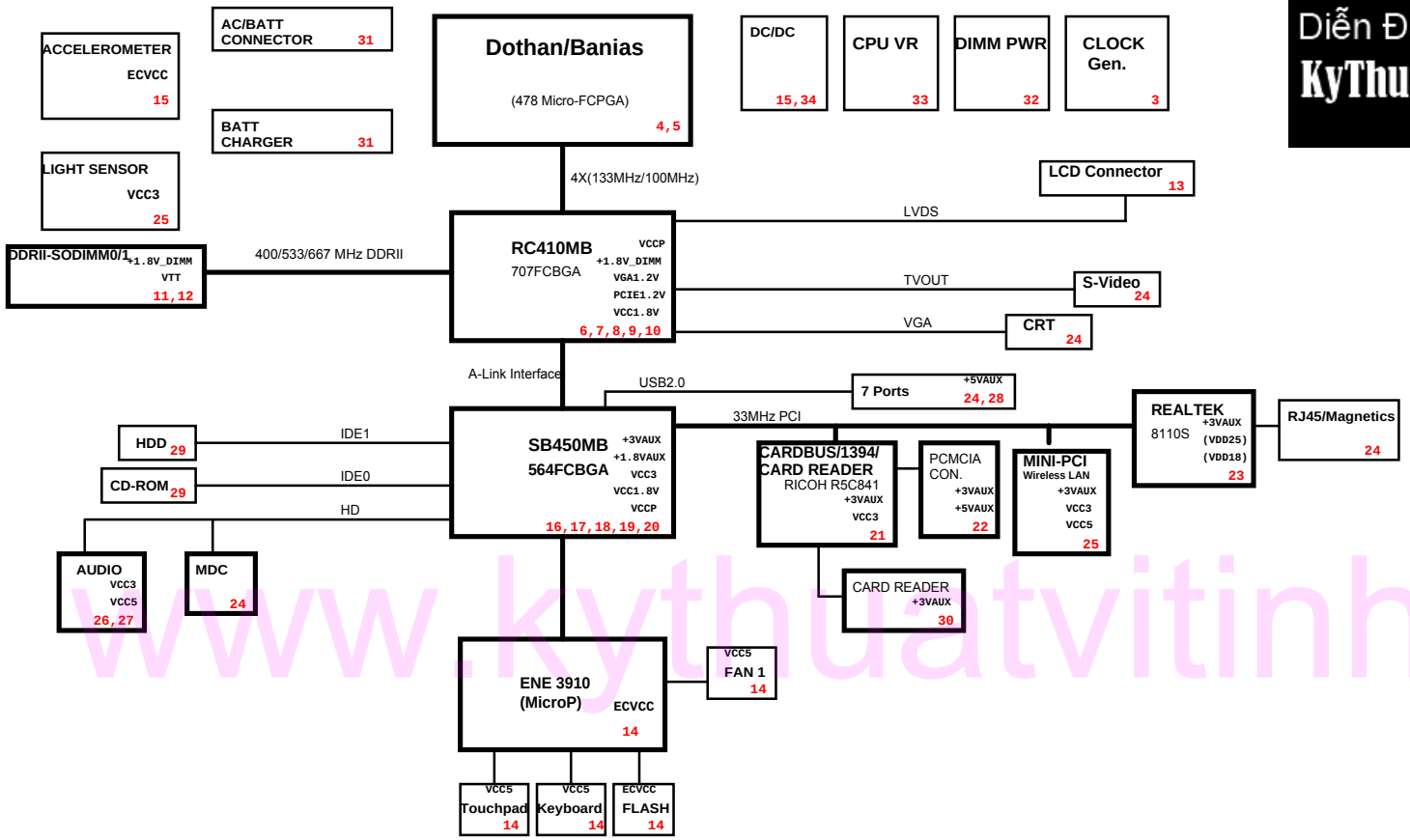
400

Rev: A.0 15-F66-010010



Page	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Rev.	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0
Data	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11

Page	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Rev.	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0	A.0
Data	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11	2005/07/11

Elitegroup Computer Systems

Title: BLOCK DIAGRAM

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Voltage Rails		ON S0~S1	ON S3	ON S4	ON S5	Control signal
12VOUT		X	X	X	X	
3V_591		X	X	X	X	
5VPCU		X	X	X	X	
+3V_S5		X	X	X	X	S5_ON
+1.5V_S5		X	X	X	X	S5_ON
+1.8VSUS		X	X			SUSON
+3VSUS		X	X			SUSON
+5VSUS		X	X			SUSON
+0.9VSUS	DDR Termination voltage	X	X			SUSON
CPU_CORE	Core voltage for Processor	X				VR_ON
+0.9V		X				MAINON
+VCCP	1.05V rail for Processor I/O	X				MAINON
+1.5V		X				MAINON
+1.8V		X				MAINON
+2.5V		X				MAINON
+3V		X				MAINON
+5V		X				MAINON
+12V		X				MAINON

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
Giga LAN	AD22	0	B
Mini-PCI	AD23	1	C, D
CardBus+1394	AD24	2	E, F, G

EC SM Bus1 address

Device	
Smart Battery	
THERMAL SENSOR	**1001 100X b**

SB450MB SM Bus address

Device	
SODIMM	**1010 000X b**
Clock Gen	**1101 001x b**

Functions with Spread Spectrum Capibility for Clock

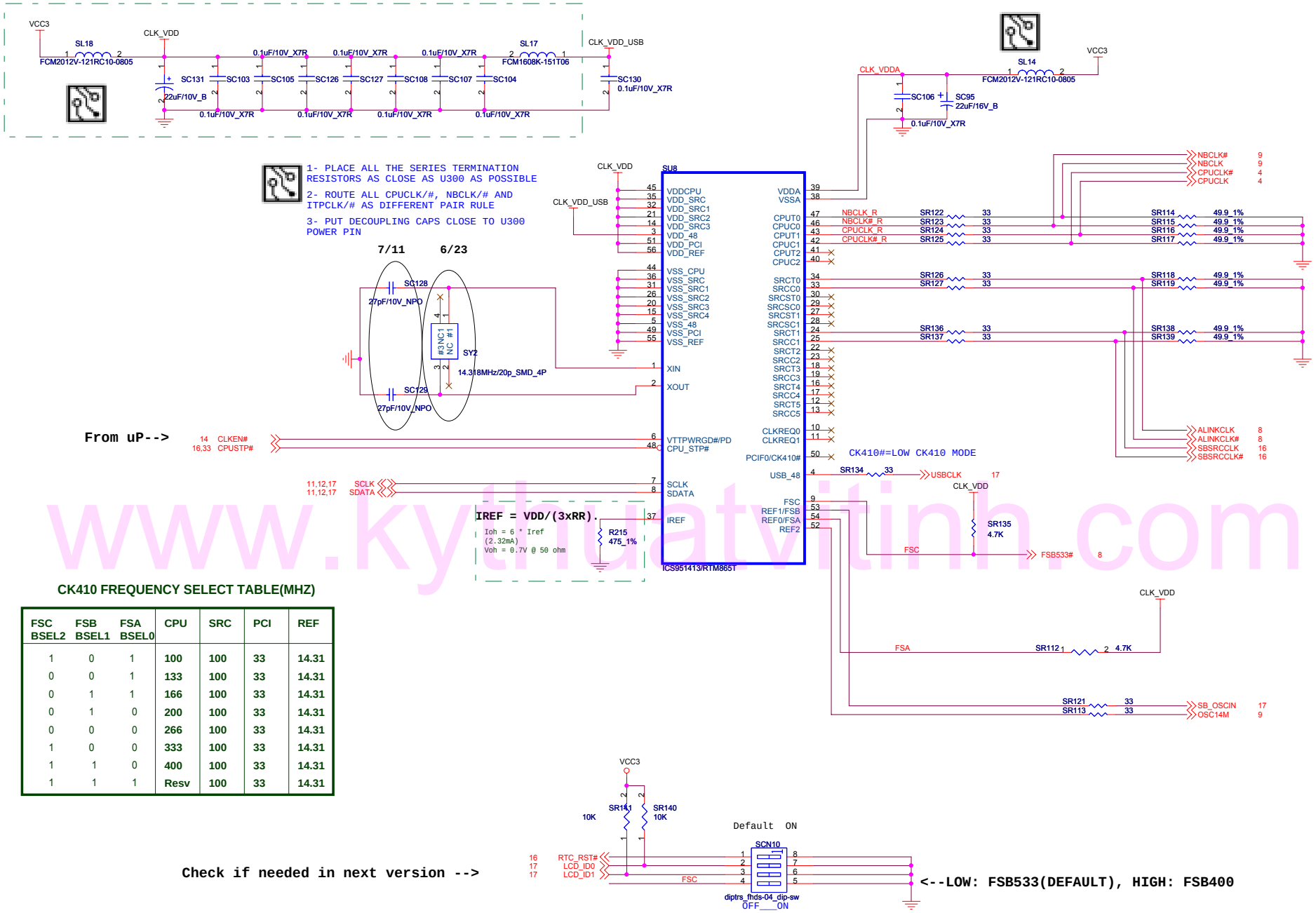
Memory

LVDS

Host Bus

PCIE Interface

Elitegroup Computer Systems		
Title: **SYSTEM INFO**		
Size: *Custom*	Document Number: *400-1-4-01*	Rev: A.0
Date: Monday, July 11, 2005	Sheet 2 of 35	



CK410 FREQUENCY SELECT TABLE(MHZ)

FSC BSEL2	FSB BSEL1	FSA BSEL0	CPU	SRC	PCI	REF
1	0	1	100	100	33	14.31
0	0	1	133	100	33	14.31
0	1	1	166	100	33	14.31
0	1	0	200	100	33	14.31
0	0	0	266	100	33	14.31
1	0	0	333	100	33	14.31
1	1	0	400	100	33	14.31
1	1	1	Resv	100	33	14.31

Elitegroup Computer Systems

Title: CLK GEN.

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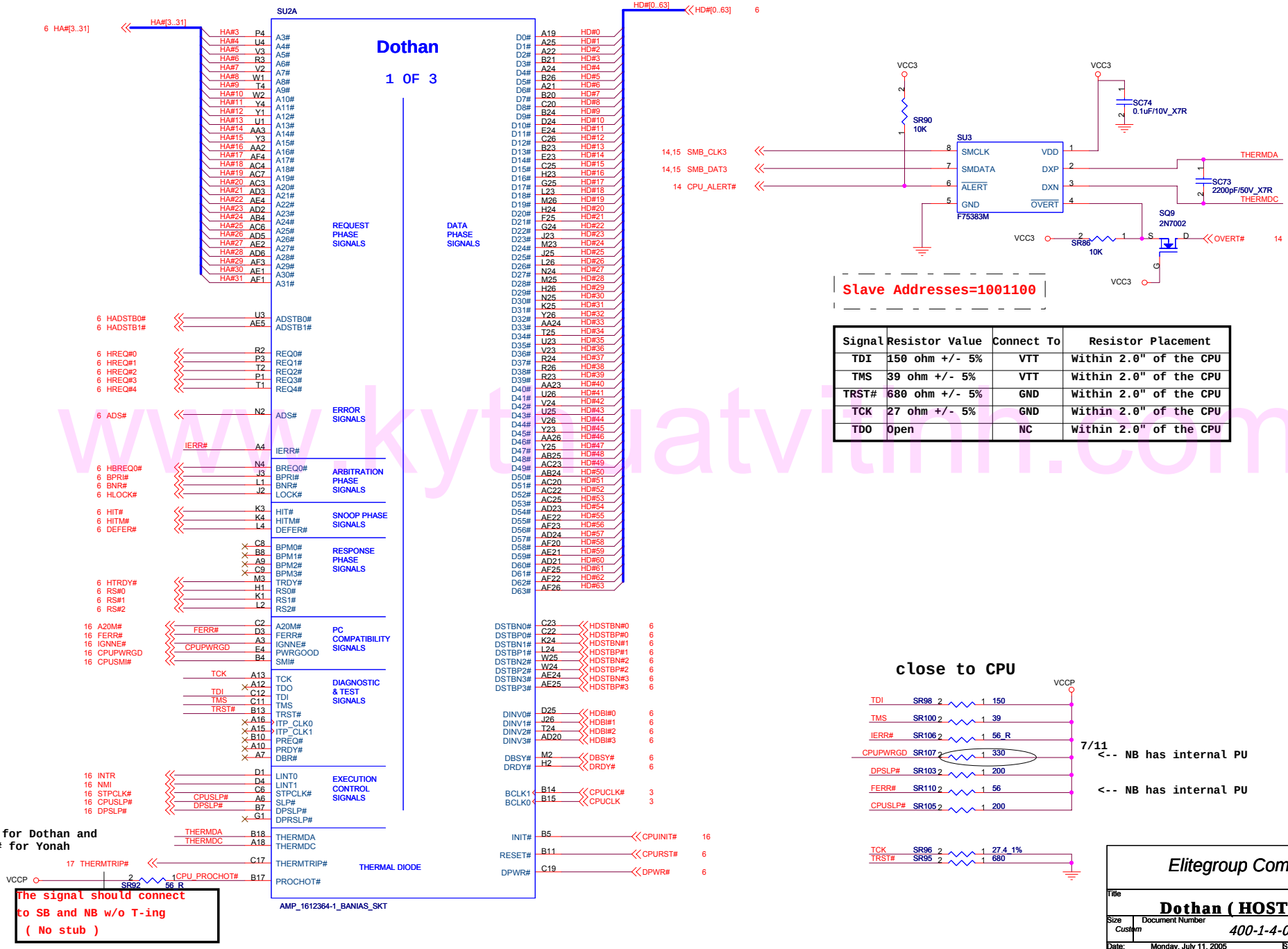

Signal	Resistor Value	Connect To	Resistor Placement
TDI	150 ohm +/- 5%	VTT	Within 2.0" of the CPU
TMS	39 ohm +/- 5%	VTT	Within 2.0" of the CPU
TRST#	680 ohm +/- 5%	GND	Within 2.0" of the CPU
TCK	27 ohm +/- 5%	GND	Within 2.0" of the CPU
TDO	Open	NC	Within 2.0" of the CPU

Elitegroup Computer Systems			
Title: Dothan (HOST BUS)			
Size: Custom	Document Number: 400-1-4-01		Rev: A.0
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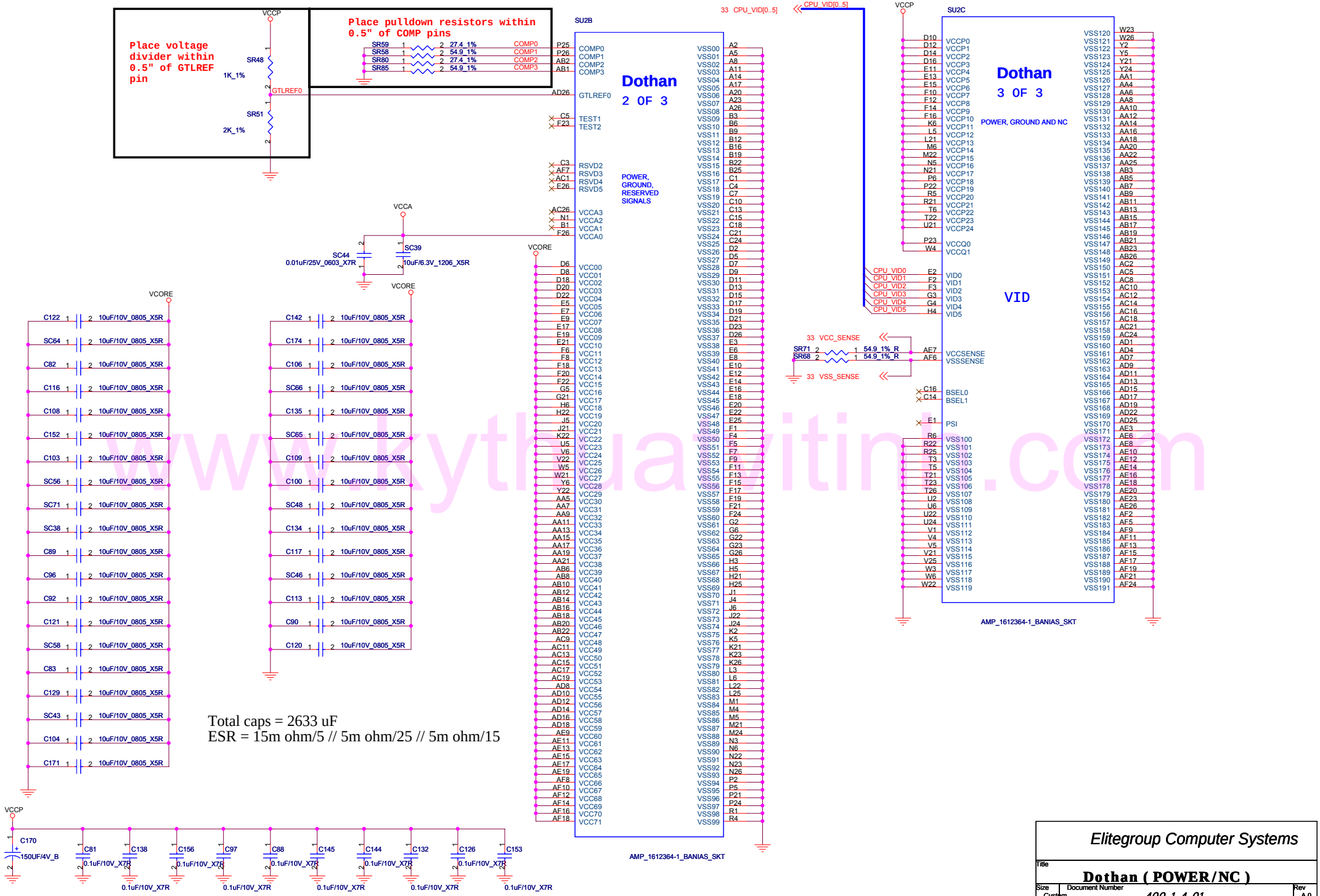

Elitegroup Computer Systems	
Title	Dothan (POWER/NC)
Size: Custom	Document Number: 400-1-4-01
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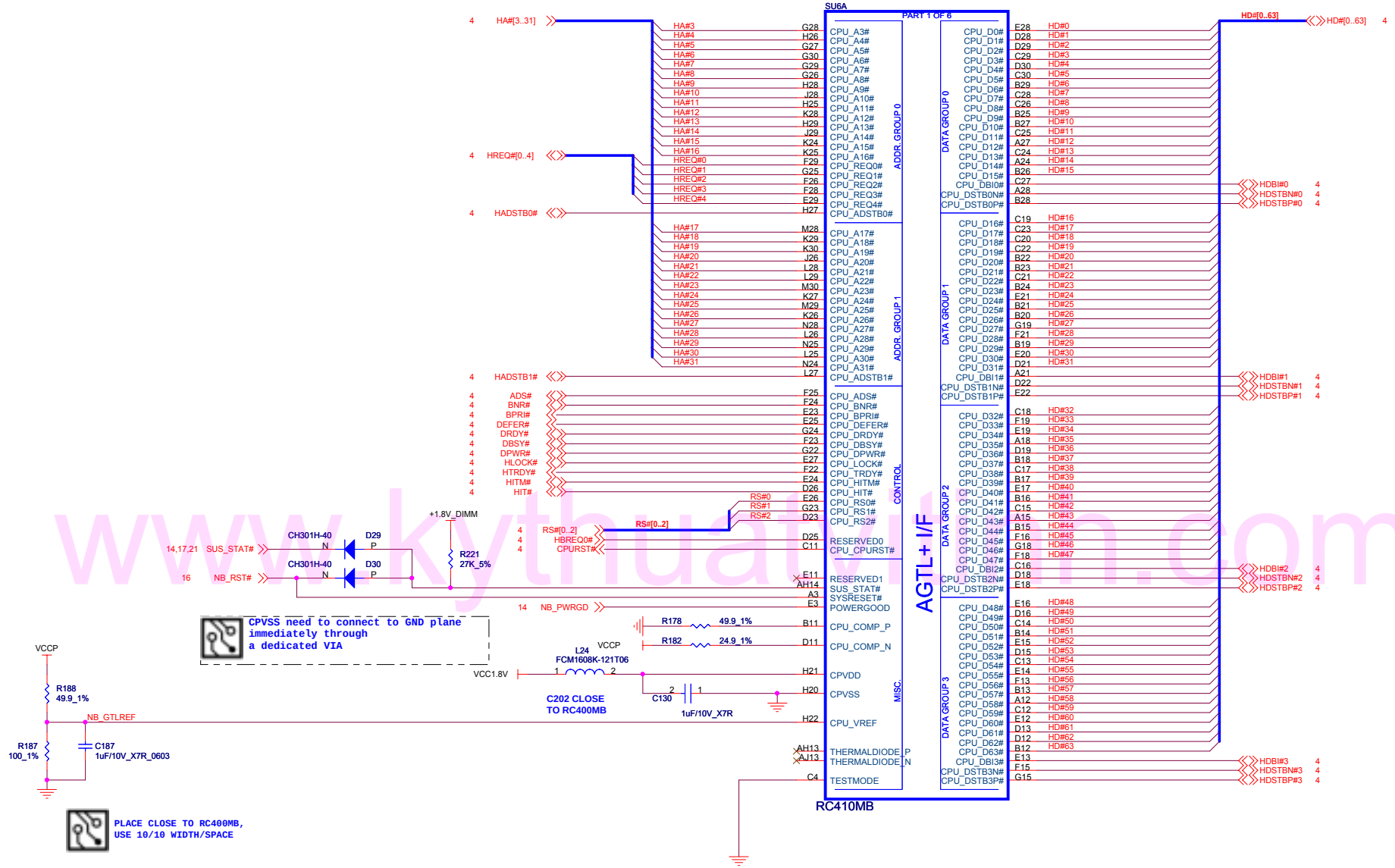
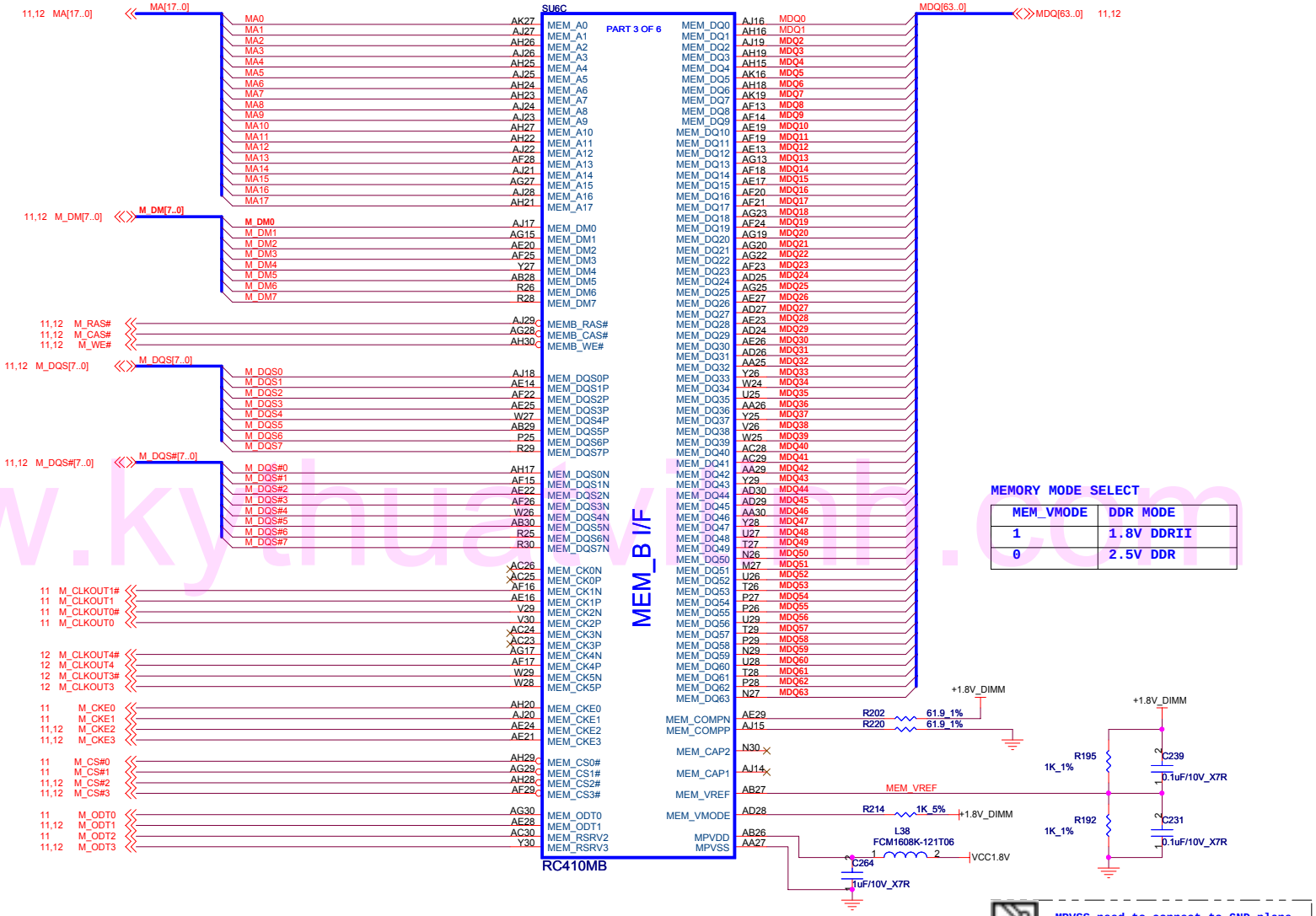


Elitegroup Computer Systems

Title: RC410MB -AGTL+

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

Date: Monday, July 11, 2005 | Sheet 6 of 35



Elitegroup Computer Systems	
Title	RC410MB-MEMORY
Size: Custom	Document Number: 400-1-4-01
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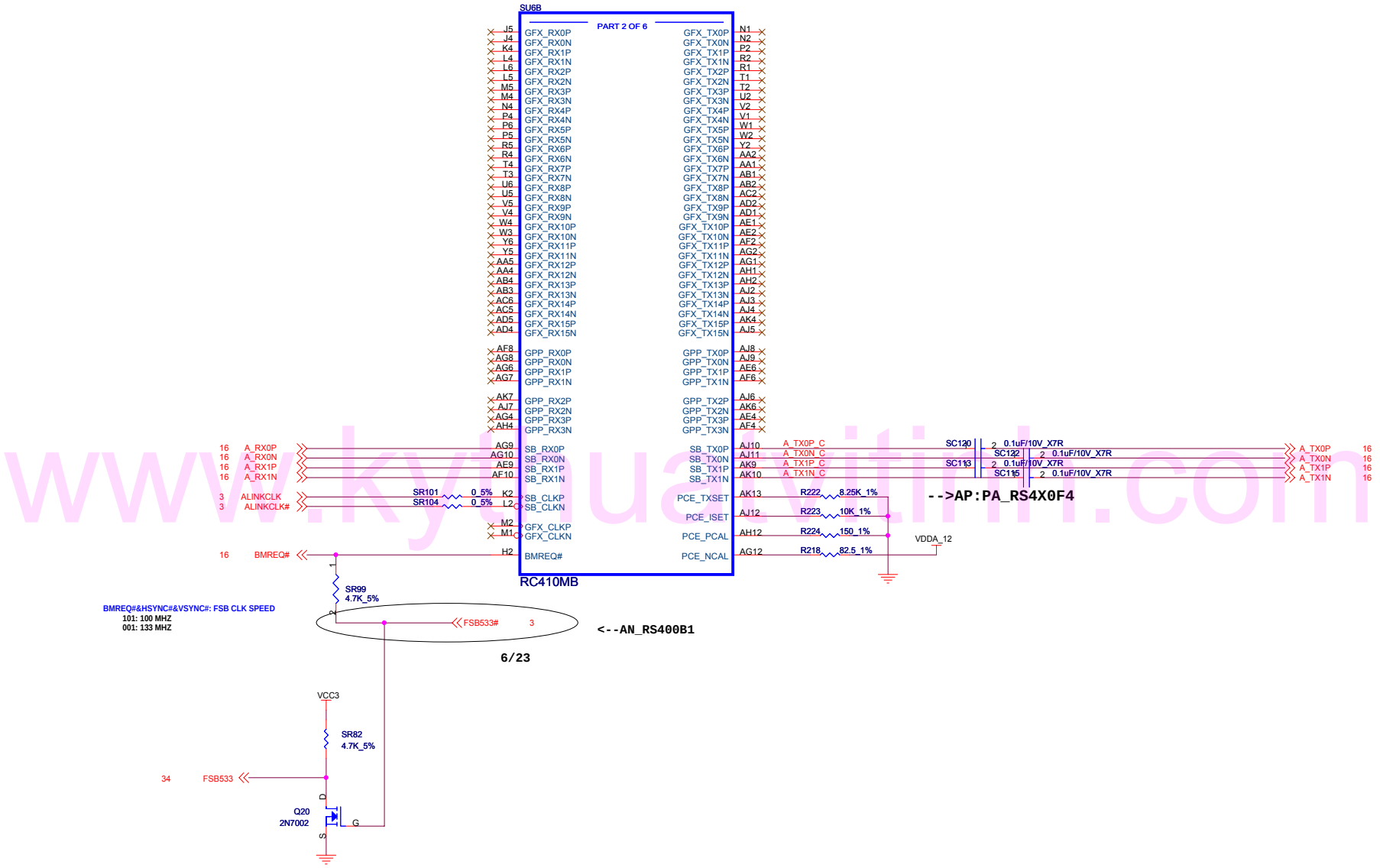
Date: Monday, July 11, 2005	Sheet 7 of 35



Elitegroup Computer Systems

Title: RC410MB-PCIE

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

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PUT AVDD, AVDDDI, AVDDQ, PLVDD DECOUPLING CAPS ON THE BOTTOM SIDE, CLOSE TO BALLS

RSET resistor R246 need 10mils trace with at least 10mils spacing. Also need to connect GND at AVSSQ HF cap.

Connect to GND plane after HF Cap with >=20mils trace

JOINT AVSSQ
JOINT LPVSS
JOINT LVSSR
JOINT AVSSN
JOINT AVSSDI
JOINT PLLVSS

SU6D
PART 4 OF 6
RC410MB
CLK. GEN.
SVID
CRT

VDDR3_1 VDDR3_2 AVDD AVSSN AVDDDI AVSSDI AVDDQ AVSSQ PLLVDD PLLVSS TMDS_HPD DDC_DATA DACVSYNC DACHSYNC RSET RED GREEN BLUE OSCIN CPU_CLKP CPU_CLKN TVCLKIN OSCOUT I2C_CLK I2C_DATA

TXOUT_U0N TXOUT_U0P TXOUT_U1N TXOUT_U1P TXOUT_U2N TXOUT_U2P TXOUT_U3N TXOUT_U3P TXOUT_L0N TXOUT_L0P TXOUT_L1N TXOUT_L1P TXOUT_L2N TXOUT_L2P TXOUT_L3N TXOUT_L3P LPVDD LPVSS LVDDR18A_1 LVDDR18A_2 LVSSR_1 LVSSR_2 LVSSR_3 LVDDR18D LVDS_DIGON LVDS_BLON LVDS_BLEN TXCLK_UP TXCLK_UN TXCLK_LP TXCLK_LN COMP DACSCL DACSDA STRP_DATA

LVDS_TXL0N LVDS_TXL0P LVDS_TXL1N LVDS_TXL1P LVDS_TXL2N LVDS_TXL2P LCDPWR_ON DISP_ON LVDS_TXLCKP LVDS_TXLCKN DAC_SCL DAC_SDAT STRP_DATA

L27 FCM1608K-121T06 L36 FCM1608K-121T06 L32 FCM1608K-121T06 L28 FCM1608K-121T06 L22 FCM1608K-121T06 L35 FCM1608K-121T06 L34 FCM1608K-121T06

C154 0.1uF/10V_X7R C198 0.1uF/10V_X7R C194 1uF/10V_X7R_0603 C169 0.1uF/10V_X7R C139 0.1uF/10V_X7R C177 0.1uF/10V_X7R C140 1uF/10V_X7R C146 10UF/10V_1206 C190 1uF/10V_X7R C124 10UF/10V_1206 C196 0.1uF/10V_X7R C193 1uF/10V_X7R_0603 C178 0.1uF/10V_X7R C189 0.1uF/10V_X7R C1791uF/10V_X7R_0603 SC68 1uF/10V_X7R_0603

JP4 JCLOSE_0_5A JP3 JCLOSE_0_5A JP2 JCLOSE_0_5A JP1 JCLOSE_0_5A JP6 JCLOSE_0_5A JP5 JCLOSE_0_5A

SR83 4.7K SR84 4.7K R176 715_1% SR97 10K_5% SD14 CH301H-40 SR93 4.7K_5% SR89 4.7K_5%_R SR94 4.7K_5% SR91 4.7K_5%

R179 TV_COMP 75_1%
R185 R 75_1%
R186 G 75_1%
R181 B 75_1%
R184 Y 75_1%
R180 C 75_1%

DAC_SCL: CPU VCC

0: MOBILE CPU
1: DESKTOP CPU
DEFAULT:0

STRP_DATA:Debug strap
DEFAULT:1
0: MEMORY CHANNEL STRAPING
1: E2PROM STRAPING

<--Check

Close to NB-->

Elitegroup Computer Systems

Title: RC410MB-VIDEO&CLK

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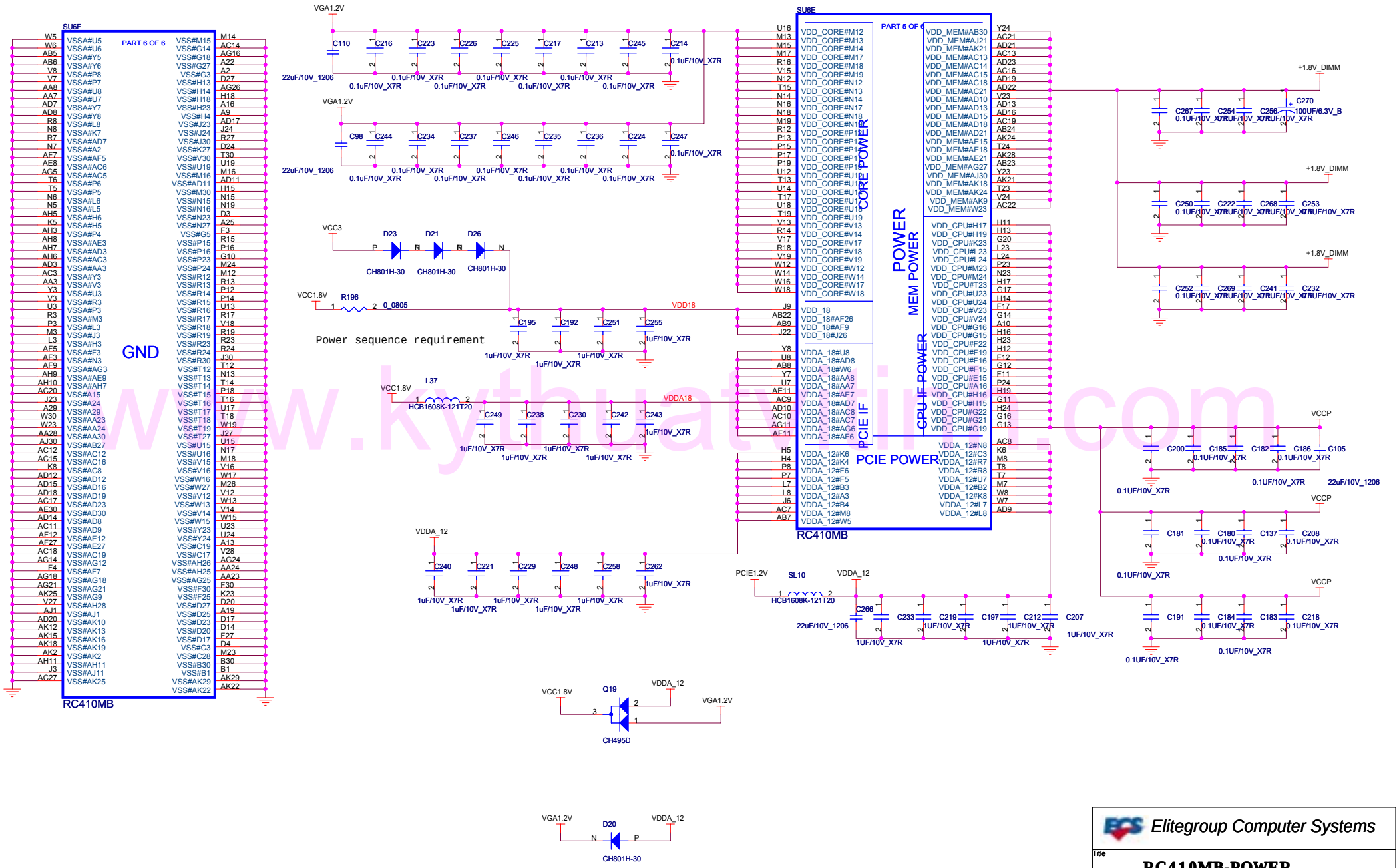

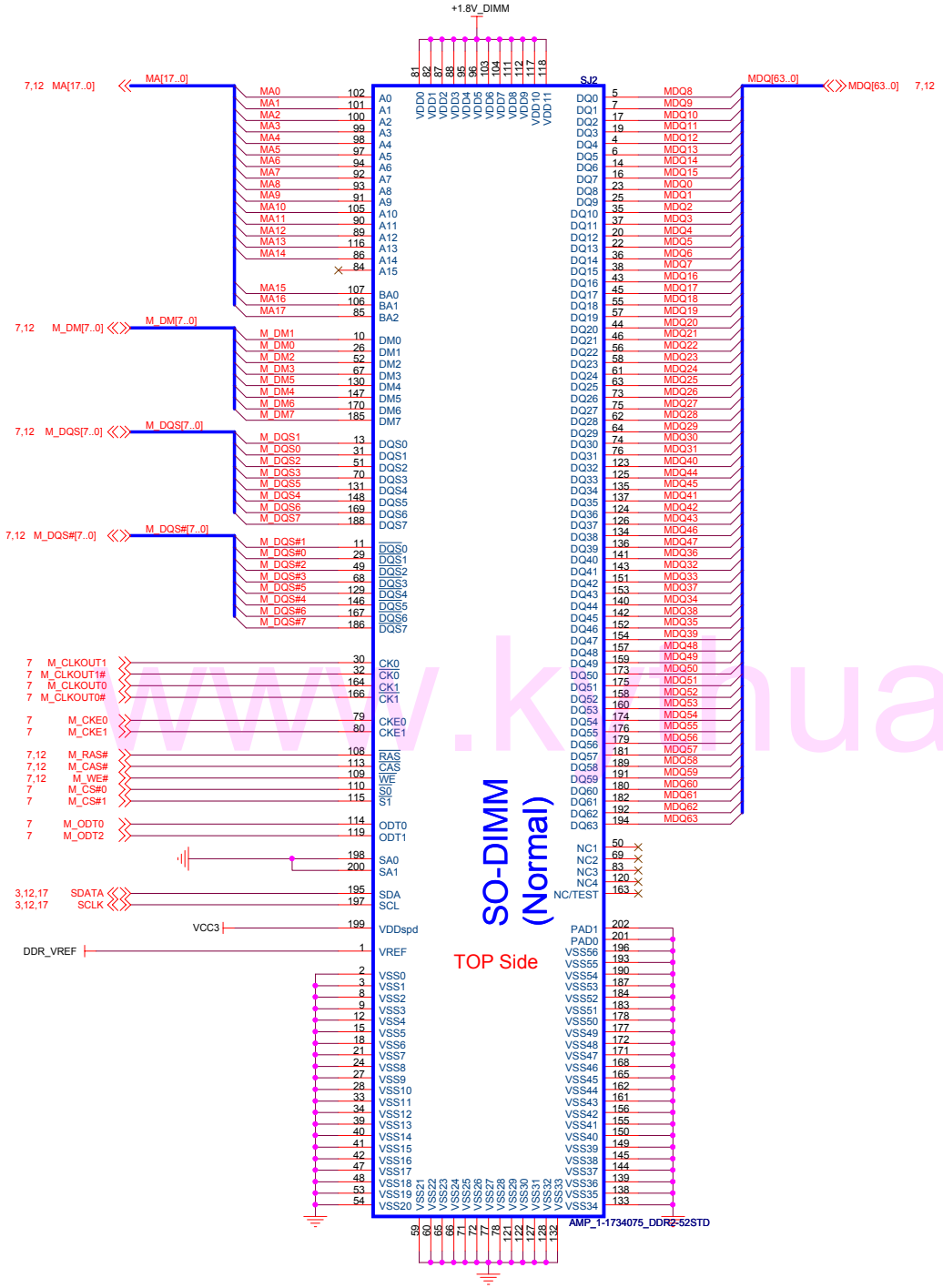

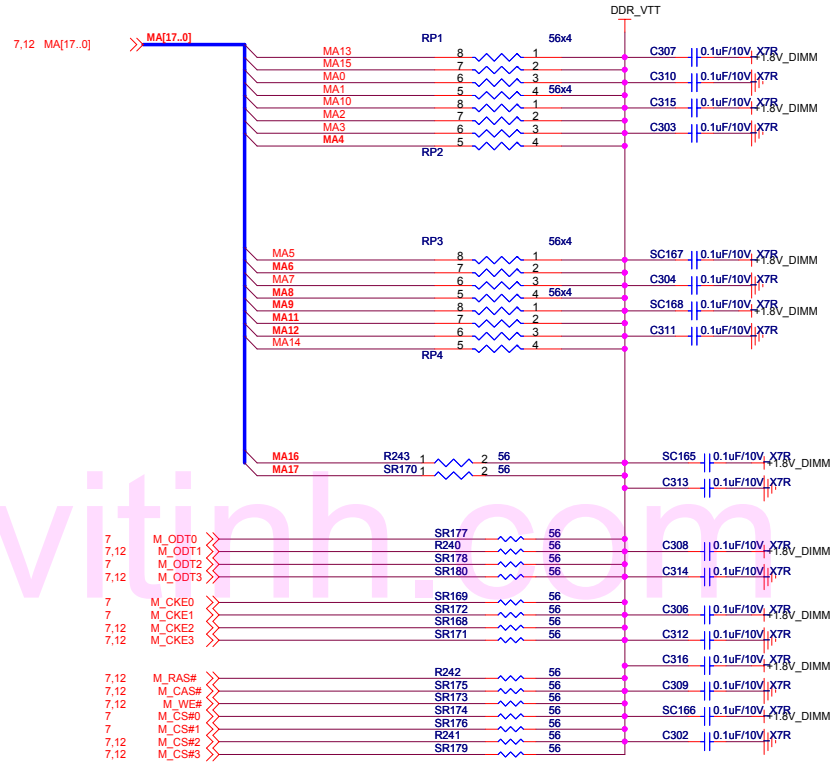

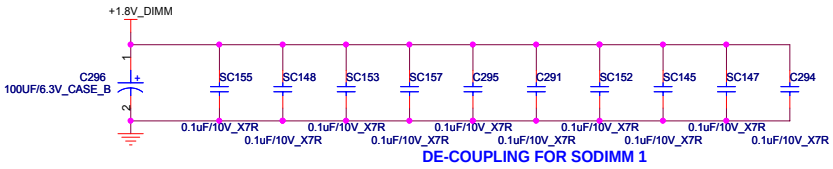

Elitegroup Computer Systems

Title: DDR2 SODIMM1

Size	Document Number	Rev
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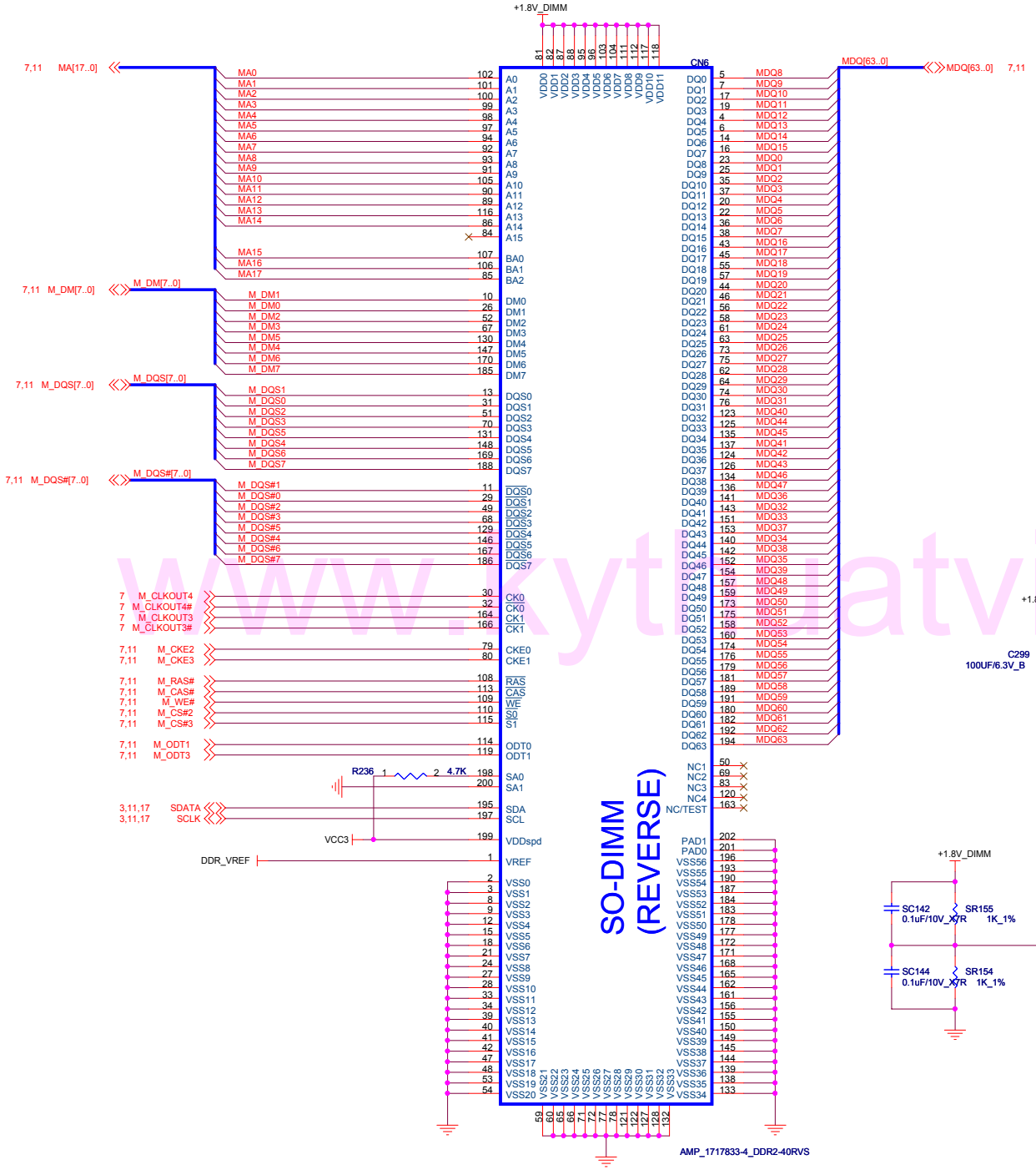
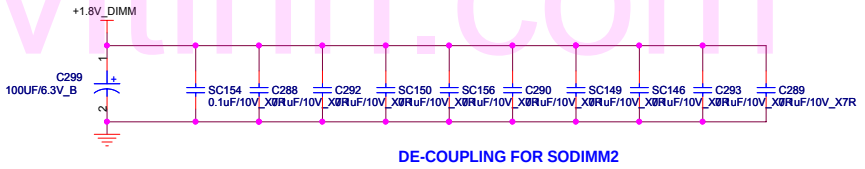




DE-COUPLING FOR SODIMM2

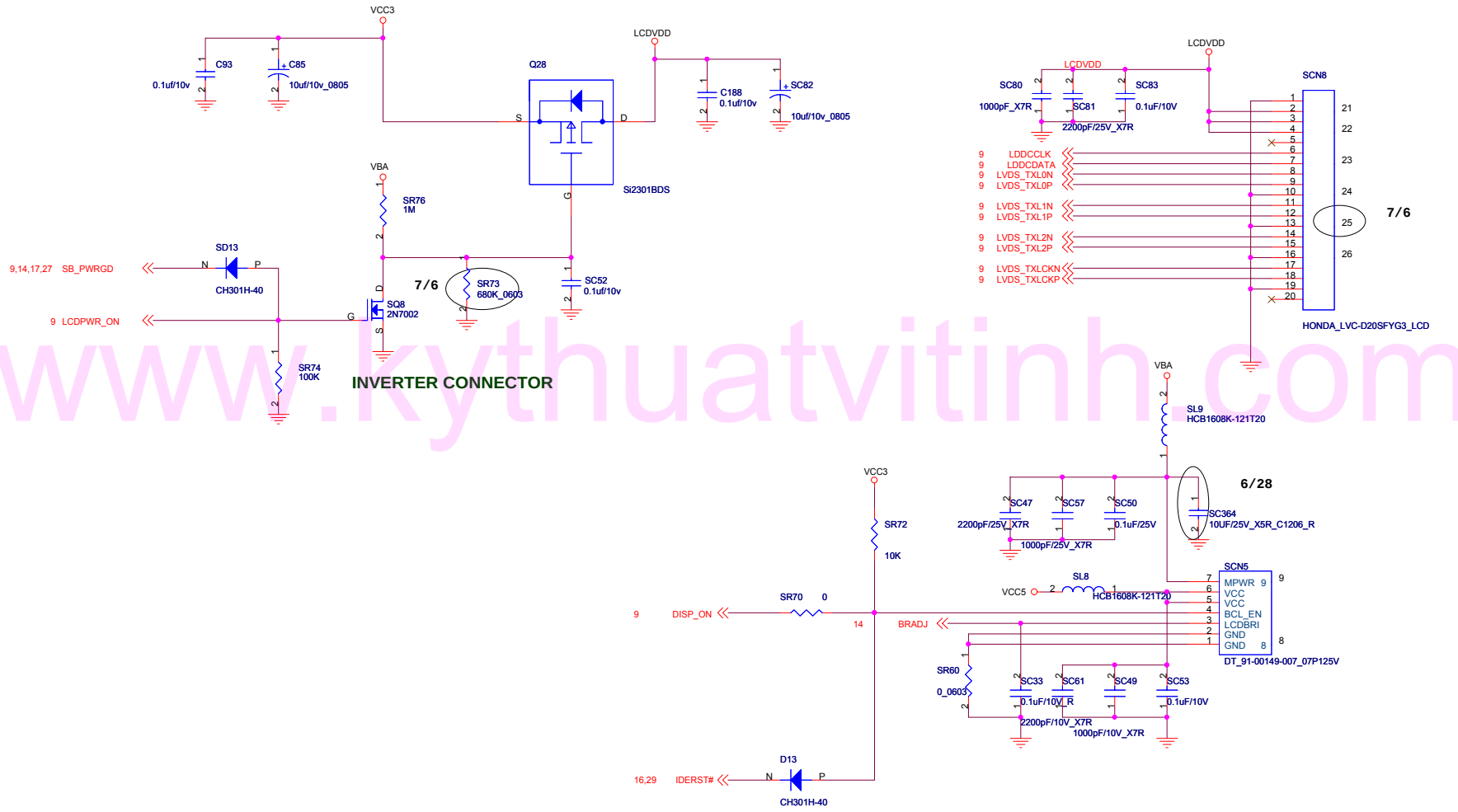
USE 10-MIL TRACE ON
DDR_VREF

Elitegroup Computer Systems

Title: DDR2 SODIMM2

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

Date: Monday, July 11, 2005 | Sheet 12 of 35

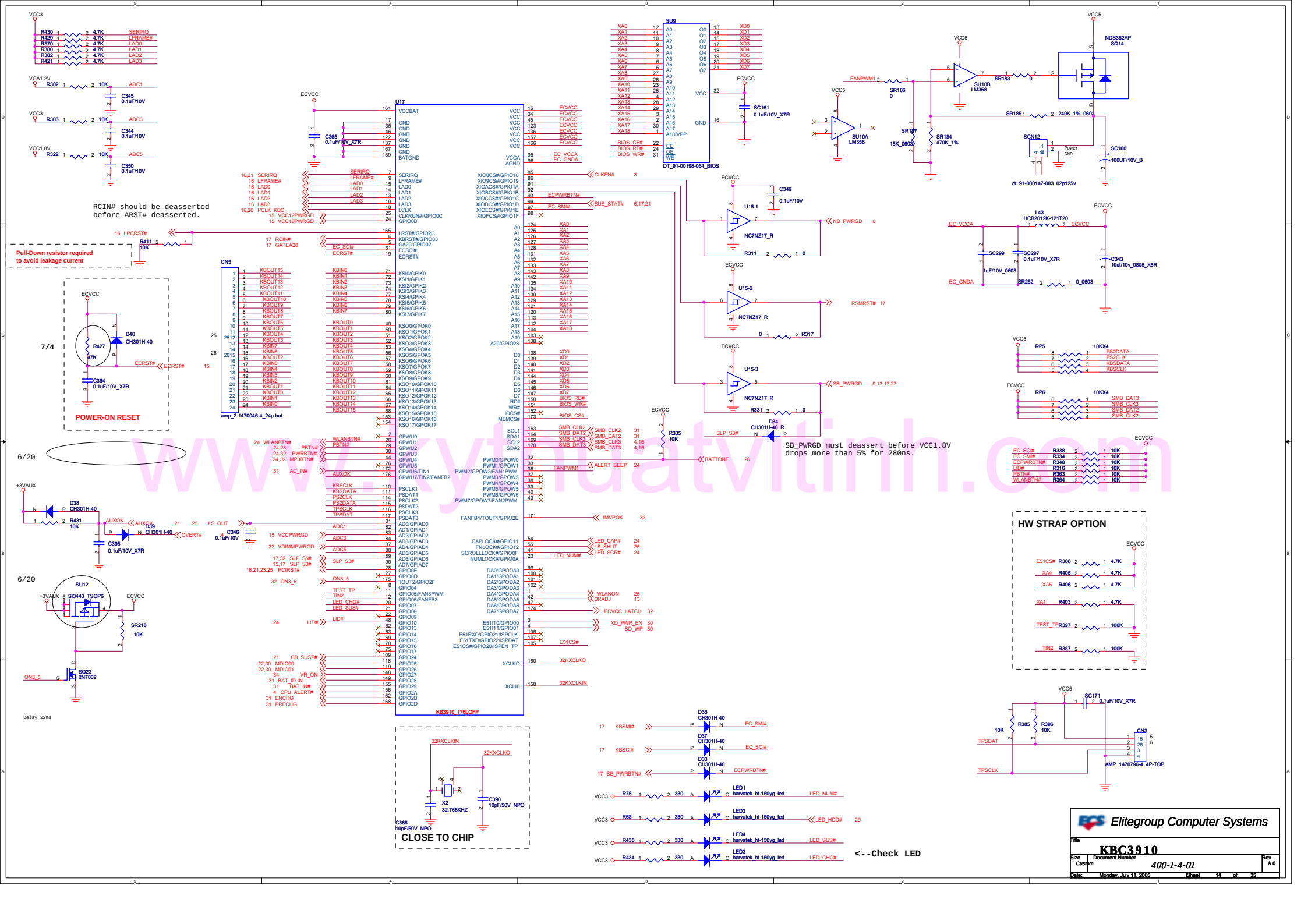


Elitegroup Computer Systems

Title: LVDS PANEL CONN

Size	Document Number	Rev
Custom	400-1-4-01	A.0

Date: Monday, July 11, 2005 Sheet 13 of 35


RCIN# should be deasserted before ARST# deasserted.
Pull-Down resistor required to avoid leakage current
POWER-ON RESET
SB_PWRGD must deassert before VCC1.8V drops more than 5% for 280ns.
HW STRAP OPTION
CLOSE TO CHIP
<--Check LED
KB3910_176LQFP
amp_2-1470046-4_24p-bot
DT_91-00198-064_BIOS
dt_91-000147-003_02p125v
AMP_1470786-4_4P-TOP
Delay 22ms
Elitegroup Computer Systems
KBC3910
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Monday, July 11, 2005
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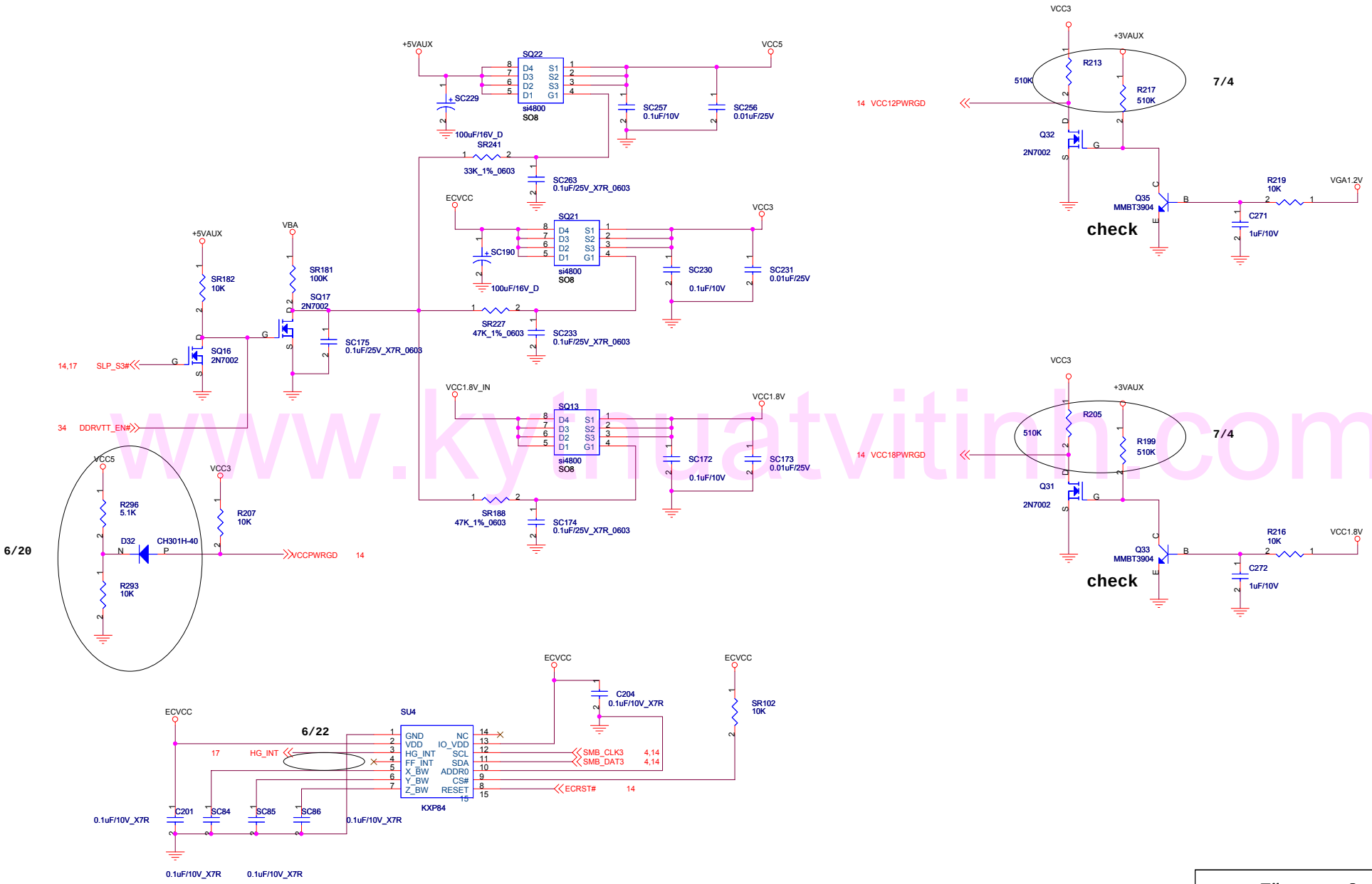

Elitegroup Computer Systems

Title: VCC Switches and Accelerometer

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

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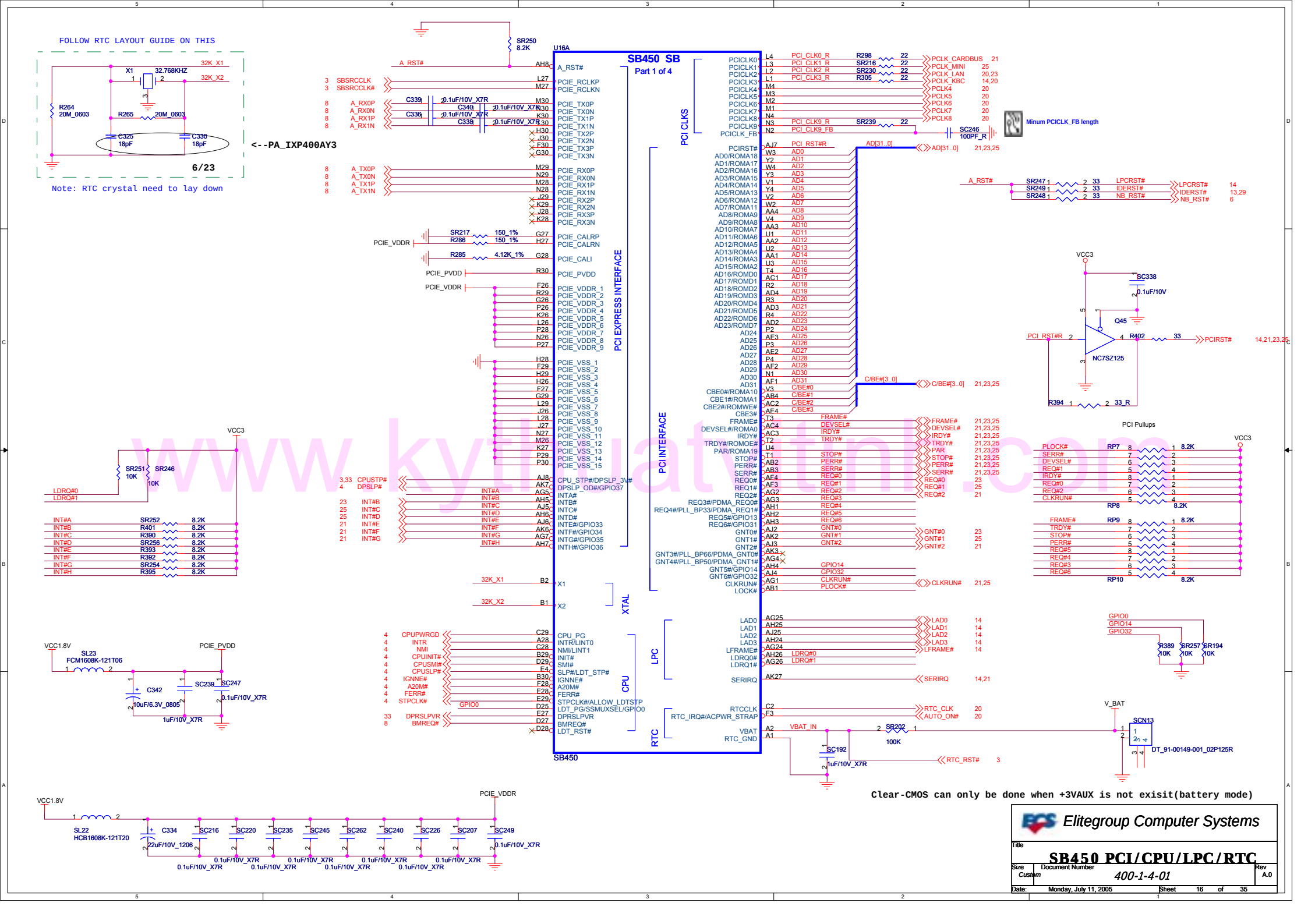

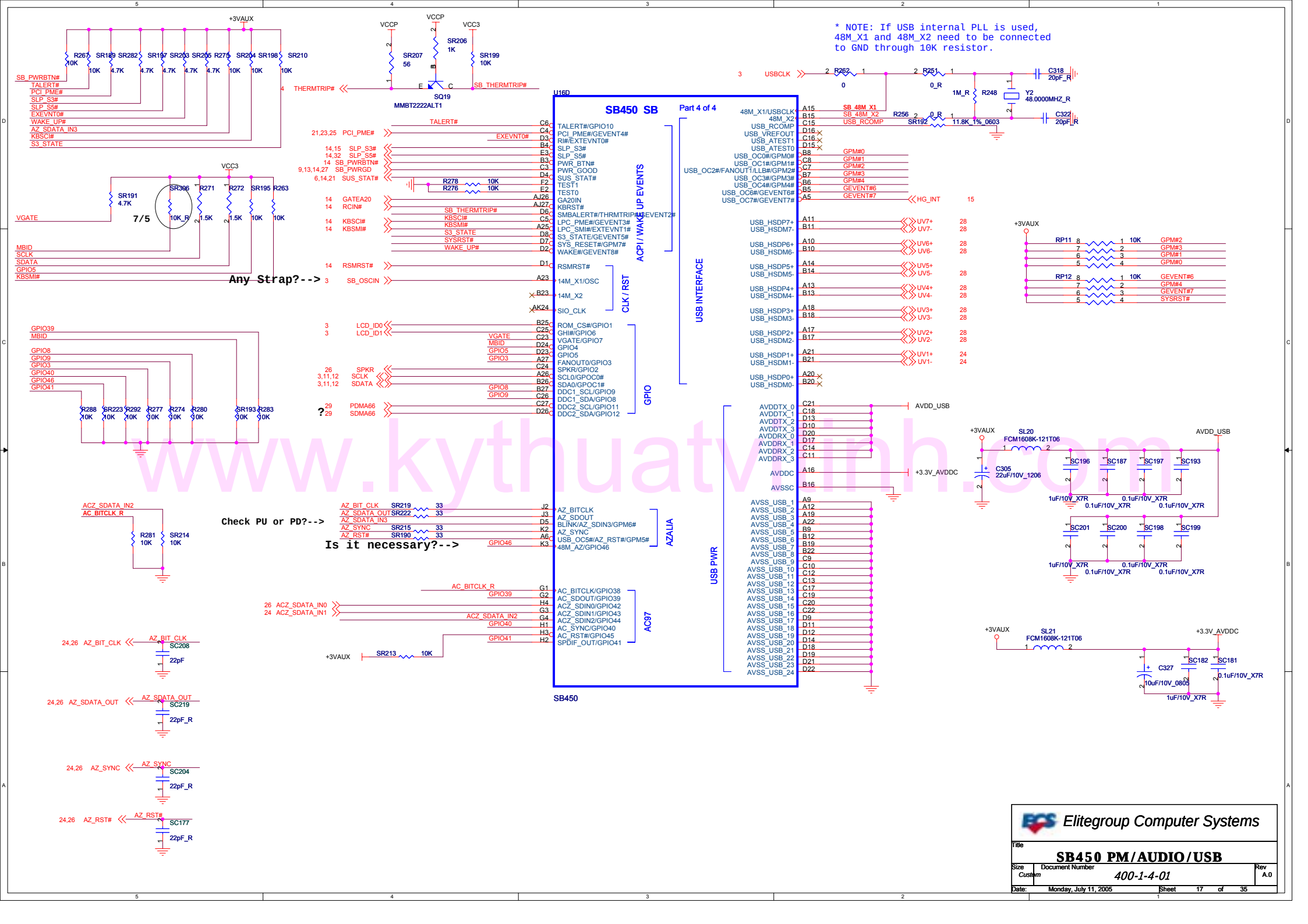

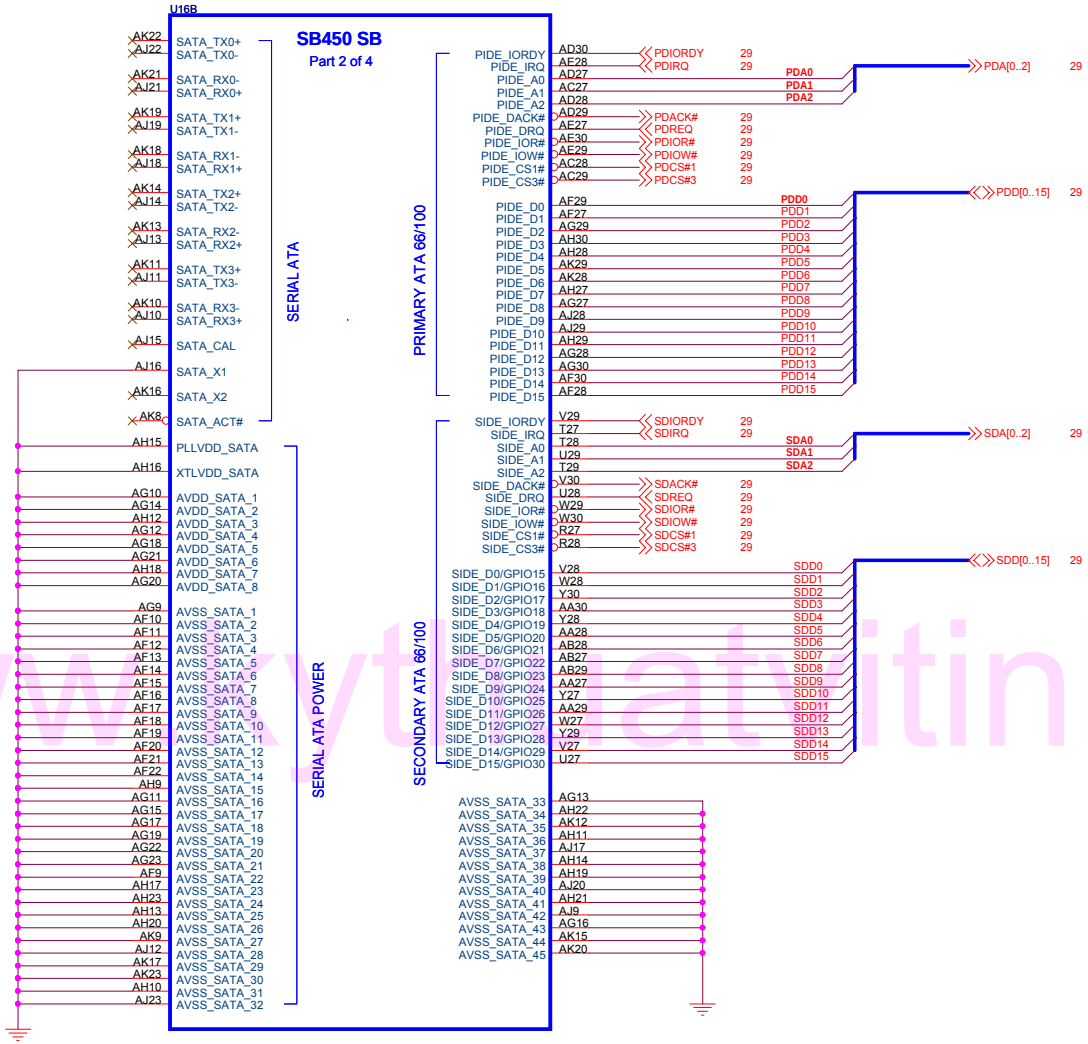

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Title: SB450 SATA/IDE

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

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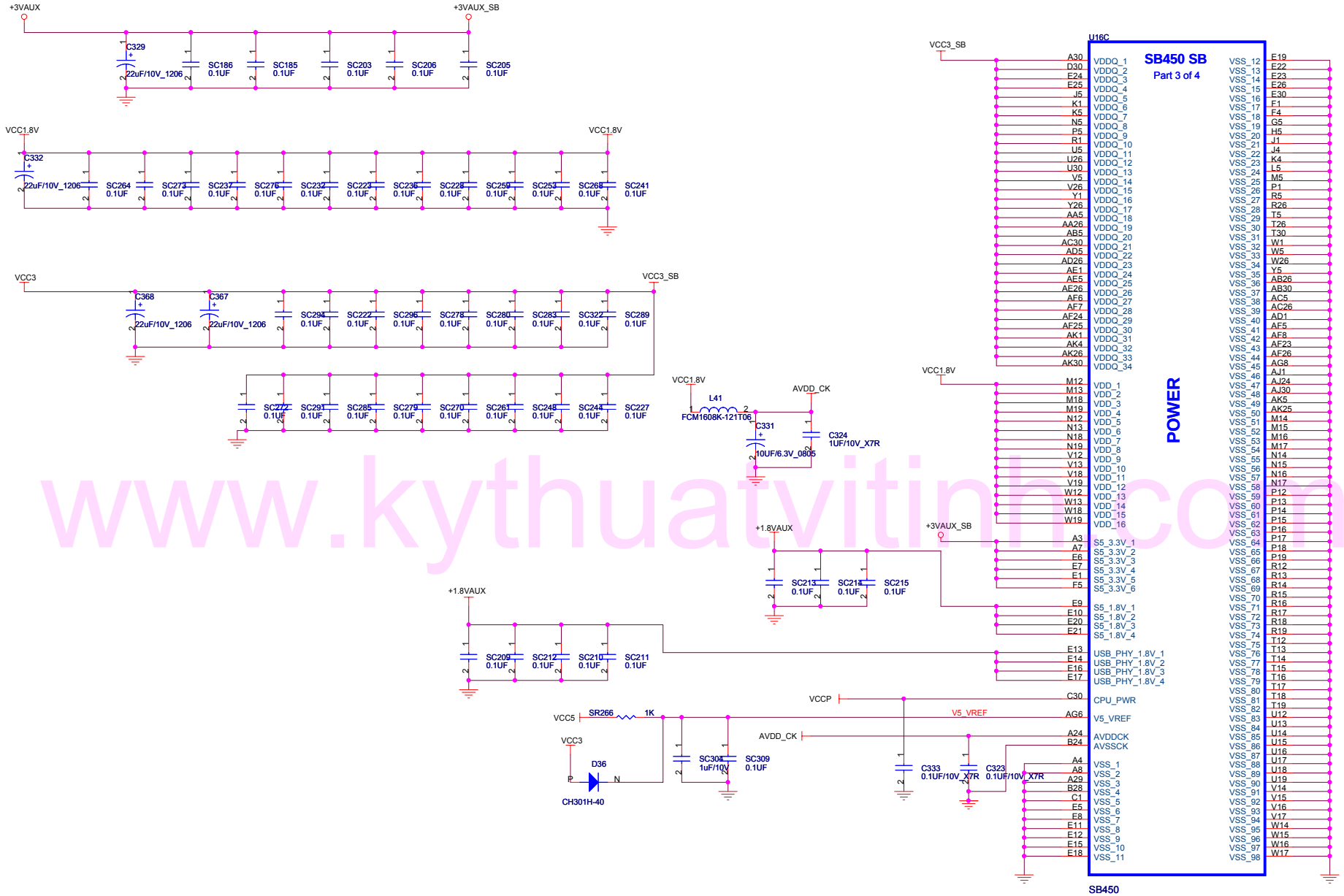

Elitegroup Computer Systems

Title: SB450 POWER

Size	Document Number	Rev
Custom	400-1-4-01	A.0

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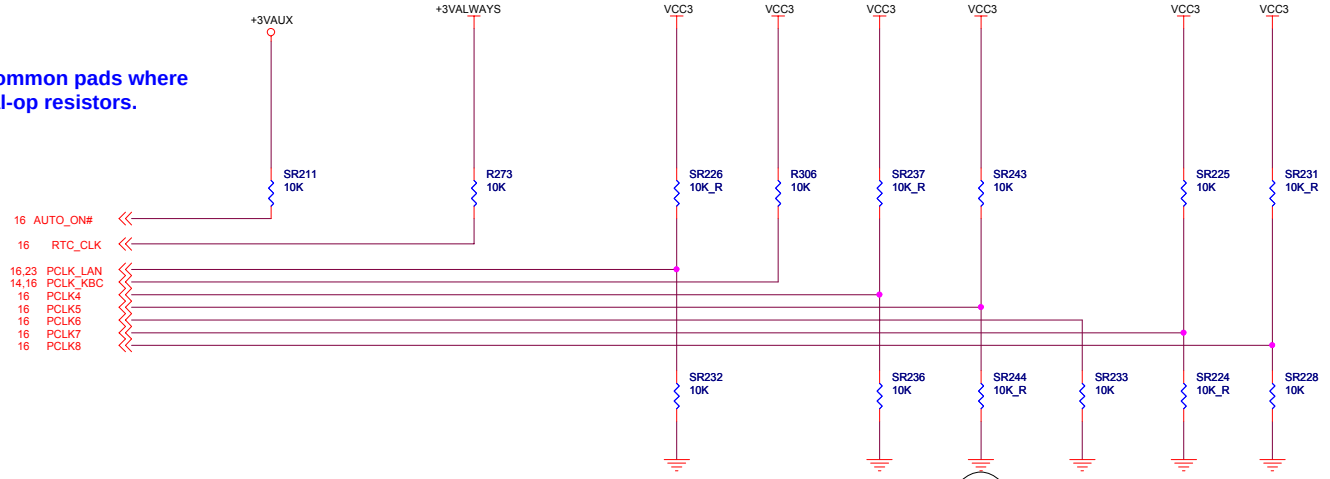
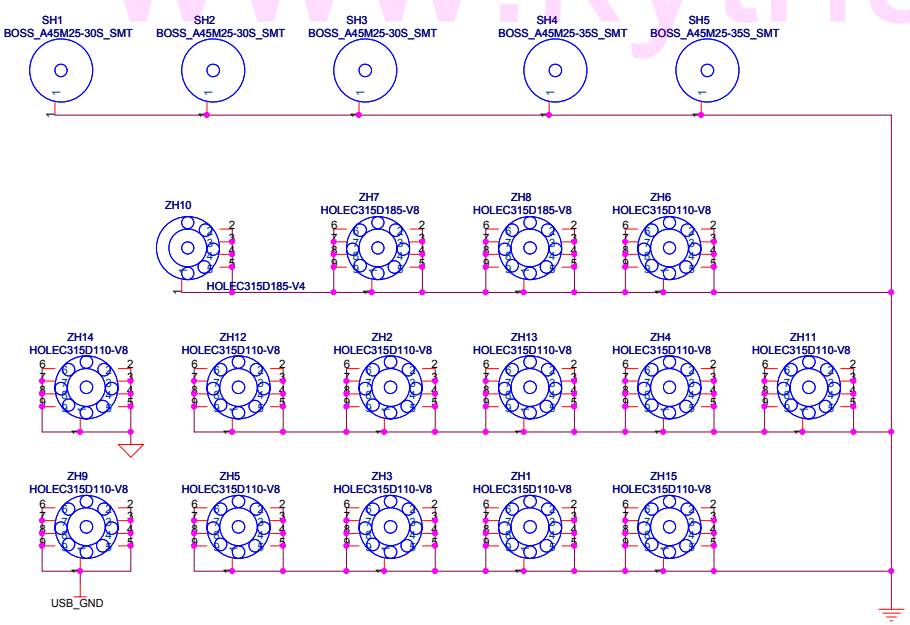
Note: Overlap common pads where possible for dual-op resistors.



REQUIRED STRAPS

	ACPWRON	AC_SDOUT	RTC_CLK	SPDIF_OUT	PCI_CLK2 PCLK_LAN	PCI_CLK3 PCLK_KBC	PCI_CLK4	PCI_CLK5	PCI_CLK6	PCI_CLK7 PCI_CLK8
PULL HIGH	MANUAL PWR ON DEFAULT	USE DEBUG STRAPS	INTERNAL RTC DEFAULT	SIO 24MHz	48MHz Crystal Pad DEFAULT	USB PHY PWRDOWN DISABLE DEFAULT	48MHz from internal USB PLL DEFAULT	A-Link Auto Detect DEFAULT	CPU I/F = K8	ROM TYPE H,H = PCI ROM H,L = LPC ROM I DEFAULT LPC Address Mapped to top 4G L,H = LPC ROM II LPC Address Mapped below 1M L,L = FWH ROM
PULL LOW	AUTO PWR ON	IGNORE DEBUG STRAPS DEFAULT	EXTERNAL RTC (NOT SUPPORTED W/ IT8712)	SIO 48MHz DEFAULT	48MHz Clock Iuput Buffer	USB PHY PWRDOWN ENABLE	48MHz from external	A-Link 2 Lanes	CPU I/F = P4 DEFAULT	

6/20



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Title: SB450 STRAPS

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

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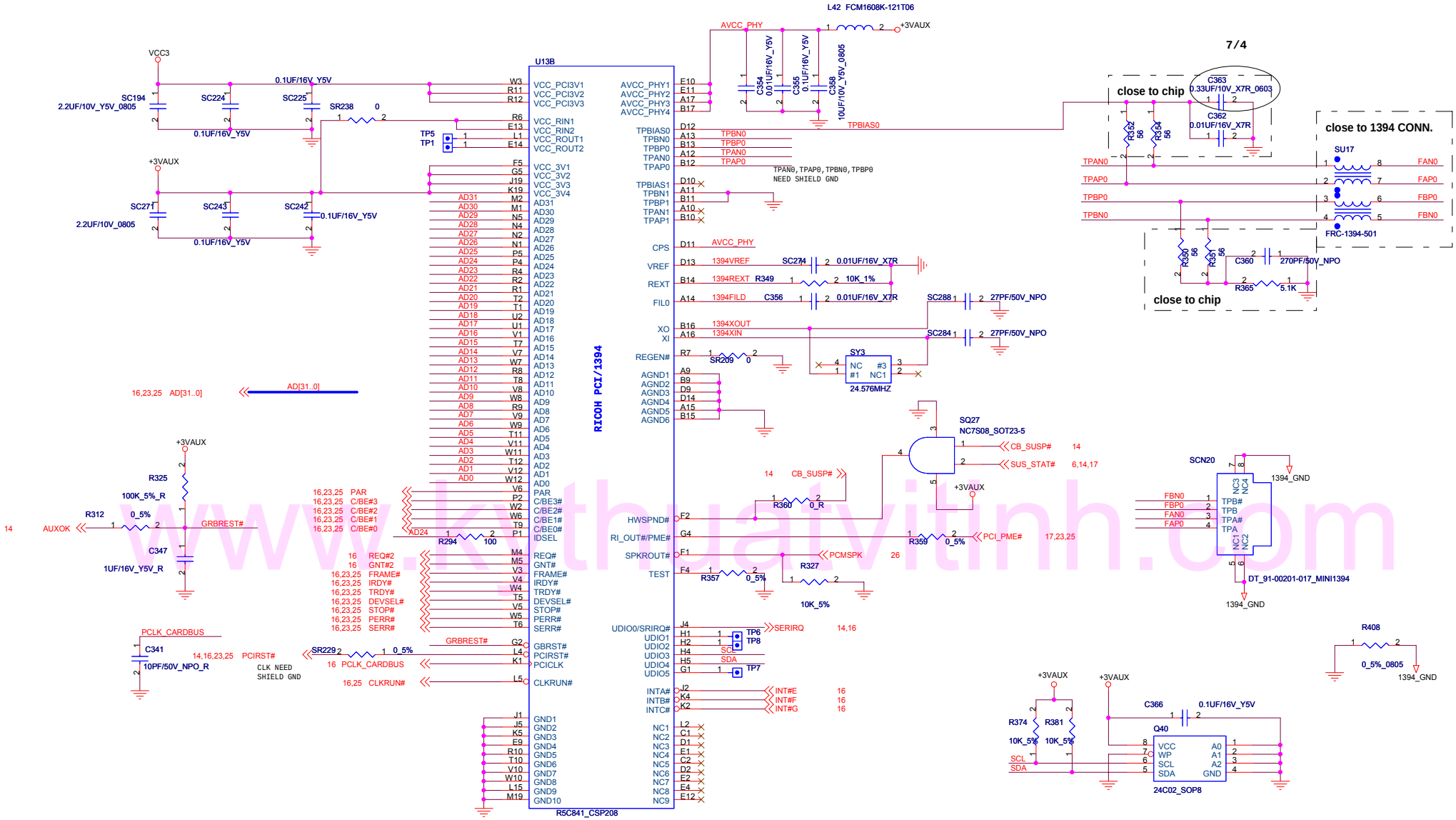

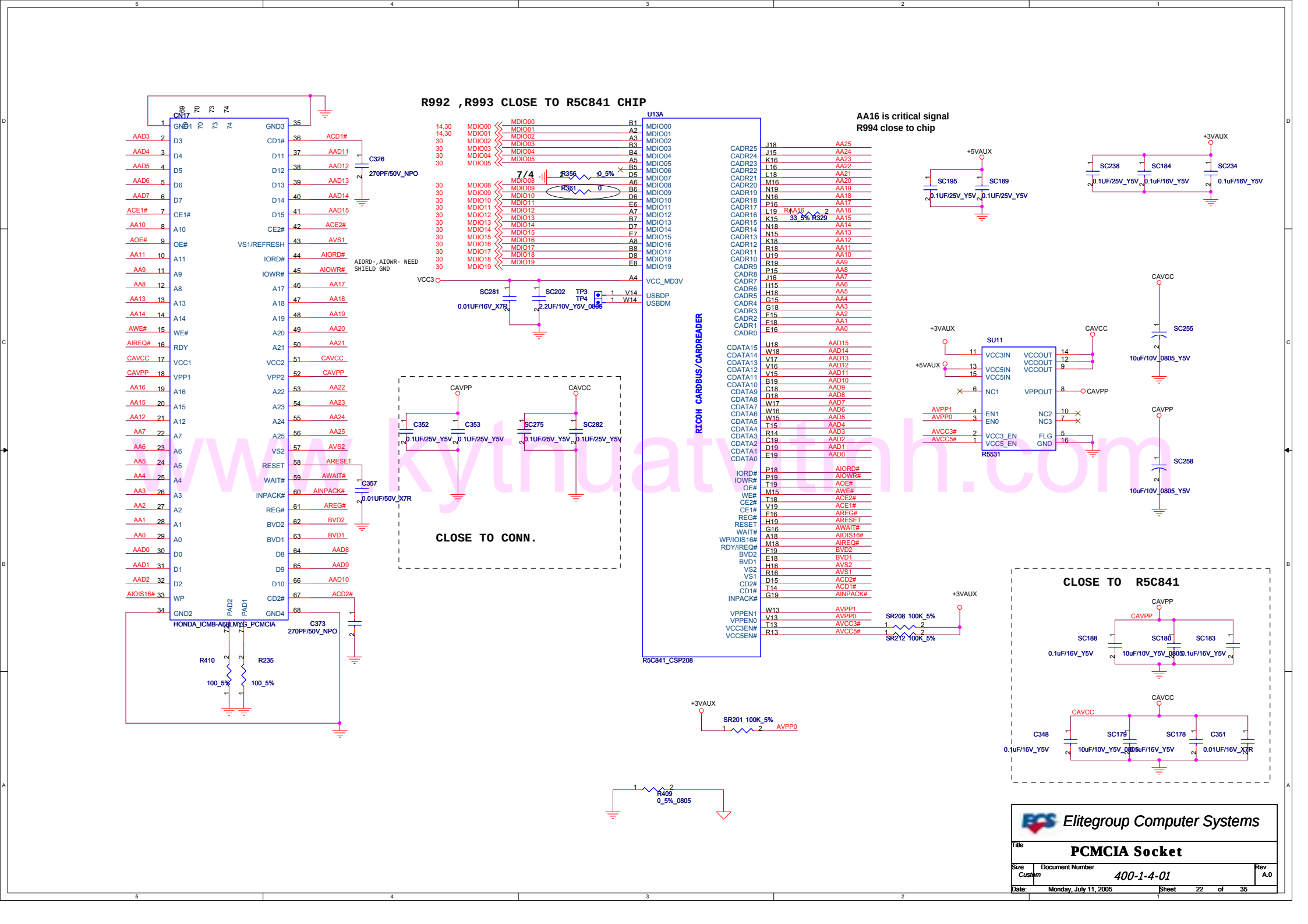

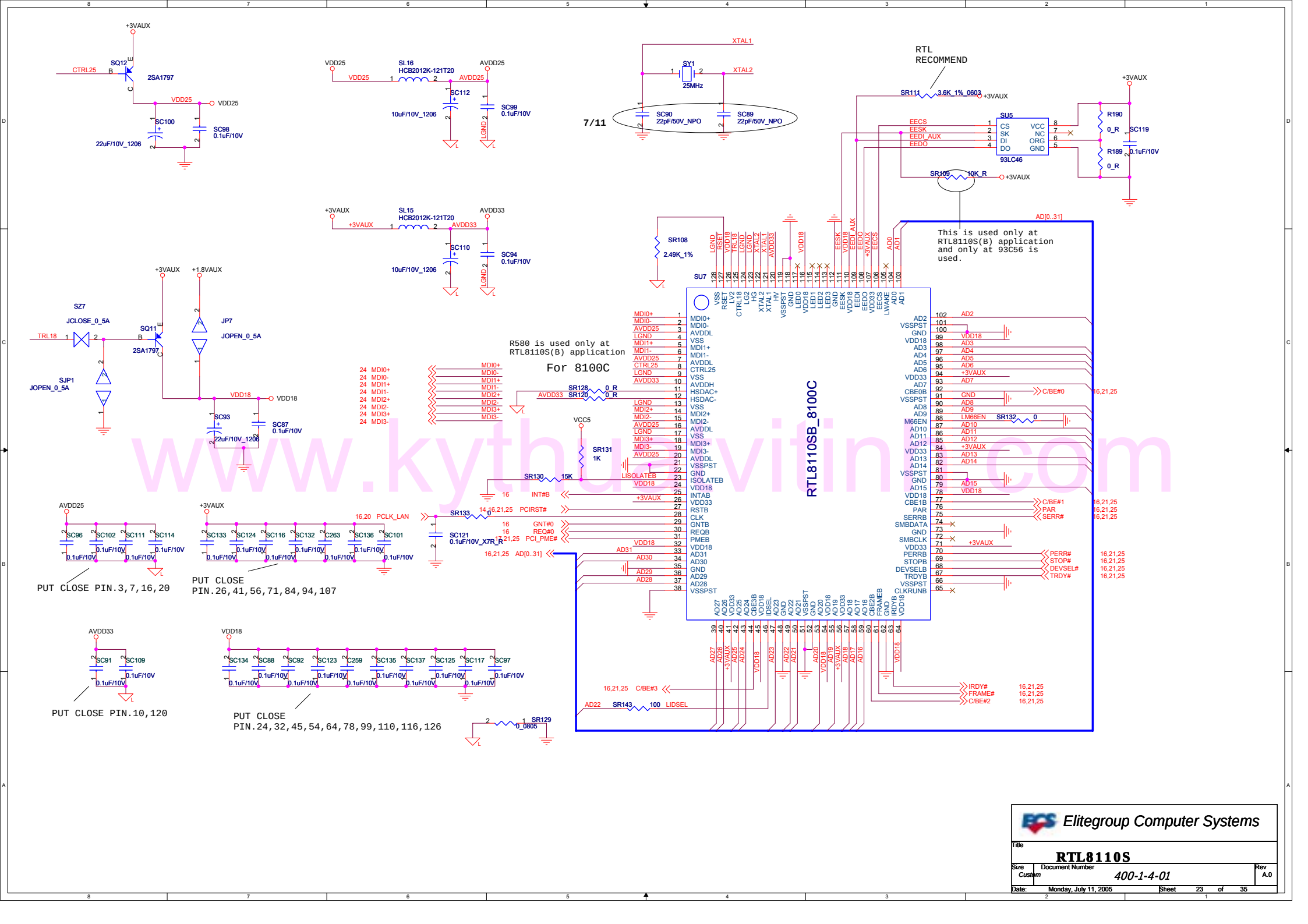
RTL8110SB_8100C
RTL RECOMMEND
This is used only at RTL8110S(B) application and only at 93C56 is used.
R580 is used only at RTL8110S(B) application For 8100C
PUT CLOSE PIN.3,7,16,20
PUT CLOSE PIN.26,41,56,71,84,94,107
PUT CLOSE PIN.10,120
PUT CLOSE PIN.24,32,45,54,64,78,99,110,116,126
7/11
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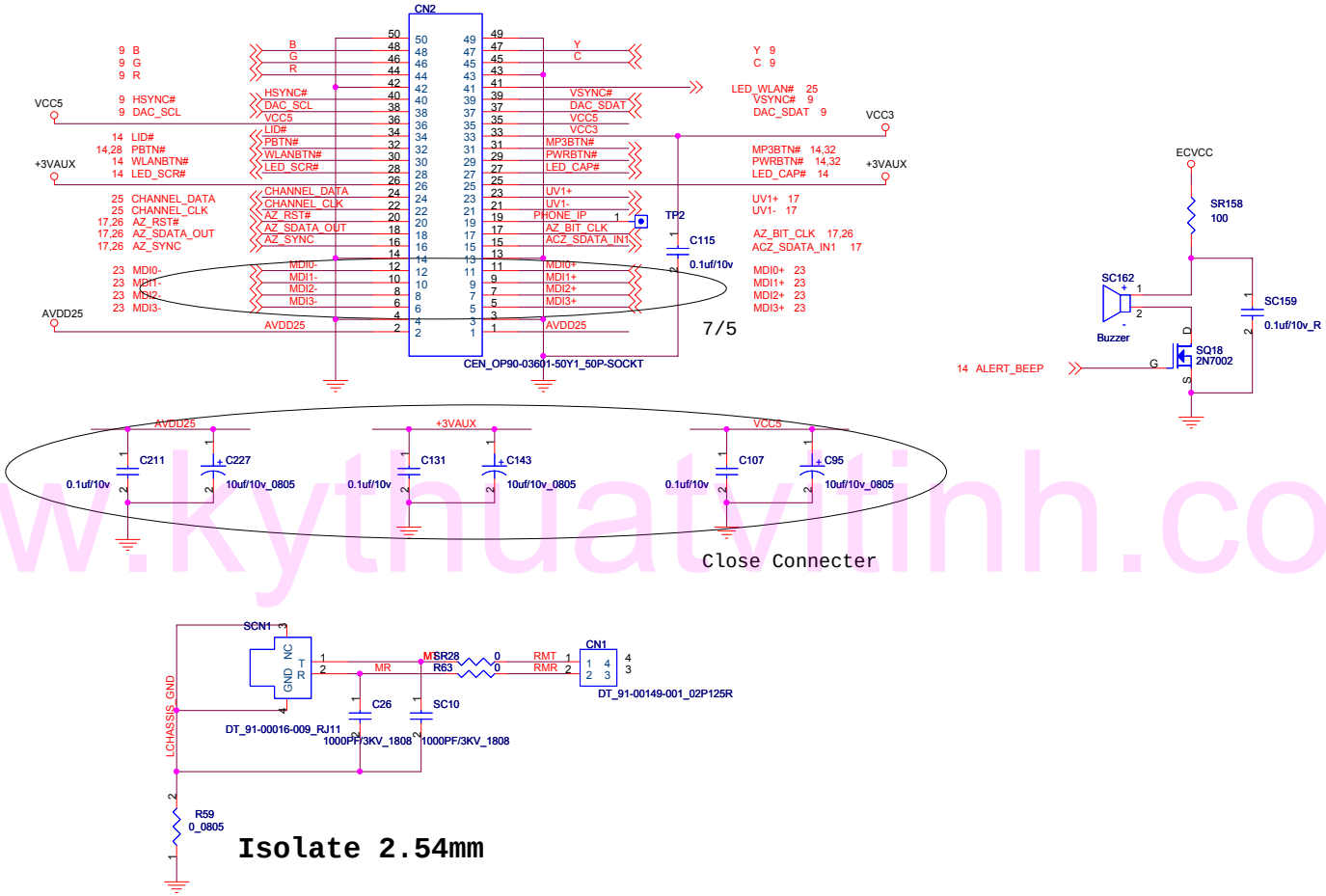

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Title	Card Connecter & RJ11	
Size: Custom	Document Number: 400-1-4-01	Rev: A.0
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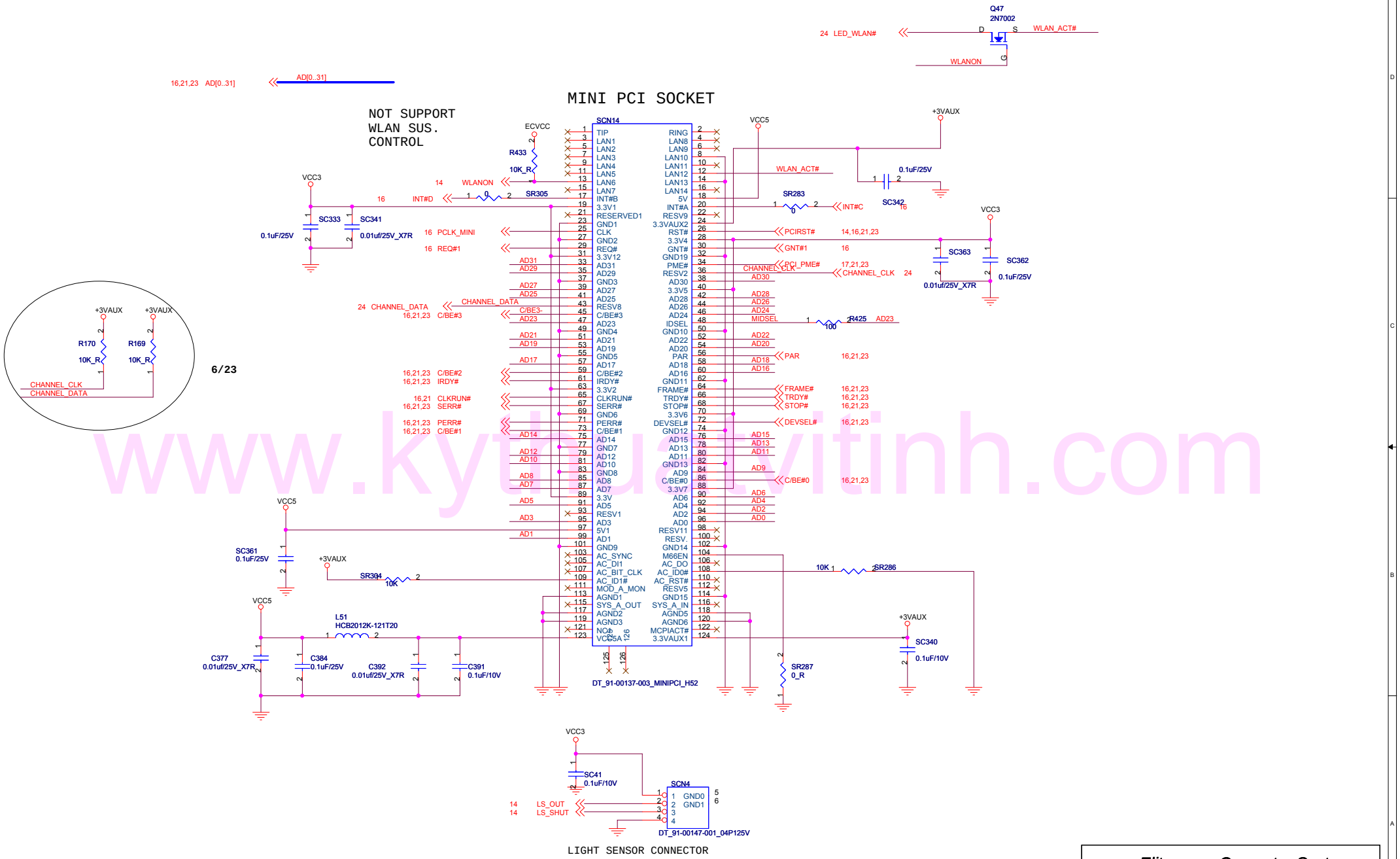
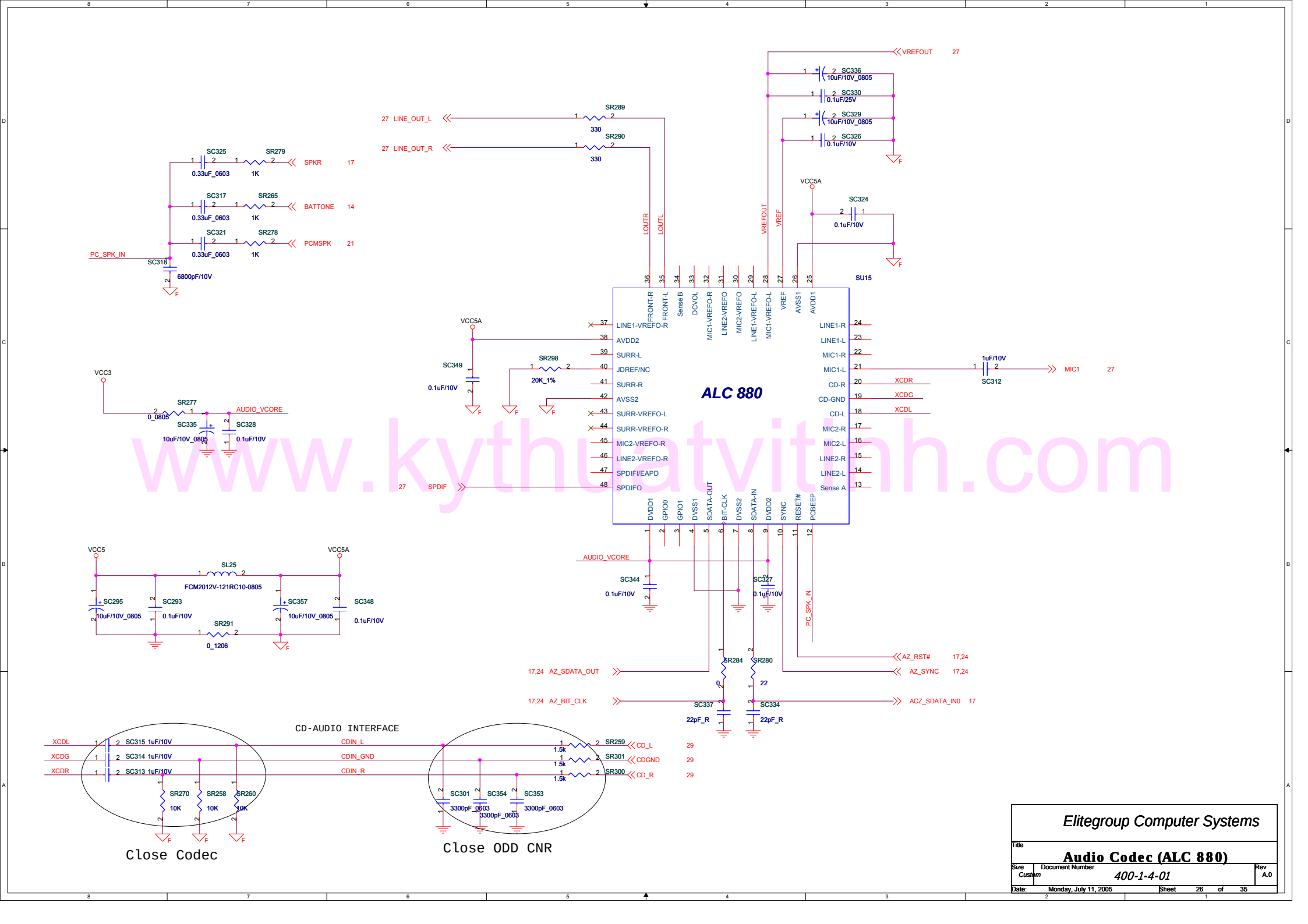


Elitegroup Computer Systems

Title: MINIPCI&LIGHT SENSOR CONN.

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

Date: Monday, July 11, 2005 | Sheet 25 of 35



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Title: Audio Codec (ALC 880)

Size: Custom | Document Number: 400-1-4-01 | Rev: A.0

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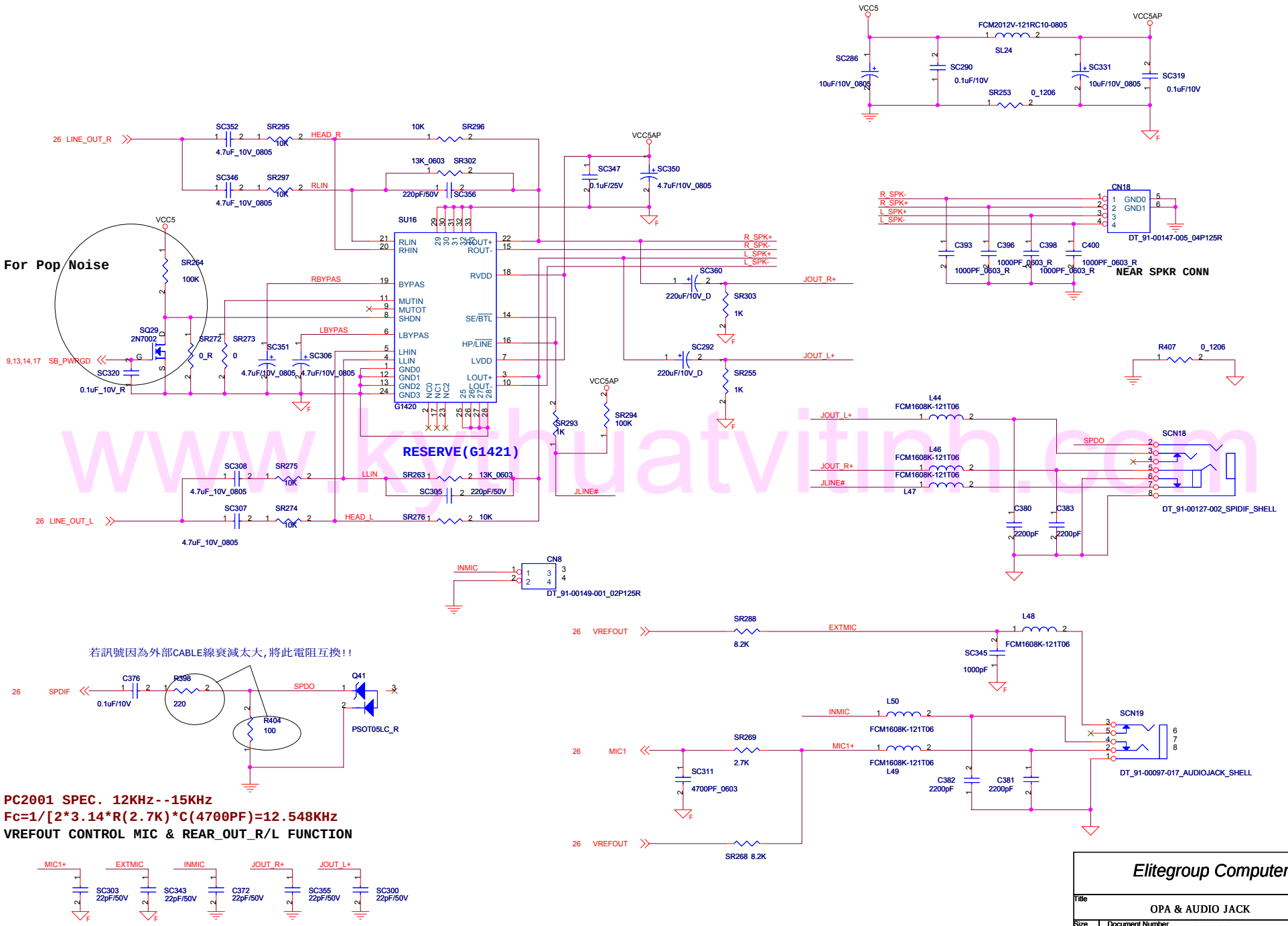
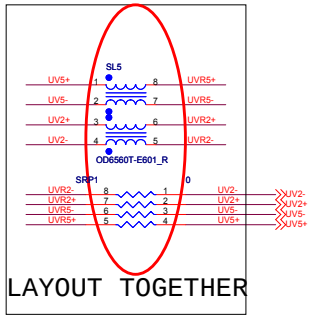
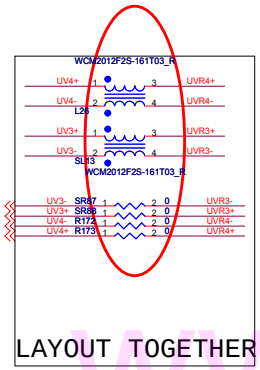
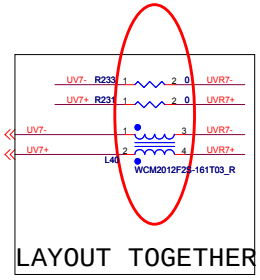
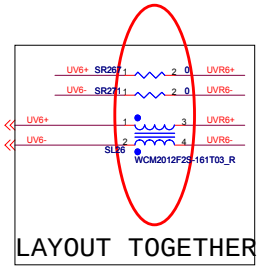
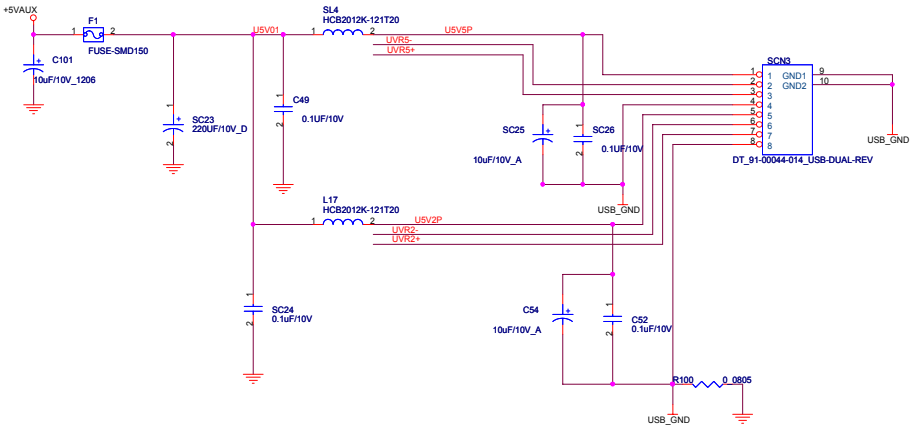


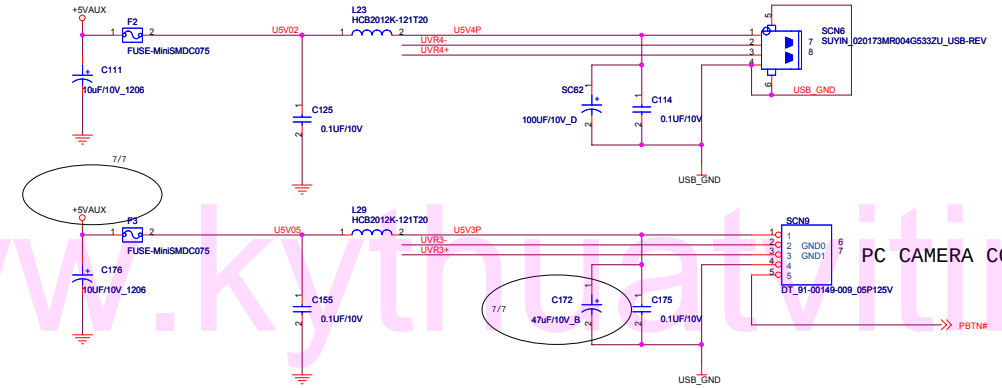




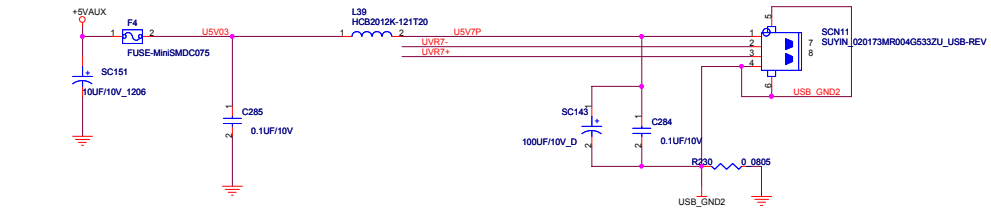


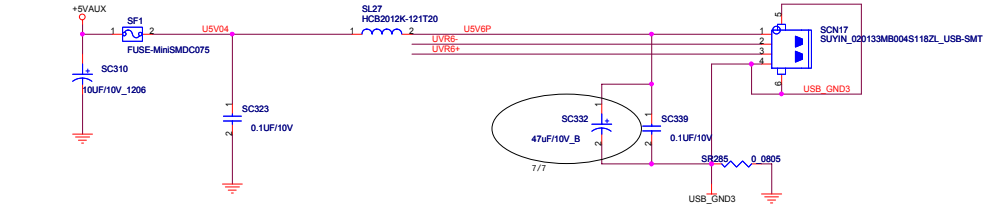






PC CAMERA CONN.





ALL THIS PAGE

ALL THESE CLOSE TO CONNECTOR

Elitegroup Computer Systems

Title: USB PORTS

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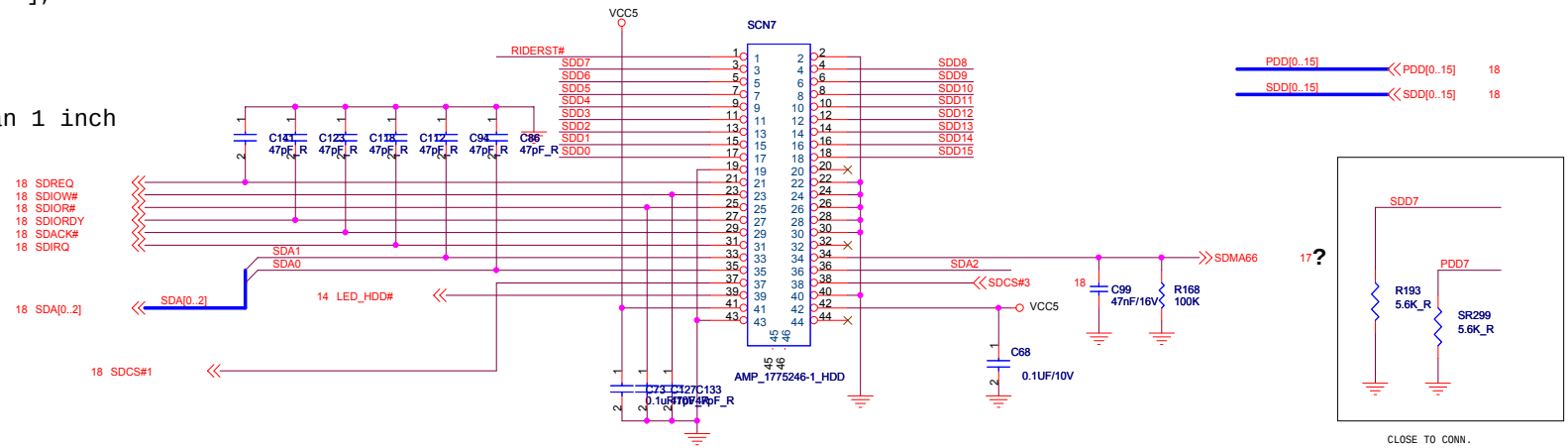
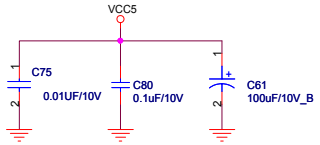
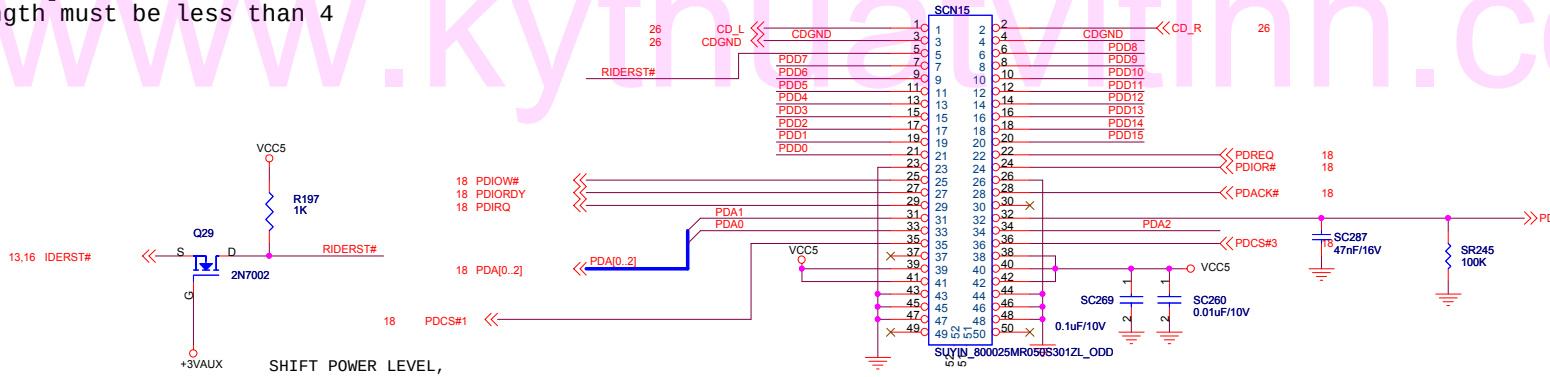
Place the damping resistors for
IDEA[2:0][A:B], IDECS[1:0][A:B],
IDEIOR[A:B]#,
IDEIOW[A:B]#, and
IDACK[A:B]# near
SiS962L
The length must be less than 1 inch





CLOSE TO HDD

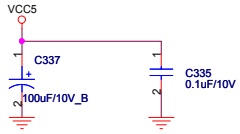
Place the damping resistors for
IDED[15:0][A:B], IDREQ[A:B],
ICHRDY[A:B], and
IDEIRQ[A:B] near IDE connectors
The length must be less than 4
inches



SHIFT POWER LEVEL,
3.3V TO 5V

CSEL : "NC" ; "Hi" --> Master(CDROM)/Slave(DVDROM)

CSEL : "Low --> Slave(CDROM)/Master(DVDROM)



CLOSE TO CDROM/DVDROM

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Title: HDD & CDROM CONN.

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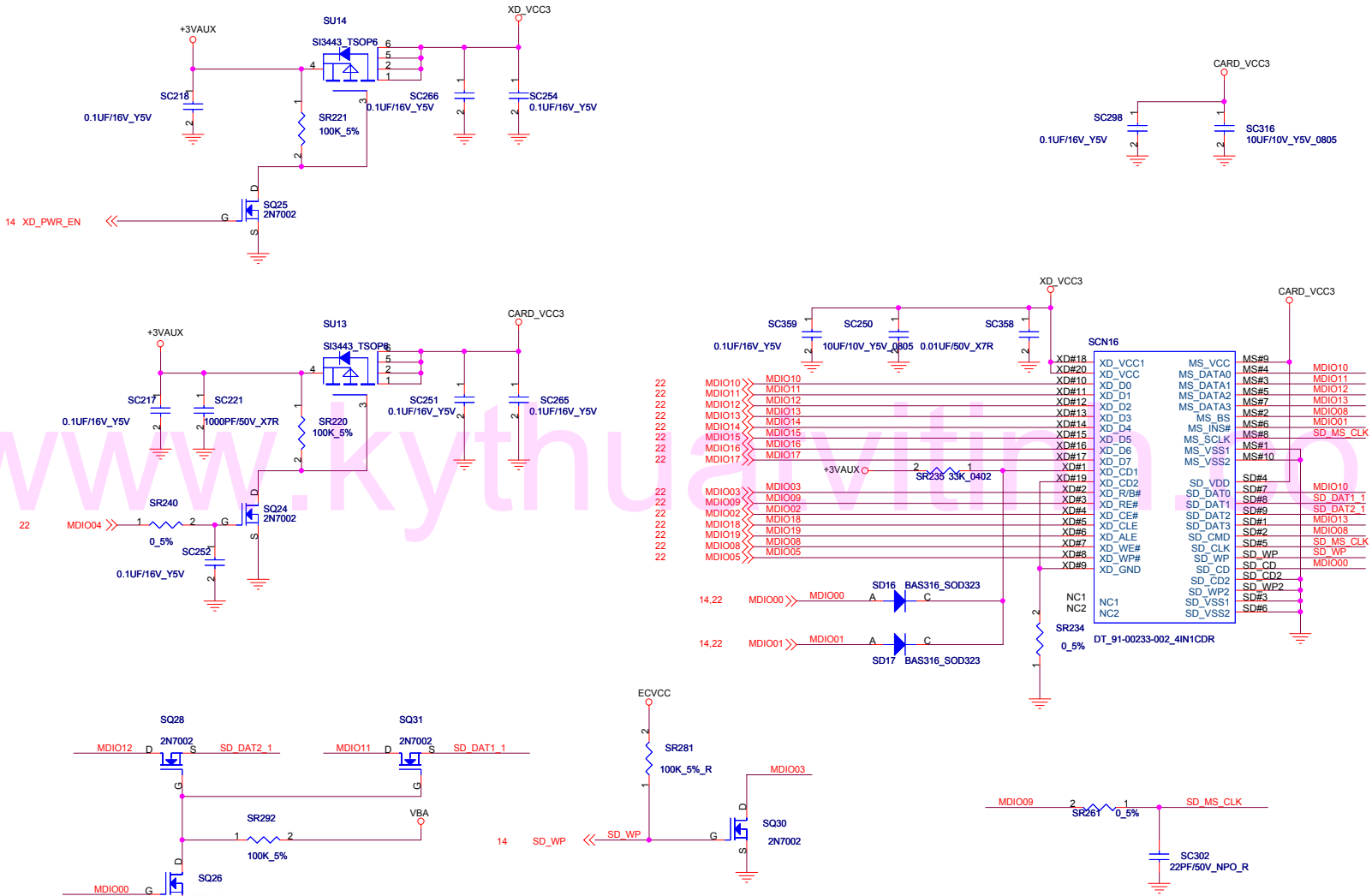

	MS	SD	XD	No card
MDIO00	HIGH	LOW	LOW	HIGH
MDIO01	LOW	HIGH	LOW	HIGH
XD_PWR_EN	LOW	LOW	HIGH	LOW
SD_WP	LOW	HIGH	LOW	LOW

Elitegroup Computer Systems

Title: **Card Reader Slot**

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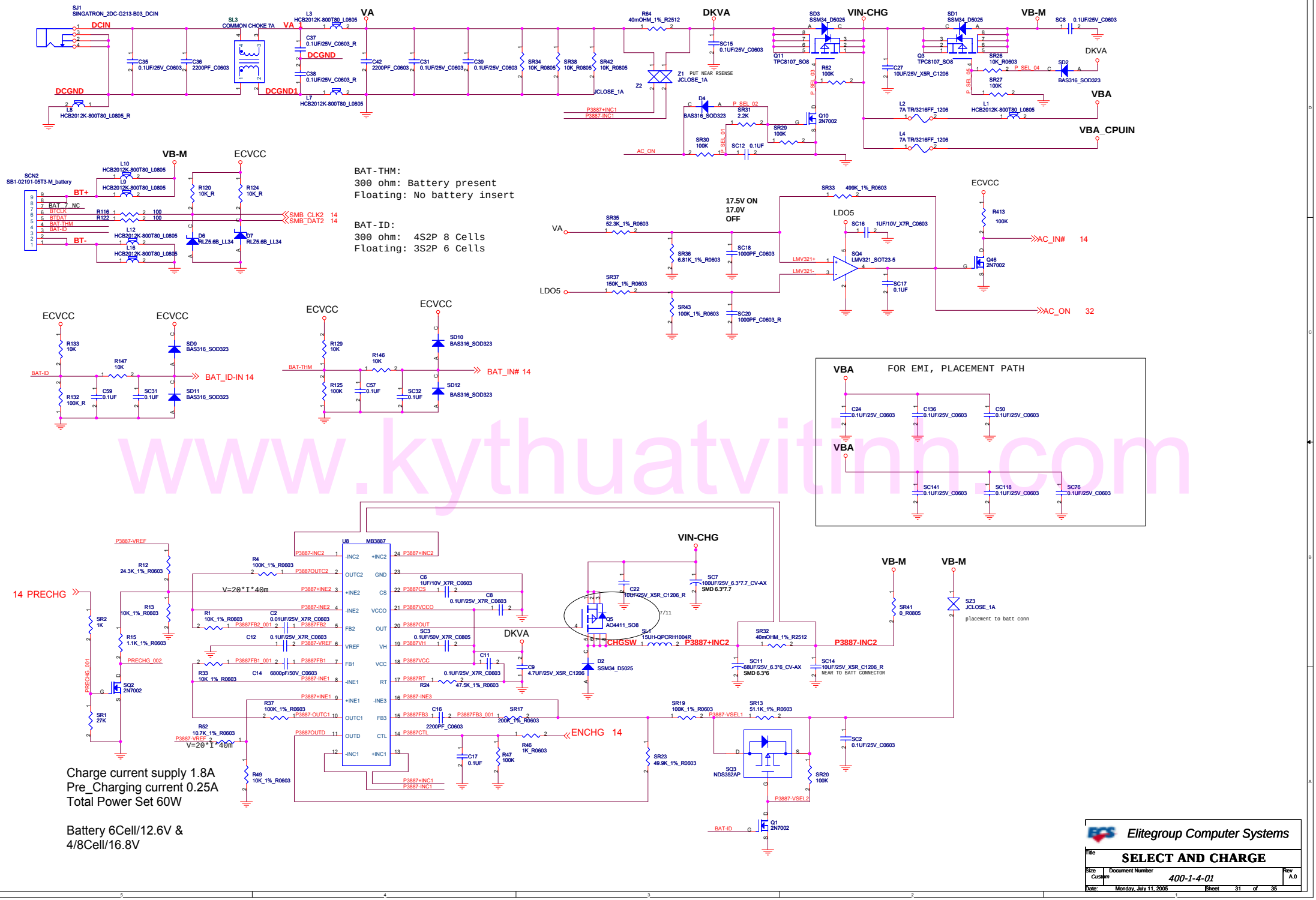

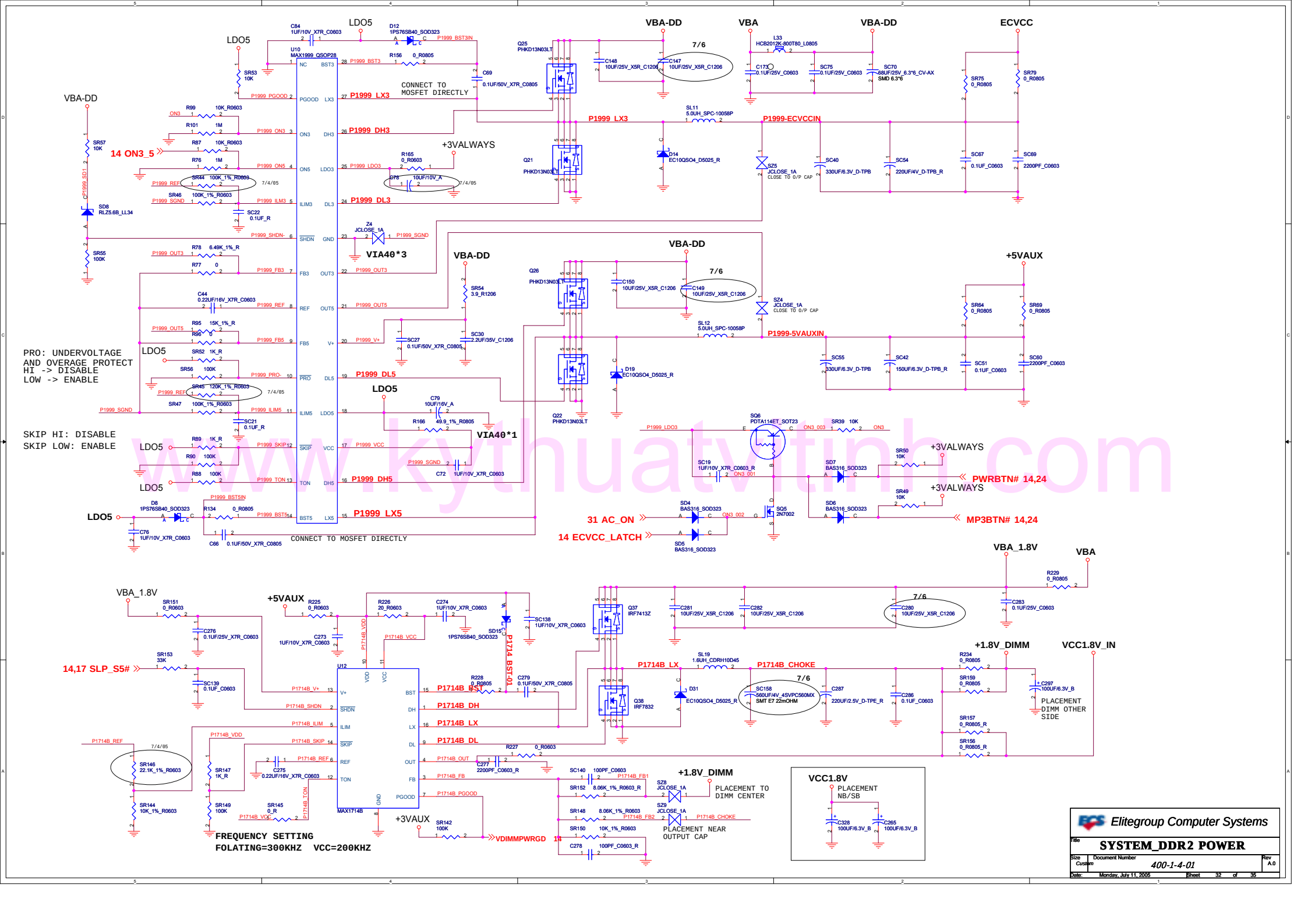

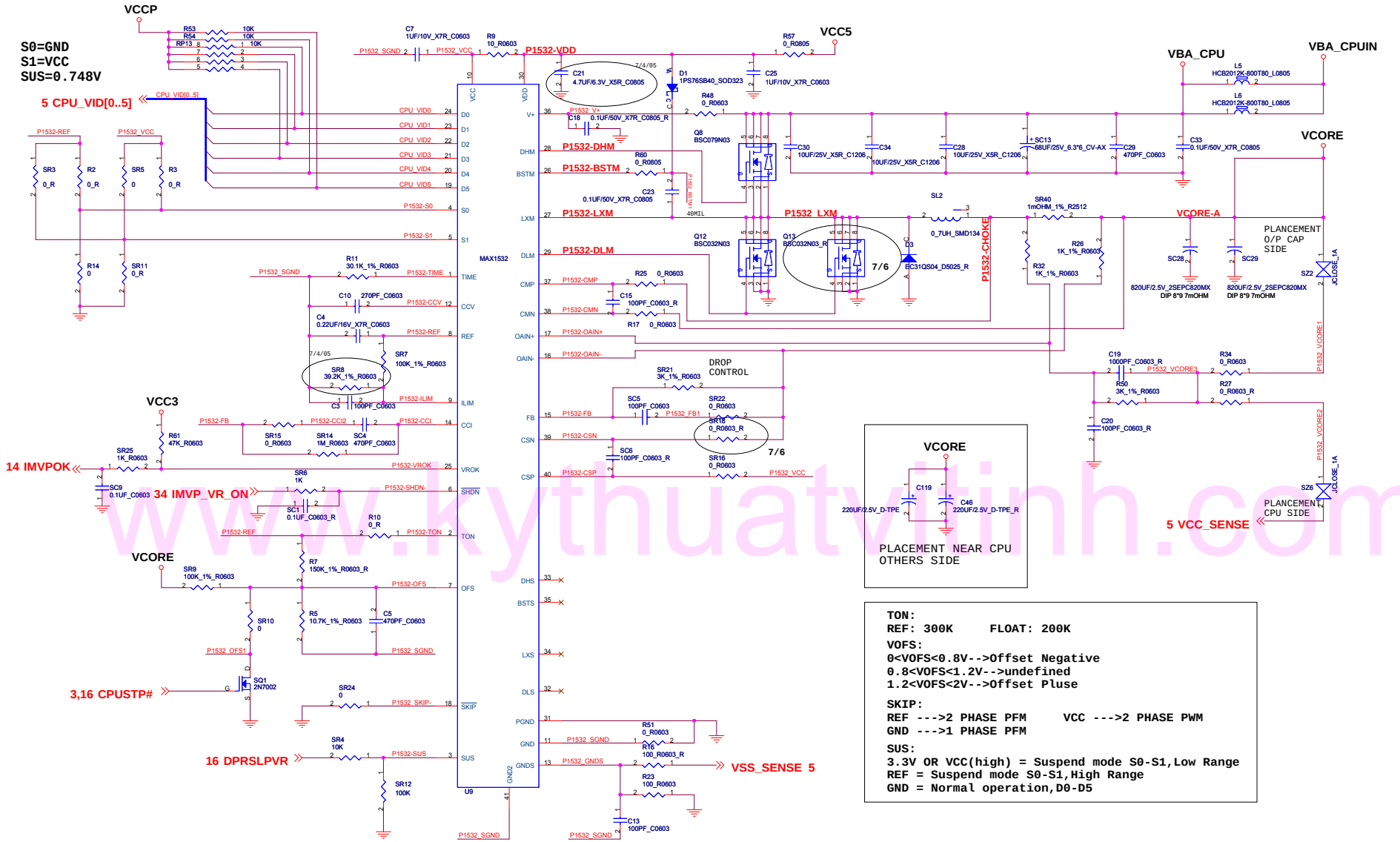

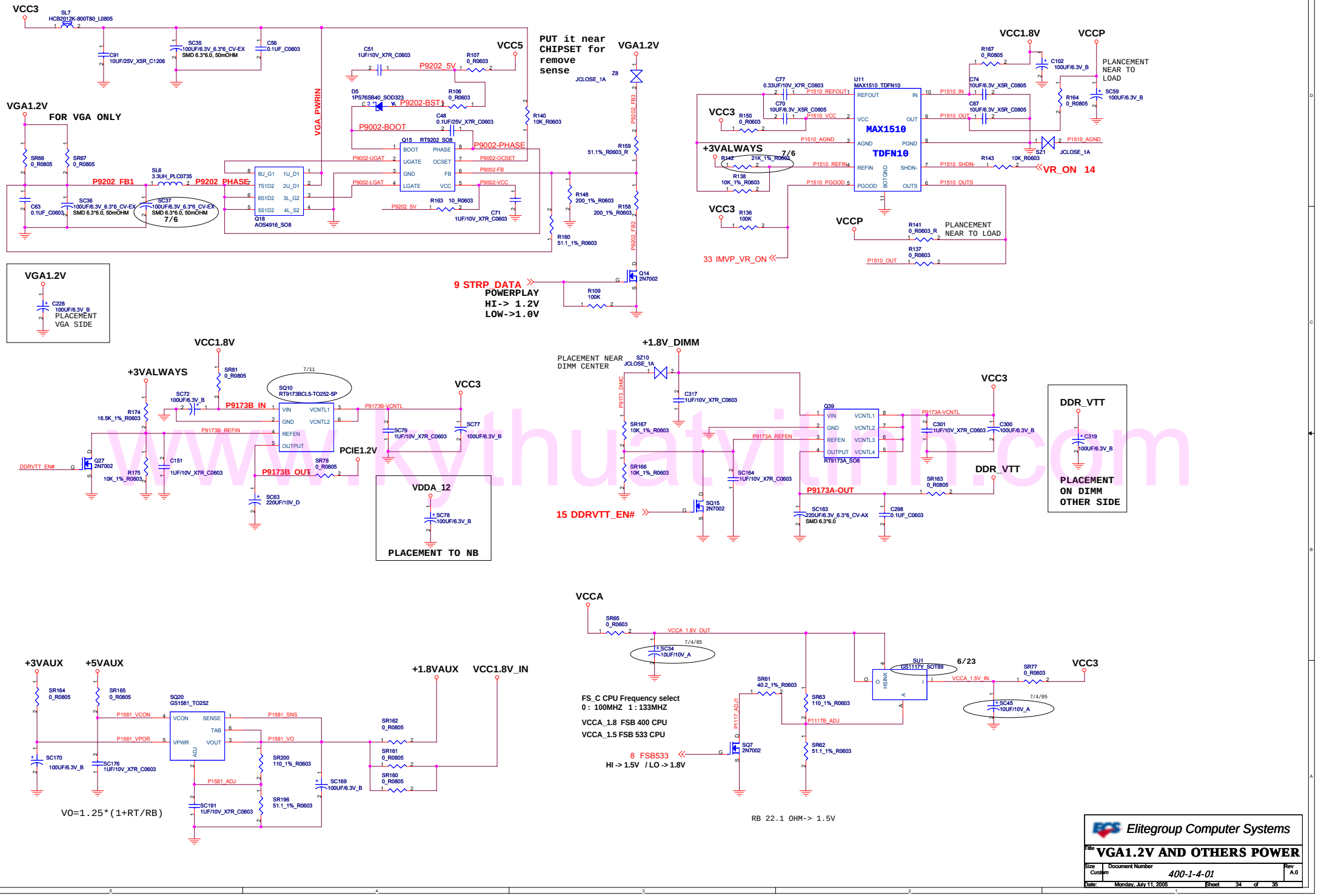

V.A: 2005/07/11 Initial Release   15-F66-010010

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Title: History

Size	Document Number	Rev
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