

Model Name: 8I915P DUO PRO REV1.4

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		
Cover Sheet		
Title	8I915P DUO PRO	
Size	Document Number	Rev
Custom		1.4
Date:	Thursday, April 07, 2005	Sheet 1 of 41

BLOCK DIAGRAM

**INTEL Pentium4
LGA775**

VCCORE = 1.75V / SLEEP: 1.3V
VCC3

PAGE 4, 5, 6, 7

PWM/OTHER POWER

VCCORE = 1.75V (60-110MHZ) / SLEEP: 1.3V
5VSB=12V,+12V,VCC,VCC3,DUAL
VTT_DDR2_5VSTR

PAGE 8, 34, 35

CHANNEL A
DDRII DIMM X 1
DDRI DIMM X 1

2_5VSTR = 2.5V(MEMORY,SUSPEND POWER)
VTT_DDR = 1.25V

PAGE 15, 17

CHANNEL B
DDRII DIMM X 1
DDRI DIMM X 1

2_5VSTR = 2.5V(MEMORY,SUSPEND POWER)
VTT_DDR = 1.25V

PAGE 16, 17

**GMCH
GRANTS DALE**

VCCORE = 1.75V / SLEEP: 1.3V
2_5VSTR = 2.5V(MEMORY)
VDDQ = 1.5V (AGP POWER 4X, HUBLINK)

PAGE 9, 10, 11, 12, 13, 14

MAA0-14
MAA_CPC1-5
MAB_CPC1-5
MDD0-63
-DQSD0-7
DM0-7

GAD0-31
ADSTB0, ADSTB0-
ADSTB1, ADSTB1-
SBA0-7
SBSTB, SBSTB-
GCBE0-3-
ST0-2

CLOCK GENERATOR

CKVDD = 3.3V

PAGE 22

**PCI EXPRESS
BY 16 PORTS**

VCC3 = 1.5V (ASP POWER IN)
VCC3 = 3.3V
+12V = 12V
3VDUAL = 3.3V
VCC = 5V

PAGE 18

USB PORTS 0~7

VCC = 5V
5VSB = 5V
5VUSB = 5V

PAGE 29

ICH6

VCC25 = 2.5V(I/O, MEMORY, VLINK)
3VDUAL = 3.3V(SUSPEND POWER)
VCC3 = 3.3V
RTCVDD = 3.3V

PAGE 19, 20, 21

HLO-10
CONTROL BUS HUB LINK

IDE Primary

VCC = 5V

PAGE 29

SERIAL ATA

VCC = 5V

PAGE 20

**AC97/Azalia
ALC880/CMI9880**

+12V = 12V
VCC3 = 3.3V
VCC = 5V
AVDD = 5V

PAGE 30

AZALIA
LINK

**PCI SLOT
PCI EXPRESS SLOT**

+12 = 12V
+12 = 12V
VCC = 5V
VCC3 = 3V
3VDUAL = 3V

PAGE 23, 24

LAN BCM5721/5751

PAGE 32, 33

1394 IT TSB43AB23

PAGE 36

RAID VIA6410

PAGE 38, 39

LPC BUS

FWH/HWMO

VCC = 5V
VCC3 = 3V

PAGE 26

LPC ITE8712HX

VCC = 5V
5VSB = 5V
VBAT = 3V

PAGE 25

I/O PORTS :
COMA COMB LPT PS2 IR FDD

PAGE 27, 28, 29

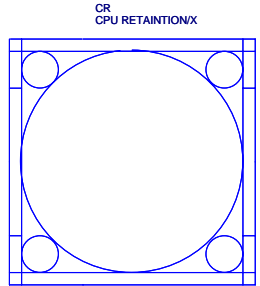
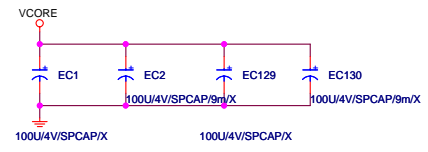
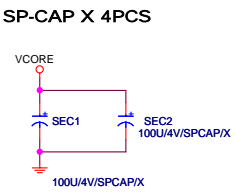
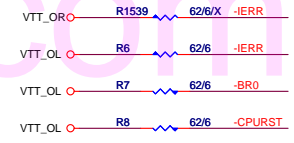
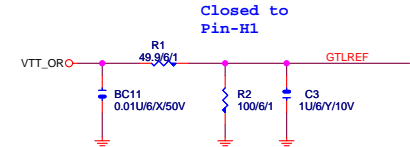
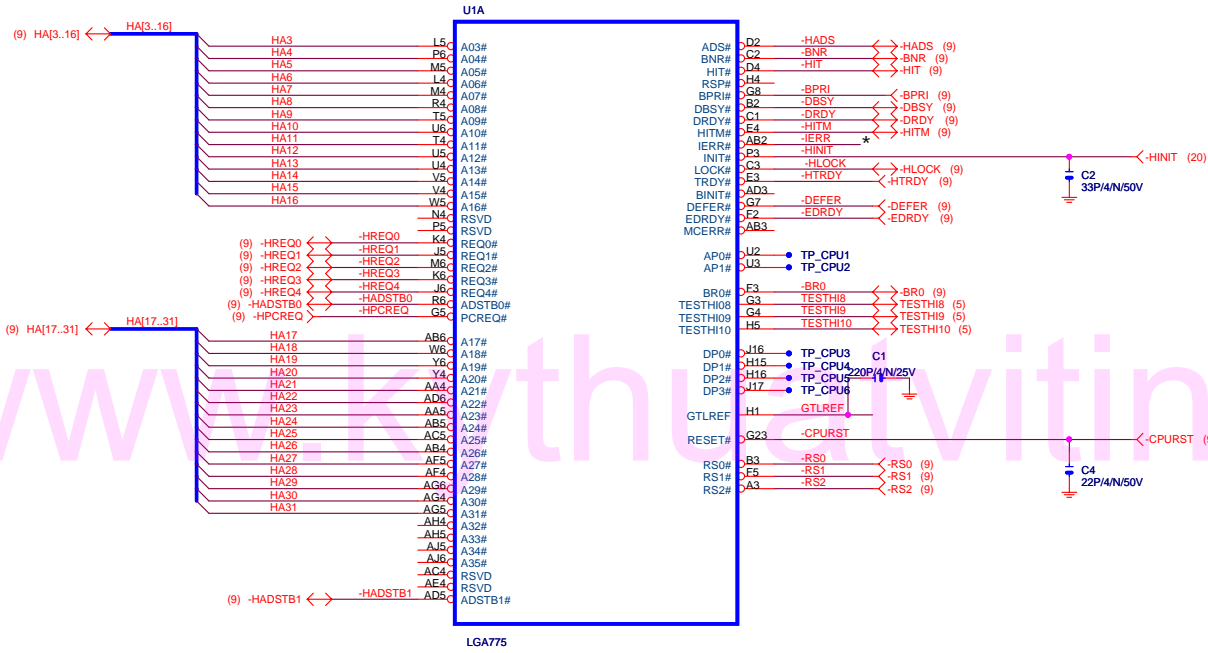
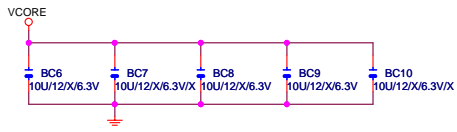
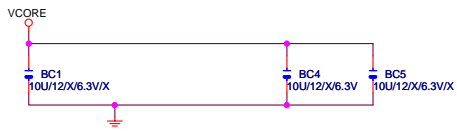
AUDIO PORTS : FRONT AUDIO
LIN_ OUT LINE_IN MIC
TELE CD_IN AUX_IN

PAGE 31

FRONT PANEL/BZ

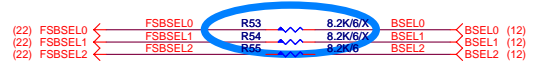
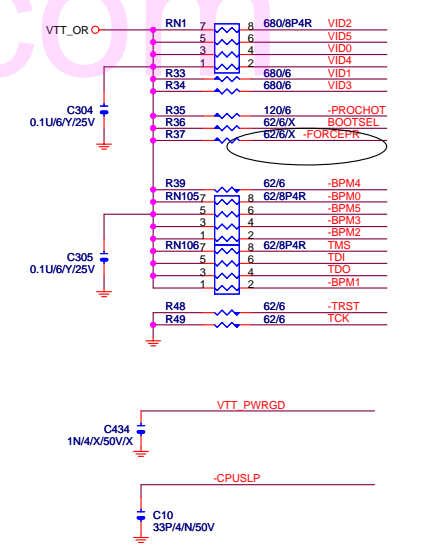
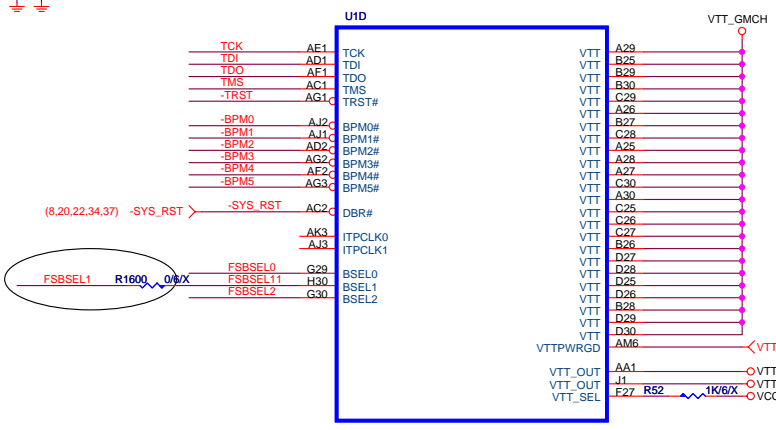
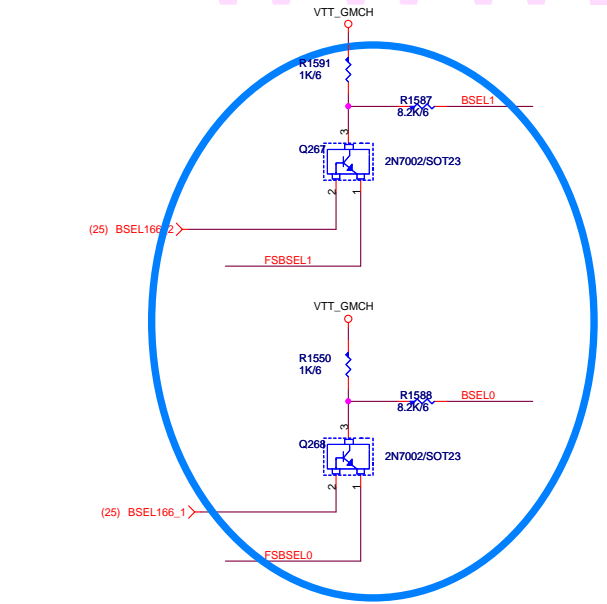
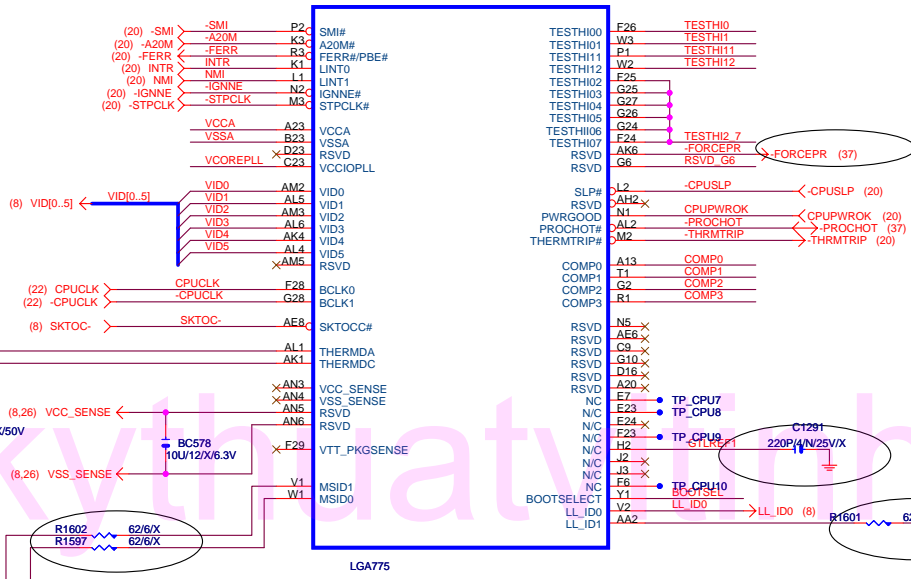
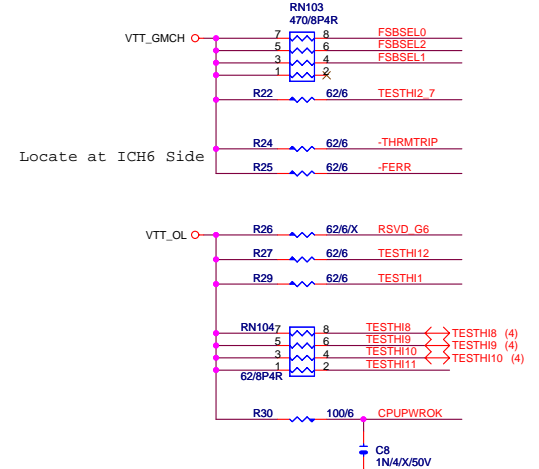
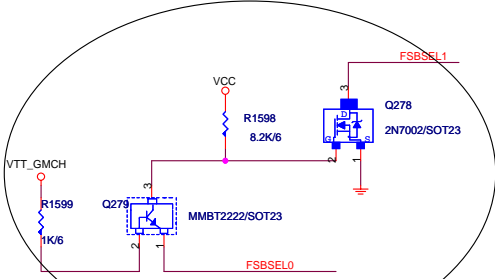
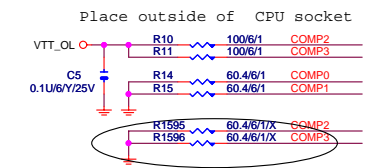
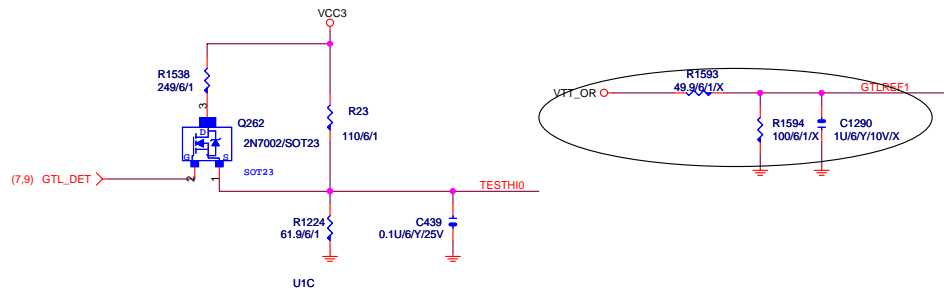
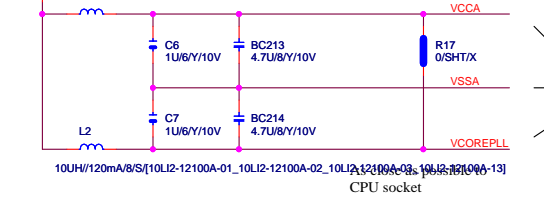
VCC = 5V
5VSB = 5V
+12 = 12V
PVCC = 5V

PAGE 37



GIGABYTE			
Title P4_LGA775-A			
Size Custom	Document Number	8I915P DUO PRO	
Date:	Thursday, April 07, 2005	Sheet	4 of 41
			Rev 1.4

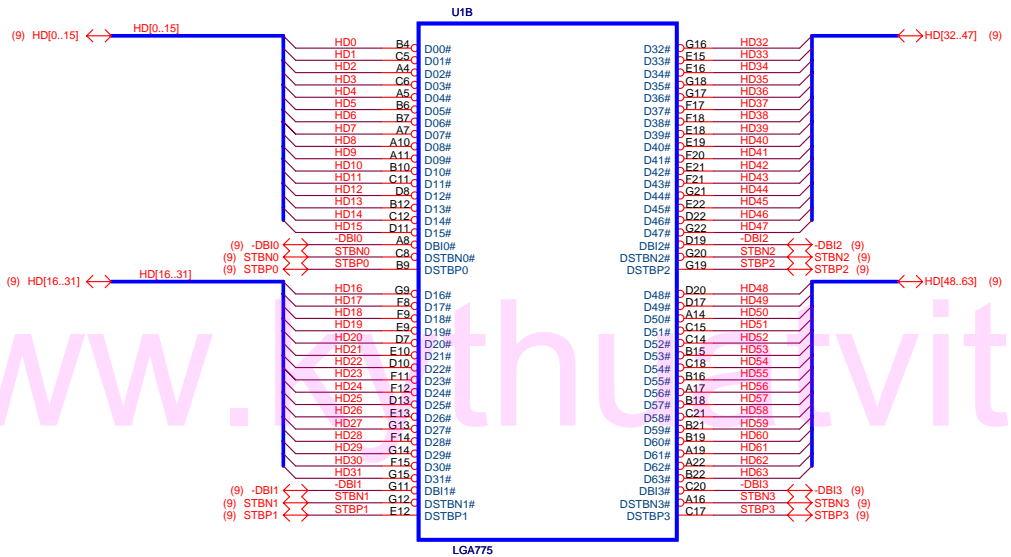
Note:
VCCA & VCOREPLL
define doesn't same as
CPU socket



GIGABYTE

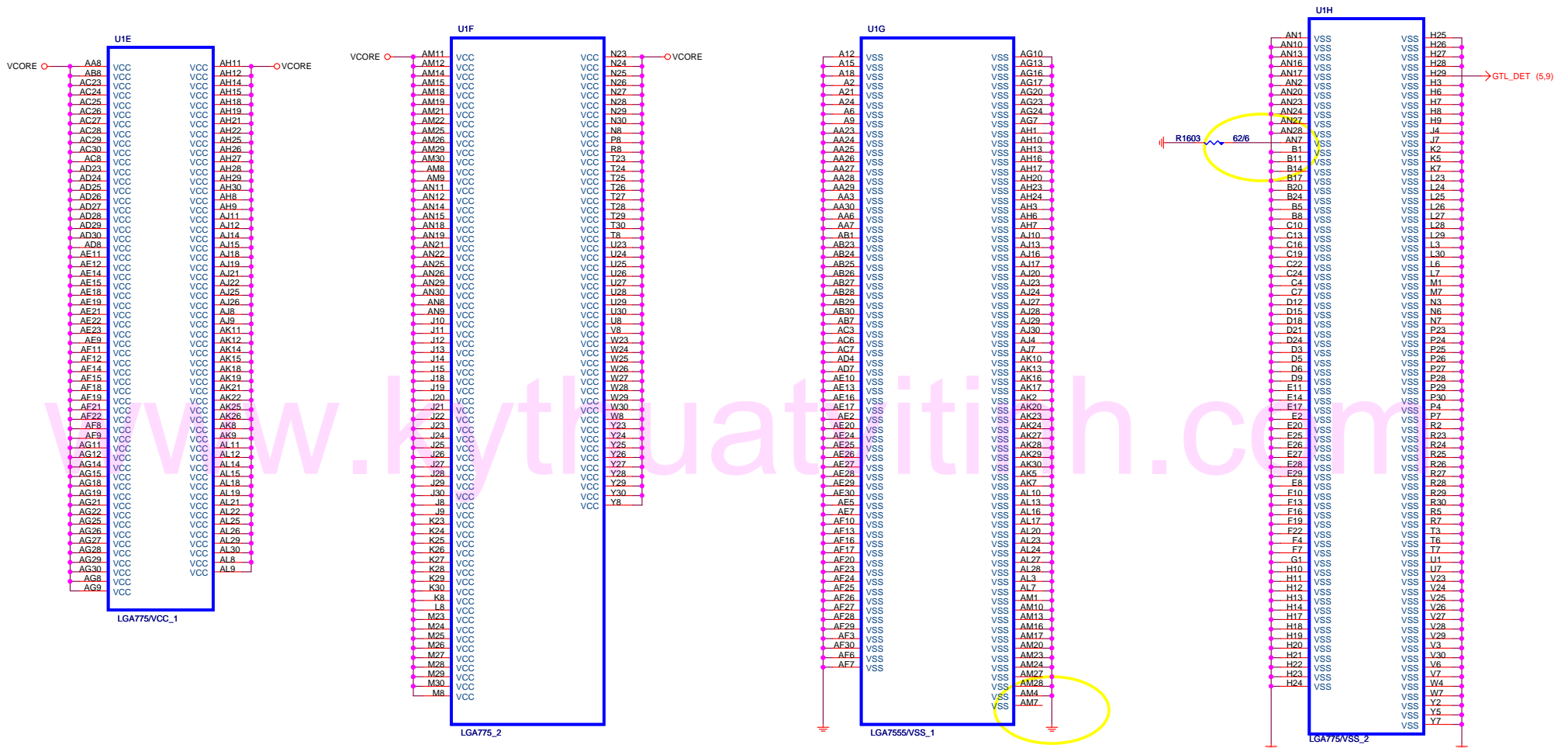
P4_LGA775-B

Title	P4_LGA775-B		
Size Custom	Document Number	8I915P DUO PRO	Rev 1.4
Date:	Thursday, April 07, 2005	Sheet	5 of 41



www.thuvietinh.com

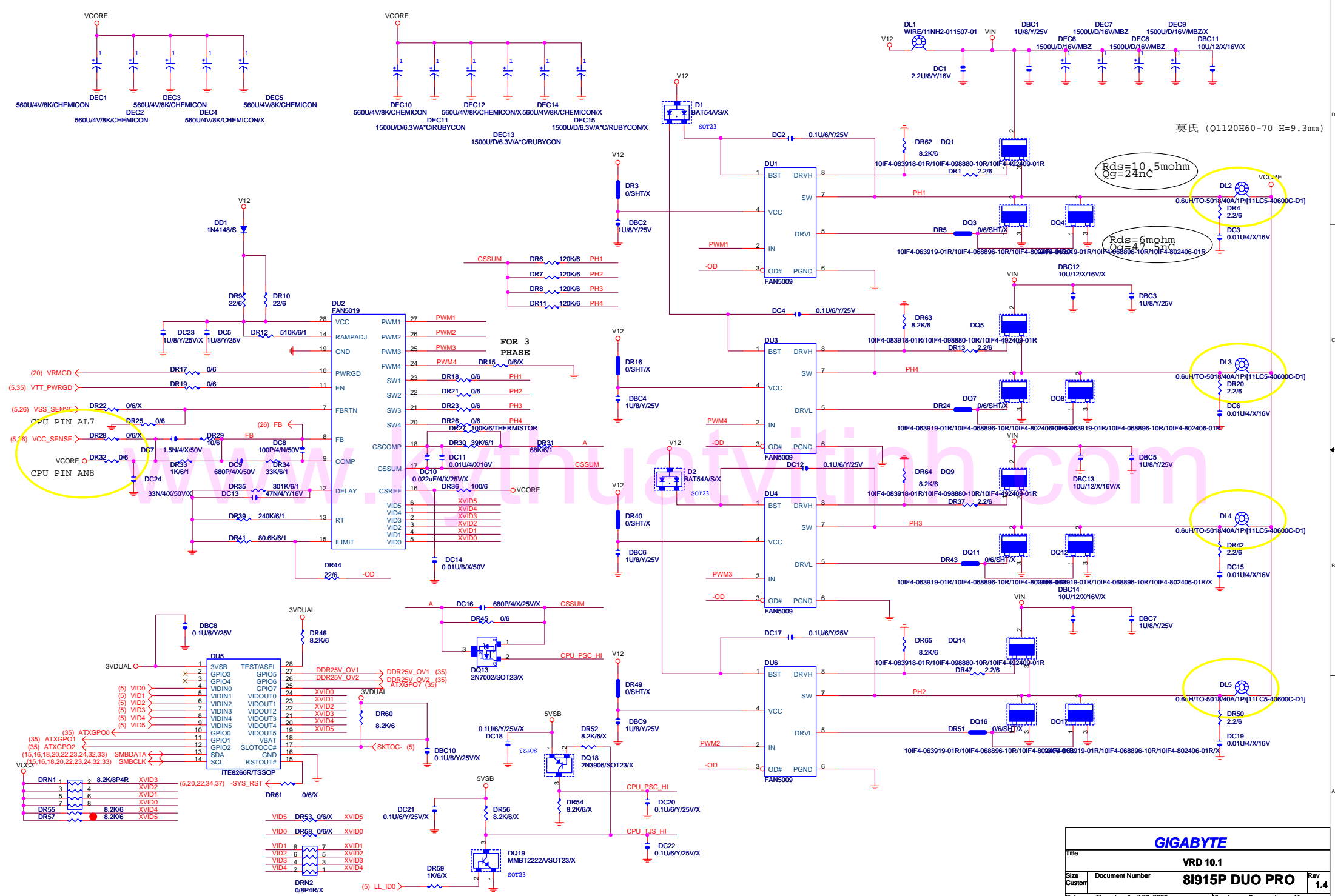
GIGABYTE			
Title P4_LGA775-C			
Size Custom	Document Number	8I915P DUO PRO	Rev 1.4
Date:	Thursday, April 07, 2005	Sheet	6 of 41



→GTL_DET (5,9)

GIGABYTE

GIGABYTE			
Title			
P4_LGA775-D			
Size	Document Number	81915P DUO PRO	Rev
Custom			1.4
Date:	Thursday, April 07, 2005	Sheet	7 of 41

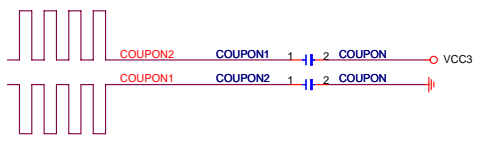
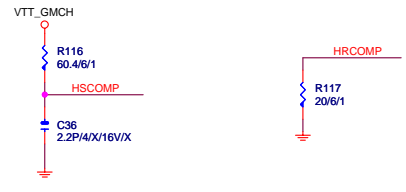
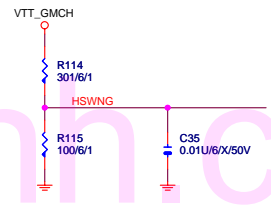
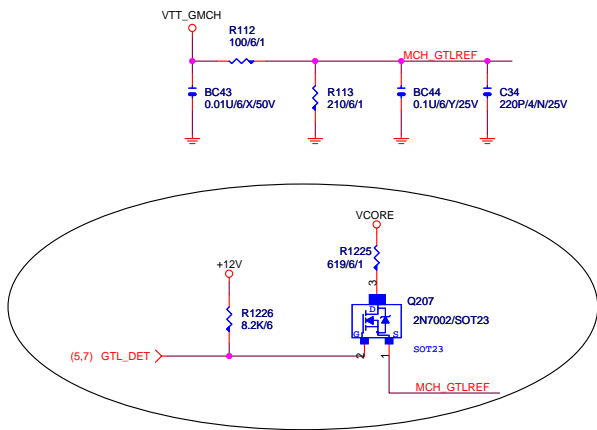
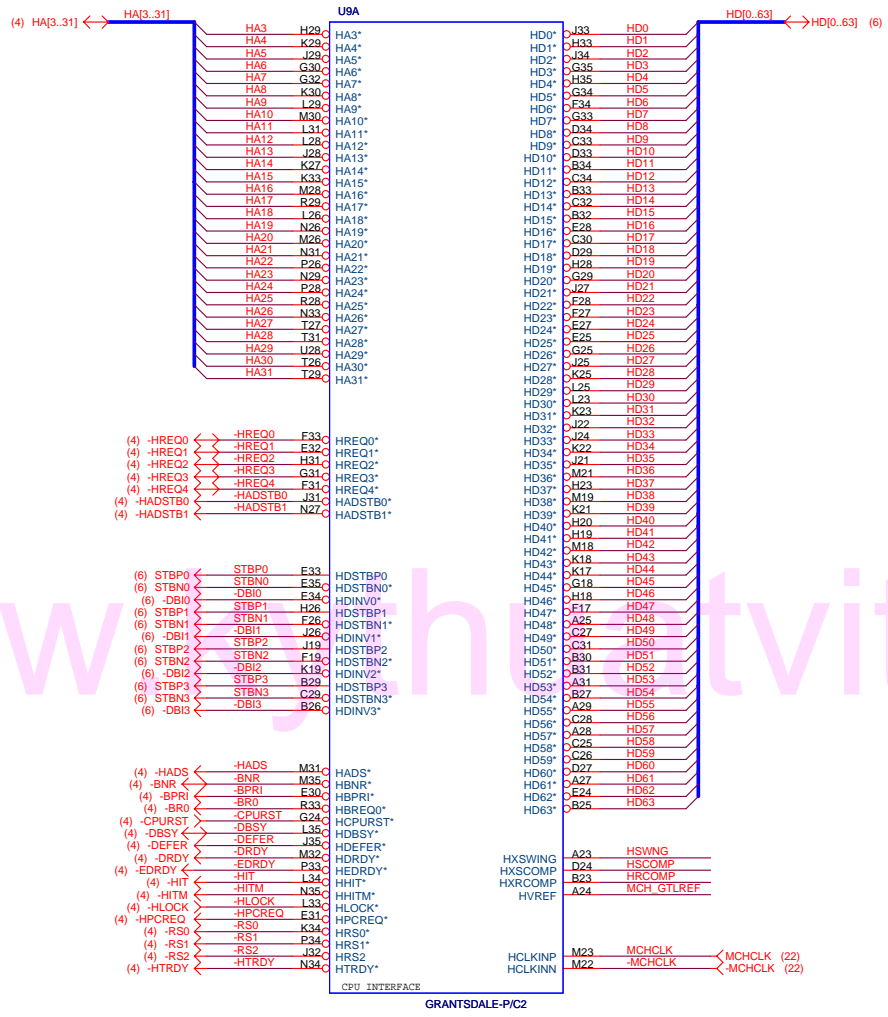


莫氏 (Q1120H60-70 H=9.3mm)

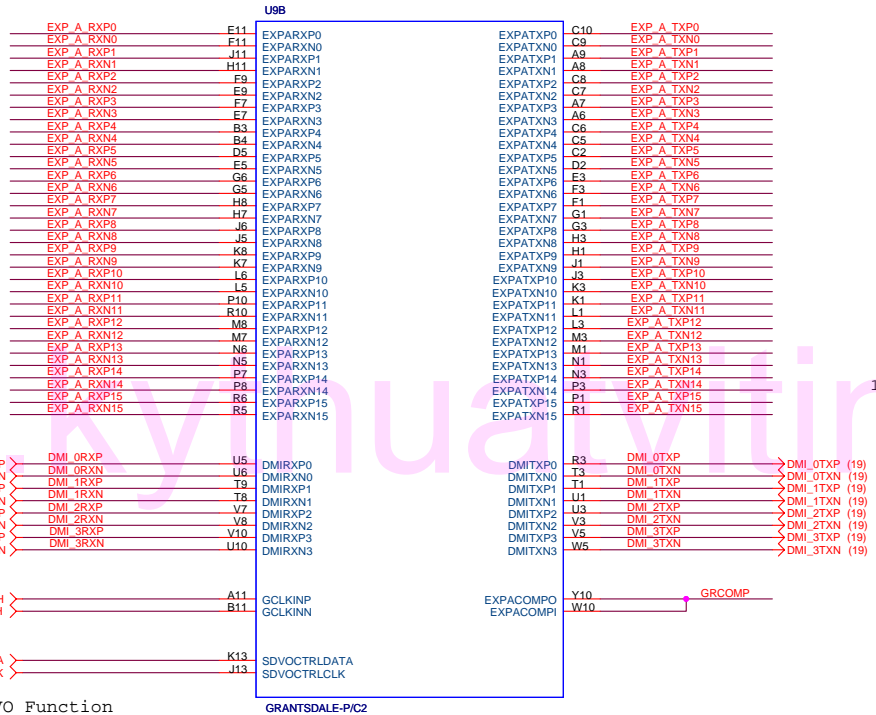
$R_{ds} = 10.5 \text{ m}\Omega$
 $Q_g = 24 \text{ nC}$

$R_{ds} = 6 \text{ m}\Omega$
 $Q_g = 4.5 \text{ nC}$

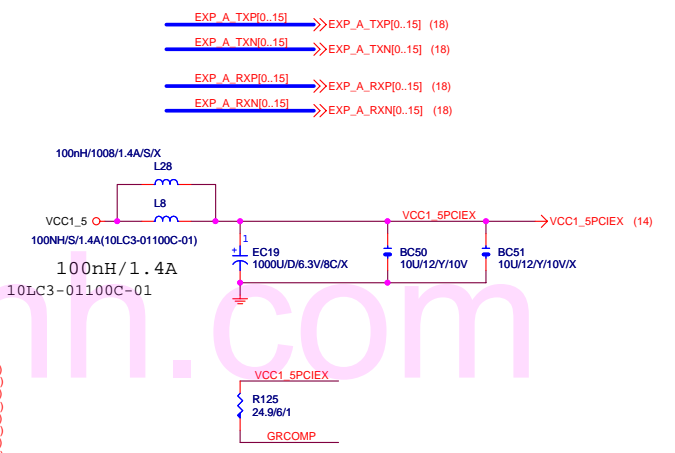
GIGABYTE		
VRD 10.1		
Title	81915P DUO PRO	
Size	Document Number	Rev
Custom		1.4
Date:	Thursday, April 07, 2005	Sheet 8 of 41

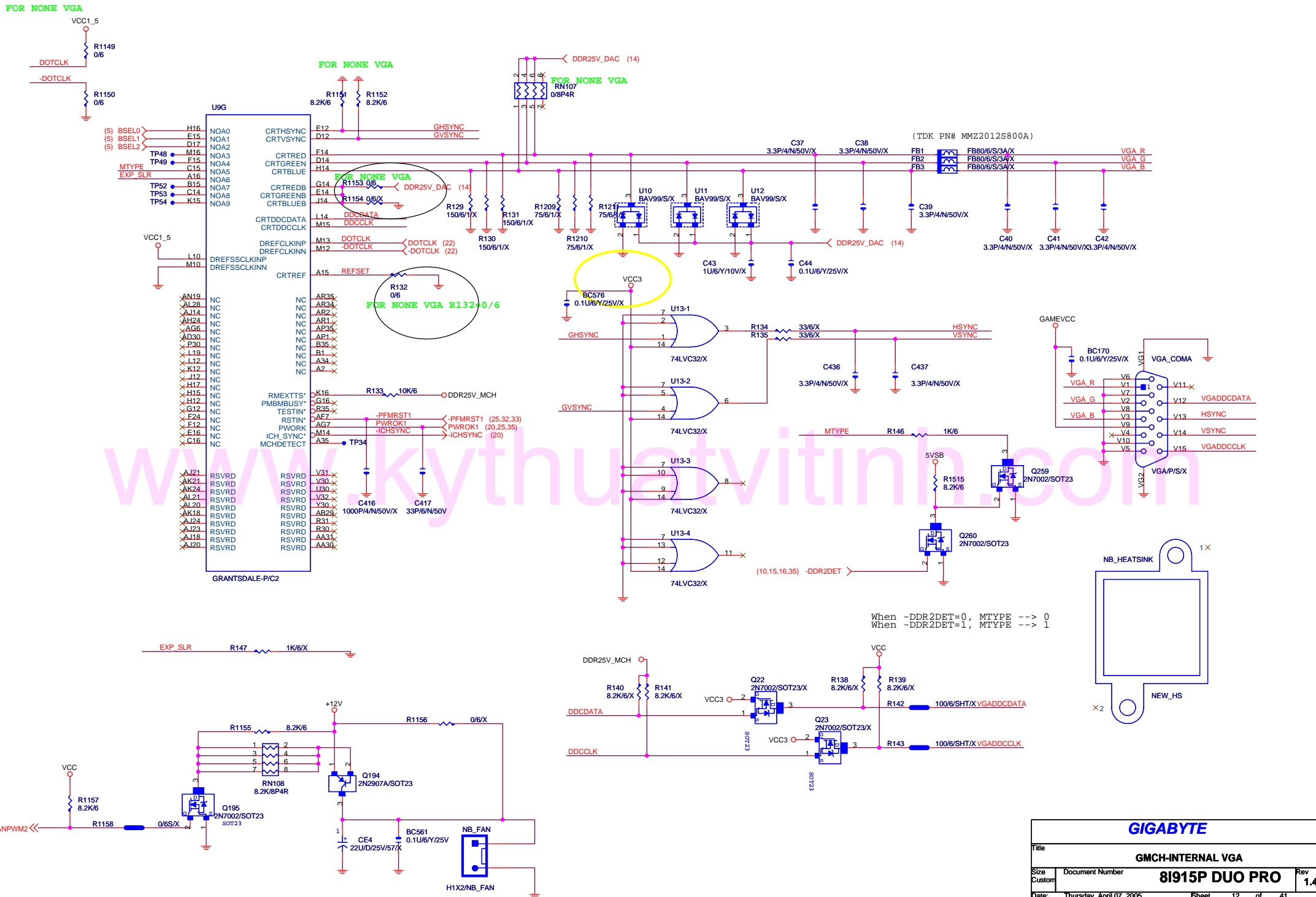


GIGABYTE			
Title GMCH-HOST			
Size Custom	Document Number	8I915P DUO PRO	
Date:	Thursday, April 07, 2005	Sheet	9 of 41
			Rev 1.4

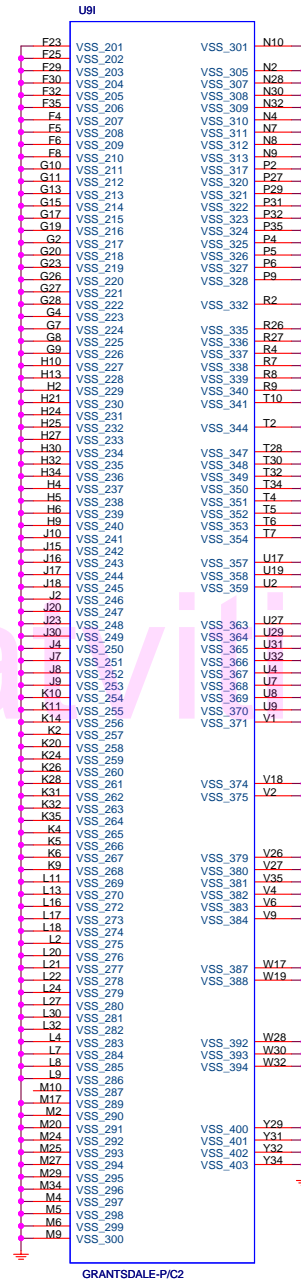
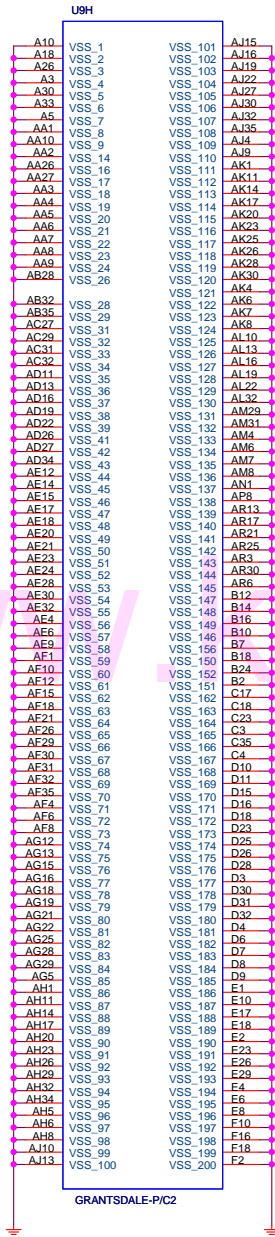


For DVO Function

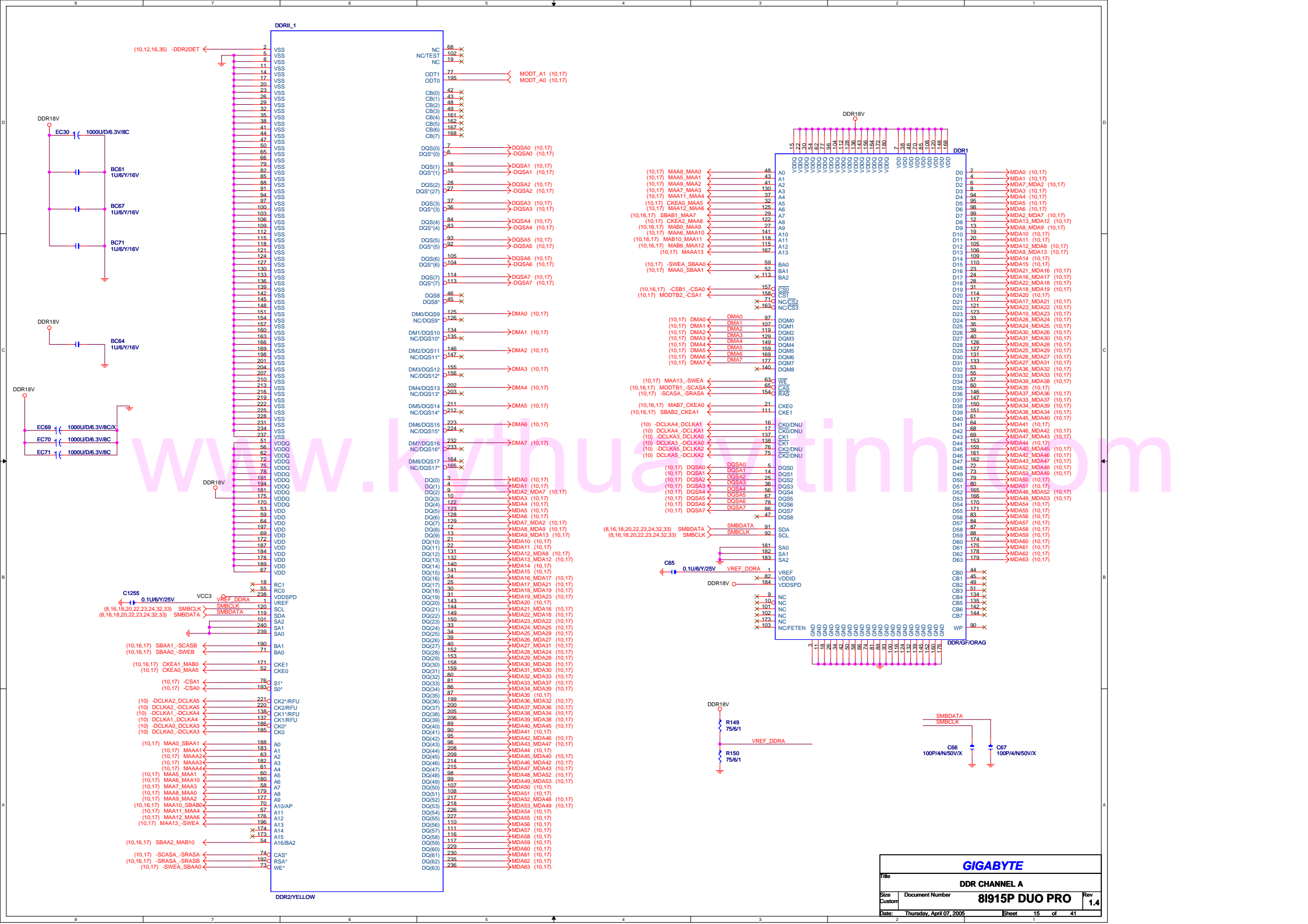


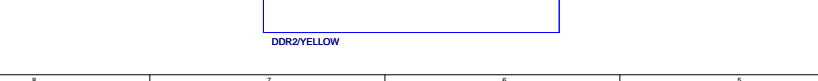
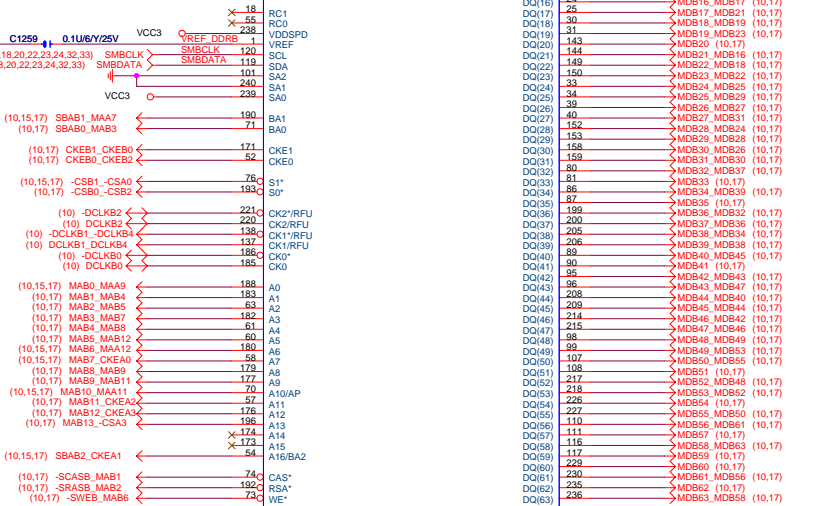
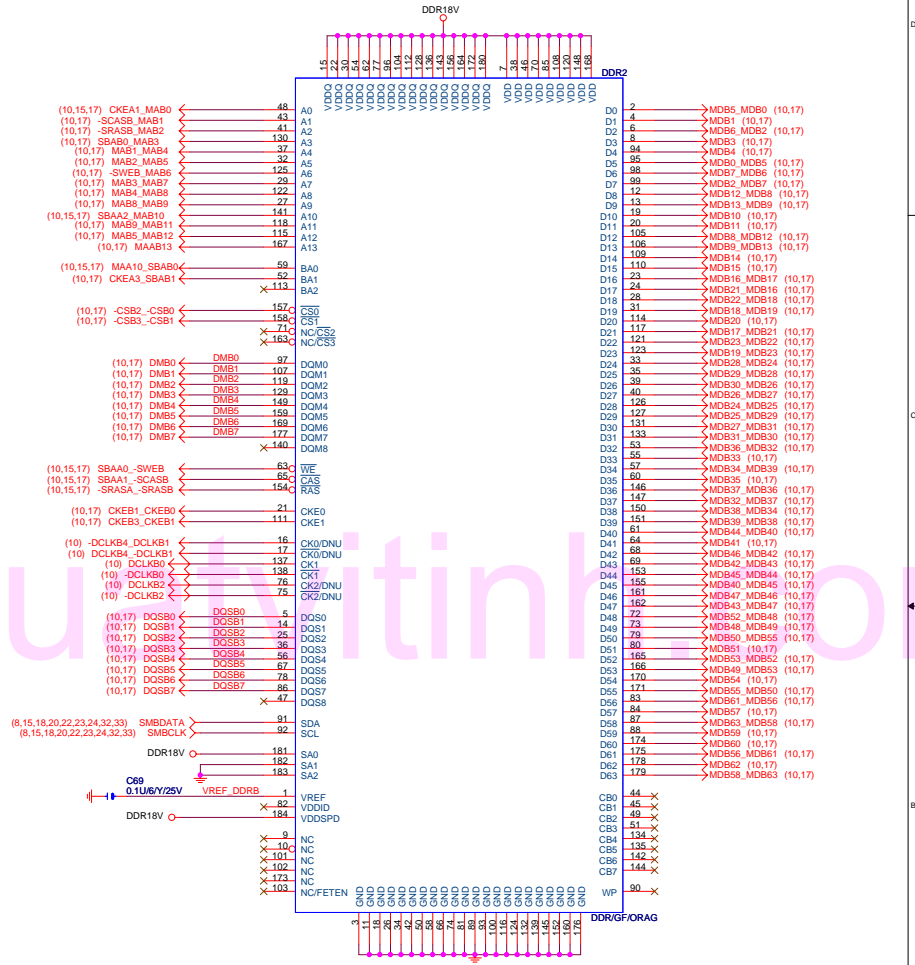
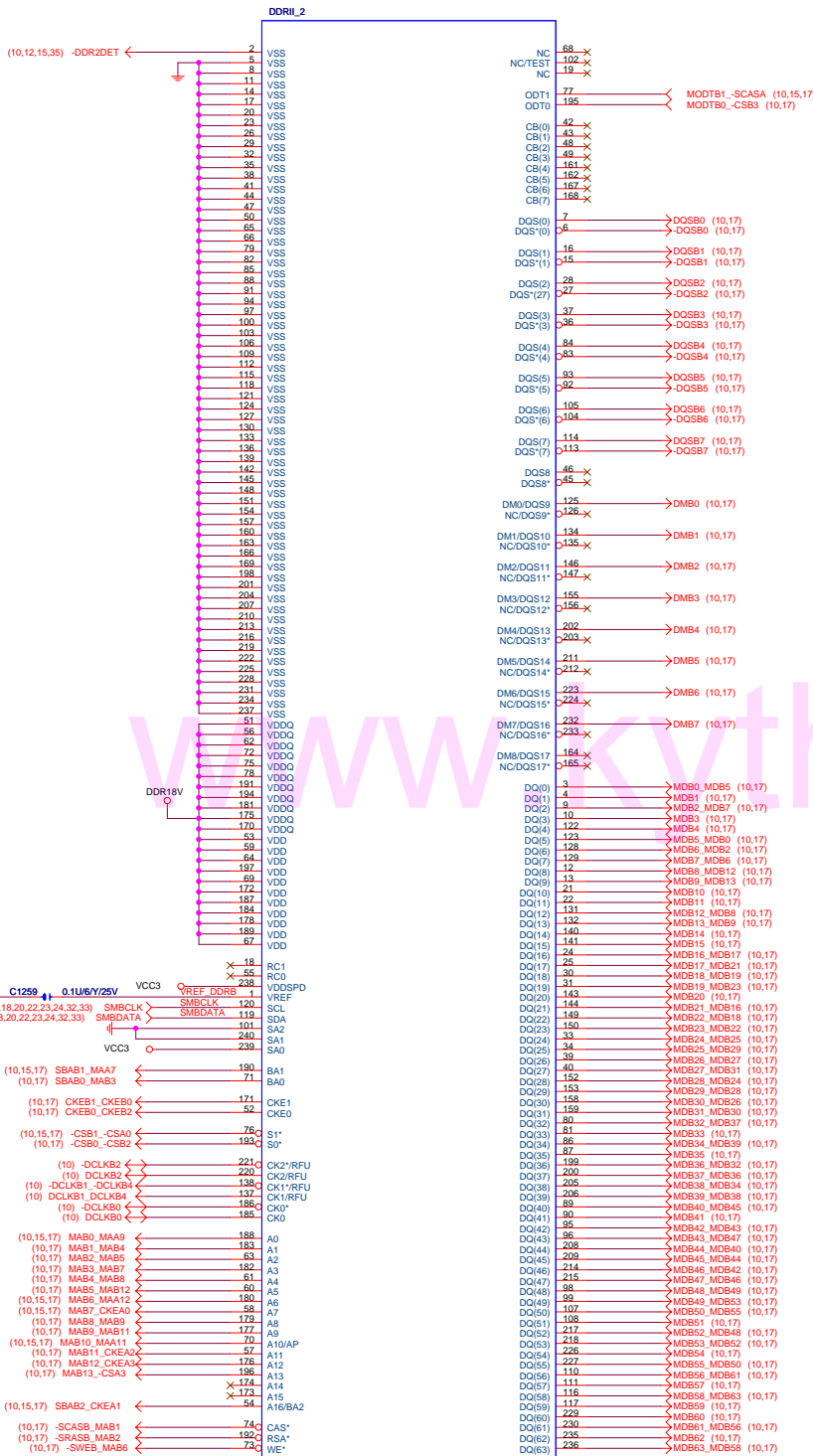


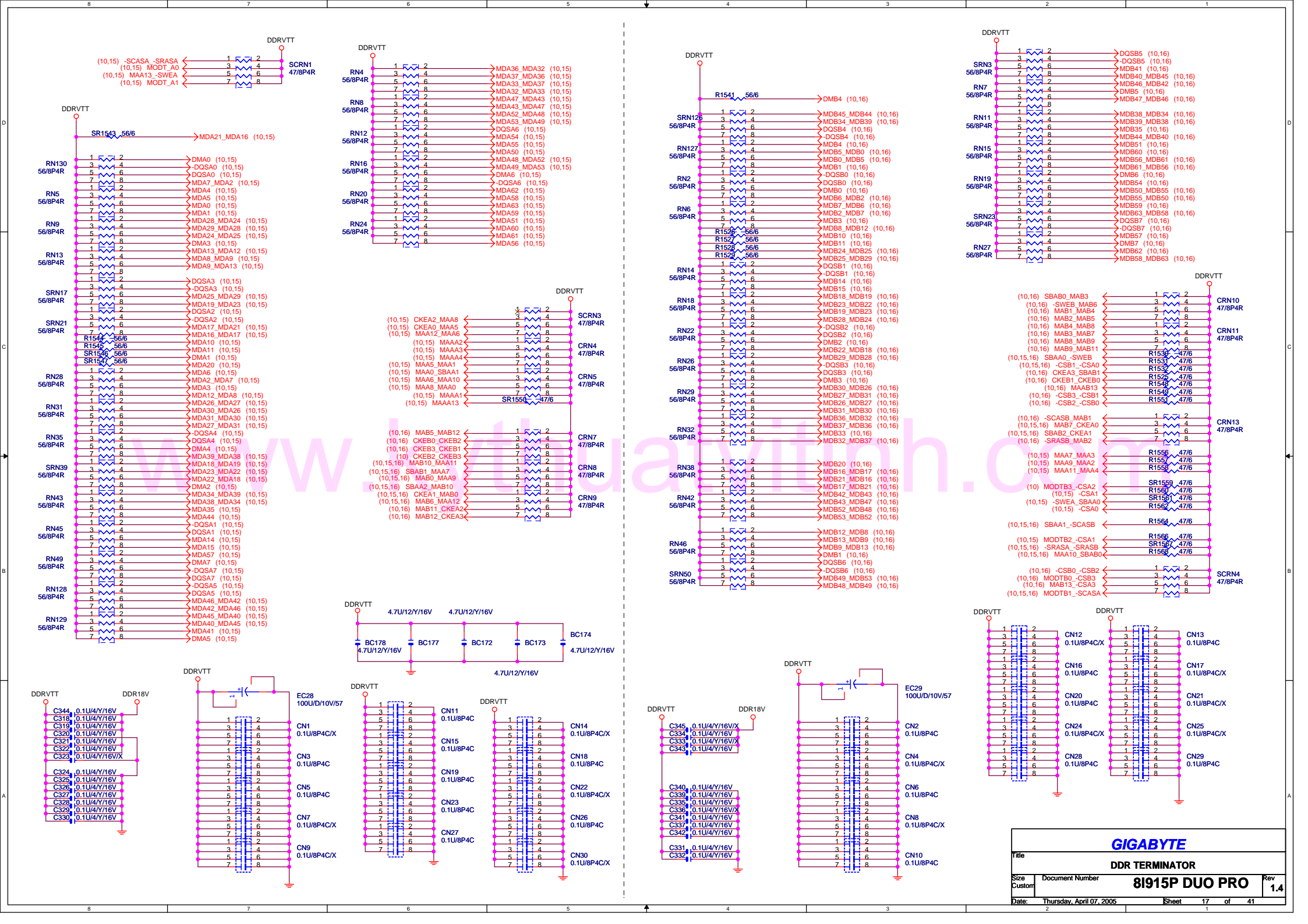
GIGABYTE			
Title	GMCH-INTERNAL VGA		
Size	Document Number	8I915P DUO PRO	
Custom		Rev	1.4
Date:	Thursday, April 07, 2005	Sheet	12 of 41

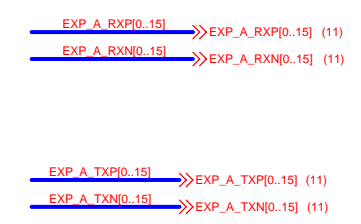
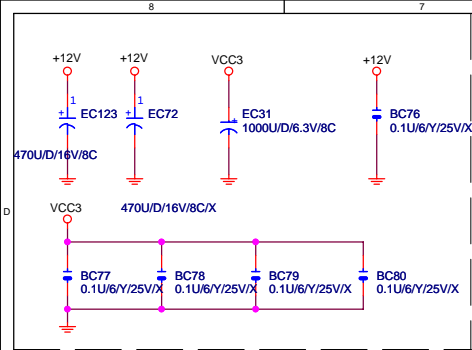


GIGABYTE			
Title GMCH-GND			
Size Custom	Document Number	8I915P DUO PRO	Rev 1.4
Date:	Thursday, April 07, 2005	Sheet 13	of 41

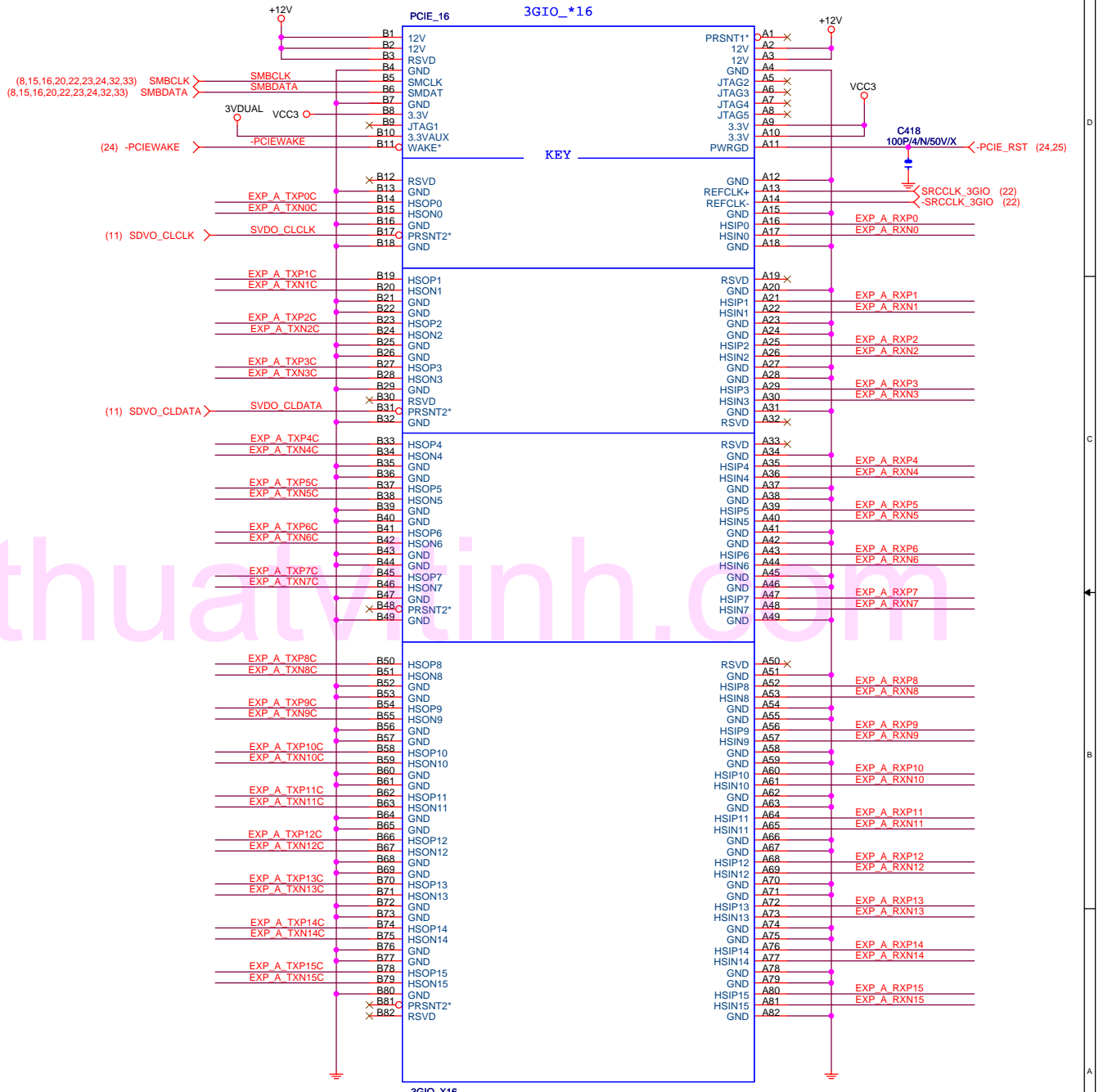








EXP_A_TXP0	C70	0.1U/6/Y/25V	EXP_A_TXP0C
EXP_A_TXN0	C71	0.1U/6/Y/25V	EXP_A_TXN0C
EXP_A_TXP1	C72	0.1U/6/Y/25V	EXP_A_TXP1C
EXP_A_TXN1	C73	0.1U/6/Y/25V	EXP_A_TXN1C
EXP_A_TXP2	C74	0.1U/6/Y/25V	EXP_A_TXP2C
EXP_A_TXN2	C75	0.1U/6/Y/25V	EXP_A_TXN2C
EXP_A_TXP3	C76	0.1U/6/Y/25V	EXP_A_TXP3C
EXP_A_TXN3	C77	0.1U/6/Y/25V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

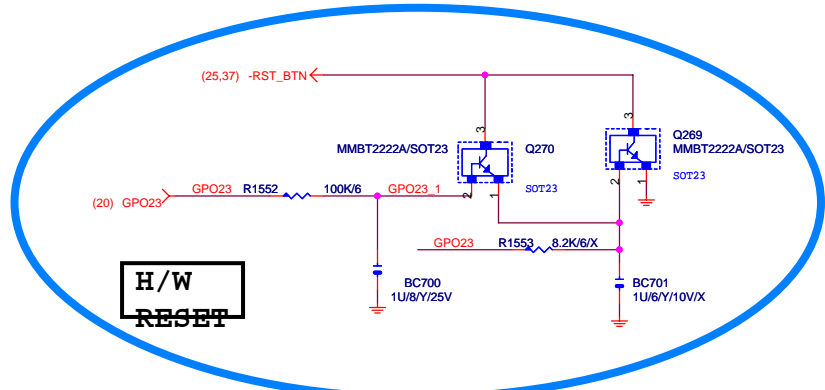


GIGABYTE

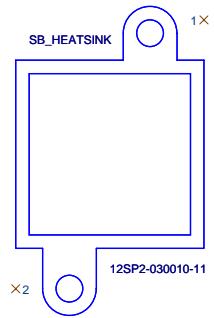
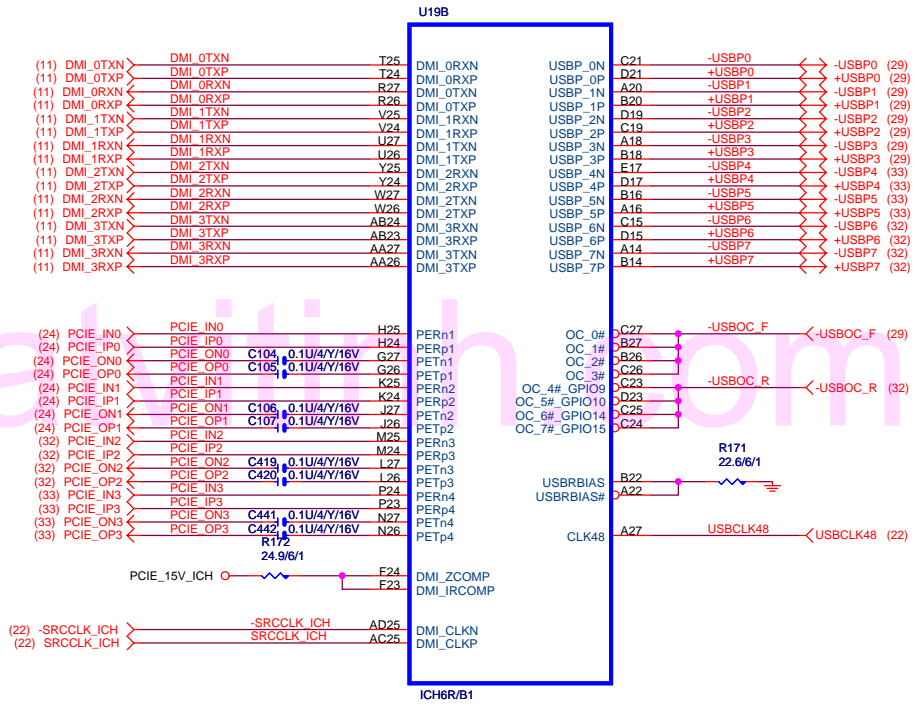
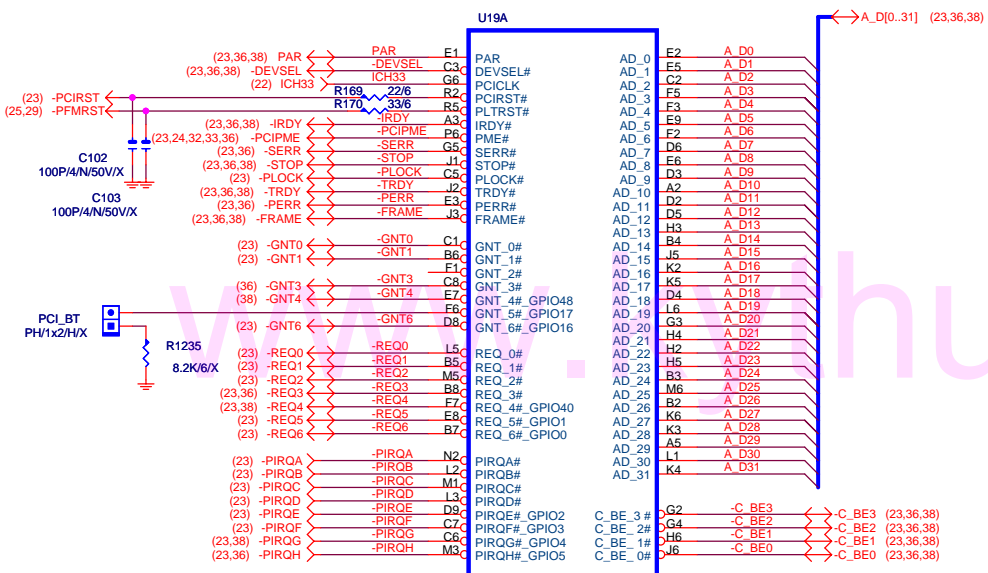
Title: **PCI EXPRESS * 16**

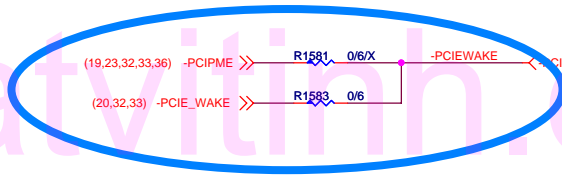
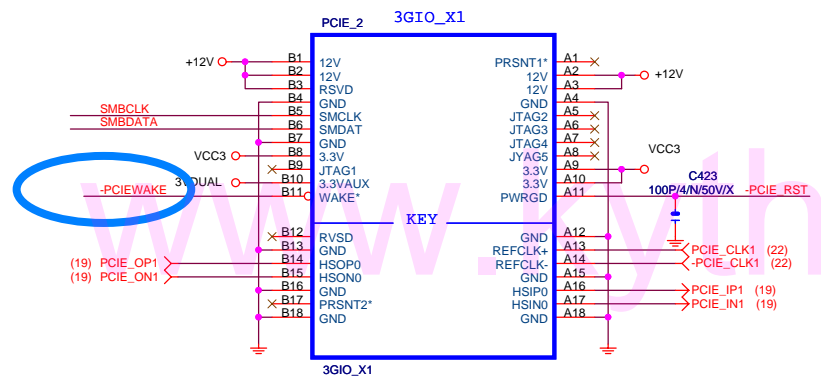
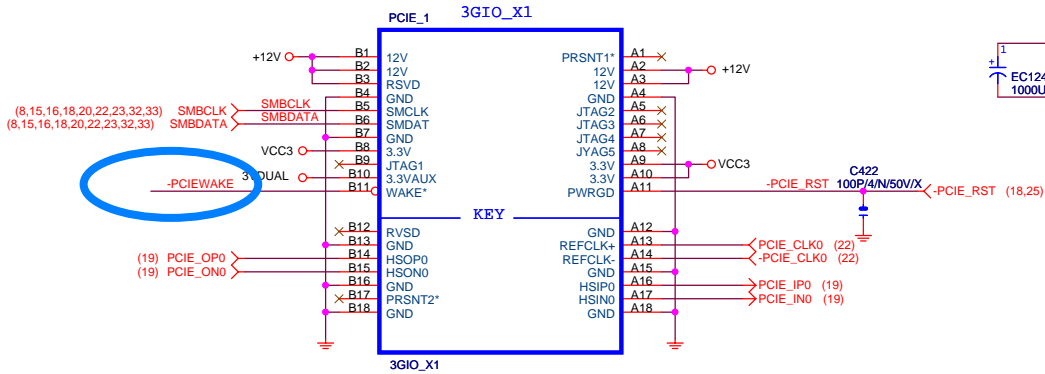
Size Custom: Document Number **81915P DUO PRO** Rev **1.4**

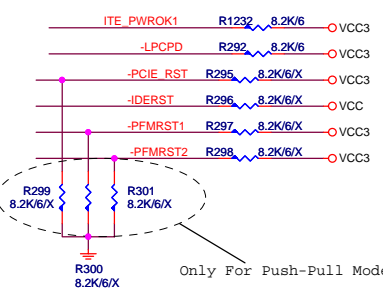
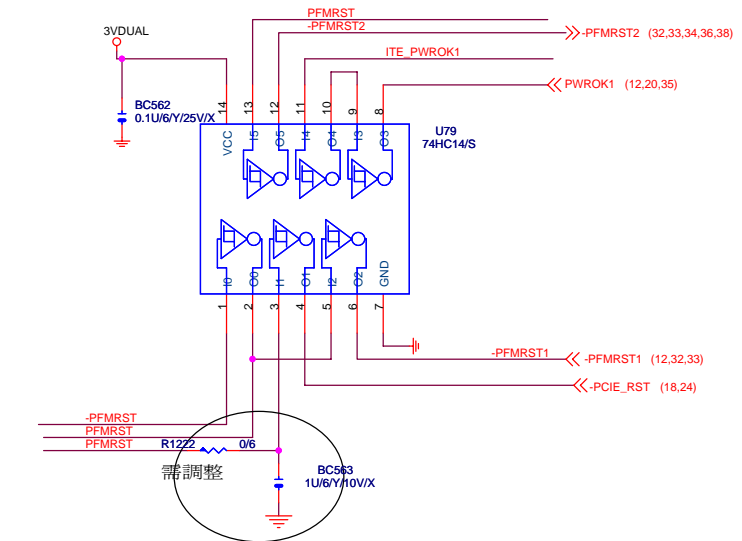
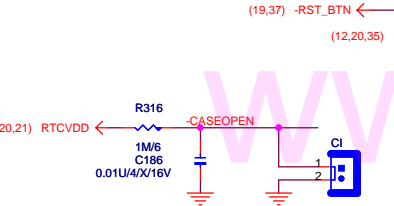
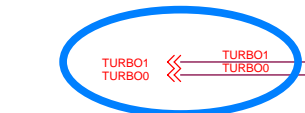
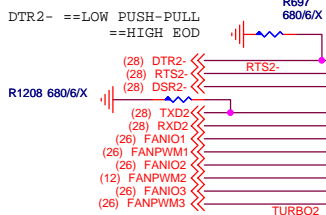
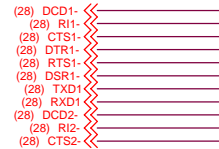
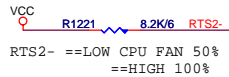
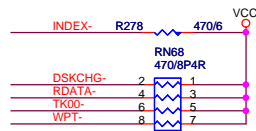
Date: Thursday, April 07, 2005 Sheet 18 of 41



DMI Connection Note
 GMCH TX Pin Need Connect to ICH6 RX Pin
 ICH6 TX Pin Need Connect to GMCH RX Pin

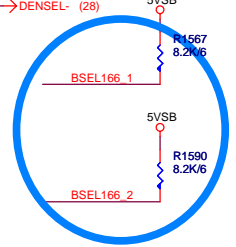
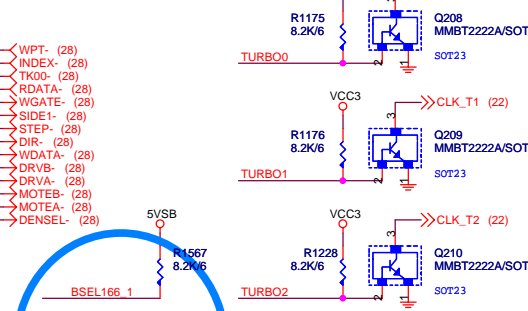
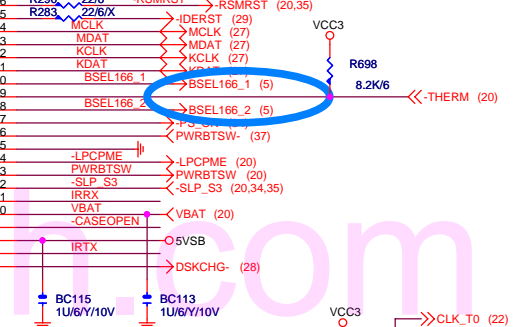
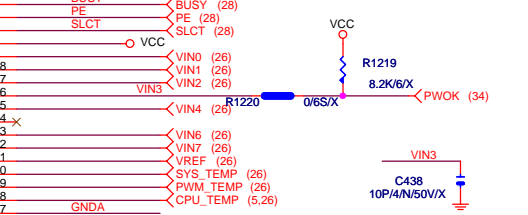
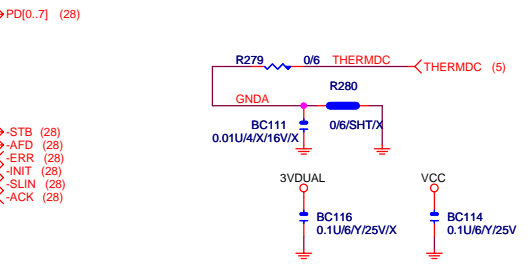




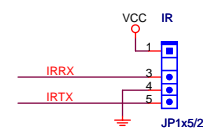


Only For Push-Pull Mode

GBT IT8712

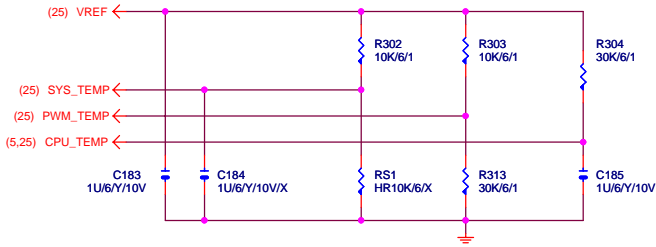


IR CONNECTOR

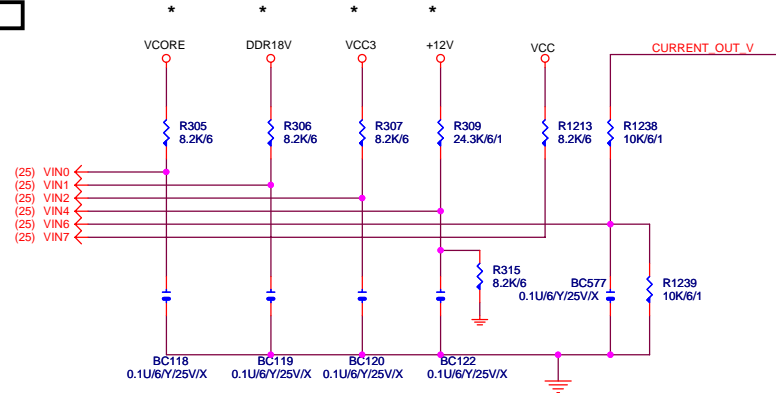


GIGABYTE			
Title LPC I/O			
Size 8I915P DUO PRO			
Document Number	Rev	1.4	
Date: Thursday, April 07, 2005	Sheet	25	of 41

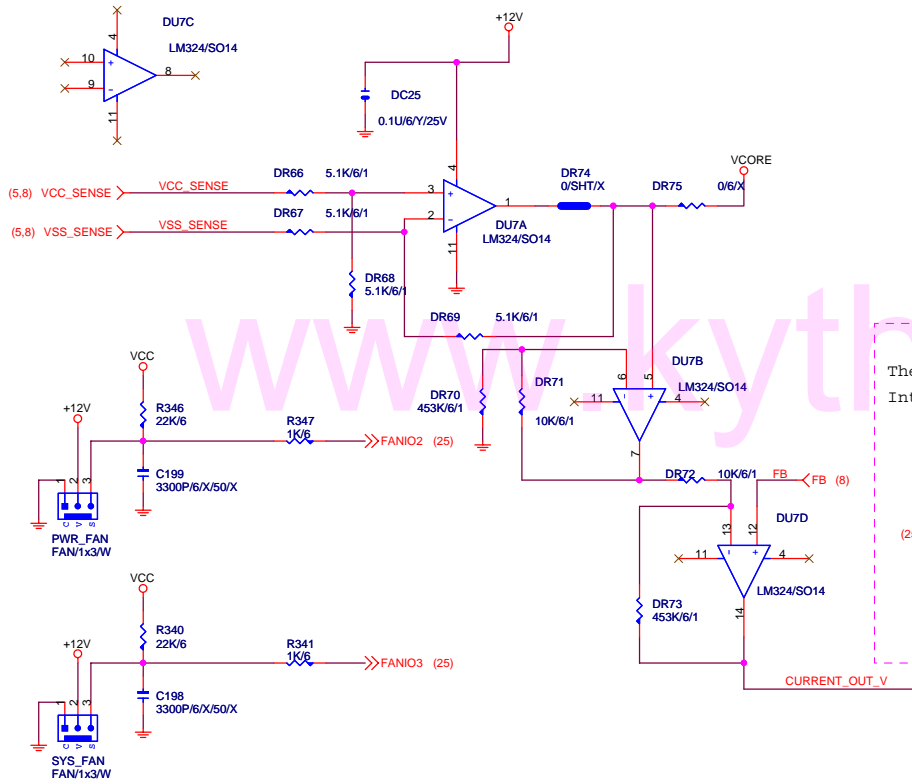
TEMP. SENSE



VOLTAGE SENSE

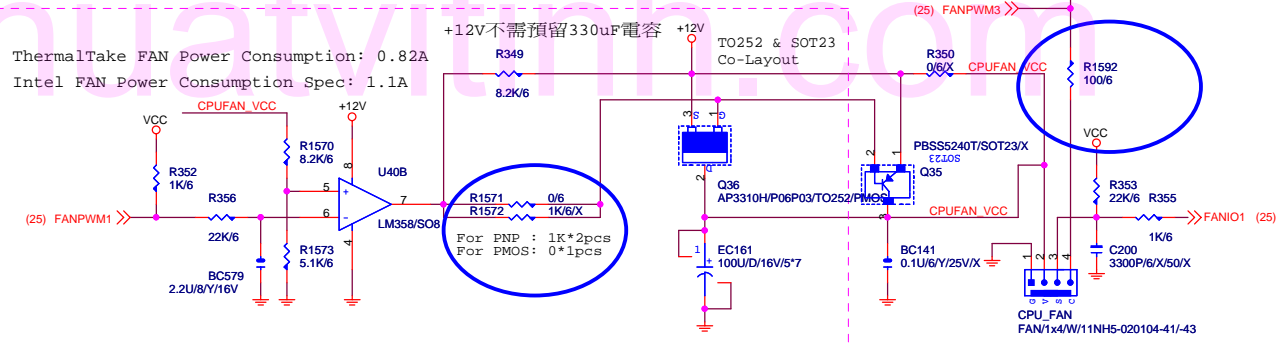


DUAL POWER



CPU/SYS FAN

CPUFAN_VCC	Temp (non airflow)	Temp (with airflow)
12V	Temp=40 deg	Temp=33 deg
11V	Temp=82 deg	Temp=62 deg
10V	Temp=70 deg	Temp=86 deg
9V	Temp=110 deg	Temp=117 deg
8V	Temp>200 deg	Temp>122 deg

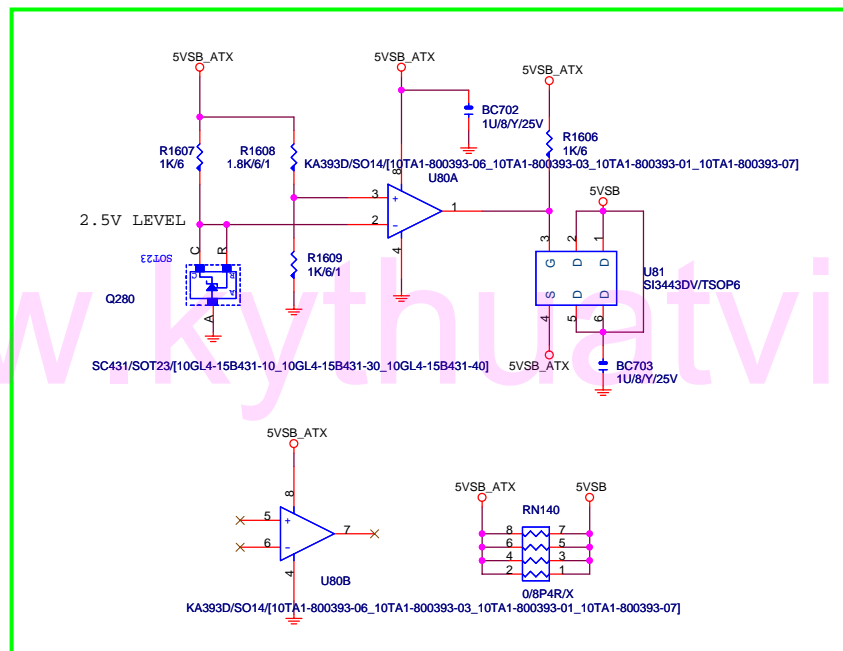
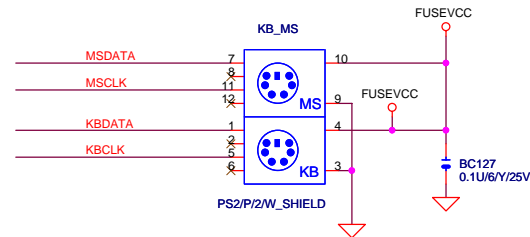
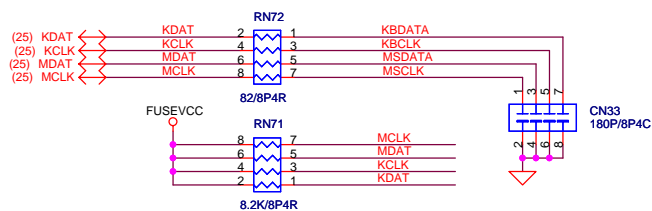


GIGABYTE

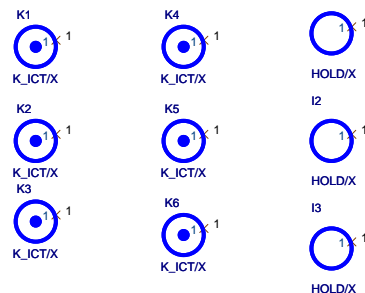
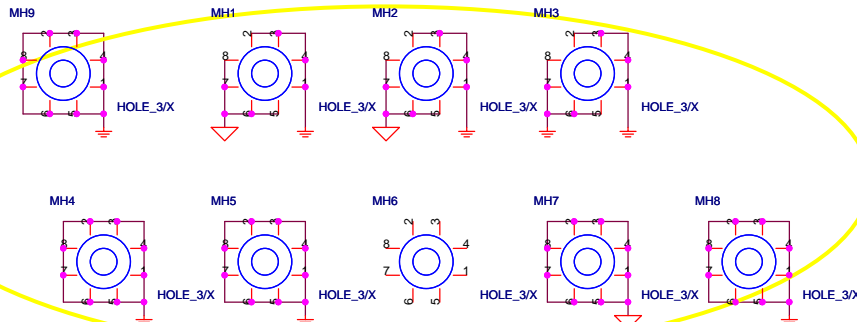
Title: **HWM/FAN/C/BIOS**

Size: Custom Document Number: **8I915P DUO PRO** Rev: **1.4**

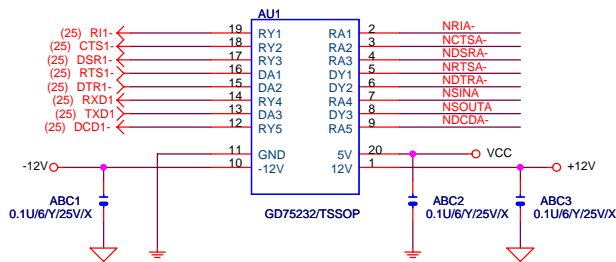
Date: Thursday, April 07, 2005 Sheet: 26 of 41



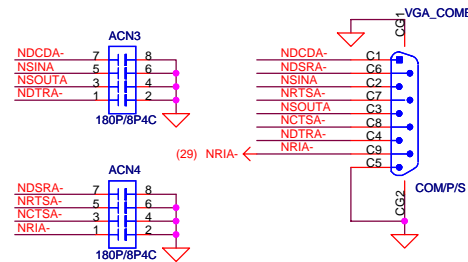
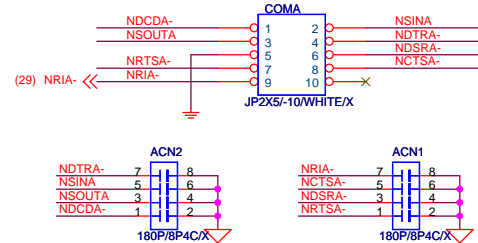
Stand by power regulator protection



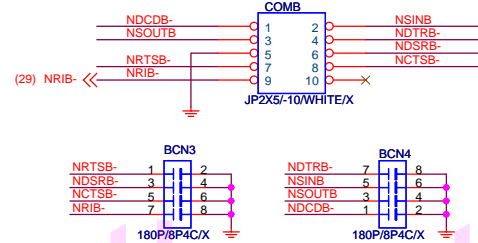
COMA / COMB



INTERNAL COMA



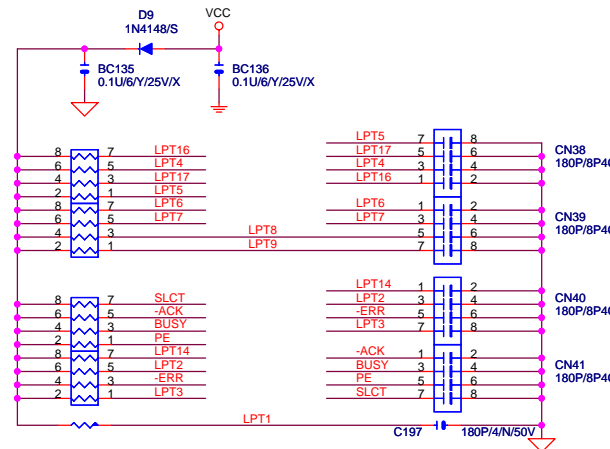
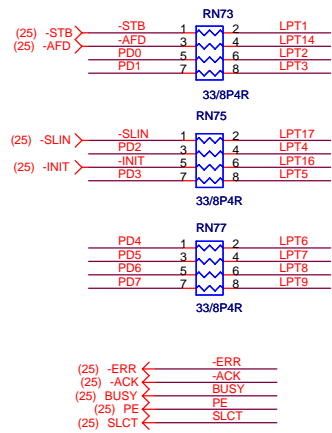
INTERNAL COMB



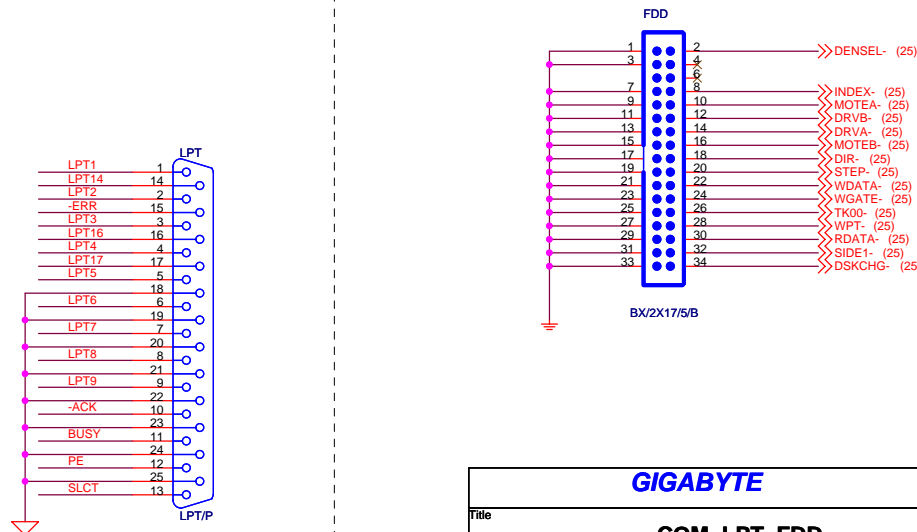
PLACE NEAR VGA_COM CONNECTOR

LPT

(25) PD[0..7] → PD[0..7]



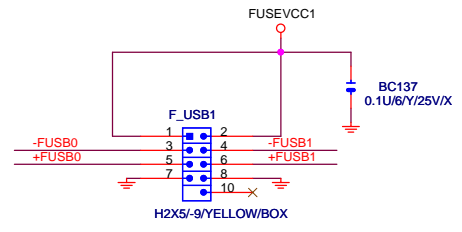
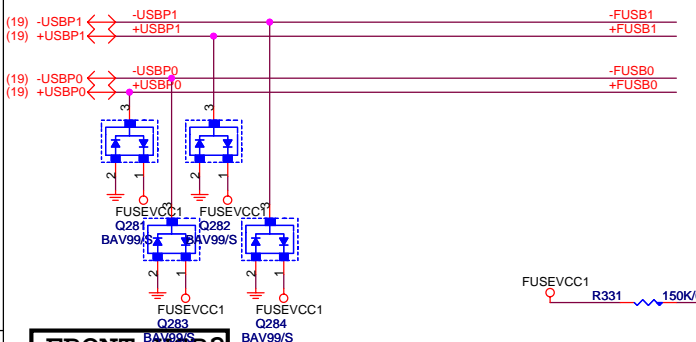
FLOPPY



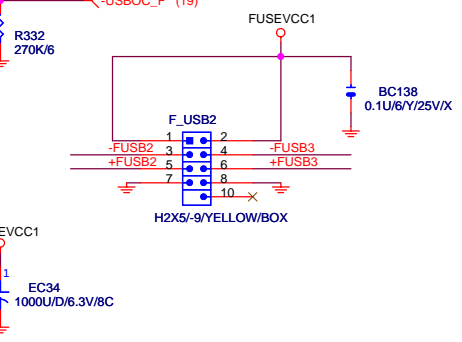
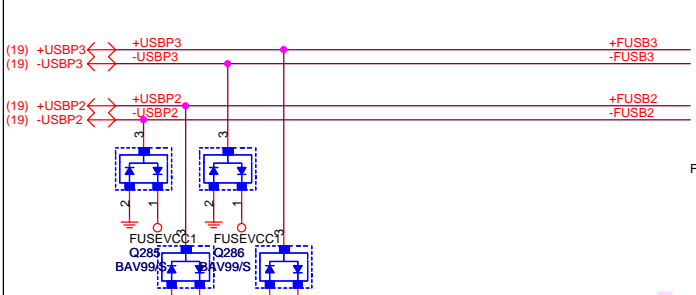
GIGABYTE

Title			COM, LPT, FDD	
Size	Document Number	81915P DUO PRO		Rev
B				1.4
Date:	Thursday, April 07, 2005	Sheet	28	of 41

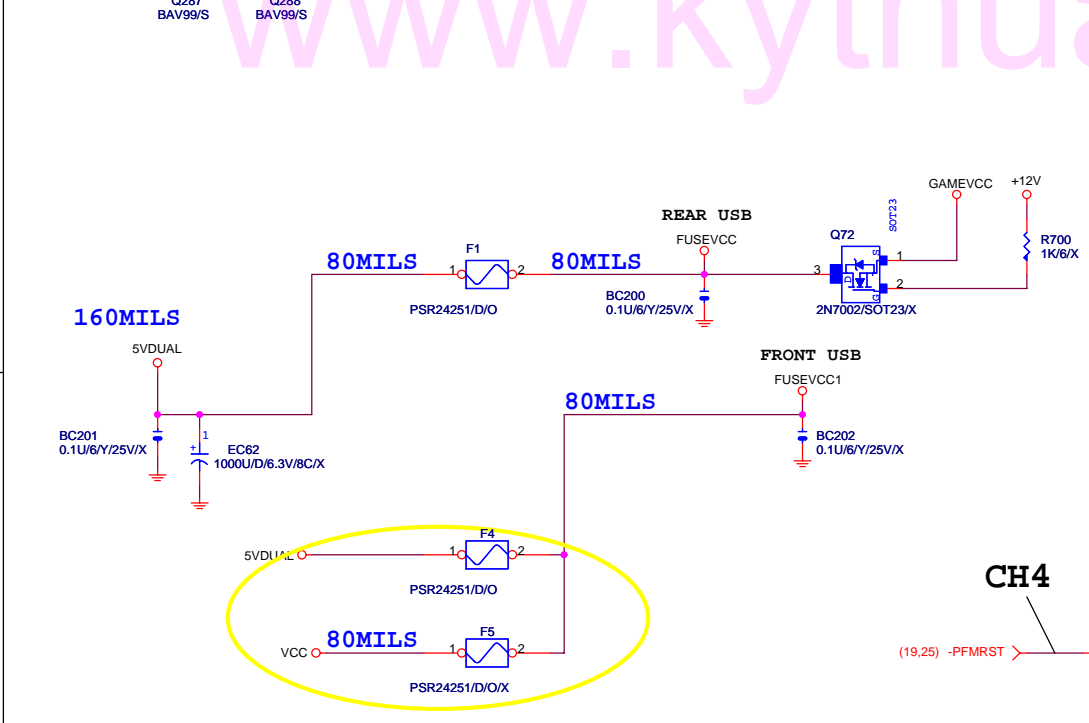
FRONT USB1



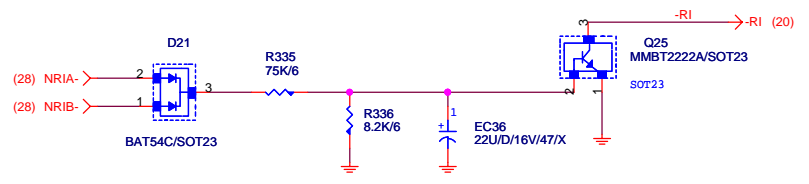
FRONT USB2



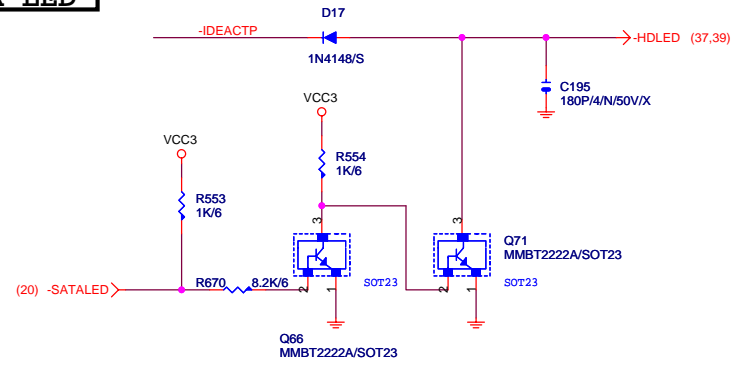
FUSEVCC, GAMEVCC



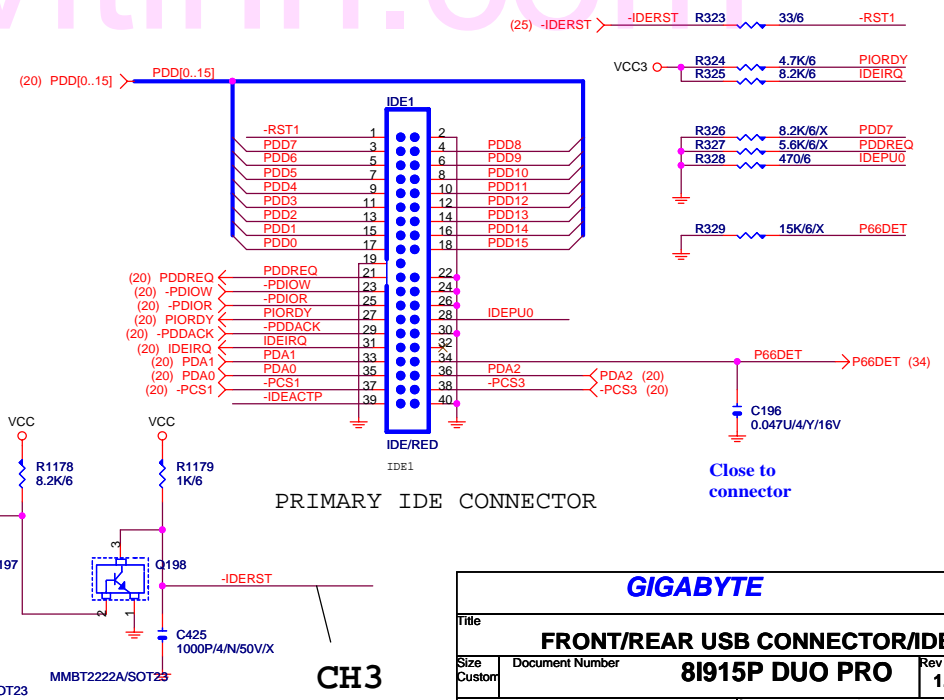
RING IN



IDE/SATA LED

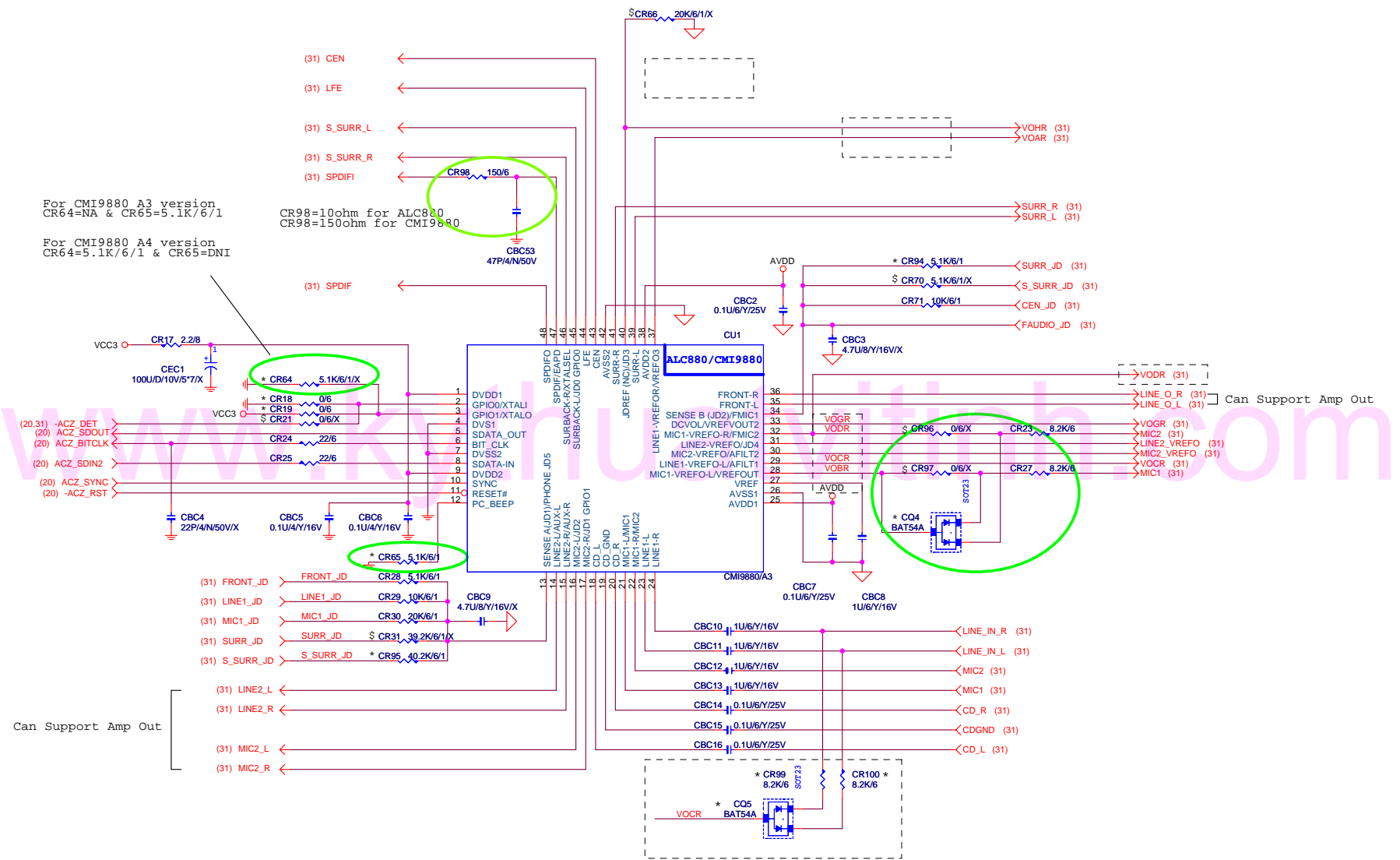


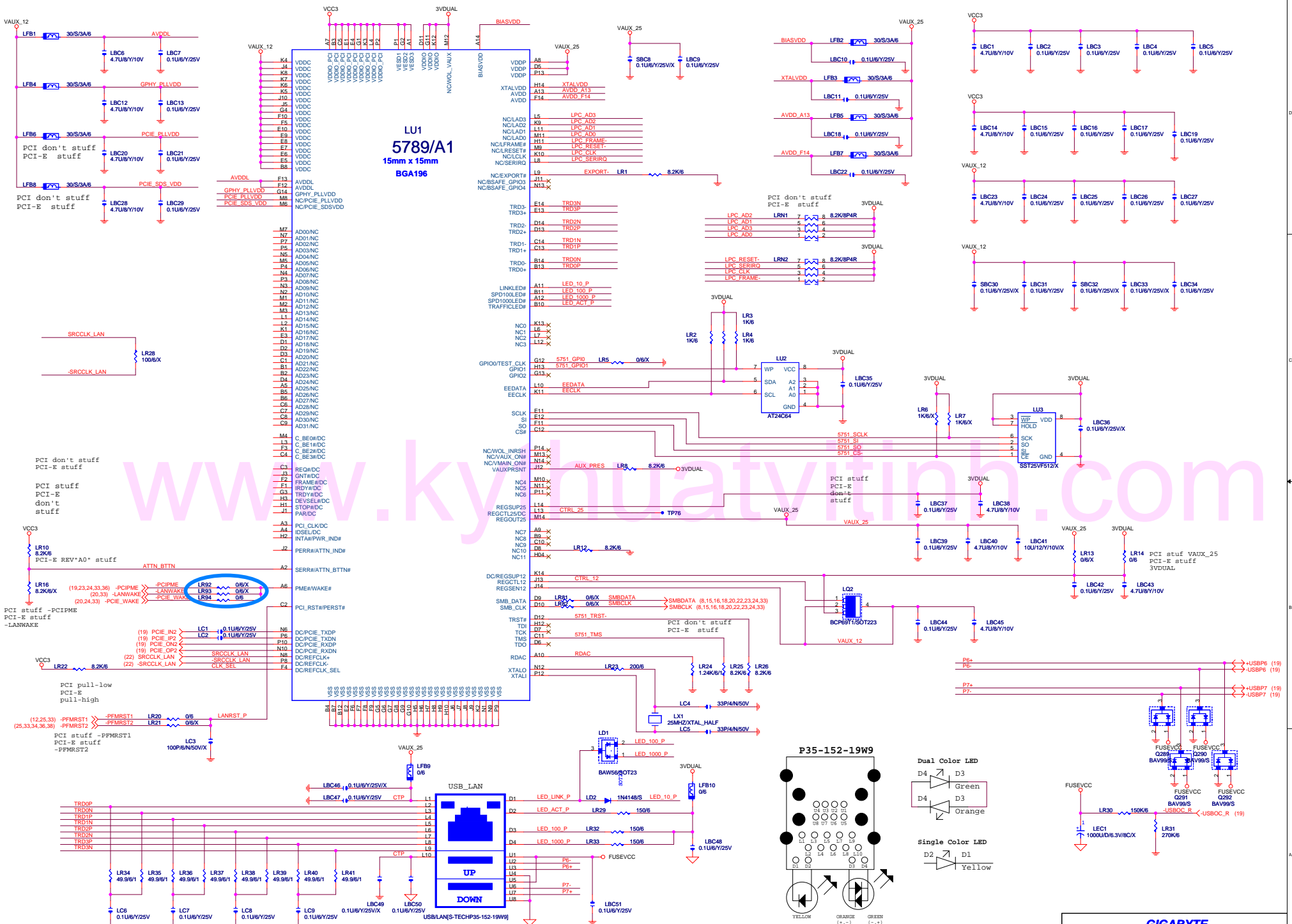
IDE



GIGABYTE			
FRONT/REAR USB CONNECTOR/IDE			
Title	Document Number	8I915P DUO PRO	Rev 1.4
Size Custom	Date	Thursday, April 07, 2005	Sheet 29 of 41

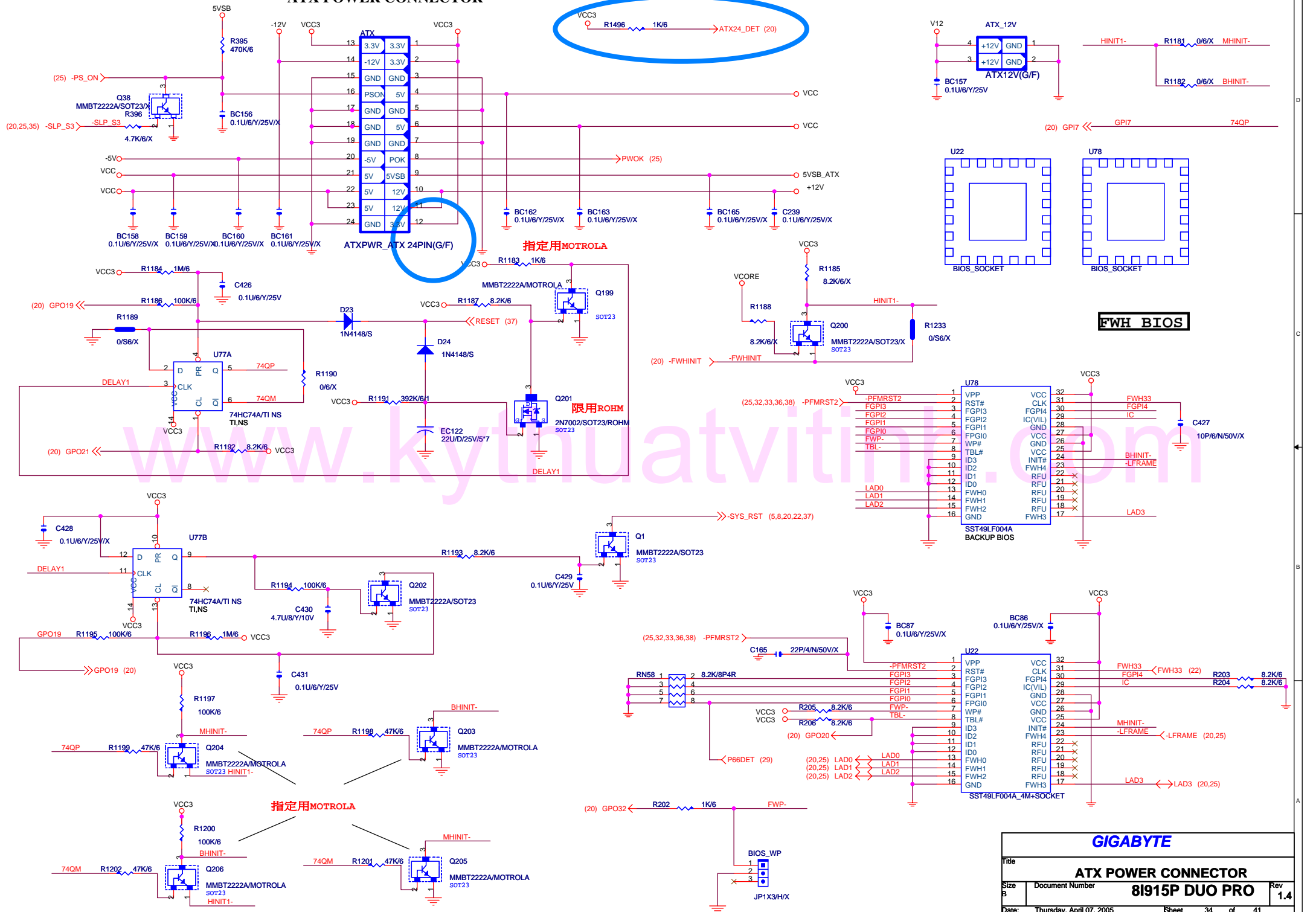
"\$" means for ALC880 only
 "*" means for CMI9880 only





GIGABYTE		
LAN BCM5705E/5751		
File	Document Number	Rev
	81915P DUO PRO	1.4
Date:	Thursday, April 07, 2005	Sheet 32 of 41

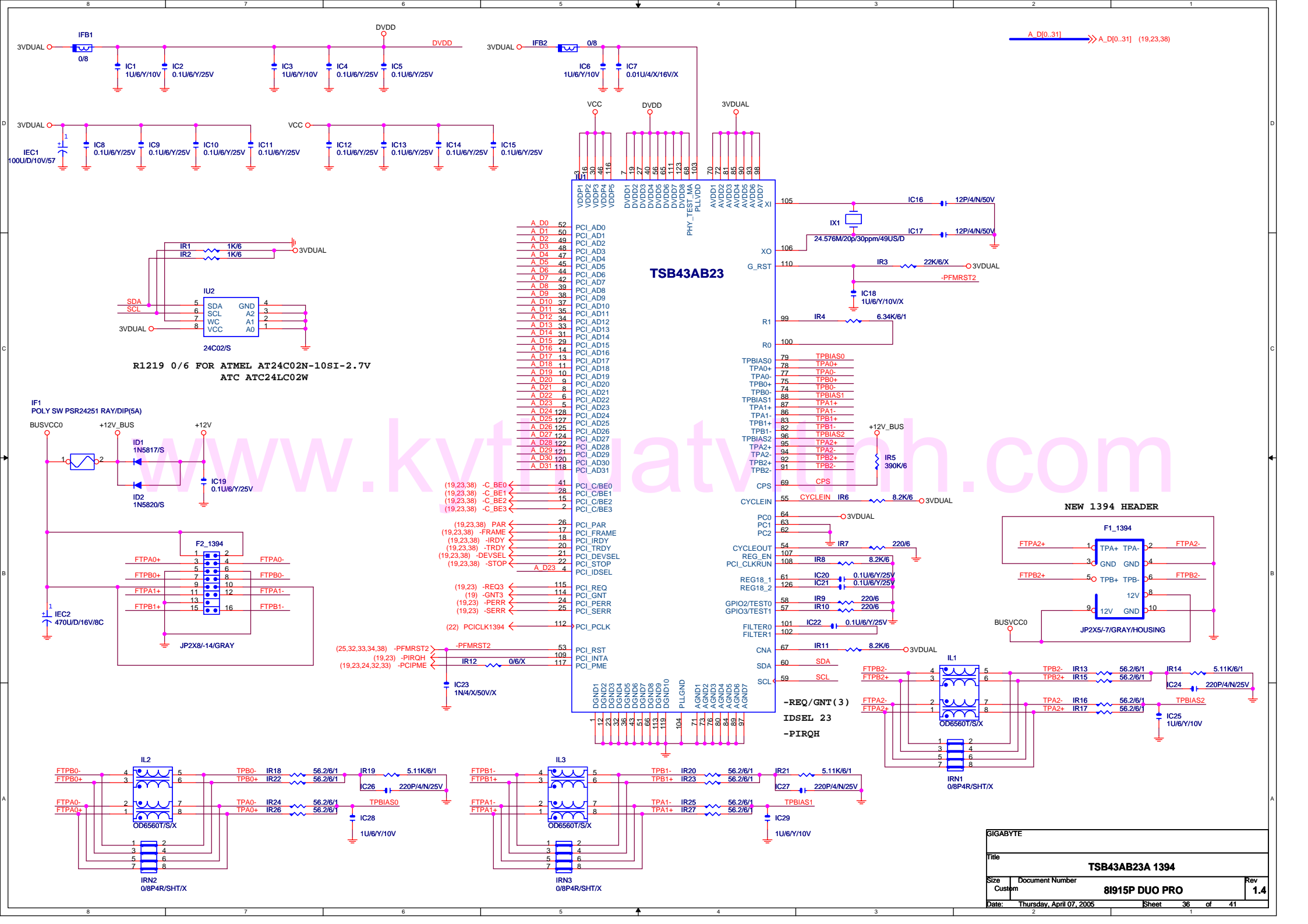
ATX POWER CONNECTOR



FWH BIOS

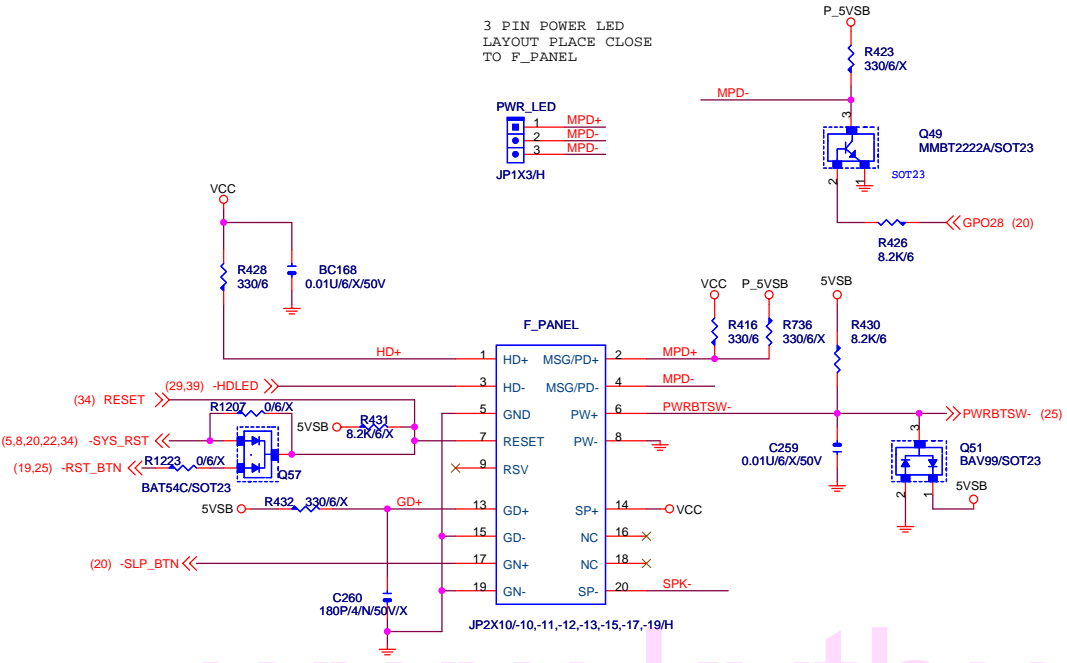
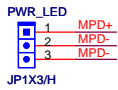
GIGABYTE

Title		ATX POWER CONNECTOR	
Size B	Document Number	81915P DUO PRO	
Date:	Thursday, April 07, 2005	Sheet	34 of 41
		Rev	1.4



INTEL FRONT PANEL

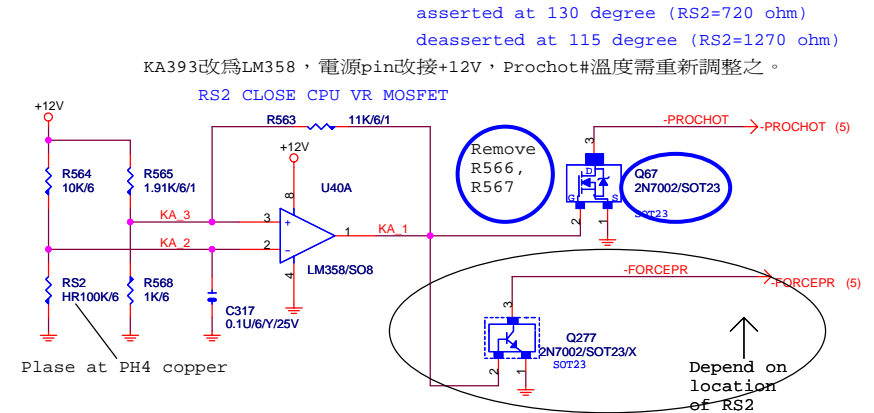
3 PIN POWER LED
LAYOUT PLACE CLOSE
TO F_PANEL



PROCESSOR HOT

(N/A)

如果要用2N7002需注意OP output
Hi時的電壓是否遠大於2V。

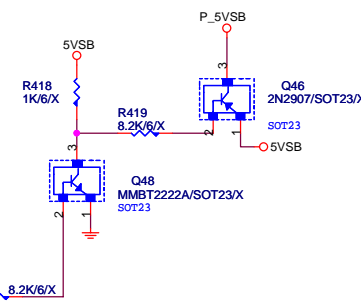
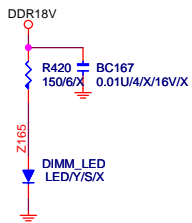


asserted at 130 degree (RS2=720 ohm)
deasserted at 115 degree (RS2=1270 ohm)

KA393改為LM358，電源pin改接+12V，Prochot#溫度需重新調整之。

RS2 CLOSE CPU VR MOSFET

www.kythuativinh.com



States for green LED NO1 GPO22 only S1 PROGRAMMING LOW

LED States	ACPI States	GPO22
ON	S1, S3	0
OFF	S0, S5	1

(GPO22 DEFAULT HIGH, main power)

States for a single-color power LED

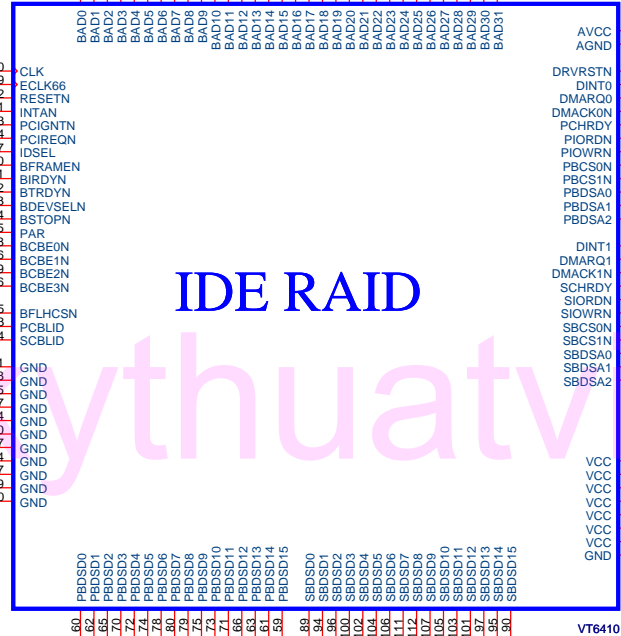
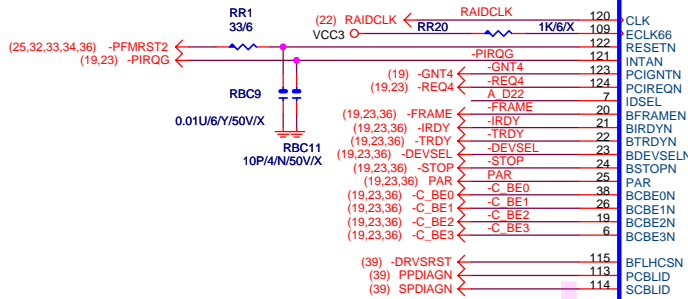
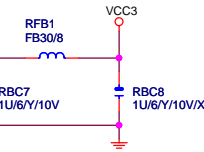
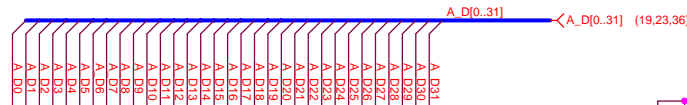
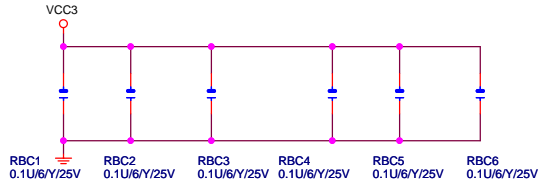
LED States	ACPI States	GPO25	GPO27	GPO24
OFF	S1, S3, S5	1	1	NO1
Steady Green	S0	1	1	1
Blinking Green	S0(message waiting)	1	B	1

LED States	ACPI States	GPO25	GPO27	GPO22
OFF	S5	1	1	X
Steady Green	S0	1	1	1
Blinking Green	S0(message waiting)	1	B	1
Steady Yellow	S1, S3	1	0	NO1
Blinking Yellow	S1, S3(message waiting)	1	B	NO1

GIGABYTE

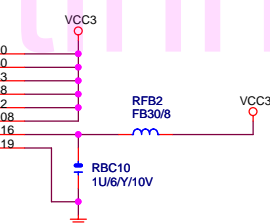
Title				FRONT PANEL	
Size	Document Number	8I915P DUO PRO		Rev	1.4
Custom					
Date:	Thursday, April 07, 2005	Sheet	37	of	41

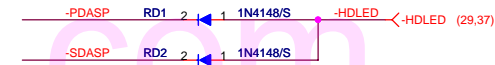
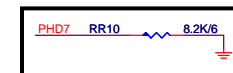
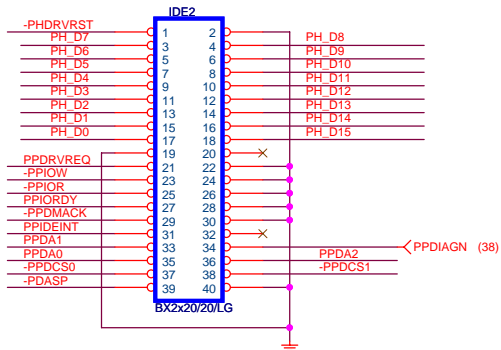
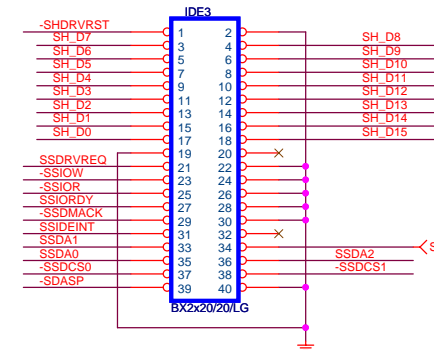
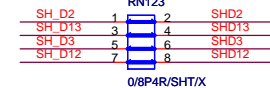
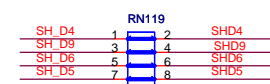
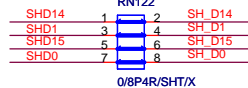
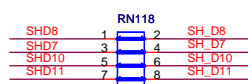
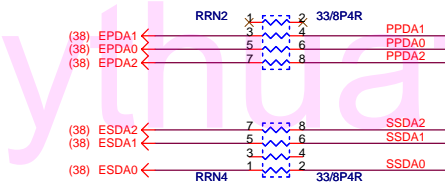
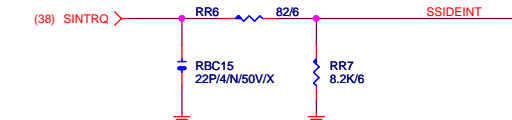
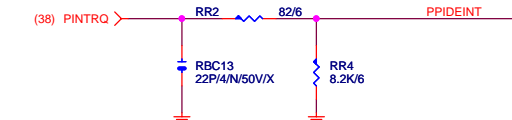
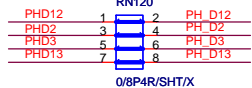
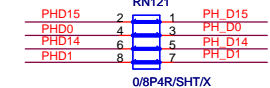
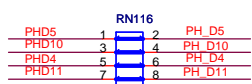
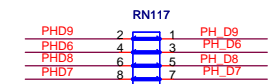
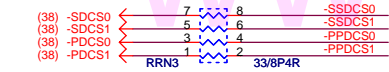
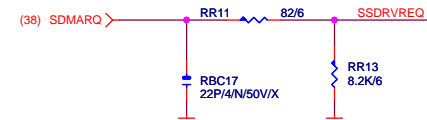
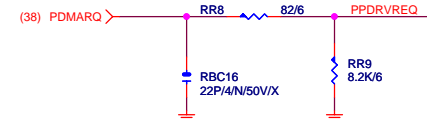
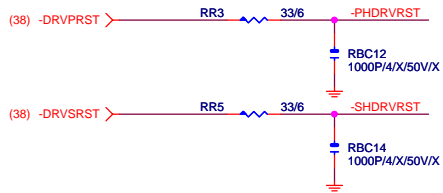
ALL INPUT PIN MUST HAVE 0.1 CAPACITOR



IDE RAID

www.lythuatv.com





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			
GPIO24	3VDAUL	GREEN LED			
GPIO25	3VDAUL	DDR OV1			
GPI26	VCC3	SATA GP0			
GPIO27	3VDAUL	+PWRLED			
GPIO28	3VDAUL	-PWRLED			
GPI29	VCC3	SATA GP1			
GPI30	VCC3	SATA GP2			
GPI31	VCC3	SATA GP3			
GPIO32	VCC3	BIOS WP			
GPIO33	VCC3	AZALIA DET			
GPIO34	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

GIGABYTE THCNOLOGIES , INC.

Title		GPIO/RESET TABLE	
Size	Document Number	8I915P DUO PRO	Rev
Custom			1.4
Date:	Thursday, April 07, 2005	Sheet	41 of 41