

Model Name: GA-H81M-DS2V

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 *3 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

www.xinxunwei.com 400-800-9990
Revision 1.03

SHEET

TITLE

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

Gigabyte Technology

Cover Sheet

Title	Cover Sheet	
Size	Document Number	Rev
Custom	GA-H81M-DS2V	1.03
Date:	Thursday, June 26, 2014	Sheet 1 of 33

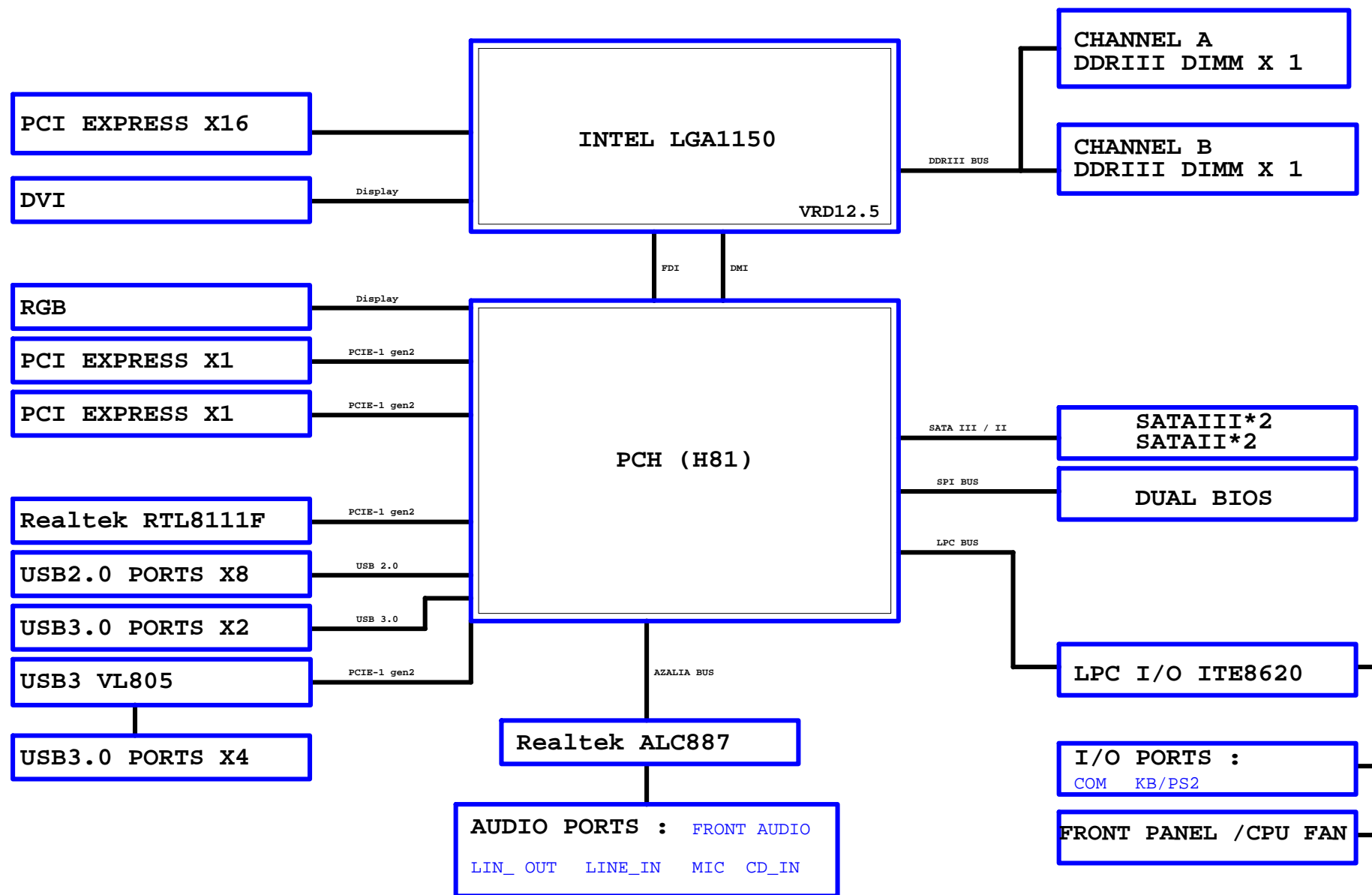
D

C

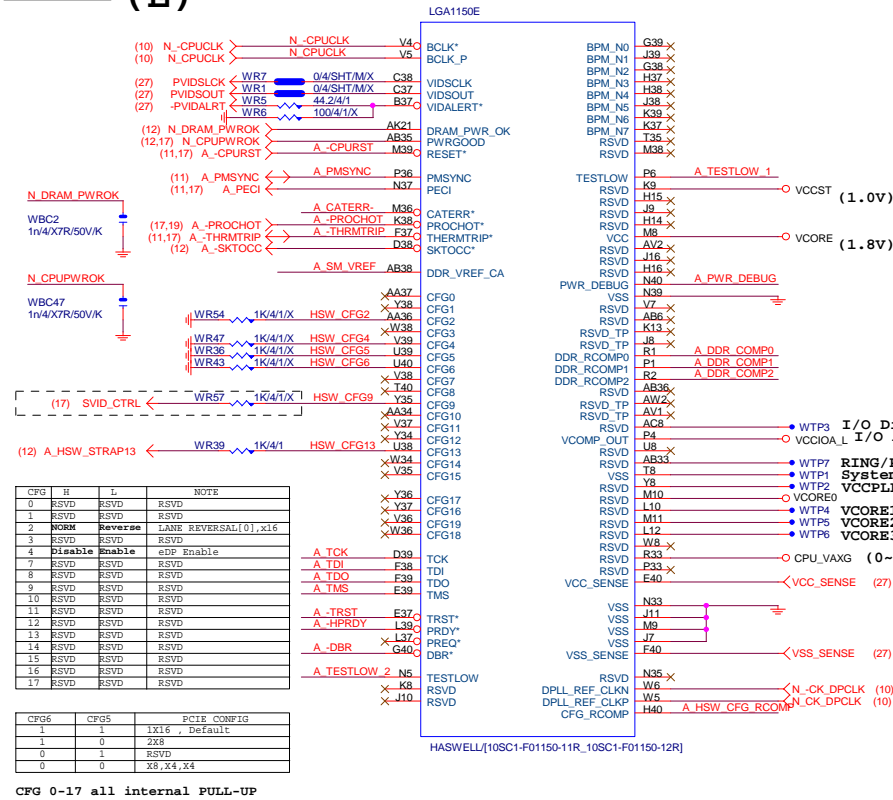
B

A

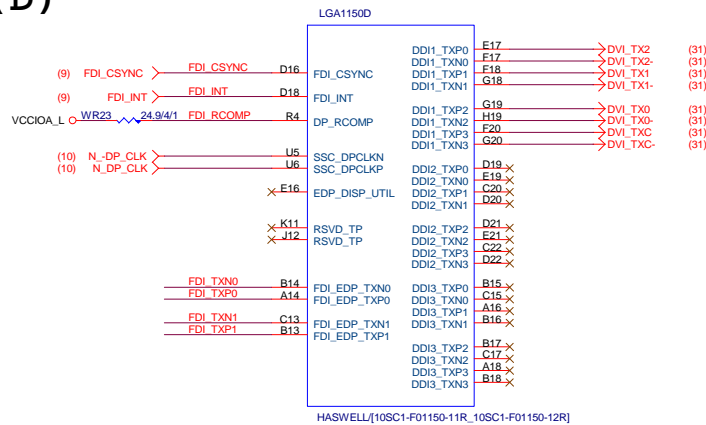
A

BLOCK DIAGRAM

LGA1150 (E)



LGA1150 (D)



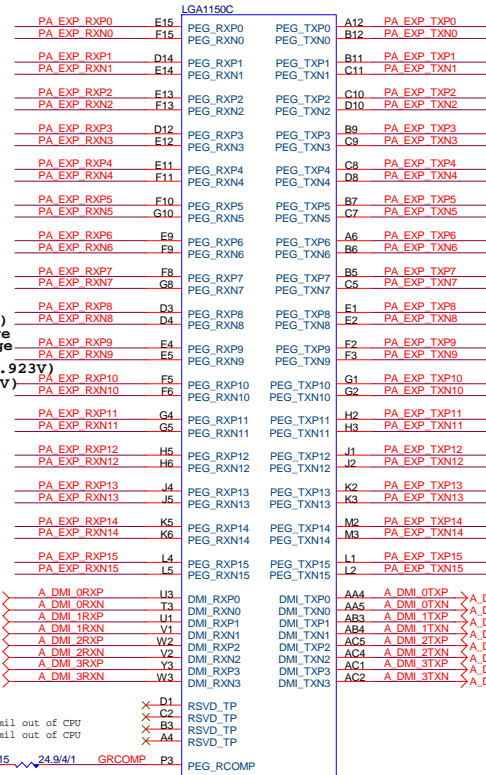
FDI:12/4/5/4/12(breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%

FDI_TXP[0..1] >> FDI_TXP[0..1] (9)

FDI_TXN[0..1] >> FDI_TXN[0..1] (9)

LGA1155 (C)

PCIEX16:16/5/5/5/16(breakout min 10/4/4/4/10)
Impedance=80 +- 17.5%

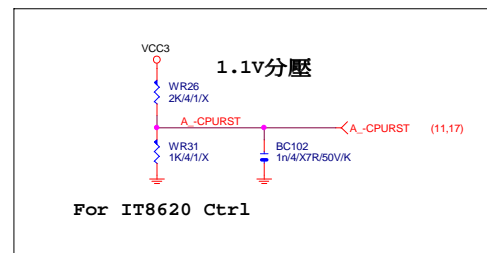


DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

5%

PA_EXP_TXP[0..15]	>>	PA_EXP_TXP[0..15]	(14)
PA_EXP_TXN[0..15]	>>	PA_EXP_TXN[0..15]	(14)
PA_EXP_RXP[0..15]	>>	PA_EXP_RXP[0..15]	(14)
PA_EXP_RXN[0..15]	>>	PA_EXP_RXN[0..15]	(14)

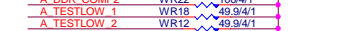
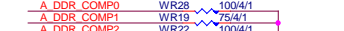
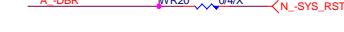
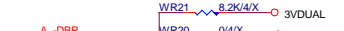
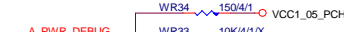
-CPURST



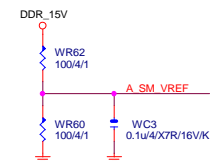
CPU SVID



CPU	PU/PD
-----	-------

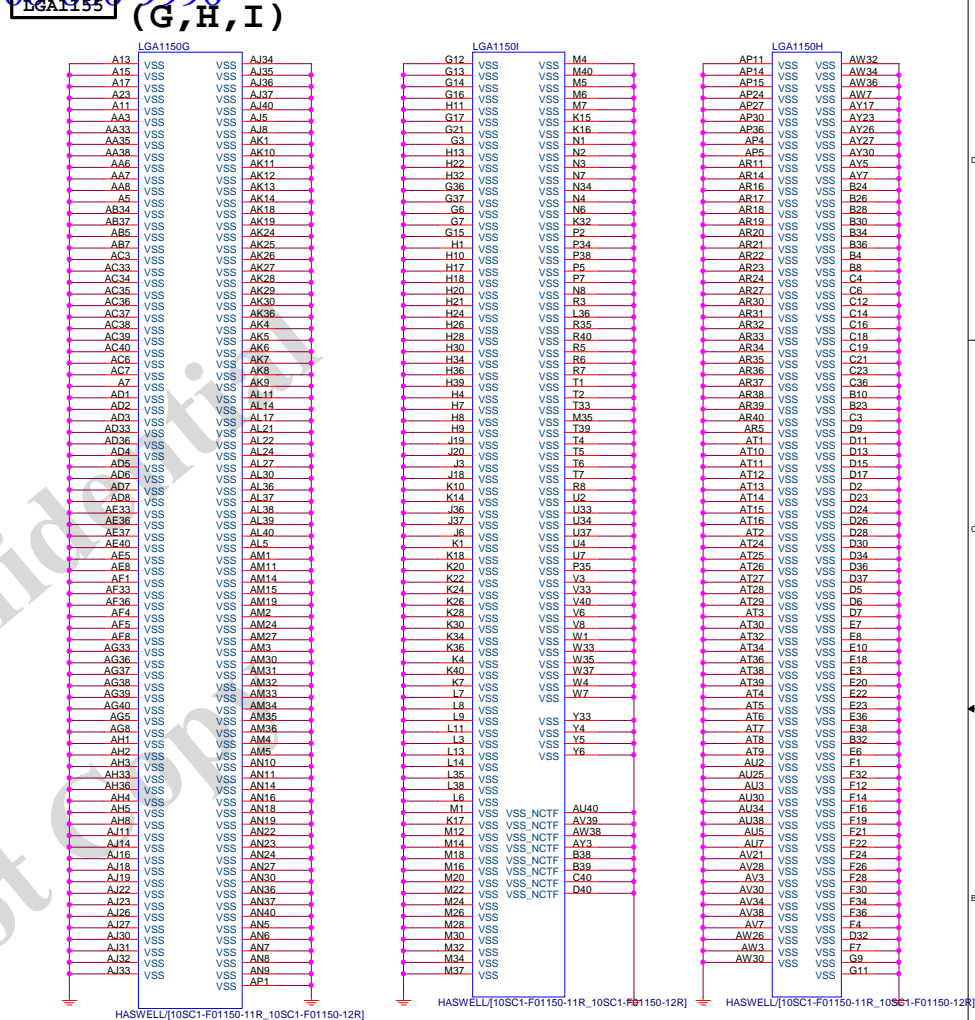


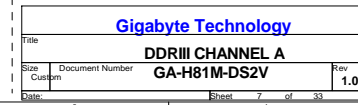
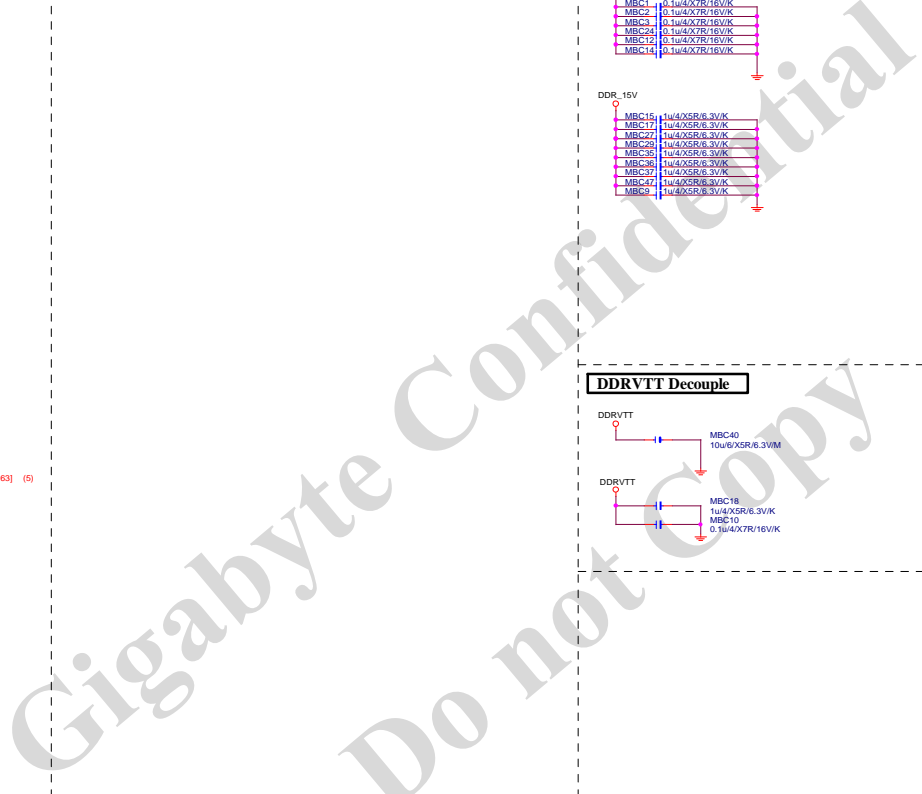
SM	REF
----	-----

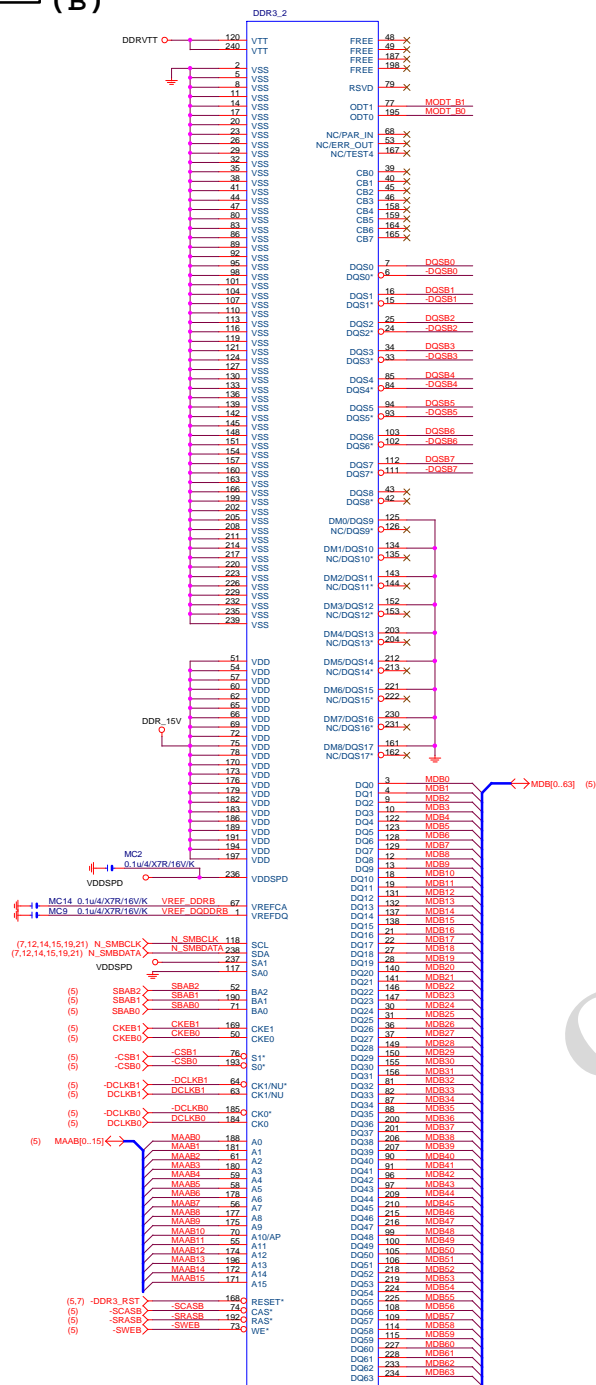


LGA1150 (A)

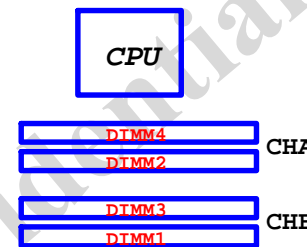
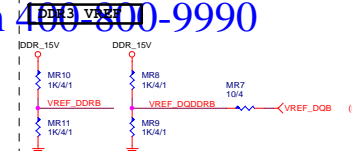
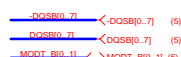
MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0
MAAA1	AV16	DDR0_MA1	DDR0_D01	AD39	MDA1
MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2
MAAA3	AW17	DDR0_MA3	DDR0_D03	AF39	MDA3
MAAA4	AU17	DDR0_MA4	DDR0_D04	AD37	MDA4
MAAA5	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5
MAAA6	AV17	DDR0_MA6	DDR0_D06	AE37	MDA6
MAAA7	AT18	DDR0_MA7	DDR0_D07	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
AW8	AY8	DDR0_ODT2	DDR0_D18	AP38	MDA18
AW8	AY8	DDR0_ODT3	DDR0_D19	AP39	MDA19
AW33	AY8	DDR0_D20	DDR0_D20	AM37	MDA20
AW33	AY8	DDR0_D21	DDR0_D21	AM38	MDA16
AW33	AY8	DDR0_D22	DDR0_D22	AM26	MDA22
AW33	AY8	DDR0_D23	DDR0_D23	AM25	MDA25
AW33	AY8	DDR0_D24	DDR0_D24	AP28	MDA28
AW33	AY8	DDR0_D25	DDR0_D25	AL26	MDA26
AW33	AY8	DDR0_D26	DDR0_D26	AL25	MDA27
AW33	AY8	DDR0_D27	DDR0_D27	AR28	MDA28
AW33	AY8	DDR0_D28	DDR0_D28	AR28	MDA29
AW33	AY8	DDR0_D29	DDR0_D29	AR28	MDA30
AW33	AY8	DDR0_D30	DDR0_D30	AW29	MDA31
AW33	AY8	DDR0_D31	DDR0_D31	AW29	MDA33
AW33	AY8	DDR0_D32	DDR0_D32	AW29	MDA37
AW33	AY8	DDR0_D33	DDR0_D33	AW29	MDA38
AW33	AY8	DDR0_D34	DDR0_D34	AW29	MDA39
AW33	AY8	DDR0_D35	DDR0_D35	AW29	MDA40
AW33	AY8	DDR0_D36	DDR0_D36	AW29	MDA41
AW33	AY8	DDR0_D37	DDR0_D37	AW29	MDA42
AW33	AY8	DDR0_D38	DDR0_D38	AW29	MDA43
AW33	AY8	DDR0_D39	DDR0_D39	AW29	MDA44
AW33	AY8	DDR0_D40	DDR0_D40	AW29	MDA45
AW33	AY8	DDR0_D41	DDR0_D41	AW29	MDA46
AW33	AY8	DDR0_D42	DDR0_D42	AW29	MDA47
AW33	AY8	DDR0_D43	DDR0_D43	AW29	MDA48
AW33	AY8	DDR0_D44	DDR0_D44	AW29	MDA49
AW33	AY8	DDR0_D45	DDR0_D45	AW29	MDA50
AW33	AY8	DDR0_D46	DDR0_D46	AW29	MDA51
AW33	AY8	DDR0_D47	DDR0_D47	AW29	MDA52
AW33	AY8	DDR0_D48	DDR0_D48	AW29	MDA53
AW33	AY8	DDR0_D49	DDR0_D49	AW29	MDA54
AW33	AY8	DDR0_D50	DDR0_D50	AW29	MDA55
AW33	AY8	DDR0_D51	DDR0_D51	AW29	MDA56
AW33	AY8	DDR0_D52	DDR0_D52	AW29	MDA57
AW33	AY8	DDR0_D53	DDR0_D53	AW29	MDA58
AW33	AY8	DDR0_D54	DDR0_D54	AW29	MDA59
AW33	AY8	DDR0_D55	DDR0_D55	AW29	MDA60
AW33	AY8	DDR0_D56	DDR0_D56	AW29	MDA61
AW33	AY8	DDR0_D57	DDR0_D57	AW29	MDA62
AW33	AY8	DDR0_D58	DDR0_D58	AW29	MDA63
AW33	AY8	DDR0_D59	DDR0_D59	AW29	MDA64
AW33	AY8	DDR0_D60	DDR0_D60	AW29	MDA65
AW33	AY8	DDR0_D61	DDR0_D61	AW29	MDA66
AW33	AY8	DDR0_D62	DDR0_D62	AW29	MDA67
AW33	AY8	DDR0_D63	DDR0_D63	AW29	MDA68
AW33	AY8	DDR0_D64	DDR0_D64	AW29	MDA69
AW33	AY8	DDR0_D65	DDR0_D65	AW29	MDA70
AW33	AY8	DDR0_D66	DDR0_D66	AW29	MDA71
AW33	AY8	DDR0_D67	DDR0_D67	AW29	MDA72
AW33	AY8	DDR0_D68	DDR0_D68	AW29	MDA73
AW33	AY8	DDR0_D69	DDR0_D69	AW29	MDA74
AW33	AY8	DDR0_D70	DDR0_D70	AW29	MDA75
AW33	AY8	DDR0_D71	DDR0_D71	AW29	MDA76
AW33	AY8	DDR0_D72	DDR0_D72	AW29	MDA77
AW33	AY8	DDR0_D73	DDR0_D73	AW29	MDA78
AW33	AY8	DDR0_D74	DDR0_D74	AW29	MDA79
AW33	AY8	DDR0_D75	DDR0_D75	AW29	MDA80
AW33	AY8	DDR0_D76	DDR0_D76	AW29	MDA81
AW33	AY8	DDR0_D77	DDR0_D77	AW29	MDA82
AW33	AY8	DDR0_D78	DDR0_D78	AW29	MDA83
AW33	AY8	DDR0_D79	DDR0_D79	AW29	MDA84
AW33	AY8	DDR0_D80	DDR0_D80	AW29	MDA85
AW33	AY8	DDR0_D81	DDR0_D81	AW29	MDA86
AW33	AY8	DDR0_D82	DDR0_D82	AW29	MDA87
AW33	AY8	DDR0_D83	DDR0_D83	AW29	MDA88
AW33	AY8	DDR0_D84	DDR0_D84	AW29	MDA89
AW33	AY8	DDR0_D85	DDR0_D85	AW29	MDA90
AW33	AY8	DDR0_D86	DDR0_D86	AW29	MDA91
AW33	AY8	DDR0_D87	DDR0_D87	AW29	MDA92
AW33	AY8	DDR0_D88	DDR0_D88	AW29	MDA93
AW33	AY8	DDR0_D89	DDR0_D89	AW29	MDA94
AW33	AY8	DDR0_D90	DDR0_D90	AW29	MDA95
AW33	AY8	DDR0_D91	DDR0_D91	AW29	MDA96
AW33	AY8	DDR0_D92	DDR0_D92	AW29	MDA97
AW33	AY8	DDR0_D93	DDR0_D93	AW29	MDA98
AW33	AY8	DDR0_D94	DDR0_D94	AW29	MDA99
AW33	AY8	DDR0_D95	DDR0_D95	AW29	MDA100
AW33	AY8	DDR0_D96	DDR0_D96	AW29	MDA101
AW33	AY8	DDR0_D97	DDR0_D97	AW29	MDA102
AW33	AY8	DDR0_D98	DDR0_D98	AW29	MDA103
AW33	AY8	DDR0_D99	DDR0_D99	AW29	MDA104
AW33	AY8	DDR0_D100	DDR0_D100	AW29	MDA105
AW33	AY8	DDR0_D101	DDR0_D101	AW29	MDA106
AW33	AY8	DDR0_D102	DDR0_D102	AW29	MDA107
AW33	AY8	DDR0_D103	DDR0_D103	AW29	MDA108
AW33	AY8	DDR0_D104	DDR0_D104	AW29	MDA109
AW33	AY8	DDR0_D105	DDR0_D105	AW29	MDA110
AW33	AY8	DDR0_D106	DDR0_D106	AW29	MDA111
AW33	AY8	DDR0_D107	DDR0_D107	AW29	MDA112
AW33	AY8	DDR0_D108	DDR0_D108	AW29	MDA113
AW33	AY8	DDR0_D109	DDR0_D109	AW29	MDA114
AW33	AY8	DDR0_D110	DDR0_D110	AW29	MDA115
AW33	AY8	DDR0_D111	DDR0_D111	AW29	MDA116
AW33	AY8	DDR0_D112	DDR0_D112	AW29	MDA117
AW33	AY8	DDR0_D113	DDR0_D113	AW29	MDA118
AW33	AY8	DDR0_D114	DDR0_D114	AW29	MDA119
AW33	AY8	DDR0_D115	DDR0_D115	AW29	MDA120
AW33	AY8	DDR0_D116	DDR0_D116	AW29	MDA121
AW33	AY8	DDR0_D117	DDR0_D117	AW29	MDA122
AW33	AY8	DDR0_D118	DDR0_D118	AW29	MDA123
AW33	AY8	DDR0_D119	DDR0_D119	AW29	MDA124
AW33	AY8	DDR0_D120	DDR0_D120	AW29	MDA125
AW33	AY8	DDR0_D121	DDR0_D121	AW29	MDA126
AW33	AY8	DDR0_D122	DDR0_D122	AW29	MDA127
AW33	AY8	DDR0_D123	DDR0_D123	AW29	MDA128
AW33	AY8	DDR0_D124	DDR0_D124	AW29	MDA129
AW33	AY8	DDR0_D125	DDR0_D125	AW29	MDA130
AW33	AY8	DDR0_D126	DDR0_D126	AW29	MDA131
AW33	AY8	DDR0_D127	DDR0_D127	AW29	MDA132
AW33	AY8	DDR0_D128	DDR0_D128	AW29	MDA133
AW33	AY8	DDR0_D129	DDR0_D129	AW29	MDA134
AW33	AY8	DDR0_D130	DDR0_D130	AW29	MDA135
AW33	AY8	DDR0_D131	DDR0_D131	AW29	MDA136
AW33	AY8	DDR0_D132	DDR0_D132	AW29	MDA137
AW33	AY8	DDR0_D133	DDR0_D133	AW29	MDA138
AW33	AY8	DDR0_D134	DDR0_D134	AW29	MDA139
AW33	AY8	DDR0_D135	DDR0_D135	AW29	MDA140
AW33	AY8	DDR0_D136	DDR0_D136	AW29	MDA141
AW33	AY8	DDR0_D137	DDR0_D137	AW29	MDA142
AW33	AY8	DDR0_D138	DDR0_D138	AW29	MDA143
AW33	AY8	DDR0_D139	DDR0_D139	AW29	MDA144
AW33	AY8	DDR0_D140	DDR0_D140	AW29	MDA145
AW33	AY8	DDR0_D141	DDR0_D141	AW29	MDA146
AW33	AY8	DDR0_D142	DDR0_D142	AW29	MDA147
AW33	AY8	DDR0_D143	DDR0_D143	AW29	MDA148
AW33	AY8	DDR0_D144	DDR0_D144	AW29	MDA149
AW33	AY8	DDR0_D145	DDR0_D145	AW29	MDA150
AW33	AY8	DDR0_D146	DDR0_D146	AW29	MDA151
AW33	AY8	DDR0_D147	DDR0_D147	AW29	MDA152
AW33	AY8	DDR0_D148	DDR0_D148	AW29	MDA153
AW33	AY8	DDR0_D149	DDR0_D149	AW29	MDA154
AW33	AY8	DDR0_D150	DDR0_D150	AW29	MDA155
AW33	AY8	DDR0_D151	DDR0_D151	AW29	MDA156
AW33	AY8	DDR0_D152	DDR0_D152	AW29	MDA157
AW33	AY8	DDR0_D153	DDR0_D153	AW29	MDA158
AW33	AY8	DDR0_D154	DDR0_D154	AW29	MDA159
AW33	AY8	DDR0_D155	DDR0_D155	AW29	MDA160
AW33	AY8	DDR0_D156	DDR0_D156	AW29	MDA161
AW33	AY8	DDR0_D157	DDR0_D157	AW29	MDA162
AW33	AY8	DDR0_D158	DDR0_D158	AW29	MDA163
AW33	AY8	DDR0_D159	DDR0_D159	AW29	MDA164
AW33	AY8	DDR0_D160	DDR0_D160	AW29	MDA165
AW33	AY8	DDR0_D161	DDR0_D161	AW29	MDA166
AW33	AY8	DDR0_D162	DDR0_D162	AW29	MDA167
AW33	AY8	DDR0_D163	DDR0_D163	AW29	MDA168
AW33	AY8	DDR0_D164	DDR0_D164	AW29	MDA169
AW33	AY8	DDR0_D165	DDR0_D165	AW29	MDA170
AW33	AY8	DDR0_D166	DDR0_D166	AW29	MDA171
AW33	AY8	DDR0_D167	DDR0_D167	AW29	MDA172
AW33	AY8	DDR0_D168	DDR0_D168	AW29	MDA173
AW33	AY8	DDR0_D169	DDR0_D169	AW29	MDA174
AW33	AY8	DDR0_D170	DDR0_D170	AW29	MDA175
AW33	AY8	DDR0_D171	DDR0_D171	AW29	MDA176
AW33	AY8	DDR0_D172	DDR0_D172	AW29	MDA177
AW33	AY8	DDR0_D173	DDR0_D173	AW29	MDA178
AW33	AY8	DDR0_D174	DDR0_D174	AW29	MDA179
AW33	AY8	DDR0_D175	DDR0_D175	AW29	MDA180
AW33	AY8	DDR0_D176	DDR0_D176	AW29	MDA181
AW33	AY8	DDR0_D177	DDR0_D177	AW29	MDA182
AW33	AY8	DDR0_D178	DDR0_D178	AW29	MDA183
AW33	AY8	DDR0_D179	DDR0_D179	AW29	MDA184
AW33	AY8	DDR0_D180	DDR0_D180	AW29	MDA185
AW33	AY8	DDR0_D181	DDR0_D181	AW29	MDA186
AW33	AY8	DDR0_D182	DDR0_D182	AW29	MDA187
AW33	AY8	DDR0_D183	DDR0_D183	AW29	MDA188
AW33	AY8	DDR0_D184	DDR0_D184	AW29	MDA189
AW33	AY8	DDR0_D185	DDR0_D185	AW29	MDA190
AW33	AY8	DDR0_D186	DDR0_D186	AW29	MDA191
AW33	AY8	DDR0_D187	DDR0_D187	AW29	MDA192
AW33	AY8	DDR0_D188	DDR0_D188	AW29	MDA193
AW33	AY8	DDR0_D189	DDR0_D189	AW29	MDA194
AW33	AY8	DDR0_D190	DDR0_D190	AW29	MDA195
AW33	AY8	DDR0_D191	DDR0_D191	AW29	MDA196
AW33	AY8	DDR0_D192	DDR0_D192	AW29	MDA197
AW33	AY8	DDR0_D193	DDR0_D193	AW29	MDA198
AW33	AY8	DDR0_D194	DDR0_D194	AW29	MDA199
AW33	AY8	DDR0_D195	DDR0_D195	AW29	MDA200
AW33	AY8	DDR0_D196	DDR0_D196	AW29	MDA201
AW33	AY8	DDR0_D197	DDR0_D197	AW29	MDA202
AW33	AY8	DDR0_D198	DDR0_D198	AW29	MDA203
AW33	AY8	DDR0_D199	DDR0_D199	AW29	MDA204
AW33	AY8	DDR0_D200	DDR0_D200	AW29	MDA205
AW33	AY8	DDR0_D201	DDR0_D201	AW29	MDA206
AW33	AY8	DDR0_D202	DDR0_D202	AW29	MDA207
AW33	AY8	DDR0_D203	DDR0_D203	AW29	MDA208
AW33	AY8	DDR0_D204	DDR0_D204	AW29	MDA209
AW33	AY8	DDR0_D205	DDR0_D205	AW29	MDA210
AW33	AY8	DDR0_D206	DDR0_D2		





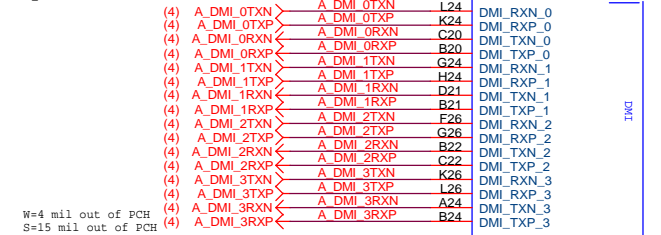


DDR3/240/BK/VA/D
BLACK CONNECTOR



PCH (B)

DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

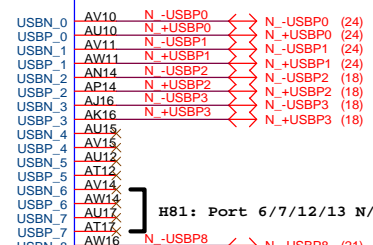
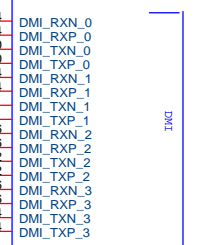


USB2.0 : 12/4.5/7.5/4.5/12 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%

PCHB

B85: Port 6/7 N/A

H81: Port 6/7/12/13 N/A



H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

H81: Port 6/7/12/13 N/A

PCH (F)

N/A

VCC3

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

NR63

NR62

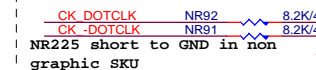
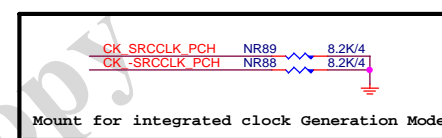
NR63

NR62

NR63

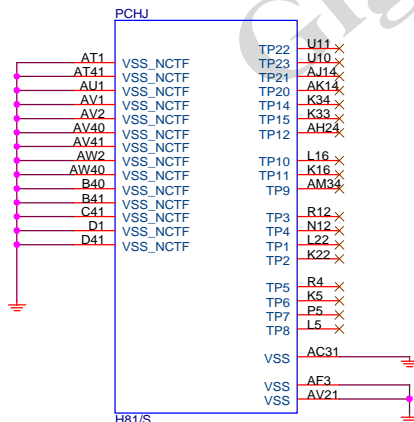
NR62

NR63

PCH CLK PD**PCH (J)**

放靠近 Device & PCI-E Slot
Impedance=80 +- 17.5%

PCIEX1:16/5/5/5/16 (breakout min 8/4/4/4/8)



PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

PCHJ

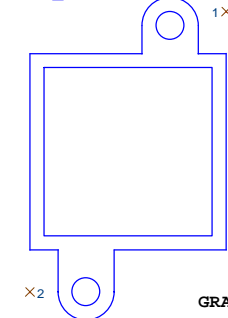
PCHJ

PCHJ

PCH H/S

LOW COST ICH7 HEATSINK

SB_HEATSINK



X2

GRAY HS

PCH_HS
PCH_HS[12SP2-030005-41R]

USB TABLE

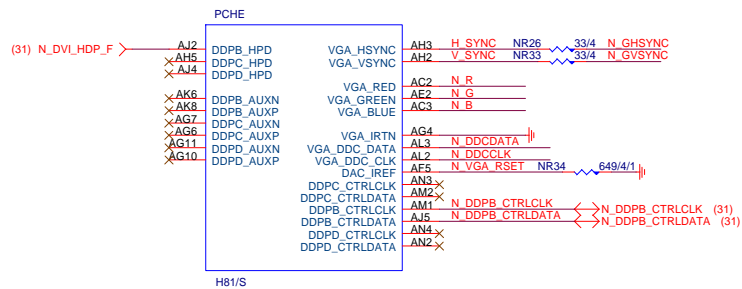
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)

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

Gigabyte Technology

Title	PCH FDI,DMI,USB ,PCIE,NVRAM		
Size	Document Number	GA-H81M-DS2V	
Custom		Rev 1.03	
Date:	Thursday, June 26, 2014	Sheet	9 of 33

PCH (E)

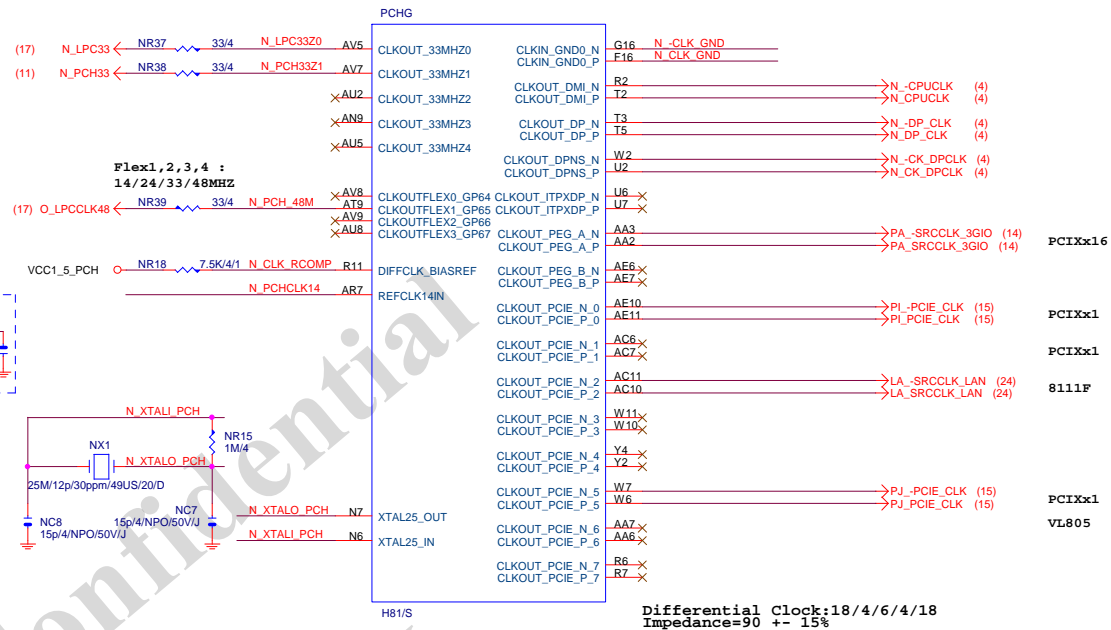


Rev 0.2

O_LPCCLK48

NC3

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



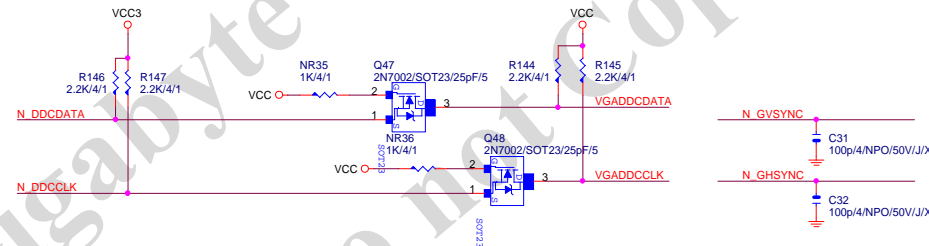
PCH CLK PD



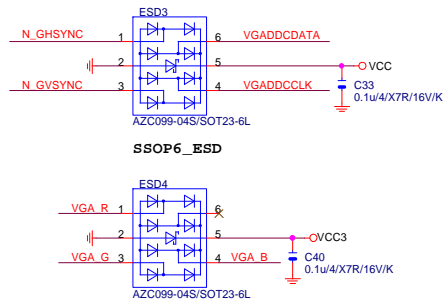
Mount for integrated clock Generation Mode



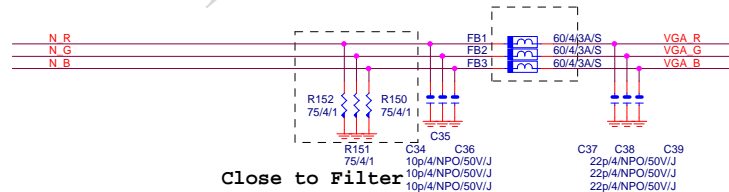
VGA DDC



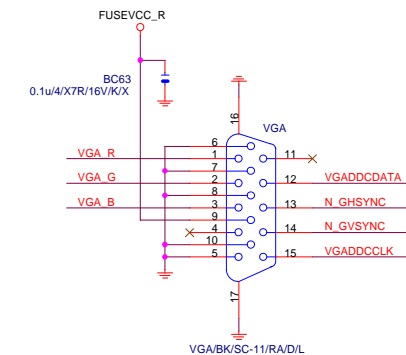
VGA ESD



VGA DDC



VGA CONNECTOR



BLACK CONNECTOR

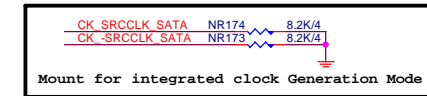
Gigabyte Technology

Title		
PCH DISPLAY_CLK BUFFER		
Size		
Custom	Document Number	Rev
GA-H81M-DS2V		
Date: Thursday, June 26, 2014		
Sheet 10 of 33		
Rev 1.03		

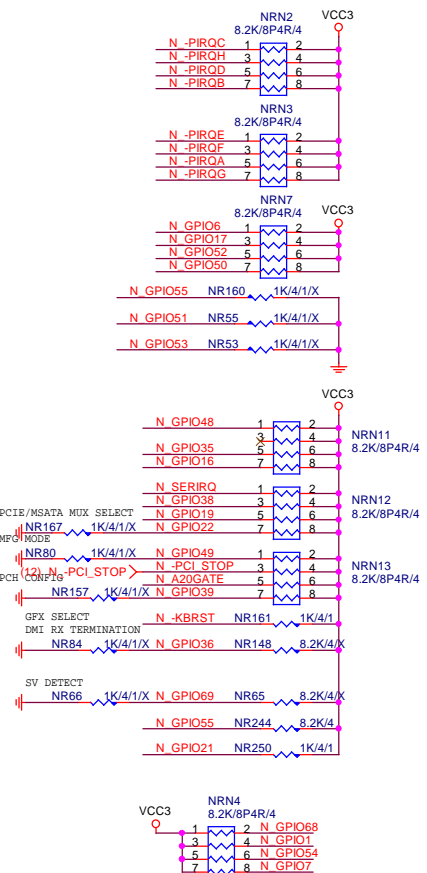
PCH (C)

PCH (A)

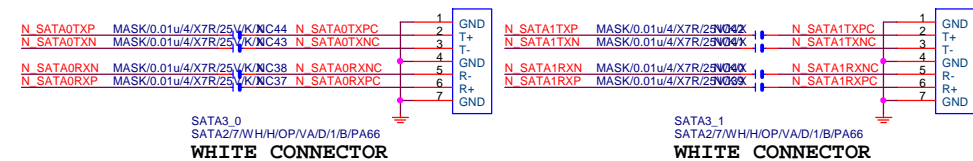
PCH CLK PD



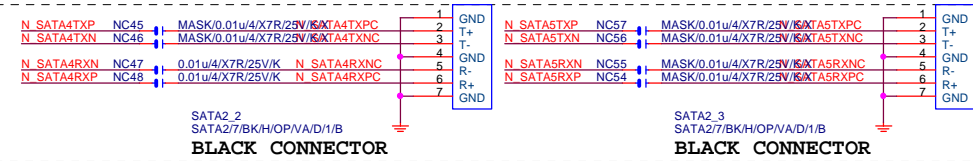
PCH PU/PD



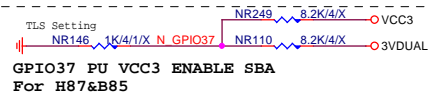
SATA CONNECTOR



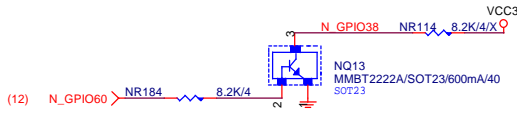
** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0



ME PWROK



GPIO38 Ctrl



Gigabyte Technology

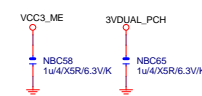
HSW_STRAP13

32.768KHZ

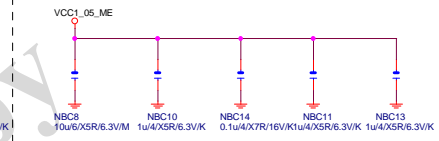
CLR_CMOS

PCH_DPWROK

Title			
PCH GPIO , CTRL , AUDIO			
Size	Document Number		Rev
Custom	GA-H81M-DS2V		1.03
Date:	Thursday, June 26, 2014	Sheet	12 of 33



(1.05V) (x5)



► (1.05V)(x2) (3.3V)(x2)



VCC1_5_P0H

NBC16 10u6/XSR/6.3V/K

NBC29 10u6/XSR/6.3V/K

NBC50 10u6/XSR/6.3V/K

NBC53 10u6/XSR/6.3V/K

NBC19 1u4/XSR/6.3V/K

NBC23 0.1u4/X7R/16V/K

NBC28 1u4/XSR/6.3V/K

NBC44 1u4/XSR/6.3V/K

NBC46 0.1u4/X7R/16V/K

NBC48 1u4/XSR/6.3V/K



PCIEX16 CAP

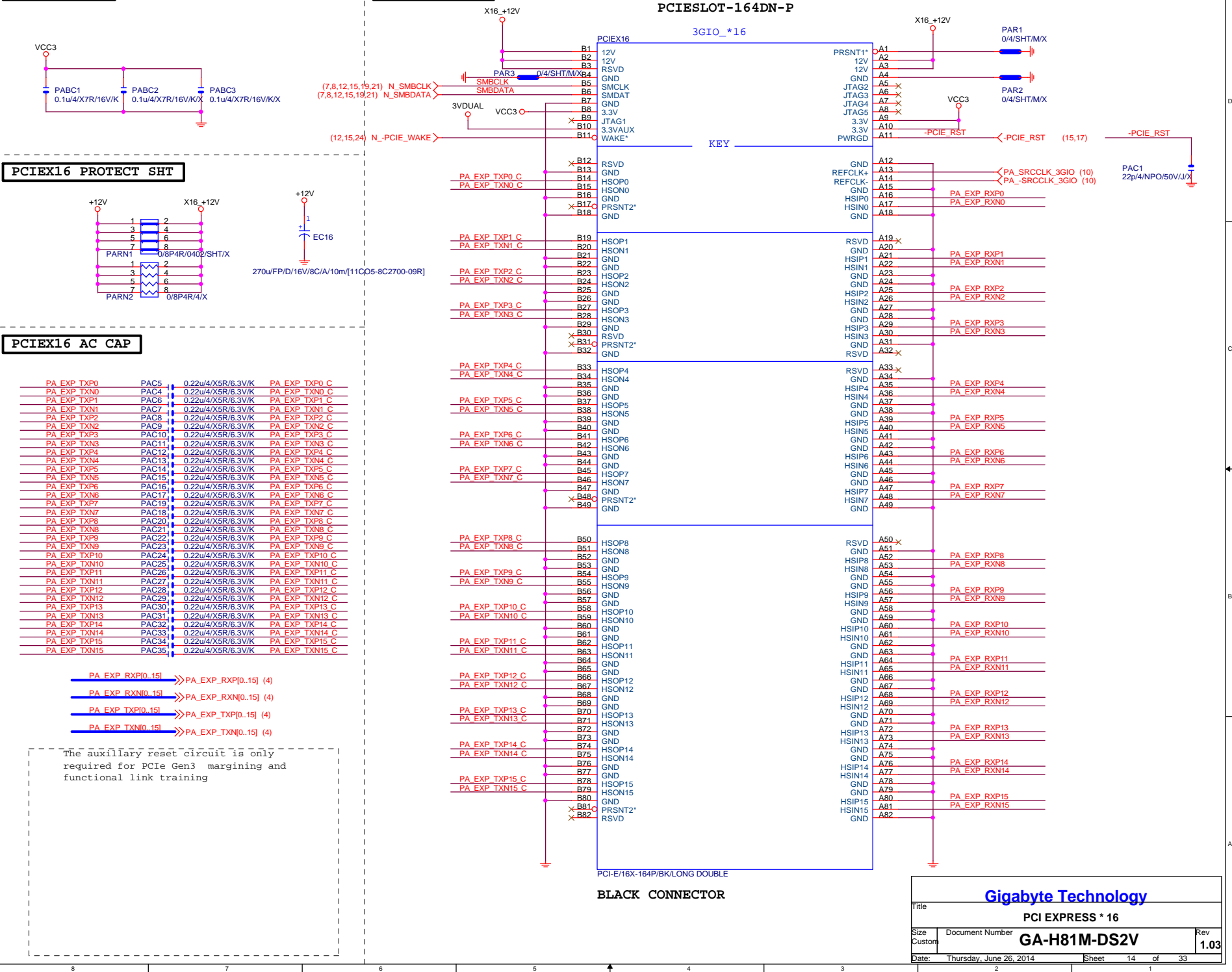
PCIEX16 PROTECT SHT

PCIEX16 AC CAP

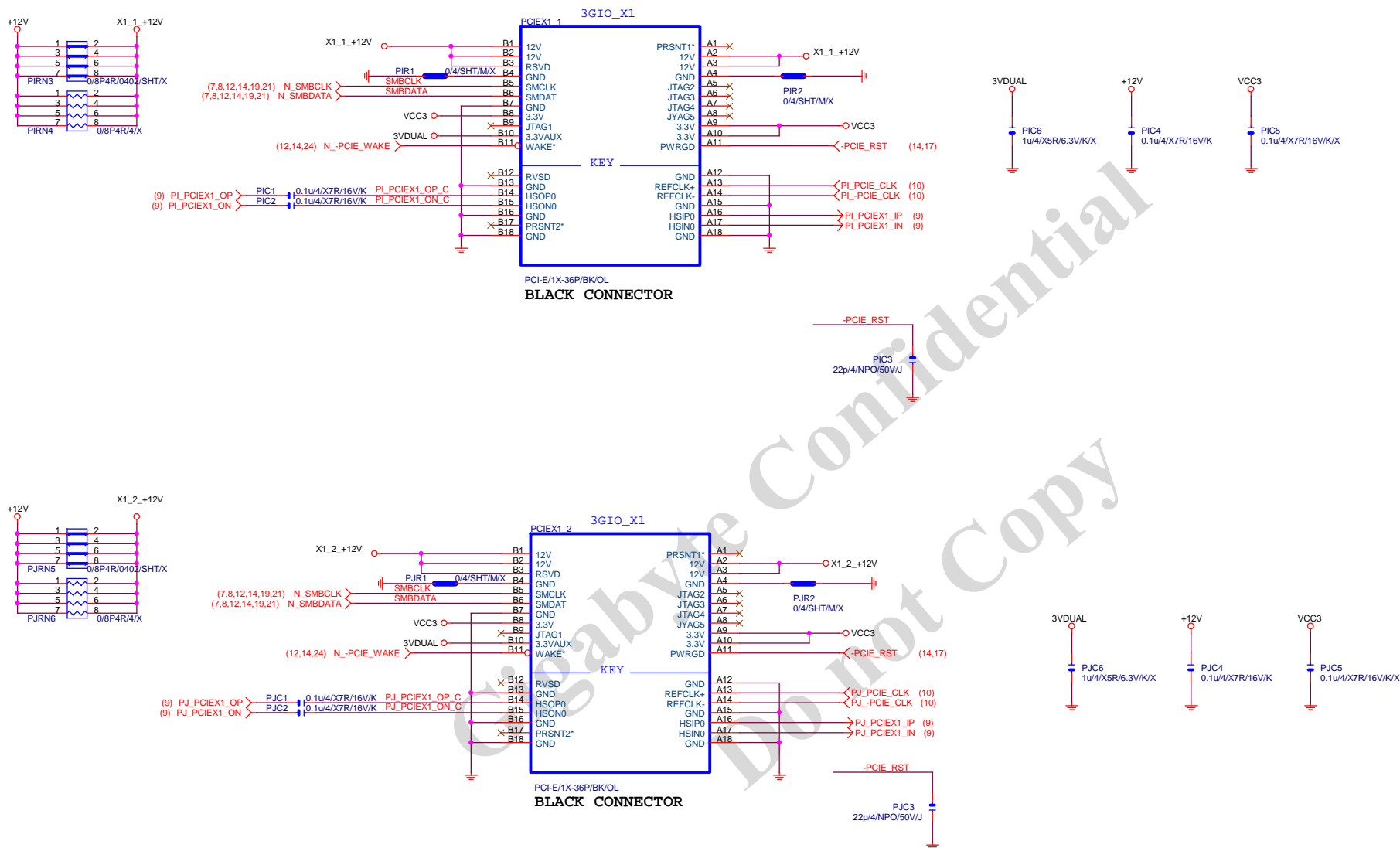
PCIEX16 SLOT

www.xinxunwei.com 400-800-9990

PCIESLOT-164DN-P



PCIEX1 SLOT



Gigabyte Technology

Gigabyte Confidential
Do not Copy

Gigabyte Technology		
Title		
PCI SLOT 1&2		
Size	Document Number	Rev
Custom	GA-H81M-DS2V	1.03
Date:	Thursday, June 26, 2014	Sheet 16 of 33

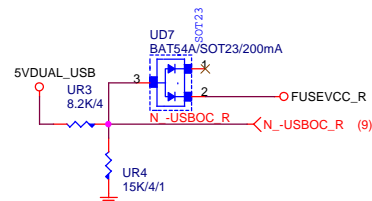
COM

COM RI

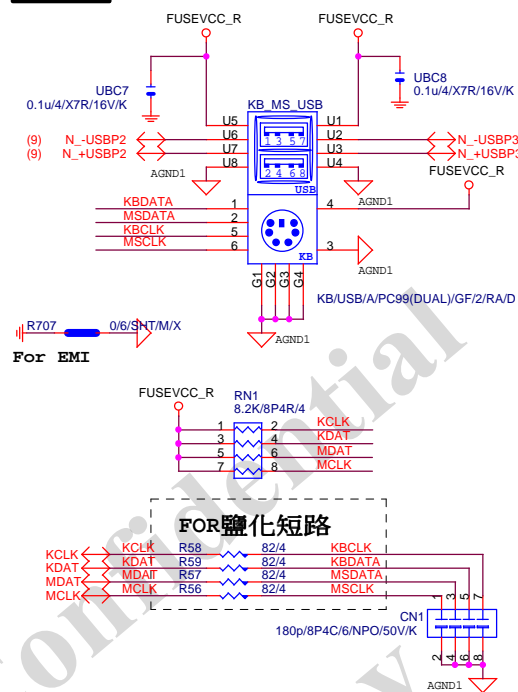
USB30_20

USB30_20 PWR

-USBOC_R



KB/MS

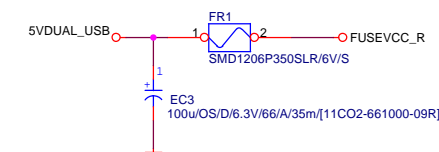


USB30_20 ESD PROTECT

USB3.0 ESD

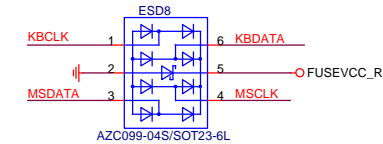
USB2.0 PWR

FUSE-0805
KB_MS_USB 2-Port 2.0A

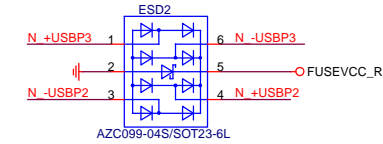


Close to connector

KB/MS ESD

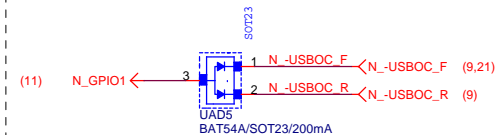


USB2.0 ESD



USB2.0 ESD

USB POWER PROTECT

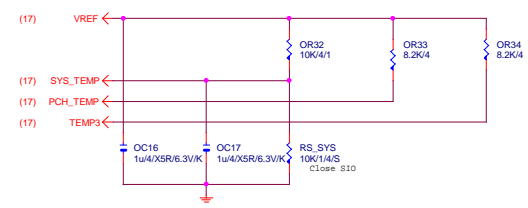


Gigabyte Technology

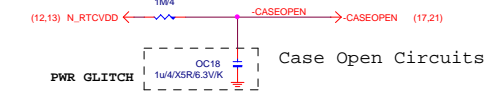
Title				COM,-RI,KB_USB,USB_ESATA,-PROCHOT	
Size	Custom	Document Number	GA-H81M-DS2V		Rev
Date:	Thursday, June 26, 2014	Sheet	18	of	33

1.03

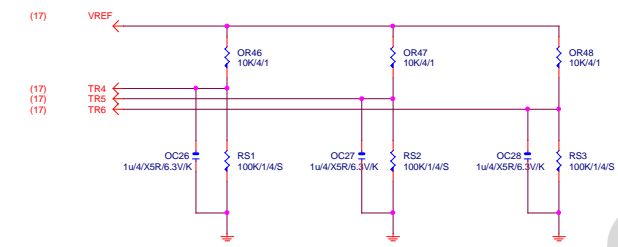
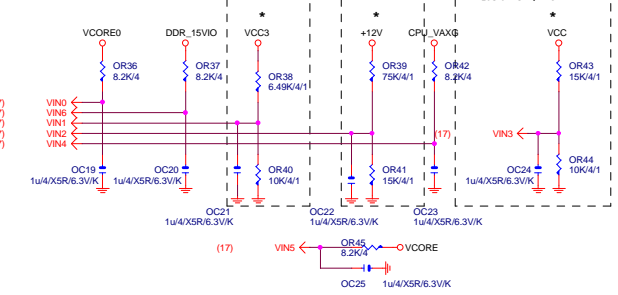
TEMP H/W MONITOR



CASE OPEN

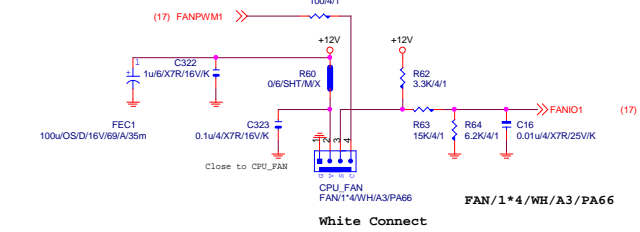


VOLTAGE-- H/W MONITOR



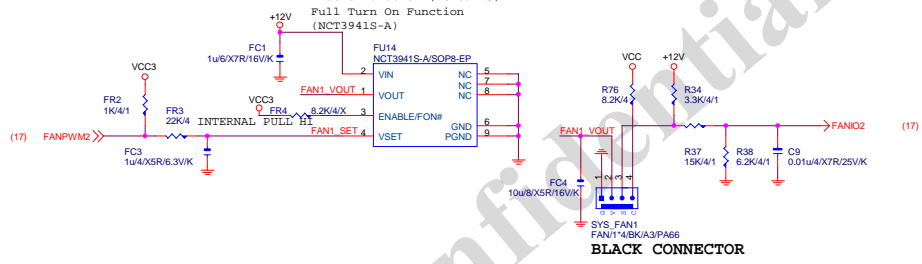
RS1、RS2、RS3 CLOSE CPU VR MOSFET

CPU SMART FAN

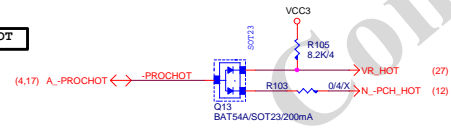


SYS SMART FAN

Linear SYS_FAN

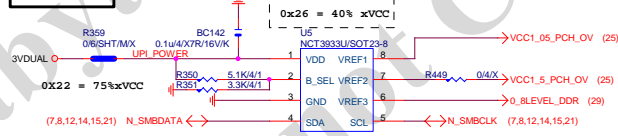


-PROHOT



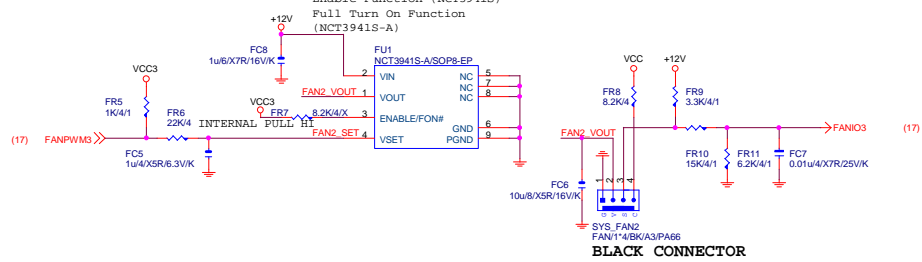
接pwm feedback pin

OV NCT3933



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

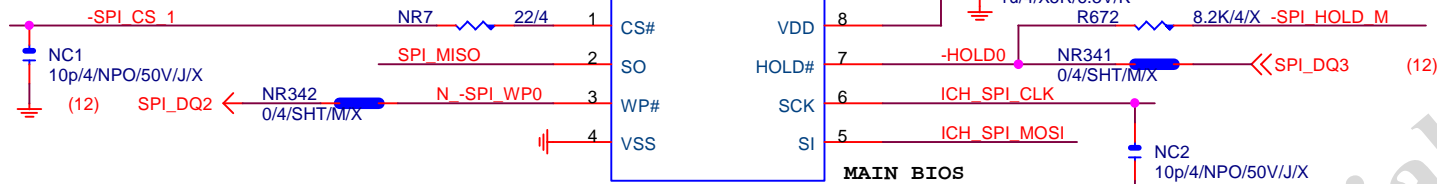
Linear SYS_FAN



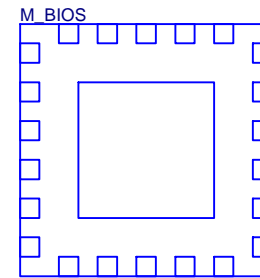
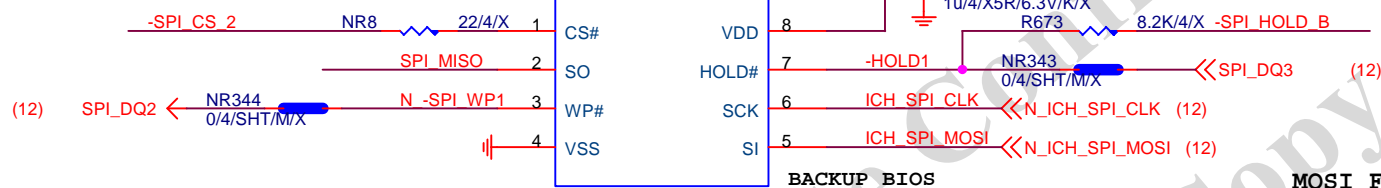
Gigabyte Technology

Title			HWM,FAN CTRL,OV
Size	Document Number	Rev	1.03
Custom	GA-H81M-DS2V		
Date	Thursday, June 26, 2014	Sheet	19 of 33

M_BIOS
64M/Q/SPI/SO8/S



B_BIOS
64M/Q/SPI/SO8/S/X

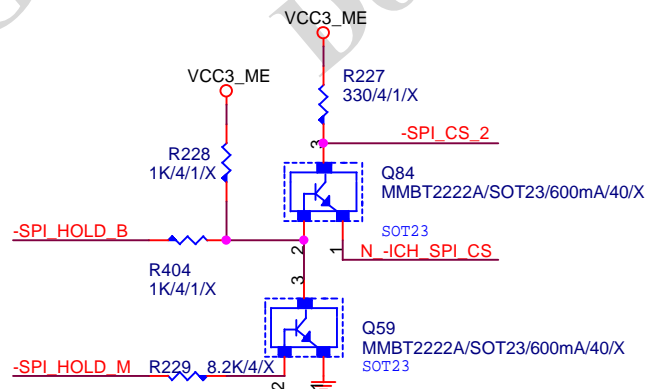
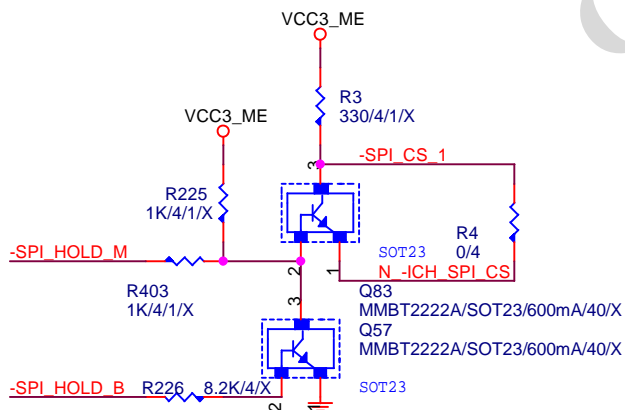
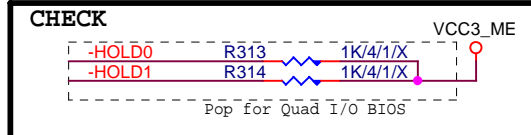
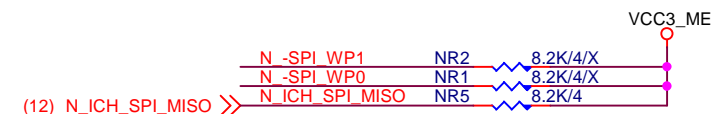
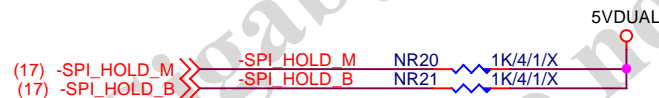
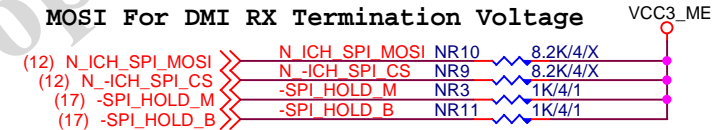


LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

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-H81M-DS2V

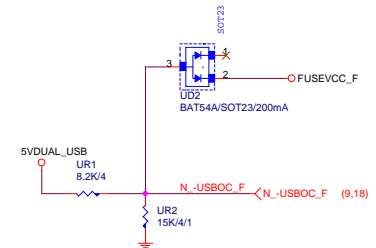
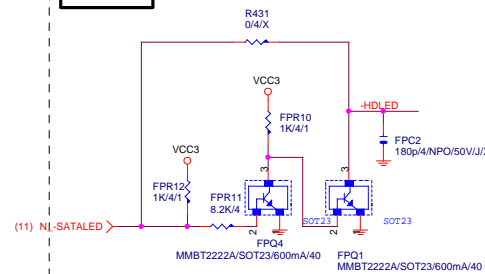
Title		Rev
Size	Document Number	1.03
Custom		
Date:	Thursday, June 26, 2014	Sheet 20 of 33

F_USB30

F_USB30_PWR

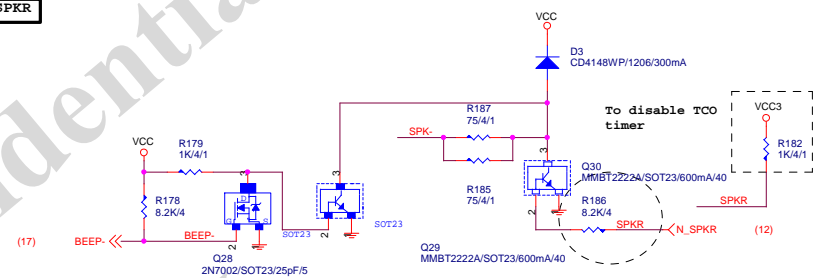
SATA_LED

-USB0C_F



F_USB30 ESD PROTECT

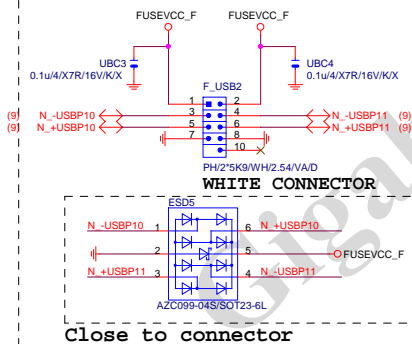
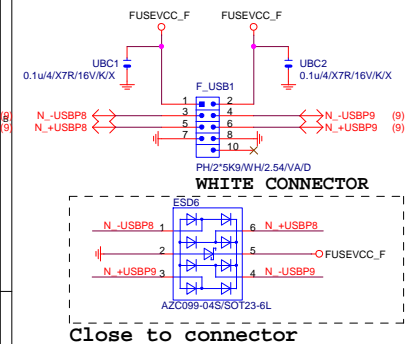
SPKR



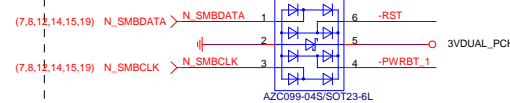
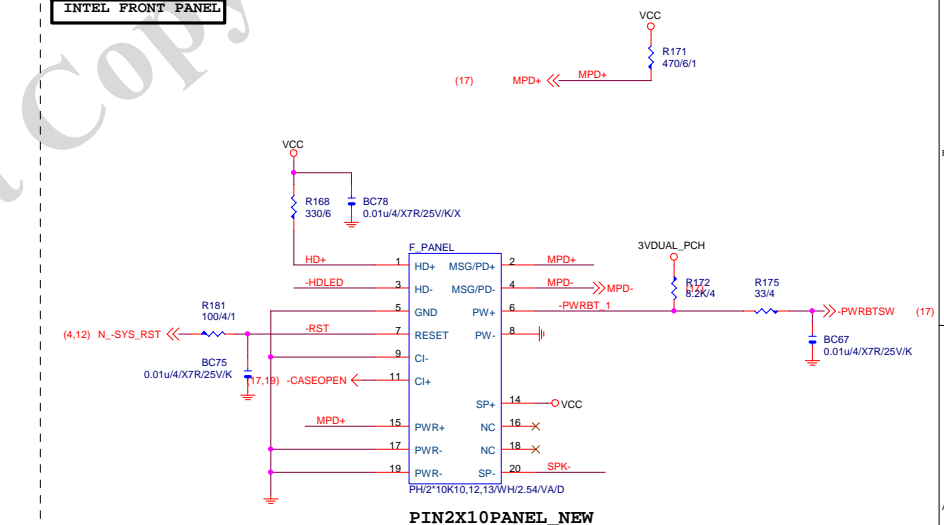
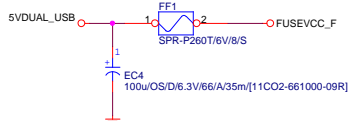
FRONT USB1

FRONT USB2

INTEL FRONT PANEL



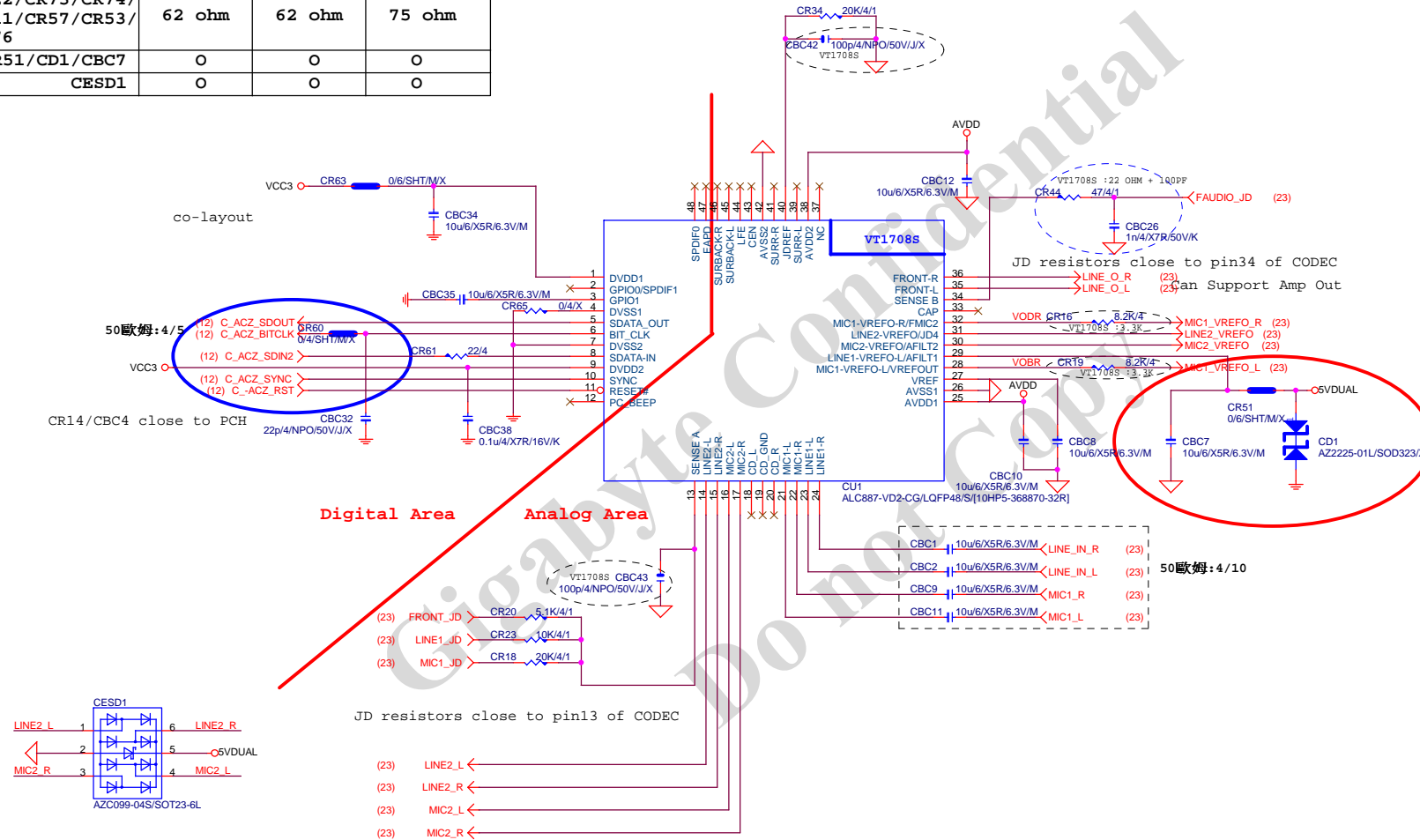
FUSE-0805
F_USB1, F_USB2 4-Port 2.6A



Gigabyte Technology			
FP,F_USB,USB PWR,SPKR,SATA LED			
Size	Document Number	Rev	
Custom	GA-H81M-DS2V	1.03	
Date:	Thursday, June 26, 2014	Sheet	21 of 33

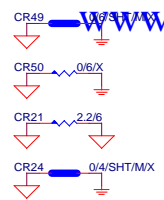
AZALIA CODEC ALC892/ALC887-VD2/VT1708-CE Colay

	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

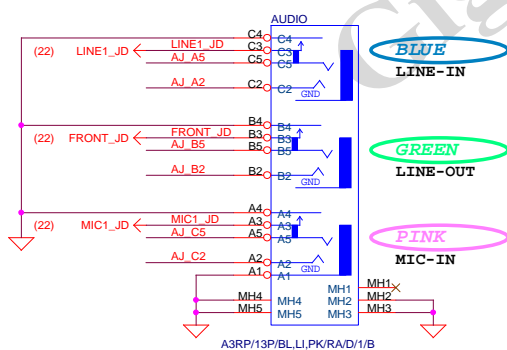


Gigabyte Technology

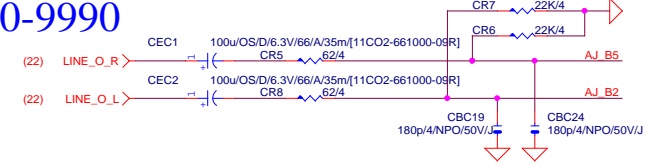
Title	HD AUDIO ALC887B-VD2/VT1708S/VT2021		
Size	Document Number	GA-H81M-DS2V	Rev
Custom			1.03
Date:	Thursday, June 26, 2014	Sheet	22 of 33



SPDIF_OUT

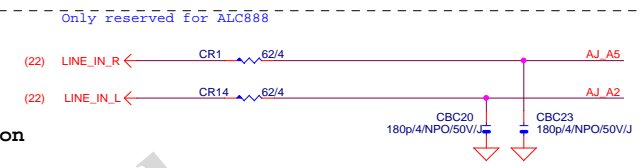


LINE-OUT

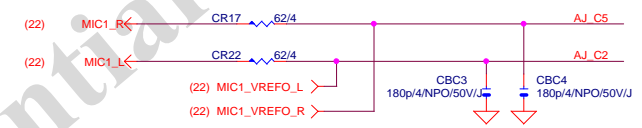


LINE-IN

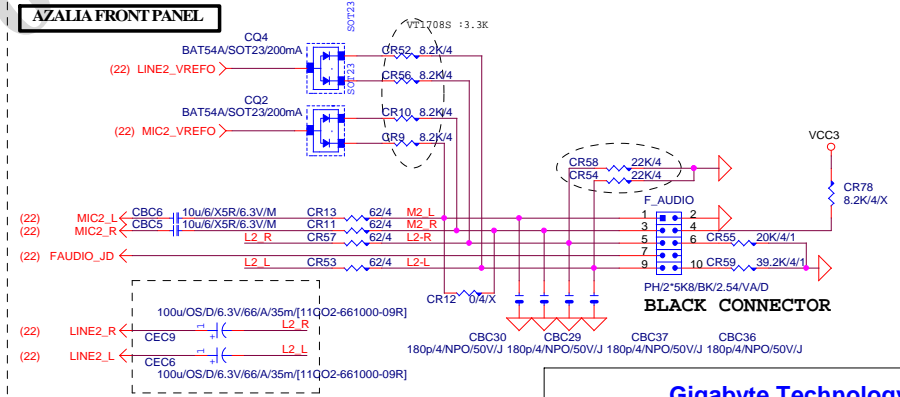
Verify MIC function
in LINE-in



MIC-IN

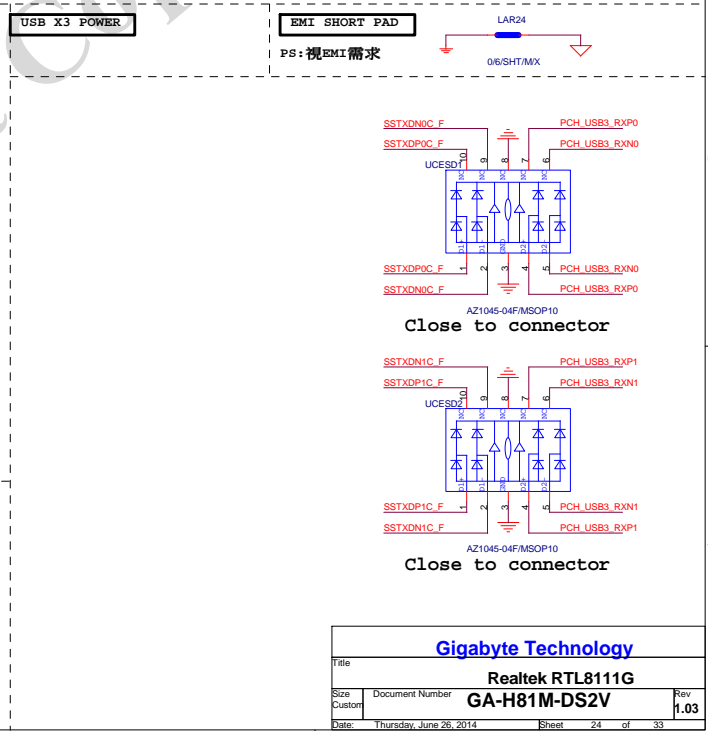


AZALIA FRONT PANEL

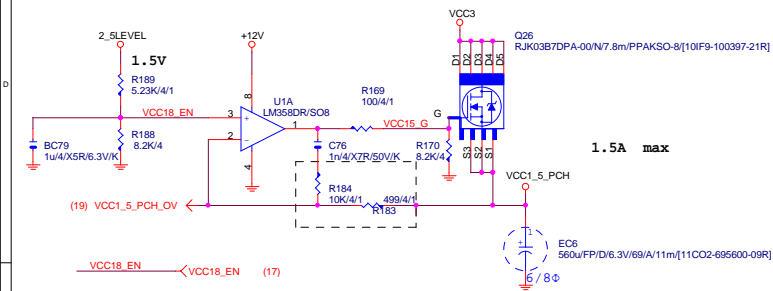




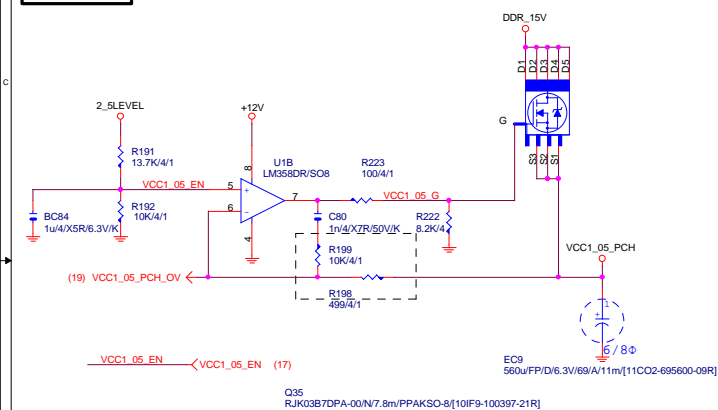
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



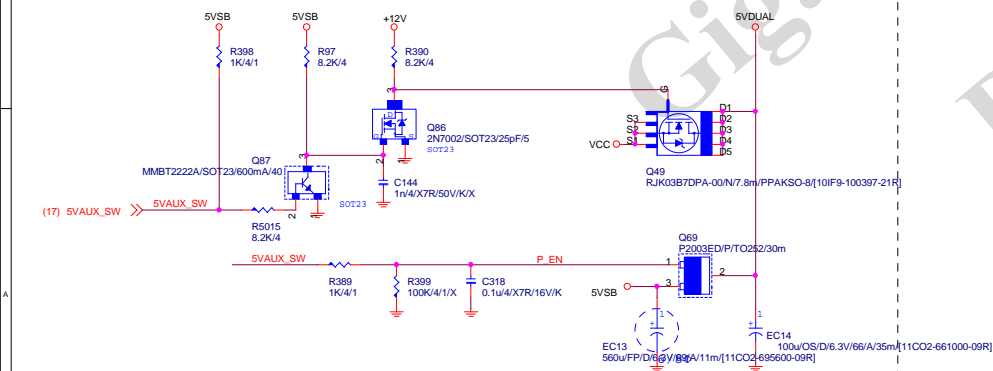
VCC1_8_PCH



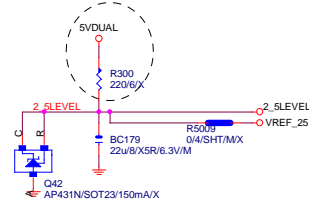
VCC1_05_PCH



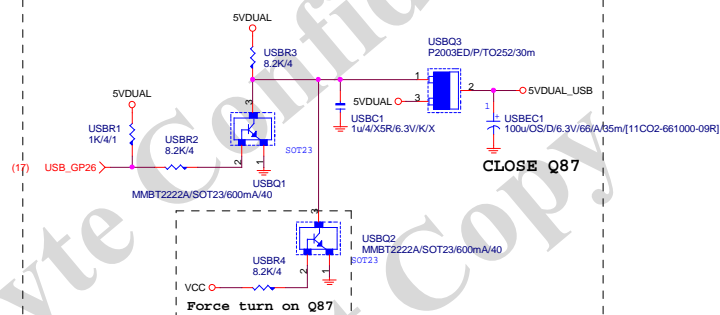
5VDUAL



ERP

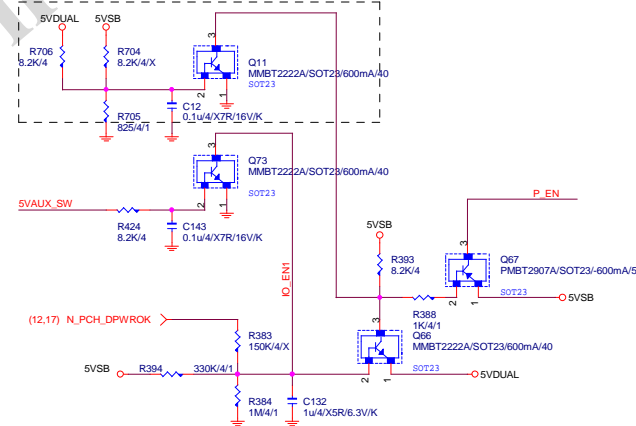


5VDUAL_USB Ctrl	GPIO	5VDUAL_USB
KB_USB, R_USB30,	High	Power ON
USB_LAN_F_USB30,	Low	Power OFF
F_USB2 Power		

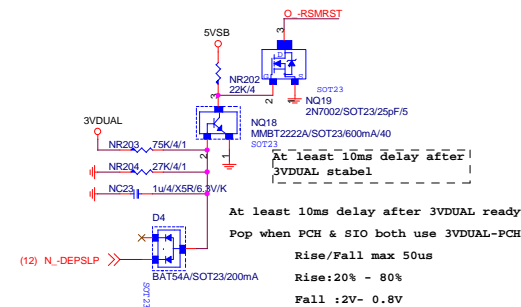
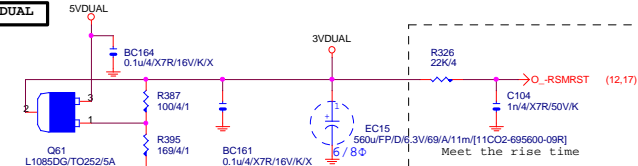


5VDUAL SHORT PROTECT

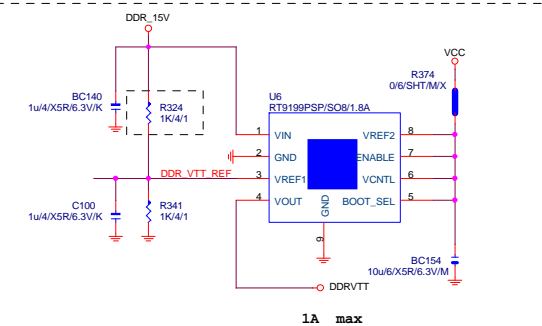
5VSB OVP:7.5V protection



3VDUAL

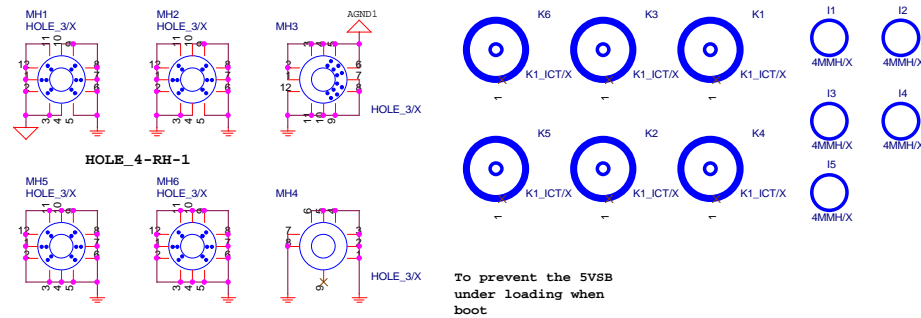
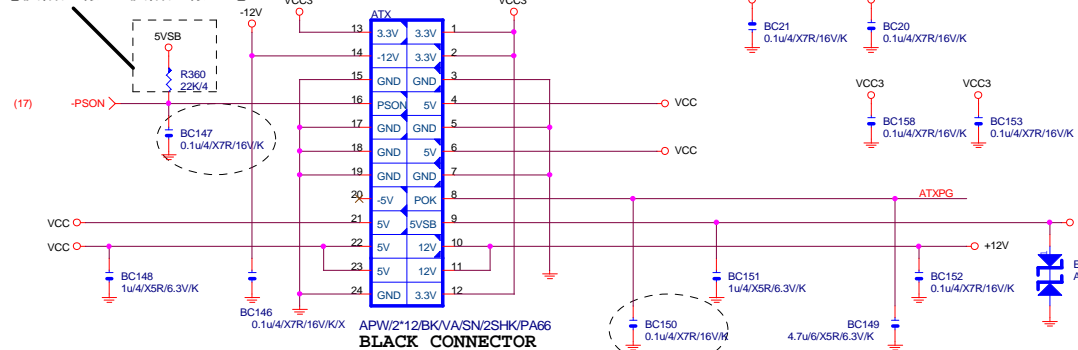


DDRVTT



ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

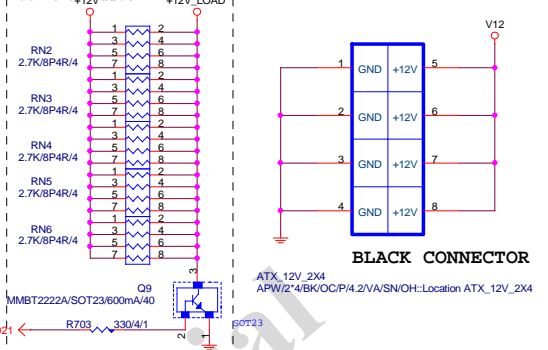


TPM

www.xinxunwei.com 400-800-0900

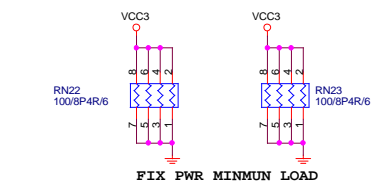
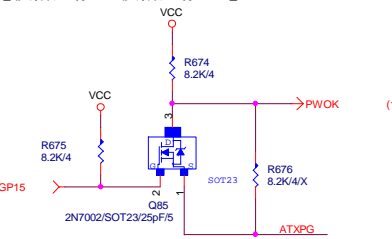
ATXX4 POWER CONNECTOR

【技術通報R&D技術通報158】



PWOK PATCH

【技術通報R&D技術通報154】

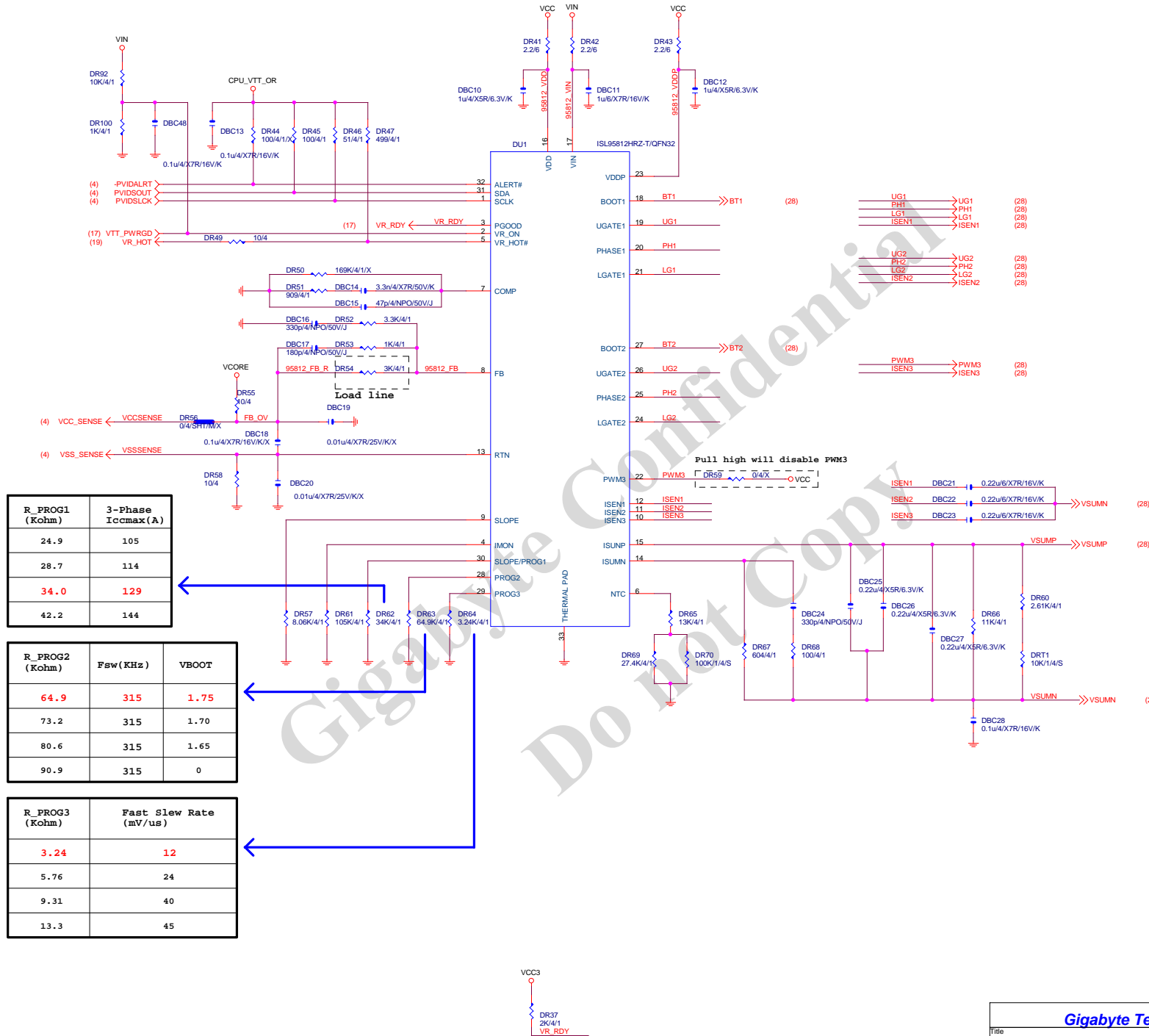


Gigabyte Technology

ATX CONNECTOR

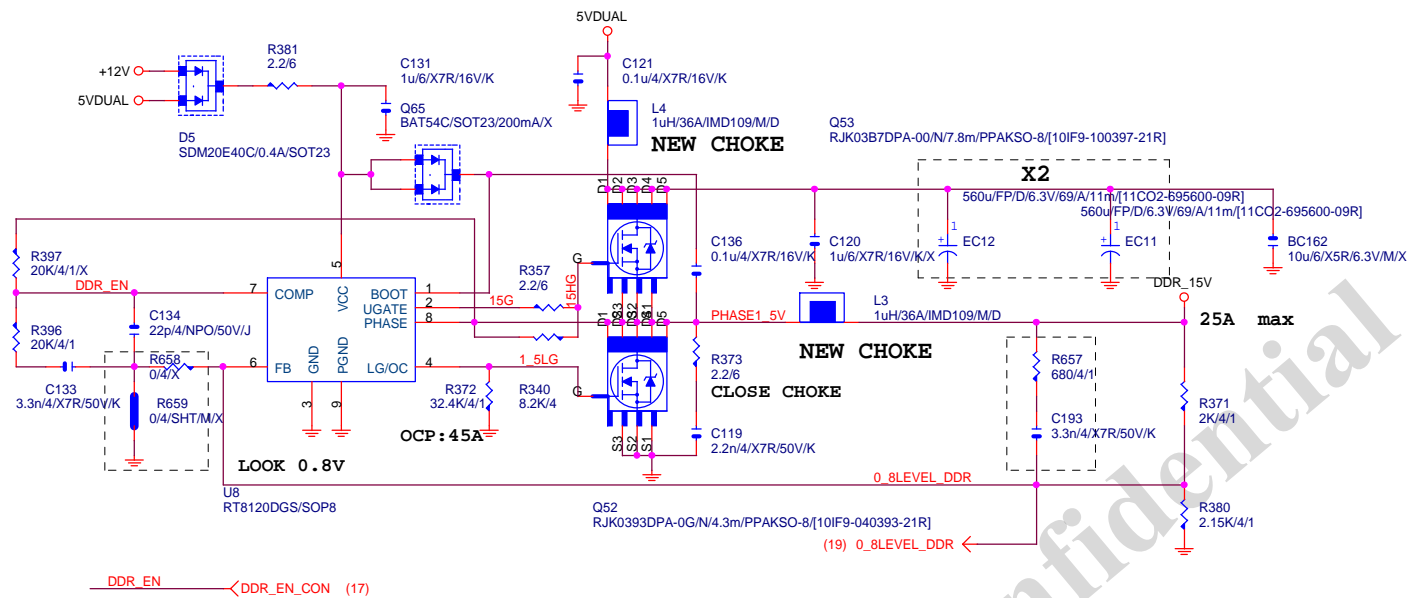
GA-H81M-DS2V

Rev 1.03



Gigabyte Technology

File			CPU CORE VR-1
Size	Document Number	GA-H81M-DS2V	
Custom		Rev 1.03	
Date	Thursday, June 26, 2014	Sheet	27 of 33




From DDR_15V source
10 mils trace to SIO

DDR_15V DDR_15VIO

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

<div style="text-align: center;">  </div>			
Title			
DDR POWER			
Size	Document Number	GA-H81M-DS2V	Rev
Custom			1.03
Date:	Thursday, June 26, 2014	Sheet	29 of 33

VCC1_05_ME

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

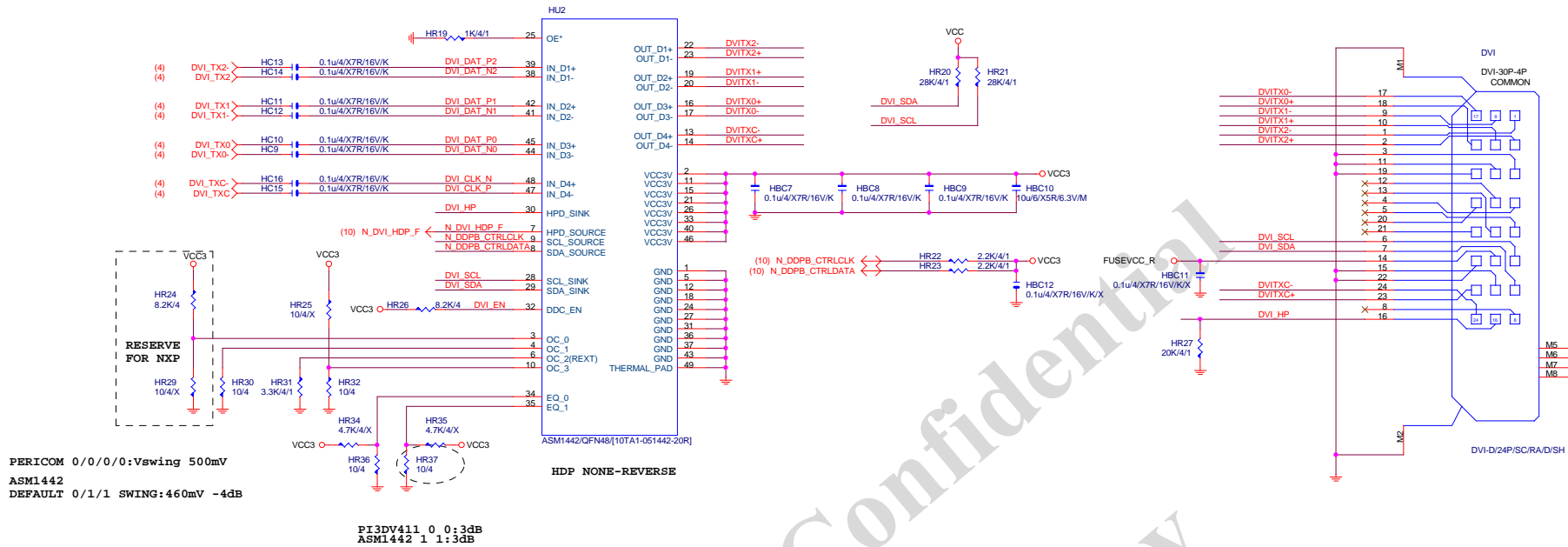
VCC3_ME

www.xinxunwei.com 400-800-9990

Gigabyte Confidential
Do not Copy

Gigabyte Technology			
Title LPT			
Size Custom	Document Number GA-H81M-DS2V		Rev 1.03
Date:	Thursday, June 26, 2014	Sheet 30	of 33

DVI LEVEL SHIFT



HDMI LEVEL SHIFT

D

D

C

C

B

B

A

A

Gigabyte Technology			
Title			
ITE IT8892E			
Size	Document Number		Rev
Custom	GA-H81M-DS2V		1.03
Date:	Thursday, June 26, 2014		Sheet 32 of 33
			1

Gigabyte Confidential
Do not Copy

Gigabyte Technology		
Title USB3 EJ188		
Size C	Document Number GA-H81M-DS2V	Rev 1.03
Date: Thursday, June 26, 2014 Sheet 33 of 33		