

Model Name: GA-B85M-D3V-A 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	PCI SLOT
17	ITE 8620 LPC IO
18	COM,KB_MS_USB,USB30_20
19	HWM,FAN CTRL,OV,-PROCHOT
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	Realtek ALC887-VD2
23	REAR AUDIO JACK
24	REALTEK RTL8111G-CG
25	DISCRETE POWER
26	ATX
27	VCORE ISL95812_1

SHEET TITLE

28	VCORE ISL95812_2
29	RT8120_DDR POWER
30	LPT, M3 POWER
31	DVI
32	IT8892E

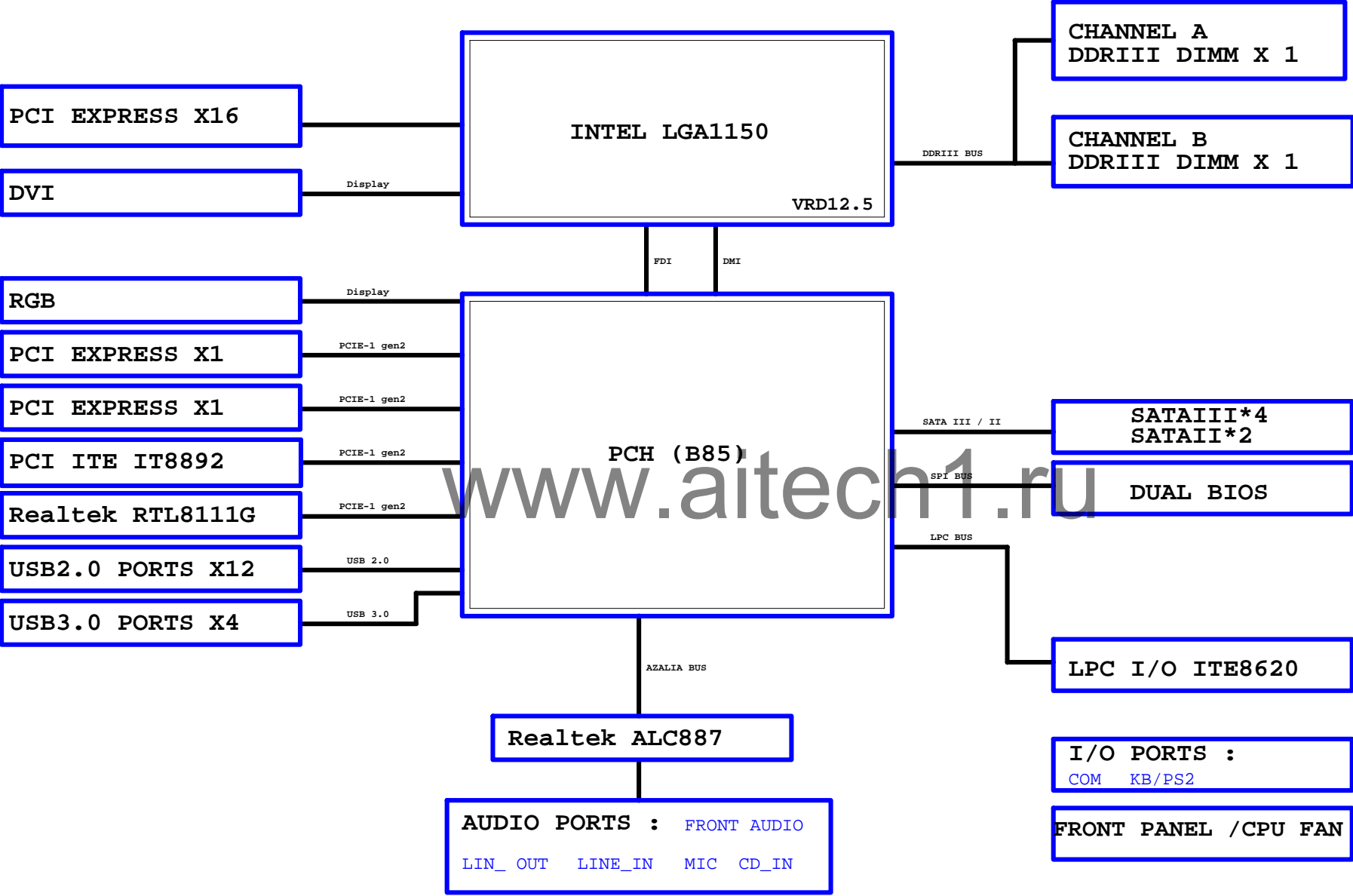
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Gigabyte Technology			
Title			
Cover Sheet			
Size	Document Number	Rev	
Custom	GA-B85M-D3V-A	1.0	
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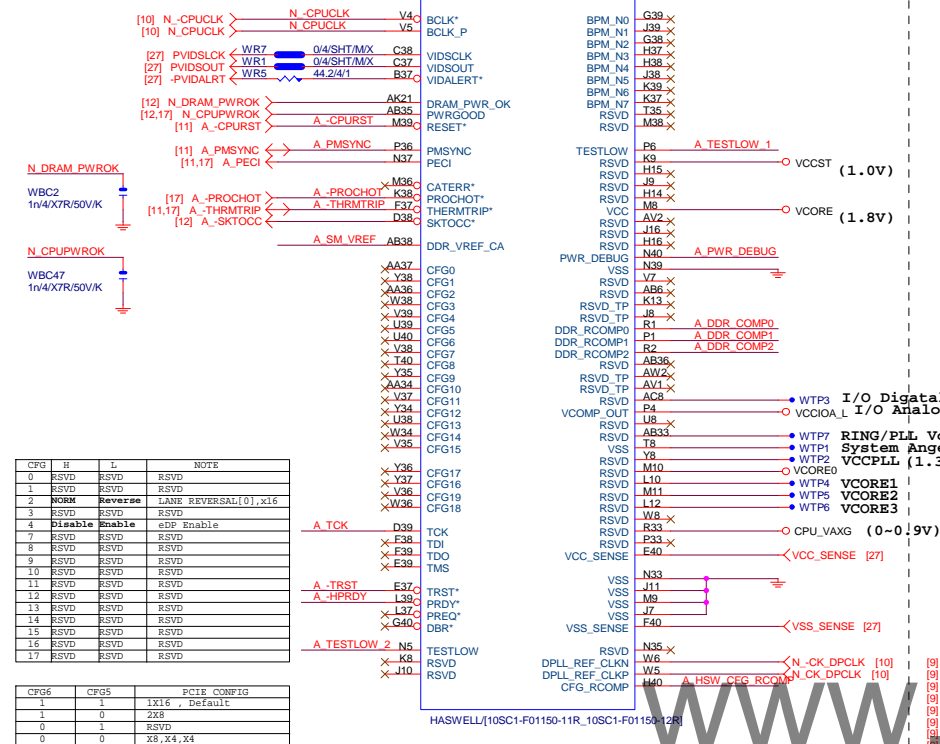
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C1

BLOCK DIAGRAM

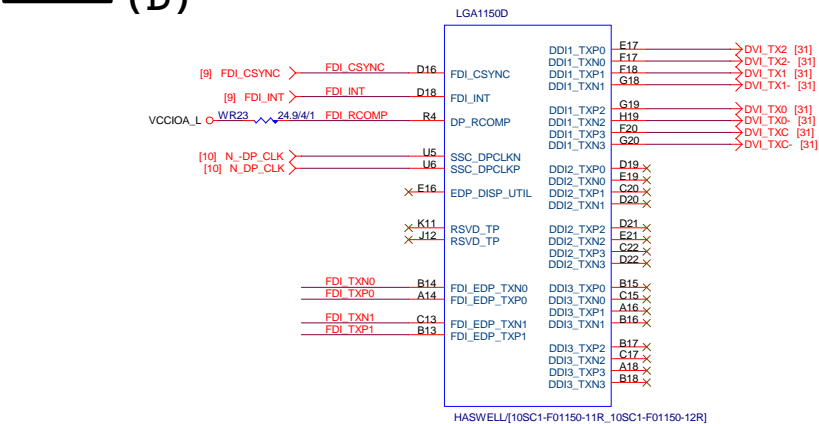


LGA1150 (E)



CFG 0-17 all internal PULL-UP

LGA1150 (D)

FDI:12/4/5/4/12(breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%FDI_TXN0_11 >>> FDI_TXN[0..1] [9]
FDI_TXN0_11 >>> FDI_TXN[0..1] [9]

LGA1155 (C)

DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%PA_EXP_TXP0_15 >>> PA_EXP_TXP[0..15] [14]
PA_EXP_TXN0_15 >>> PA_EXP_TXN[0..15] [14]
PA_EXP_RXP0_15 >>> PA_EXP_RXP[0..15] [14]
PA_EXP_RXN0_15 >>> PA_EXP_RXN[0..15] [14]

-CPURST

BC102
1n4/47R/50V/K

CPU SVID

CPU_VTT_OR < WR2 115/4/1 PVIDSOUT
WR4 75/4/1 -PVIDALRT

CPU PU/PD

CPU_VTT_OR < 1 51/BP4R/4 2 A-HPRDY
3 4 A-TCK
5 6 A-TRST
7 8

CPU_VTT_OR < WR25 1K/4/1 A-PROCHOT

A-THRMTRIP WR8 1K/4/1 VCC1_05_PCH
A-PWR_DEBUG WR34 150/4/1 VCC1_05_PCHA-DDR_COMP0 WR28 100/4/1
A-DDR_COMP1 WR19 75/4/1
A-DDR_COMP2 WR22 100/4/1
A-TESTLOW_1 WR18 49.9/4/1
A-TESTLOW_2 WR12 49.9/4/1
A-HSW_CFG_RCOMP WR24 49.9/4/1

SM REF

DDR_15V
WR62 100/4/1
WR60 100/4/1
WC3 0.1u4/47R/16V/K

Gigabyte Technology

CPU LGA1150-A			
Title	Document Number	GA-B85M-D3V-A	Rev 1.0
Size Custom			
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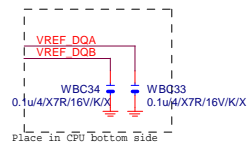
LGA1150 (A)

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	AU17	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	AK40	MDA15
MAAA14	AW21	DDR0_MA15	DDR0_D15	AM40	MDA17
MODT_A0	AW10	DDR0_ODT0	DDR0_ODT0	AM39	MDA21
MODT_A1	AV8	DDR0_ODT1	DDR0_ODT1	AP38	MDA18
AW9	AW9	DDR0_ODT2	DDR0_ODT2	AP39	MDA19
AW8	AW8	DDR0_ODT3	DDR0_ODT3	AM37	MDA20
AW33	AW33	DDR0_ECC0	DDR0_ECC0	AM38	MDA16
AW33	AW33	DDR0_ECC1	DDR0_ECC1	AP37	MDA22
AU31	AU31	DDR0_ECC2	DDR0_ECC2	AP40	MDA23
AU31	AU31	DDR0_ECC3	DDR0_ECC3	AW37	MDA29
AU33	AU33	DDR0_ECC4	DDR0_ECC4	AU35	MDA26
AT31	AT31	DDR0_ECC5	DDR0_ECC5	AU35	MDA27
AW31	AW31	DDR0_ECC6	DDR0_ECC6	T37	MDA28
AW31	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	AW4	MDA34
CSA0	CSA0	DDR0_CS_N0	DDR0_CS_N0	AW6	MDA35
CSA1	CSA1	DDR0_CS_N1	DDR0_CS_N1	AW6	MDA32
DCLKA0	DCLKA0	DDR0_CLK_P0	DDR0_CLK_P0	AW4	MDA38
DCLKA1	DCLKA1	DDR0_CLK_P1	DDR0_CLK_P1	AR1	MDA39
DCLKA2	DCLKA2	DDR0_CLK_P2	DDR0_CLK_P2	AR4	MDA45
DCLKA3	DCLKA3	DDR0_CLK_P3	DDR0_CLK_P3	AN3	MDA42
DCLKA4	DCLKA4	DDR0_CLK_P4	DDR0_CLK_P4	AN4	MDA43
DCLKA5	DCLKA5	DDR0_CLK_P5	DDR0_CLK_P5	AR2	MDA44
DCLKA6	DCLKA6	DDR0_CLK_P6	DDR0_CLK_P6	AR3	MDA40
DCLKA7	DCLKA7	DDR0_CLK_P7	DDR0_CLK_P7	AN2	MDA46
DCLKA8	DCLKA8	DDR0_CLK_P8	DDR0_CLK_P8	AN1	MDA47
DCLKA9	DCLKA9	DDR0_CLK_P9	DDR0_CLK_P9	AL1	MDA49
DCLKA10	DCLKA10	DDR0_CLK_P10	DDR0_CLK_P10	AL4	MDA53
DCLKA11	DCLKA11	DDR0_CLK_P11	DDR0_CLK_P11	AL4	MDA50
DCLKA12	DCLKA12	DDR0_CLK_P12	DDR0_CLK_P12	AJ4	MDA51
DCLKA13	DCLKA13	DDR0_CLK_P13	DDR0_CLK_P13	AL2	MDA52
DCLKA14	DCLKA14	DDR0_CLK_P14	DDR0_CLK_P14	AJ2	MDA54
DCLKA15	DCLKA15	DDR0_CLK_P15	DDR0_CLK_P15	AJ1	MDA55
DCLKA16	DCLKA16	DDR0_CLK_P16	DDR0_CLK_P16	AG1	MDA57
DCLKA17	DCLKA17	DDR0_CLK_P17	DDR0_CLK_P17	AG4	MDA61
DCLKA18	DCLKA18	DDR0_CLK_P18	DDR0_CLK_P18	AE3	MDA58
DCLKA19	DCLKA19	DDR0_CLK_P19	DDR0_CLK_P19	E4	MDA59
DCLKA20	DCLKA20	DDR0_CLK_P20	DDR0_CLK_P20	AG2	MDA60
DCLKA21	DCLKA21	DDR0_CLK_P21	DDR0_CLK_P21	AG3	MDA56
DCLKA22	DCLKA22	DDR0_CLK_P22	DDR0_CLK_P22	AE2	MDA63
DCLKA23	DCLKA23	DDR0_CLK_P23	DDR0_CLK_P23	AE1	MDA62
DCLKA24	DCLKA24	DDR0_CLK_P24	DDR0_CLK_P24	AE39	DQSA0
DCLKA25	DCLKA25	DDR0_CLK_P25	DDR0_CLK_P25	AJ39	DQSA1
DCLKA26	DCLKA26	DDR0_CLK_P26	DDR0_CLK_P26	AN39	DQSA2
DCLKA27	DCLKA27	DDR0_CLK_P27	DDR0_CLK_P27	AV36	DQSA3
DCLKA28	DCLKA28	DDR0_CLK_P28	DDR0_CLK_P28	AV5	DQSA4
DCLKA29	DCLKA29	DDR0_CLK_P29	DDR0_CLK_P29	AK3	DQSA5
DCLKA30	DCLKA30	DDR0_CLK_P30	DDR0_CLK_P30	AF3	DQSA6
DCLKA31	DCLKA31	DDR0_CLK_P31	DDR0_CLK_P31	AV32	DQSA7
DCLKA32	DCLKA32	DDR0_CLK_P32	DDR0_CLK_P32	AE38	DQSA0
DCLKA33	DCLKA33	DDR0_CLK_P33	DDR0_CLK_P33	AJ38	DQSA1
DCLKA34	DCLKA34	DDR0_CLK_P34	DDR0_CLK_P34	AN38	DQSA2
DCLKA35	DCLKA35	DDR0_CLK_P35	DDR0_CLK_P35	AJ36	DQSA3
DCLKA36	DCLKA36	DDR0_CLK_P36	DDR0_CLK_P36	AW5	DQSA4
DCLKA37	DCLKA37	DDR0_CLK_P37	DDR0_CLK_P37	AP2	DQSA5
DCLKA38	DCLKA38	DDR0_CLK_P38	DDR0_CLK_P38	AK2	DQSA6
DCLKA39	DCLKA39	DDR0_CLK_P39	DDR0_CLK_P39	AF2	DQSA7
DCLKA40	DCLKA40	DDR0_CLK_P40	DDR0_CLK_P40	AU32	

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

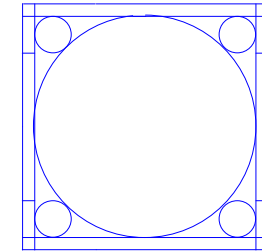
LGA1150 (B)

LGA1150B		DDR1_MA0	DDR1_D00	AE34	MDB0
MAAB0	AL19	DDR1_MA1	DDR1_D01	AE35	MDB1
MAAB1	AK23	DDR1_MA2	DDR1_D02	AG35	MDB2
MAAB2	AM22	DDR1_MA3	DDR1_D03	AH35	MDB3
MAAB3	AM23	DDR1_MA4	DDR1_D04	AD34	MDB4
MAAB4	AP23	DDR1_MA5	DDR1_D05	AD35	MDB5
MAAB5	AL23	DDR1_MA6	DDR1_D06	AG34	MDB6
MAAB6	AY24	DDR1_MA7	DDR1_D07	AH34	MDB7
MAAB7	AV25	DDR1_MA8	DDR1_D08	AL34	MDB8
MAAB8	AU26	DDR1_MA9	DDR1_D09	AL35	MDB9
MAAB9	AW25	DDR1_MA10	DDR1_D10	AL31	MDB11
MAAB10	AP18	DDR1_MA11	DDR1_D11	AK34	MDB12
MAAB11	AY25	DDR1_MA12	DDR1_D12	AK35	MDB13
MAAB12	AV26	DDR1_MA13	DDR1_D13	AK32	MDB14
MAAB13	AR15	DDR1_MA14	DDR1_D14	AL32	MDB15
MAAB14	AV27	DDR1_MA15	DDR1_D15	AL34	MDB17
MAAB15	AY28	DDR1_MA16	DDR1_D16	AP34	MDB21
MODT_B0	AM17	DDR1_ODT0	DDR1_ODT0	AN31	MDB19
MODT_B1	AL16	DDR1_ODT1	DDR1_ODT1	AP31	MDB23
AM16	AM16	DDR1_ODT2	DDR1_ODT2	AN35	MDB20
AK15	AK15	DDR1_ODT3	DDR1_ODT3	AP35	MDB16
AM26	AM26	DDR1_ECC0	DDR1_ECC0	AN32	MDB18
AM25	AM25	DDR1_ECC1	DDR1_ECC1	AP32	MDB22
AP25	AP25	DDR1_ECC2	DDR1_ECC2	AM29	MDB25
AP26	AP26	DDR1_ECC3	DDR1_ECC3	AM28	MDB28
AL26	AL26	DDR1_ECC4	DDR1_ECC4	AR29	MDB27
AL25	AL25	DDR1_ECC5	DDR1_ECC5	AR28	MDB30
AR26	AR26	DDR1_ECC6	DDR1_ECC6	AL28	MDB24
AR25	AR25	DDR1_ECC7	DDR1_ECC7	AL28	MDB29
BA0	BA0	DDR1_BA0	DDR1_BA0	AP29	MDB26
BA1	BA1	DDR1_BA1	DDR1_BA1	AP28	MDB31
BA2	BA2	DDR1_BA2	DDR1_BA2	AR12	MDB32
CKE0	CKE0	DDR1_CKE0	DDR1_CKE0	AL12	MDB35
CKE1	CKE1	DDR1_CKE1	DDR1_CKE1	AR13	MDB36
CKE2	CKE2	DDR1_CKE2	DDR1_CKE2	AP13	MDB37
CKE3	CKE3	DDR1_CKE3	DDR1_CKE3	AM13	MDB38
CSB0	CSB0	DDR1_CS_N0	DDR1_CS_N0	AM12	MDB39
CSB1	CSB1	DDR1_CS_N1	DDR1_CS_N1	AR9	MDB45
CSB2	CSB2	DDR1_CS_N2	DDR1_CS_N2	AP9	MDB41
CSB3	CSB3	DDR1_CS_N3	DDR1_CS_N3	AR6	MDB47
DCLKB0	DCLKB0	DDR1_CLK_P0	DDR1_CLK_P0	AP6	MDB43
DCLKB1	DCLKB1	DDR1_CLK_P1	DDR1_CLK_P1	AR10	MDB44
DCLKB2	DCLKB2	DDR1_CLK_P2	DDR1_CLK_P2	AP10	MDB40
DCLKB3	DCLKB3	DDR1_CLK_P3	DDR1_CLK_P3	AR7	MDB46
DCLKB4	DCLKB4	DDR1_CLK_P4	DDR1_CLK_P4	AP7	MDB42
DCLKB5	DCLKB5	DDR1_CLK_P5	DDR1_CLK_P5	AM9	MDB52
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DCLKB7	DCLKB7	DDR1_CLK_P7	DDR1_CLK_P7	AL6	MDB50
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DCLKB12	DCLKB12	DDR1_CLK_P12	DDR1_CLK_P12	AM7	MDB51
DCLKB13	DCLKB13	DDR1_CLK_P13	DDR1_CLK_P13	AH6	MDB61
DCLKB14	DCLKB14	DDR1_CLK_P14	DDR1_CLK_P14	AH7	MDB60
DCLKB15	DCLKB15	DDR1_CLK_P15	DDR1_CLK_P15	AE6	MDB59
DCLKB16	DCLKB16	DDR1_CLK_P16	DDR1_CLK_P16	AE7	MDB63
DCLKB17	DCLKB17	DDR1_CLK_P17	DDR1_CLK_P17	AJ6	MDB56
DCLKB18	DCLKB18	DDR1_CLK_P18	DDR1_CLK_P18	AJ7	MDB57
DCLKB19	DCLKB19	DDR1_CLK_P19	DDR1_CLK_P19	AG6	MDB58
DCLKB20	DCLKB20	DDR1_CLK_P20	DDR1_CLK_P20	AF7	MDB62
DCLKB21	DCLKB21	DDR1_CLK_P21	DDR1_CLK_P21	AF35	DQSB0
DCLKB22	DCLKB22	DDR1_CLK_P22	DDR1_CLK_P22	AL33	DQSB1
DCLKB23	DCLKB23	DDR1_CLK_P23	DDR1_CLK_P23	AP33	DQSB2
DCLKB24	DCLKB24	DDR1_CLK_P24	DDR1_CLK_P24	AN28	DQSB3
DCLKB25	DCLKB25	DDR1_CLK_P25	DDR1_CLK_P25	AN12	DQSB4
DCLKB26	DCLKB26	DDR1_CLK_P26	DDR1_CLK_P26	AP8	DQSB5
DCLKB27	DCLKB27	DDR1_CLK_P27	DDR1_CLK_P27	AL8	DQSB6
DCLKB28	DCLKB28	DDR1_CLK_P28	DDR1_CLK_P28	AG7	DQSB7
DCLKB29	DCLKB29	DDR1_CLK_P29	DDR1_CLK_P29	AN25	
DCLKB30	DCLKB30	DDR1_CLK_P30	DDR1_CLK_P30	AE34	DQSB0
DCLKB31	DCLKB31	DDR1_CLK_P31	DDR1_CLK_P31	AK33	DQSB1
DCLKB32	DCLKB32	DDR1_CLK_P32	DDR1_CLK_P32	AN33	DQSB2
DCLKB33	DCLKB33	DDR1_CLK_P33	DDR1_CLK_P33	AN29	DQSB3
DCLKB34	DCLKB34	DDR1_CLK_P34	DDR1_CLK_P34	AL13	DQSB4
DCLKB35	DCLKB35	DDR1_CLK_P35	DDR1_CLK_P35	AR8	DQSB5
DCLKB36	DCLKB36	DDR1_CLK_P36	DDR1_CLK_P36	AM8	DQSB6
DCLKB37	DCLKB37	DDR1_CLK_P37	DDR1_CLK_P37	AG6	DQSB7
DCLKB38	DCLKB38	DDR1_CLK_P38	DDR1_CLK_P38	AN26	



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

LGA1150 (CR)

CR
CPU RETENTION/X

LGA1150_P



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

DDR BUS

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

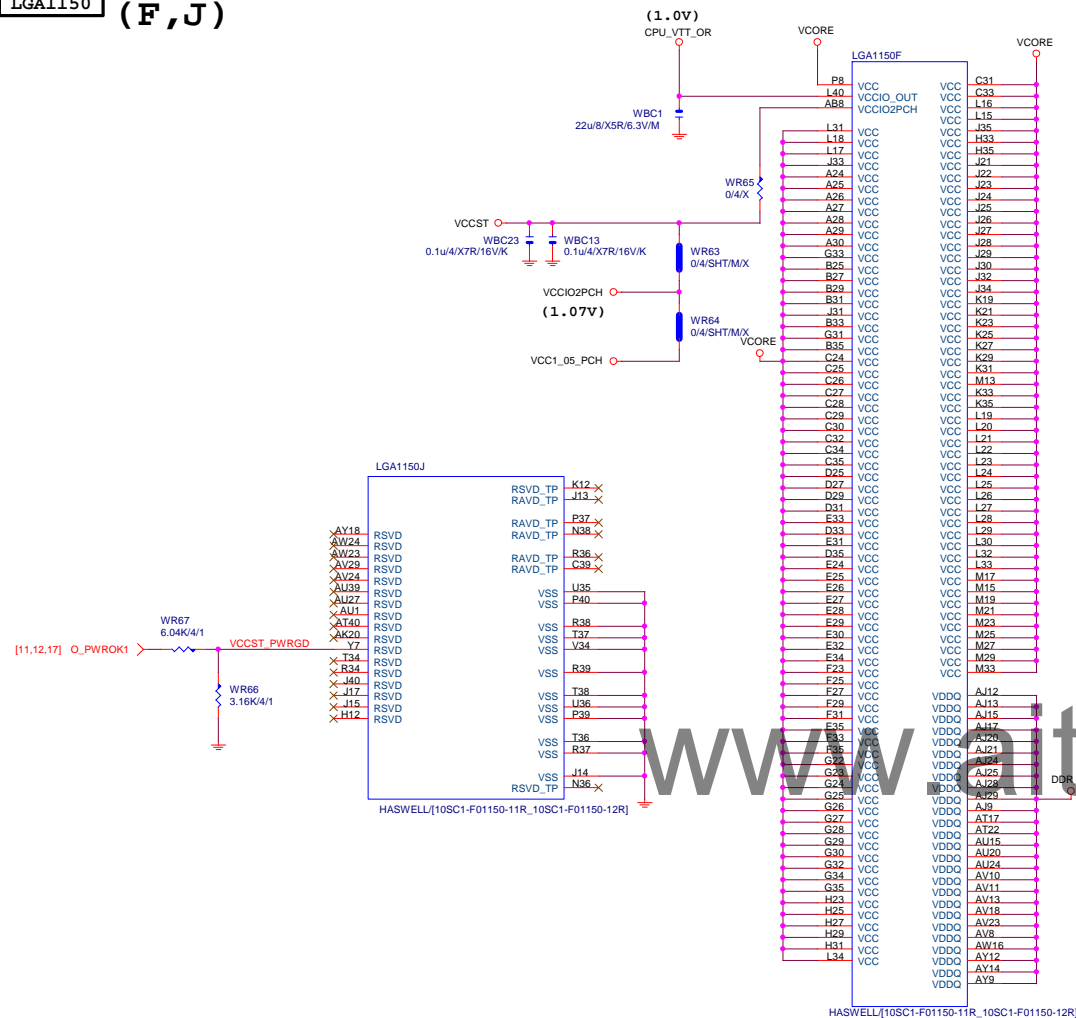
Gigabyte Technology

CPU LGA1150-B

Title	Document Number	Rev
Size	GA-B85M-D3V-A	1.0

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LGA1150 (F, J)

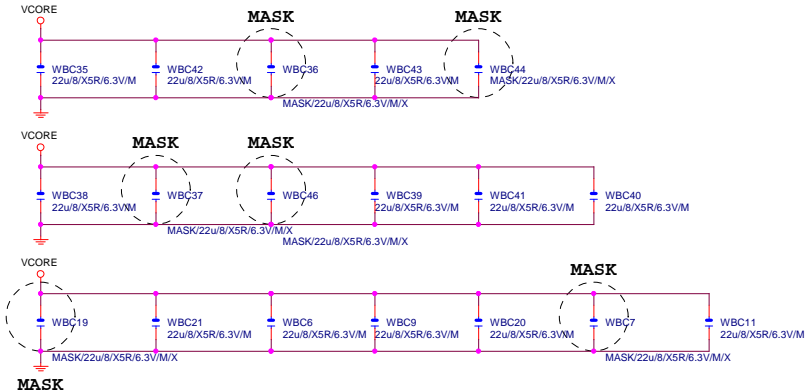


LGA1155 (G,H,I)



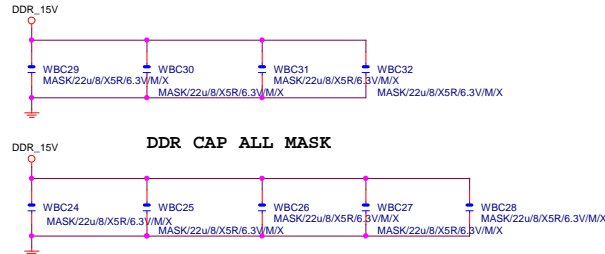
VCore CAP

(x12)



DDR CAP

(X0)

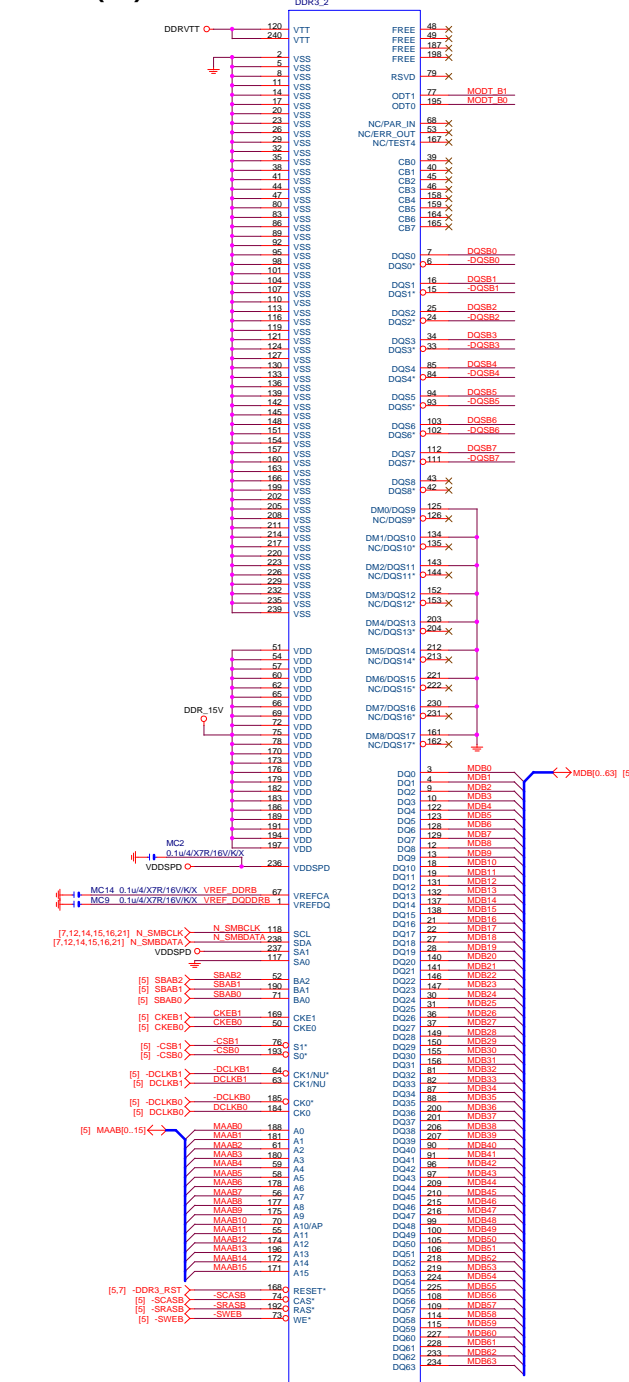


Gigabyte Technology

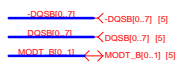
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CPU LGA1150-C			
Size	Document Number		Rev
Custom	GA-B85M-D3V-A		1.0
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DDR3

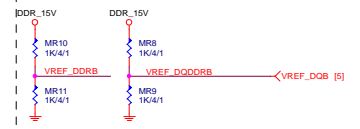
(B)



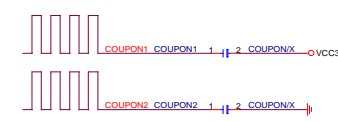
DDR3/240/BK/VA/D
BLACK CONNECTOR



DDR3 VREF



COUPON

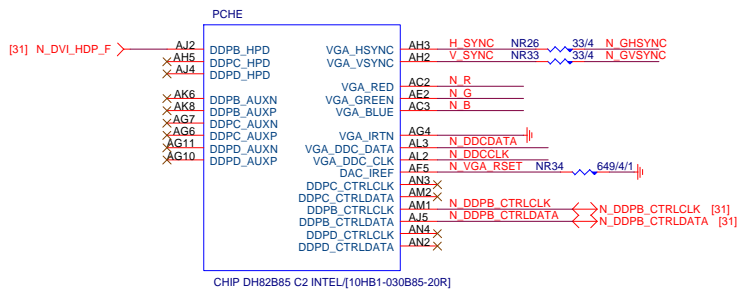


CPU

DIMM1 CHA
DIMM2 CHB

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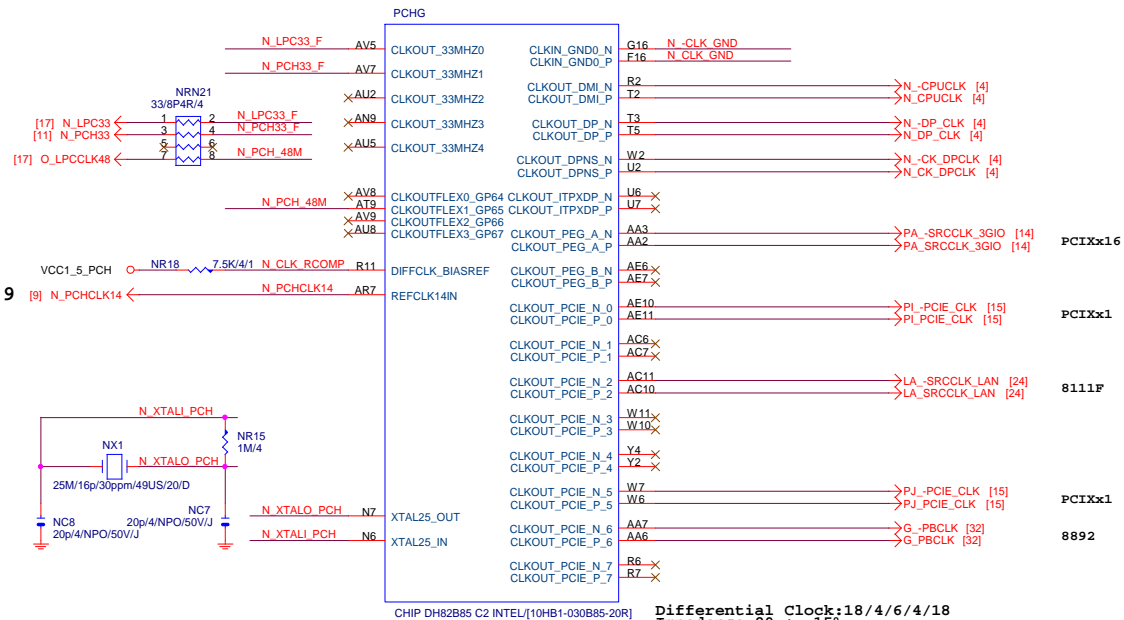
PCH (E)



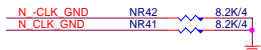
PCH (G)

Flex1,2,3,4 :

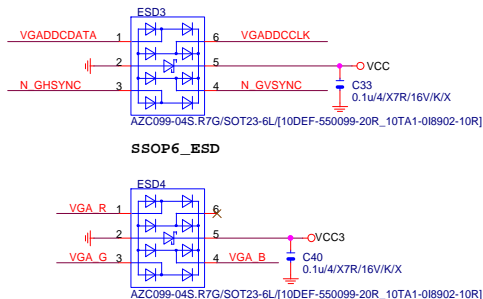
P.D排組PAGE 9



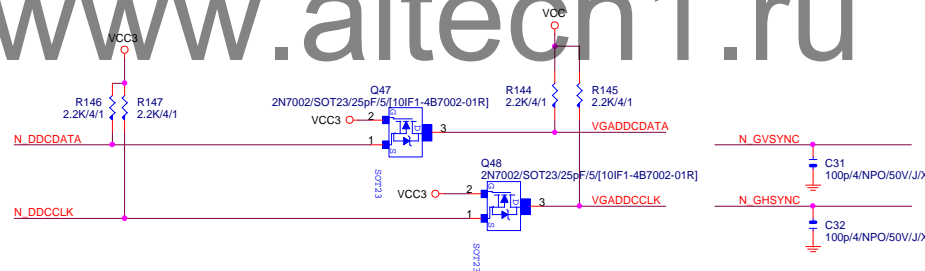
PCH CLK PD



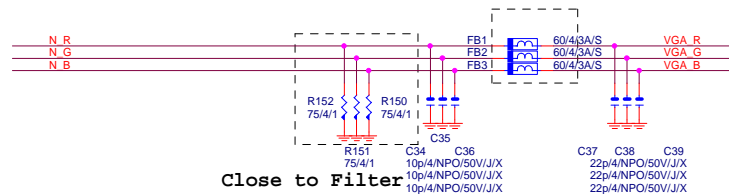
VGA ESD



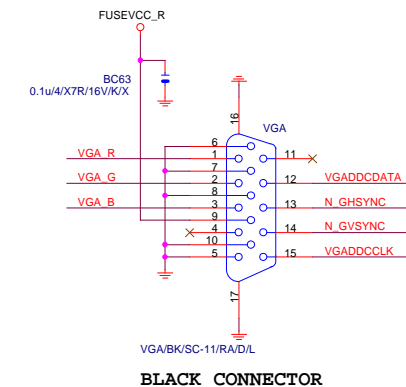
VGA DDC



VGA DDC



VGA CONNECTOR



Gigabyte Technology		
Title		
PCH DISPLAY,CLK BUFFER		
Size		
Custom		
Date		
Monday, January 19, 2015		
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10 of 32		
Rev		
1.0		

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%

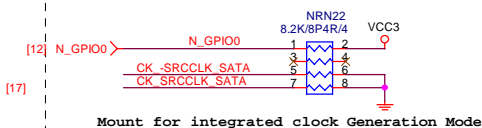
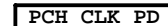
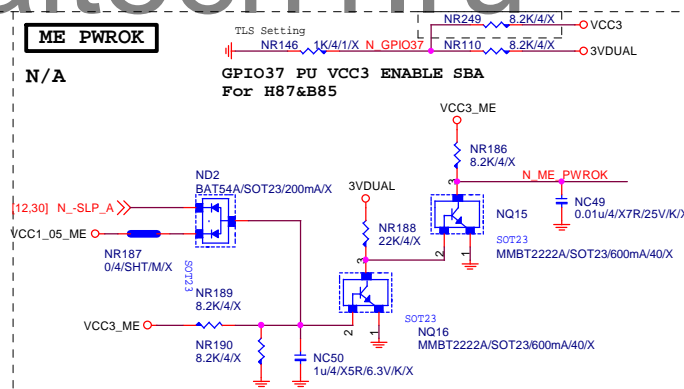
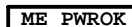
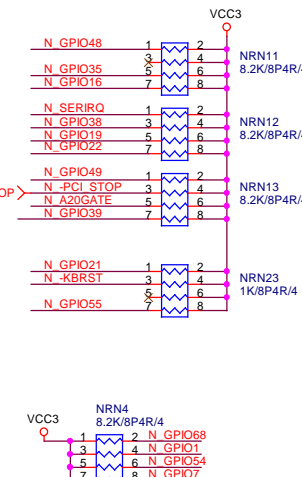
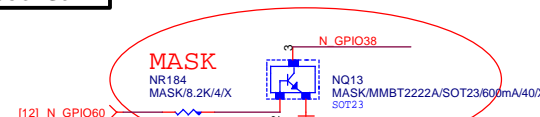


Figure 1: Pin connections for the Raspberry Pi 4 Model B. The diagram shows three 40-pin headers. The top header has pins 1-4 connected to NR2N (N-PIROC), NR2P (N-PIROH), NR2Q (N-PIROD), and NR2R (N-PIROB) respectively. Pins 5-8 are connected to NR3N (N-PIROE), NR3P (N-PIROF), NR3Q (N-PIROG), and NR3R (N-PIROH) respectively. The middle header has pins 1-4 connected to NR7N (N-GPIOC), NR7P (N-GPIOD), NR7Q (N-GPIOE), and NR7R (N-GPIOF) respectively. Pins 5-8 are connected to NR7S (N-GPIOG), NR7T (N-GPIOH), NR7U (N-GPIOI), and NR7V (N-GPIOJ) respectively. The bottom header has pins 1-4 connected to NR8N (N-GPIOK), NR8P (N-GPIOL), NR8Q (N-GPIOM), and NR8R (N-GPION) respectively. Pins 5-8 are connected to NR8S (N-GPIOO), NR8T (N-GPIOP), NR8U (N-GPIOQ), and NR8V (N-GPIOR) respectively. The diagram also shows the VCC and GND pins for each header.

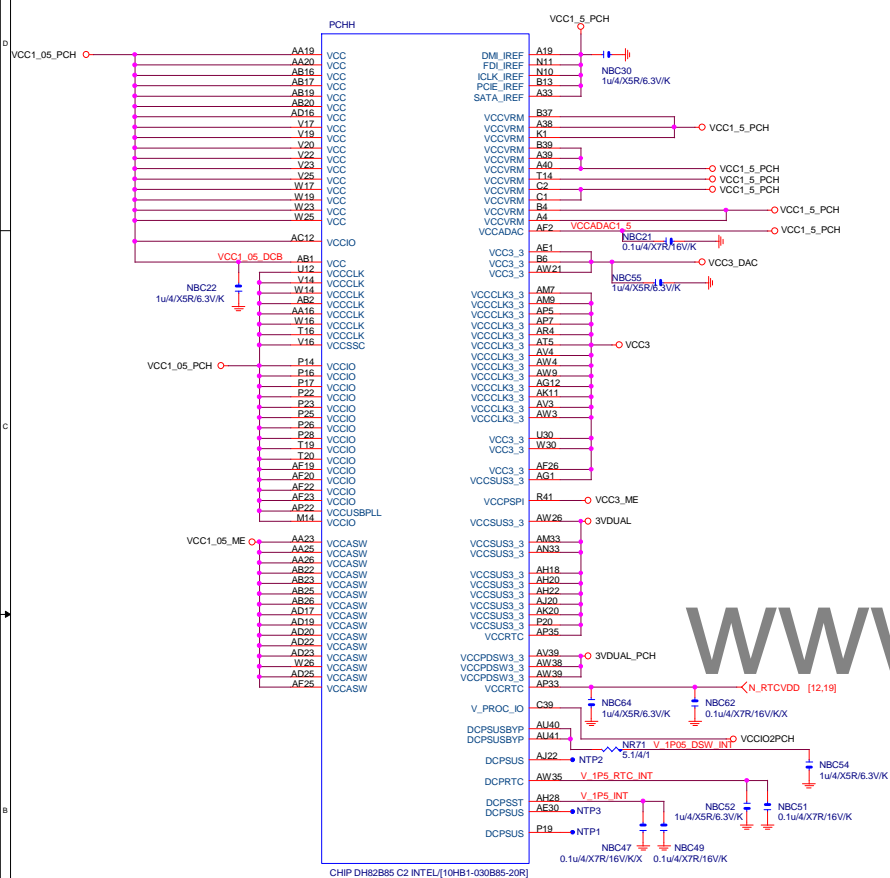
Remove SATA MLCC [Footprint: C0402-SHORT4-MASK]



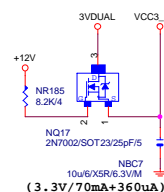
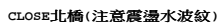
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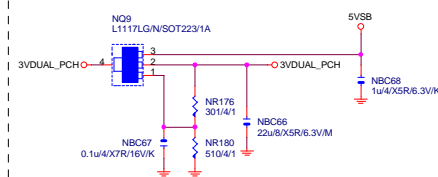
PCH (H)



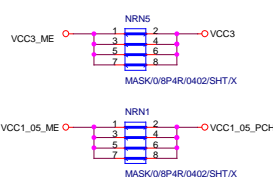
VCC3_DAC



3VDUAL_PCH

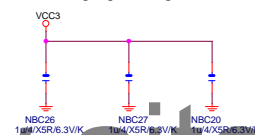


SHT PWR

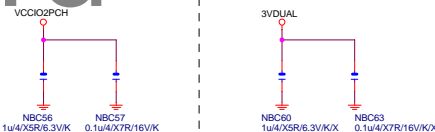


CAP

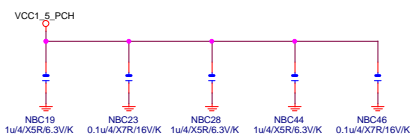
(3.3V) (X3)



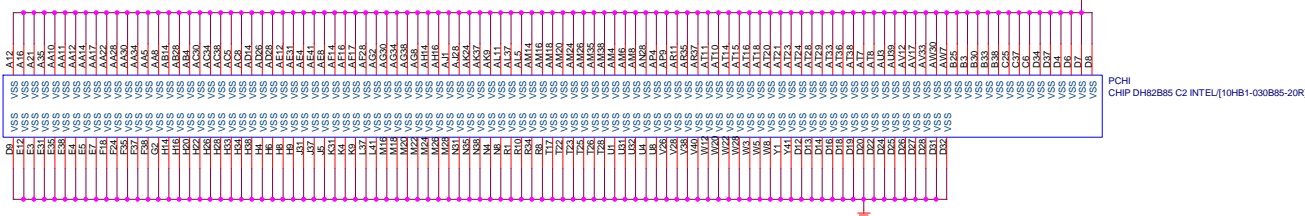
(1.05V)(x2) (3.3V) (x2)



(1.5V) (x5)

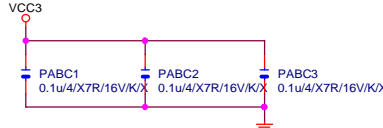


PCH (I)

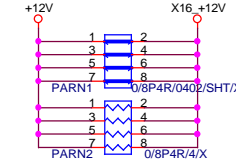


PCIEX16 CAP

N/A



PCIEX16 PROTECT SHT



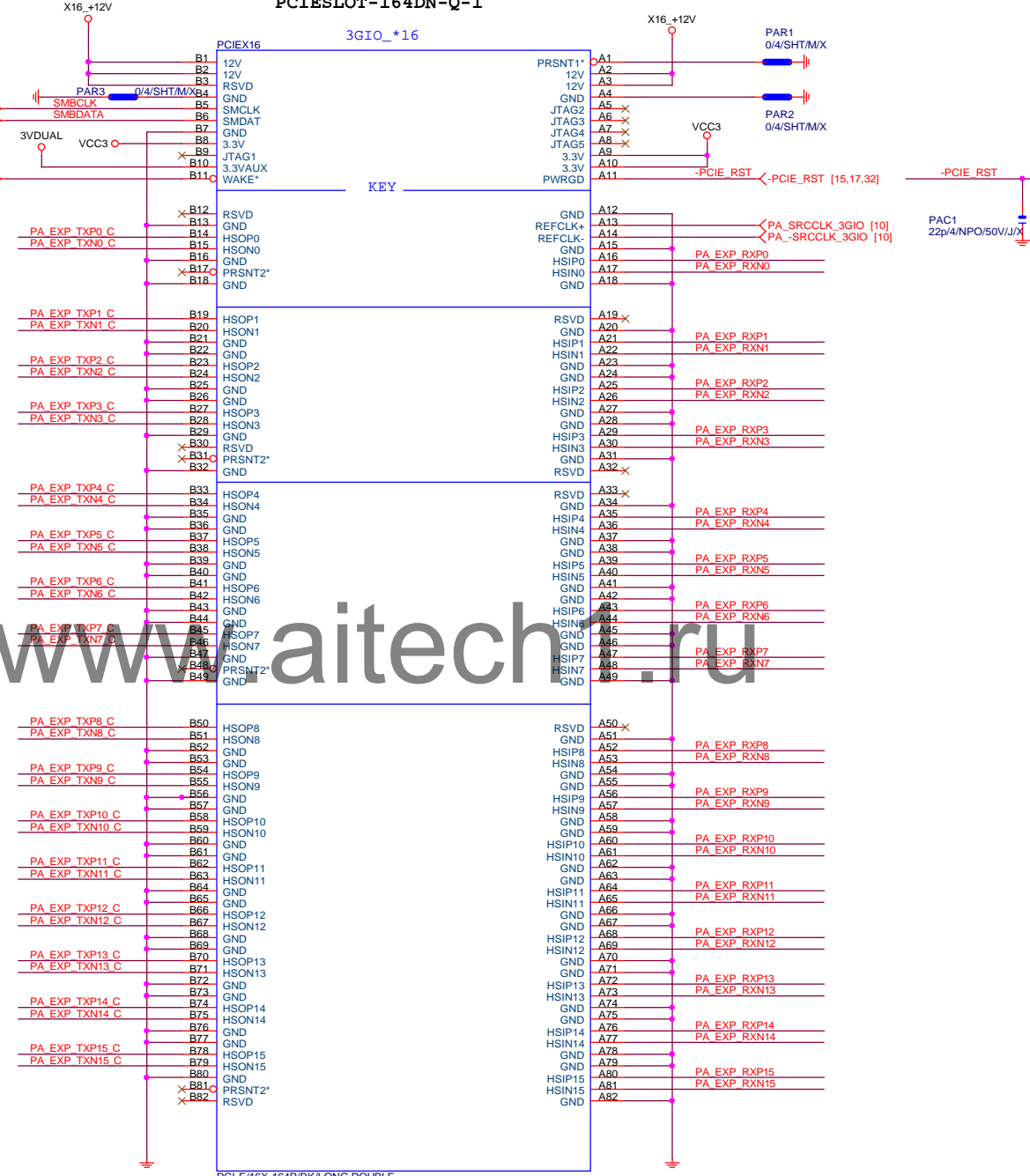
PCIEX16 AC CAP

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

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

PCIEX16 SLOT

PCIESLOT-164DN-Q-1



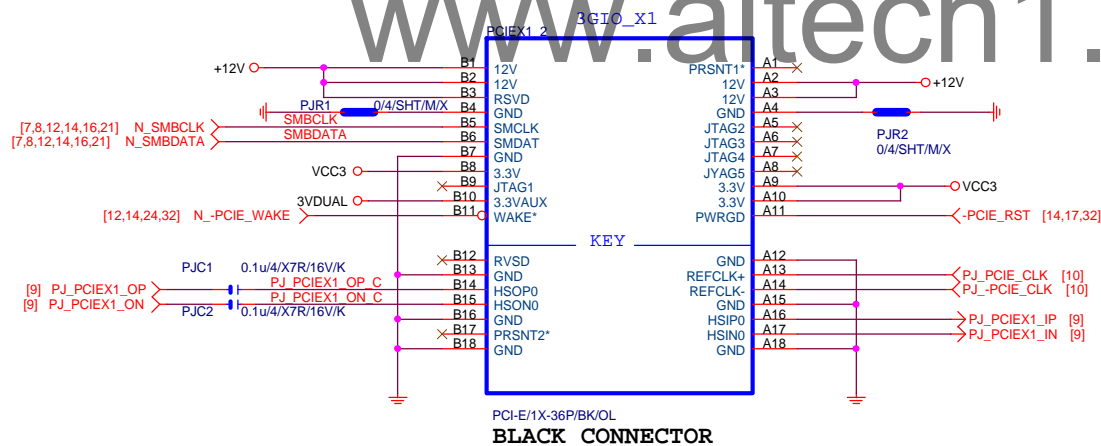
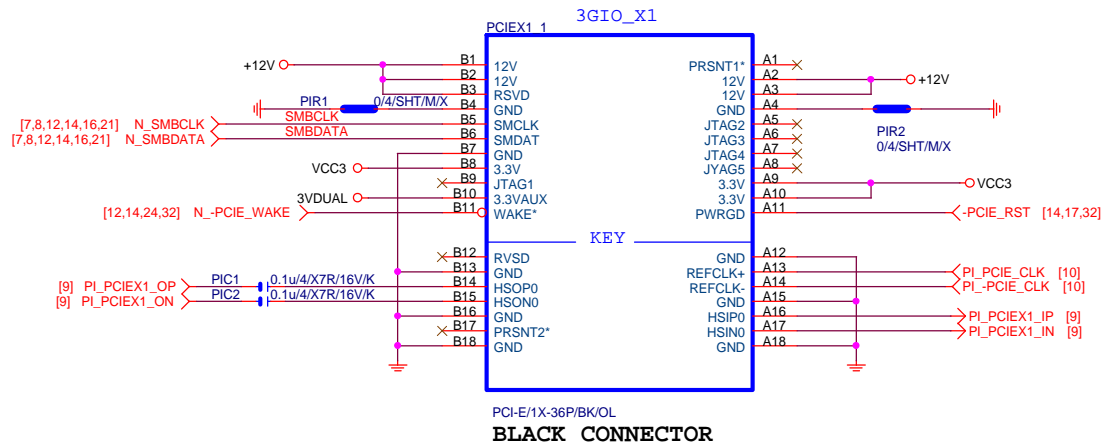
PCIESLOT-164DN-Q-1

BLACK CONNECTOR

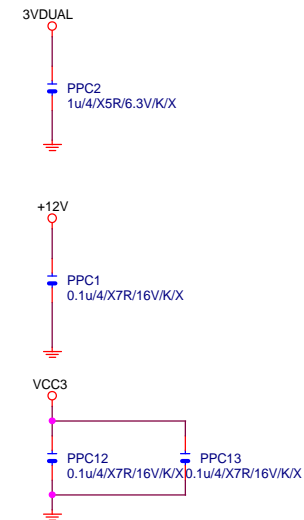
Gigabyte Technology

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Size	Document Number	GA-B85M-D3V-A		Rev
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Date:	Monday, January 19, 2015	Sheet	14 of 32	

PCIEX1 SLOT



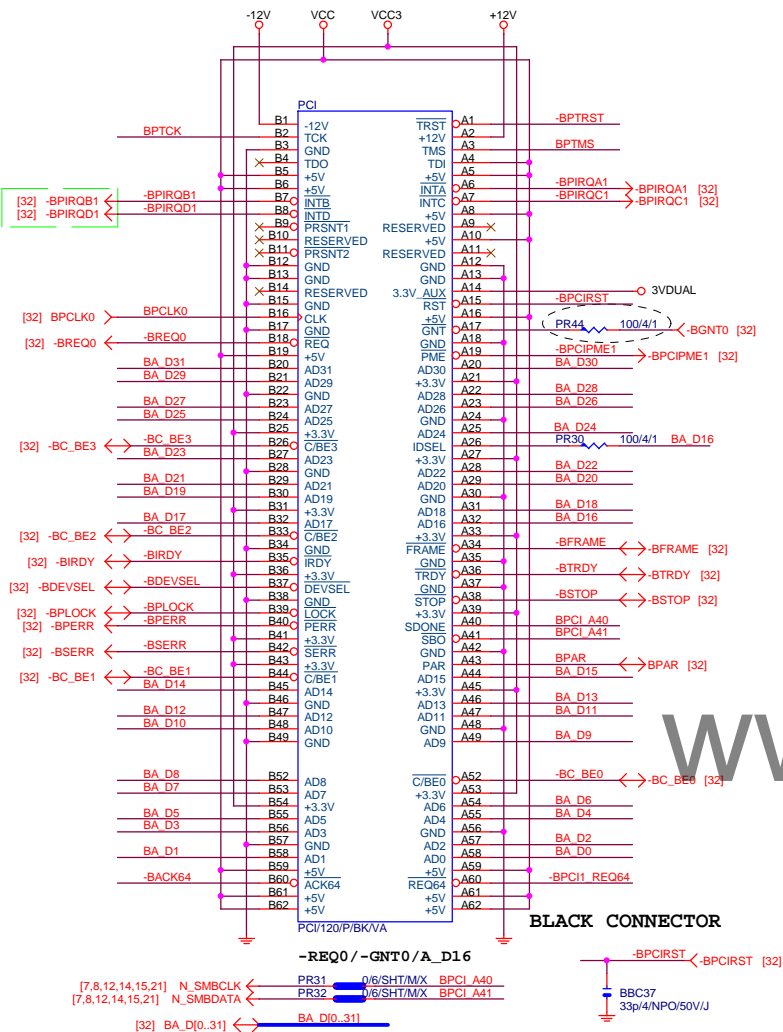
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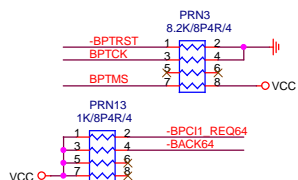
Gigabyte Technology

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Size	Document Number	GA-B85M-D3V-A	
Custom		Rev	1.0
Date:	Monday, January 19, 2015	Sheet	15 of 32

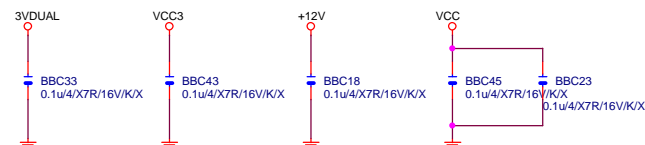
PCI SLOT 1



PCI	PU
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PCI CAP	N/A
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SIO IT8620

FIX ATX 插拔漏電

PWR SHT

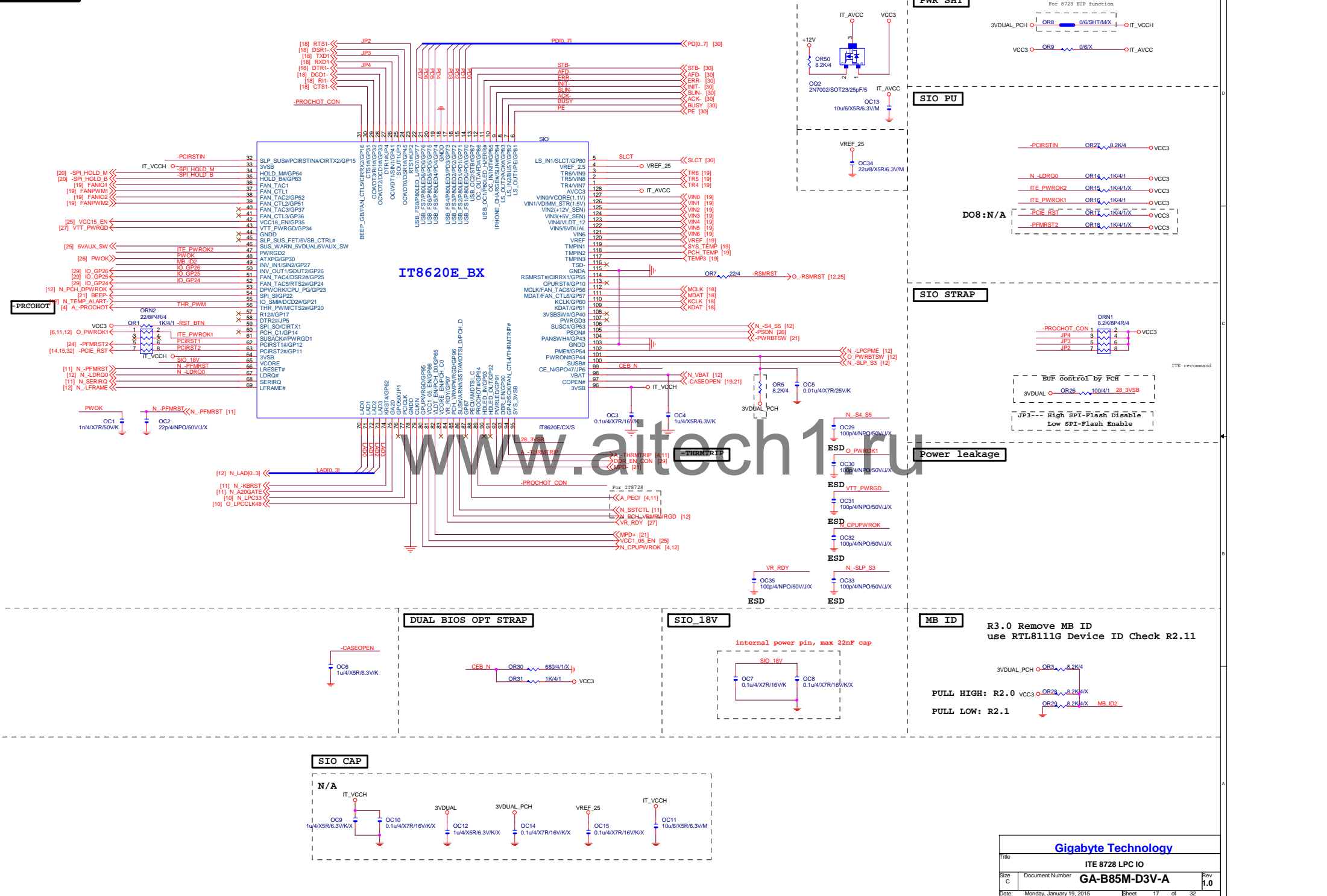
SIO PU

SIO STRAP

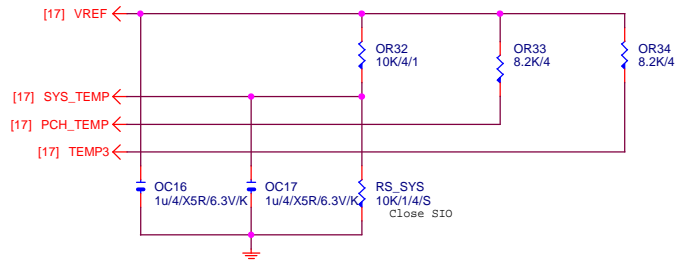
Power leakage

MB ID

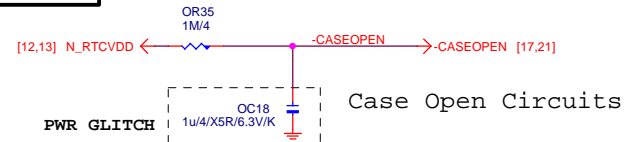
SIO CAP



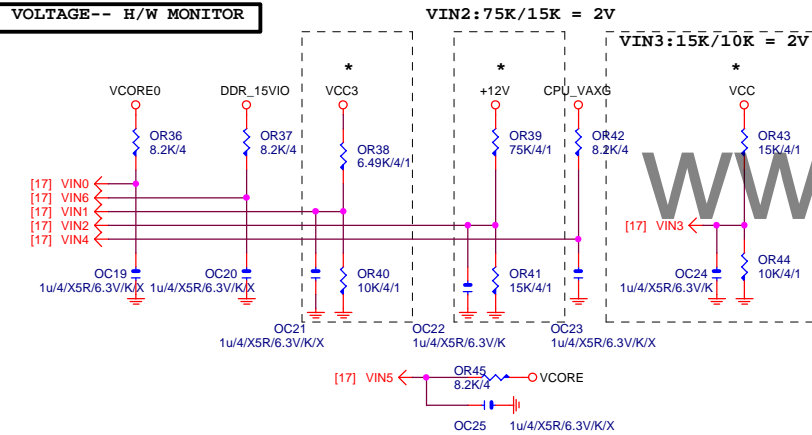
TEMP H/W MONITOR



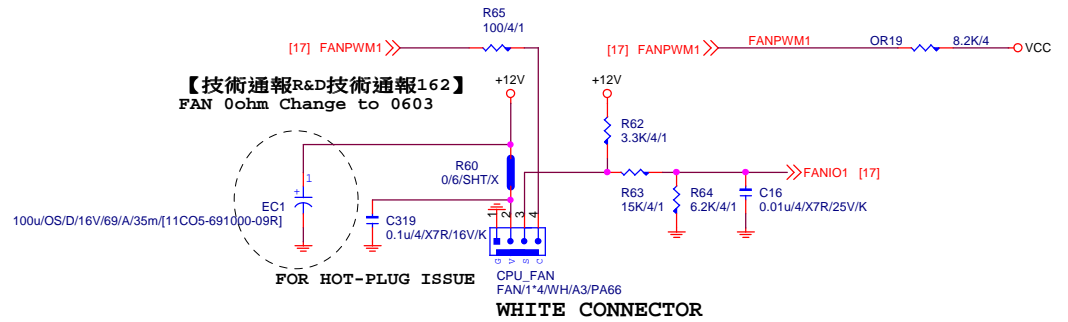
CASE OPEN



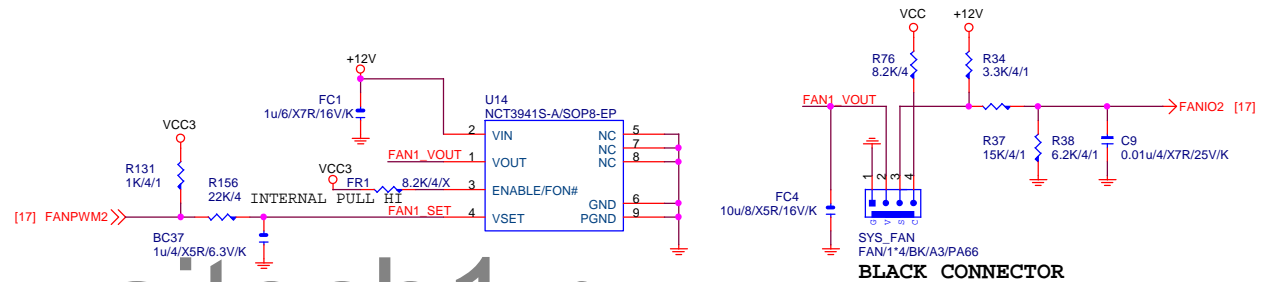
VOLTAGE-- H/W MONITOR



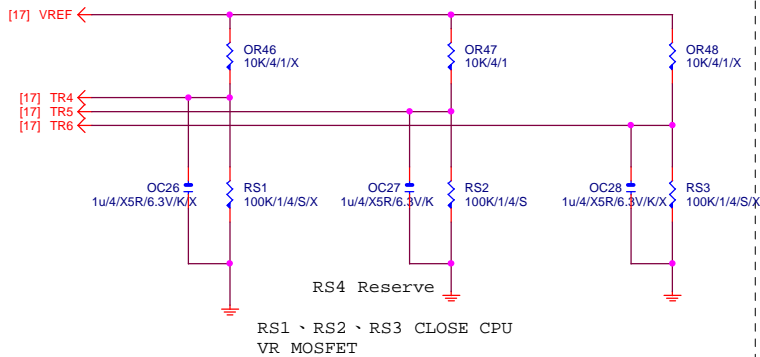
CPU SMART FAN



SYS SMART FAN

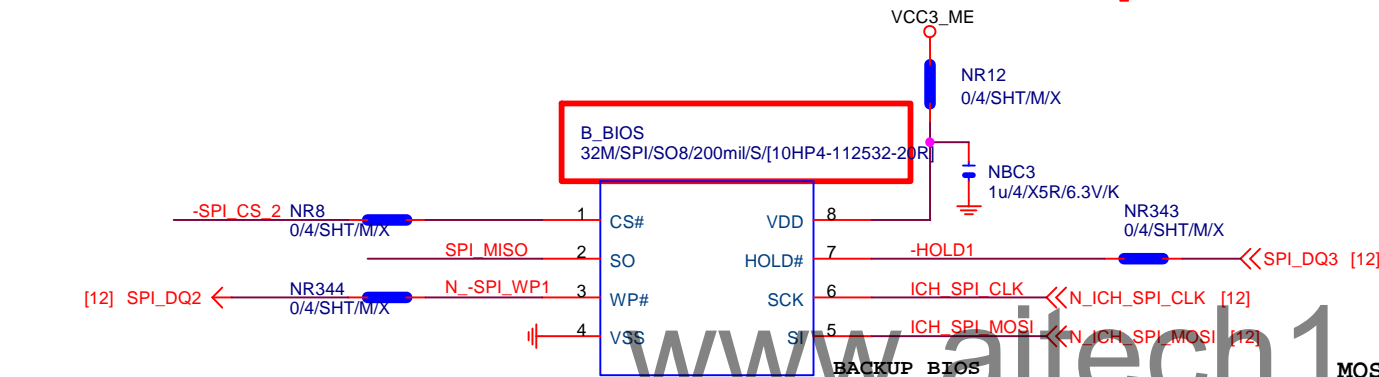
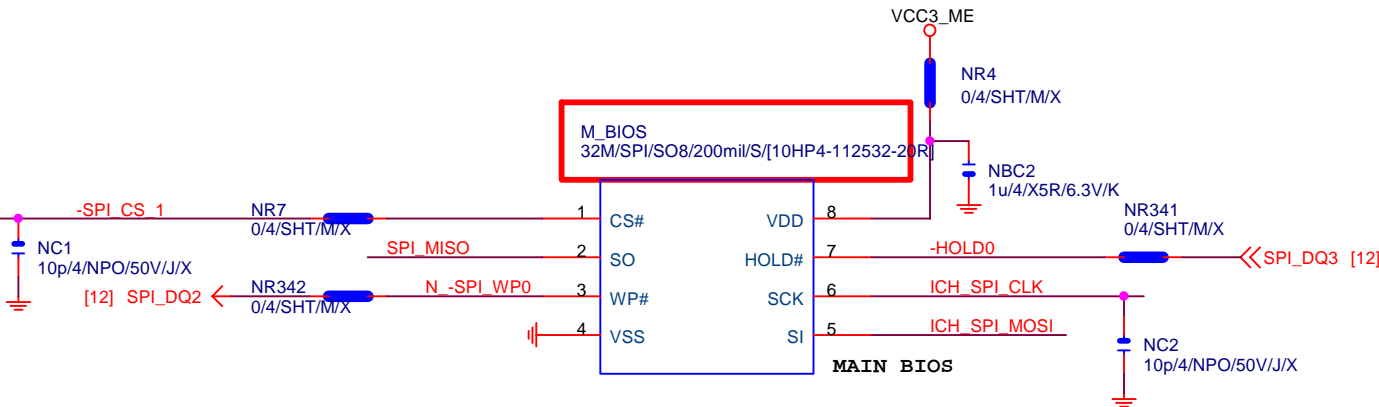


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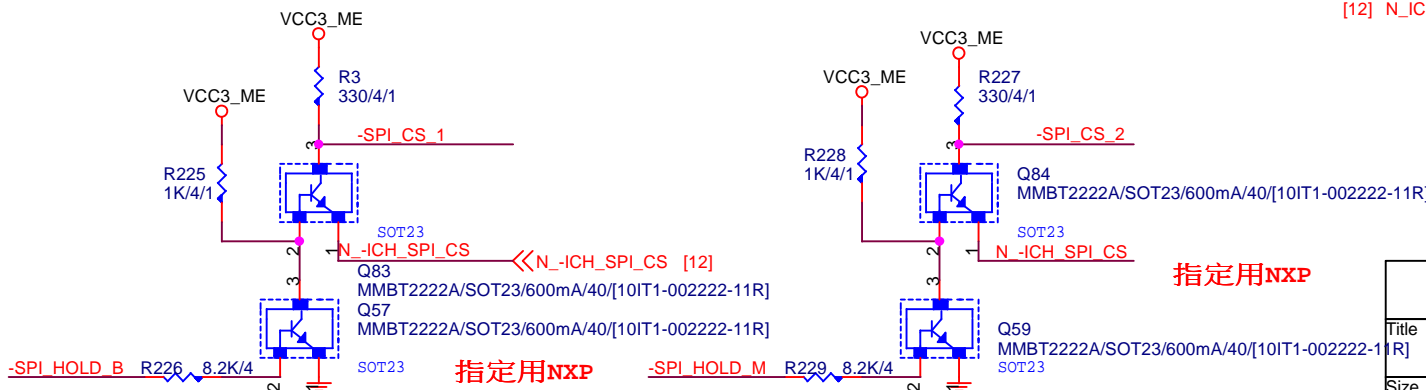
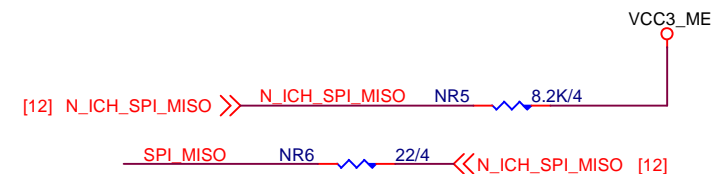
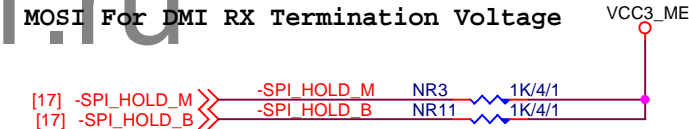
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Size	Document Number	GA-B85M-D3V-A	
Custom		Rev 1.0	
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BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K

MOSI For DMI RX Termination Voltage



指定用NXP

Gigabyte Technology

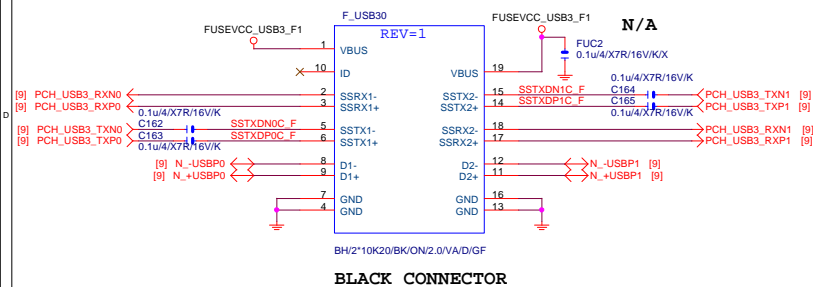
DUAL BIOS

GA-B85M-D3V-A

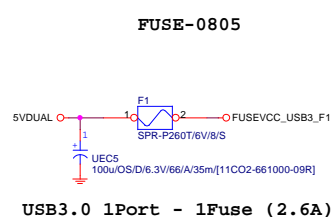
Rev 1.0

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		1.0
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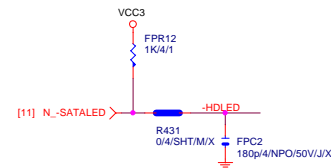
F_USB30



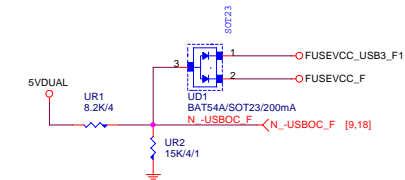
F_USB30 PWR



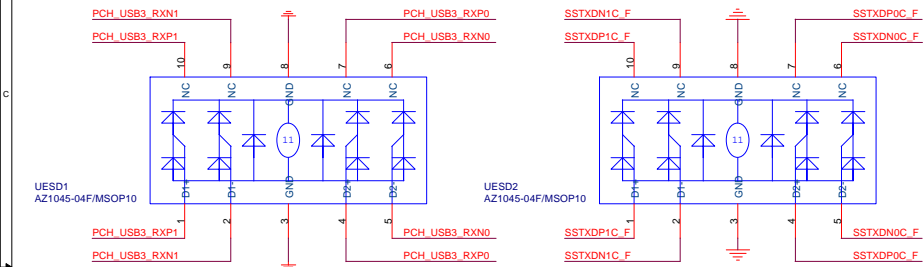
SATA LED



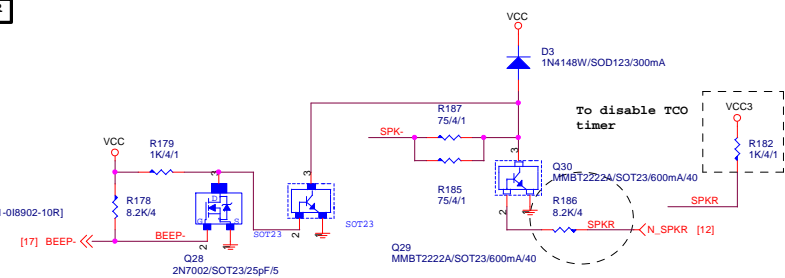
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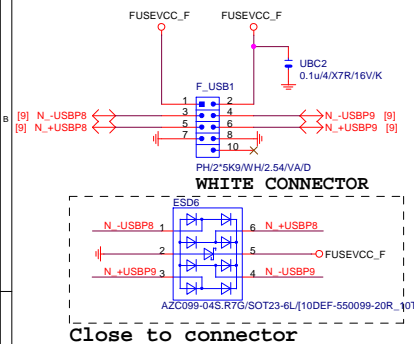
F_USB30 ESD PROTECT



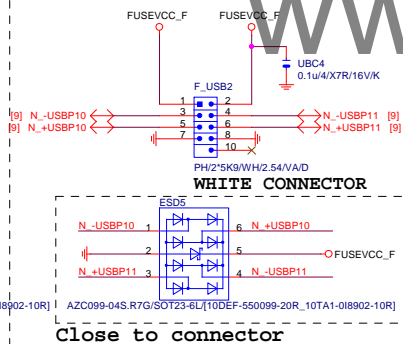
SPKR



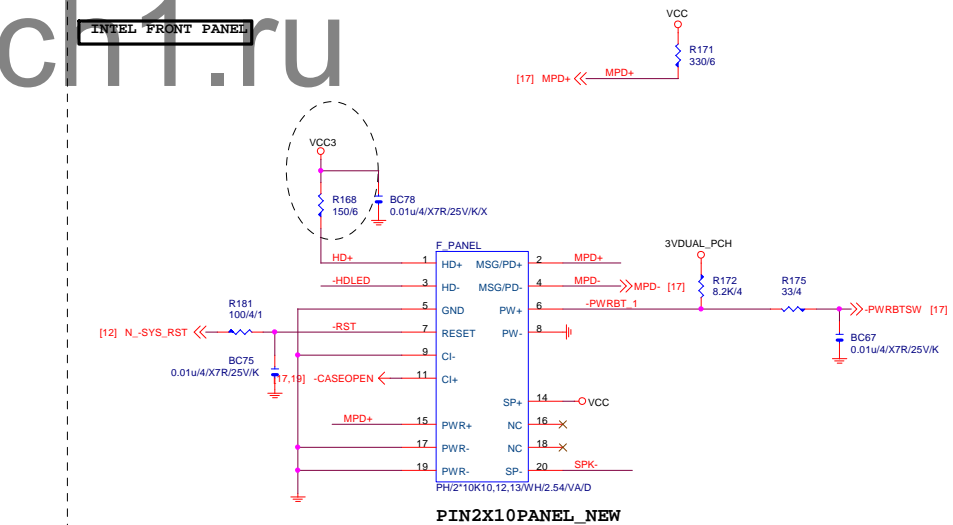
FRONT USB1



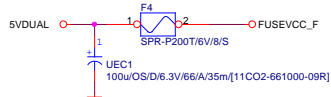
FRONT USB2



INTEL FRONT PANEL

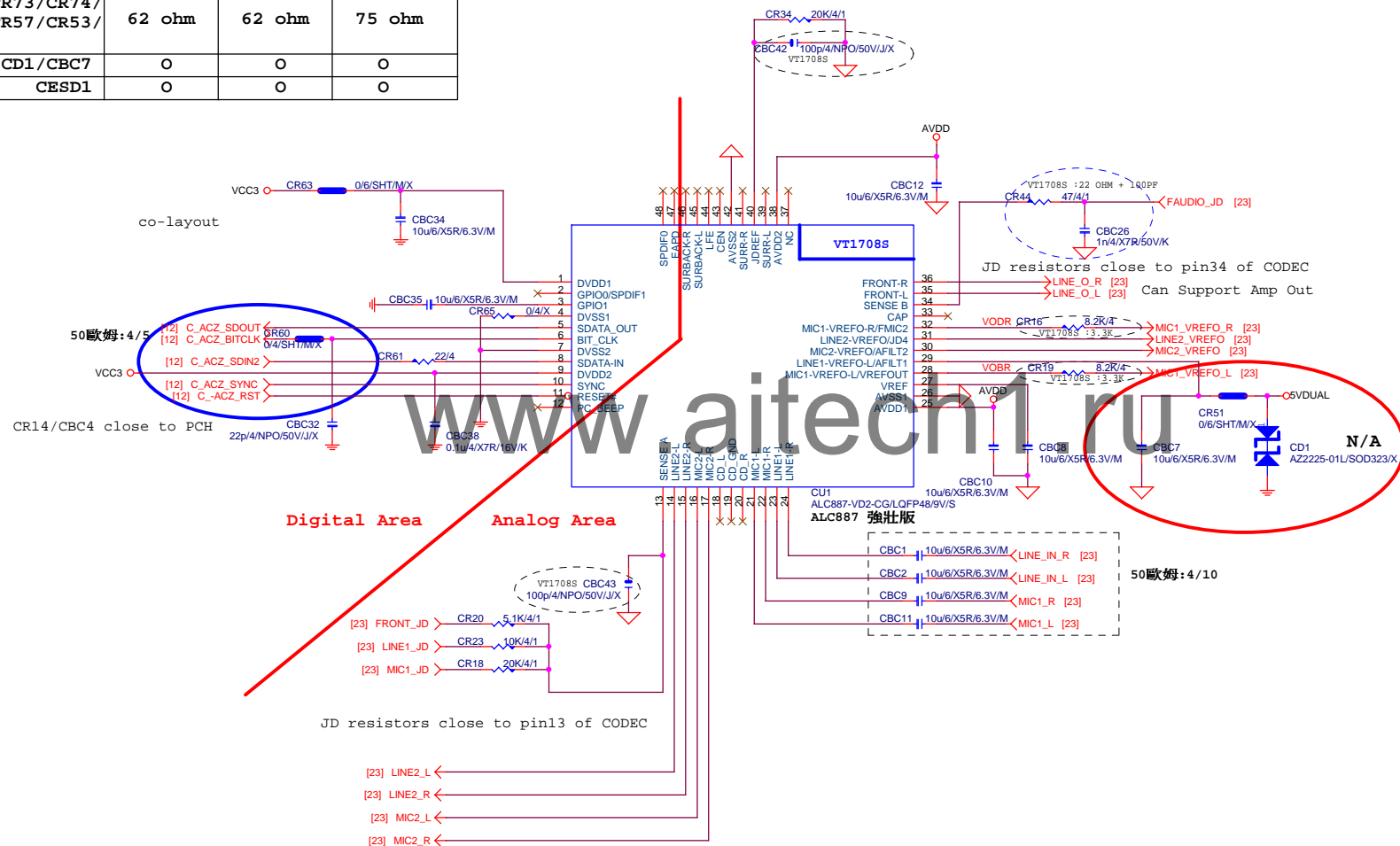


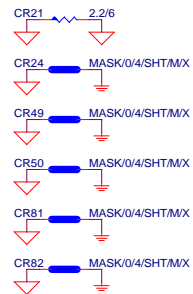
FUSE-0805 F_USB1, F_USB2 4-Port 2.0A



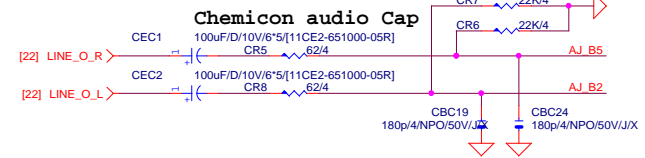
Gigabyte Technology			
FP,F_USB,USB PWR,SPKR,SATA LED			
GA-B85M-D3V-A			
Rev	1.0		
Date:	Monday, January 19, 2015		
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	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	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





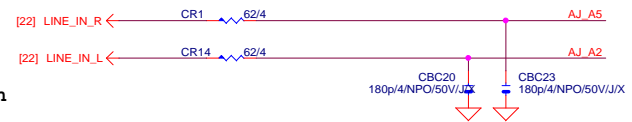
LINE-OUT



LINE-IN

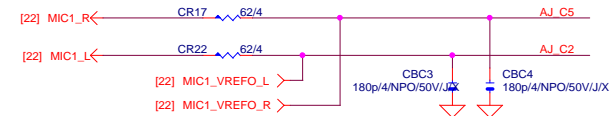
Verify MIC function
in LINE-in

Only reserved for ALC888

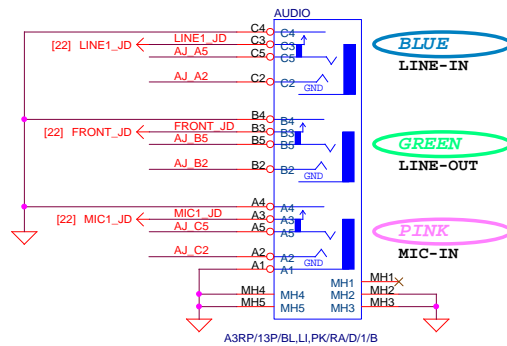


For 889A/888

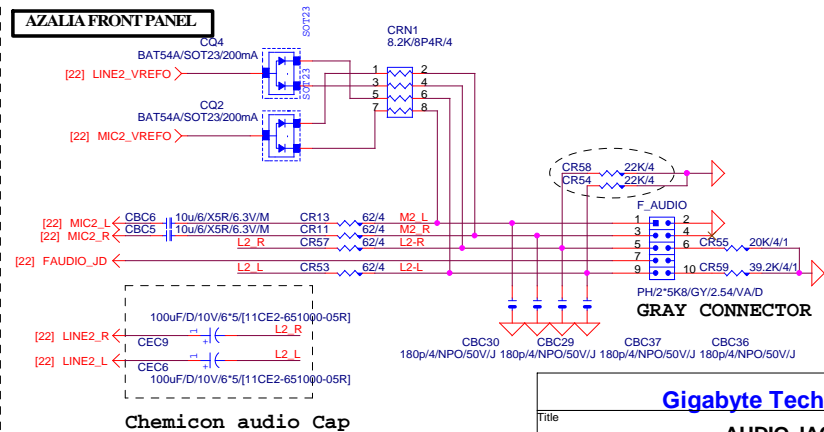
MIC-IN



SPDIF_OUT



AZALIA FRONT PANEL



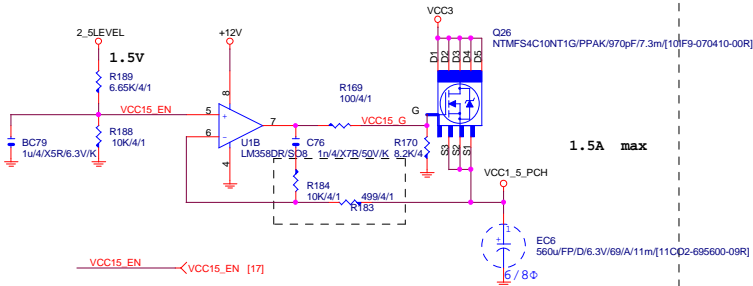
Gigabyte Technology

AUDIO JACK

GA-B85M-D3V-A

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Size	Custom	1.0
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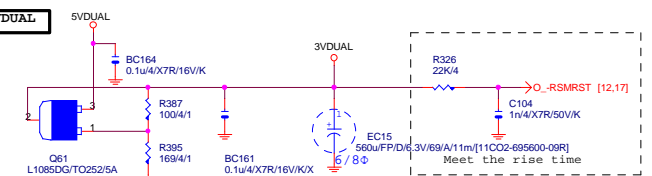
VCC1_5_PCH



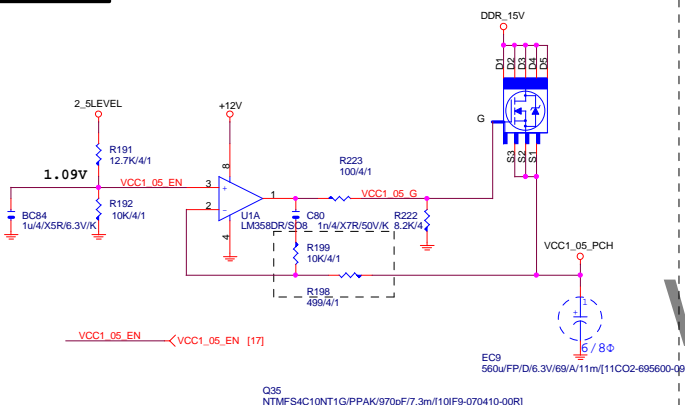
2_5LEVEL



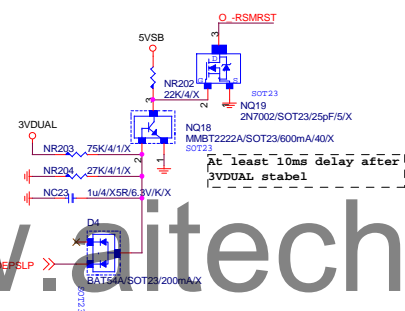
3VDUAL



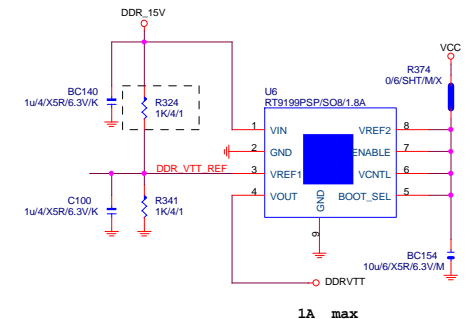
VCC1_05_PCH



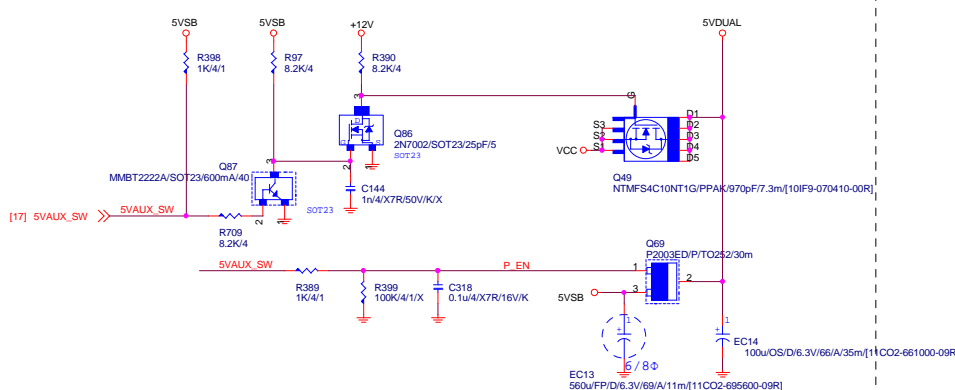
N/A



DDRVTT



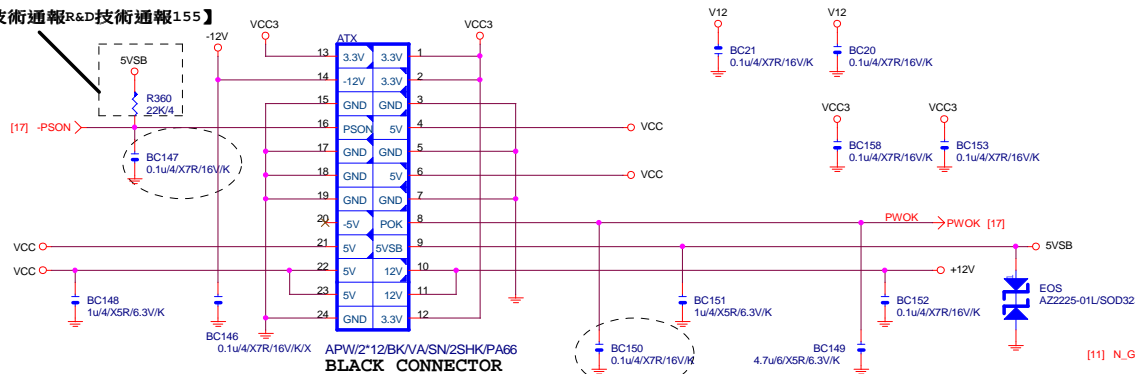
5VDUAL



Gigabyte Technology			
DISCRETE POWER			
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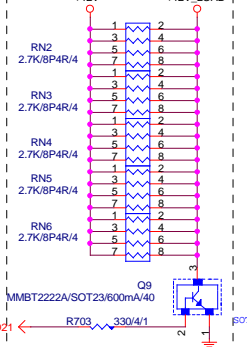
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

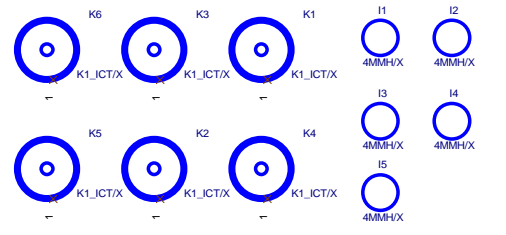
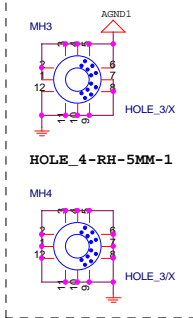
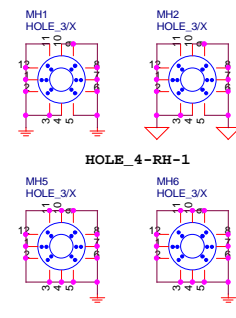
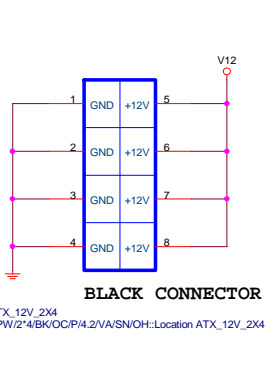


【技術通報R&D技術通報158】

To fix 12V light load abnormal issue



ATXX4 POWER CONNECTOR



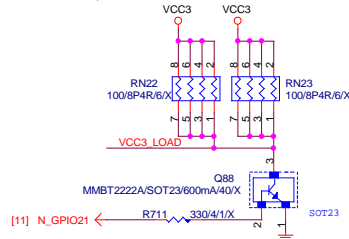
To prevent the 5VSB under loading when boot

TPM

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FIX PWR MINMUN LOAD

N/A

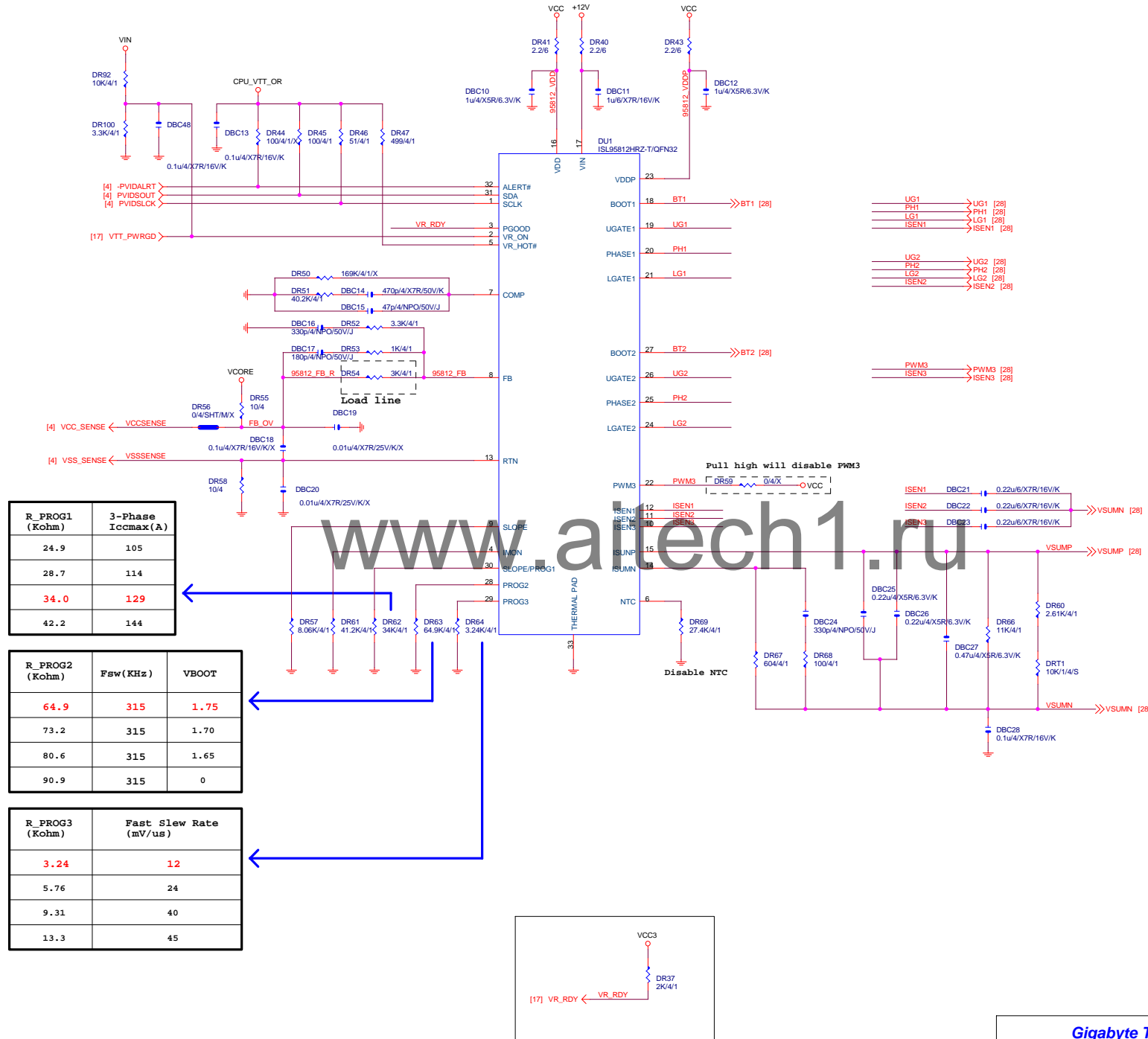


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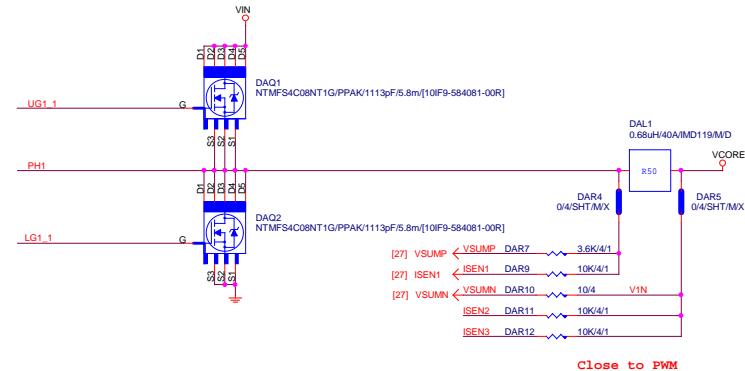
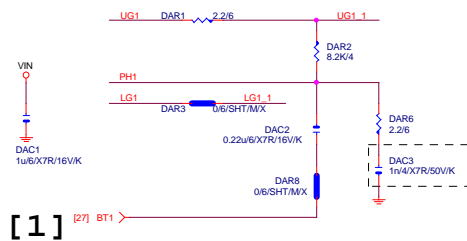
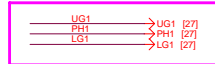
ATX CONNECTOR

GA-B85M-D3V-A

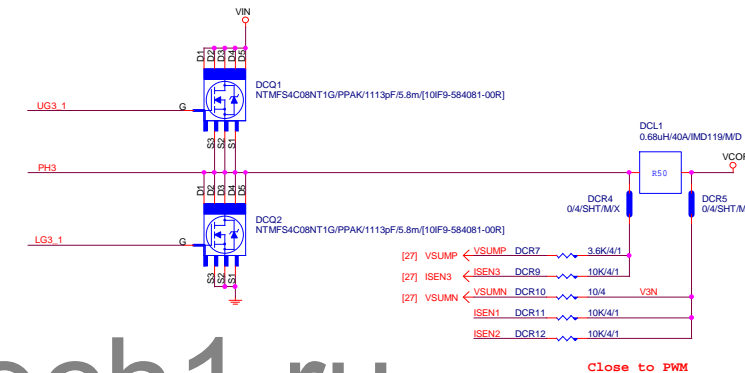
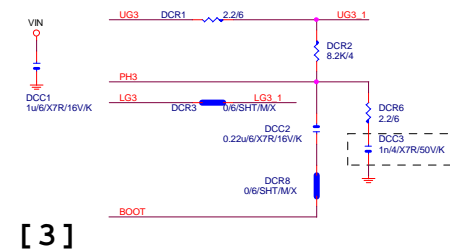
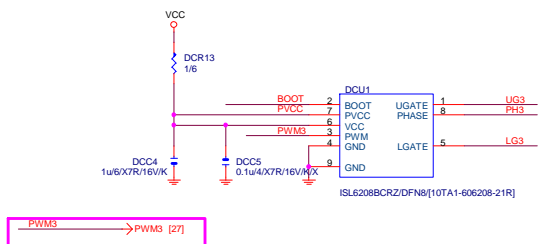
Rev 1.0



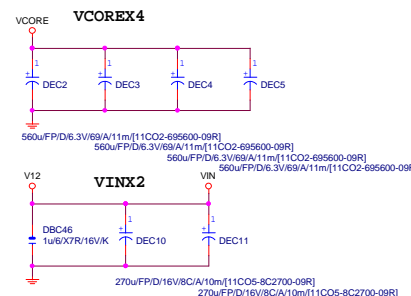
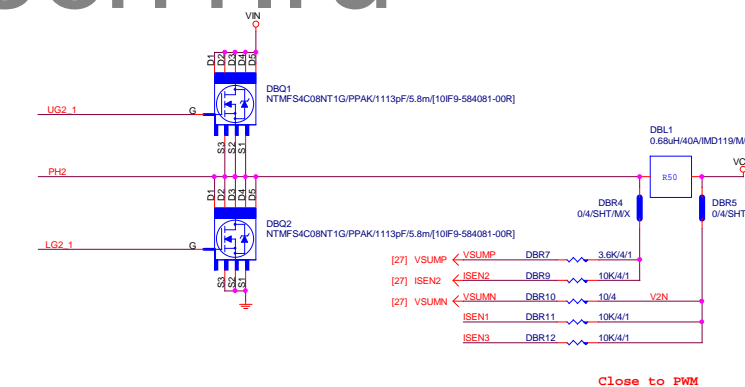
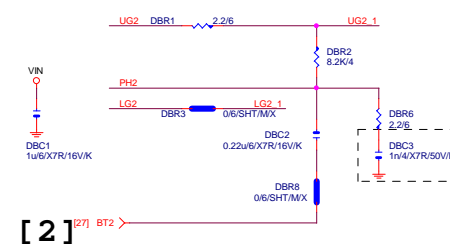
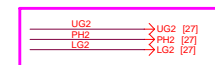
PHASE 1



PHASE 3

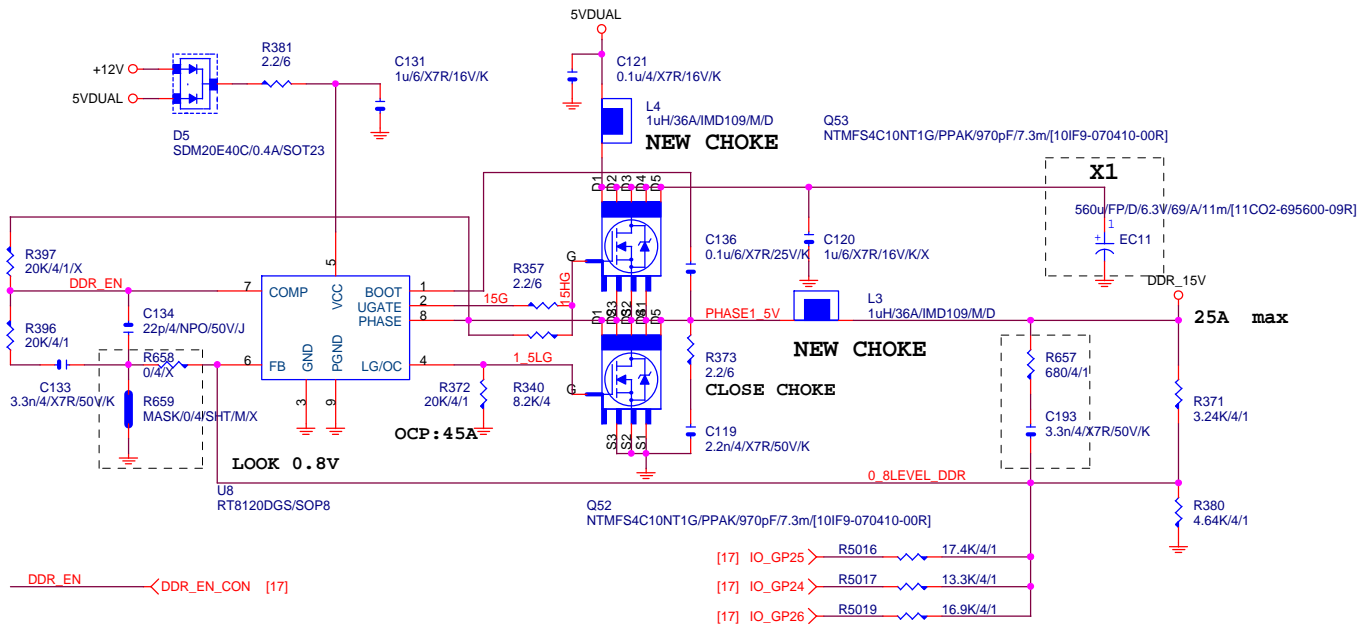


PHASE 2



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DDR15V



From DDR_15V source
10 mils trace to SIO

DDR_15V DDR_15VIO
MR20 0/4/SHT/M/X

PWR_SEQ

	H	L	L	L
GP26	H	H	L	H
GP25	H	H	L	H
GP24	H	H	H	L
	1.35V	1.50V	1.65V	1.70V

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

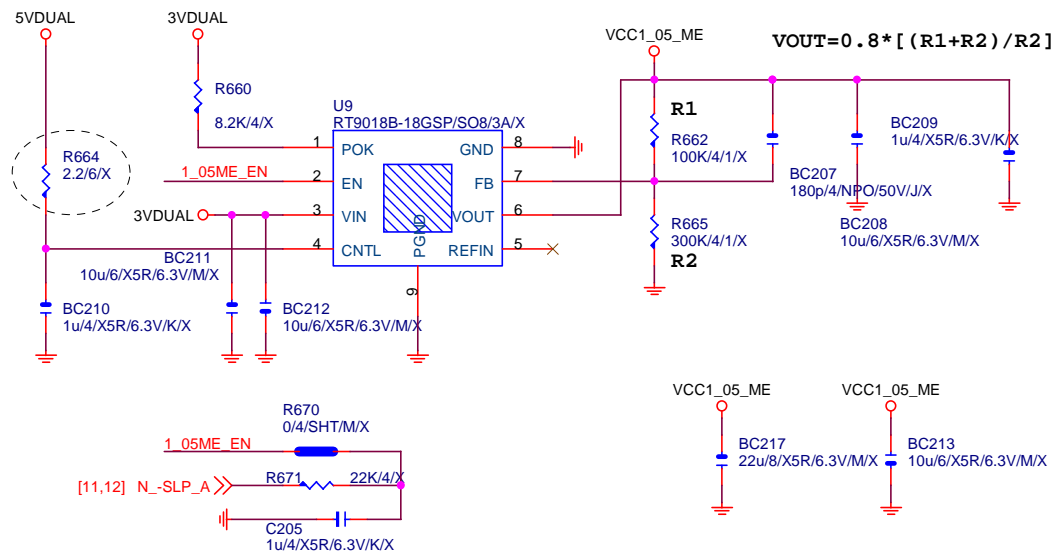
$Rocset = (I_{ocp} * L_{gate, rdson}) / I_{ocset}$
 $Rocset = (45A * 6.7m\Omega) / 10uA = 30K$
 $I_{ocset} = 10uA$

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DDR POWER			
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N/A

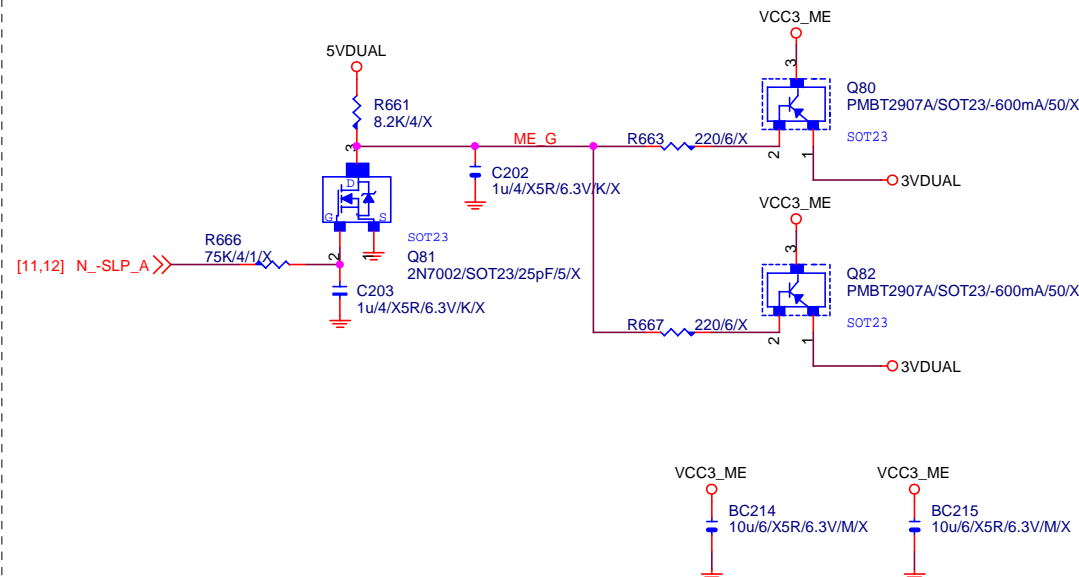
【技術通報R&D技術通報156】
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值



Second source
EM5103 - 10GL2-305103-01R
NCT3730S -
10GL2-303730-01R

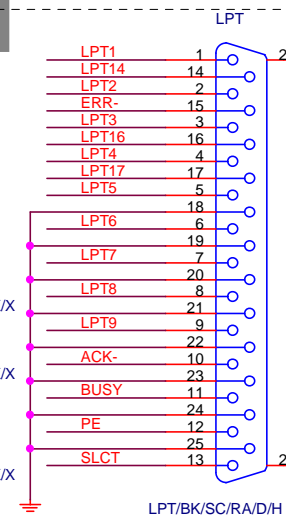
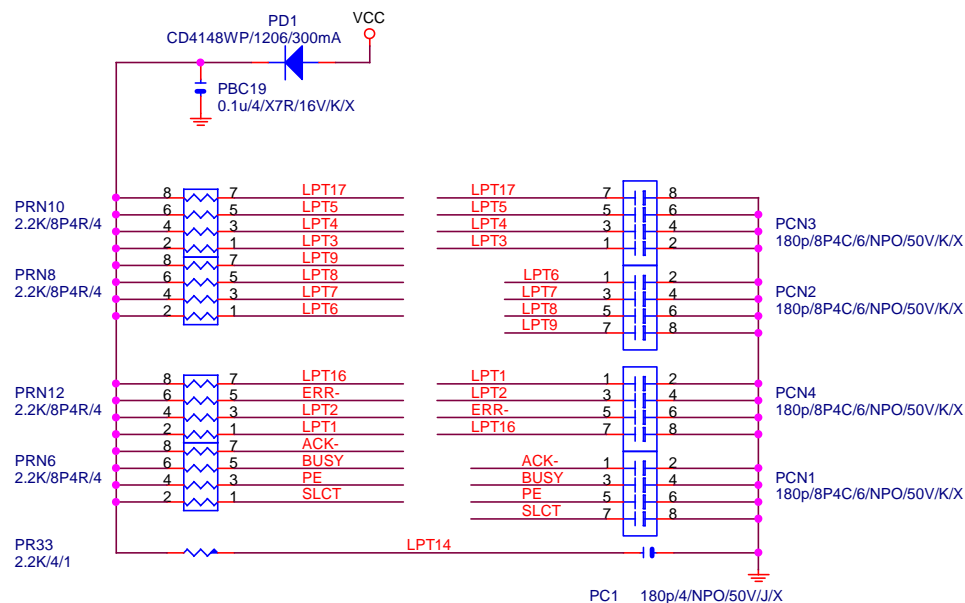
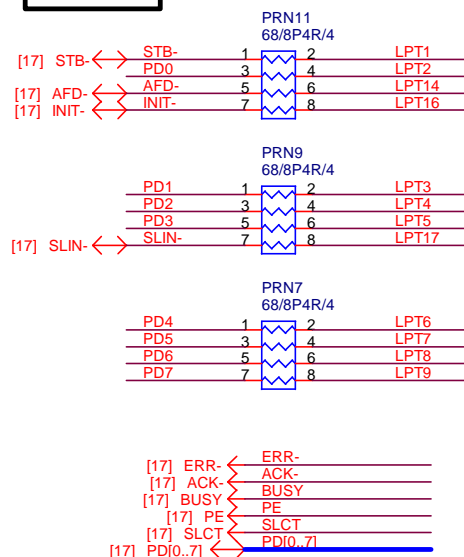
VCC3_ME

N/A



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

LPT PORT



Color: Black

Gigabyte Technology

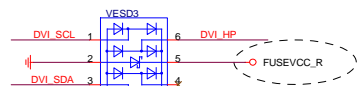
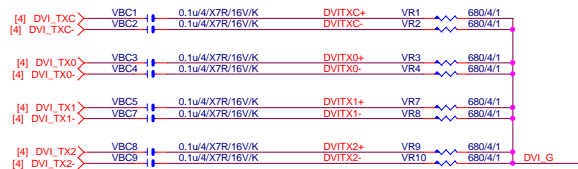
LPT

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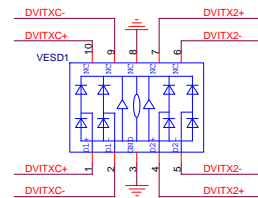
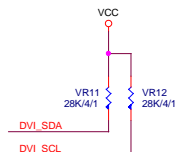
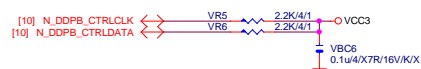
Title			
LPT			
Size Customr	Document Number		Rev
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DVI



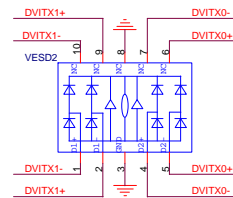
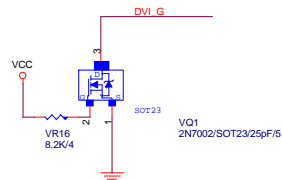
AZ0399-04S.R7G/SOT23-6L[10DEF-550099-20R_10TA1-0I8902-10R]

Close to connector



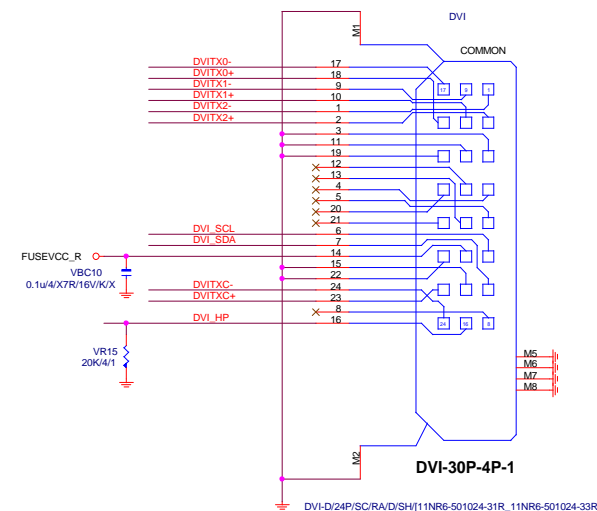
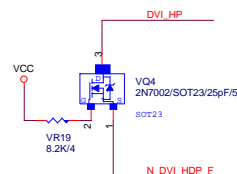
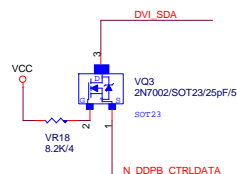
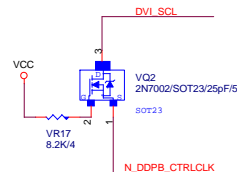
AZ1045-04F/MSOP10

Close to connector



AZ1045-04F/MSOP10

Close to connector



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