

Model Name: GA-H81M-HD3

Revision 1.03

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 X16 SLOT
15	PCI EXPRESS X1 SLOT
16	PCI SLOT 1,2
17	ITE 8620 LPC IO
18	COM,LPT,KB_MS
19	HWM,FAN CTRL,OV,-PROCHOT
20	DUAL BIOS
21	R_USB30,FP,FUSB,SPK,SATALED
22	CODEC ALC892
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	DVI
31	ITE IT8892E
32	USB3 VL805
33	HDMI/DP
34	F_USB30

Gigabyte Technology

Cover Sheet

Size Custom	Document Number GA-H81M-HD3	Rev 1.03
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Revision 1.03

Component value change history

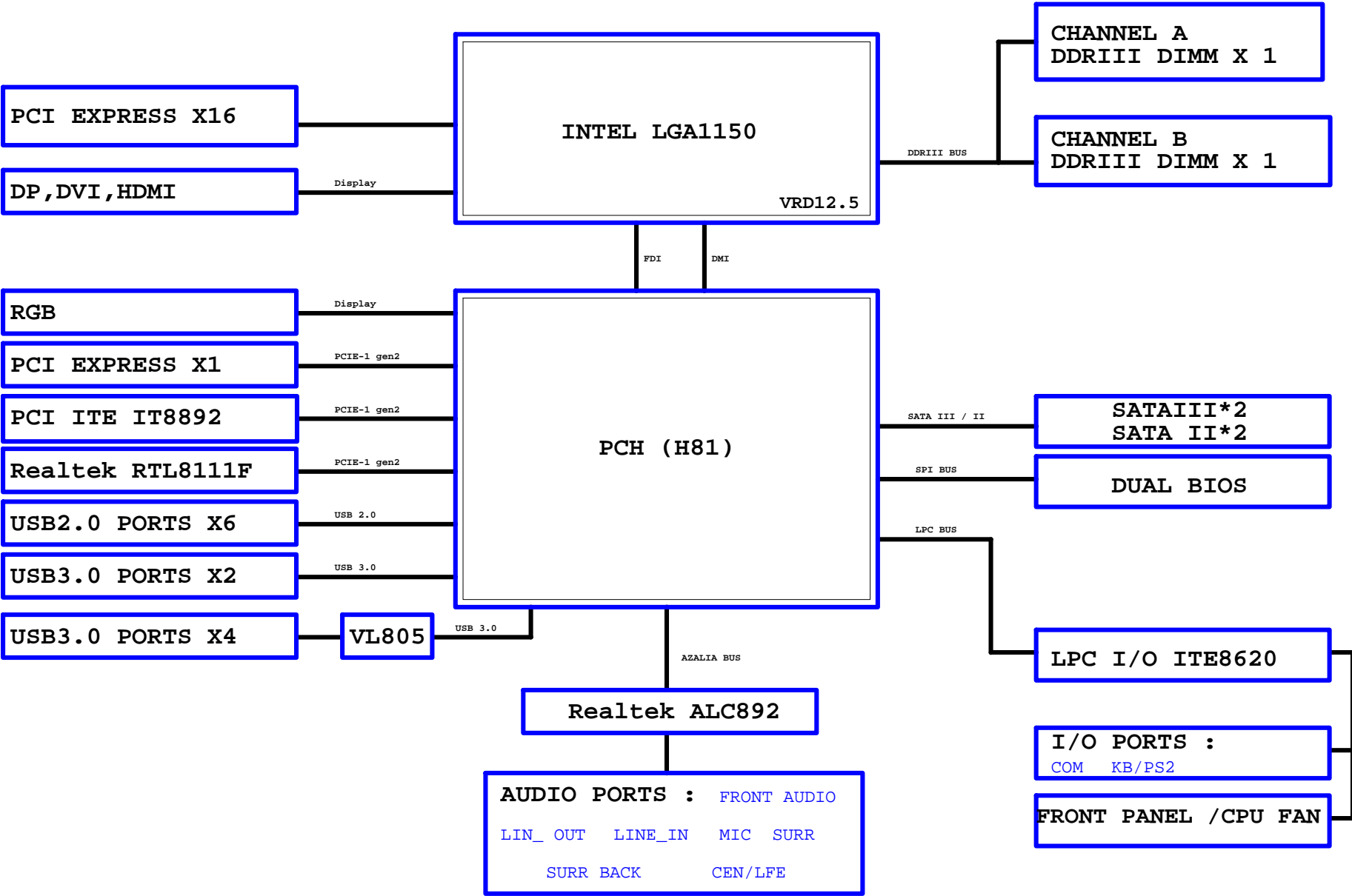
2013/04/22

[illegible]

Circuit or PCB layout change

[illegible]

BLOCK DIAGRAM



10 N_CPUCLK N_CPUCLK V4 BCLK* BCLK_P

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

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

27 PVIDALRT WR5 44.2/4/1 B37 VIDAALRT*

12 N_DRAM_PWROK AK21 DRAM_PWR_OK

11,17 A_CPUURST A_CPUURST M39 RSVD

11 A_PMSYNC P36 PMSYNC

11,17 A_PECI N37 PECI

11,17 A_CATERR M36 CATERR*

17,19 A_PROCHOT K38 PROCHOT*

11,17 A_THERMTRIP F37 THERMTRIP*

11,17 A_SKTODCC D38 SKTODCC*

17,19 A_SM_VREF AB38 DDR_VREF_CA

11,17 A_HSW_CFG2 XA37 HSW_CFG2

11,17 A_HSW_CFG4 XA38 HSW_CFG4

11,17 A_HSW_CFG6 XA39 HSW_CFG6

11,17 A_HSW_CFG9 XA40 HSW_CFG9

11,17 A_HSW_CFG13 XA41 HSW_CFG13

11,17 A_HSW_CFG15 XA42 HSW_CFG15

11,17 A_HSW_CFG17 XA43 HSW_CFG17

11,17 A_HSW_CFG18 XA44 HSW_CFG18

11,17 A_HSW_CFG19 XA45 HSW_CFG19

11,17 A_HSW_CFG20 XA46 HSW_CFG20

11,17 A_HSW_CFG21 XA47 HSW_CFG21

11,17 A_HSW_CFG22 XA48 HSW_CFG22

11,17 A_HSW_CFG23 XA49 HSW_CFG23

11,17 A_HSW_CFG24 XA50 HSW_CFG24

11,17 A_HSW_CFG25 XA51 HSW_CFG25

11,17 A_HSW_CFG26 XA52 HSW_CFG26

11,17 A_HSW_CFG27 XA53 HSW_CFG27

11,17 A_HSW_CFG28 XA54 HSW_CFG28

11,17 A_HSW_CFG29 XA55 HSW_CFG29

11,17 A_HSW_CFG30 XA56 HSW_CFG30

11,17 A_HSW_CFG31 XA57 HSW_CFG31

11,17 A_HSW_CFG32 XA58 HSW_CFG32

11,17 A_HSW_CFG33 XA59 HSW_CFG33

11,17 A_HSW_CFG34 XA60 HSW_CFG34

11,17 A_HSW_CFG35 XA61 HSW_CFG35

11,17 A_HSW_CFG36 XA62 HSW_CFG36

11,17 A_HSW_CFG37 XA63 HSW_CFG37

11,17 A_HSW_CFG38 XA64 HSW_CFG38

11,17 A_HSW_CFG39 XA65 HSW_CFG39

11,17 A_HSW_CFG40 XA66 HSW_CFG40

11,17 A_HSW_CFG41 XA67 HSW_CFG41

11,17 A_HSW_CFG42 XA68 HSW_CFG42

11,17 A_HSW_CFG43 XA69 HSW_CFG43

11,17 A_HSW_CFG44 XA70 HSW_CFG44

11,17 A_HSW_CFG45 XA71 HSW_CFG45

11,17 A_HSW_CFG46 XA72 HSW_CFG46

11,17 A_HSW_CFG47 XA73 HSW_CFG47

11,17 A_HSW_CFG48 XA74 HSW_CFG48

11,17 A_HSW_CFG49 XA75 HSW_CFG49

11,17 A_HSW_CFG50 XA76 HSW_CFG50

11,17 A_HSW_CFG51 XA77 HSW_CFG51

11,17 A_HSW_CFG52 XA78 HSW_CFG52

11,17 A_HSW_CFG53 XA79 HSW_CFG53

11,17 A_HSW_CFG54 XA80 HSW_CFG54

11,17 A_HSW_CFG55 XA81 HSW_CFG55

11,17 A_HSW_CFG56 XA82 HSW_CFG56

11,17 A_HSW_CFG57 XA83 HSW_CFG57

11,17 A_HSW_CFG58 XA84 HSW_CFG58

11,17 A_HSW_CFG59 XA85 HSW_CFG59

11,17 A_HSW_CFG60 XA86 HSW_CFG60

11,17 A_HSW_CFG61 XA87 HSW_CFG61

11,17 A_HSW_CFG62 XA88 HSW_CFG62

11,17 A_HSW_CFG63 XA89 HSW_CFG63

11,17 A_HSW_CFG64 XA90 HSW_CFG64

11,17 A_HSW_CFG65 XA91 HSW_CFG65

11,17 A_HSW_CFG66 XA92 HSW_CFG66

11,17 A_HSW_CFG67 XA93 HSW_CFG67

11,17 A_HSW_CFG68 XA94 HSW_CFG68

11,17 A_HSW_CFG69 XA95 HSW_CFG69

11,17 A_HSW_CFG70 XA96 HSW_CFG70

11,17 A_HSW_CFG71 XA97 HSW_CFG71

11,17 A_HSW_CFG72 XA98 HSW_CFG72

11,17 A_HSW_CFG73 XA99 HSW_CFG73

11,17 A_HSW_CFG74 XA100 HSW_CFG74

11,17 A_HSW_CFG75 XA101 HSW_CFG75

11,17 A_HSW_CFG76 XA102 HSW_CFG76

11,17 A_HSW_CFG77 XA103 HSW_CFG77

11,17 A_HSW_CFG78 XA104 HSW_CFG78

11,17 A_HSW_CFG79 XA105 HSW_CFG79

11,17 A_HSW_CFG80 XA106 HSW_CFG80

11,17 A_HSW_CFG81 XA107 HSW_CFG81

11,17 A_HSW_CFG82 XA108 HSW_CFG82

11,17 A_HSW_CFG83 XA109 HSW_CFG83

11,17 A_HSW_CFG84 XA110 HSW_CFG84

11,17 A_HSW_CFG85 XA111 HSW_CFG85

11,17 A_HSW_CFG86 XA112 HSW_CFG86

11,17 A_HSW_CFG87 XA113 HSW_CFG87

11,17 A_HSW_CFG88 XA114 HSW_CFG88

11,17 A_HSW_CFG89 XA115 HSW_CFG89

11,17 A_HSW_CFG90 XA116 HSW_CFG90

11,17 A_HSW_CFG91 XA117 HSW_CFG91

11,17 A_HSW_CFG92 XA118 HSW_CFG92

11,17 A_HSW_CFG93 XA119 HSW_CFG93

11,17 A_HSW_CFG94 XA120 HSW_CFG94

11,17 A_HSW_CFG95 XA121 HSW_CFG95

11,17 A_HSW_CFG96 XA122 HSW_CFG96

11,17 A_HSW_CFG97 XA123 HSW_CFG97

11,17 A_HSW_CFG98 XA124 HSW_CFG98

11,17 A_HSW_CFG99 XA125 HSW_CFG99

11,17 A_HSW_CFG100 XA126 HSW_CFG100

11,17 A_HSW_CFG101 XA127 HSW_CFG101

11,17 A_HSW_CFG102 XA128 HSW_CFG102

11,17 A_HSW_CFG103 XA129 HSW_CFG103

11,17 A_HSW_CFG104 XA130 HSW_CFG104

11,17 A_HSW_CFG105 XA131 HSW_CFG105

11,17 A_HSW_CFG106 XA132 HSW_CFG106

11,17 A_HSW_CFG107 XA133 HSW_CFG107

11,17 A_HSW_CFG108 XA134 HSW_CFG108

11,17 A_HSW_CFG109 XA135 HSW_CFG109

11,17 A_HSW_CFG110 XA136 HSW_CFG110

11,17 A_HSW_CFG111 XA137 HSW_CFG111

11,17 A_HSW_CFG112 XA138 HSW_CFG112

11,17 A_HSW_CFG113 XA139 HSW_CFG113

11,17 A_HSW_CFG114 XA140 HSW_CFG114

11,17 A_HSW_CFG115 XA141 HSW_CFG115

11,17 A_HSW_CFG116 XA142 HSW_CFG116

11,17 A_HSW_CFG117 XA143 HSW_CFG117

11,17 A_HSW_CFG118 XA144 HSW_CFG118

11,17 A_HSW_CFG119 XA145 HSW_CFG119

11,17 A_HSW_CFG120 XA146 HSW_CFG120

11,17 A_HSW_CFG121 XA147 HSW_CFG121

11,17 A_HSW_CFG122 XA148 HSW_CFG122

11,17 A_HSW_CFG123 XA149 HSW_CFG123

11,17 A_HSW_CFG124 XA150 HSW_CFG124

11,17 A_HSW_CFG125 XA151 HSW_CFG125

11,17 A_HSW_CFG126 XA152 HSW_CFG126

11,17 A_HSW_CFG127 XA153 HSW_CFG127

11,17 A_HSW_CFG128 XA154 HSW_CFG128

11,17 A_HSW_CFG129 XA155 HSW_CFG129

11,17 A_HSW_CFG130 XA156 HSW_CFG130

11,17 A_HSW_CFG131 XA157 HSW_CFG131

11,17 A_HSW_CFG132 XA158 HSW_CFG132

11,17 A_HSW_CFG133 XA159 HSW_CFG133

11,17 A_HSW_CFG134 XA160 HSW_CFG134

11,17 A_HSW_CFG135 XA161 HSW_CFG135

11,17 A_HSW_CFG136 XA162 HSW_CFG136

11,17 A_HSW_CFG137 XA163 HSW_CFG137

11,17 A_HSW_CFG138 XA164 HSW_CFG138

11,17 A_HSW_CFG139 XA165 HSW_CFG139

11,17 A_HSW_CFG140 XA166 HSW_CFG140

11,17 A_HSW_CFG141 XA167 HSW_CFG141

11,17 A_HSW_CFG142 XA168 HSW_CFG142

11,17 A_HSW_CFG143 XA169 HSW_CFG143

11,17 A_HSW_CFG144 XA170 HSW_CFG144

11,17 A_HSW_CFG145 XA171 HSW_CFG145

11,17 A_HSW_CFG146 XA172 HSW_CFG146

11,17 A_HSW_CFG147 XA173 HSW_CFG147

11,17 A_HSW_CFG148 XA174 HSW_CFG148

11,17 A_HSW_CFG149 XA175 HSW_CFG149

11,17 A_HSW_CFG150 XA176 HSW_CFG150

11,17 A_HSW_CFG151 XA177 HSW_CFG151

11,17 A_HSW_CFG152 XA178 HSW_CFG152

11,17 A_HSW_CFG153 XA179 HSW_CFG153

11,17 A_HSW_CFG154 XA180 HSW_CFG154

11,17 A_HSW_CFG155 XA181 HSW_CFG

Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin
FDI_CS _{YN} C	D16	FDI_CS _{YN} C	D16	FDI_CS _{YN} C	D16	FDI_CS _{YN} C	D16
FDI_IN _T	D18	FDI_IN _T	D18	FDI_IN _T	D18	FDI_IN _T	D18
FDI_RCOMP	R4	FDI_RCOMP	R4	FDI_RCOMP	R4	FDI_RCOMP	R4
N_DP_CLK	U5	N_DP_CLK	U5	N_DP_CLK	U5	N_DP_CLK	U5
N_DP_CLK	U6	N_DP_CLK	U6	N_DP_CLK	U6	N_DP_CLK	U6
EDP_DISP_UTIL	E16	EDP_DISP_UTIL	E16	EDP_DISP_UTIL	E16	EDP_DISP_UTIL	E16
RSVD_TP	K11	RSVD_TP	K11	RSVD_TP	K11	RSVD_TP	K11
RSVD_TP3	J12	RSVD_TP3	J12	RSVD_TP3	J12	RSVD_TP3	J12
FDI_EDP_TXN0	B14	FDI_EDP_TXN0	B14	FDI_EDP_TXN0	B14	FDI_EDP_TXN0	B14
FDI_EDP_TXP0	A14	FDI_EDP_TXP0	A14	FDI_EDP_TXP0	A14	FDI_EDP_TXP0	A14
FDI_TXN1	C13	FDI_TXN1	C13	FDI_TXN1	C13	FDI_TXN1	C13
FDI_TXP1	B13	FDI_TXP1	B13	FDI_TXP1	B13	FDI_TXP1	B13
DP_TX0	B15	DP_TX0	B15	DP_TX0	B15	DP_TX0	B15
DP_TX0	C15	DP_TX0	C15	DP_TX0	C15	DP_TX0	C15
DP_TX1	A16	DP_TX1	A16	DP_TX1	A16	DP_TX1	A16
DP_TX1	B16	DP_TX1	B16	DP_TX1	B16	DP_TX1	B16
DP_TX2	B17	DP_TX2	B17	DP_TX2	B17	DP_TX2	B17
DP_TX2	C17	DP_TX2	C17	DP_TX2	C17	DP_TX2	C17
DP_TX3	A18	DP_TX3	A18	DP_TX3	A18	DP_TX3	A18
DP_TX3	B18	DP_TX3	B18	DP_TX3	B18	DP_TX3	B18

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	G1	PA EXP_TXN9					
PA EXP_RXP10	F5	PEG_RXP10	G2	PA EXP_TXP10					
PA EXP_RXN10	F6	PEG_RXN10	G3	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	J3	PA EXP_TXN14					
PA EXP_RXP15	L4	PEG_RXP15	L1	PA EXP_TXP15					
PA EXP_RXN15	L5	PEG_RXN15	L2	PA EXP_TXN15					
A_DMI_0RXP	U3	DMI_RXP0	DMI_TXP0	A44	A_DMI_0TXP				
A_DMI_0RXN	U3	DMI_RXN0	DMI_TXN0	A45	A_DMI_0TXN				
A_DMI_1RXP	U4	DMI_RXP1	DMI_TXP1	A46	A_DMI_1TXP				
A_DMI_1RXN	V1	DMI_RXN1	DMI_TXN1	A47	A_DMI_1TXN				
A_DMI_2RXP	W2	DMI_RXP2	DMI_TXP2	A48	A_DMI_2TXP				
A_DMI_2RXN	W2	DMI_RXN2	DMI_TXN2	A49	A_DMI_2TXN				
A_DMI_3RXP	Y2	DMI_RXP3	DMI_TXP3	A50	A_DMI_3TXP				
A_DMI_3RXN	W3	DMI_RXN3	DMI_TXN3	A51	A_DMI_3TXN				
	D1	RSVD_TP							
	X2	RSVD_TP							
	B3	RSVD_TP							
	X4	RSVD_TP							
	P3	PEG_RCOMP							

1.1V分壓

VCC3

WR26
20k/1/X

WR31
10k/1/X

A_CPUREST

BC102
10k/1/X

11.1V

For IT8620 Ctrl

CPU_VTT_OR

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

CPU_VTT_OR

WR14	51/4/1/X	A TMS
WR16	51/4/1/X	A TDO
WR17	51/4/1/X	A TDI
WR30	51/4/1	A -HPRDY
WR11	51/4/1	A TCK
WR9	51/4/1	A -TRST

[illegible]

A DDR COMP0	WR28	100/4/1
A DDR COMP1	WR19	75/4/1
A DDR COMP2	WR22	100/4/1
A TESTLOW 1	WR18	49.9/4/1
A TESTLOW 2	WR12	49.9/4/1
A HSW CFG RCOMP	WR24	49.9/4/1

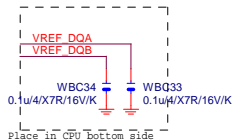
LGA1150 (A)

LGA1150A		DDR0_MA0	DDR0_D00	AD38	MDA0
MAAA0	AU13	DDR0_MA1	DDR0_D01	AD39	MDA1
MAAA1	AV16	DDR0_MA2	DDR0_D02	AF38	MDA2
MAAA2	AU16	DDR0_MA3	DDR0_D03	AF39	MDA3
MAAA3	AW17	DDR0_MA4	DDR0_D04	AD37	MDA4
MAAA4	AU17	DDR0_MA5	DDR0_D05	AD40	MDA5
MAAA5	AW18	DDR0_MA6	DDR0_D06	AE37	MDA6
MAAA6	AV17	DDR0_MA7	DDR0_D07	AF40	MDA7
MAAA7	AT18	DDR0_MA8	DDR0_D08	AH40	MDA9
MAAA8	AU18	DDR0_MA9	DDR0_D09	AH39	MDA10
MAAA9	AT19	DDR0_MA10	DDR0_D10	AK38	MDA11
MAAA10	AW11	DDR0_MA11	DDR0_D11	AK39	MDA12
MAAA11	AV19	DDR0_MA12	DDR0_D12	AH37	MDA12
MAAA12	AU19	DDR0_MA13	DDR0_D13	AH38	MDA14
MAAA13	AT20	DDR0_MA14	DDR0_D14	AK40	MDA15
MAAA14	AW21	DDR0_MA15	DDR0_D15	AM40	MDA17
MAAA15	AU21	DDR0_D16	DDR0_D16	AM39	MDA21
MODT_A0	AW10	DDR0_ODT0	DDR0_ODT0	AP38	MDA18
MODT_A1	AV8	DDR0_ODT1	DDR0_ODT1	AP39	MDA19
	AW9	DDR0_ODT2	DDR0_ODT2	AM37	MDA20
	AW8	DDR0_ODT3	DDR0_ODT3	AM38	MDA16
		DDR0_D21	DDR0_D21	AM26	MDA22
		DDR0_D22	DDR0_D22	AM25	MDA23
		DDR0_D23	DDR0_D23	AP28	MDA28
		DDR0_D24	DDR0_D24	AL26	MDA26
		DDR0_D25	DDR0_D25	AL25	MDA27
		DDR0_D26	DDR0_D26	AR26	MDA28
		DDR0_D27	DDR0_D27	AR25	MDA29
		DDR0_D28	DDR0_D28	AR24	MDA30
		DDR0_D29	DDR0_D29	AW35	MDA31
		DDR0_D30	DDR0_D30	AW6	MDA33
		DDR0_D31	DDR0_D31	AW6	MDA37
		DDR0_D32	DDR0_D32	AW4	MDA34
		DDR0_D33	DDR0_D33	AW4	MDA35
		DDR0_D34	DDR0_D34	AW6	MDA32
		DDR0_D35	DDR0_D35	AW4	MDA38
		DDR0_D36	DDR0_D36	AR1	MDA39
		DDR0_D37	DDR0_D37	AR4	MDA45
		DDR0_D38	DDR0_D38	AN3	MDA42
		DDR0_D39	DDR0_D39	AN4	MDA43
		DDR0_D40	DDR0_D40	AR2	MDA44
		DDR0_D41	DDR0_D41	AR3	MDA40
		DDR0_D42	DDR0_D42	AN2	MDA46
		DDR0_D43	DDR0_D43	AN1	MDA47
		DDR0_D44	DDR0_D44	AL1	MDA49
		DDR0_D45	DDR0_D45	AL4	MDA53
		DDR0_D46	DDR0_D46	AL3	MDA50
		DDR0_D47	DDR0_D47	AL4	MDA51
		DDR0_D48	DDR0_D48	AL2	MDA52
		DDR0_D49	DDR0_D49	AL2	MDA48
		DDR0_D50	DDR0_D50	AJ2	MDA54
		DDR0_D51	DDR0_D51	AJ1	MDA55
		DDR0_D52	DDR0_D52	AG1	MDA57
		DDR0_D53	DDR0_D53	AG4	MDA61
		DDR0_D54	DDR0_D54	AE3	MDA58
		DDR0_D55	DDR0_D55	E4	MDA59
		DDR0_D56	DDR0_D56	AG2	MDA60
		DDR0_D57	DDR0_D57	AG3	MDA56
		DDR0_D58	DDR0_D58	AE2	MDA62
		DDR0_D59	DDR0_D59	AE1	MDA63
		DDR0_D60	DDR0_D60	AE39	DQSA0
		DDR0_D61	DDR0_D61	AJ39	DQSA1
		DDR0_D62	DDR0_D62	AN39	DQSA2
		DDR0_D63	DDR0_D63	AV36	DQSA3
		DDR0_D64	DDR0_D64	AV5	DQSA4
		DDR0_D65	DDR0_D65	AP3	DQSA5
		DDR0_D66	DDR0_D66	AK3	DQSA6
		DDR0_D67	DDR0_D67	AF3	DQSA7
		DDR0_D68	DDR0_D68	AV32	DQSA0
		DDR0_D69	DDR0_D69	AE38	DQSA1
		DDR0_D70	DDR0_D70	AJ38	DQSA2
		DDR0_D71	DDR0_D71	AN38	DQSA3
		DDR0_D72	DDR0_D72	AJ36	DQSA4
		DDR0_D73	DDR0_D73	AW5	DQSA5
		DDR0_D74	DDR0_D74	AP2	DQSA6
		DDR0_D75	DDR0_D75	AK2	DQSA7
		DDR0_D76	DDR0_D76	AF2	DQSA7
		DDR0_D77	DDR0_D77	AJ32	DQSA7

CPU-SK/1150/S/GF

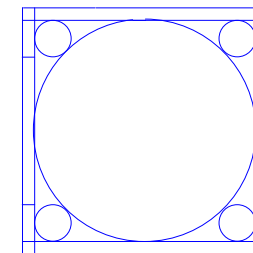
LGA1150 (B)

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MAAB1	AK23	DDR1_MA2	DDR1_D02	AG35	MDB2
MAAB2	AM22	DDR1_MA3	DDR1_D03	AH35	MDB3
MAAB3	AM23	DDR1_MA4	DDR1_D04	AD34	MDB4
MAAB4	AP23	DDR1_MA5	DDR1_D05	AD35	MDB5
MAAB5	AL23	DDR1_MA6	DDR1_D06	AG34	MDB6
MAAB6	AY24	DDR1_MA7	DDR1_D07	AH34	MDB7
MAAB7	AV25	DDR1_MA8	DDR1_D08	AL34	MDB8
MAAB8	AU26	DDR1_MA9	DDR1_D09	AL35	MDB9
MAAB9	AW25	DDR1_MA10	DDR1_D10	AL31	MDB10
MAAB10	AP18	DDR1_MA11	DDR1_D11	AK34	MDB11
MAAB11	AY25	DDR1_MA12	DDR1_D12	AK35	MDB12
MAAB12	AV26	DDR1_MA13	DDR1_D13	AK32	MDB13
MAAB13	AR15	DDR1_MA14	DDR1_D14	AL32	MDB14
MAAB14	AV27	DDR1_MA15	DDR1_D15	AL34	MDB17
MAAB15	AY28	DDR1_D16	DDR1_D16	AP34	MDB21
MODT_B0	AM17	DDR1_ODT0	DDR1_ODT0	AN31	MDB19
MODT_B1	AL16	DDR1_ODT1	DDR1_ODT1	AP31	MDB23
	AM16	DDR1_ODT2	DDR1_ODT2	AN35	MDB20
	AK15	DDR1_ODT3	DDR1_ODT3	AP35	MDB16
		DDR1_ECC0	DDR1_ECC0	AN32	MDB18
		DDR1_ECC1	DDR1_ECC1	AP32	MDB22
		DDR1_ECC2	DDR1_ECC2	AM29	MDB25
		DDR1_ECC3	DDR1_ECC3	AM28	MDB28
		DDR1_ECC4	DDR1_ECC4	AR29	MDB27
		DDR1_ECC5	DDR1_ECC5	AR28	MDB30
		DDR1_ECC6	DDR1_ECC6	AL28	MDB24
		DDR1_ECC7	DDR1_ECC7	AP29	MDB26
		DDR1_BA0	DDR1_D00	AP28	MDB31
		DDR1_BA1	DDR1_D01	AR12	MDB32
		DDR1_BA2	DDR1_D02	AL12	MDB35
		DDR1_CKE0	DDR1_D03	AR13	MDB36
		DDR1_CKE1	DDR1_D04	AP13	MDB37
		DDR1_CKE2	DDR1_D05	AM13	MDB38
		DDR1_CKE3	DDR1_D06	AM12	MDB39
		DDR1_CS_N0	DDR1_D07	AR9	MDB45
		DDR1_CS_N1	DDR1_D08	AP9	MDB41
		DDR1_CS_N2	DDR1_D09	AR6	MDB47
		DDR1_CS_N3	DDR1_D10	AP6	MDB43
		DDR1_CLK_P0	DDR1_D11	AR10	MDB44
		DDR1_CLK_N0	DDR1_D12	AP10	MDB40
		DDR1_CLK_P1	DDR1_D13	AR7	MDB46
		DDR1_CLK_N1	DDR1_D14	AP7	MDB42
		DDR1_CLK_P2	DDR1_D15	AM9	MDB52
		DDR1_CLK_N2	DDR1_D16	AL9	MDB53
		DDR1_CLK_P3	DDR1_D17	AL6	MDB50
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		DDR1_RAS*	DDR1_D20	AL10	MDB49
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		DDR_VREF_DQ1	DDR1_D23	AH7	MDB60
		DDR1_D24	DDR1_D24	AE6	MDB59
		DDR1_D25	DDR1_D25	AE7	MDB63
		DDR1_D26	DDR1_D26	AJ6	MDB56
		DDR1_D27	DDR1_D27	AJ7	MDB57
		DDR1_D28	DDR1_D28	AF6	MDB58
		DDR1_D29	DDR1_D29	AF7	MDB62
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		DDR1_D31	DDR1_D31	AL33	DQSB1
		DDR1_D32	DDR1_D32	AN28	DQSB2
		DDR1_D33	DDR1_D33	AN28	DQSB3
		DDR1_D34	DDR1_D34	AN12	DQSB4
		DDR1_D35	DDR1_D35	AP8	DQSB5
		DDR1_D36	DDR1_D36	AL8	DQSB6
		DDR1_D37	DDR1_D37	AG7	DQSB7
		DDR1_D38	DDR1_D38	AN25	DQSB0
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		DDR1_D42	DDR1_D42	AN29	DQSB4
		DDR1_D43	DDR1_D43	AN13	DQSB4
		DDR1_D44	DDR1_D44	AR8	DQSB5
		DDR1_D45	DDR1_D45	AM8	DQSB6
		DDR1_D46	DDR1_D46	AG6	DQSB7
		DDR1_D47	DDR1_D47	AN26	DQSB7



CPU-SK/1150/S/GF

LGA1150 (CR)

CR
CPU RETAINION/X

LGA1150



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

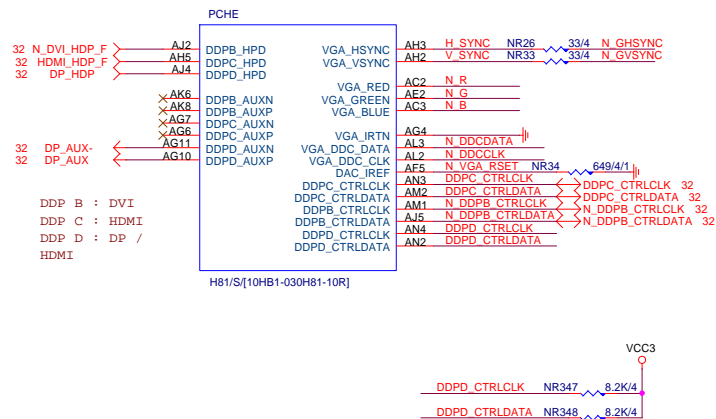
DDR BUS

7	MODT_A[0..1]	MODT_A0..1
8	MODT_B[0..1]	MODT_B0..1
7	MDA[0..63]	MDA0..63
8	MDB[0..63]	MDB0..63
7	DQSA[0..7]	DQSA0..7
7	DQSA[0..7]	DQSA0..7
7	MAAA[0..15]	MAAA0..15
8	MAAB[0..15]	MAAB0..15
8	DQSB[0..7]	DQSB0..7
8	DQSB[0..7]	DQSB0..7

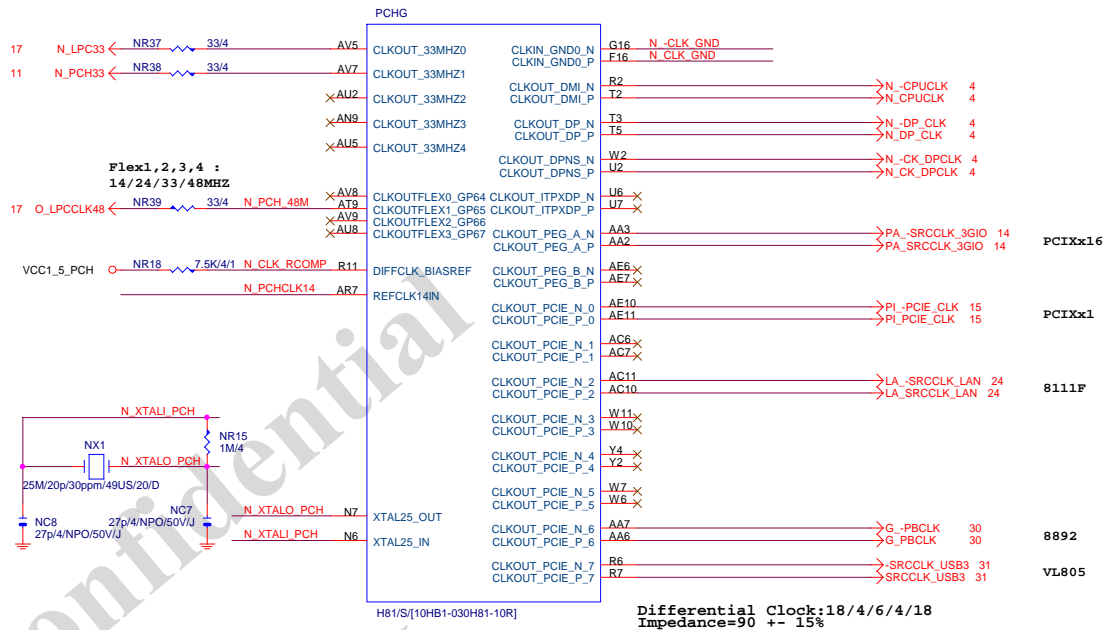
Gigabyte Technology

Title					Rev
CPU LGA1150-B					
Size	Document Number	GA-H81M-HD3			1.03
Custom					
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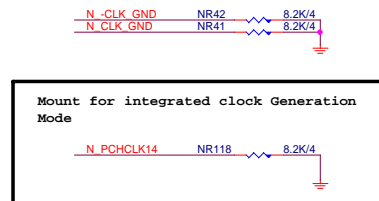
PCH (E)



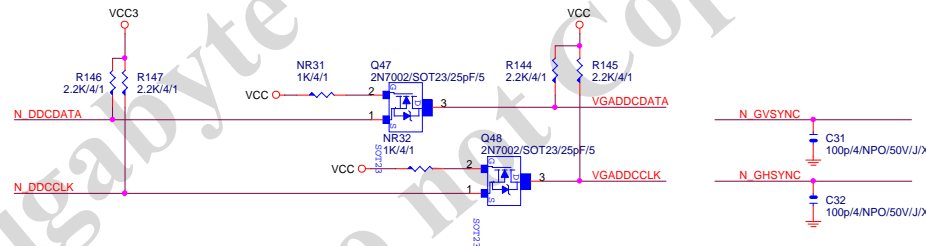
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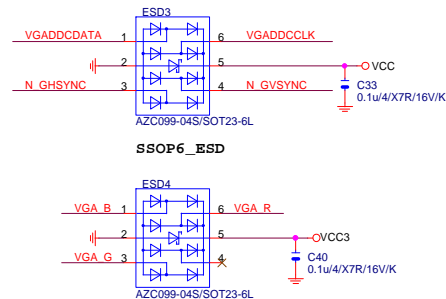
PCH CLK PD



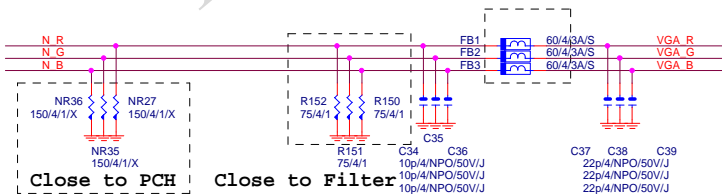
VGA DDC



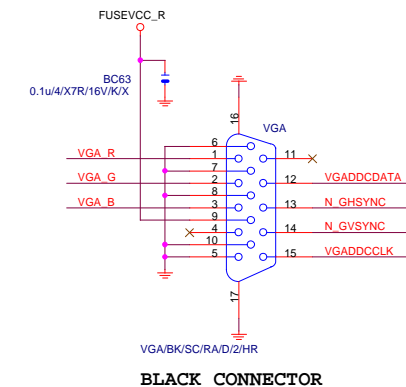
VGA ESD



VGA DDC



VGA CONNECTOR

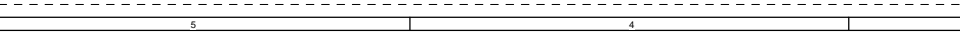


Gigabyte Technology			
Title			
PCH DISPLAY_CLK BUFFER			
Size			
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		GA-H81M-HD3	
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(C)

SATA CONNECTOR

[↑](#) [↓](#) [↺](#) [↻](#)

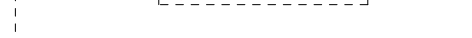


(A)

PCH	CLK	PD
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PCH	PU/PD
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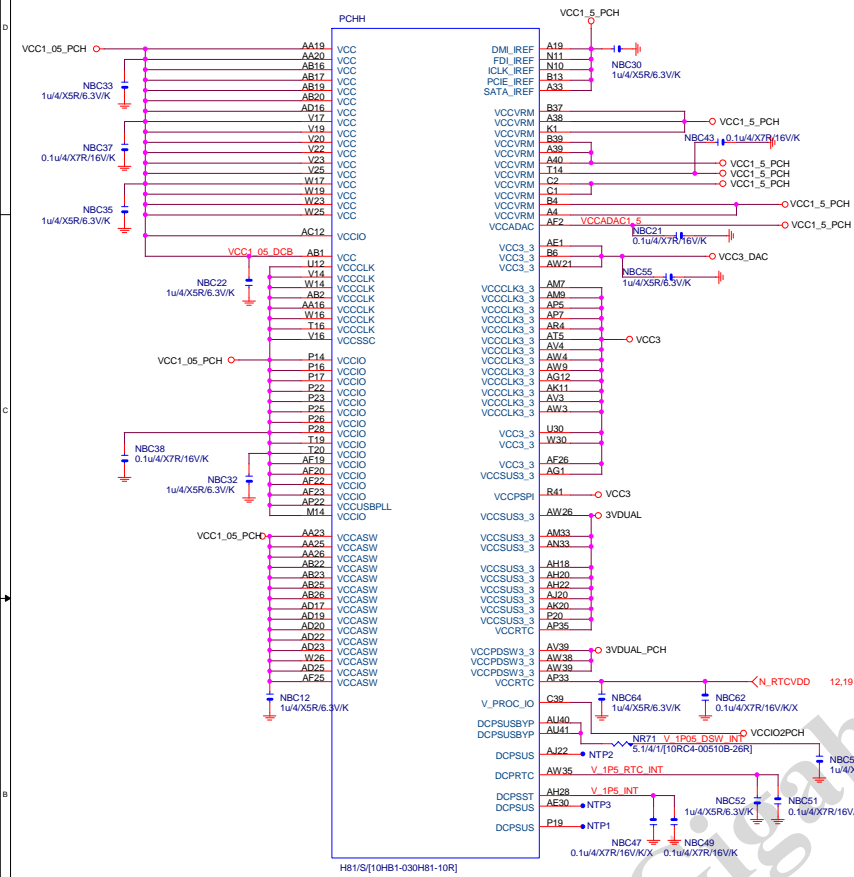


GPIO38 Ctrl

Gigabyte Technology

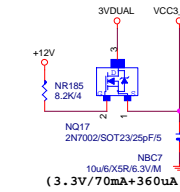
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Size	Document Number		Rev
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PCH (H)

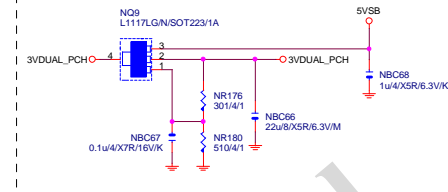


VCC3_DAC

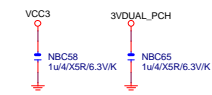
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3VDUAL_PCH

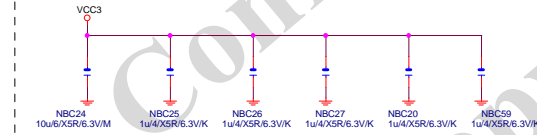


SHT_PWR

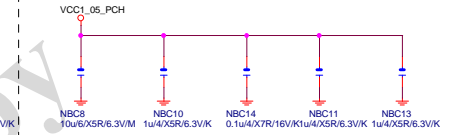


CAP

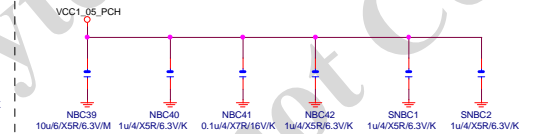
(3.3V) (X6)



(1.05V) (X5)



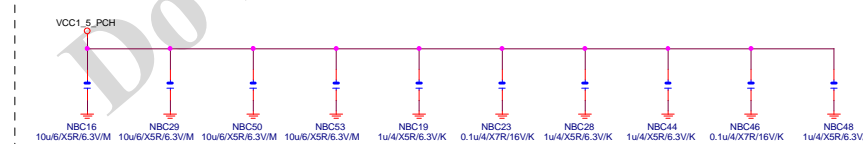
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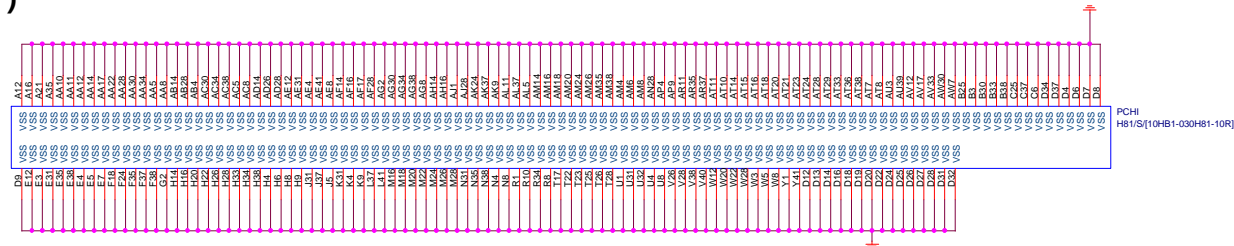
(1.05V) (X2) (3.3V) (X2)



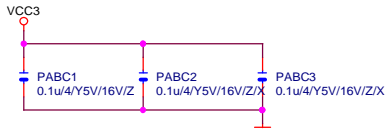
(1.05V) (X10)



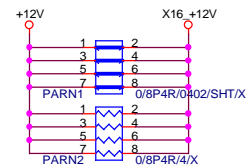
PCH (I)



PCIEX16 CAP



PCIEX16 PROTECT SHT



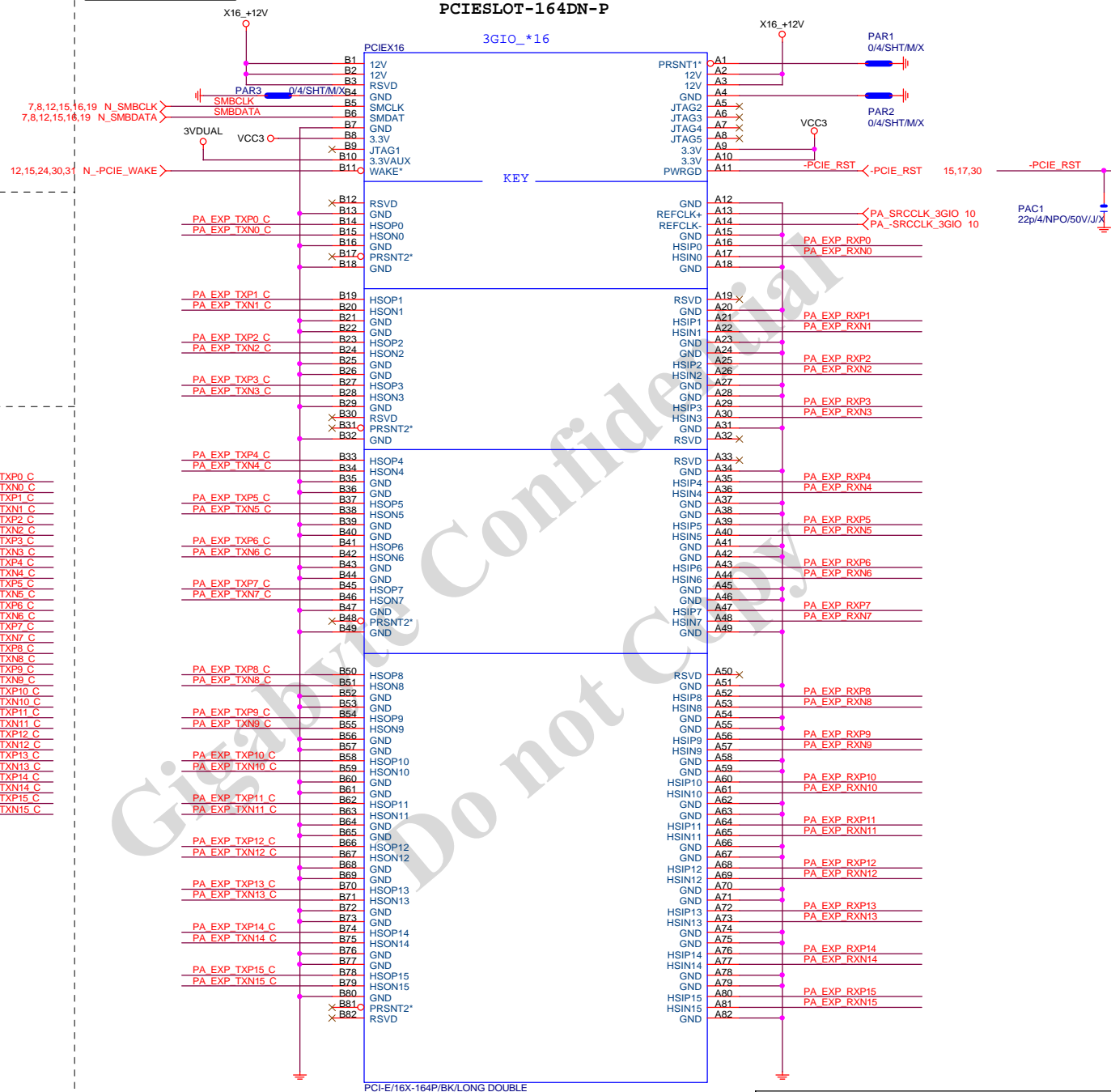
PCIEX16	AC	CAP
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PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22u4/X5R/6.3V/K	PA EXP TXP8 C
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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
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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
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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
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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

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PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] 4
PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] 4
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PCIEX16 SLOT

PCIESLOT-164DN-P



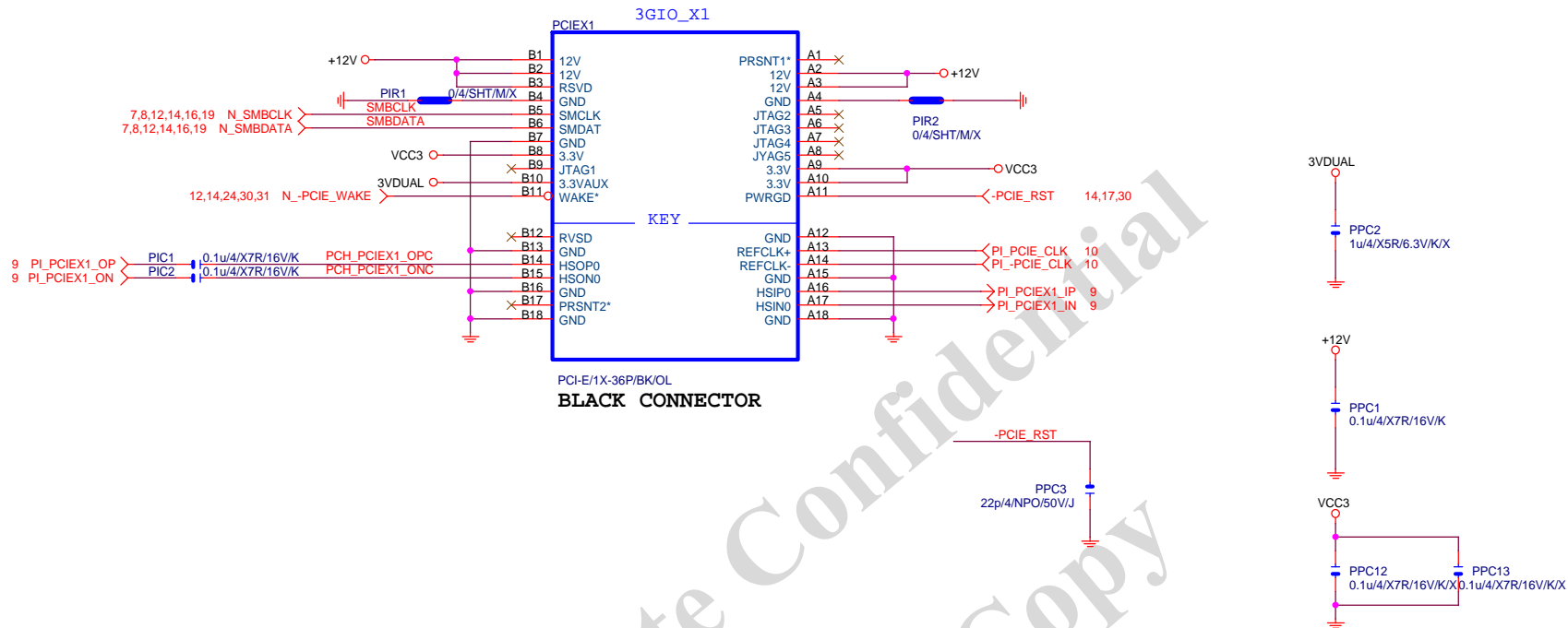
PCI-E/16X-164P/BK/LONG DOUBLE

BLACK CONNECTOR

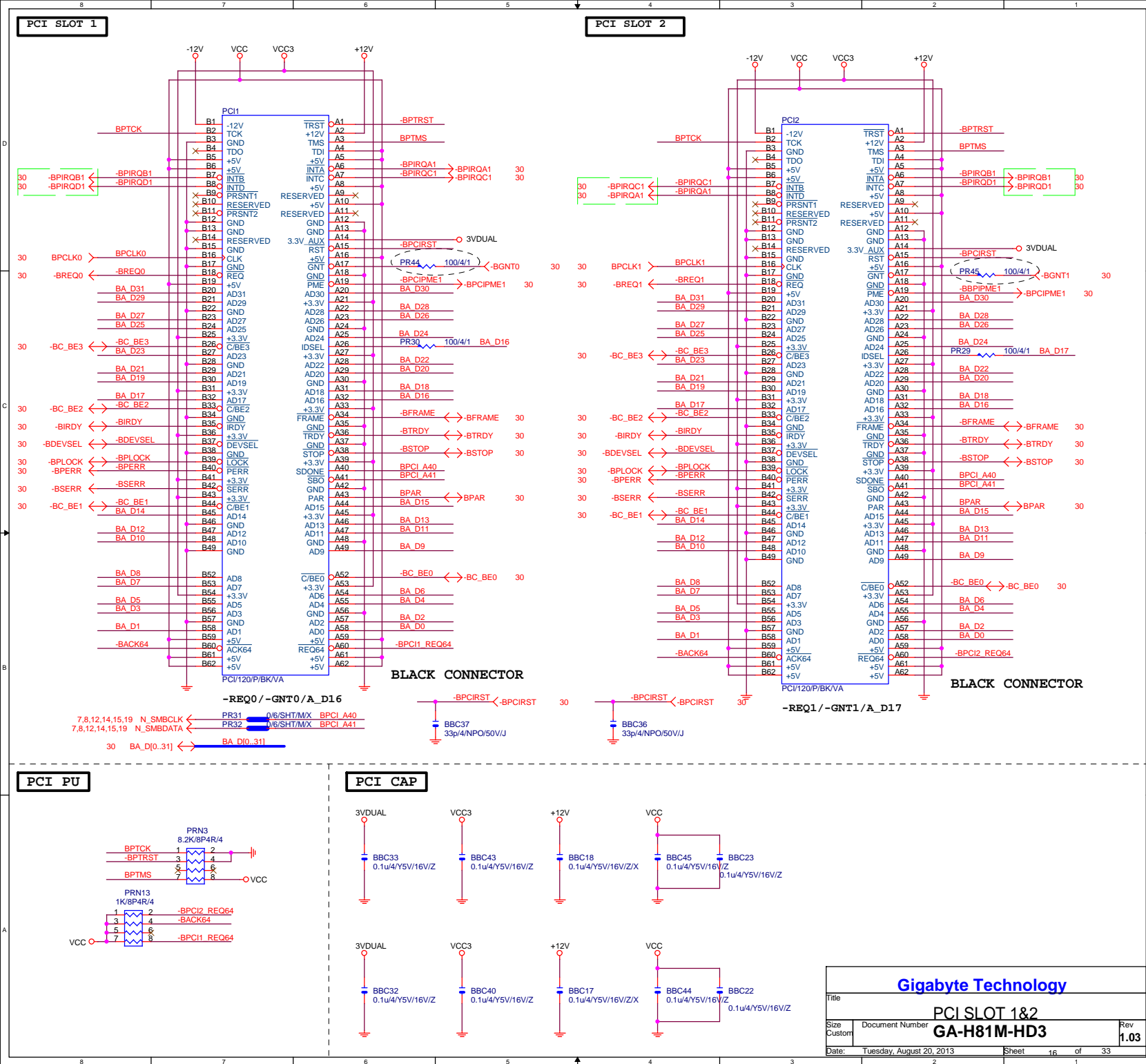
Gigabyte Technology

Title			
PCI EXPRESS * 16			
Size Custom	Document Number	GA-H81M-HD3	Rev 1.03
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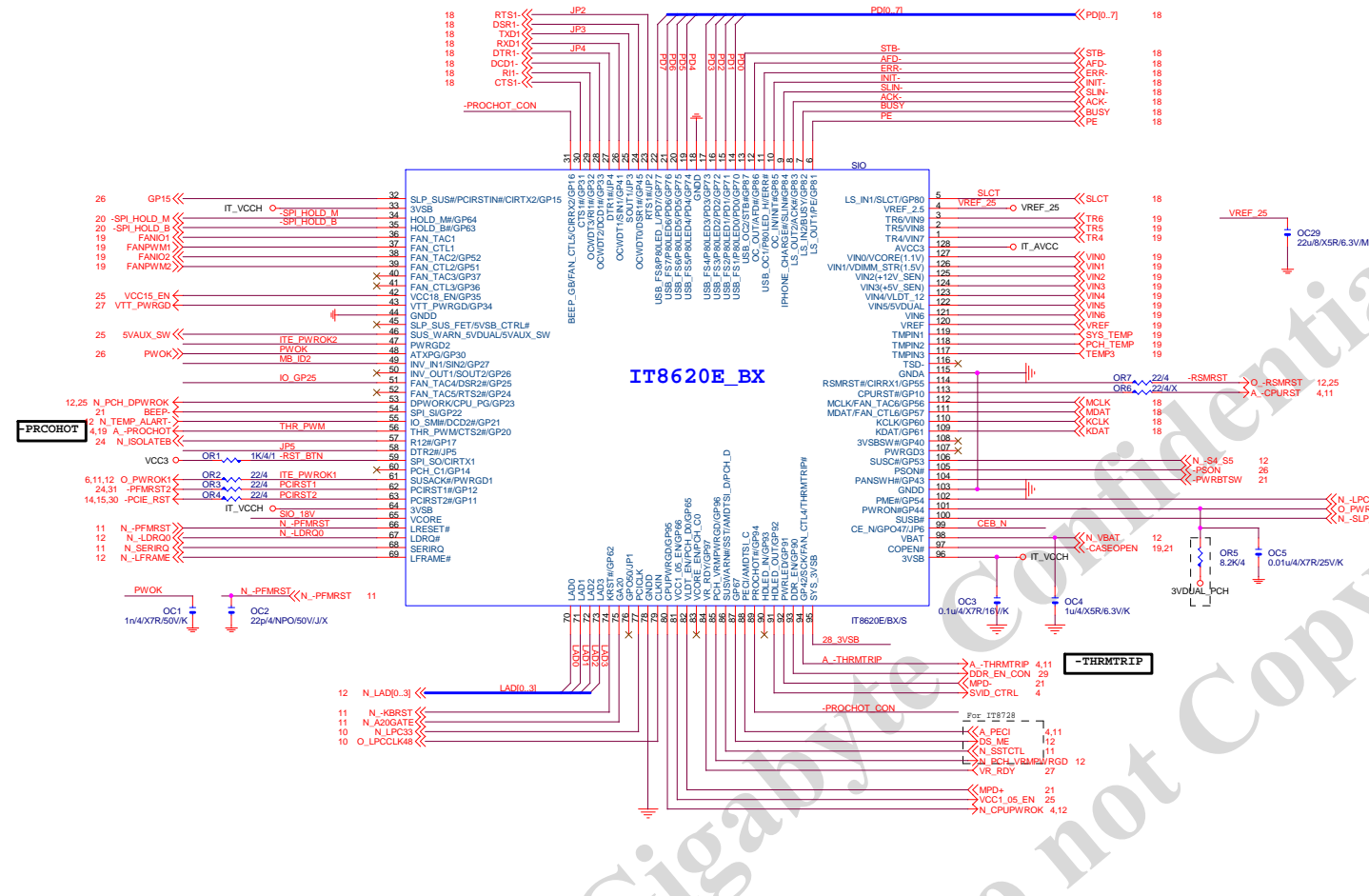
PCIEX1 SLOT



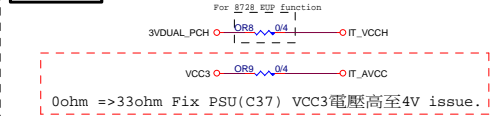
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PCI EXPRESS X 1 PORT			
Size	Document Number	Rev	
Custom	GA-H81M-HD3	1.03	
Date:	Tuesday, August 20, 2013	Sheet	15 of 33



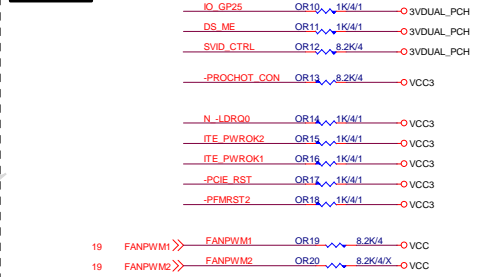
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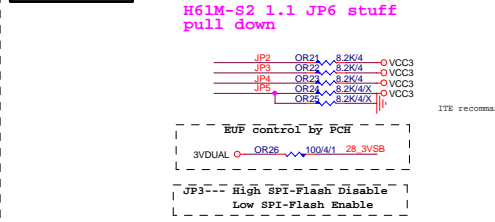
Power SHT



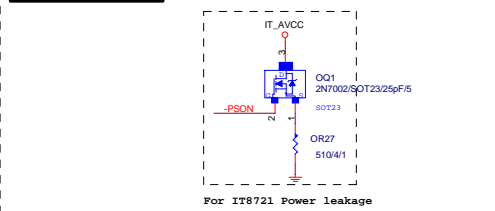
SIO PU



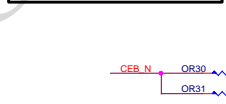
SIO STRAP



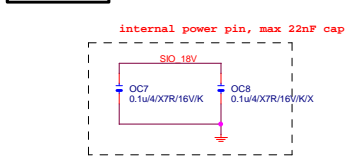
Power leakage



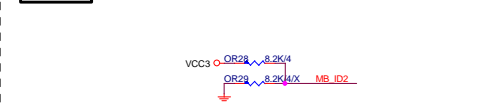
DUAL BIOS OPT STRAP



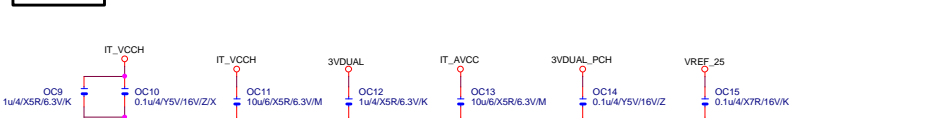
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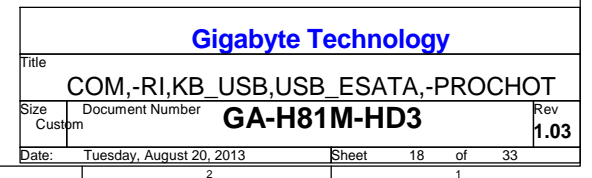
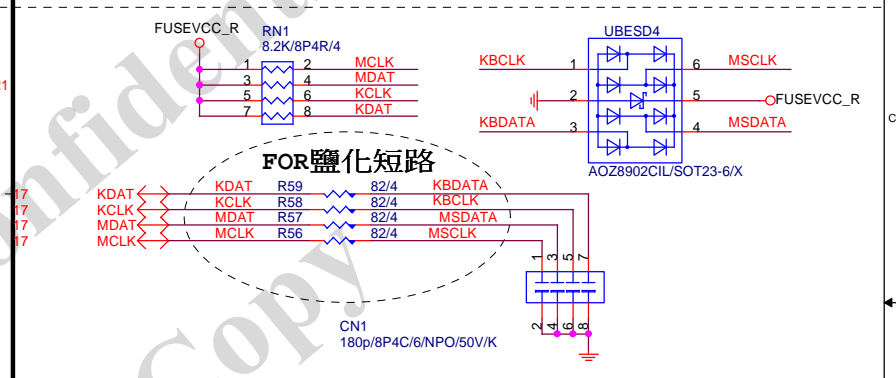
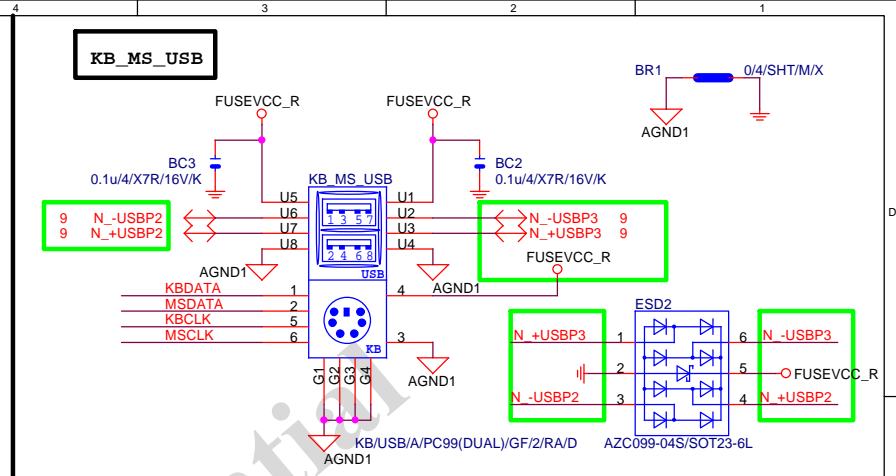


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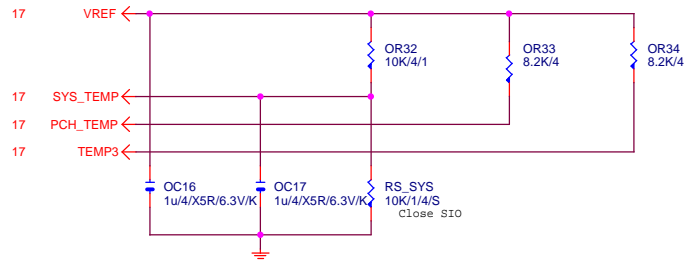


SIO CAP

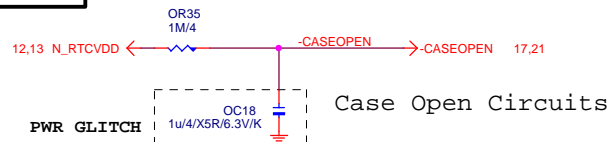




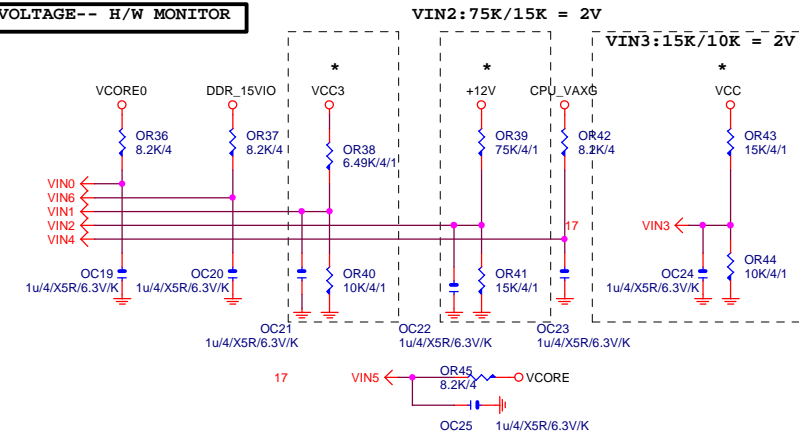
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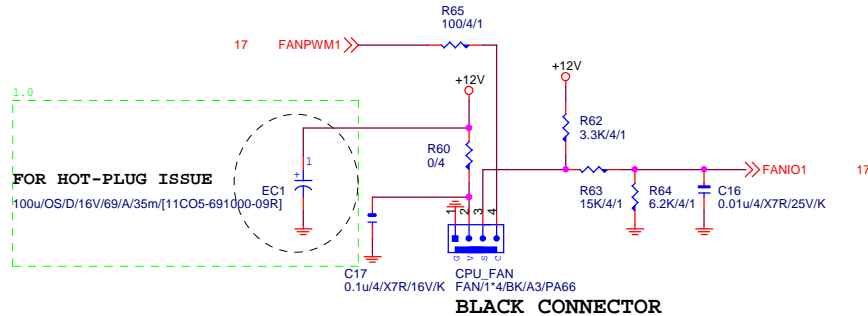
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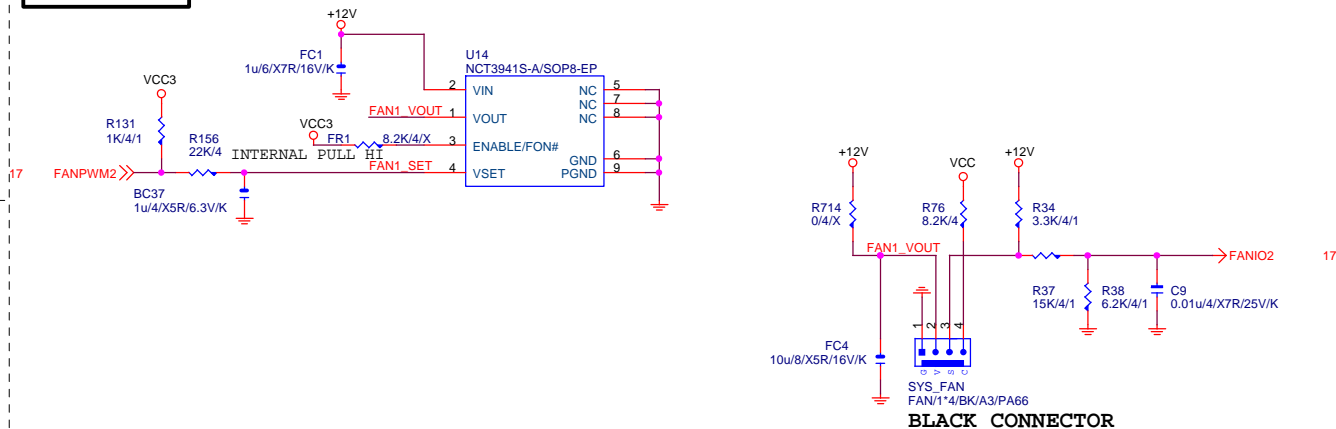
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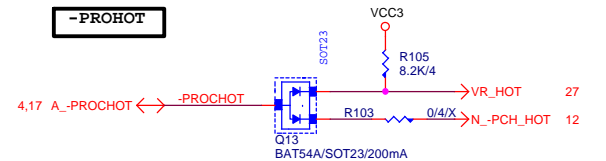
CPU SMART FAN



SYS SMART FAN

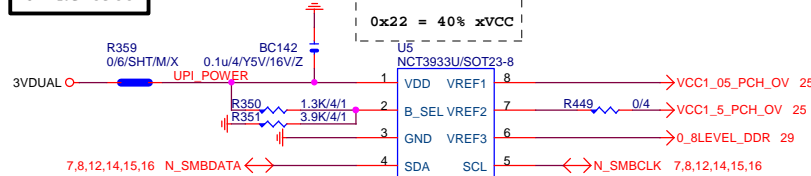


-PROHOT



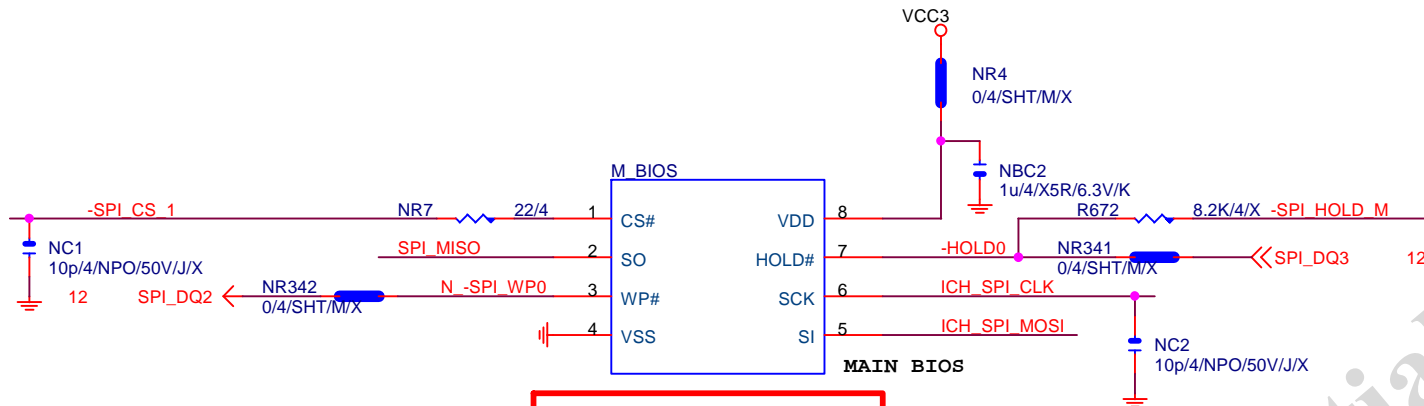
接pwm feedback pin

OV NCT3933

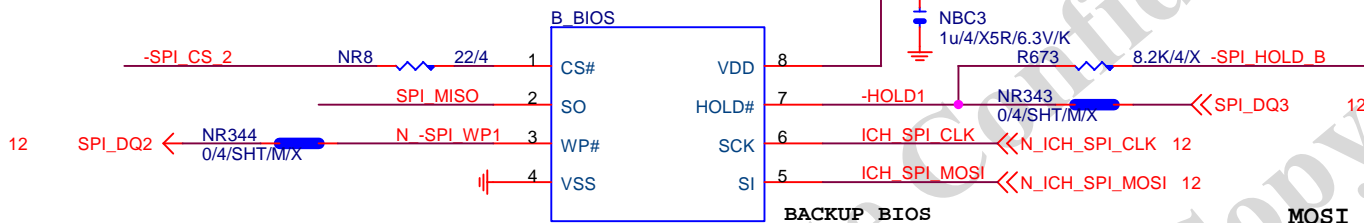


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Title				
HWM.FAN CTRL.OV				
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64M/Q/SPI/SO8/S/[10HP4-112564-30R]

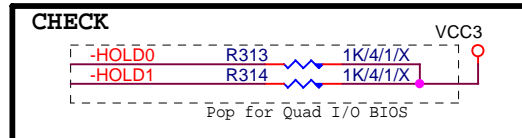
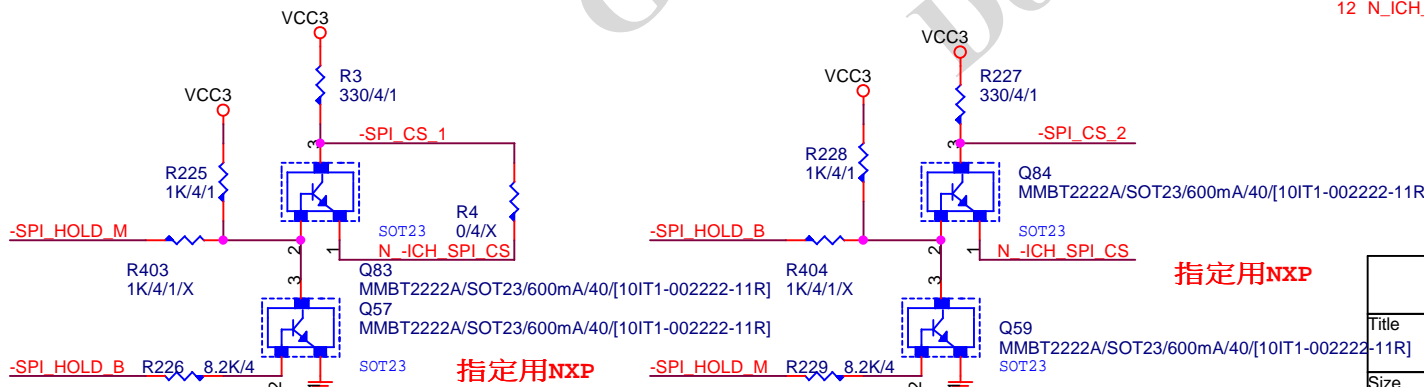
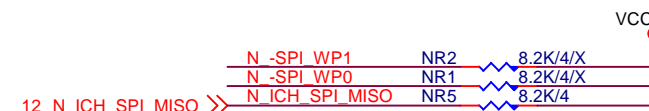
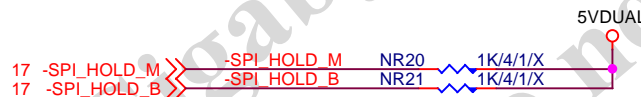
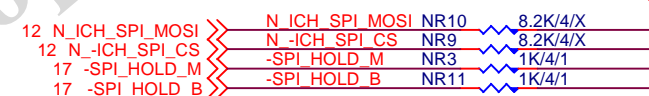


64M/Q/SPI/SO8/S/[10HP4-112564-30R]

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

1 means floating
0 means PD 1K

MOSI For DMI RX Termination Voltage



指定用NXP

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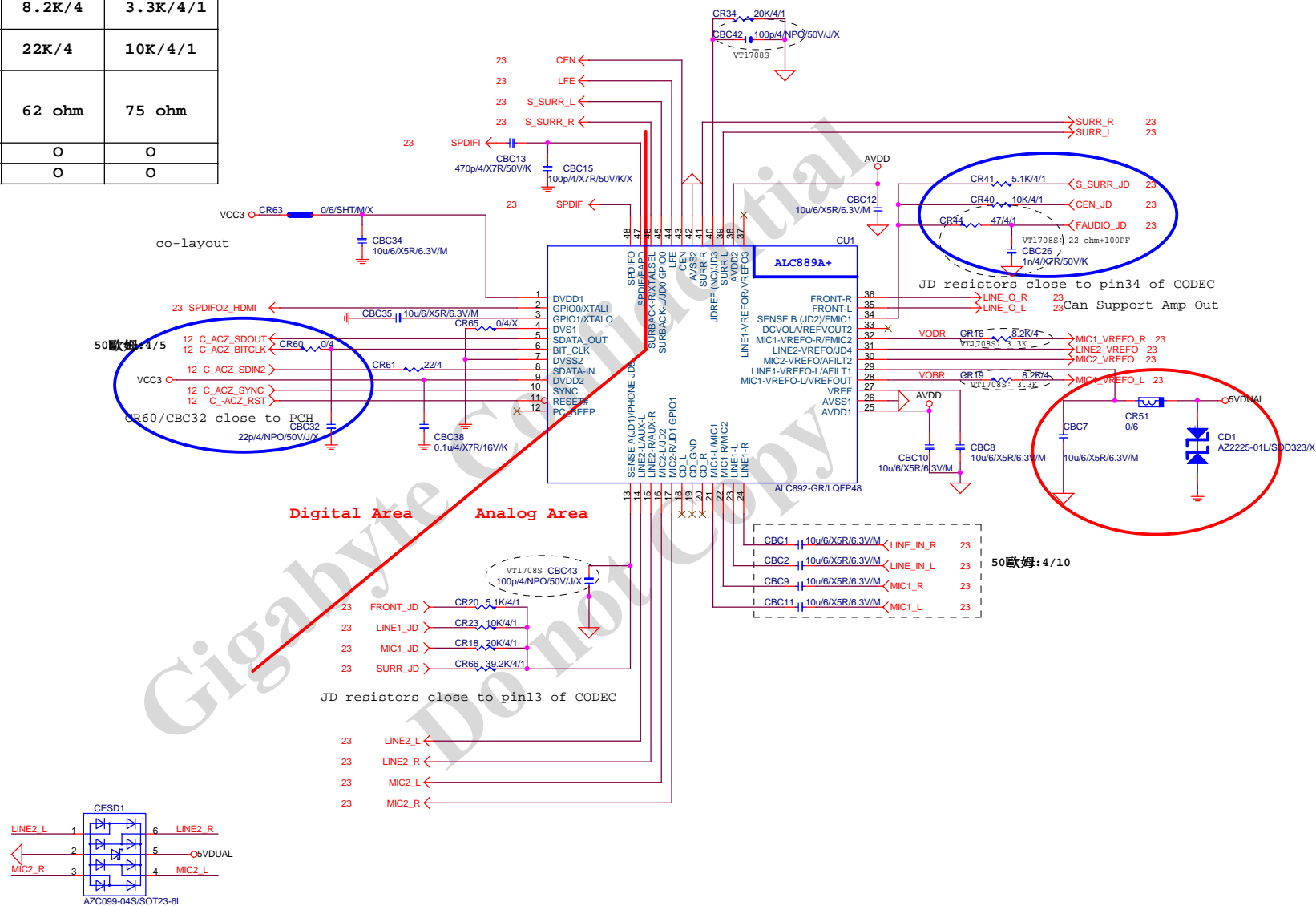
DUAL BIOS

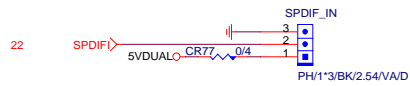
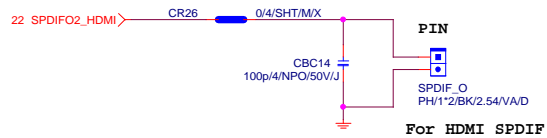
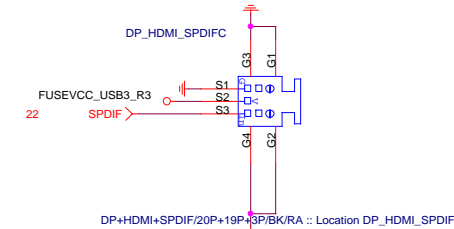
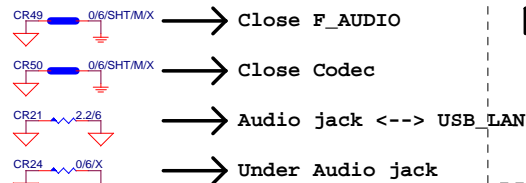
GA-H81M-HD3

Rev 1.03

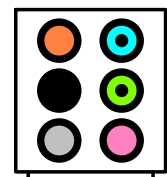
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CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	O	O	O

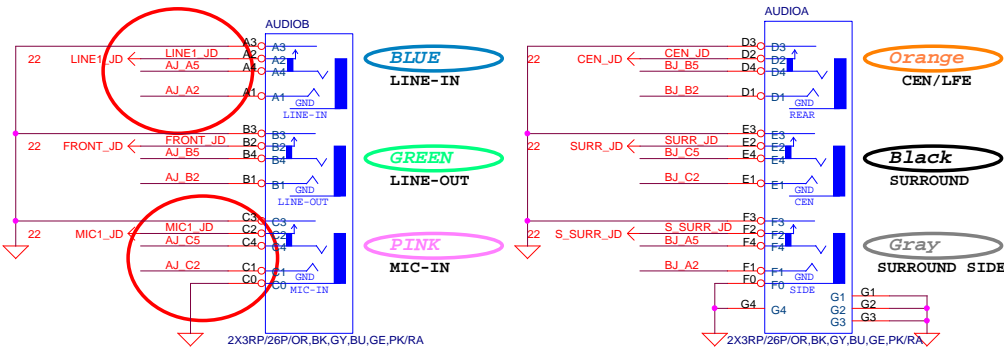




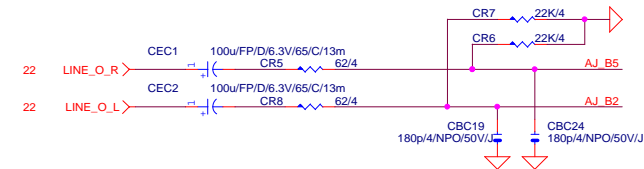
AZALIA JACK
 BTX AZALIA CONNECTOR



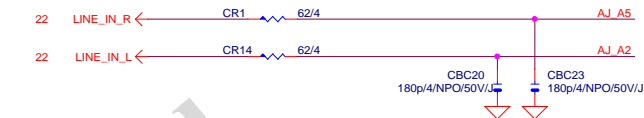
11NR6-403007-21R



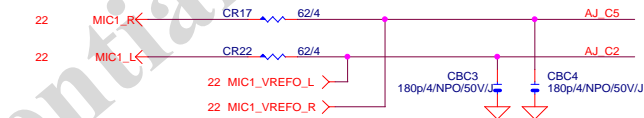
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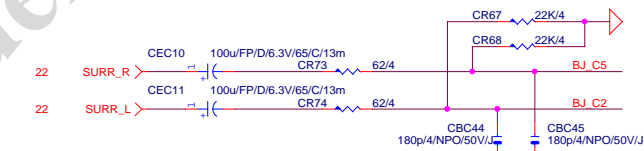
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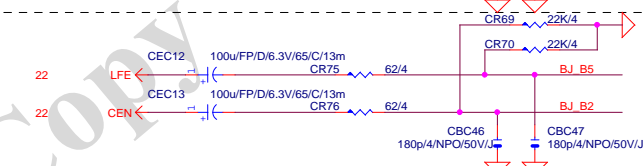
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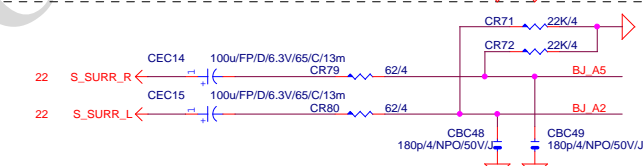
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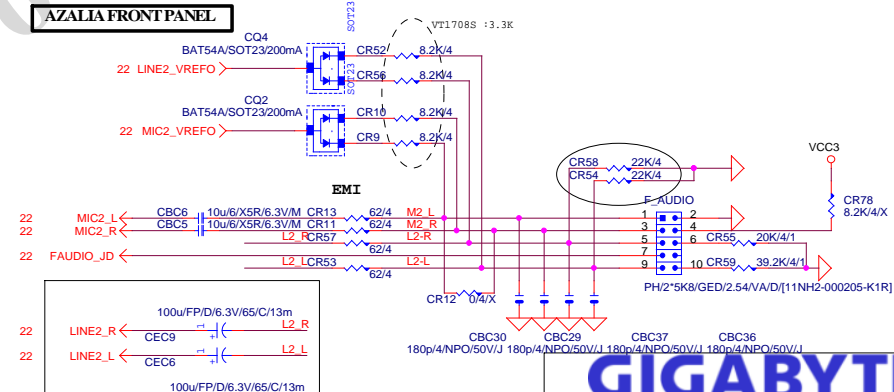
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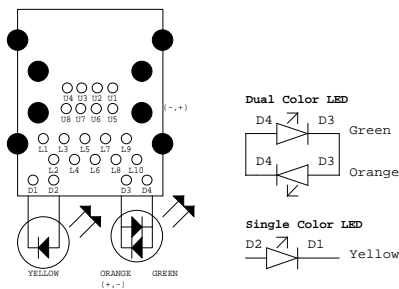
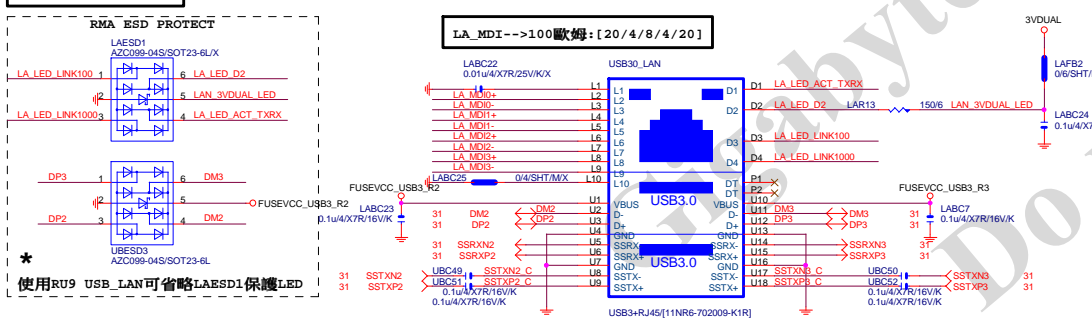
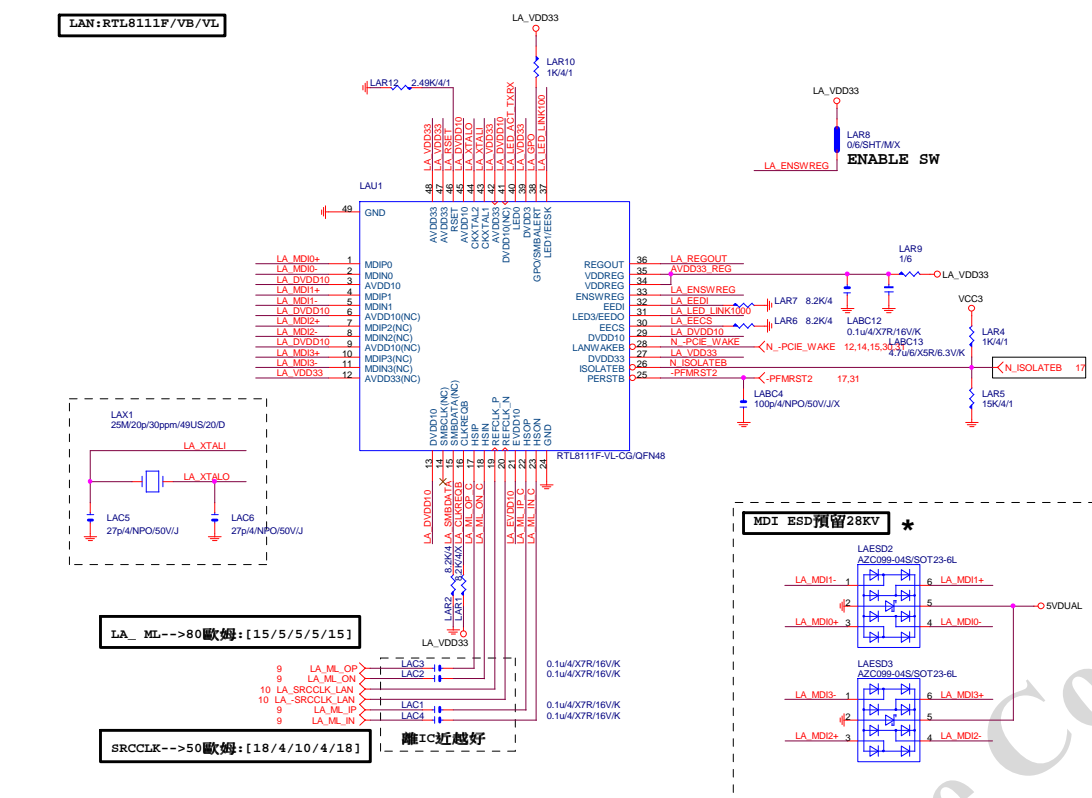
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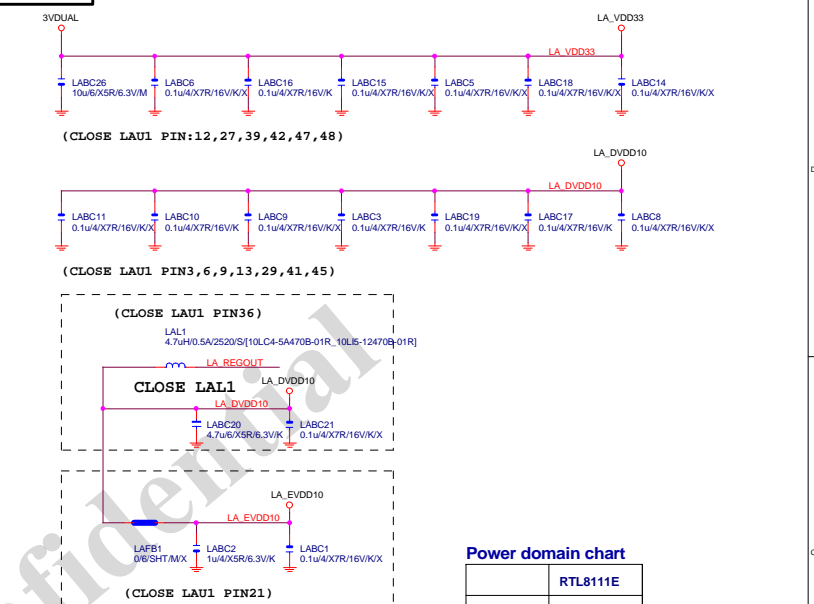
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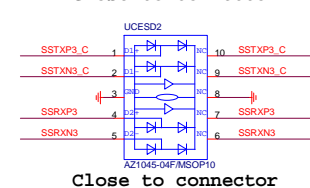
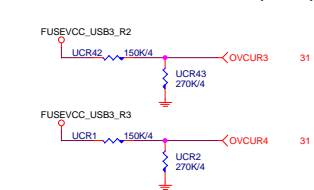
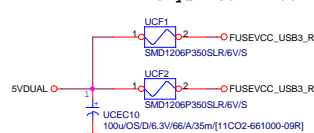
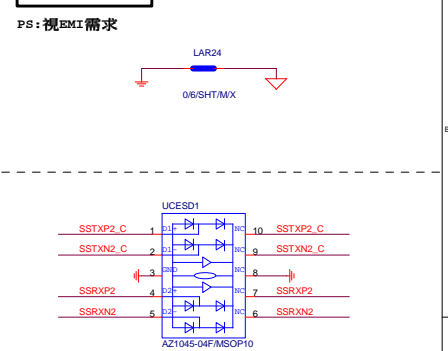
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AUDIO JACK			
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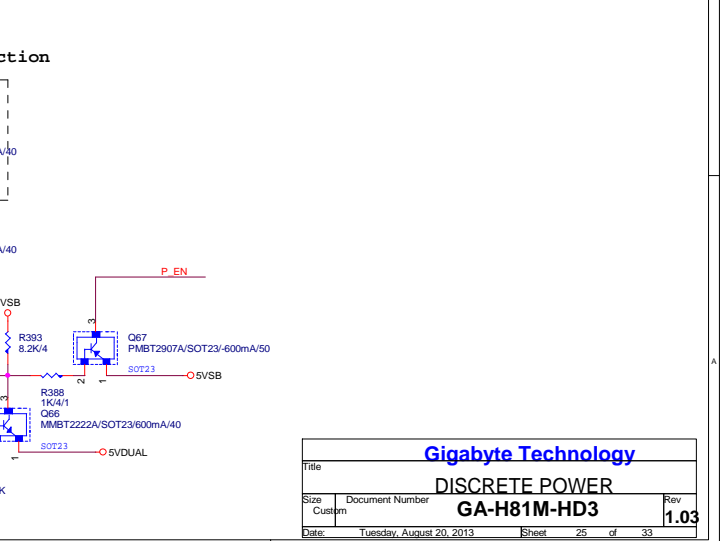
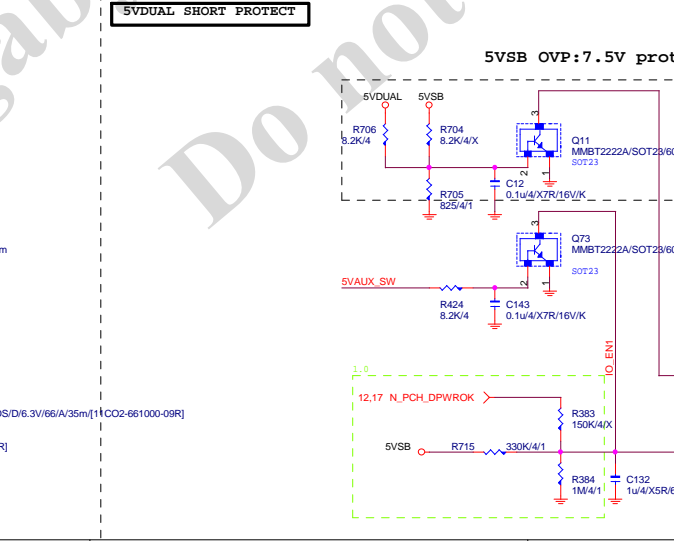
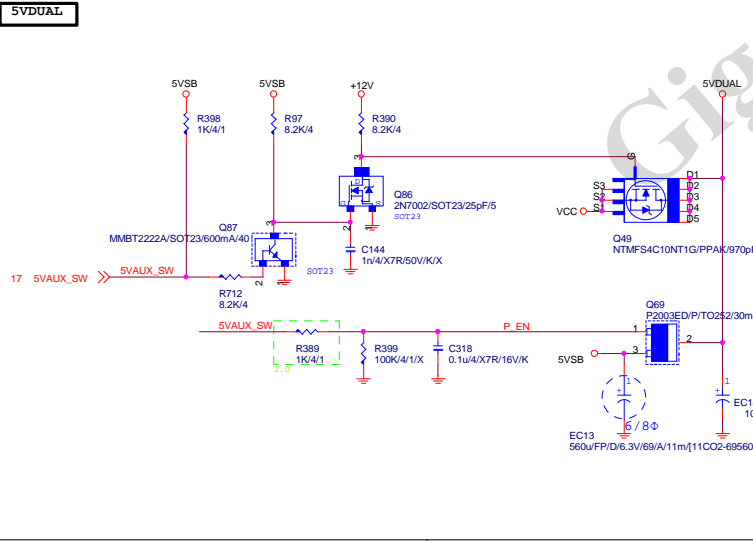
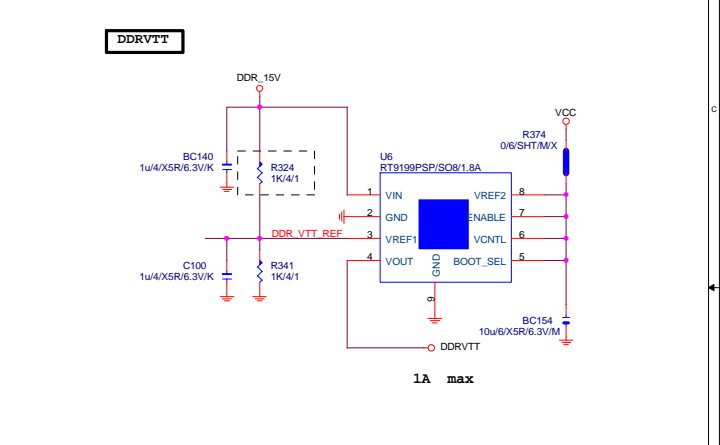
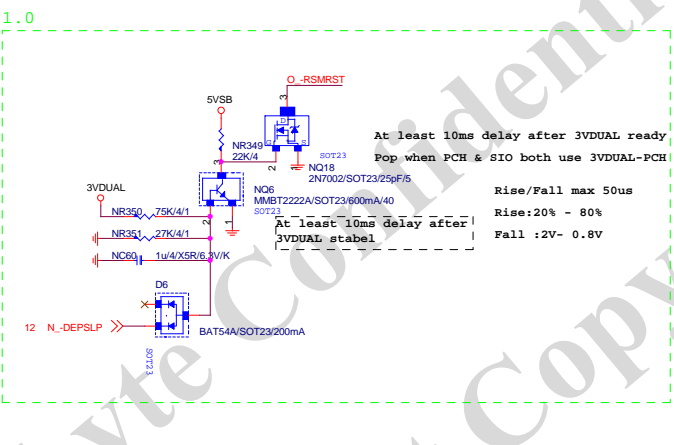
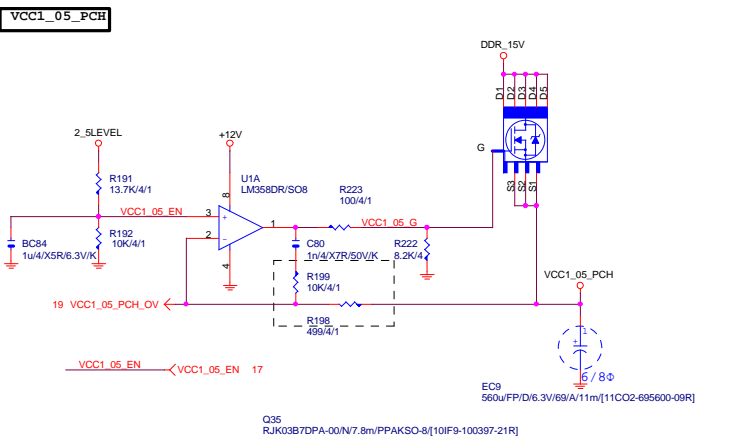
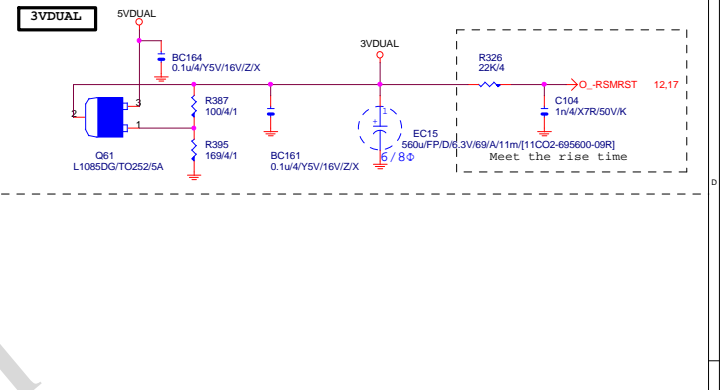
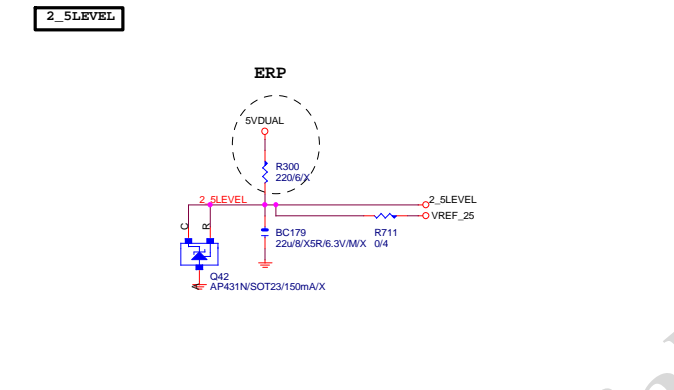
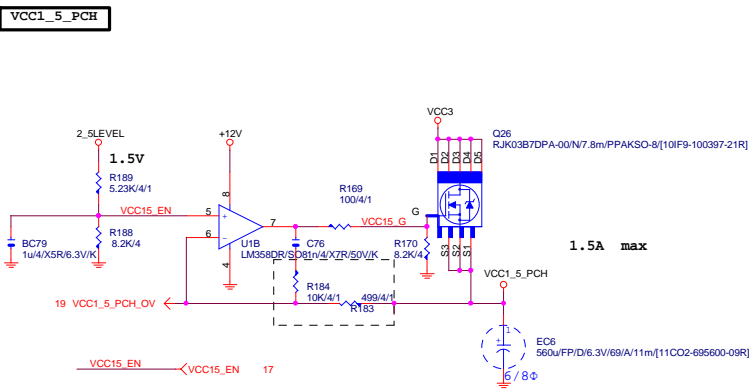


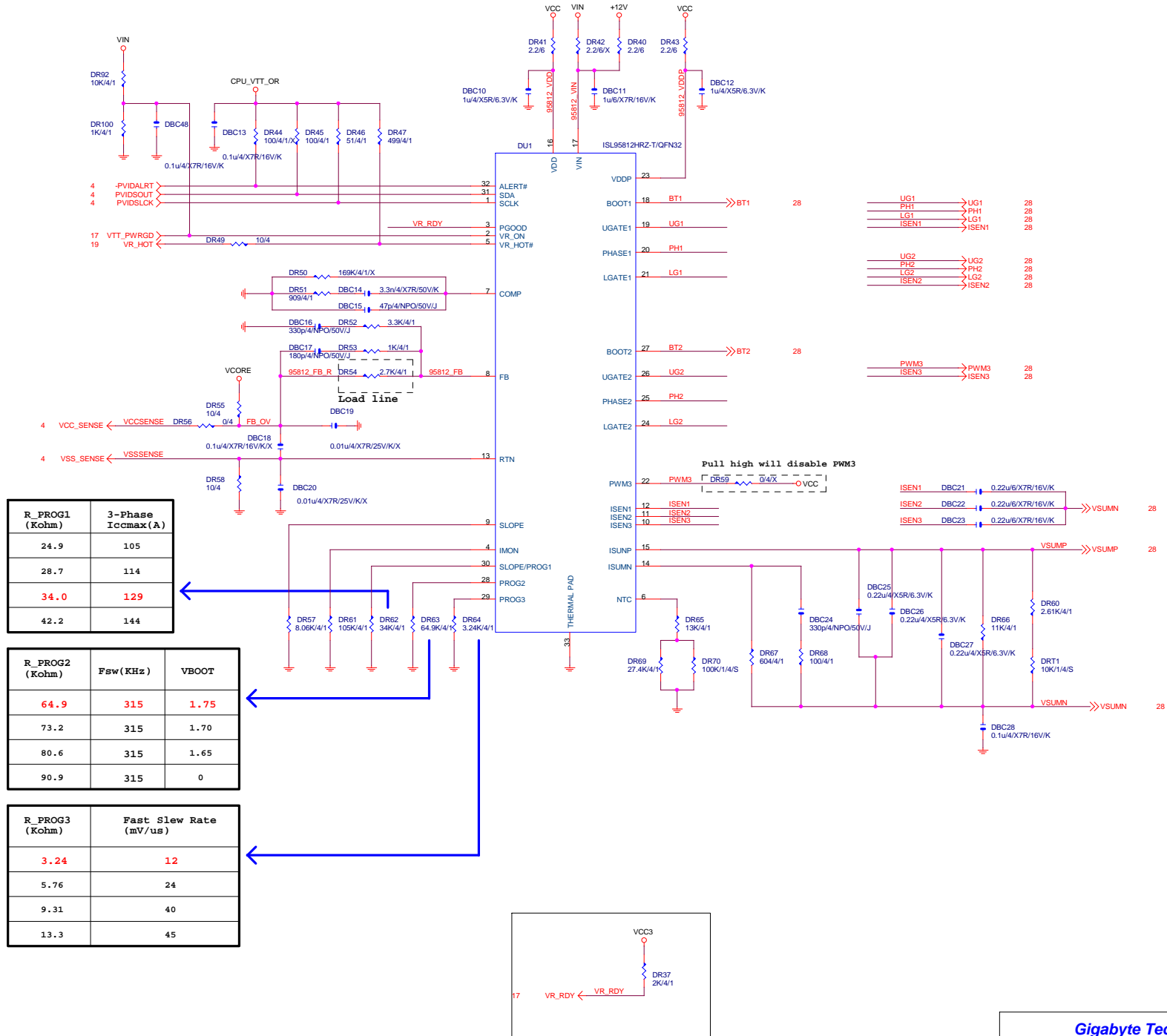
- | | | |
|----------------------------------|---------------|----|
| 料號 | 規格 | 廠商 |
| 11NR6-702009-96R 1G LAN (12core) | UDE(RU9 ESD+) | |
| [LED獨立走線,可省略略外加ZCC099料件]LAESD1 | | |
-
- | |
|--|
| 1. 9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R |
| 2. 28KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
LAESD2, LAESD3: 上件AZC398-04S |



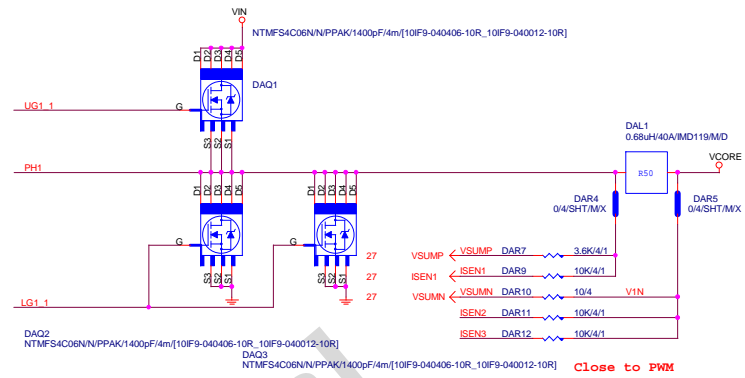
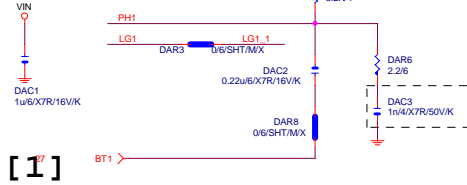
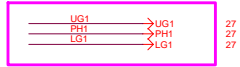
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



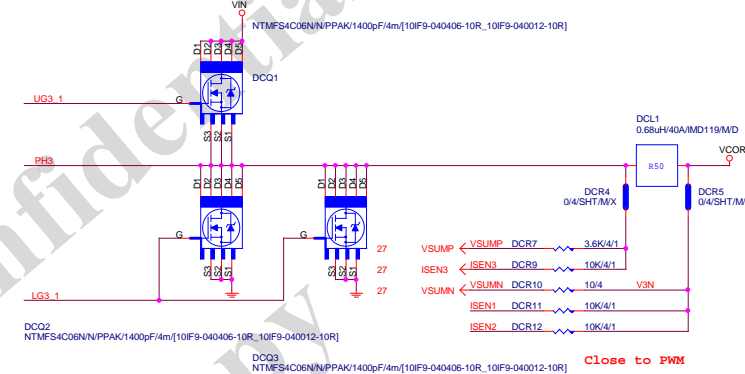
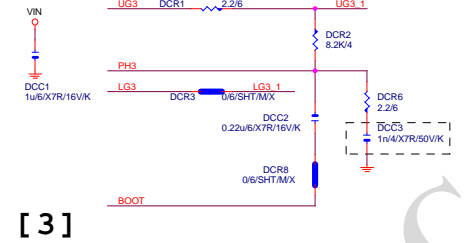
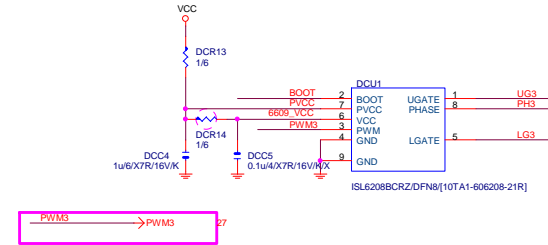




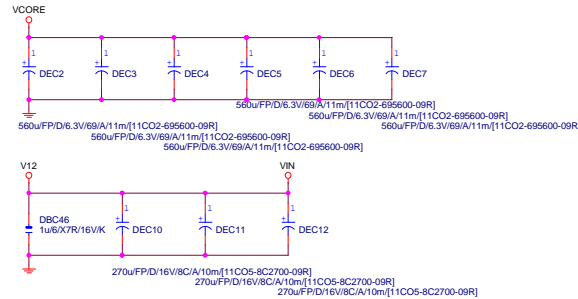
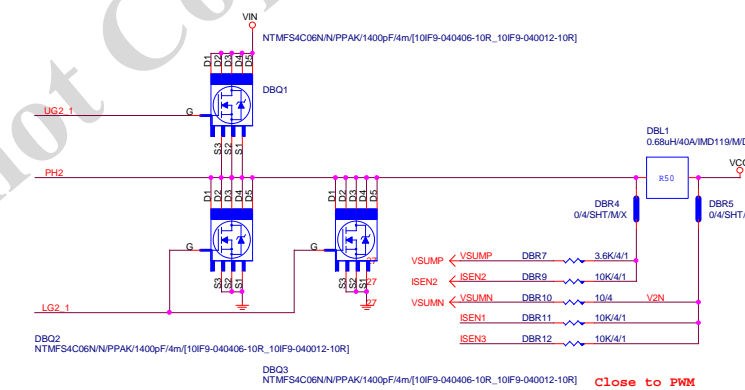
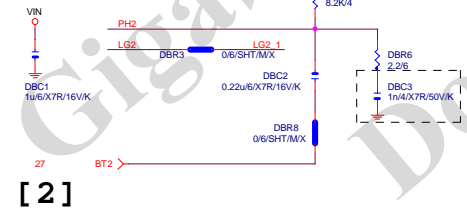
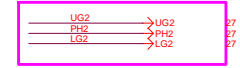
PHASE 1



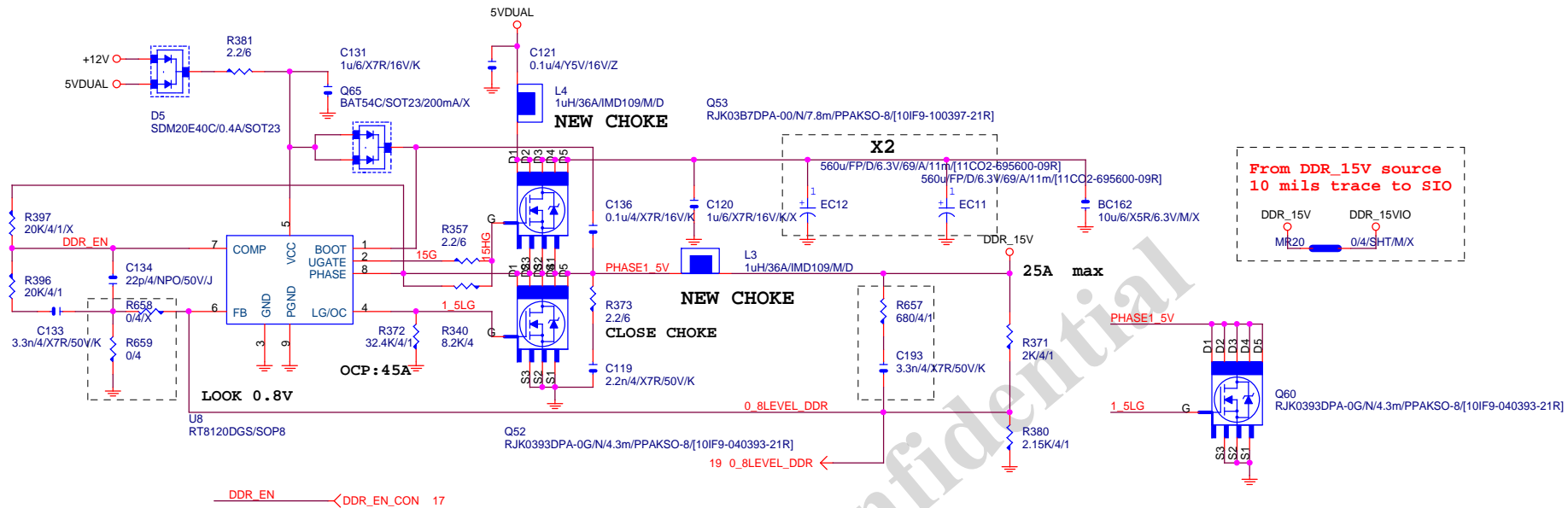
PHASE 3



PHASE 2



DDR15V



PWR_SEQ

VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1
 IRMS=11.45A
 560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
 Coefficient=1.7(85°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

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

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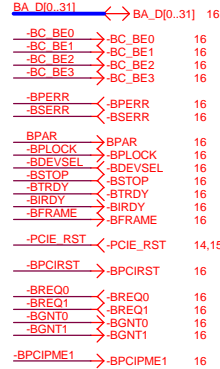
RT8120_DDR POWER

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PCIE TO PCI

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



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



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



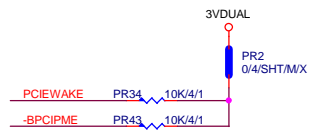
PCI slot



PCI slot

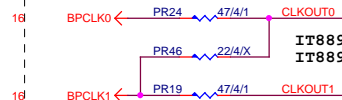


chipset side

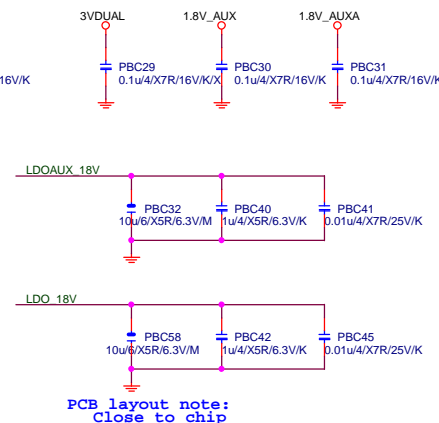
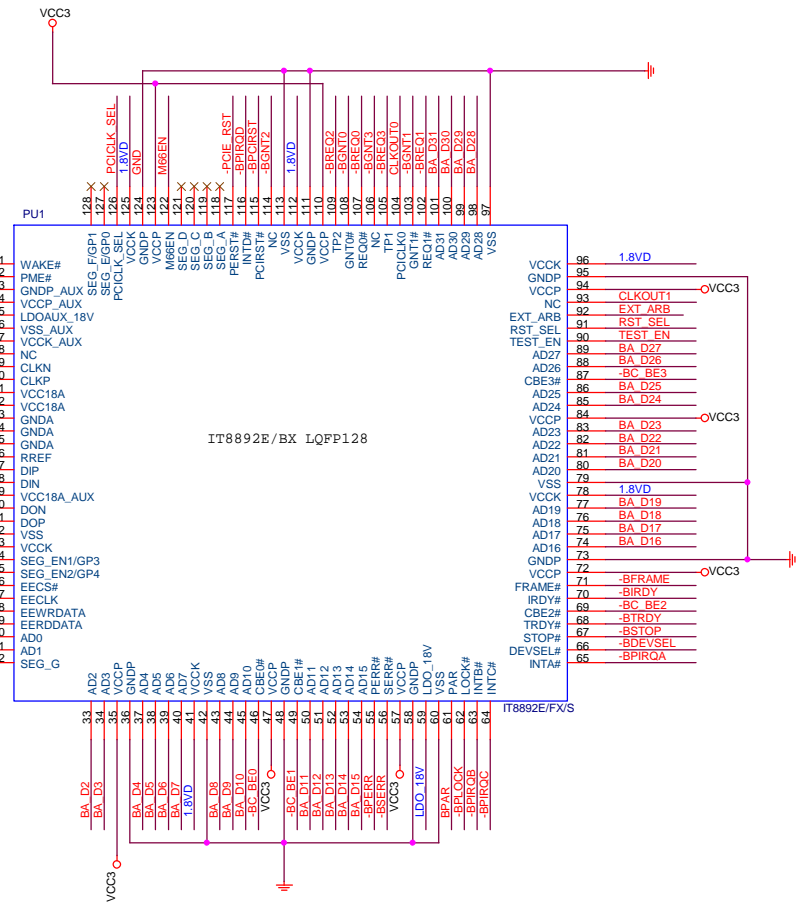
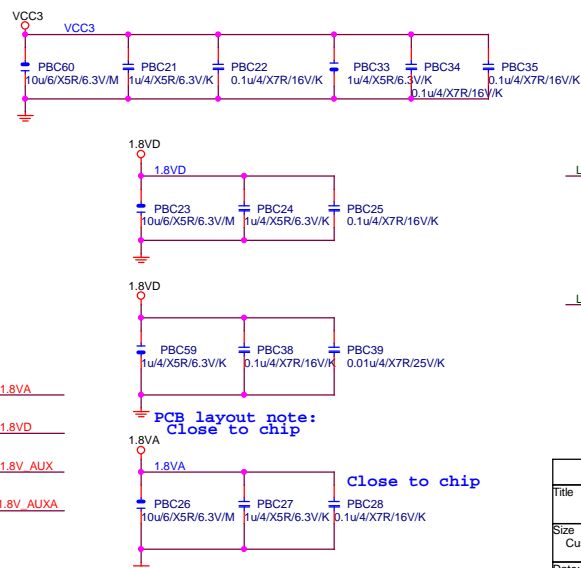
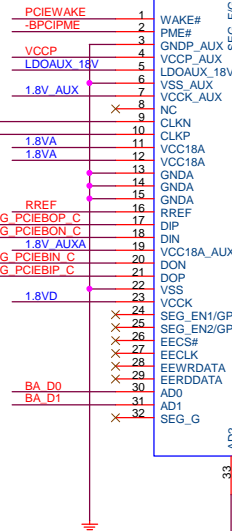
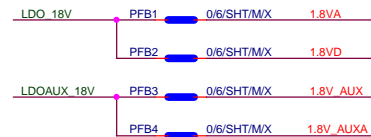
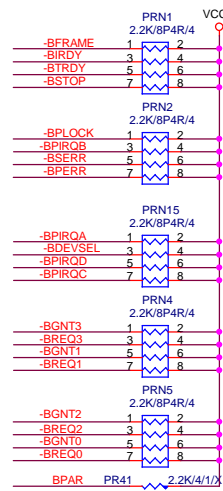
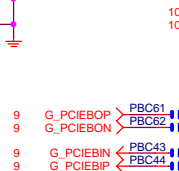


Co-Lay IT8893 (IT8893 CLKOUT1 N/A)

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



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



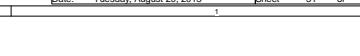
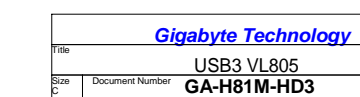
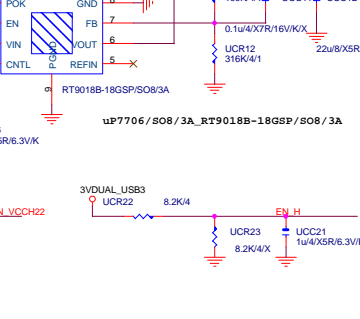
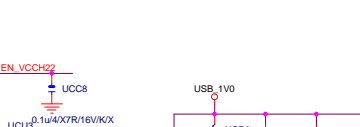
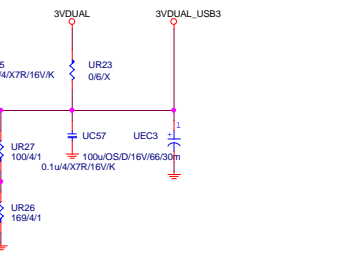
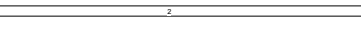
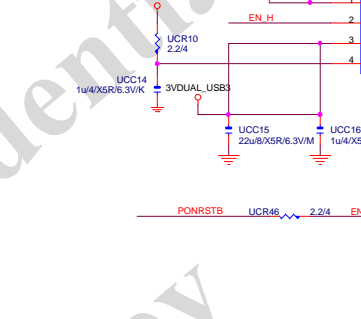
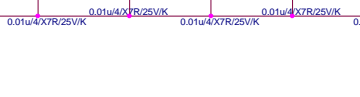
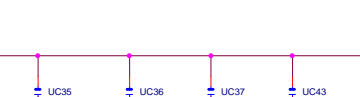
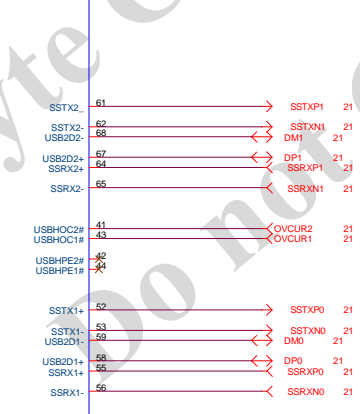
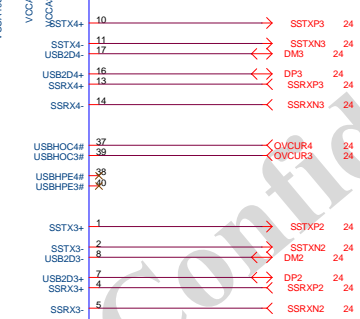
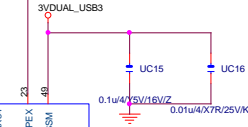
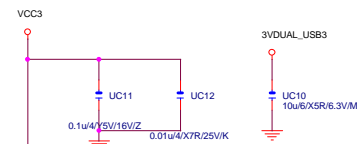
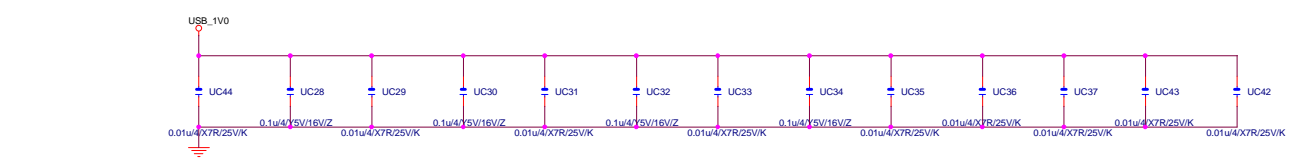
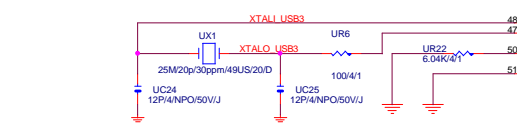
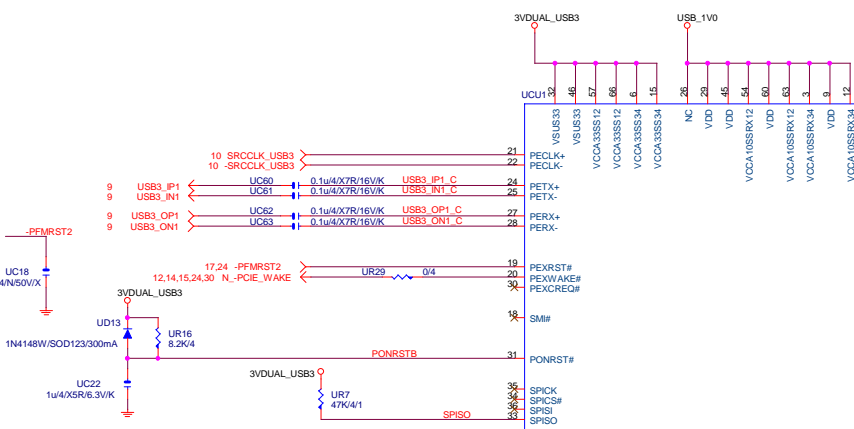
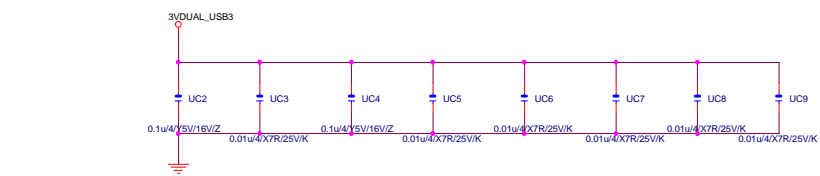
PCB layout note:
Close to chip

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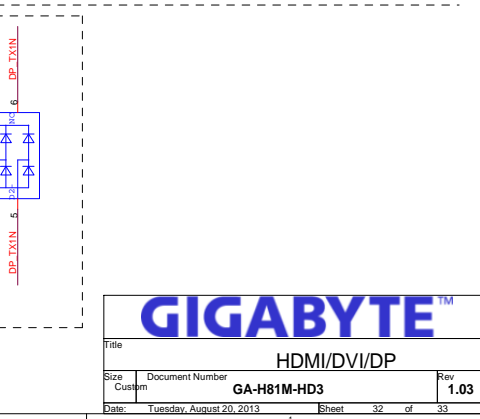
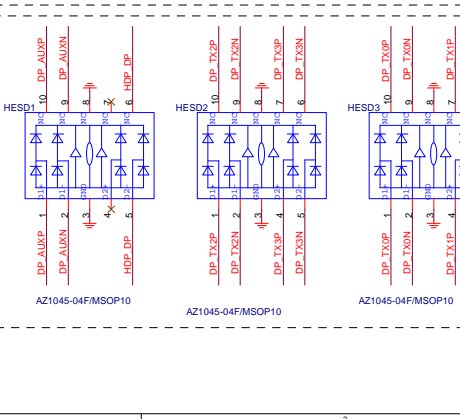
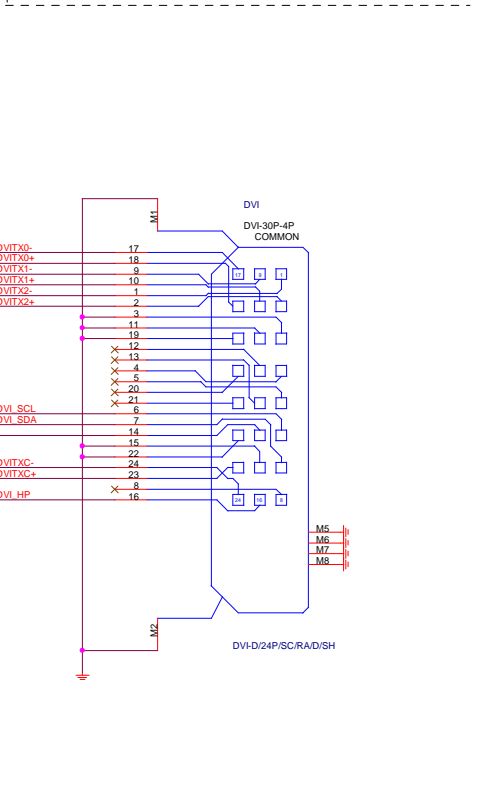
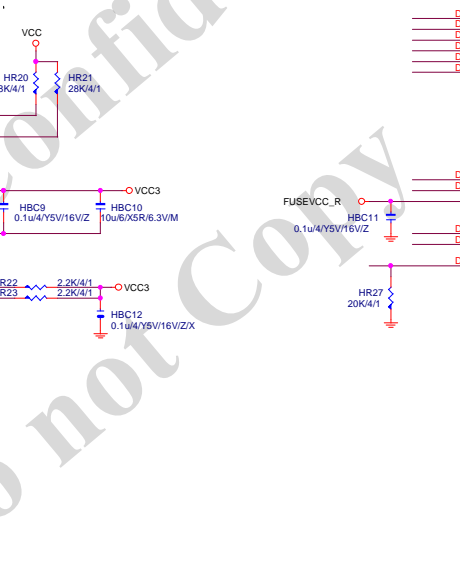
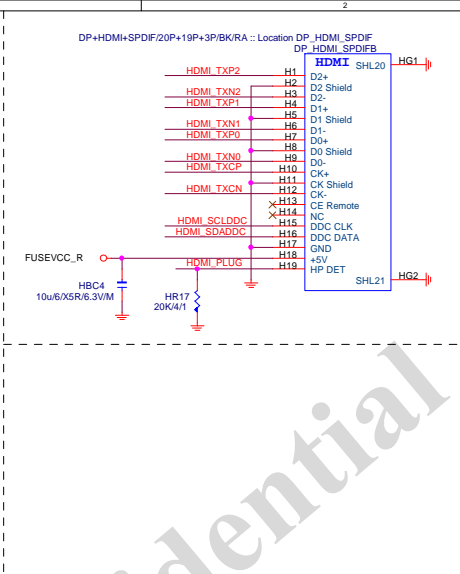
ITE IT8892E

1.03

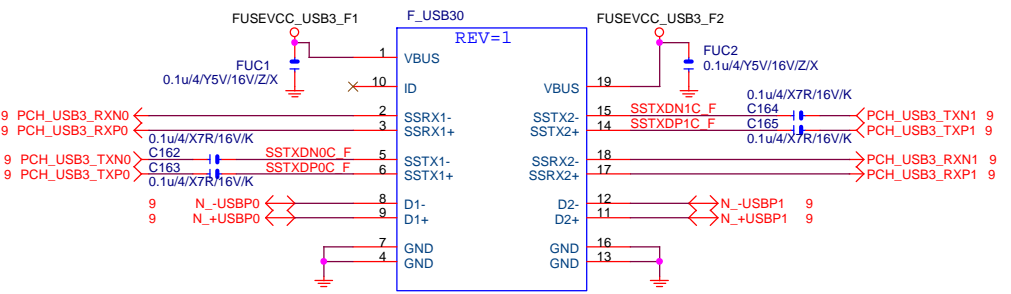
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ITE IT8892E			
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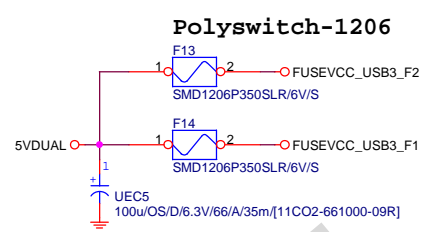
F_USB30



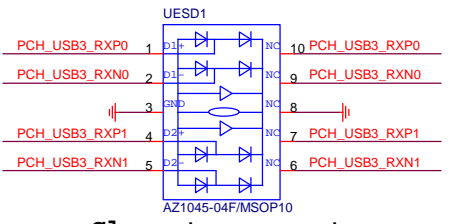
BH/2*10K20/BK/ON/2.0/VA/D/GF

BLACK CONNECTOR

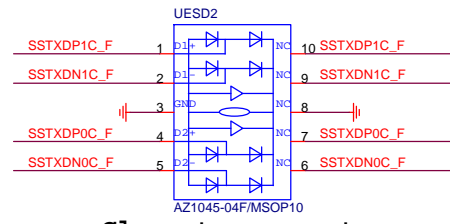
F_USB30 PWR



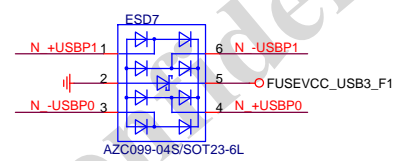
USB3.0 1Port - 1Fuse (3.5A)



Close to connector



Close to connector



Close to connector

