ELITEGROUP COMPUTER SYSTEMS

Project Name : I4xSIx

Platform :Penryn(CPU)+SIS M672FX(NB)+SIS 968(SB)

PAGE CONTENT

Schematic Version Change History

Release Date	Version	PCB P/N	PCBA P/N	Note
2008/09/16	Rev.A	37GI41000-A0	82GI41000-A0	Initial
2008/10/30	Rev.B	37GI41000-B0	82GI41000-B0	Update
2008/12/18	Rev.C	37GI41000-C0	82GI41000-C0	Update
2009/01/20	Rev.01	37GI41000-10	82GI41000-10	Update

ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

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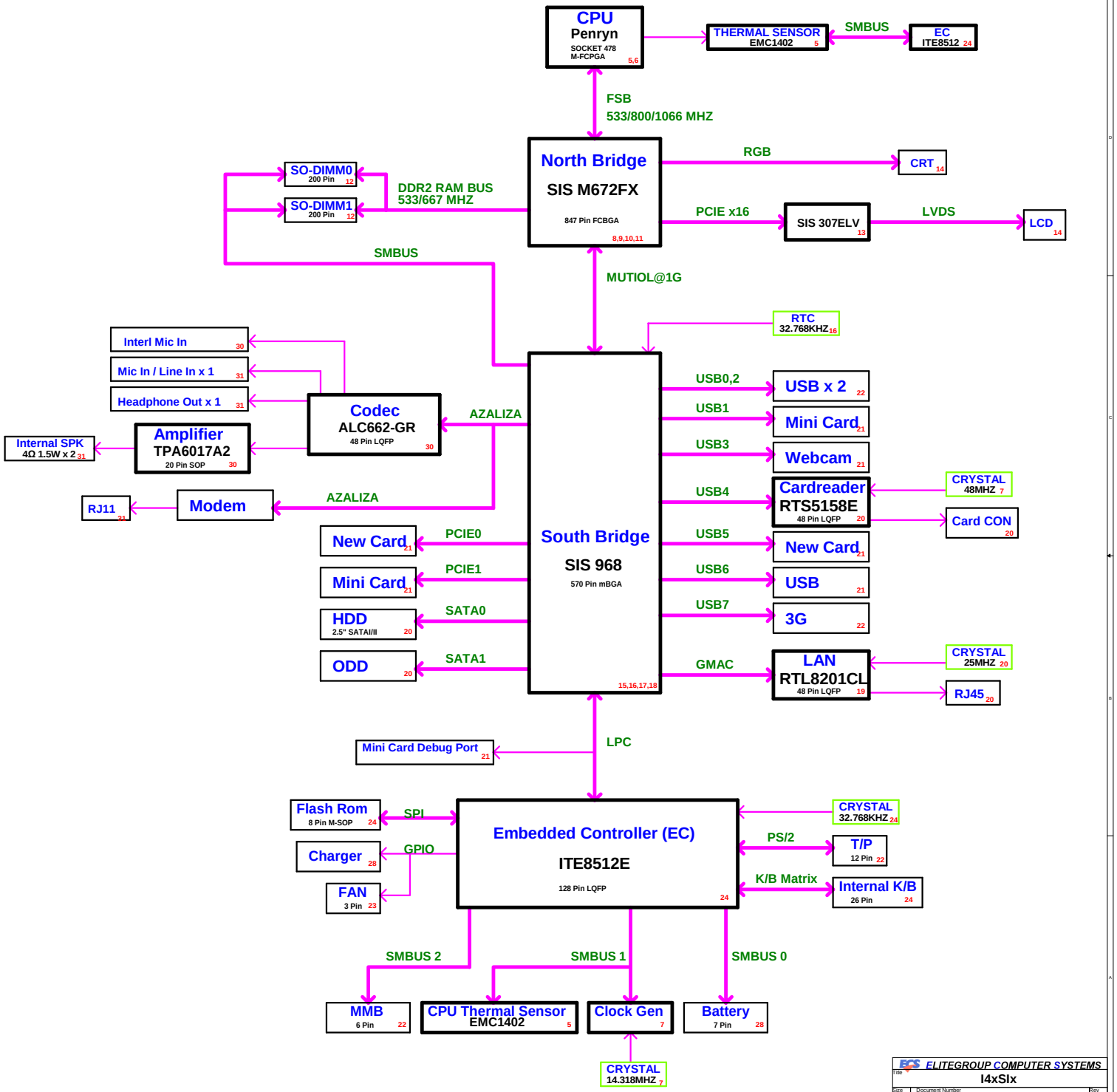
CPU
Penryn
SOCKET 478
M-FCPGA
5,6
THERMAL SENSOR
EMC1402
5
SMBUS
EC
ITE8512
24
FSB
533/800/1066 MHZ
North Bridge
SIS M672FX
847 Pin FCBGA
8,9,10,11
RGB
CRT
14
SO-DIMM0
200 Pin
12
SO-DIMM1
200 Pin
12
DDR2 RAM BUS
533/667 MHZ
PCIE x16
SIS 307ELV
13
LVDS
LCD
14
SMBUS
MUTIOL@1G
RTC
32.768KHZ
16
Interl Mic In
30
Mic In / Line In x 1
31
Headphone Out x 1
31
Codec
ALC662-GR
48 Pin LQFP
30
AZALIZA
Internal SPK
4Ω 1.5W x 2
31
Amplifier
TPA6017A2
20 Pin SOP
30
RJ11
31
Modem
AZALIZA
South Bridge
SIS 968
570 Pin mBGA
15,16,17,18
USB0,2
USB x 2
22
USB1
Mini Card
21
USB3
Webcam
21
USB4
Cardreader
RTS5158E
48 Pin LQFP
20
CRYSTAL
48MHZ
7
Card CON
20
USB5
New Card
21
USB6
USB
21
USB7
3G
22
GMAC
LAN
RTL8201CL
48 Pin LQFP
19
CRYSTAL
25MHZ
20
RJ45
20
New Card
21
PCIE0
Mini Card
21
PCIE1
HDD
2.5" SATAI/II
20
SATA0
ODD
20
SATA1
Mini Card Debug Port
21
LPC
Flash Rom
8 Pin M-SOP
24
SPI
Charger
28
GPIO
FAN
3 Pin
23
Embedded Controller (EC)
ITE8512E
128 Pin LQFP
24
CRYSTAL
32.768KHZ
24
PS/2
T/P
12 Pin
22
K/B Matrix
Internal K/B
26 Pin
24
SMBUS 2
SMBUS 1
SMBUS 0
MMB
6 Pin
22
CPU Thermal Sensor
EMC1402
5
Clock Gen
7
Battery
7 Pin
28
CRYSTAL
14.318MHZ
7
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I4xSIx
SYSTEM BLOCK DIAGRAM
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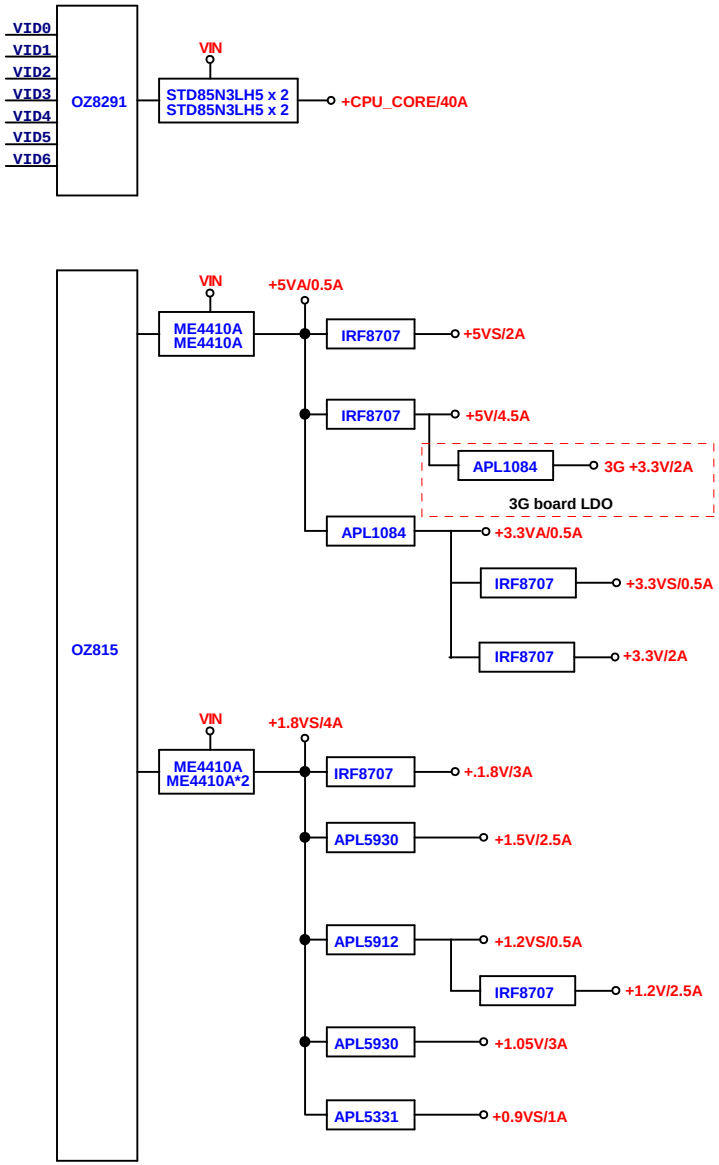
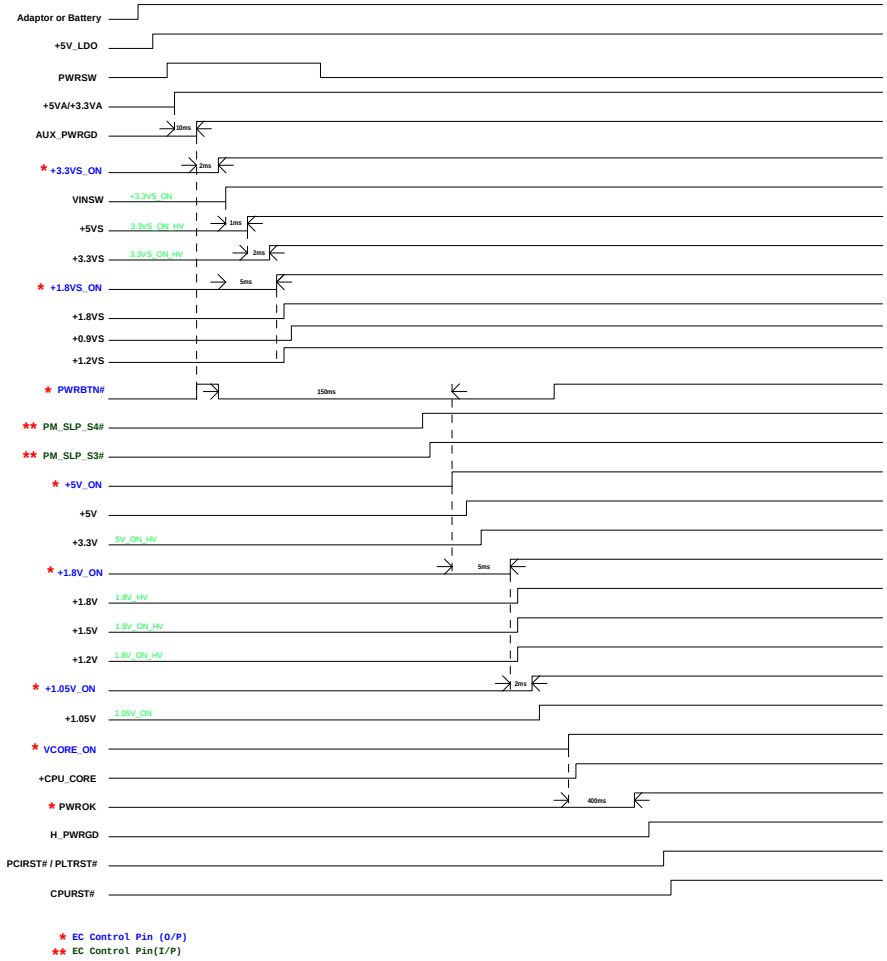
POWER BLOCK DIAGRAM



System Poewr On Sequence



* EC Control Pin (O/P)
** EC Control Pin(I/P)

ELITEGROUP COMPUTER SYSTEMS

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SIS968 GPIO

GPIO0	NC
GPIO1	NC
GPIO2	PM_THROTTING#
GPIO3	EC_EXTSMI#
GPIO4	PM_CLKRUN#
GPIO5	NC
GPIO6	NC
GPIO7	NC
GPIO8	NC
GPIO9	NC
GPIO10	SLP_S5#
GPIO11	AGPSTOP_N
GPIO12	DPSLP#
GPIO13	SB_DPRSLPVR
GPIO14	NC
GPIO15	SLP_S3#
GPIO16	NC
GPIO17	H_A20GATE
GPIO18	H_RCIN#
GPIO19	SB_SMB_CLK
GPIO20	SB_SMB_DATA

ITE8512E GPIO

GPA0	AUX_PWRGD
GPA1	DDR_V_SW#
GPA2	BTL_BEEP
GPA3	RFLED_ON
GPA4	SCROLL/3G_LED
GPA5	NUM_LED
GPA6	CAPS_LED
GPA7	PWRON_LED
GPB0	PM_SLP_S5#
GPB1	PM_SLP_S3#
GPB2	WEBCAM_ON
GPB3	BAT_SMBCLK
GPB4	BAT_SMBDAT
GPB5	H_A20GATE
GPB6	H_RCIN#
GPB7	BT_ON
GPC0	EC_VID5
GPC1	SMBCLK_EC
GPC2	SMBDAT_EC
GPC3	EC_VID2
GPC4	RF_SW_ON#
GPC5	EC_VID1
GPC6	INTERNET#
GPC7	SILENT#
GPD0	EC_PREST#
GPD1	PWRBTN#
GPD2	EC_LPCRST#
GPD3	EC_EXTSCI#
GPD4	EC_EXTSMI#
GPD5	H_PROCHOT#
GPD6	CHG_ON
GPD7	LCDSW
GPE0	EC_PWR_ON
GPE1	SET_V
GPE2	PWROK
GPE3	VCORE_ON
GPE4	LID#
GPE5	AC_IN/OUT#
GPE6	FAN_SPD# or RTCRST
GPE7	AMP_MUTE#
GPF0	3G_ON
GPF1	EC_BSEL1
GPF2	CHG_G_LED
GPF3	CHG_R_LED
GPF4	TP_CLK
GPF5	TP_DATA
GPF6	VGA_SMBCLK
GPF7	VGA_SMBDAT
GPG0	EC_VID3
GPG1	EC_WDOG OK
GPG2	FLFRAME#
GPG6	NEW_CARD_PWR_ON#
GPH0	+1.8V_ON
GPH1	+1.8VS_ON
GPH2	SENBAT_V
GPH3	+3.3VS_ON
GPH4	+5V_ON
GPH5	VDD_CORE_ON
GPH6	EC_VID4

ITE8512E GPIO

GPI0	BATT_TEMP
GPI1	ADAPTOR_I
GPI2	NC
GPI3	FAN_SPD#
GPI4	BAT_I
GPI5	EC_CPU_PWR
GPI6	DDR2_TEMP
GPI7	BAT_V
GPJ0	EC_BRGHT
GPJ1	CHG_I
GPJ2	FAN_CTRL0
GPJ3	MMB_RST#
GPJ4	CHG_REF
GPJ5	PM_THROTTING#

CPU

	CPU CORE(V)	ICC(mA)	W	TEMP(℃)
2.0G	1.525	35.7	54.3	69
2.2G	1.525	37.5	57.1	70
2.26G	1.525	38.1	58.0	70
2.4G	1.525	39.3	59.8	71
2.5G	1.525	40	61.0	72
2.53G	1.525	40.4	61.5	72
2.6G	1.525	41.05	62.6	72
2.66G	1.525	43.35	66.1	74
2.8G	1.525	44.86	68.4	75
3.06G	1.525	55.9	85.2	81

VCC	ICC(mA)	W	TEMP(℃)
+1.5V	120	0.18	
+1.05V	2500	2.625	70

672FX

VCC	ICC(mA)	W	TEMP(℃)
+1.2V	2303	2.76	
+1.8V	1215	2.18	70
+1.05V	80	0.084	

SIS968

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	86	0.283	
+1.8V	851	1.531	70
+1.05V	22	0.022	

307LV

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	236	1.107	
+1.8V	565	0.778	70

CLOCK GENERATOR+BUFFER

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	400	1.32	
+1.8V	300	0.54	70

ITE8512E

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	200	0.66	70
+3.3VA	500	1.65	

RTS5158

VCC	ICC(mA)	W	TEMP(℃)
+5V	76	0.38	85

RTL8201CL

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	20	0.396	85

ALC662-GR

VCC	ICC(mA)	W	TEMP(℃)
+3.3V	23	0.075	
+5VA	38	0.19	70

TPA6017A2

VCC	ICC(mA)	W	TEMP(℃)
5V	20	0.1	85

ADM1032

VCC	ICC	W	TEMP(℃)
+3.3V	170uA	0.56mW	150

SMART POWER TABLE

VID6	VID5	VID4	VID3	VID2	VID1	VID0	VCORE	+_mV
0	0	0	0	0	0	0	1.5000	-0mV
0	0	0	0	0	0	1	1.4875	-2.5mV
0	0	0	0	0	1	0	1.4750	-5mV
0	0	0	0	1	0	0	1.4500	-50mV
0	0	0	1	0	0	0	1.4000	-100mV
0	0	1	0	0	0	0	1.3000	-200mV
0	1	0	0	0	0	0	1.1000	-400mV
1	0	0	0	0	0	0	0.7000	-800mV
0	0	1	1	0	1	1	1.1625	
0	0	1	0	0	0	1		
0	0	1	0	0	1	0		
0	0	1	0	1	0	0		
0	0	1	0	1	1	0		
0	0	1	1	0	0	1		
0	0	1	1	0	1	0		

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GPIO & Power Consumption

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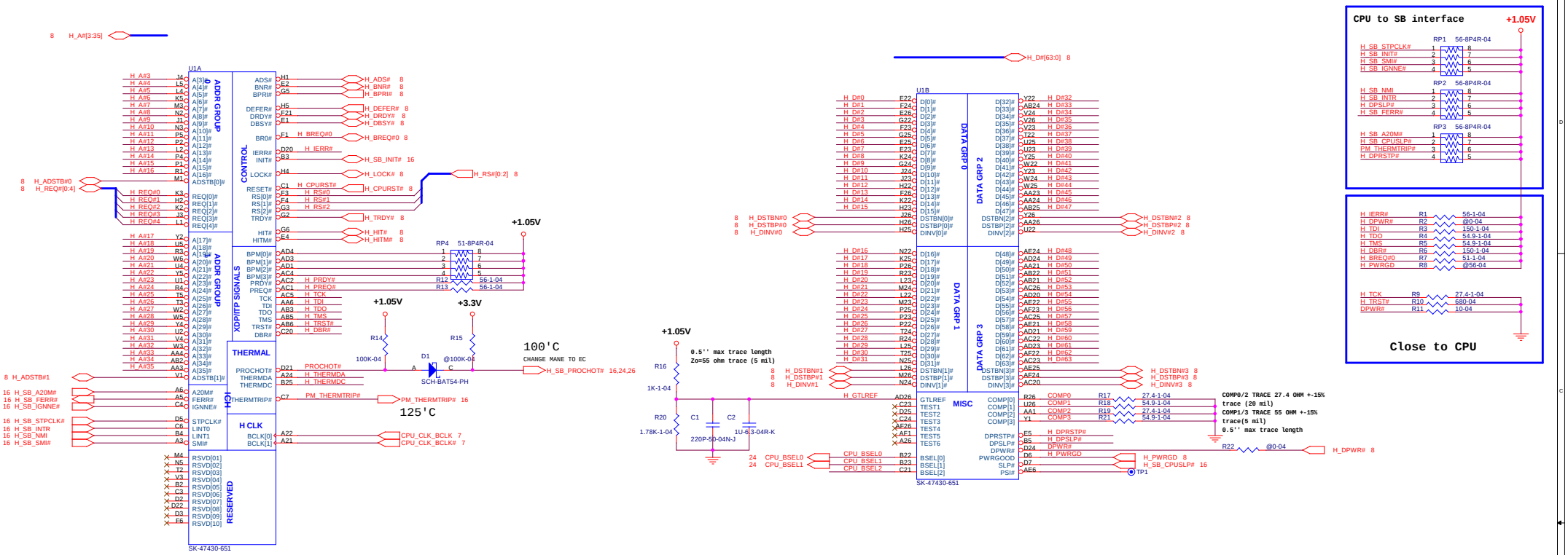
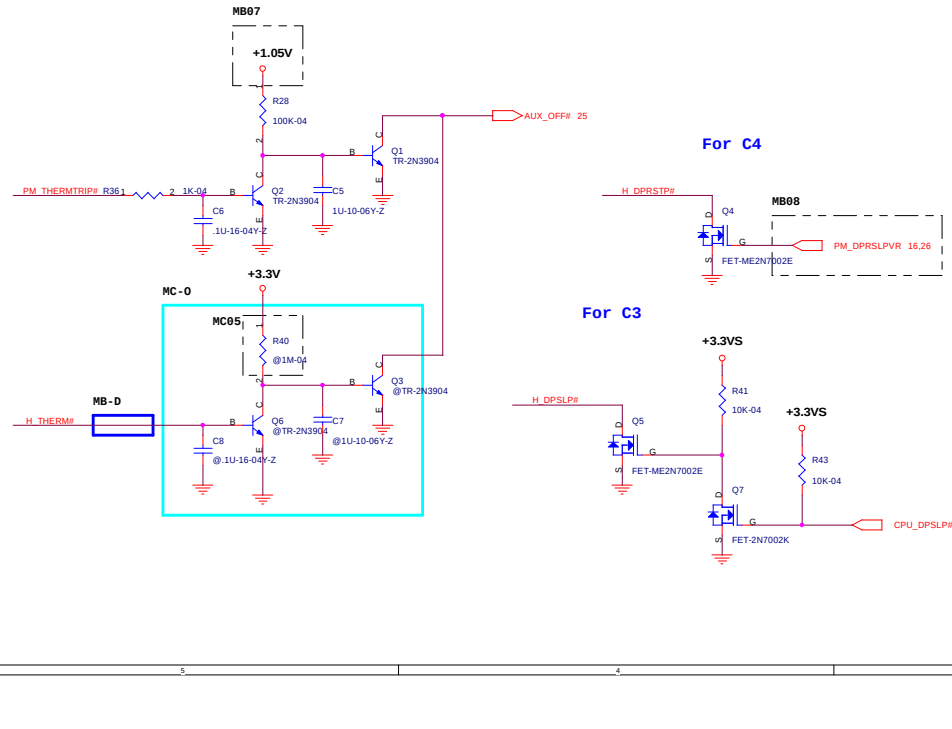
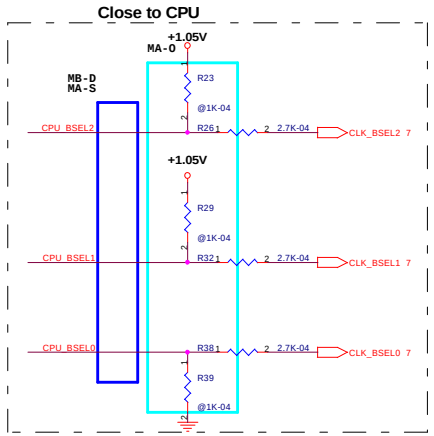
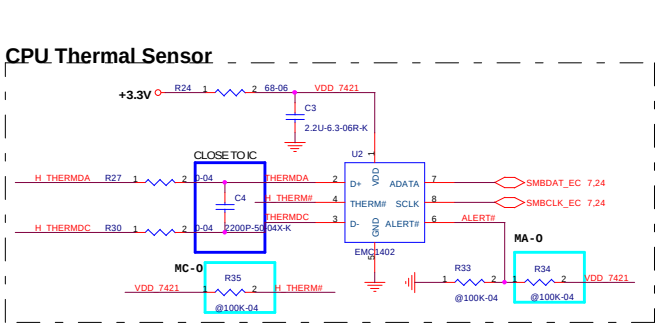






FSB \ BSEL	BSEL2	BSEL1	BSEL0	MHZ
FSB533	0	0	1	133
FSB667	0	1	1	166
FSB800	0	1	0	200
FSB1066	0	0	0	266



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Title: I4xSIx

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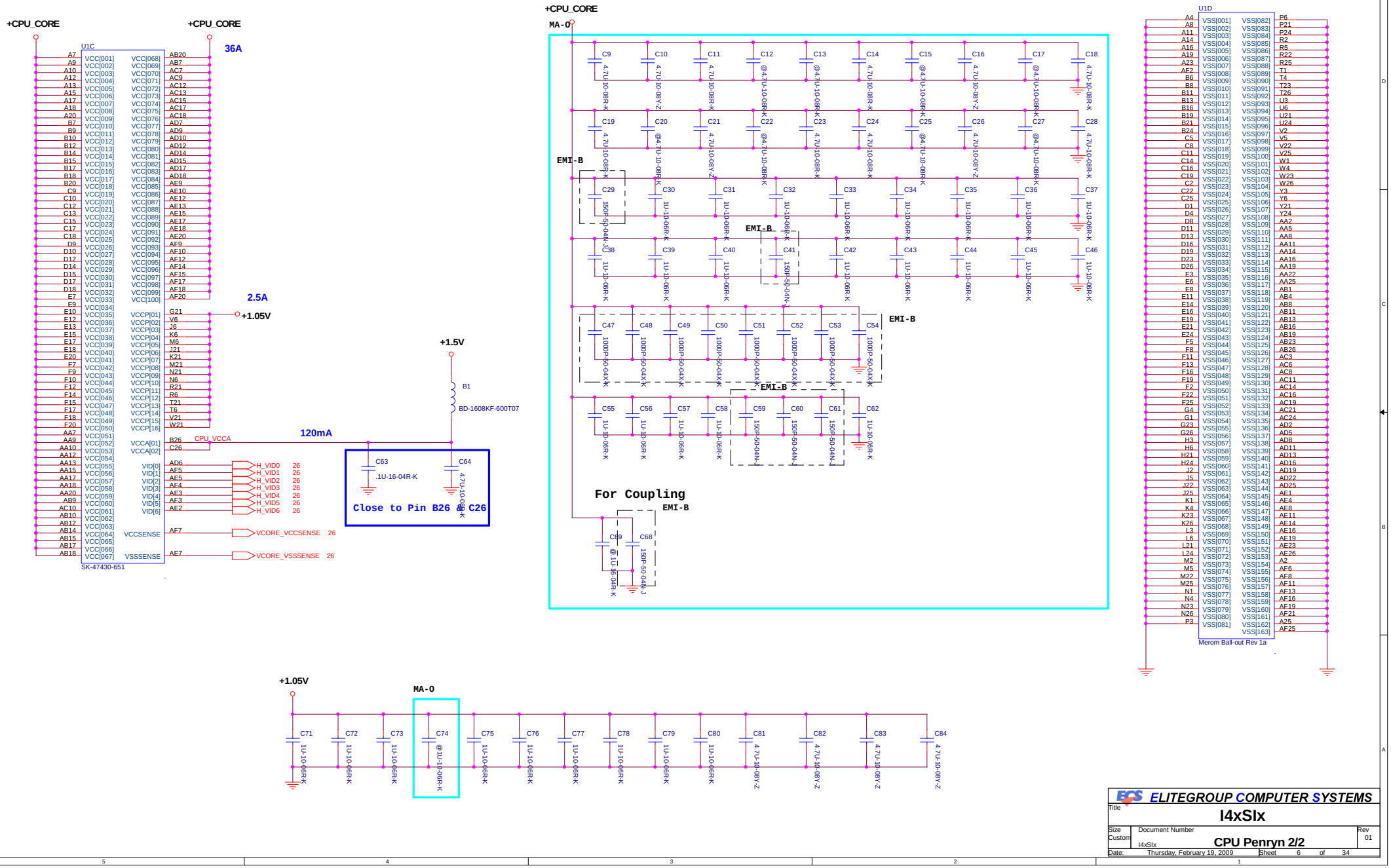

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Title	I4xSIx	
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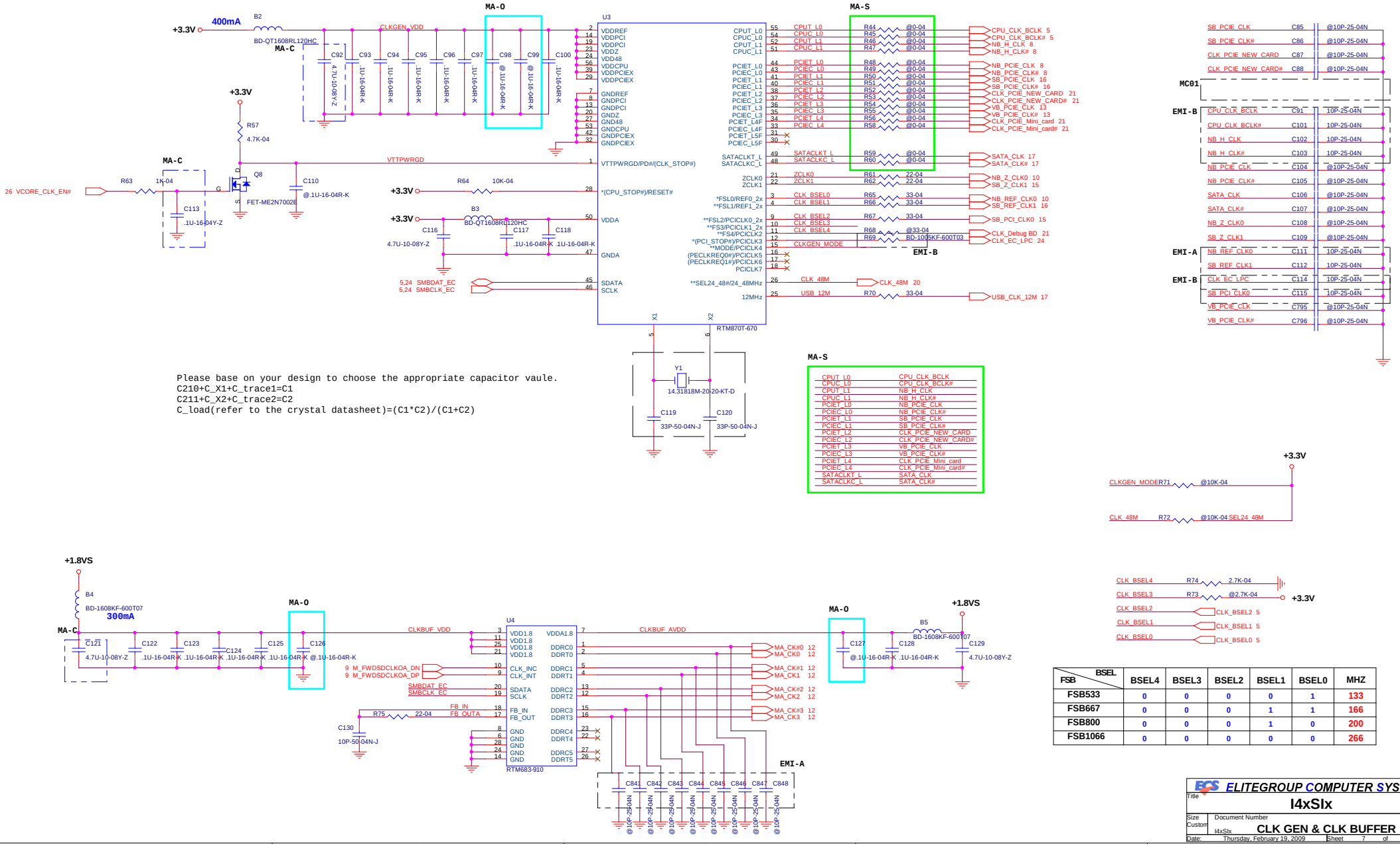

FSB \ BSEL	BSEL4	BSEL3	BSEL2	BSEL1	BSEL0	MHZ
FSB533	0	0	0	0	1	133
FSB667	0	0	0	1	1	166
FSB800	0	0	0	1	0	200
FSB1066	0	0	0	0	0	266

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CLK GEN & CLK BUFFER

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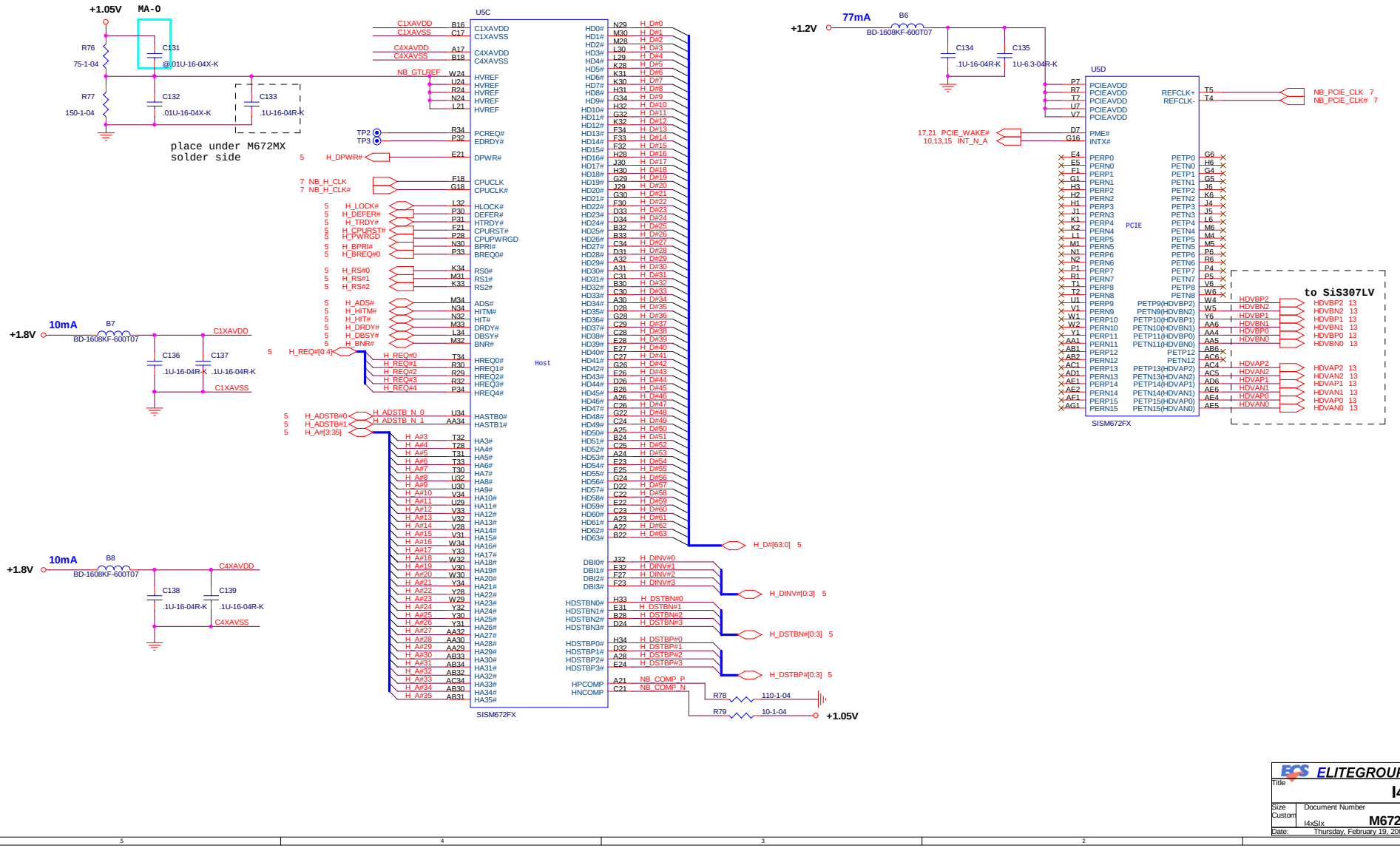

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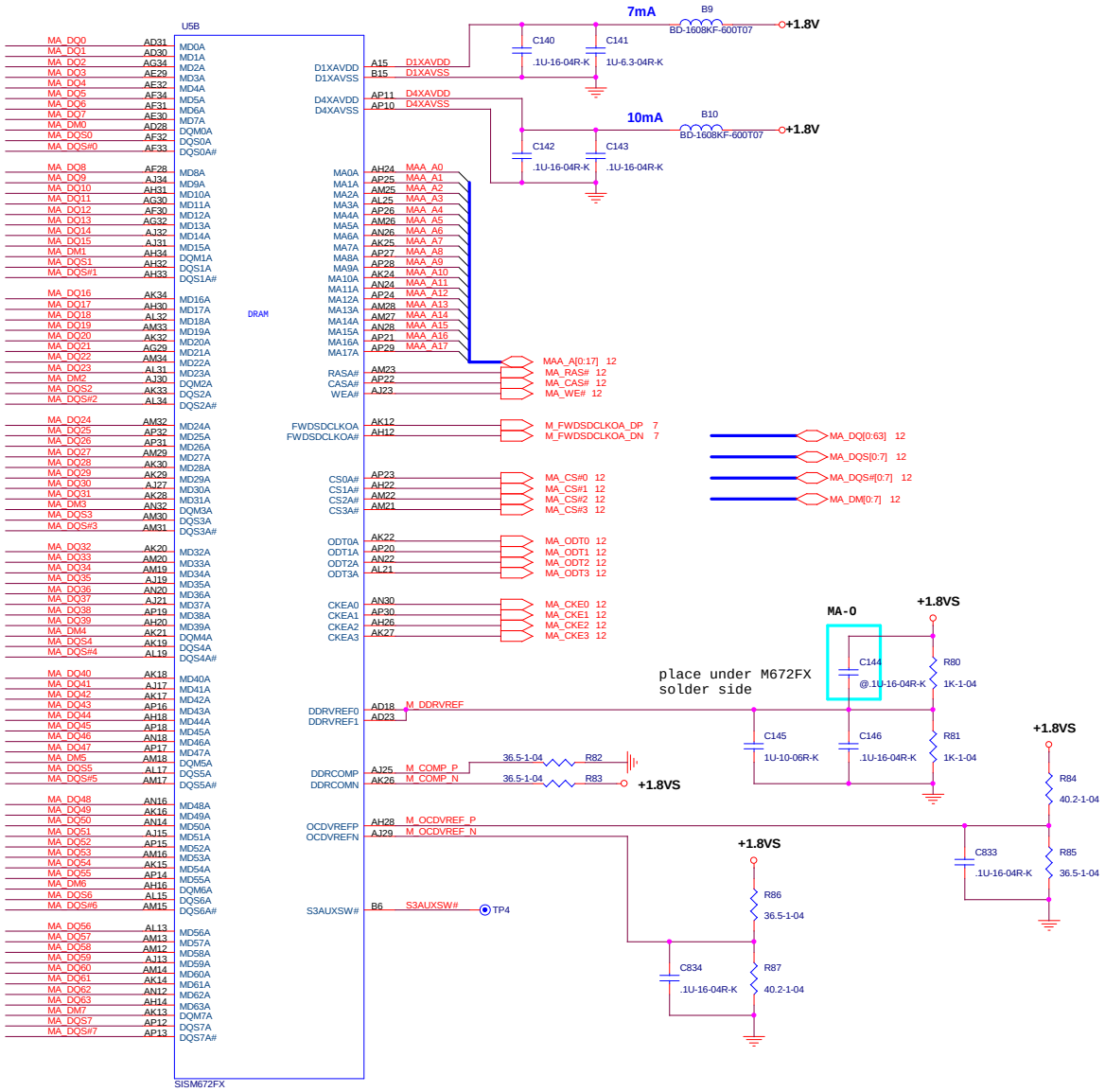

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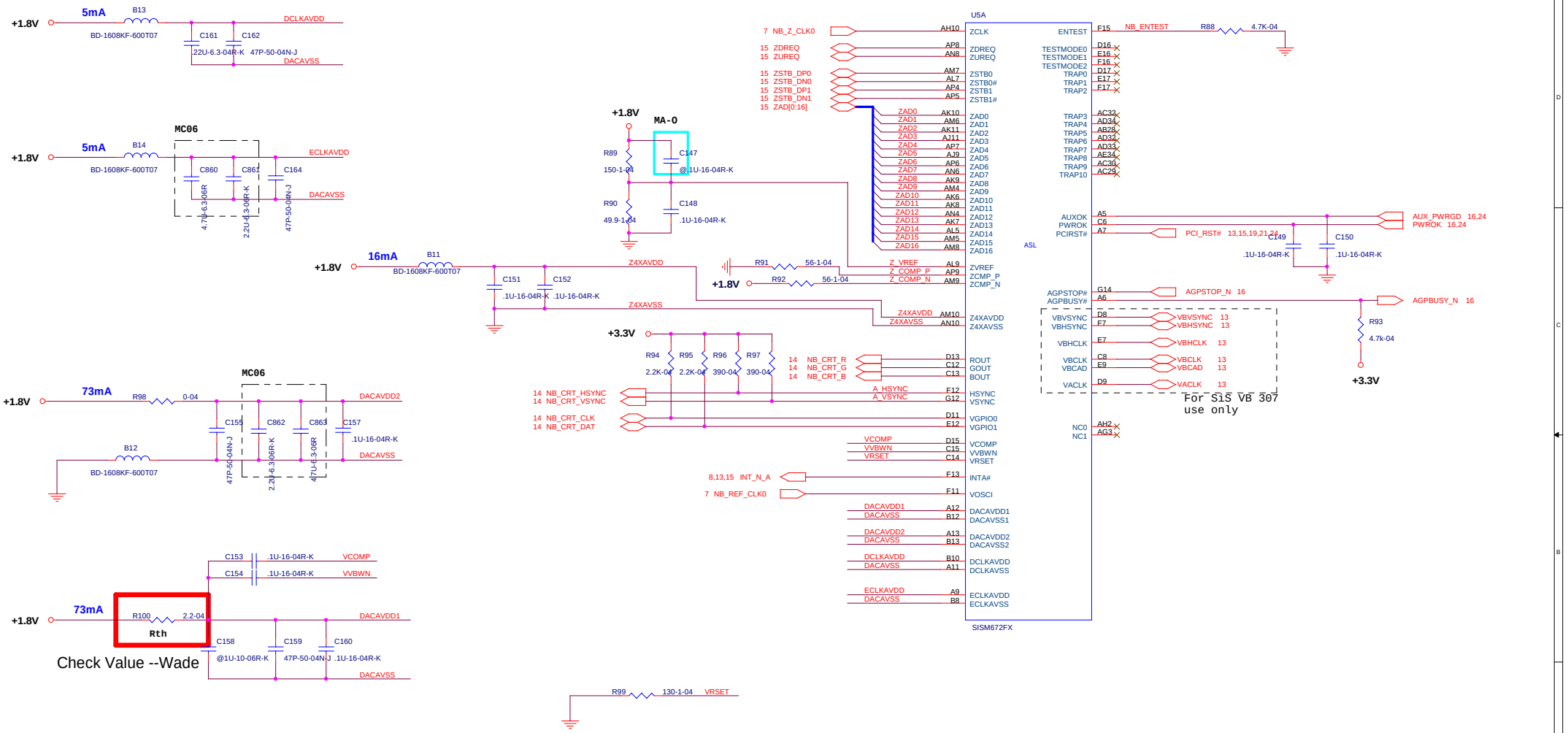

DACAVDD1 Spec.
Voltage: 1.5V +/- 5%
Current: 100mA
Rth use a 3.3 ohm resister make a voltage drop about 0.3V to meet the voltage above.

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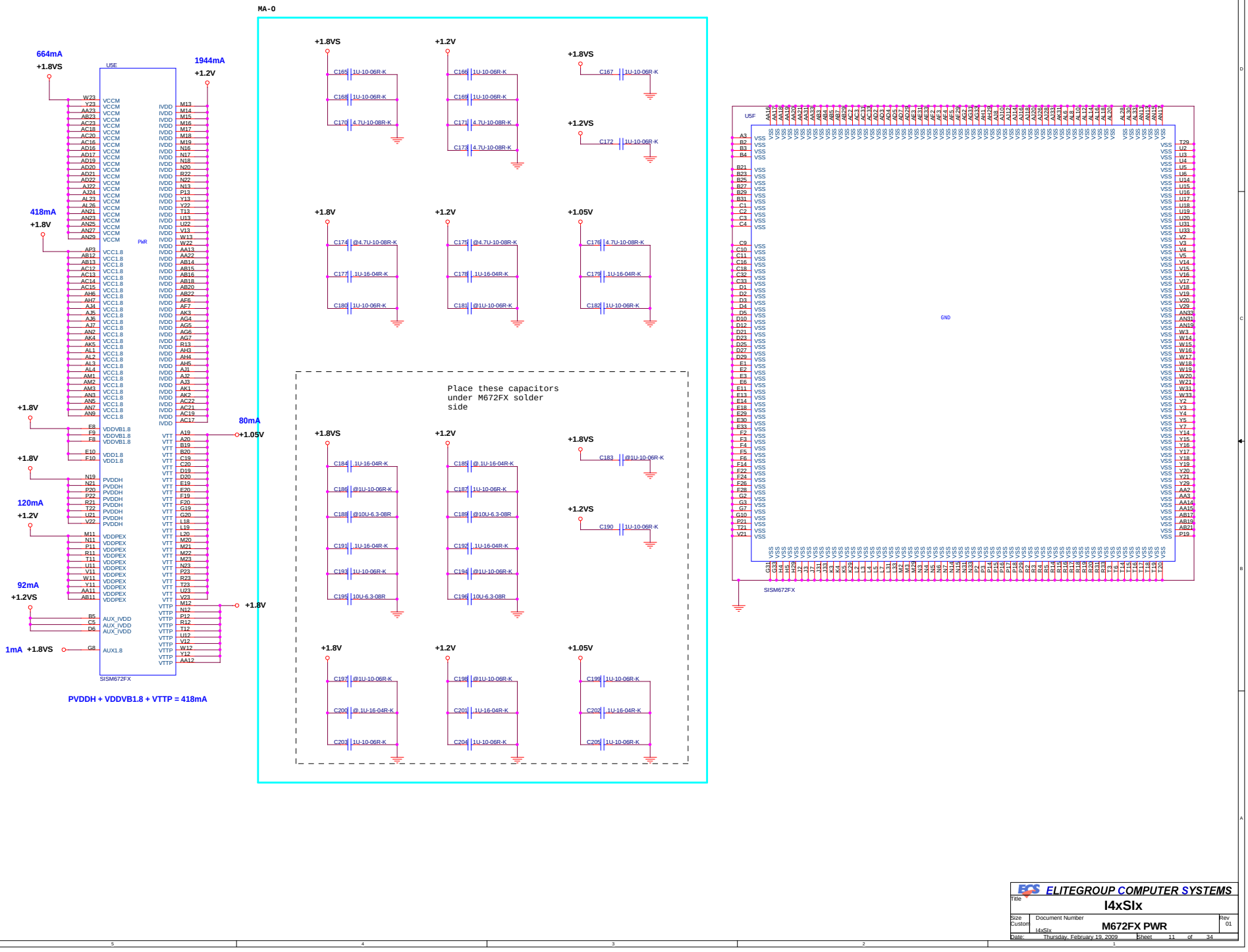

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Title	I4xSIx	
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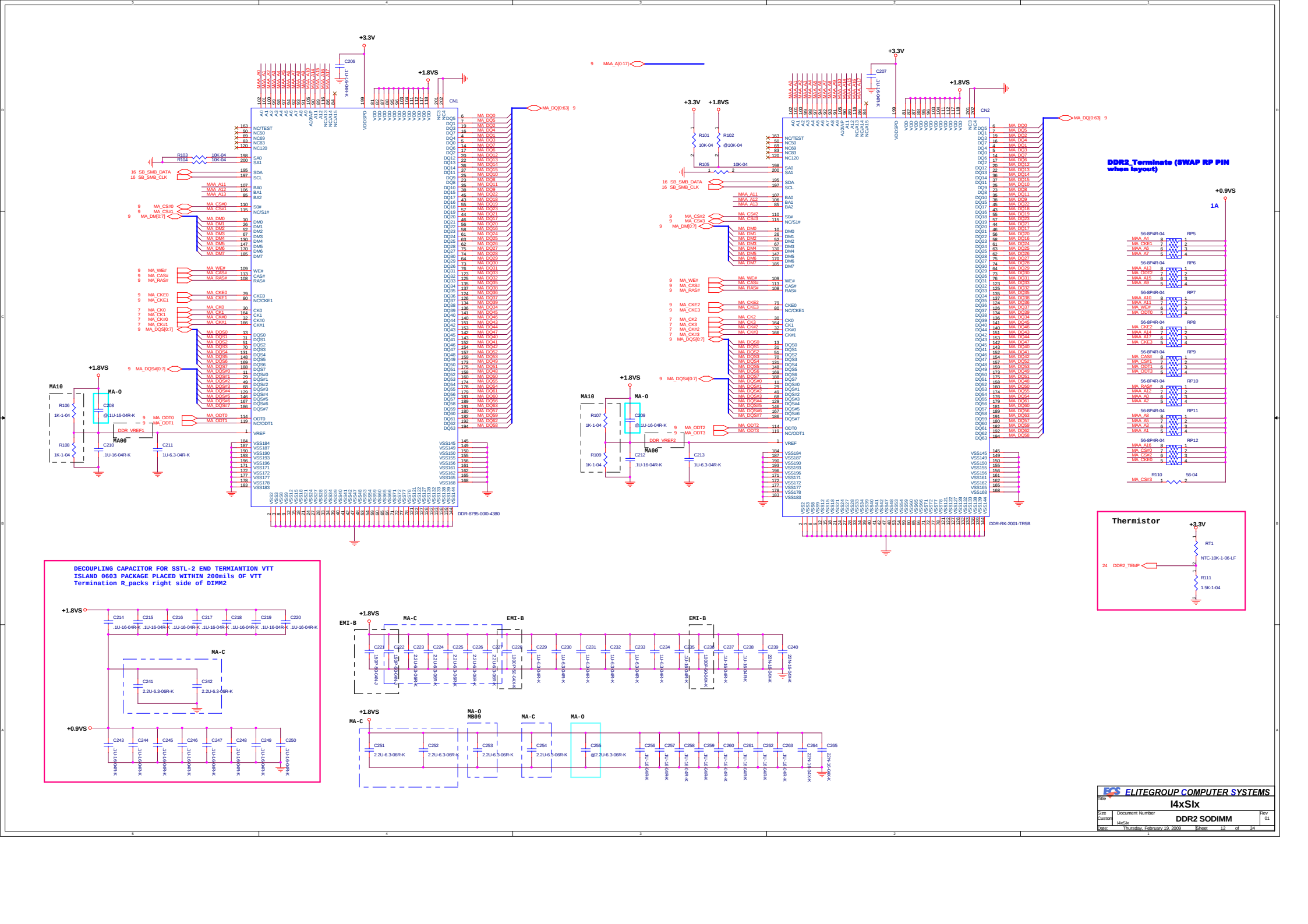
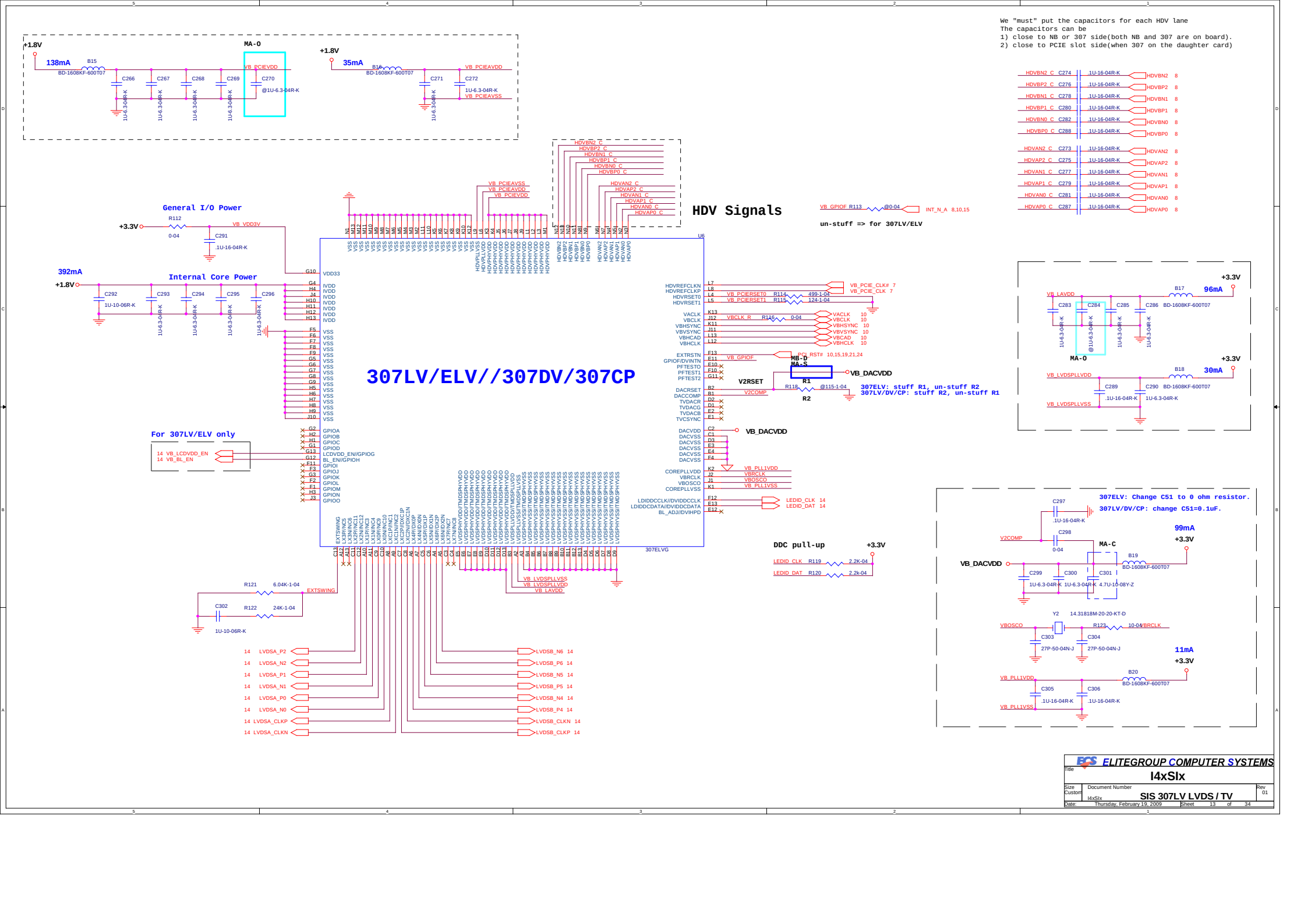

DDR2_Terminate (SWAP RP PIN when layout)
DECOUPLING CAPACITOR FOR SSTL-2 END TERMIANTION VTT
ISLAND 0603 PACKAGE PLACED WITHIN 200mils OF VTT
Termination R_packs right side of DIMM2
Thermistor
ELITEGROUP COMPUTER SYSTEMS
I4xSIx
DDR2 SODIMM
Thursday, February 19, 2009


We "must" put the capacitors for each HDV lane
The capacitors can be
1) close to NB or 307 side(both NB and 307 are on board).
2) close to PCIE slot side(when 307 on the daughter card)
+1.8V
138mA
B15
BD-1608KF-600T07
MA-0
VB_PCIEVDD
C266
C267
C268
C269
C270
@1U-6.3-04R-K
1U-6.3-04R-K
+1.8V
35mA
B16
BD-1608KF-600T07
VB_PCIEAVDD
C271
C272
1U-6.3-04R-K
VB_PCIEAVSS
HDVBN2_C C274
HDVBP2_C C276
HDVBN1_C C278
HDVBP1_C C280
HDVBN0_C C282
HDVBP0_C C288
HDVAN2_C C273
HDVAP2_C C275
HDVAN1_C C277
HDVAP1_C C279
HDVAN0_C C281
HDVAP0_C C287
.1U-16-04R-K
HDVBN2 8
HDVBP2 8
HDVBN1 8
HDVBP1 8
HDVBN0 8
HDVBP0 8
HDVAN2 8
HDVAP2 8
HDVAN1 8
HDVAP1 8
HDVAN0 8
HDVAP0 8
HDV Signals
General I/O Power
+3.3V
R112
0-04
VB_VDD3V
C291
.1U-16-04R-K
392mA
Internal Core Power
+1.8V
C292
1U-10-06R-K
C293
C294
C295
C296
1U-6.3-04R-K
VB_PCIEAVSS
VB_PCIEAVDD
VB_PCIEVDD
HDVBN2_C
HDVBP2_C
HDVBN1_C
HDVBP1_C
HDVBN0_C
HDVBP0_C
HDVAN2_C
HDVAP2_C
HDVAN1_C
HDVAP1_C
HDVAN0_C
HDVAP0_C
U6
VDD33
IVDD
VSS
307LV/ELV//307DV/307CP
307ELVG
VB_GPIOF R113
@0-04
INT_N_A 8,10,15
un-stuff => for 307LV/ELV
HDVREFCLKN
HDVREFCLKP
HDVRSET0
HDVRSET1
VB_PCIERSET0 R114
VB_PCIERSET1 R115
499-1-04
124-1-04
VB_PCIE_CLK# 7
VB_PCIE_CLK 7
VACLK
VBCLK
VBHSYNC
VBVSYNC
VBHCAD
VBHCLK
VBCLK_R R116
0-04
10
EXTRSTN
GPIOF/DVINTN
PFTESTO
PFTEST1
PFTEST2
VB_GPIOF
PCI_RST# 10,15,19,21,24
MB-D
MA-S
R1
R2
V2RSET
R118
@115-1-04
VB_DACVDD
307ELV: stuff R1, un-stuff R2
307LV/DV/CP: stuff R2, un-stuff R1
DACRSET
DACCOMP
TVDACR
TVDACG
TVDACB
TVCSYNC
V2COMP
DACVDD
DACVSS
COREPLLVDD
VBRCLK
VBOSCO
COREPLLVSS
VB_PLL1VDD
VB_PLL1VSS
LDIDDCCLK//DVIDDCCLK
LDIDDCDATA//DVIDDCDATA
BL_ADJ//DVIHPD
LEDID_CLK 14
LEDID_DAT 14
+3.3V
VB_LAVDD
B17
96mA
C283
C284
C285
C286
BD-1608KF-600T07
@1U-6.3-04R-K
MA-0
VB_LVDSPLLVDD
B18
30mA
C289
C290
.1U-16-04R-K
VB_LVDSPLLVSS
For 307LV/ELV only
14 VB_LCDVDD_EN
14 VB_BL_EN
GPIOA
GPIOB
GPIOC
GPIOD
LCDVDD_EN//GPIOG
BL_EN//GPIOH
GPIOI
GPIOJ
GPIOK
GPIOL
GPIOM
GPION
GPIOO
EXTSWING
R121
6.04K-1-04
R122
24K-1-04
C302
1U-10-06R-K
VB_LVDSPLLVSS
VB_LVDSPLLVDD
VB_LAVDD
DDC pull-up
+3.3V
LEDID_CLK R119
LEDID_DAT R120
2.2K-04
14 LVDSA_P2
14 LVDSA_N2
14 LVDSA_P1
14 LVDSA_N1
14 LVDSA_P0
14 LVDSA_N0
14 LVDSA_CLKP
14 LVDSA_CLKN
LVDSB_N6 14
LVDSB_P6 14
LVDSB_N5 14
LVDSB_P5 14
LVDSB_N4 14
LVDSB_P4 14
LVDSB_CLKN 14
LVDSB_CLKP 14
307ELV: Change C51 to 0 ohm resistor.
307LV/DV/CP: change C51=0.1uF.
C297
.1U-16-04R-K
C298
0-04
V2COMP
MA-C
99mA
+3.3V
B19
BD-1608KF-600T07
VB_DACVDD
C299
C300
C301
1U-6.3-04R-K
4.7U-10-08Y-Z
Y2
14.31818M-20-20-KT-D
VBOSCO
R123
10-04/BRCLK
C303
C304
27P-50-04N-J
11mA
+3.3V
VB_PLL1VDD
B20
BD-1608KF-600T07
C305
C306
.1U-16-04R-K
VB_PLL1VSS
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Title
I4xSIx
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SIS 307LV LVDS / TV
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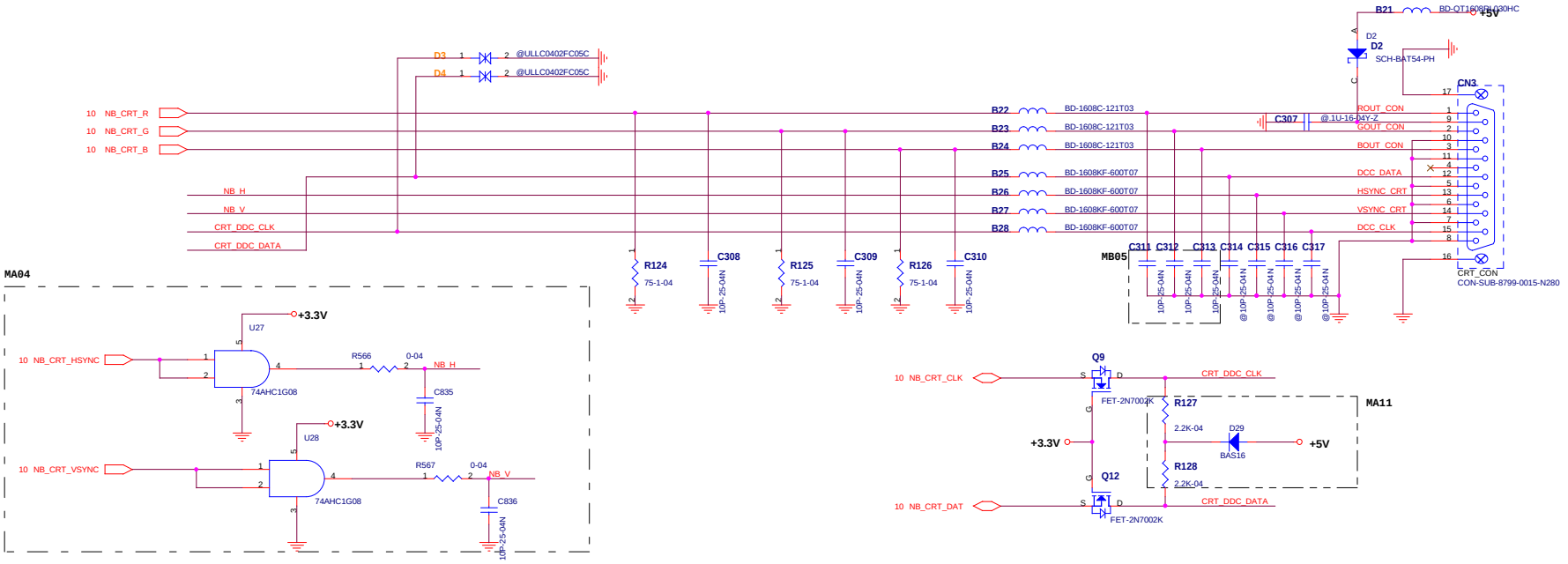
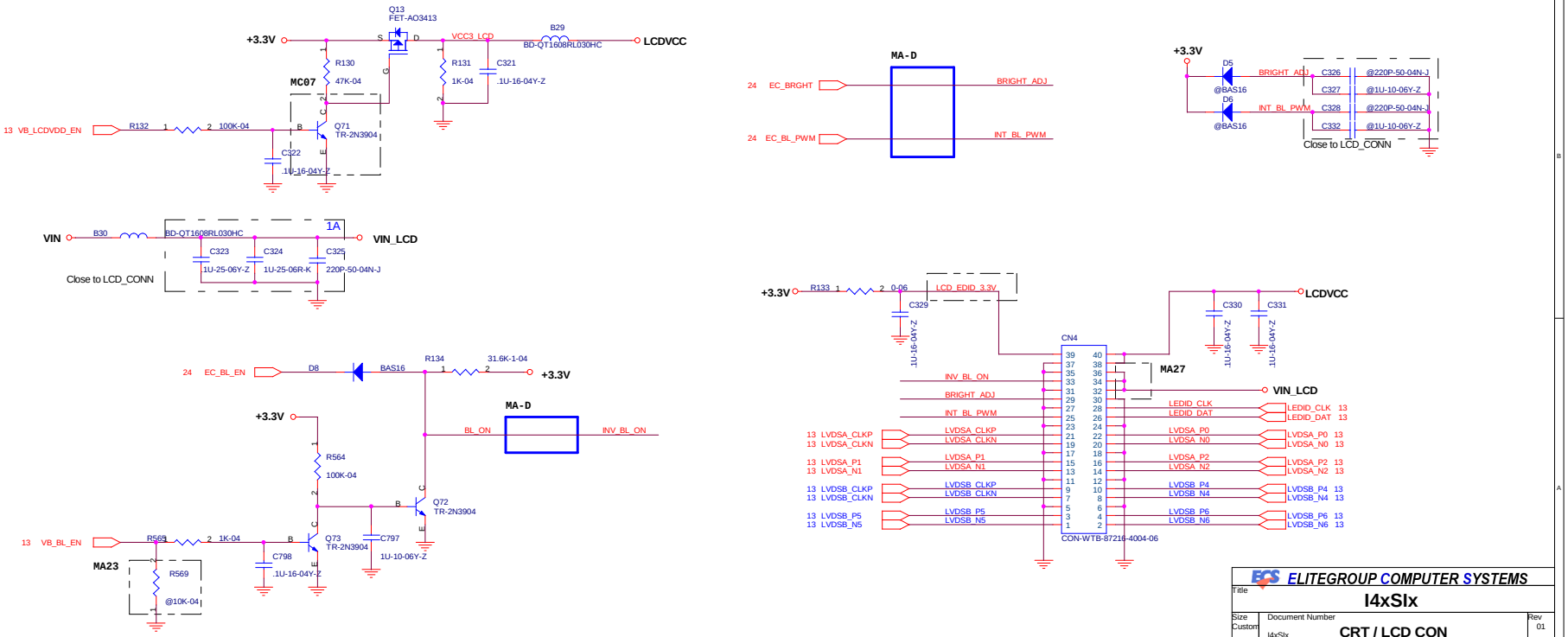
CRT CON

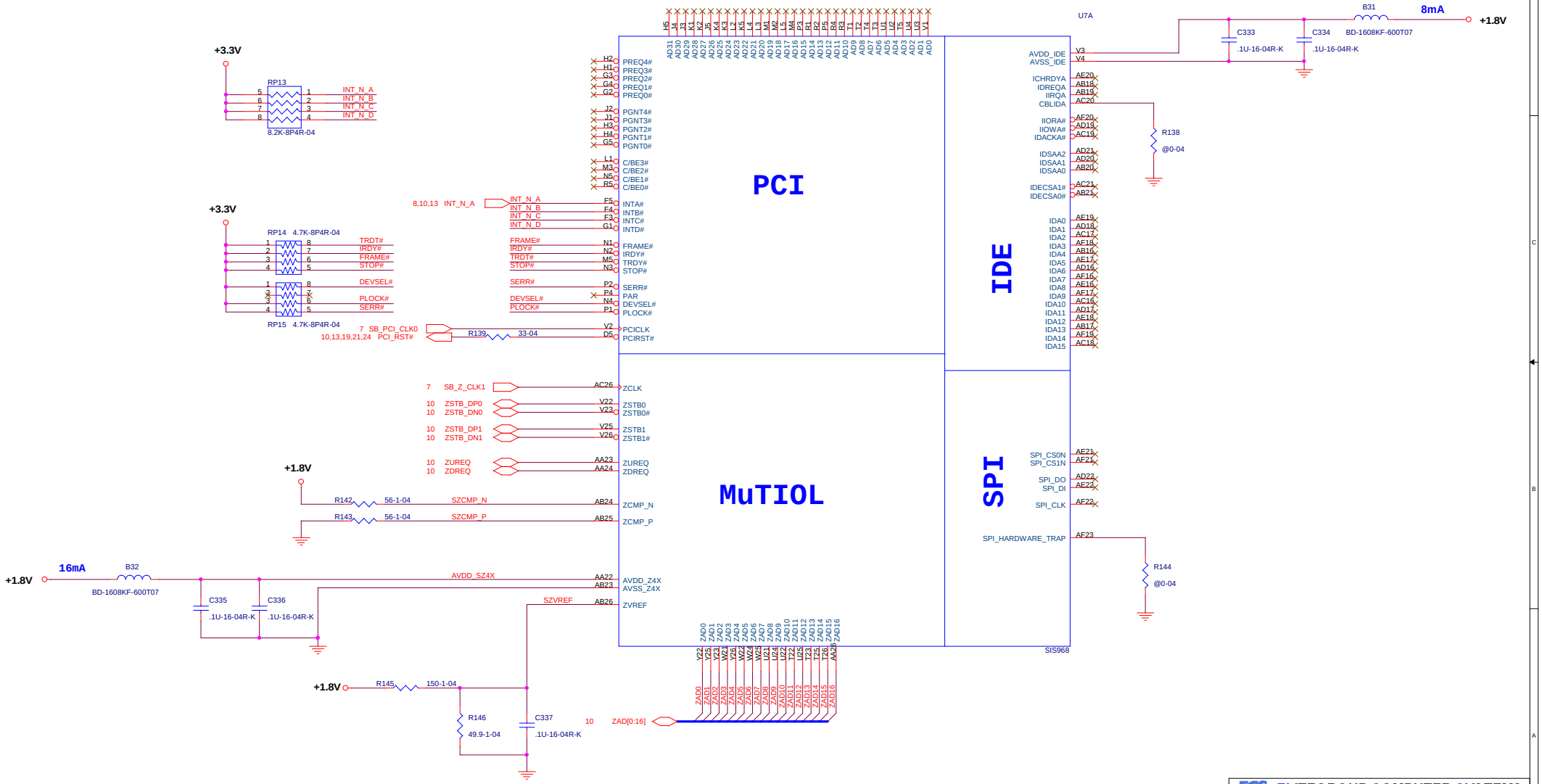


LCD CON



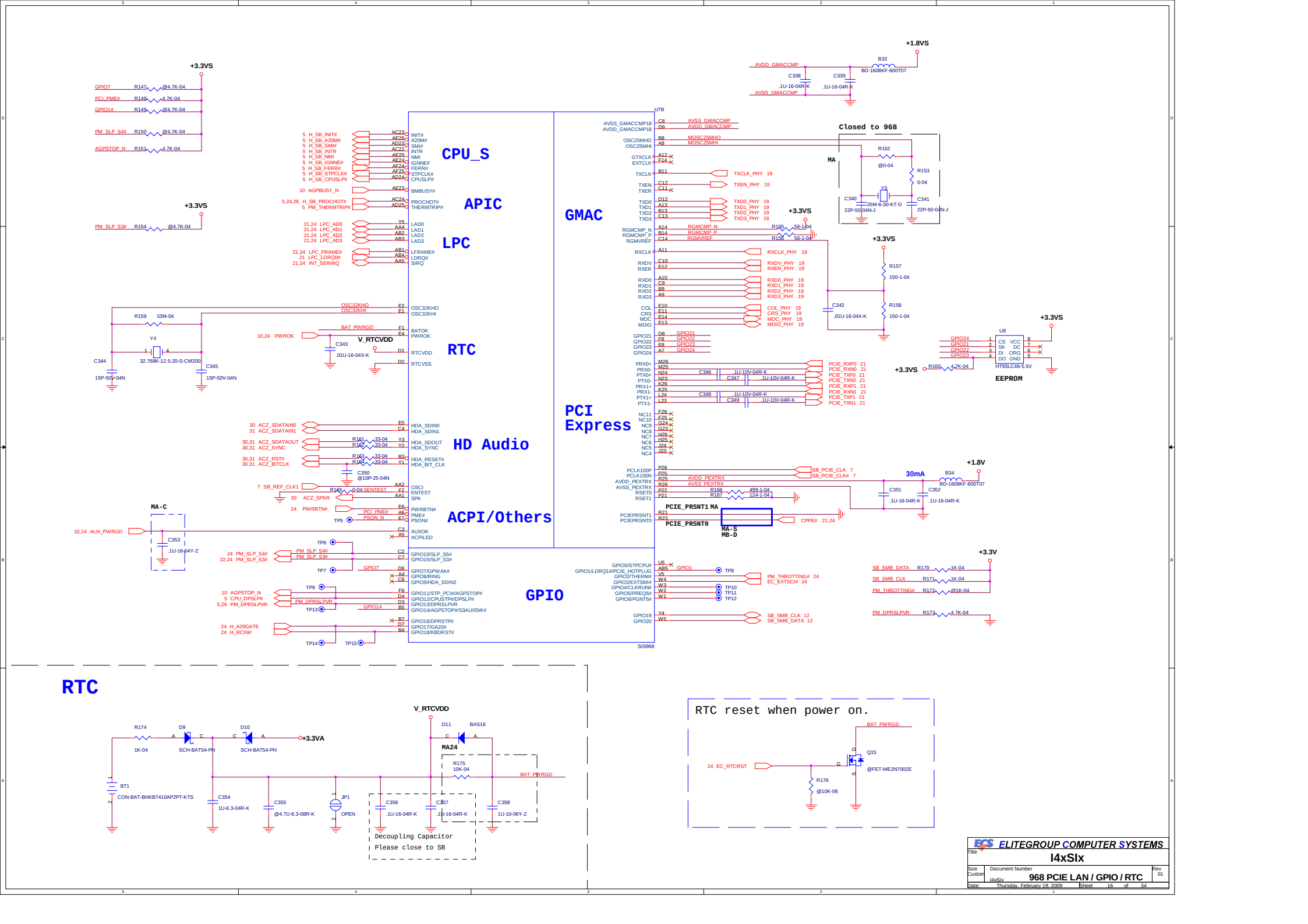
ELITEGROUP COMPUTER SYSTEMS

Title	I4xSIx	
Size: Custom	Document Number: I4xSIx — CRT / LCD CON	Rev: 01
Date: Thursday, February 19, 2009	Sheet 14 of 34	



ELITEGROUP COMPUTER SYSTEMS

Title	I4xSIx	
Size: Custom	Document Number: I4xSIx 968 PCI/ IDE / MUTIOL / SPI	Rev: 01
Date: Thursday, February 19, 2009	Sheet 15 of 34	


+3.3VS
GPIO7 R147 @4.7K-04
PCI_PME# R148 4.7K-04
GPIO14 R149 @4.7K-04
PM_SLP_S4# R150 @4.7K-04
AGPSTOP_N R151 4.7K-04
+3.3VS
PM_SLP_S3# R154 @4.7K-04
CPU_S
APIC
LPC
RTC
HD Audio
ACPI/Others
GPIO
GMAC
PCI Express
+1.8VS
AVDD_GMACCMP
AVSS_GMACCMP
B33
BD-1608KF-600T07
C338 .1U-16-04R-K
C339 .1U-16-04R-K
U7B
Closed to 968
MA
R152 @0-04
R153 0-04
Y3
C340 25M-6-30-KT-D
C341 22P-50-04N-J
+3.3VS
R155 56-1-04
R156 56-1-04
R157 150-1-04
R158 150-1-04
C342 .01U-16-04X-K
+3.3VS
U8
HT93LC46-5.5V
EEPROM
R160 4.7K-04
+3.3VS
Y4 32.768K-12.5-20-S-CM200
C344 15P-50V-04N
C345 15P-50V-04N
R159 10M-04
V_RTCVDD
C343 .01U-16-04X-K
C346 .1U-10V-04R-K
C347 .1U-10V-04R-K
C348 .1U-10V-04R-K
C349 .1U-10V-04R-K
+1.8V
30mA
B34
BD-1608KF-600T07
C351 .1U-16-04R-K
C352 .1U-16-04R-K
PCIE_PRSNT1 MA
PCIE_PRSNT0
MA-S
MB-D
MA-C
C353 .1U-16-04Y-Z
C350 @10P-25-04N
R165 0-04 SENTEST
+3.3V
R170 1K-04
R171 1K-04
R172 @1K-04
R173 4.7K-04
SB_SMB_DATA
SB_SMB_CLK
PM_THROTTING#
PM_DPRSLPVR
RTC
R174 1K-04
D9 SCH-BAT54-PH
D10 SCH-BAT54-PH
+3.3VA
V_RTCVDD
D11 BAS16
MA24
R175 10K-04
BAT_PWRGD
BT1 CON-BAT-BHKB7410AP2PT-KTS
C354 1U-6.3-04R-K
C355 @4.7U-6.3-08R-K
JP1 OPEN
C356 .1U-16-04R-K
C357 .1U-16-04R-K
C358 1U-10-06Y-Z
Decoupling Capacitor
Please close to SB
RTC reset when power on.
BAT_PWRGD
Q15 @FET-ME2N7002E
24 EC_RTCRST
R176 @10K-06
ELITEGROUP COMPUTER SYSTEMS
Title
I4xSIx
Size Custom
Document Number
968 PCIE LAN / GPIO / RTC
Rev 01
I4xSIx
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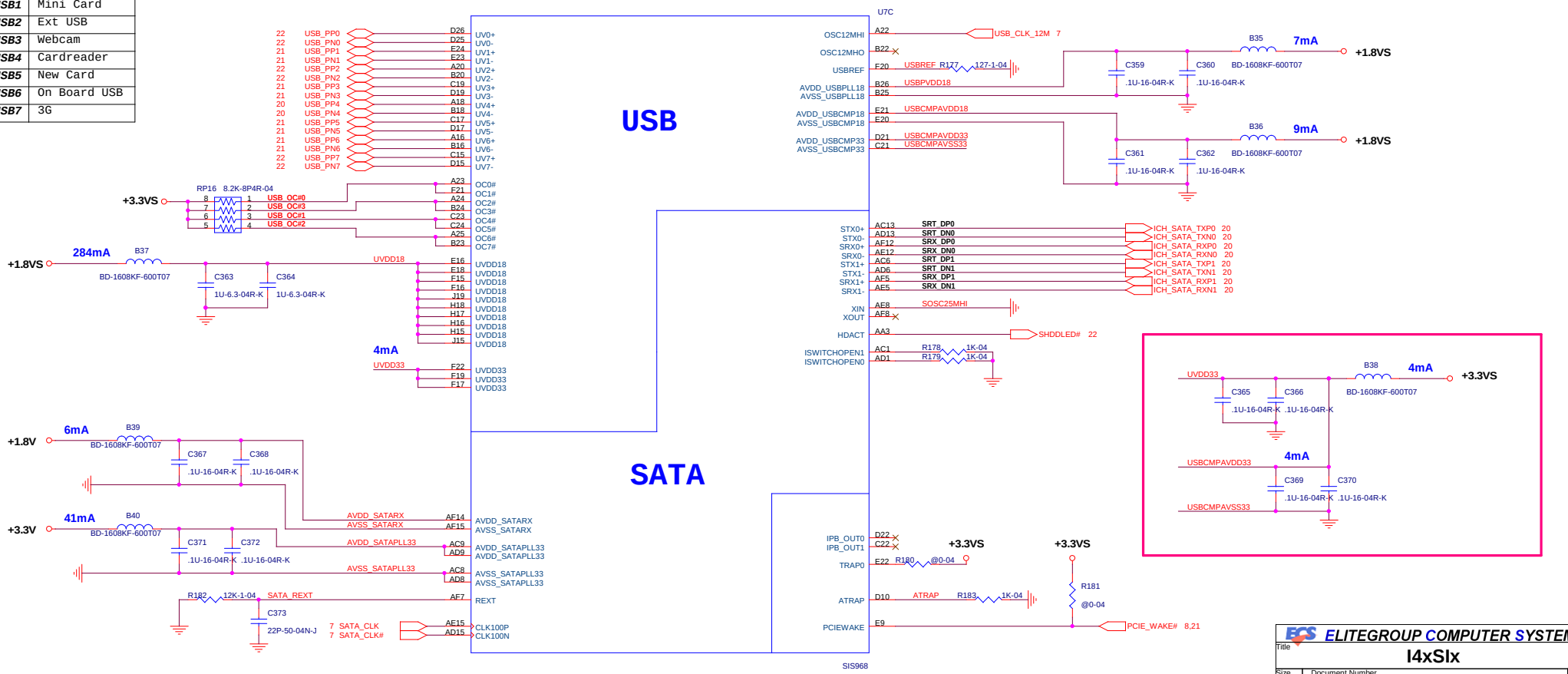
	I41SIx
USB0	Ext USB
USB1	Mini Card
USB2	Ext USB
USB3	Webcam
USB4	Cardreader
USB5	New Card
USB6	On Board USB
USB7	3G



ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

Size: Custom | Document Number: 968 USB / SATA | Rev: 01

I4xSIx

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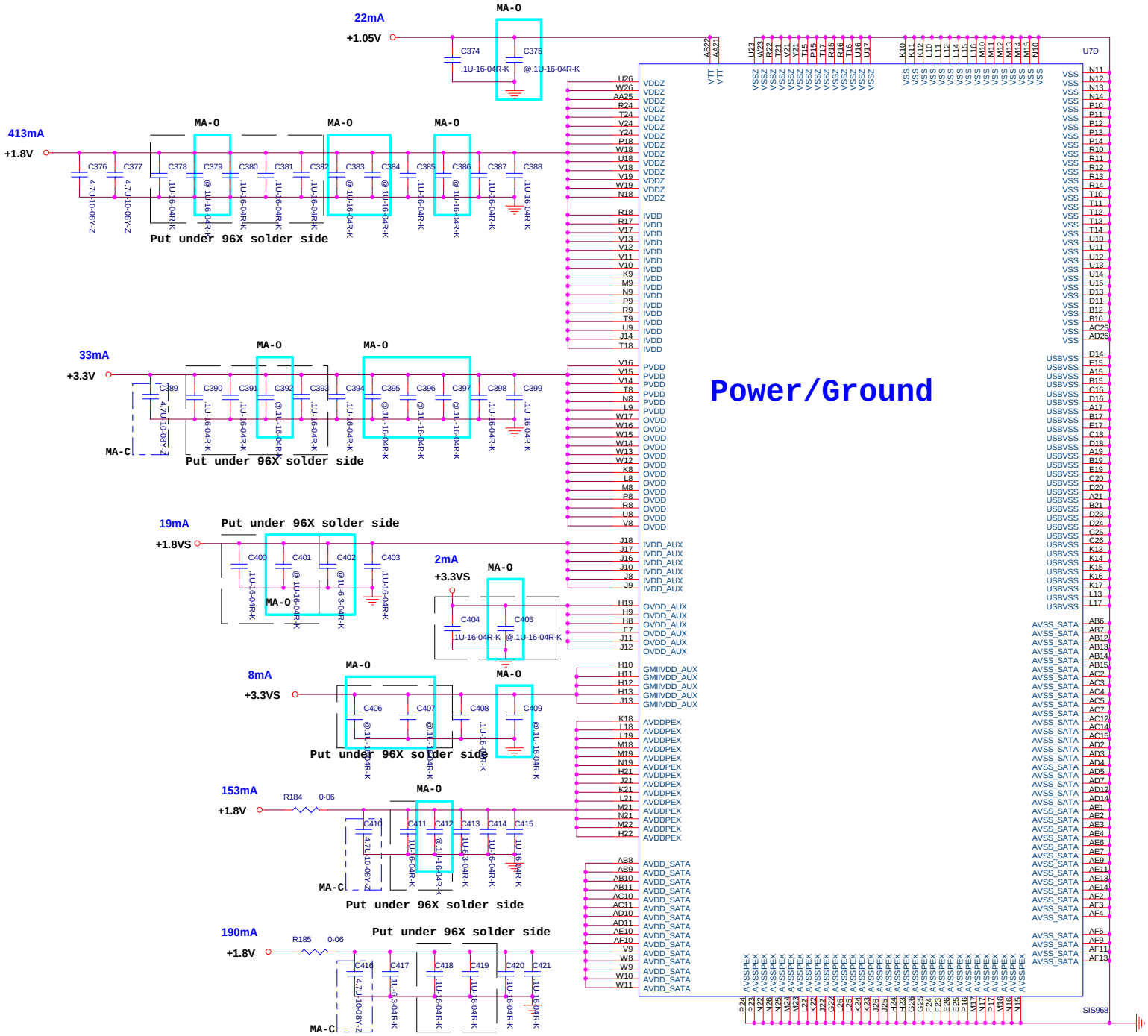
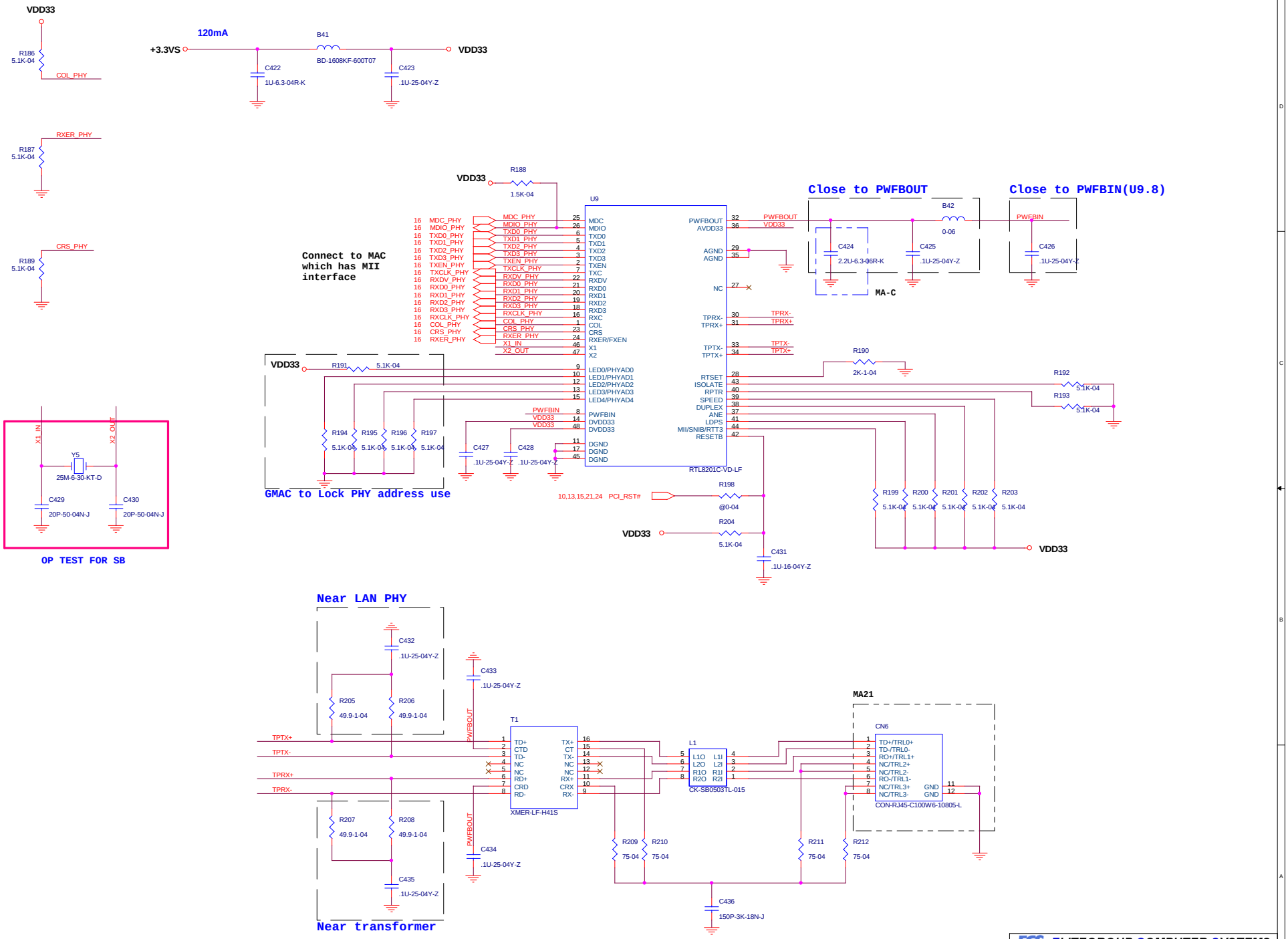


ELITEGROUP COMPUTER SYSTEMS

Title	I4xSIx	
Size: Custom	Document Number: 968 PWR	Rev: 01
Date: Thursday, February 19, 2009	Sheet 18 of 34	



ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

Size: Custom | Document Number: I4xSix | LAN PHY(RTL8201CL) | Rev: 01

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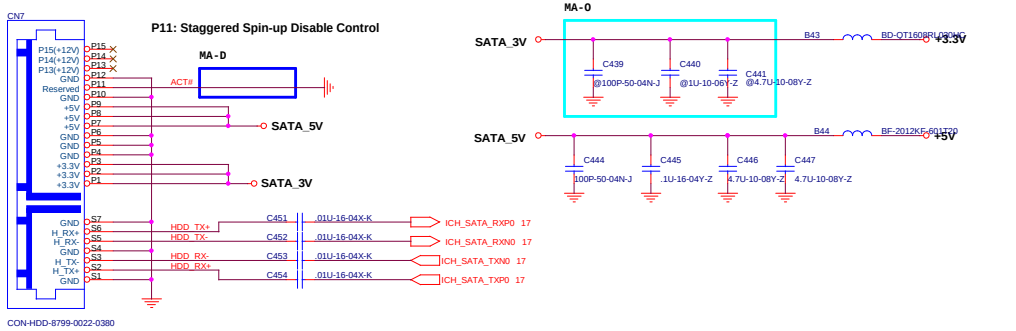
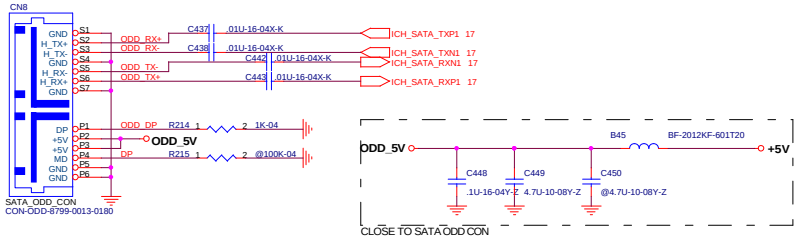
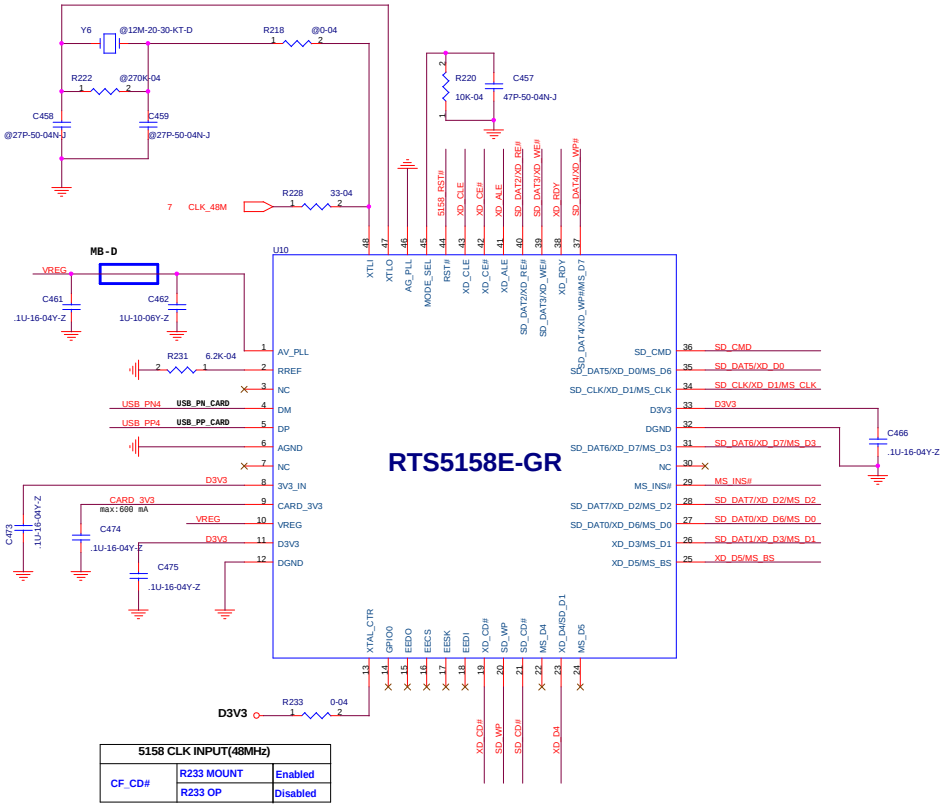
MASTER HDD CON



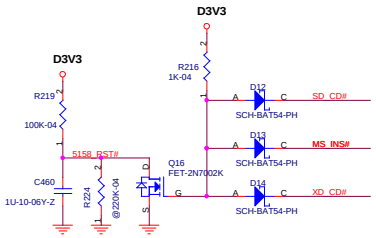
SATA ODD CON

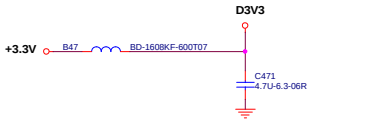


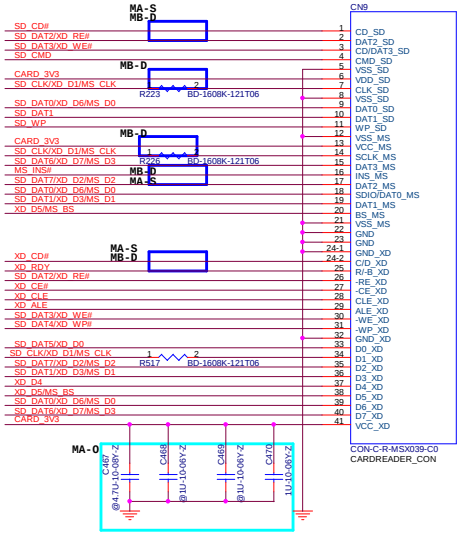
CARDREADER

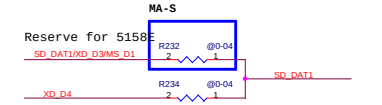


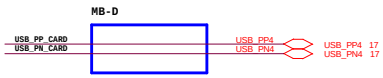
using RTS5158E, don't need hard ware reset circuit. But change AR65 to CHIP-R KOHM 100 1/16W J SMD 0402 LF, AC72 to MC UF 1 10V Y5V Z 0603 LF.

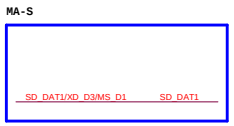












ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

Size: Custom | Document Number: I4xSIx | Rev: 01

HDD / ODD / CARDREADER

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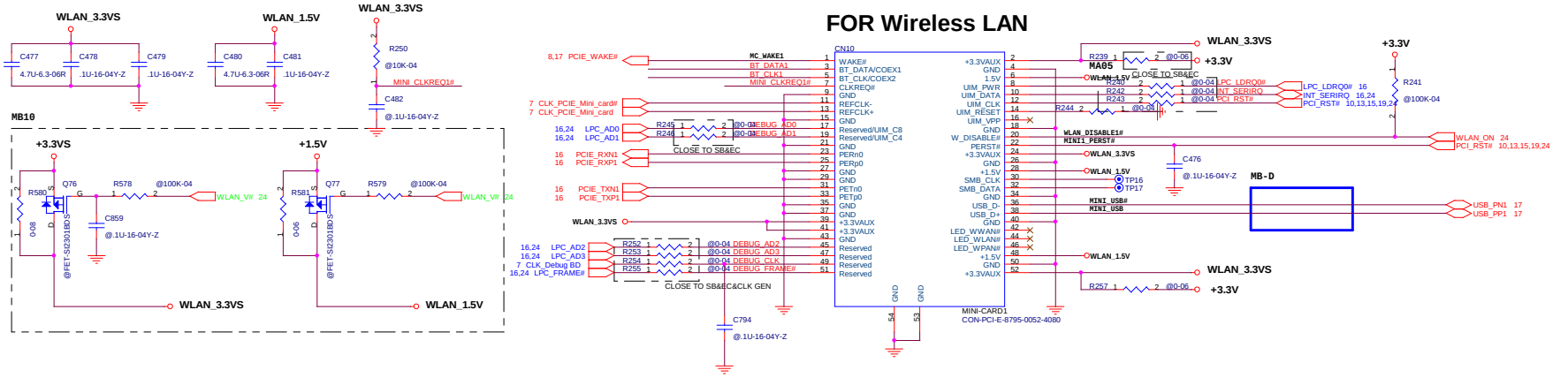
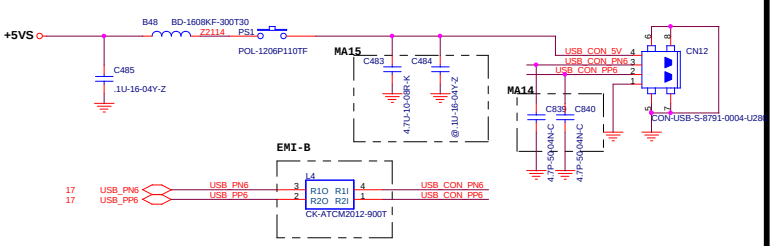
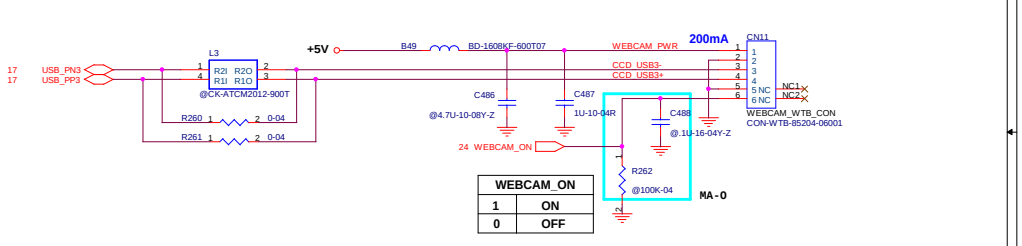
MINI CARD CON



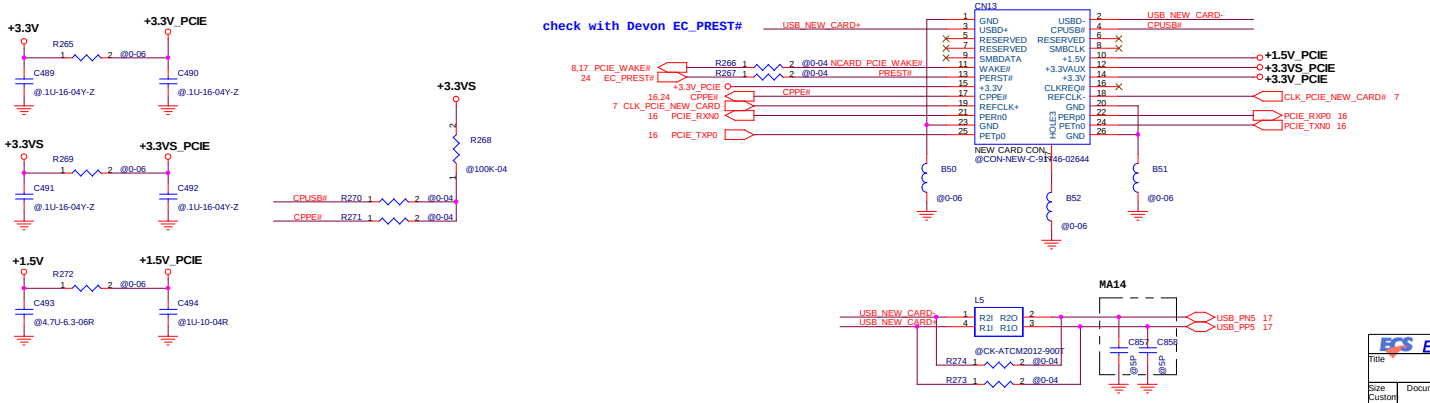
USB CON



WEBCAM CON

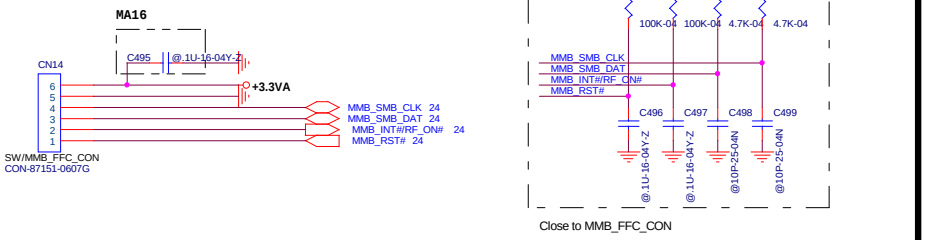


NEW CARD SOCKET

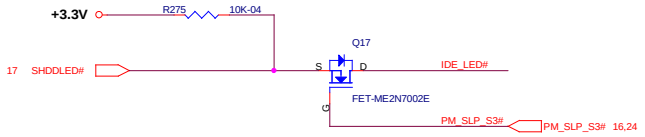


Title	ELITEGROUP COMPUTER SYSTEMS
	I4xSIx
Size: Custom	Document Number: NEW CARD/MINI CARD/USB/WEB
I4xSIx	Rev: 01
Date: Thursday, February 19, 2009	Sheet 21 of 34

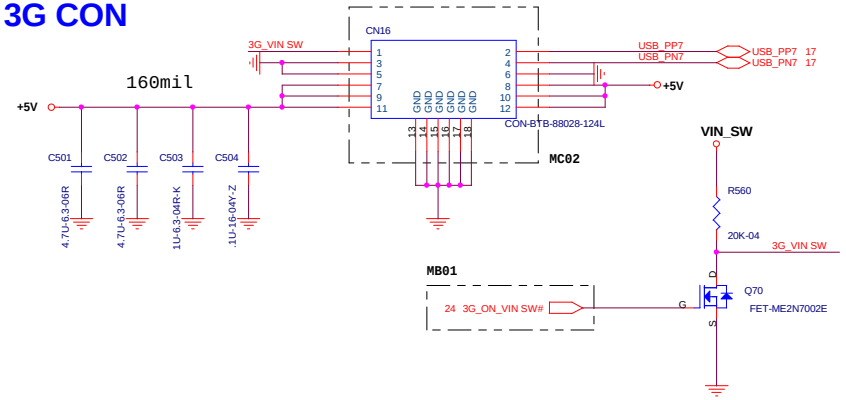
MMB CON



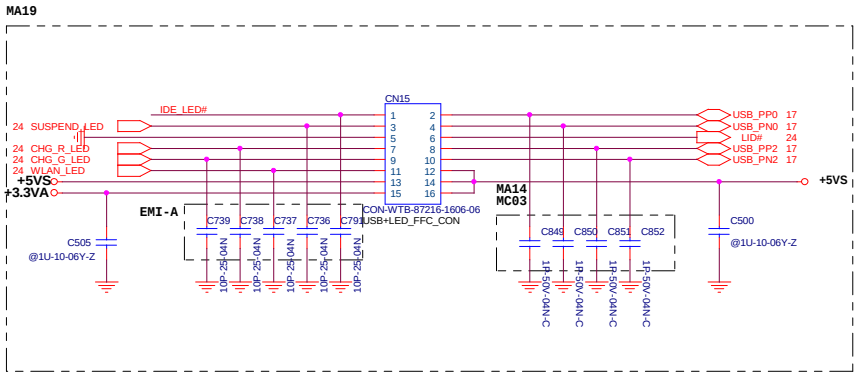
HDD Led



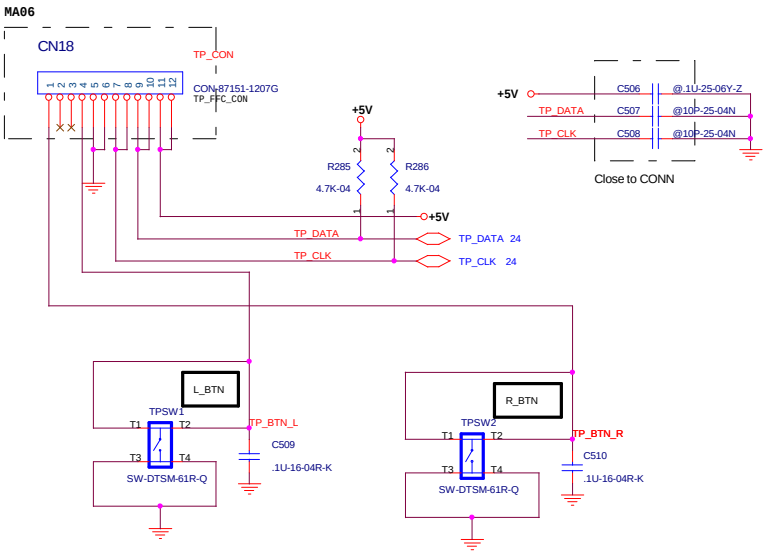
3G CON



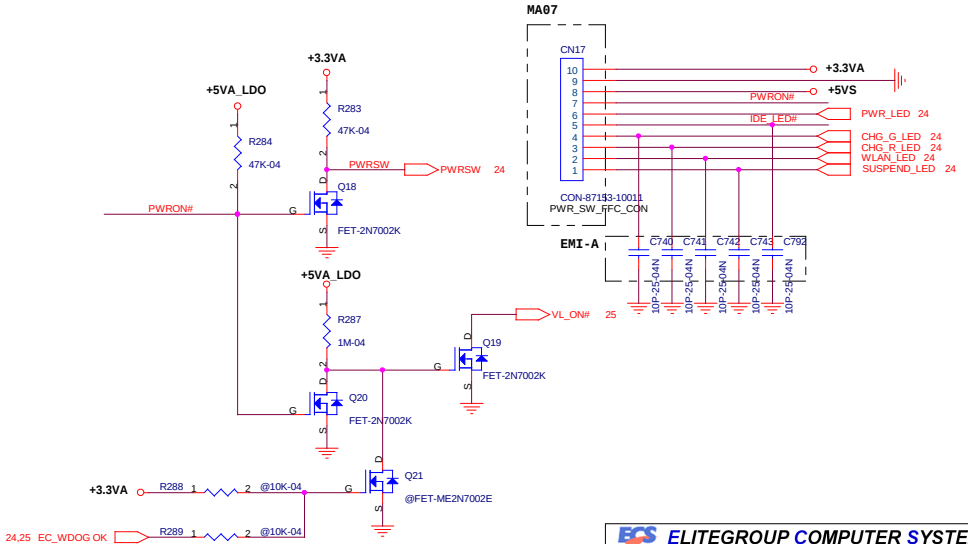
USB+LED CON



TP CON



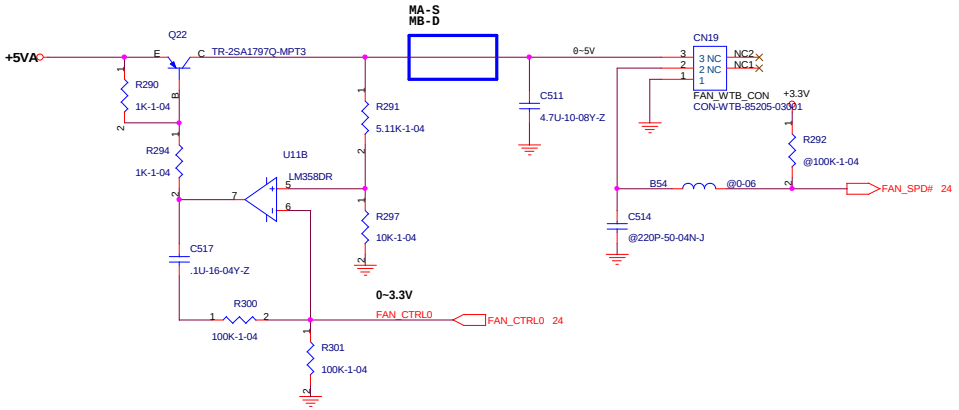
PWR SW CON



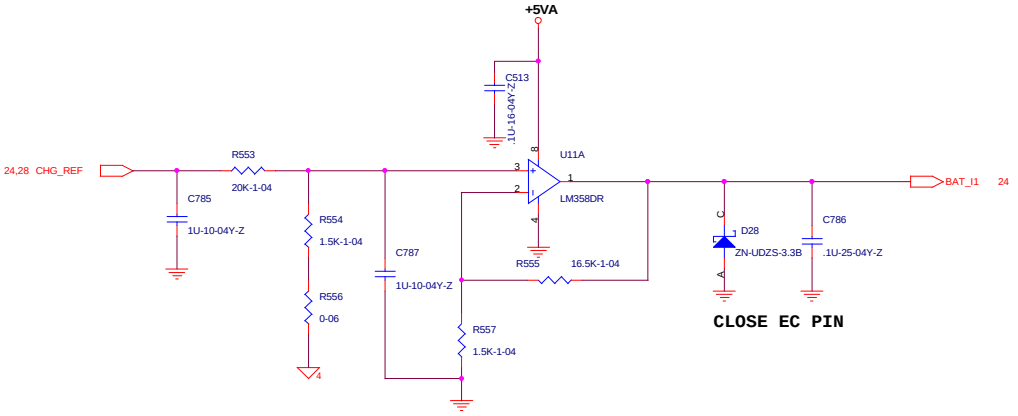
ECS ELITEGROUP COMPUTER SYSTEMS

Title	I4xSIx	
Size: Custom	Document Number: I4xSIx 3G/MMB/SW/TP/IO CON/ HDD LED	Rev: 01
Date: Thursday, February 19, 2009	Sheet 22 of 34	

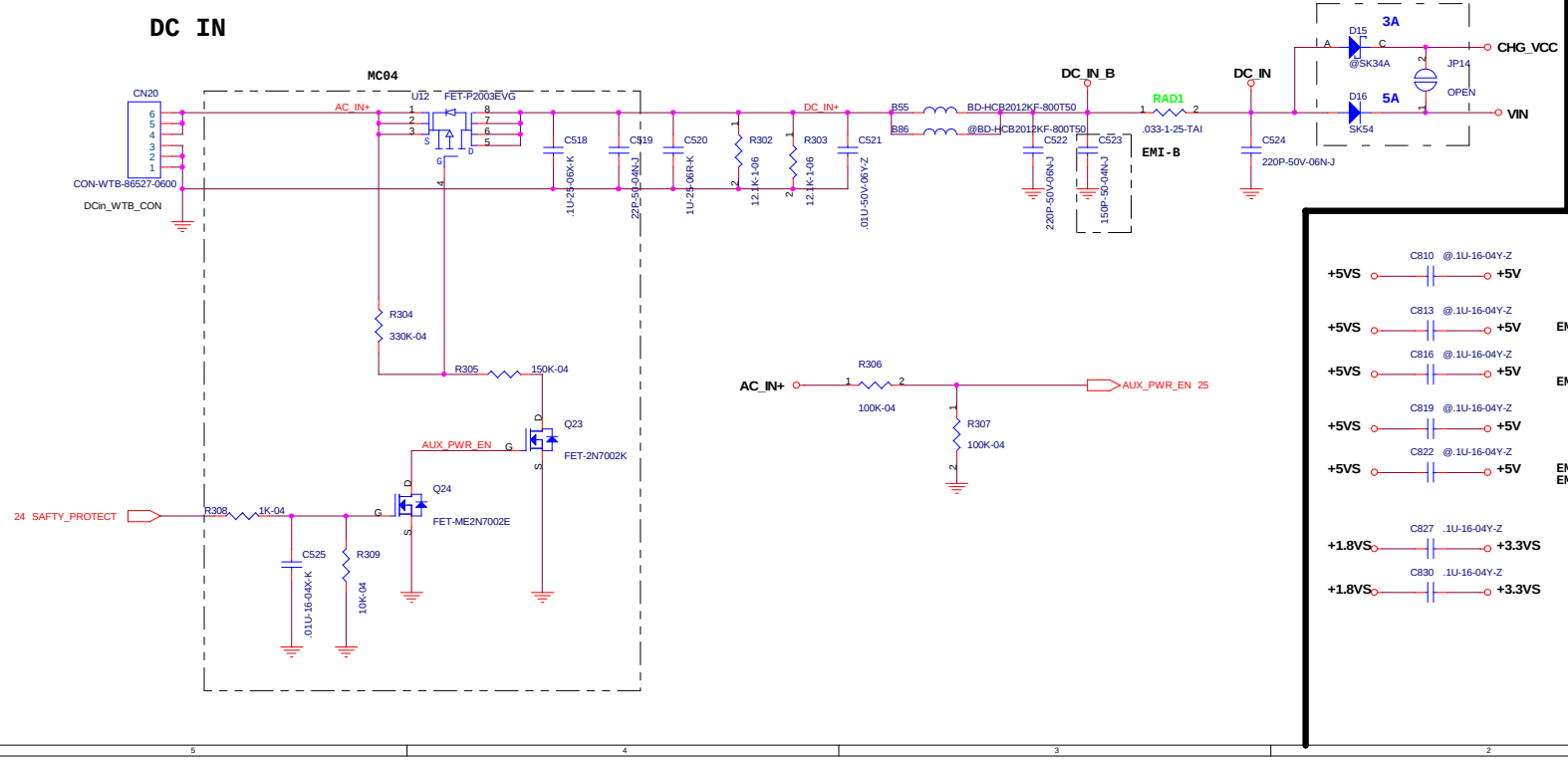
CPU FAN CONTROL



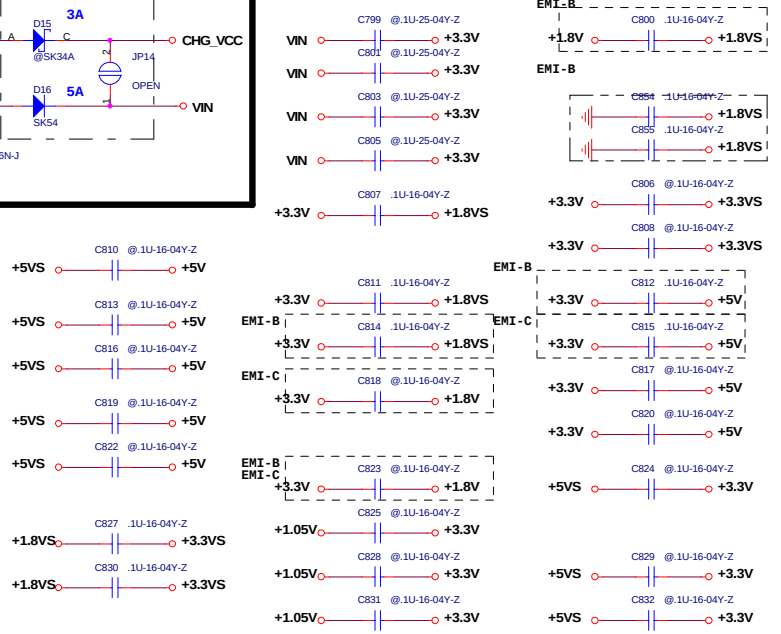
Charge / Discharge Detect



DC IN



High speed current return path Capactor



ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

Size: Custom | Document Number: I4xSIx | DC IN / CPU FAN / EMI* | Rev: 01

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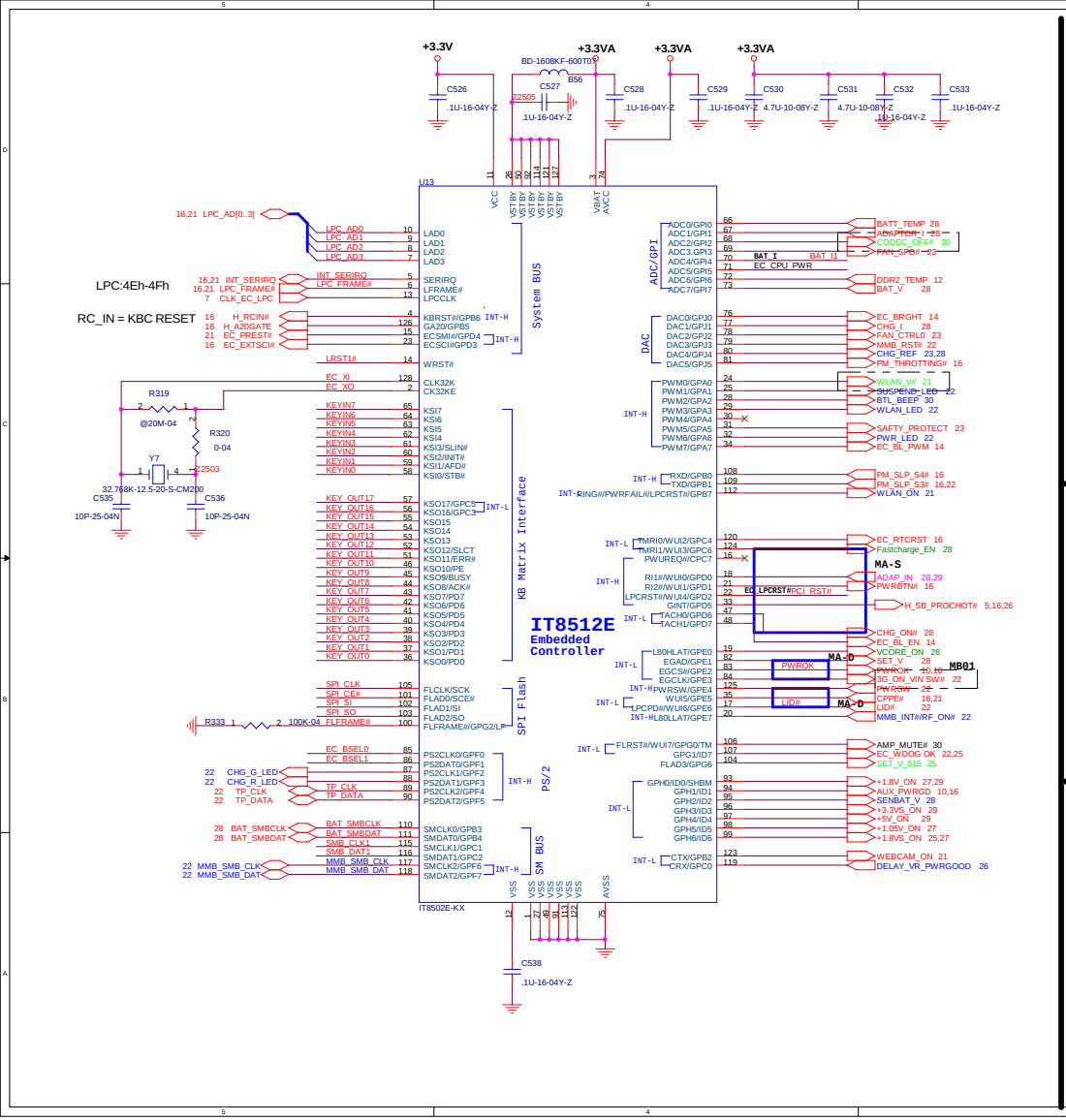
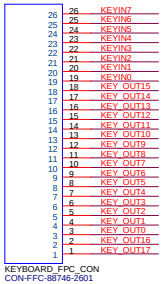
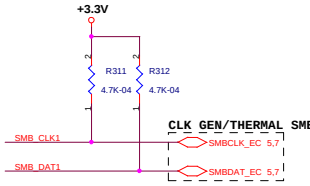
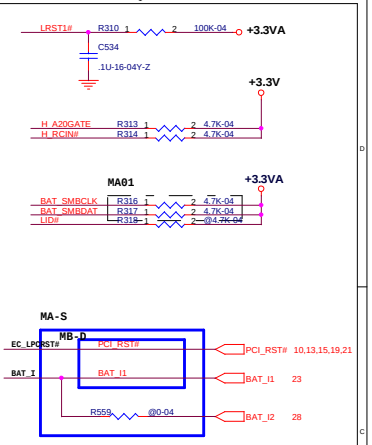


KEYBOARD CON

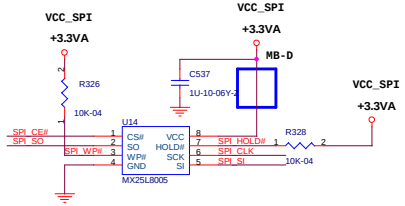


SMBUS LEVEL SHIFT

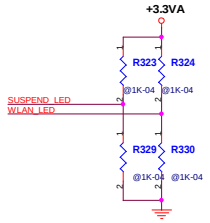




FLASH ROM(SPI)

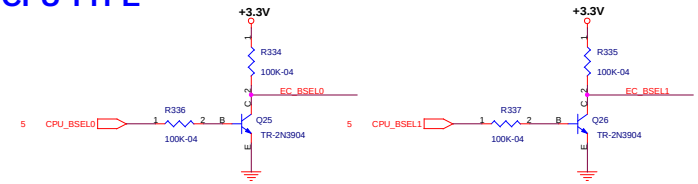


Platform ID



MODEL \ ID	(ID0) SUSPEND_LED	(ID1) WLAN/BT_LED
I4xII/SI	0	0
I5xII/SI	0	1
I7xII/SI	1	0
RESERVED	1	1

CPU TYPE



FOR EC

FSB \ BSEL	BSEL2	BSEL1	BSEL0	MHZ
FSB533	1	1	0	133
FSB667	1	0	0	166
FSB800	1	0	1	200
FSB1066	1	1	1	266

ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

Size: Custom | Document Number: I4xSIx | EC / BIOS / KEY CON | Rev: 01

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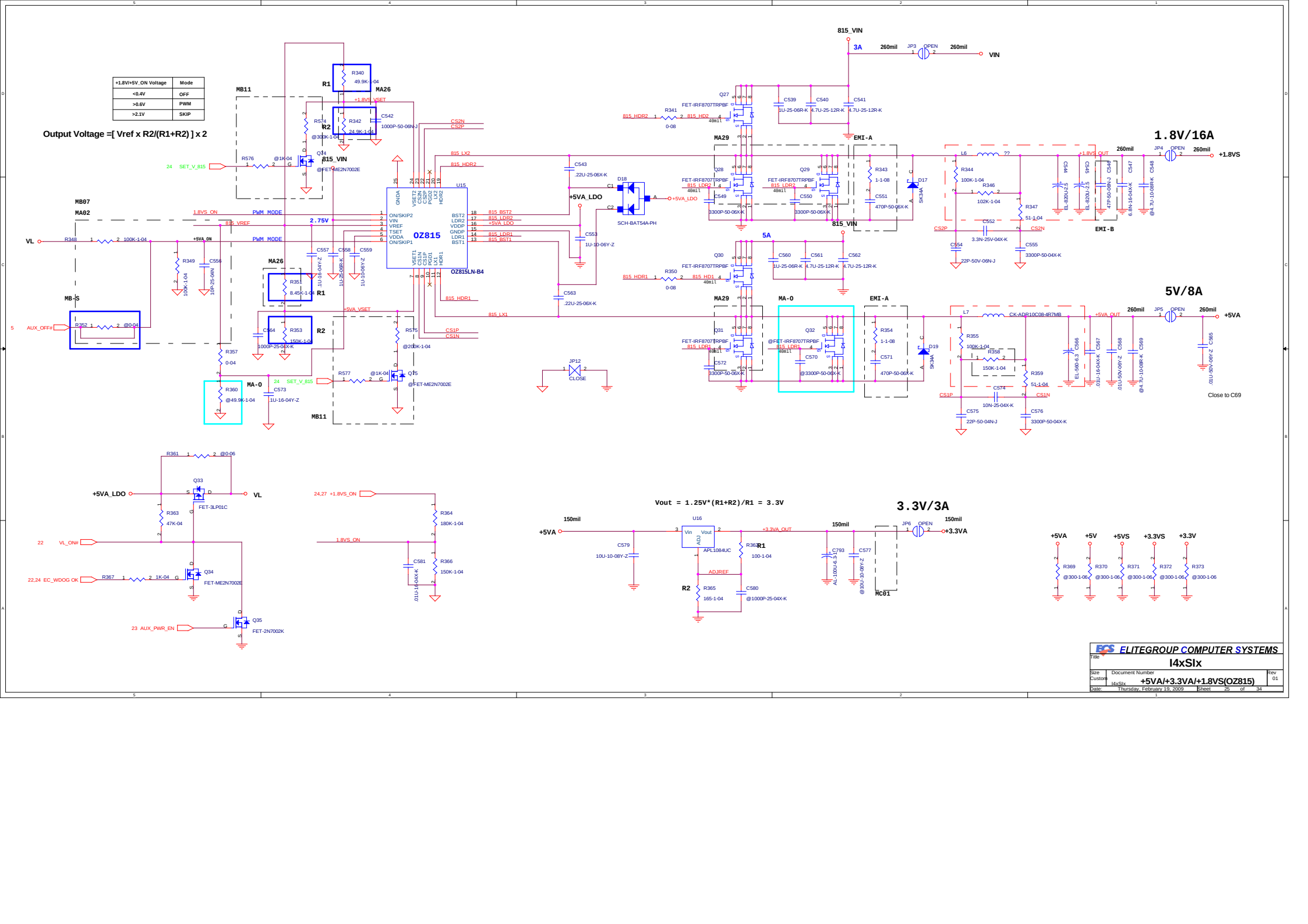
+1.8V/+5V_ON Voltage | Mode
<0.4V | OFF
>0.6V | PWM
>2.1V | SKIP
Output Voltage =[Vref x R2/(R1+R2)] x 2
MB11
R1
R2
MA26
MA02
MB07
MB-S
MA-0
MB11
OZ815
OZ815LN-B4
2.75V
815_VIN
3A
5A
VIN
1.8V/16A
5V/8A
3.3V/3A
+1.8VS
+5VA
+5V_LDO
+5VA_LDO
VL
SCH-BAT54A-PH
FET-IRF8707TRPBF
FET-3LP01C
FET-ME2N7002E
FET-2N7002K
SK34A
CK-ADR10C08-4R7MB
APL1084UC
EMI-A
EMI-B
JP12
CLOSE
Vout = 1.25V*(R1+R2)/R1 = 3.3V
Close to C69
ELITEGROUP COMPUTER SYSTEMS
I4xSIx
+5VA/+3.3VA/+1.8VS(OZ815)
Thursday, February 19, 2009
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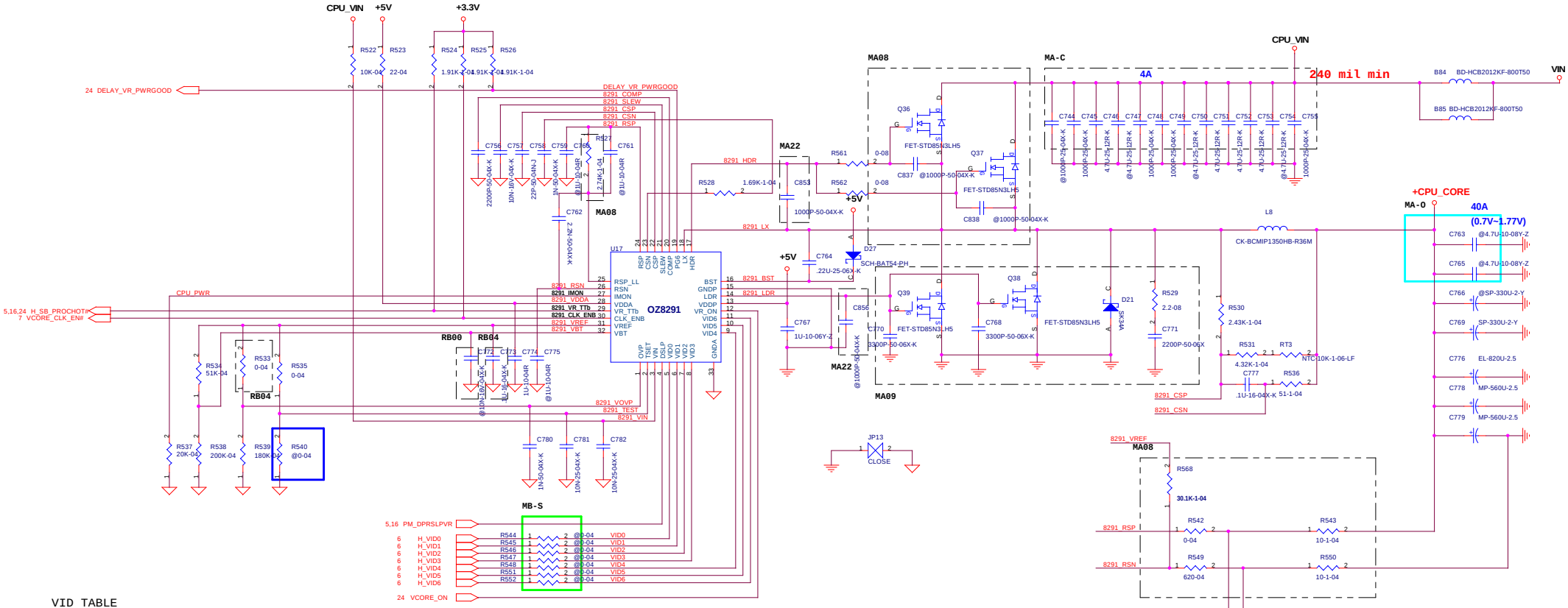

6	5	4	3	2	1	0	Vcore	Status
0	0	1	0	0	0	1	1.2875	Yonah(HFM)
0	0	1	1	0	0	0	1.2000	Boot Vout
0	0	1	1	1	0	0	1.1500	Merom(HFM)
0	1	1	0	1	0	1	0.8375	Y&M(LFM)
0	1	1	1	0	1	1	0.7625	Y&M(Deeper Sleep)
1	1	1	1	1	1	1	0.0000	Shut down

ELITEGROUP COMPUTER SYSTEMS

Title: I4xSIx

Size: Custom | Document Number: I4xSIx | CPU CORE(OZ8291) | Rev: 01

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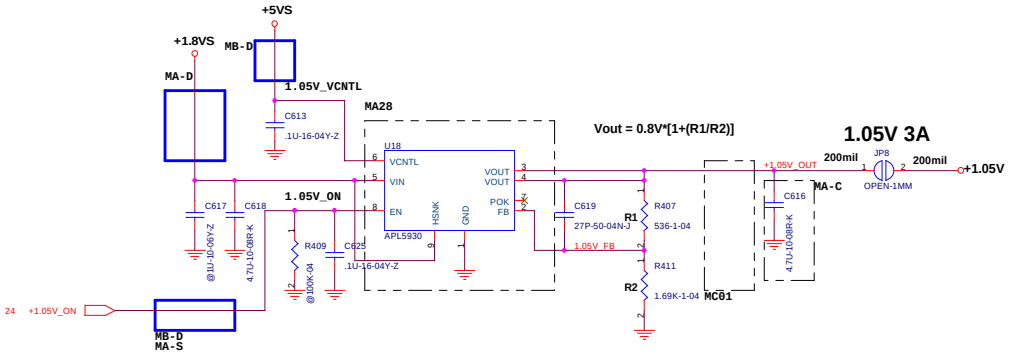

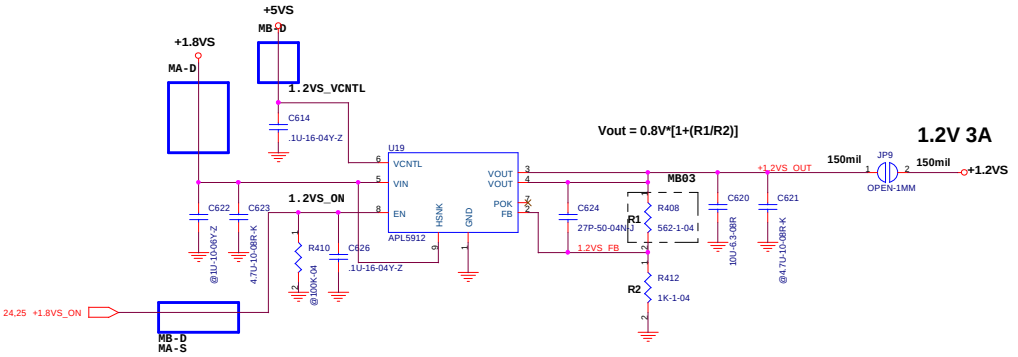

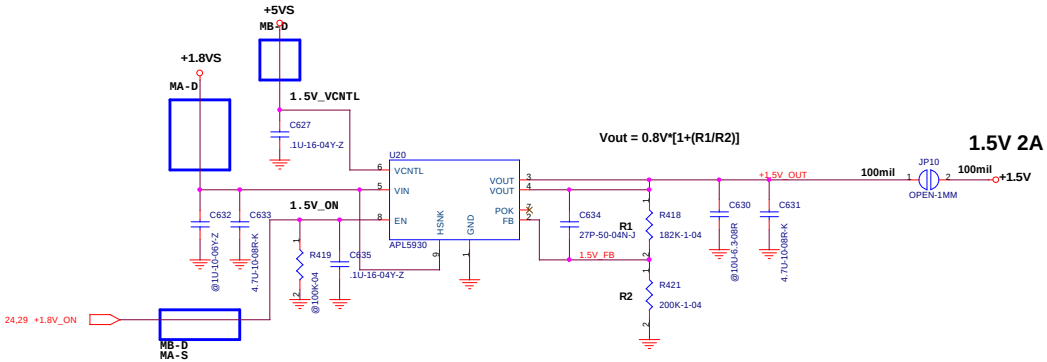

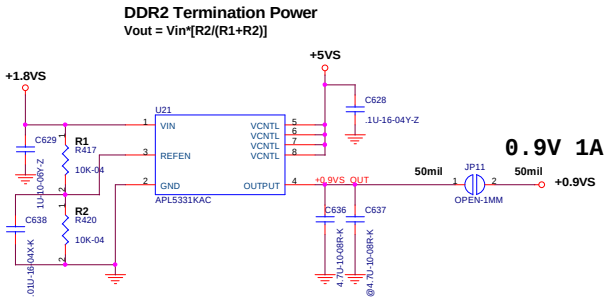

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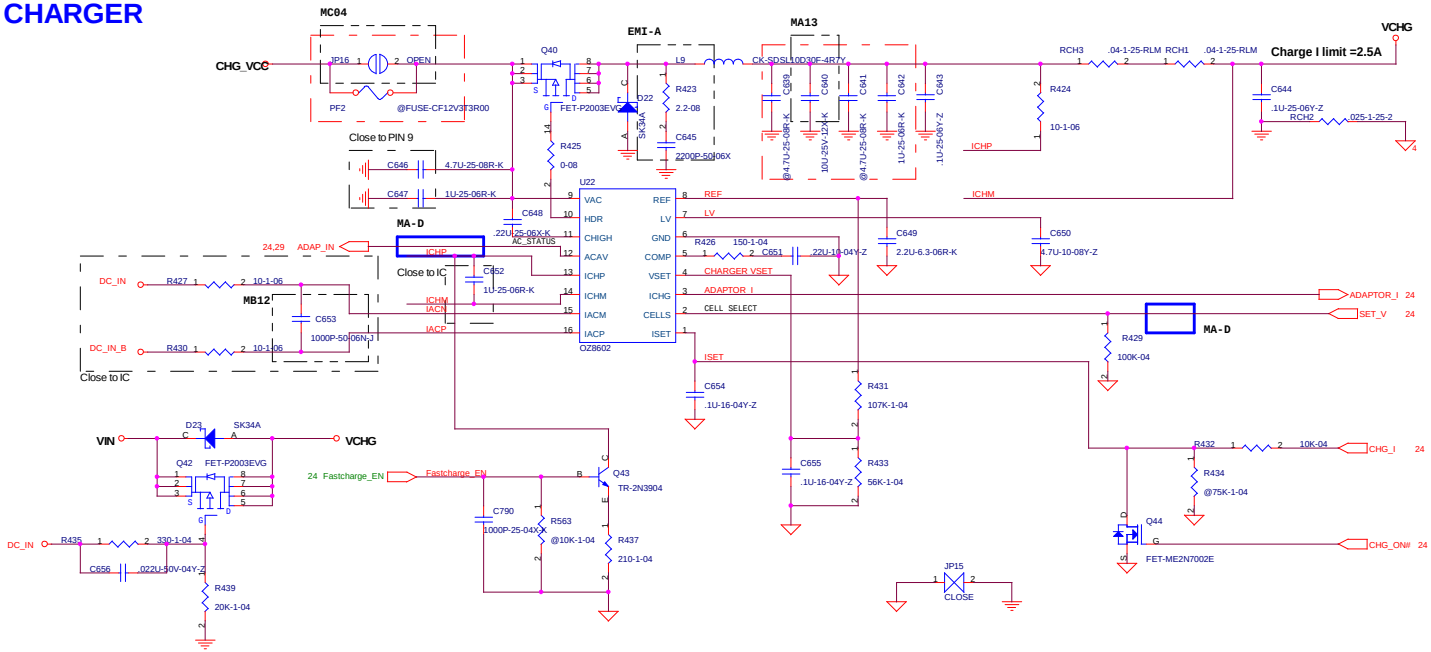
CHARGER



SET_V	
H	16.84V (4CELL)
L	12.71V (3CELL)

Vch =Nx(4.1 +Vset/10)
N=Cell (pin2 =high
-->4, low -->3)

CHG_ON	
L	CHARGER ON
H	CHARGER OFF

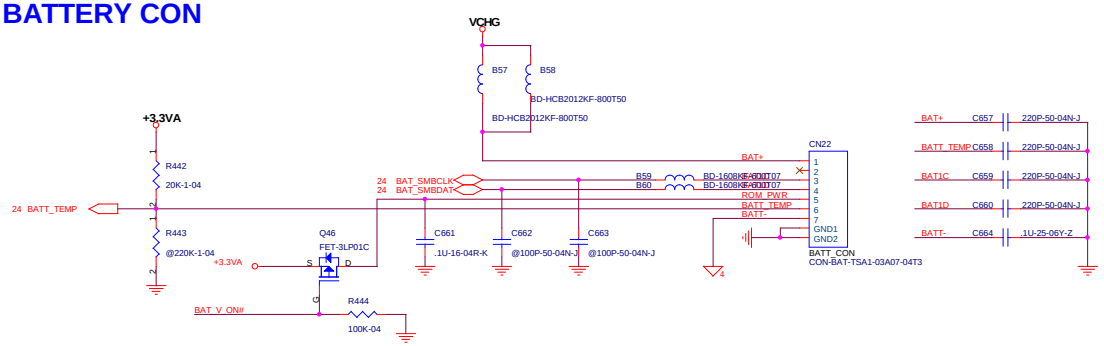
ADAPTOR_I	
F50II0	
Voltage	W
330mV	20W
660mV	40W
990mV	60W
1.32V	80W
X	X
X	X

Vichg =RAD1*Irsense*10

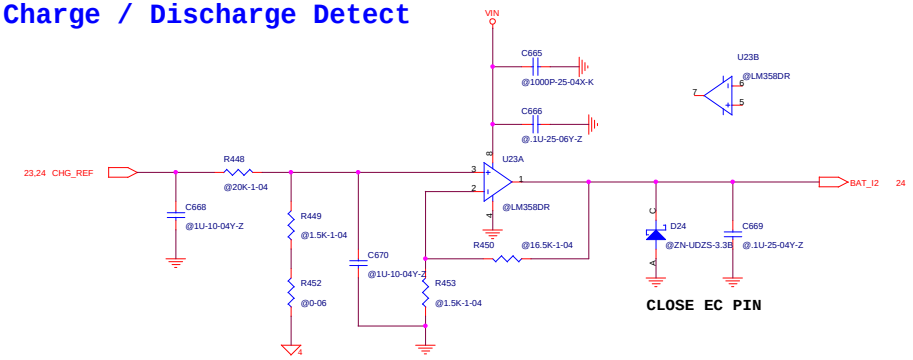
CHARGER CURRENT CGH_I=(Ich*Rch-V_R424)*30

Fast-charge-EN	CHG_I	Ich
H	3.3V	3A
H	2.82V	2.8A
H	2.1V	2.5A
H	0.9V	2A
H	0.3V	1.6A
L	3V	1.25A
L	2.4V	1A
L	0.48V	0.200A
L	0.3V	0.125A

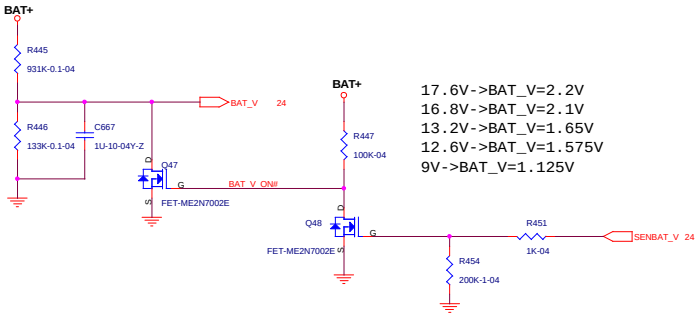
BATTERY CON



Charge / Discharge Detect

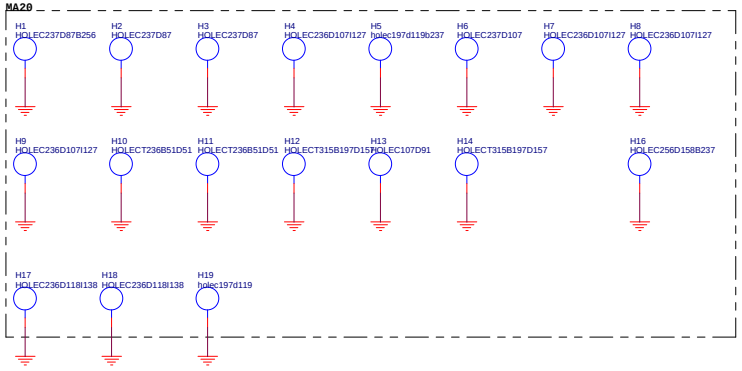


Battery Voltage Detect



17.6V->BAT_V=2.2V
16.8V->BAT_V=2.1V
13.2V->BAT_V=1.65V
12.6V->BAT_V=1.575V
9V->BAT_V=1.125V

MA20



Item	drill	Ring(TOP)	Ring(BOT)	Footprint Name
1	2.7	6	6	HOLEC236D107I127
2	1.3	6	0	HOLECT236B51D51
3	4	8	5	HOLECT315B197D157
4	4	6	6	HOLEC236D157I177
5	3	6	6	HOLEC236D118I138
6	1.5	5	5	HOLEC197D59
7	2.7	7.5	7.5	HOLECT236B295D107

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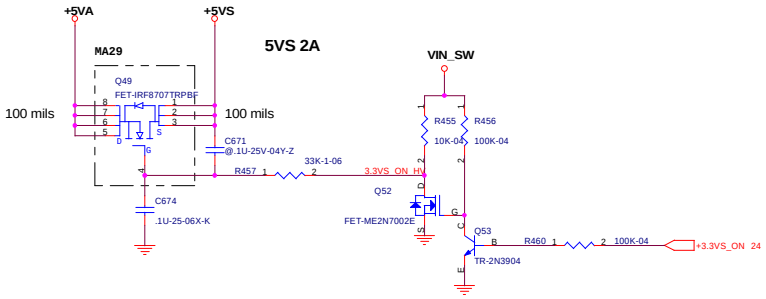

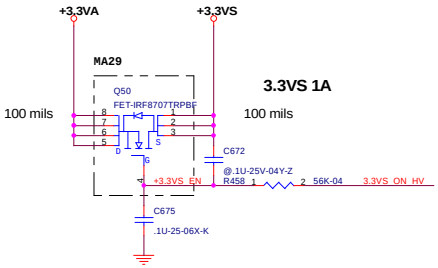

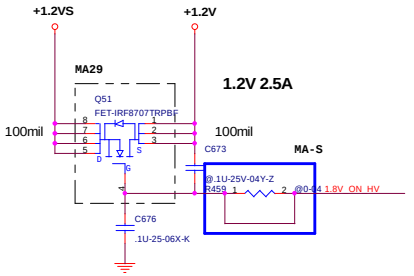

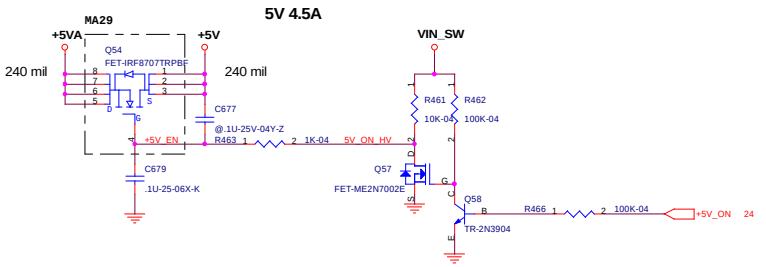

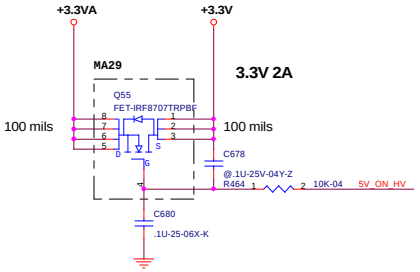

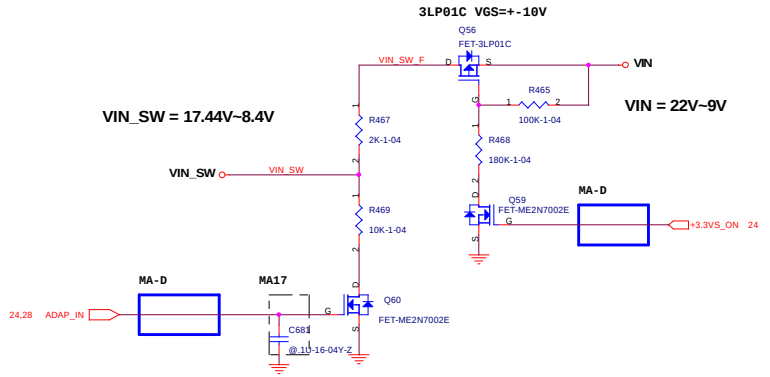

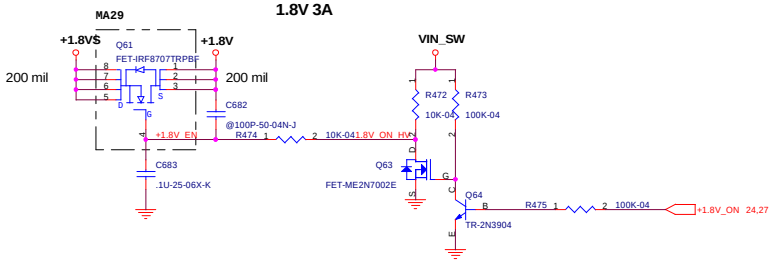

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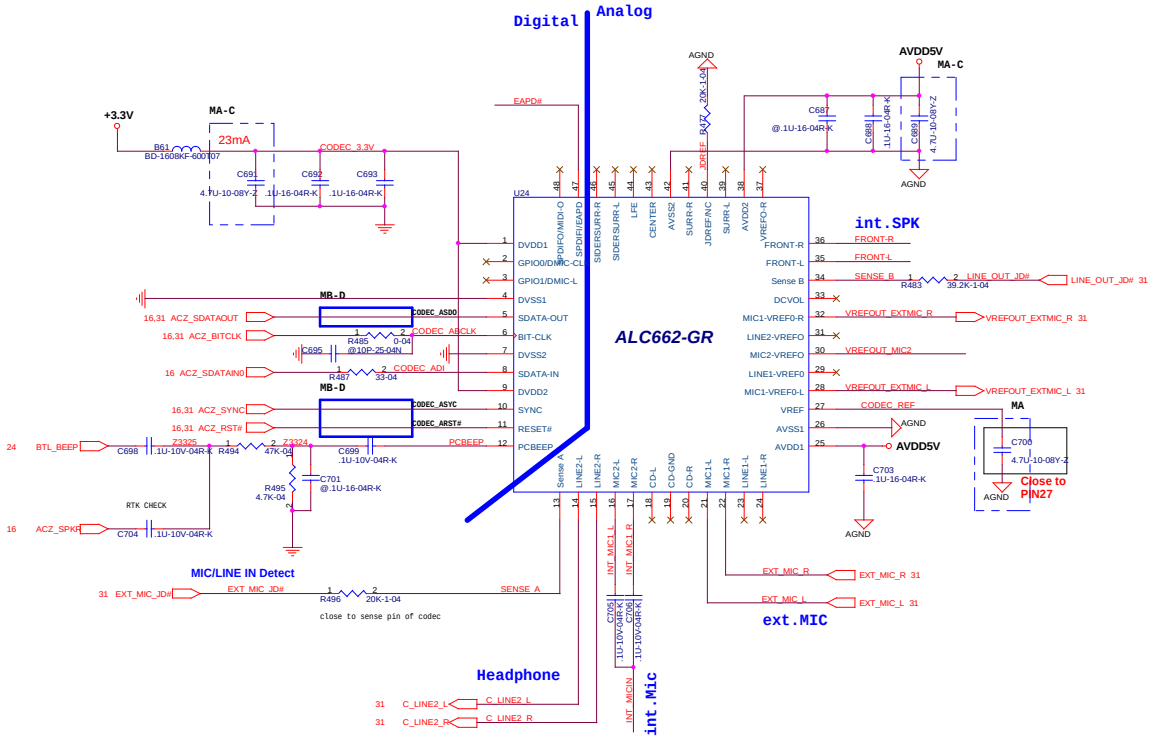
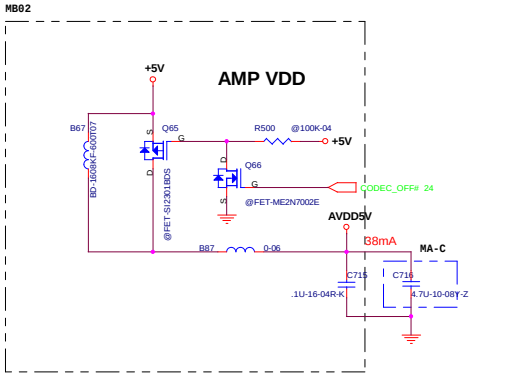
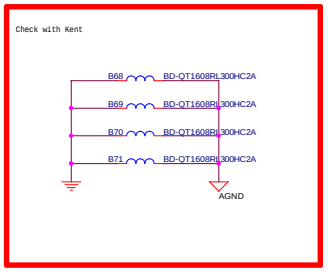
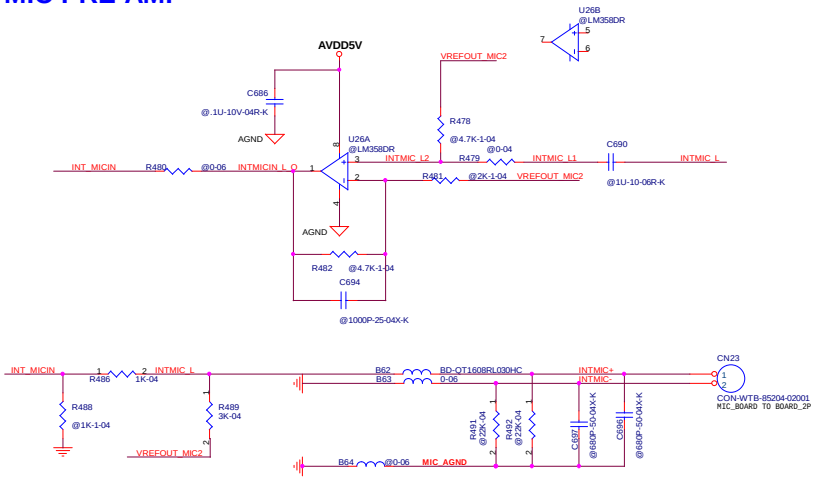
CODEC 662



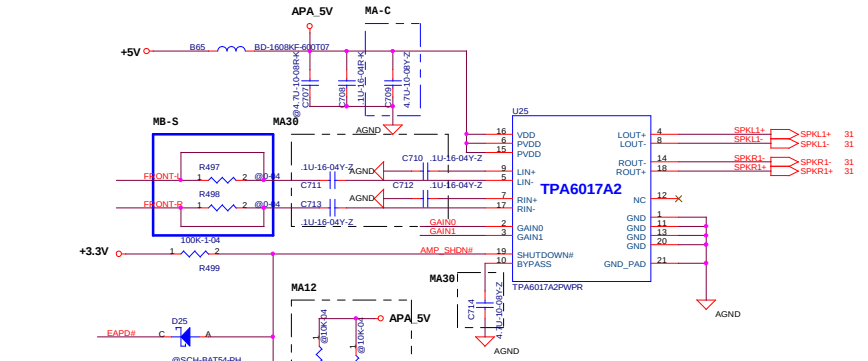




INT MIC & MIC PRE-AMP



INT SPK AMP



Gain Table

GAIN0	GAIN1	Gain
L	L	6dB
L	H	10dB
H	L	15.6dB
H	H	21.6dB

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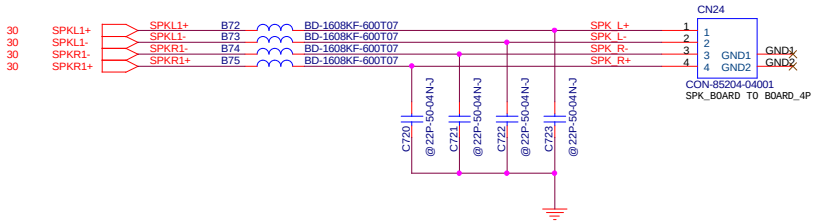
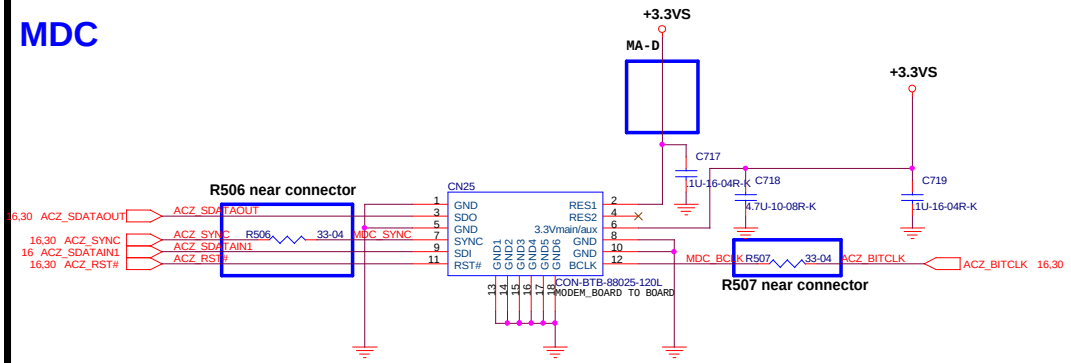
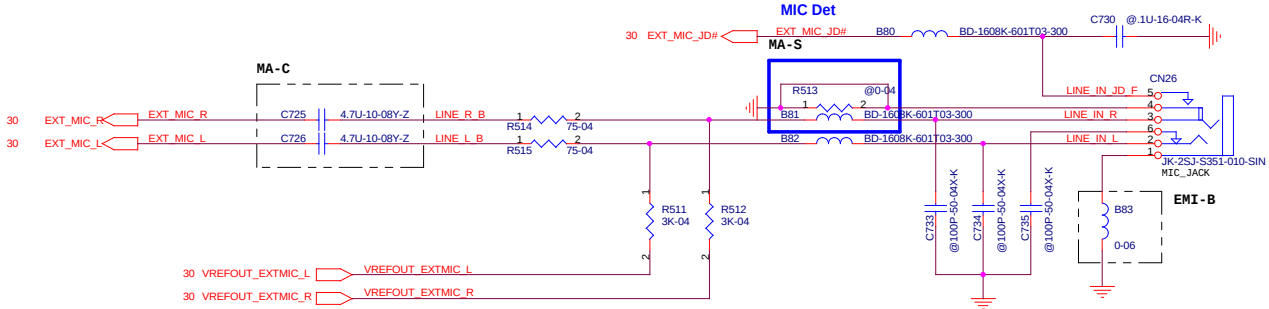
Int SPK



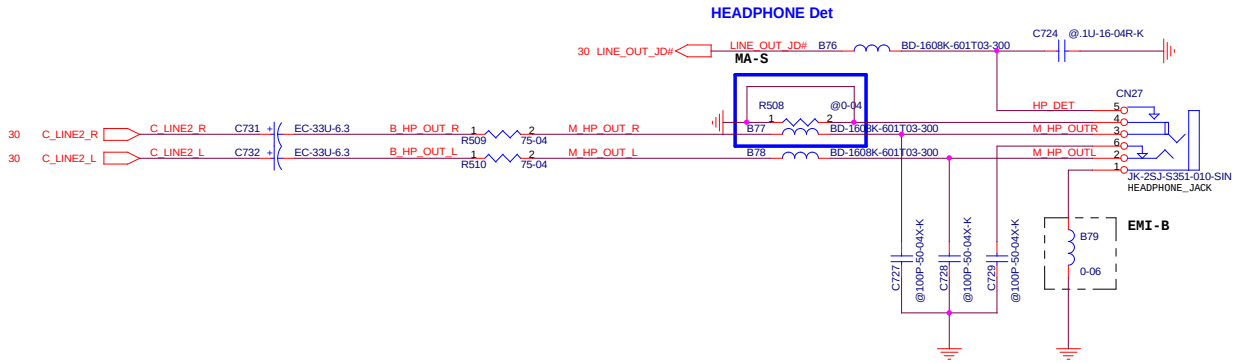
MDC



EXTERNAL MIC



HEADPHONE



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RA to RB Modify list:

Symbol	Modify Item	Modify Reason	Page	Note
MA00	NET NAME CHANGE	Schematic ERROR	PAGE 12	
MA01	SMBUS HIGH 3.3V	BATTERY SMBUS,BOM ERROR	PAGE 24	
MA02	MODIFY NET AUX_OFF TO VL	CANNOT POWER ON	PAGE 25	
MA03	ADD JP14, D15 OP	COST DOWN	PAGE 23	
MA04	DELL Q10,Q11 ADD U27,U28,R566,R567,C835,C836	FOR DQA H,V VOLTAGE TO LOW FOR DQA	PAGE 14	
MA05	R239 CHANGE TO 0603	Schematic ERROR	PAGE 21	
MA06	MODIFY TP CON PIN NET CN18	Schematic ERROR	PAGE 22	
MA07	CN17 CHANGE 180 DEGREE	Layout ERROR	PAGE 22	
MA08	CPU ADD C837,C838,R568	Vcore MODIFY	PAGE 26	
MA09	Vcore POWER MODIFY	Vcore MODIFY	PAGE 26	
MA10	R106,R107 CHANGE TO 10K	MODIFY DDR VREF VOLTAGE	PAGE 12	
MA11	5V POWER OFF HAVE 1V(CRT DDC)	FOR S3 5VA OFF HAVE 1V	PAGE 14	
MA12	Modify AMP gain(6DB)	FOR DQA TEST	PAGE 30	
MA13	C640 CHANGE TO 1206	COST DOWN	PAGE 28	
MA14	USB ADD 5P CAP	FOR DQA TEST(USB PORT)	PAGE 21,22	
MA15	USB CAP CHANGE TO 4.7UF OP 1UF	COST DOWN	PAGE 21	
MA16	MMB 3.3VA CAP OP	COST DOWN	PAGE 22	
MA17	C681 OP	COST DOWN	PAGE 29	
MA18	MODIFY CN6 FOOTPRINT	ME CHANGE	PAGE 19	
MA19	MODIFY CN15 CON 20PIN TO 16PIN,ADD USP CAP	ME CHANGE	PAGE 22	
MA20	MODIFY HOLE FOOTPRINT	ME CHANGE	PAGE 28	
MA21	CN6 FOOTPRINT CHANGE		PAGE 19	
MA22	ADD CAP FOR Vcore dead time		PAGE 26	
MA23	FOR LCD BL ON	PANEL BL ON FOR WHITE DISPLAY	PAGE 14	
MA24	CHANGE FOR BAT PWRGD TIME	COST DOWN	PAGE 16	
MA25	FOR BATTERY FUNTION(OP R563)	Schematic ERROR	PAGE 28	
MA26	change 5V,1.8V VOLTAGE	FOR 5V, 1.8V VOLTAGE TO LOW	PAGE 25	
MA27	MODIFY PIN32,34,36 NET VIN_LCD	FOR 16:9 PANEL	PAGE 14	
MA28	U18 IC:5912 CHAGE TO 5930		PAGE 27	
MA29	MODFIY MOS MA4410TO IR8707	FOR POWER	PAGE 25,29	
MA30	CHANGE C711,C713,C714 VULE	FOR AMP POP NOISE	PAGE 30	

Symbol	Modify Item (Component count less than 10% with U50)			Page
MA	MA-O(OP) R23,R29,R39,R34	MA-S(SHORT) R25,R31,R37		PAGE 5
	MA-O(OP) C12,C13,C15,C17,C20,C22,C25,C27,C29,C41,C47,C48,C49 C51,C52,C53,C54,C59,C60,C61,C68,C69,C74			PAGE 6
	MA-O(OP) C98,C99,C126,C127	MA-S(SHORT) R44~R56,R58~R60		PAGE 7
	MA-O(OP) C131			PAGE 8
	MA-O(OP) C144			PAGE 9
	MA-O(OP) C147			PAGE 10
	MA-O(OP) C174,C175,C183,C185,C186,C188,C189,C194,C197,C198,C200			PAGE 11
	MA-O(OP) C208,C209,C221,C222,C228,C253,C255			PAGE 12
	MA-O(OP) C270,C284	MA-S(SHORT) R117		PAGE 13
	MA-S(SHORT) R168,R169			PAGE 16
	MA-O(OP) C375,C379,C383,C384,C386,C392,C395,C396,C397,C401,C402,C405 C406,C407,C409,C412			PAGE 18
	MA-O(OP) C439,C440,C441,C467,C468,C469	MA-S(SHORT) R222,R217,R227,R229	MA-D(DELL) R213	PAGE 20
	MA-O(OP) C486,C488,R262	MA-S(SHORT) R321,R323		PAGE 21
	MA-S(SHORT) R413,R422,R414	MA-D(DEL) R405,R406,R416		PAGE 27
	MA-S(SHORT) R459	MA-D(DEL) R470,R471		PAGE 29
	MA-S(SHORT) R520,R558,R321	MA-D(DEL) R332,R338,R339		PAGE 24
	MA-D(DEL) R135,R136,R137			PAGE 14
	MA-S(SHORT) B53			PAGE 23
	MA-O(OP) Q32,C570			PAGE 25
	MA-O(OP) C763,C765			PAGE 26
	MA-D(DEL) R428,R441			PAGE 28
	MA-D(DEL) R505	MA-S(SHORT) R508,R513		PAGE 31

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RB to R01 Modify list:

Symbol	Modify Item	Modify Reason	Page	Note
MB00	OP C772	FOR CPU POWER UP	PAGE 26	
MB01	Net change 3G VIN SW add #	MODIFY EC CONTROL NET NAME	PAGE 22,24	
MB02	Add CODE 662 AMP 5V power control	FOR ENGRGY STAR AND BATTERY LIFE	PAGE 30	
MB03	Modify 1.2V voltage		PAGE 27	
MB04	Modify R533 to 0-04,C773 to .1uf	FOR VCORE POWER MODIFY	PAGE 26	
MB05	Modify C311,C312,C313 TO 10P	FOR QDA TEST	PAGE 14	
MB06	ADD MMB SMBUS FOR 3.3V	FOR MMB FUNTION	PAGE 22	
MB07	PM_THERMTRIP# HIGH VOLTAGE TO 1.05V(NET AUX_OFF TO +5VA_ON)	FOR AUX_OFF FUNTION	PAGE 5,25	
MB08	CPU Vcore C4 net cheage to PM_DPRSLPVR	FOR A PHASE C4 OPEN SYSTEM WILL HAND UP	PAGE 5,26	
MB09	ADD 2.2UF FOR PMEM TEST	FOR QE TEST	PAGE 12	
MB10	FOR PCIE CUT OFF POWER 3.3VS/V AND 1.5V	CUT OFF PCIE POWER TO WLAN ADD BATTEY LIFE	PAGE 21	
MB11	FOR SETTING 5V AND 1.8V VOLTAGE	CHANGE 5V AND 1.8V VOLTAGE TO ADD BATTEY LIFE	PAGE 25	
MB12	C653 0.1UF CHANGE TO 1000P	FOR R427,R430 TO BURN	PAGE 28	
MC01	Del C578,C615,C89,C90	For M1 request	PAGE 25,27,7	
MC02	MODIFY 3G CON FOOTPRINT	For M1 request	PAGE 22	
MC03	FOR USB EYE FAIL ADD CAP	For DQA bug	PAGE 22	
MC04	SAFETY FUNTION,DEL JP2,PF1,ADD JP16	For SAFETY	PAGE 23,28	
MC05	FOR AUX_OFF FUNTION R40 TO 1M	FOR POWER ON EC WILL GET TURN ON THE AUX_OFF	PAGE 5	
MC06	ADD C860,C863(4.7U) C861,C862(2.2U)	For DQA bug(CRT JITTER)	PAGE 10	
MC07	MODIFY THE Q71 NET ERROR	Schematic ERROR	PAGE 14	

Symbol	Modify Item (Component count less than 10% with U50)		Page
MB	MB-D(DEL) R42,R25,R31,R37	MC-O(OP) R35,R40,Q6,Q3,C7,C8	PAGE 5
	MB-D(DEL) R117		PAGE 13
	MB-D(DEL) R168,R169		PAGE 16
	MB-D(DEL) R217,R221,R225,R227,R229,R230		PAGE 20
	MB-D(DEL) R518,R519		PAGE 21
	MB-D(DEL) B53		PAGE 23
	MB-D(DEL) R520,R558,R322		PAGE 24
	MB-S(SHORT) R352		PAGE 25
	MB-S(SHORT) R544~R548,R551,R552		PAGE 26
	MB-D(DEL) R403,R404,R413,R414,R422		PAGE 27
	MB-D(DEL) R484,R490,R493	MB-S(SHORT) R497,R498	PAGE 30

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Symbol	Modify Item	Page	Note
EMI-A	1.CLK_GEN:NB_REF_CLK0,SB_REF_CLK1,SB_PCI_CLK0, PART:C111,C112,C115(10P) 2.DDR BUFFER CAP: C841~C848@10P-25-04N	PAGE 7	
	ADD C736~C739,C791~C792,C740~C743(10P) FOR I/O	PAGE 22	
	1.ADD R343(1OHM),C551(470P) FOR 5V 2.ADD R354(1OHM),C571(470P)	PAGE 25	
	ADD R423(2.2OHM),C645(2200P) FOR CHG	PAGE 28	
EMI-B	FOR VCORE POWER ADD CAP:C29,C41,C59,C60,C61,C68(150P) CAP:C47,C48,C49,C50,C51,C52,C53,C54(1000P)	PAGE 5	
	1.CLK_GEN:CPU_CLK_BLCK,CPU_CLK_BLCK#,NB_H_CLK,NB_H_CLK#,CLK_EC_LPC(10P) 2.R69:CHANGE BEAD 1005KF-600T03	PAGE 7	
	FOR 1.8VS POWER ADD CAP:C221,C222(150P) CAP:C228,C238(1000P)	PAGE 12	
	USB PORT ADD L4(CK-ATCM2012-900T)	PAGE 21	
	1.ADD CAP:C523(150P) FOR DCIN 2.+1.8V TO +1.8VS:C800(0.1U) 3.+1.8VS TO GND:C854,C855(0.1U) 4.+3.3V TO +5V:C812(0.1U) 5.+3.3V TO +1.8V:C823(0.1U)	PAGE 23	
	B79,B83(0OHM)	PAGE 31	
EMI-C	1.+3.3V TO +5V:C815(0.1U) 2.+3.3V TO +1.8V:C818(@0.1U) 3.+3.3V TO +1.8V:C823(@0.1U)	PAGE 23	

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