

Model Name: GA-B85M-Game Plus

SHEET	TITLE	Revision 1.0
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 1,2	
08	DDR III CHANNEL B 1,2	
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*4 SLOT	
16	PCI SLOT1,2	
17	ITE 8728 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 ALC892-GR	
23	REAR AUDIO JACK	
24	REALTEK RTL8111F	
25	DISCRETE POWER	
26	ATX , CLOCK GEN, TPM	
27	VCORE ISL95820_1	

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

www.aitech1.ru

Model Name: GA-B85M-Game Plus

Component value change history

Revision 1.0
P-Code U12090-0

[illegible]

Circuit or PCB layout change

[illegible]

BLOCK DIAGRAM

PCI EXPRESS X16

DVI, HDMI

RGB

PCI EXPRESS X4

PCI BRIDGE ITE IT8892

Realtek RTL8111F

USB2.0 PORTS X12

USB3.0 PORTS X4

INTEL LGA1150

VRD12.5

PCH (B85)

Realtek ALC892

AUDIO PORTS : FRONT AUDIO
LIN_ OUT LINE_IN MIC CD_IN
SURROUND CEN/LEF SURR BACK

CHANNEL A
DDRIII DIMM X 2

CHANNEL B
DDRIII DIMM X 2

SATAIII*4/SATAII*2

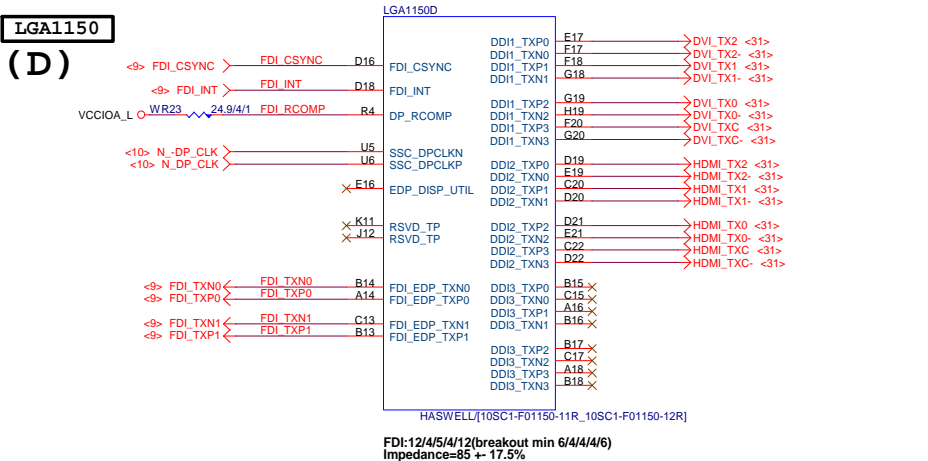
DUAL BIOS

LPC I/O ITE8728

I/O PORTS :
COM KB/MS

FRONT PANEL / FAN

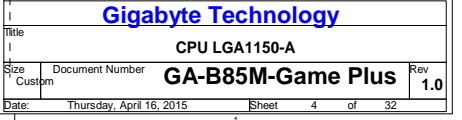
LGA1150
(D)



-CPURST



CPU PU/PD



LGA1150 (A)

MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0
MAAA1	AV16	DDR0_MA1	DDR0_D01	AD39	MDA1
MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2
MAAA3	AW17	DDR0_MA3	DDR0_D03	AF39	MDA3
MAAA4	AU17	DDR0_MA4	DDR0_D04	AD37	MDA4
MAAA5	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5
MAAA6	AV17	DDR0_MA6	DDR0_D06	AE37	MDA6
MAAA7	AT18	DDR0_MA7	DDR0_D07	AF40	MDA7
MAAA8	AU18	DDR0_MA8	DDR0_D08	AH40	MDA9
MAAA9	AT19	DDR0_MA9	DDR0_D09	AH39	MDA10
MAAA10	AW11	DDR0_MA10	DDR0_D10	AK38	MDA10
MAAA11	AV19	DDR0_MA11	DDR0_D11	AK39	MDA11
MAAA12	AU19	DDR0_MA12	DDR0_D12	AH37	MDA12
MAAA13	AT20	DDR0_MA13	DDR0_D13	AH38	MDA13
MAAA14	AT20	DDR0_MA14	DDR0_D14	AK37	MDA14
MAAA15	AU21	DDR0_MA15	DDR0_D15	AK40	MDA15
MODT_A0	AW10	DDR0_ODT0	DDR0_D16	AM40	MDA17
MODT_A1	AY8	DDR0_ODT1	DDR0_D17	AM39	MDA21
MODT_A2	AW9	DDR0_ODT2	DDR0_D18	AP38	MDA18
MODT_A3	AU8	DDR0_ODT3	DDR0_D19	AP39	MDA19
			DDR0_D20	AM37	MDA20
			DDR0_D21	AM38	MDA16
			DDR0_D22	AP37	MDA22
			DDR0_D23	AP40	MDA23
			DDR0_D24	AW37	MDA29
			DDR0_D25	AU35	MDA26
			DDR0_D26	AU35	MDA27
			DDR0_D27	AT37	MDA28
			DDR0_D28	AU37	MDA24
			DDR0_D29	AT35	MDA30
			DDR0_D30	AW35	MDA31
			DDR0_D31	AW6	MDA33
			DDR0_D32	AW6	MDA37
			DDR0_D33	AW4	MDA34
			DDR0_D34	AU4	MDA35
			DDR0_D35	AW6	MDA36
			DDR0_D36	AW6	MDA32
			DDR0_D37	AW4	MDA38
			DDR0_D38	AW4	MDA39
			DDR0_D39	AR1	MDA41
			DDR0_D40	AR4	MDA45
			DDR0_D41	AN3	MDA42
			DDR0_D42	AN4	MDA43
			DDR0_D43	AR2	MDA44
			DDR0_D44	AR3	MDA40
			DDR0_D45	AN2	MDA46
			DDR0_D46	AN1	MDA47
			DDR0_D47	AL1	MDA49
			DDR0_D48	AL4	MDA53
			DDR0_D49	AL4	MDA50
			DDR0_D50	AJ4	MDA51
			DDR0_D51	AJ2	MDA52
			DDR0_D52	AJ2	MDA48
			DDR0_D53	AJ2	MDA54
			DDR0_D54	AJ1	MDA55
			DDR0_D55	AG1	MDA57
			DDR0_D56	AG4	MDA61
			DDR0_D57	AE3	MDA58
			DDR0_D58	AE4	MDA59
			DDR0_D59	AG2	MDA60
			DDR0_D60	AG3	MDA56
			DDR0_D61	AE2	MDA62
			DDR0_D62	AE2	MDA63
			DDR0_D63	AE1	MDA64
			DDR0_D64	AE39	DQSA0
			DDR0_D65	AJ39	DQSA1
			DDR0_D66	AN39	DQSA2
			DDR0_D67	AV36	DQSA3
			DDR0_D68	AV5	DQSA4
			DDR0_D69	AP3	DQSA5
			DDR0_D70	AK3	DQSA6
			DDR0_D71	AF3	DQSA7
			DDR0_D72	AV32	DQSA8
			DDR0_D73	AE38	DQSA9
			DDR0_D74	AJ38	DQSA1
			DDR0_D75	AN38	DQSA2
			DDR0_D76	AJ36	DQSA3
			DDR0_D77	AW5	DQSA4
			DDR0_D78	AP2	DQSA5
			DDR0_D79	AK2	DQSA6
			DDR0_D80	AF2	DQSA7
			DDR0_D81	AU32	DQSA8
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(F, J) 

(G,H,I)

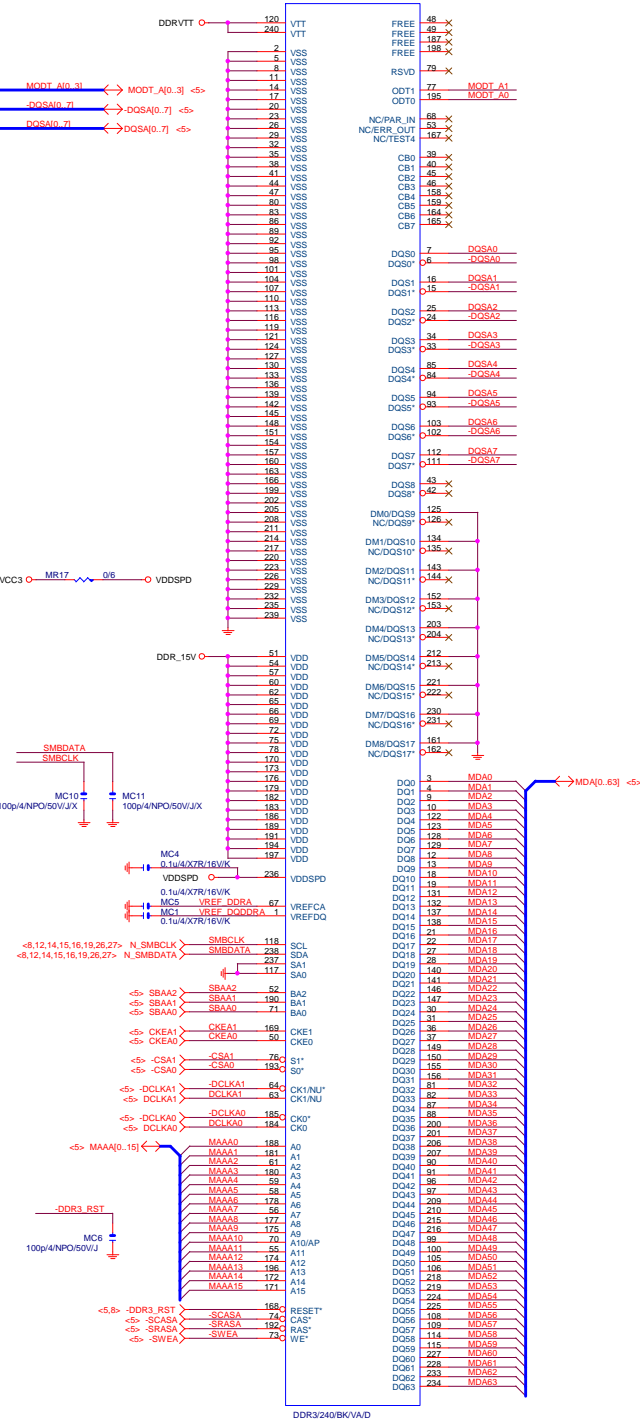


VCore CAP (X18)

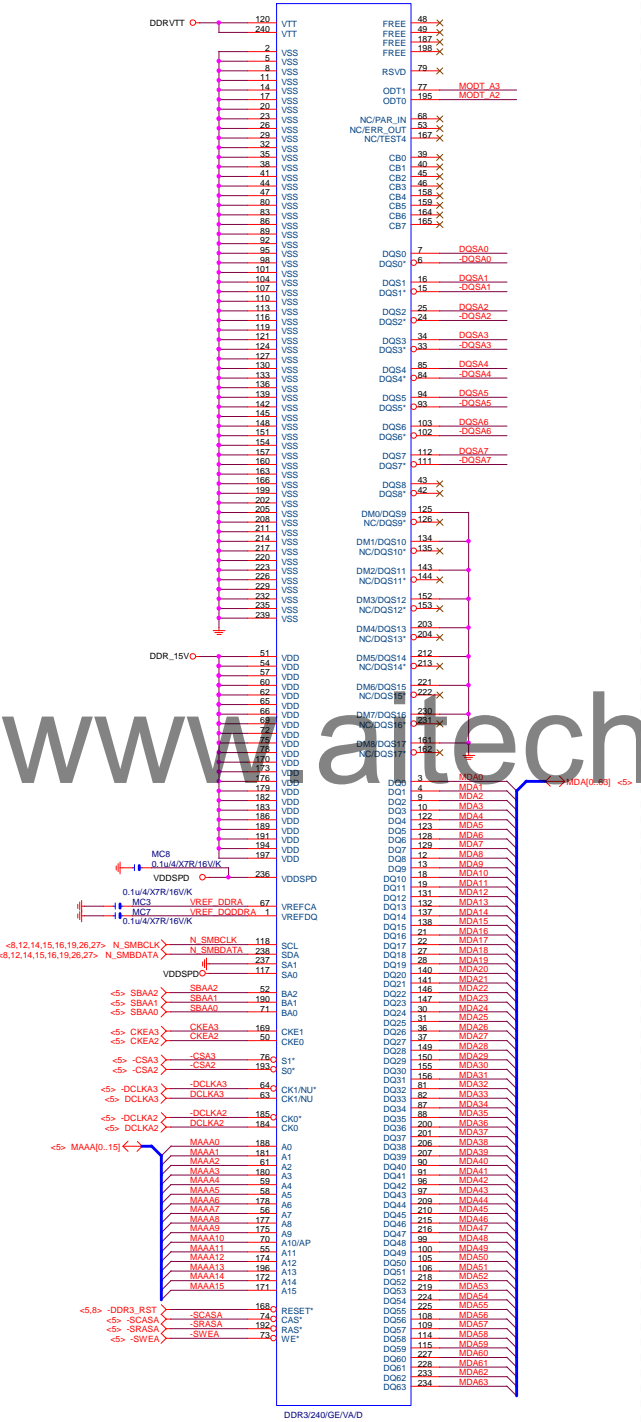


DDR3

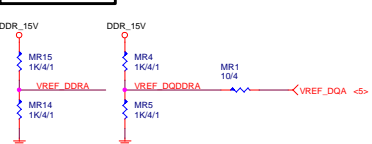
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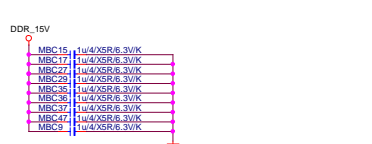
DDR3



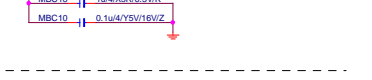
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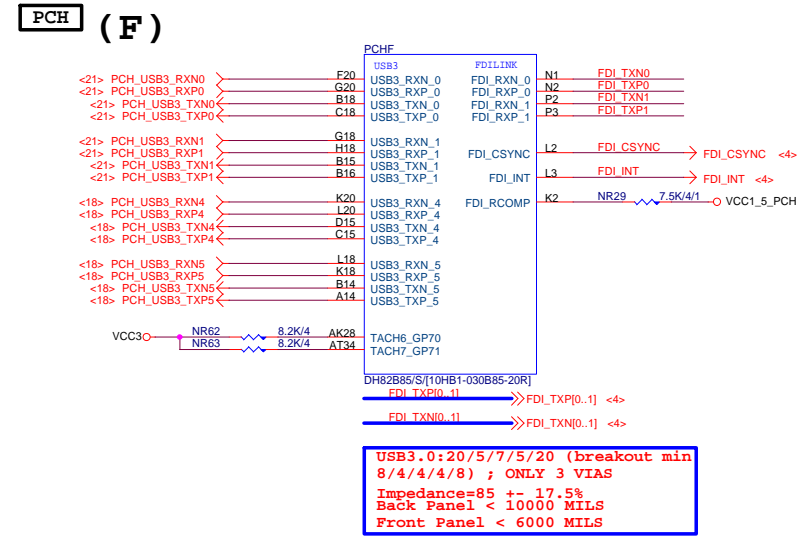
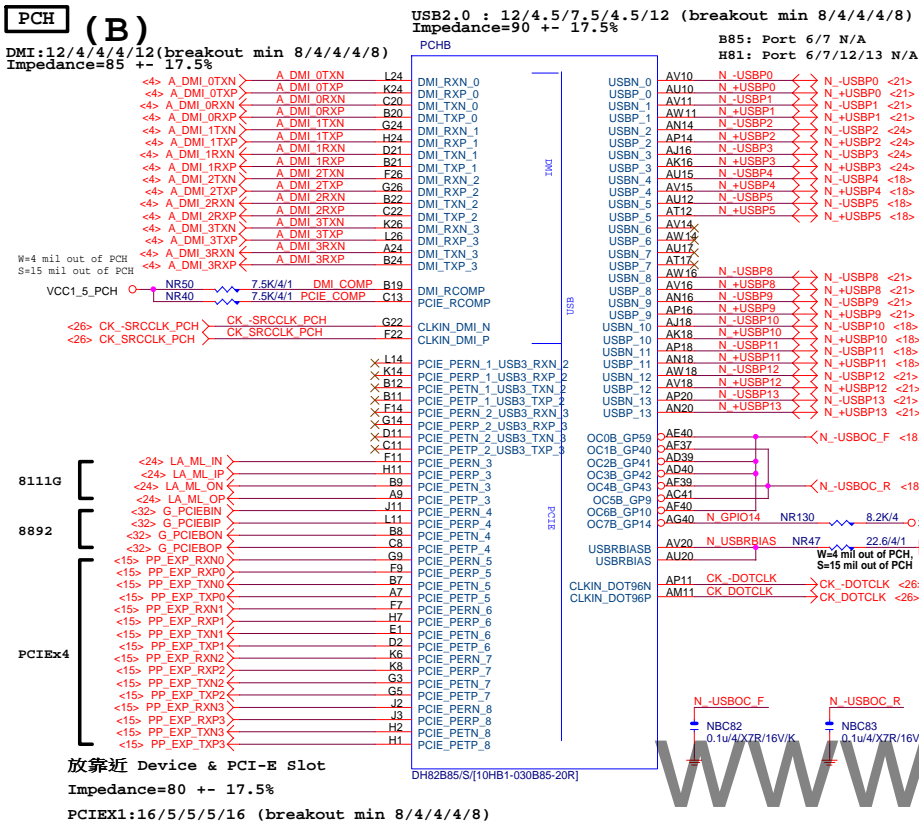


DDR15V Decouple

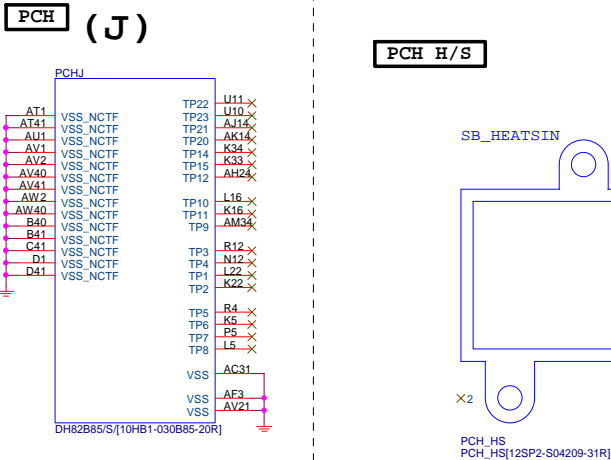
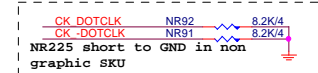
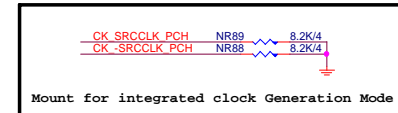


DDR VTT Decouple





PCH CLK PD



USB TABLE

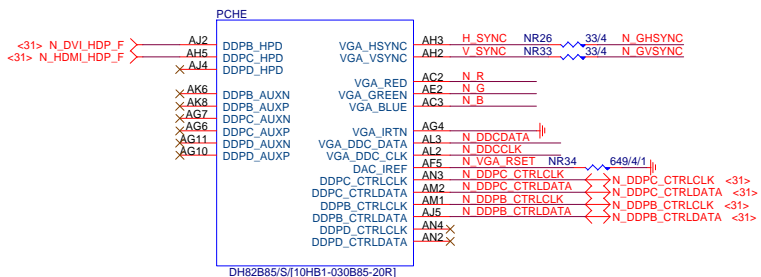
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)

USB OC#	Configure
OC0#	F_USB30
OC1#	F_USB1
OC2#	F_USB2
OC3#	F_USB3
OC4#	USB_LAN
OC5#	R_USB30
OC6#	KB_MS_USB
OC7#	Not Use

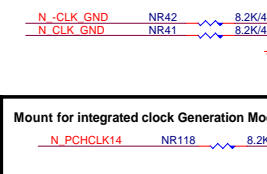
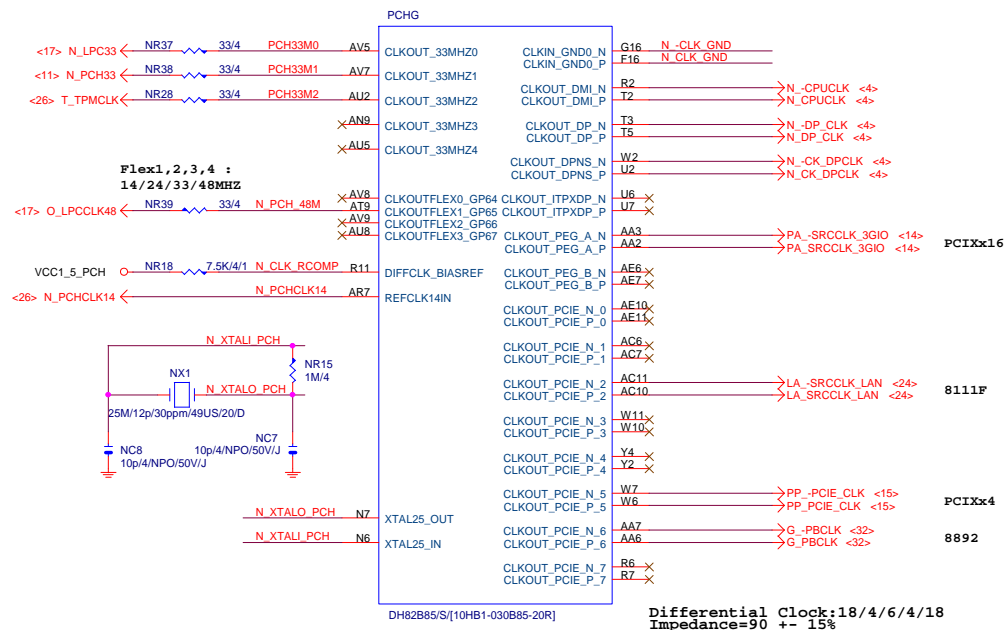
Gigabyte Technology

Title			PCH FDI,DMI,USB ,PCIE,NVRAM	
Size	Document Number	GA-B85M-Game Plus		Rev 1.0
Custom				
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PCH (E)



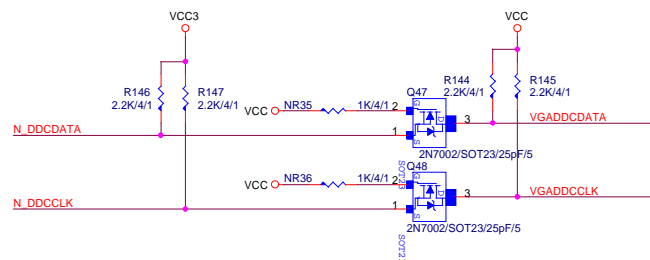
PCH (G)



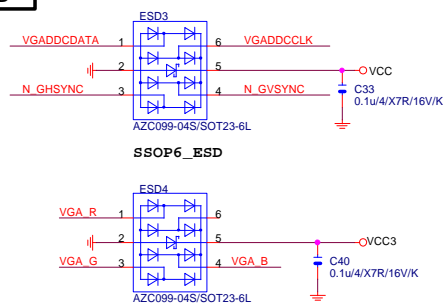
PCH CLK PD



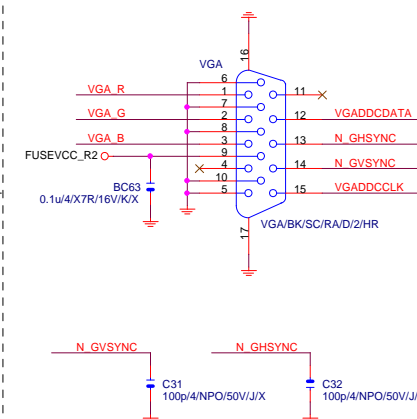
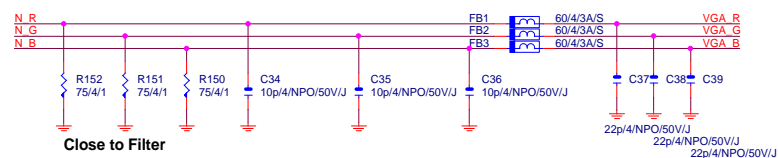
VGA DDC



VGA ESD



VGA DDC



Gigabyte Technology

PCH DISPLAY ,CLK BUFFER

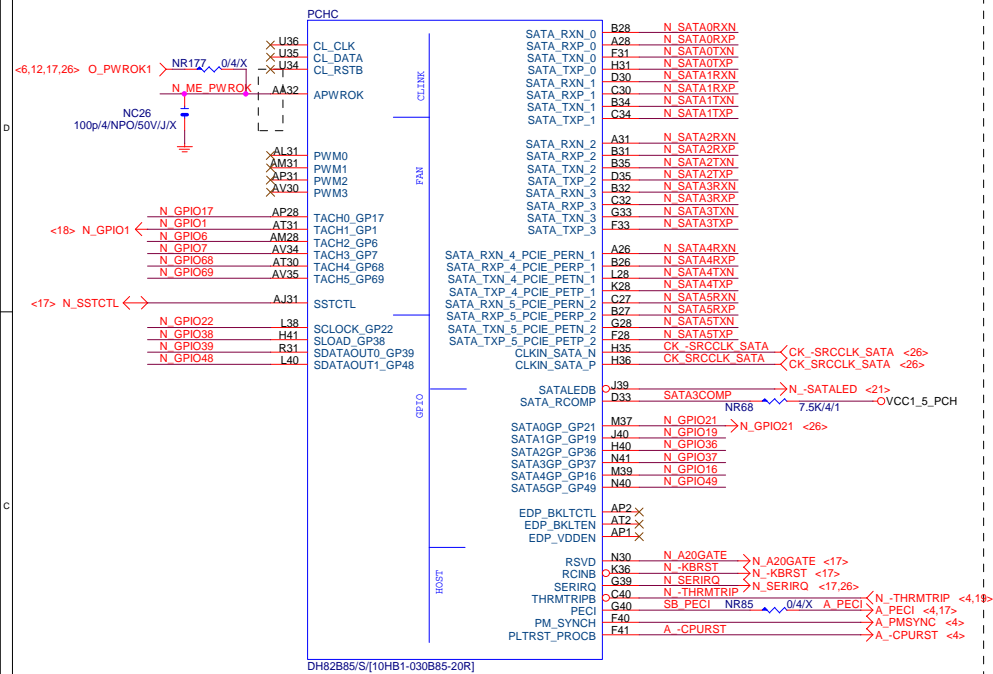
GA-B85M-Game Plus

Date: Thursday, April 16, 2015 Sheet 10 of 32

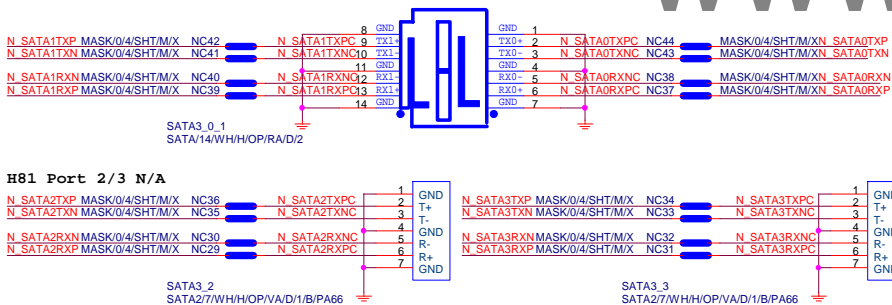
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PCH (C)

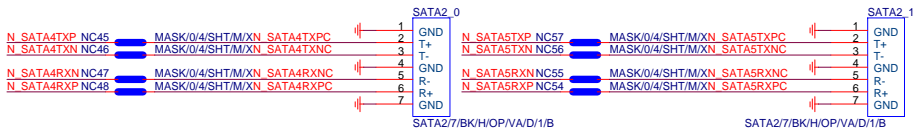
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +/- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +/- 17.5%



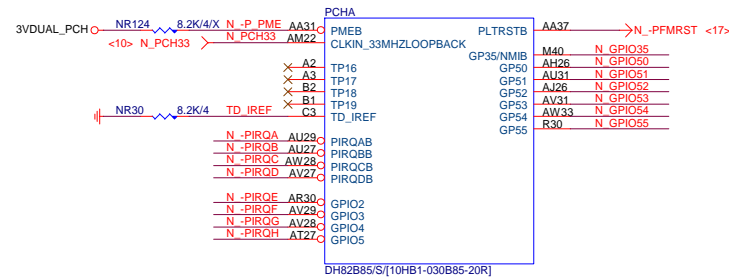
SATA CONNECTOR



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

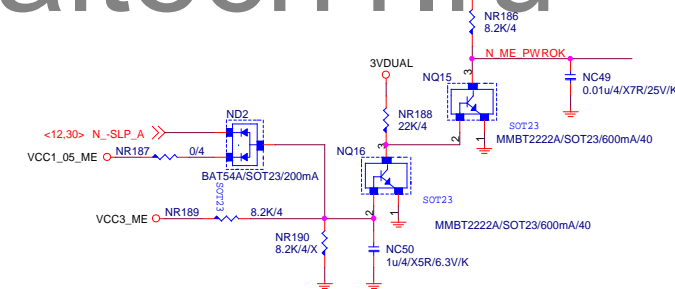


PCH (A)

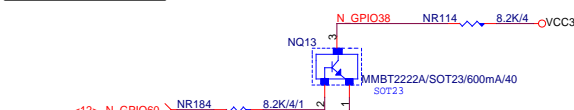


ME PWROK

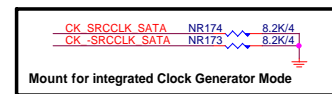
Z87 N/A



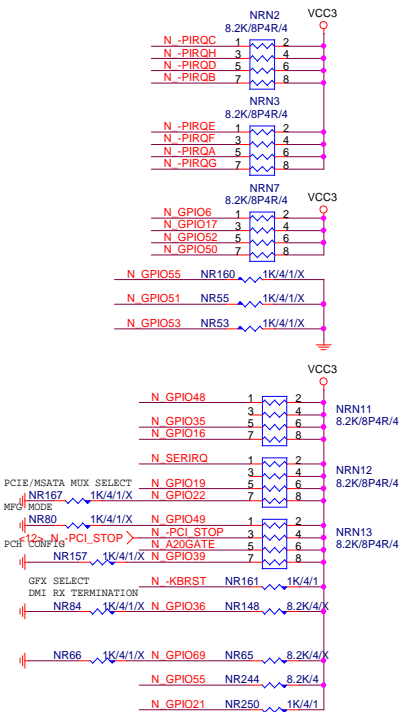
GPIO38 Ctrl1



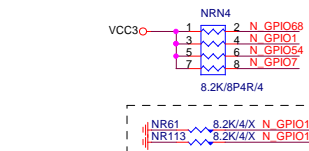
PCH CLK PD



PCH PU/PD



GPIO37 PU VCC3 ENABLE SBA
For H87&B85



(D)



At least 10ms delay after 3VDUAL_PCH is asserted

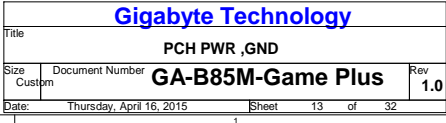
At least 40ns lead fall to 0V before 3VDUAL_PCH falls to 2V

NR155 8.2K/4/X N_GPIO45 3VDUAL
 NR139 8.2K/4/X N_GPIO46 1 2
 NR103 8.2K/4/X N_GPIO44 3 4
 N_GPIO57 5 6
 7 8 NR9 8.2K/8P4R/4
 A -SKTOCC 1 2
 N_TEMP_ALARM 3 4
 N_RI 5 6
 7 8 NR10 8.2K/8P4R/4
 GP8:Low to enable
 PCH clock chip
 NR106 1K/4/1 N_IGC_EN NR105 8.2K/4/X
 NR153 1K/4/1X N_SUSCLK NR154 8.2K/4/X
 SUSCLK:Low to OD
 PLL VR
 N -SUSTAT NR133 8.2K/4/X
 -D_GPIO HRST NR51 1K/4/1
 N_GPIO28 NR144 1K/4/1
 N_GPIO29 NR96 1K/4/1
 GP28:Lo disable
 _Hi enable
 VRM

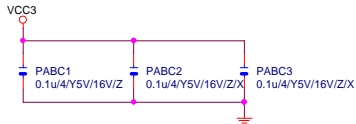
3VDUAL_PCH
 N -S_WARN NR129 8.2K/4/X
 N_GPIO27 NR60 8.2K/4/X
 N_GPIO31 NR72 8.2K/4/X
 N -SLP_LAN NR73 8.2K/4/X
 N_GPIO72 NR100 8.2K/4/X
 N -PCIE_WAKE NR76 1K/4/1
 N_GPIO29 NR95 1K/4/1X
 VCC3
 NR145 8.2K/4/X N_GPIO20 NR109 1K/4/1
 N_GPIO0 NR115 8.2K/4/X
 N -SYS_RST NR164 8.2K/4/X
 N_GPIO32 NR162 8.2K/4/X
 NR48 8.2K/4/X N_GPIO33 NR49 8.2K/4/X
 3VDUAL
 N_PCH_RST NR172 20K/4/1
 N_PCH_TDI NR170 200/4/1
 N_PCH_TDO NR141 200/4/1
 N_PCH_TMS NR169 200/4/1
 N_PCH_TCK NR87 200/4/1X
 N_PCH_RST NR143 1K/4/1X
 N_PCH_TDI NR171 100/4/1
 N_PCH_TDO NR168 100/4/1
 N_PCH_TMS NR142 100/4/1
 N_PCH_TCK NR108 51K/4/1
 N_GPIO18 NR79 8.2K/4/X
 N_GPIO73 NR134 8.2K/4/X
 N_GPIO26 NR107 8.2K/4/X
 N_GPIO25 NR137 8.2K/4/X
 N -SYS_RST NC58 1n/4/X/R/50V/K
 N_DRAM_PWROK NC59 1n/4/X/R/50V/K

[illegible]

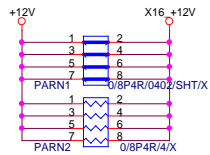
Title			
PCH GPIO , CTRL , AUDIO			
Size	Document Number	GA-B85M-Game Plus	Rev
Custom			1.0
Date:	Thursday, April 16, 2015	Sheet 12 of 32	



PCIEX16 CAP



PCIEX16 PROTECT SHT

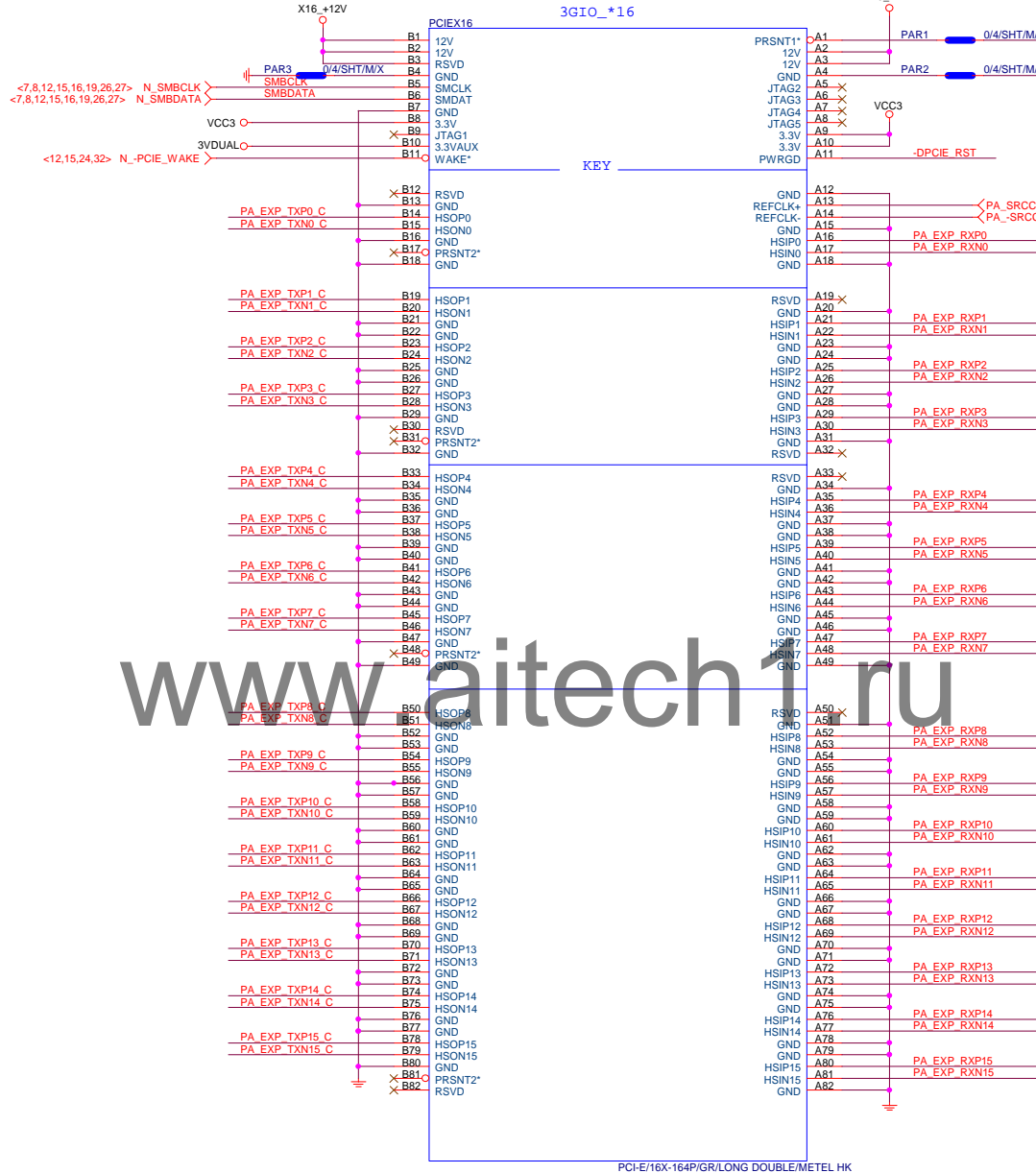


PCIEX16 AC CAP

PA EXP TXP0 C	PAC5	0.22u/4/X5R6.3V/K	PA EXP TXP0 C
PA EXP TXN0 C	PAC4	0.22u/4/X5R6.3V/K	PA EXP TXN0 C
PA EXP TXP1 C	PAC6	0.22u/4/X5R6.3V/K	PA EXP TXP1 C
PA EXP TXN1 C	PAC7	0.22u/4/X5R6.3V/K	PA EXP TXN1 C
PA EXP TXP2 C	PAC8	0.22u/4/X5R6.3V/K	PA EXP TXP2 C
PA EXP TXN2 C	PAC9	0.22u/4/X5R6.3V/K	PA EXP TXN2 C
PA EXP TXP3 C	PAC10	0.22u/4/X5R6.3V/K	PA EXP TXP3 C
PA EXP TXN3 C	PAC11	0.22u/4/X5R6.3V/K	PA EXP TXN3 C
PA EXP TXP4 C	PAC12	0.22u/4/X5R6.3V/K	PA EXP TXP4 C
PA EXP TXN4 C	PAC13	0.22u/4/X5R6.3V/K	PA EXP TXN4 C
PA EXP TXP5 C	PAC14	0.22u/4/X5R6.3V/K	PA EXP TXP5 C
PA EXP TXN5 C	PAC15	0.22u/4/X5R6.3V/K	PA EXP TXN5 C
PA EXP TXP6 C	PAC16	0.22u/4/X5R6.3V/K	PA EXP TXP6 C
PA EXP TXN6 C	PAC17	0.22u/4/X5R6.3V/K	PA EXP TXN6 C
PA EXP TXP7 C	PAC19	0.22u/4/X5R6.3V/K	PA EXP TXP7 C
PA EXP TXN7 C	PAC18	0.22u/4/X5R6.3V/K	PA EXP TXN7 C
PA EXP TXP8 C	PAC20	0.22u/4/X5R6.3V/K	PA EXP TXP8 C
PA EXP TXN8 C	PAC21	0.22u/4/X5R6.3V/K	PA EXP TXN8 C
PA EXP TXP9 C	PAC22	0.22u/4/X5R6.3V/K	PA EXP TXP9 C
PA EXP TXN9 C	PAC23	0.22u/4/X5R6.3V/K	PA EXP TXN9 C
PA EXP TXP10 C	PAC24	0.22u/4/X5R6.3V/K	PA EXP TXP10 C
PA EXP TXN10 C	PAC25	0.22u/4/X5R6.3V/K	PA EXP TXN10 C
PA EXP TXP11 C	PAC26	0.22u/4/X5R6.3V/K	PA EXP TXP11 C
PA EXP TXN11 C	PAC27	0.22u/4/X5R6.3V/K	PA EXP TXN11 C
PA EXP TXP12 C	PAC28	0.22u/4/X5R6.3V/K	PA EXP TXP12 C
PA EXP TXN12 C	PAC29	0.22u/4/X5R6.3V/K	PA EXP TXN12 C
PA EXP TXP13 C	PAC30	0.22u/4/X5R6.3V/K	PA EXP TXP13 C
PA EXP TXN13 C	PAC31	0.22u/4/X5R6.3V/K	PA EXP TXN13 C
PA EXP TXP14 C	PAC32	0.22u/4/X5R6.3V/K	PA EXP TXP14 C
PA EXP TXN14 C	PAC33	0.22u/4/X5R6.3V/K	PA EXP TXN14 C
PA EXP TXP15 C	PAC34	0.22u/4/X5R6.3V/K	PA EXP TXP15 C
PA EXP TXN15 C	PAC35	0.22u/4/X5R6.3V/K	PA EXP TXN15 C

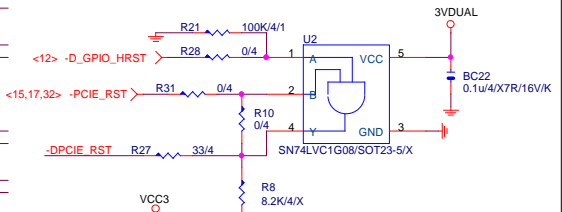
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PA EXP RXN0..15] >>>PA_EXP_RXN[0..15] <4>
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PA EXP TXN0..15] >>>PA_EXP_TXN[0..15] <4>

PCIEX16 SLOT

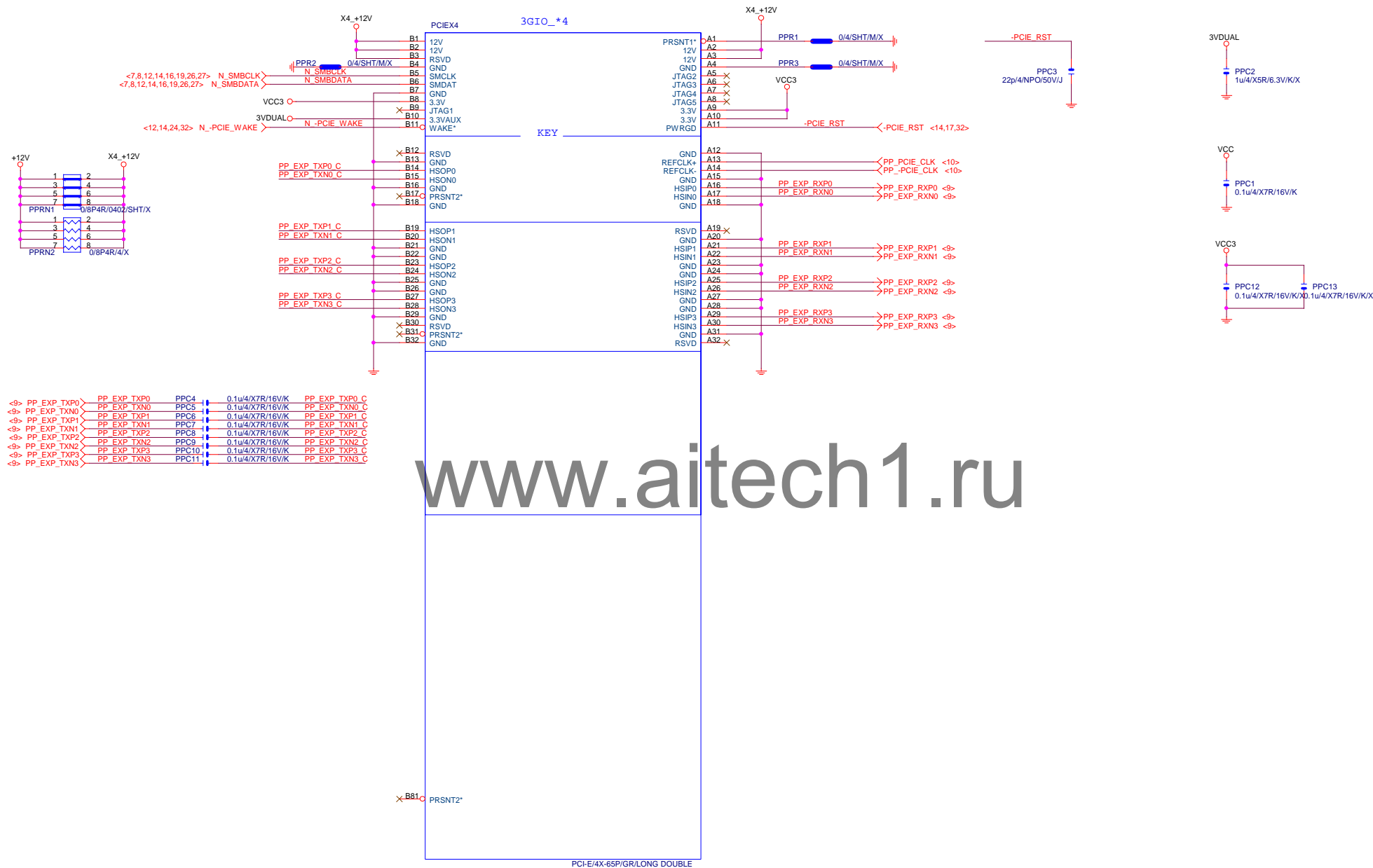


PCI-E/16X-164P/GR/LONG DOUBLE/METEL HK

The auxillary reset circuit is only required for PCIe Gen3 margining and functional link training



PCIEX4 SLOT

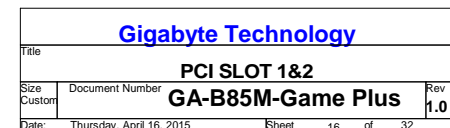


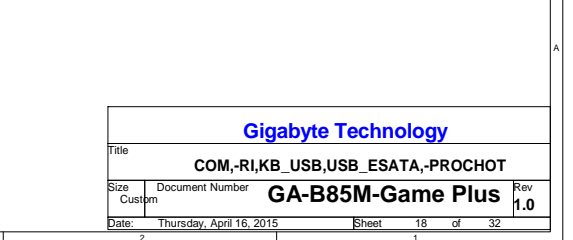
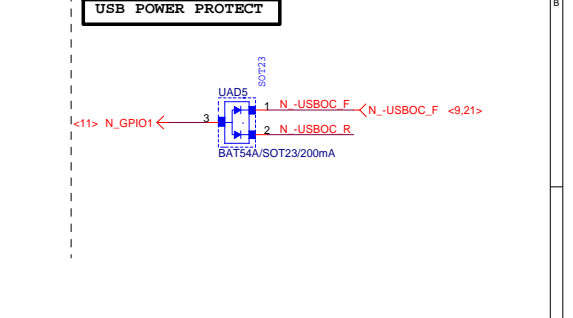
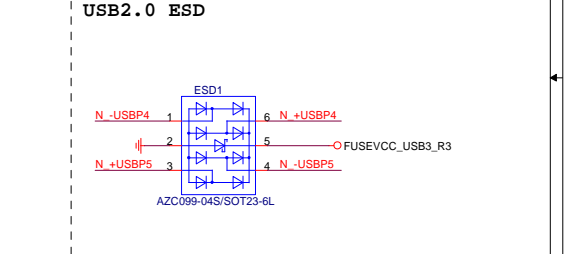
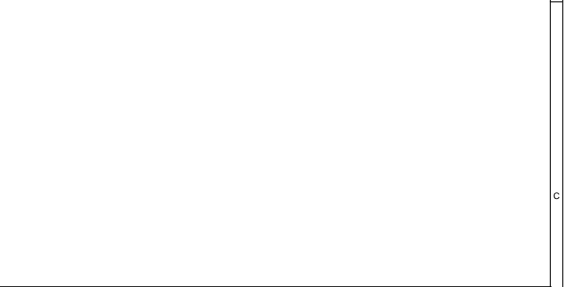
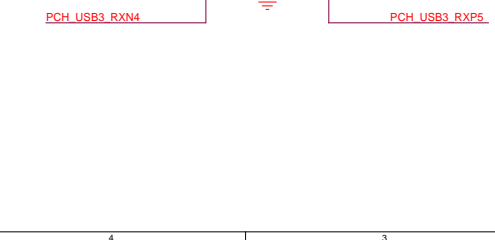
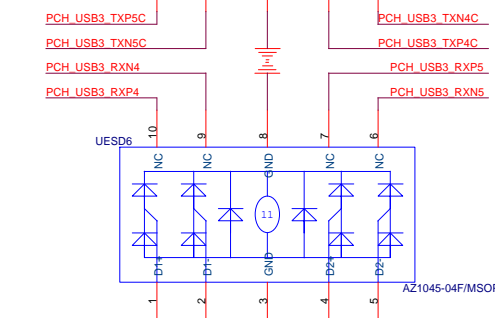
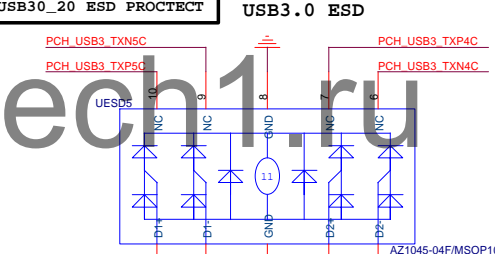
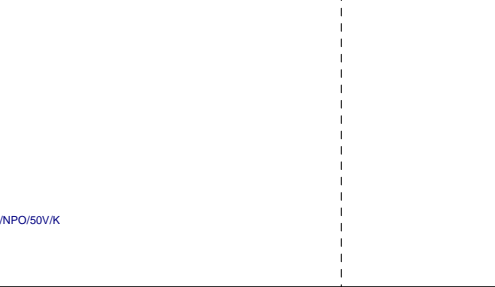
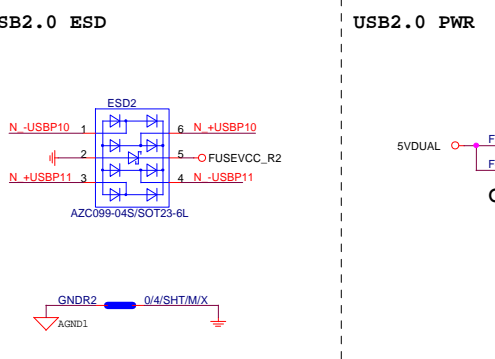
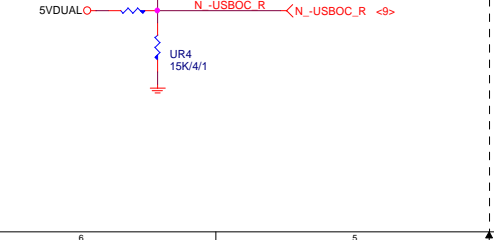
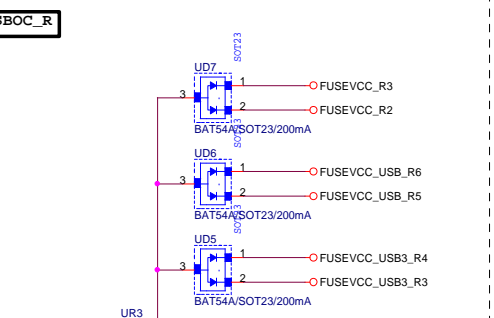
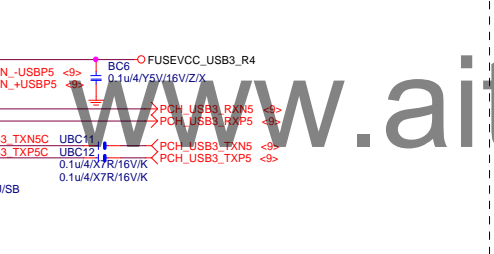
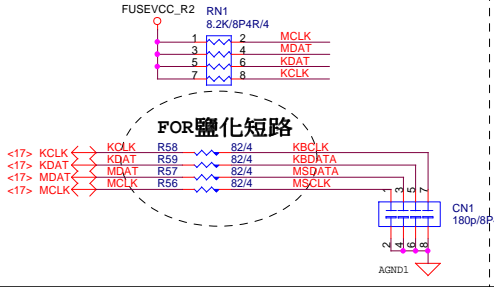
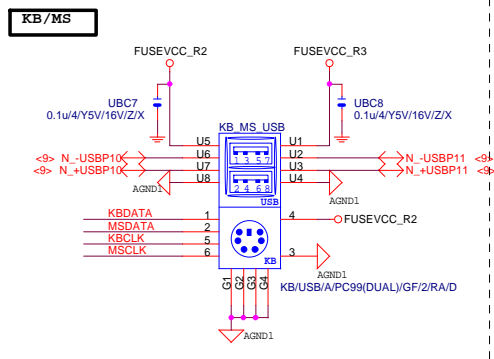
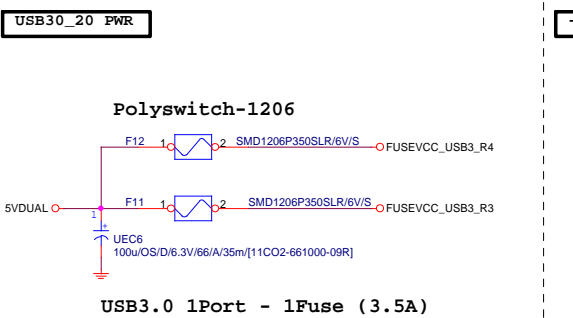
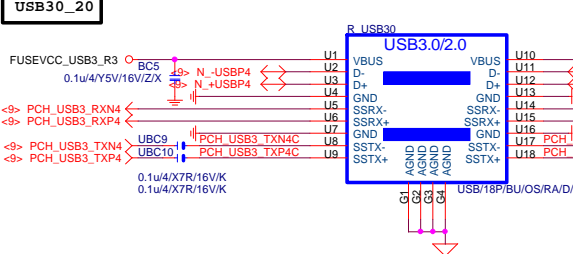
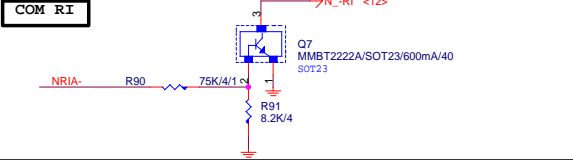
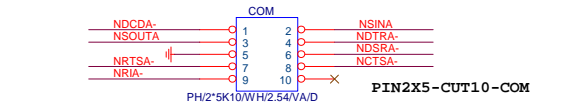
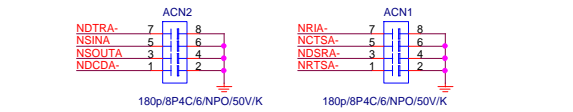
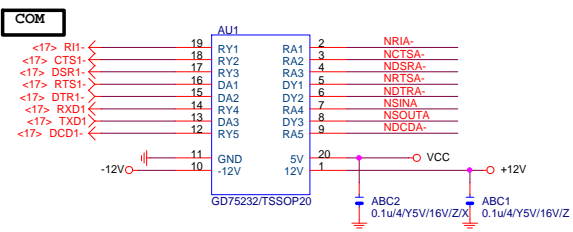
www.aitech1.ru

PCI SLOT 2

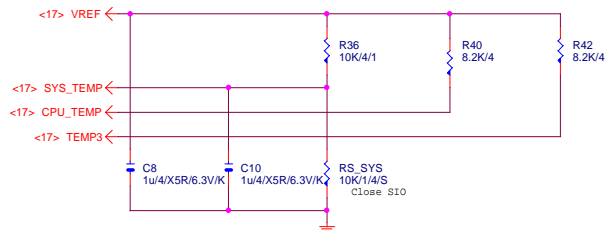


PCI CAP

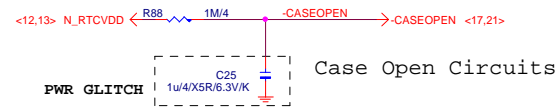




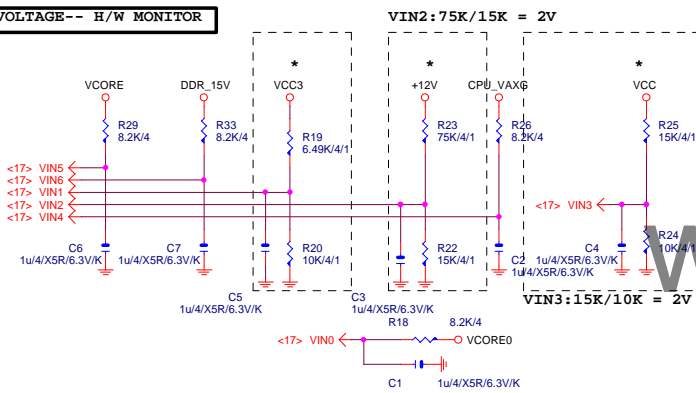
TEMP H/W MONITOR



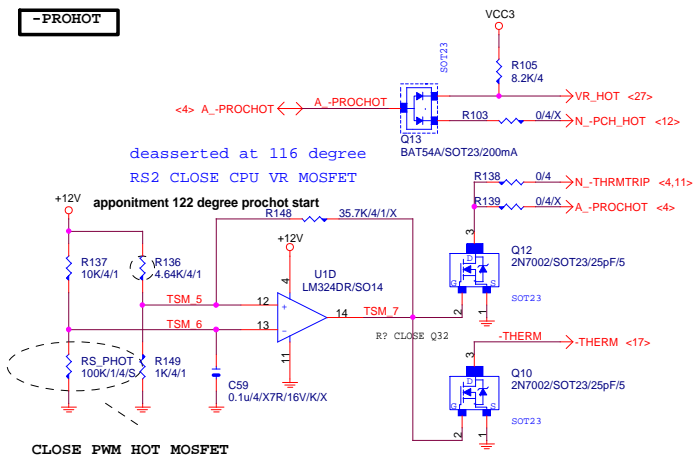
CASE OPEN



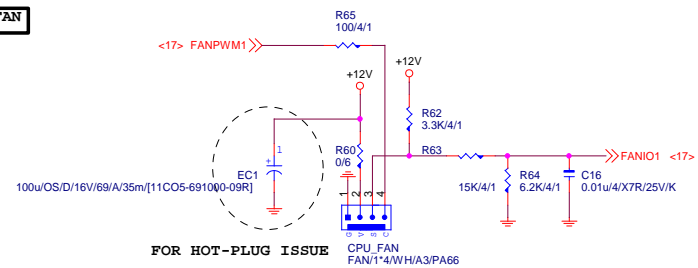
VOLTAGE-- H/W MONITOR



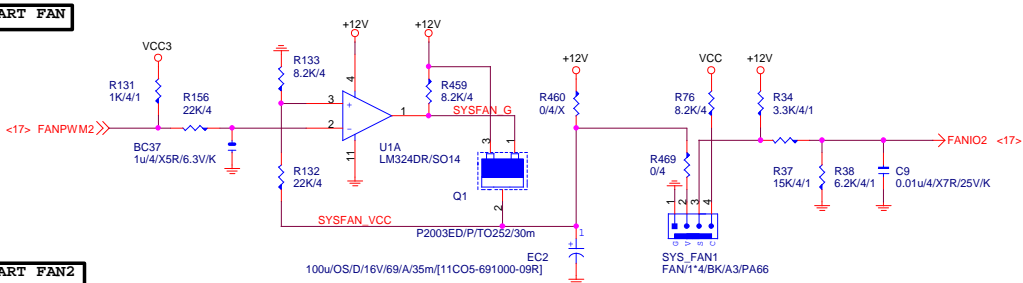
-PROHOT



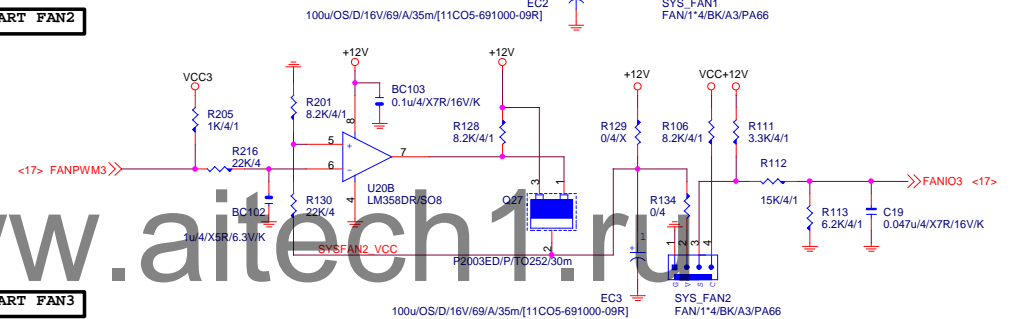
CPU SMART FAN



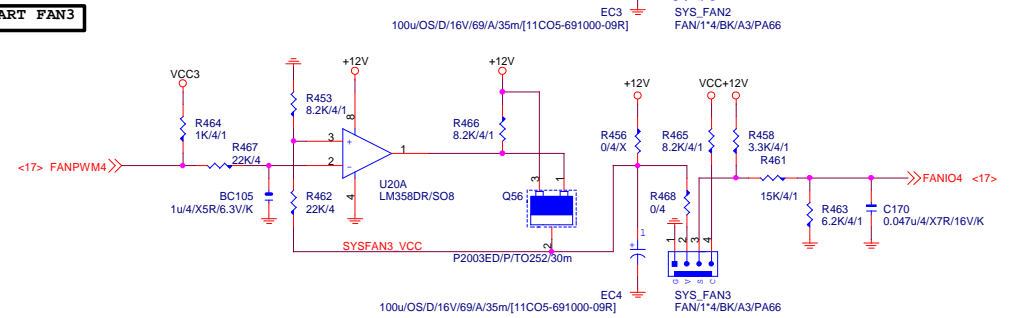
SYS SMART FAN



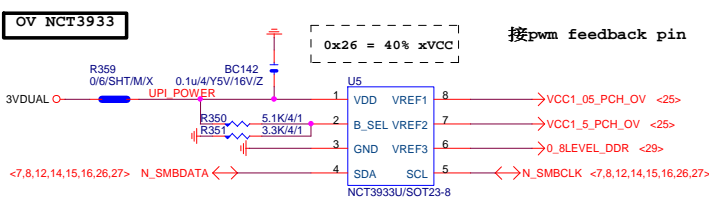
SYS SMART FAN2

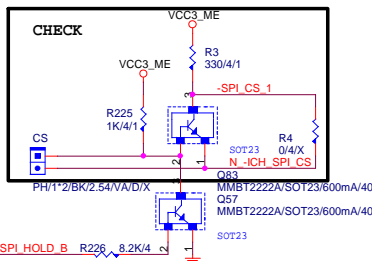
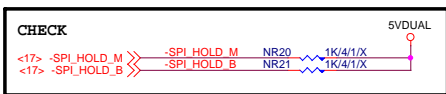
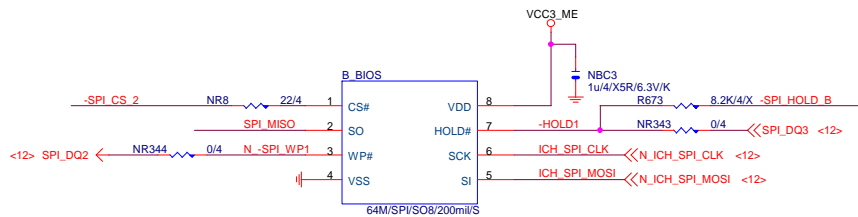
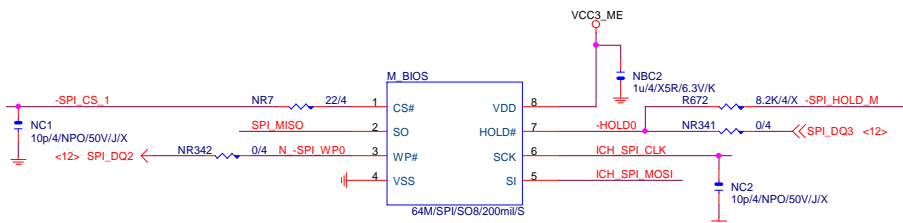


SYS SMART FAN3

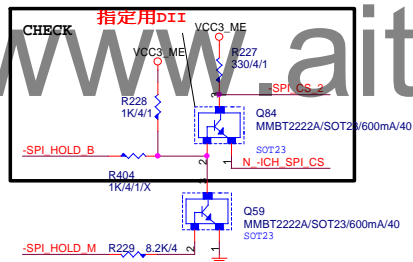


OV NCT3933



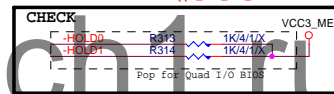
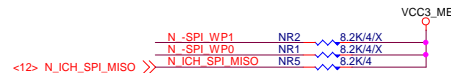
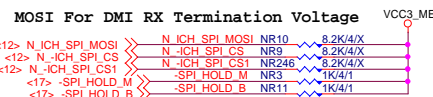


Dual BIOS CS connect circuit update



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

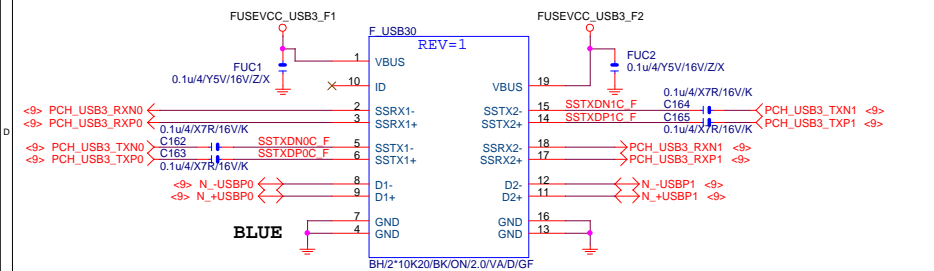
1 means floating
0 means PD 1K



Gigabyte Technology

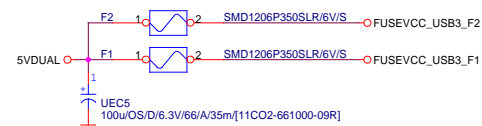
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Size	Document Number	GA-B85M-Game Plus	Rev 1.0
Custom	Date:	Thursday, April 16, 2015	Sheet 20 of 32

F_USB30



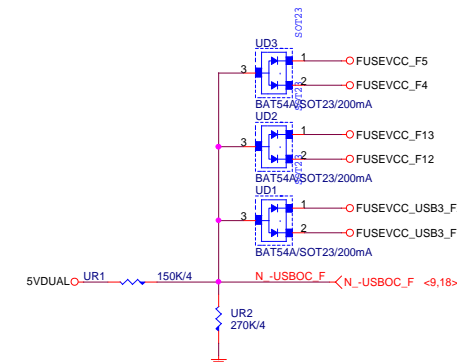
F_USB30	PWR
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Polyswitch-1206

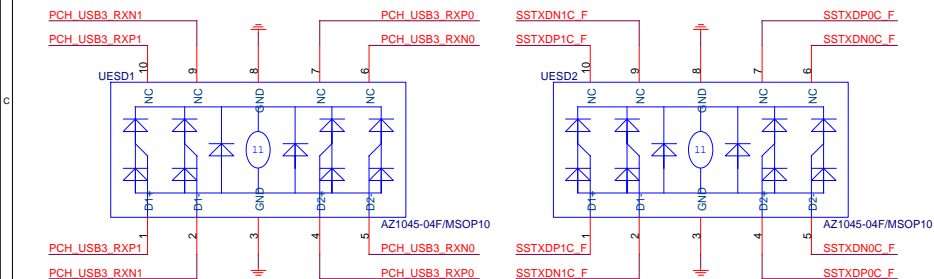


USB3.0 1Port - 1Fuse (3.5A)

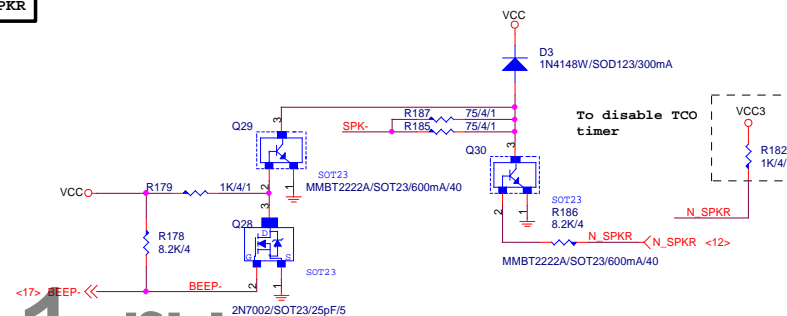
-USB_OC_F



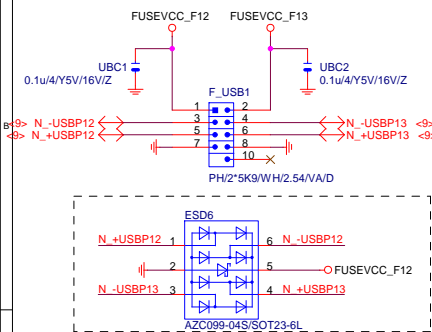
F_USB30	ESD PROTECT
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SPKR

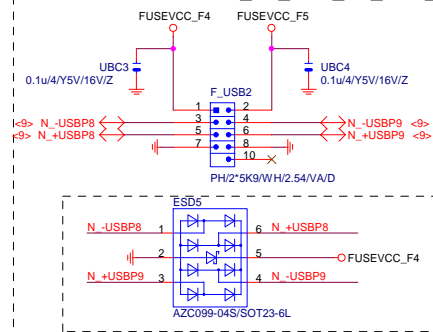


FRONT USB1



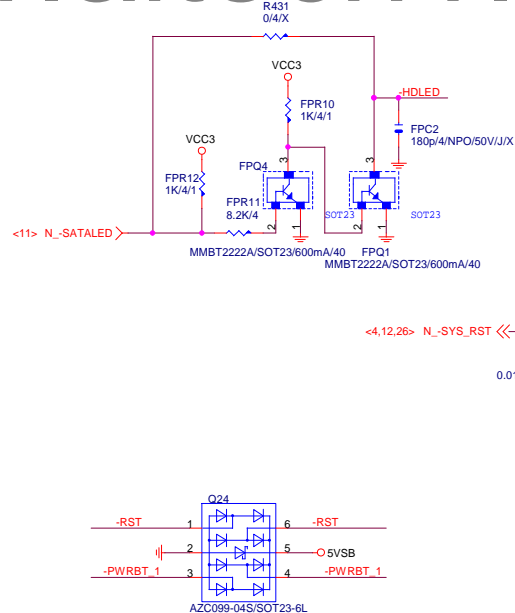
Close to connector

FRONT USB2

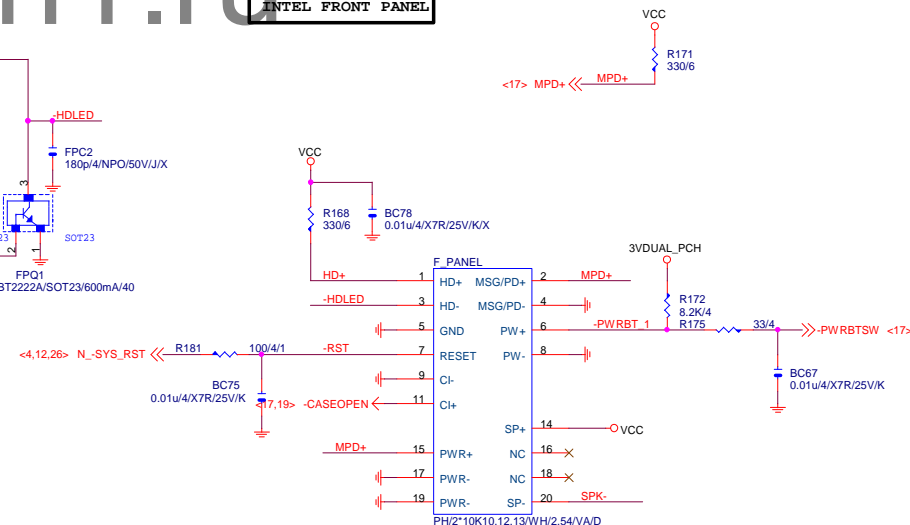


Close to connector

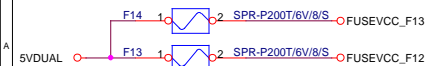
SATA LED



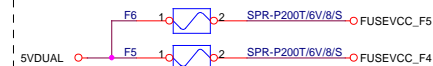
INTEL FRONT PANEL



FUSE-0805



FUSE-0805





<2> SPDIF02_HDMI

0.4/SH/T/M/X

CBC14

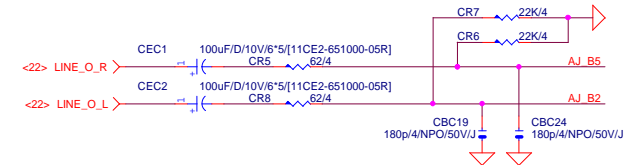
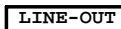
100p4/NP0/50V/J

PIN

SPDIF_O

PH1/1/2/BK/2.54/VA/D

For HDMI SPDIF



Only reserved for ALC888

on

The diagram shows two input lines, LINE_IN_R and LINE_IN_L, connected to components CR1 and CR14 respectively. These are connected through capacitors labeled 62/4 to a common vertical bus. This bus connects to two output points, AJ_A5 and AJ_A2. Two capacitors, CBC20 and CBC23, both labeled 180pf/4/NPO/50V/J, are connected between the common bus and ground symbols.

For 889A/888

<22> MIC1_R ← CR17 62/4
 <22> MIC1_L ← CR22 62/4
 <22> MIC1_VREF0_L ← CBC3 180p/4/NPO/50V/J
 <22> MIC1_VREF0_R ← CBC4 180p/4/NPO/50V/J

CE10 100uF/D/10V/65''[11CE2-651000-05R] CR73 62k/4

<2> SURRE CR67 22k/4

CR68 22k/4 B.J. C5

CE11 100uF/D/10V/65''[11CE2-651000-05R] CR74 62k/4

<2> SURRE B.J. C2

CBC44 180pF/NPO/50V/J

CBC45 180pF/NPO/50V/J

EMI

CEC14 100uF/D/10V/6*5[11CE2-6S1000-05R] CR79 62/4

CEC15 100uF/D/10V/6*5[11CE2-6S1000-05R] CR80 62/4

CR71 22K/4

CR72 22K/4

BC49 180p/4NPO/50V/J

BC49 180p/4NPO/50V/J

BJA5

BJA2

<22> S_SURR_R

<22> S_SURR_L

Ground symbol

AZALIA FRONT PANEL

Q04 BAT54A/SOT23/200mA
Q02 BAT54A/SOT23/200mA

<<2>> LINE2_VREF0
<<2>> MIC2_VREF0

<<2>> MIC2_L
<<2>> MIC2_R

<<2>> FAUDIO_ID

CR22 10uF/6.3V/5%
CR23 10uF/6.3V/5%
CR24 10uF/6.3V/5%
CR25 10uF/6.3V/5%
CR26 10uF/6.3V/5%
CR27 10uF/6.3V/5%
CR28 10uF/6.3V/5%
CR29 10uF/6.3V/5%
CR30 10uF/6.3V/5%
CR31 10uF/6.3V/5%
CR32 10uF/6.3V/5%
CR33 10uF/6.3V/5%
CR34 10uF/6.3V/5%
CR35 10uF/6.3V/5%
CR36 10uF/6.3V/5%
CR37 10uF/6.3V/5%
CR38 10uF/6.3V/5%
CR39 10uF/6.3V/5%
CR40 10uF/6.3V/5%
CR41 10uF/6.3V/5%
CR42 10uF/6.3V/5%
CR43 10uF/6.3V/5%
CR44 10uF/6.3V/5%
CR45 10uF/6.3V/5%
CR46 10uF/6.3V/5%
CR47 10uF/6.3V/5%
CR48 10uF/6.3V/5%
CR49 10uF/6.3V/5%
CR50 10uF/6.3V/5%
CR51 10uF/6.3V/5%
CR52 10uF/6.3V/5%
CR53 10uF/6.3V/5%
CR54 10uF/6.3V/5%
CR55 10uF/6.3V/5%
CR56 10uF/6.3V/5%
CR57 10uF/6.3V/5%
CR58 10uF/6.3V/5%
CR59 10uF/6.3V/5%
CR60 10uF/6.3V/5%
CR61 10uF/6.3V/5%
CR62 10uF/6.3V/5%
CR63 10uF/6.3V/5%
CR64 10uF/6.3V/5%
CR65 10uF/6.3V/5%
CR66 10uF/6.3V/5%
CR67 10uF/6.3V/5%
CR68 10uF/6.3V/5%
CR69 10uF/6.3V/5%
CR70 10uF/6.3V/5%
CR71 10uF/6.3V/5%
CR72 10uF/6.3V/5%
CR73 10uF/6.3V/5%
CR74 10uF/6.3V/5%
CR75 10uF/6.3V/5%
CR76 10uF/6.3V/5%
CR77 10uF/6.3V/5%
CR78 10uF/6.3V/5%
CR79 10uF/6.3V/5%
CR80 10uF/6.3V/5%
CR81 10uF/6.3V/5%
CR82 10uF/6.3V/5%
CR83 10uF/6.3V/5%
CR84 10uF/6.3V/5%
CR85 10uF/6.3V/5%
CR86 10uF/6.3V/5%
CR87 10uF/6.3V/5%
CR88 10uF/6.3V/5%
CR89 10uF/6.3V/5%
CR90 10uF/6.3V/5%
CR91 10uF/6.3V/5%
CR92 10uF/6.3V/5%
CR93 10uF/6.3V/5%
CR94 10uF/6.3V/5%
CR95 10uF/6.3V/5%
CR96 10uF/6.3V/5%
CR97 10uF/6.3V/5%
CR98 10uF/6.3V/5%
CR99 10uF/6.3V/5%
CR100 10uF/6.3V/5%
CR101 10uF/6.3V/5%
CR102 10uF/6.3V/5%
CR103 10uF/6.3V/5%
CR104 10uF/6.3V/5%
CR105 10uF/6.3V/5%
CR106 10uF/6.3V/5%
CR107 10uF/6.3V/5%
CR108 10uF/6.3V/5%
CR109 10uF/6.3V/5%
CR110 10uF/6.3V/5%
CR111 10uF/6.3V/5%
CR112 10uF/6.3V/5%
CR113 10uF/6.3V/5%
CR114 10uF/6.3V/5%
CR115 10uF/6.3V/5%
CR116 10uF/6.3V/5%
CR117 10uF/6.3V/5%
CR118 10uF/6.3V/5%
CR119 10uF/6.3V/5%
CR120 10uF/6.3V/5%
CR121 10uF/6.3V/5%
CR122 10uF/6.3V/5%
CR123 10uF/6.3V/5%
CR124 10uF/6.3V/5%
CR125 10uF/6.3V/5%
CR126 10uF/6.3V/5%
CR127 10uF/6.3V/5%
CR128 10uF/6.3V/5%
CR129 10uF/6.3V/5%
CR130 10uF/6.3V/5%
CR131 10uF/6.3V/5%
CR132 10uF/6.3V/5%
CR133 10uF/6.3V/5%
CR134 10uF/6.3V/5%
CR135 10uF/6.3V/5%
CR136 10uF/6.3V/5%
CR137 10uF/6.3V/5%
CR138 10uF/6.3V/5%
CR139 10uF/6.3V/5%
CR140 10uF/6.3V/5%
CR141 10uF/6.3V/5%
CR142 10uF/6.3V/5%
CR143 10uF/6.3V/5%
CR144 10uF/6.3V/5%
CR145 10uF/6.3V/5%
CR146 10uF/6.3V/5%
CR147 10uF/6.3V/5%
CR148 10uF/6.3V/5%
CR149 10uF/6.3V/5%
CR150 10uF/6.3V/5%
CR151 10uF/6.3V/5%
CR152 10uF/6.3V/5%
CR153 10uF/6.3V/5%
CR154 10uF/6.3V/5%
CR155 10uF/6.3V/5%
CR156 10uF/6.3V/5%
CR157 10uF/6.3V/5%
CR158 10uF/6.3V/5%
CR159 10uF/6.3V/5%
CR160 10uF/6.3V/5%
CR161 10uF/6.3V/5%
CR162 10uF/6.3V/5%
CR163 10uF/6.3V/5%
CR164 10uF/6.3V/5%
CR165 10uF/6.3V/5%
CR166 10uF/6.3V/5%
CR167 10uF/6.3V/5%
CR168 10uF/6.3V/5%
CR169 10uF/6.3V/5%
CR170 10uF/6.3V/5%
CR171 10uF/6.3V/5%
CR172 10uF/6.3V/5%
CR173 10uF/6.3V/5%
CR174 10uF/6.3V/5%
CR175 10uF/6.3V/5%
CR176 10uF/6.3V/5%
CR177 10uF/6.3V/5%
CR178 10uF/6.3V/5%
CR179 10uF/6.3V/5%
CR180 10uF/6.3V/5%
CR181 10uF/6.3V/5%
CR182 10uF/6.3V/5%
CR183 10uF/6.3V/5%
CR184 10uF/6.3V/5%
CR185 10uF/6.3V/5%
CR186 10uF/6.3V/5%
CR187 10uF/6.3V/5%
CR188 10uF/6.3V/5%
CR189 10uF/6.3V/5%
CR190 10uF/6.3V/5%
CR191 10uF/6.3V/5%
CR192 10uF/6.3V/5%
CR193 10uF/6.3V/5%
CR194 10uF/6.3V/5%
CR195 10uF/6.3V/5%
CR196 10uF/6.3V/5%
CR197 10uF/6.3V/5%
CR198 10uF/6.3V/5%
CR199 10uF/6.3V/5%
CR200 10uF/6.3V/5%
CR201 10uF/6.3V/5%
CR202 10uF/6.3V/5%
CR203 10uF/6.3V/5%
CR204 10uF/6.3V/5%
CR205 10uF/6.3V/5%
CR206 10uF/6.3V/5%
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CR209 10uF/6.3V/5%
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CR213 10uF/6.3V/5%
CR214 10uF/6.3V/5%
CR215 10uF/6.3V/5%
CR216 10uF/6.3V/5%
CR217 10uF/6.3V/5%
CR218 10uF/6.3V/5%
CR219 10uF/6.3V/5%
CR220 10uF/6.3V/5%
CR221 10uF/6.3V/5%
CR

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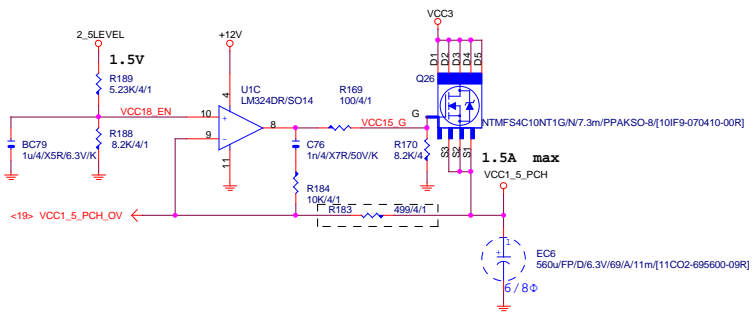
AUDIO JACK

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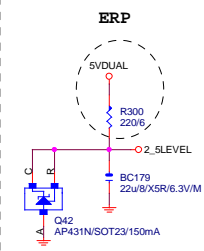
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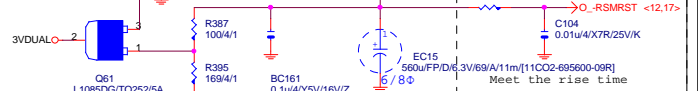
VCC1_8_PCH



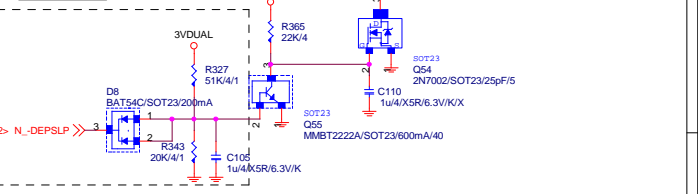
2_5LEVEL



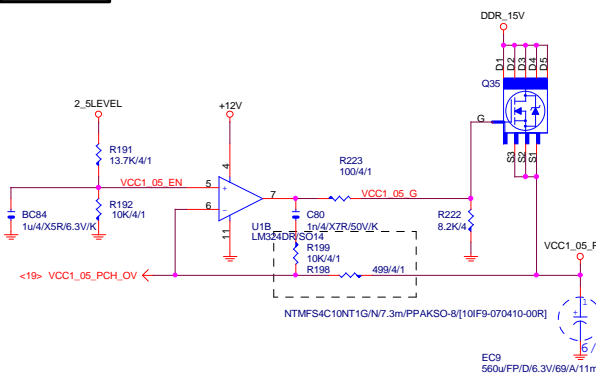
3VDUAL



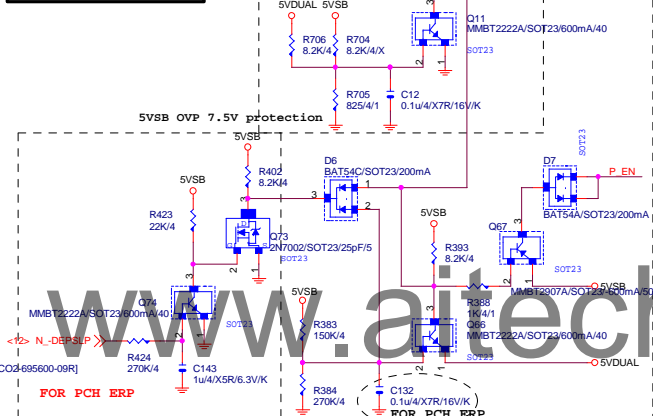
-RSMRST



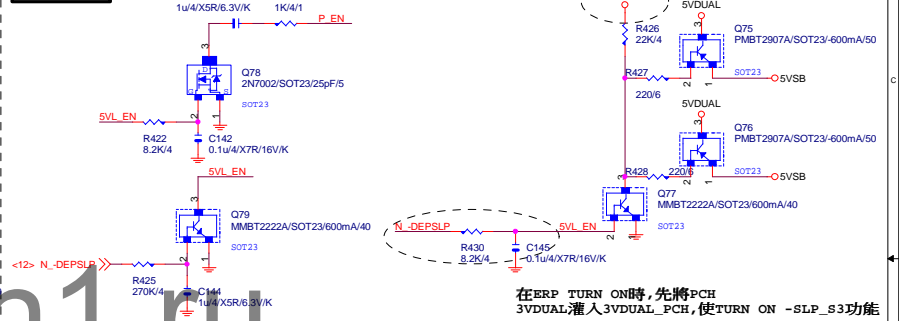
VCC1_05_PCH



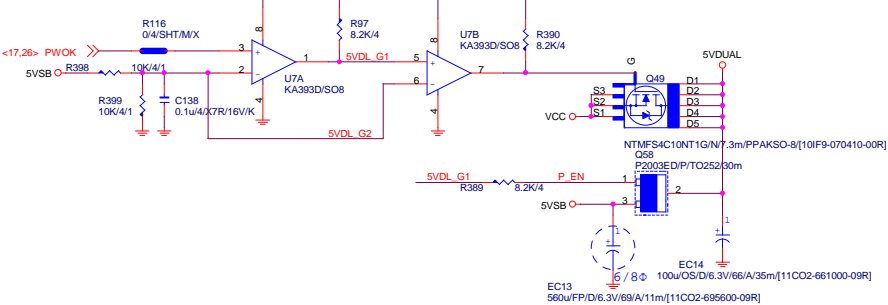
5VDUAL SHORT PROTECT



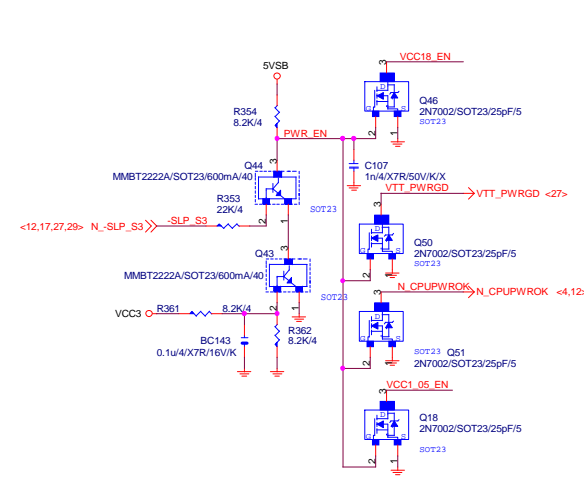
PCH ERP



5VDUAL

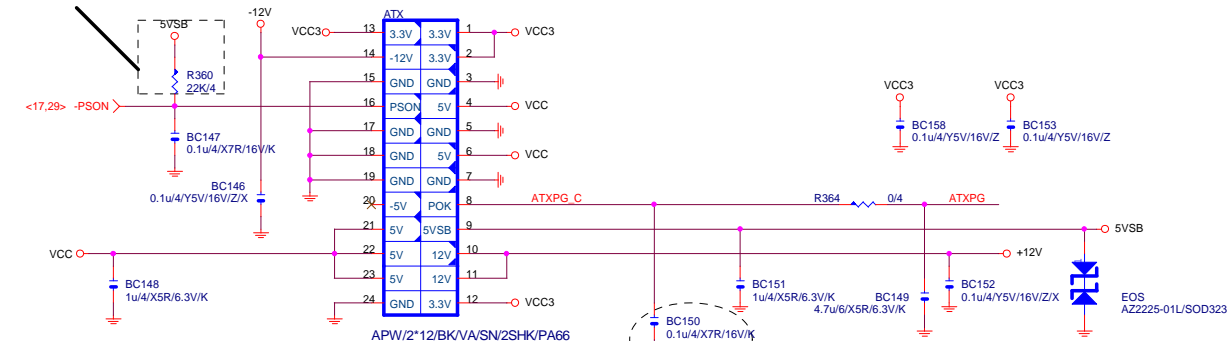


PWR SEQ



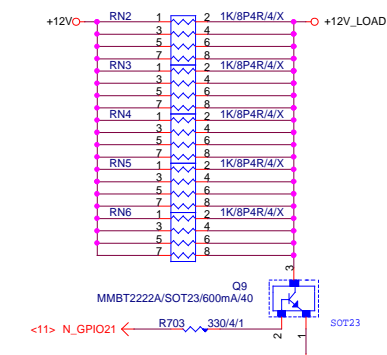
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】



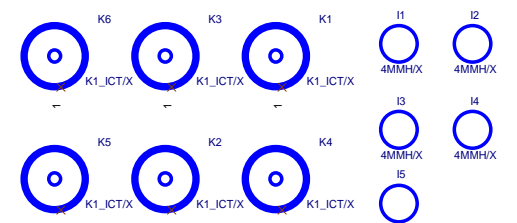
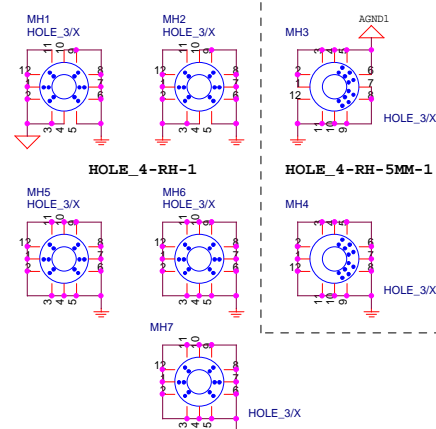
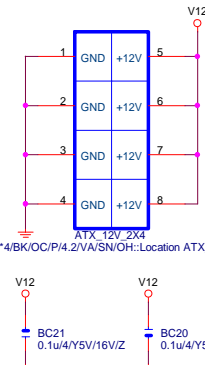
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



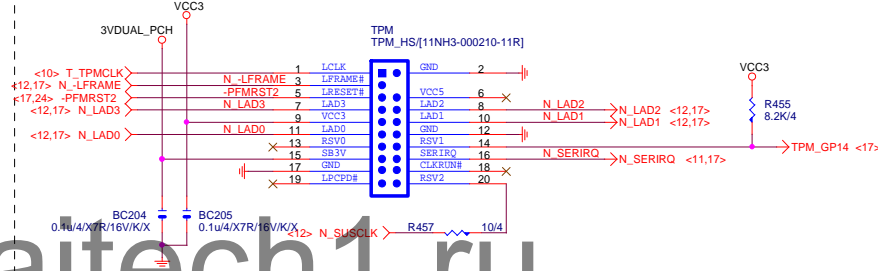
ATXX4 POWER CONNECTOR

APW/2*4BK/OC/P/4.2/VA/SN/CH::Location ATX_12V_2X4



To prevent the 5VSB under loading when boot

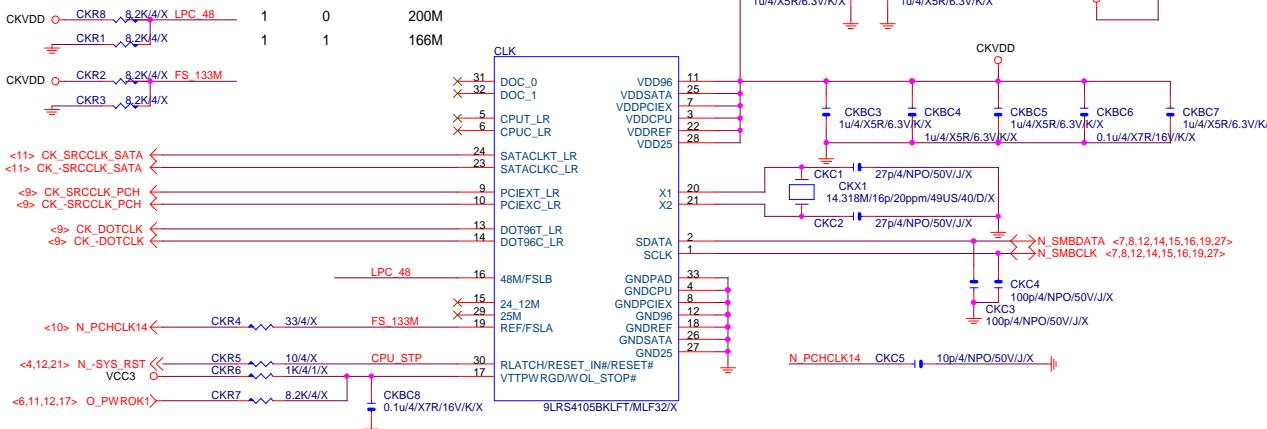
TPM



CLK GEN

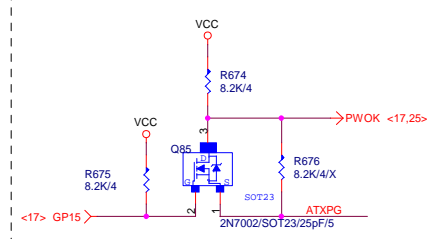
CPU Frequency Selection

FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M



PWOK PATCH

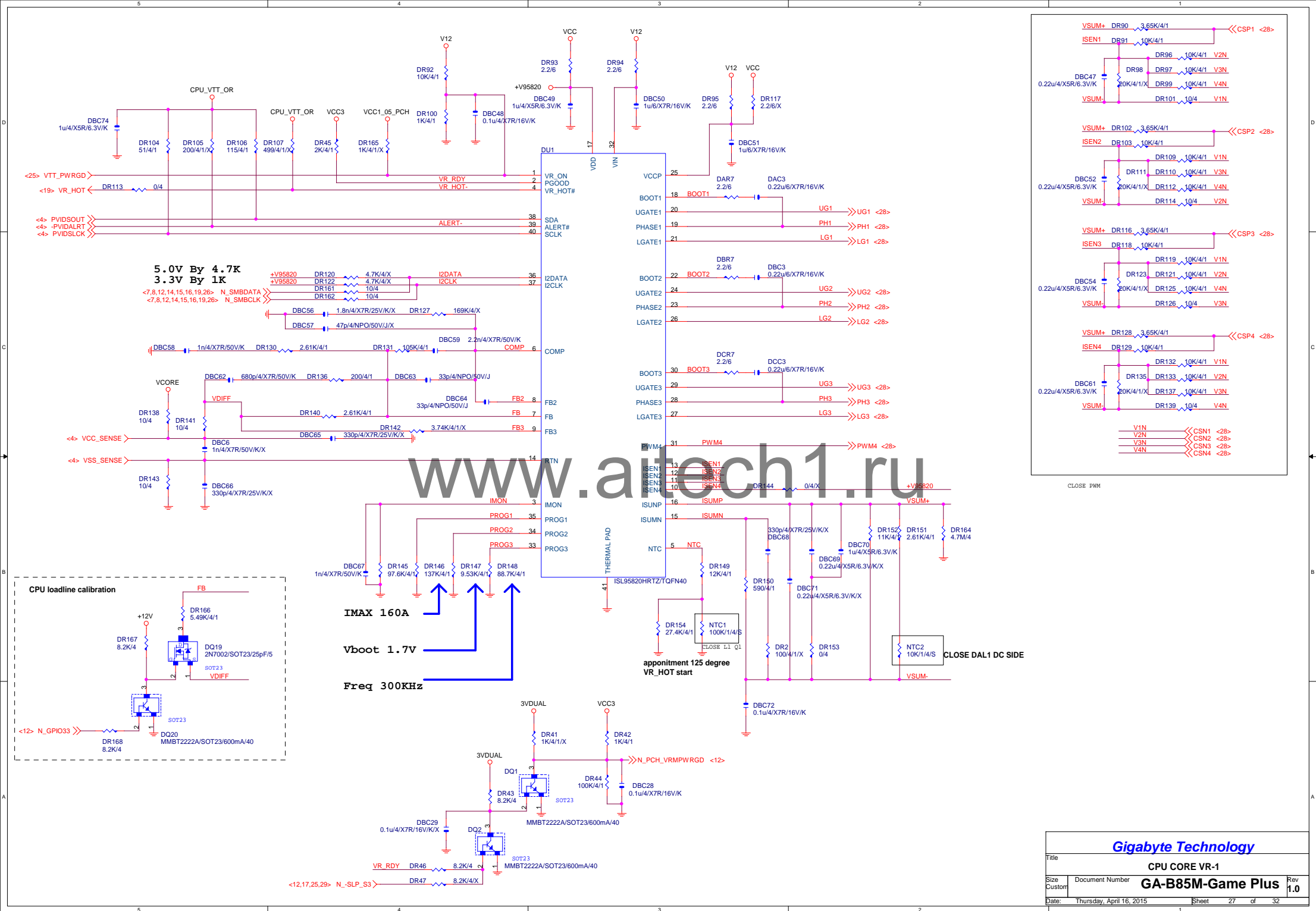
【技術通報R&D技術通報154】

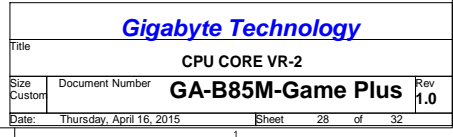


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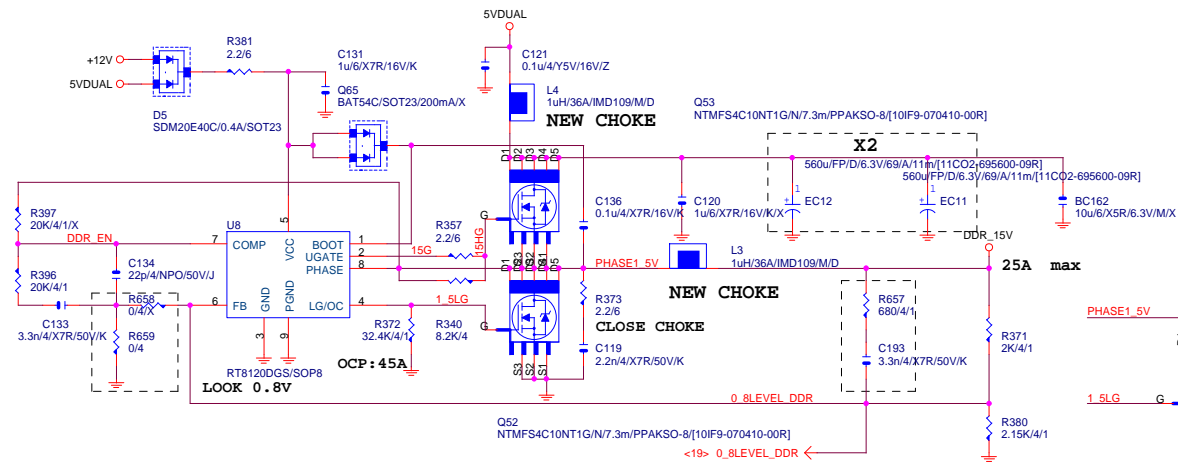
ATX CONNECTOR

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Custom		
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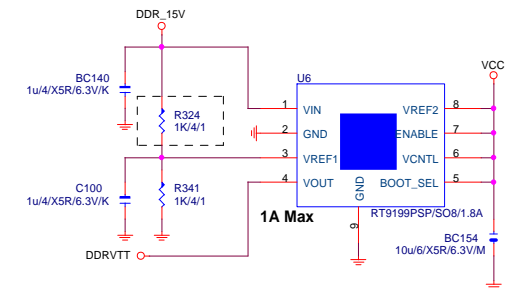




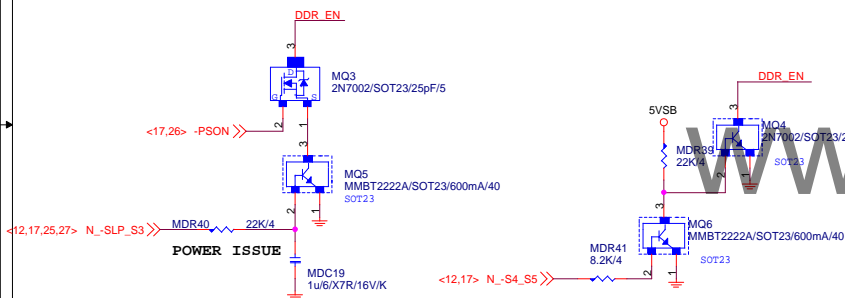
DDR15V



DDRVTT



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°C),1(105°C)

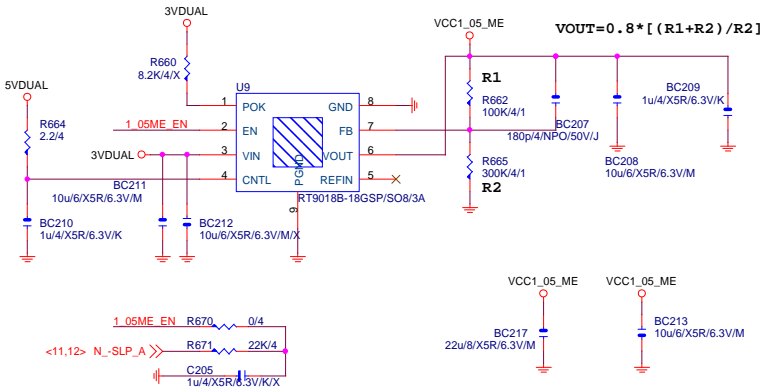
VIN Ripple current=4.7X1.7=7.99A(85°C)
-->故固態電容須2X7.99=15.98>11.45A

$$\text{Rocset} = (\text{Iocp} * \text{Lgate}, \text{rdson}) / \text{Iocset}$$

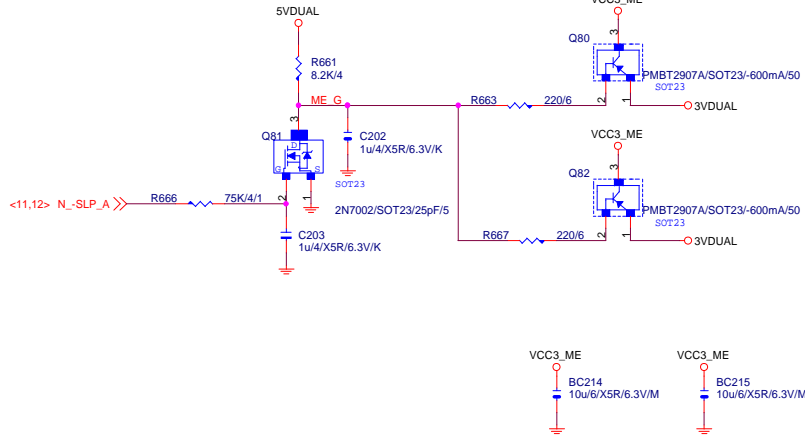
$$R_{ocset} = (45A * 6.7m\Omega) / 10\mu A = 30K$$

Iocset=10uA

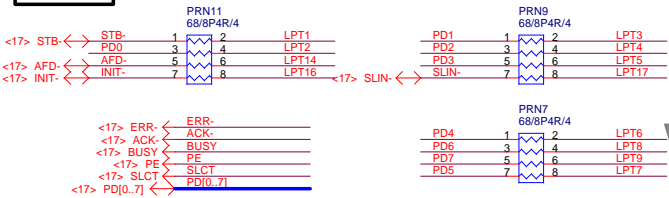
VCC1_05_ME



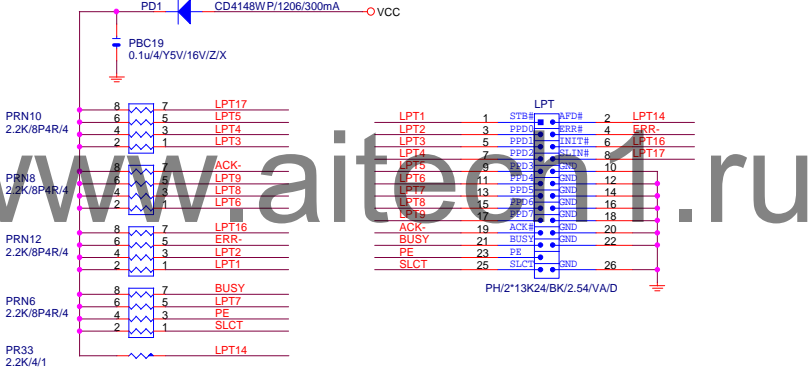
VCC3_ME



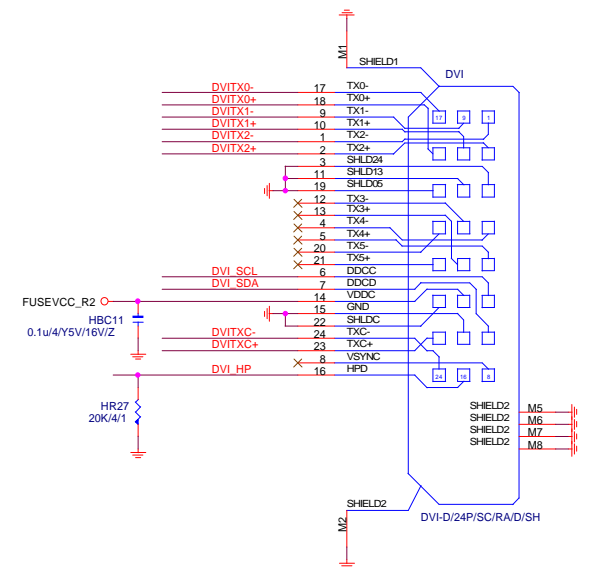
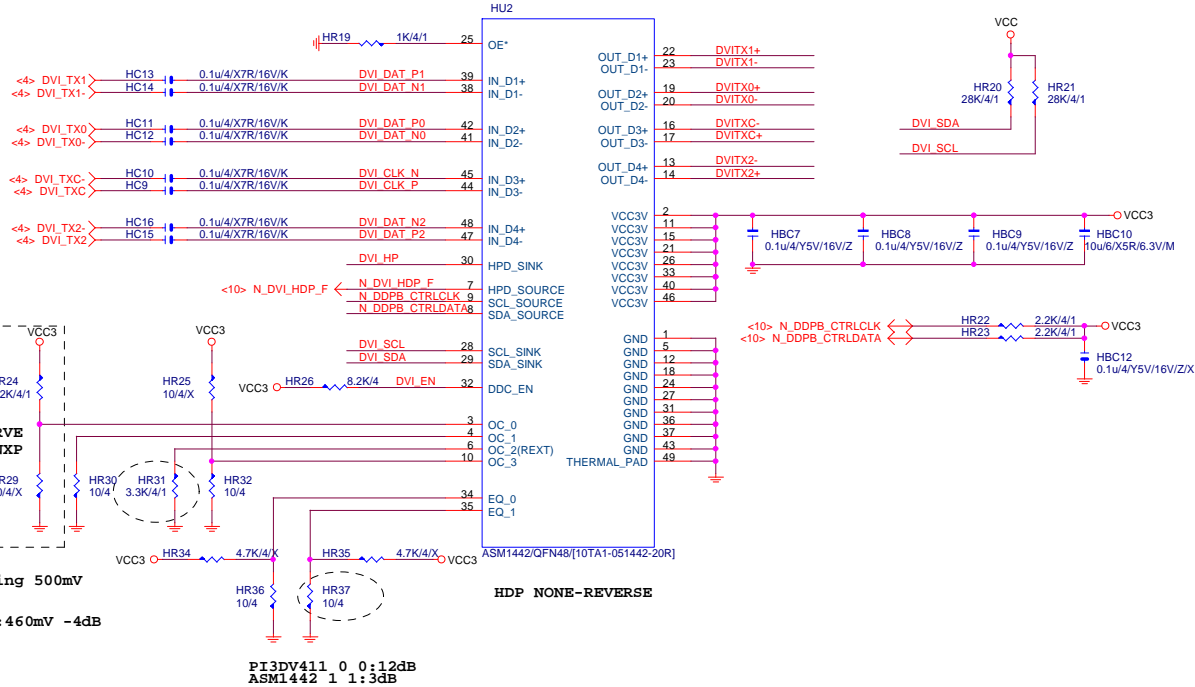
LPT PORT



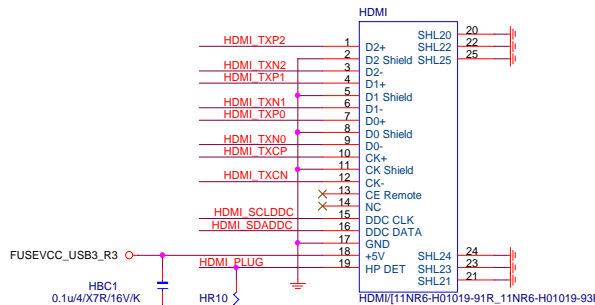
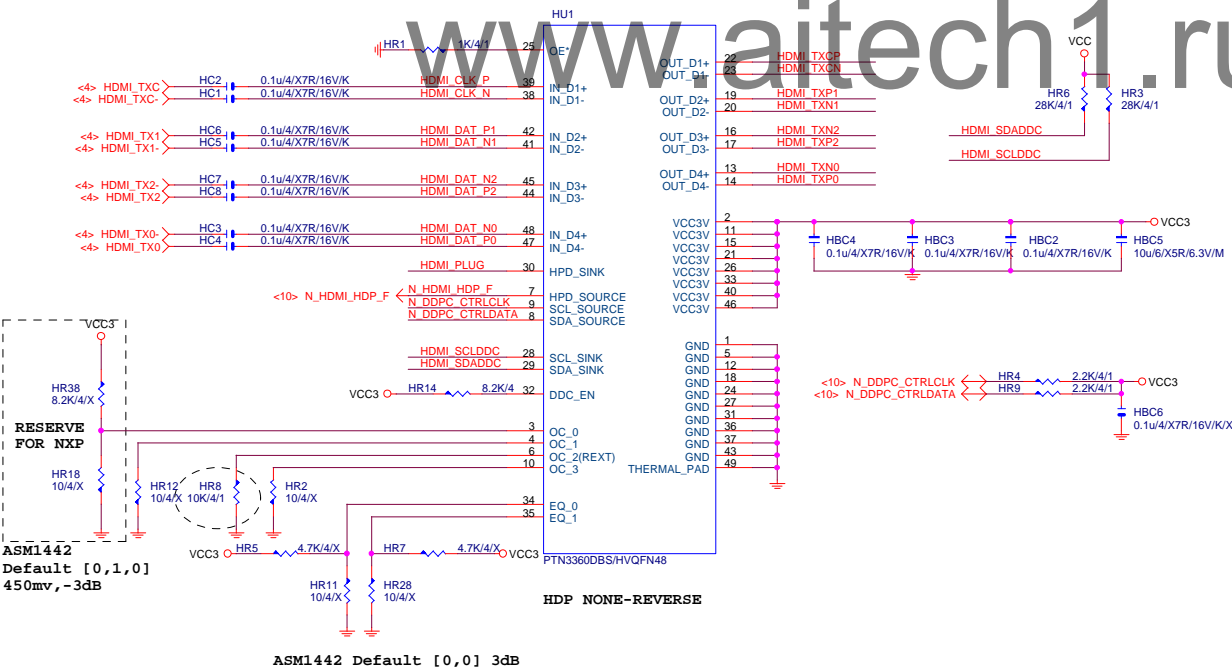
【技術通報R&D技術通報151】
33ohm Change to 68ohm



DVI LEVEL SHIFT



HDMI LEVEL SHIFT



【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMedia ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

Gigabyte Technology			
DVI			
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PCIE TO PCI

PCI:5/4/5 Impedance=50 +- 15%

BA D0 31 <-> BA_D[0.31] <16>

BC BE0 <-> BC_BE0 <16>
BC BE1 <-> BC_BE1 <16>
BC BE2 <-> BC_BE2 <16>
BC BE3 <-> BC_BE3 <16>

BPERR <-> BPERR <16>
BSERR <-> BSERR <16>

BPAR <-> BPAR <16>
BPLOCK <-> BPLOCK <16>
BDEVSEL <-> BDEVSEL <16>
BSTOP <-> BSTOP <16>
BTRDY <-> BTRDY <16>
BIRDY <-> BIRDY <16>
BFRAME <-> BFRAME <16>

PCIE_RST <-> PCIE_RST <14,15,17>

BPCIRST <-> BPCIRST <16>

BREQ0 <-> BREQ0 <16>
BREQ1 <-> BREQ1 <16>
BGNT0 <-> BGNT0 <16>
BGNT1 <-> BGNT1 <16>

BPCIPME1 <-> BPCIPME1 <16>



High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz



High: PCICLK INPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip

Co-Lay IT8893 (IT8893 CLKOUT1 N/A)

IT8892: PR24 -> 47ohm
IT8893: PR24 -> 22ohm

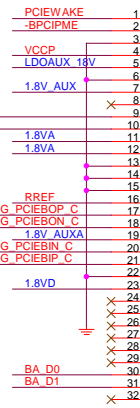
IT8892: PR46 -> X
IT8893: PR46 -> O

IT8892: PR19 -> O
IT8893: PR19 -> X

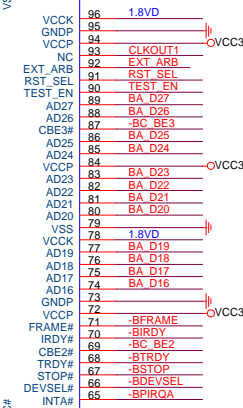
RREF PR13 12K/4/1
TEST_EN PR21 10K/4/1
EXT_ARB PR22 10K/4/1
RST_SEL PR7 10K/4/1

<10> G_PBCLK
<10> G_PBCLK

PBC61 0.1u/4/X7R/16V/K G_PCIEBOP C
PBC62 0.1u/4/X7R/16V/K G_PCIEBON C
PBC43 0.1u/4/X7R/16V/K G_PCIEBIN C
PBC44 0.1u/4/X7R/16V/K G_PCIEBIP C



IT8892E/BX LQFP128



IT8892E/FX/S

IT8892

PCI slot

PRN14 0/8P4R/0402/SHT/X
BPIROA 1 <-> BPIROA1 <16>
BPIROD 3 <-> BPIROD1 <16>
BPIROB 5 <-> BPIROB1 <16>
BPIROC 7 <-> BPIROC1 <16>

VCCP PR26 0/4/SHT/M/X 3VDUAL

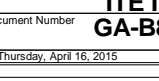
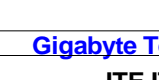
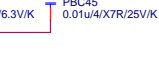
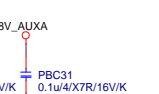
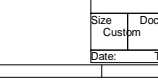
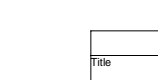
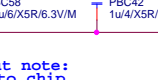
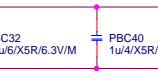
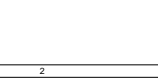
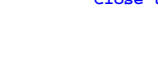
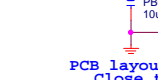
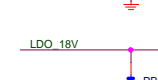
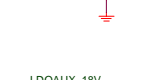
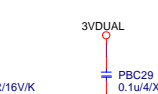
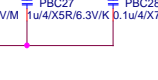
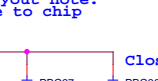
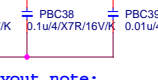
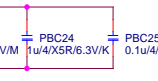
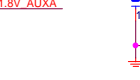
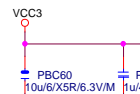
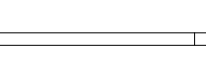
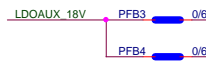
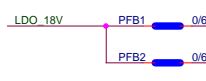
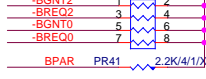
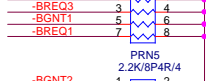
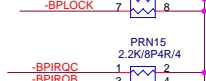
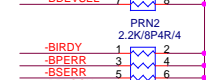
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chipset side



PCIEWAKE PR34 10K/4/1
BPCIPME PR43 10K/4/1



Gigabyte Technology

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