

GIGABYTE GA-8IGMIU Schematics

Revision



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Title COVER SHEET	
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Model Name: GA-8IGMIU(-G)

233.68mm X 243.84mm 60+-15% A Type (1PG4)

Version:0.1-->0.2

1. Pop R80(10K ohm)
2. AGP SLOT change to GIGABYTE 4X Only
3. Layout AGP LIB change to 4X
4. PS_ON- circuit update
5. U12.11 connected to V2_5
6. PWRBTN circuit update
7. AGP ST[2:0], GMCH_CLK swap
8. Brookdale-G LIB update
9. ICH4 VCCSUS1_5 power pin connected to 1_5VSTR
10. Increase F2,F3 & SINK LOCK & FWH second source
11. Update ICH4 5VREF circuit
12. Update LAN_RST- circuit

Version:0.2-->0.3

1. Update LAN circuit
2. Remove WOL circuit
3. Update EMI solution for USB2.0
4. Update EMI solution for AUDIO(Line-out)
5. Update EMI solution for RGB signals
6. Update power solution for VDDQ
7. Update power solution for VTT_DDR

Version:0.3-->0.4

1. Update PWM circuit
2. Update AUDIO circuit
3. Update FAN Control circuit
4. Update LAN reset control circuit
5. Power LED circuit modify

Version:0.4-->0.4 1(IBM Request)

1. Layout modify for LAN
2. Layout modify for RGB

Version:0.4-->0.5

1. Layout modify for LAN
2. Layout modify for RGB
3. Update VGADDCDATA circuit
4. Swap USB Pair

Version:0.5ECN

1. ADD second source for LAN connector, Super I/O, H?W monitor, N/B Heatsink.

Version:0.5-->1.0

1. Change LAN layout as Rev0.4
2. Short POV3 pin27 & 29
3. Add ATE test point
4. Change position of SN label

Version:1.0-->1.0ECN

1. Change clock GEN to IBM consign parts

Version:1.0-->1.1

1. Correct SLP_S4- curcuit to fix S4 issue
2. Change revision ID
3. Add FRU label

Version:1.1A-ECN

1. Del SEMTECH source for Q5

BOM : 1.1A-->1.1B

1. Follow IBM FRU SKUs

Version:1.1-->1.2

1. Improve USB Droop & Drop

Version:1.2-->1.3

1. Add DIMM protect circuit.

Version:1.3-->1.4

1. Change FUSE5V circuit and remove FAN5063.

Version:1.4-->1.5

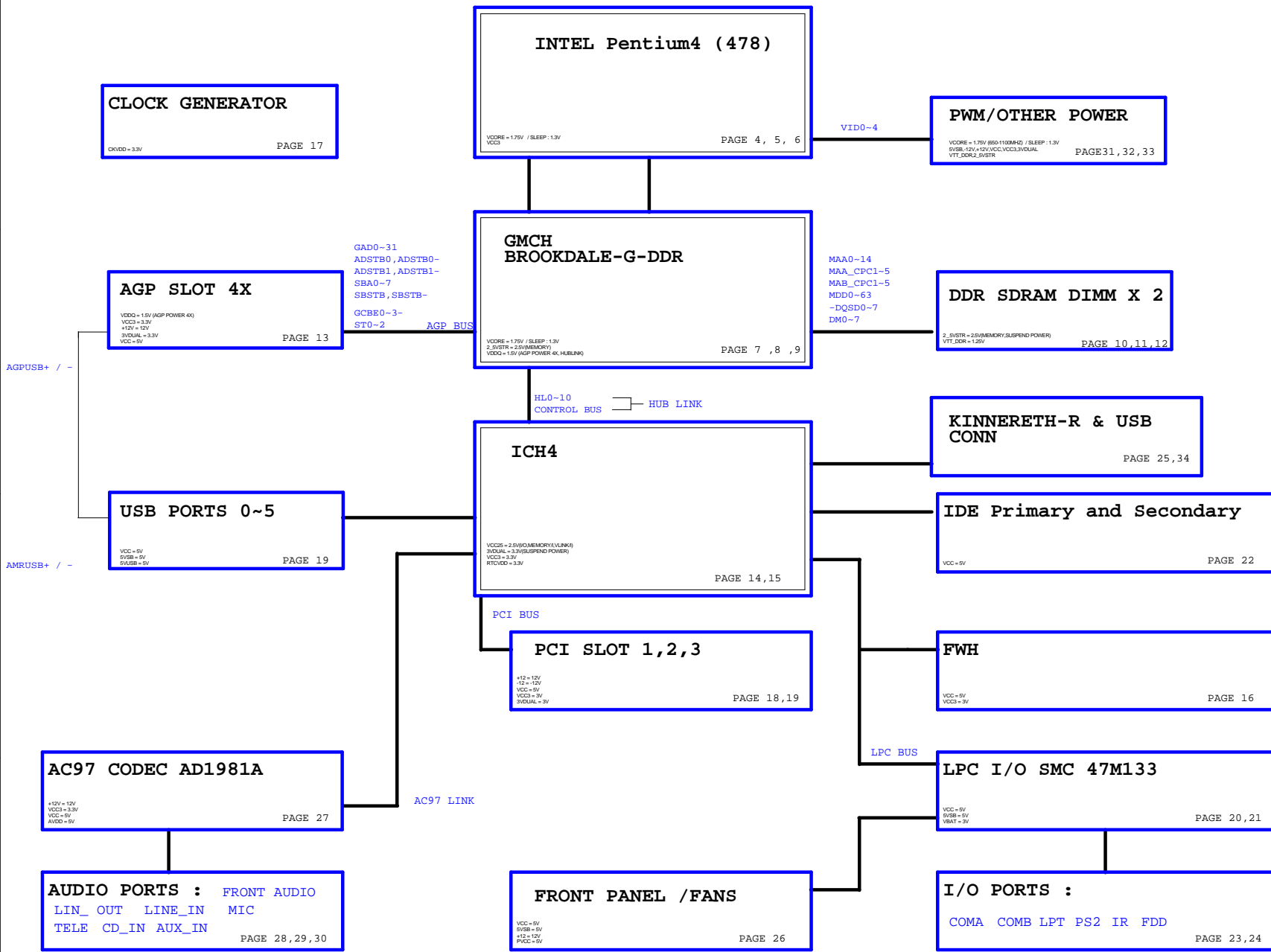
1. Add SO-8 package to support FUSE5V large current.

Version:1.5-->1.6

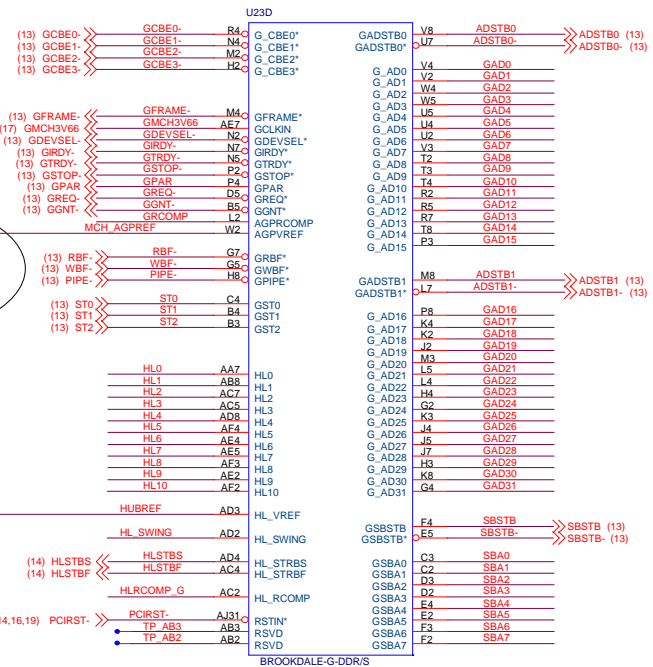
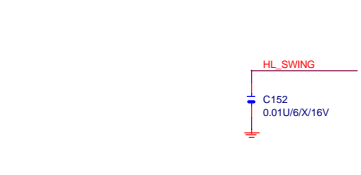
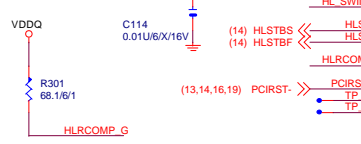
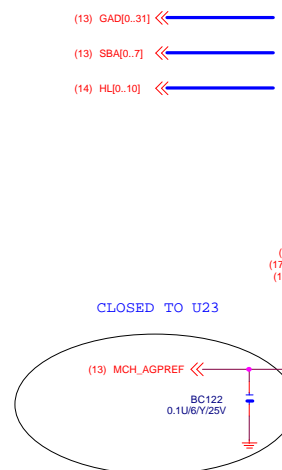
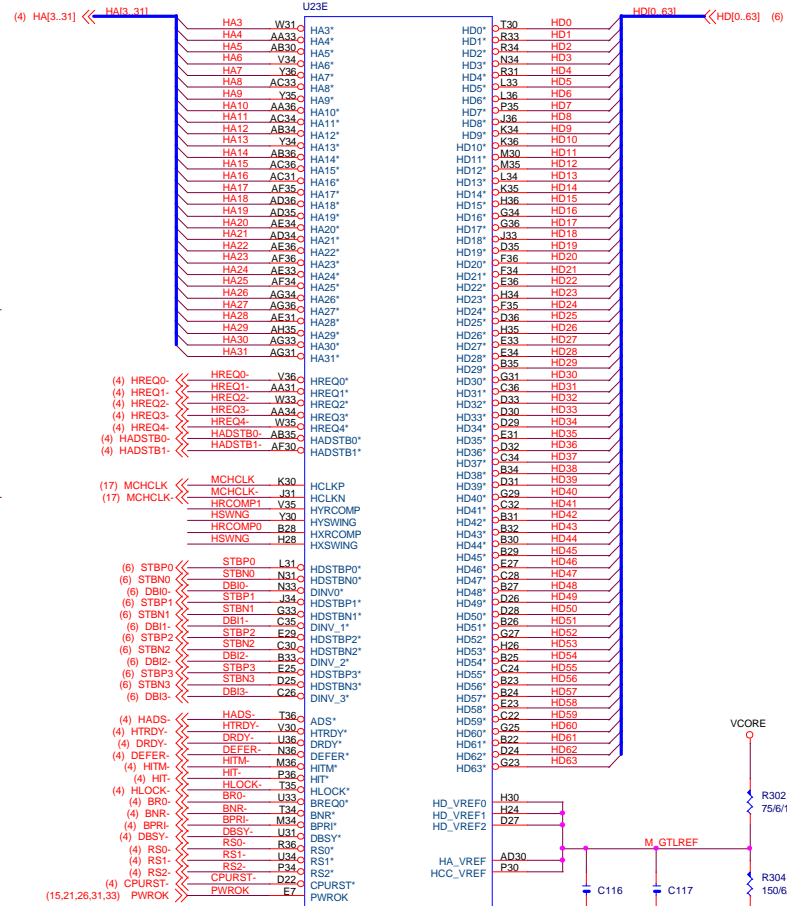
1. Add R-C on Q7 and Q65 for LAN issue.

GIGABYTE			
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BLOCK DIAGRAM



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BOM & PCB MODIFY HISTORY			
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GA-BIGMU		1.6	
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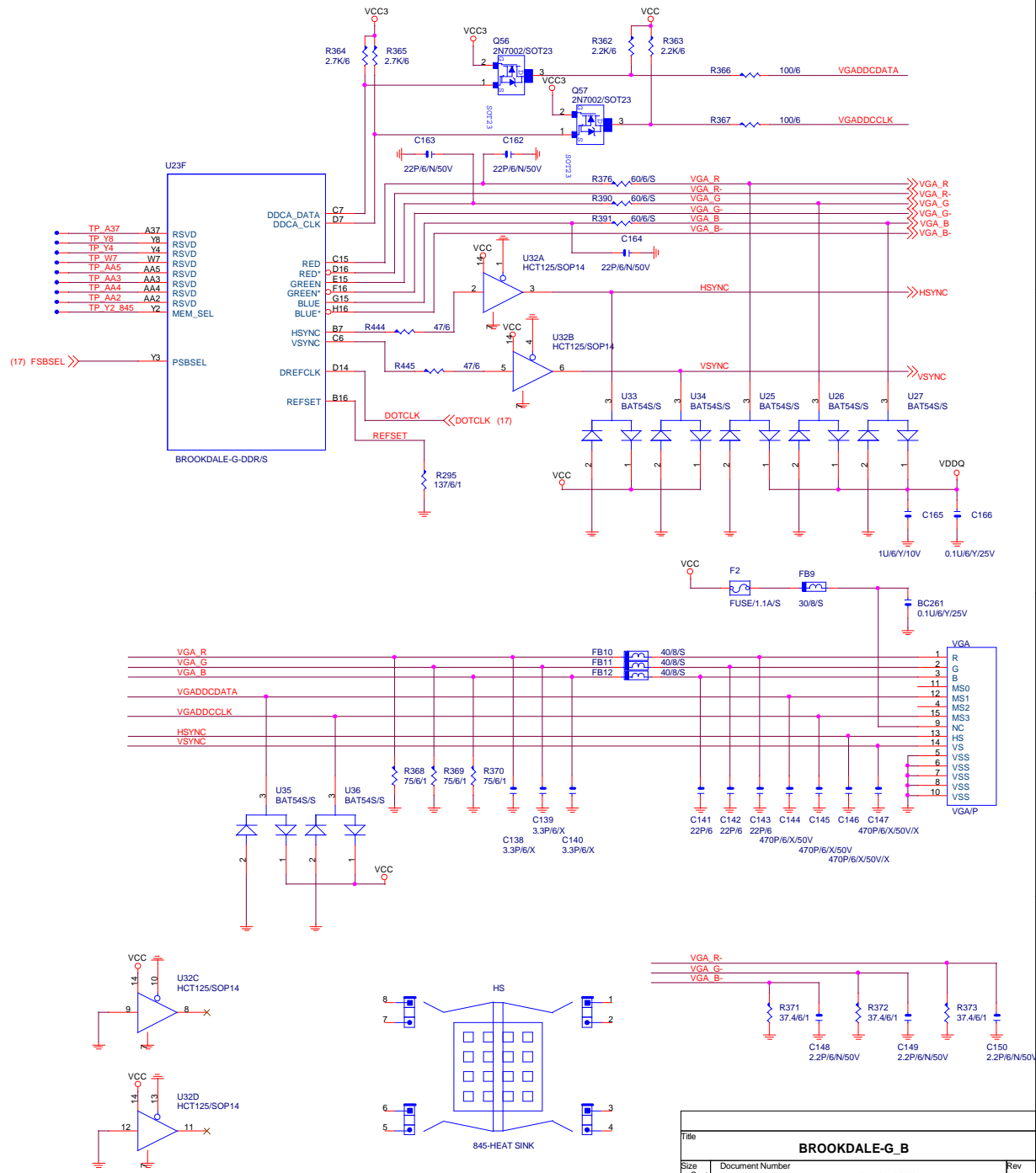
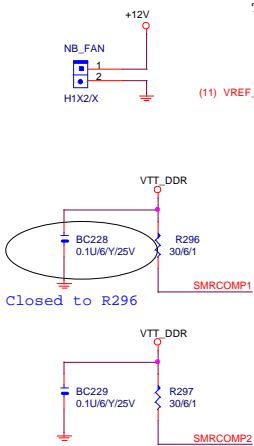


Title		
BROOKDALE-G_A		
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Custom	GA-8IGMU	1.6
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- (11,12) MAA[0..12] >> MAA0..12I
- (11,12) MAA_CPC[1..5] >> MAA_CPC01..5I
- (11,12) MAB_CPC[1..5] >> MAB_CPC01..5I
- (10) DM[0..7] >> DM0..7I
- (10) MD[0..63] >> MD0..63I
- (10) -DQS[0..7] >> -DQS0..7I

U23C		U23F	
MAA0	AL25	SMAA0	SDQS0 AR2 -DQS0
MAA_CPC1	AN25	SMAA1	SDM0 AN4 DM0
MAA_CPC2	AP23	SMAA2	SDQ0 AN4 MD0
MAA3	AK20	SMAA3	SDQ1 AT3 MD2
MAA_CPC4	AL19	SMAA4	SDQ2 AP2 MB1
MAA_CPC5	AL17	SMAA5	SDQ3 AR5 MD3
MAA6	AP19	SMAA6	SDQ4 AP3 MD5
MAA7	AP17	SMAA7	SDQ5 AR4 MD6
MAA8	AN17	SMAA8	SDQ6 AT4 MD7
MAA9	AK16	SMAA9	SDQ7 AT7 -DQS1
MAA10	AK26	SMAA10	SDQ8 AR7 DM1
MAA11	AL15	SMAA11	SDQ9 AT9 MD10
MAA12	AN15	SMAA12	SDQ10 AT10 MD11
MAB_CPC1	AP25	SMAB1	SDQ11 SD11
MAB_CPC2	AN23	SMAB2	SDQ12 AT8 MD13
MAB_CPC4	AN19	SMAB4	SDQ13 AP6 MD14
MAB_CPC5	AK18	SMAB5	SDQ14 AT8 MD15
			SDQ15 SD15
(11,12) -SWEA << -SWEA AP29C	SWE*	SDQS2 AT12 -DQS2	SDM2 AP12 DM2
(11,12) -SCASA << -SCASA AN29C	SCAS*	SDQ16 AP10 MD16	SDQ17 AT11 MD17
(11,12) -SRASA << -SRASA AK28C	SRAS*	SDQ18 AT12 MD18	SDQ19 AT14 MD19
		SDQ20 AT10 MD20	SDQ21 AR12 MD22
(11,12) SB50 << SB50 AN27	SBA0	SDQ22 AP14 MD23	SDQ23 SD23
(11,12) SB51 << SB51 AP27	SBA1	SDQS3 AT17 -DQS3	SDM3 AR18 DM3
		SDQ24 AT15 MD24	SDQ25 AP16 MD25
(11,12) -CS0 << -CS0 AL29C	SCS0*	SDQ26 AT19 MD27	SDQ27 AR16 MD28
(11,12) -CS1 << -CS1 AP31C	SCS1*	SDQ28 AT16 MD29	SDQ29 AP18 MD30
(11,12) -CS2 << -CS2 AK30C	SCS2*	SDQ30 AT16 MD29	SDQ31 AR20 MD31
(11,12) -CS3 << -CS3 AN31C	SCS3*	SDQ32 SD32	SDQ33 SD33
		SDQ34 AR24 -DQS4	SDM4 AT24 DM4
(11,12) CKE0 << CKE0 AP13	SCKE0	SDQ35 AP28 -DQS5	SDM5 AP28 DM5
(11,12) CKE1 << CKE1 AN13	SCKE1	SDQ36 AP26 MD40	SDQ37 AT28 MD41
(11,12) CKE2 << CKE2 AK14	SCKE2	SDQ38 AR30 MD42	SDQ39 AT22 MD36
(11,12) CKE3 << CKE3 AL13	SCKE3	SDQ40 AP30 MD43	SDQ41 AT27 MD44
		SDQ42 AT27 MD44	SDQ43 AR28 MD45
		SDQ44 AT20 MD46	SDQ45 AT31 MD47
		SDQ46 AT31 MD47	SDQ47 AT34 -DQS6
		SDQ48 AT32 MD49	SDM6 AR34 DM6
		SDQ49 AR32 MD48	SDQ50 AT32 MD49
		SDQ51 AP35 MD51	SDQ52 AP32 MD52
		SDQ53 AT33 MD53	SDQ54 AP34 MD54
		SDQ55 AT35 MD55	SDQ56 AT36 MD56
		SDQ57 AM36 MD57	SDQ58 AK36 MD59
		SDQ59 AP36 MD60	SDQ60 AP35 MD61
		SDQ61 AK35 MD62	SDQ62 AK34 MD63
		SDQ63	

Total trace = 100 mils



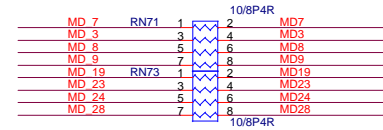
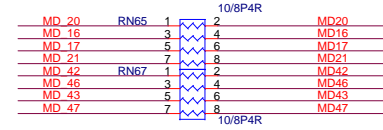
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(11,12) MD_[0..63] << <<MD[0..63] (8)

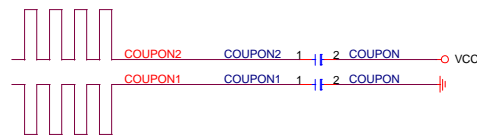
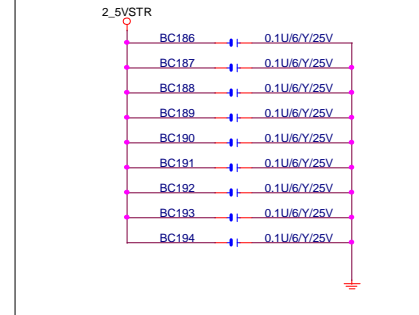
(11,12) DM_[0..7] >> >>DM[0..7] (8)

(11,12) -DQS_[0..7] << <<-DQS[0..7] (8)

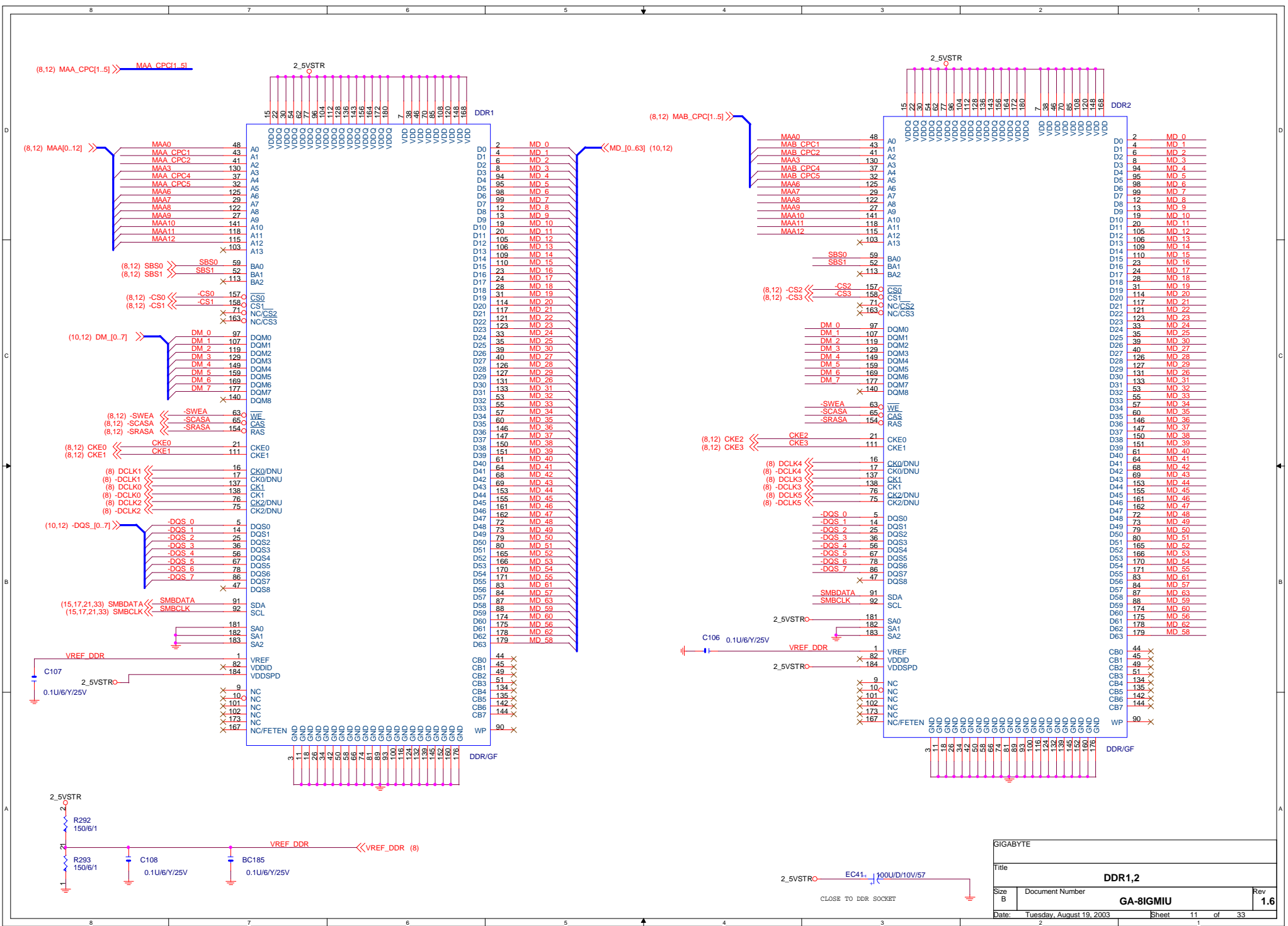
DM 0	RN66	1	2	10/8P4R	DM0
-DQS 0		3	4		-DQS0
MD 2		5	6		MD2
MD 6		7	8		MD6
MD 0	RN68	1	2	10/8P4R	MD0
MD 4		3	4		MD4
MD 5		5	6		MD5
MD 1		7	8		MD1
MD 12	RN69	1	2	10/8P4R	MD12
MD 13		3	4		MD13
-DQS 1		5	6		-DQS1
DM 1		7	8		DM1
MD 14	RN70	1	2	10/8P4R	MD14
MD 15		3	4		MD15
MD 10		5	6		MD10
MD 11		7	8		MD11
-DQS 2	RN72	1	2	10/8P4R	-DQS2
DM 2		3	4		DM2
MD 18		5	6		MD18
MD 22		7	8		MD22
MD 29	RN74	1	2	10/8P4R	MD29
MD 25		3	4		MD25
-DQS 3		5	6		-DQS3
DM 3		7	8		DM3
MD 26	RN75	1	2	10/8P4R	MD26
MD 30		3	4		MD30
MD 27		5	6		MD27
MD 31		7	8		MD31
MD 32	RN76	1	2	10/8P4R	MD32
MD 36		3	4		MD36
MD 33		5	6		MD33
MD 37		7	8		MD37
MD 39	RN77	1	2	10/8P4R	MD39
MD 35		3	4		MD35
MD 40		5	6		MD40
MD 44		7	8		MD44
-DQS 4	RN78	1	2	10/8P4R	-DQS4
DM 4		3	4		DM4
MD 34		5	6		MD34
MD 38		7	8		MD38
MD 45	RN79	1	2	10/8P4R	MD45
MD 41		3	4		MD41
DM 5		5	6		DM5
-DQS 5		7	8		-DQS5
MD 48	RN80	1	2	10/8P4R	MD48
MD 49		3	4		MD49
MD 52		5	6		MD52
MD 53		7	8		MD53
MD 50	RN81	1	2	10/8P4R	MD50
MD 51		3	4		MD51
MD 60		5	6		MD60
MD 61		7	8		MD61
DM 6	RN82	1	2	10/8P4R	DM6
-DQS 6		3	4		-DQS6
MD 54		5	6		MD54
MD 55		7	8		MD55
MD 56	RN83	1	2	10/8P4R	MD56
MD 57		3	4		MD57
DM 7		5	6		DM7
-DQS 7		7	8		-DQS7
MD 59	RN84	1	2	10/8P4R	MD59
MD 63		3	4		MD63
MD 58		5	6		MD58
MD 62		7	8		MD62



BETWEEN DIMM1 & DIMM2



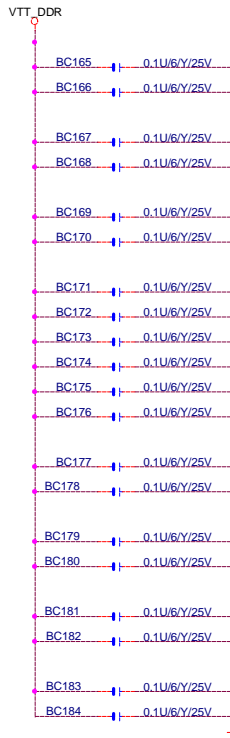
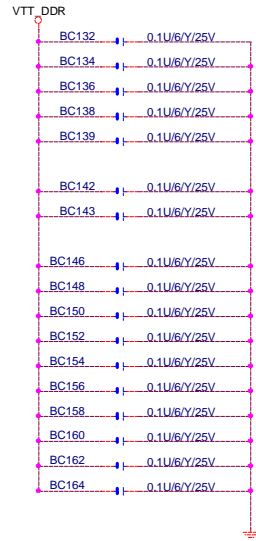
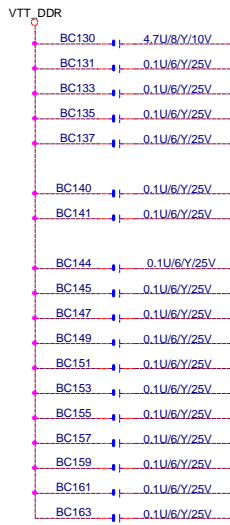
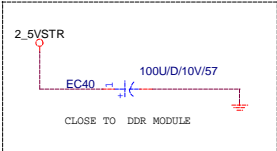
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DDR SERIAL TERM.			
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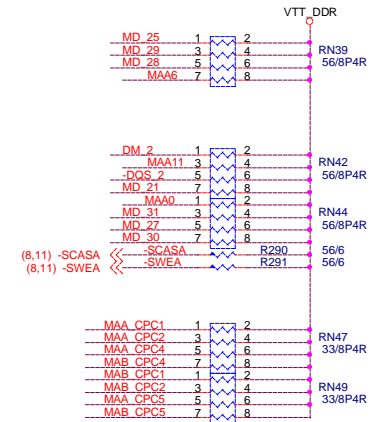
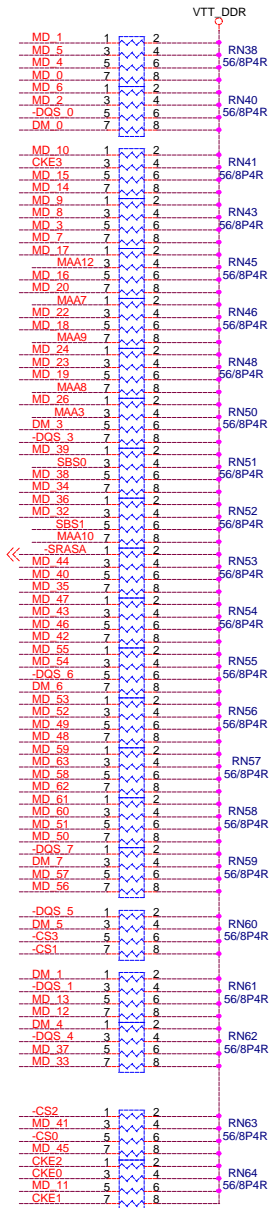
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CLOSE TO DDR SOCKET



CLOSE TO DDR TERMINATOR(1 CAP. FOR 2 R-PACKS)

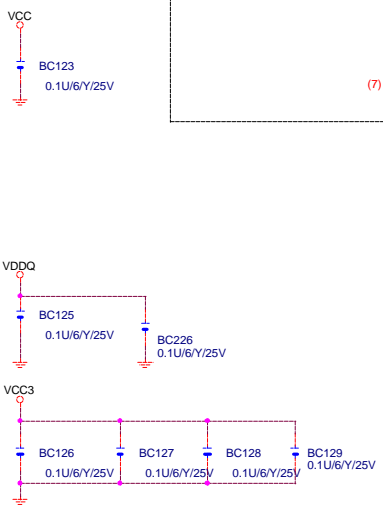
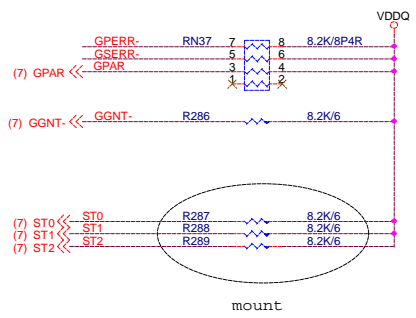
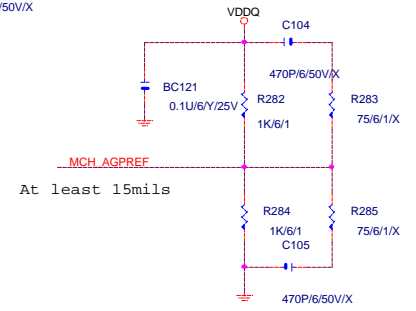
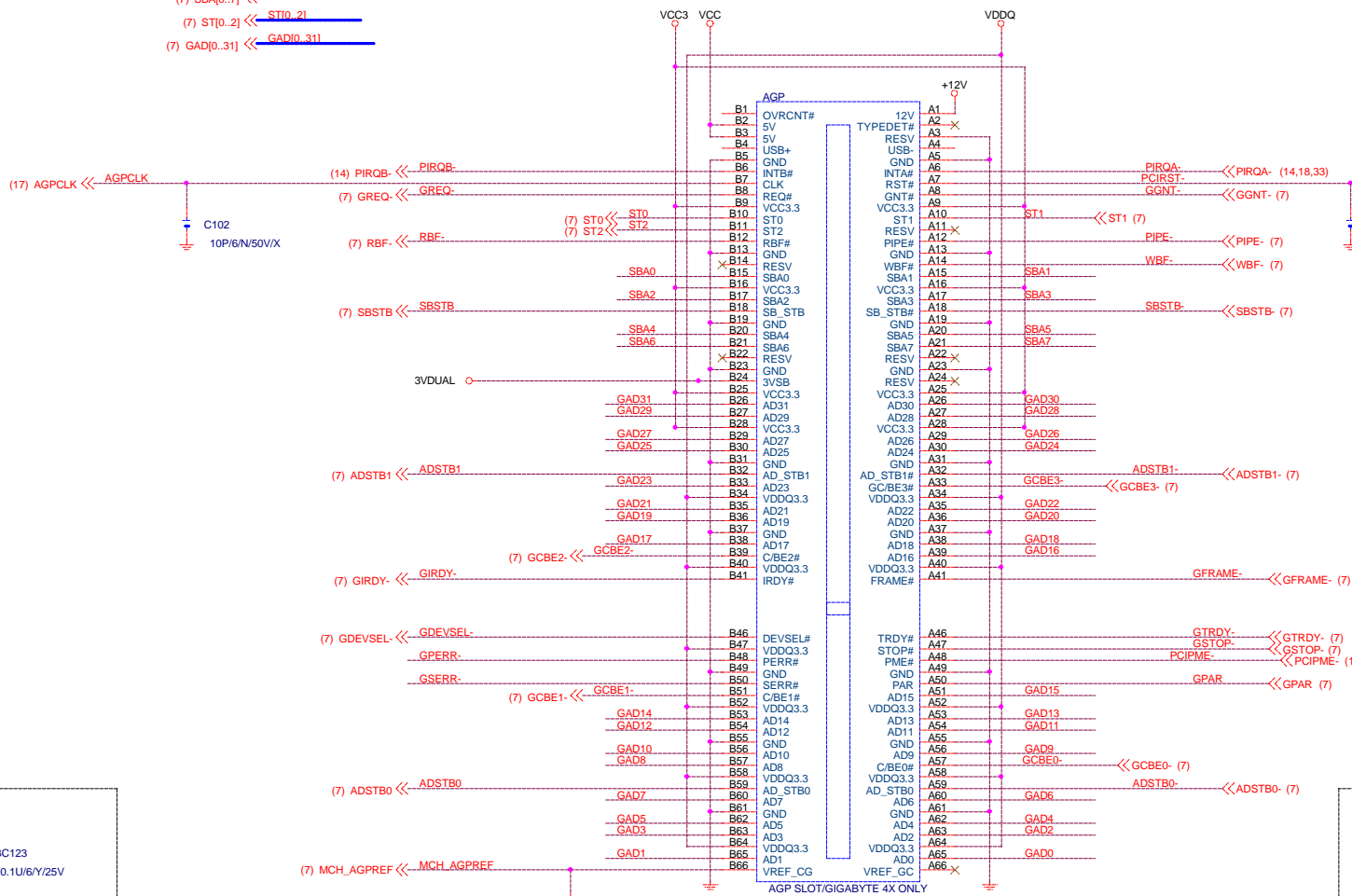
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- (10,11) DM_I0.[7] << MPD_I0_7I
- (10,11) -DQS_I0.[7] << -DQS_I0_7I
- (8,11) MAAI0.[12] << MAAI0_12I
- (8,11) -CSI0.[3] << -CSI0_3I
- (8,11) CKEI0.[3] << CKEI0_3I
- (8,11) SBSI0.[1] << SBSI0_1I
- (8,11) MAA_CPC[1..5] << MAA_CPC1_5I
- (8,11) MAB_CPC[1..5] << MAB_CPC1_5I



GIGABYTE		
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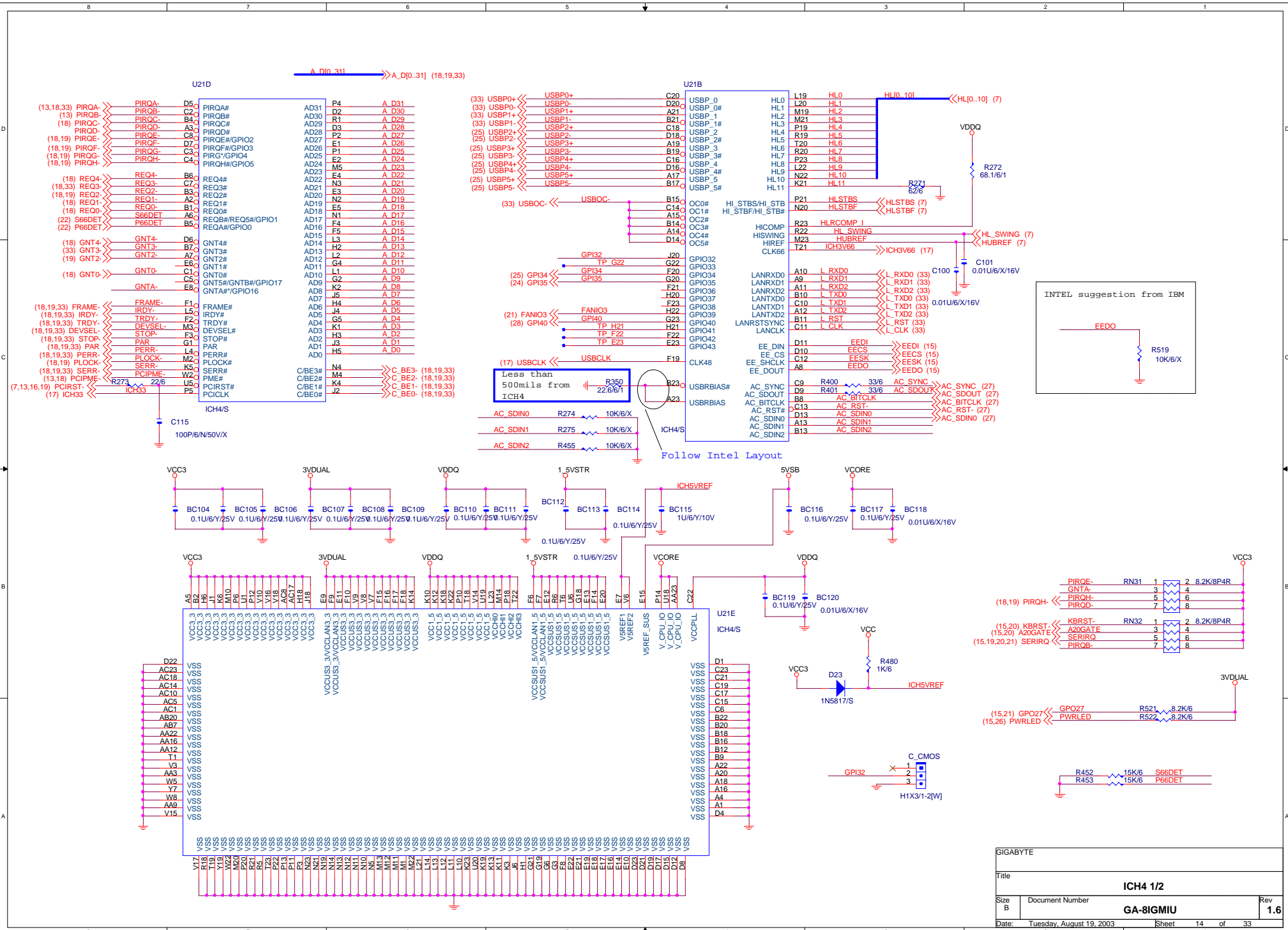
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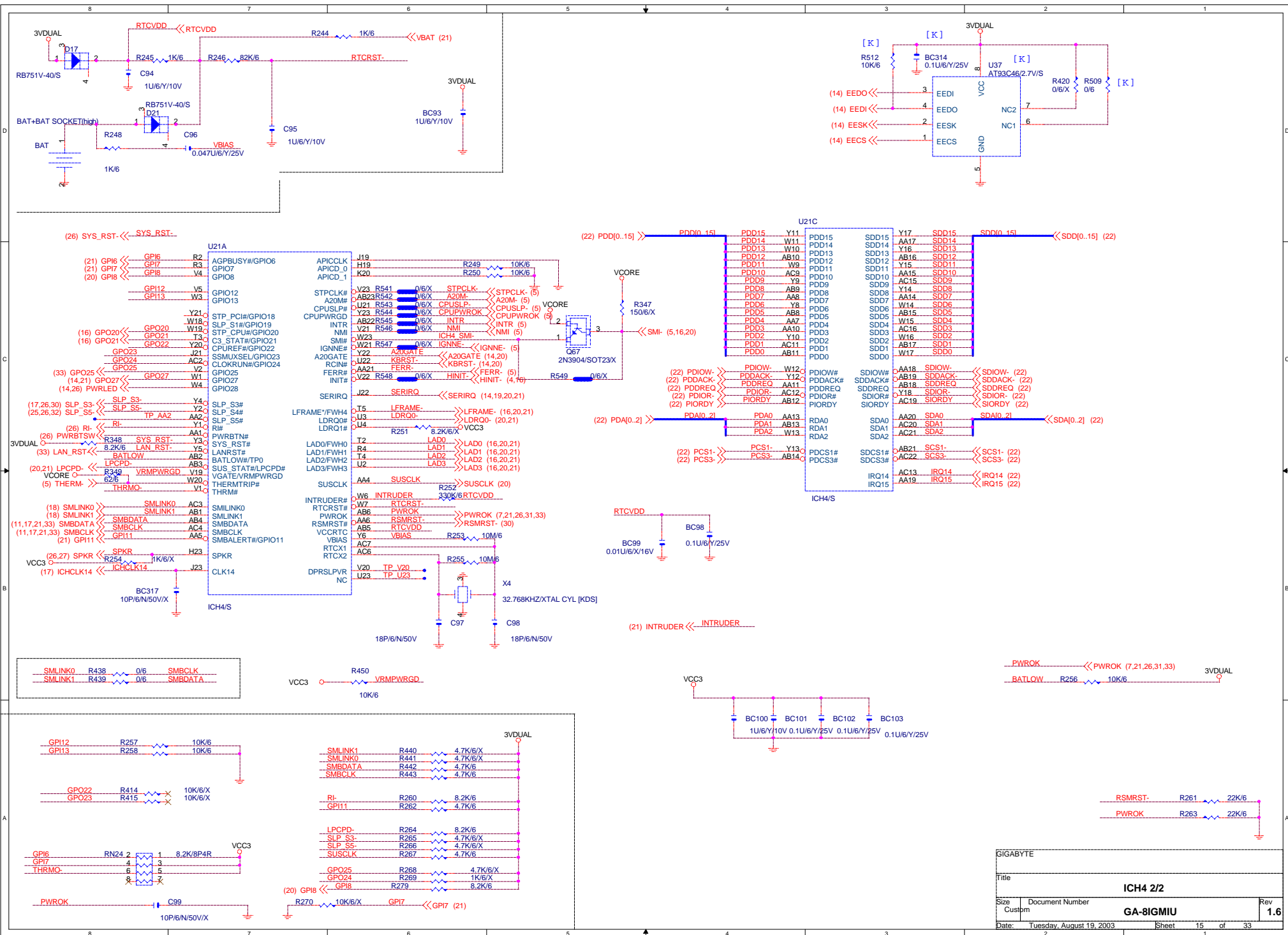
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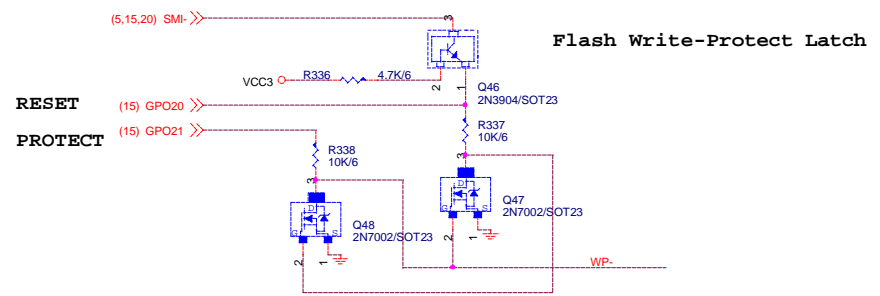
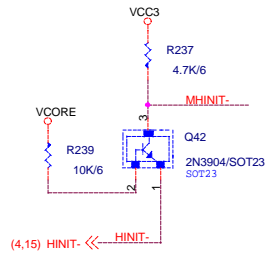


AGP RM DEFAULT
NO USE

GIGABYTE		
Title		
AGP SLOT		
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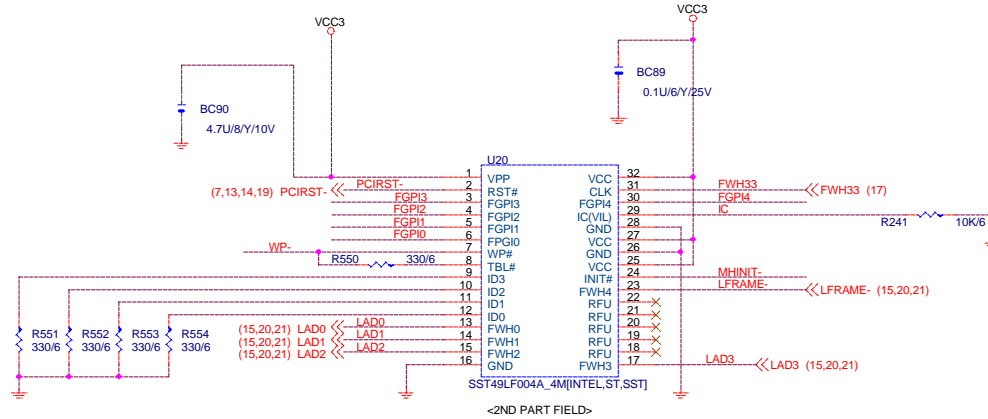
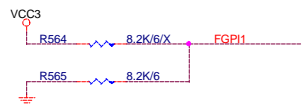
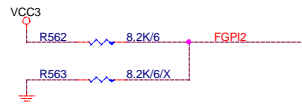
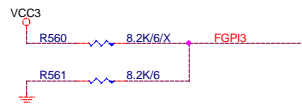
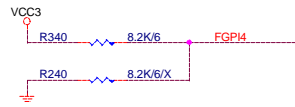
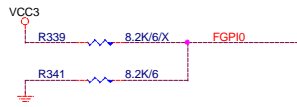




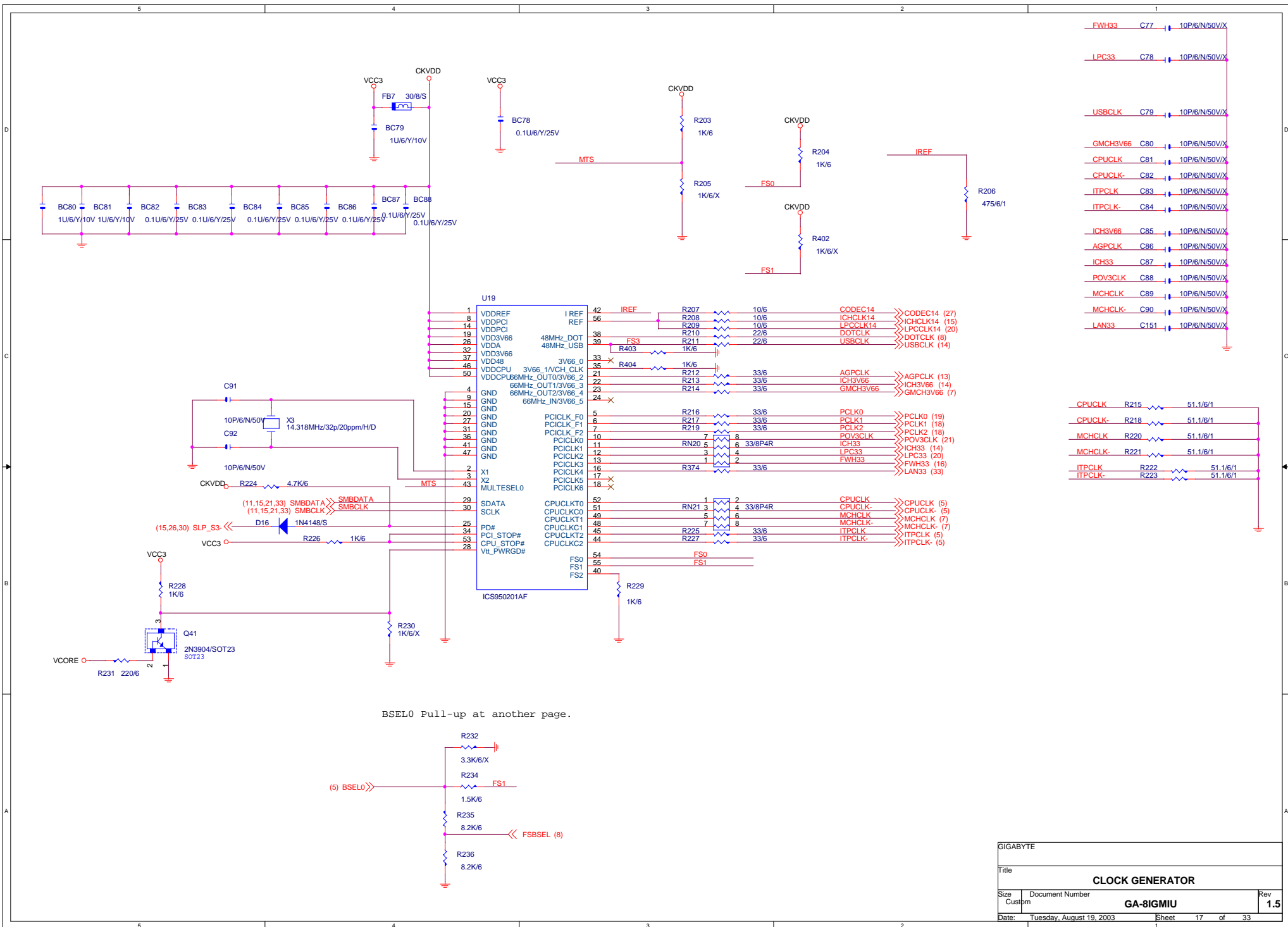


Pull up: Spartan-G
Pull Down: Spartan-G

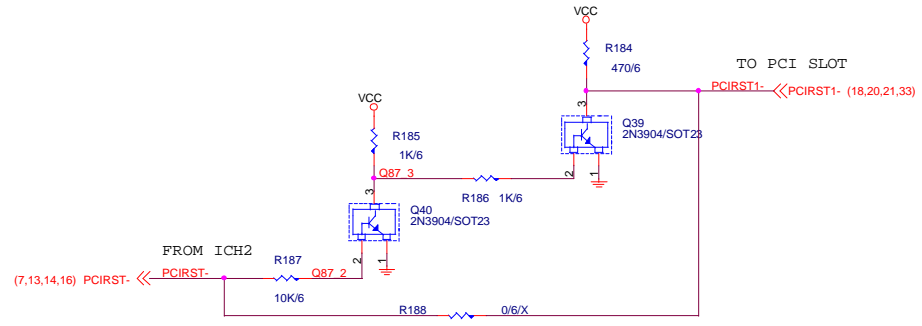
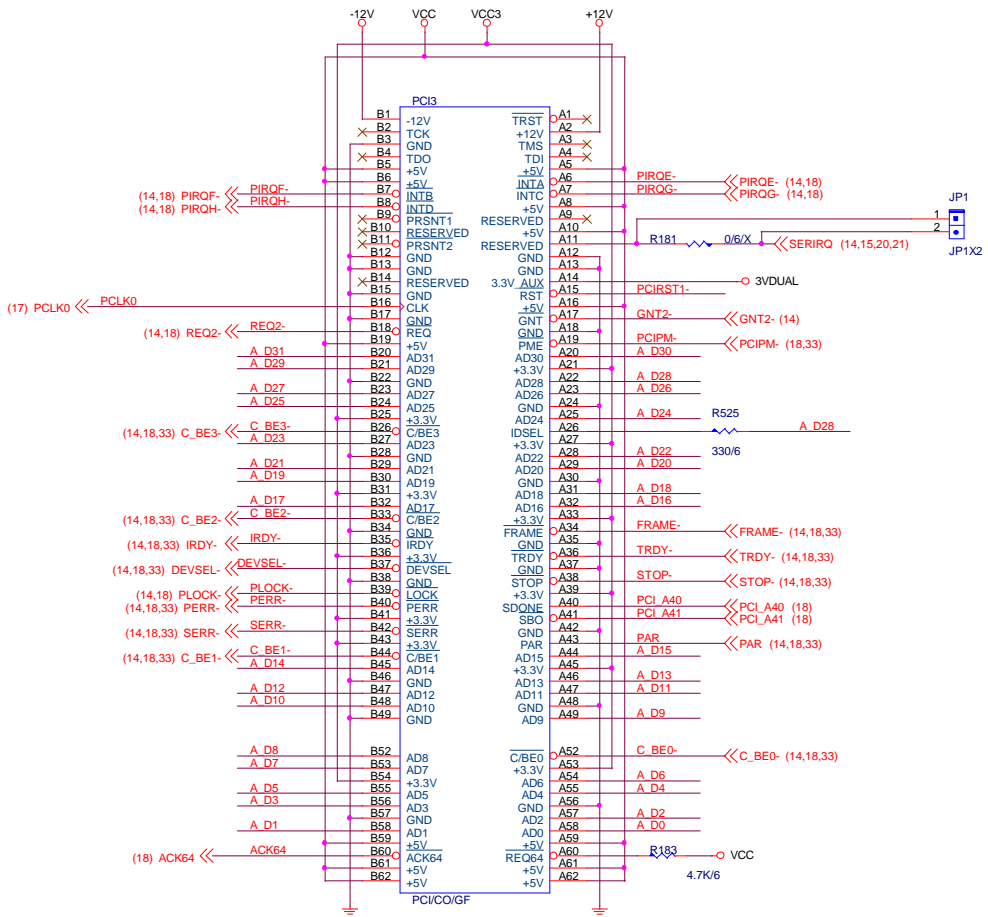
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Pull Down: Gigabit Ethernet



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FWH		
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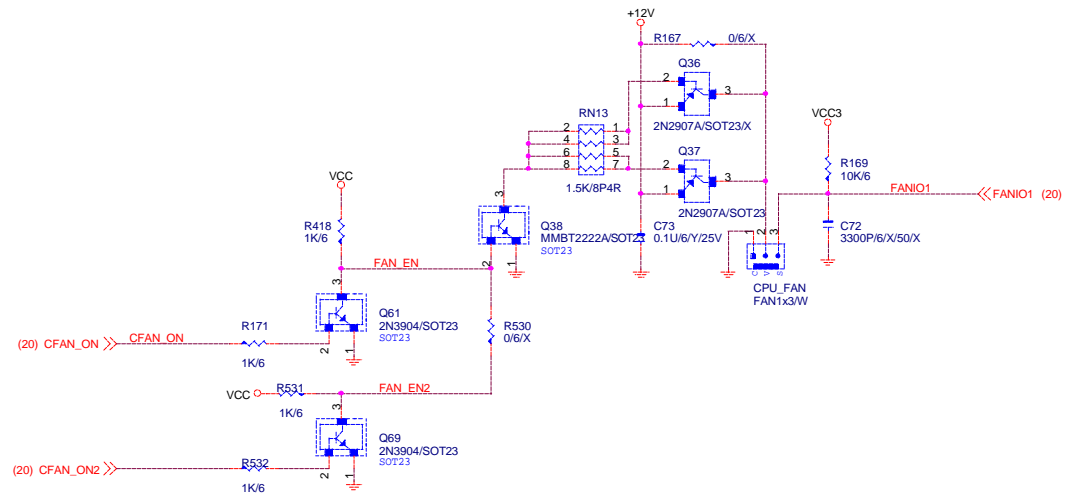
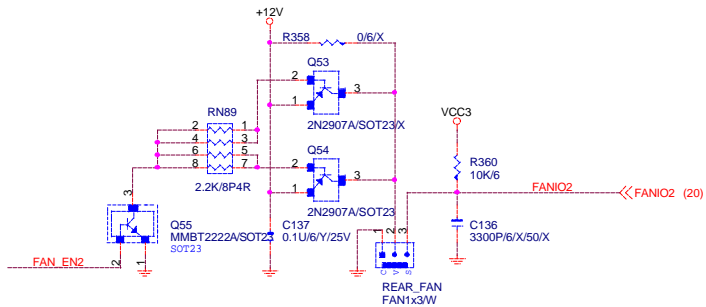
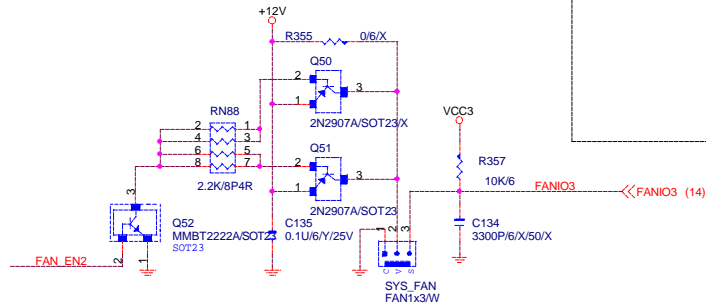
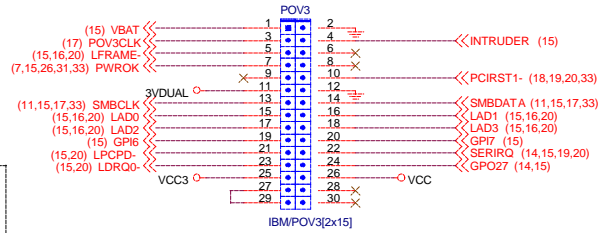


GIGABYTE			
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CLOCK GENERATOR			
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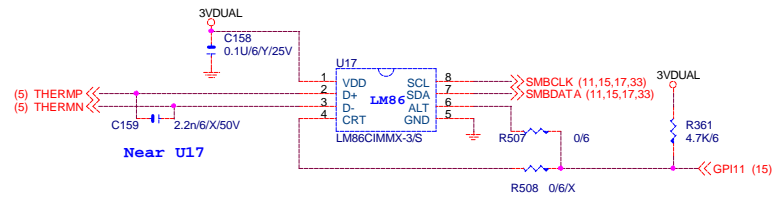


GIGABYTE		
Title		
PCI SLOT 3		
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POV3 Daughter Card

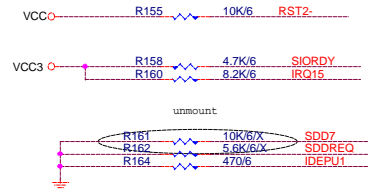
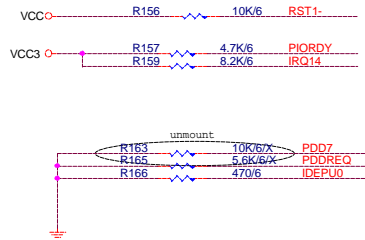
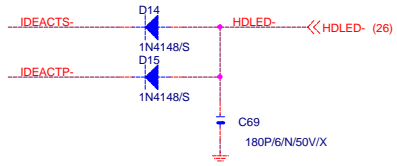


FAN

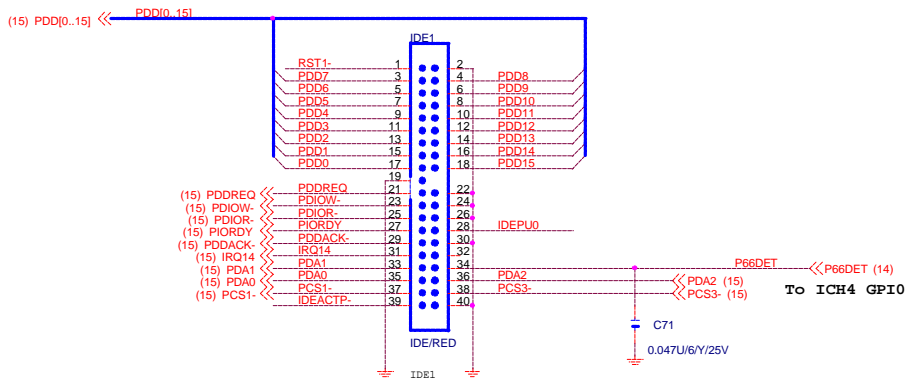


ROOM TEMP SENSOR

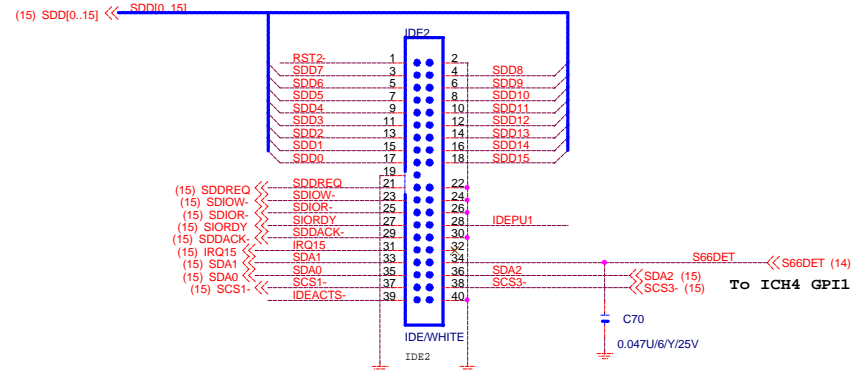
GIGABYTE			
Title			
POV3/FAN/HWMO			
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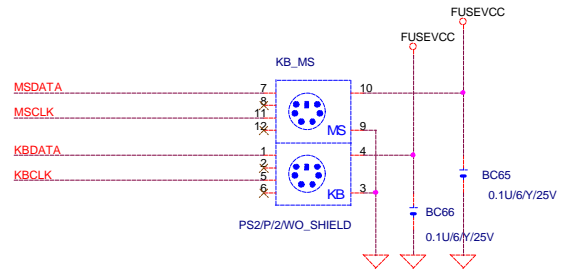
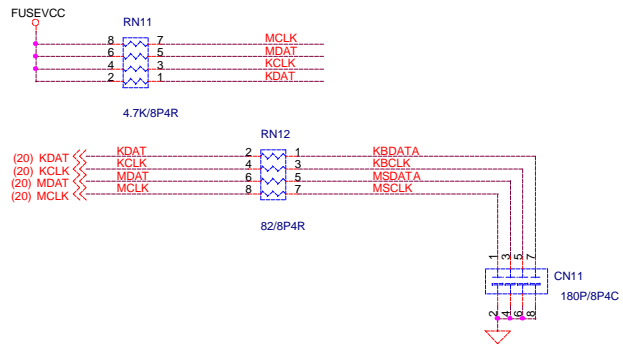
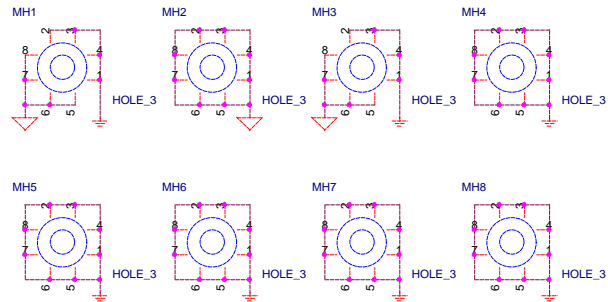
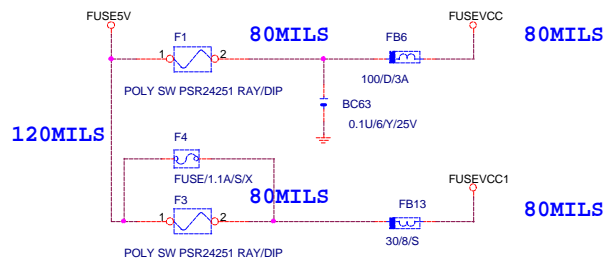
PRIMARY IDE CONNECTOR



SECONDARY IDE CONNECTOR

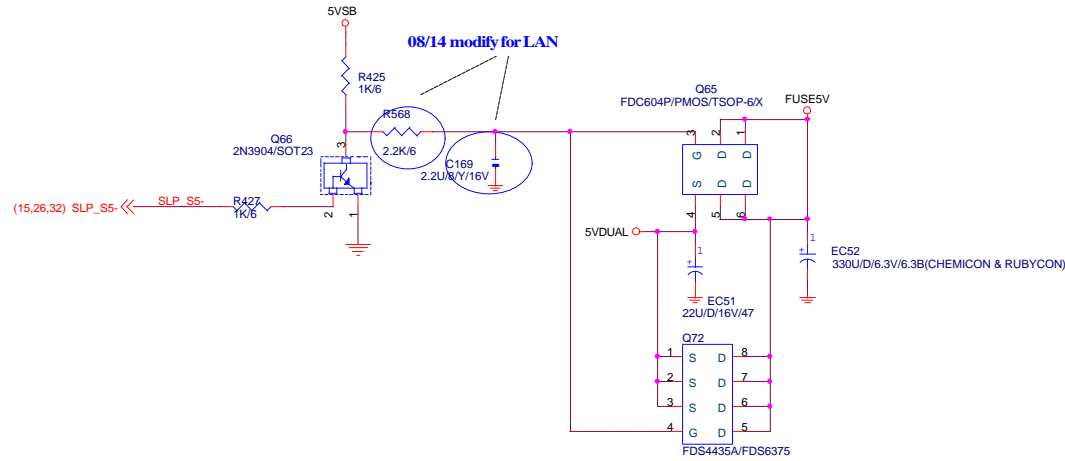


GIGABYTE		
Title IDE CONNECTOR		
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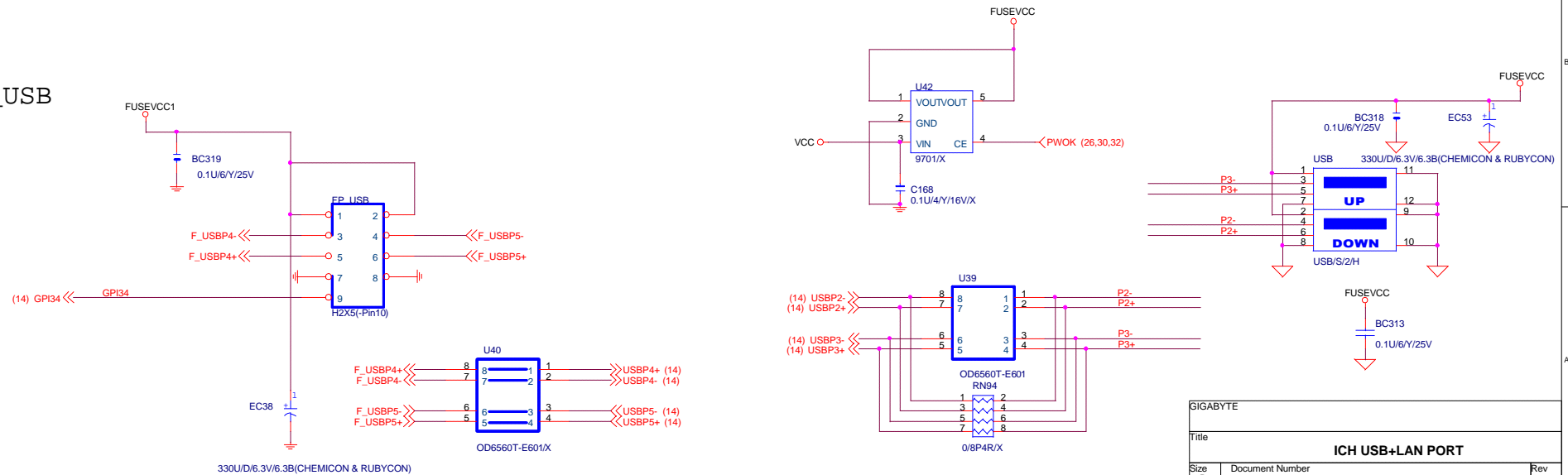


GIGABYTE		
Title		
KB & PS2 MOUSE & IR		
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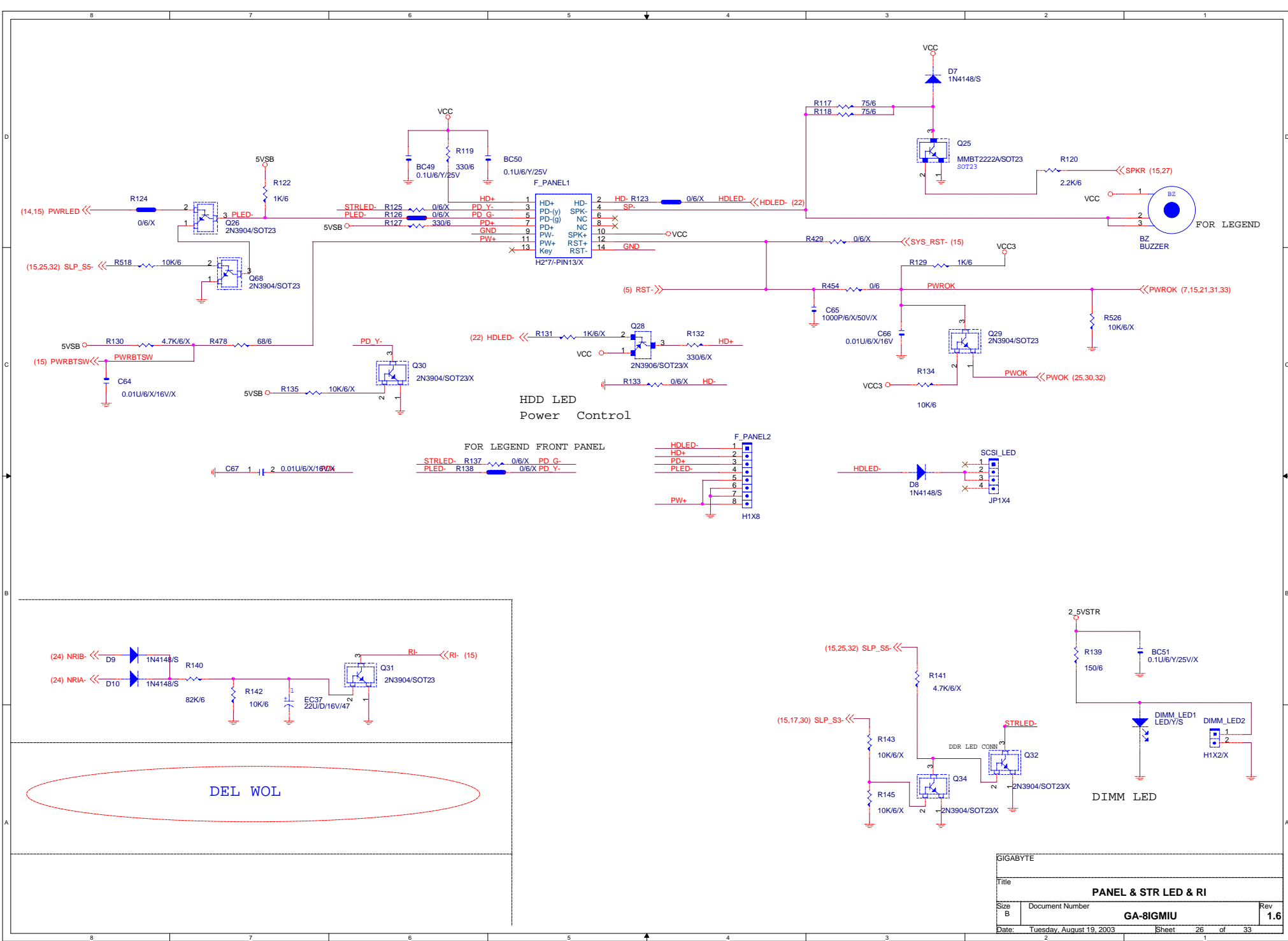
FUSEVCC



F_USB



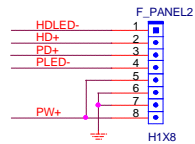
GIGABYTE		
Title		
ICH USB+LAN PORT		
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HDD LED
Power Control

FOR LEGEND FRONT PANEL

STRLED- R137 0/6/X PD G-
PLED- R138 0/6/X PD Y-

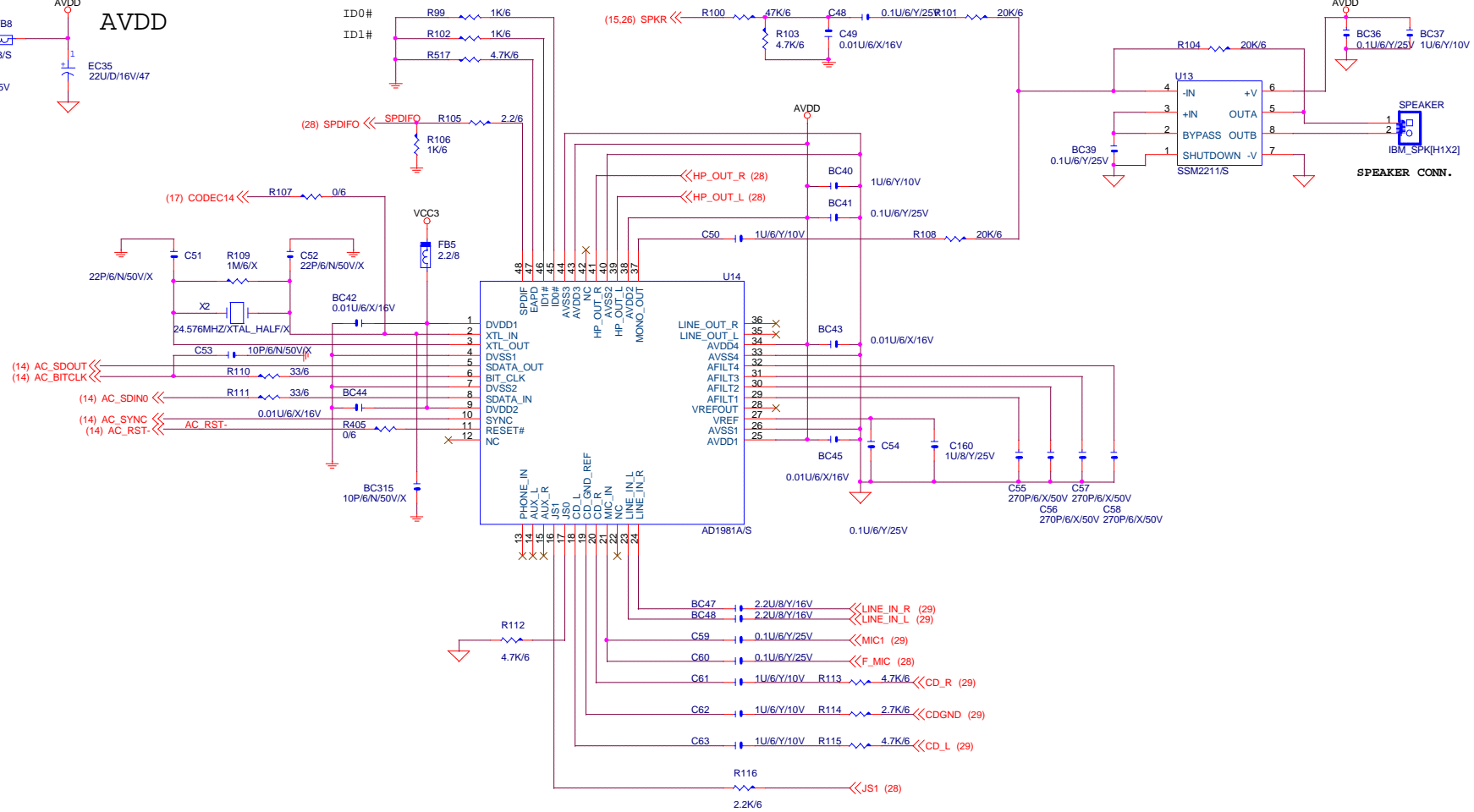
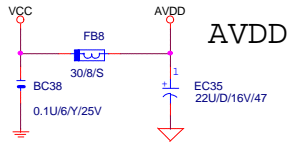


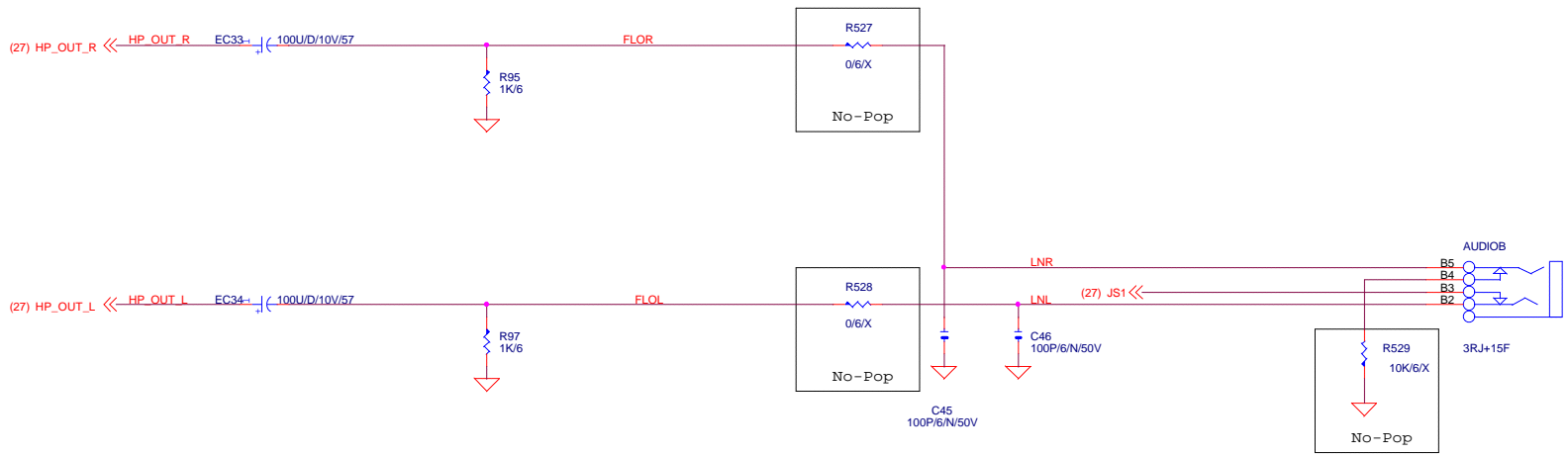
DEL WOL

GIGABYTE		
Title		
PANEL & STR LED & RI		
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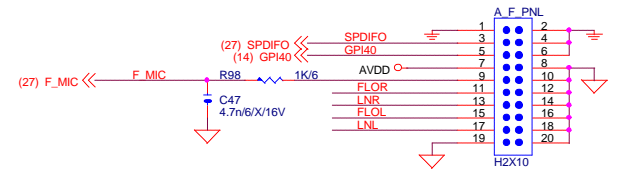
ID0#	ID1#	CLK_FREQ	MODE	CODEC ID
FLOAT	FLOAT	24.576M	Local XTAL	PRIMARY
GND	FLOAT	48.000M	Ext. CLOCK	PRIMARY
GND	GND	14.318M	Ext. CLOCK	PRIMARY
FLOAT	GND	12.288M	Ext. BITCLK	SECONDARY

(Default)



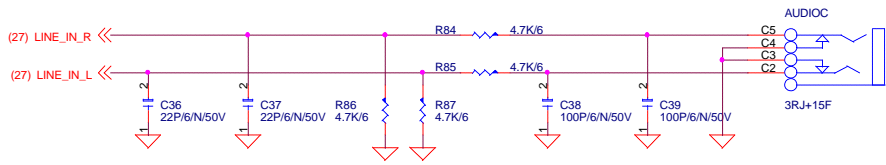


Put red shunter at
Pin-11&13 and Pin-15&17

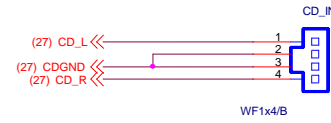


GIGABYTE			
Title			
LJACK LINE OUT			
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	2		1

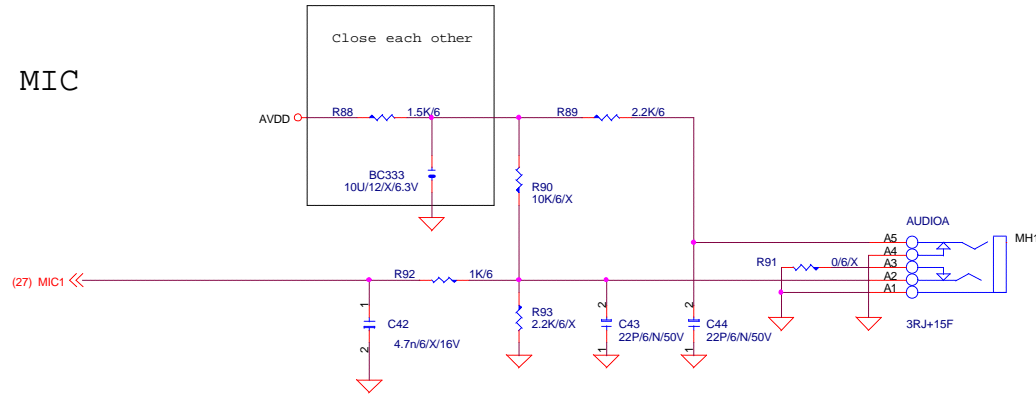
LINE-IN



CDIN

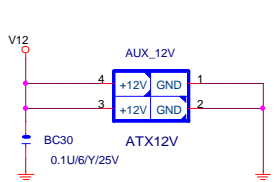
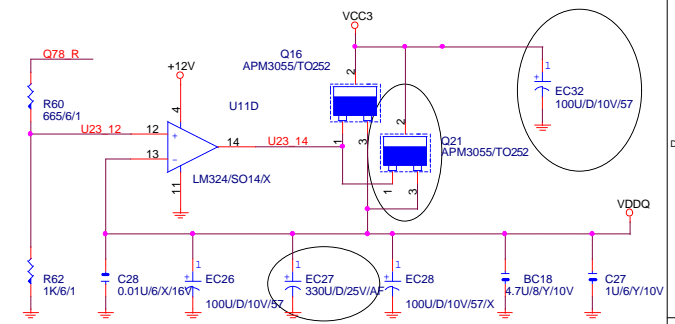
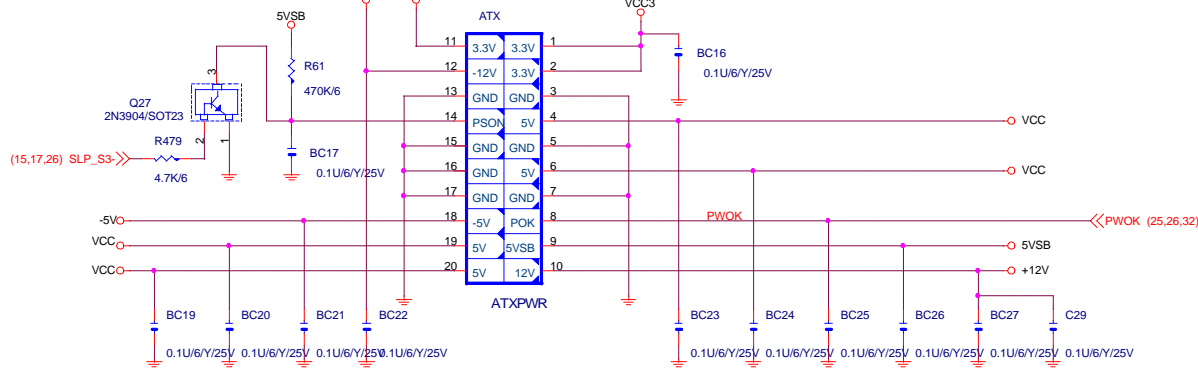


MIC

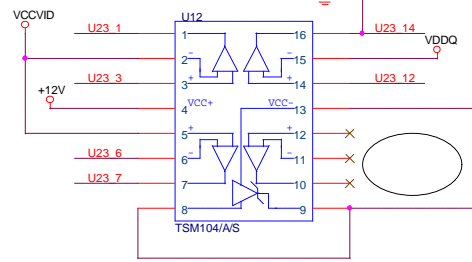


GIGABYTE			
Title			
PHONE JACK, GAME PORT			
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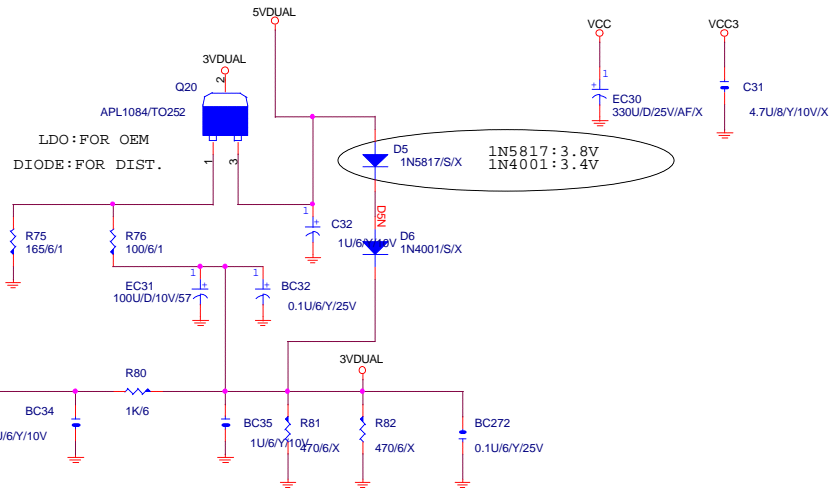
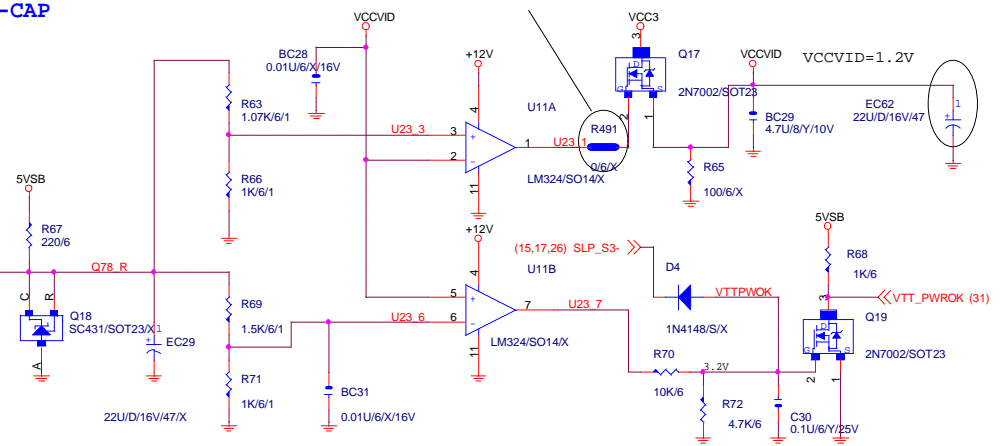
ATX POWER CONNECTOR



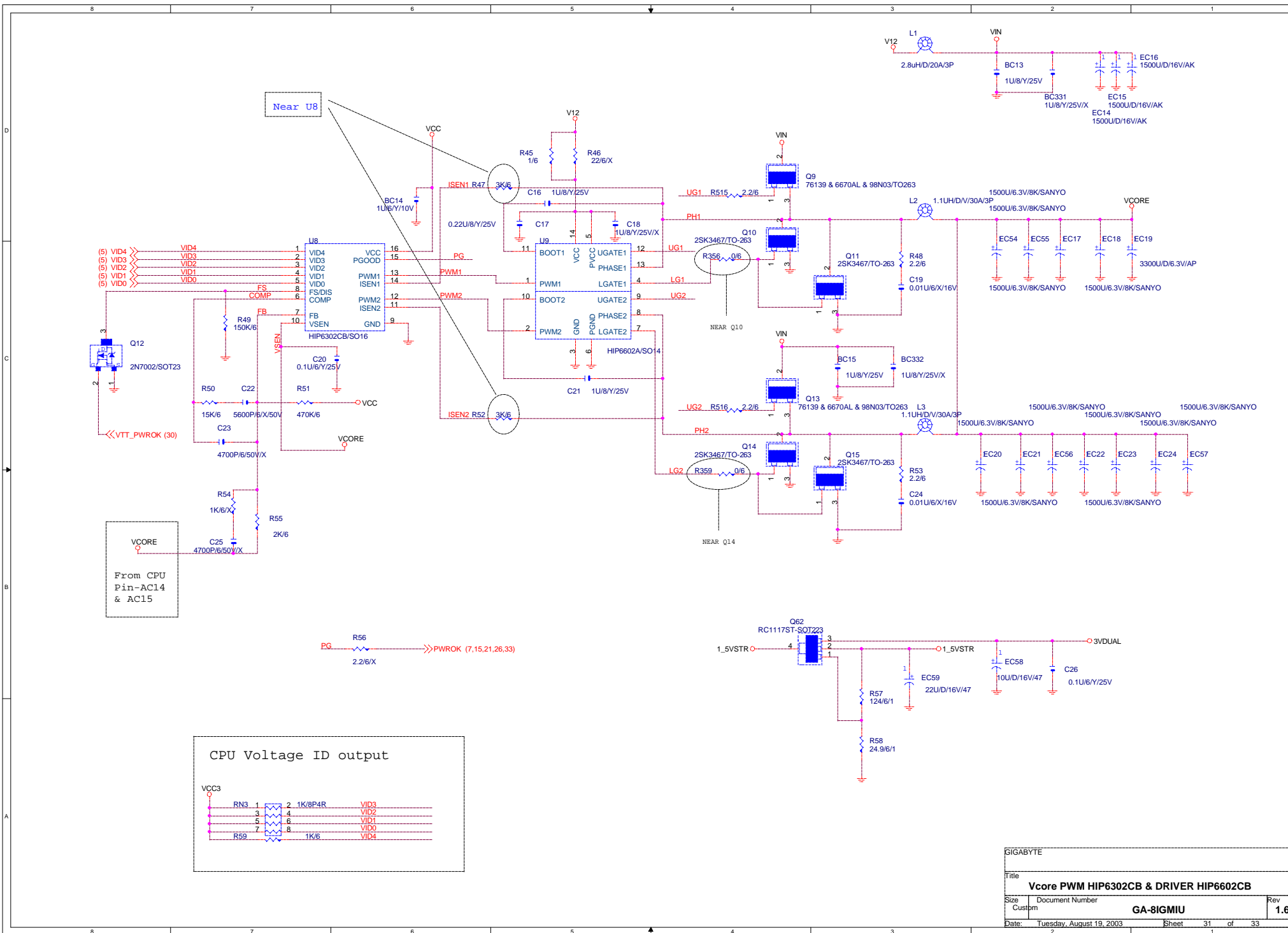
EC61 22u/D/16V/47 → Add E-CAP

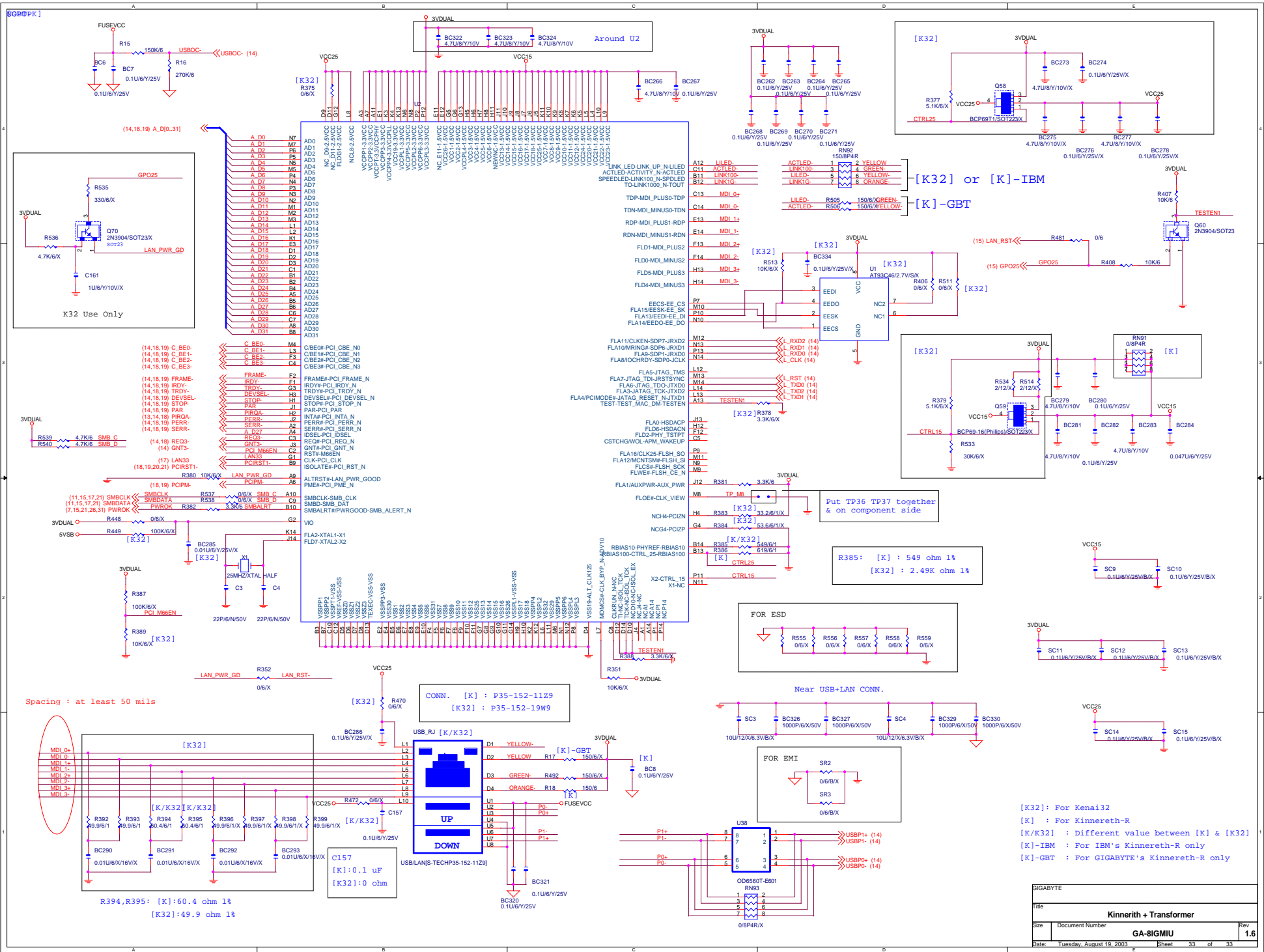


From 1K to Short-Pad



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Title		
Misc. PWR & ATX CONN.		
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[K32] or [K]-IBM

[K]-GBT

Put TP36 TP37 together & on component side

R385: [K] : 549 ohm 1%
[K32] : 2.49K ohm 1%

FOR ESD

Near USB+LAN CONN.

FOR EMI

[K32]: For Kenai32
[K] : For Kinnereth-R
[K/K32] : Different value between [K] & [K32]
[K]-IBM : For IBM's Kinnereth-R only
[K]-GBT : For GIGABYTE's Kinnereth-R only

GIGABYTE		
Title: Kinnereth + Transformer		
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