

Model Name: 8I915PL-G REV1.0

SHEET TITLE

01	COVER SHEET
02	BLOCK DIAGRAM
03	BOM & PCB MODIFY HISTORY
04	P4_LGA775_A
05	P4_LGA775_B
06	P4_LGA775_C
07	P4_LGA775_D
08	VCORE POWER
09	GMCH-GRANTS DALE_HOST
10	GMCH-GARNTSDALE_DDR
11	GMCH-GRANTS DALE_PCI E, DMI
12	GMCH-GRANTS DALE_INT VGA
13	GMCH-GRANTS DALE_GND
14	GMCH-GRANTS DALE_PWR
15	DDR CHANNEL A
16	DDR CHANNEL B
17	DDR TERMINATION
18	PCI EXPRESS*16 SLOT
19	ICH6 PCI, USB, DMI, LAN
20	ICH6 IDE, GPIO, SATA, CTRL
21	ICH6 VCC, GND
22	CLK GEN

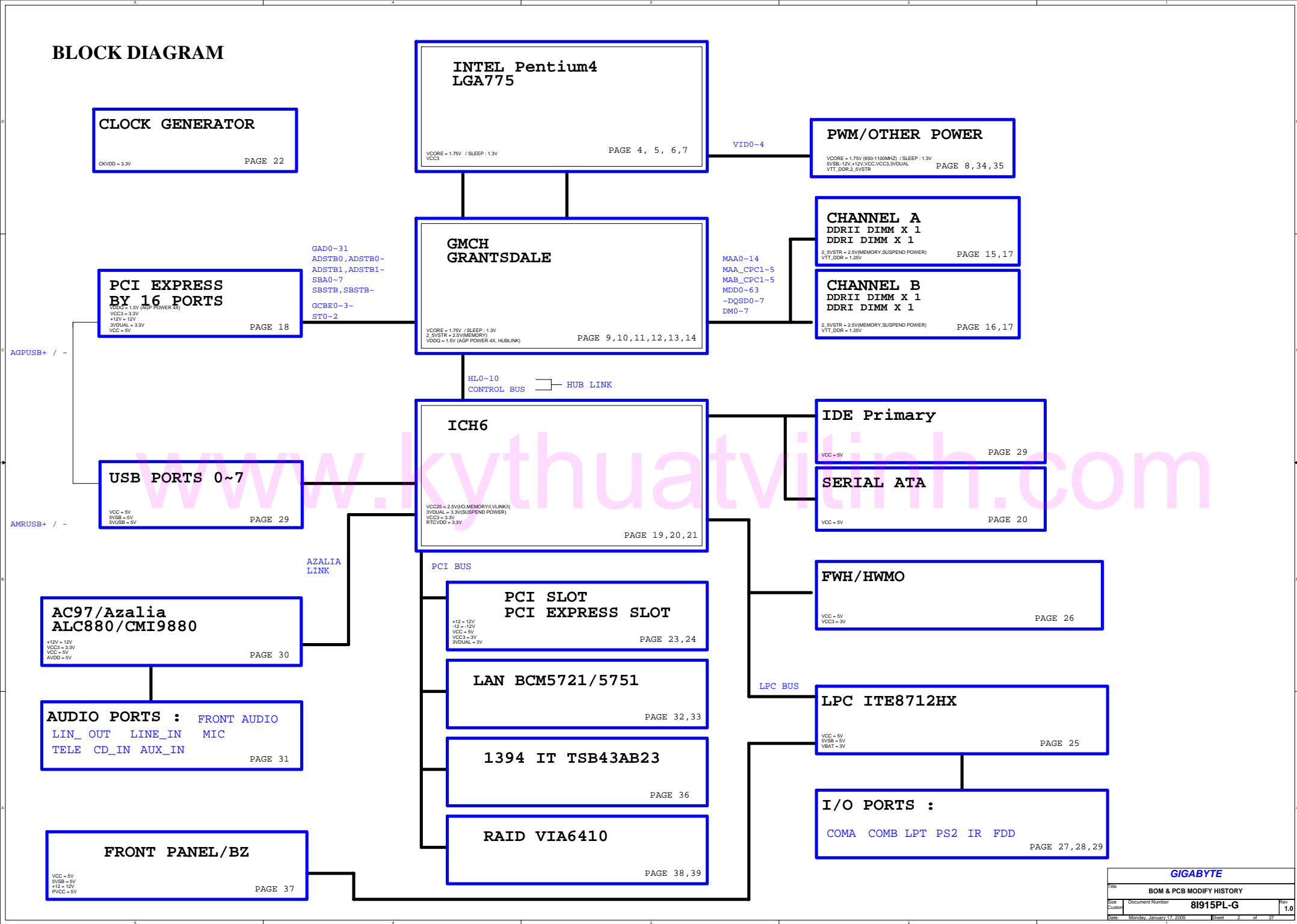
SHEET TITLE

23	PCI SLOT
24	PCI EXPRESS*1 SLOT
25	ITE8712HX
26	HWMO/FAN/FWH BIOS
27	KB_MS/GAME
28	COM/LPT/FDD
29	(FRONT+REAR)USB/RING/IDE
30	AZALIA CODEC ALC880/CMi9880
31	AUDIO JACK
32	LAN BCM5705E/5751
33	LAN BCM5751
34	ATX POWER CONN.
35	ALL POWER
36	1394 TSB43AB23
37	FRONT PANEL/BZ
38	RAID VIA6410
39	RAID IDE CONNECTOR
40	GPIO TABLE
41	RESET TABLE

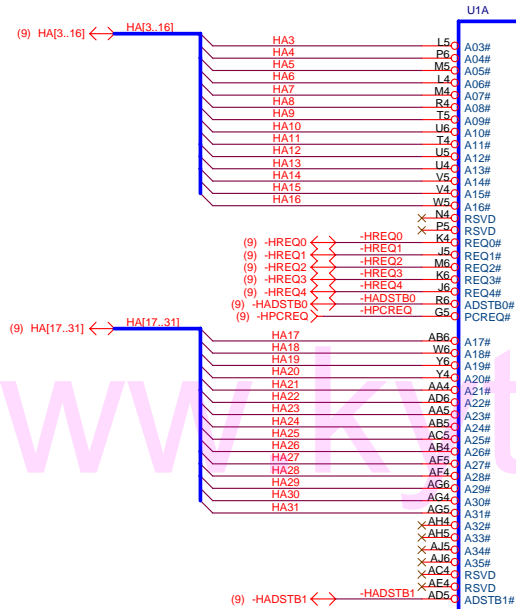
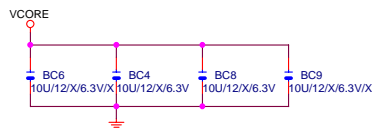
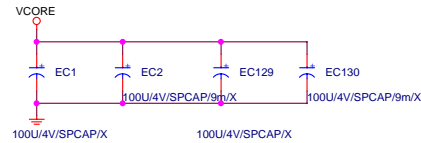
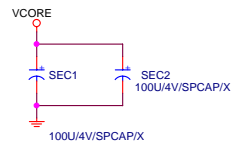
COMPONENT SIDE
(1 oz. Copper)
VCC SIDE
(1 oz. Copper)
GND SIDE
(1 oz. Copper)
SOLDER SIDE
(1 oz. Copper)

GIGABYTE			
Title			
Cover Sheet			
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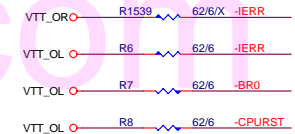
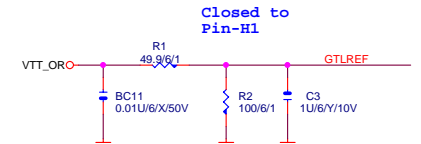
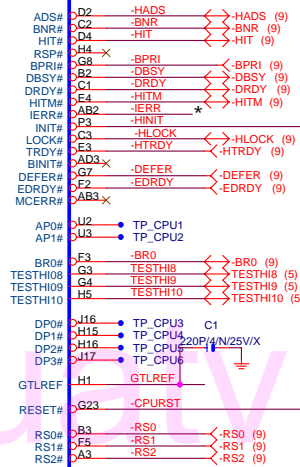
BLOCK DIAGRAM



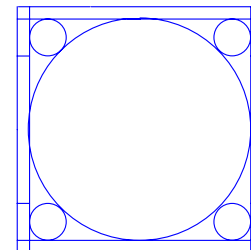
SP-CAP X 4PCS



CPU-SK/775[10SC1-D03775-01_10SC1-D03775-02]

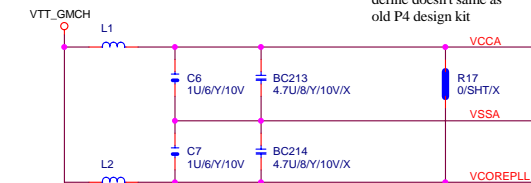


CR CPU RETAINTION/X

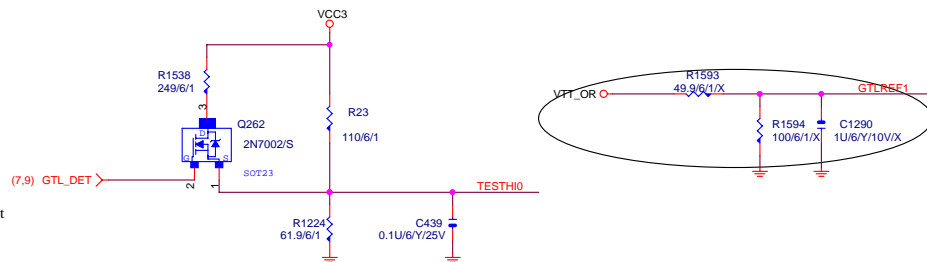


GIGABYTE			
P4_LGA775-A			
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VCCA & VCOREPLL
define doesn't same as
old P4 design kit



- Trace width doesn't less than 12 Mil



VTT_OL

100Ω/6V R10

100Ω/1 R11

COMP2

COMP3

C5

0.1μF/6V/25V

60.4Ω/6V R14

60.4Ω/1 R15

COMP0

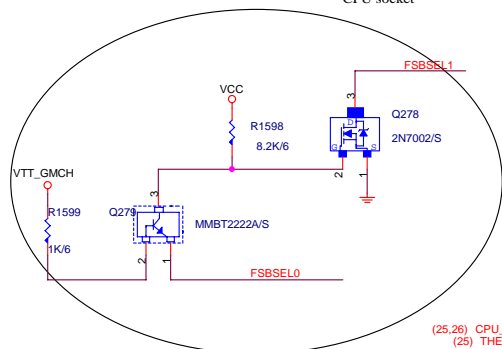
COMP1

60.4Ω/6V/X R1595

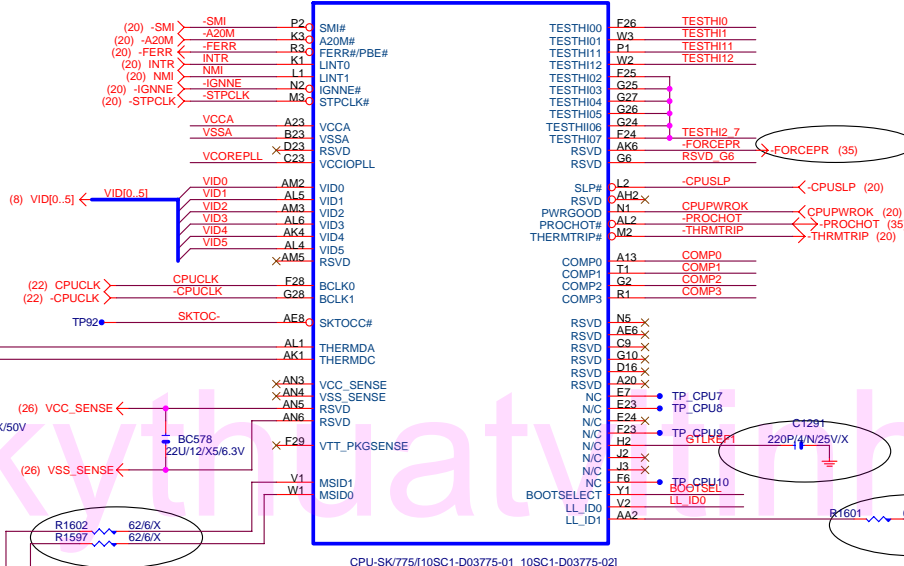
60.4Ω/6V/X R1596

COMP2

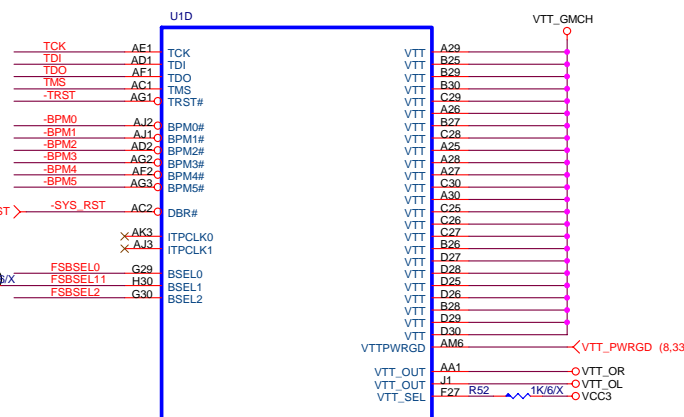
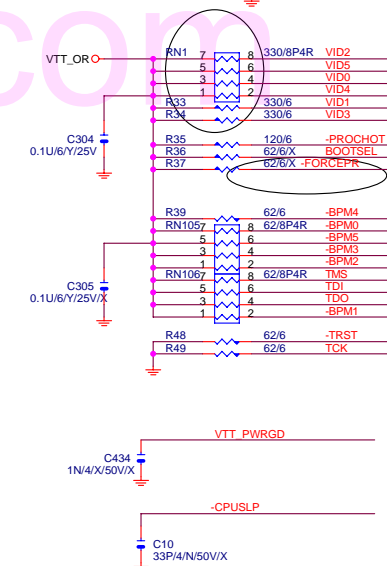
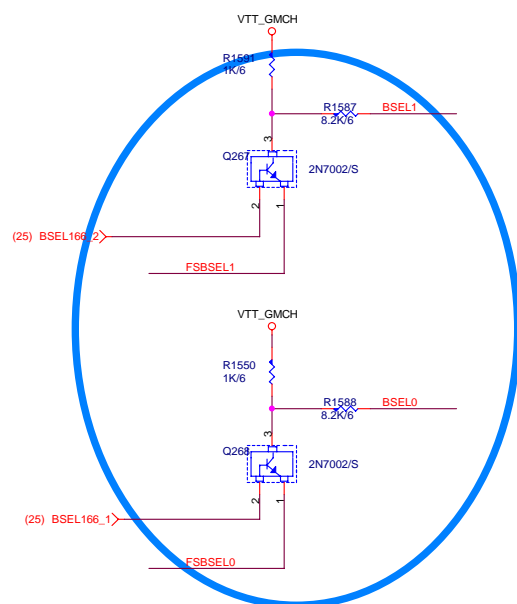
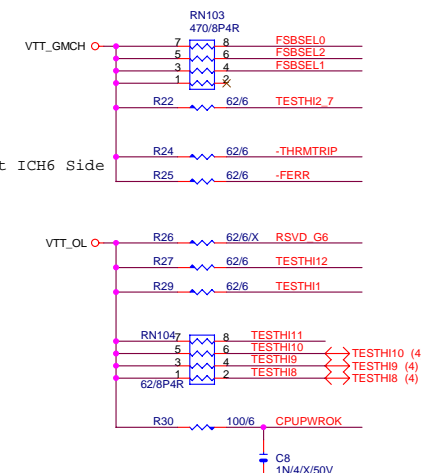
COMP3



As close as possible to
CPU socket



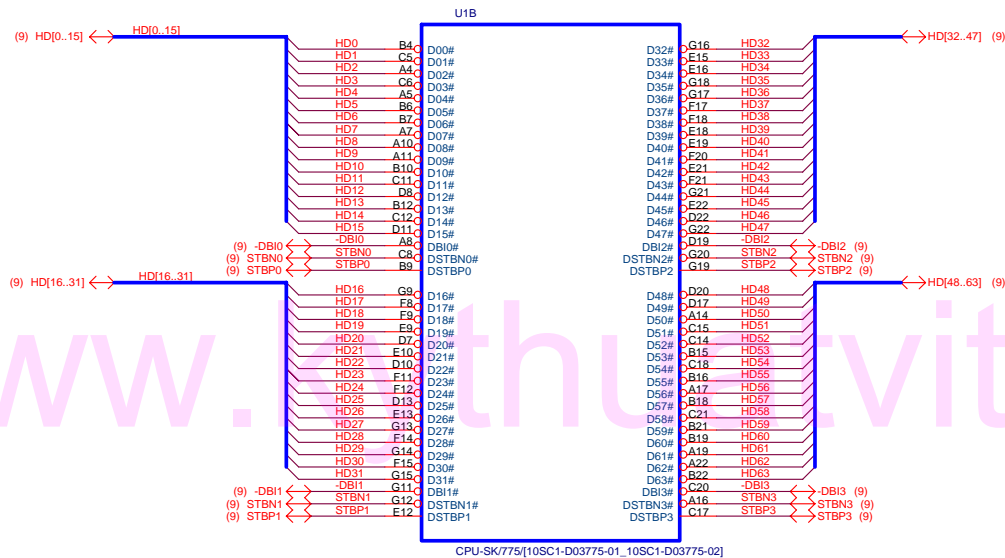
Locate at ICH6 Side

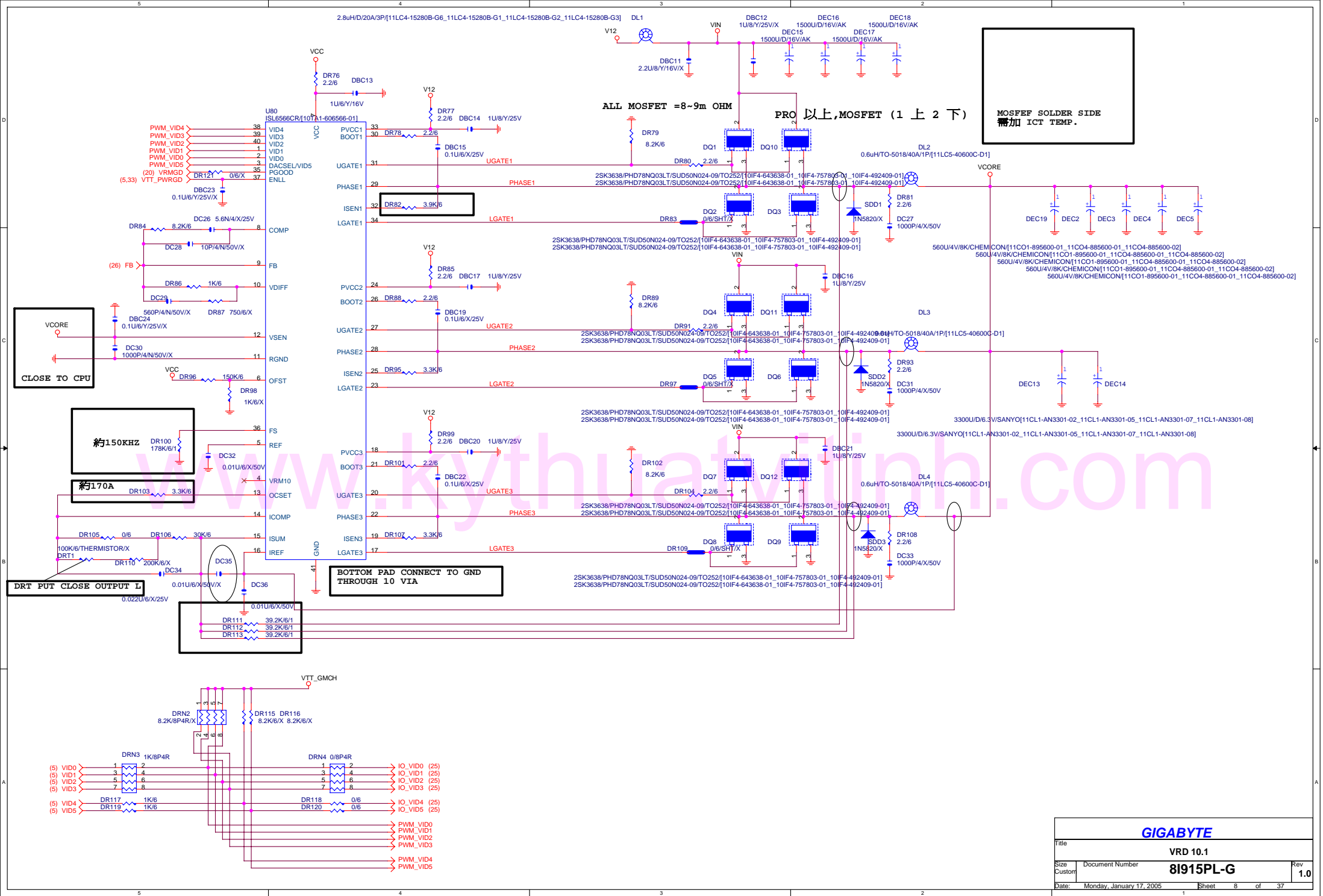


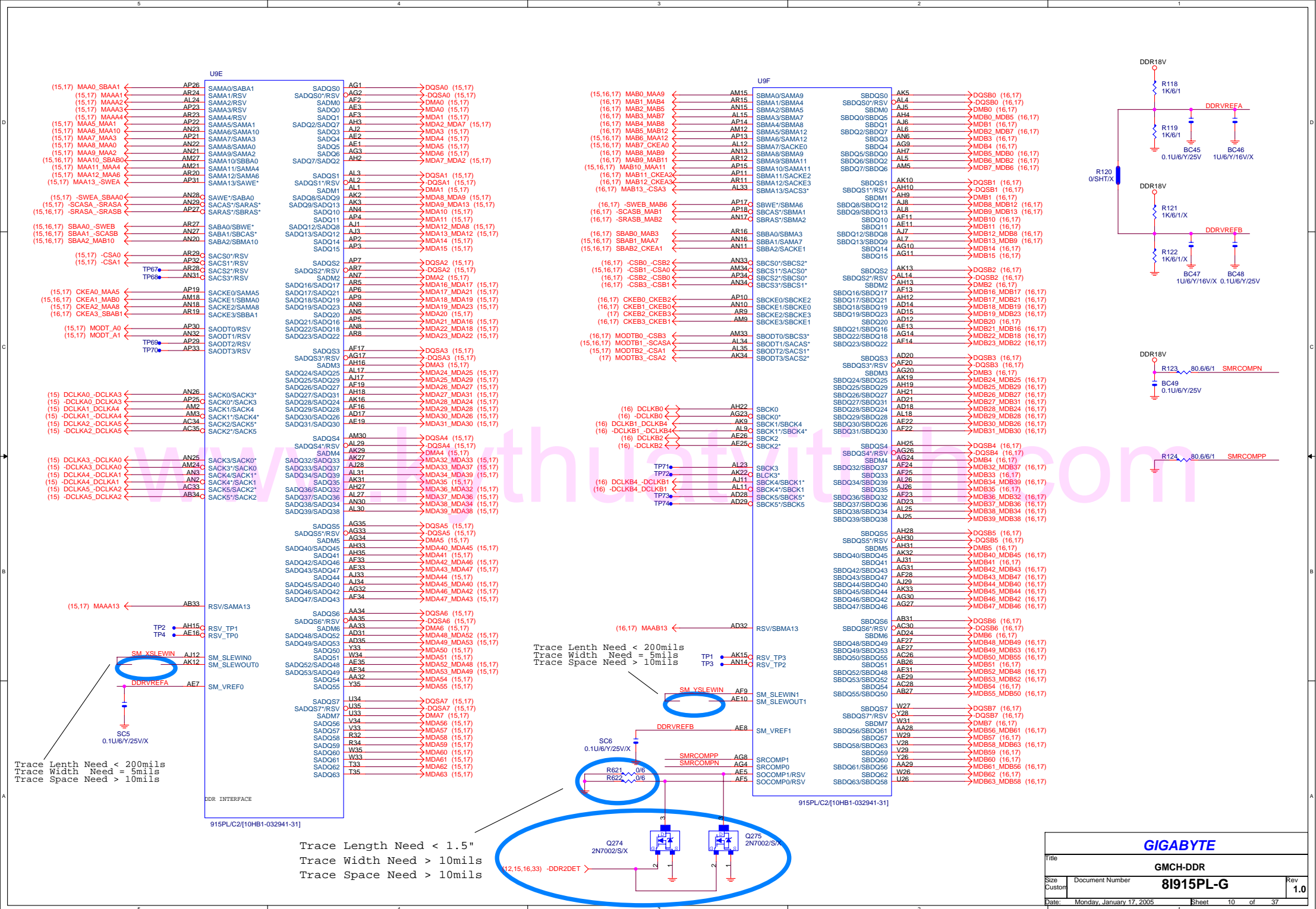
GIGABYTE

P4 LGA775-B

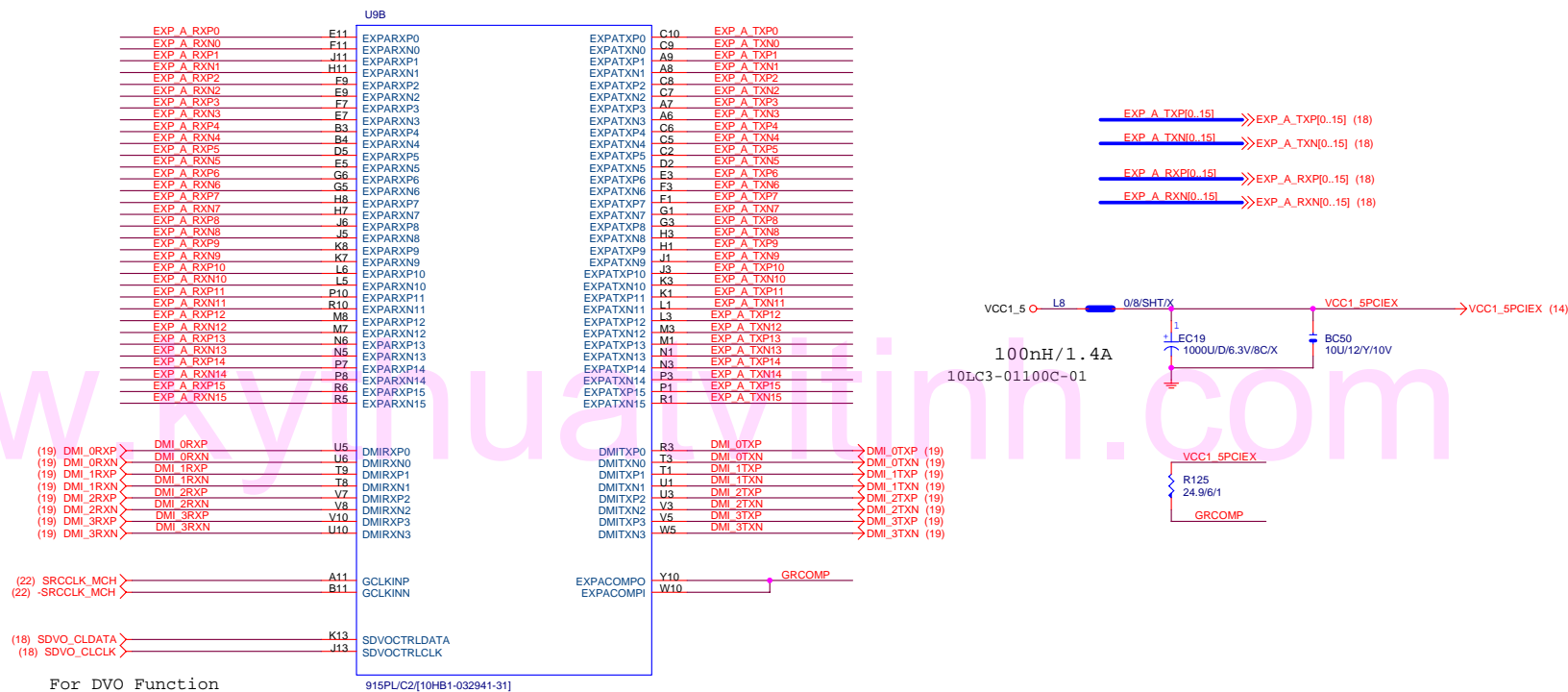
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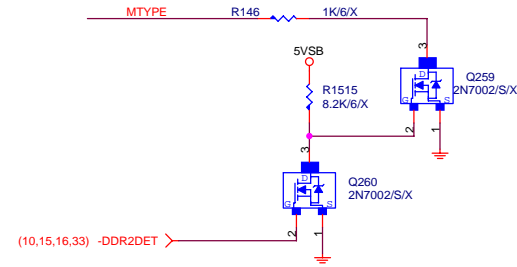
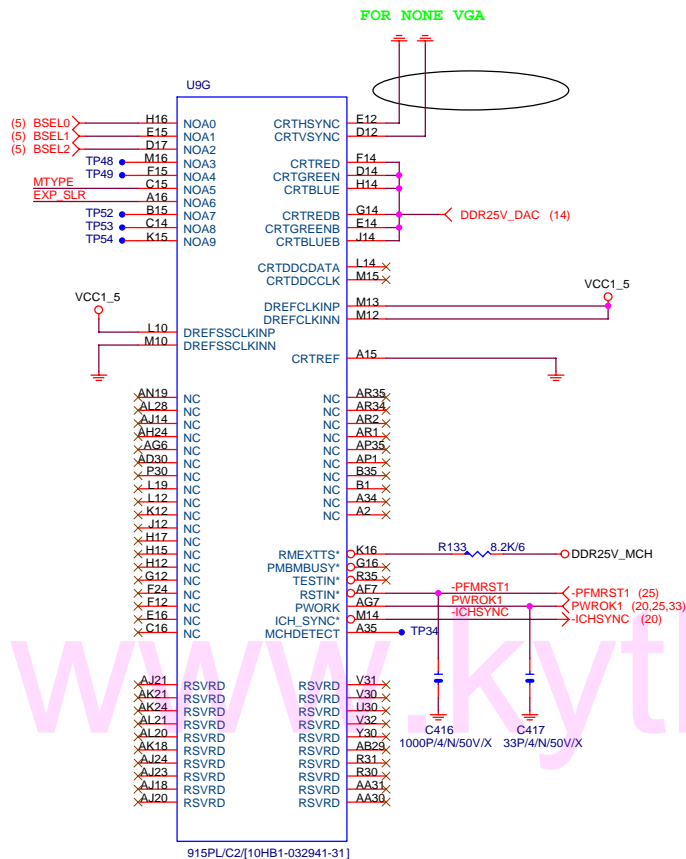




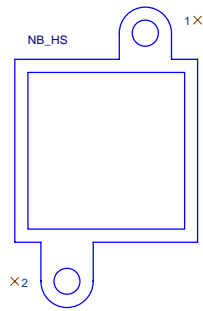


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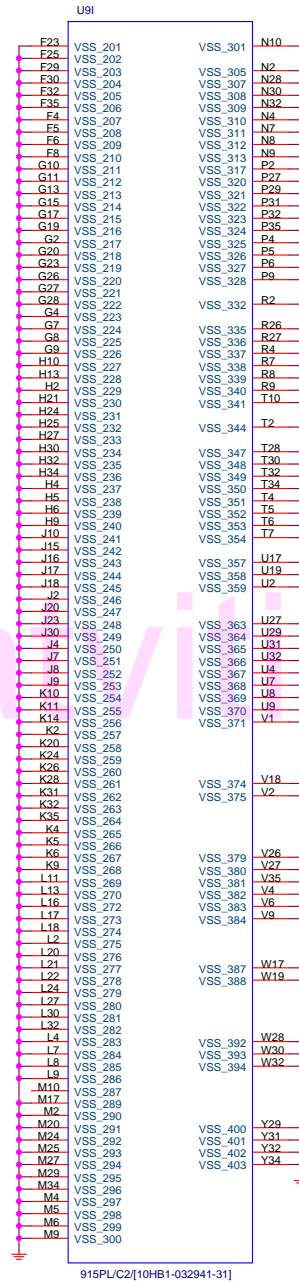
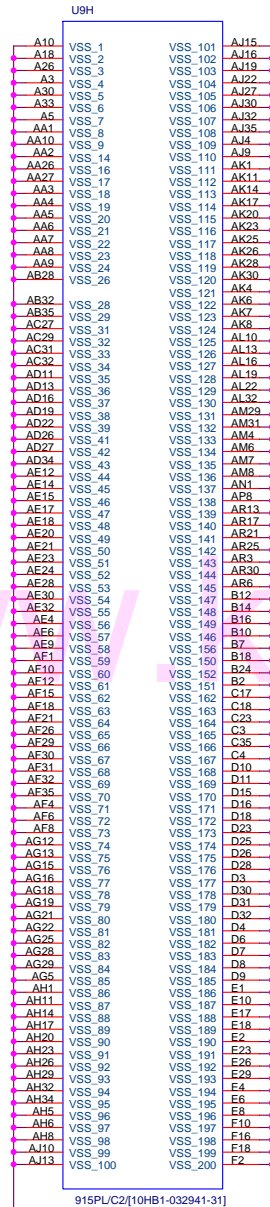


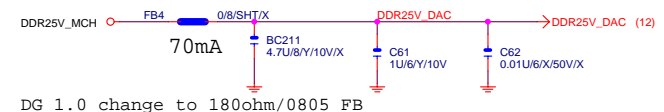
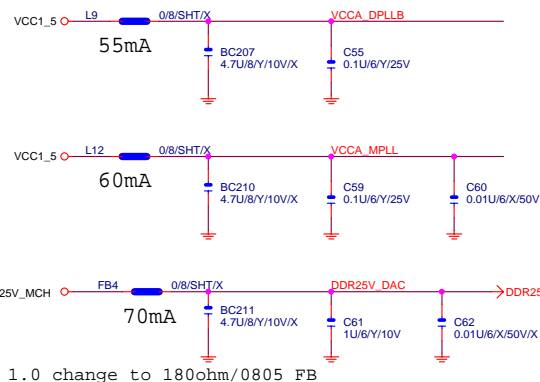
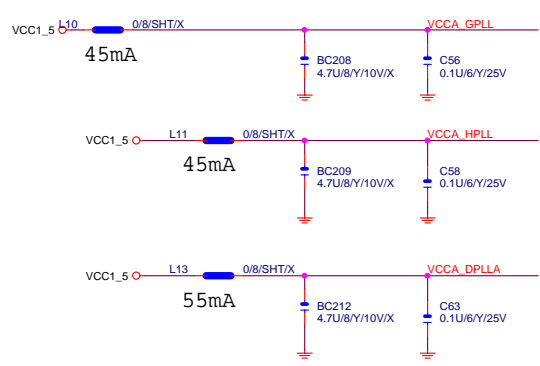
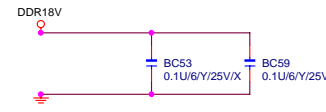
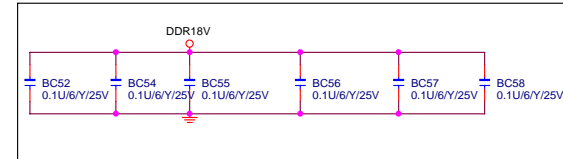
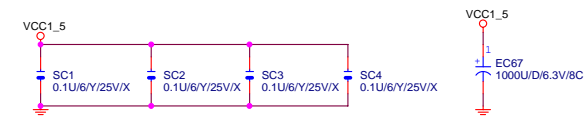
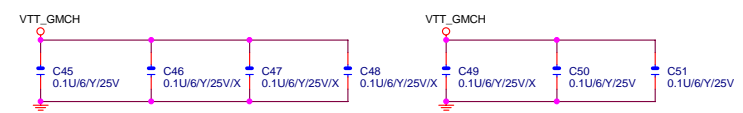
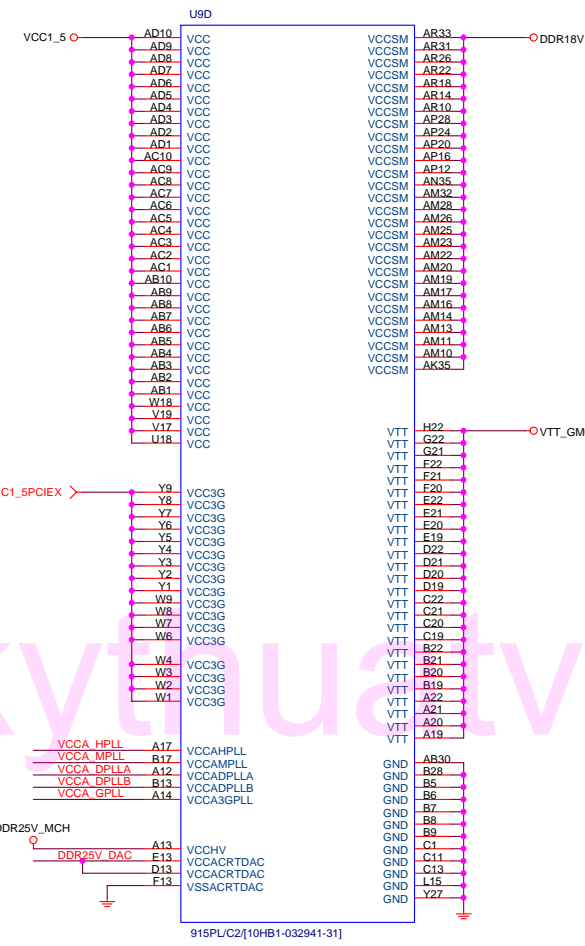
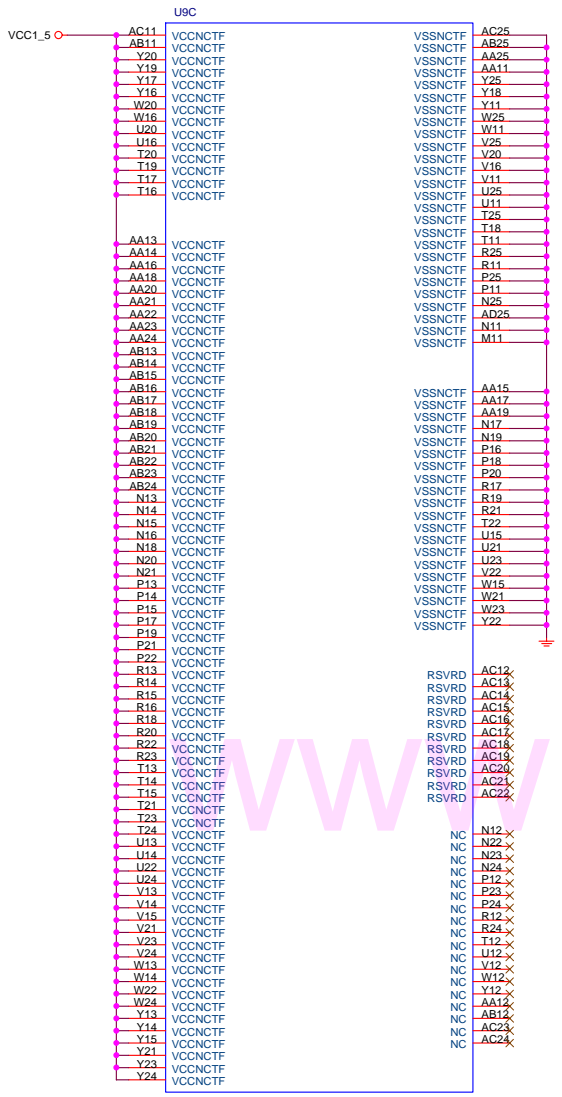
When -DDR2DET=0, MTYPE --> 0
When -DDR2DET=1, MTYPE --> 1



NEW_HS[12SP2-04E003-01_12SP2-04E003-02_12SP2-04E003-03]

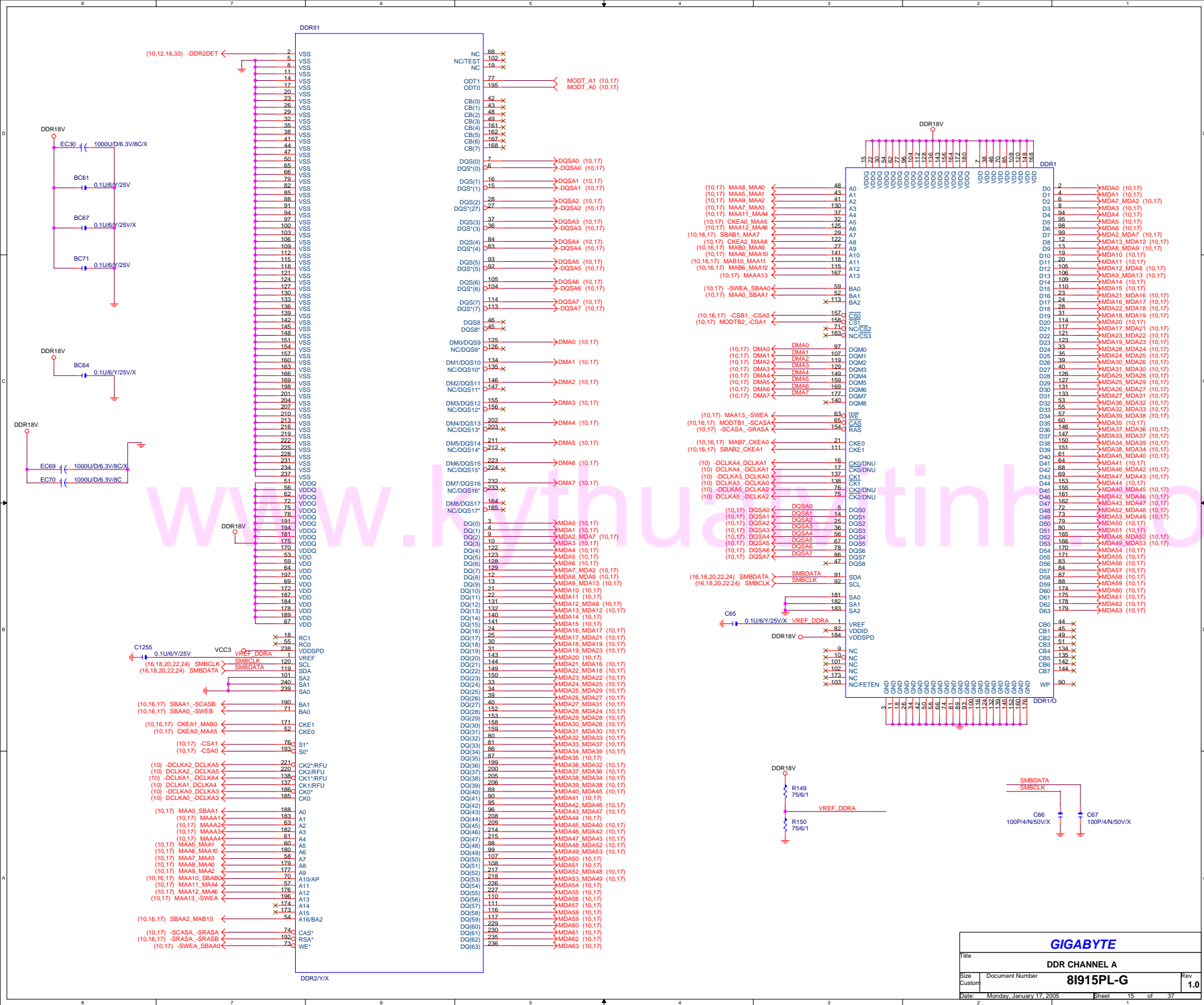
GIGABYTE			
Title			
GMCH-INTERNAL VGA			
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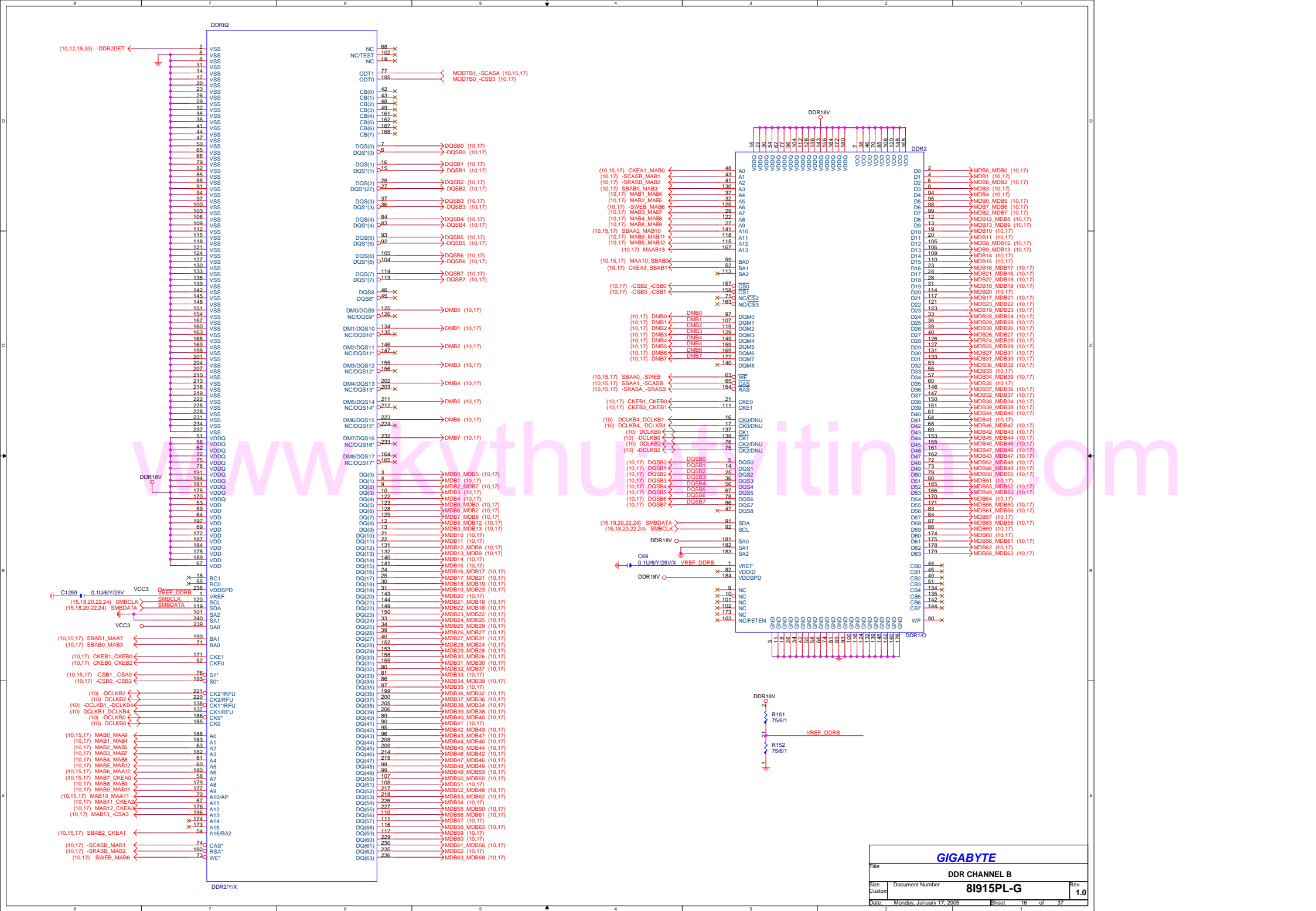


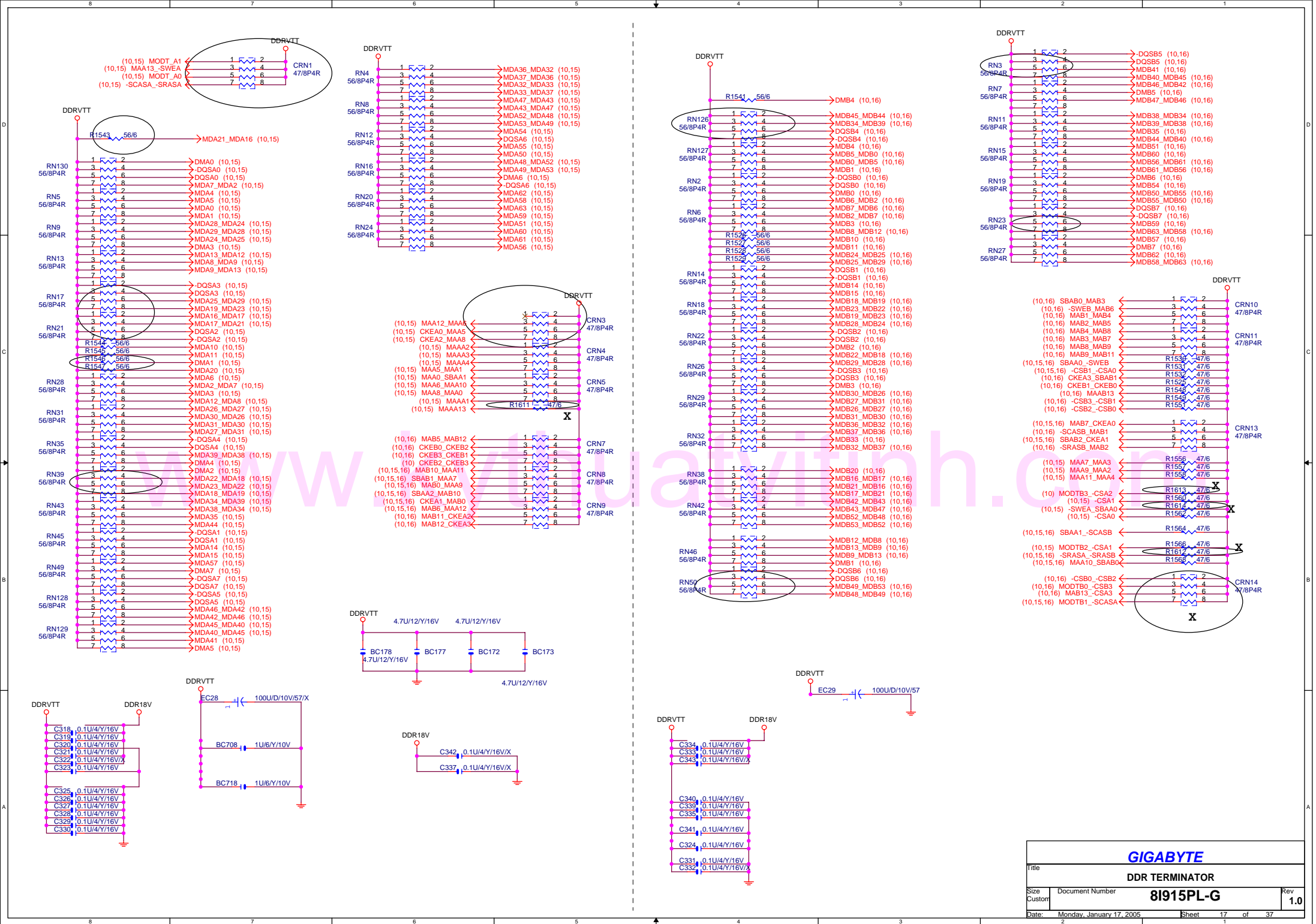


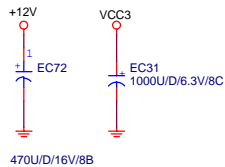
GIGABYTE			
Title			
GMCH-PWR			
Size			
Document Number			
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0.1			
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Monday, January 17, 2005			
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DG 1.0 change to 180ohm/0805 FB





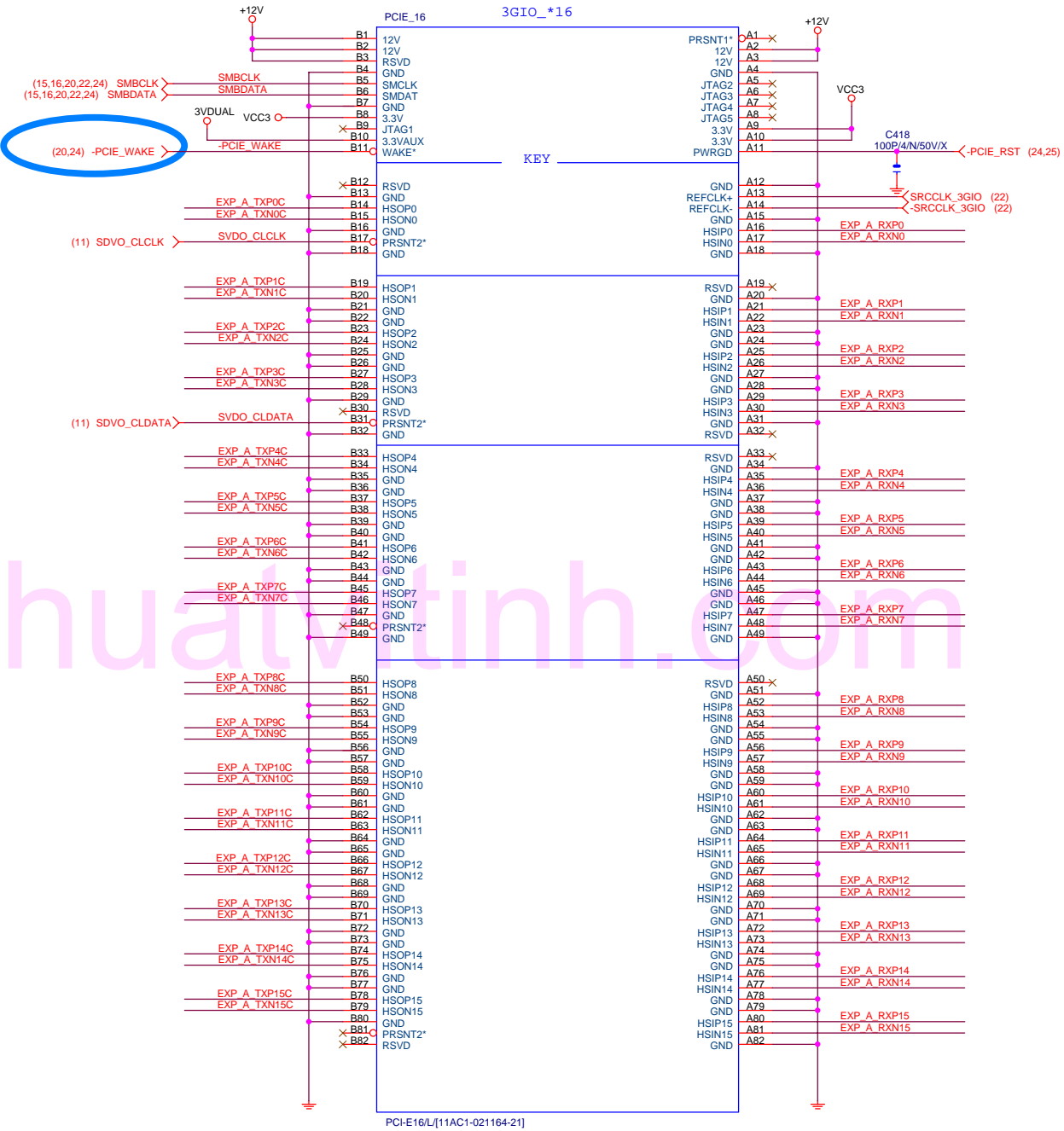


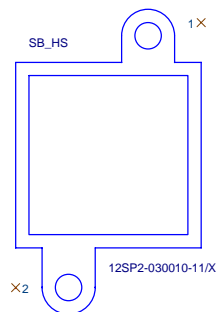
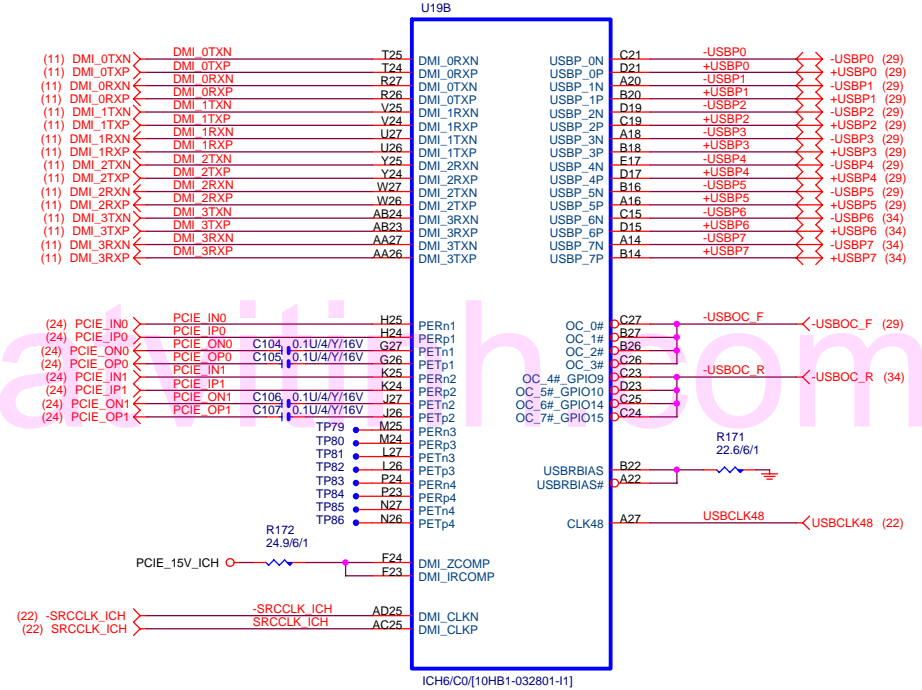
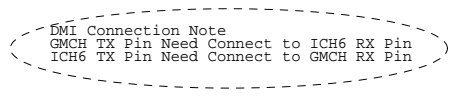


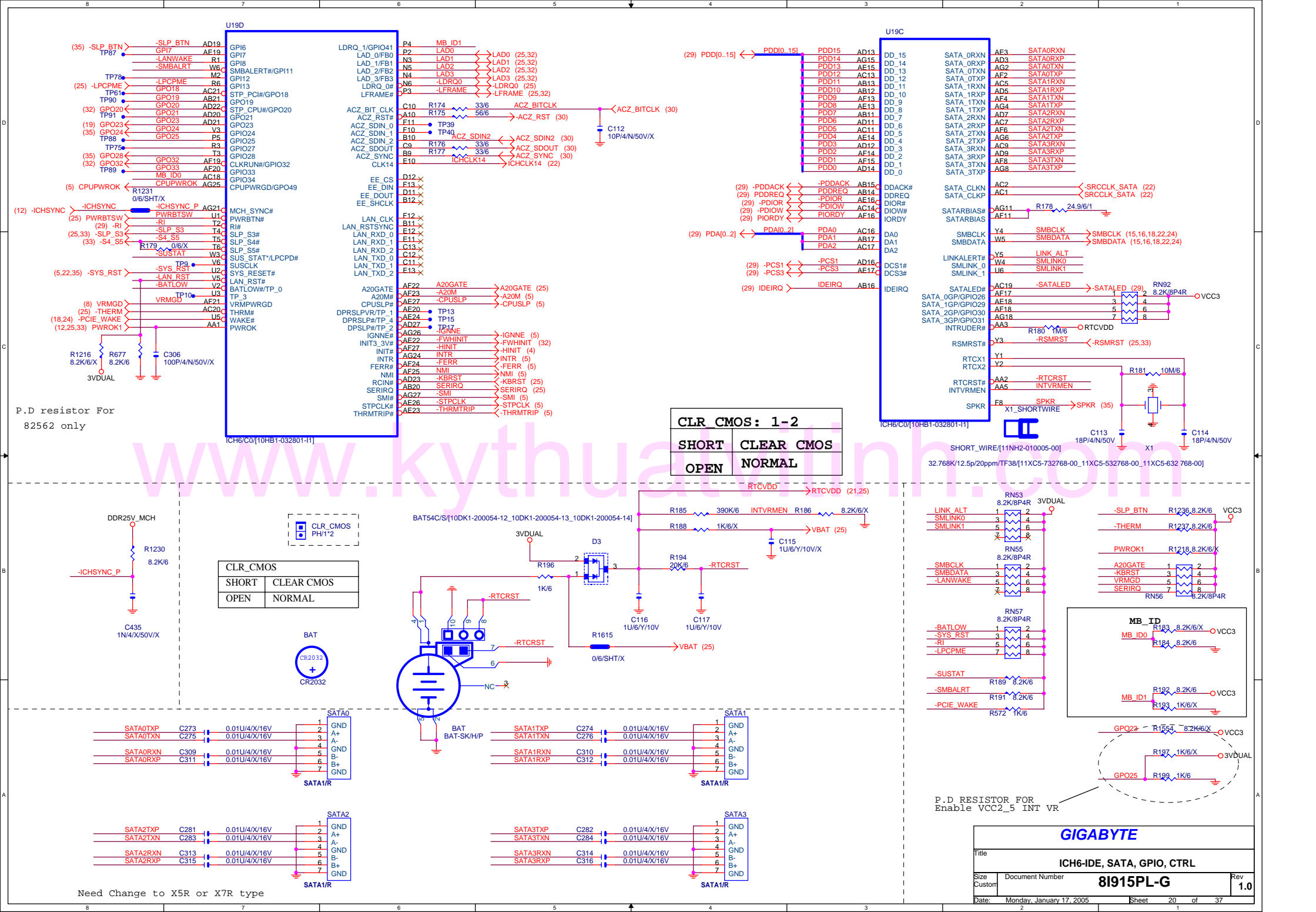
EXP_A_RXP[0..15] >> EXP_A_RXP[0..15] (11)
 EXP_A_RXN[0..15] >> EXP_A_RXN[0..15] (11)

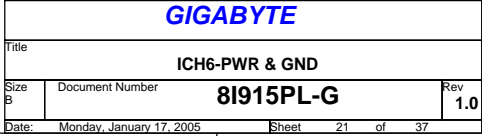
EXP_A_TXP[0..15] >> EXP_A_TXP[0..15] (11)
 EXP_A_TXN[0..15] >> EXP_A_TXN[0..15] (11)

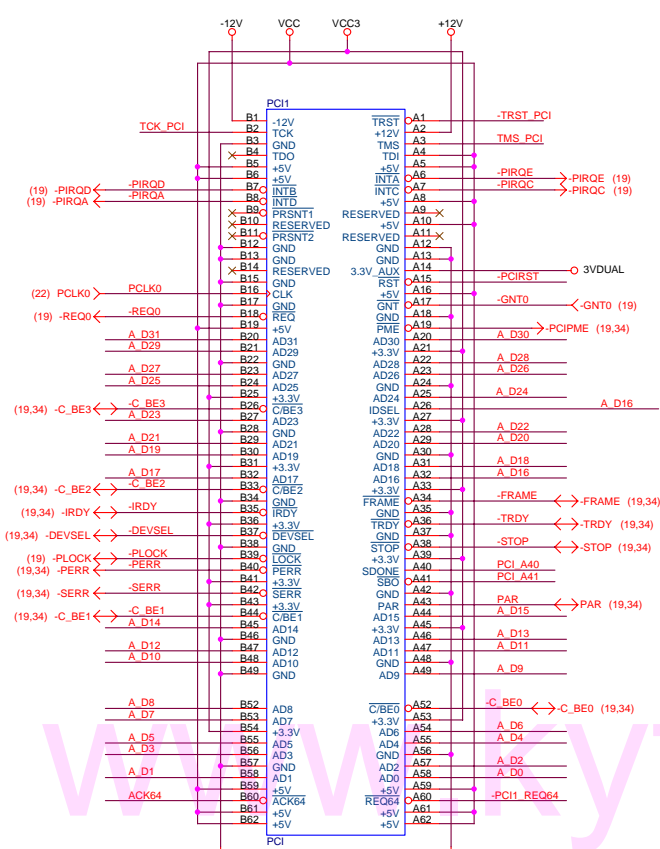
EXP_A_TXP0	C70	0.1U/6Y/25V	EXP_A_TXP0C
EXP_A_TXN0	C71	0.1U/6Y/25V	EXP_A_TXN0C
EXP_A_TXP1	C72	0.1U/6Y/25V	EXP_A_TXP1C
EXP_A_TXN1	C73	0.1U/6Y/25V	EXP_A_TXN1C
EXP_A_TXP2	C74	0.1U/6Y/25V	EXP_A_TXP2C
EXP_A_TXN2	C75	0.1U/6Y/25V	EXP_A_TXN2C
EXP_A_TXP3	C76	0.1U/6Y/25V	EXP_A_TXP3C
EXP_A_TXN3	C77	0.1U/6Y/25V	EXP_A_TXN3C
EXP_A_TXP4	C78	0.1U/6Y/25V	EXP_A_TXP4C
EXP_A_TXN4	C79	0.1U/6Y/25V	EXP_A_TXN4C
EXP_A_TXP5	C80	0.1U/6Y/25V	EXP_A_TXP5C
EXP_A_TXN5	C81	0.1U/6Y/25V	EXP_A_TXN5C
EXP_A_TXP6	C82	0.1U/6Y/25V	EXP_A_TXP6C
EXP_A_TXN6	C83	0.1U/6Y/25V	EXP_A_TXN6C
EXP_A_TXP7	C84	0.1U/6Y/25V	EXP_A_TXP7C
EXP_A_TXN7	C85	0.1U/6Y/25V	EXP_A_TXN7C
EXP_A_TXP8	C86	0.1U/6Y/25V	EXP_A_TXP8C
EXP_A_TXN8	C87	0.1U/6Y/25V	EXP_A_TXN8C
EXP_A_TXP9	C88	0.1U/6Y/25V	EXP_A_TXP9C
EXP_A_TXN9	C89	0.1U/6Y/25V	EXP_A_TXN9C
EXP_A_TXP10	C90	0.1U/6Y/25V	EXP_A_TXP10C
EXP_A_TXN10	C91	0.1U/6Y/25V	EXP_A_TXN10C
EXP_A_TXP11	C92	0.1U/6Y/25V	EXP_A_TXP11C
EXP_A_TXN11	C93	0.1U/6Y/25V	EXP_A_TXN11C
EXP_A_TXP12	C94	0.1U/6Y/25V	EXP_A_TXP12C
EXP_A_TXN12	C95	0.1U/6Y/25V	EXP_A_TXN12C
EXP_A_TXP13	C96	0.1U/6Y/25V	EXP_A_TXP13C
EXP_A_TXN13	C97	0.1U/6Y/25V	EXP_A_TXN13C
EXP_A_TXP14	C98	0.1U/6Y/25V	EXP_A_TXP14C
EXP_A_TXN14	C99	0.1U/6Y/25V	EXP_A_TXN14C
EXP_A_TXP15	C100	0.1U/6Y/25V	EXP_A_TXP15C
EXP_A_TXN15	C101	0.1U/6Y/25V	EXP_A_TXN15C



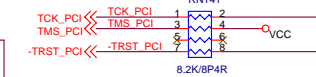
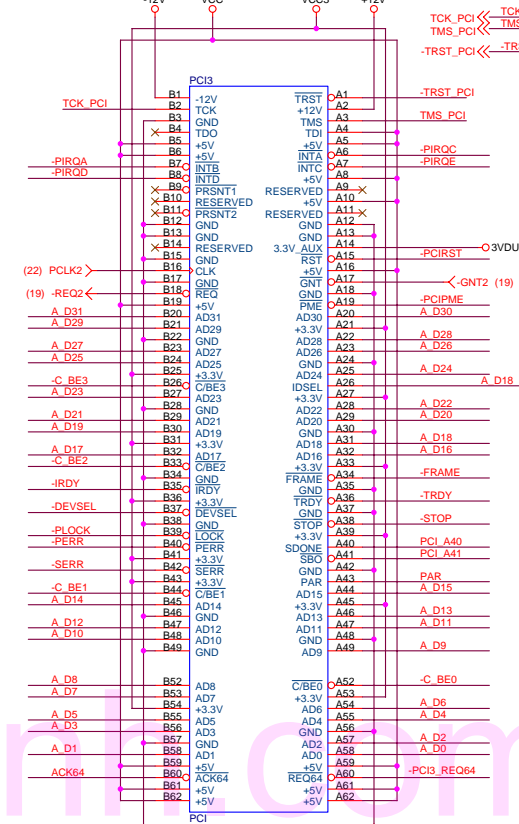
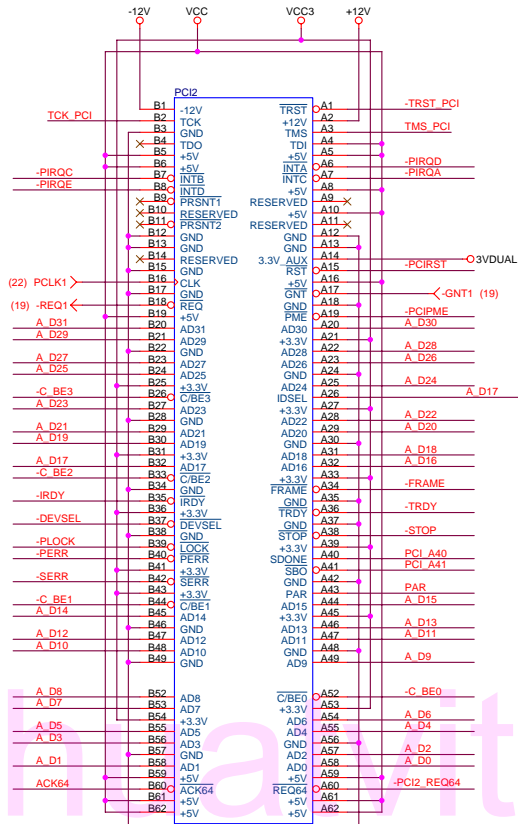








AD16 / -PIRQ(E-D-C-A) / -REQ0 / -GNT0

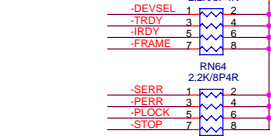
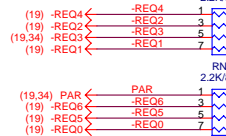


(19,34) A_D0..311

-PCIRST (19)

C180
33P4/N/50V/X

Place close to PCI1



VCC
EC68
1000U/D/6.3V/8C/X

GIGABYTE

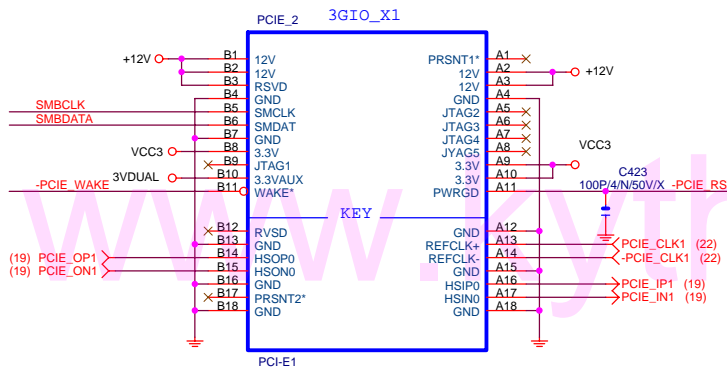
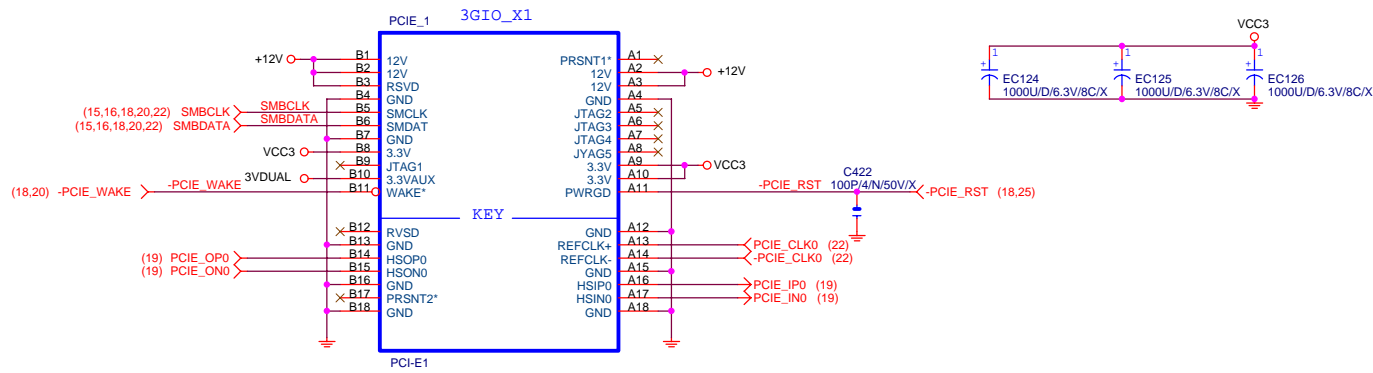
PCI SLOT

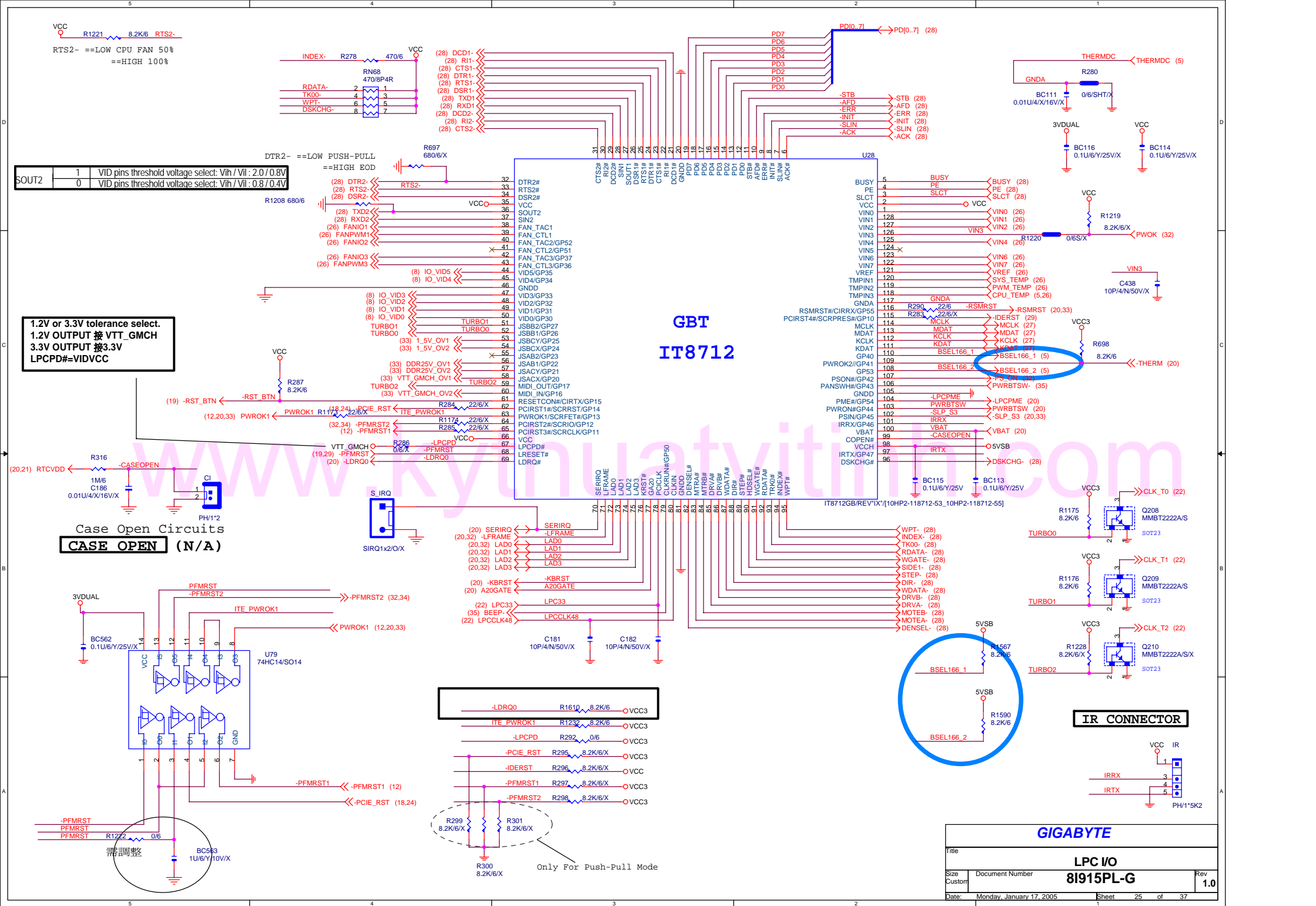
8I915PL-G

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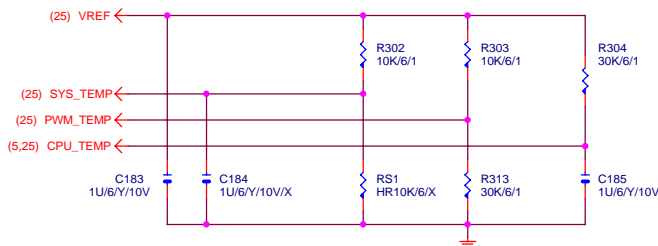
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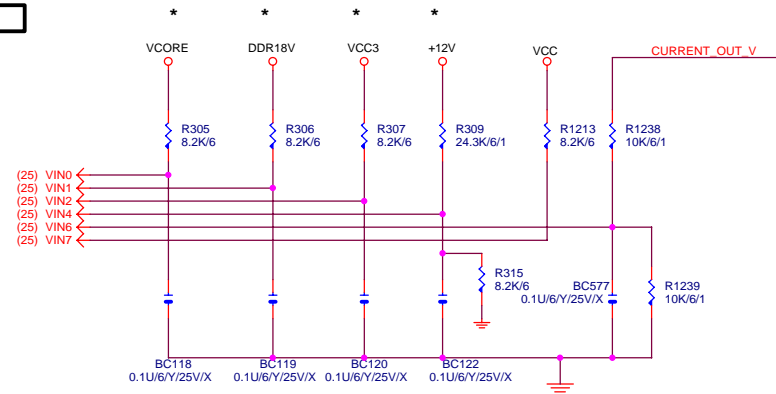




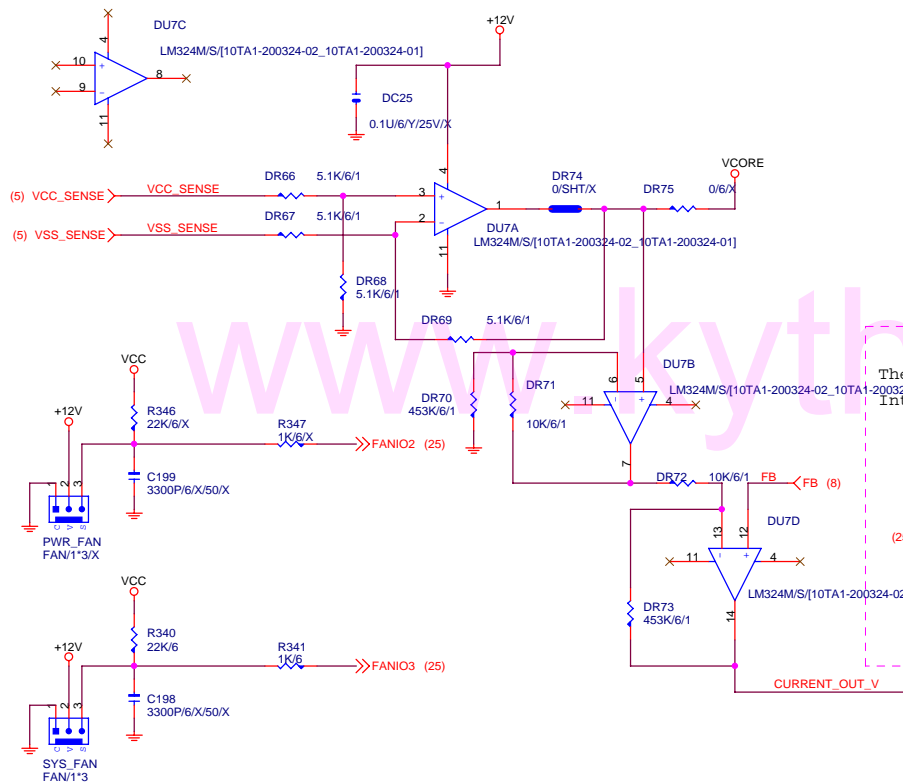
TEMP. SENSE



VOLTAGE SENSE



DUAL POWER



CPU/SYS FAN

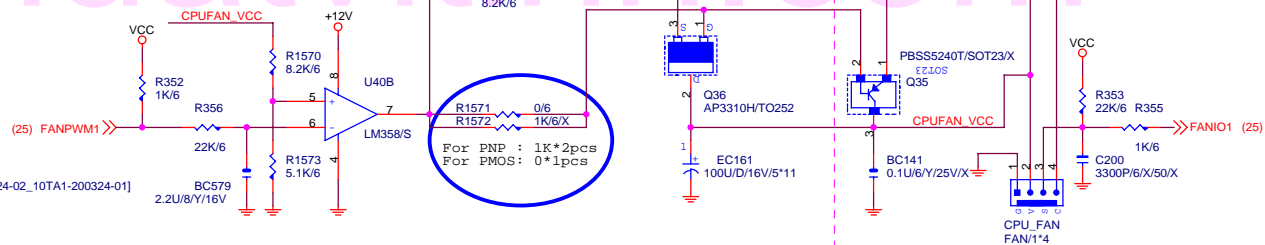
If use PBSS5240 lpcs : (non airflow)

CPUFAN_VCC=12V: Temp=40 deg
 CPUFAN_VCC=11V: Temp=82 deg
 CPUFAN_VCC=10V: Temp=70 deg
 CPUFAN_VCC= 9V: Temp=110 deg
 CPUFAN_VCC= 8V: Temp>200 deg

If use PBSS5240 lpcs : (with airflow)

CPUFAN_VCC=12V: Temp=33 deg
 CPUFAN_VCC=11V: Temp=62 deg
 CPUFAN_VCC=10V: Temp=86 deg
 CPUFAN_VCC= 9V: Temp=117 deg
 CPUFAN_VCC= 8V: Temp>122 deg

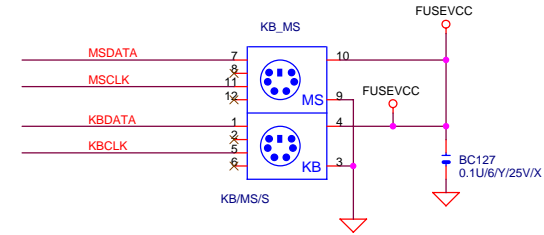
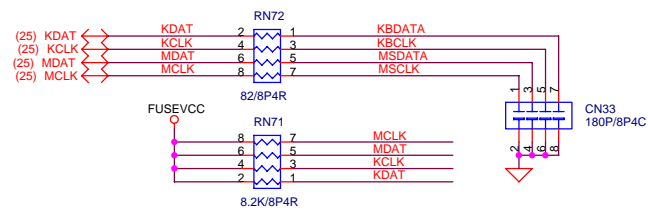
ThermalTake FAN Power Consumption: 0.82A
 Intel FAN Power Consumption Spec: 1.1A



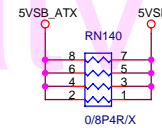
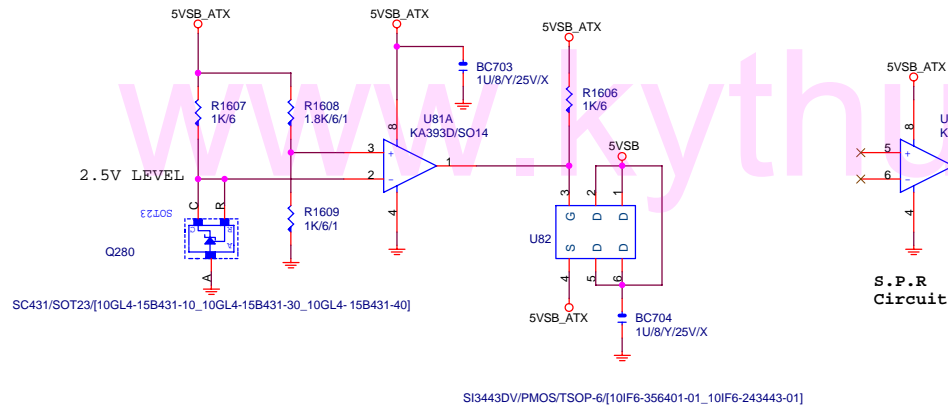
GIGABYTE

Title		
HWM/FAN/C/BIOS		
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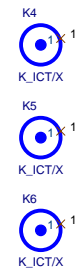
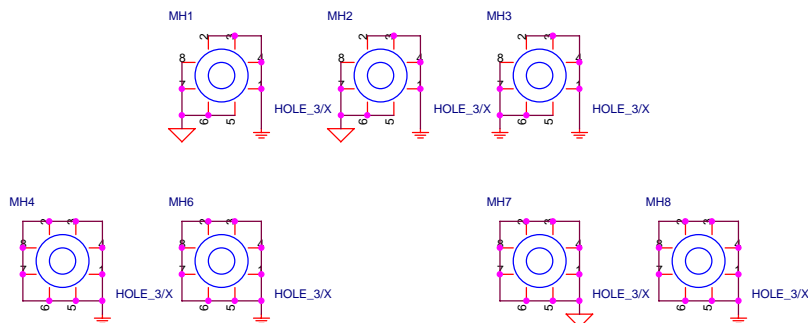
KB/MS



S.P.P.

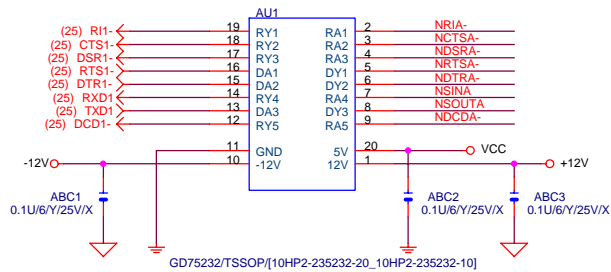


S.P.P.
Circuit

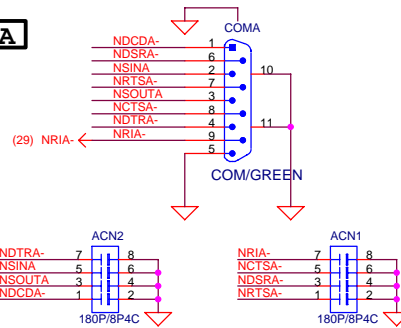


GIGABYTE		
Title		
PS/2 KB & MS		
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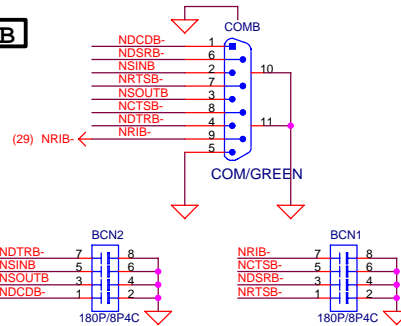
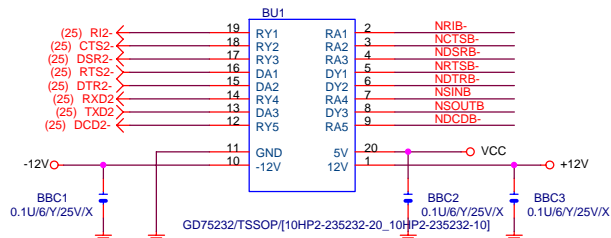
COMA / COMB



COMA

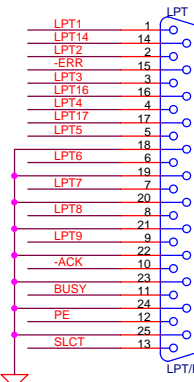
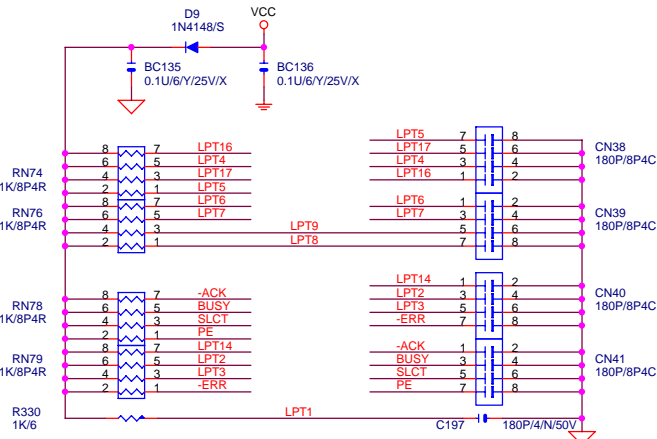
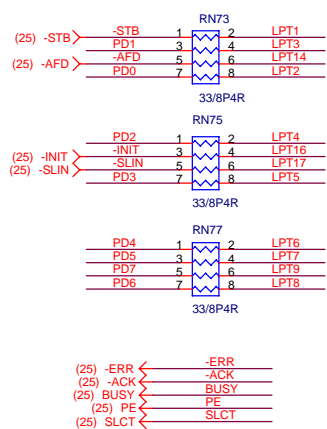


COMB

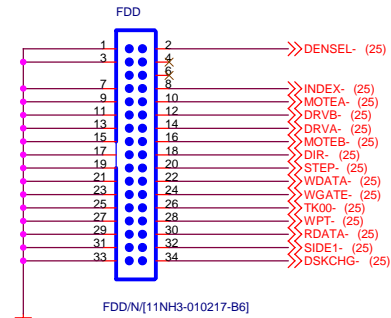


LPT

(25) PD[0..7] PD[0..7]



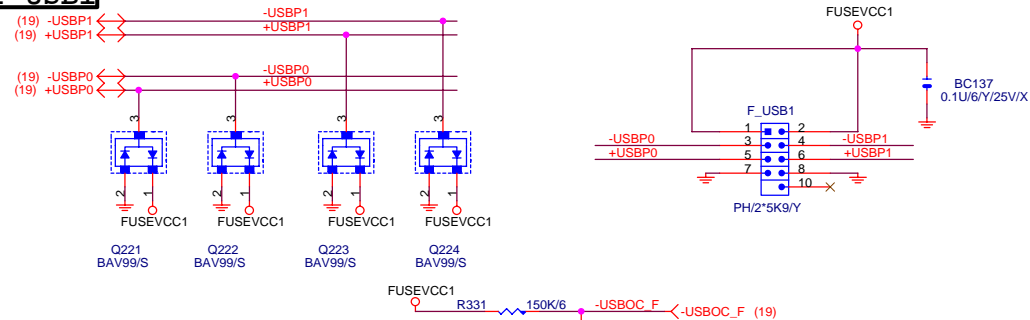
FLOPPY



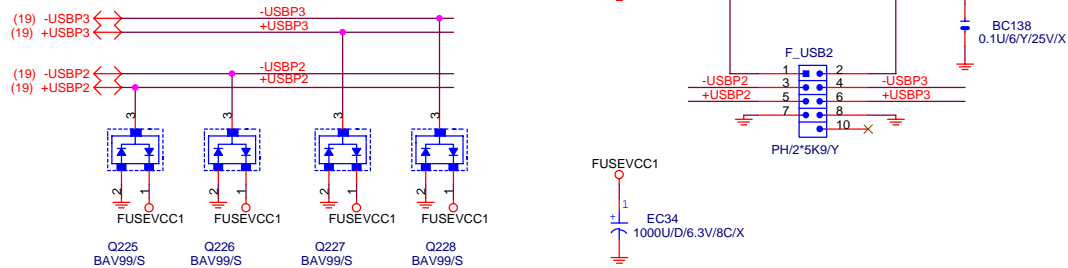
GIGABYTE

Title		
COM, LPT, FDD		
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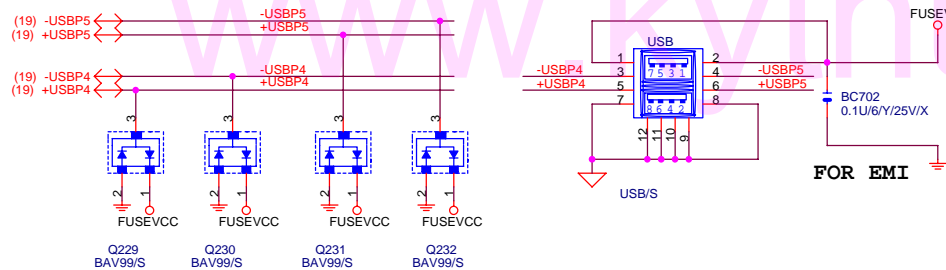
FRONT USB1



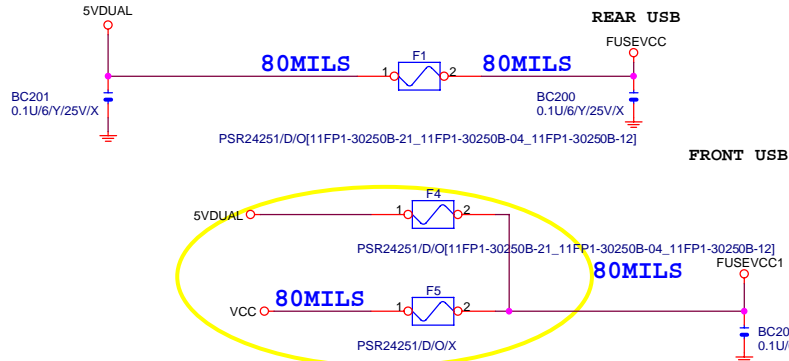
FRONT USB2



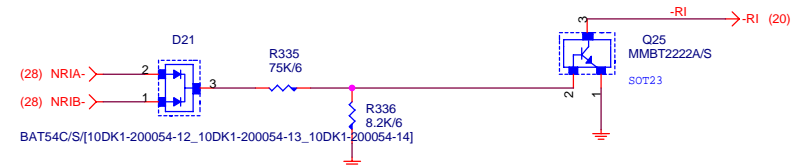
FUSEVCC, GAMEVCC



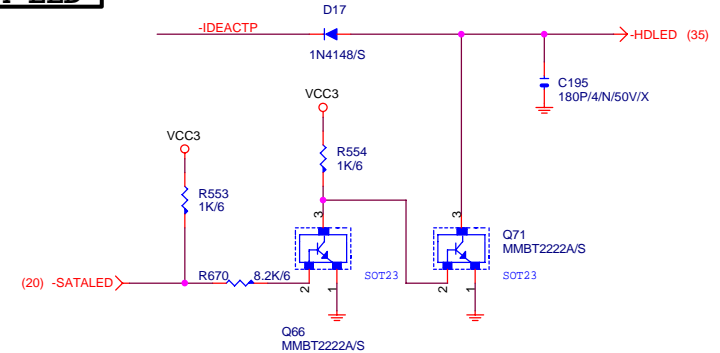
160MILS



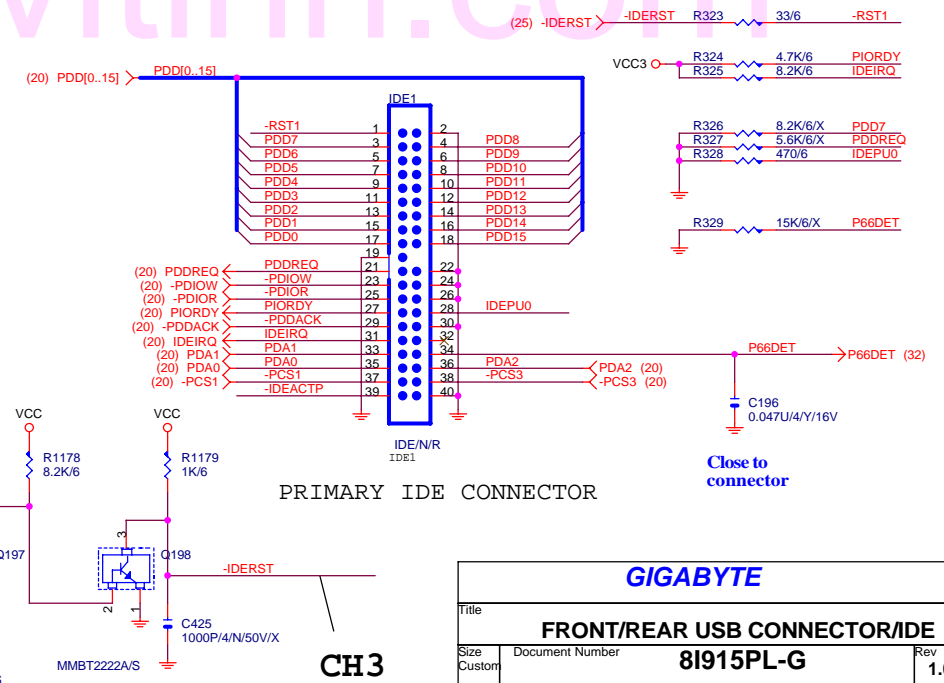
RING IN



IDE/SATA LED



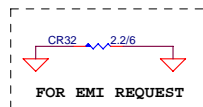
IDE



GIGABYTE			
Title			
FRONT/REAR USB CONNECTOR/IDE			
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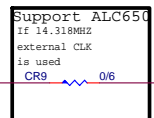
Filter Cap design:

	Pin-29	Pin-30	Pin-31	Pin-32
ALC655 Rev D	1000pf	1000pf	1uf	Front-MIC2
ALC655 Rev C	1000pf	1000pf	1uf	X
ALC658	X	X	JD4	X
ALC650	1000pf	1000pf	1uf	1uf
ALC850	1000pf	1000pf	JD4	Front-MIC2



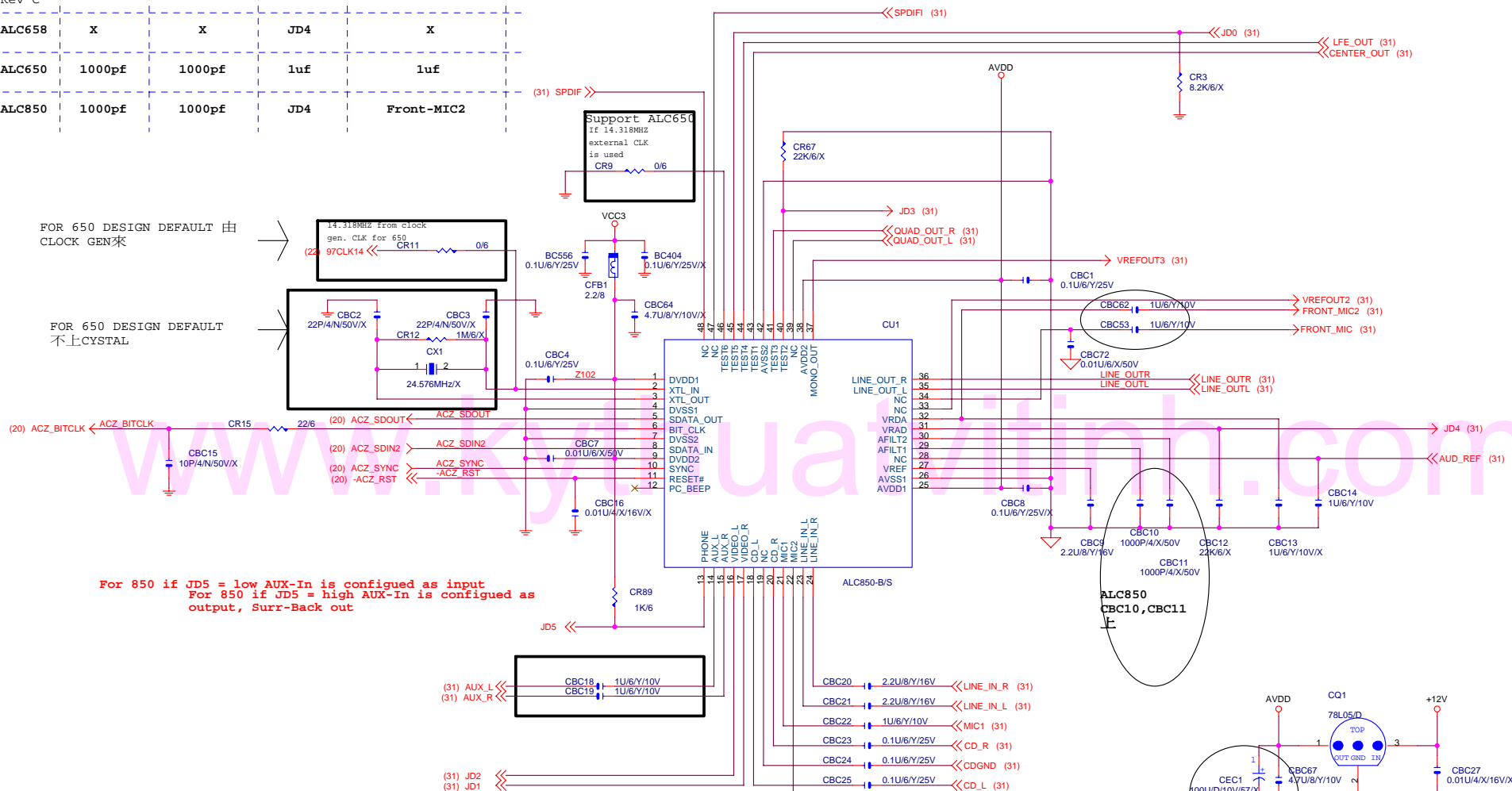
BETWEEN AUDIO1 & USB_LAN IN COMPONENT SIDE

(31) SPDIF >>

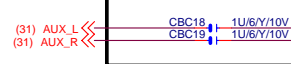


FOR 650 DESIGN DEFAULT 由
CLOCK GEN來

FOR 650 DESIGN DEFAULT
不上CRYSTAL



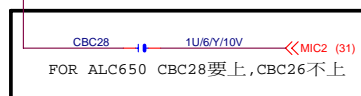
For 850 if JD5 = low AUX-In is configured as input
For 850 if JD5 = high AUX-In is configured as
output, Surr-Back out



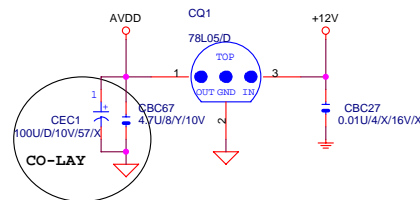
(31) JD2
(31) JD1

Arrangement of Jack detection Pin:

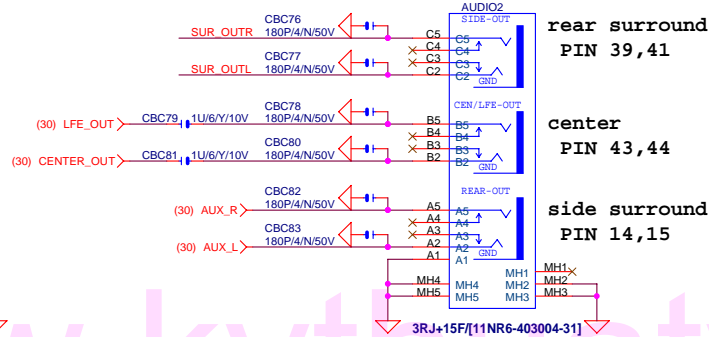
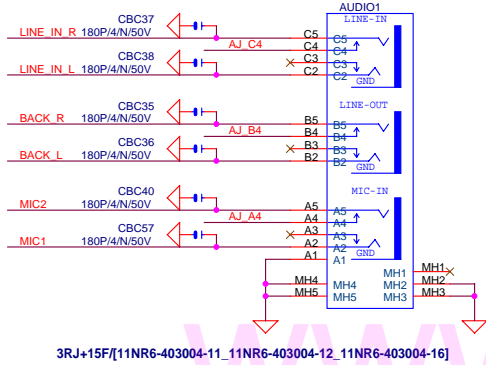
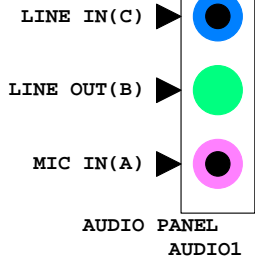
	Pin-45(JD0)	Pin-17(JD1)	Pin-16(JD2)	Pin-40(JD3)	Pin-31(JD4)	Pin-13(JD5)
ALC655	for MIC-IN	for FRONT-OUT	for LINE-IN			
ALC658	for MIC-IN	for UAJ1	for UAJ2	for FRONT-OUT External pull high is needed	for LINE-IN External pull high is needed	
ALC850	for MIC-IN	for Front Pannel OUT	for Front Pannel IN	for FRONT-OUT	for LINE-IN	for SurrBack Out



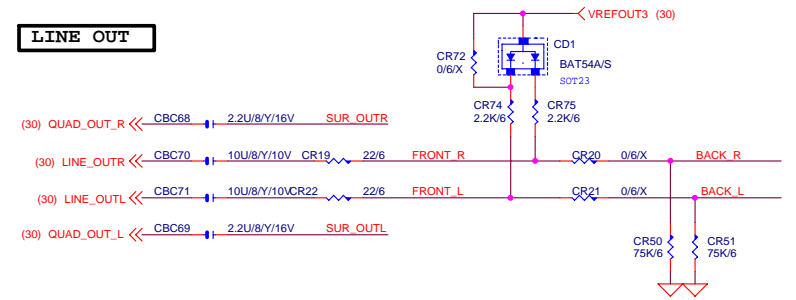
For 850 if JD5 = low AUX-In is configured as input
For 850 if JD5 = high AUX-In is configured as
output, Surr-Back out



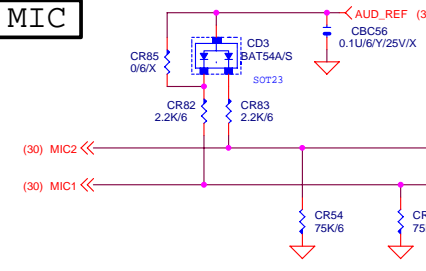
GIGABYTE CORP.			
Title			
ALC850			
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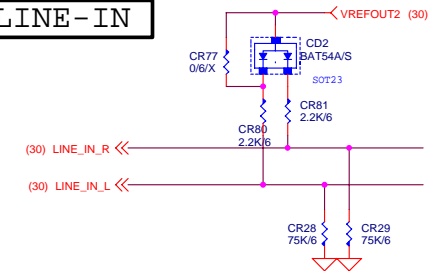
LINE OUT



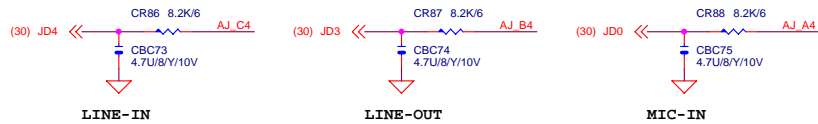
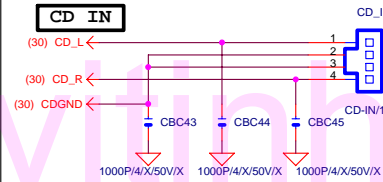
MIC



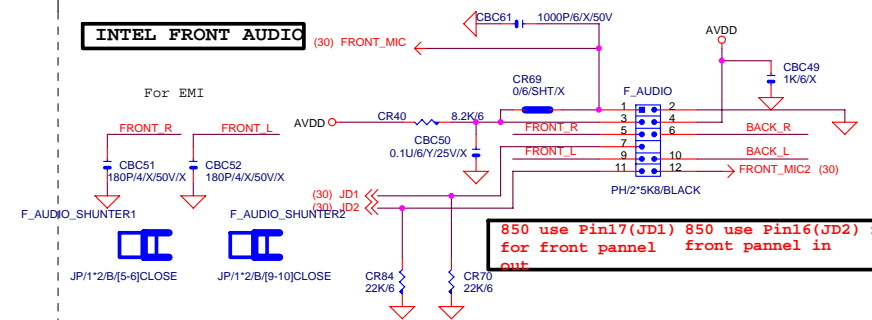
LINE-IN



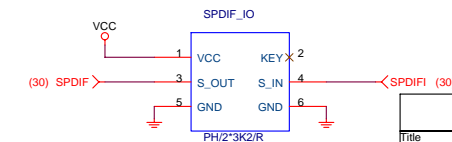
CD IN



INTEL FRONT AUDIO



SPDIF_IO



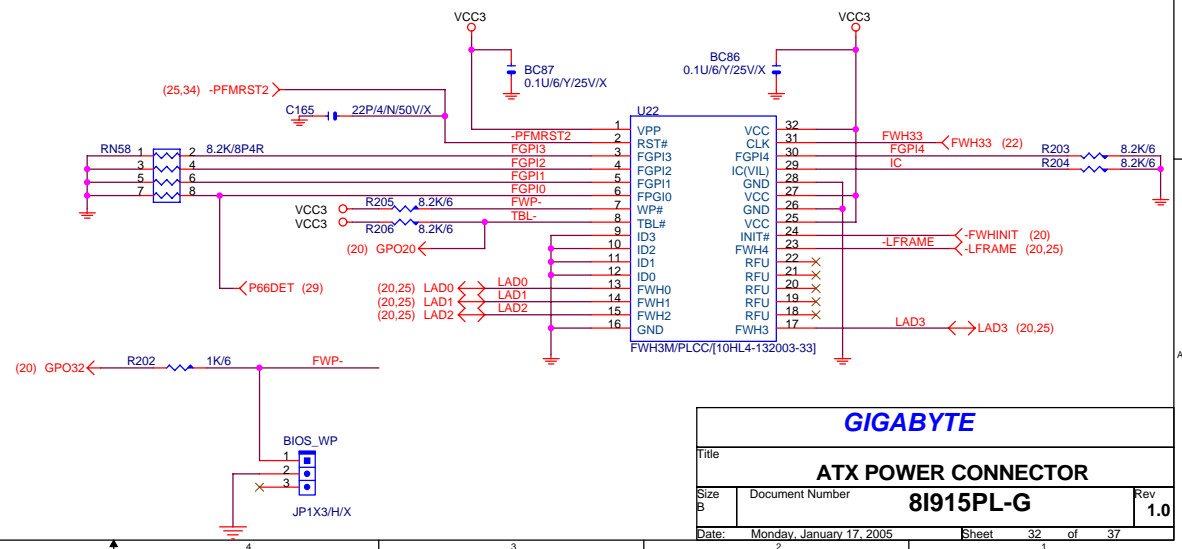
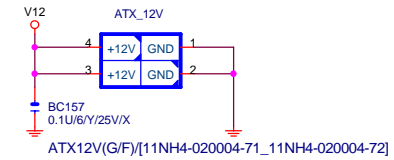
GIGABYTE CORP.

AUDIO OUTPUT, GAME PORT

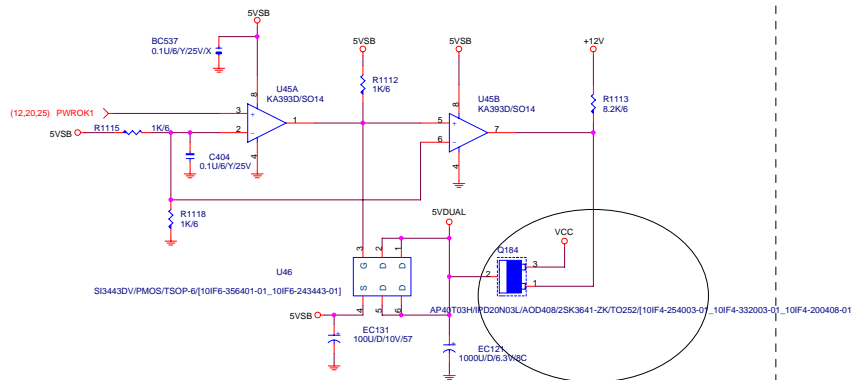
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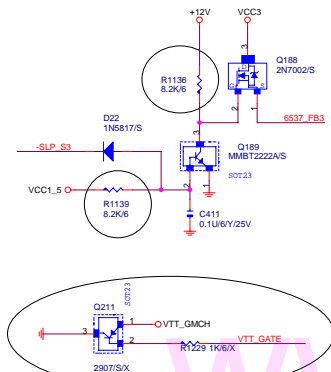
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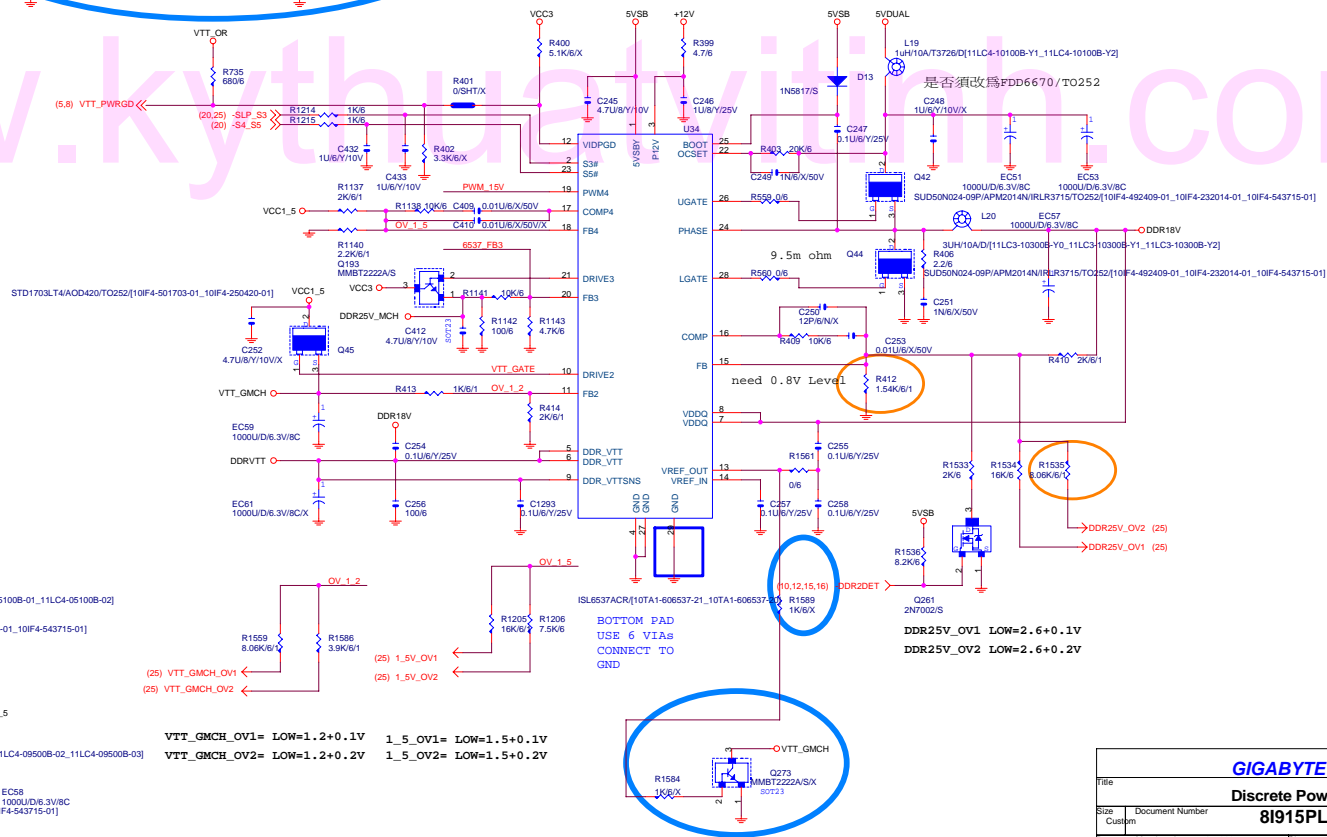
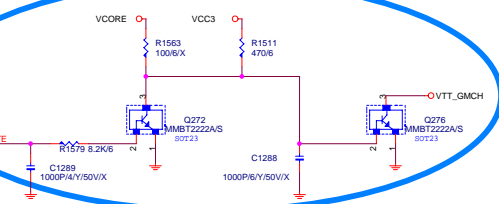
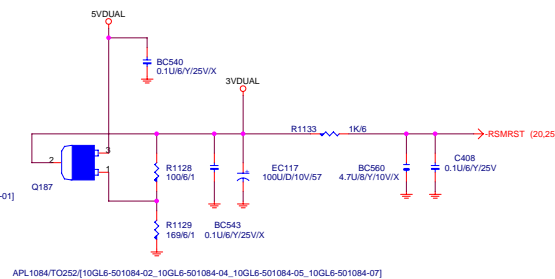
5VDUAL CIRCUIT



DDR25V/VCC1_5/VTT_GMCH/DDRVT



3VDUAL CIRCUIT



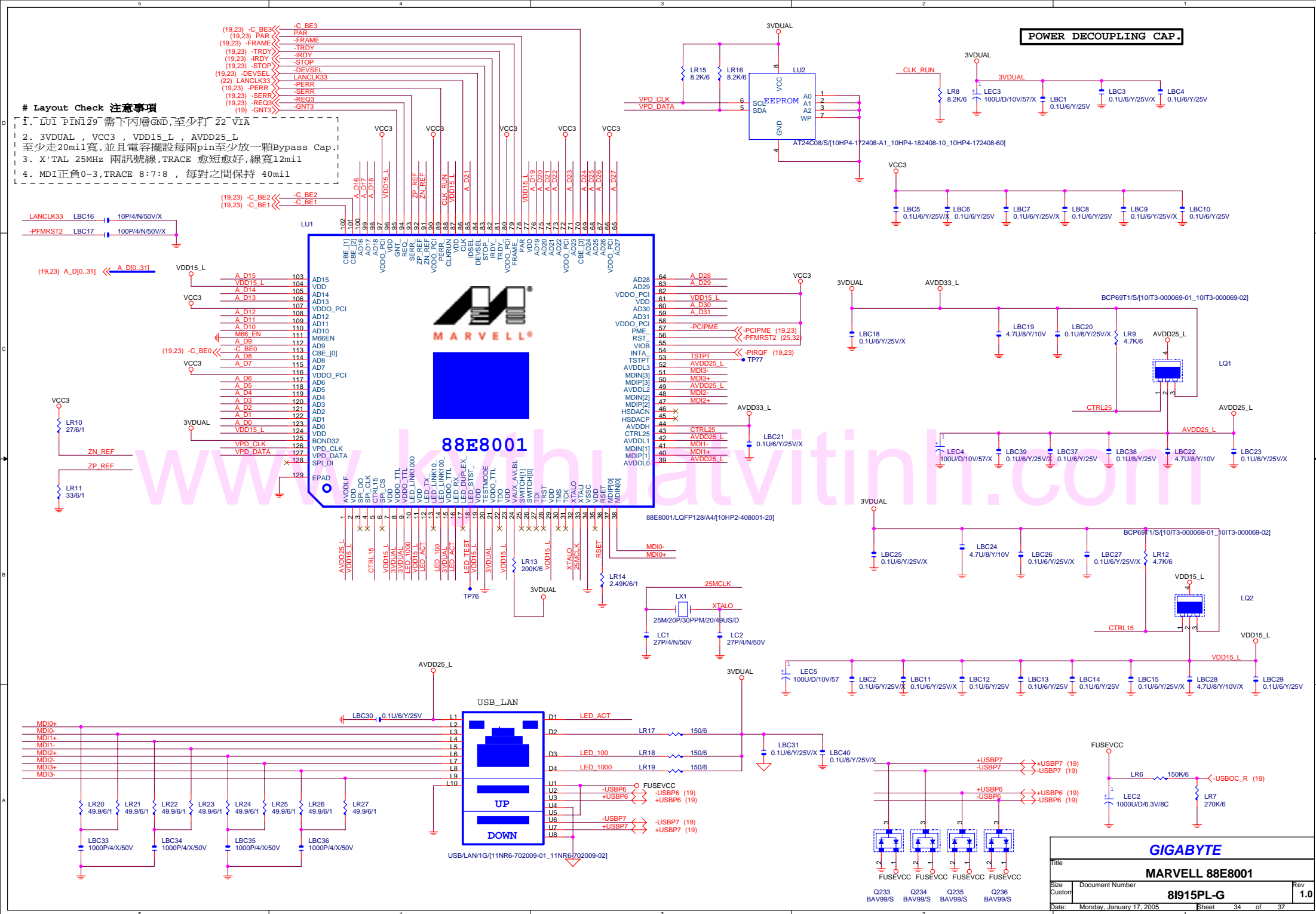
DDR25V_OV1 LOW=2.6+0.1V
DDR25V_OV2 LOW=2.6+0.2V

GIGABYTE

Discrete Power

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紅字表示CPI/O 同PIN

GPO PIN

[illegible]

GPIO TABLE

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ICH6 GPIO Table:

NAME	PWR LANE	USAGE	NAME	PWR LANE	USAGE
GPI0	V5REF	M/B ID (-REQ6)	GPI41	VCC3	M/B ID
GPI1	V5REF	-REQ5	GPO48	VCC3	-GNT4
GPI2	V5REF	-PIRQE	GPO49	V-CPUIO	CPUPWOK
GPI3	V5REF	-PIRQF			
GPI4	V5REF	-PIRQG			
GPI5	V5REF	-PIRQH			
GPI6	VCC3	-SLP_BTN			
GPI7	VCC3	DUAL BIOS			
GPI8	3VDAUL	-LANWAKE			
GPI9	3VDAUL	-USBOC4			
GPI10	3VDAUL	-USBOC5			
GPI11	3VDAUL	-SMBALT			
GPI12	VCC3	ATX DET			
GPI13	3VDAUL	-LPCPME			
GPI14	3VDAUL	-USBOC6			
GPI15	3VDAUL	-USBOC7			
GPO16	VCC3	CPU OV1 (-GNT6)			
GPO17	VCC3	-GNT5			
GPO18	VCC3	CPU OV2			
GPO19	VCC3	DUAL BIOS			
GPO20	VCC3	BIOS T-BLOCK			
GPO21	VCC3	DUAL BIOS			
GPO23	VCC3	DDR OV0			
GPI024	3VDAUL	GREEN_LED			
GPI025	3VDAUL	DDR OV1			
GPI26	VCC3	SATA_GP0			
GPI027	3VDAUL	+PWRLED			
GPI028	3VDAUL	-PWRLED			
GPI29	VCC3	SATA_GP1			
GPI30	VCC3	SATA_GP2			
GPI31	VCC3	SATA_GP3			
GPI032	VCC3	BIOS_WP			
GPI033	VCC3	AZALIA_DET			
GPI034	VCC3	M/B ID			
GPI40	V5REF	-REQ4			

PWROK/RESET Table:

ITE8712BHX PIN	NET NAME	TARGET
PIN62/-PCIRST1	-PCIE_RST	1. PCI-E * 1 Slot1 2. PCI-E * 1 Slot2 3. PCI-E * 1 Slot3 4. PCI-E * 16 Slot
PIN64/-PCIRST2	-PFMRST2	1. Onboard PCI Lan 2. Onboard 1394 Chip 3. OnBoard FWH
PIN65/-PCIRST3	-PFMRST1	1. Onboard PCI-E Lan 2. Onboard SATA Chip 3. GMCH
PIN115/-PCIRST4	-PFMRST_IDERST	Reserved For IDE
PIN63/PWROK1	PWROK1	1. GMCH 2. ICH6 3. 5VDUAL SWITCH 4. DPS CONTROL
PIN109/PWROK2	-THERM	1. ICH6

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