

Model Name: GA-B85M-D2V

Revision 1.11

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

SHEET

TITLE

28	VCORE ISL95812_2
29	RT8120_DDR POWER
30	LPT
31	DVI
32	IT8892E (NA)
33	USB3 VL805 (NA)

www.aitech1.ru

Gigabyte Technology

Cover Sheet

Size Custom	Document Number GA-B85M-D2V	Rev 1.11
Date: Monday, January 06, 2014	Sheet 1 of 33	

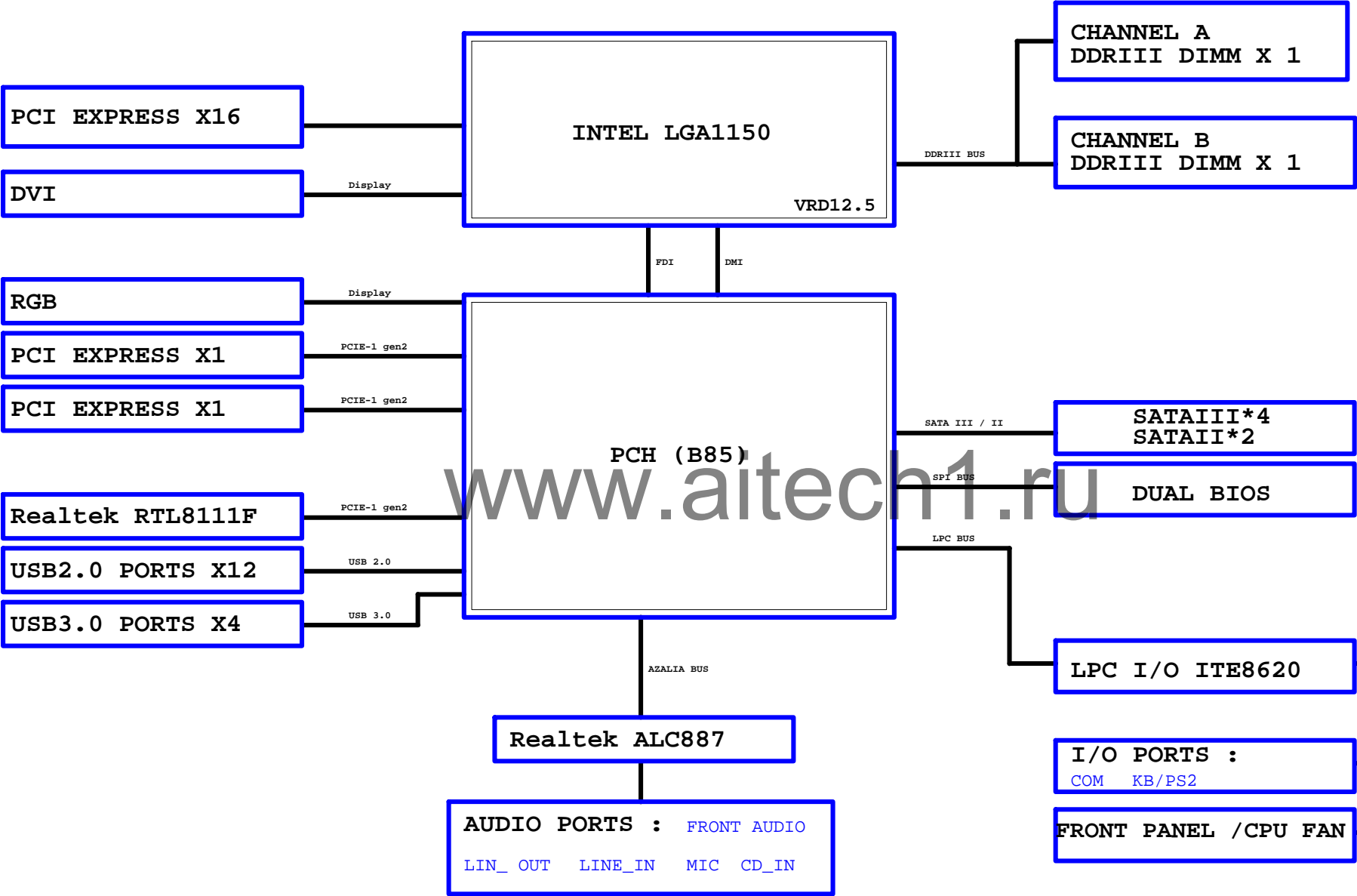
Component value change history

[illegible][illegible]

S:單文
4:四層板
V:第二層是VCC
N:咖啡色
B:製程

<i>Gigabyte Technology</i>			
Title			
BOM & PCB MODIFY HISTORY			
Size Custom	Document Number	GA-B85M-D2V	Rev 1.1
Date:	Monday, January 06, 2014	Sheet 2 of 33	

BLOCK DIAGRAM



10 N_CPUCLK N_CPUCLK V4 BCLK_P BCLK_P

27 PVIDSLOCK WR7 0/4/SH/T/M/X C38 VIDSCLK

27 PVIDSOUT WR1 0/4/SH/T/M/X C37 VIDSOUT

27 PVIDALRT WR5 44.2/4/1 B37 VIDAALRT*

12 N_DRAM_PWROK AK21 RESET PWR_OK

11,17 A_CPUWROK A_CPURST M39 RSTWGOOD

11 A_PMSYNC P36 PMSYNC

11,17 A_PECI N37 PECI

17,19 A_PROCHOT M36 CATERR* PROCHOT*

11,17,21 A_THRMTRIP F37 THERMTRIP*

12 A_SKTOCC D38 SKTOCC*

A SM_VREF AB38 DDR_VREF_CA

N_DRAM_PWROK

WBC2 1n4/X7R/50V/K

N_CPUWROK

WBC47 1n4/X7R/50V/K

17 SVID_CTRL WR57 1K/4/1 HSW_CFG9

12 A_HSW_STRAP13 WR39 1K/4/1 HSW_CFG13

CFG0 H L NOTE

0 RSVSD RSVSD RSVSD

1 RSVSD RSVSD RSVSD

2 RSVSD Reverse LANE REVERSAL[0..x]16

3 RSVSD RSVSD RSVSD

4 Disable Enable eDP Enable

7 RSVSD RSVSD RSVSD

8 RSVSD RSVSD RSVSD

9 RSVSD RSVSD RSVSD

10 RSVSD RSVSD RSVSD

11 RSVSD RSVSD RSVSD

12 RSVSD RSVSD RSVSD

13 RSVSD RSVSD RSVSD

14 RSVSD RSVSD RSVSD

15 RSVSD RSVSD RSVSD

16 RSVSD RSVSD RSVSD

17 RSVSD RSVSD RSVSD

CFG6 CFG5 PCIE CONFIG

1 1 1X16, Default

1 0 2X8

0 1 RSVSD

0 0 8X, 4X, 4X

A TCK D39 TCK

A TDI F38 TDI

A TDO F39 TDO

A TMS F39 TMS

A TRST E37 TRST*

A HFRDY L39 PRDY*

A DBR X137 PREQ*

A DBR* G40 DBR*

A TESTLOW 2 N3 TESTLOW

K8 XKA

K10 XKA

CFG0 CFG5

CFG1 X338

CFG2 X338

CFG3 X338

CFG4 X338

CFG5 X338

CFG6 X338

CFG7 X338

CFG8 X338

CFG9 X338

CFG10 X338

CFG11 X338

CFG12 X338

CFG13 X338

CFG14 X338

CFG15 X338

CFG16 X338

CFG17 X338

CFG18 X338

CFG19 X338

CFG20 X338

CFG21 X338

CFG22 X338

CFG23 X338

CFG24 X338

CFG25 X338

CFG26 X338

CFG27 X338

CFG28 X338

CFG29 X338

CFG30 X338

CFG31 X338

CFG32 X338

CFG33 X338

CFG34 X338

CFG35 X338

CFG36 X338

CFG37 X338

CFG38 X338

CFG39 X338

CFG40 X338

CFG41 X338

CFG42 X338

CFG43 X338

CFG44 X338

CFG45 X338

CFG46 X338

CFG47 X338

CFG48 X338

CFG49 X338

CFG50 X338

CFG51 X338

CFG52 X338

CFG53 X338

CFG54 X338

CFG55 X338

CFG56 X338

CFG57 X338

CFG58 X338

CFG59 X338

CFG60 X338

CFG61 X338

CFG62 X338

CFG63 X338

CFG64 X338

CFG65 X338

CFG66 X338

CFG67 X338

CFG68 X338

CFG69 X338

CFG70 X338

CFG71 X338

CFG72 X338

CFG73 X338

CFG74 X338

CFG75 X338

CFG76 X338

CFG77 X338

CFG78 X338

CFG79 X338

CFG80 X338

CFG81 X338

CFG82 X338

CFG83 X338

CFG84 X338

CFG85 X338

CFG86 X338

CFG87 X338

CFG88 X338

CFG89 X338

CFG90 X338

CFG91 X338

CFG92 X338

CFG93 X338

CFG94 X338

CFG95 X338

CFG96 X338

CFG97 X338

CFG98 X338

CFG99 X338

CFG100 X338

CFG101 X338

CFG102 X338

CFG103 X338

CFG104 X338

CFG105 X338

CFG106 X338

CFG107 X338

CFG108 X338

CFG109 X338

CFG110 X338

CFG111 X338

CFG112 X338

CFG113 X338

CFG114 X338

CFG115 X338

CFG116 X338

CFG117 X338

CFG118 X338

CFG119 X338

CFG120 X338

CFG121 X338

CFG122 X338

CFG123 X338

CFG124 X338

CFG125 X338

CFG126 X338

CFG127 X338

CFG128 X338

CFG129 X338

CFG130 X338

CFG131 X338

CFG132 X338

CFG133 X338

CFG134 X338

CFG135 X338

CFG136 X338

CFG137 X338

CFG138 X338

CFG139 X338

CFG140 X338

CFG141 X338

CFG142 X338

CFG143 X338

CFG144 X338

CFG145 X338

CFG146 X338

CFG147 X338

CFG148 X338

CFG149 X338

CFG150 X338

CFG151 X338

CFG152 X338

CFG153 X338

CFG154 X338

CFG155 X338

CFG156 X338

CFG157 X338

CFG158 X338

CFG159 X338

CFG160 X338

CFG161 X338

CFG162 X338

CFG163 X338

CFG164 X338

CFG165 X338

CFG166 X338

CFG167 X338

CFG168 X338

CFG169 X338

CFG170 X338

CFG171 X338

CFG172 X338

CFG173 X338

CFG174 X338

CFG175 X338

CFG176 X338

CFG177 X338

CFG178 X338

CFG179 X338

CFG180 X338

CFG181 X338

CFG182 X338

CFG183 X338

CFG184 X338

CFG185 X338

CFG186 X338

CFG187 X338

CFG188 X338

CFG189 X338

CFG190 X338

CFG191 X338

CFG192 X338

CFG193 X338

CFG194 X338

CFG195 X338

CFG196 X338

CFG197 X338

CFG198 X338

CFG199 X338

CFG200 X338

CFG201 X338

CFG202 X338

CFG203 X338

CFG204 X338

CFG205 X338

CFG206 X338

CFG207 X338

CFG208 X338

CFG209 X338

CFG210 X338

CFG211 X338

CFG212 X338

CFG213 X338

CFG214 X338

CFG215 X338

CFG216 X338

CFG217 X338

CFG218 X338

CFG219 X338

CFG220 X338

CFG221 X338

CFG222 X338

CFG223 X338

CFG224 X338

CFG225 X338

CFG226 X338

CFG227 X338

CFG228 X338

CFG229 X338

CFG230 X338

CFG231 X338

CFG232 X338

CFG233 X338

CFG234 X338

CFG235 X338

CFG236 X338

CFG237 X338

CFG238 X338

CFG239 X338

CFG240 X338

CFG241 X338

CFG242 X338

CFG243 X338

CFG244 X338

CFG245 X338

CFG246 X338

CFG247 X338

CFG248 X338

CFG249 X338

CFG250 X338

CFG251 X338

CFG252 X338

CFG253 X338

CFG254 X338

CFG255 X338

CFG256 X338

CFG257 X338

CFG258 X338</

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

PCIEX16:16/5/5/16(breakout min 10/4/4/4/10)			
Impedance=80 ± 17.5%			
	LGA1150C		
PA EXP RXP0	E15	PEG_RXP0	A12 PA EXP TXP0
PA EXP RXN0	F15	PEG_RXN0	B12 PA EXP TXN0
PA EXP RXP1	D14	PEG_RXP1	B11 PA EXP TXP1
PA EXP RXN1	E14	PEG_RXN1	C11 PA EXP TXN1
PA EXP RXP2	E13	PEG_RXP2	C10 PA EXP TXP2
PA EXP RXN2	F13	PEG_RXN2	D10 PA EXP TXN2
PA EXP RXP3	D12	PEG_RXP3	B9 PA EXP TXP3
PA EXP RXN3	E12	PEG_RXN3	C9 PA EXP TXN3
PA EXP RXP4	E11	PEG_RXP4	C8 PA EXP TXP4
PA EXP RXN4	F11	PEG_RXN4	D8 PA EXP TXN4
PA EXP RXP5	F10	PEG_RXP5	B7 PA EXP TXP5
PA EXP RXN5	G10	PEG_RXN5	C7 PA EXP TXN5
PA EXP RXP6	E9	PEG_RXP6	A6 PA EXP TXP6
PA EXP RXN6	F9	PEG_RXN6	B6 PA EXP TXN6
PA EXP RXP7	F8	PEG_RXP7	B5 PA EXP TXP7
PA EXP RXN7	G8	PEG_RXN7	C5 PA EXP TXN7
PA EXP RXP8	D3	PEG_RXP8	E1 PA EXP TXP8
PA EXP RXN8	D4	PEG_RXN8	F2 PA EXP TXN8
PA EXP RXP9	E4	PEG_RXP9	F3 PA EXP TXP9
PA EXP RXN9	E5	PEG_RXN9	F4 PA EXP TXN9
PA EXP RXP10	F5	PEG_RXP10	G1 PA EXP TXP10
PA EXP RXN10	F6	PEG_RXN10	G2 PA EXP TXN10
PA EXP RXP11	G4	PEG_RXP11	H2 PA EXP TXP11
PA EXP RXN11	G5	PEG_RXN11	H3 PA EXP TXN11
PA EXP RXP12	H5	PEG_RXP12	J1 PA EXP TXP12
PA EXP RXN12	H6	PEG_RXN12	J2 PA EXP TXN12
PA EXP RXP13	J4	PEG_RXP13	K2 PA EXP TXP13
PA EXP RXN13	J5	PEG_RXN13	K3 PA EXP TXN13
PA EXP RXP14	K5	PEG_RXP14	M2 PA EXP TXP14
PA EXP RXN14	K6	PEG_RXN14	M3 PA EXP TXN14
PA EXP RXP15	L4	PEG_RXP15	L1 PA EXP TXP15
PA EXP RXN15	L5	PEG_RXN15	L2 PA EXP TXN15
A_DMIL ORXP	U3	DMIL_RXP0	AA4 A_DMIL OTXP
A_DMIL ORXN	T3	DMIL_RXN0	AA5 A_DMIL OTXN
A_DMIL1 ORXP	U4	DMIL_RXP1	AB3 A_DMIL1 OTXP
A_DMIL1 ORXN	T4	DMIL_RXN1	AB4 A_DMIL1 OTXN
A_DMIL2 ORXP	U2	DMIL_RXP2	AC5 A_DMIL2 OTXP
A_DMIL2 ORXN	V2	DMIL_RXN2	AC4 A_DMIL2 OTXN
A_DMIL3 ORXP	U2	DMIL_RXP3	AC1 A_DMIL3 OTXP
A_DMIL3 ORXN	V2	DMIL_RXN3	AC2 A_DMIL3 OTXN
	X D1	RSVD_TP	
	X C2	RSVD_TP	
	X B3	RSVD_TP	
	X A4	RSVD_TP	
W=12 mil out of CPU			
S=15 mil out of CPU			
VCCIOA_LO W1R15 24.9/41 GRMCOMP P3		PEG_RCOMP	

1.1V分壓

VCC3

WR26
2K4/1/X

WR31
1K4/1/X

A_CPURST

BC102
1n/407R/50V/K

1.1, 17

For IT8620 Ctrl

CPU_VTT_OR

WR3	90.9/4/1/X	PVIDSLCK
WR2	115/4/1	PVIDSOUT
WR4	75/4/1	-PVIDALRT

Figure 10: CPU VTT OR circuit diagram. The diagram shows the internal structure of the CPU_VTT_OR block, including various multiplexers (WR14, WR16, WR17, WR30, WR11, WR9, WR29, WR10, WR25, WR56, WR55, WR8, WR34, WR33, WR21, WR20, WR28, WR19, WR22, WR12, WR24) and their connections to external signals (A_TMS, A_TDO, A_TDI, A_HPRDY, A_TCK, A_TRST, A_PECI, A_CATERR-, A_PROCHOT, N_CPUWPWRCK, VCC1_05_PCH, 3VDUAL, N_SYS_RST, A_THRMTRIP, A_PWR_DEBUG, A_DBR, A_DDR_COMP0, A_DDR_COMP1, A_DDR_COMP2, A_TESTFLOW_1, A_TESTFLOW_2, A_HSW_CFG_RCOMP).

DDR_15V

WR62
100k/1

WR60
100k/1

WC3
0.1uF/4X7R/16V/K

A_SM_VREF

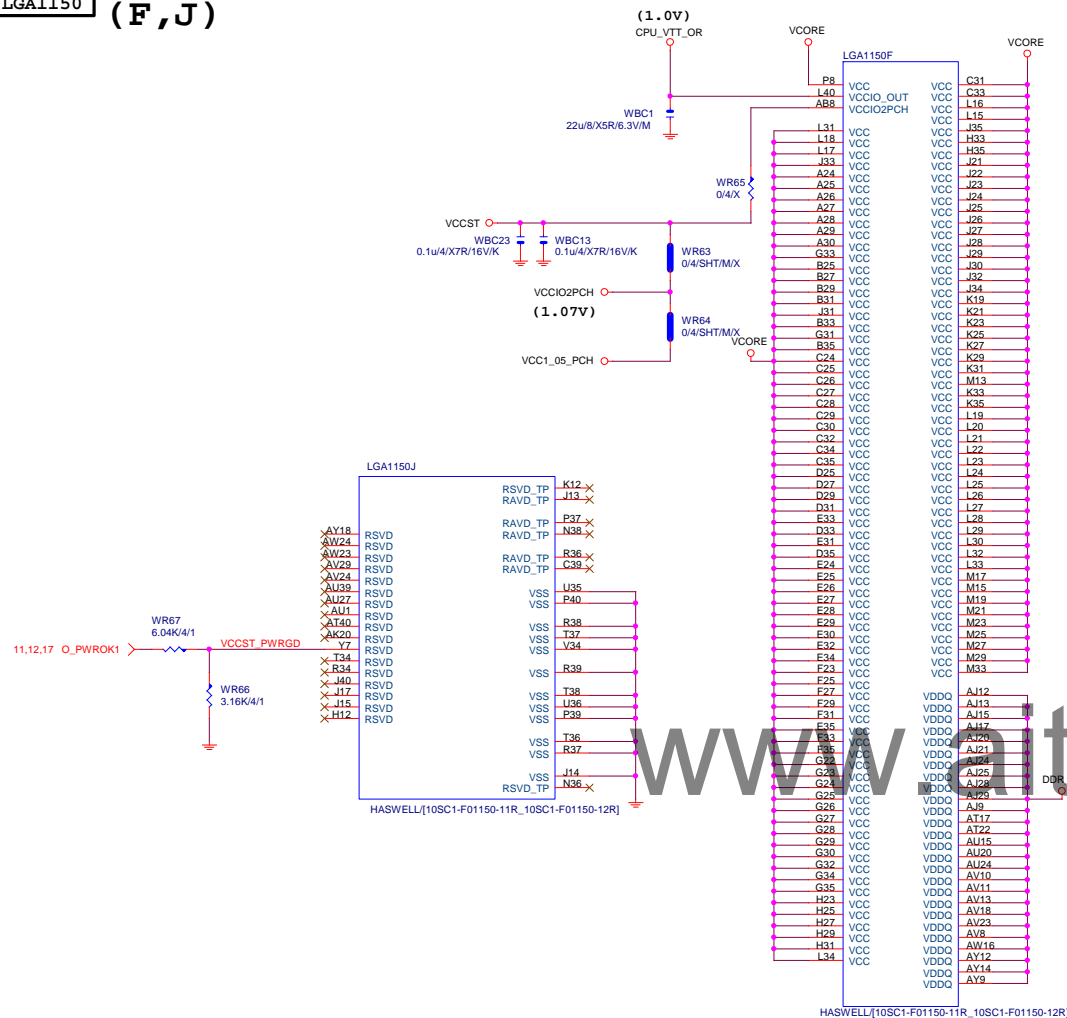
LGA1150 (A)

LGA1150 (B)

LGA1150 (CR)

LGA1150A			
MAAA0	AU13	DDR0_MA0	DDR0_D00
MAAA1	AV16	DDR0_MA1	DDR0_D01
MAAA2	AU16	DDR0_MA2	DDR0_D02
MAAA3	AW17	DDR0_MA3	DDR0_D03
MAAA4	AU17	DDR0_MA4	DDR0_D04
MAAA5	AW18	DDR0_MA5	DDR0_D05
MAAA6	AV17	DDR0_MA6	DDR0_D06
MAAA7	AT18	DDR0_MA7	DDR0_D07
MAAA8	AU18	DDR0_MA8	DDR0_D08
MAAA9	AT19	DDR0_MA9	DDR0_D09
MAAA10	AW11	DDR0_MA10	DDR0_D10
MAAA11	AV19	DDR0_MA11	DDR0_D11
MAAA12	AU19	DDR0_MA12	DDR0_D12
MAAA13	AY10	DDR0_MA13	DDR0_D13
MAAA14	AT20	DDR0_MA14	DDR0_D14
MAAA15	AU21	DDR0_MA15	DDR0_D15
MODT_A0	AW10	DDR0_ODT0	DDR0_D16
MODT_A1	AY8	DDR0_ODT1	DDR0_D17
	AW9	DDR0_ODT2	DDR0_D18
	AW8	DDR0_ODT3	DDR0_D19
			DDR0_D20
			DDR0_D21
			DDR0_D22
			DDR0_D23
			DDR0_D24
			DDR0_D25
			DDR0_D26
			DDR0_D27
			DDR0_D28
			DDR0_D29
			DDR0_D30
			DDR0_D31
			DDR0_D32
			DDR0_D33
			DDR0_D34
			DDR0_D35
			DDR0_D36
			DDR0_D37
			DDR0_D38
			DDR0_D39
			DDR0_D40
			DDR0_D41
			DDR0_D42
			DDR0_D43
			DDR0_D44
			DDR0_D45
			DDR0_D46
			DDR0_D47
			DDR0_D48
			DDR0_D49
			DDR0_D50
			DDR0_D51
			DDR0_D52
			DDR0_D53
			DDR0_D54
			DDR0_D55
			DDR0_D56
			DDR0_D57
			DDR0_D58
			DDR0_D59
			DDR0_D60
			DDR0_D61
			DDR0_D62
			DDR0_D63
			DDR0_D64
			DDR0_D65
			DDR0_D66
			DDR0_D67
			DDR0_D68
			DDR0_D69
			DDR0_D70
			DDR0_D71
			DDR0_D72
			DDR0_D73
			DDR0_D74
			DDR0_D75
			DDR0_D76
			DDR0_D77
			DDR0_D78
			DDR0_D79
			DDR0_D80
			DDR0_D81
			DDR0_D82
			DDR0_D83
			DDR0_D84
			DDR0_D85
			DDR0_D86
			DDR0_D87
			DDR0_D88
			DDR0_D89
			DDR0_D90
			DDR0_D91
			DDR0_D92
			DDR0_D93
			DDR0_D94
			DDR0_D95
			DDR0_D96
			DDR0_D97
			DDR0_D98
			DDR0_D99
			DDR0_D100
			DDR0_D101
			DDR0_D102
			DDR0_D103
			DDR0_D104
			DDR0_D105
			DDR0_D106
			DDR0_D107
			DDR0_D108
			DDR0_D109
			DDR0_D110
			DDR0_D111
			DDR0_D112
			DDR0_D113
			DDR0_D114
			DDR0_D115
			DDR0_D116
			DDR0_D117
			DDR0_D118
			DDR0_D119
			DDR0_D120
			DDR0_D121
			DDR0_D122
			DDR0_D123
			DDR0_D124
			DDR0_D125
			DDR0_D126
			DDR0_D127
			DDR0_D128
			DDR0_D129
			DDR0_D130
			DDR0_D131
			DDR0_D132
			DDR0_D133
			DDR0_D134
			DDR0_D135
			DDR0_D136
			DDR0_D137
			DDR0_D138
			DDR0_D139
			DDR0_D140
			DDR0_D141
			DDR0_D142
			DDR0_D143
			DDR0_D144
			DDR0_D145
			DDR0_D146
			DDR0_D147
			DDR0_D148
			DDR0_D149
			DDR0_D150
			DDR0_D151
			DDR0_D152
			DDR0_D153
			DDR0_D154
			DDR0_D155
			DDR0_D156
			DDR0_D157
			DDR0_D158
			DDR0_D159
			DDR0_D160
			DDR0_D161
			DDR0_D162
			DDR0_D163
			DDR0_D164
			DDR0_D165
			DDR0_D166
			DDR0_D167
			DDR0_D168
			DDR0_D169
			DDR0_D170
			DDR0_D171
			DDR0_D172
			DDR0_D173
			DDR0_D174
			DDR0_D175
			DDR0_D176
			DDR0_D177
			DDR0_D178
			DDR0_D179
			DDR0_D180
			DDR0_D181
			DDR0_D182
			DDR0_D183
			DDR0_D184
			DDR0_D185
			DDR0_D186
			DDR0_D187
			DDR0_D188
			DDR0_D189
			DDR0_D190
			DDR0_D191
			DDR0_D192
			DDR0_D193
			DDR0_D194
			DDR0_D195
			DDR0_D196
			DDR0_D197
			DDR0_D198
			DDR0_D199
			DDR0_D200
			DDR0_D201
			DDR0_D202
			DDR0_D203
			DDR0_D204
			DDR0_D205
			DDR0_D206
			DDR0_D207
			DDR0_D208
			DDR0_D209
			DDR0_D210
			DDR0_D211
			DDR0_D212
			DDR0_D213
			DDR0_D214
			DDR0_D215
			DDR0_D216
			DDR0_D217
			DDR0_D218
			DDR0_D219
			DDR0_D220
			DDR0_D221
			DDR0_D222
			DDR0_D223
			DDR0_D224
			DDR0_D225
			DDR0_D226
			DDR0_D227
			DDR0_D228
			DDR0_D229
			DDR0_D230
			DDR0_D231
			DDR0_D232
			DDR0_D233
			DDR0_D234
			DDR0_D235
			DDR0_D236
			DDR0_D237
			DDR0_D238
			DDR0_D239
			DDR0_D240
			DDR0_D241
			DDR0_D242
			DDR0_D243
			DDR0_D244
			DDR0_D245
			DDR0_D246
			DDR0_D247
			DDR0_D248
			DDR0_D249
			DDR0_D250
			DDR0_D251
			DDR0_D252
			DDR0_D253
			DDR0_D254
			DDR0_D255
			DDR0_D256
			DDR0_D257
			DDR0_D258
			DDR0_D259
			DDR0_D260
			DDR0_D261
			DDR0_D262
			DDR0_D263
			DDR0_D264
			DDR0_D265
			DDR0_D266
			DDR0_D267
			DDR0_D268
			DDR0_D269
			DDR0_D270
			DDR0_D271
			DDR0_D272
			DDR0_D273
			DDR0_D274
			DDR0_D275
			DDR0_D276
			DDR0_D277
			DDR0_D278
			DDR0_D279
			DDR0_D280
			DDR0_D281
			DDR0_D282
			DDR0_D283
			DDR0_D284
			DDR0_D285
			DDR0_D286
			DDR0_D287
			DDR0_D288
			DDR0_D289
			DDR0_D290
			DDR0_D291
			DDR0_D292
			DDR0_D293
			DDR0_D294
			DDR0_D295
			DDR0_D296
			DDR0_D297
			DDR0_D298
			DDR0_D299
			DDR0_D300
			DDR0_D301
			DDR0_D302
			DDR0_D303
			DDR0_D304
			DDR0_D305
			DDR0_D306
			DDR0_D307
			DDR0_D308
			DDR0_D309
			DDR0_D310
			DDR0_D311
			DDR0_D312
			DDR0_D313
			DDR0_D314
			DDR0_D315
			DDR0_D316
			DDR0_D317
			DDR0_D318
			DDR0_D319
			DDR0_D320
			DDR0_D321
			DDR0_D322
			DDR0_D323
			DDR0_D324
			DDR0_D325
			DDR0_D326
			DDR0_D327
			DDR0_D328
			DDR0_D329
			DDR0_D330
			DDR0_D331
			DDR0_D332
			DDR0_D333
			DDR0_D334
			DDR0_D335
			DDR0_D336
			DDR0_D337
			DDR0_D338
			DDR0_D339
			DDR0_D340
			DDR0_D341
			DDR0_D342
			DDR0_D343
			DDR0_D344
			DDR0_D345
			DDR0_D346
			DDR0_D347
			DDR0_D348
			DDR0_D349
			DDR0_D350
			DDR0_D351
			DDR0_D352
			DDR0_D353
			DDR0_D354
			DDR0_D355
			DDR0_D356
			DDR0_D357
			DDR0_D358
			DDR0_D359
			DDR0_D360
			DDR0_D361
			DDR0_D362
			DDR0_D363
			DDR0_D364
			DDR0_D365
			DDR0_D366
			DDR0_D367
			DDR0_D368
			DDR0_D369
			DDR0_D370
			DDR0_D371
			DDR0_D372
			DDR0_D373
			DDR0_D374
			DDR0_D375
			DDR0_D376
			DDR0_D377
			DDR0_D378
			DDR0_D379
			DDR0_D380
			DDR0_D381
			DDR0_D382
			DDR0_D383
			DDR0_D384
			DDR0_D385
			DDR0_D386
			DDR0_D387
			DDR0_D388
			DDR0_D389
			DDR0_D390
			DDR0_D391
			DDR0_D392
			DDR0_D393
			DDR0_D394
			DDR0_D395
			DDR0_D396
			DDR0_D397
			DDR0_D398
			DDR0_D399
			DDR0_D400
			DDR0_D401
			DDR0_D402
			DDR0_D403
			DDR0_D404
			DDR0_D405
			DDR0_D406
			DDR0_D407
			DDR0_D408
			DDR0_D409
			DDR0_D410
			DDR0_D411
			DDR0_D412
			DDR0_D413
			DDR0_D414
			DDR0_D415
			DDR0_D416
			DDR0_D417
			DDR0_D418
			DDR0_D419
			DDR0_D420
			DDR0_D421
			DDR0_D422
			DDR0_D423
			DDR0_D424
			DDR0_D425
			DDR0_D426
			DDR0_D427
			DDR0_D428
			DDR0_D429
			DDR0_D430
			DDR0_D431
			DDR0_D432
			DDR0_D433
			DDR0_D434
			DDR0_D435
			DDR0_D436
			DDR0_D437
			DDR0_D438
			DDR0_D439
			DDR0_D440
			DDR0_D441
			DDR0_D442
			DDR0_D443
			DDR0_D444

LGA1150 (F,J)

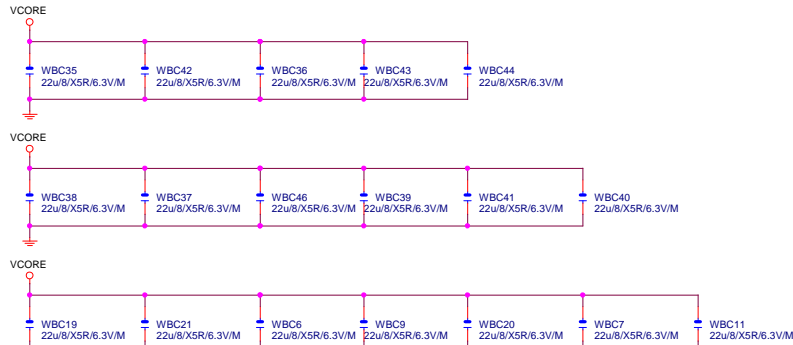


LGA1155 (G,H,I)



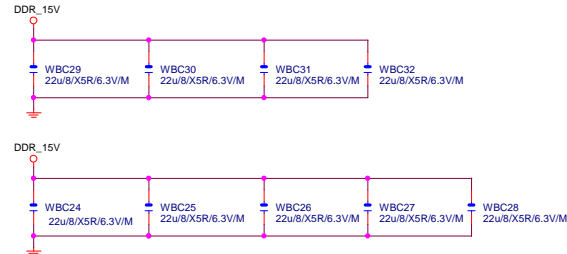
VCore CAP

(X18)



DDR CAP

(x9)



Gigabyte Technology

Title	CPU IGA1150-C
-------	---------------

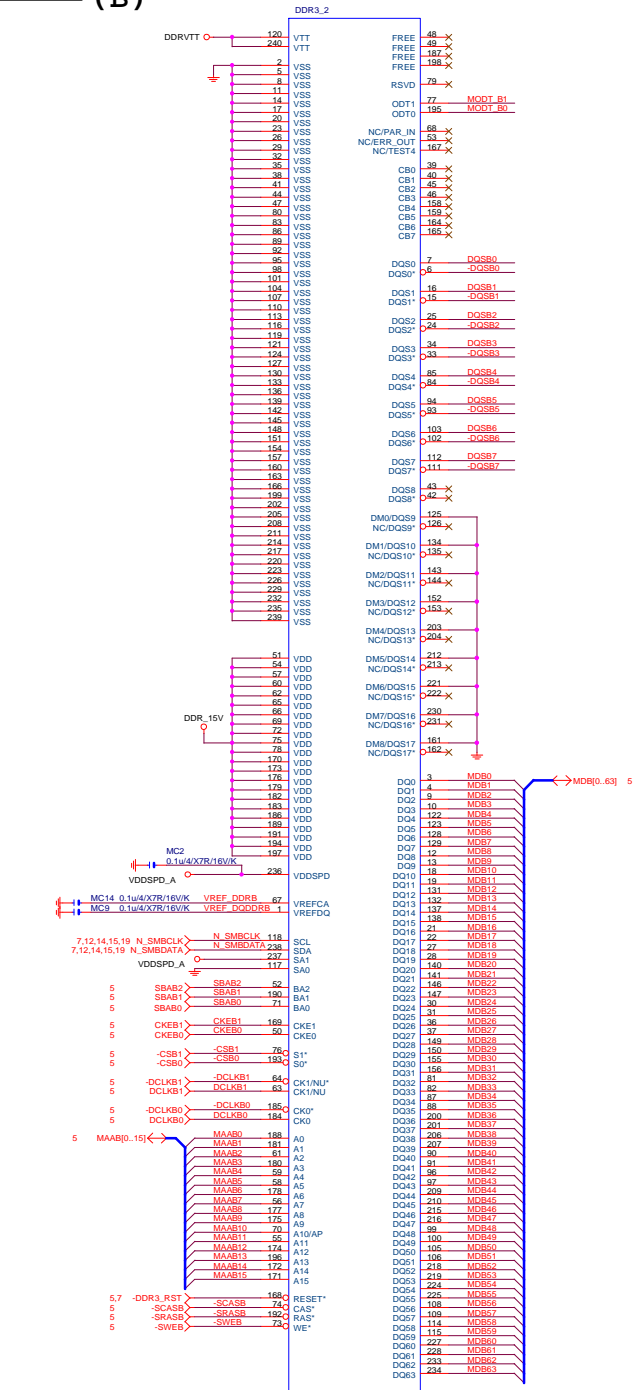
Size	Document Number	GA-B85M-D2V
Custom		

Custom	GA-BUSM-B2V	1.1
Date:	Monday, January 06, 2014	Sheet 6 of 33

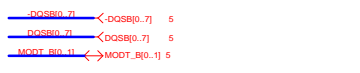
1.11

DDR3

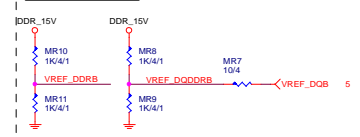
(B)



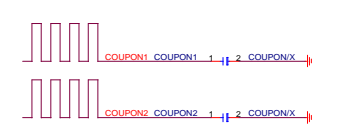
DDR3/240/BK/VA/D
BLACK CONNECTOR



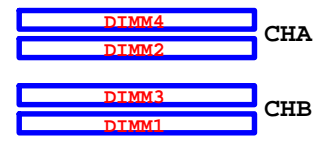
DDR3 VREF



COUPON

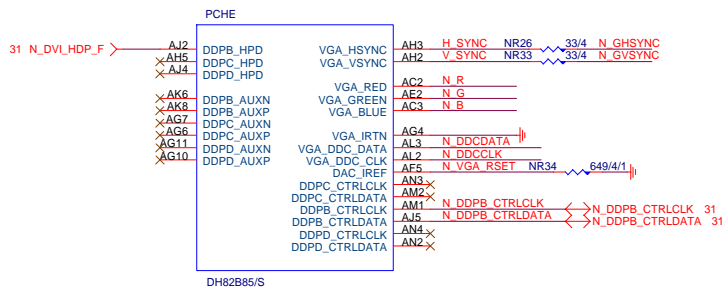


CPU

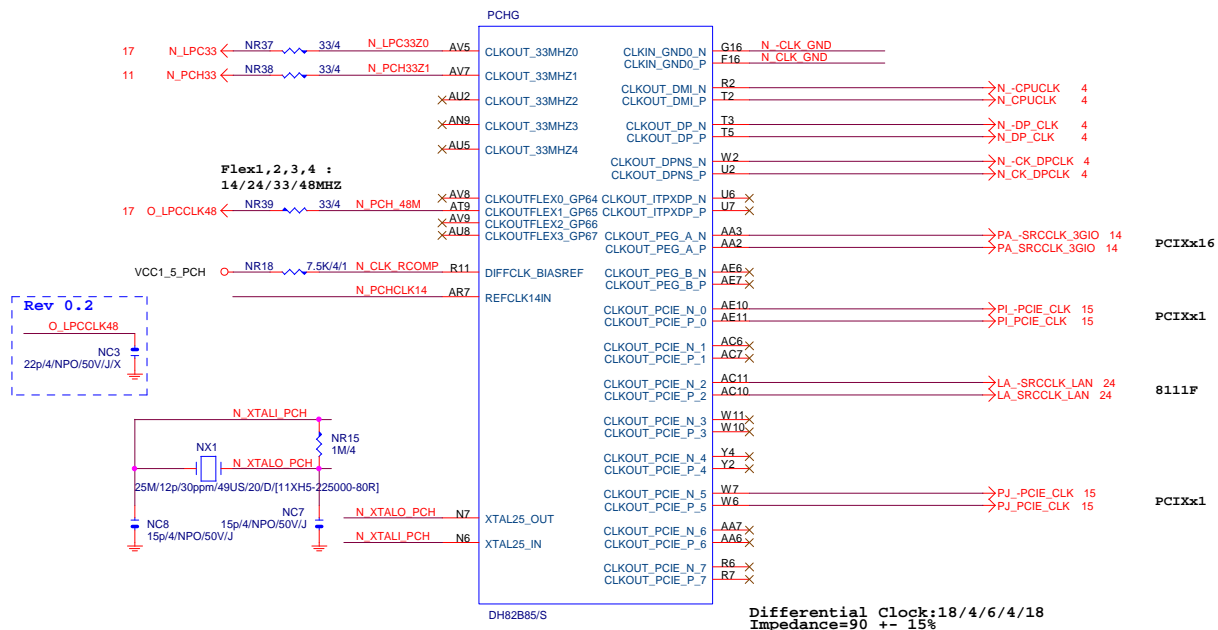


www.aitech1.ru

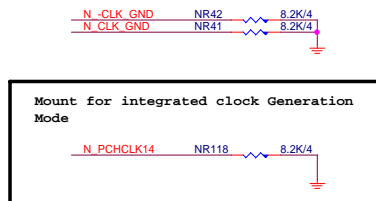
PCH (E)



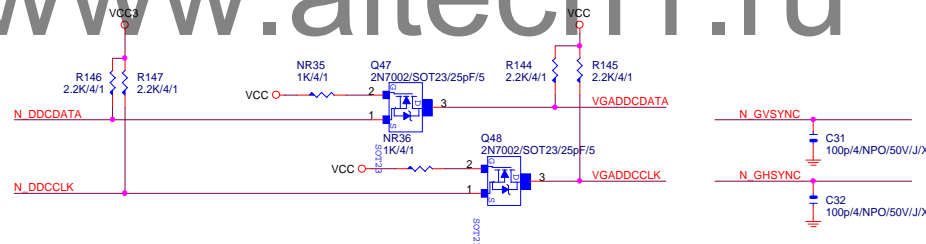
PCH (G)



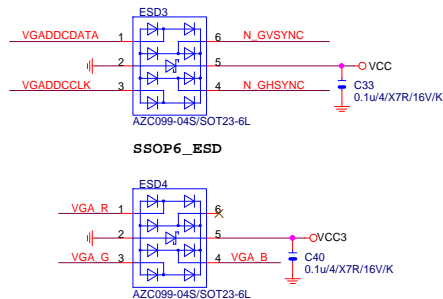
PCH CLK PD



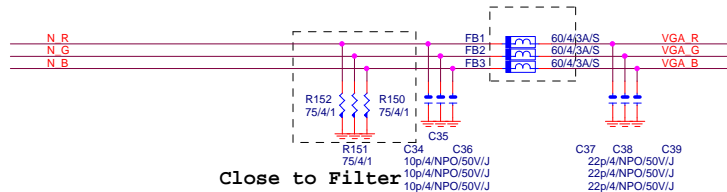
VGA DDC



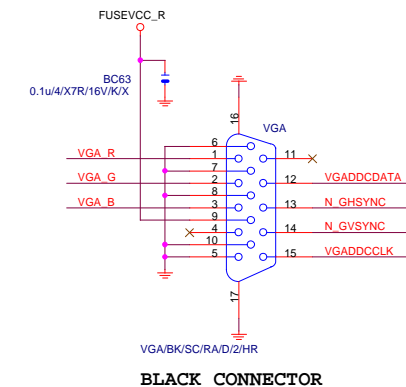
VGA ESD



VGA DDC

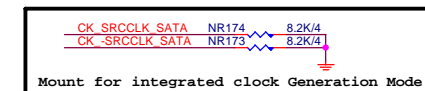


VGA CONNECTOR

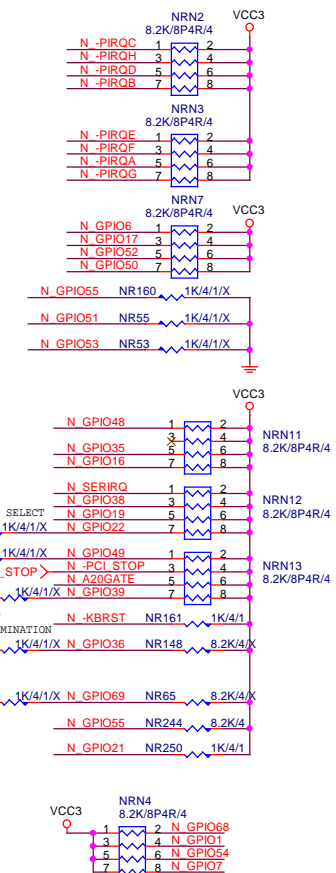


Gigabyte Technology			
Title			
PCH DISPLAY_CLK BUFFER			
Size			
Custom			
Document Number			
GA-B85M-D2V			
Date			
Monday, January 06, 2014			
Sheet			
10 of 33			
Rev			
1.11			

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



PCH	PU/PD
-----	-------



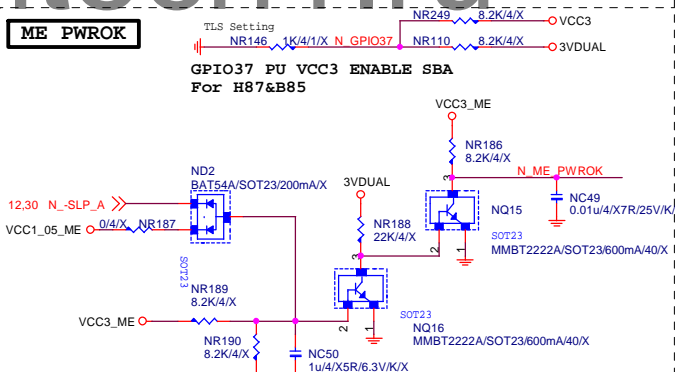
SATA CONNECTOR



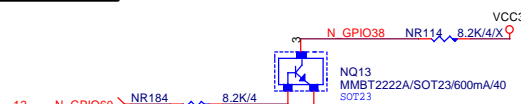
```
** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0
```



ME PWROK



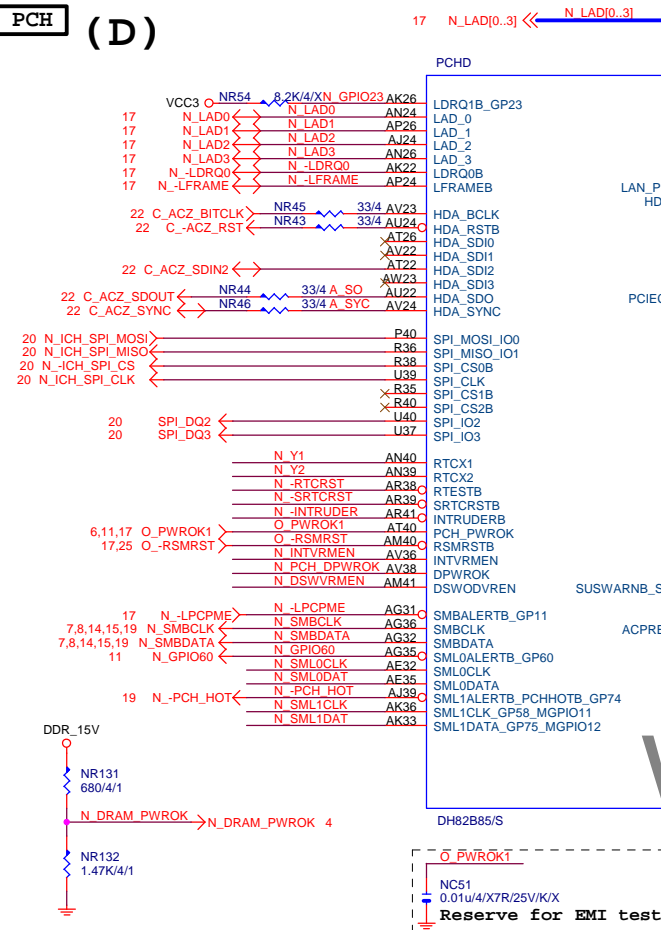
GPI038 Ctrl



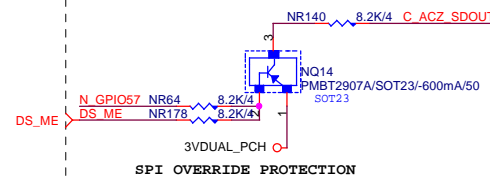
Gigabyte Technology

Title			
PCH HOST , SATA, PCI			
Size	Document Number		Rev
Custom	GA-B85M-D2V		1.1
Date:	Monday, January 06, 2014	Sheet	11 of 33

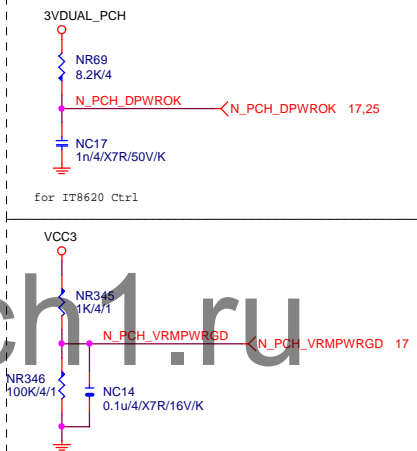
(D)



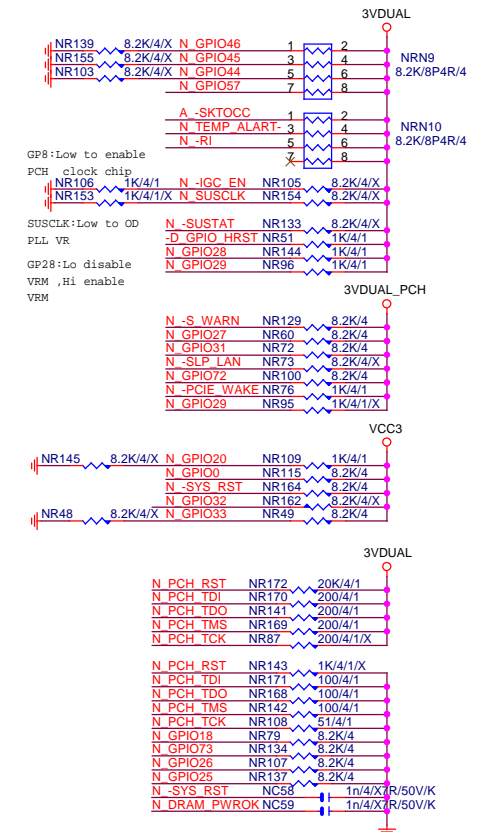
ACZ_SDOUT



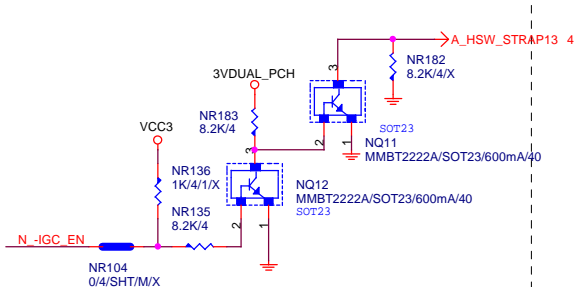
PCH_DPWROK



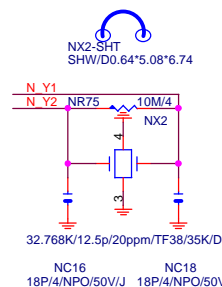
PCH	PU/PD
-----	-------



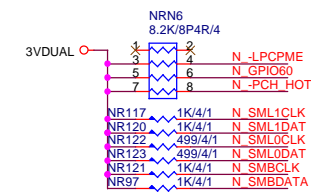
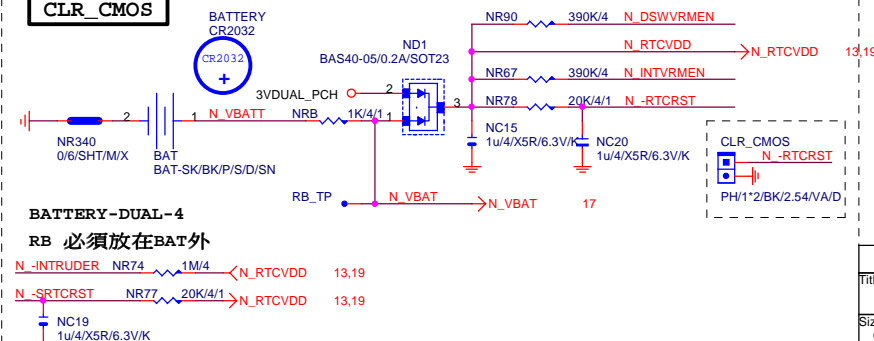
HSW_STRAP13



32.768KHZ



CLR_CMOS



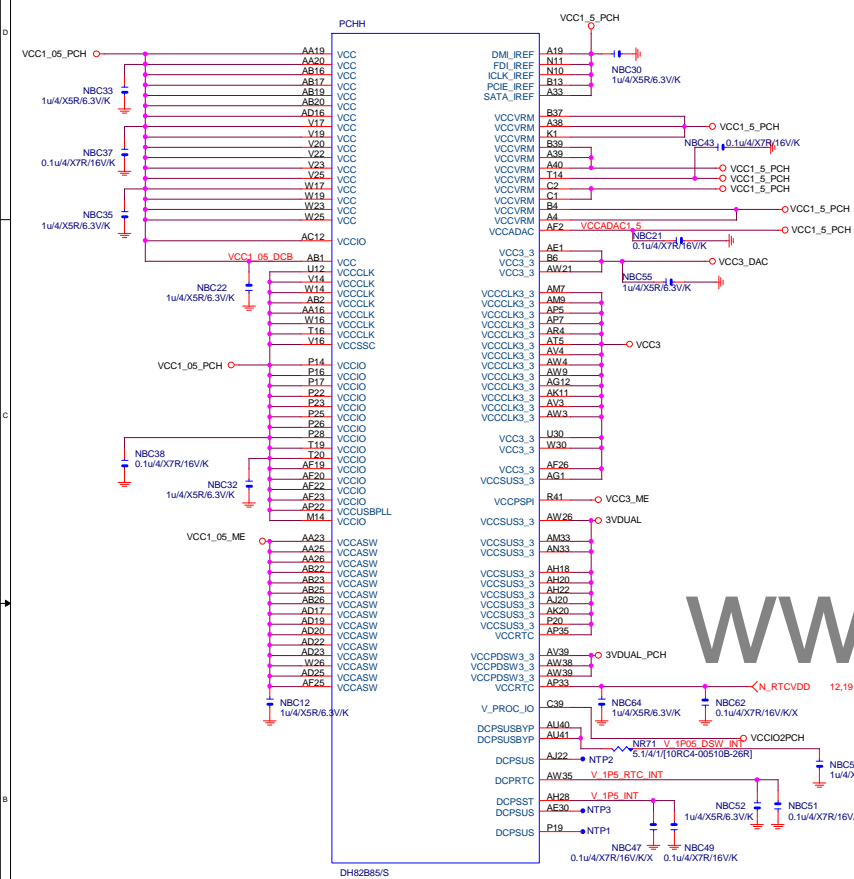
Gigabyte Technology

PCH GPIO , CTRL , AUDIO

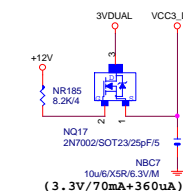
GA-B85M-D2V

1.1

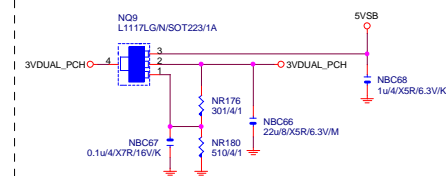
PCH (H)



VCC3_DAC



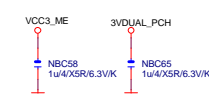
3VDUAL_PCH



SHT PWR

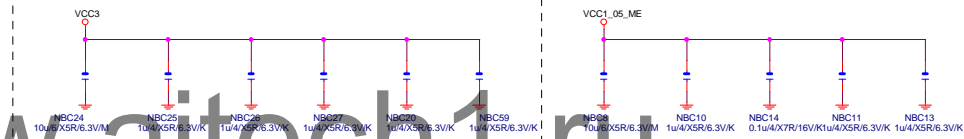


CAP

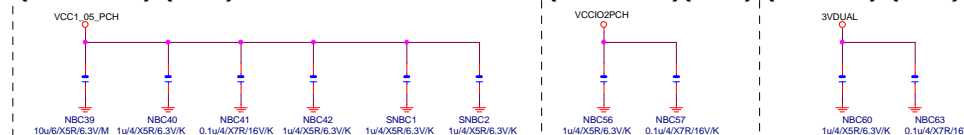


(3.3V) (X6)

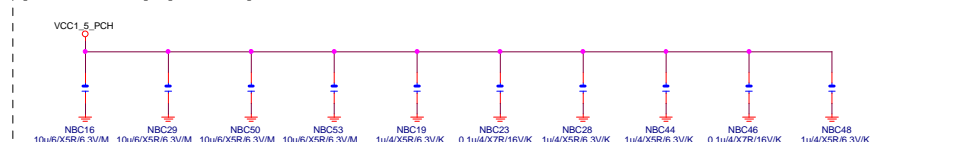
(1.05V) (x5)



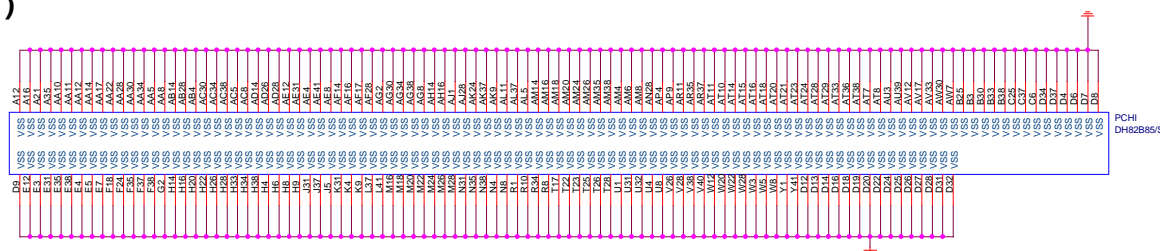
(1.05V)(x6)

$$(1.05V)(x_2) - (3.3V)(x_2)$$


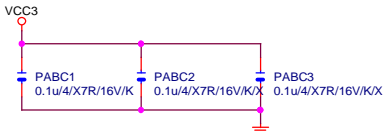
(1.05V) (x10)



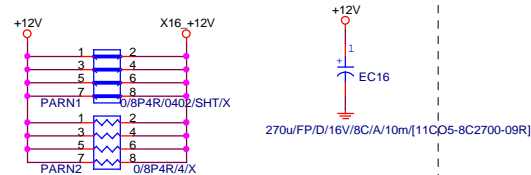
PCH (I)



PCIEX16 CAP



PCIEX16 PROTECT SHT



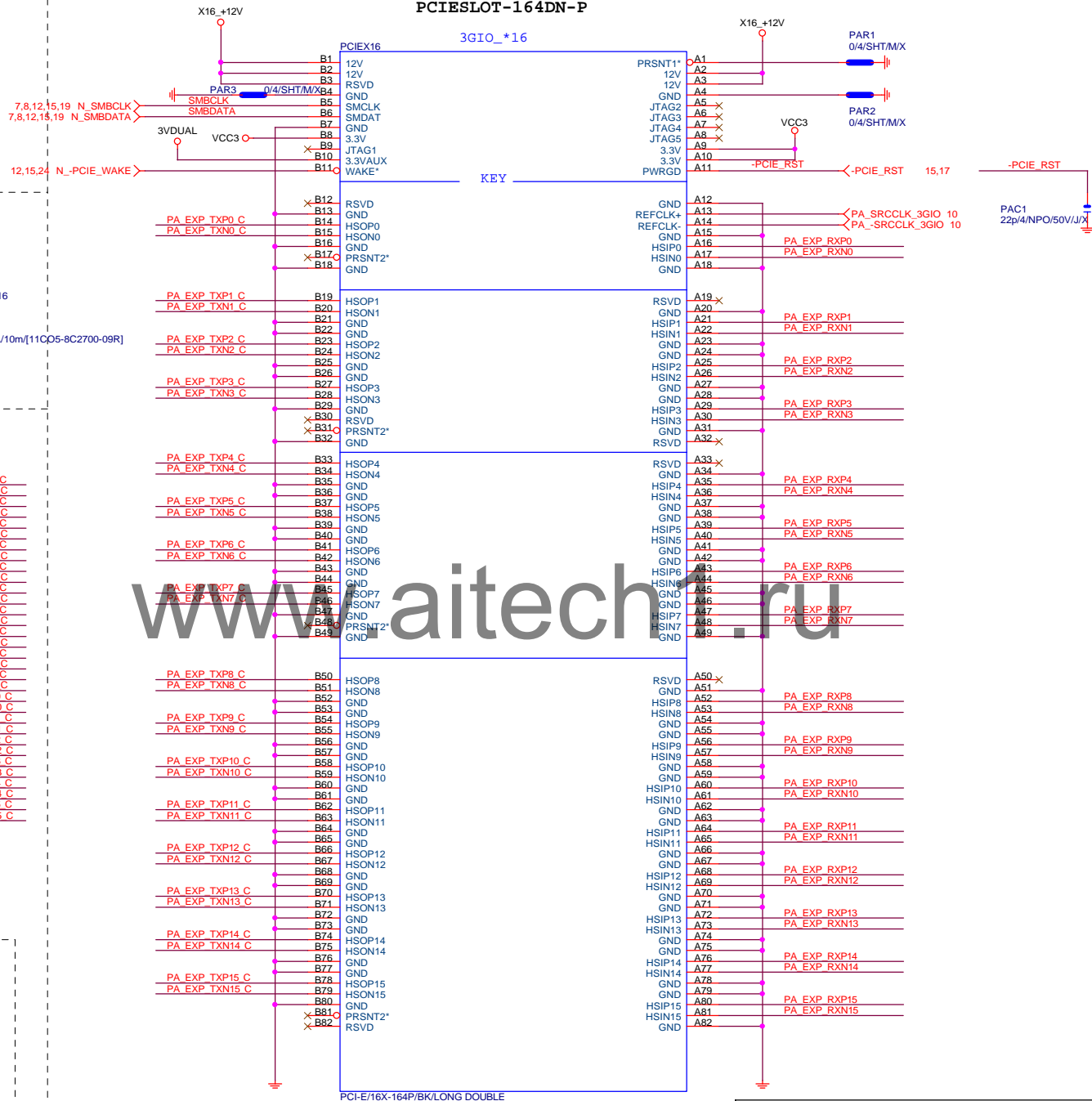
PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC18	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

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

PCIEX16 SLOT



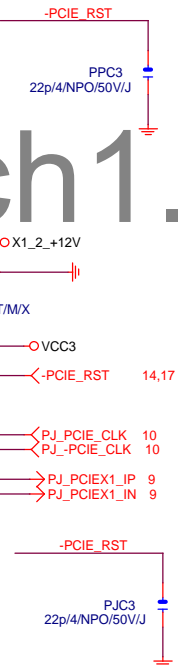
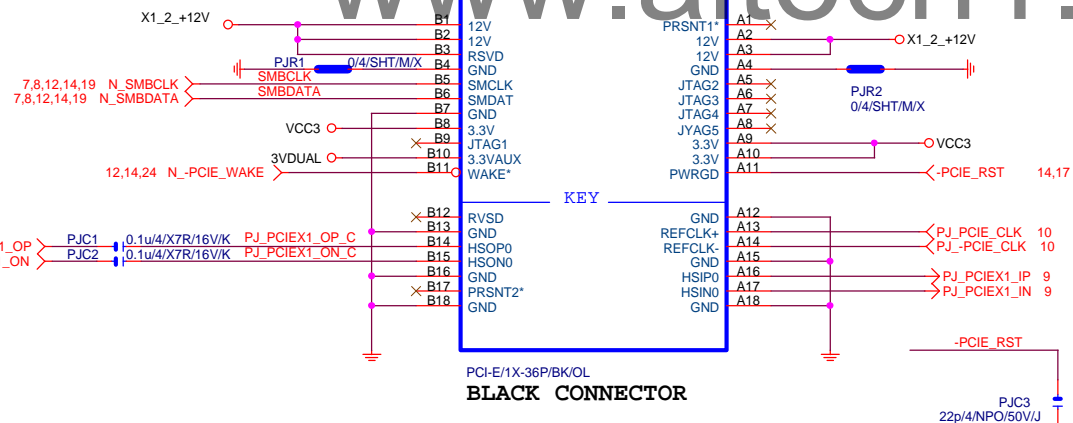
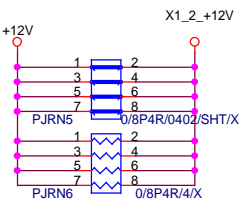
PCI-E/16X-164P/BK/LONG DOUBLE

BLACK CONNECTOR

Gigabyte Technology

Title			PCI EXPRESS * 16		
Size			Document Number		
Custom			GA-B85M-D2V		
Date:			Monday, January 06, 2014		
Sheet			14 of 33		
Rev			1.11		

PCIEX1 SLOT



Gigabyte Technology

Title	PCI EXPRESS X 1 PORT
-------	----------------------

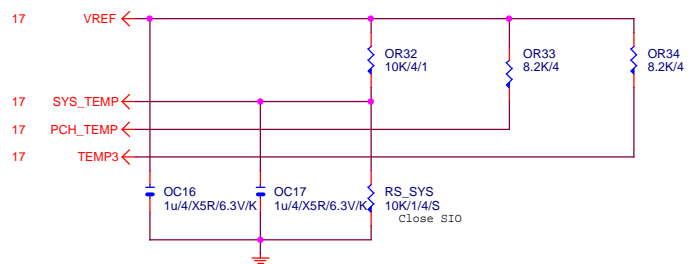
Size Custom	Document Number GA-B85M-D2V	Rev 1.11
----------------	---------------------------------------	--------------------

Date: Monday, January 06, 2014 Sheet 15 of 33

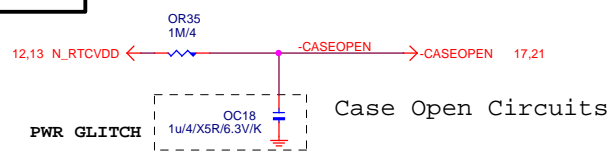
www.aitech1.ru

Gigabyte Technology			
Title			
PCI SLOT 1&2			
Size	Document Number		Rev
Custom	GA-B85M-D2V		1.11
Date:	Monday, January 06, 2014	Sheet	16 of 33
	2		1

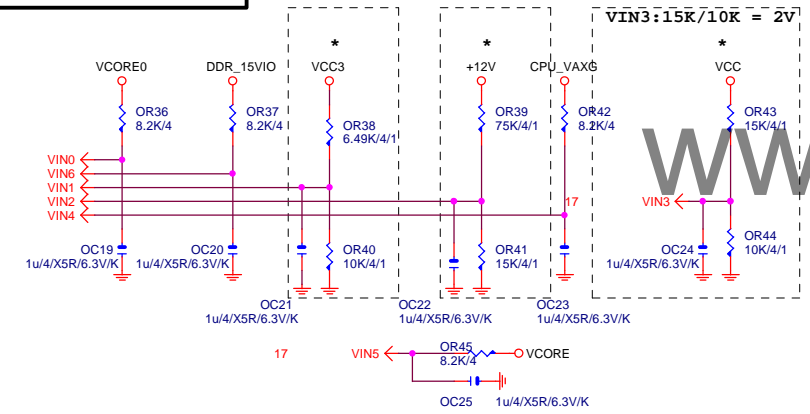
TEMP H/W MONITOR



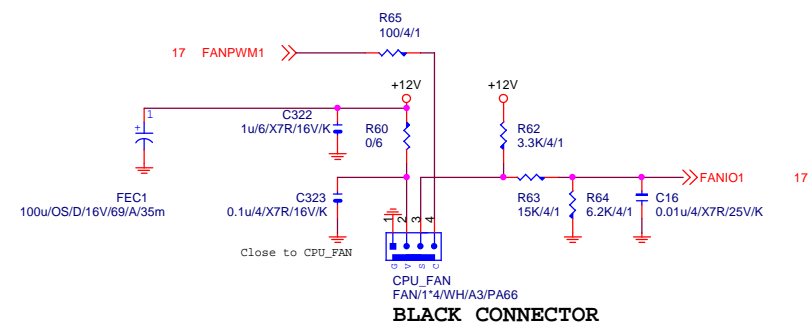
CASE OPEN



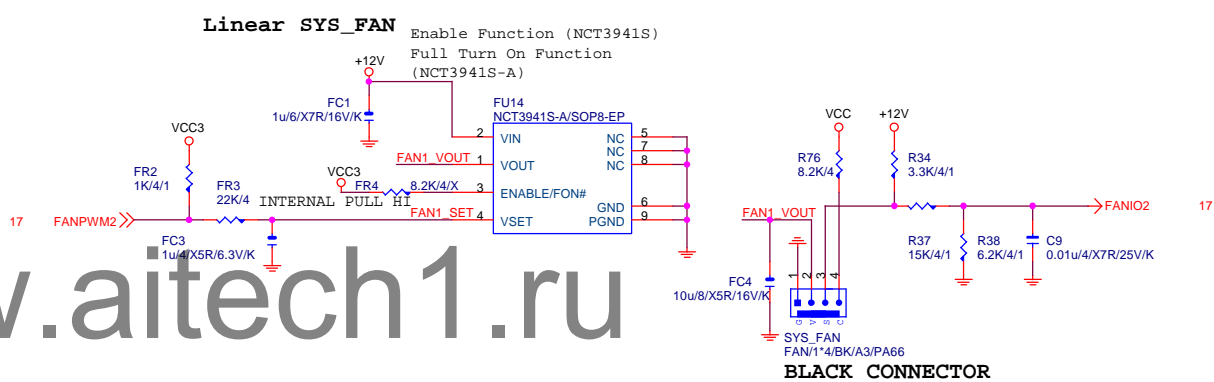
VOLTAGE-- H/W MONITOR



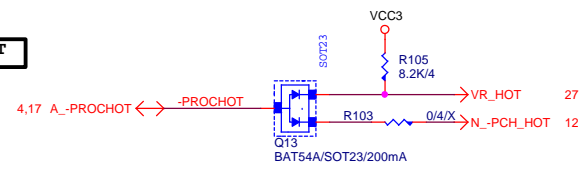
CPU SMART FAN



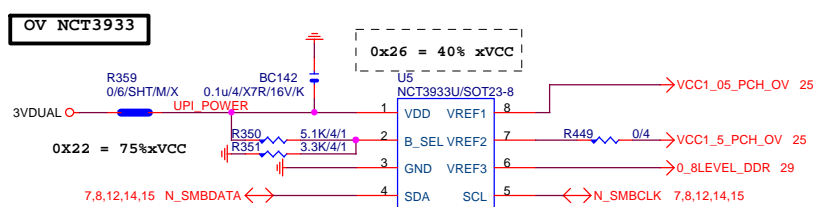
SYS SMART FAN



-PROHOT



接pwm feedback pin



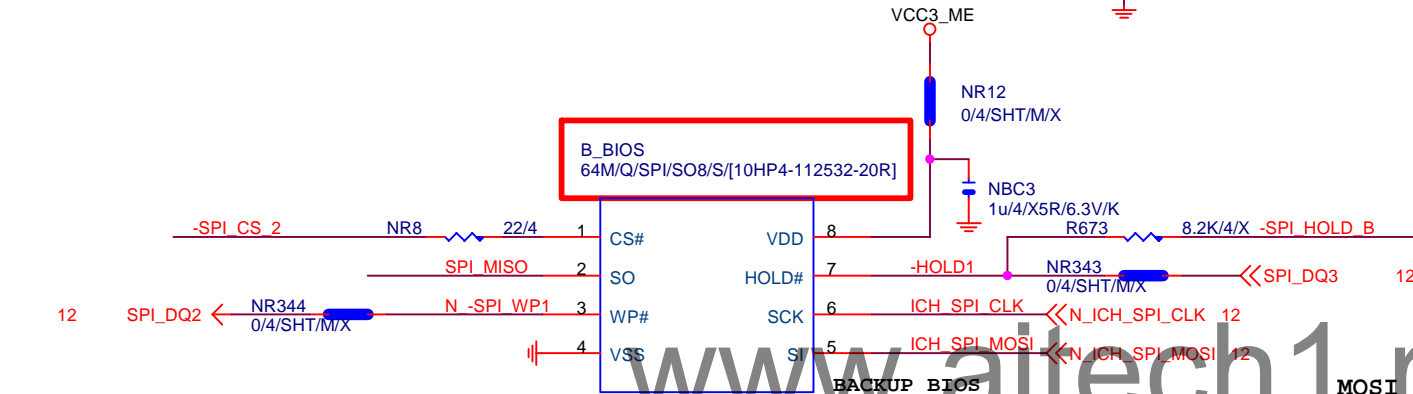
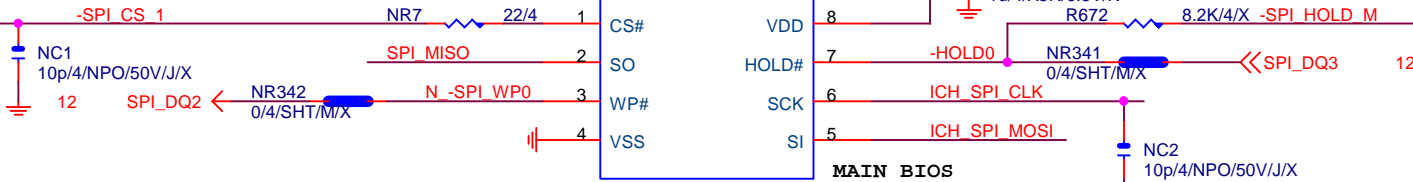
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology

TitleHWM,FAN CTRL,OV

SizeCustomDocument NumberGA-B85M-D2VRev1.11

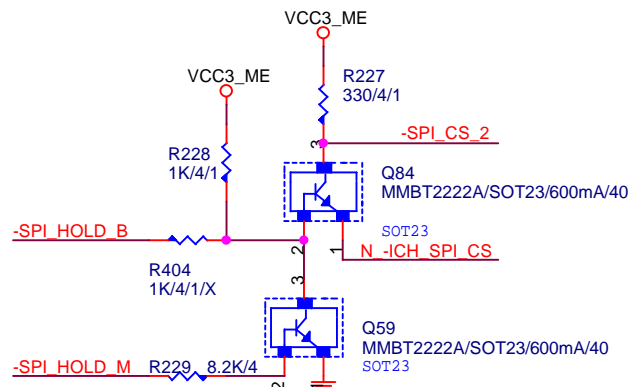
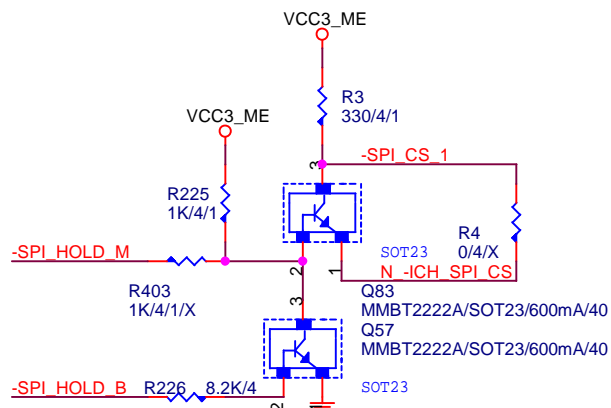
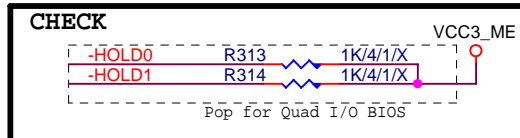
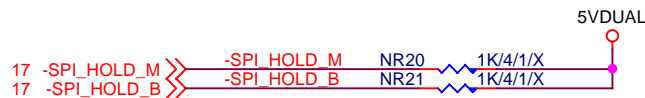
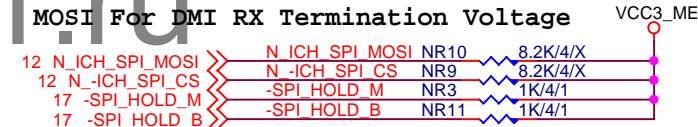
Date:Monday, January 06, 2014Sheet19 of 33



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



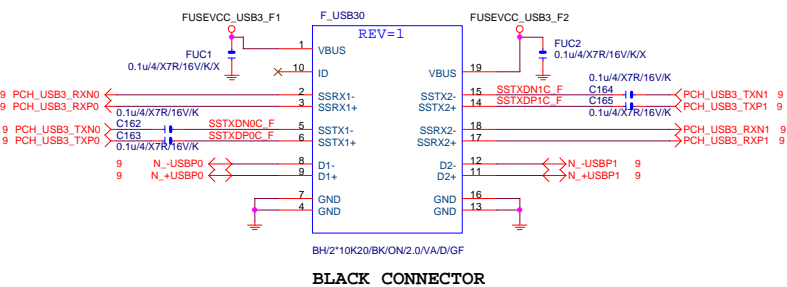
Gigabyte Technology

DUAL BIOS

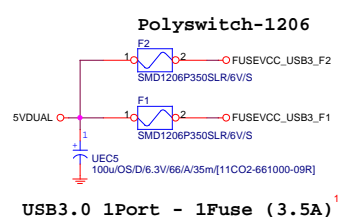
GA-B85M-D2V

Title			Rev
Size	Document Number	1.11	
Custom			
Date:	Monday, January 06, 2014	Sheet	20 of 33

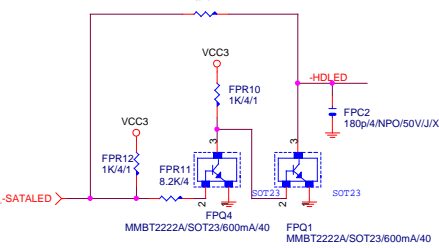
F_USB30



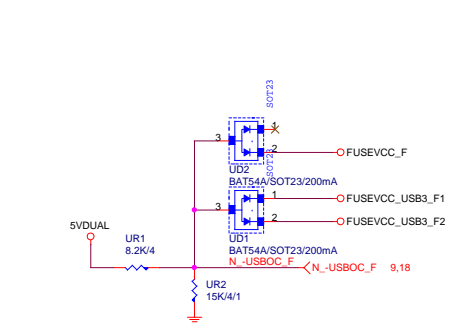
F_USB30 PWR



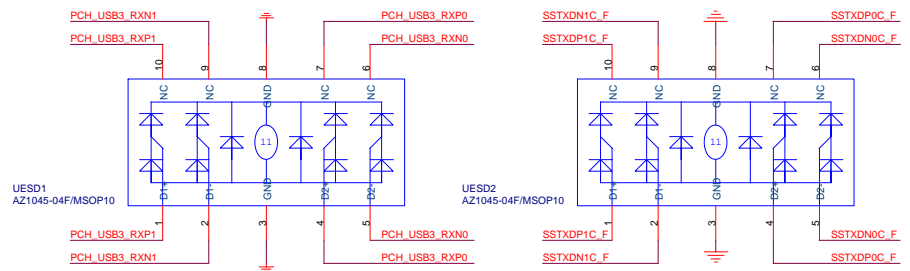
SATA LED



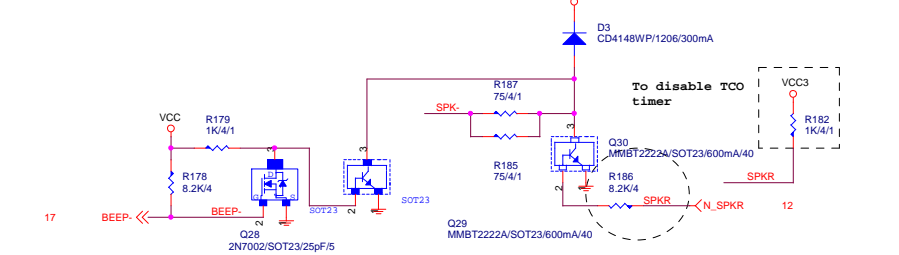
-USB0C_F



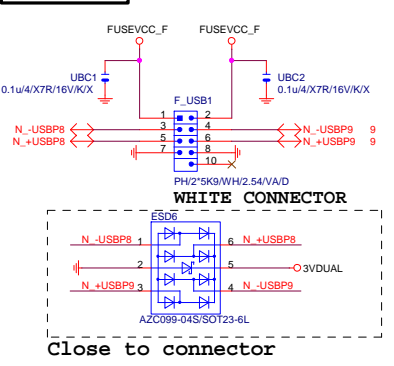
F_USB30 ESD PROTECT



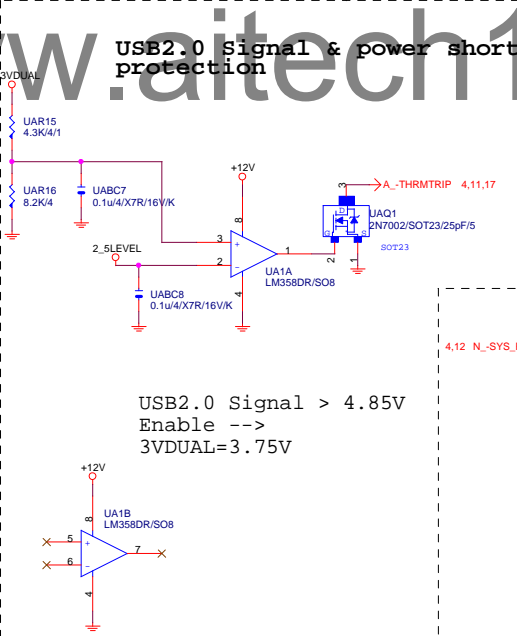
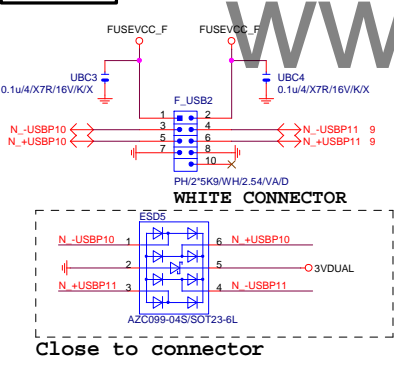
SPKR



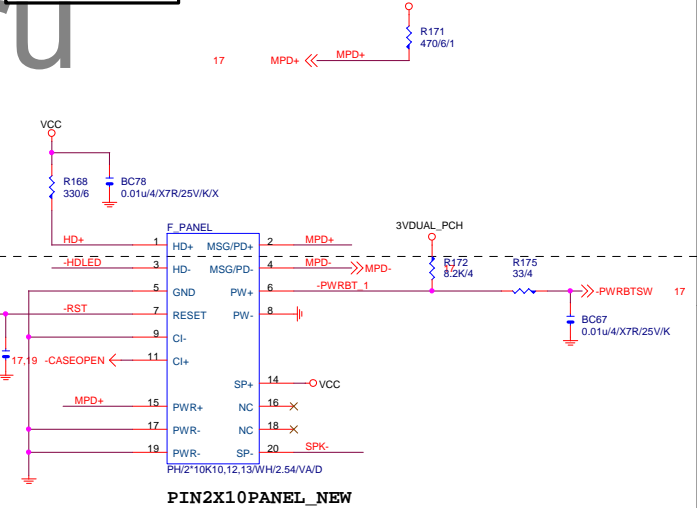
FRONT USB1



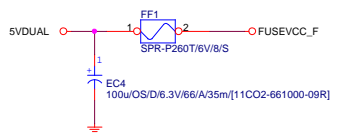
FRONT USB2



INTEL FRONT PANEL



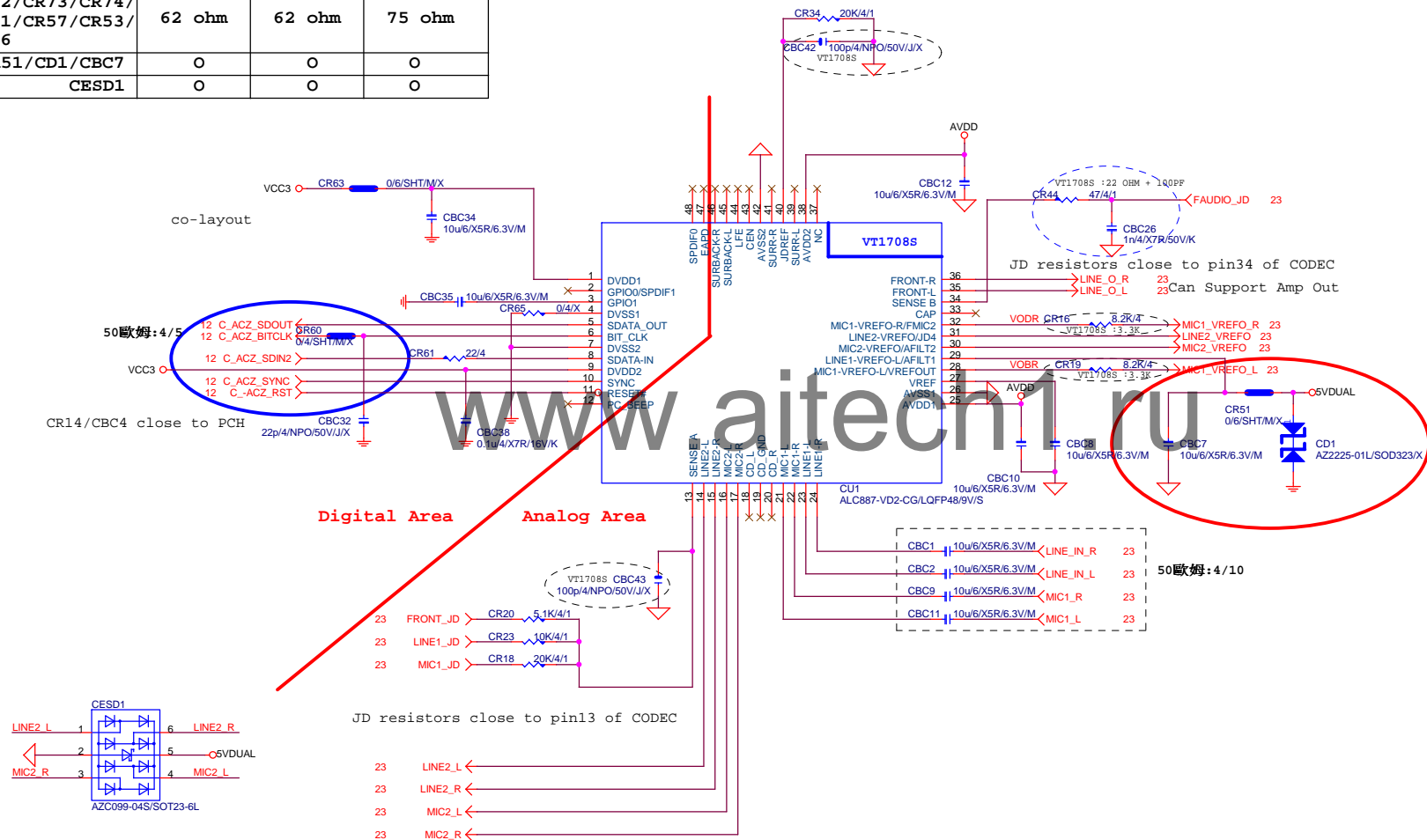
FUSE-0805 F_USB1, F_USB2 4-Port 2.6A

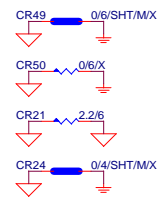


Gigabyte Technology			
FP,F_USB,USB PWR,SPKR,SATA LED			
GA-B85M-D2V			
Rev	1.11		

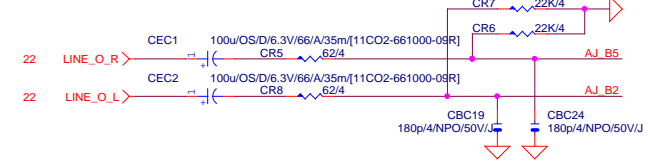
AZALIA CODEC ALC892/ALC887-VD2/VT1708-CE Colay

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





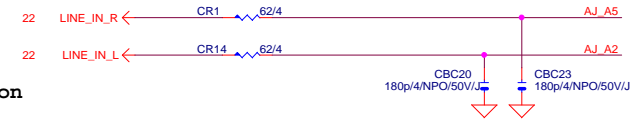
LINE-OUT



LINE-IN

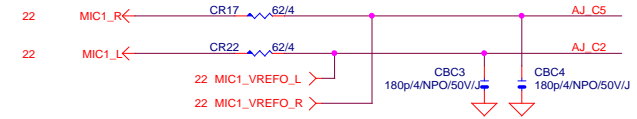
Verify MIC function
in LINE-in

Only reserved for ALC888



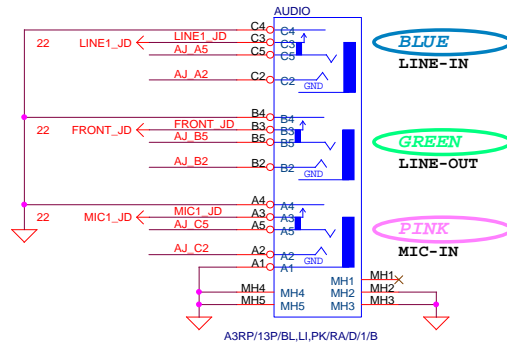
For 889A/888

MIC-IN

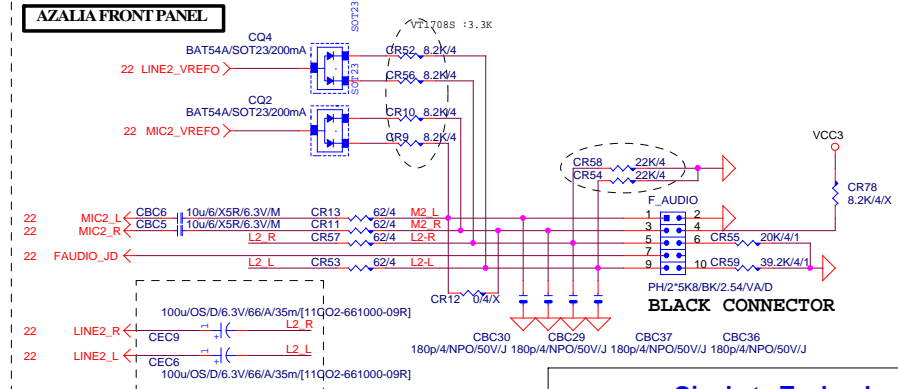


SPDIF_OUT

www.aitech1.ru



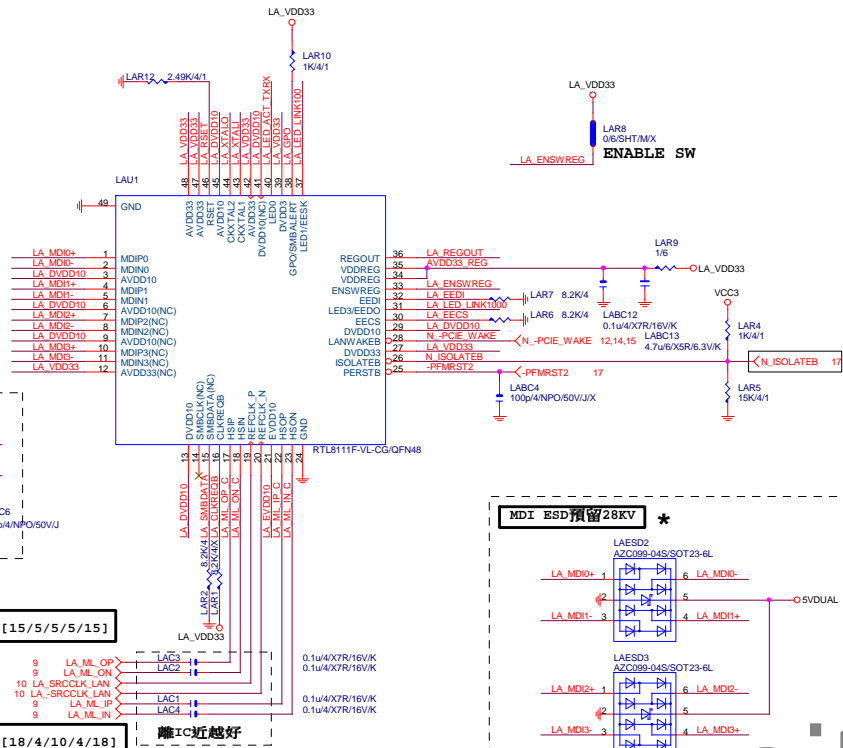
AZALIA FRONT PANEL



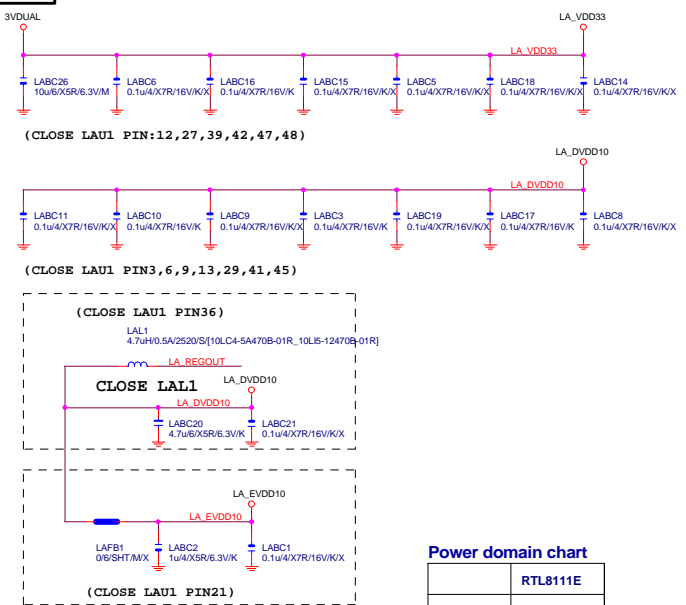
Gigabyte Technology

Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-B85M-D2V	1.11
Date:	Monday, January 06, 2014	Sheet 23 of 33

LAN:RTL8111F/VB/VL



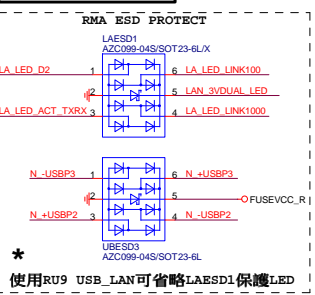
LAN POWER



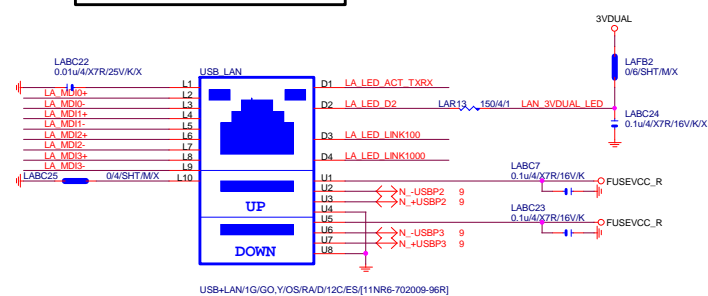
Power domain chart

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

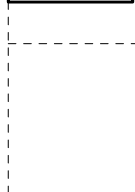
USB LAN CONNECTOR



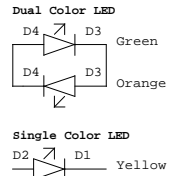
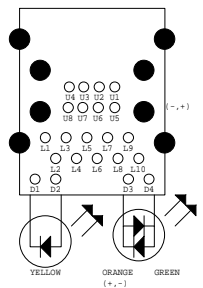
LA_MDI-->100歐姆:[20/4/8/4/20]



USB X3 POWER



EMI SHORT PAD

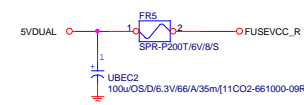


注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

BOM NOTICE

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

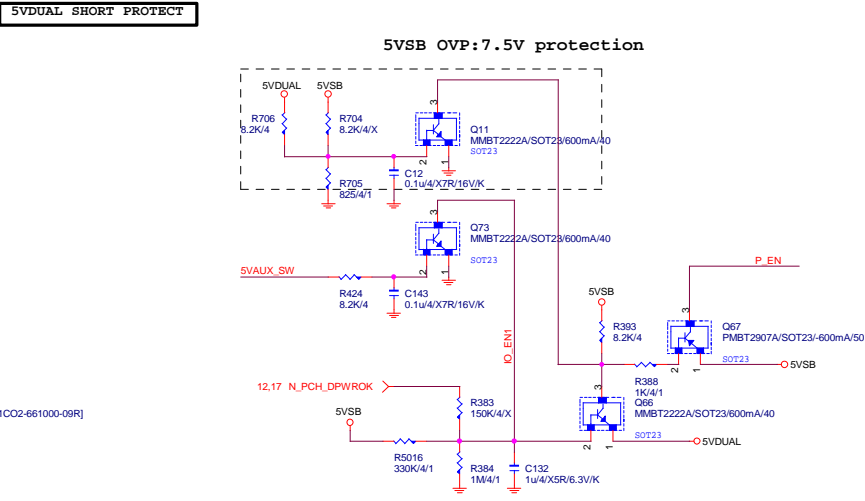
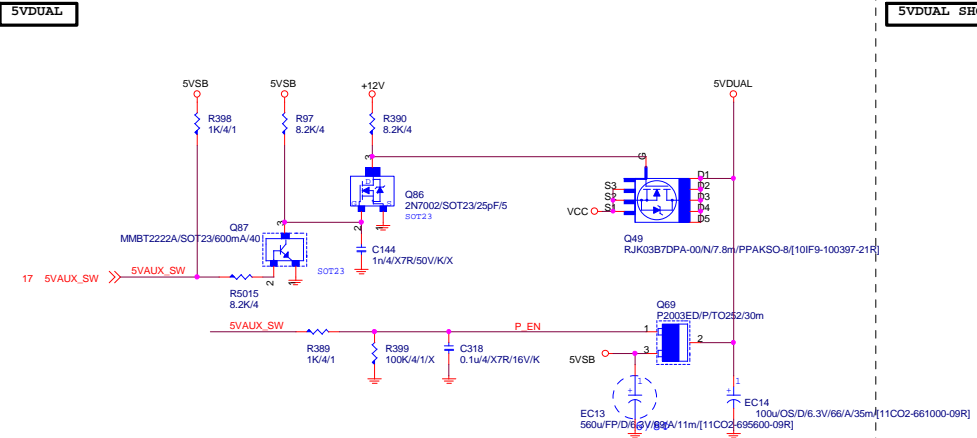
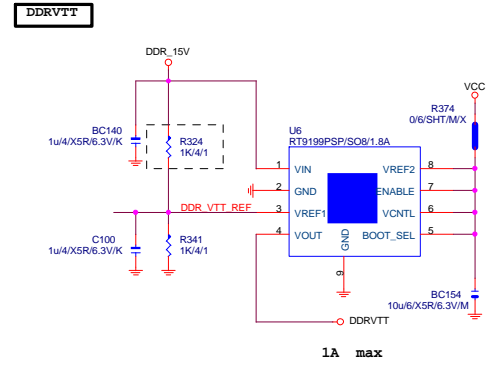
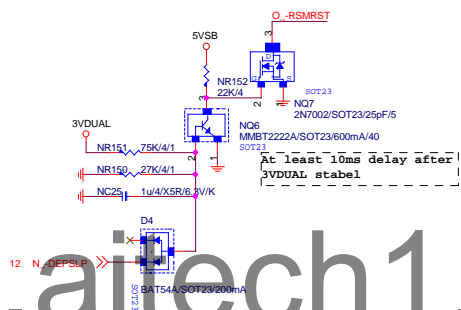
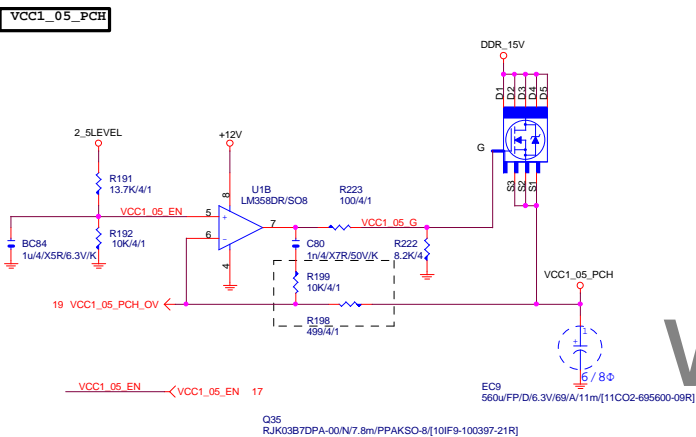
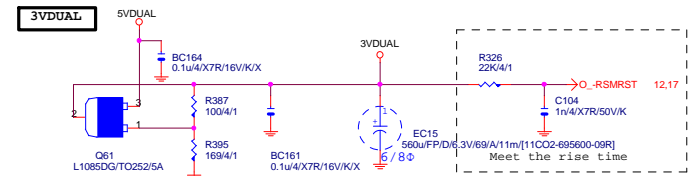
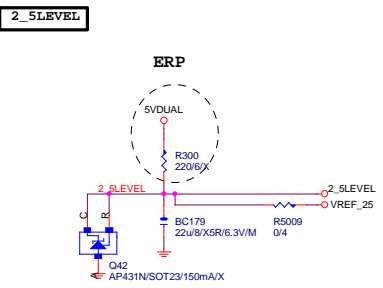
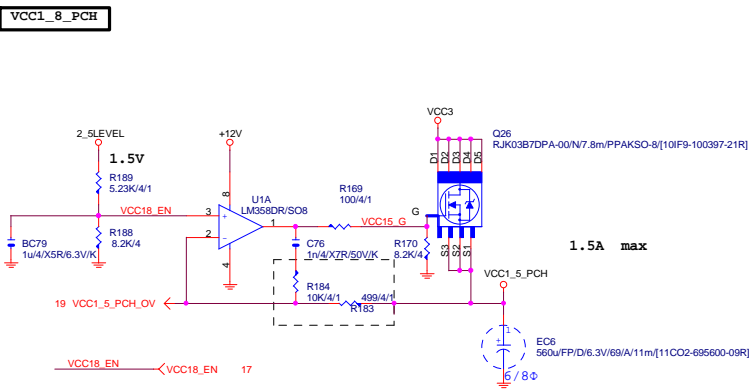
FUSE-0805



Close to connector

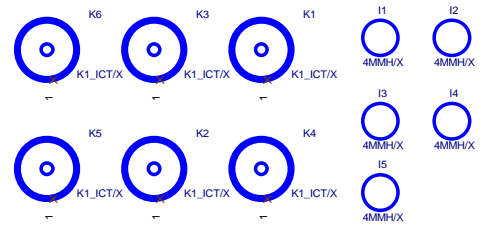
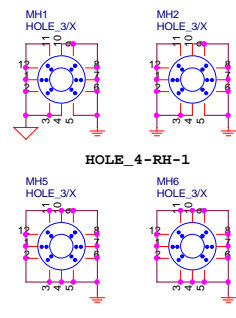
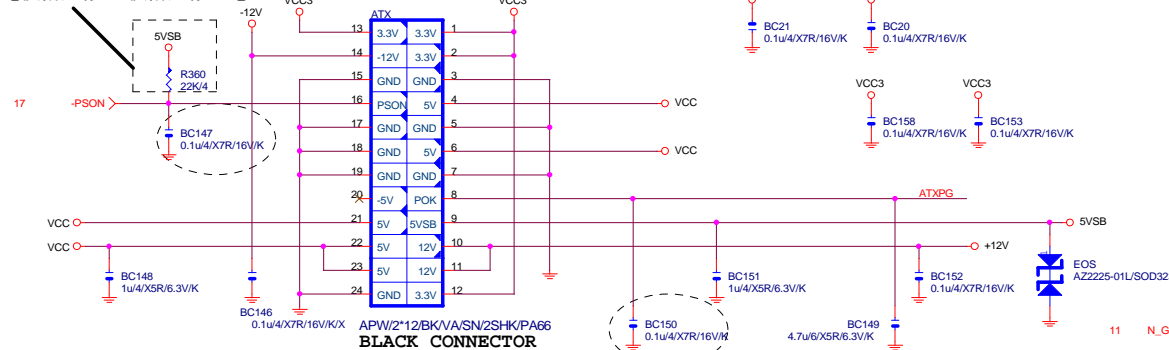
Gigabyte Technology

Realtek RTL8111G		
Size	Document Number	Rev
Custom	GA-B85M-D2V	1.11
Date:	Monday, January 06, 2014	Sheet 24 of 33



ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

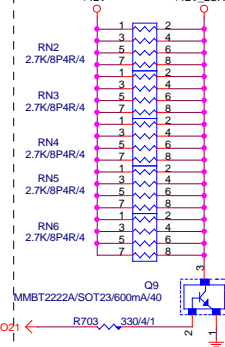


To prevent the 5VSB under loading when boot

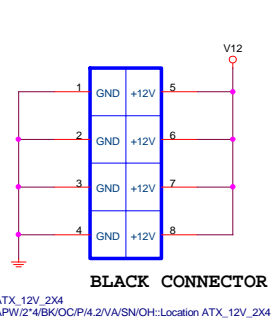
www.aitech1.ru

【技術通報R&D技術通報158】

To fix 12V light load abnormal issue

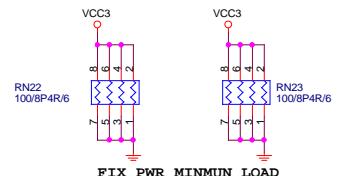
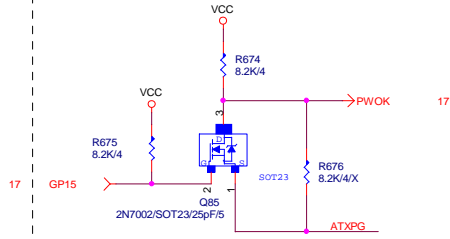


ATXX4 POWER CONNECTOR



PWOK PATCH

【技術通報R&D技術通報154】



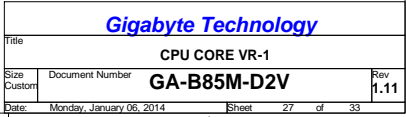
FIX PWR MINMUN LOAD

Gigabyte Technology

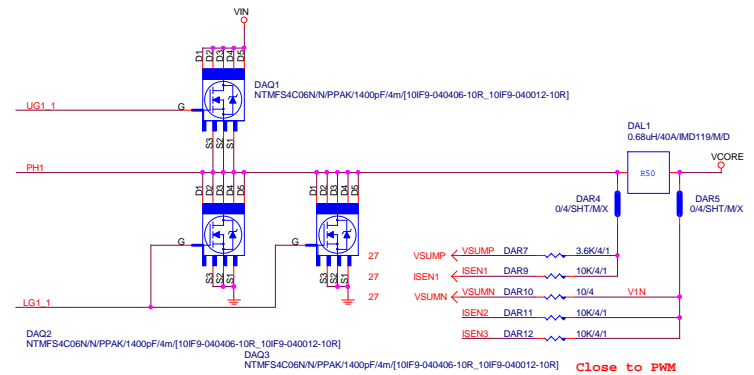
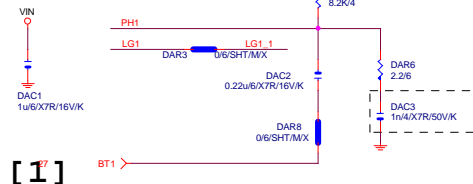
ATX CONNECTOR

GA-B85M-D2V

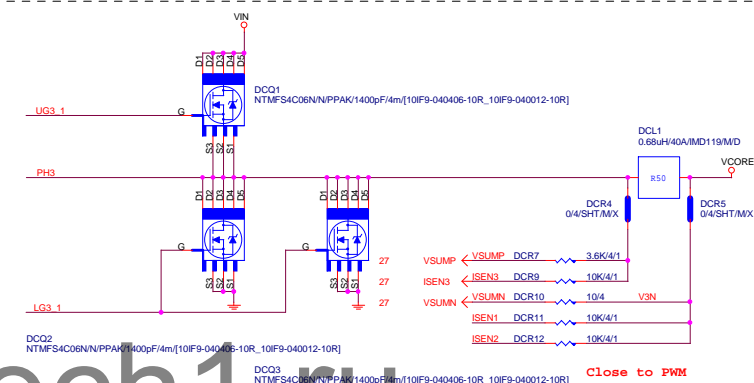
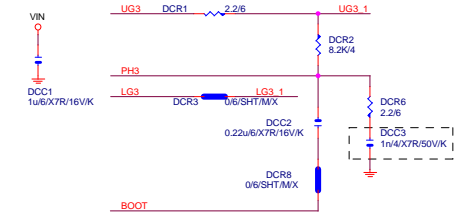
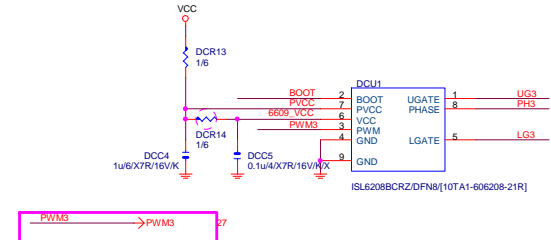
Rev 1.11



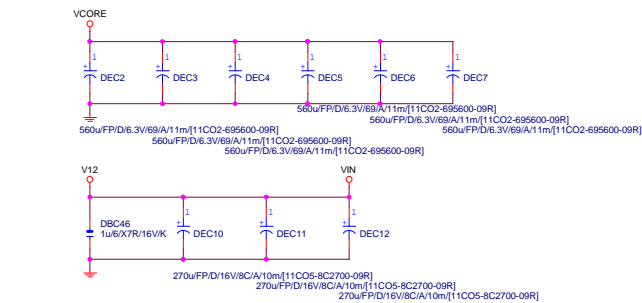
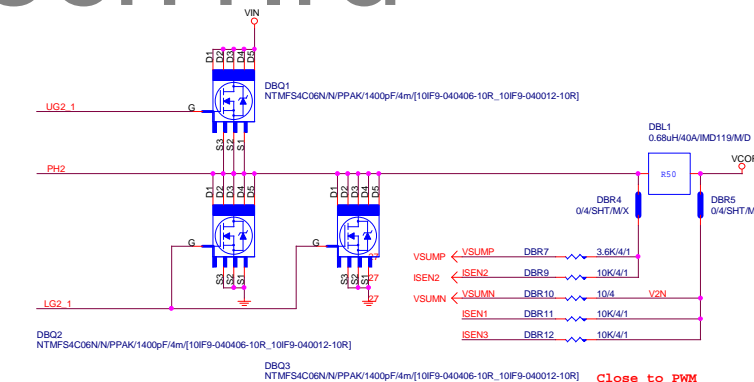
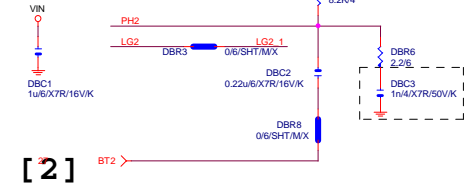
PHASE 1

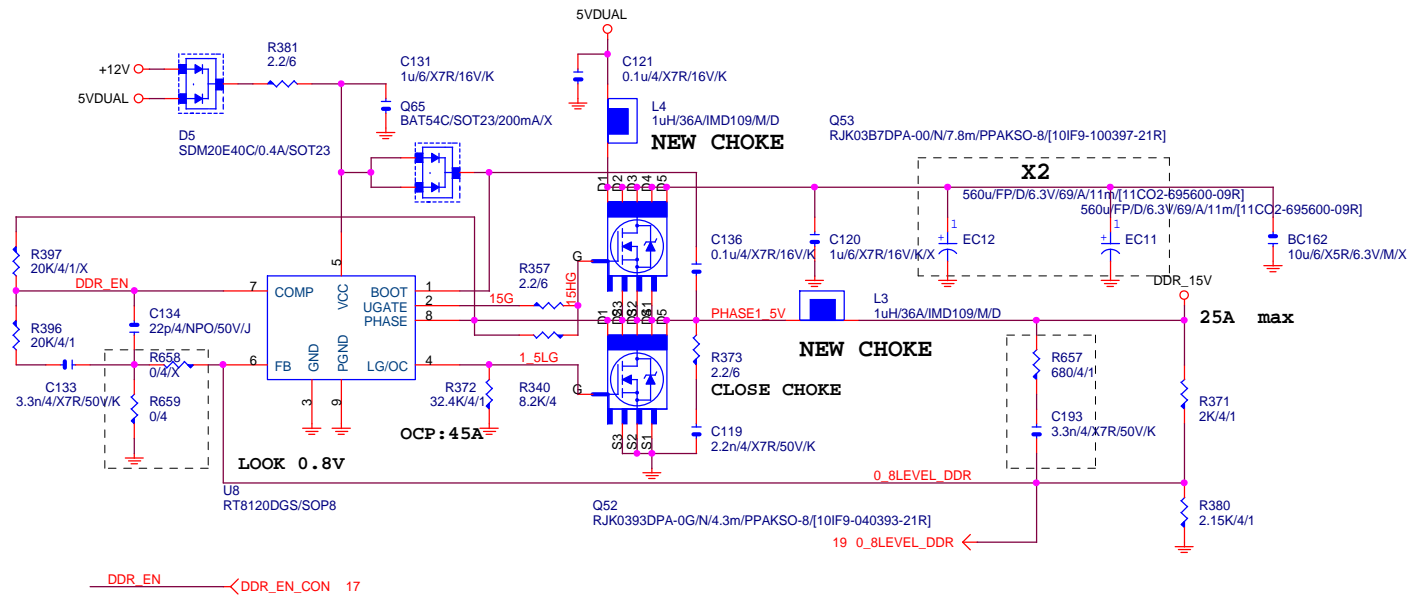


PHASE 3



PHASE 2



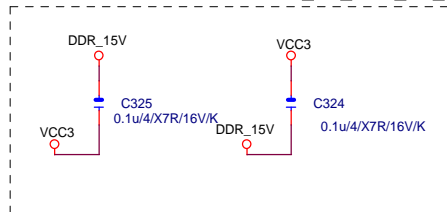


From DDR_15V source
10 mils trace to SIO

DDR_15V
MR20

DDR_15VIO
Q/4/SHT/M/X

穿層電容



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

$Rocset = (I_{ocp} * L_{gate, rdson}) / I_{ocset}$

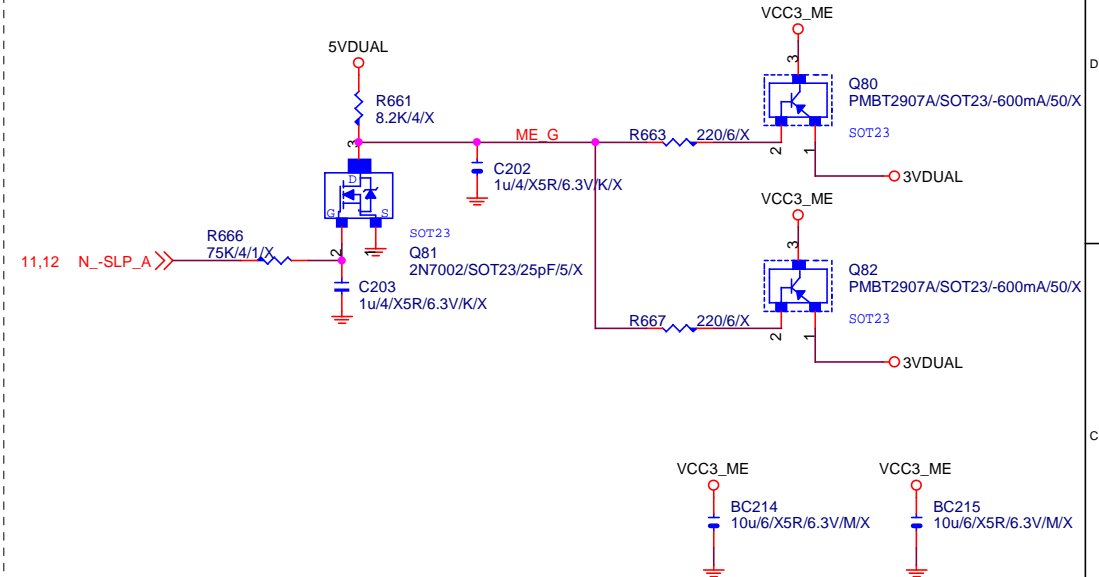
$Rocset = (45A * 6.7m\Omega) / 10uA = 30K$

$I_{ocset} = 10uA$

Gigabyte Technology

Title			
DDR POWER			
Size	Document Number	Rev	
Custom	GA-B85M-D2V	1.11	
Date:	Monday, January 06, 2014	Sheet	29 of 33

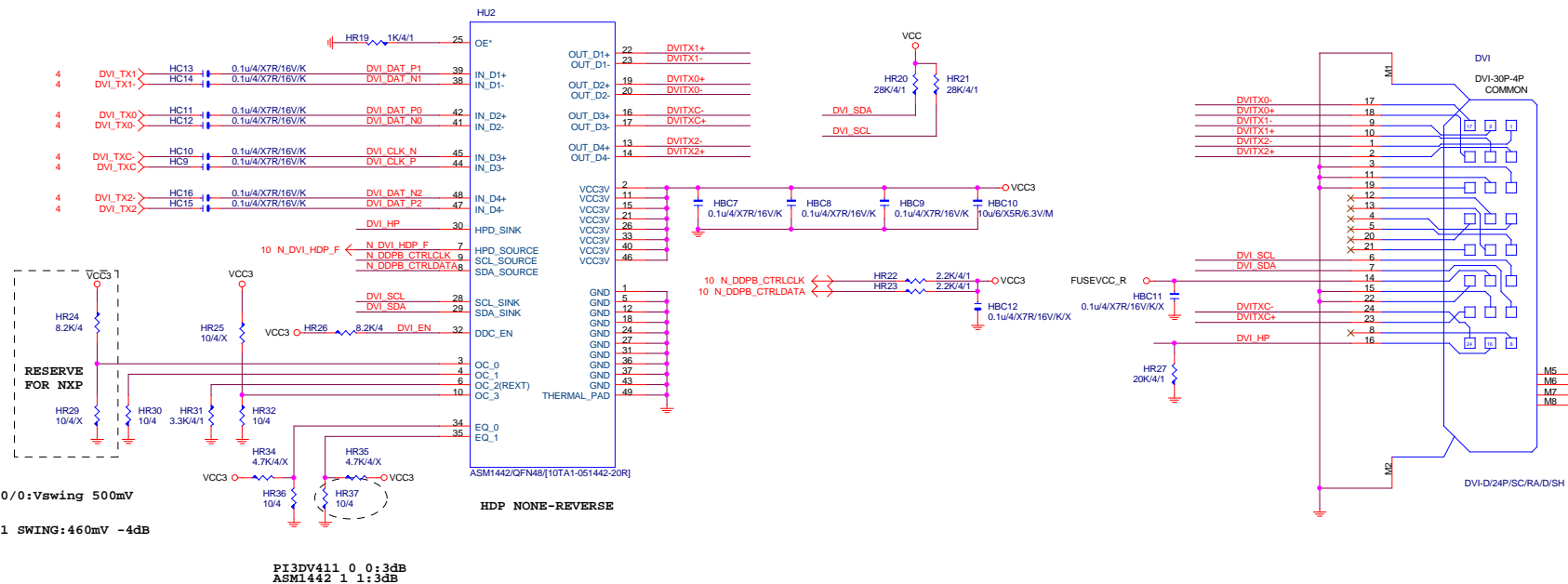
【技術通報R&D技術通報156】
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值



www.aitech1.ru

Title			
LPT			
Size	Document Number		Rev
Custom	GA-B85M-D2V		1.11
Date:	Monday, January 06, 2014	Sheet	30 of 33

DVI LEVEL SHIFT



HDMI LEVEL SHIFT

www.aitech1.ru

www.aitech1.ru

Gigabyte Technology			
Title			
ITE IT8892E			
Size	Document Number		Rev
Custom	GA-B85M-D2V		1.11
Date:	Monday, January 06, 2014		Sheet 32 of 33
		1	

www.aitech1.ru

<i>Gigabyte Technology</i>			
Title USB3 EJ188			
Size C	Document Number GA-B85M-D2V		Rev 1.11
Date: Monday, January 06, 2014	Sheet 33 of 33		