


G31T-M Rev: 1.0

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Cover Sheet			
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DEVICE	IDSEL	INT#	REQ#	GNT#
PCI1	17	C/D/E/F	PREQ-0	PGNT-0
PCI2	18	D/E/F/G	PREQ-1	PGNT-1

VCORE POWER
PWM VRD11
(RT8802A)

**INTEL
P4 Processor**
Core 2 Duo & Wolfdale
LGA 775 pin

PCB : 244 x 210 mm ; 4 layers

CLOCK GEN:9LPRS419

FSB : 1066MHz & Freq : 266MHz
FSB : 800MHz & Freq : 200MHz

PCIEx16

INTEL
G31

BW : 10.7GB/s @ DDR2 :800/667MHz

DIMM1: DDR2 Socket 240P

VGA

1210pin FC-BGA

DIMM2 : DDR2 Socket 240P

Analog Display
RAMDAC: 400MHz
Resolutions Up To 2048x1536@75Hz

USB V2.0

USB1
2 ports

USB2
2 ports

USB3
2 ports

Up to Ultra ATA/100

IDE1 40pin

One IDE Channel

INTEL
ICH7

652pin EPGA

PCIEx1

BW : 133MB/s @ Freq : 33MHz

PCI Slot 120pin @ AD17

PCI2 Slot 120pin @ AD18

PCIE-LAN
RTL8111C/8101E

USBLAN
RJ45

Line in
Line out
Mic in
Center/Bass out
Surround
Side-Surround

Audio Codec
IDT92HD206/202

SATA1 7Pin

SATA2 7pin

SATA3 7Pin

SATA4 7pin

BW : 150MB/s

Flash Bios

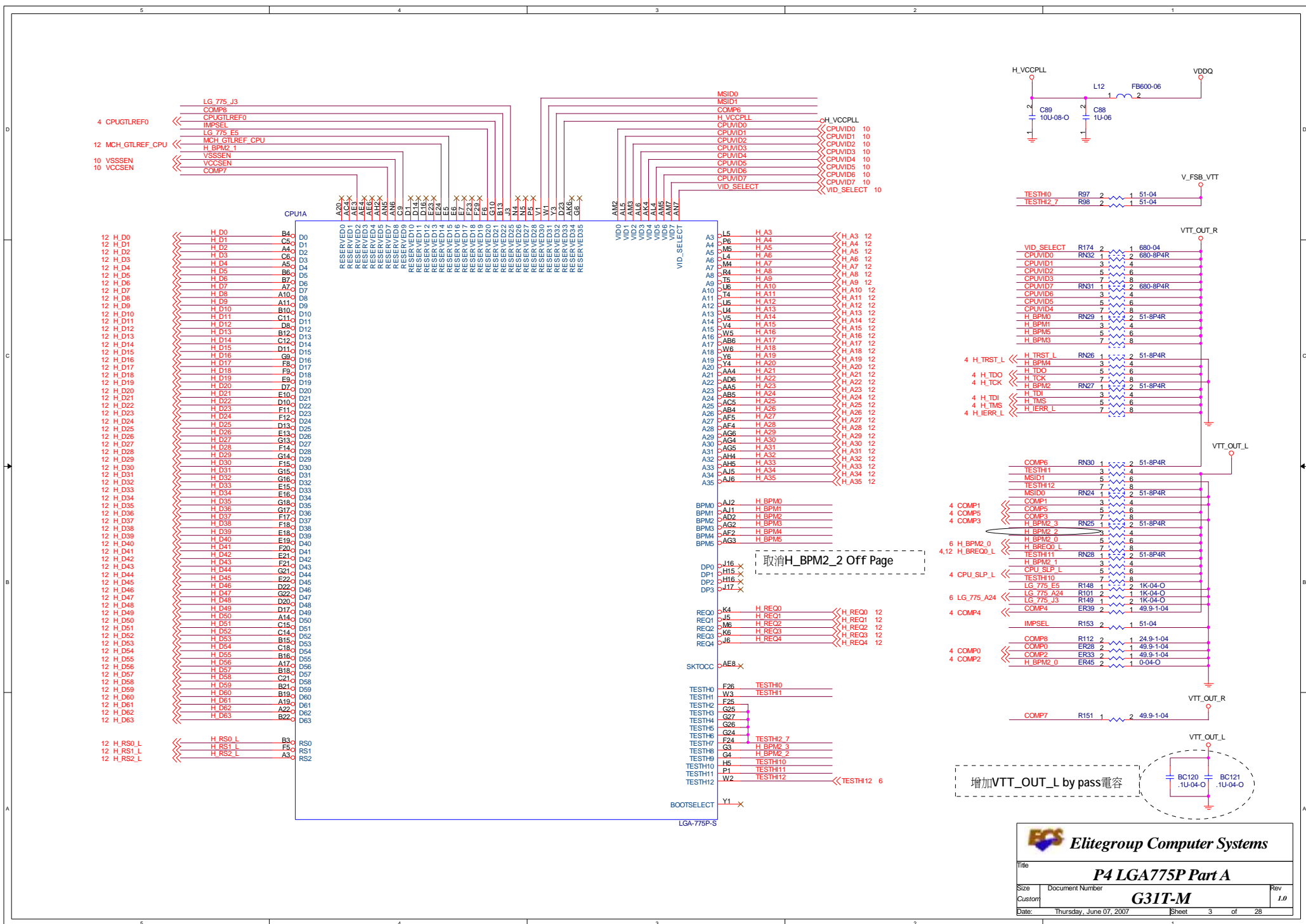
SPI

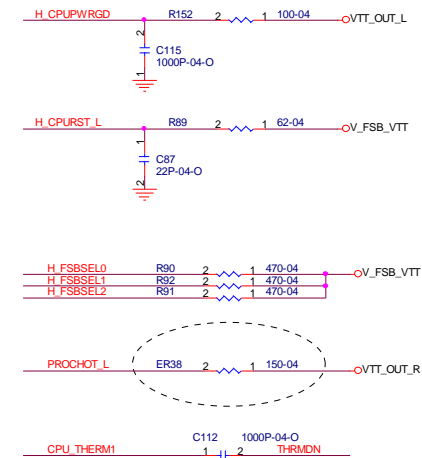
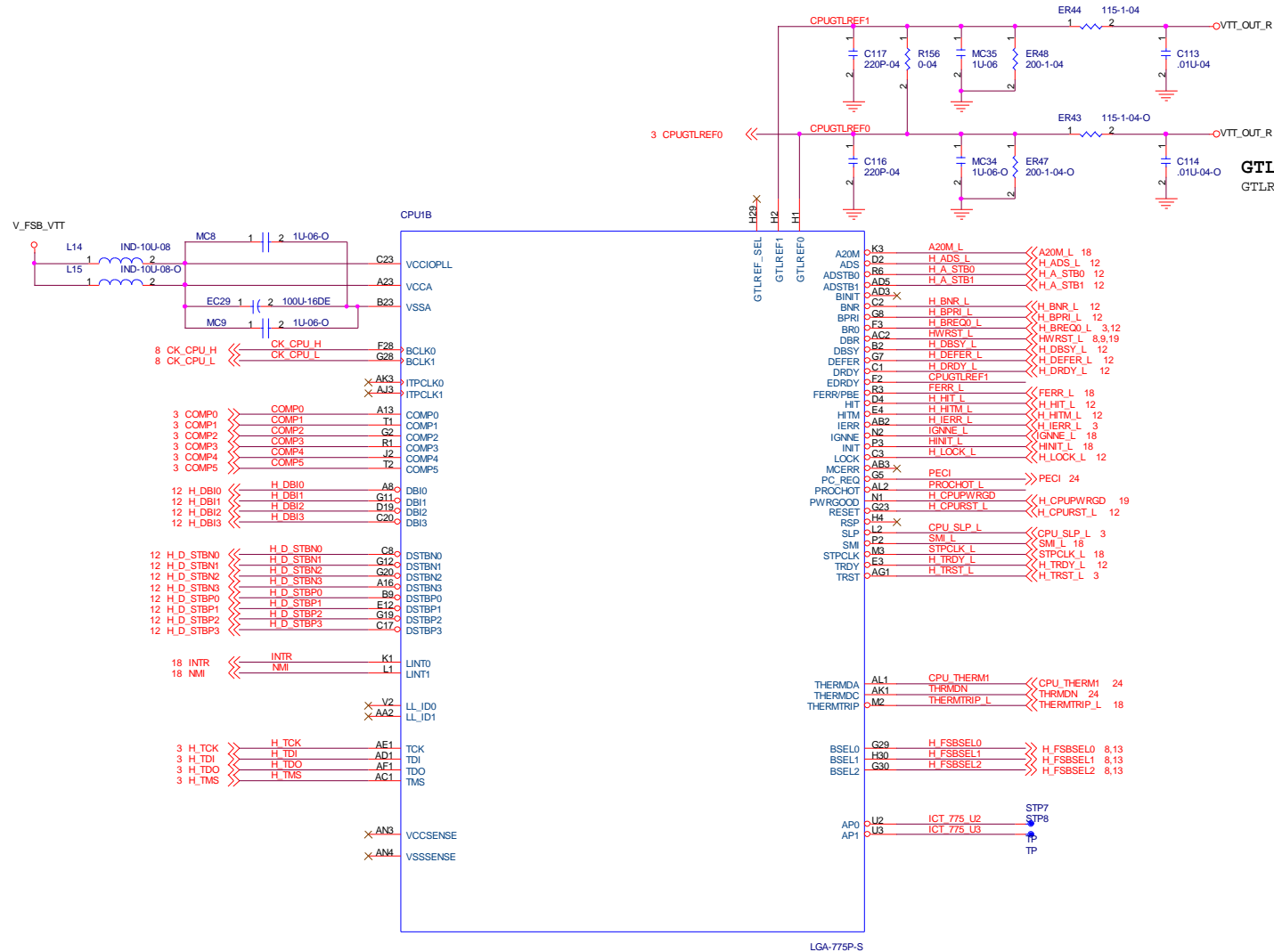
LPC bus

Super I/O
ITE 8718
128pin PQFP

ECS Elitegroup Computer Systems

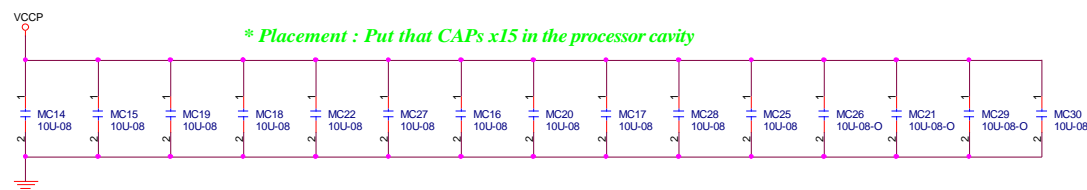
Title System Block Diagram		
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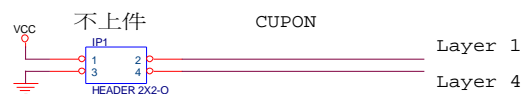
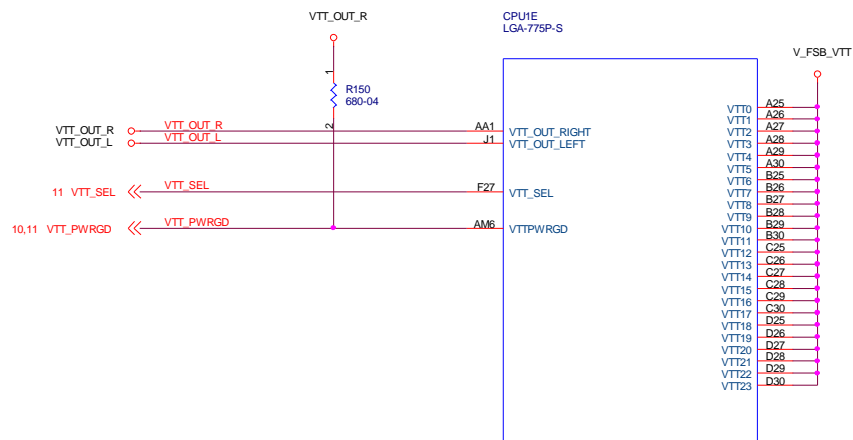
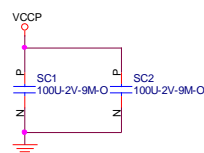








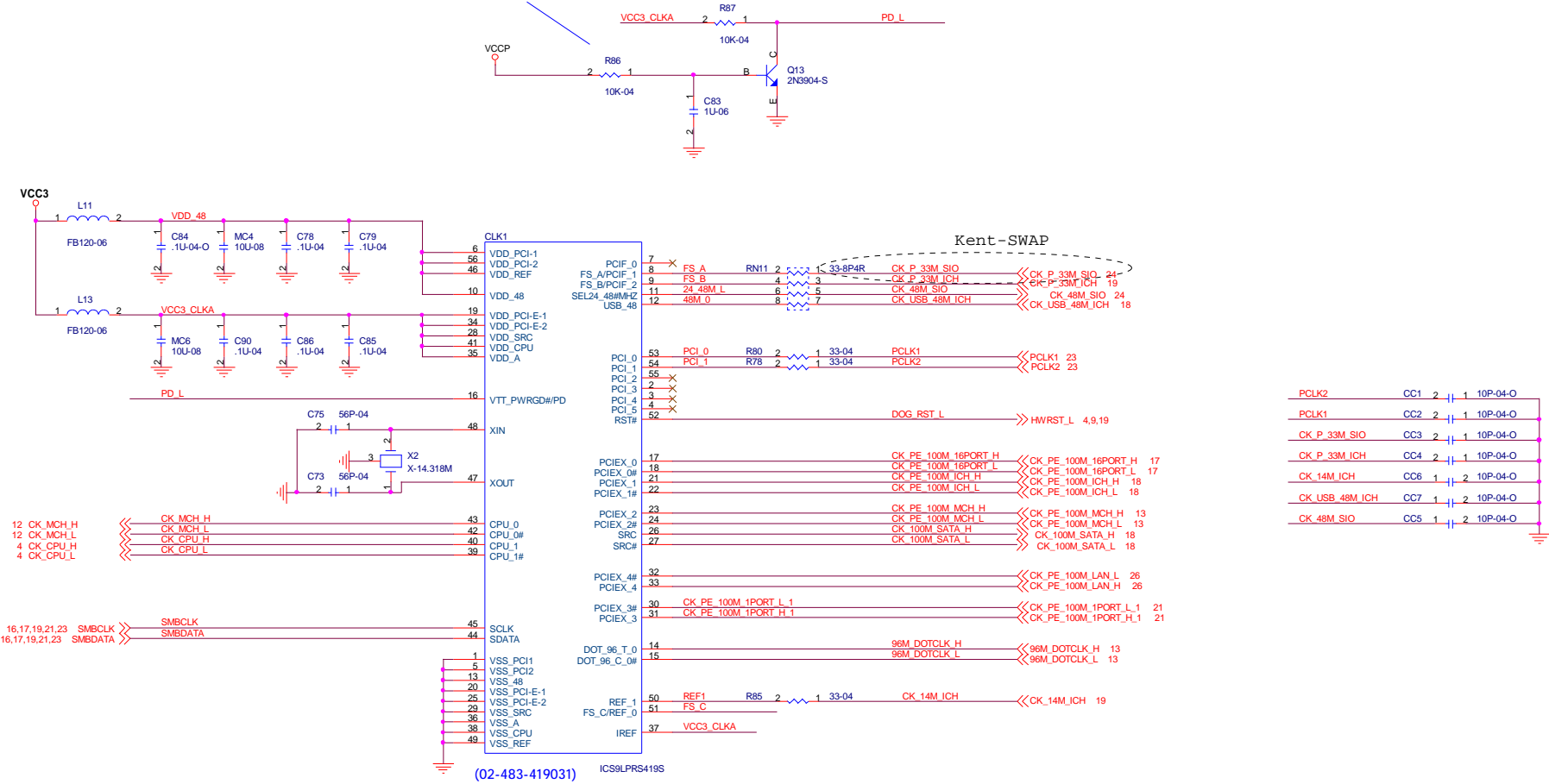
* Placement : Put that CAPs x2 on solder side



1080 : trace width 4 mil 50 ohm
Trace Length 3150 mils
Spacing: 1.clearance to itself 50/4/50(S:W:S)
2.clearance to other signal 3W

Title		
P4 LGA775P Part E		
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Short(2-3) for VRM_PWRGD onto CONORE CPU timing



BSEL TABLE
2 1 0 PSB FREQUENCY

0 0 1 133 MHZ (533)

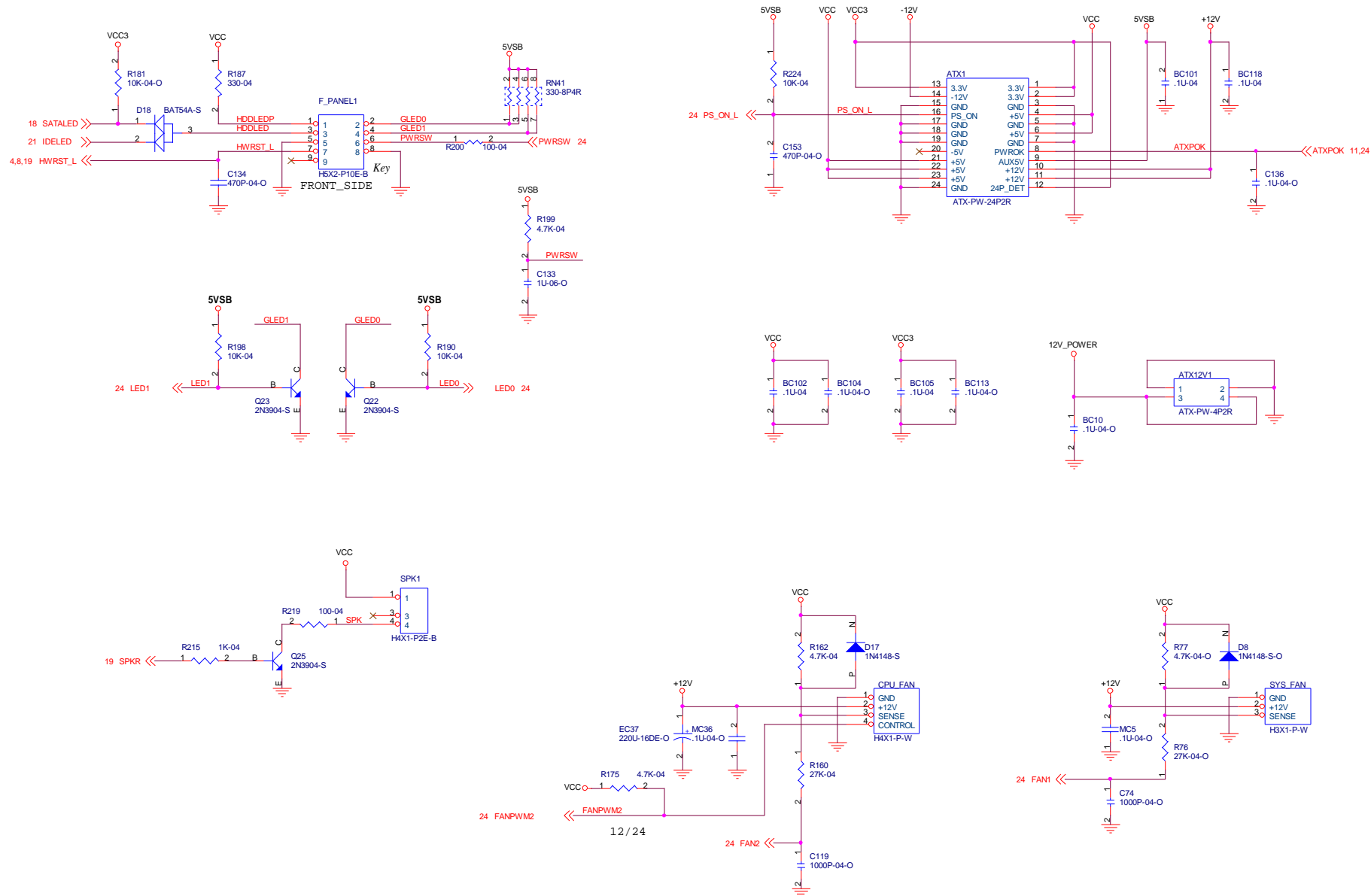
0 1 0 200 MHZ (800)


0 0 0 266 MHZ (1066)

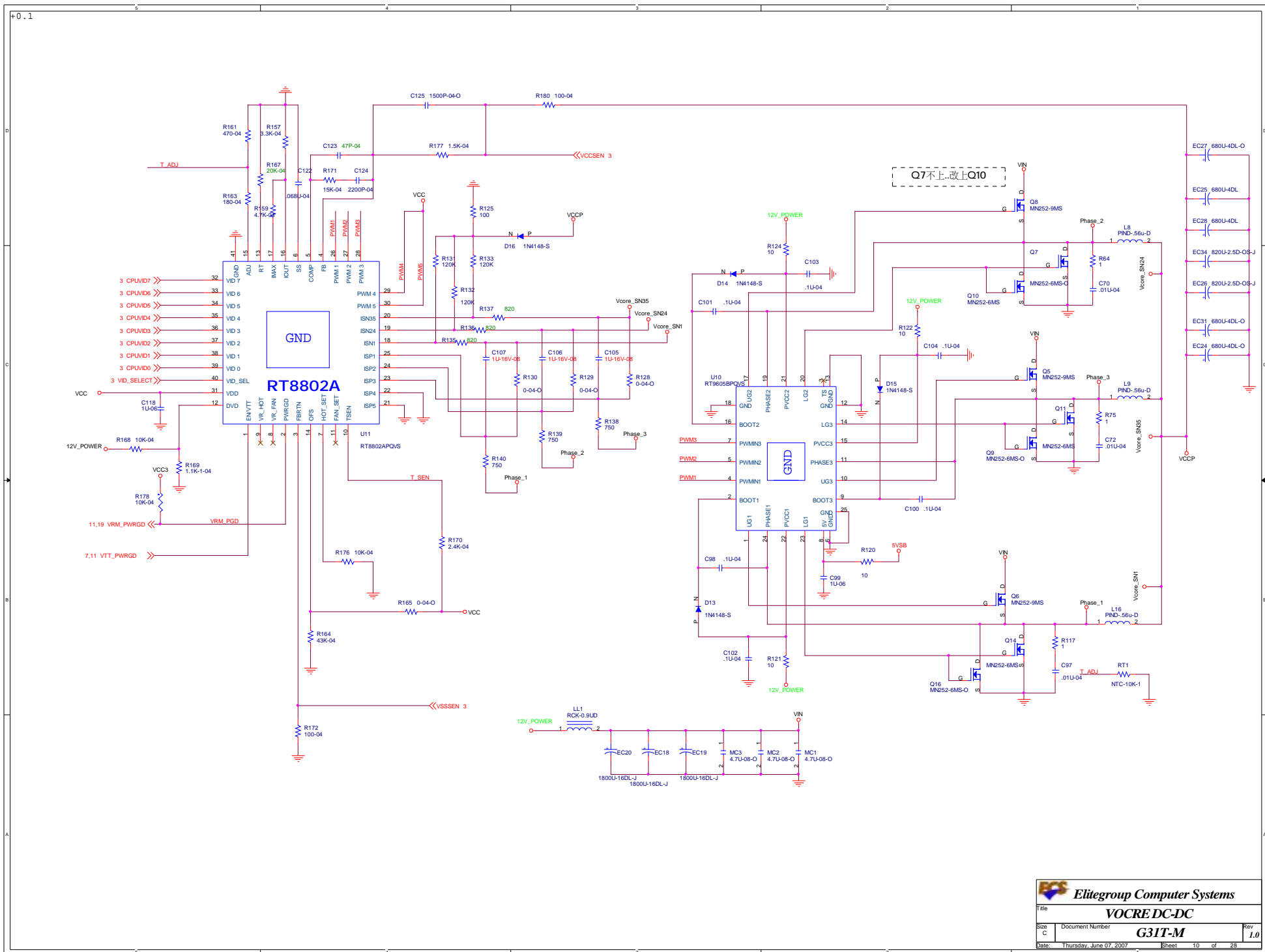
FS C R84 2 1 10K-04 H.FSBSEL2 H.FSBSEL2 4,13
FS B R81 2 1 10K-04 H.FSBSEL1 H.FSBSEL1 4,13
FS A R82 2 1 10K-04 H.FSBSEL0 H.FSBSEL0 4,13

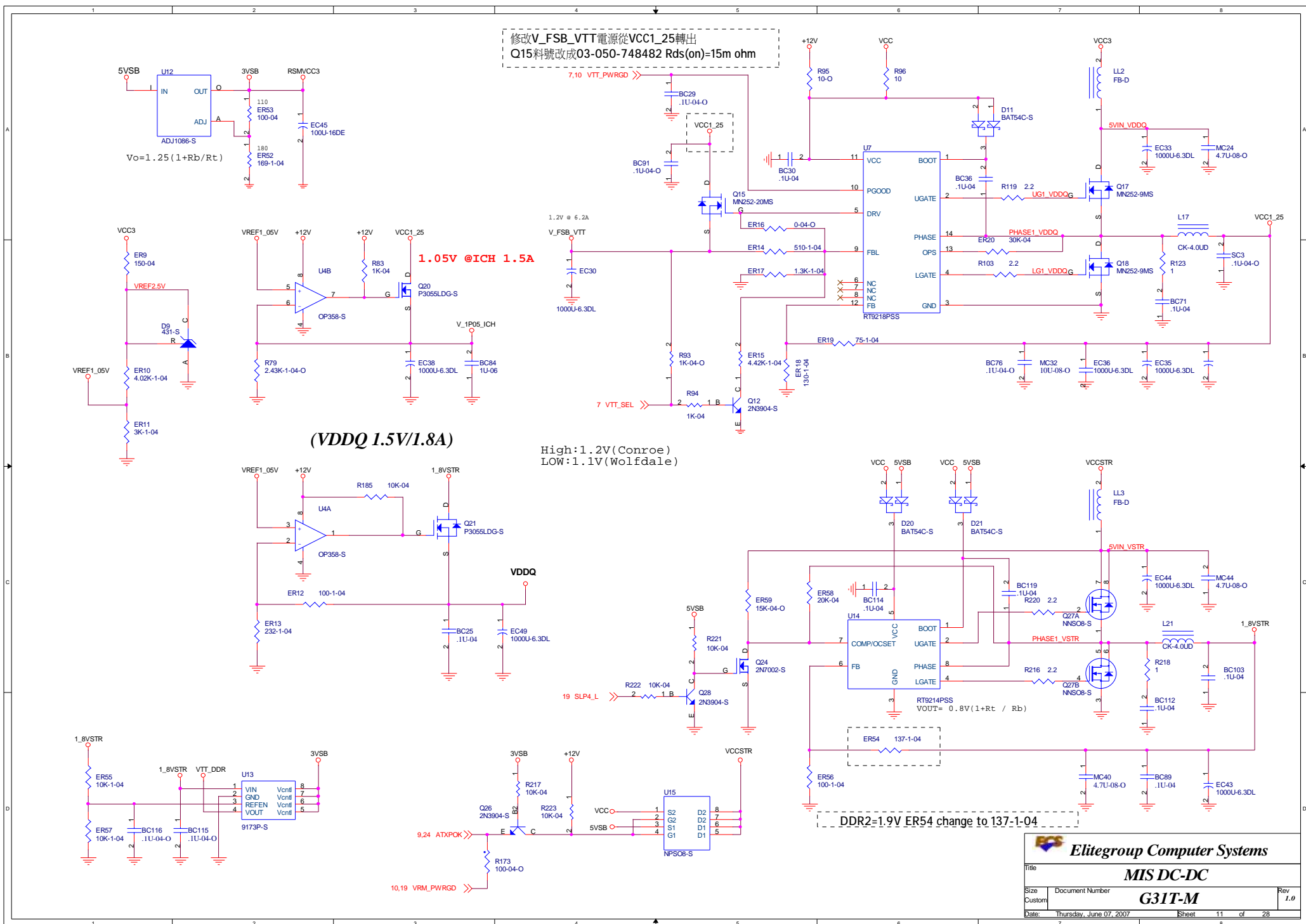
Swap PCIEX16 and SATA clock
Change ICH clk to pin 8

Clock Generator(CK410)			
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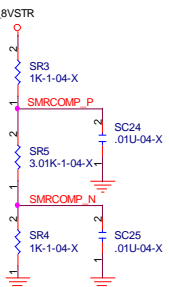
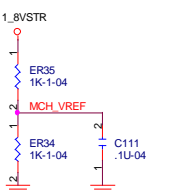


 Elitegroup Computer Systems			
Title ATX Power & Front Panel			
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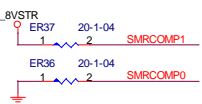
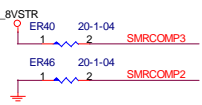








DESIGN NOTE:
BUFFERS CALIBRATE TO
20/80% OF V_{SM} INTERNAL
BUFFERS SET TO 20 OHMS



NB1C		U1MCH	
MAAA_0	BA31	SDQS_A0	AJ4
MAAA_1	BA25	SDQS_A0#	AR3
MAAA_2	BA26	SDM_A0	AR2
MAAA_3	BA25		
MAAA_4	AY25		
MAAA_5	BA23		
MAAA_6	AY24		
MAAA_7	AY23		
MAAA_8	BA23		
MAAA_9	BA22		
MAAA_10	AY33		
MAAA_11	BA22		
MAAA_12	AW21		
MAAA_13	AY38		
MAAA_14	BA21		
SWE_L_A	BB34	SDQS_A1	BB3
SCAS_L_A	AY35	SDQS_A1#	BA4
SRAS_L_A	BB33	SDM_A1	BA2
SBSA_0	BA33		
SBSA_1	AW32		
SBSA_2	BB21		
CSA_L0	AW35		
CSA_L1	BA38		
	BA34		
	BB38		
CKEA_0	BC20		
CKEA_1	AY20		
	AY21		
	BA19		
ODTA_0	AY37		
ODTA_1	BA38		
	BB35		
	BA39		
DCLKA_H0	AL31		
DCLKA_L0	AR31		
DCLKA_H1	AP27		
DCLKA_L1	AN27		
DCLKA_H2	AY33		
DCLKA_L2	AW33		
	AP29		
	AP23		
	AM25		
	AM27		
	AT33		
	AU33		
SDQS_A5		SDQS_A5	AL41
SDQS_A5#		SDM_A5	AL40
SDM_A5			AM3
SDQ_A40			AN41
SDQ_A41			AM38
SDQ_A42			AK42
SDQ_A43			AK41
SDQ_A44			AN40
SDQ_A45			AN42
SDQ_A46			AL42
SDQ_A47			AL39
SDQS_A6		SDQS_A6	AG42
SDQS_A6#		SDM_A6	AG41
SDM_A6			AG40
SDQ_A48			AJ40
SDQ_A49			AH43
SDQ_A50			AF38
SDQ_A51			AE40
SDQ_A52			AJ42
SDQ_A53			AJ41
SDQ_A54			AF41
SDQ_A55			AF42
SDQS_A7		SDQS_A7	AC42
SDQS_A7#		SDM_A7	AC41
SDM_A7			AC40
SDQ_A56			AD40
SDQ_A57			AD43
SDQ_A58			AB41
SDQ_A59			AA40
SDQ_A60			AE42
SDQ_A61			AE41
SDQ_A62			AC38
SDQ_A63			AB42

DDR_0

AN21

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G31

NB1D		U1MCH	
MAAB_0	BB17	SDQS_B0	AV6
MAAB_1	AY17	SDQS_B0#	AU5
MAAB_2	BA17	SDM_B0	AR7
MAAB_3	BC16		
MAAB_4	BA15		
MAAB_5	BA15		
MAAB_6	BB15		
MAAB_7	BA14		
MAAB_8	BA15		
MAAB_9	AY15		
MAAB_10	AW18		
MAAB_11	BB13		
MAAB_12	BA13		
MAAB_13	AY29		
MAAB_14	AY13		
SWE_L_B	BA27		
SCAS_L_B	AY29		
SRAS_L_B	AW28		
SBSB_0	AY19		
SBSB_1	BA18		
SBSB_2	BC12		
CSB_L0	BB27		
CSB_L1	BB30		
	AY27		
	AY31		
CKEB_0	AY12		
CKEB_1	AW12		
	BA11		
ODTB_0	BA29		
ODTB_1	BA30		
	BB29		
	BB31		
DCLKB_H0	AV31		
DCLKB_L0	AV31		
DCLKB_H1	AT27		
DCLKB_L1	AT27		
DCLKB_H2	AT32		
DCLKB_L2	AT32		
	AT29		
	AR29		
	AV29		
	AV22		
	AN3		
	AP30		
	AP32		
SDQS_B5		SDQS_B5	AL35
SDQS_B5#		SDM_B5	AL34
SDM_B5			AM37
SDQ_B40			AM35
SDQ_B41			AM38
SDQ_B42			AL34
SDQ_B43			AL38
SDQ_B44			AR39
SDQ_B45			AM34
SDQ_B46			AL37
SDQ_B47			AL32
SDQS_B6		SDQS_B6	AG35
SDQS_B6#		SDM_B6	AG36
SDM_B6			AG39
SDQ_B48			AG38
SDQ_B49			AJ38
SDQ_B50			AF35
SDQ_B51			AF33
SDQ_B52			AJ37
SDQ_B53			AJ35
SDQ_B54			AG33
SDQ_B55			AF34
SDQS_B7		SDQS_B7	AC36
SDQS_B7#		SDM_B7	AC37
SDM_B7			AD38
SDQ_B56			AD36
SDQ_B57			AC33
SDQ_B58			AA34
SDQ_B59			AA36
SDQ_B60			AD34
SDQ_B61			AF38
SDQ_B62			AC34
SDQ_B63			AA33

DDR_1

AM21

MCH_VREF

SRCOMP0
SRCOMP1
SRCOMP2
SRCOMP3
SRCOMP N
SRCOMP P
SRCOMPVOL
SRCOMPVOH
RESERVED

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G31

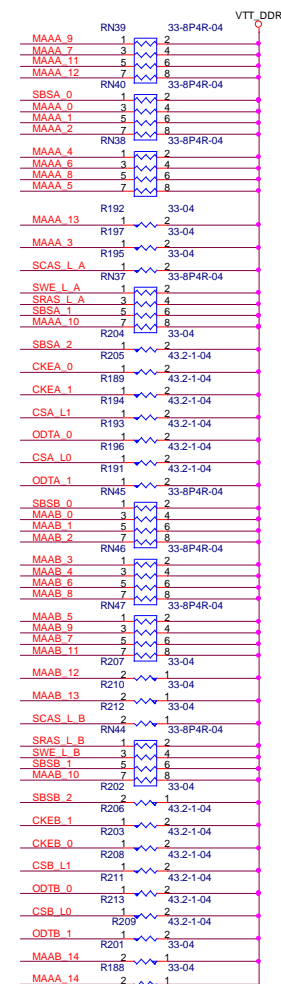
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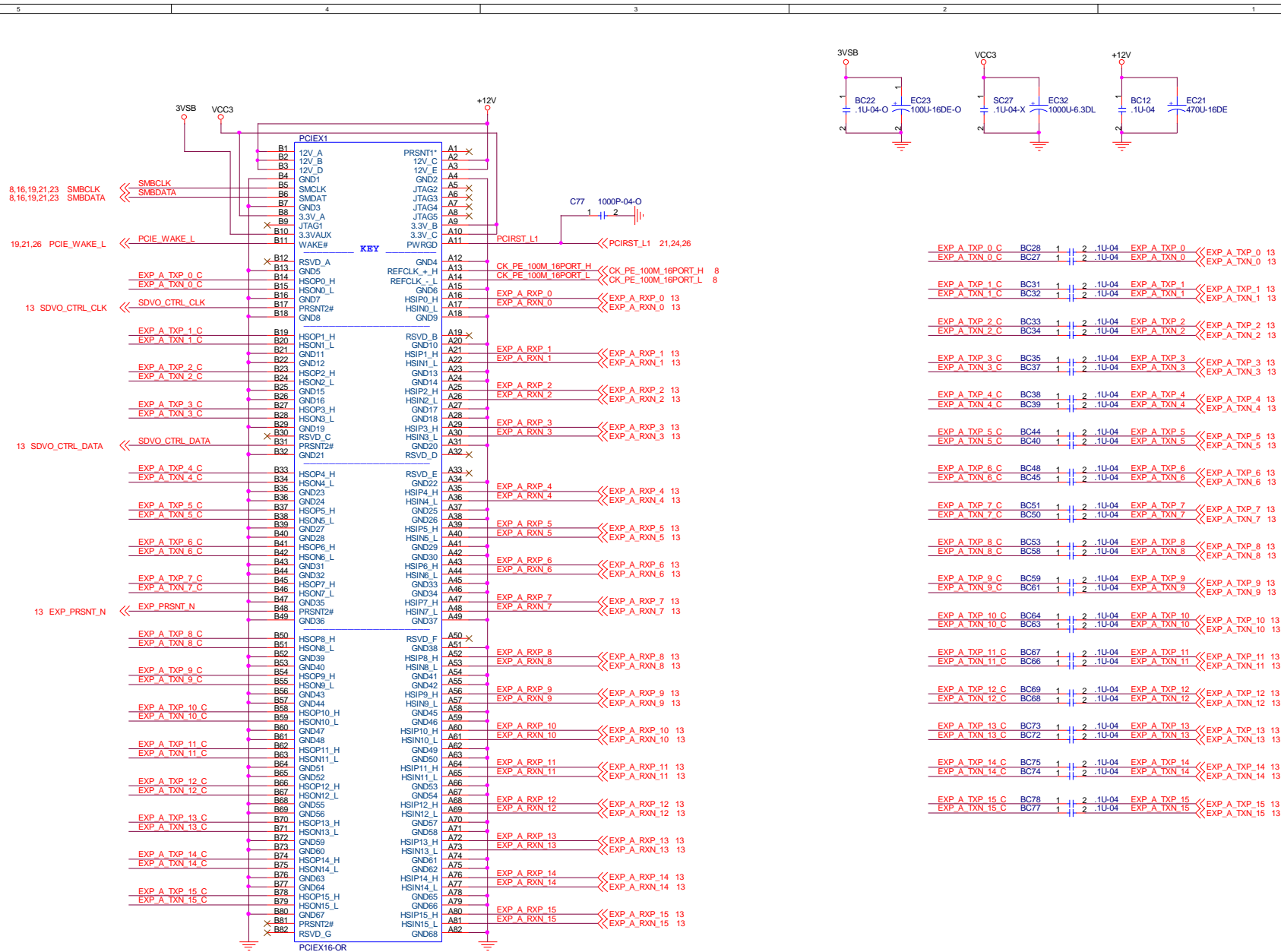
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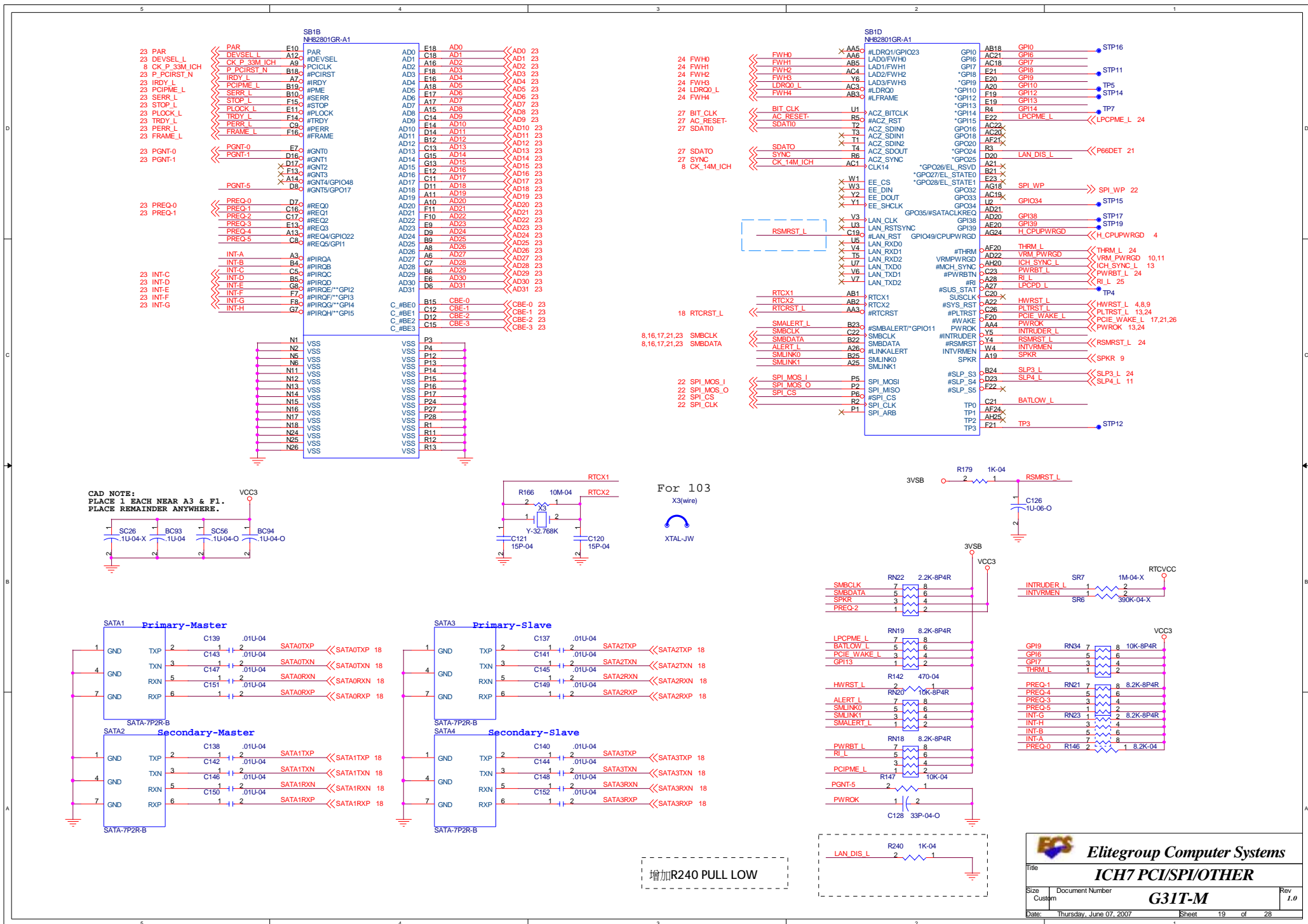
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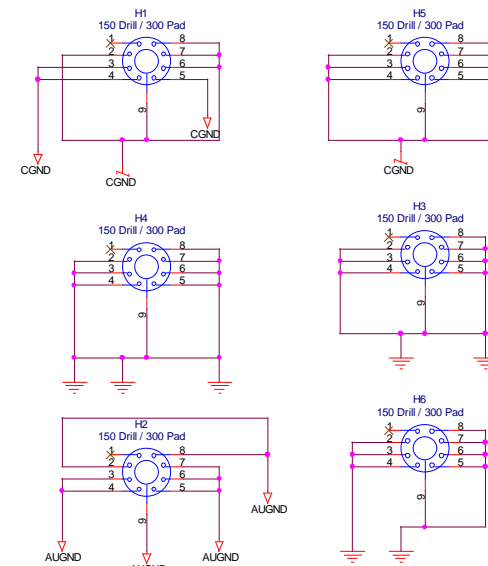


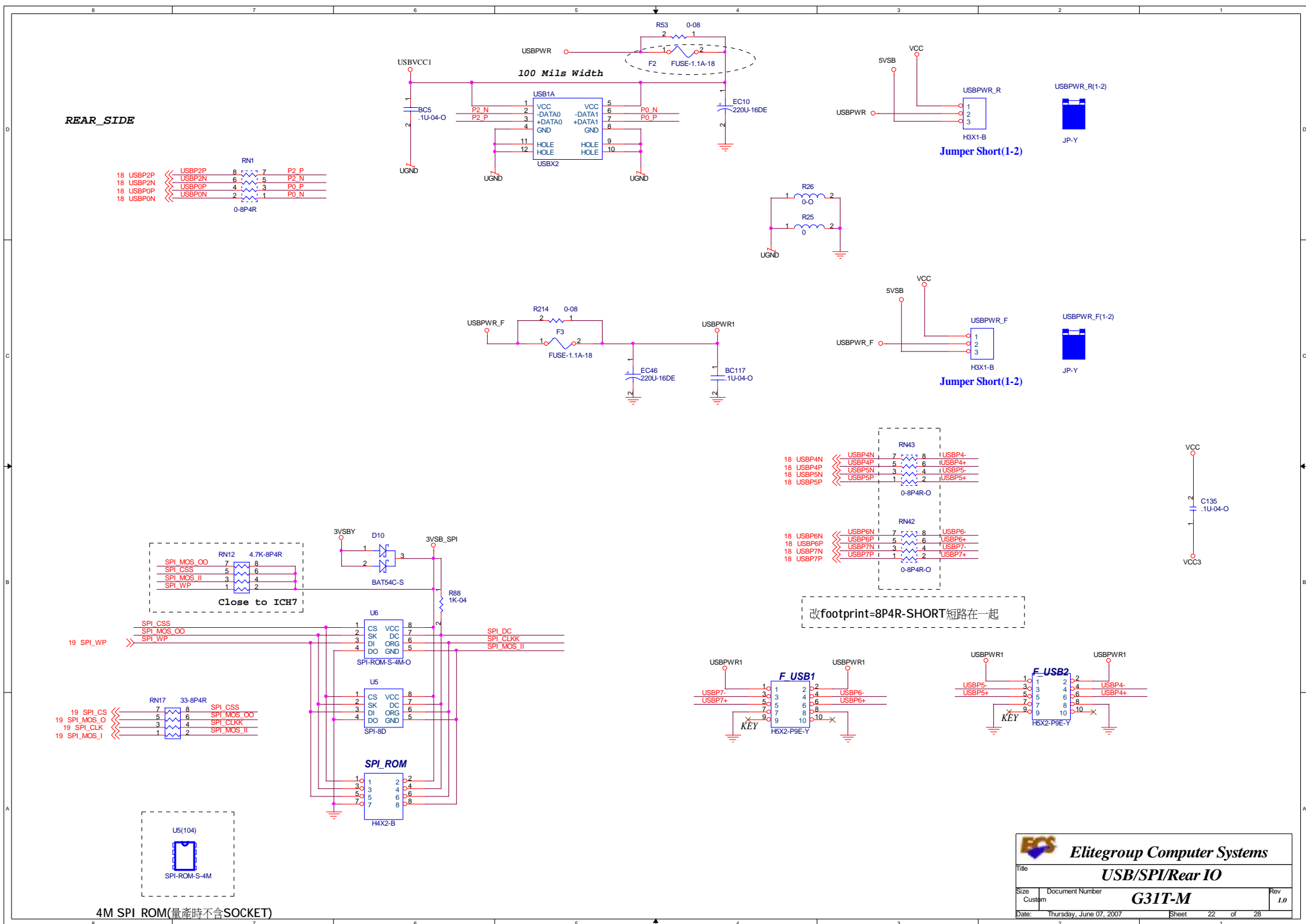


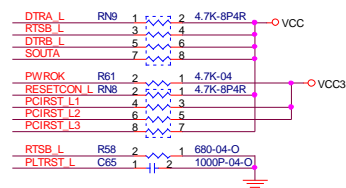
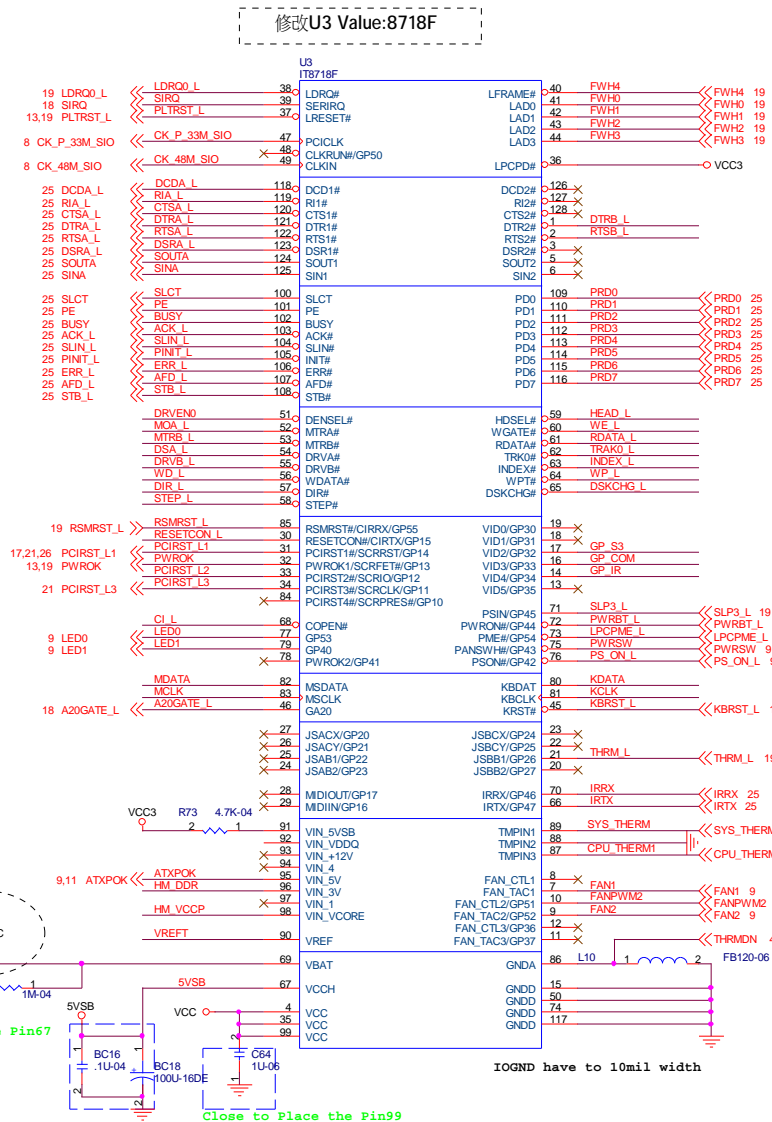
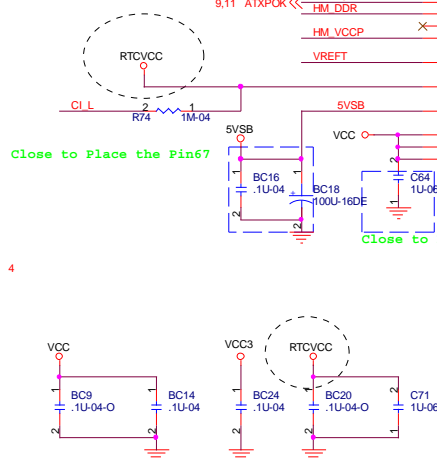
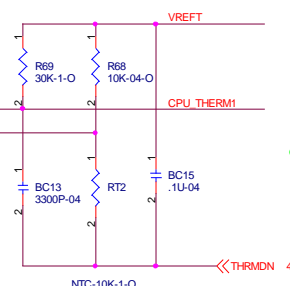
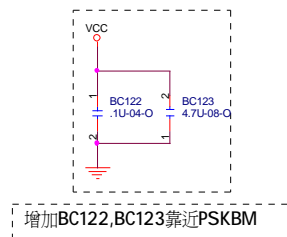
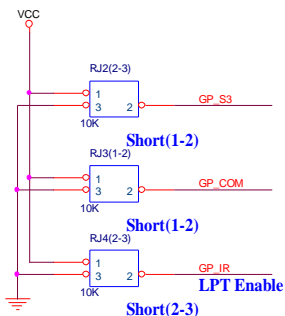


Title			
PCIEX16 slot			
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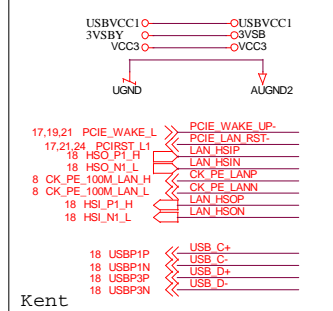






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External Connection



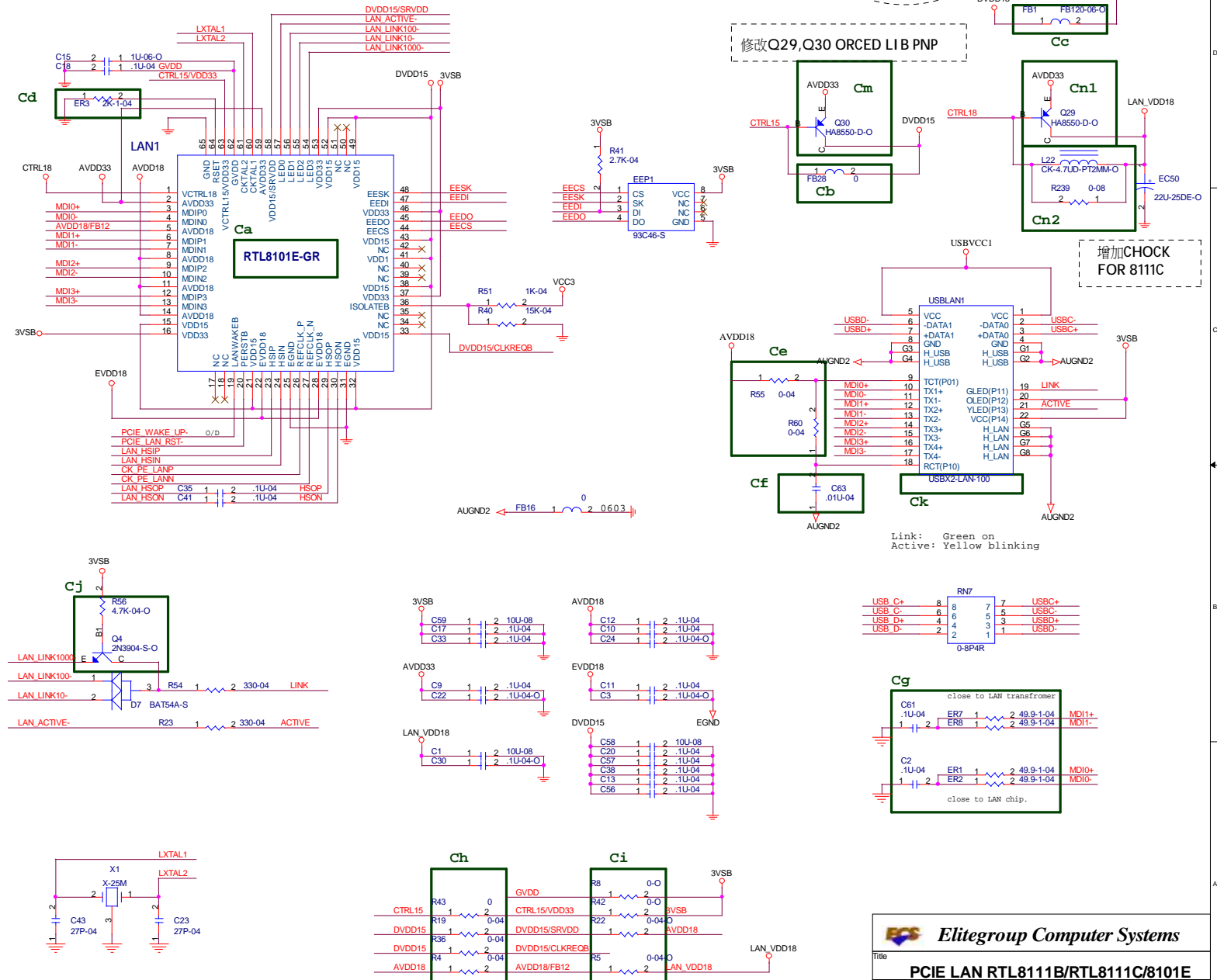
Kent
When you found some bug, please inform Ren(ext:665) to update circuit.

BOM Difference

	RTL8101E-GR 10/100M	RTL8111C-GR 1000M	RTL8111B-GR 1000M
Ca	RTL8101E-GR	RTL8111C-GR	RTL8111B-GR
Cb	V	X	X
Cc	X	V	X
Cd	2K-1-04	2.49K-1-04	2.49K-1-04
Ce	V	X	X
Cf	.01U-04	0-04	0-04
Cg	V	X	X
Ch	V	X	V
Ci	X	V	X
Cj	X	V	V
Ck	USBX2-LAN-100	USBX2-LAN-1000	USBX2-LAN-1000
Cm	X	X	HA8550-D
Cn1	X	X	HA8550-D
Cn2	0	chock+EC50	X

Power Difference

	RTL8101E	RTL8111C
AVDD33	3.3V	3.3V
AVDD18	1.8V	1.2V
EVDD18	1.8V	1.2V
DVDD15	1.5V	1.2V



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Title: **PCIE LAN RTL8111B/RTL8111C/8101E**

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External Connection

VCC \rightarrow VCC
+12V \rightarrow +12V
VCC3 \rightarrow VCC3

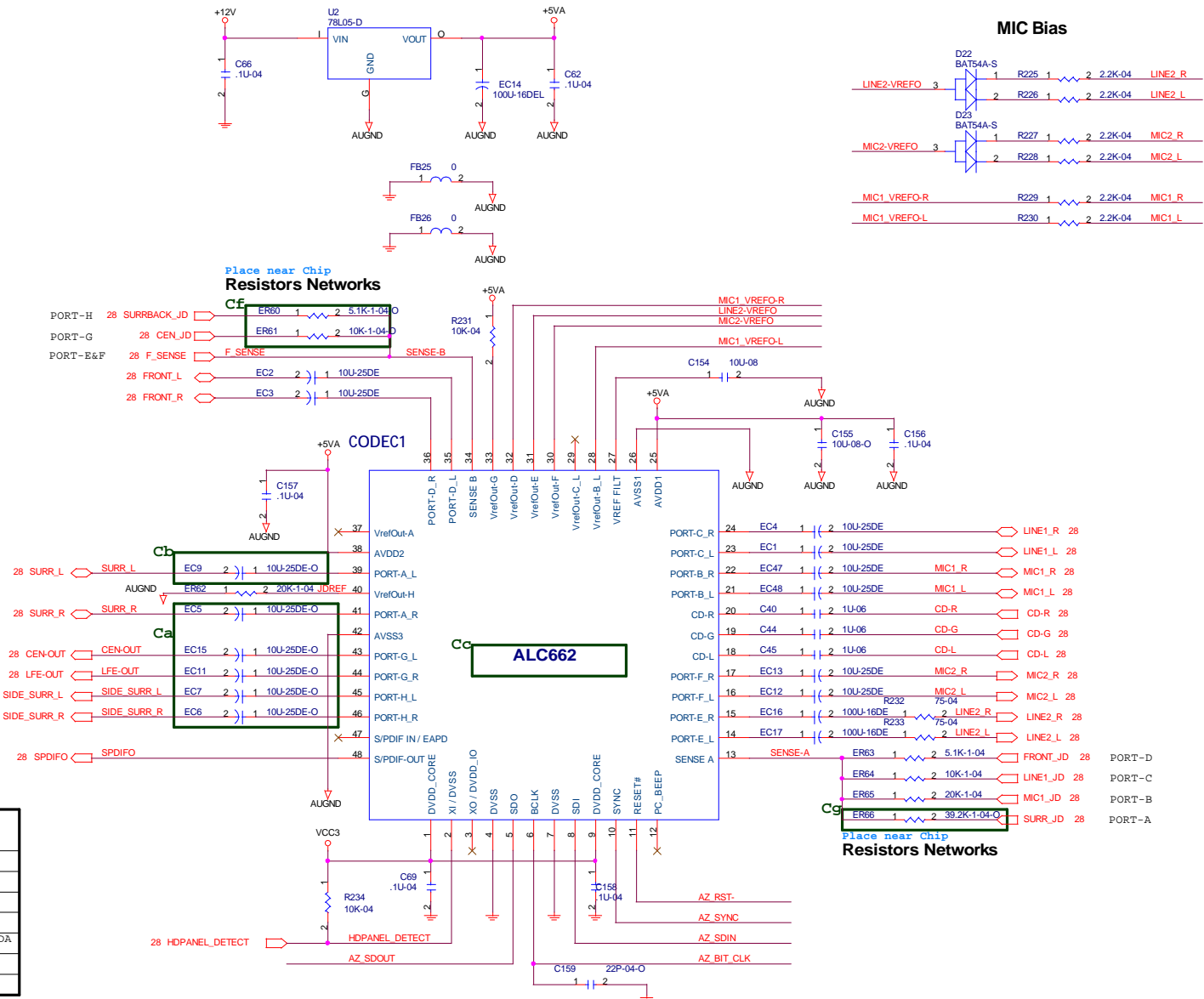
19 AC_RESET \rightarrow AZ_RST-
19 BIT_CLK \rightarrow AZ_BIT_CLK
19 SYNC \rightarrow AZ_SYNC
19 SDAT10 \rightarrow AZ_SDIN
19 SDAT0 \rightarrow AZ_SDOU

When you found some bug, please inform Ren(ext:665) to update circuit.

BOM Difference

Location	ALC883 7.1 Ch	ALC662 5.1 CH
Ca	V	X
Cb	V	X
Cc	ALC883	ALC662
Cd	V	X
Ce	AUDIO-6P	AUDIO-3P-HDA
Cf	V	X
Cg	V	X

When you change BOM, remember change GPI to inform BIOS use different Verb-Table.



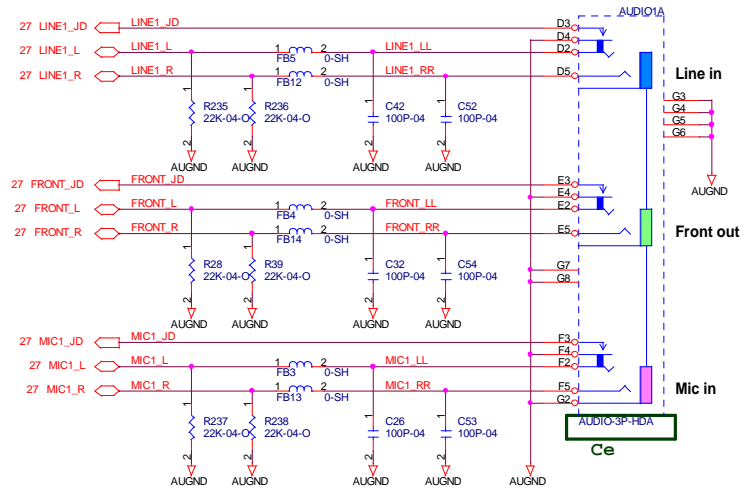
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Title: **AUDIO ALC883/ALC662 (CHIP)**

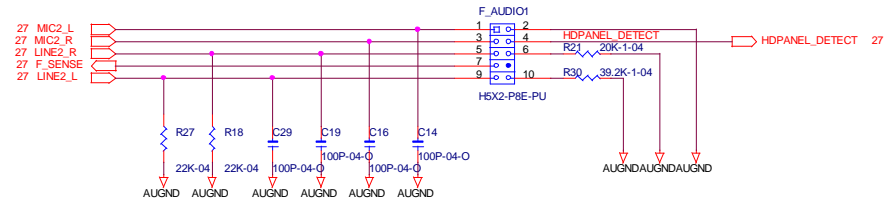
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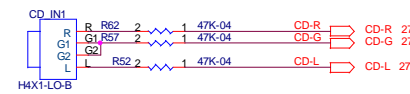
REAR-AUDIO



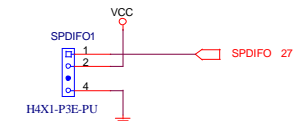
FRONT-AUDIO



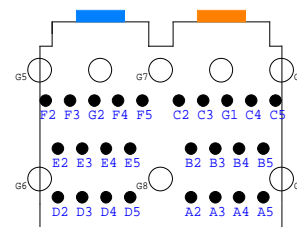
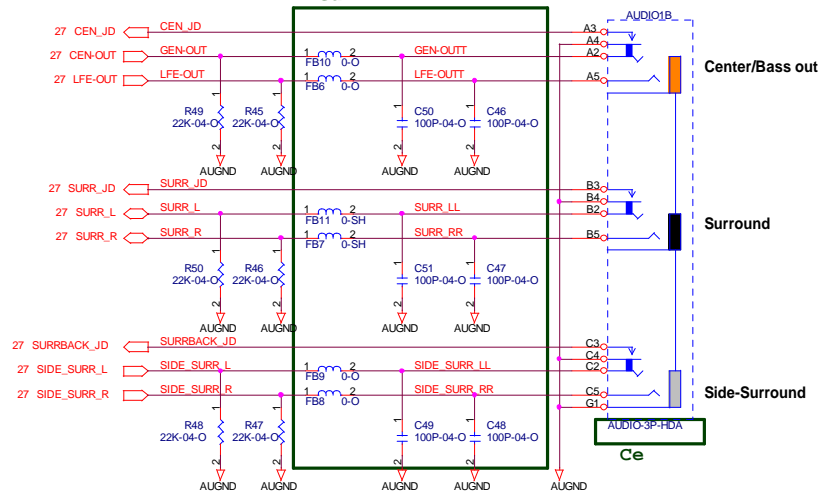
CD_I N



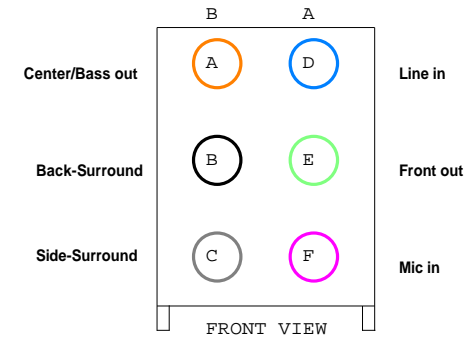
SPDIF-OUT



Cd



TOP VIEW



Title			
AUDIO ALC883/ALC662 (PANEL)			
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