	C46	0.22u/4/X5R/6.3V/K	EXP_A_TXP4C
EXP_A_TXN4	C49	0.22u/4/X5R/6.3V/K	EXP_A_TXN4C
EXP_A_TXP5	C50	0.22u/4/X5R/6.3V/K	EXP_A_TXP5C
EXP_A_TXN5	C51	0.22u/4/X5R/6.3V/K	EXP_A_TXN5C
EXP_A_TXP6	C52	0.22u/4/X5R/6.3V/K	EXP_A_TXP6C
EXP_A_TXN6	C54	0.22u/4/X5R/6.3V/K	EXP_A_TXN6C
EXP_A_TXP7	C57	0.22u/4/X5R/6.3V/K	EXP_A_TXP7C
EXP_A_TXN7	C58	0.22u/4/X5R/6.3V/K	EXP_A_TXN7C
EXP_A_TXP8	C60	0.22u/4/X5R/6.3V/K	EXP_A_TXP8C
EXP_A_TXN8	C61	0.22u/4/X5R/6.3V/K	EXP_A_TXN8C
EXP_A_TXP9	C62	0.22u/4/X5R/6.3V/K	EXP_A_TXP9C
EXP_A_TXN9	C63	0.22u/4/X5R/6.3V/K	EXP_A_TXN9C
EXP_A_TXP10	C64	0.22u/4/X5R/6.3V/K	EXP_A_TXP10C
EXP_A_TXN10	C65	0.22u/4/X5R/6.3V/K	EXP_A_TXN10C
EXP_A_TXP11	C66	0.22u/4/X5R/6.3V/K	EXP_A_TXP11C
EXP_A_TXN11	C67	0.22u/4/X5R/6.3V/K	EXP_A_TXN11C
EXP_A_TXP12	C68	0.22u/4/X5R/6.3V/K	EXP_A_TXP12C
EXP_A_TXN12	C70	0.22u/4/X5R/6.3V/K	EXP_A_TXN12C
EXP_A_TXP13	C72	0.22u/4/X5R/6.3V/K	EXP_A_TXP13C
EXP_A_TXN13	C73	0.22u/4/X5R/6.3V/K	EXP_A_TXN13C
EXP_A_TXP14	C74	0.22u/4/X5R/6.3V/K	EXP_A_TXP14C
EXP_A_TXN14	C75	0.22u/4/X5R/6.3V/K	EXP_A_TXN14C
EXP_A_TXP15	C77	0.22u/4/X5R/6.3V/K	EXP_A_TXP15C
EXP_A_TXN15	C78	0.22u/4/X5R/6.3V/K	EXP_A_TXN15C

EXP_A_RXP[0..15] >> EXP_A_RXP[0..15] [4]

EXP_A_RXN[0..15] >> EXP_A_RXN[0..15] [4]

EXP_A_TXP[0..15] >> EXP_A_TXP[0..15] [4]

EXP_A_TXN[0..15] >> EXP_A_TXN[0..15] [4]

PCIEX16 SLOT

PCIESLOT-164DN-P

X16_+12V

3GIO_*16

PCIEX16

R97 0/4/SHT/M/X

[7,8,12,15,16,19] SMBCLK

[7,8,12,15,16,19] SMBDATA

3VDUAL

VCC3

[12,15,24] -PCIE_WAKE

KEY

R92 0/4/SHT/M/X

R96 0/4/SHT/M/X

-PCIE_RST [15,17]

-PCIE_RST

C29 22p/4/NPO/50V/J/X

SRCCLK_PCIEX16 [10]

-SRCCLK_PCIEX16 [10]

	B1	12V	PRSNT1*	A1	
	B2	12V	12V	A2	
	B3	RSVD	12V	A3	
	B4	GND	GND	A4	
SMBCLK	B5	SMCLK	JTAG2	A5	
SMBDATA	B6	SMDAT	JTAG3	A6	
	B7	GND	JTAG4	A7	
	B8	3.3V	JTAG5	A8	
	B9	JTAG1	3.3V	A9	
	B10	3.3VAUX	3.3V	A10	
-PCIE_WAKE	B11	WAKE*	PWRGD	A11	-PCIE_RST
	B12	RSVD	GND	A12	
	B13	GND	REFCLK+	A13	SRCCLK_PCIEX16 [10]
EXP_A_TXP0C	B14	HSOP0	REFCLK-	A14	-SRCCLK_PCIEX16 [10]
EXP_A_TXN0C	B15	HSON0	GND	A15	
	B16	GND	HSIP0	A16	EXP_A_RXP0
	B17	PRSNT2*	HSIN0	A17	EXP_A_RXN0
	B18	GND	GND	A18	
EXP_A_TXP1C	B19	HSOP1	RSVD	A19	
EXP_A_TXN1C	B20	HSON1	GND	A20	
	B21	GND	HSIP1	A21	EXP_A_RXP1
	B22	GND	HSIN1	A22	EXP_A_RXN1
EXP_A_TXP2C	B23	HSOP2	GND	A23	
EXP_A_TXN2C	B24	HSON2	GND	A24	
	B25	GND	HSIP2	A25	EXP_A_RXP2
	B26	GND	HSIN2	A26	EXP_A_RXN2
EXP_A_TXP3C	B27	HSOP3	GND	A27	
EXP_A_TXN3C	B28	HSON3	GND	A28	
	B29	GND	HSIP3	A29	EXP_A_RXP3
	B30	RSVD	HSIN3	A30	EXP_A_RXN3
	B31	PRSNT2*	GND	A31	
	B32	GND	RSVD	A32	
EXP_A_TXP4C	B33	HSOP4	RSVD	A33	
EXP_A_TXN4C	B34	HSON4	GND	A34	
	B35	GND	HSIP4	A35	EXP_A_RXP4
	B36	GND	HSIN4	A36	EXP_A_RXN4
EXP_A_TXP5C	B37	HSOP5	GND	A37	
EXP_A_TXN5C	B38	HSON5	GND	A38	
	B39	GND	HSIP5	A39	EXP_A_RXP5
	B40	GND	HSIN5	A40	EXP_A_RXN5
EXP_A_TXP6C	B41	HSOP6	GND	A41	
EXP_A_TXN6C	B42	HSON6	GND	A42	
	B43	GND	HSIP6	A43	EXP_A_RXP6
	B44	GND	HSIN6	A44	EXP_A_RXN6
EXP_A_TXP7C	B45	HSOP7	GND	A45	
EXP_A_TXN7C	B46	HSON7	GND	A46	
	B47	GND	HSIP7	A47	EXP_A_RXP7
	B48	PRSNT2*	HSIN7	A48	EXP_A_RXN7
	B49	GND	GND	A49	
EXP_A_TXP8C	B50	HSOP8	RSVD	A50	
EXP_A_TXN8C	B51	HSON8	GND	A51	
	B52	GND	HSIP8	A52	EXP_A_RXP8
	B53	GND	HSIN8	A53	EXP_A_RXN8
EXP_A_TXP9C	B54	HSOP9	GND	A54	
EXP_A_TXN9C	B55	HSON9	GND	A55	
	B56	GND	HSIP9	A56	EXP_A_RXP9
	B57	GND	HSIN9	A57	EXP_A_RXN9
EXP_A_TXP10C	B58	HSOP10	GND	A58	
EXP_A_TXN10C	B59	HSON10	GND	A59	
	B60	GND	HSIP10	A60	EXP_A_RXP10
	B61	GND	HSIN10	A61	EXP_A_RXN10
EXP_A_TXP11C	B62	HSOP11	GND	A62	
EXP_A_TXN11C	B63	HSON11	GND	A63	
	B64	GND	HSIP11	A64	EXP_A_RXP11
	B65	GND	HSIN11	A65	EXP_A_RXN11
EXP_A_TXP12C	B66	HSOP12	GND	A66	
EXP_A_TXN12C	B67	HSON12	GND	A67	
	B68	GND	HSIP12	A68	EXP_A_RXP12
	B69	GND	HSIN12	A69	EXP_A_RXN12
EXP_A_TXP13C	B70	HSOP13	GND	A70	
EXP_A_TXN13C	B71	HSON13	GND	A71	
	B72	GND	HSIP13	A72	EXP_A_RXP13
	B73	GND	HSIN13	A73	EXP_A_RXN13
EXP_A_TXP14C	B74	HSOP14	GND	A74	
EXP_A_TXN14C	B75	HSON14	GND	A75	
	B76	GND	HSIP14	A76	EXP_A_RXP14
	B77	GND	HSIN14	A77	EXP_A_RXN14
EXP_A_TXP15C	B78	HSOP15	GND	A78	
EXP_A_TXN15C	B79	HSON15	GND	A79	
	B80	GND	HSIP15	A80	EXP_A_RXP15
	B81	PRSNT2*	HSIN15	A81	EXP_A_RXN15
	B82	RSVD	GND	A82	

PCI-E/16X-164P/297C/LONG DOUBLE

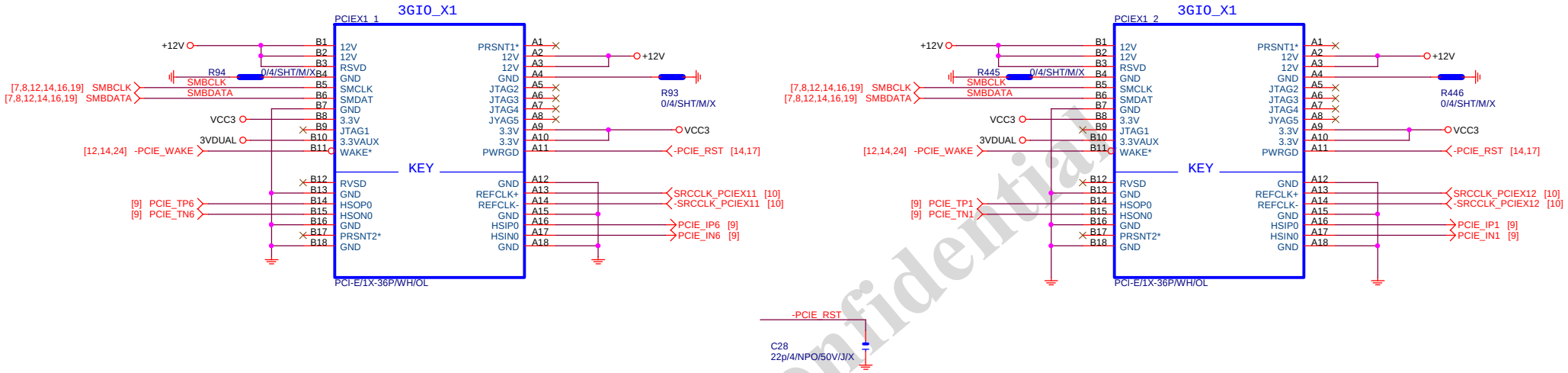
Gigabyte Technology

Title: PCI EXPRESS * 16

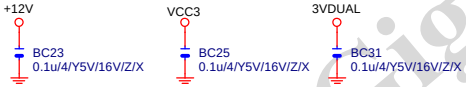
Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 14 of 32

PCIEX1 SLOT



PCIEX1 CAP



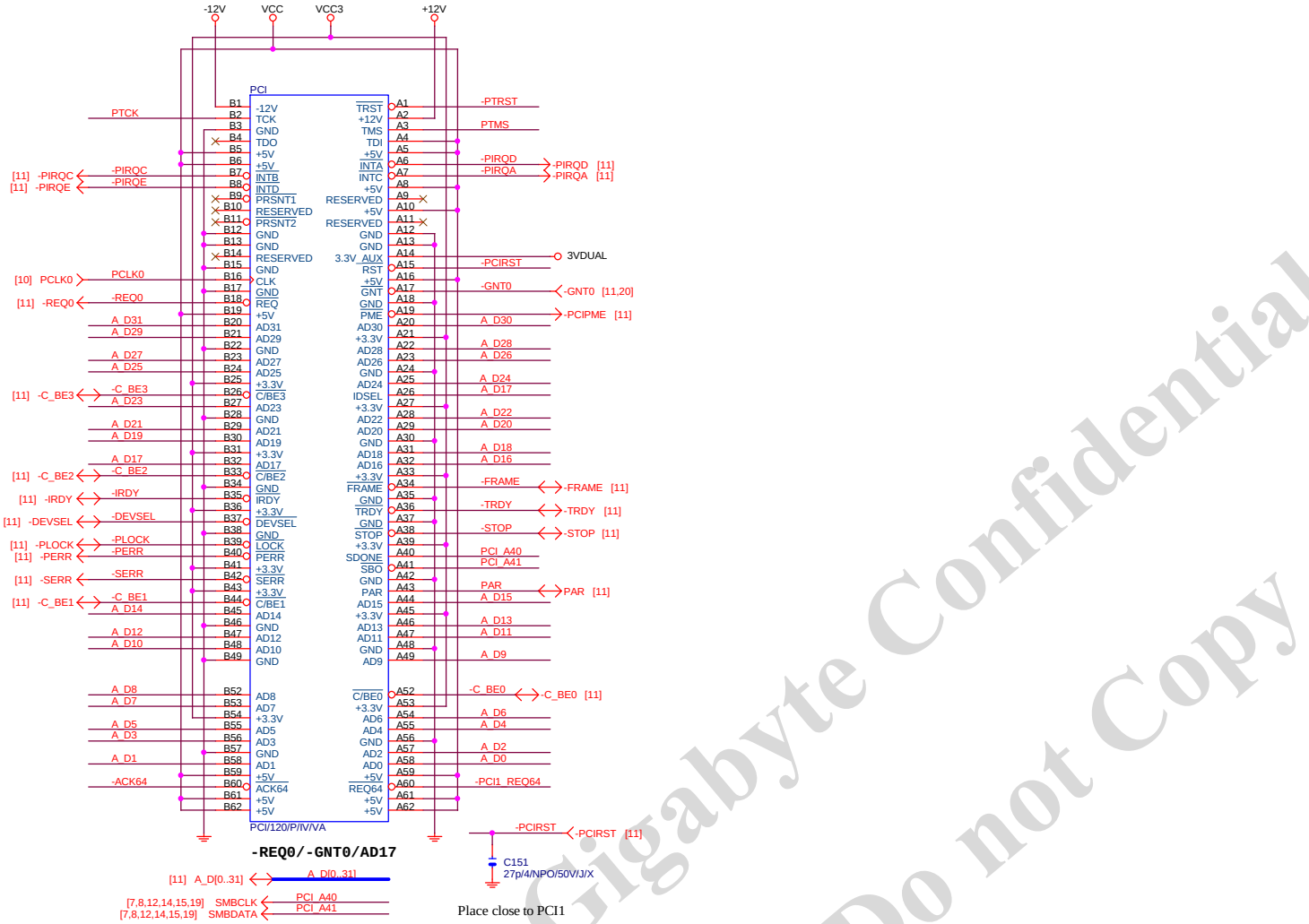
Gigabyte Technology

Title: PCI EXPRESS X 1 PORT

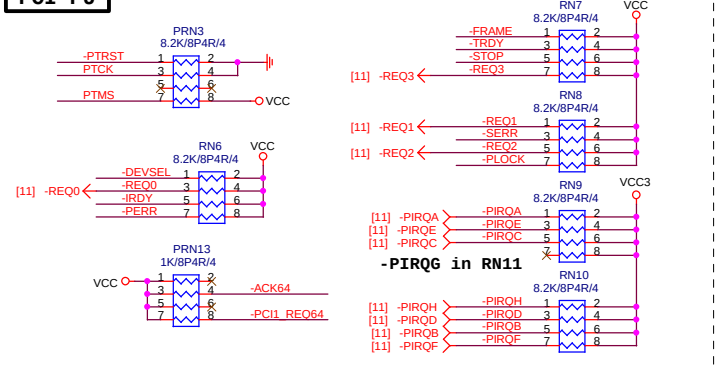
Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 15 of 32

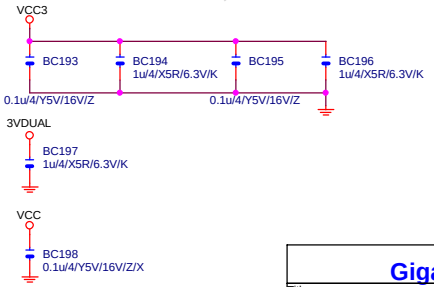
PCI SLOT



PCI PU



PCI CAP



Gigabyte Technology		
Title: PCI SLOT 1&2		
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 16 of 32	

SIO IT8620E

IT8620E

PWR SHT

SIO PU

SIO STRAP

CPU_FAN

SYS_FAN

EUP

IT8728F NOTE

	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

DUAL BIOS OPT STRAP

Power leakage

For IT8721 Power leakage

SIO_18V

internal power pin, max 22nF cap

FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

SIO CAP

MB ID

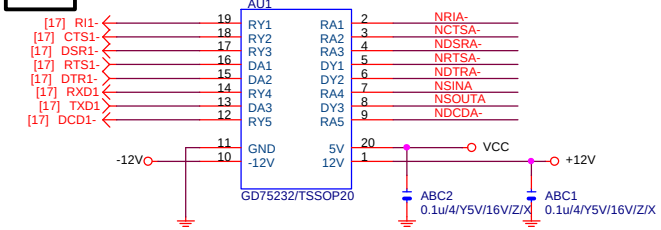
Gigabyte Technology

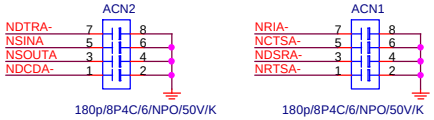
Title: ITE 8728 LPC IO

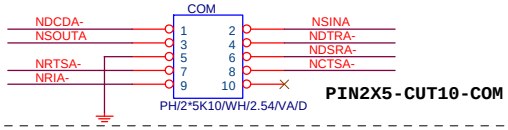
Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 17 of 32

COM

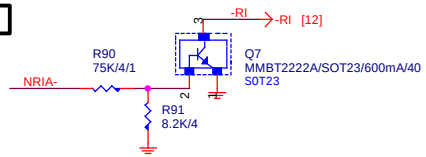




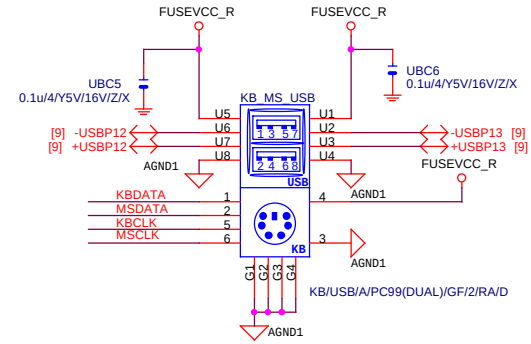


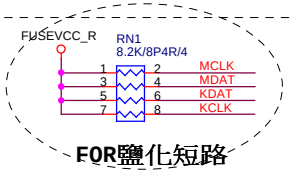
PIN2X5-CUT10-COM

COM RI

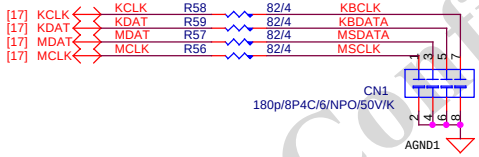


KB/MS

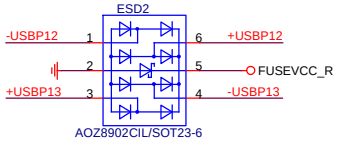




FOR鹽化短路

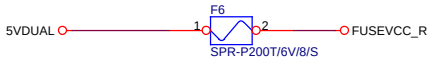


USB2.0 ESD



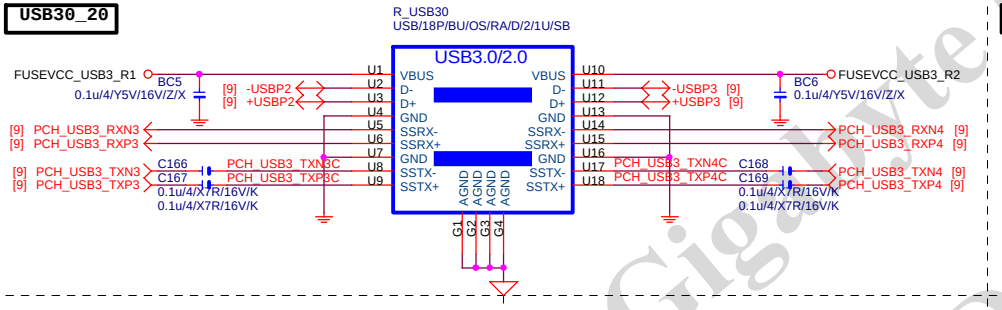
USB2.0 PWR

USB_LAN, KB_USB 4-Port 2.6A

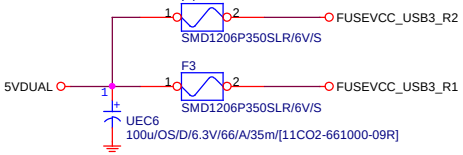


Close to connector

USB30_20

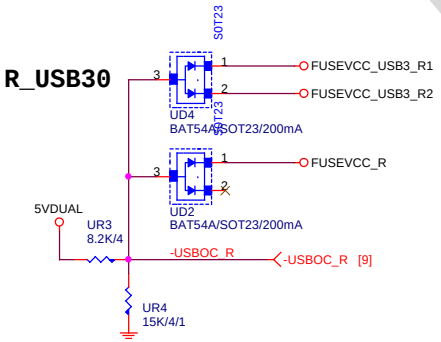


USB30_20 PWR



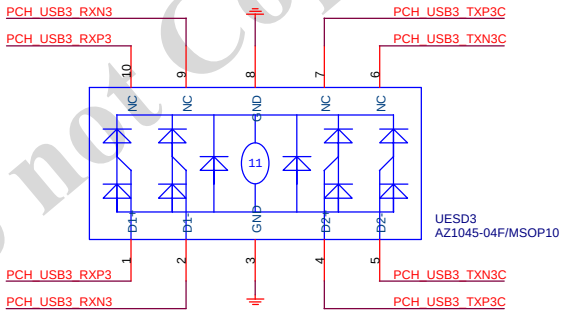
USB3.0 1Port - 1Fuse (3.5A)

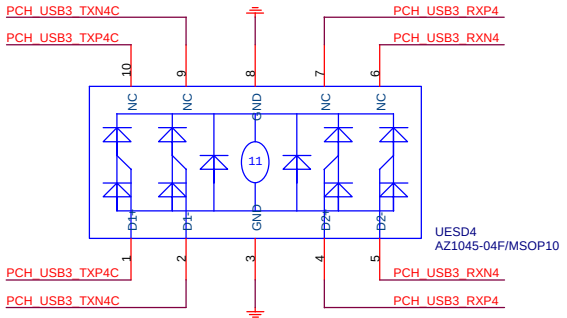
-USBOC_R



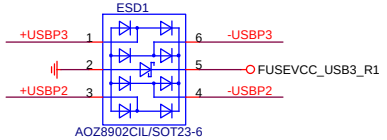
USB30_20 ESD PROCTECT

USB3.0 ESD



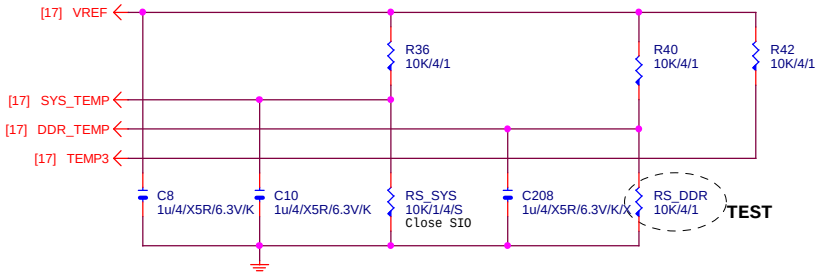


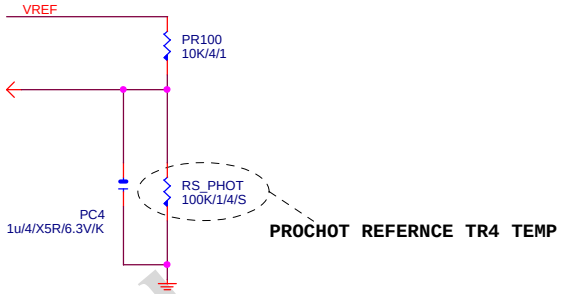
USB2.0 ESD



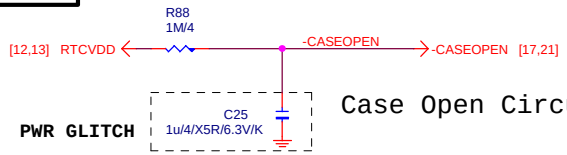
Gigabyte Technology			
Title: COM,-RI,KB_USB,USB_ESATA,-PROCHOT			
Size: Custom	Document Number: GA-B75M-D3V		Rev: 2.02
Date: Friday, June 20, 2014	Sheet 18 of 32		

TEMP H/W MONITOR

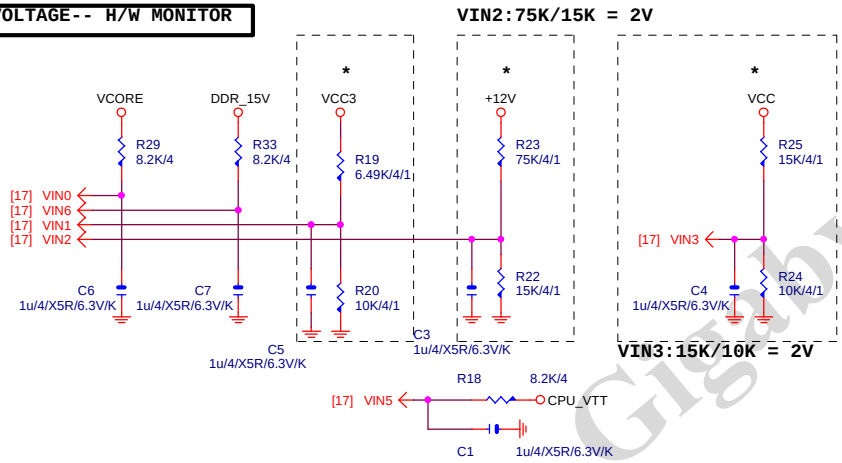




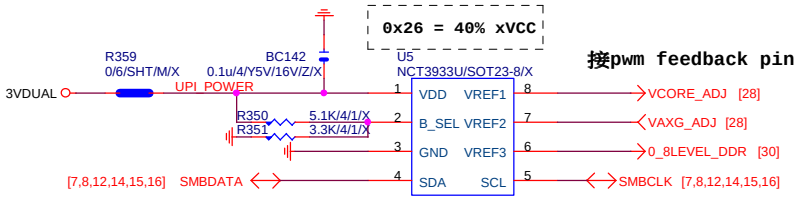
CASE OPEN



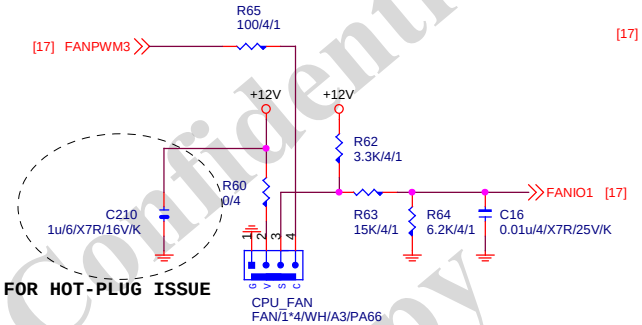
VOLTAGE-- H/W MONITOR



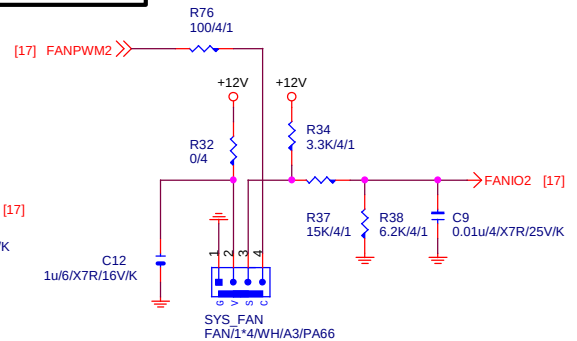
OV NCT3933



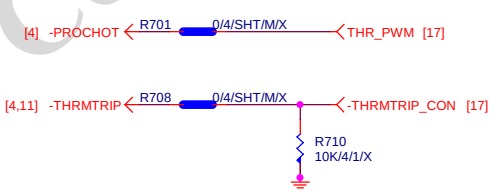
CPU SMART FAN



SYS SMART FAN



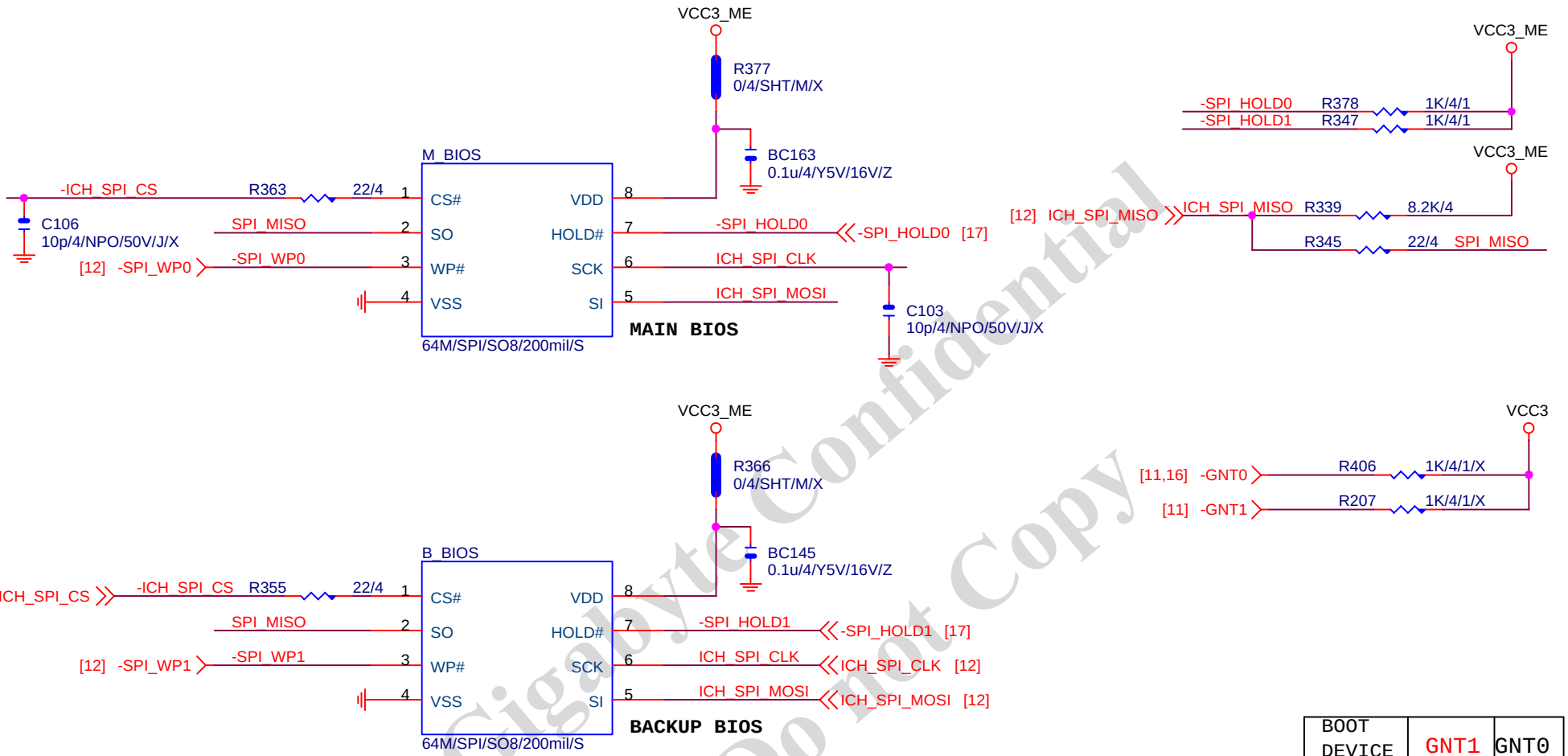
-PROHOT



FOR -PROCHOT BIOS CAN CTRL OUTPUT DUTY/PWM

Gigabyte Technology		
Title: HWM,FAN CTRL,OV		
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 19 of 32	

DUAL BIOS



B65使用64M BIOS

使用H67暂用32M

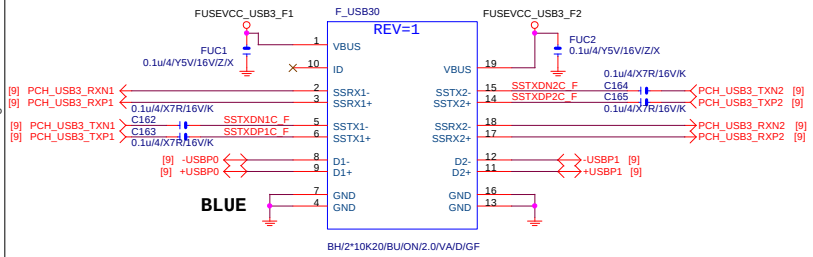
H61使用32M BIOS

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

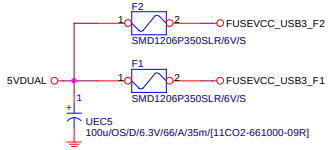
1 means floating
0 means PD 1K

Gigabyte Technology		
Title: DUAL BIOS		
Size: A	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 20 of 32	

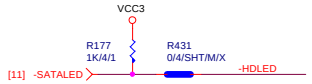
F_USB30



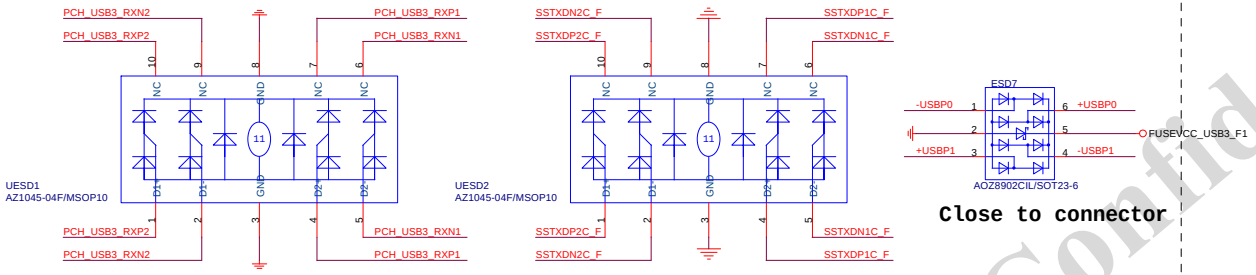
USB 3.0 PWR



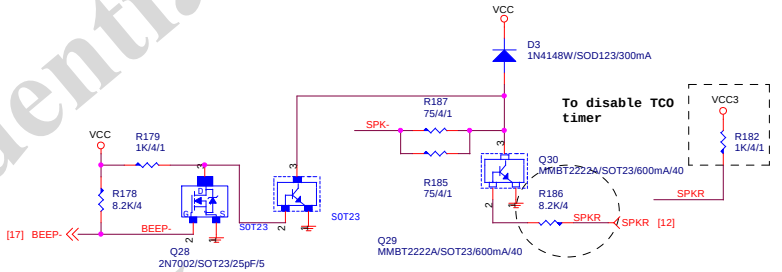
SATA LED



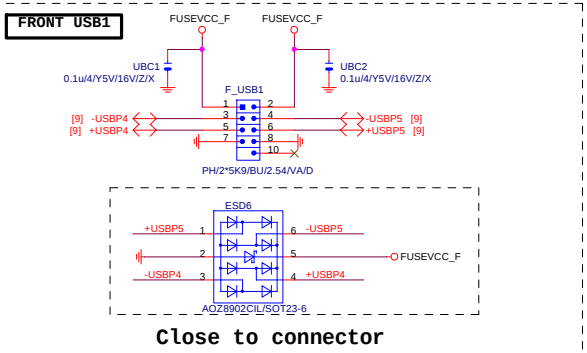
F_USB30 ESD PROTECT



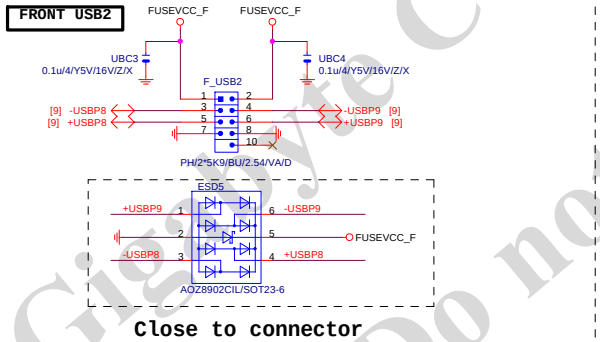
SPKR



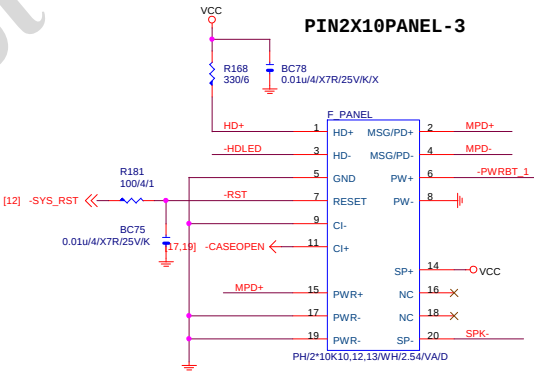
FRONT USB1



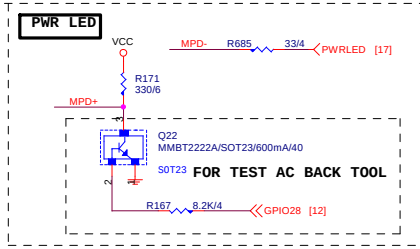
FRONT USB2



INTEL FRONT PANEL



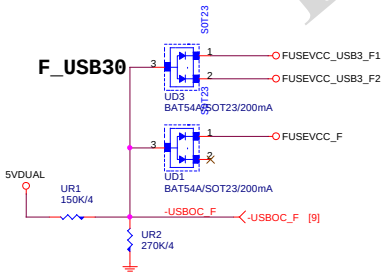
PWR LED



FUSEVCC_F

F_USB1, F_USB2 4-Port 2.6A

-USBOC_F



Gigabyte Technology

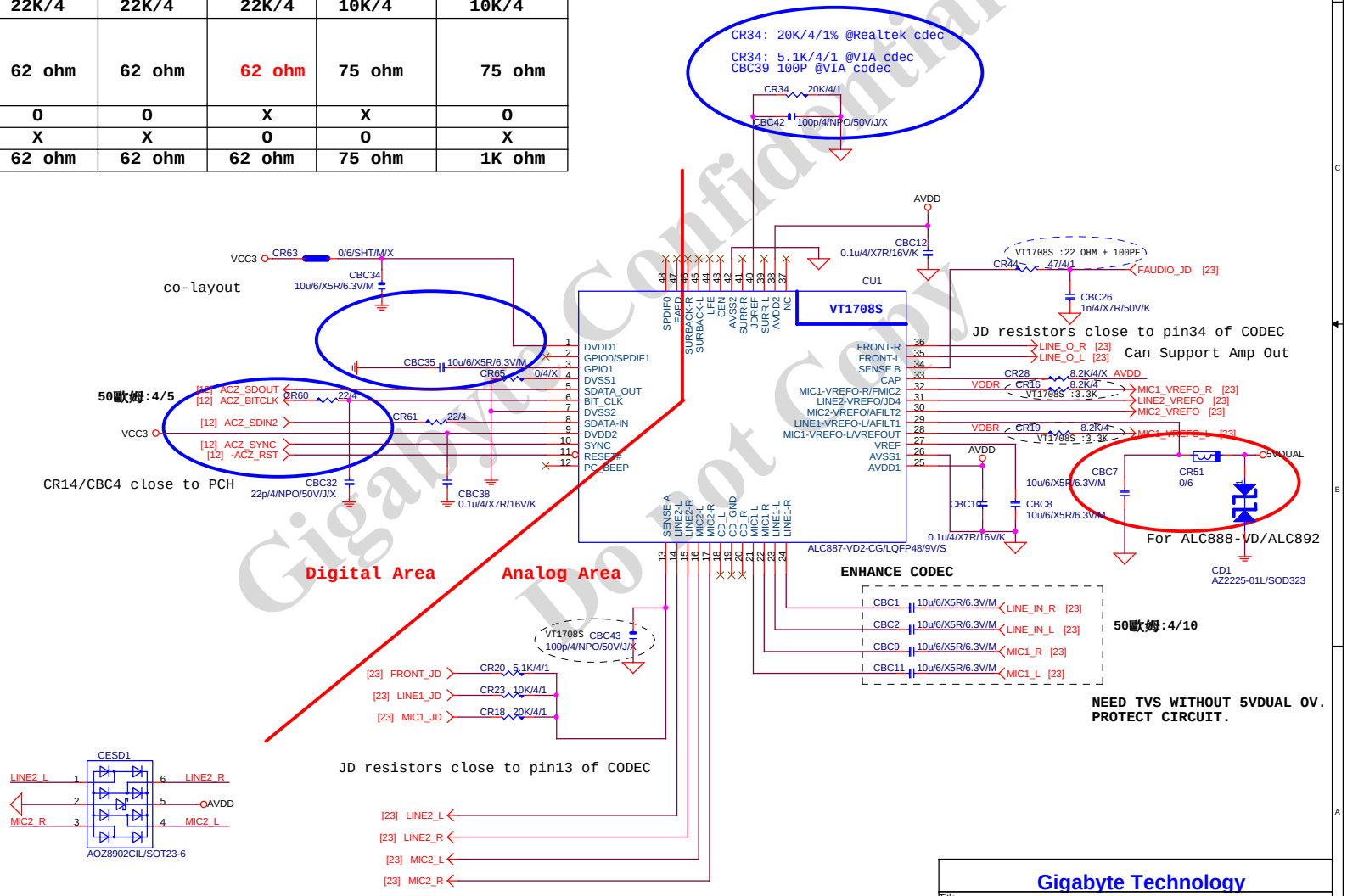
Title: FP,F_USB,USB PWR,SPKR,SATA LED

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 21 of 32

AZALIA CODEC *ALC887-VD2/ALC889/VT1708S/VT1708SCE Colay*

	ALC662	ALC887-VD2	ALC889	VT1708S	VT1708SCE
CR65	X	X	O	O	X
CR64	X	X	X	X	0.1u/4
CBC35	O	O	X	X	O
CR44/CBC6	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR31	X	O	O	O	O
CR30	O	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1
CBC39/CBC40	N/A	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	O	X	X	O
CD2/CD3/CQ3/CQ5	X	X	O	O	X
CR1/CR14/CR17/CR22	62 ohm	62 ohm	62 ohm	75 ohm	1K ohm



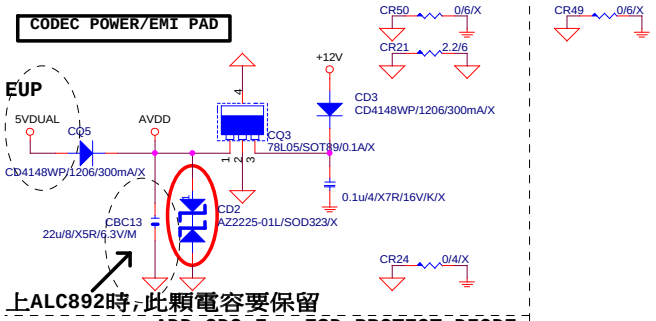
Gigabyte Technology

Title: HD AUDIO ALC887B-VD2/VT1708S/VT2021

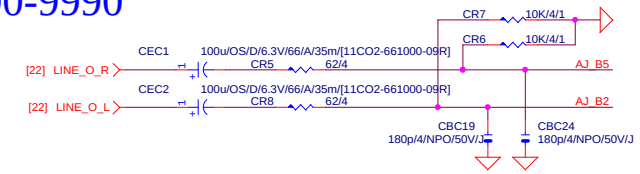
Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

Date: Friday, June 20, 2014 | Sheet 22 of 32

CODEC POWER/EMI PAD

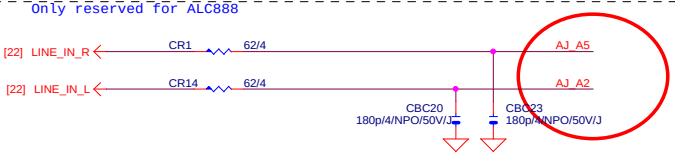


LINE-OUT



Only reserved for ALC888

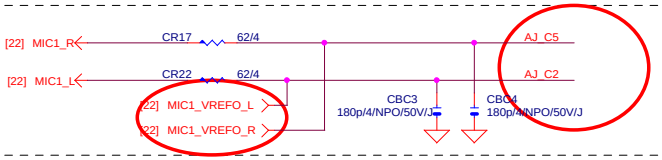
LINE-IN



Verify MIC function in LINE-in

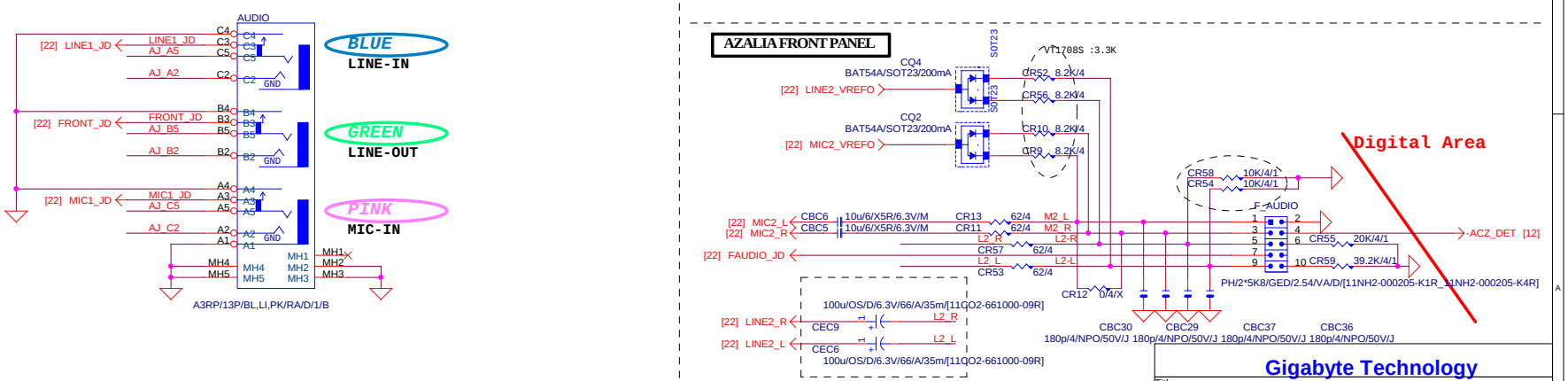
For 889A/888

MIC-IN



SPDIF_OUT

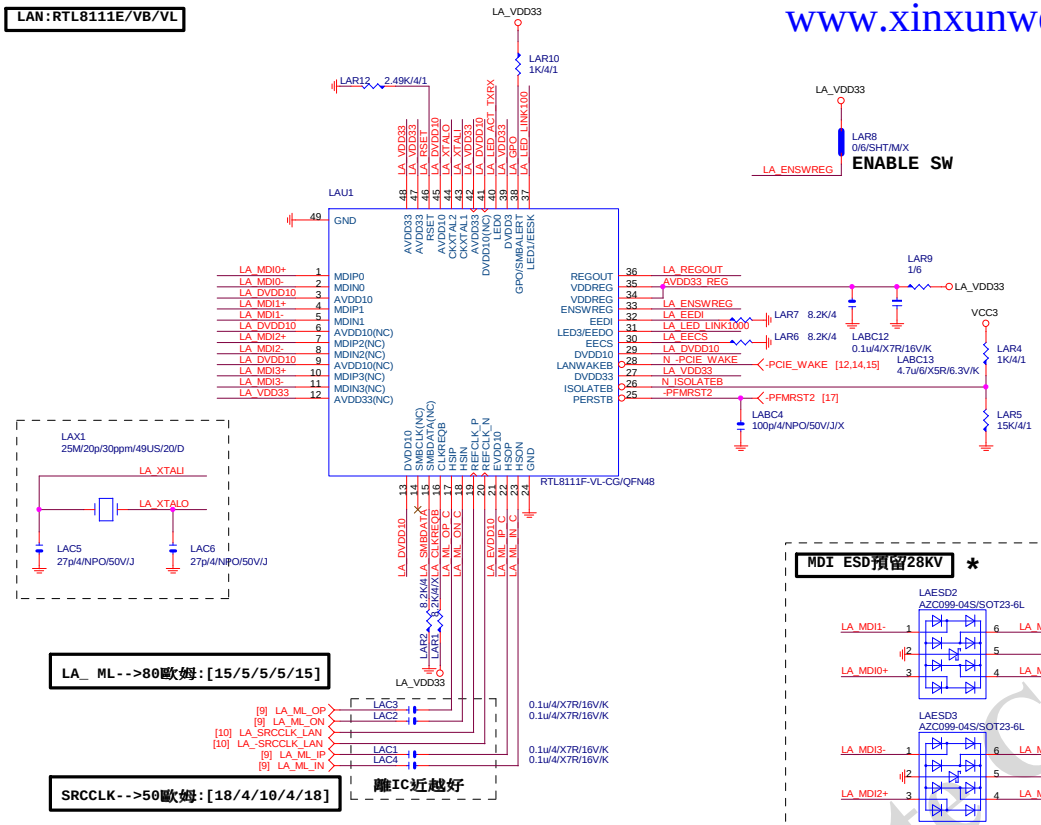
AZALIA FRONT PANEL



Gigabyte Technology

Title	AUDIO JACK	
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 23 of 32	

LAN:RTL8111E/VB/VL

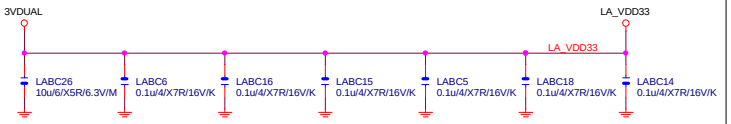


LA_ ML-->80歐姆:[15/5/5/5/15]

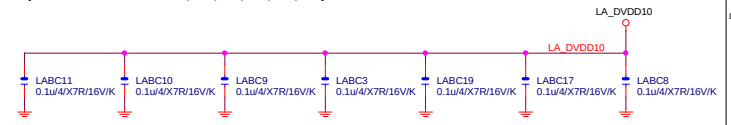
SRCCLK-->50歐姆:[18/4/10/4/18]

MDI ESD預留28KV *

LAN_POWER

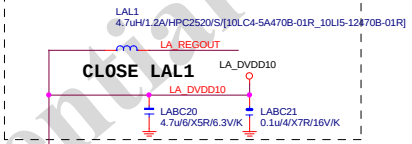


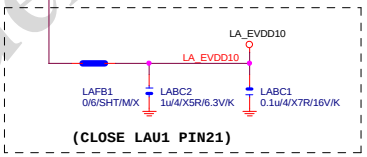
(CLOSE LAU1 PIN:12,27,39,42,47,48)



(CLOSE LAU1 PIN3,6,9,13,29,41,45)

(CLOSE LAU1 PIN36)





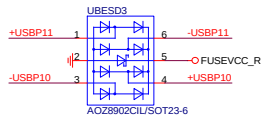
(CLOSE LAU1 PIN21)

Power domain chart

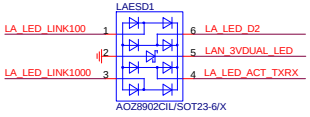
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V

USB_LAN CONNECTOR

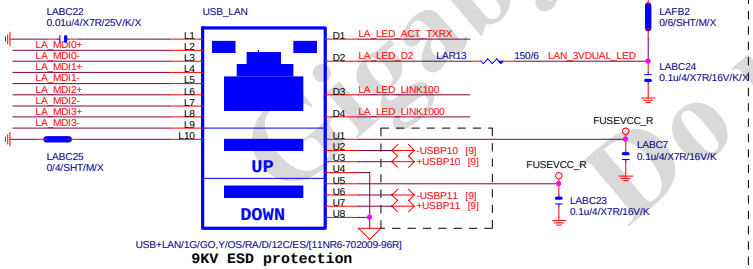
RMA ESD PROTECT



使用RU9 USB_LAN可省略LAESD1保護LED



LA_MDI-->100歐姆:[20/4/8/4/20]



USB+LAN/1G/GO,Y/OS/RA/D/12C/ES/[11NR6-702009-96R]

9KV ESD protection

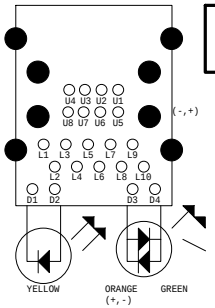
注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

USB X3 POWER

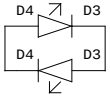
EMI SHORT PAD

PS:視EMI需求

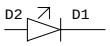
注意:LAN LED PROTECT:(CO-LAYOUT)
1.ESD(6PIN):AOZ8902CIL/SOT23-6(DEFAULT)
2.SURGE(5PIN):AZ2025-04S/SOT23-5L



Dual Color LED



Single Color LED



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

USB_LAN BOM區分:

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

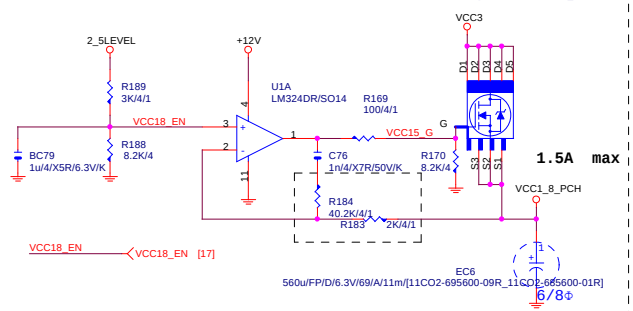
Gigabyte Technology

Title: REALTEK RTL8111F-VL

Size: Custom | Document Number: GA-B75M-D3V | Rev: 2.02

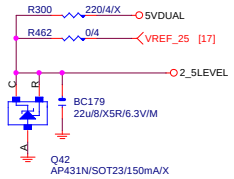
Date: Friday, June 20, 2014 | Sheet 24 of 32

VCC1_8_PCH

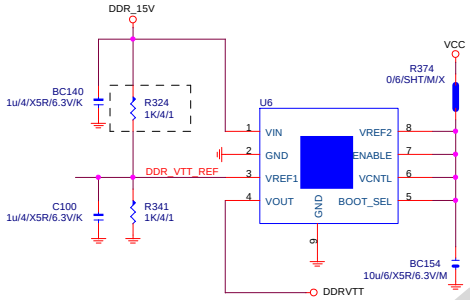


2_5LEVEL

FROM I/O



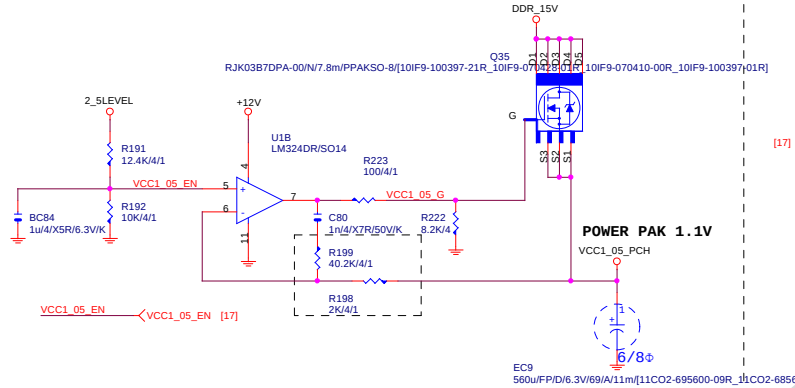
DDRVTT



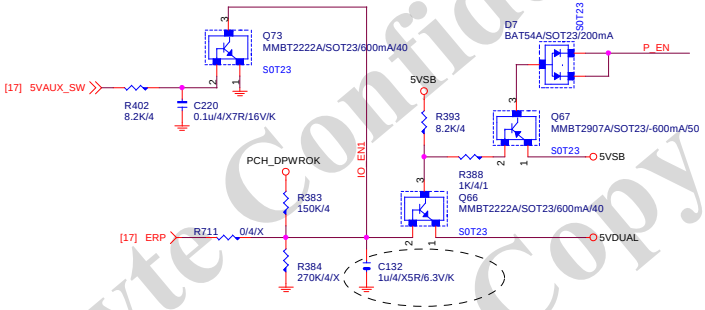
-RSMRST

N/A

VCC1_05_PCH



5VDUAL SHORT PROTECT



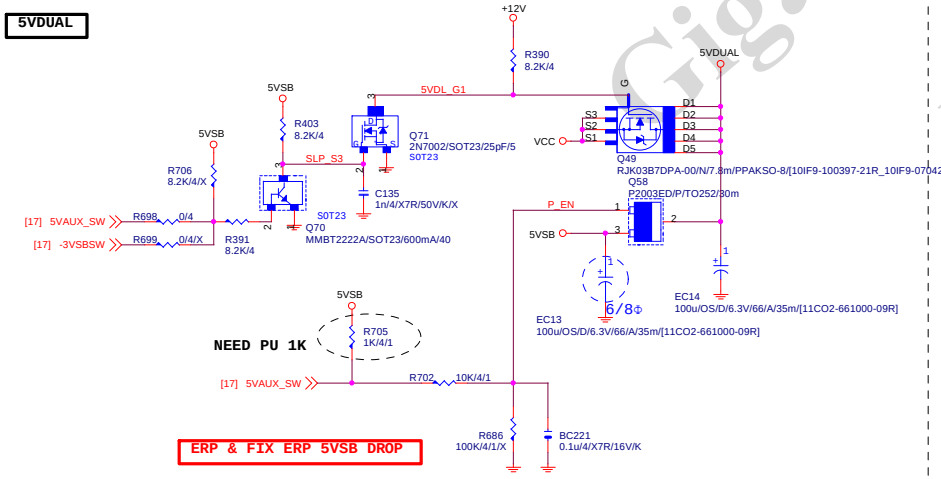
PCH ERP

N/A

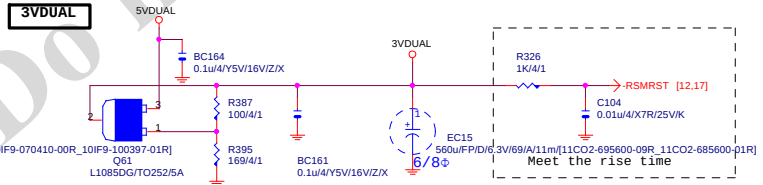
PWR SEQ

N/A

5VDUAL

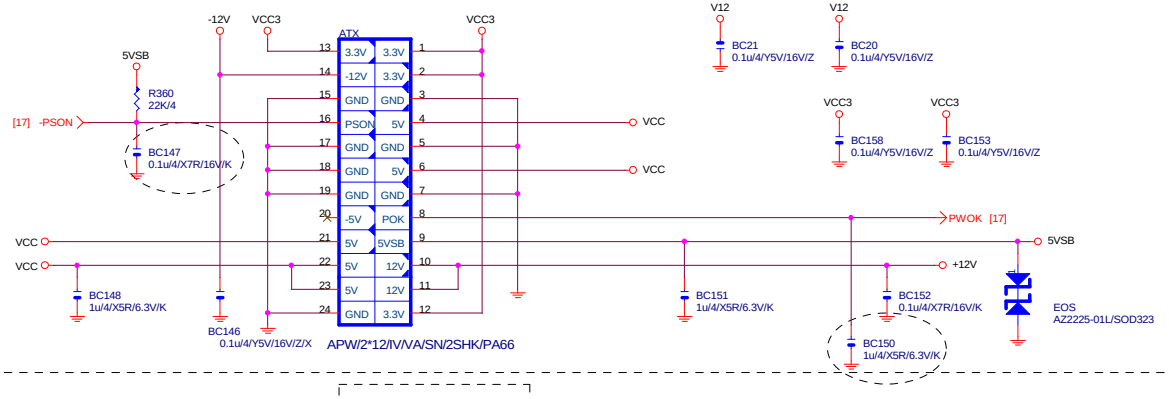


3VDUAL

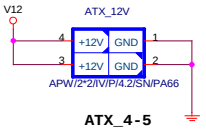


Gigabyte Technology		
Title: DISCRETE POWER		
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 25 of 32	

ATXX24 POWER CONNECTOR

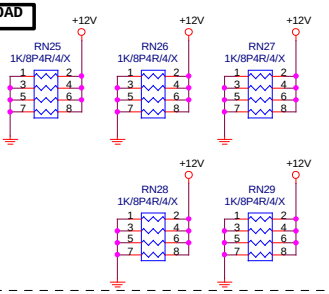


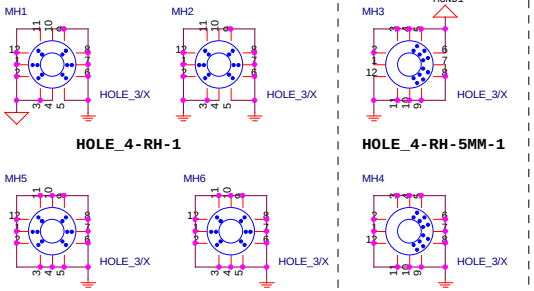
ATXX4 POWER CONNECTOR



ATX_4-5

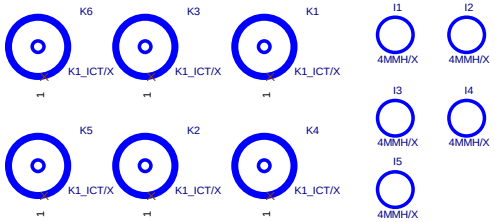
+12V DUMMY LOAD





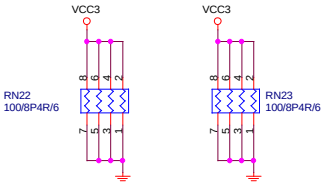
HOLE_4-RH-1

HOLE_4-RH-5MM-1



To prevent the 5VSB under loading when boot

VCC3 DUMMY LOAD

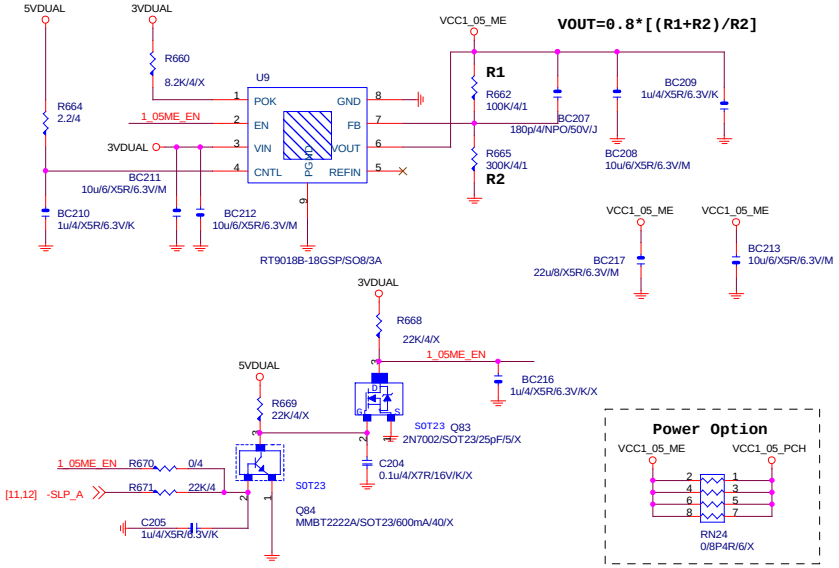


FIX PWR MINMUN LOAD

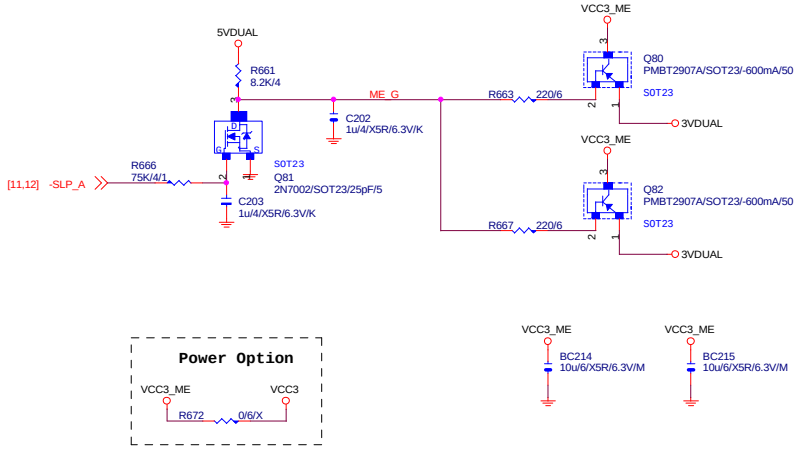
VCC1_05_ME

【技術通報R&D技術通報156】
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值

VOUT=0.8*[(R1+R2)/R2]



VCC3_ME



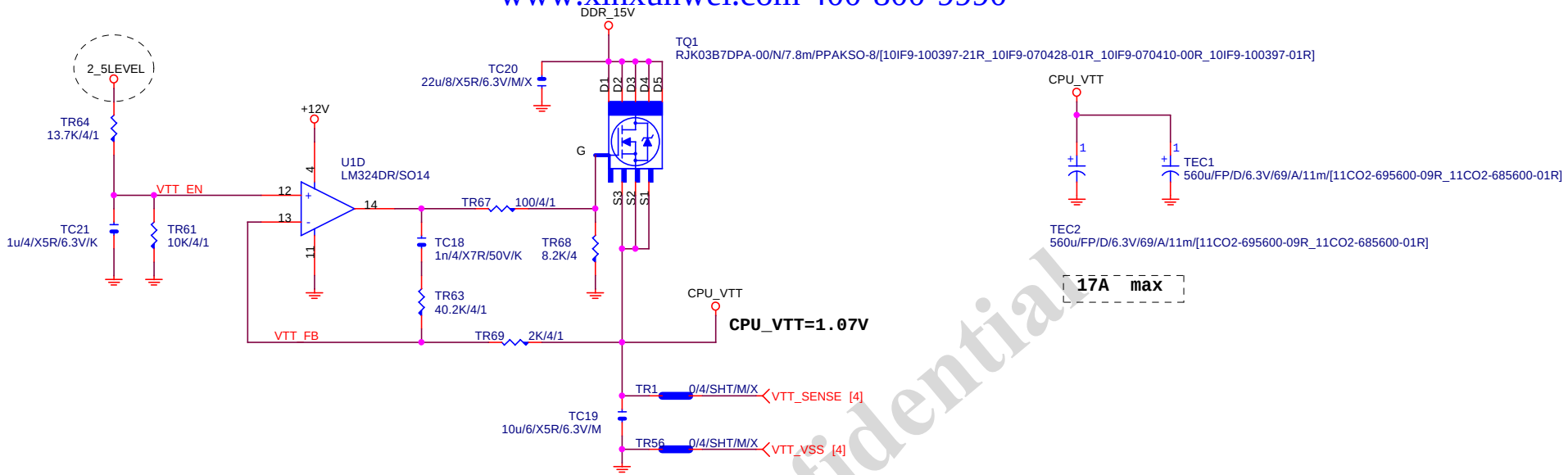
Gigabyte Technology

Title: ATX CONNECTOR

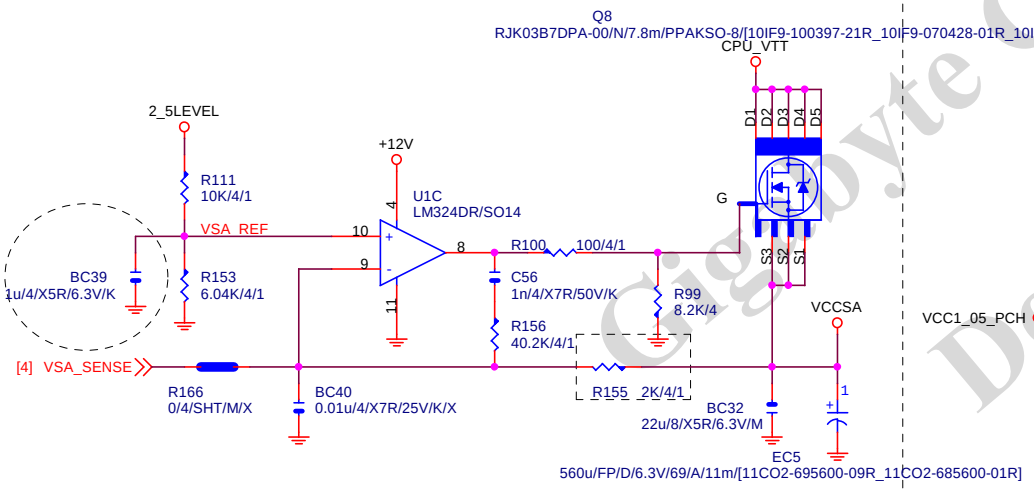
Size	Document Number	Rev
Custom	GA-B75M-D3V	2.02

Date: Friday, June 20, 2014 Sheet 26 of 32

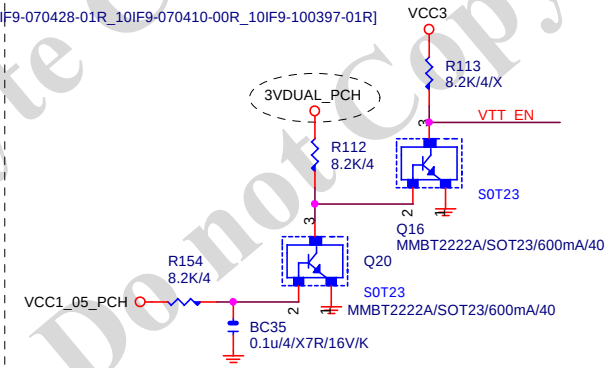
CPU_VTT



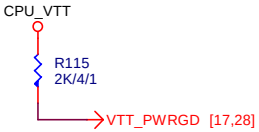
VCCSA



CPU_VTT PWR SEQ



VTT_PWRGD



GIGABYTE™

Title	CPU_VTT PWM_RT8120	
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 27 of 32	

VCORE PWM

Intersil Original Design

LAYOUT RESERVE CHOKE SPACE

Load line-->4.1mohm

S.W frequncy-->300Khz Imax-->45A

Close DL6

RGntc=(RGseries+DRT4)//RGparellel

RGseries **RGparellel**

RGi

IGocp-->56A

Disable PWM2G

Disable NTCG

Disable NTC

PWM INTERSIL ISL95836HRTZ

BOTTOM PAD CONNECT TO GND THROUGH 10 VIA

ISL95836HRZ/[10TA1-695836-01R]

Close DL2

Rseries

Rparellel

Rntc=(Rseries+DRT3)//Rparellel

Ri

Iocp-->150A

Load line-->1.7mohm

Vboot-->0V Imax-->99A

Intersil Original Design

FOR RMA

Set VBOOT=GND for Vboot=0V
VBOOT=OPEN for Vboot=1.1V

DR485->X, DQ56 -> 7002
DR485->O, DQ56 -> 2222

Gigabyte Technology		
Title: CPU CORE VR-1		
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 28 of 32	

PHASE 1

H61 ALL MOSFET =VISHAY 6+9m OHM

UG1 PH1 LG1 → UG1 [28] PH1 [28] LG1 [28]

[1]

VIN DBC11 1u/6/X7R/16V/K

UG1 DR9 2.2/6 UG1_1 DR14 8.2K/4

PH1

LG1 DR7 0/6/SHT/M/X LG1_1

DBC111 0.22u/6/X7R/16V/K

DR15 2.2/6

DC3 1n/4/X7R/50V/K

DR470 0/6/SHT/M/X

[28] BT1

DQ1 RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R_10IF9-070428-01R_10IF9-070410-00R_10IF9-100397-01R]

DL2 0.68uH/40A/IMD119/M/D

VCORE

DR169 0/4/SHT/M/X

DR170 0/4/SHT/M/X

DR438 10K/4/1 ISEN2

DR439 10K/4/1 ISEN3

[28] VSUMP VSUMP DR171 3.6K/4/1

[28] ISEN1 ISEN1 DR172 10K/4/1

DQ4 RJK0393DPA-00-J5A/PPAKSO8/4.3m/[10IF9-040393-21R_10IF9-040012-10R_10IF9-040406-10R_10IF9-040393-01R]

[28] VSUMN VSUMN DR173 10/4

Close to PWM

PHASE 3

Pop ISL6625CB for PSI
[ISL6625CBZ/SO8]

VCC DR90 1/6 DR4 1/6 DBC4 1u/6/X7R/16V/K DC2 0.1u/6/X7R/25V/K DR6 1/6 DBC2 0.1u/4/X7R/16V/K

PH3

DU2 BOOT PVCC VCC PWM GND UGATE PHASE LGATE

6609_VCC

UG3 LG3

ISL6208BCRZ/DFN8/[10TA1-606208-21R]

DU3 BOOT PVCC VCC PWM GND UGATE PHASE LGATE

ISL6609ACBZ/SO8/X

PWM3 → PWM3 [28]

6609 colay with 6208

[3]

VIN DBC14 1u/6/X7R/16V/K

UG3 DR11 2.2/6 UG3_1 DR12 8.2K/4

PH3

LG3 DR8 0/6/SHT/M/X LG3_1

DR16 2.2/6

DC4 1n/4/X7R/50V/K

DQ2 RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R_10IF9-070428-01R_10IF9-070410-00R_10IF9-100397-01R]

DL3 0.68uH/40A/IMD119/M/D

VCORE

DR174 0/4/SHT/M/X

DR175 0/4/SHT/M/X

DR440 10K/4/1 ISEN1

DR441 10K/4/1 ISEN2

[28] VSUMP VSUMP DR176 3.6K/4/1

[28] ISEN3 ISEN3 DR177 10K/4/1

DQ6 RJK0393DPA-00-J5A/PPAKSO8/4.3m/[10IF9-040393-21R_10IF9-040012-10R_10IF9-040406-10R_10IF9-040393-01R]

[28] VSUMN VSUMN DR178 10/4

Close to PWM

PHASE 2

UG2 → UG2 [28]
PH2 → PH2 [28]
LG2 → LG2 [28]

[2]

VIN DBC8 1u/6/X7R/16V/K

UG2 DR21 2.2/6 UG2_1 DR23 8.2K/4

PH2

LG2 DR29 0/6/SHT/M/X LG2_1

DBC112 0.22u/6/X7R/16V/K

DR24 2.2/6

DC7 1n/4/X7R/50V/K

DR471 0/6/SHT/M/X

[28] BT2

DQ10 RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R_10IF9-070428-01R_10IF9-070410-00R_10IF9-100397-01R]

VCORE DEC7 DEC11 DEC4 DEC3

560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R_11CO2-685600-01R]
560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R_11CO2-685600-01R]
560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R_11CO2-685600-01R]
560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R_11CO2-685600-01R]

DL5 0.68uH/40A/IMD119/M/D

VCORE

DR179 0/4/SHT/M/X

DR180 0/4/SHT/M/X

DR442 10K/4/1 ISEN1

DR443 10K/4/1 ISEN3

[28] VSUMP VSUMP DR181 3.6K/4/1

[28] ISEN2 ISEN2 DR182 10K/4/1

DQ12 RJK0393DPA-00-J5A/PPAKSO8/4.3m/[10IF9-040393-21R_10IF9-040012-10R_10IF9-040406-10R_10IF9-040393-01R]

[28] VSUMN VSUMN DR183 10/4

Close to PWM

VAXG

VIN

DQ13 RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R_10IF9-070428-01R_10IF9-070410-00R_10IF9-100397-01R]

[28] UGS UGS DR480 2.2/6 UGS_1

DR479 8.2K/4

[28] PHS PHS

DBC115 0.22u/6/X7R/16V/K

DR25 2.2/6

DBC5 1n/4/X7R/50V/K

DR476 0/6/SHT/M/X

[28] BTS

[28] LGS LGS DR28 0/6/SHT/M/X LGS_1

DL6 0.68uH/40A/IMD119/M/D

CPU_VAXG

DR26 0/4/SHT/M/X

DR27 0/4/SHT/M/X

DQ15 RJK0393DPA-00-J5A/PPAKSO8/4.3m/[10IF9-040393-21R_10IF9-040012-10R_10IF9-040406-10R_10IF9-040393-01R]

[28] VSUMPG DR472 3.6K/4/1

[28] VSUMNG DR474 10/4

CPU_VAXG

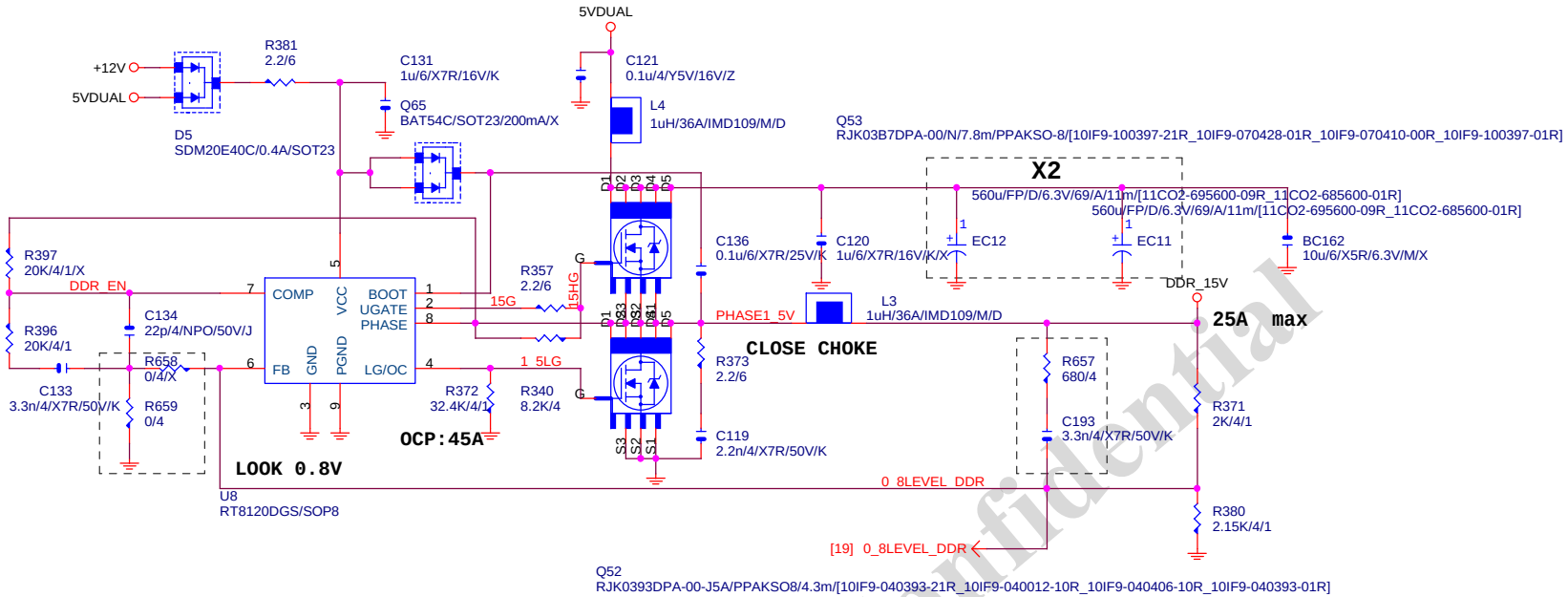
DEC14 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R_11CO2-685600-01R]
DEC15 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R_11CO2-685600-01R]

VIN DBC7 1u/6/X7R/16V/K

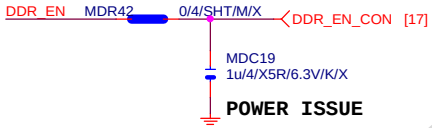
DEC12 270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]

Gigabyte Technology		
Title	CPU CORE VR-2	
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 29 of 32	

DDR15V



PWR SEQ



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℃),1(105℃)

VIN Ripple current=4.7X1.7=7.99A(85℃)
-->故固態電容須2X7.99=15.98>11.45A

Rocset=(Iocp*Lgate,rdson)/Iocset

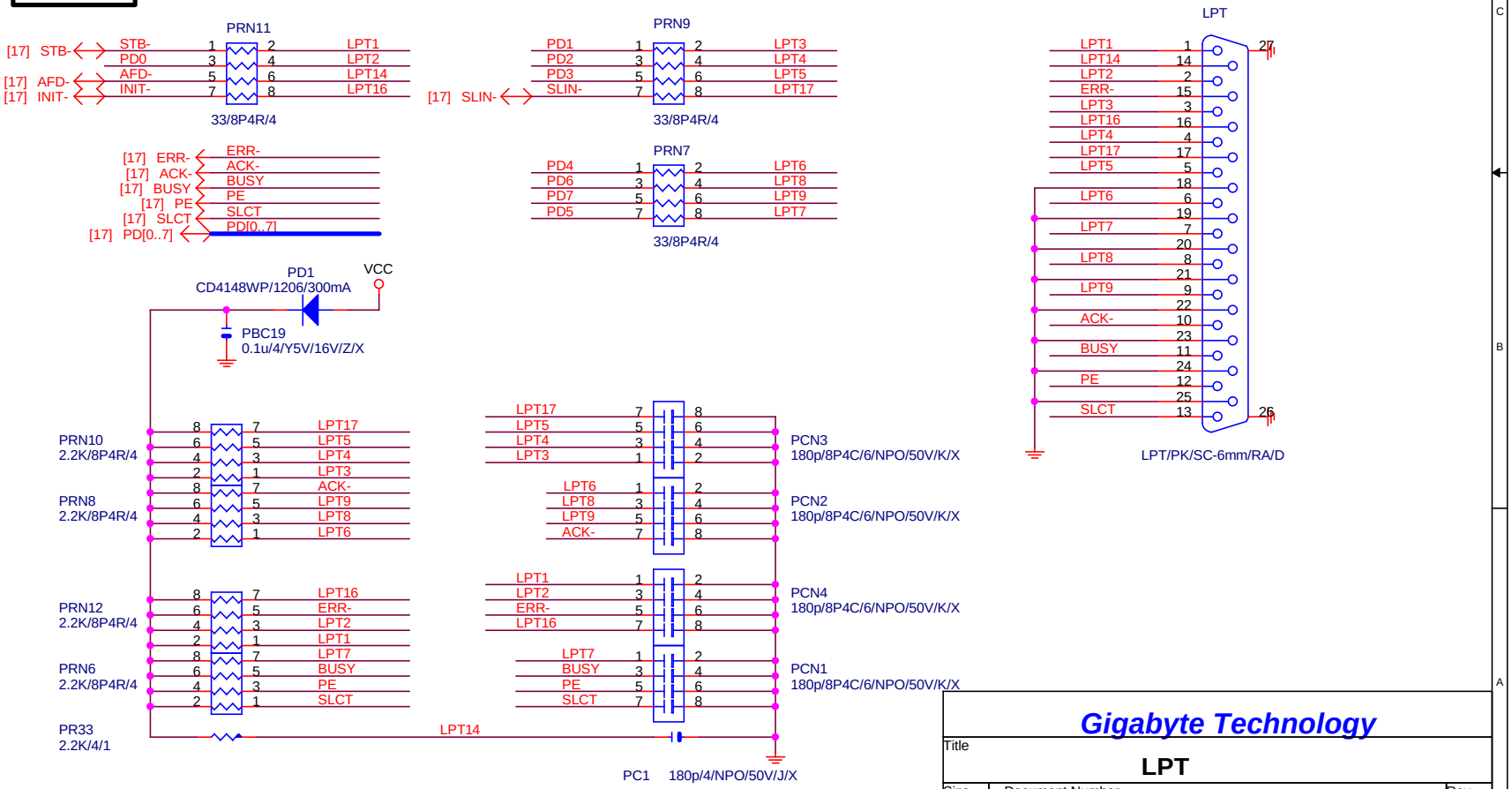
Rocset=(45A*6.7mOhm)/10uA = 30K

Iocset=10uA

Gigabyte Technology			
Title: DDR POWER			
Size: Custom	Document Number: GA-B75M-D3V		Rev: 2.02
Date: Friday, June 20, 2014	Sheet 30 of 32		

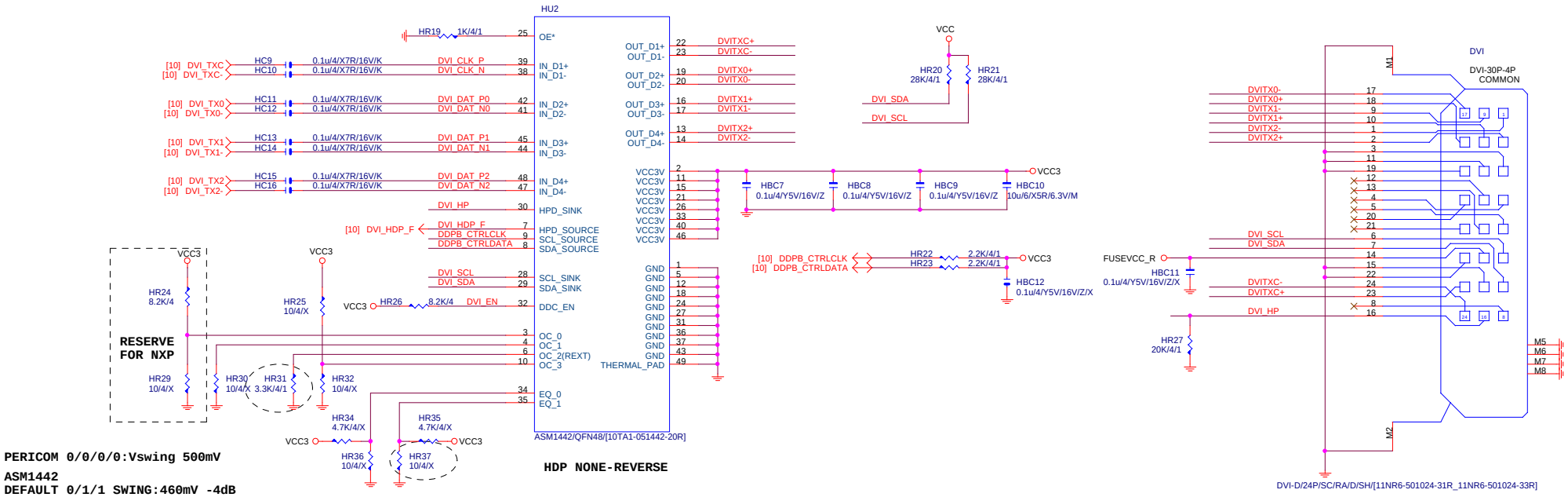
TPM

LPT PORT



Gigabyte Technology		
Title: LPT		
Size: Custom	Document Number: GA-B75M-D3V	Rev: 2.02
Date: Friday, June 20, 2014	Sheet 31 of 32	

DVI LEVEL SHIFT



PERICOM 0/0/0/0:Vswing 500mV

ASM1442
DEFAULT 0/1/1 SWING:460mV -4dB

HDP NONE-REVERSE

PI3DV411 0 0:3dB
ASM1442 1 1:3dB

Gigabyte Technology			
Title: DVI			
Size: Custom	Document Number: GA-B75M-D3V		Rev: 2.02
Date: Friday, June 20, 2014	Sheet 32 of 32		