

ZB2

CPU CORE
SENTECH
SC4511TSTR
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SYSTEM 3V/5V
 MAXIM
 MAX1999
 +3VPCU
 +3V S5
 +3VSUS
 +3V
 +5VPCU
 +5VSUS
 +5V
 +15V
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+1.8VSUS
 +1.8V
 +0.9VSUS
 +0.9V
 +1.5V
 +1.05V
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 +2.5V
 +1.2V
VGA_CORE
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BATTERY CHARGER
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 MAX8724
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/M52PG
/M54P
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Wireless LAN
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TI PCI7412
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 GNT0#
 INTE#
 INTF#
 INTG#
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MINI-PCI
Wireless LAN
 AD19
 REQ2# / GNT2#
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MIC IN
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SPEAKER
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LINE OUT
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KBC
NS PC97551/541V
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Touchpad
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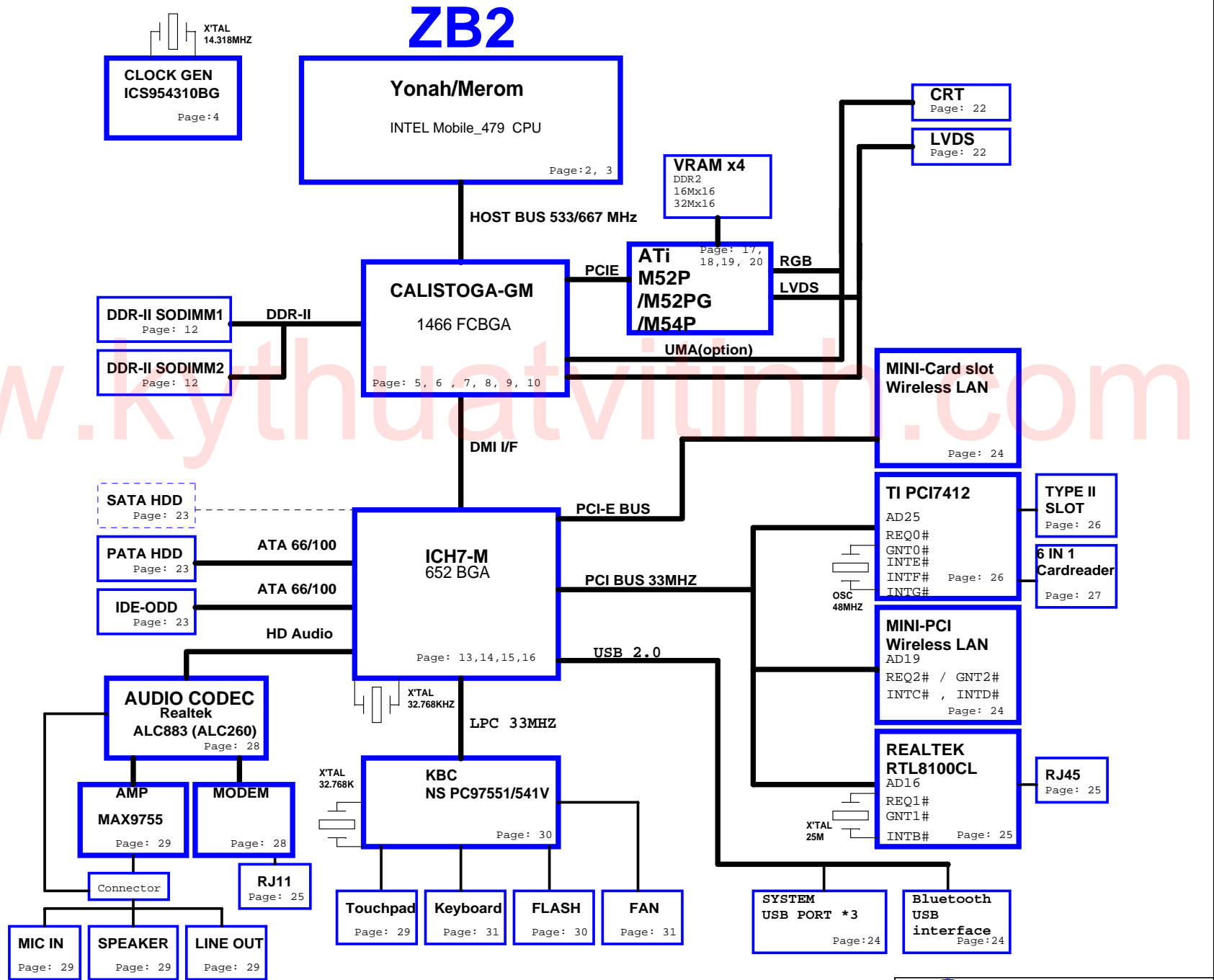
Keyboard
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FLASH
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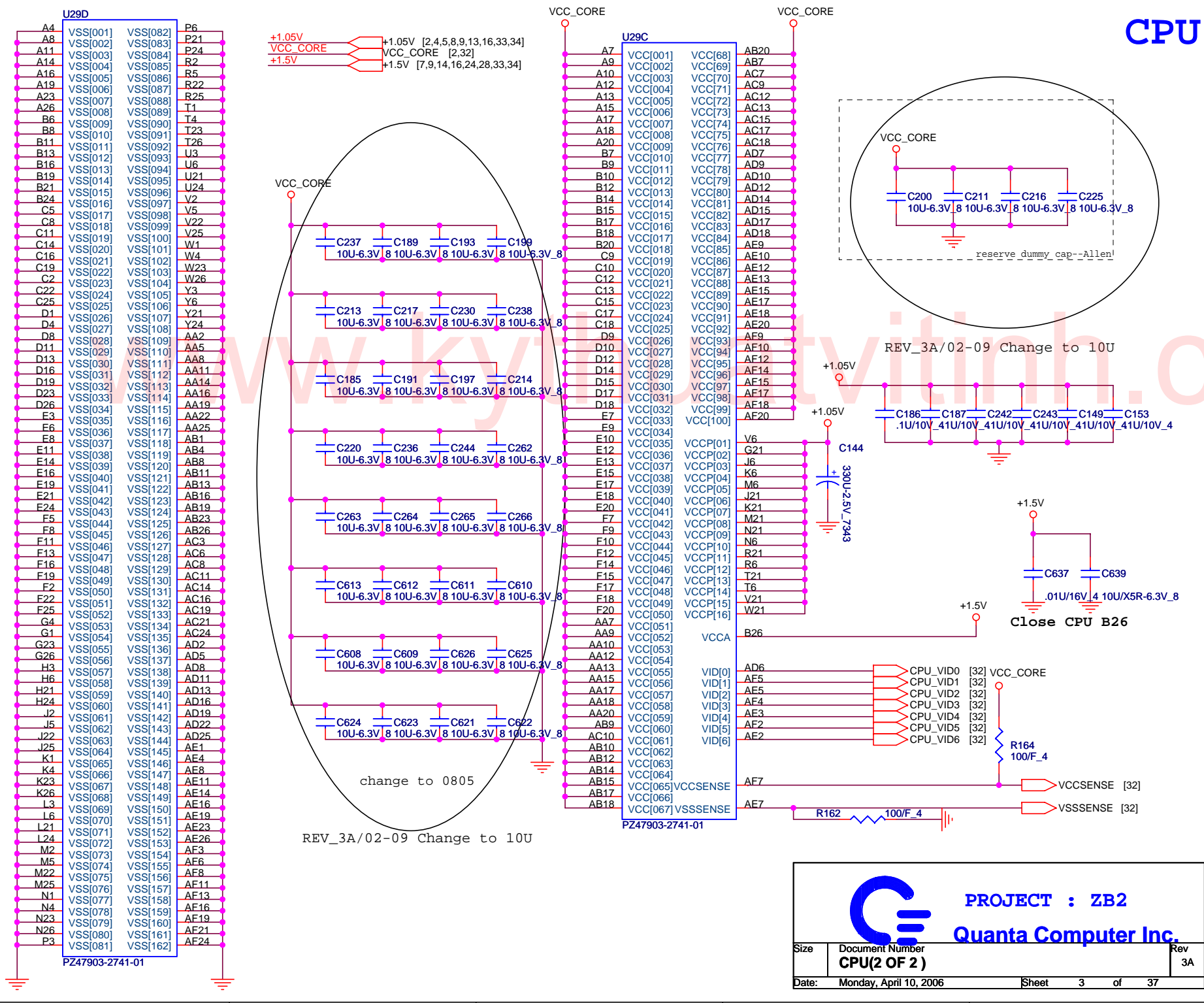
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SYSTEM
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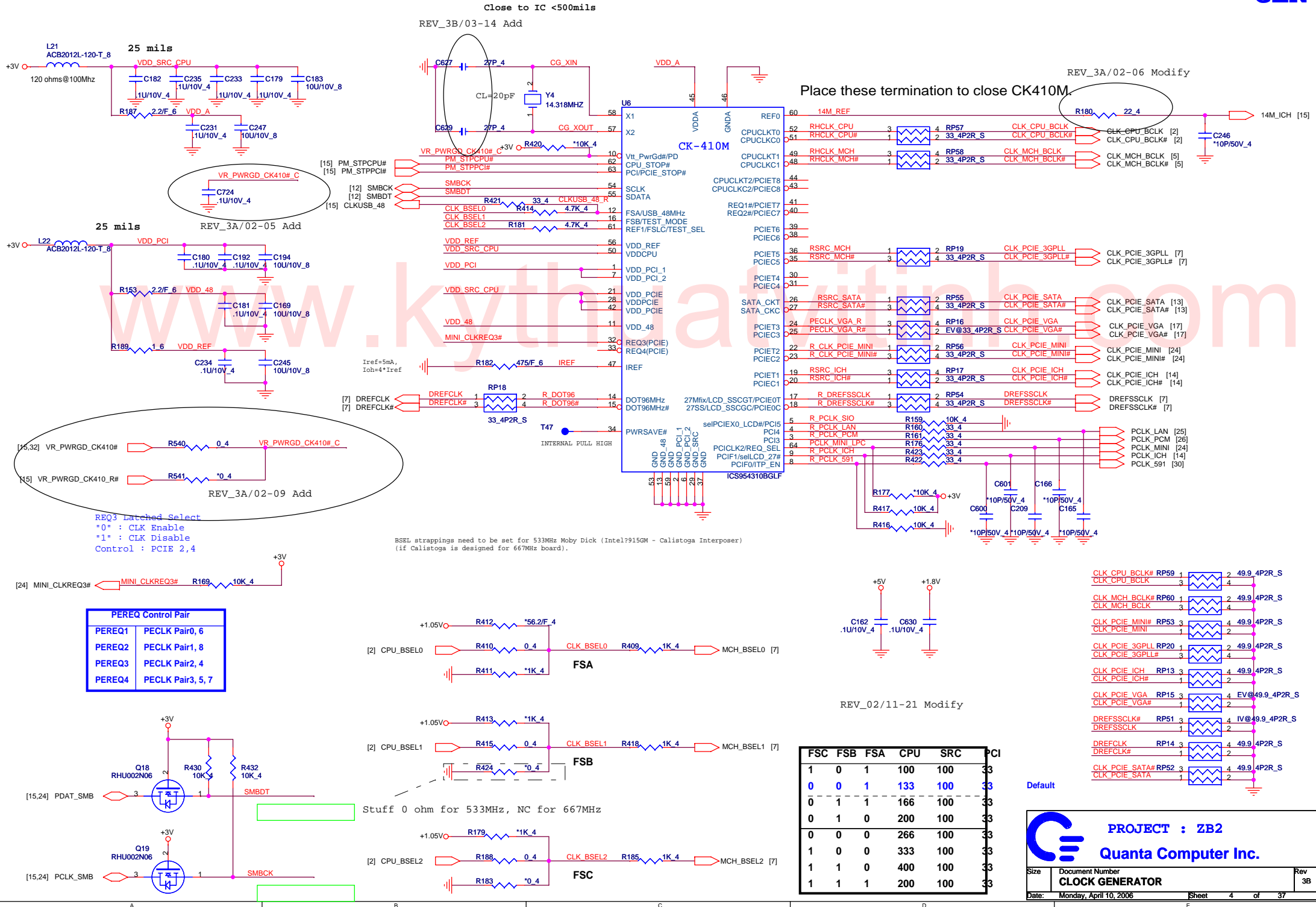
CPU



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Size	Document Number	Rev
	CPU(2 OF 2)	3A
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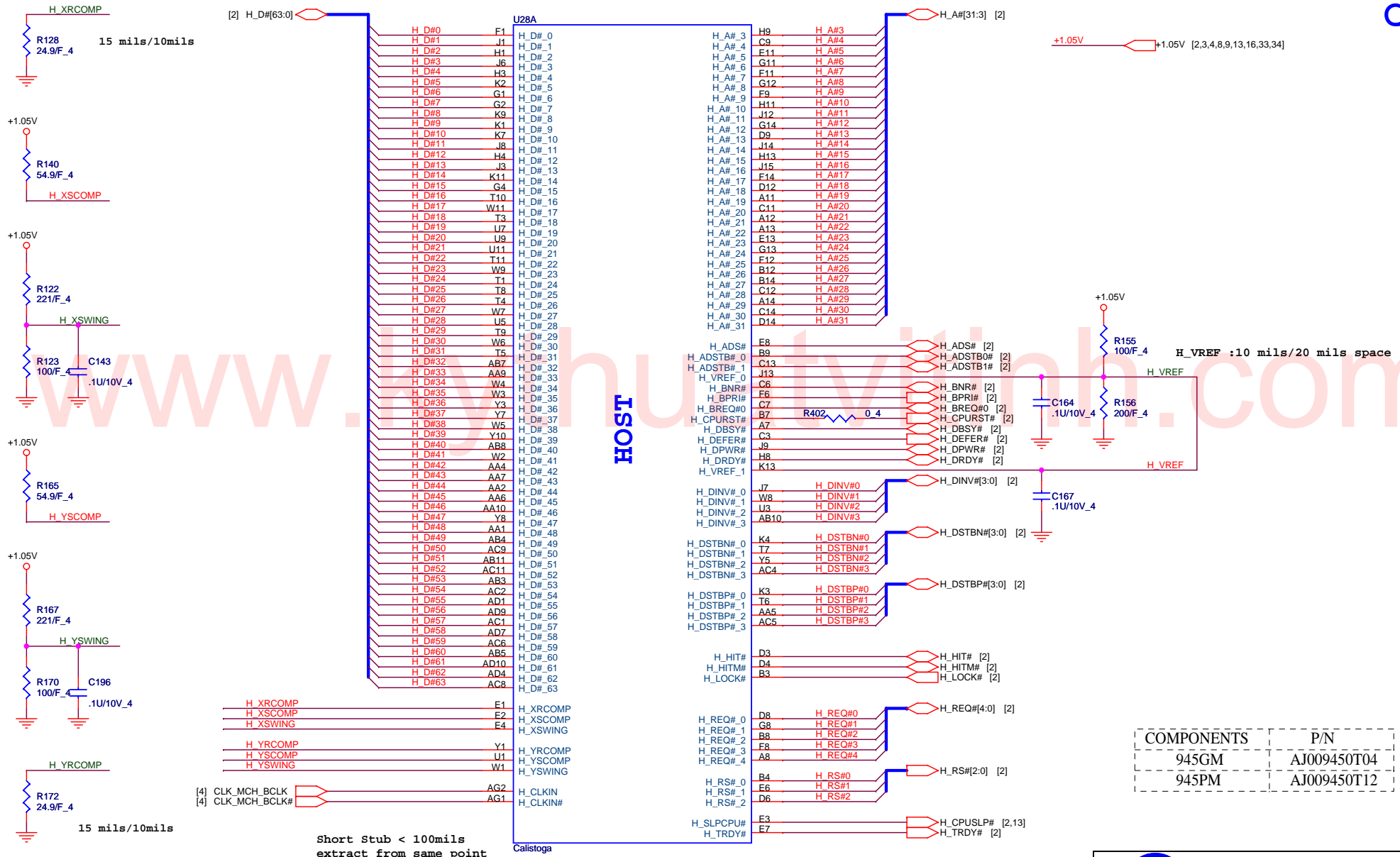
Note : If Use Internal VGA Please NC "EV@xxx" Parts



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Size: Document Number: **CLOCK GENERATOR** Rev: 3B

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COMPONENTS	P/N
945GM	AJ009450T04
945PM	AJ009450T12

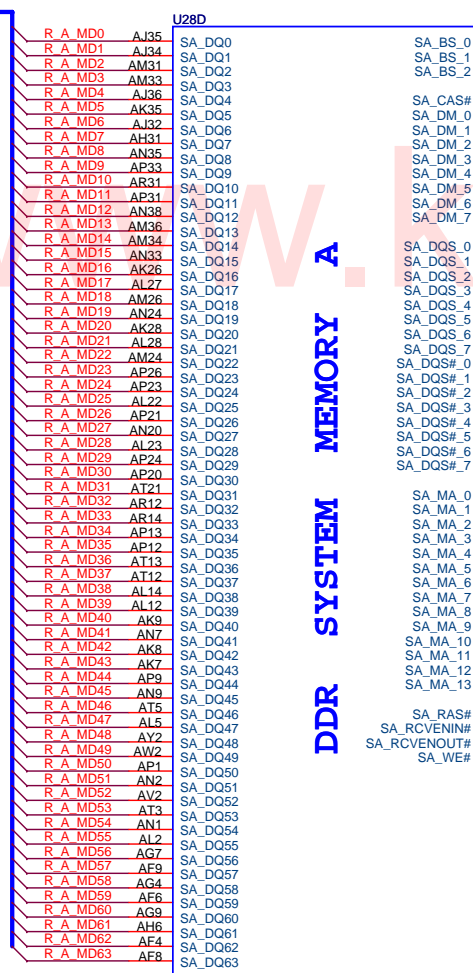
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Size	Document Number	Rev
	GMCH HOST(1 OF 6)	1A
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D
C
B
A

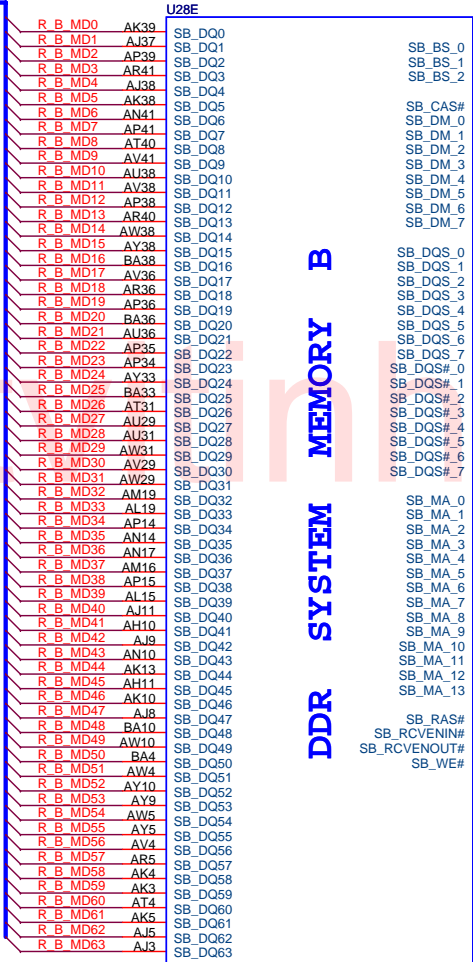
D
C
B
A

[12] R_A_MD[0..63]

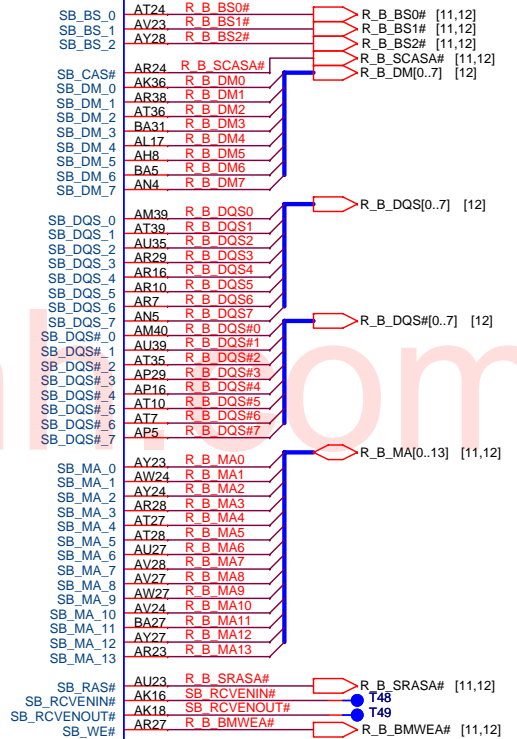


Calistoga

[12] R_B_MD[0..63]

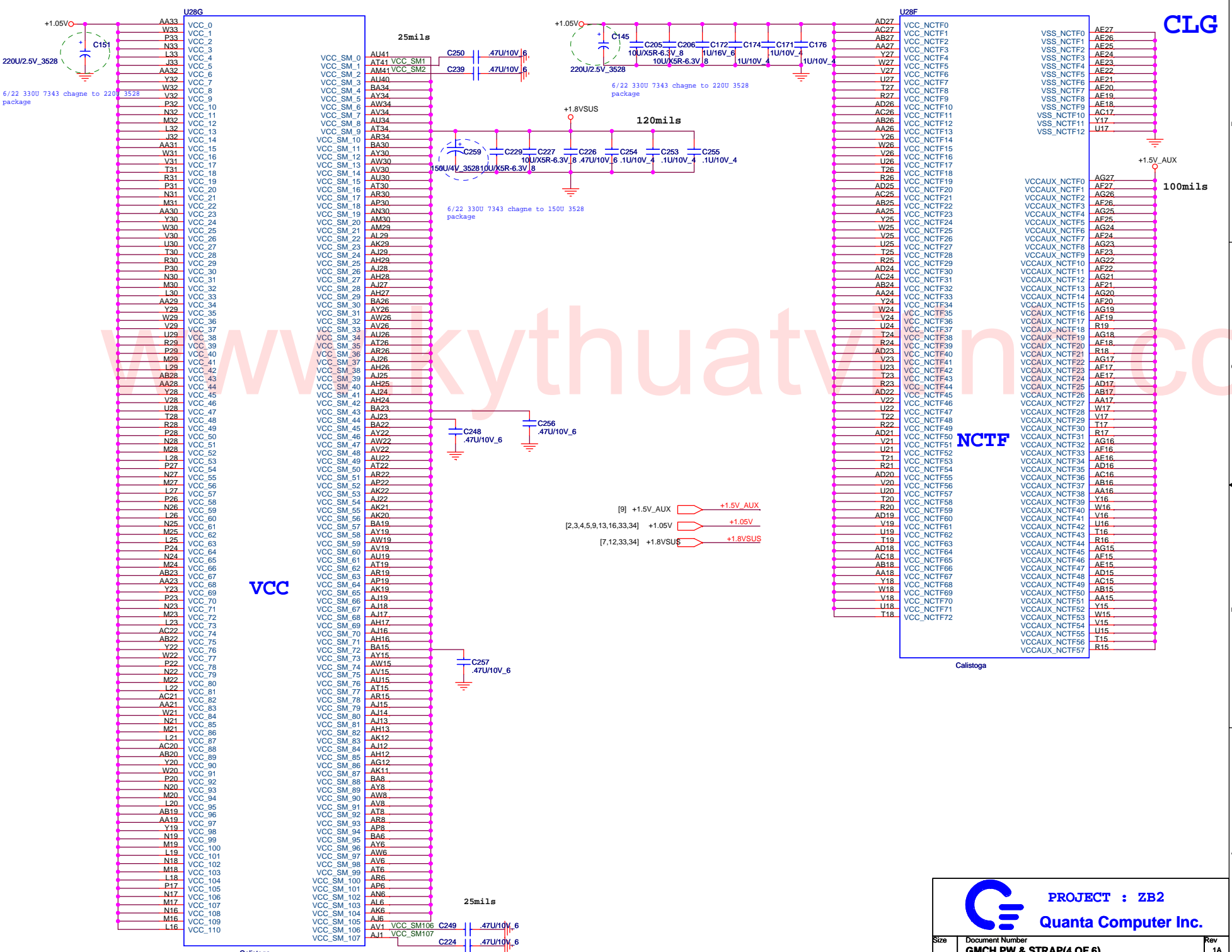


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Size	Document Number	Rev
	GMCH DDR(2 OF 6)	1A
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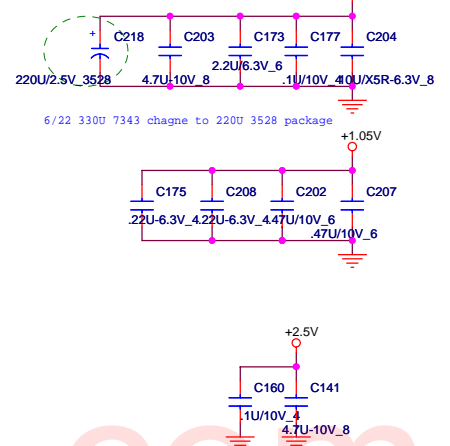
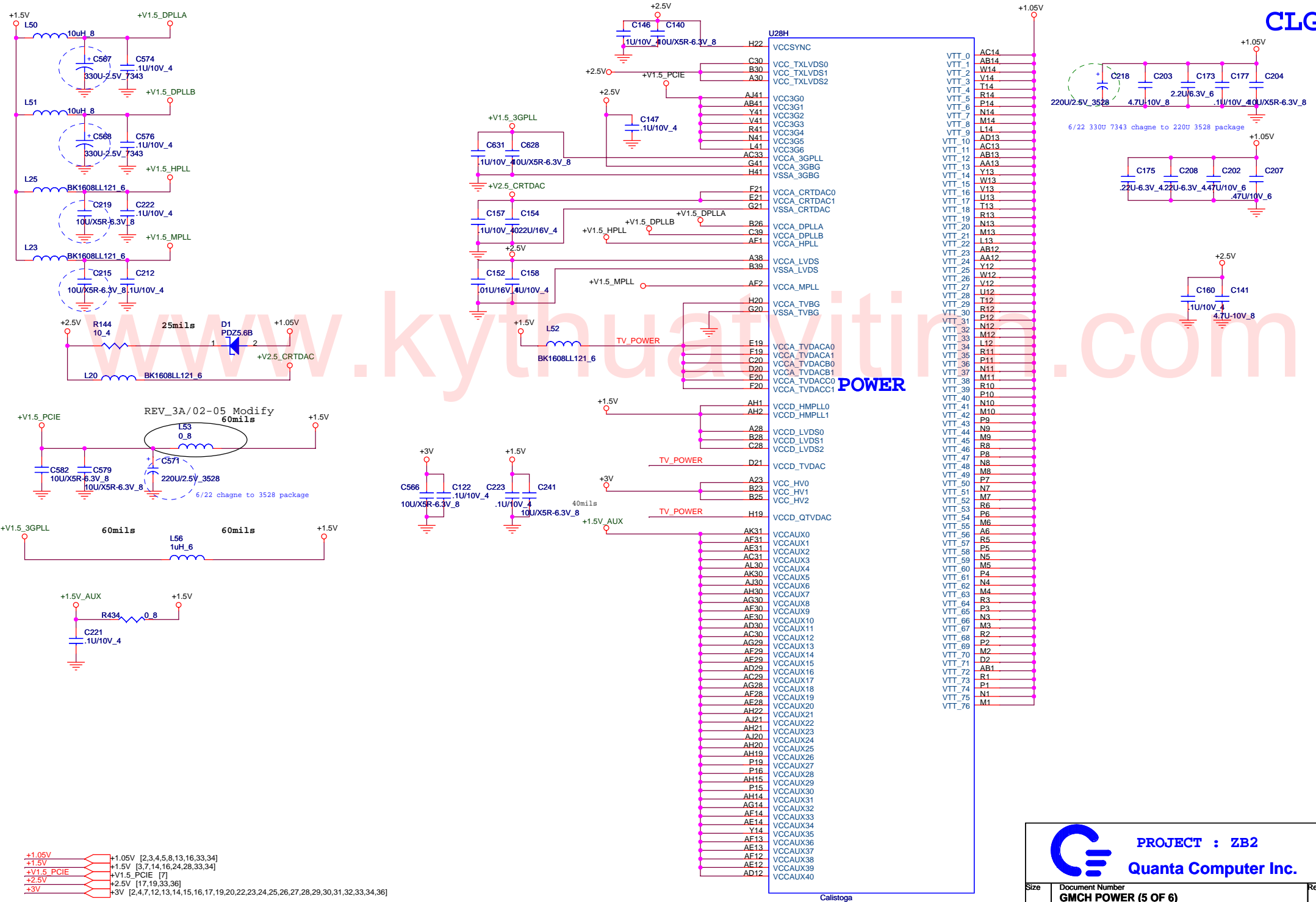
CLG

NCTF

Calistoga

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Size	Document Number	Rev
	GMCH PW & STRAP(4 OF 6)	1A
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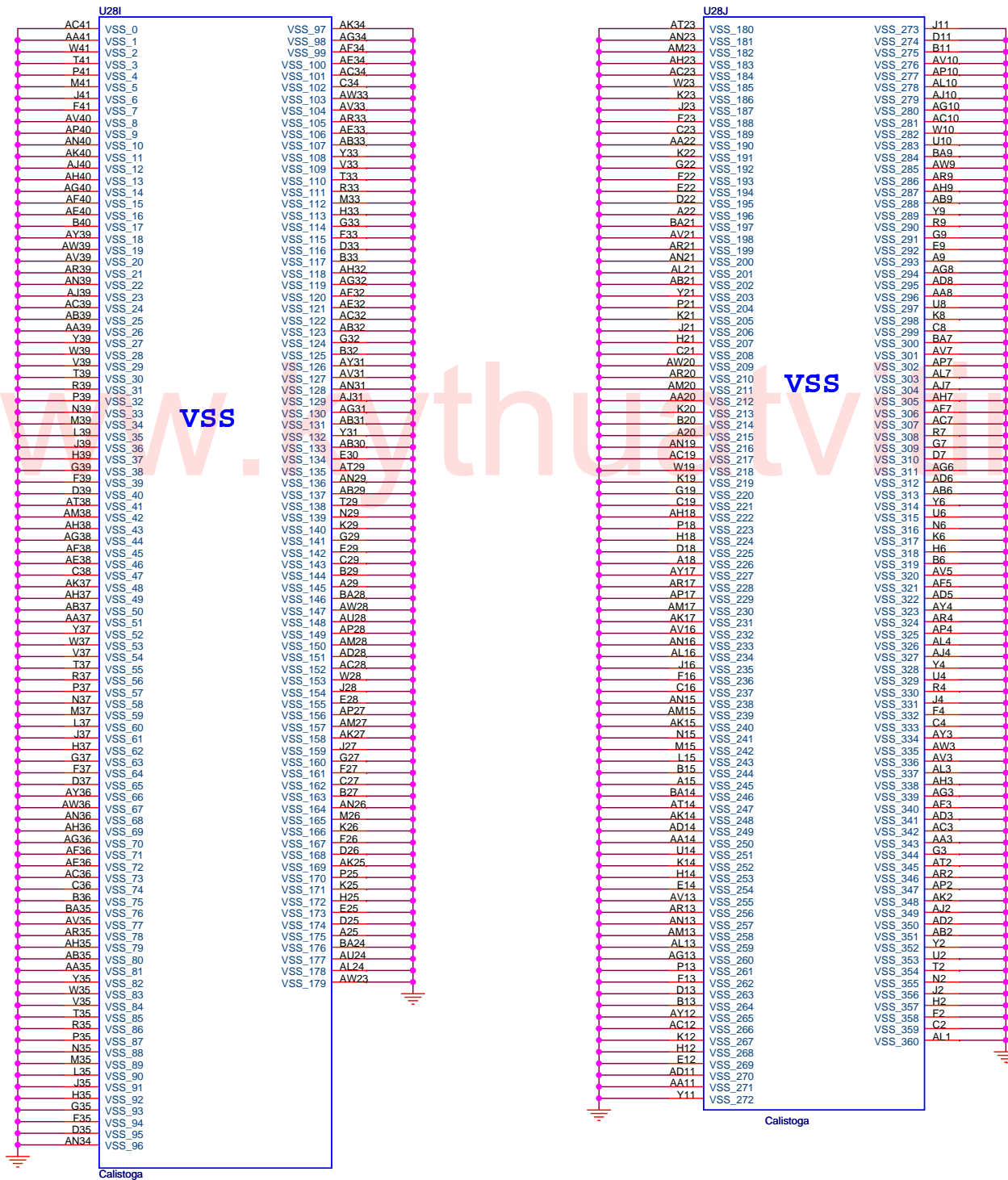


+1.05V	+1.05V [2,3,4,5,8,13,16,33,34]
+1.5V	+1.5V [3,7,14,16,24,28,33,34]
+V1.5_PCIE	+V1.5_PCIE [7]
+2.5V	+2.5V [17,19,33,36]
+3V	+3V [2,4,7,12,13,14,15,16,17,19,20,22,23,24,25,26,27,28,29,30,31,32,33,34,36]

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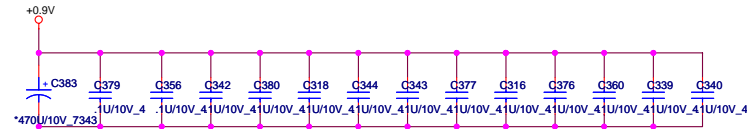
Size: Document Number: **GMCH POWER (5 OF 6)** Rev: 3A
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Calistoga

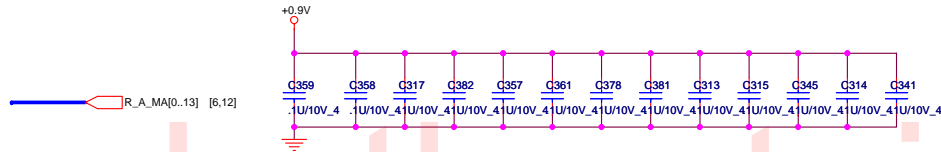


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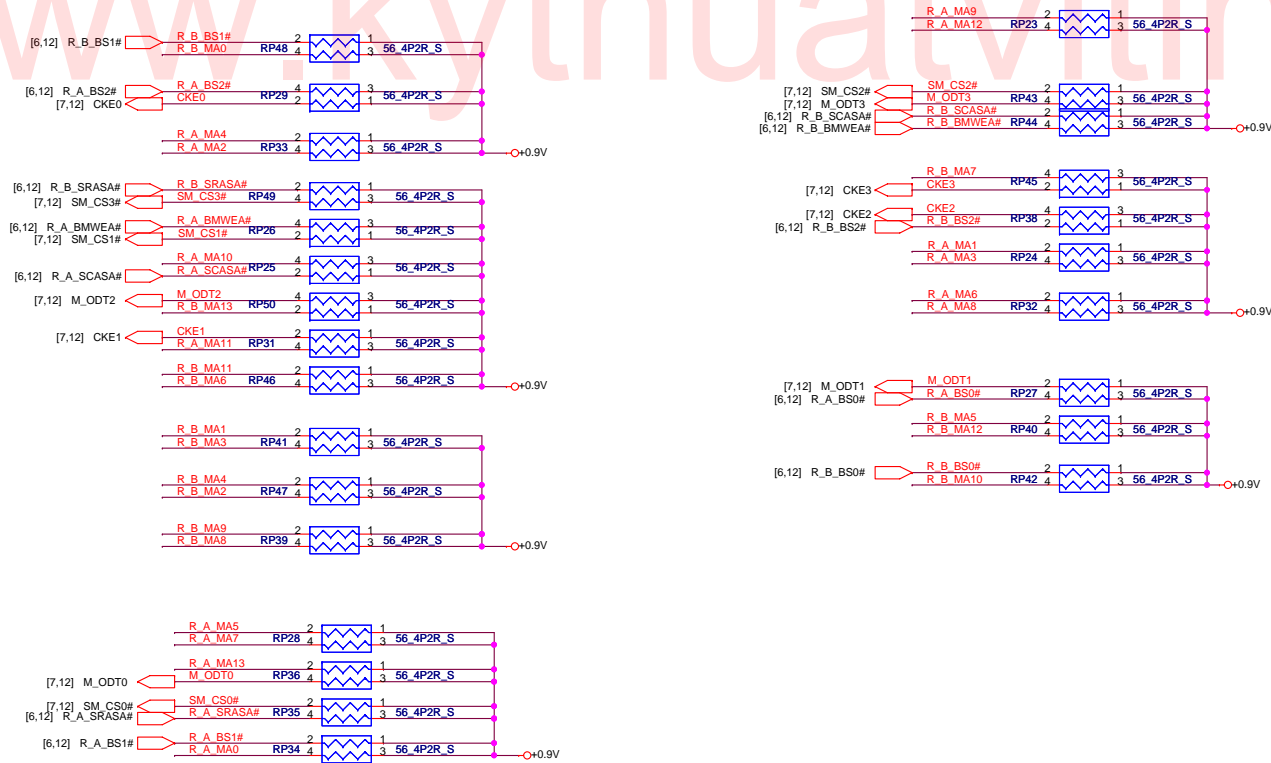
Size	Document Number	Rev
	GMCH GND(6 OF 6)	1A
Date:	Monday, April 10, 2006	Sheet 10 of 37



Layout note: Place one cap close to every 2 pullup resistors terminated to +0.9V



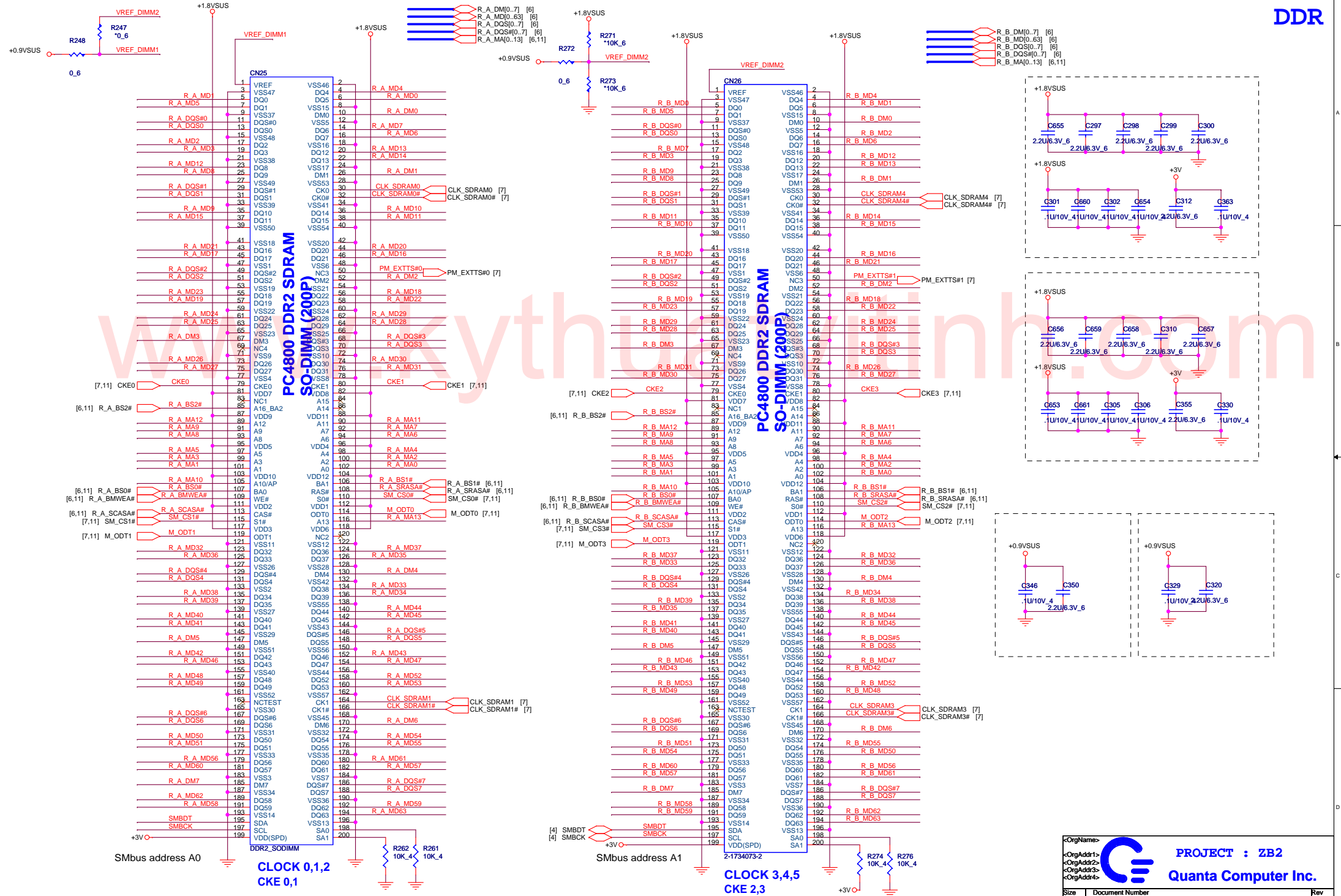
Layout note: Place one cap close to every 2 pullup resistors terminated to +0.9V



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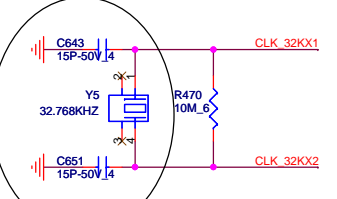
PROJECT : ZB2
Quanta Computer Inc.

Size	Document Number	Rev
	DDR2 TERMINATION	1A
Date:	Monday, April 10, 2006	Sheet 11 of 37

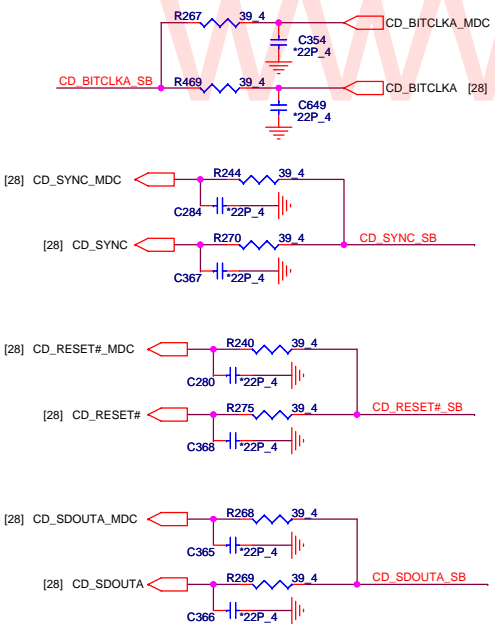


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 <OrgAddr2>
 <OrgAddr3>
 <OrgAddr4>
 PROJECT : ZB2
 Quanta Computer Inc.
 Size Document Number
 DDR2 SO-DIMM (200P)
 Date: Monday, April 10, 2006 Sheet 12 of 37 Rev 1A

CLK:C1/C2: 18pF -> CL:12.5pF
 C1/C: 10pF -> CL Value = 8.5pF

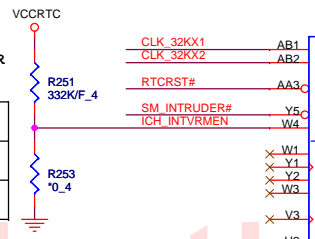


REV_3B/03-14 Modify

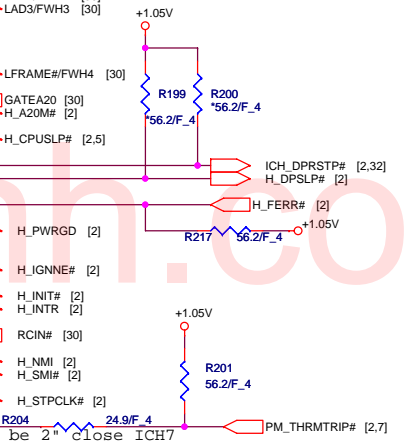
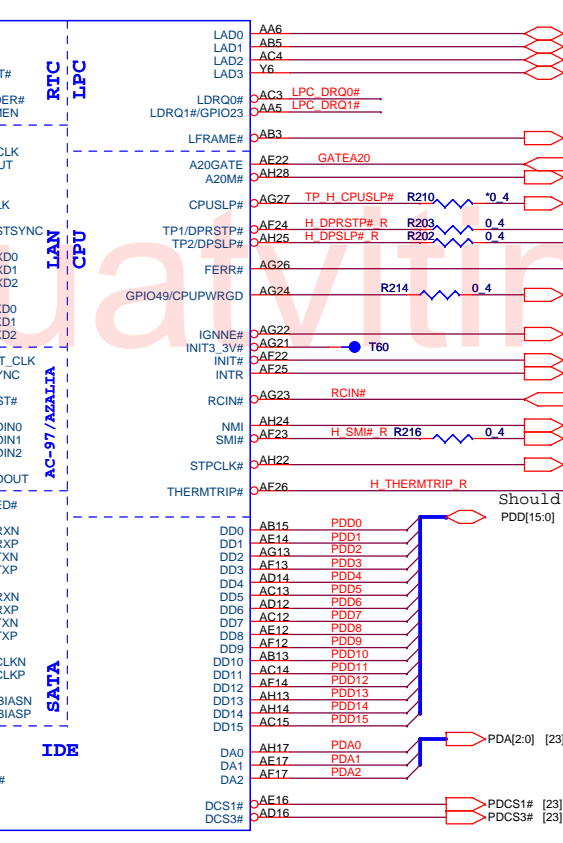


ICH7 internal VR enable strap

INTVRMEN	
Enable (default)	1
Disable	0

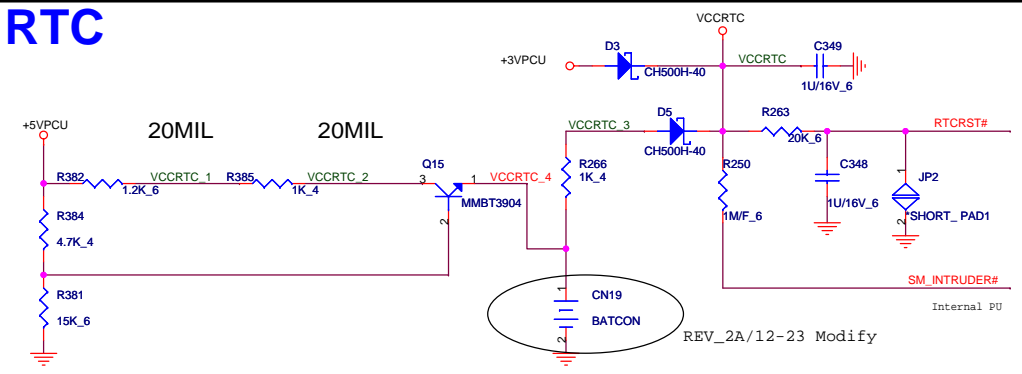


U34A ICH7-M



Should be 2" close ICH7

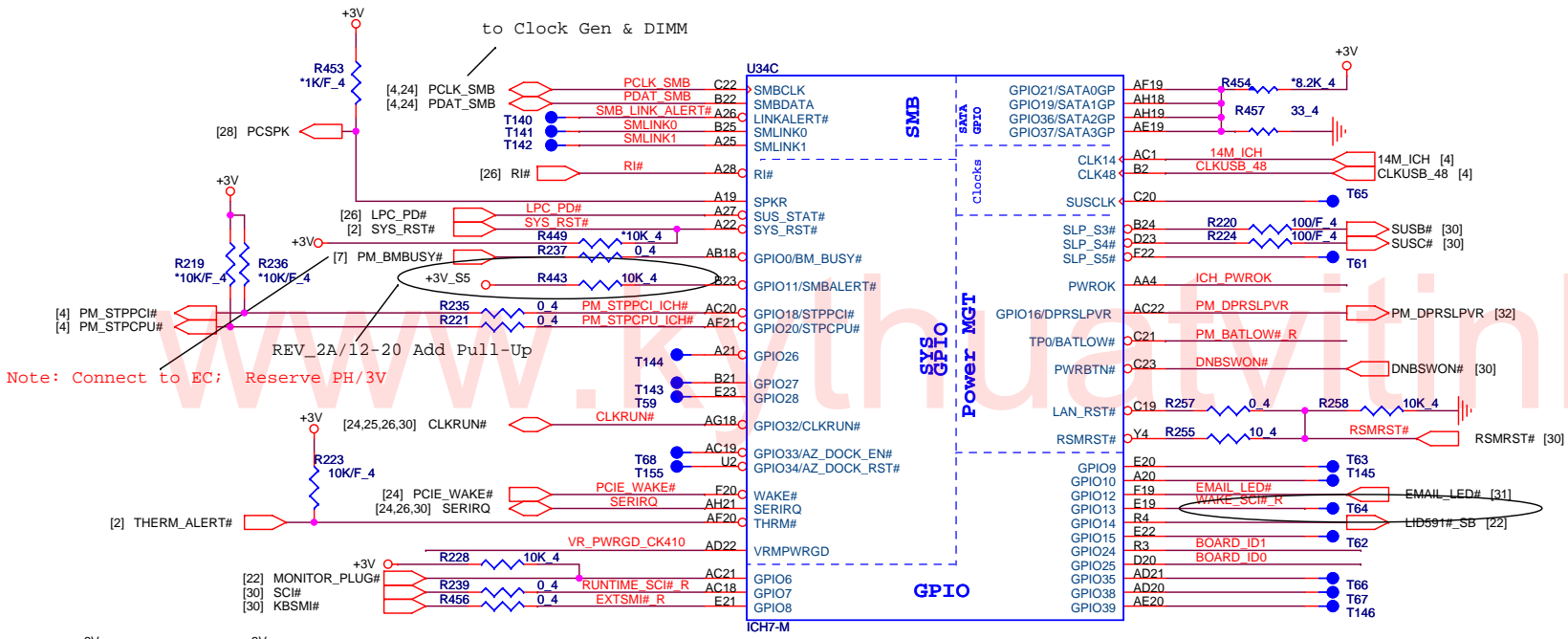
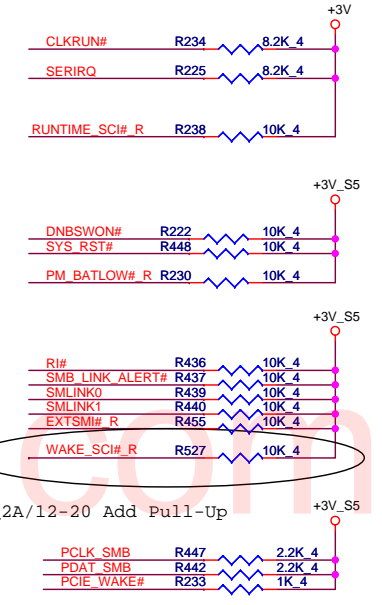
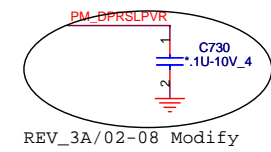
RTC



REV_2A/12-23 Modify

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Size	Document Number	Rev
	ICH7-M HOST (1 OF 4)	3B
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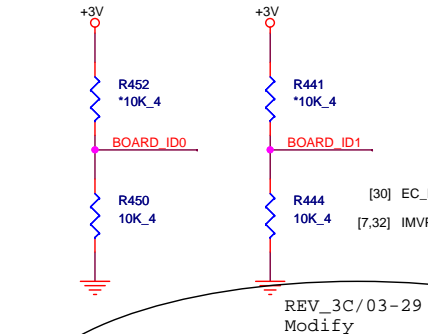


Note: Connect to EC; Reserve PH/3V

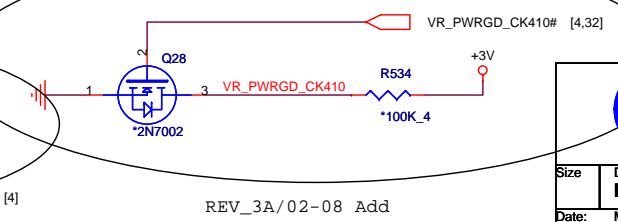
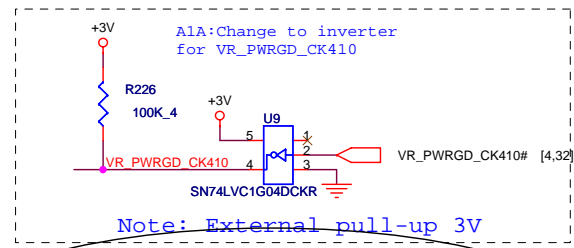
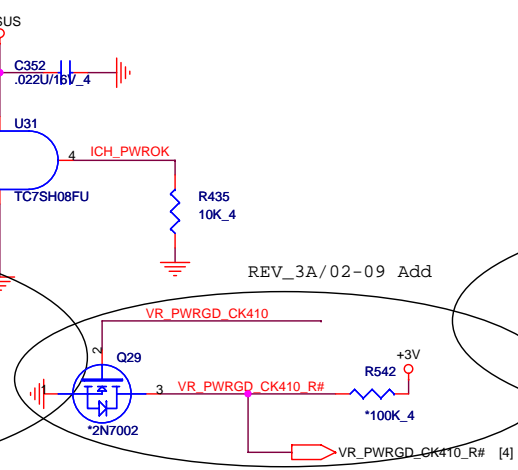
REV_2A/12-20 Add Pull-Up

REV_2A/12-20 Add Pull-Up

GPIO25 /suspend rail is a HW strap , don't pull down .



Board ID	CardReader	CCD
ID0 , ID1 00	X	X
ID0 , ID1 01	X	V
ID0 , ID1 10	V	X
ID0 , ID1 11	V	V



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Size Document Number Rev
ICH7-M GPIO (3 OF 4) 3C

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RV410 MEMORY CHANNELS A and B

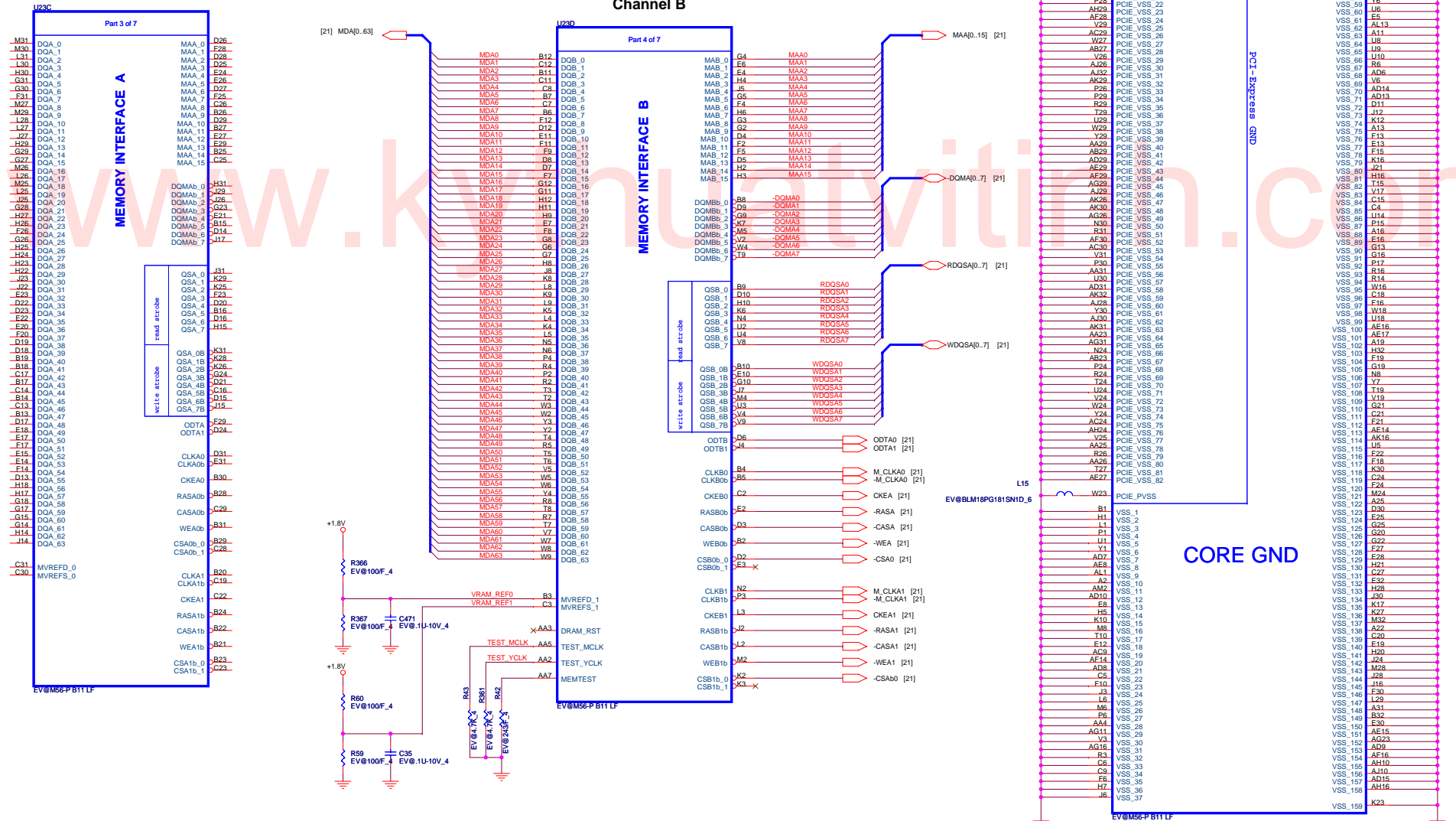
VGA

FOR M52P, M54P, M26X,
PIN B25 IS MA12 (BA0)
PIN C25 IS MA13 (BA1)
PIN E29 IS MA15 (BA2)
PIN E27 IS MA14
M50P IS THE SAME EXCEPT
PIN E29 IS CSBb_1
FOR M56P
PIN B25 IS MA14 (BA0)
PIN C25 IS MA15 (BA1)
PIN E29 IS MA13 (BA2)
PIN E27 IS MA12

FOR M52P, M54P, M26X, M50P
PIN H2 IS MAB12 (BA0)
PIN H3 IS MAB13 (BA1)
PIN F5 IS MAB15 (BA2)
PIN D5 IS MAB14
M50P IS THE SAME EXCEPT
PIN D5 IS CSBb_1
FOR M56P
PIN H2 IS MA14 (BA0)
PIN H3 IS MA15 (BA1)
PIN D5 IS MA13 (BA2)
PIN F5 IS MAB1

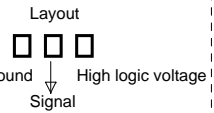
Channel A

Channel B

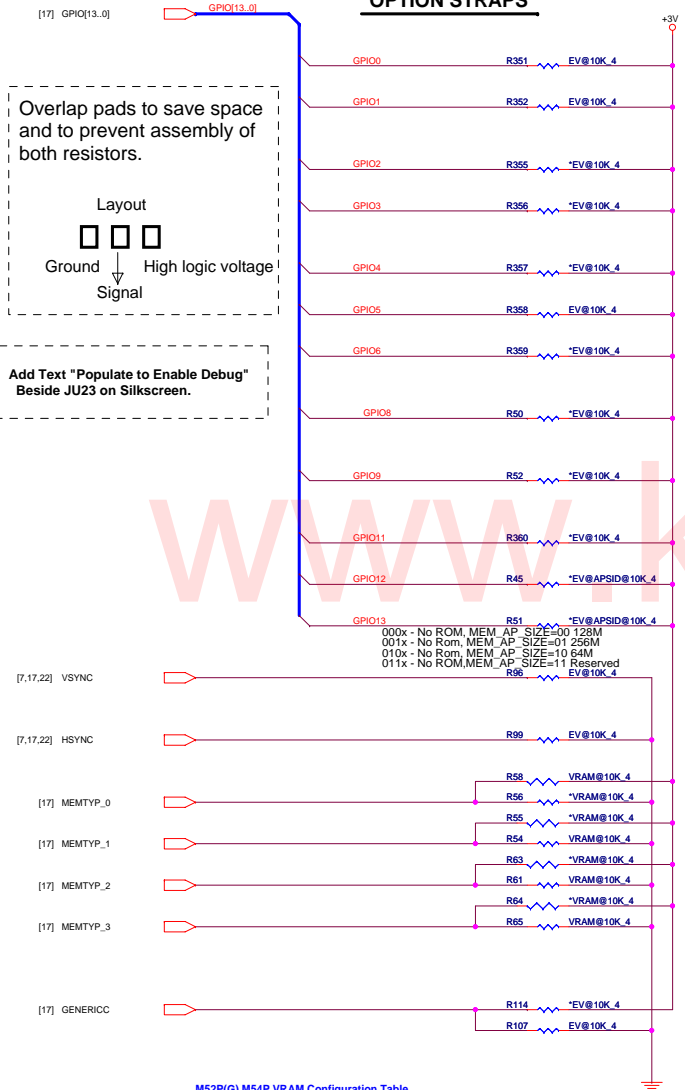


OPTION STRAPS

Overlap pads to save space and to prevent assembly of both resistors.



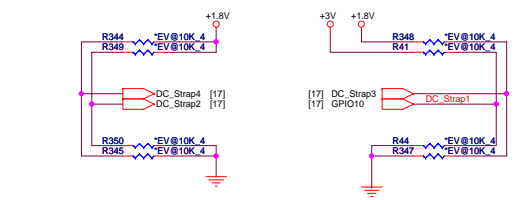
Add Text "Populate to Enable Debug" Beside JU23 on Silkscreen.



M52P(G) M54P VRAM Configuration Table

MEMTYP [3:0]	DESCRIPTION	Size
0000	DDR2, 16Mx16, 2pcs	64M
0001	DDR2, 16Mx16, 4pcs	128M
0010	DDR2, 32Mx16, 2pcs	128M
0011	DDR2, 32Mx16, 4pcs	256M
others	Reserved	

Default



M56-P Strap

STRAPS	PIN	DESCRIPTION	Board DEFAULT
TX_PWRS_ENB	GPIO0 (Internal pull-down)	Transmitter Power Saving Enable 0: 50% Tx output swing 1: full Tx output swing	1
TX_DEEMPH_EN	GPIO1 (Internal pull-down)	Transmitter De-emphasis Enable 0: Tx de-emphasis disabled 1: Tx de-emphasis enabled	1
	GPIO(3:2) (Internal pull-down)	RSVD	
DEBUG_ACCESS	GPIO4 (Internal pull-down)	Strap to set the debug muxes to bring out DEBUG signals even if registers are inaccessible	0
	GPIO5 (Internal pull-down)	RSVD	
	GPIO6 (Internal pull-down)	RSVD	
Force_Comppliance	GPIO8 (Internal pull-down)	Force chip to get to compliance state quickly for Tester purposes	0
ROMIDCFG(3:0)	GPIO(9,13,12,11) (Internal pull-down)	If no ROM attached, controls chip IDIs. If rom attached identifies ROM type 000x - No ROM, MEM_AP_SIZE=00 128M 001x - No Rom, MEM_AP_SIZE=01 256M 010x - No Rom, MEM_AP_SIZE=10 64M 011x - No ROM, MEM_AP_SIZE=11 Reserved 1000 - Parallel ROM, chip IDIs from ROM 1001 - Serial AT25F1024 ROM (Atmel), chip IDIs from ROM 1010 - Serial AT45DB011 ROM (Atmel), chip IDIs from ROM 1011 - Serial M25P10 ROM (ST), chip IDIs from ROM 1100 - Serial M25P05 ROM (ST), chip IDIs from ROM 1100 - Serial NX25F011B ROM (ISSI), chip IDIs from ROM	000
VIP_DEVICE	VSYN	Indicates if any slave VIP host devices drove this pin low during reset. 0- Slave VIP host port devices present. 1-No slave VIP port devices reporting presence during reset	No default
	H2SYN, V2SYN, SBNER10C	RSVD	
	VSYN	RSVD	
	HSYN	RSVD	
	PCIE_TEST	RSVD	

Memory Aperture Size Select
When no ROM is attached, GPIO_9 is set to 0
GPIO_[13:12] is used to select the memory aperture size.
GPIO_[13:12] = 00: 128M memory aperture, same as ROM strap 00
GPIO_[13:12] = 01: 256M memory aperture, same as ROM strap 01
GPIO_[13:12] = 10: 64M memory aperture, same as ROM strap 10
GPIO_[13:12] = 11: reserved, same as ROM strap 11

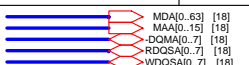
Default: 128M memory aperture.
GPIO_[13:12] = 01 (256M memory aperture) recommended for designs with 256MB or 512MB of physical memory.

Board Straps REV. 0.3

STRAPS	PIN	DESCRIPTION	VALUE
MEMTYPE(1:0)	GPIO25,26	Memory identification for BIOS 00 - DDR2 16X16X4pcs 128MB 01 - DDR2 32X16X4pcs 256MB 10 - DDR2 16X16X2pcs 64MB 11 - DDR2 32X16X2pcs 128MB	
DC_Strip1	GPIO(10)	Internal TMDS Enabled 0 - Disabled 1 - Enabled	1
DC_Strip2	LCDDATA(13)	Video Capture Enabled 0 - Disabled 1 - Not detected	0
DC_Strip3	LCDDATA(14)	HDTV out detect 0 - Detected 1 - Enabled	1
DC_Strip4, DEMUX_SEL	LCDDATA(15,19)	Video capture enable 00 - DAC2 Off 01 - DAC2 On as CRT 10 - DAC2 On as TVOUT 11 - DAC2 On as TVOUT and CRT	01
PALNTSC	LCDDATA(18)	TVO Standard Default (Resistor pull-up and switch short to GND) 0 - PAL (on board resistor pull-down and switch closed) 1 - NTSC (on board resistor pull-up)	1

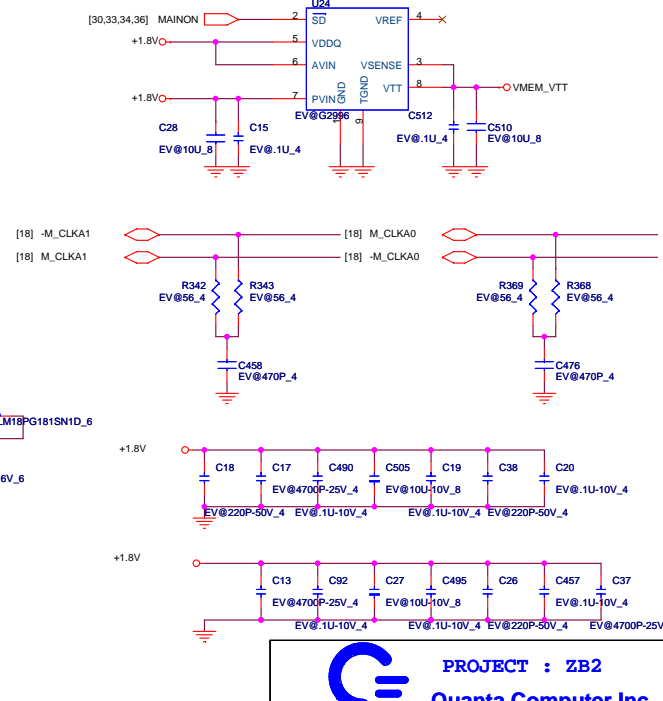
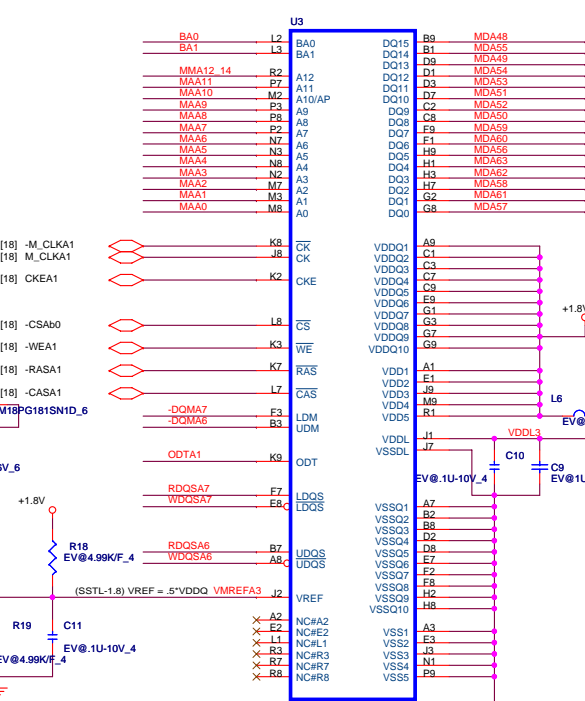
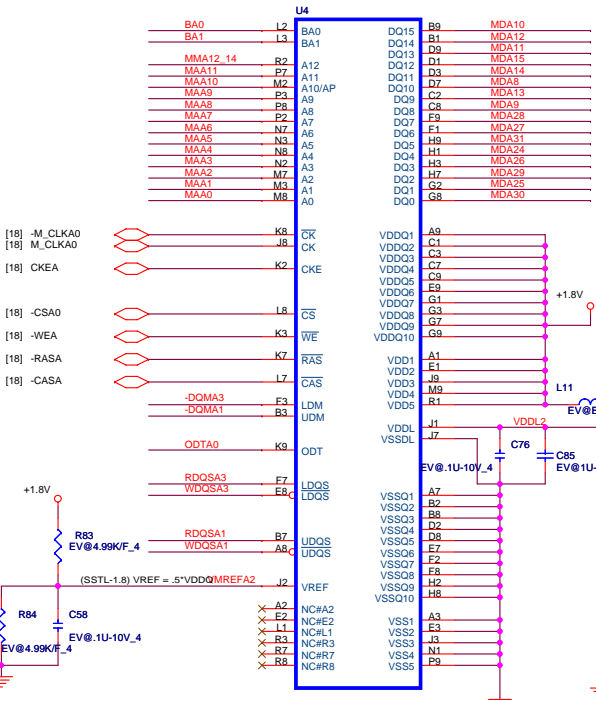
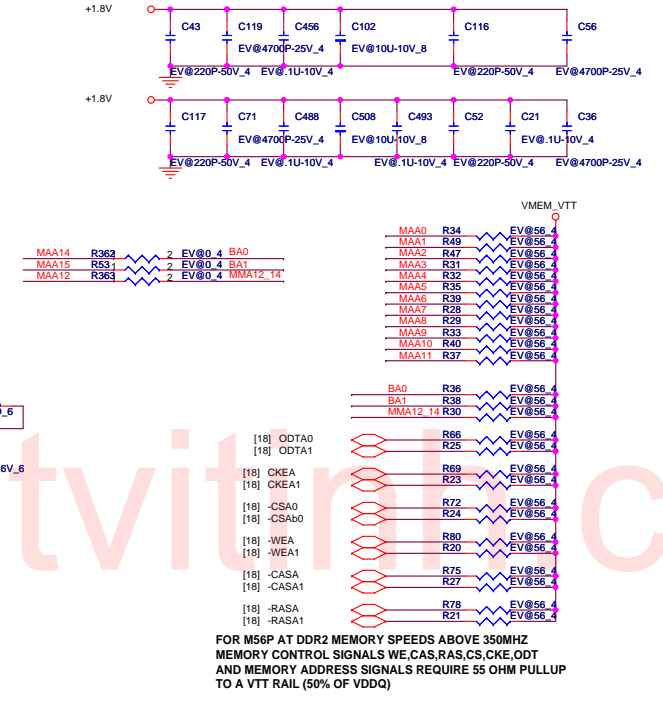
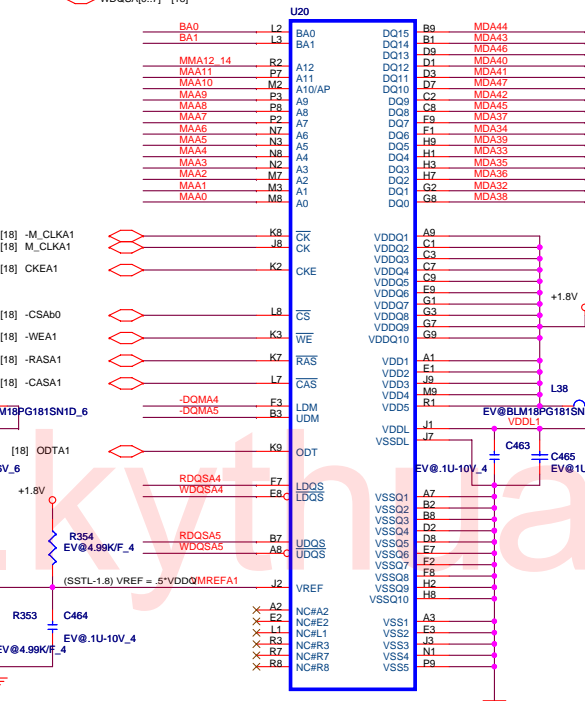
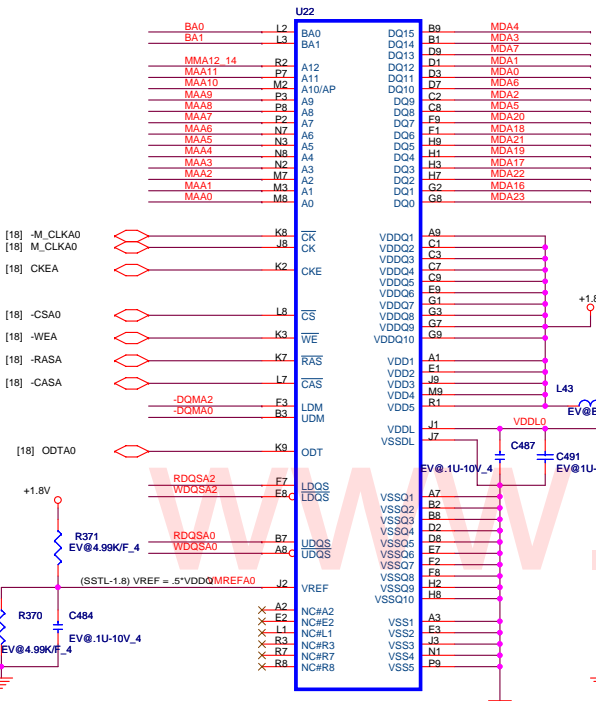
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Size	Document Number	Rev
	M52-P_Straps (4 of 4)	1A
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CHAN A DDR2 84BGA 16MX16 MEMORY

VGA

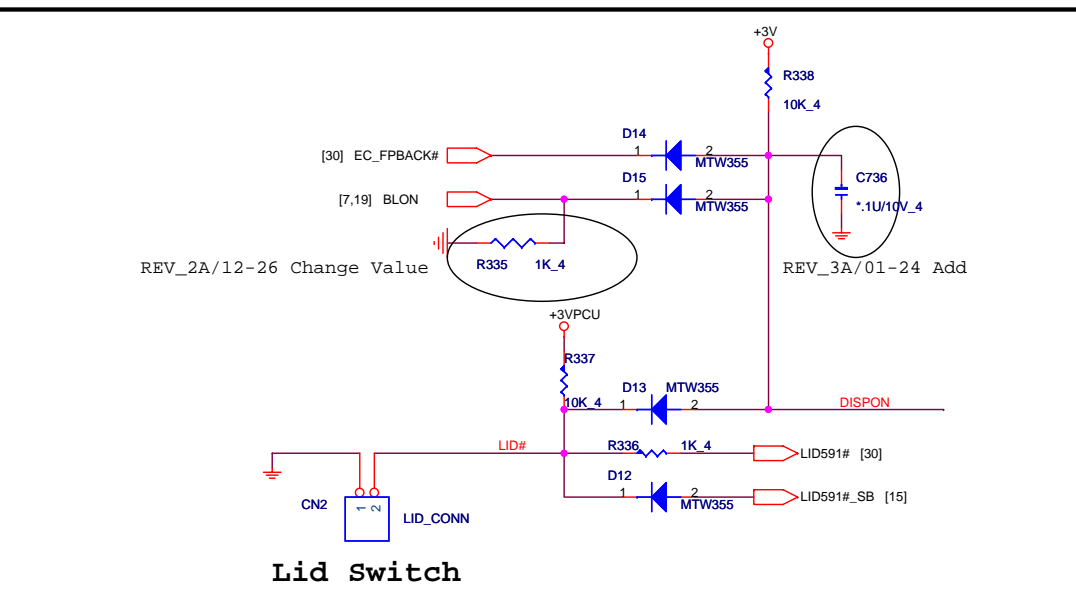
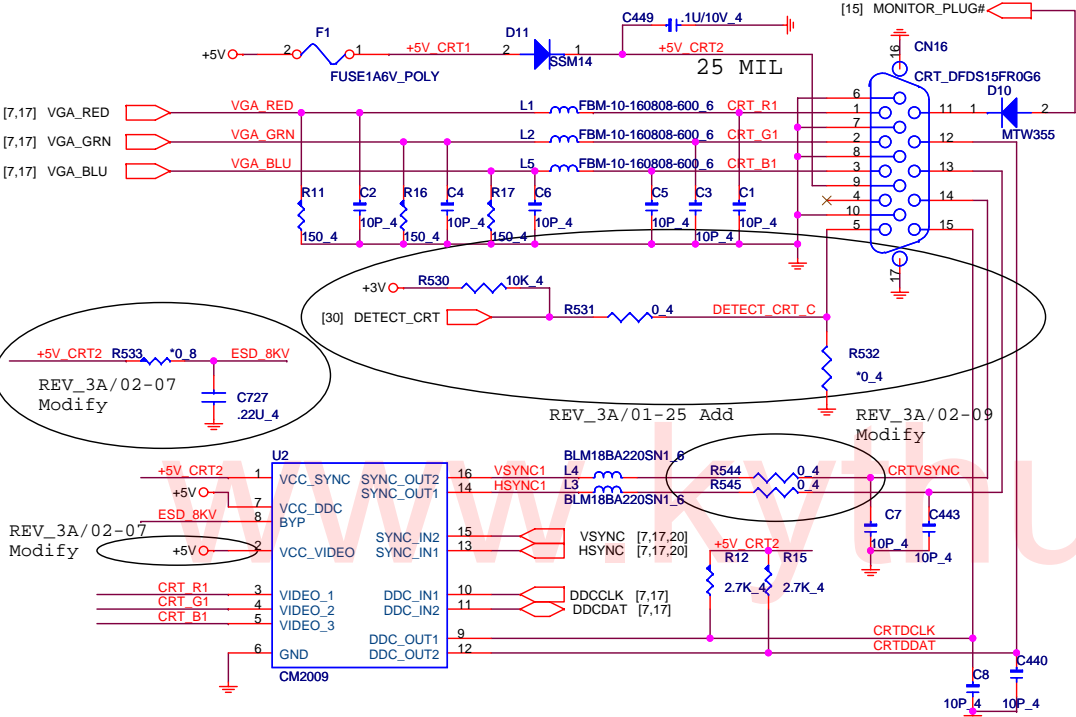


FOR M56P AT DDR2 MEMORY SPEEDS ABOVE 350MHZ MEMORY CONTROL SIGNALS WE,CAS,RAS,CS,CKE,ODT AND MEMORY ADDRESS SIGNALS REQUIRE 55 OHM PULLUP TO A VTT RAIL (50% OF VDDQ)

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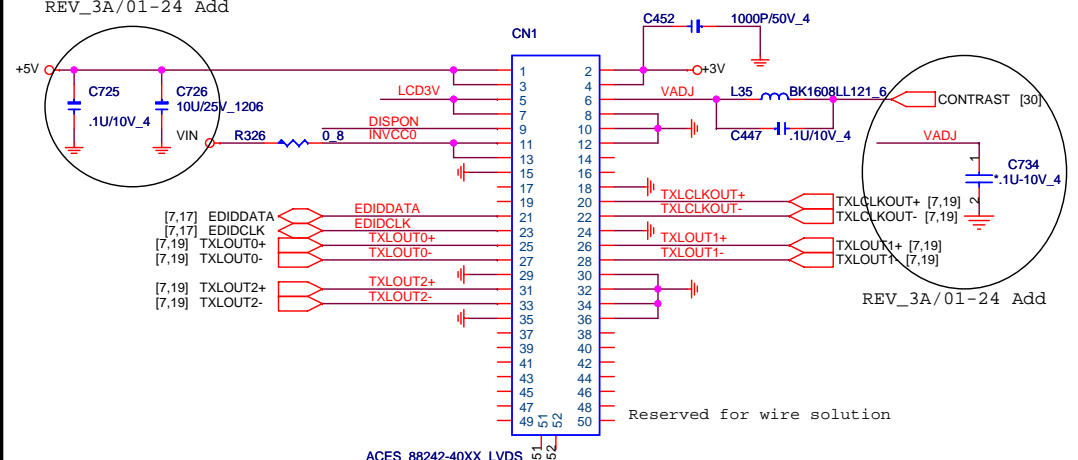
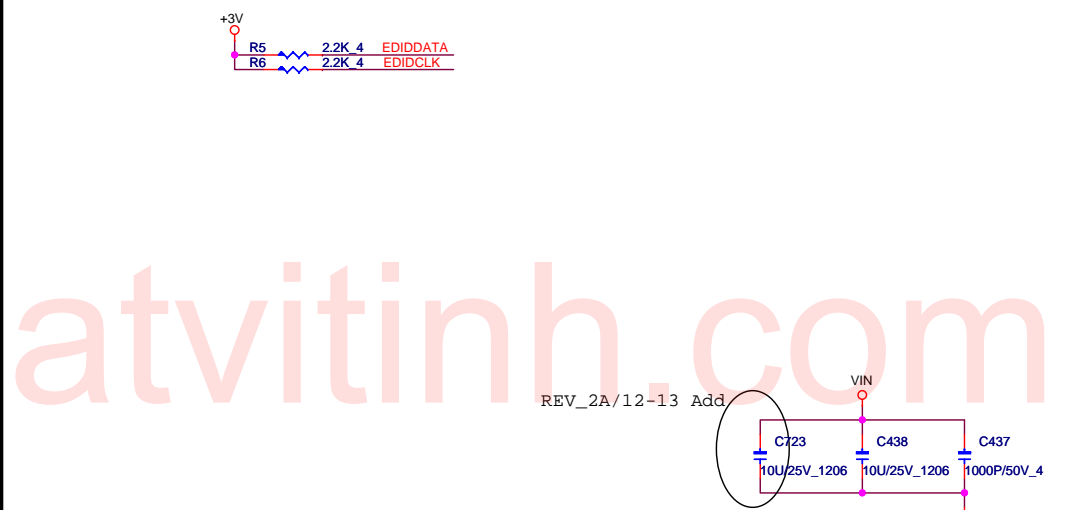
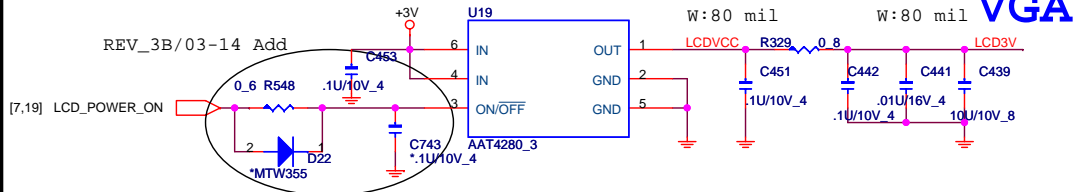
Size	Document Number	Rev
	VRAM DDR2	1A
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CRT PORT



Lid Switch

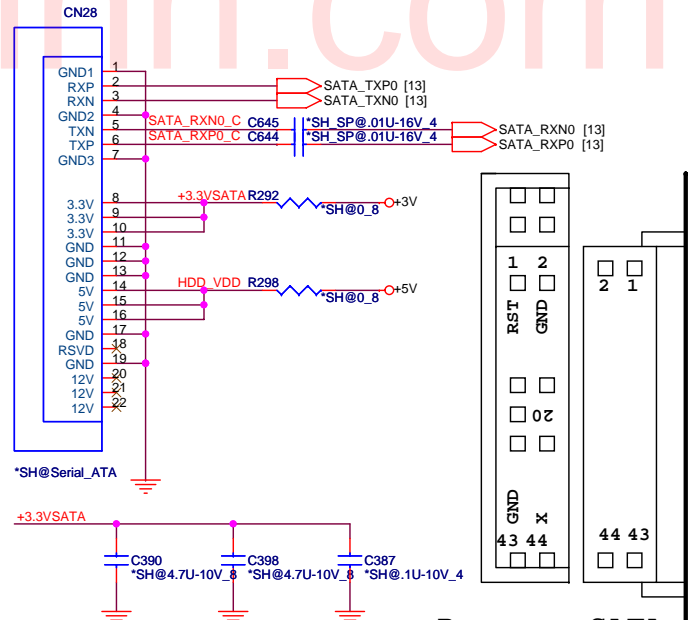
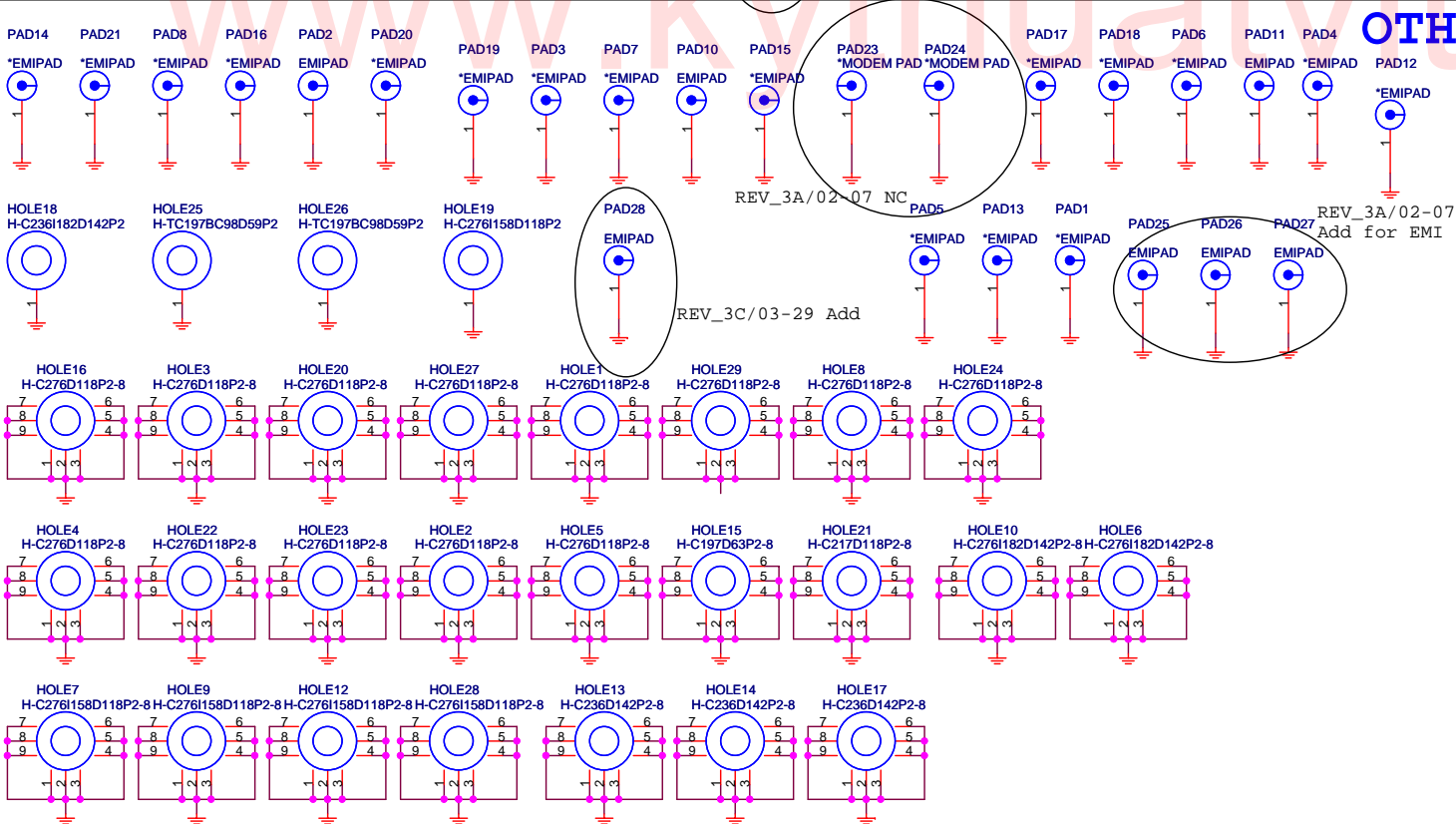
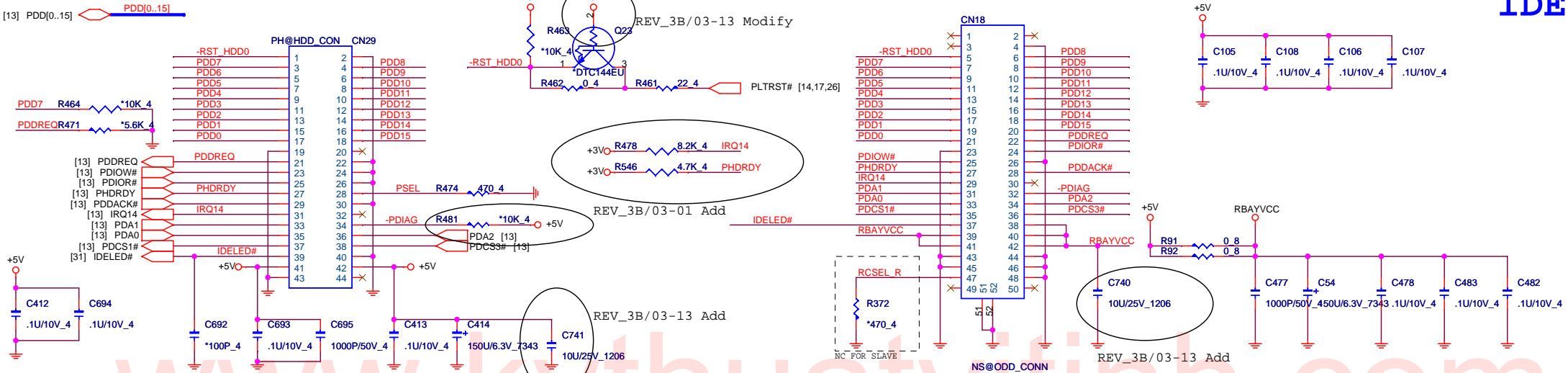
VGA





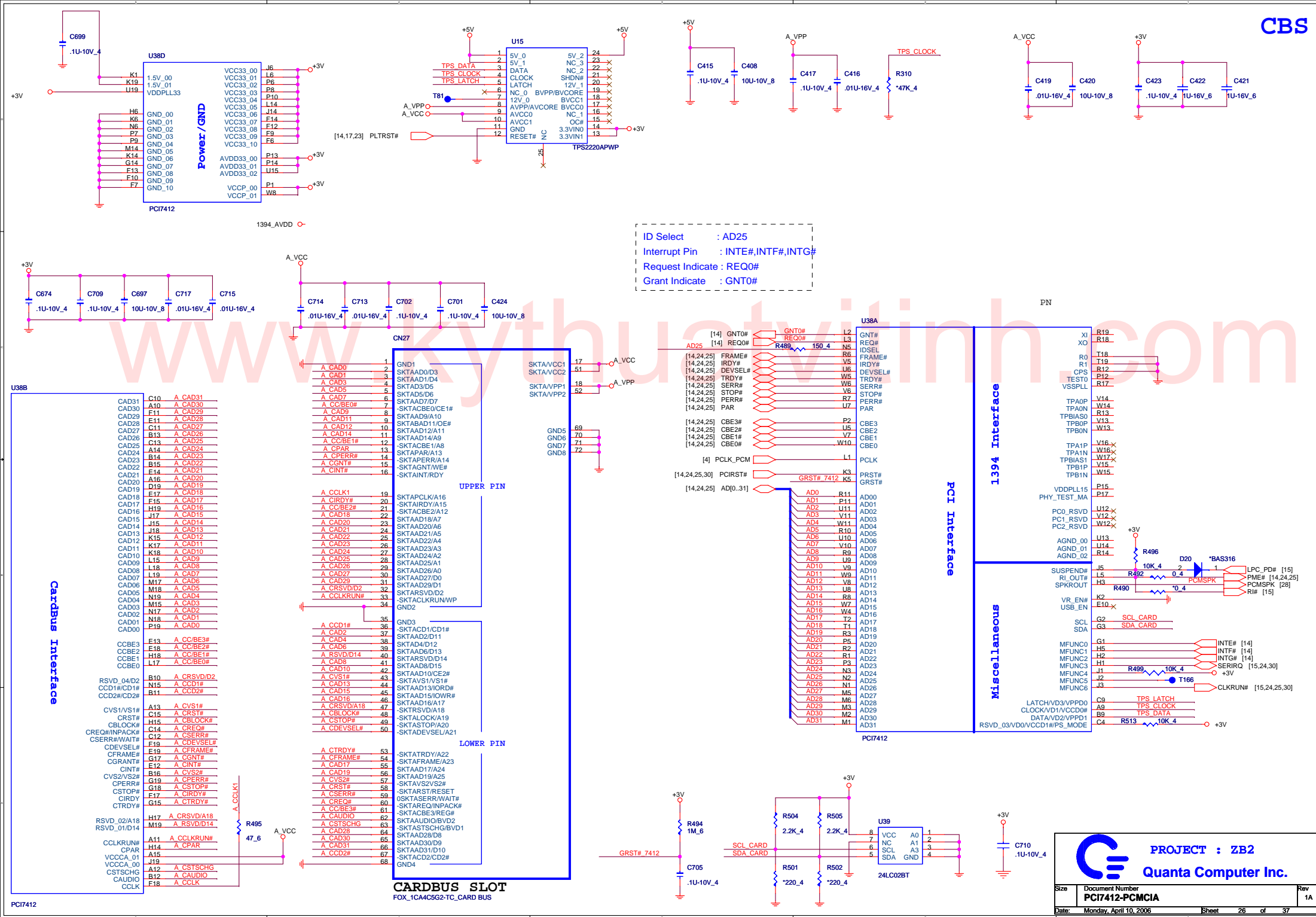
PROJECT : ZB2
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Size	Document Number	Rev
	LVDS,VGA Ports, LID	3B
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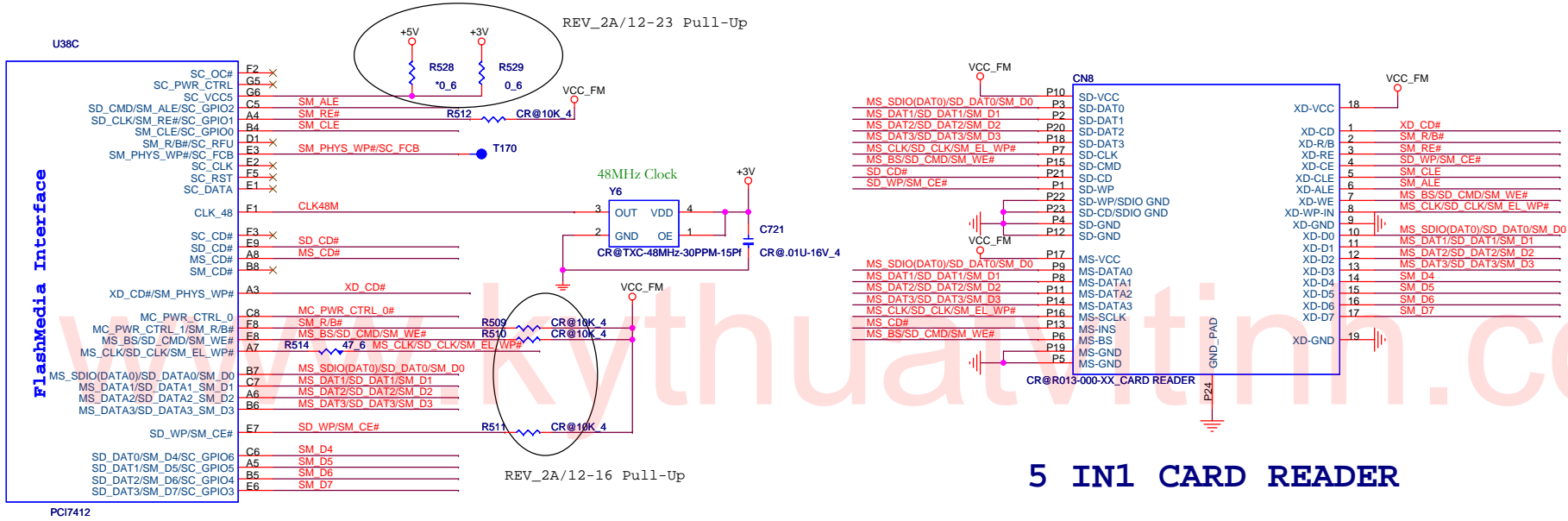


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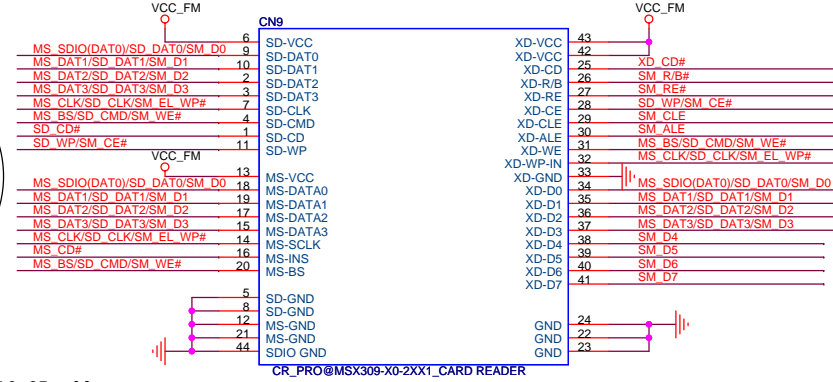
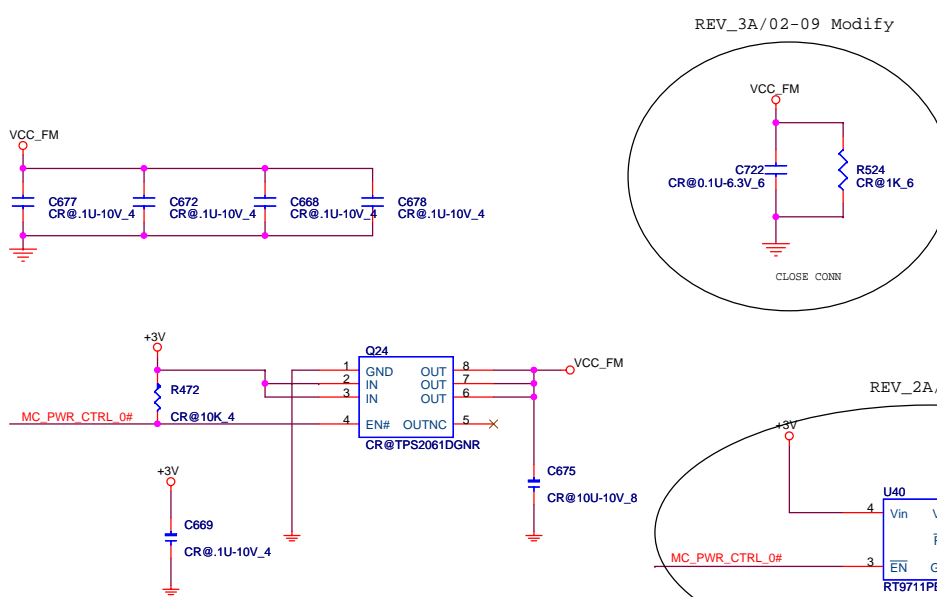
Size: Document Number: **HDD & CDROM & Hole** Rev: 3C
 Date: Monday, April 10, 2006 Sheet 23 of 37



DO NOT INSERT SD/MMC, MEMORYSTICK AND XD SIMULTANEOUSLY.

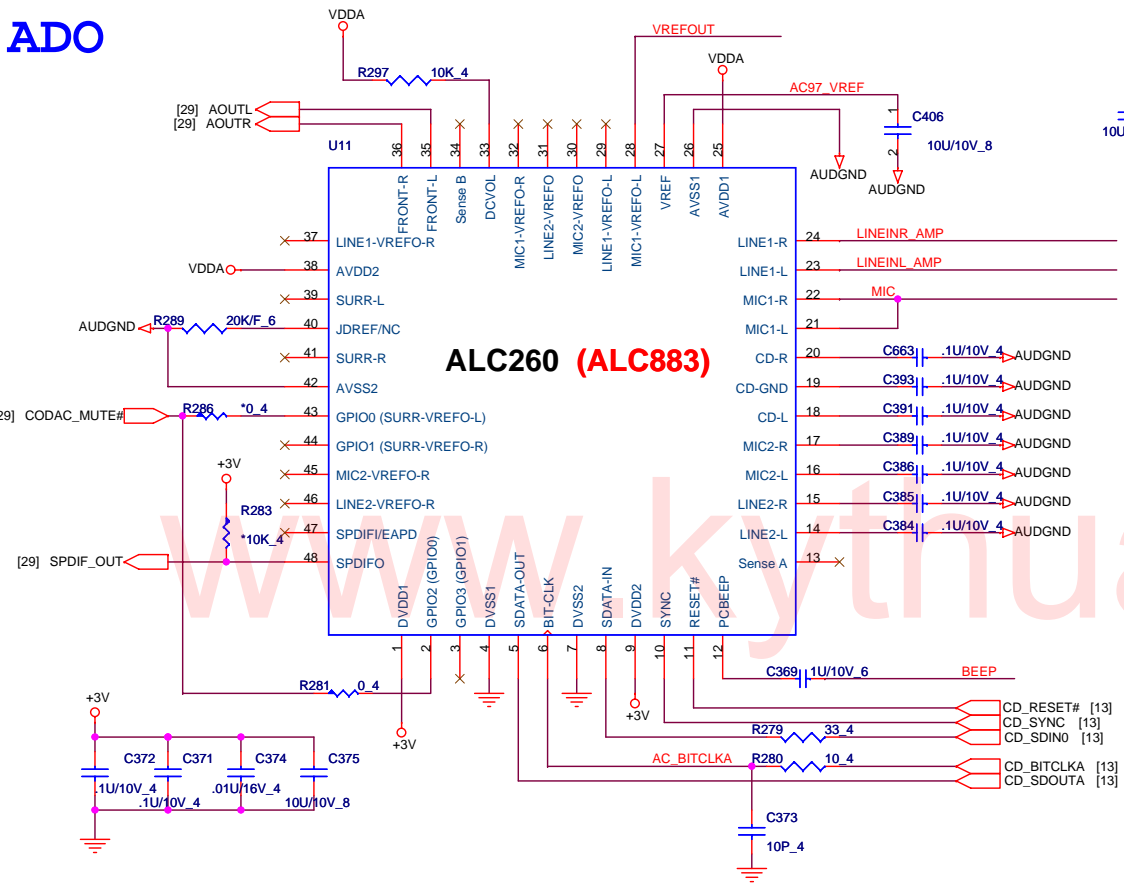


5 IN 1 CARD READER



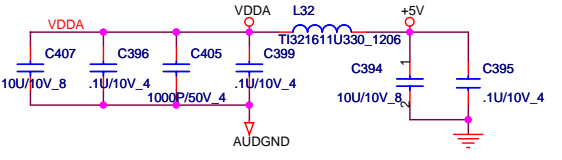
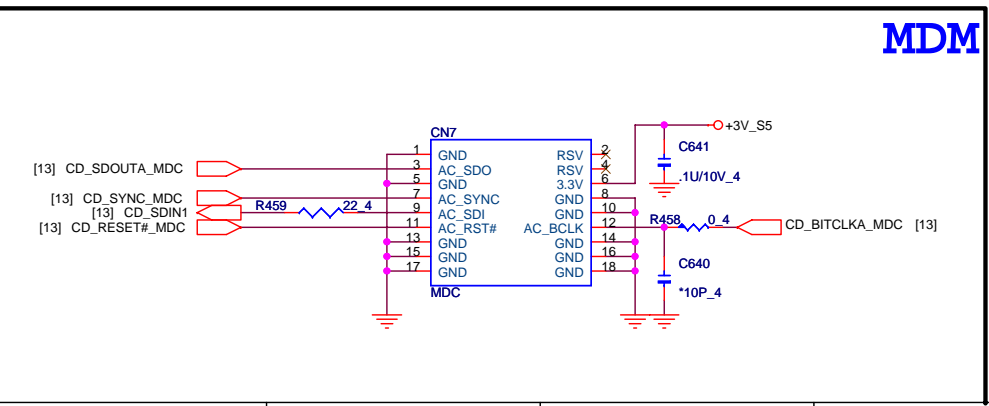
PROJECT : ZB2
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	PCI7412-CARD READER	3A
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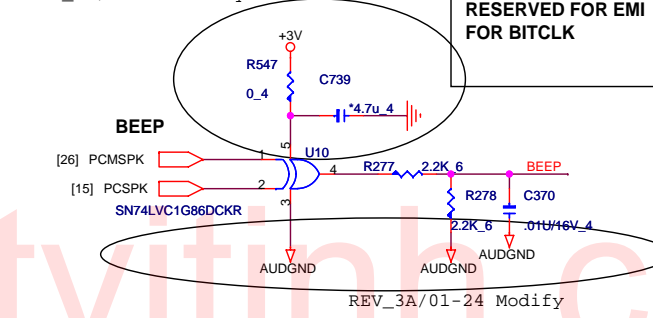


ALC260 (ALC883)

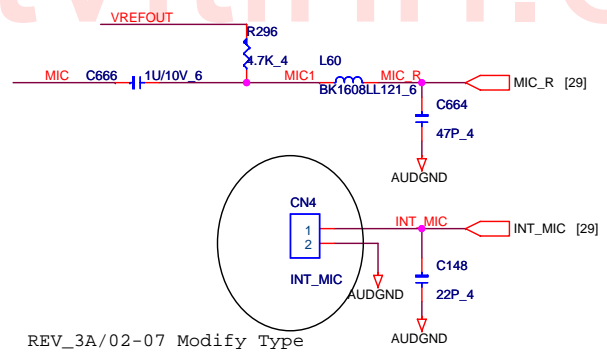
MDM



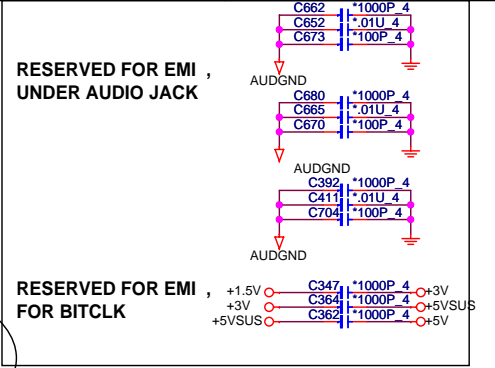
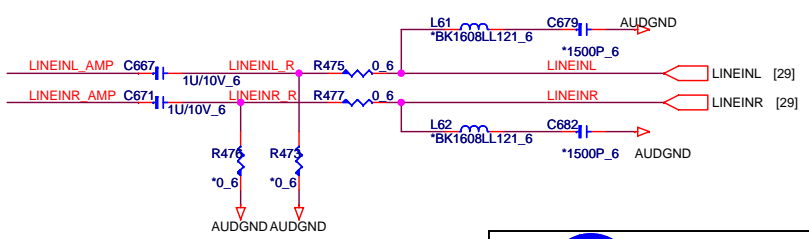
REV_3B/03-10 Modify



REV_3A/01-24 Modify



REV_3A/02-07 Modify Type

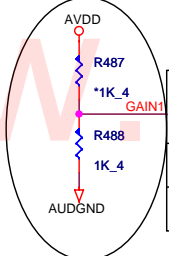
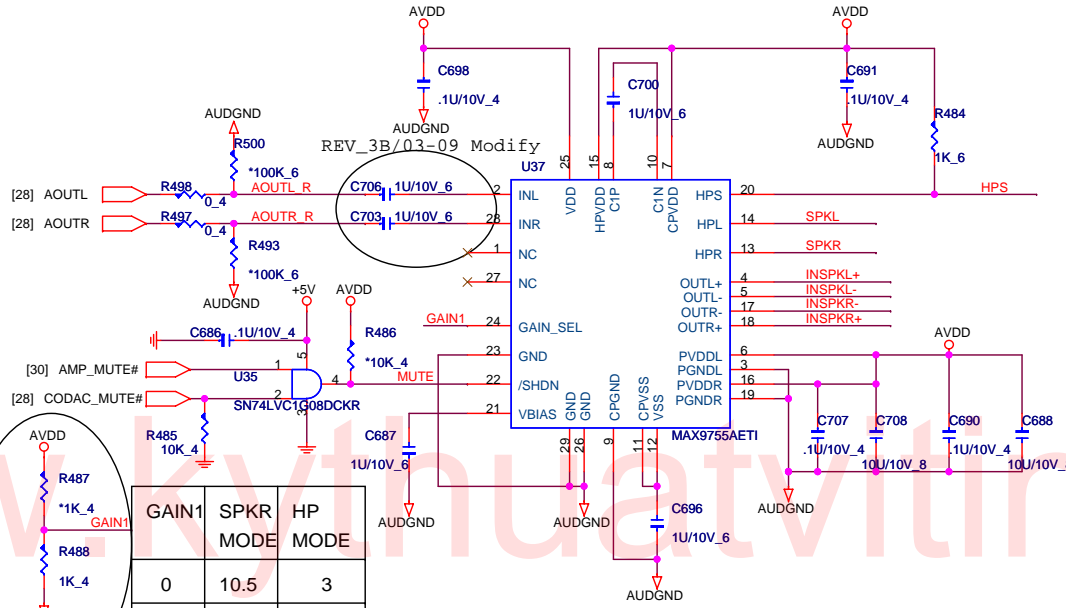
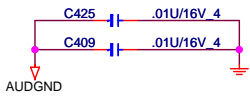
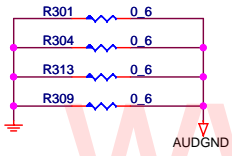
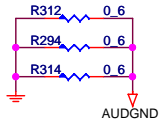
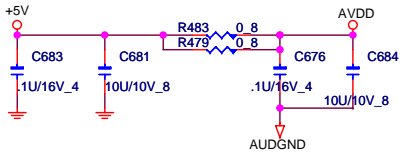


RESERVED FOR EMI , UNDER AUDIO JACK

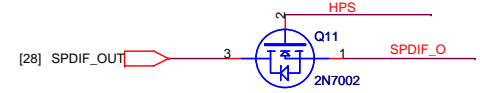
RESERVED FOR EMI , FOR BITCLK

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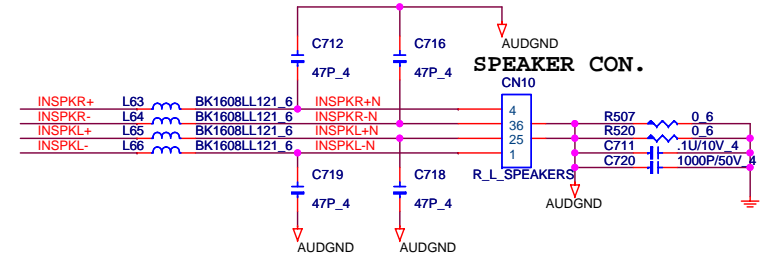
Size	Document Number	Rev
	REALTEK ALC883	3B
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GAIN1	SPKR MODE	HP MODE
0	10.5	3
1	9	0

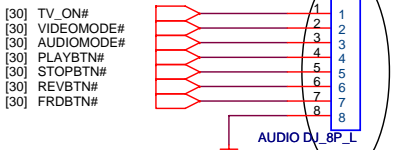


REV_2A/01-06 Modify

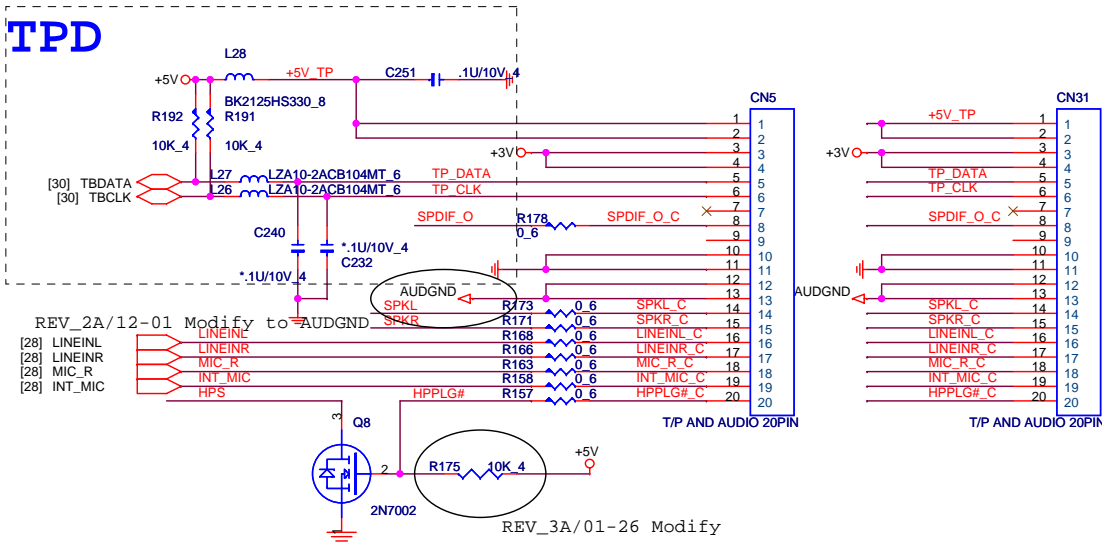


AUDIO DJ

ADJ




REV_3B/03-09 Modify Footprint



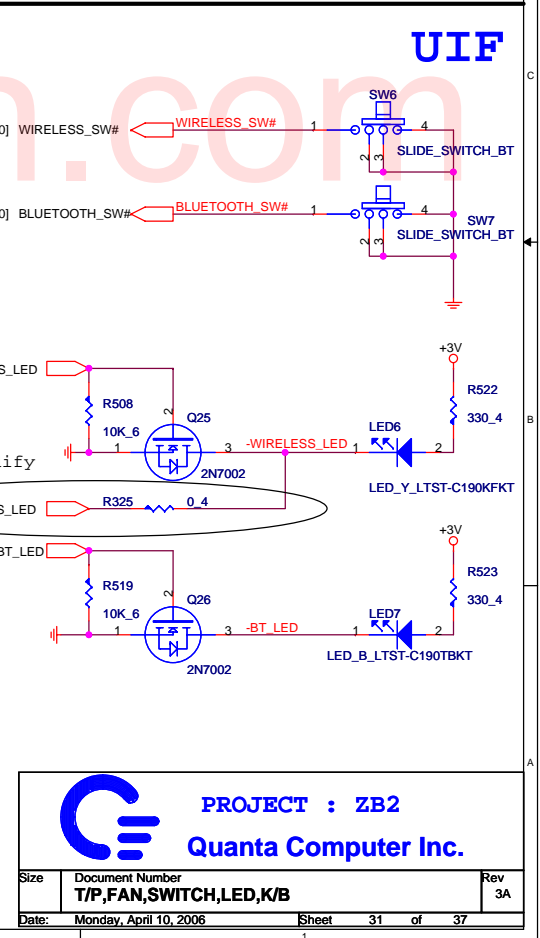
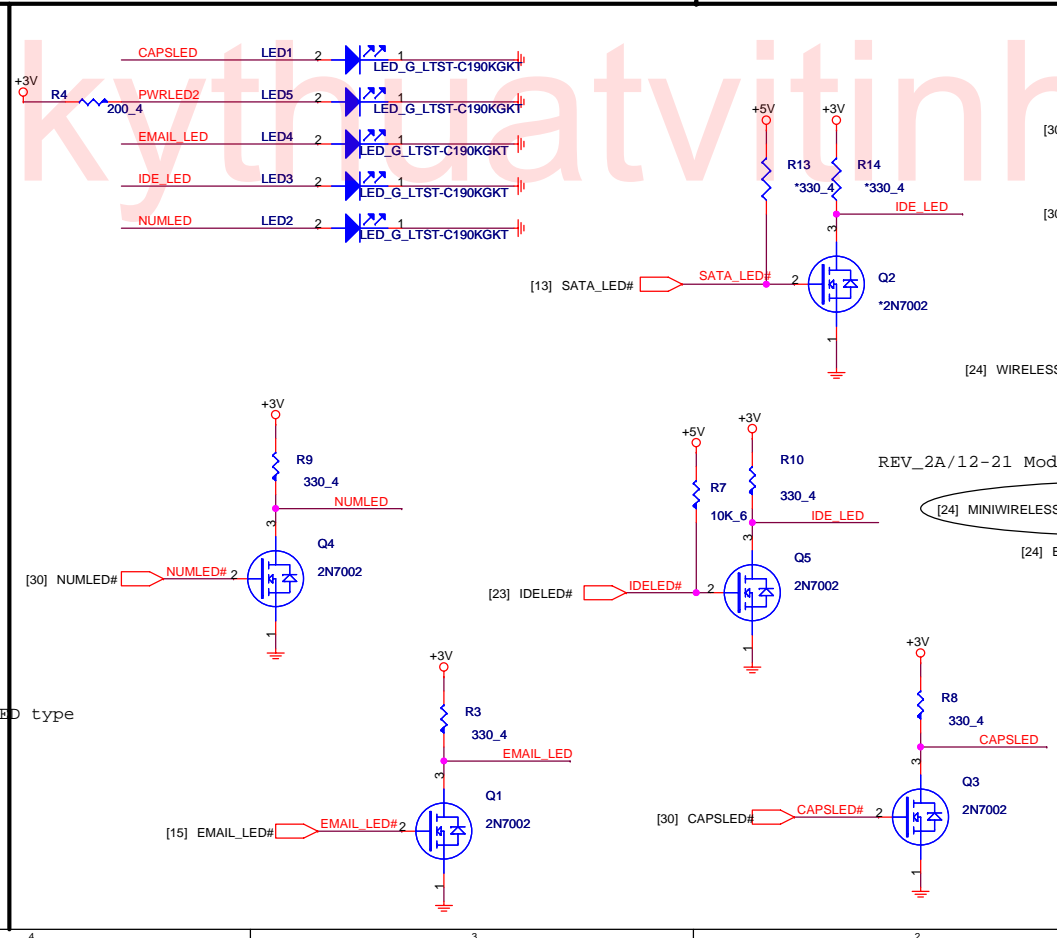
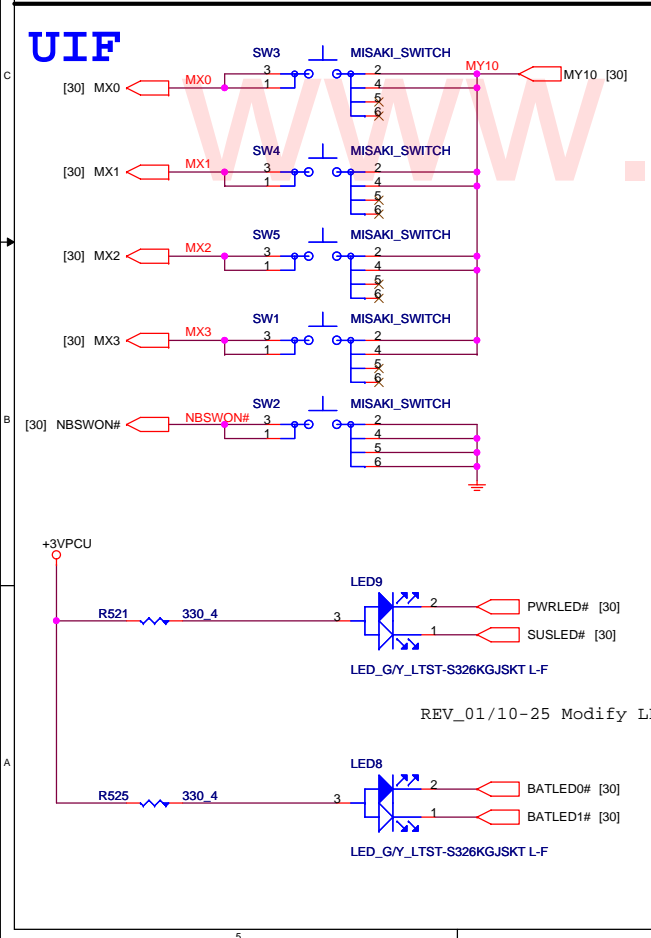
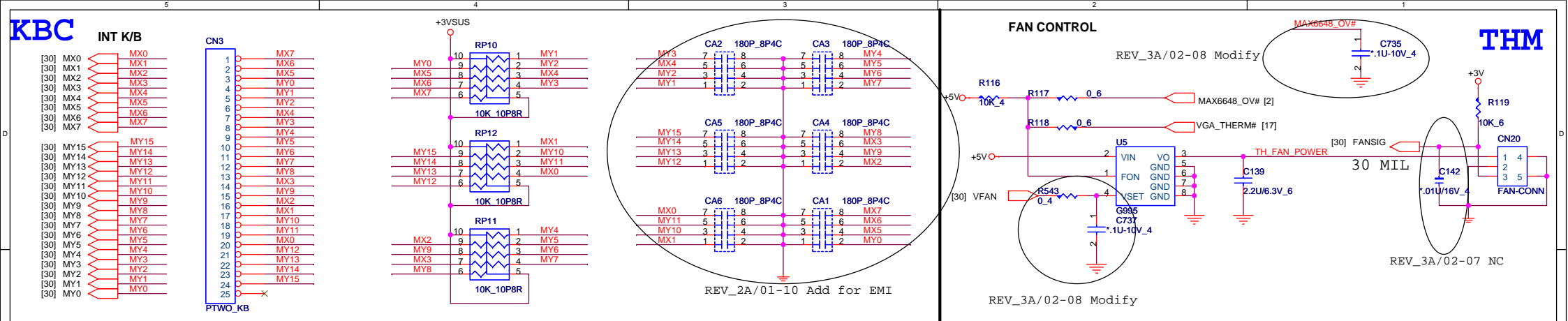
REV_2A/12-01 Modify to

REV_3A/01-26 Modify



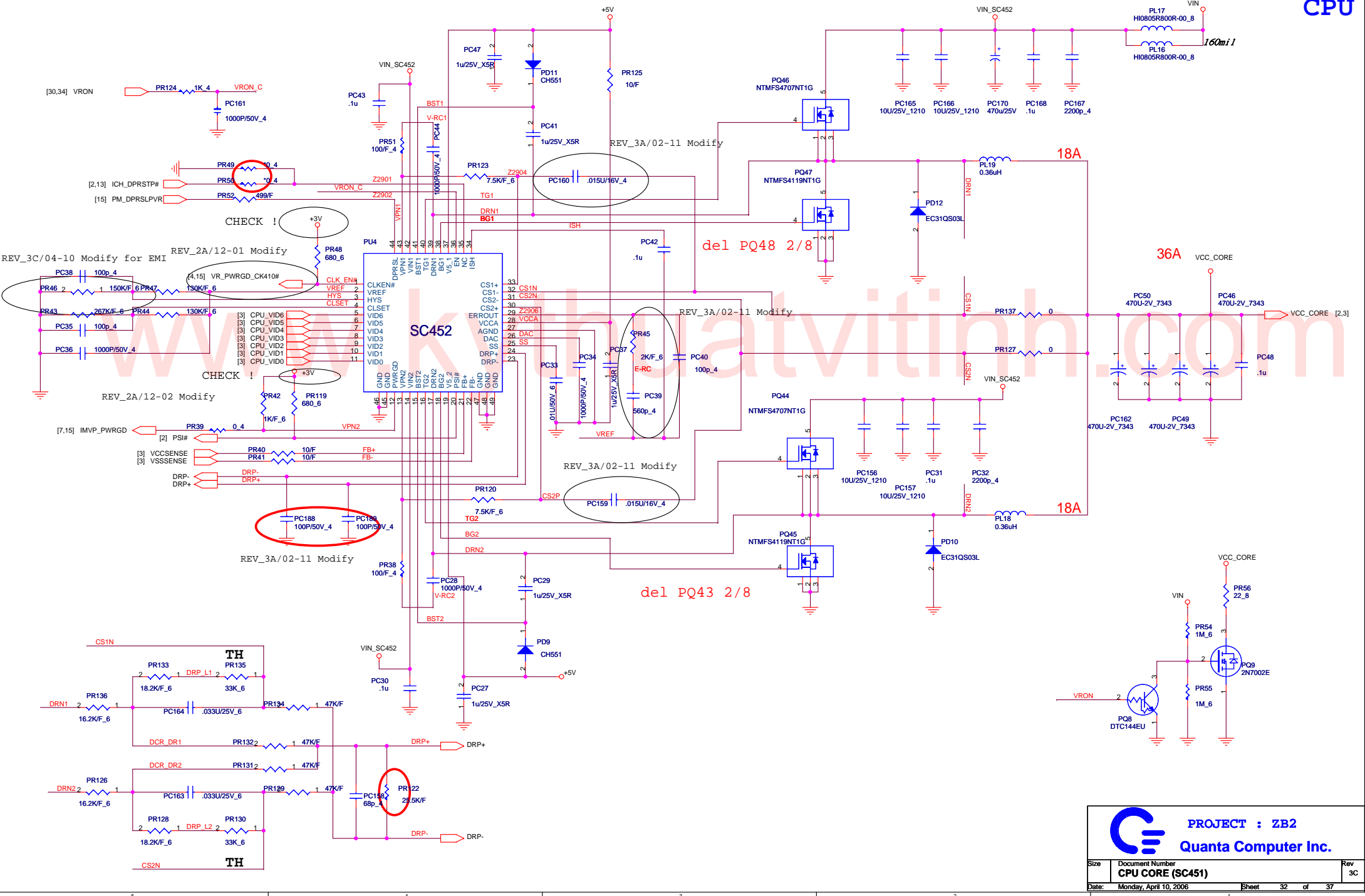
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Size	Document Number	Rev
	AUDIO AMP(MAX 9755)	3B
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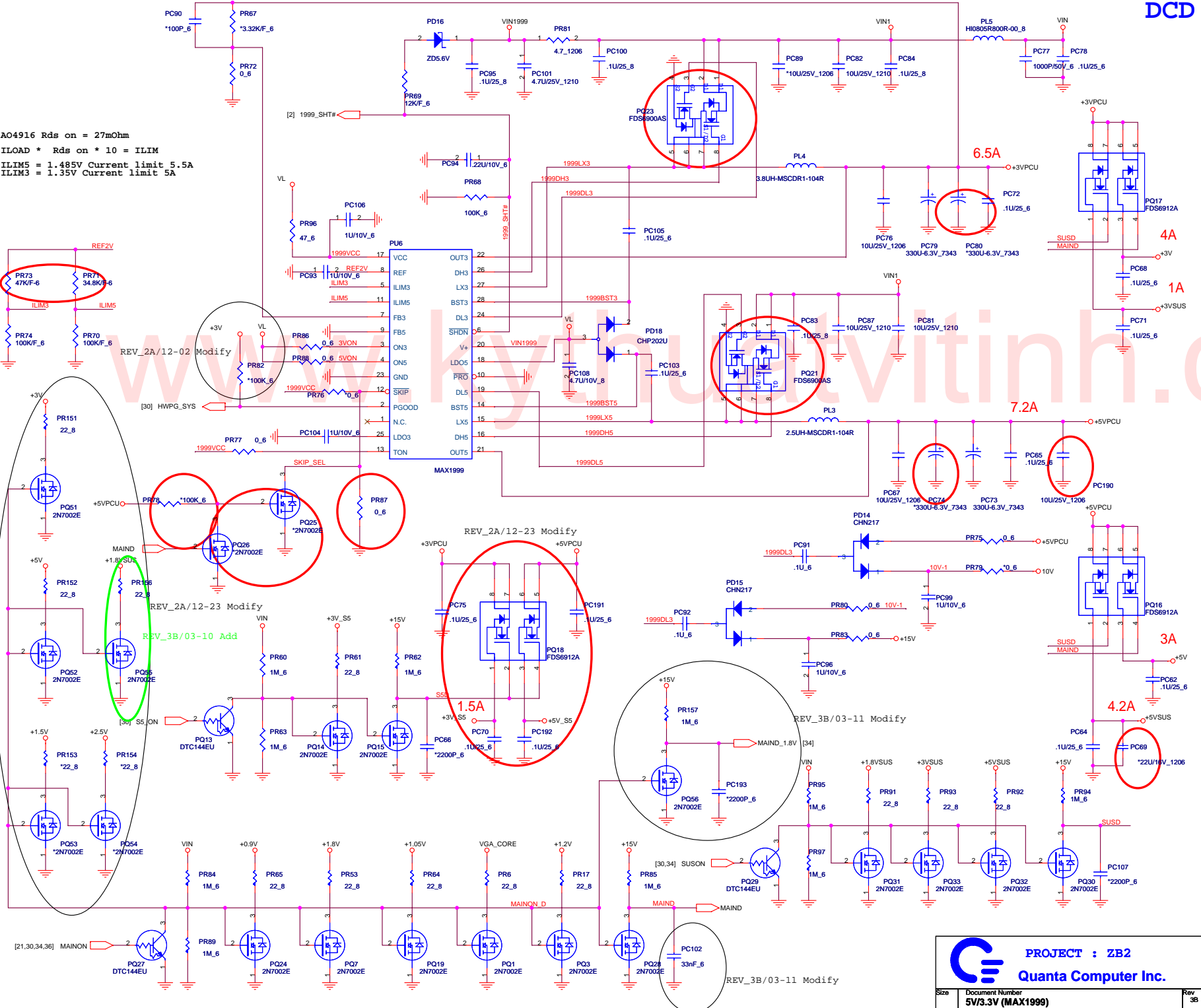
Size	Document Number	Rev
T/P,FAN,SWITCH,LED,K/B		3A
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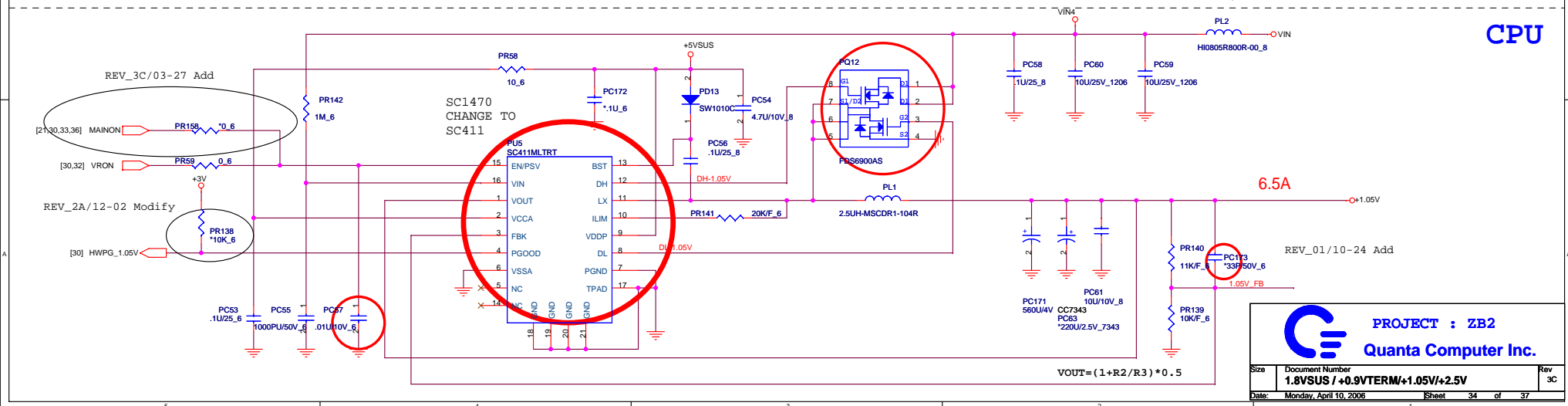
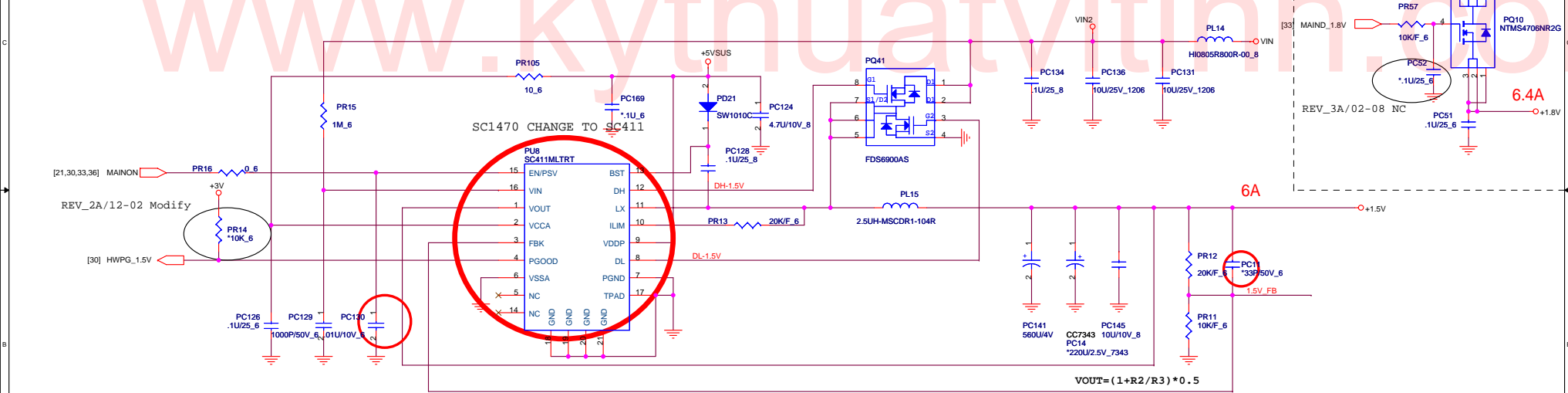
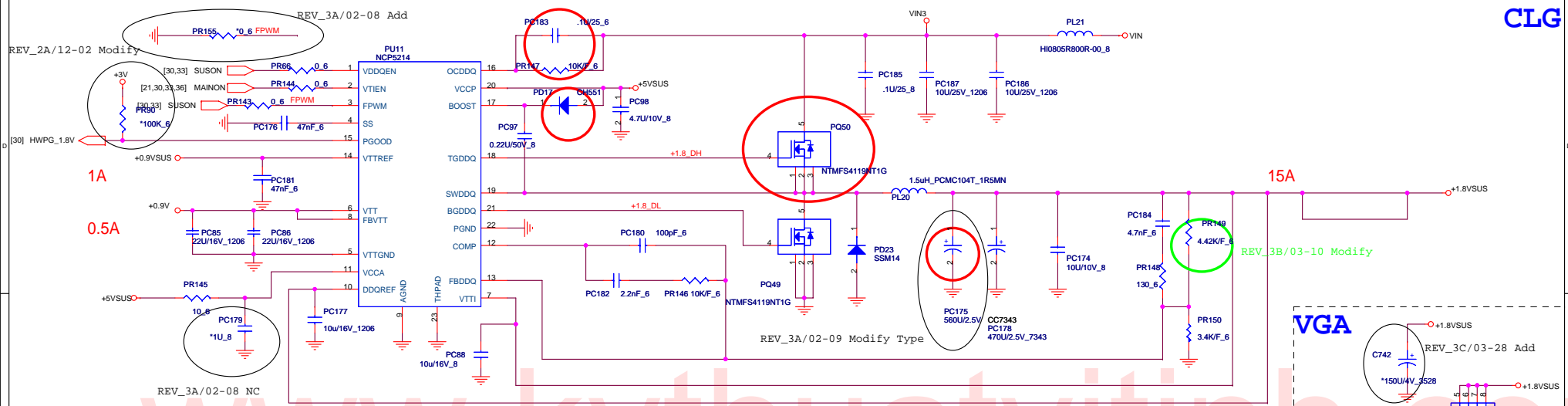
Size	Document Number	Rev
	CPU CORE (SC451)	3C
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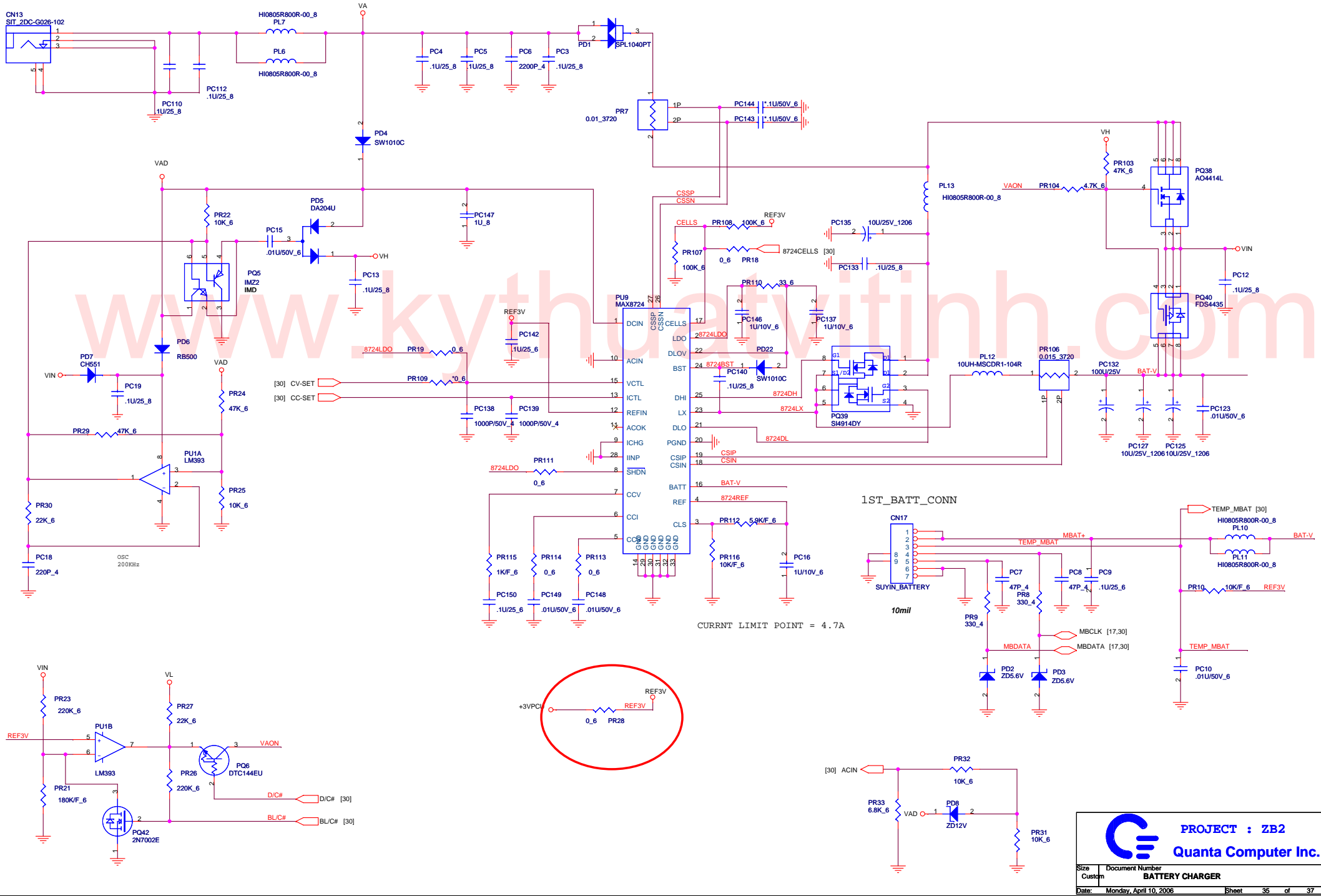
AO4916 Rds on = 27mOhm
ILOAD * Rds on * 10 = ILIM
ILIM5 = 1.485V Current limit 5.5A
ILIM3 = 1.35V Current limit 5A



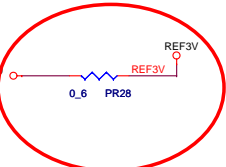
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Size	Document Number	Rev
	5V/3.3V (MAX1999)	3B
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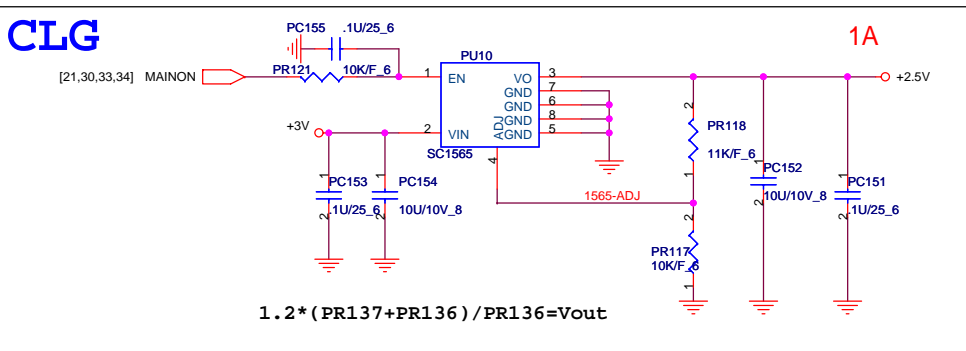
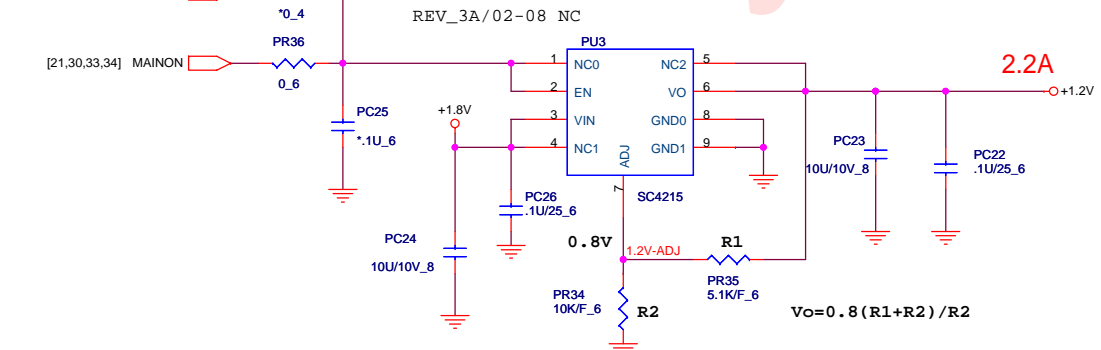
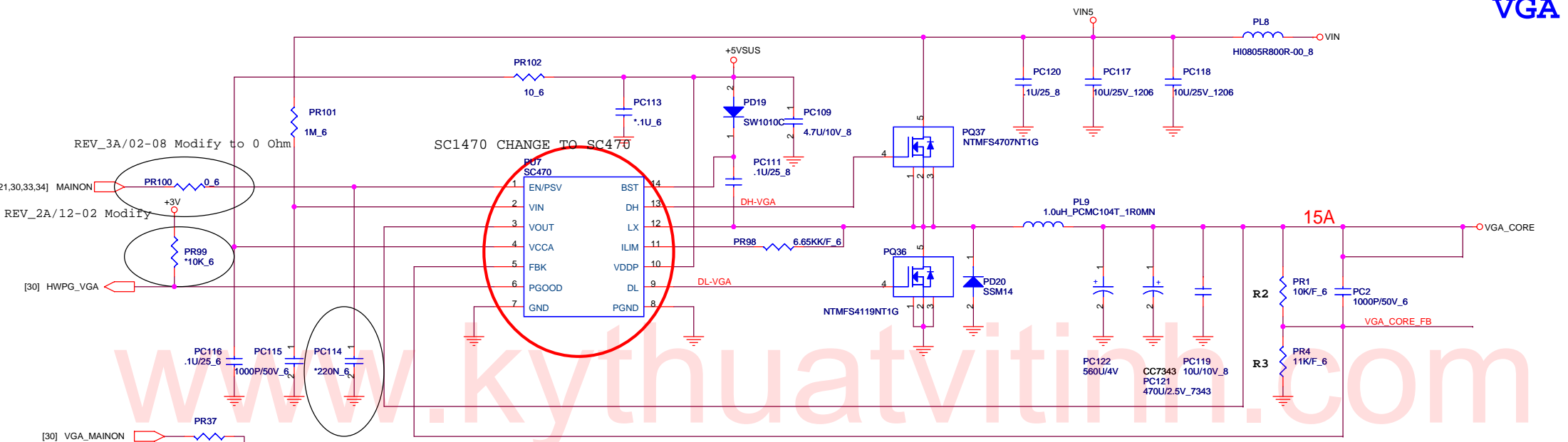


CURRENT LIMIT POINT = 4.7A



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Custom	BATTERY CHARGER	1A
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HI --> $V_{OUT} = (1 + R2/R3) \cdot 0.5$
 LO --> $V_{OUT} = (1 + R2/(R3/R4)) \cdot 0.5$

- M52P (G)**
 PR1 : 10K
 PR4 : 11K
 PR2 : 110K
- M54P**
 PR1 : 12K
 PR4 : 12K
 PR2 : 60.4K

Power Play Mode

VGA_PWR_SW	VGA_CORE
HI	0.95V--M52P (G)
Default	1.0V --M54P
LO	1.0V--M54P

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Size	Document Number	Rev
	VGA CORE/+1.2V	3A
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