

COMPAL CONFIDENTIAL

MODEL NAME : *BDW00*

COMPAL P/N : *DA8DW00L110/DA8DW00L410*

PCB NO : *LA-1452*

Revision : *1C*

DATE :

Abacus/TangII Schematics Document

uFCBGA/uFCPGA Northwood

2003-02-24

REV: 1C

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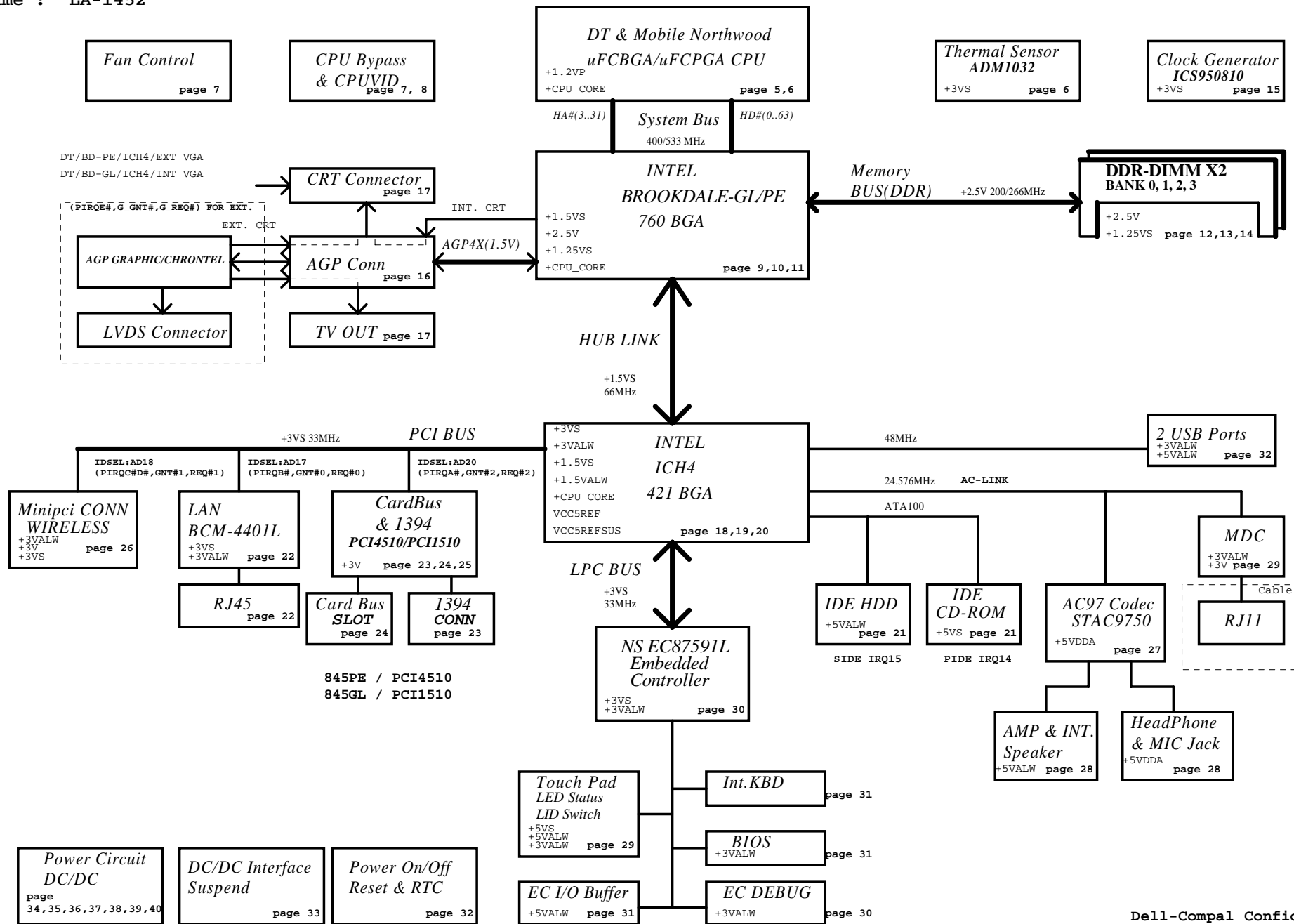
Compal Electronics, Inc.

Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	~P期五, 四月 25, 2003	Sheet 1 of 47

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Model Name : ABACUS/TangII

File Name : LA-1452



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	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 2 of 47

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Revision List

	Schematics Rev	PCB Rev	CHIPS Rev
SST-Build	0.1	0.1	
PT-Build	0.2	0.2	845PE Rev B0 845GL Rev B1 ICH4 Rev B0
ST-Build			
QT-Build			

Power Management table

Signal / State	+3VALW +5VALW +12VALW	+3V +5V +2.5V	+3VS +5VS +1.5VS +1.2VP +CPU_CORE +1.25VS
S0	ON	ON	ON
S1	ON	ON	ON
S3	ON	ON	OFF
S5 S4/AC	ON	OFF	OFF
S5 S4/AC don't exist	OFF	OFF	OFF

Ceramic Capacitor Spec Guide:

Temperature Characteristics:

Symbol	0	1	2	3	4	5	6	7
CODE	Z5U	Z5V	Z5P	Y5U	Y5V	Y5P	X5R	X7R

8	9	A	B	C	D	E	F	G
NP0	C0G		BJ	CH	CJ	CK	SH	SJ

H	I	J	
UJ	UK	SL	

Tolerance:

Symbol	A	B	C	D	F	G	H	J
CODE	+/-0.05PF	+/-0.1PF	+/-0.25PF	+/-0.5PF	+/-1PF	+/-2%	+/-3%	+/-5%

K	M	N	P	Q	v	X	Z	
+/-10%	+/-20%	+/-30%	+100,-0%	+30,-10%	+20,-10%	+40,-20%	+80,-20%	

SMBUS Control Table

	SOURCE	INVERTER	BATT	SERIAL EPROM	THERMAL SENSOR (CPU) (U57)	THERMAL SENSOR (U25/U23)	SODIMM	CLK CHIP	MINI PCI
SMB_EC_CK1 SMB_EC_DA1	NS 87591	✓	✓	✓ (1010)	✗	✗	✗	✗	✗
SMB_EC_CK2 SMB_EC_DA2	NS 87591	✗	✗	✗	✓	✓	✗	✗	✗
SMB_CLK SMB_DATA	ICH4	✗	✗	✗	✗	✗	✓	✓	✓

NOTE1:

@XX : Depop component

1@XX : Pop for INT, Depop for EXT

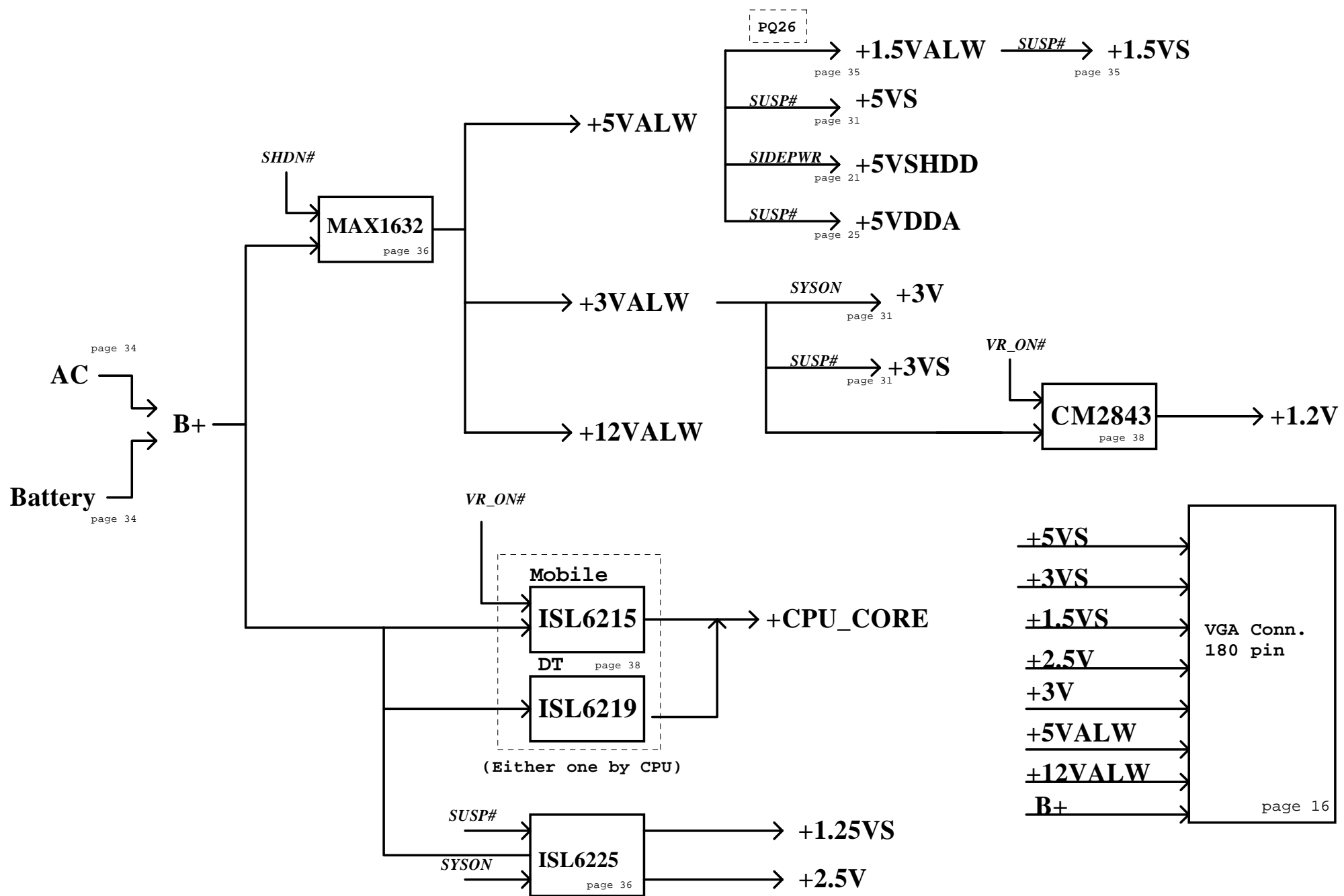
2@XX : Pop for EXT, Depop for INT

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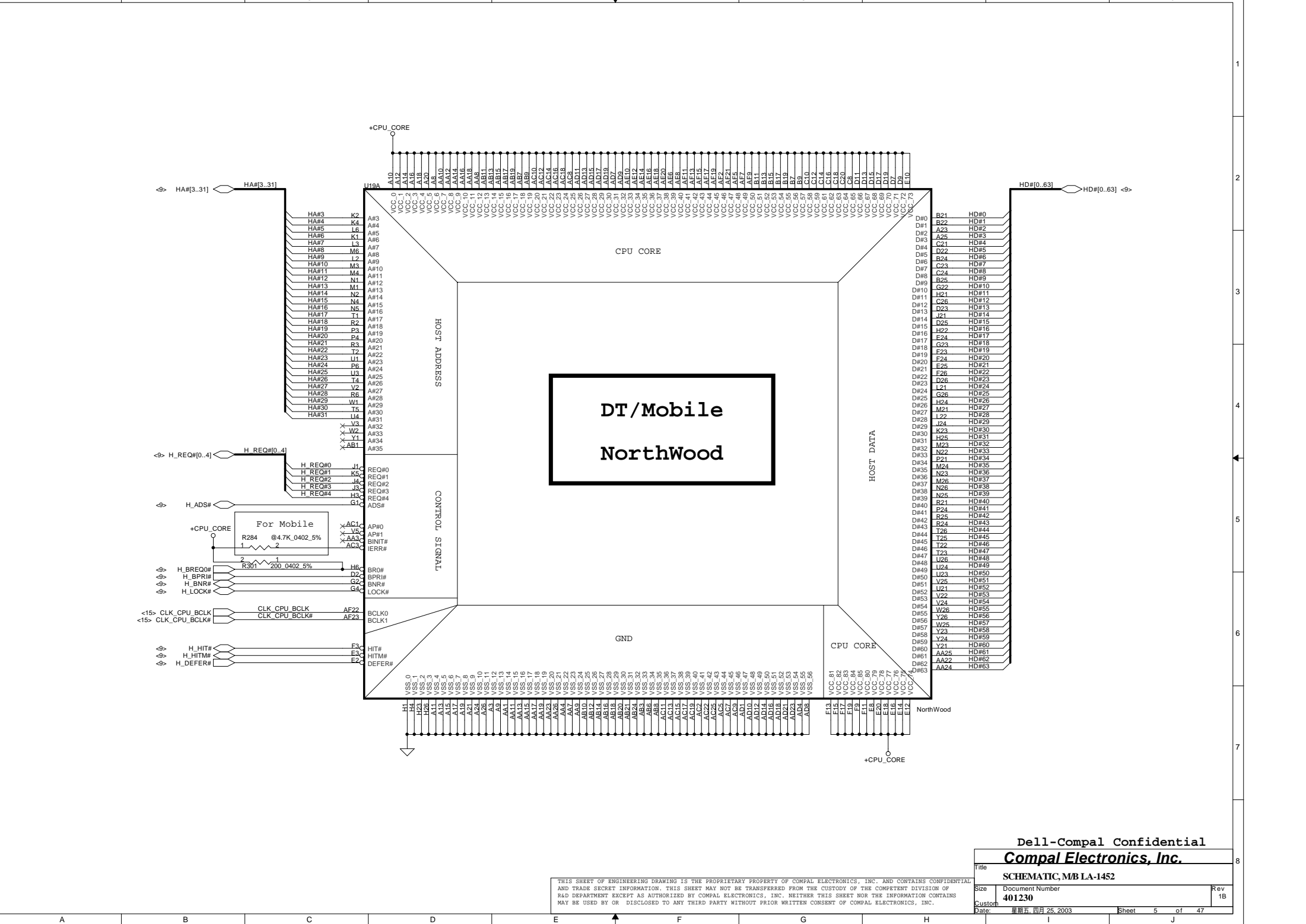
Title		SCHEMATIC, M/B LA-1452	
Size	Document Number	Rev	
	401230	1B	
Date:	~P期五, 四月 25, 2003	Sheet	3 of 47

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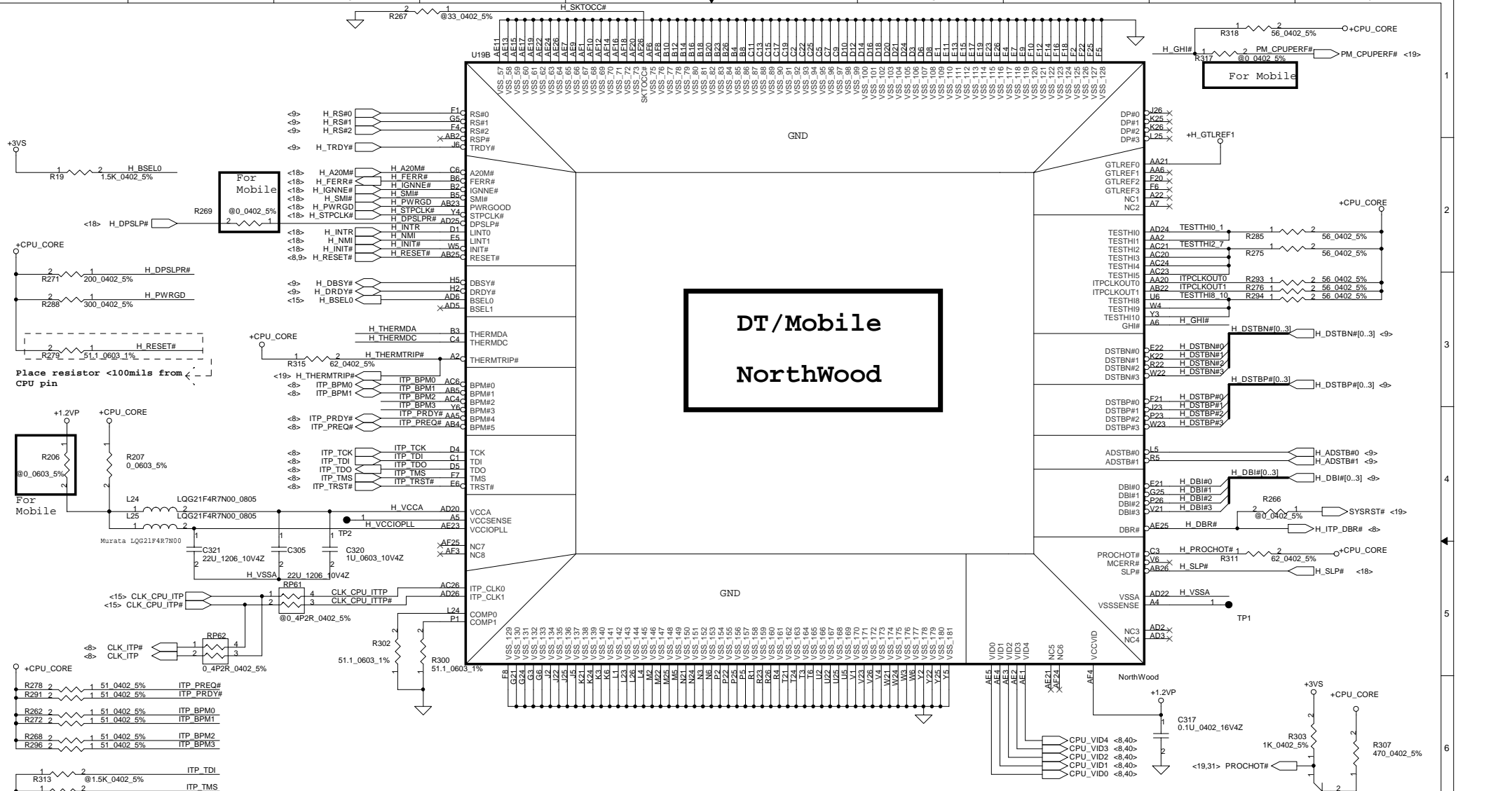
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Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 4 of 47



**DT/Mobile
NorthWood**

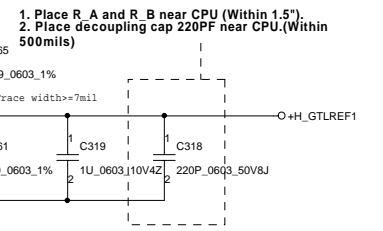
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Size	Document Number	Rev
Custom	401230	18
Date	星期五, 四月 25, 2003	Sheet 5 of 47

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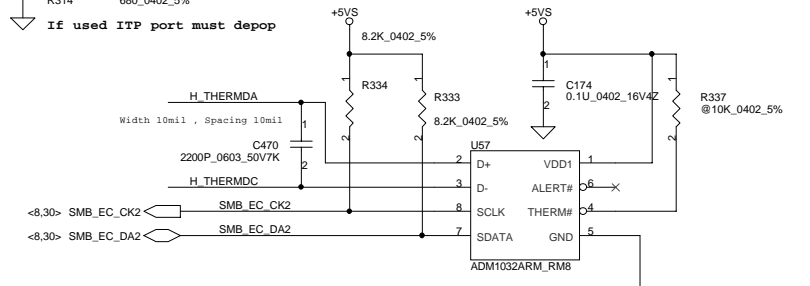


DT/Mobile NorthWood

GTL Reference Voltage



CPU Temperature Sensor



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Title SCHEMATIC, MB LA-1452		
Size	Document Number 401230	Rev 18
Custom	Date: 星期五, 四月 25, 2003	Sheet 6 of 47

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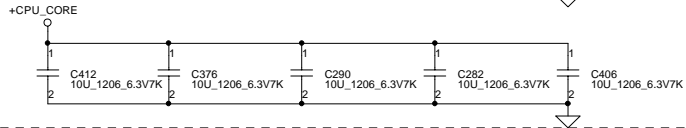
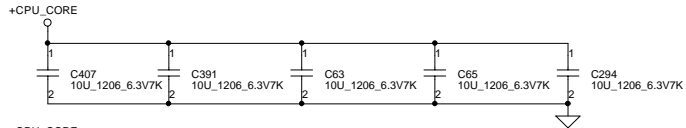
Layout note :
 Place close to CPU, Use 2-3 vias per PAD.
 Place .22uF caps underneath balls on solder side.
 Place 10uF caps on the peripheral near balls.
 Use 2-3 vias per PAD.

Layout note :
 Place close to CPU power and ground pin as possible (<1inch)

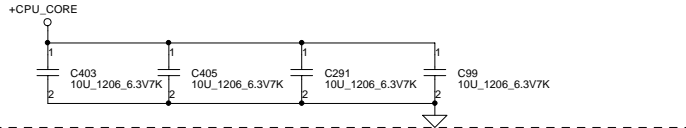
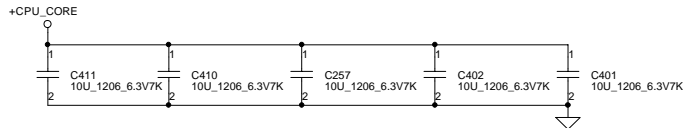
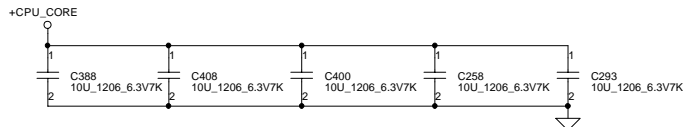
For Desktop's CPU:
 ESR total=0.75m ohm
 C total=6350uF

For Mobile's CPU:
 ESR total=1.875m ohm
 C total=2590uF

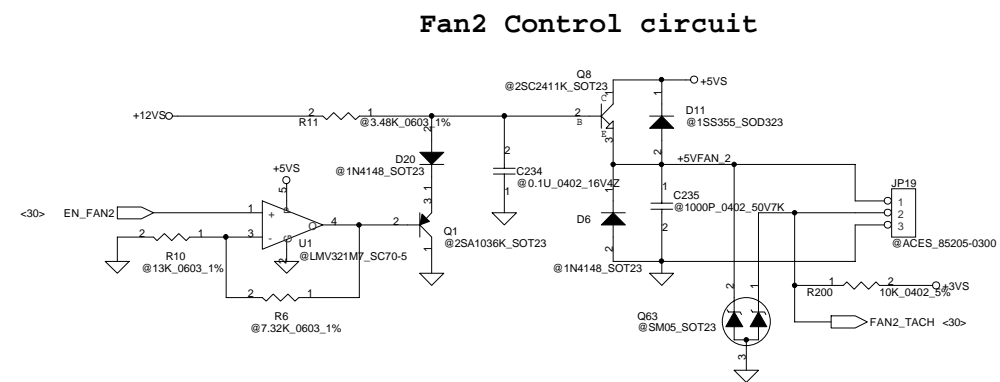
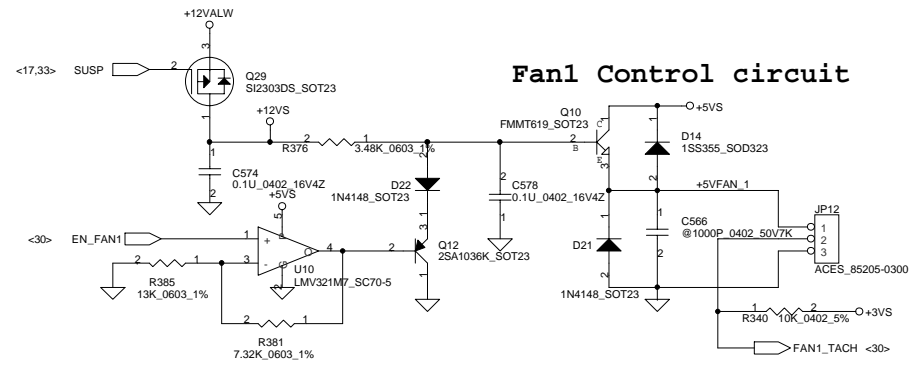
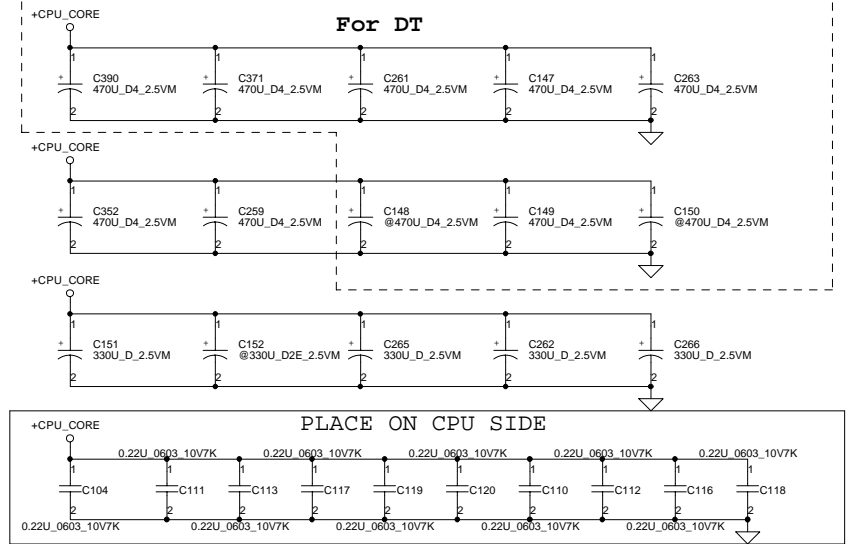
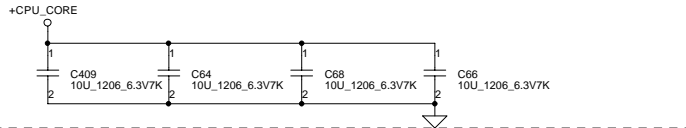
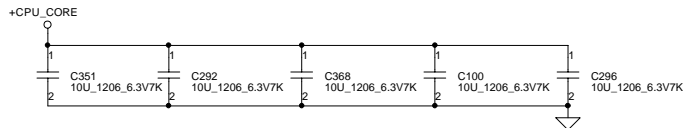
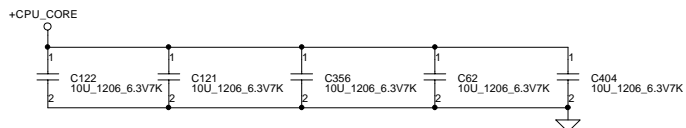
Please place these cap in the socket cavity area



Please place these cap on the socket north side

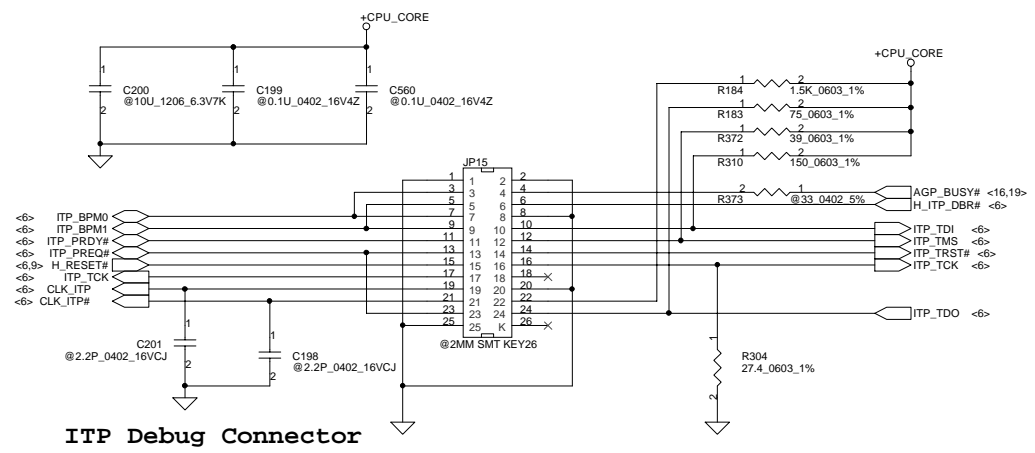
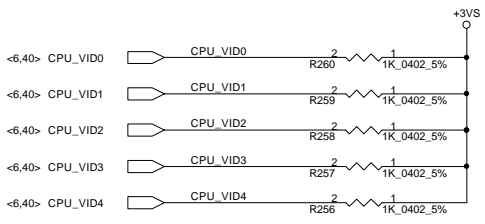


Please place these cap on the socket south side

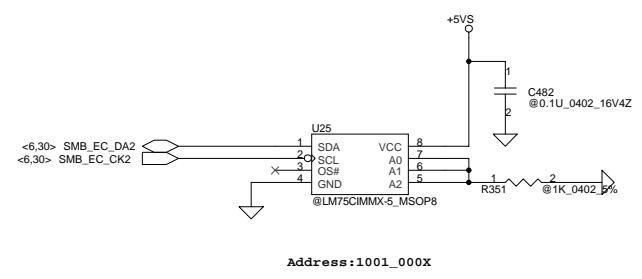


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Size	Document Number	Rev
Custom	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 7 of 47

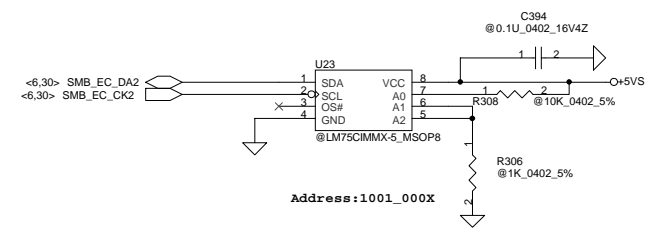
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ITP Debug Connector



Address:1001_000X



Address:1001_000X

MO/DT_CPU	Mobile CPU					Desktop CPU				
	1					0				
VID	4	3	2	1	0	4	3	2	1	0
VCC										
1.750V	0	0	0	0	0	0	0	1	0	0
1.700V	0	0	0	0	1	0	0	1	1	0
1.650V	0	0	0	1	0	0	1	0	0	0
1.600V	0	0	0	1	1	0	1	0	1	0
1.550V	0	0	1	0	0	0	1	1	1	0
1.500V	0	0	1	0	1	0	1	1	1	0
1.450V	0	0	1	1	0	1	0	0	0	0
1.400V	0	0	1	1	1	1	0	0	1	0
1.350V	0	1	0	0	0	1	0	1	0	0
1.300V	0	1	0	0	1	1	0	1	1	0
1.250V	0	1	0	1	0	1	1	0	0	0
1.200V	0	1	0	1	1	1	1	0	1	0
1.150V	0	1	1	0	0	1	1	1	0	0
1.100V	0	1	1	0	1	1	1	1	1	0
1.050V	0	1	1	1	0	X	X	X	X	X
1.000V	0	1	1	1	1	X	X	X	X	X
0.975V	1	0	0	0	0	X	X	X	X	X
0.950V	1	0	0	0	1	X	X	X	X	X
0.925V	1	0	0	1	0	X	X	X	X	X
0.900V	1	0	0	1	1	X	X	X	X	X
0.875V	1	0	1	0	0	X	X	X	X	X
0.850V	1	0	1	0	1	X	X	X	X	X
0.825V	1	0	1	1	0	X	X	X	X	X
0.800V	1	0	1	1	1	X	X	X	X	X
0.775V	1	1	0	0	0	X	X	X	X	X
0.750V	1	1	0	0	1	X	X	X	X	X
0.725V	1	1	0	1	0	X	X	X	X	X
0.700V	1	1	0	1	1	X	X	X	X	X
0.675V	1	1	1	0	0	X	X	X	X	X
0.650V	1	1	1	0	1	X	X	X	X	X
0.625V	1	1	1	1	0	X	X	X	X	X
0.600V	1	1	1	1	1	X	X	X	X	X
VRM output off	1	1	1	1	1	1	1	1	1	1

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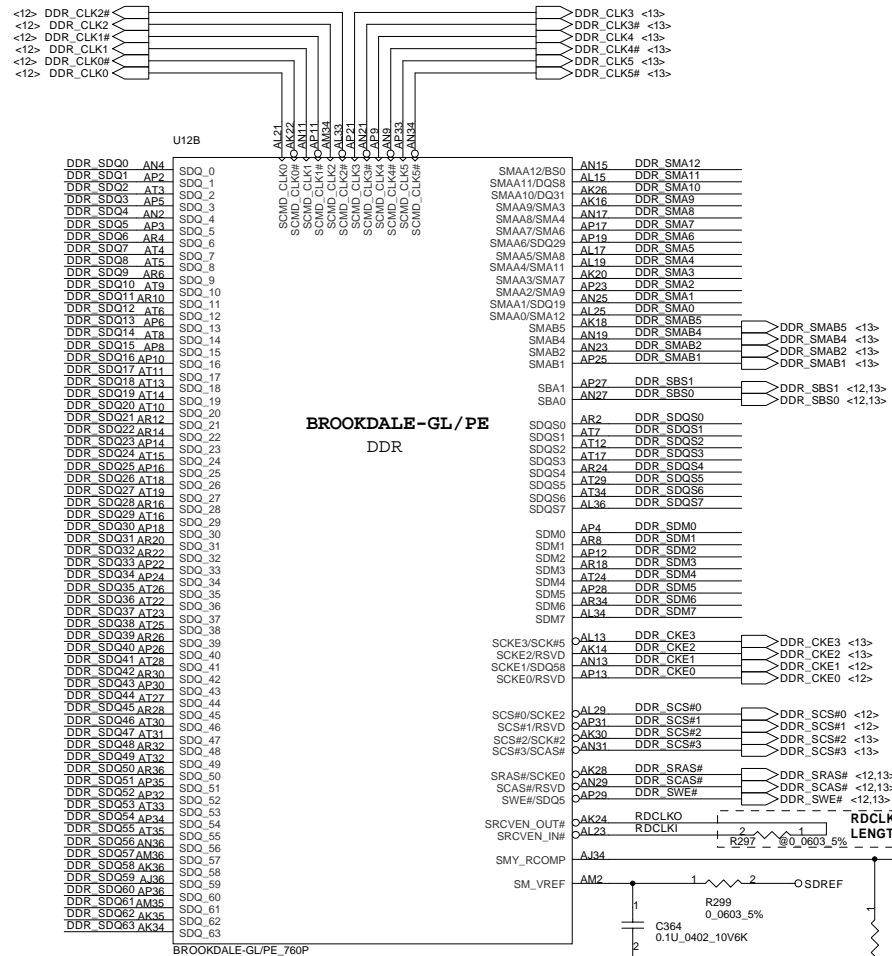
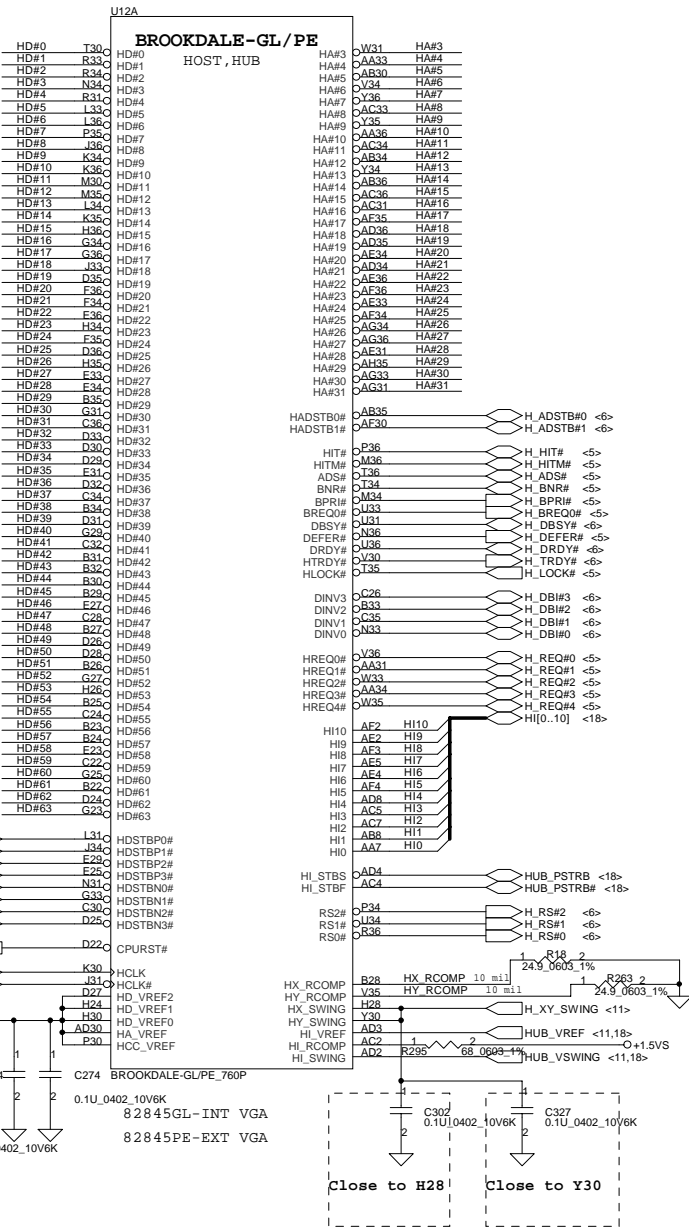
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HD#[0..63] <5>
 HA#[3..31] <5>

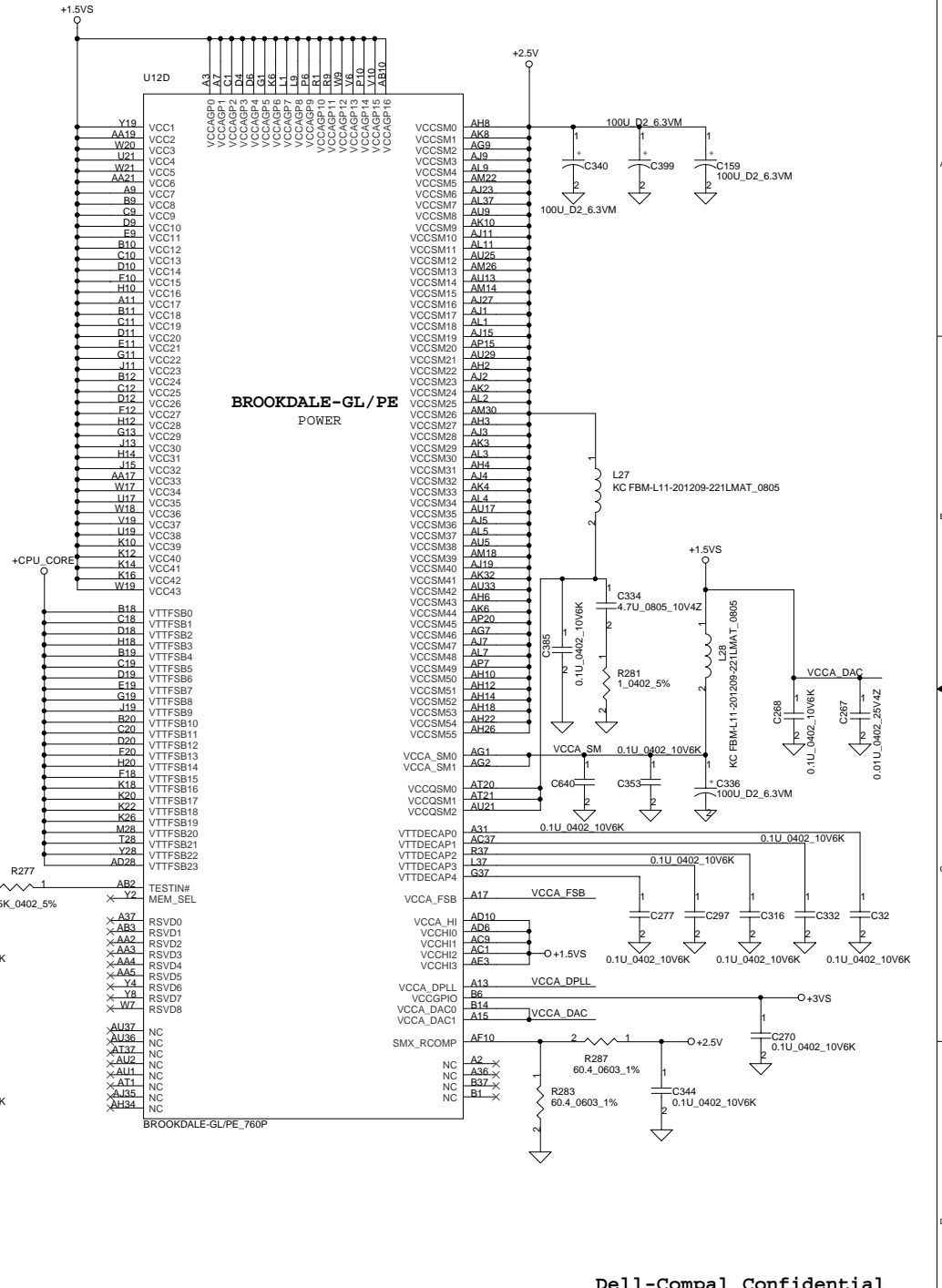
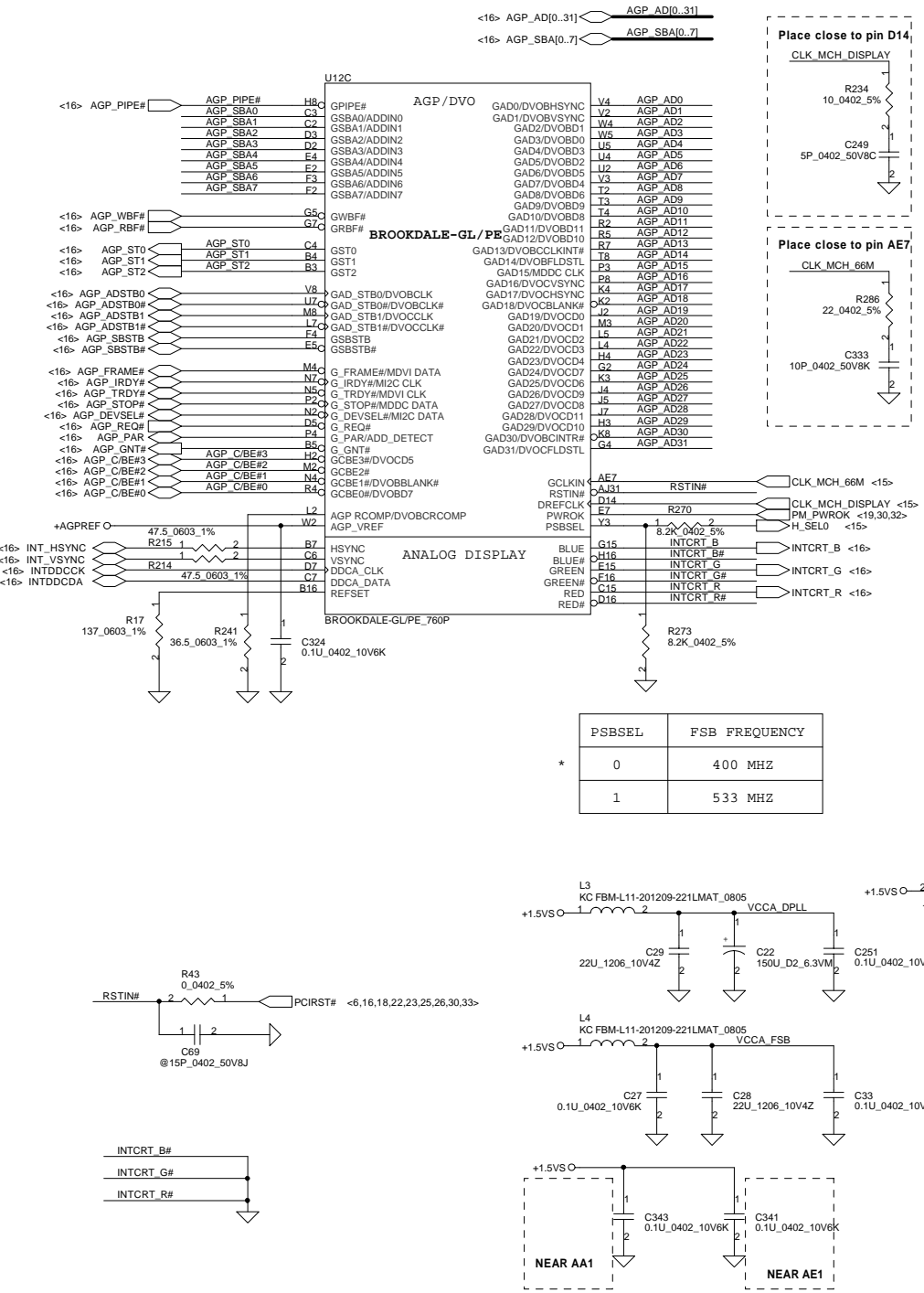
<12> DDR_SDQ[0..63] <5>
 <12> DDR_SDQS[0..7] <5>
 <12> DDR_SDM[0..7] <5>
 <12,13> DDR_SMA[0..12] <5>



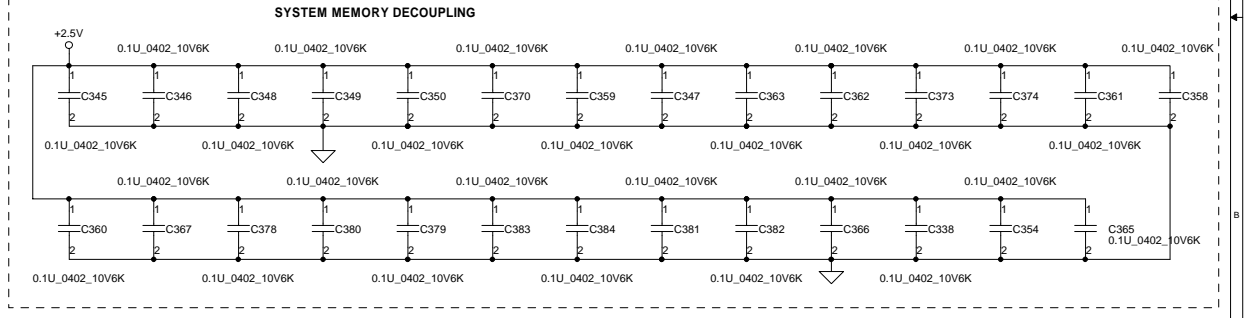
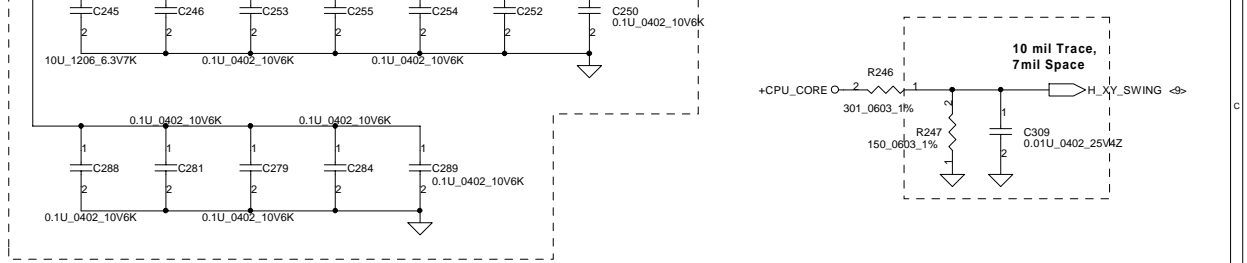
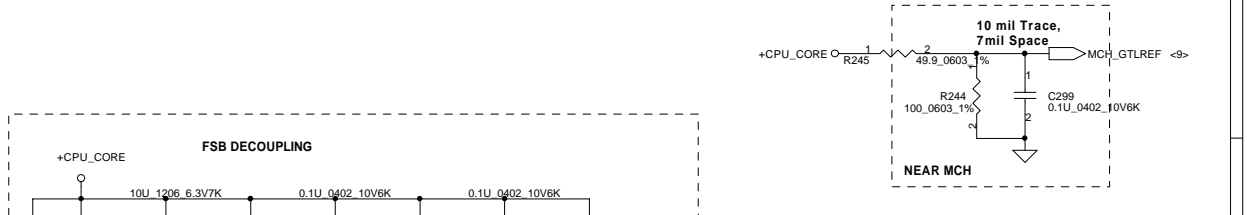
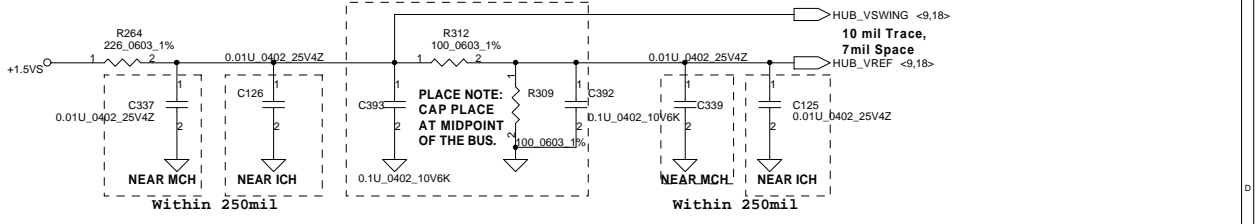
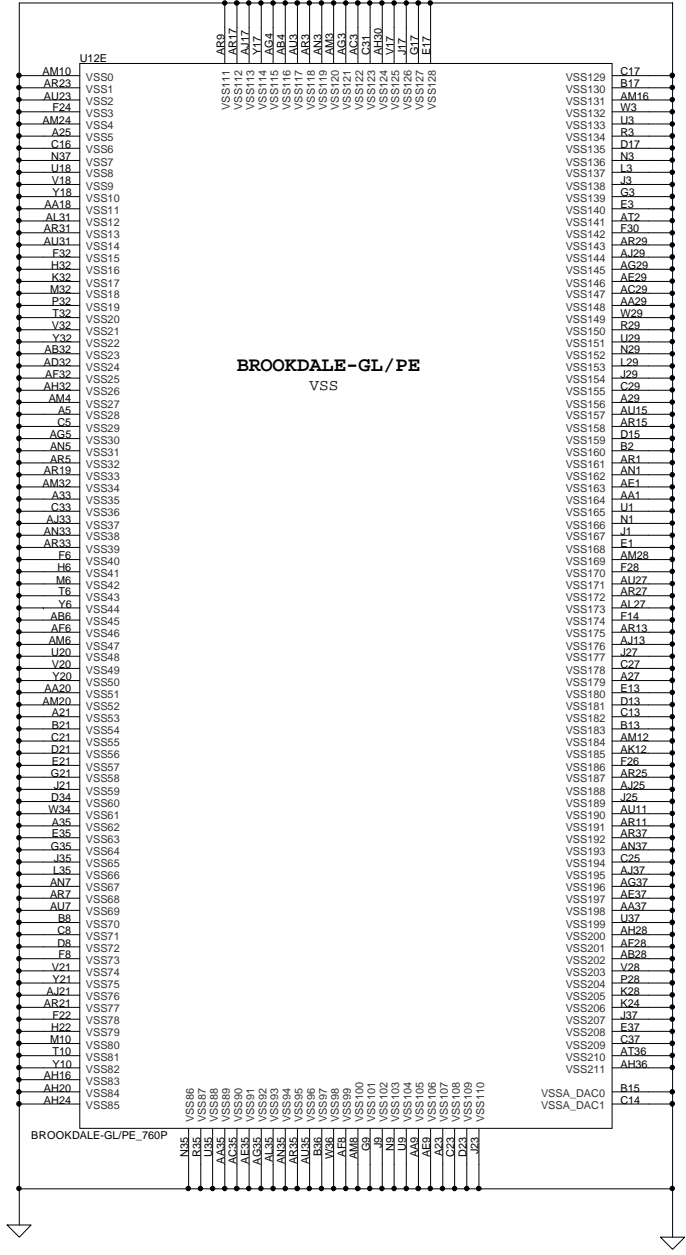
Layout note :
 1. HX_RCOMP, HY_RCOMP Trace width 10 mil.
 2. Terminator Max 500 mil.

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Title			
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Size	Document Number	Rev	
	401230	1B	
Date:	星期二, 四月 25, 2003	Sheet	9 of 47

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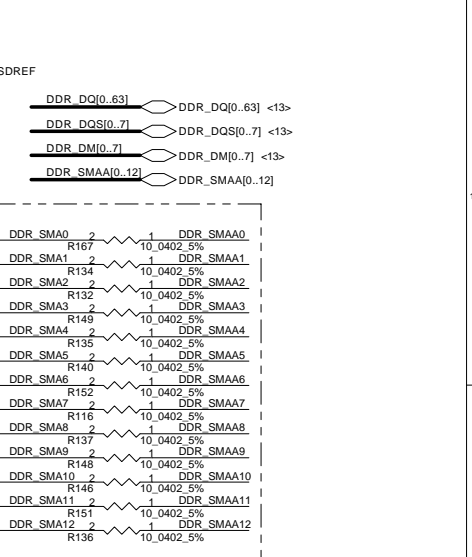
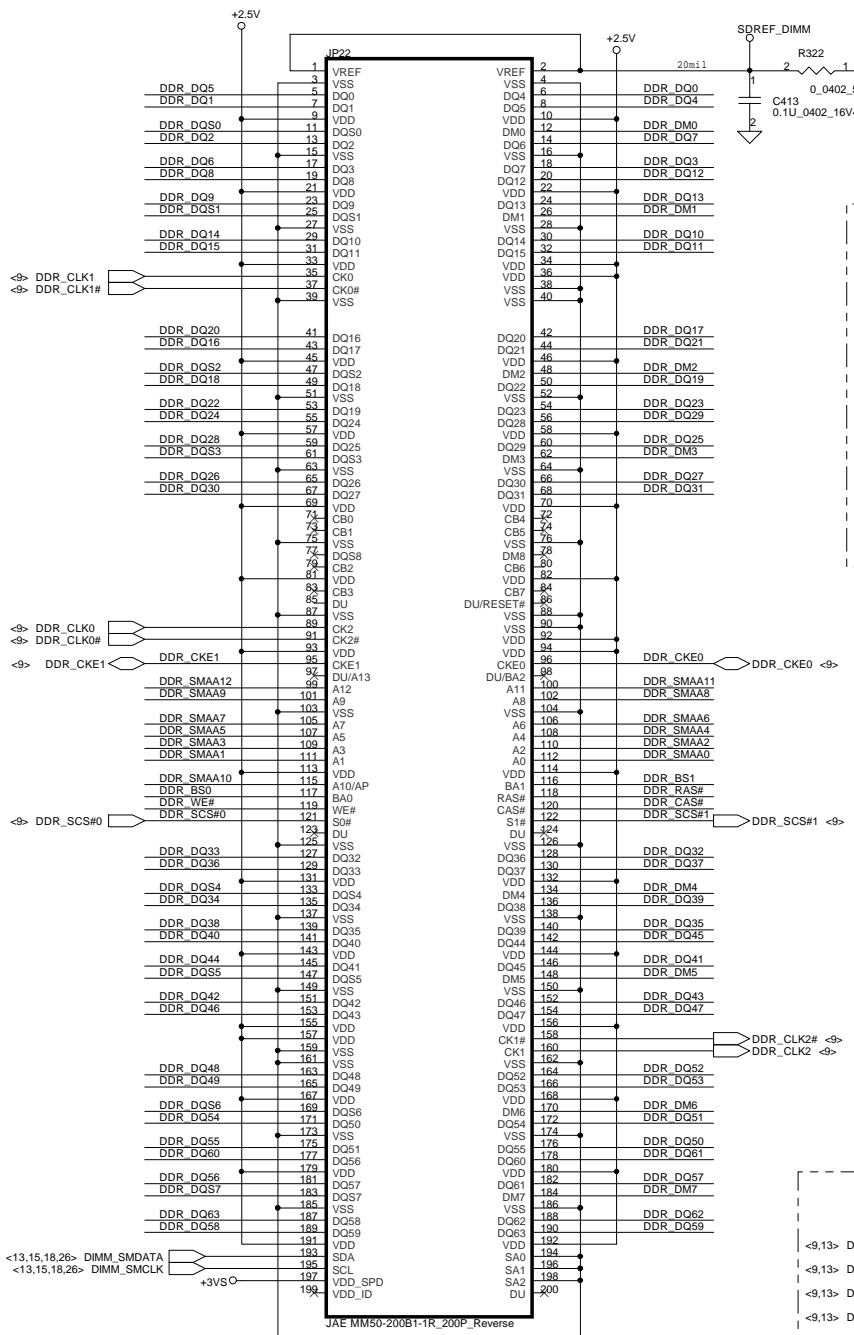
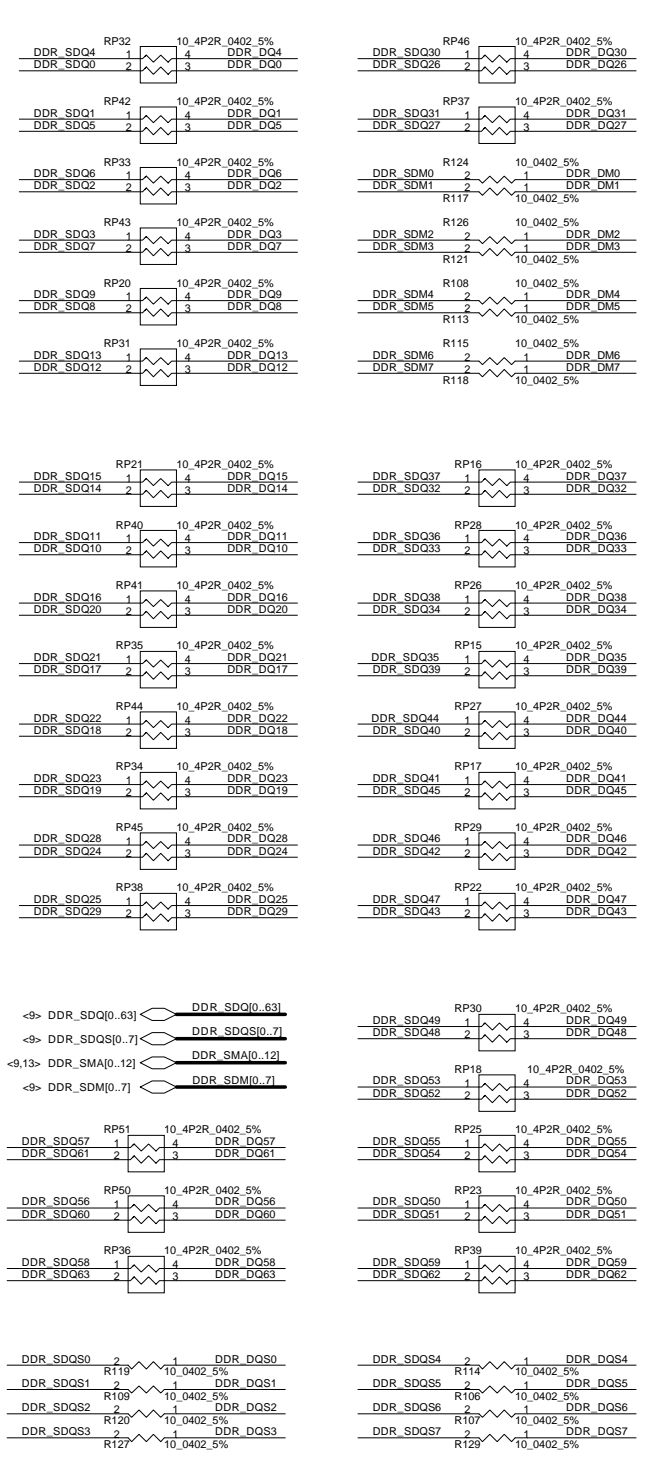


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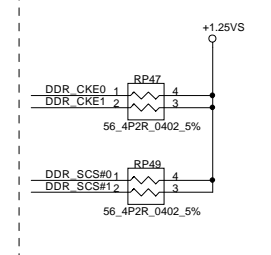
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Date:	星期五, 四月 25, 2003	Sheet	11 of 47

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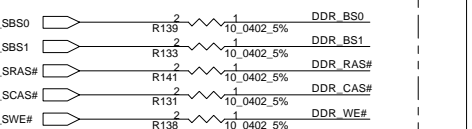


Note:
Place Close to DIMM0

Layout note
Place these resistor close by DIMM0, all trace length Max=1.4"



Note:
Place Close to DIMM0



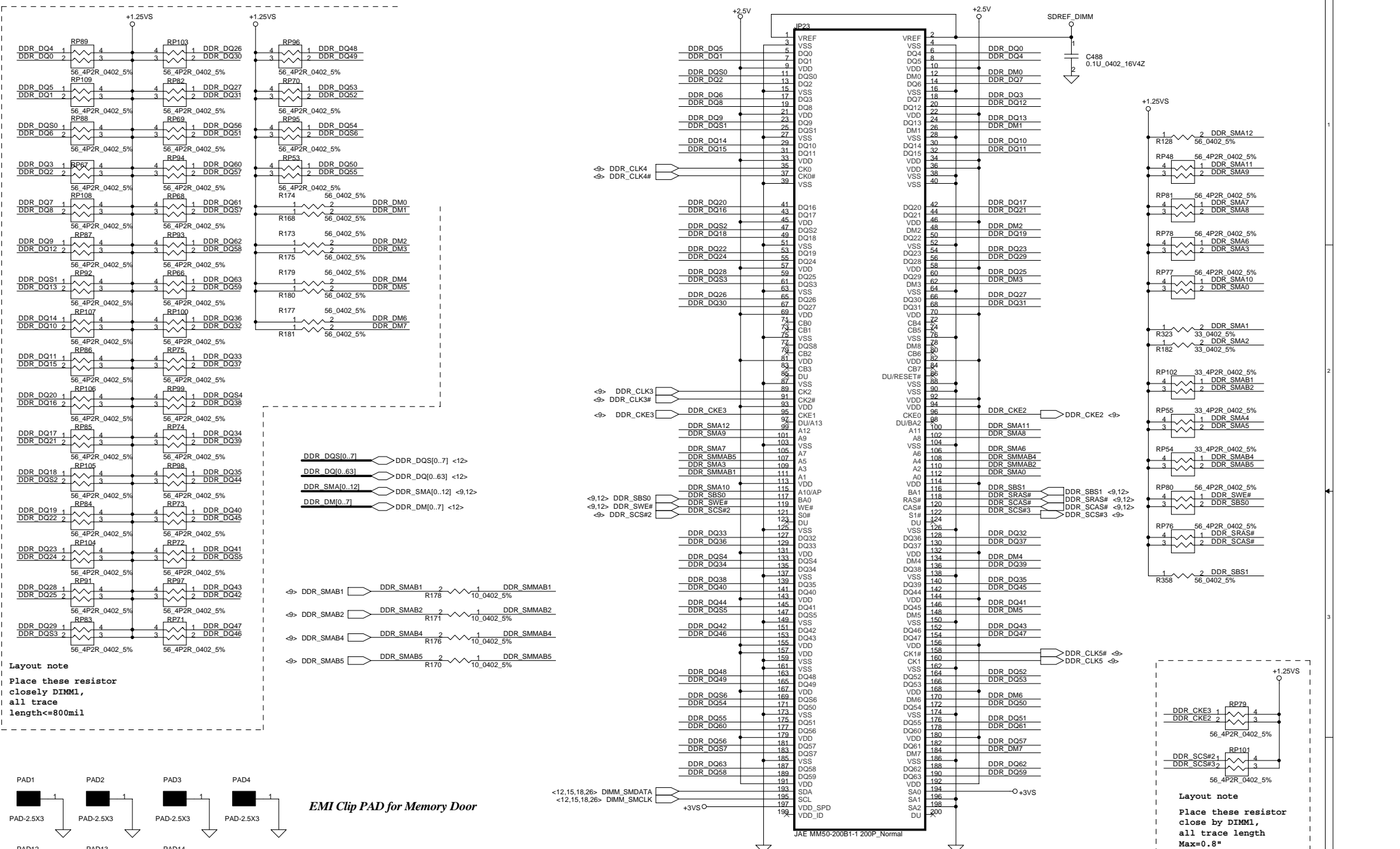
Layout note
Place these resistors close to DIMM0, all trace length<500 mll

DIMM0

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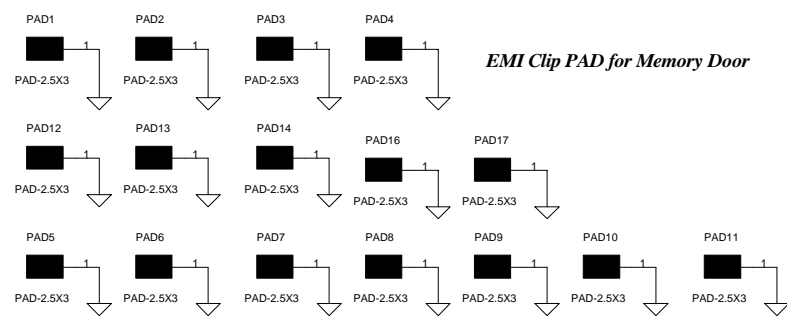
Title			SCHEMATIC, M/B LA-1452		
Size			Document Number 401230		
Date			Rev 1B		
Date			Sheet 12 of 47		

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Layout note
Place these resistor closely DIMM1, all trace length<=800mil

Layout note
Place these resistor close by DIMM1, all trace length Max=0.8"

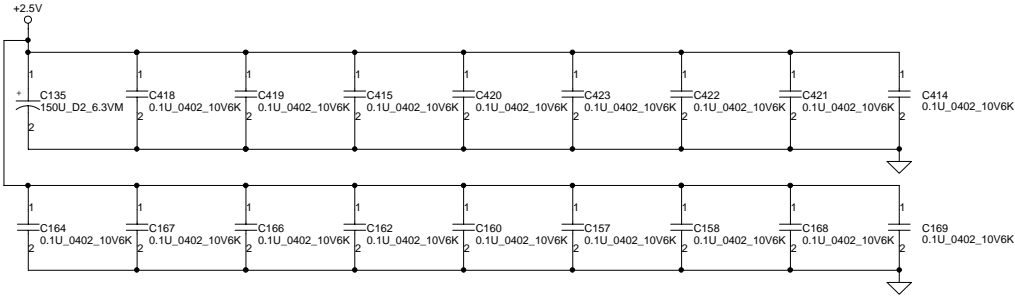


EMI Clip PAD for Memory Door

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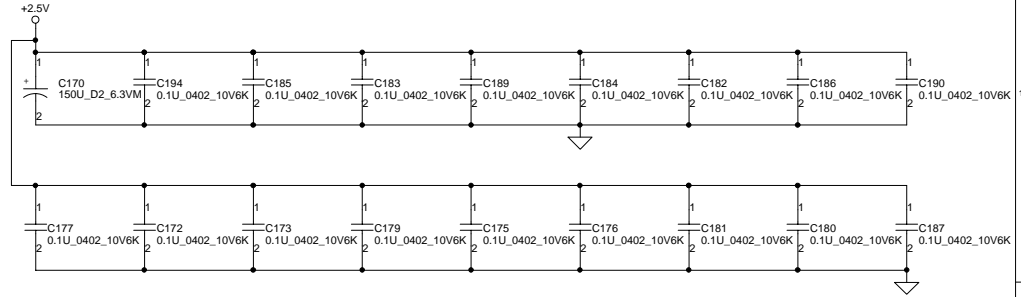
Layout note :

Distribute as close as possible to DDR-SODIMM0.



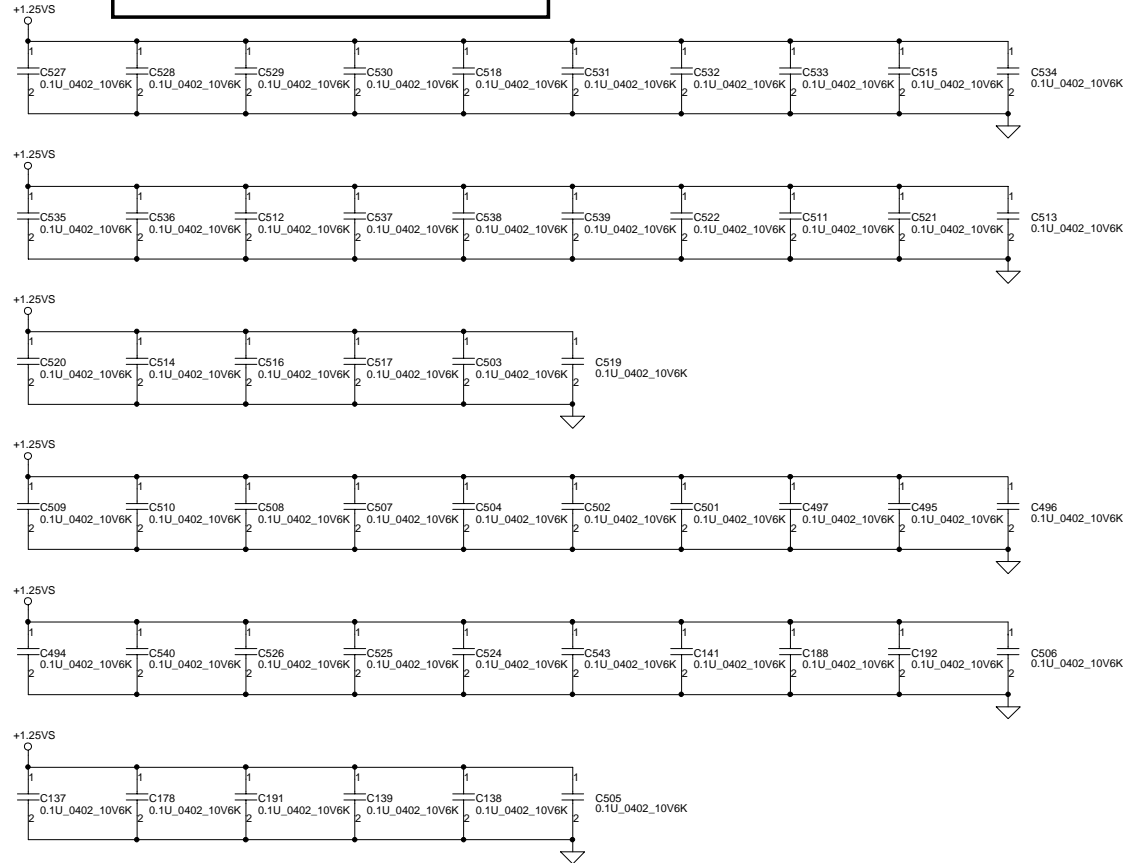
Layout note :

Distribute as close as possible to DDR-SODIMM1.



Layout note :

Place one cap close to every 2 pull up resistors termination to +1.25VS

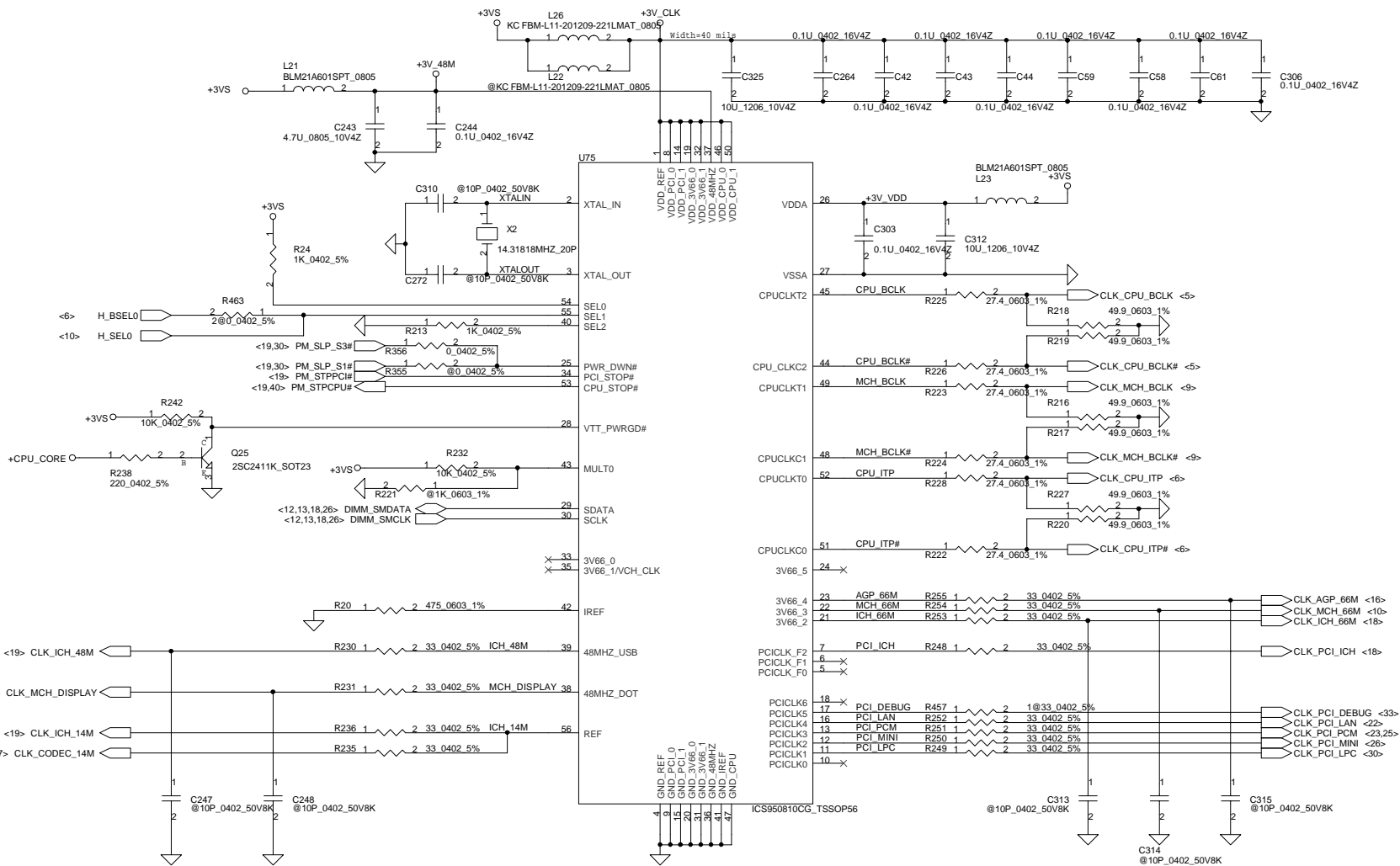


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Title		
SCHEMATIC, M/BLA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 14 of 47



CPU Frequency Select Table

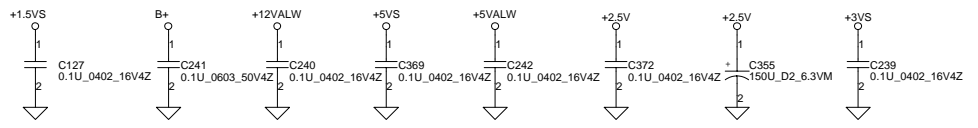
SEL[2:0]	CK-408 Speed
001	100 MHz
011	133 MHz

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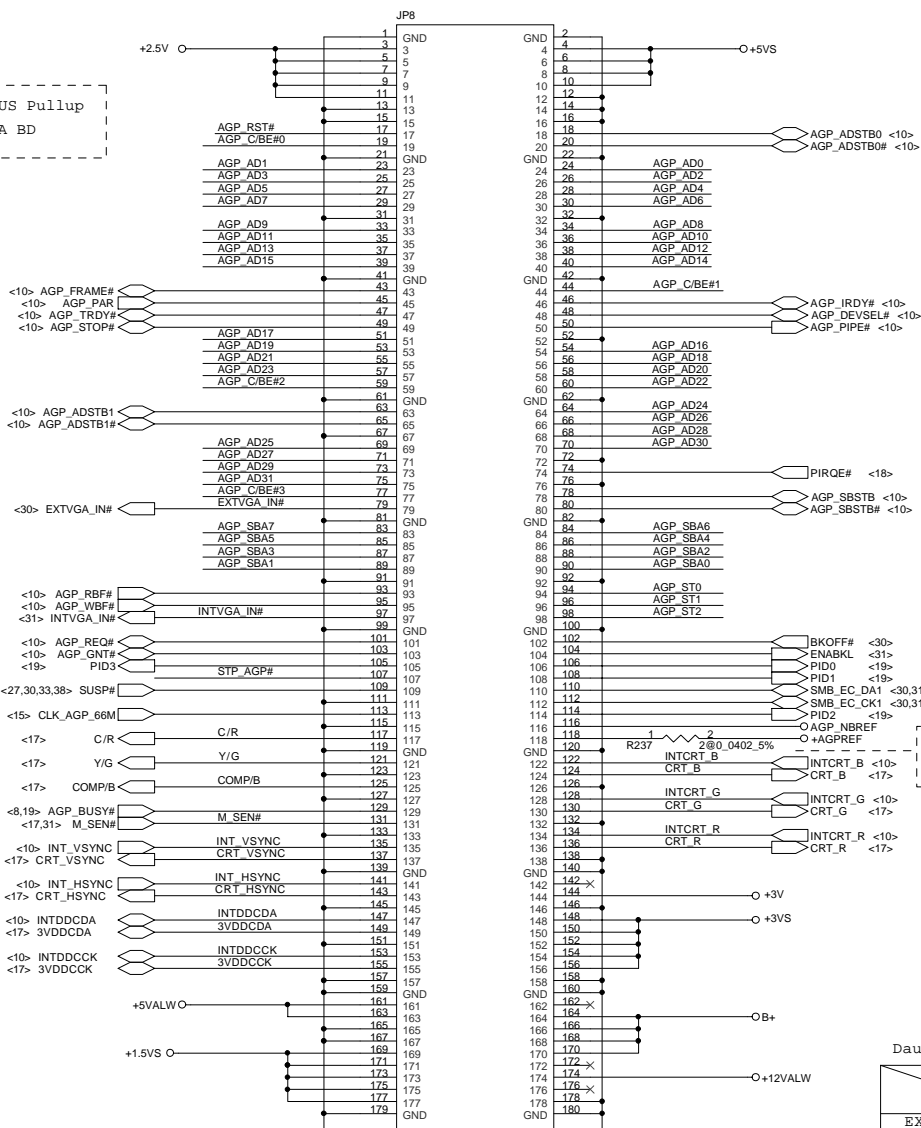
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Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 15 of 47

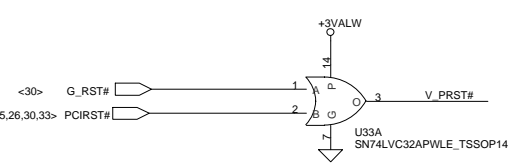
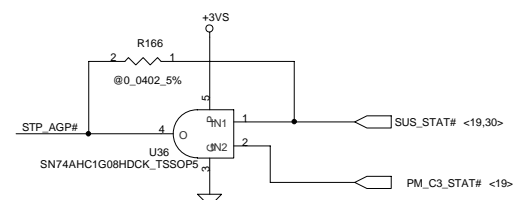
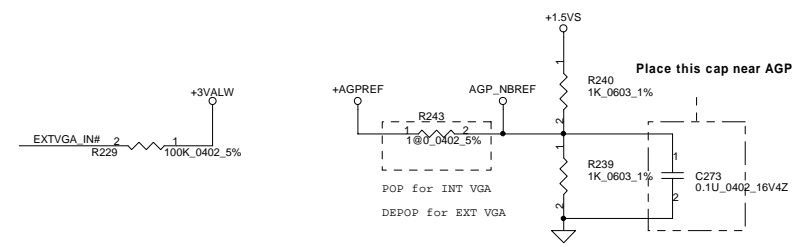
<10> AGP_ST[0..2] AGP_ST[0..2]
 <10> AGP_SBA[0..7] AGP_SBA[0..7]
 <10> AGP_AD[0..31] AGP_AD[0..31]
 <10> AGP_C/BE[0..3] AGP_C/BE[0..3]



AGP BUS Pullup
 on VGA BD



CLK_AGP_66M
 Terminator on VGA BD



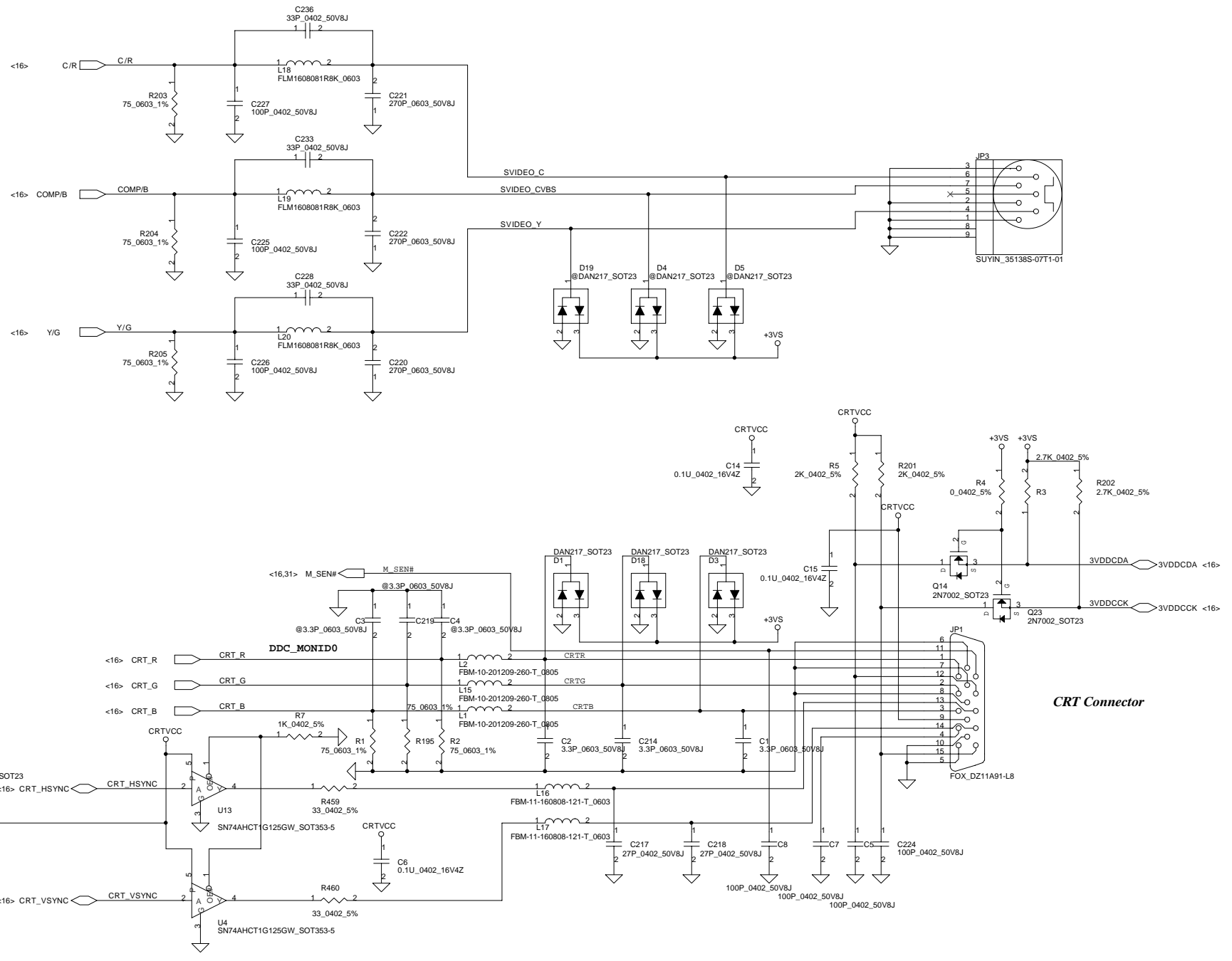
Daughter Card Present Table

	DOCKED	NON DOCKED
EXTVGA_IN# (Ext. Graphy)	LOW	HIGH
INTVGA_IN# (Int. Graphy)	LOW	HIGH

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Title		
SCHEMATIC, M/LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 16 of 47

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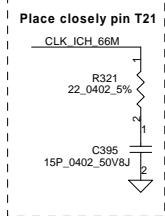
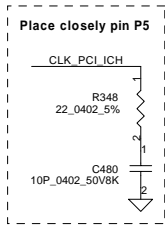
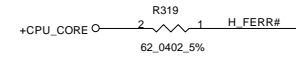


CRT Connector

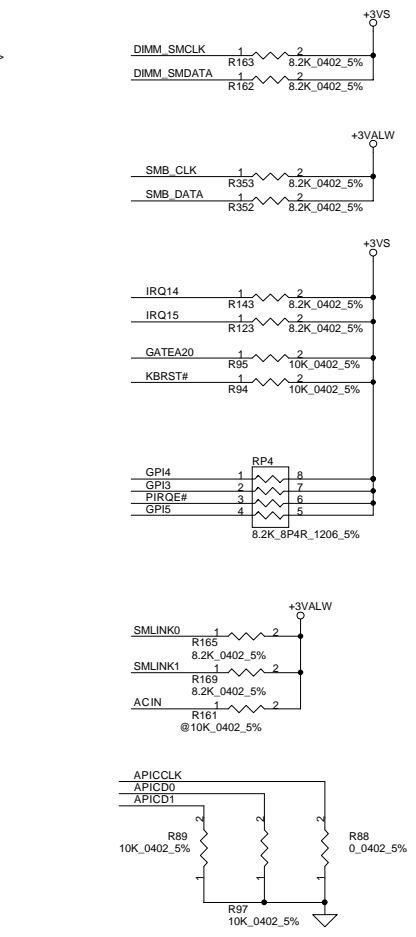
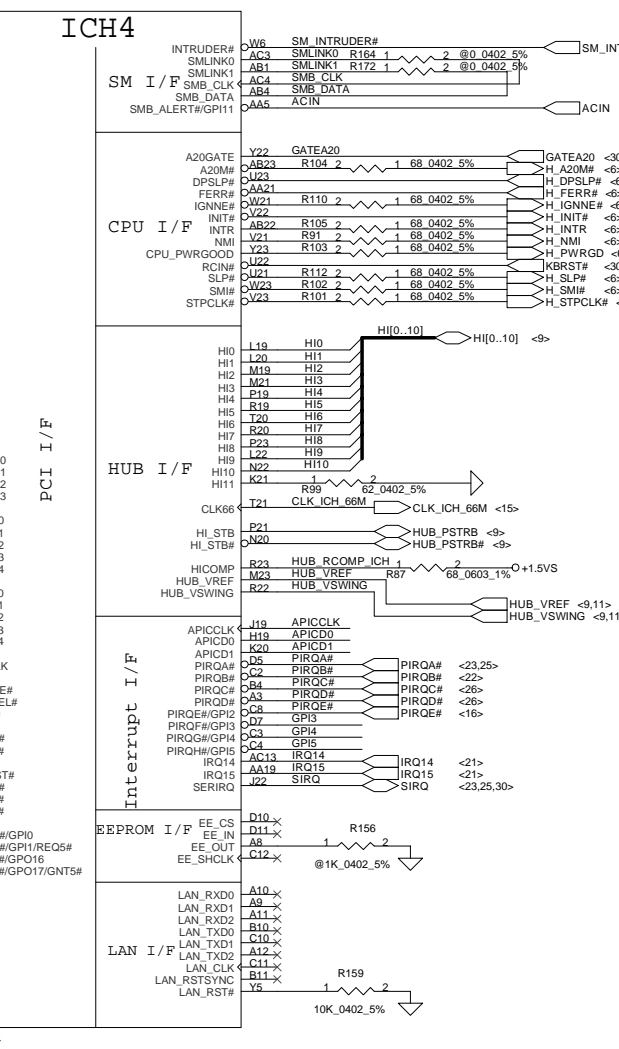
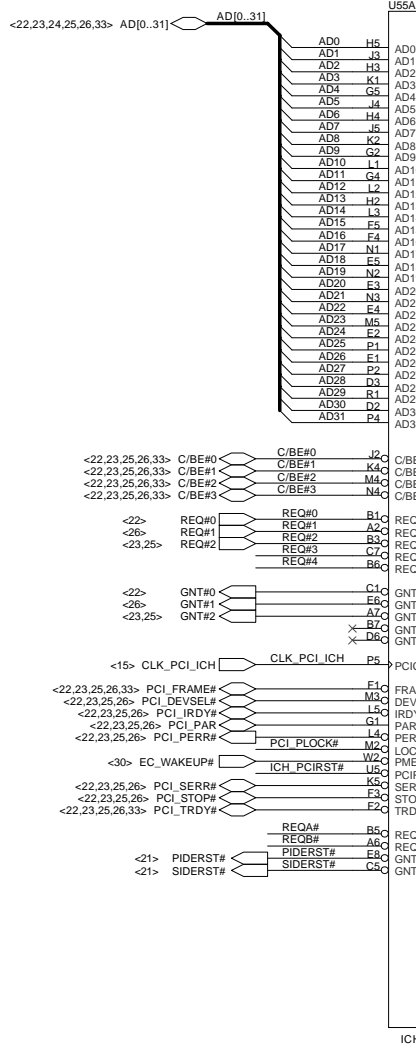
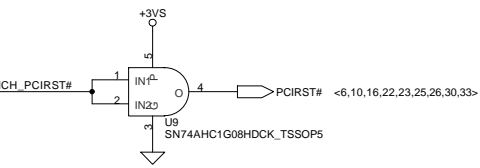
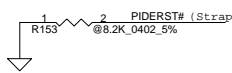
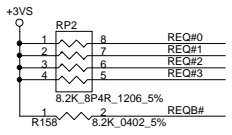
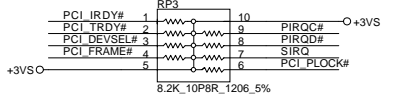
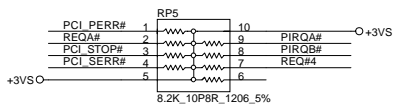
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Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 17 of 47

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PCI Pullups



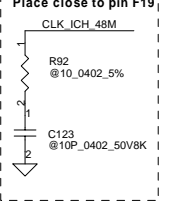
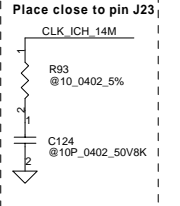
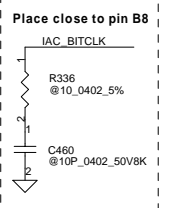
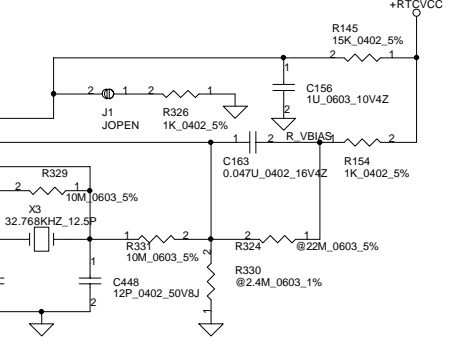
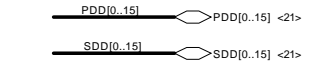
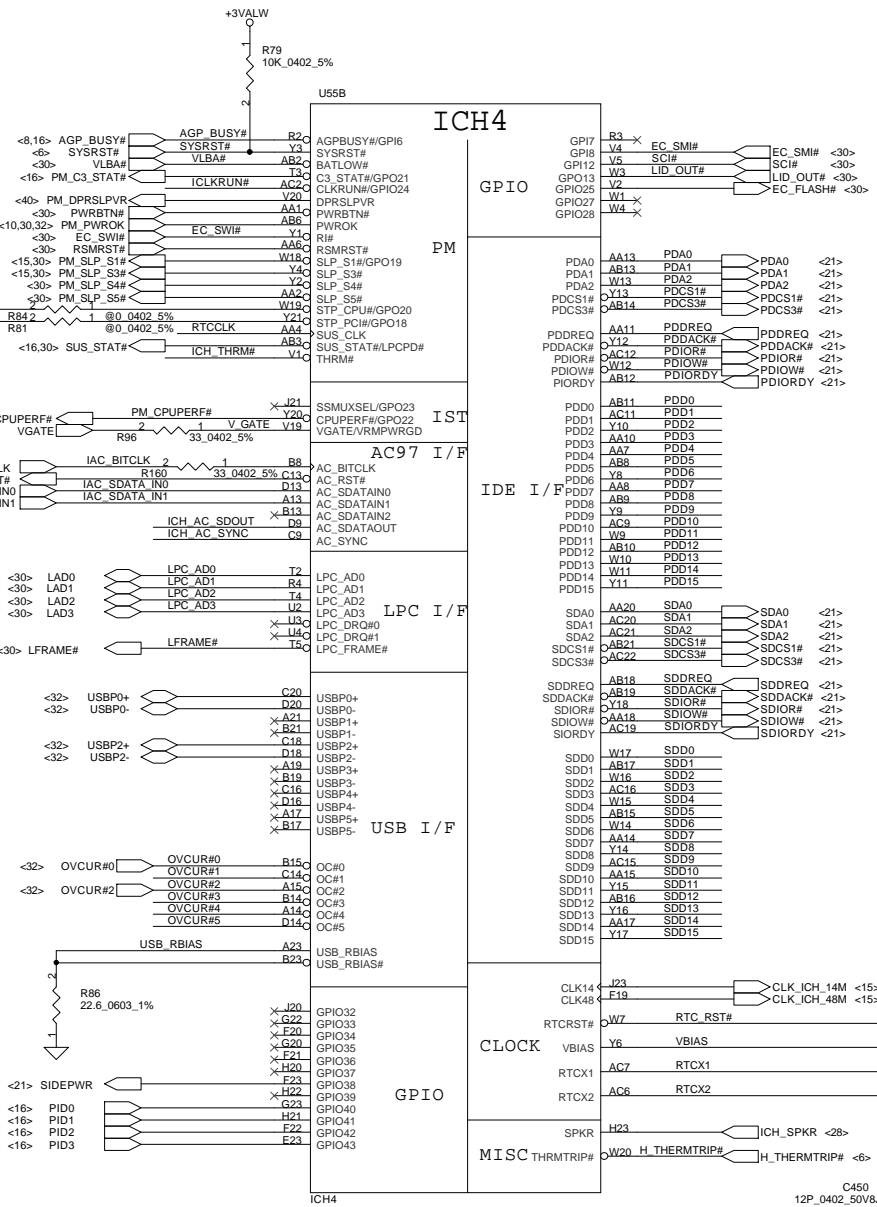
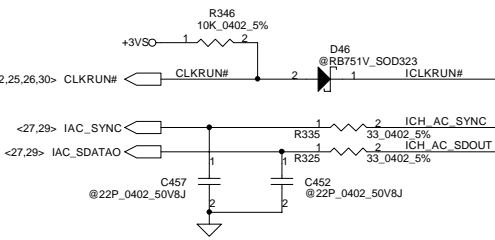
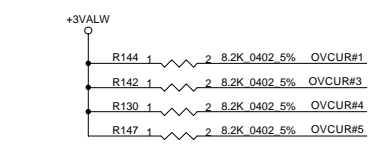
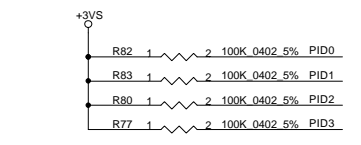
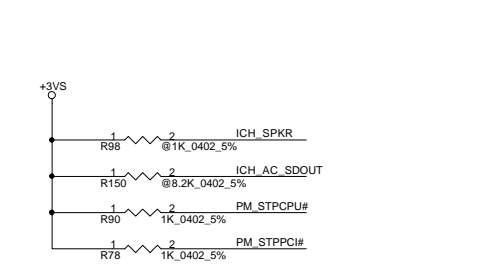
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Title: SCHEMATIC, M/BLA-1452

Size	Document Number	Rev
	401230	1B

Date: 星期五, 四月 25, 2003 Sheet 18 of 47

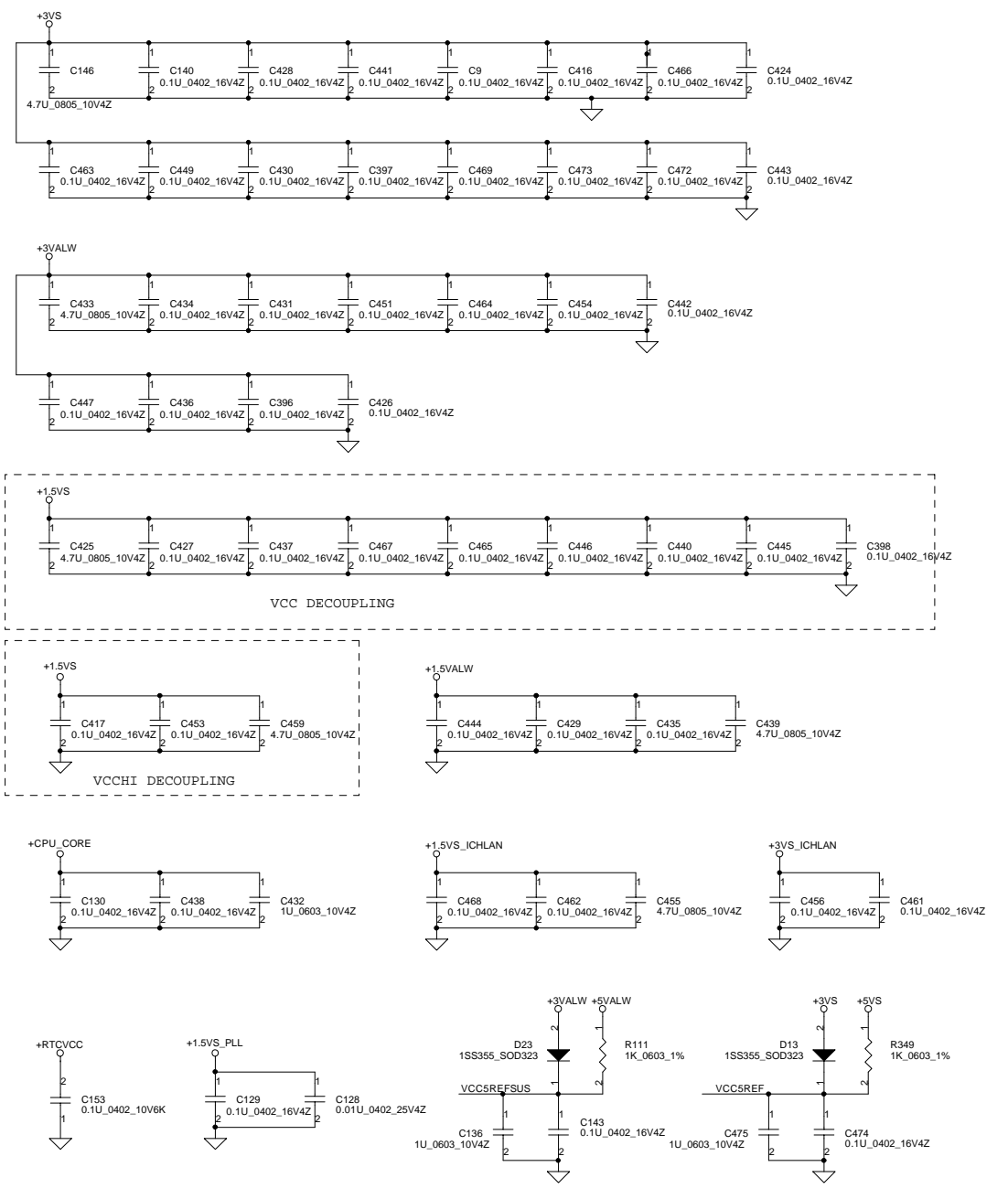
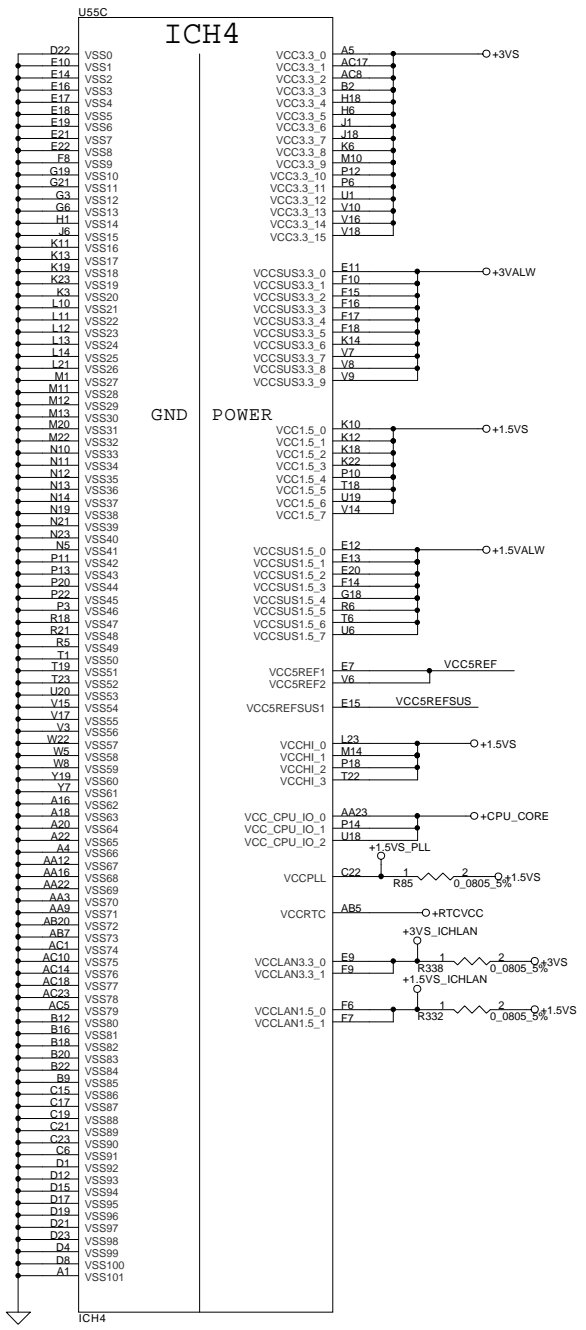
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Size	Document Number	Rev	
	401230	1B	
Date:	星期五, 四月 25, 2003	Sheet	19 of 47

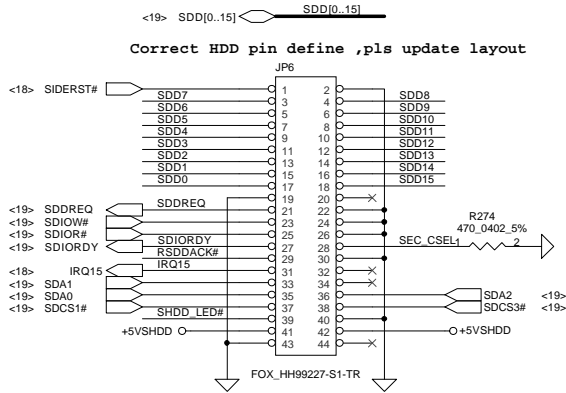
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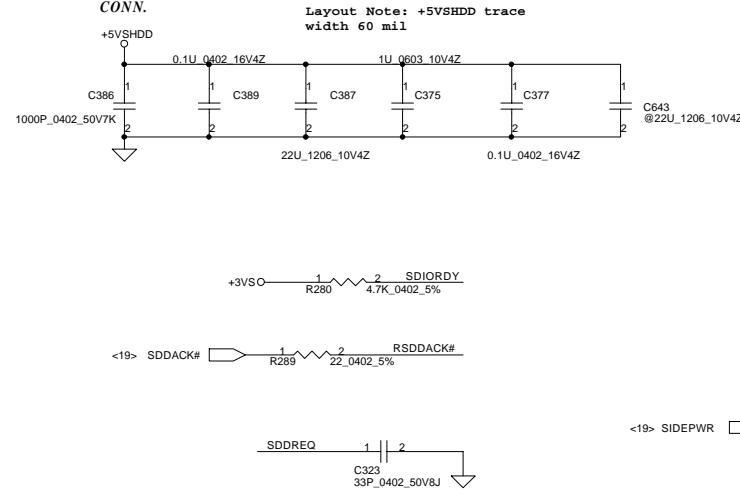
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Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 20 of 47

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HDD Connector

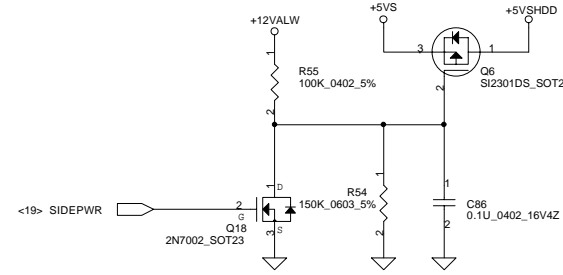


Placea caps. near HDD CONN.

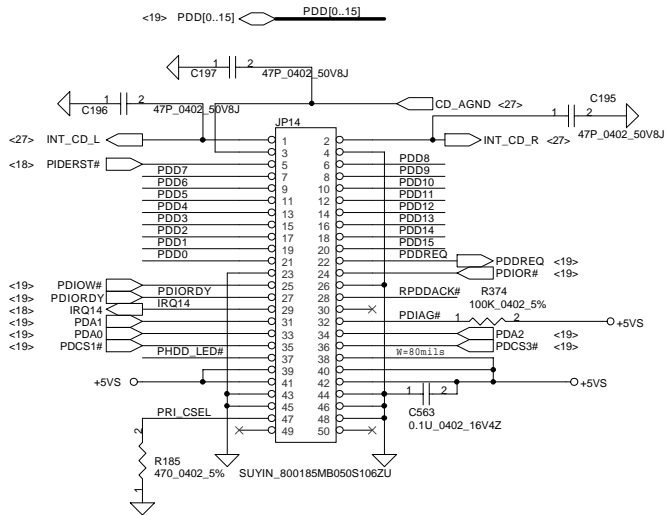


SI2301DS: P CHANNEL
 VGS: -4.5V, RDS: 130 mOHM
 VGS: -2.5V, RDS: 190mOHM
 Id(MAX): 2.3A
 VGS(MAX): +8V

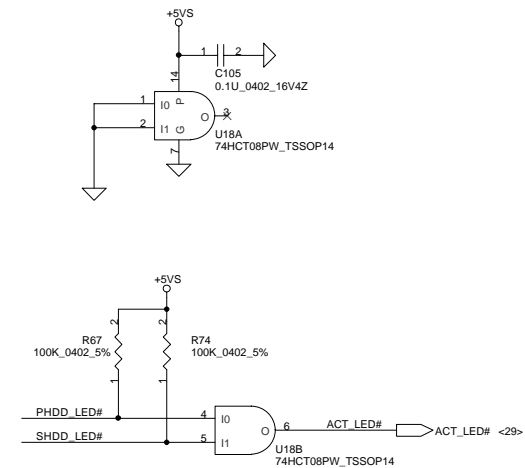
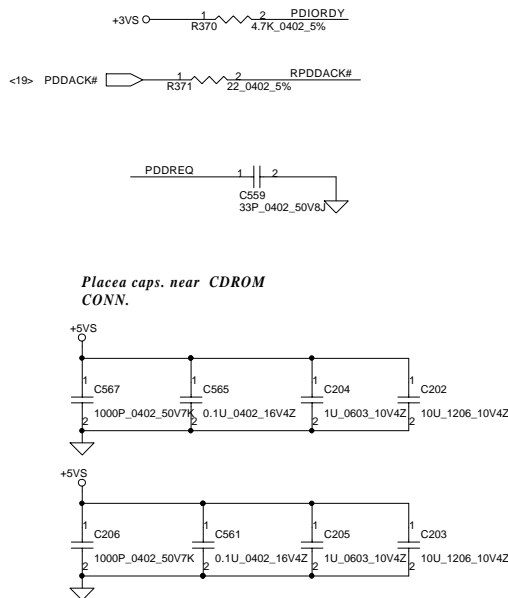
1 D



CD-ROM Connector



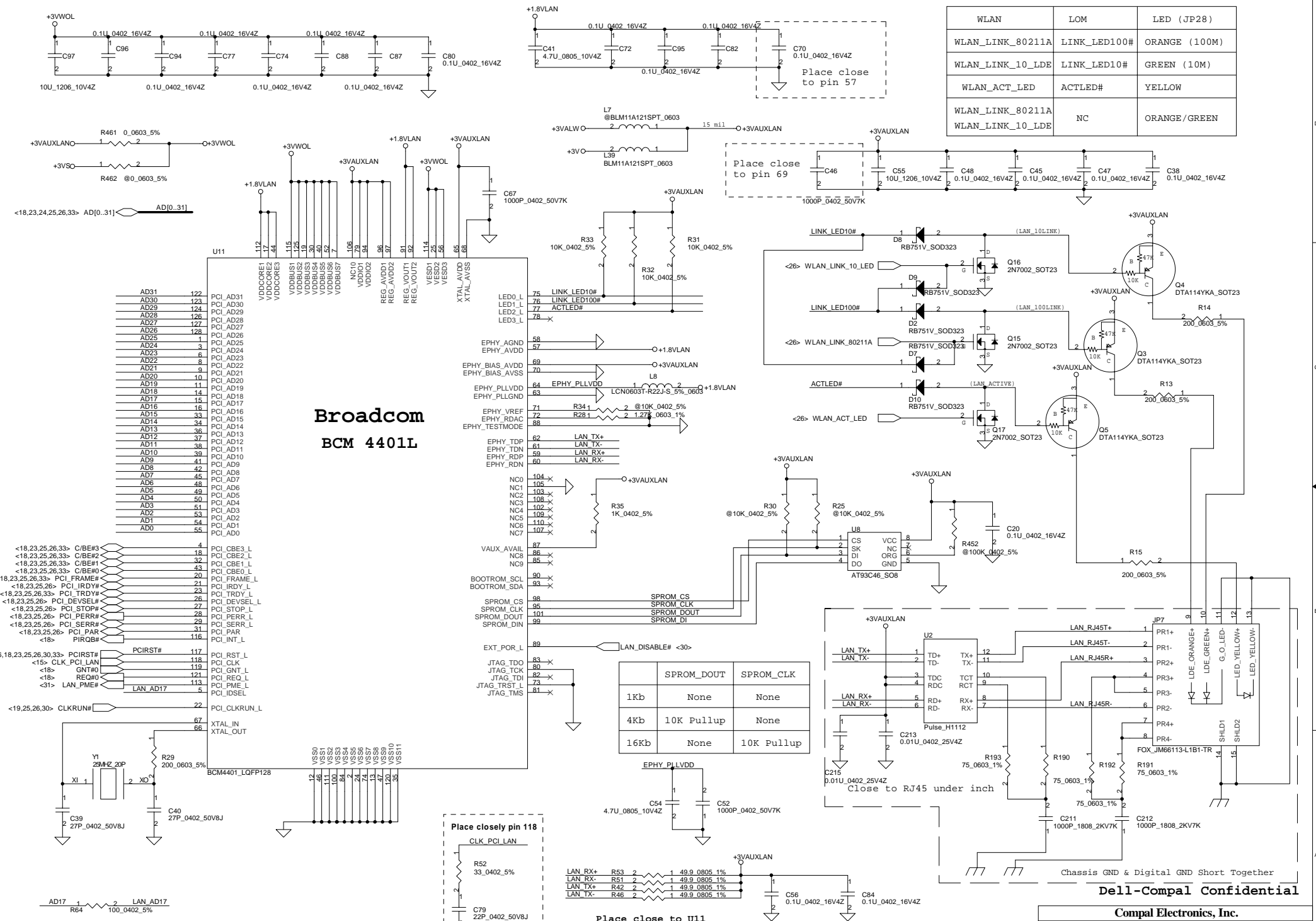
Placea caps. near CDROM CONN.



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Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 21 of 47

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WLAN	LOM	LED (JP28)
WLAN_LINK_80211A	LINK_LED100#	ORANGE (100M)
WLAN_LINK_10_LDE	LINK_LED10#	GREEN (10M)
WLAN_ACT_LED	ACTLED#	YELLOW
WLAN_LINK_80211A		
WLAN_LINK_10_LDE	NC	ORANGE/GREEN

**Broadcom
BCM 4401L**

AD31	122	PCI_AD31
AD30	123	PCI_AD30
AD29	124	PCI_AD29
AD28	126	PCI_AD28
AD27	127	PCI_AD27
AD26	128	PCI_AD26
AD25	3	PCI_AD25
AD24	4	PCI_AD24
AD23	6	PCI_AD23
AD22	8	PCI_AD22
AD21	8	PCI_AD21
AD20	10	PCI_AD20
AD19	11	PCI_AD19
AD18	12	PCI_AD18
AD17	14	PCI_AD17
AD16	16	PCI_AD16
AD15	33	PCI_AD15
AD14	36	PCI_AD14
AD13	34	PCI_AD13
AD12	37	PCI_AD12
AD11	38	PCI_AD11
AD10	39	PCI_AD10
AD9	41	PCI_AD9
AD8	42	PCI_AD8
AD7	45	PCI_AD7
AD6	48	PCI_AD6
AD5	49	PCI_AD5
AD4	50	PCI_AD4
AD3	51	PCI_AD3
AD2	53	PCI_AD2
AD1	54	PCI_AD1
AD0	55	PCI_AD0

<18,23,25,26,33>	C/BE#3	4	PCI_CBE3_L
<18,23,25,26,33>	C/BE#2	18	PCI_CBE2_L
<18,23,25,26,33>	C/BE#1	32	PCI_CBE1_L
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<18,23,25,26,33>	PCI_FRAME#	20	PCI_FRAME_L
<18,23,25,26>	PCI_IRDY#	21	PCI_IRDY_L
<18,23,25,26,33>	PCI_TRDY#	23	PCI_TRDY_L
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<18,23,25,26>	PCI_STOP#	27	PCI_STOP_L
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<18>	PIRQB#	116	PCI_INT_L
16,18,23,25,26,30,33>	PCIRST#	117	PCI_RST_L
<15>	CLK_PCI_LAN	118	PCI_CLK
<18>	GNT#0	119	PCI_GNT_L
<18>	REQ#0	121	PCI_REQ_L
<31>	LAN_PME#	113	PCI_PME_L
	LAN_AD17	5	PCI_IDSEL
<19,25,26,30>	CLKRUN#	22	PCI_CLKRUN_L

	SPROM_DOUT	SPROM_CLK
1Kb	None	None
4Kb	10K Pullup	None
16Kb	None	10K Pullup

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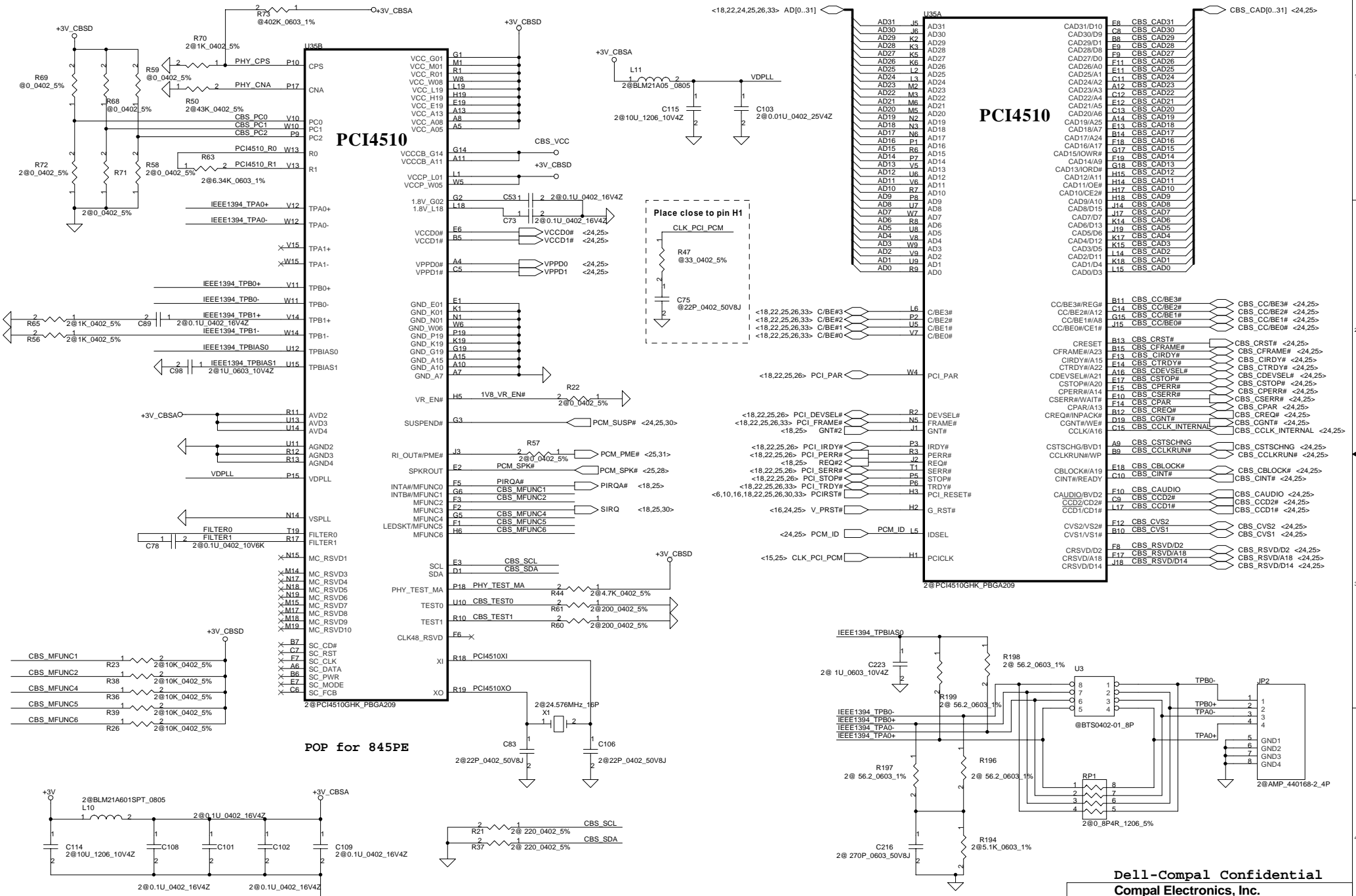
Title: **SCHEMATIC, M/BLA-1452**

Size	Document Number 401230	Rev 1B
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Date: 星期五, 四月 25, 2003 Sheet 22 of 47

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<18,22,24,25,26,33> AD[0..31] AD[0..31] CBS_CAD[0..31] <24,25>



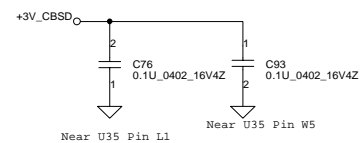
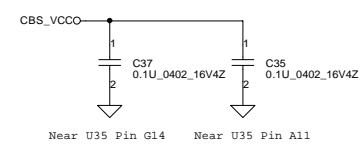
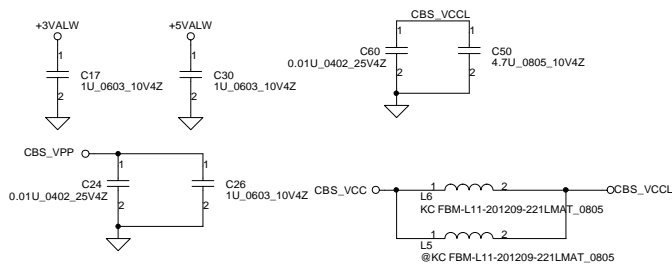
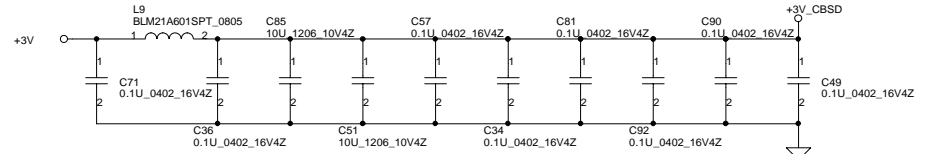
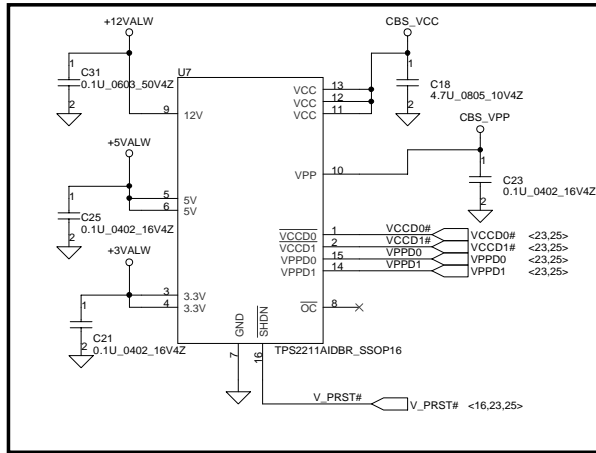
POP for 845PE

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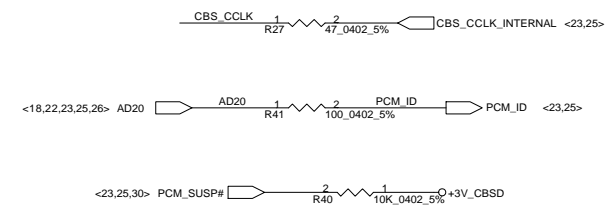
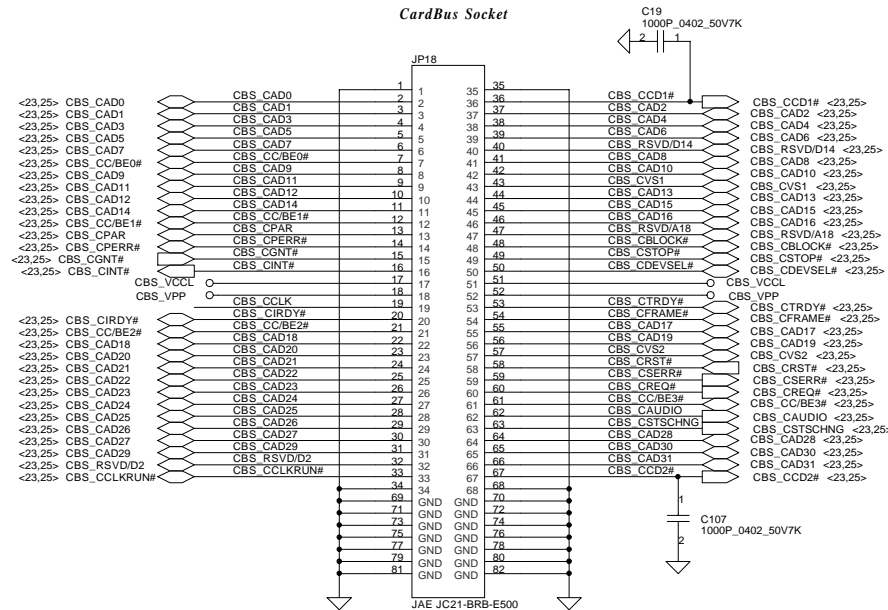
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PCMCIA Power Controller



CardBus Socket

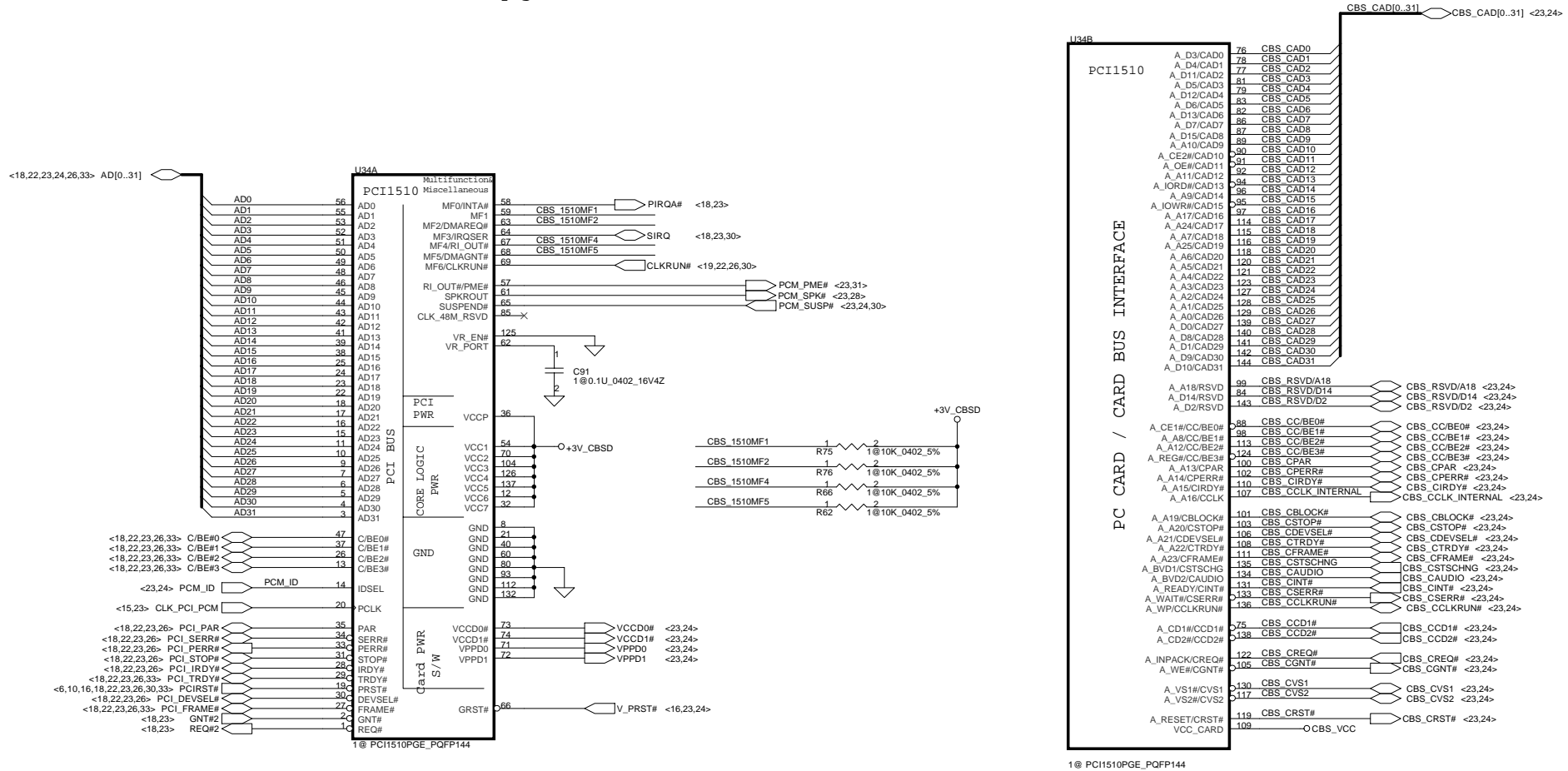


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Size	Document Number	Rev
	401230	1B
Date:	星期三, 四月 25, 2003	Sheet 24 of 47

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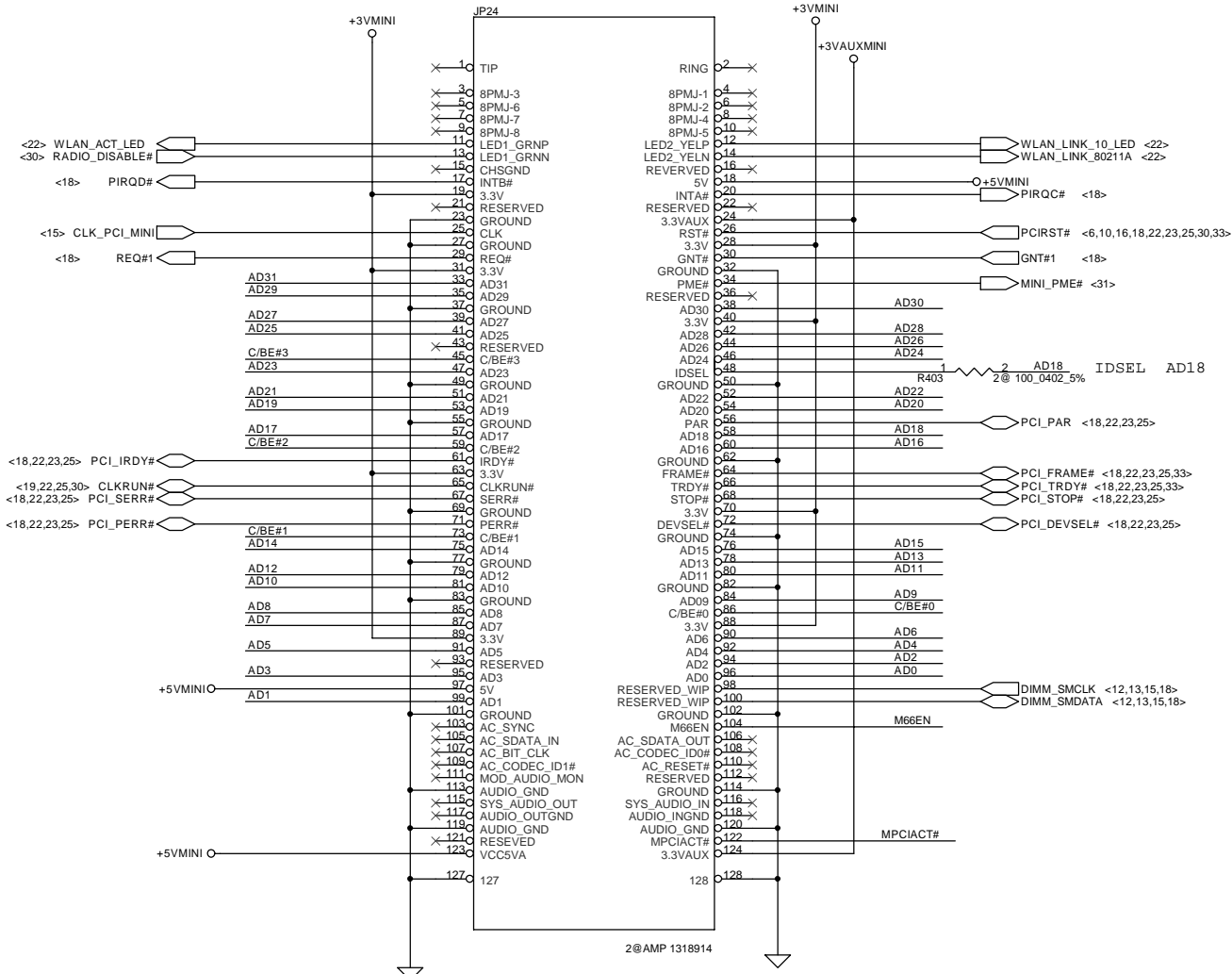
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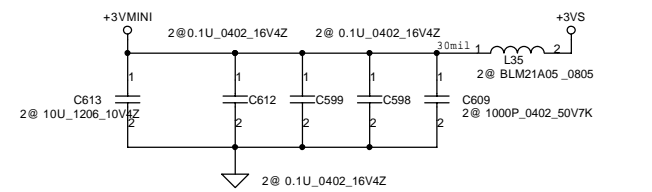
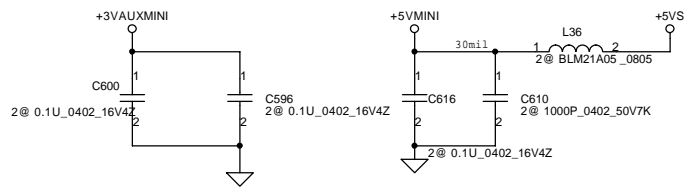
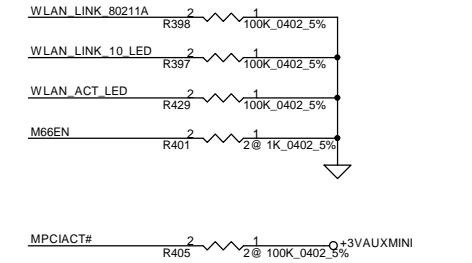
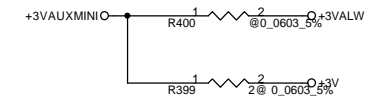
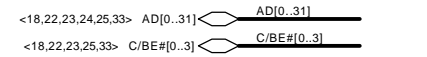
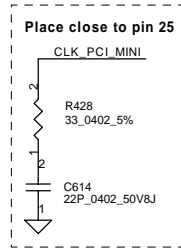
Title			SCHEMATIC, M/B LA-1452		
Size	Document Number			Rev	
	401230			1B	
Date:	星期三, 四月 25, 2003	Sheet	25	of	47

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MINI PCI TYPE III



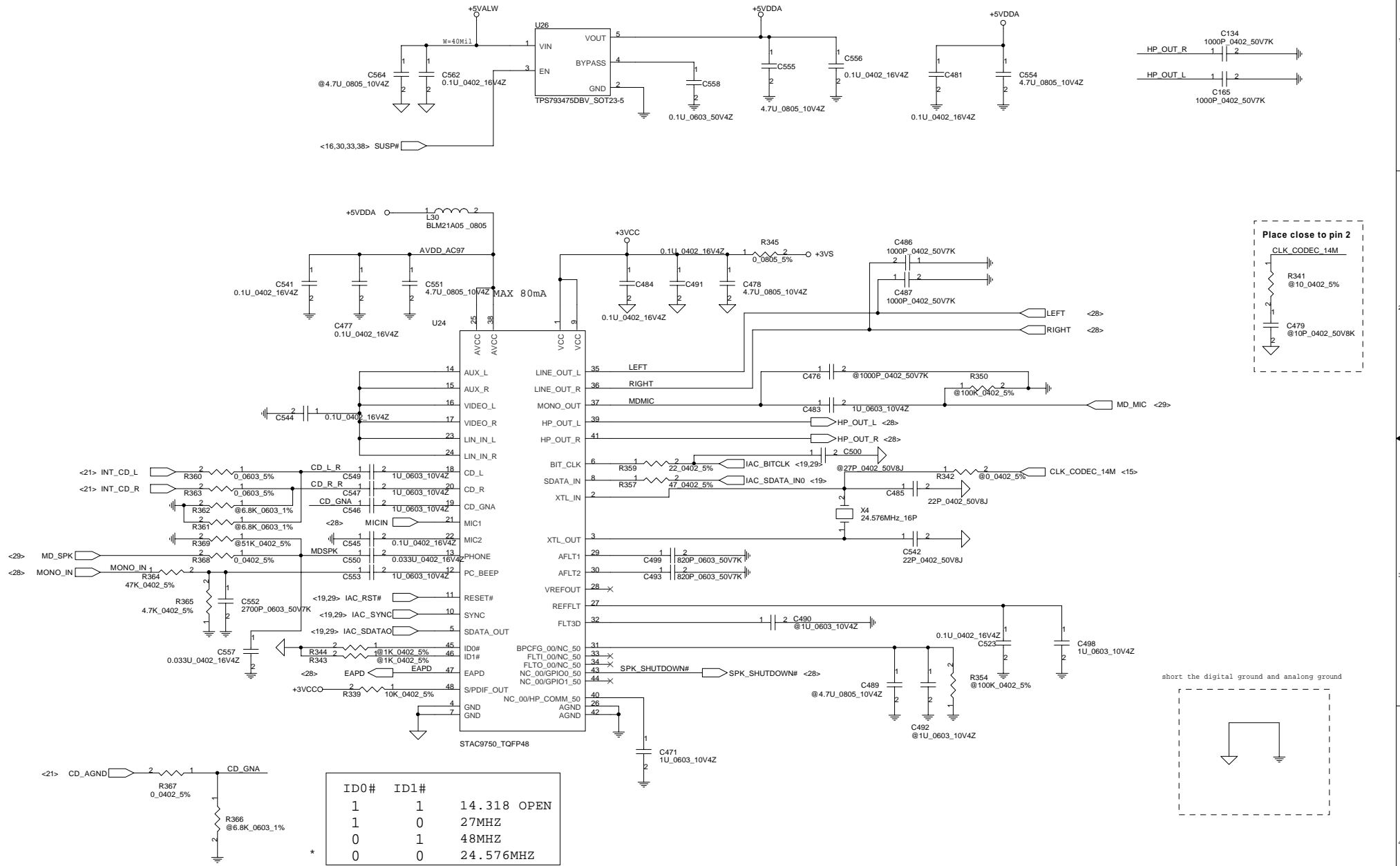
WIRELESS SUPPORT ONLY



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Title			SCHEMATIC, M/B LA-1452		
Size	Document Number		401230		Rev
					18
Date:	~P期五, 四月 25, 2003		Sheet	26	of 47

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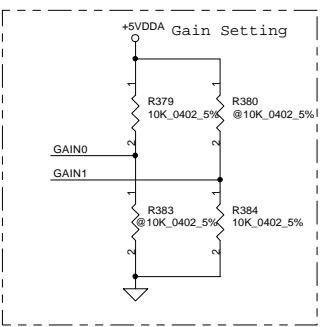
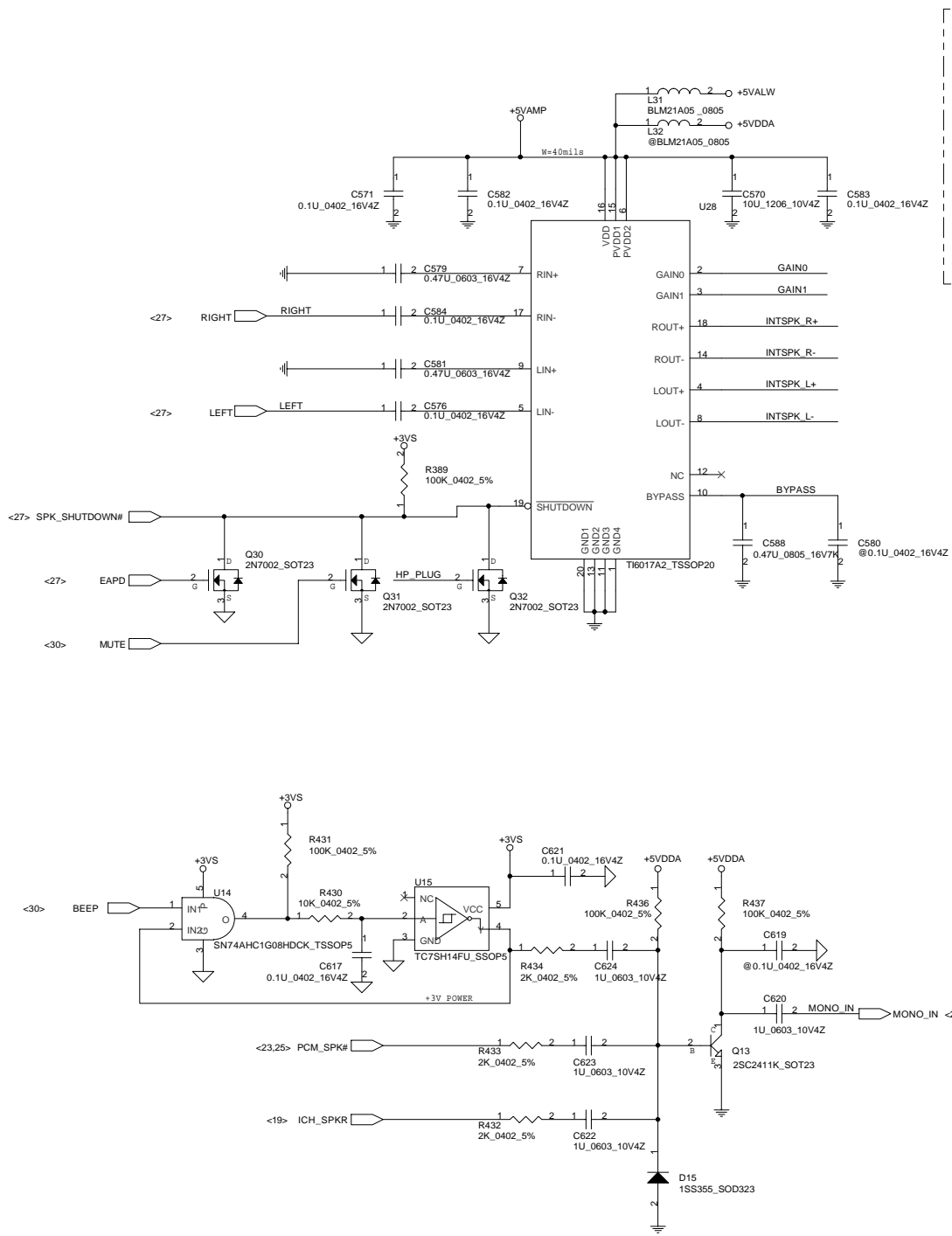


ID0#	ID1#	Value
1	1	14.318 OPEN
1	0	27MHZ
0	1	48MHZ
0	0	24.576MHZ

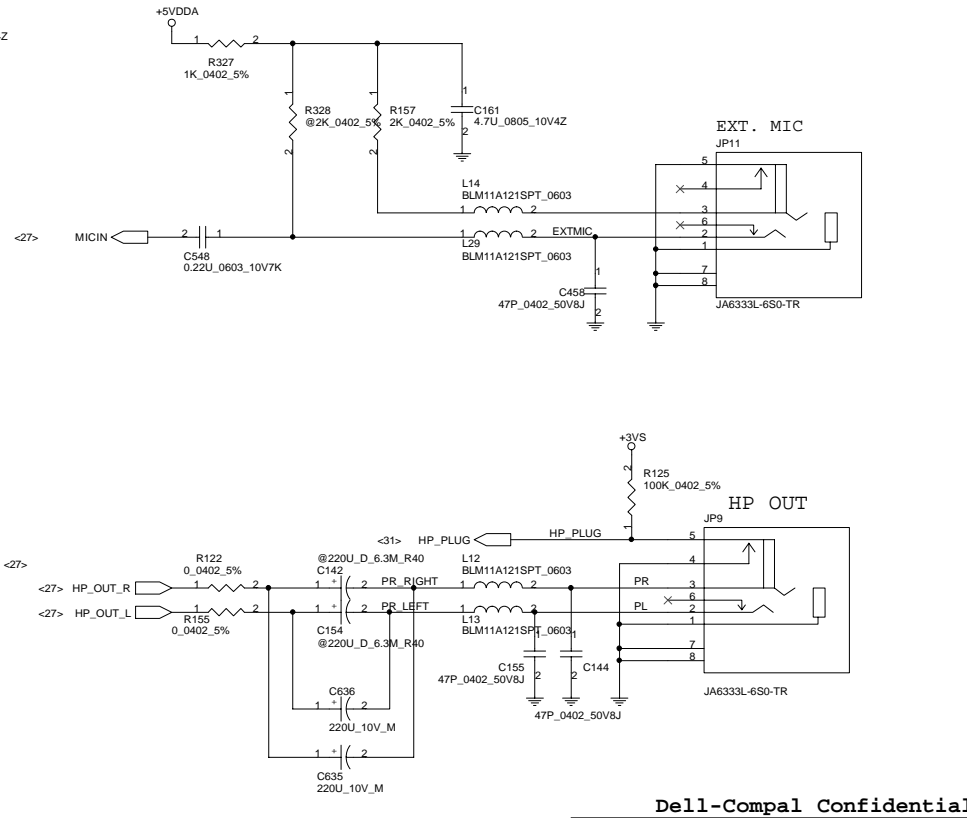
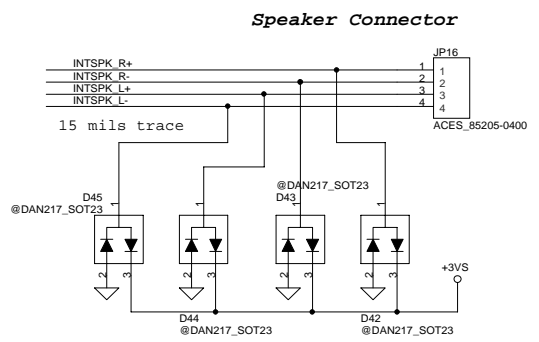
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Title		
SCHEMATIC, M/BLA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 27 of 47

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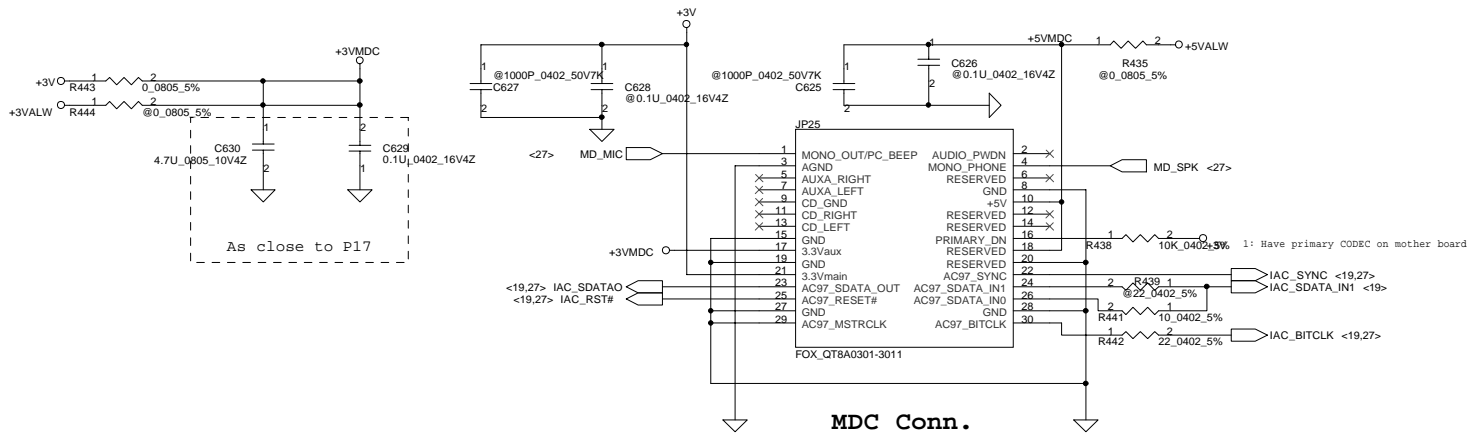
GAIN0	GAIN1	AV(inv)	INPUT IMPEDANCE
0	0	6dB	90K ohm
0	1	10dB	70K ohm
1	0	15.6dB	45K ohm
1	1	21.6dB	25K ohm



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Title		
SCHEMATIC, M/BLA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 28 of 47

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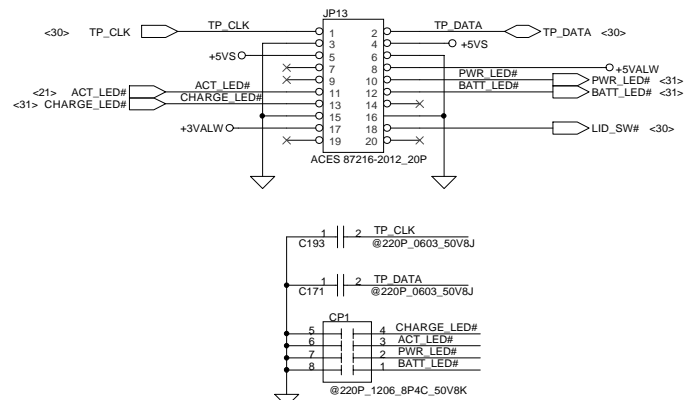


MDC Conn.

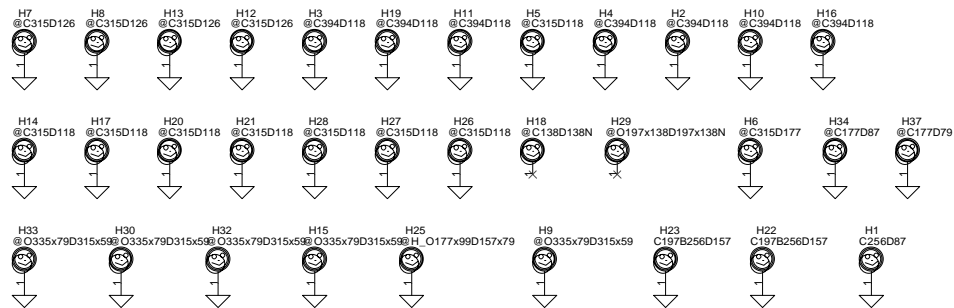
MDC Note

Pin 1 is NC for Pctel and connexant MDC modem
 Pin 2 is NC for Pctel and connexant MDC modem

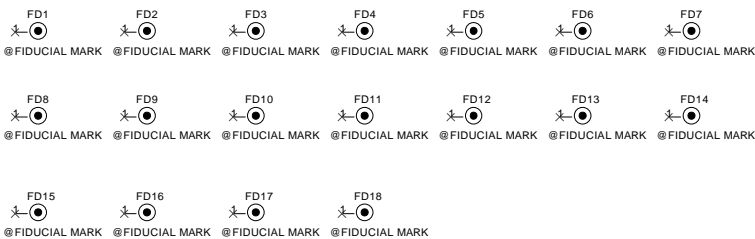
Touch Pad & Status LED Conn.



Screw Hole

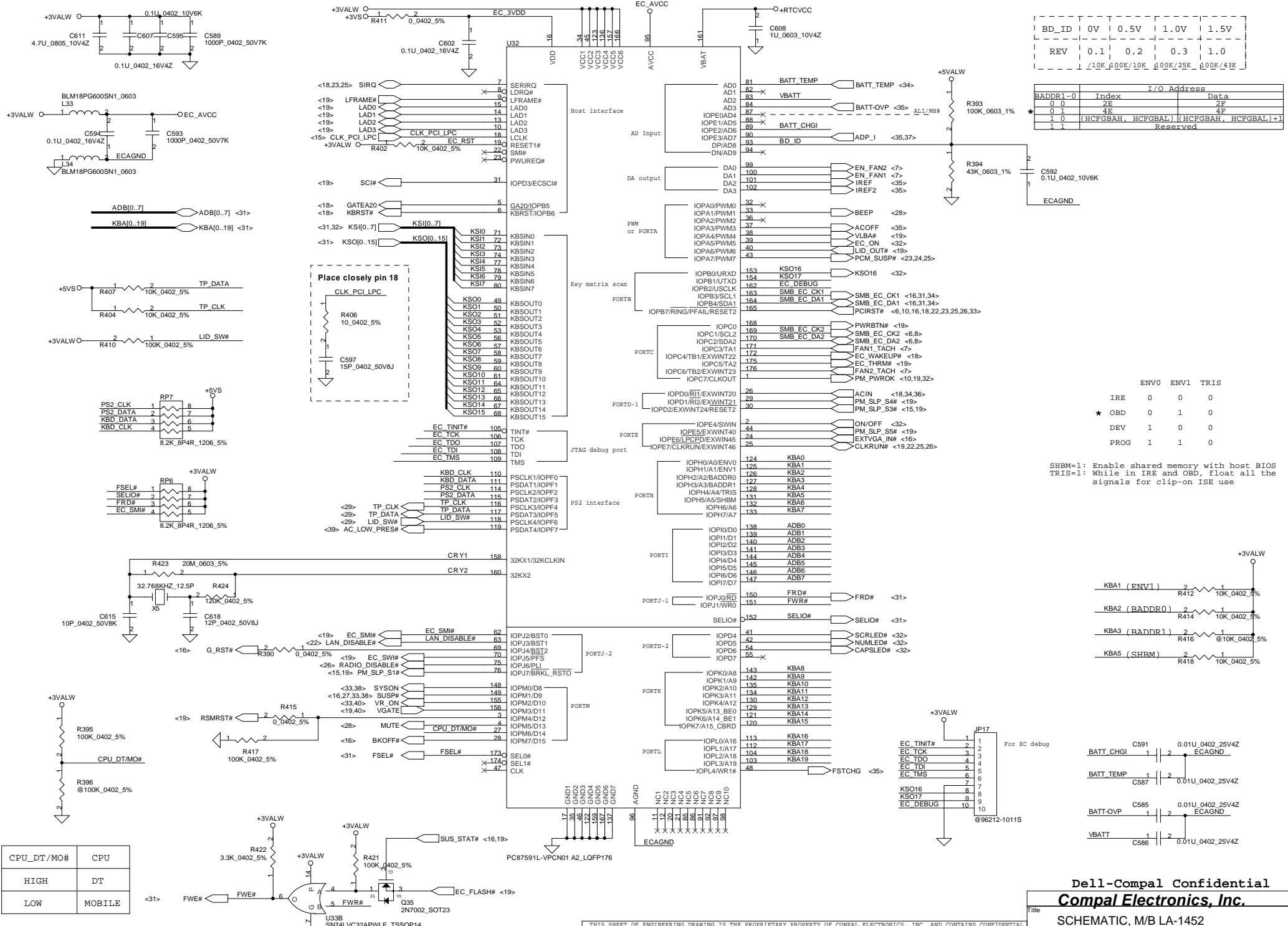


Fiducial Mark



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Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 29 of 47

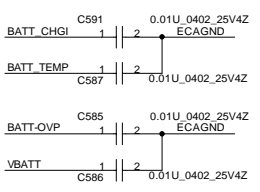
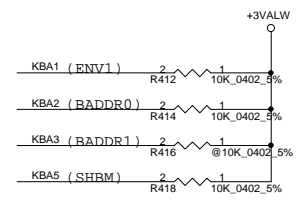


BD_ID	0V	0.5V	1.0V	1.5V
REV	0.1	0.2	0.3	1.0
	1/10K	100K/10K	100K/25K	100K/43K

BADDR1-0	Index	I/O Address	Data
0	28		2F
0	1	4E	4F
1	0	(HCFGBAH, HCFGBAL)	(HCFGBAH, HCFGBAL)+1
1	1		Reserved

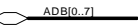
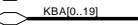
ENVO	ENV1	TRIS
IRE	0	0
* OBD	0	1
DEV	1	0
PROG	1	1

SHBM=1: Enable shared memory with host BIOS
 TRIS=1: While in IRE and OBD, float all the signals for clip-on ISE use

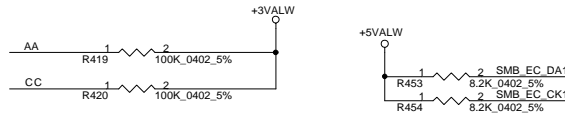
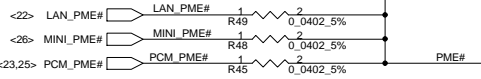
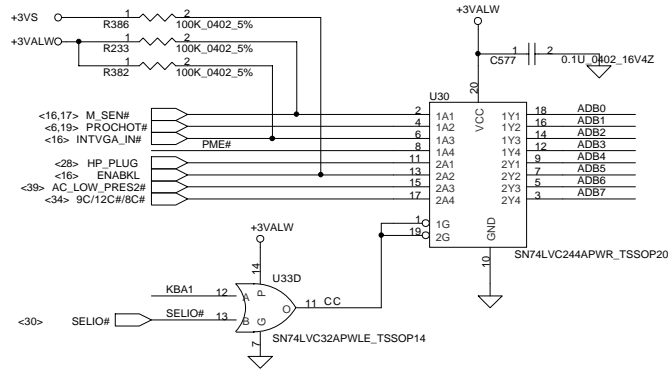


CPU_DT/MO#	CPU
HIGH	DT
LOW	MOBILE

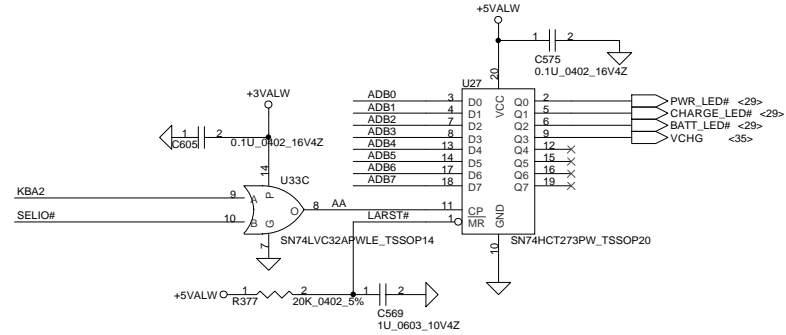
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<30> ADB[0..7]  ADB[0..7]
 <30> KBA[0..19]  KBA[0..19]

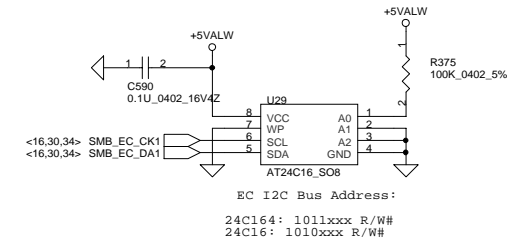
Input Port



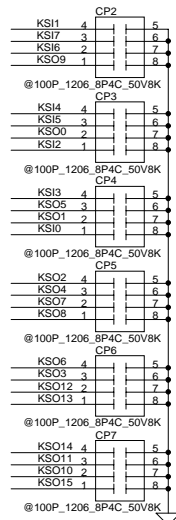
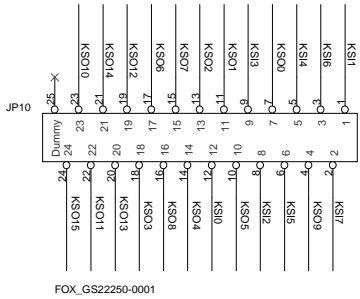
Output Port


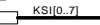


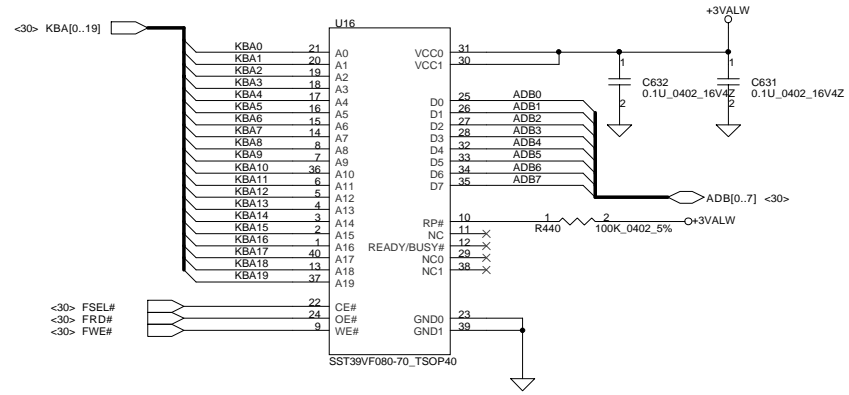
NM24C164 Address definition: 1 A2 A1# A0 B2 B1 B0 R/W#



INT_KBD CONN.



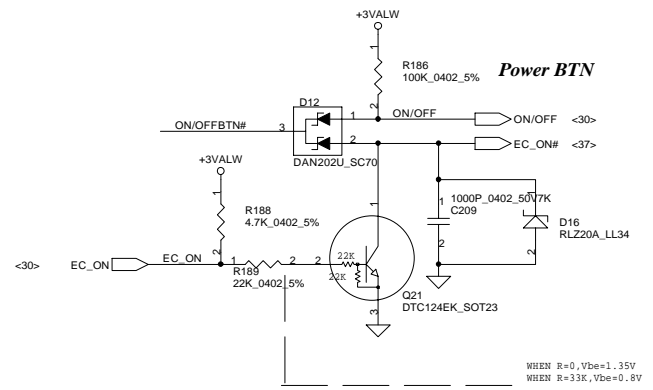
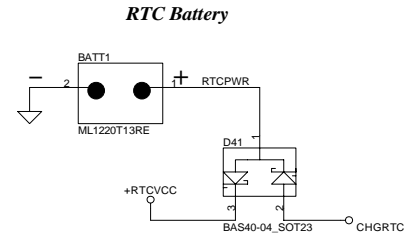
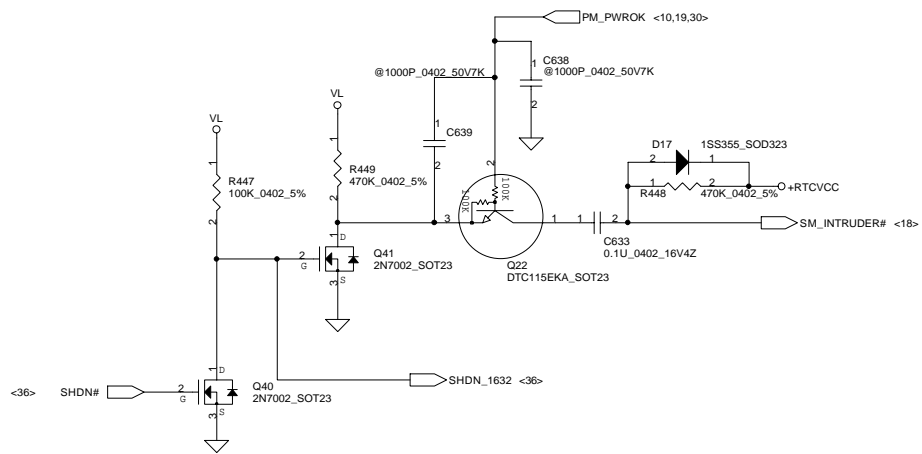
<30> KSO[0..15]  KSO[0..15]
 <30,32> KSI[0..7]  KSI[0..7]



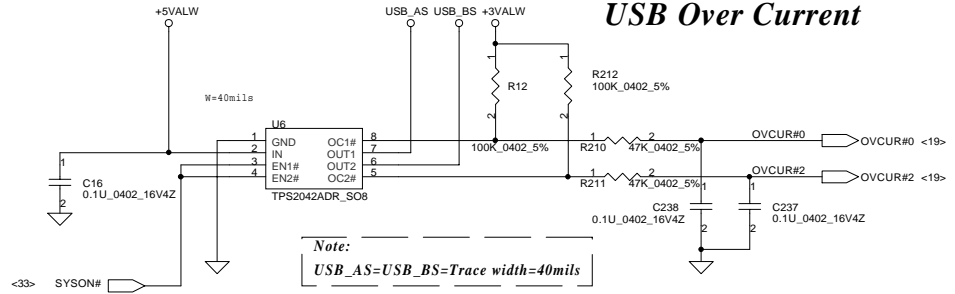
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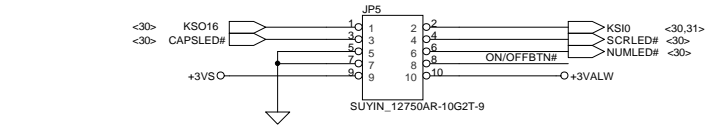
Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 31 of 47



WHEN R=0, Vbe=1.35V
WHEN R=33K, Vbe=0.8V

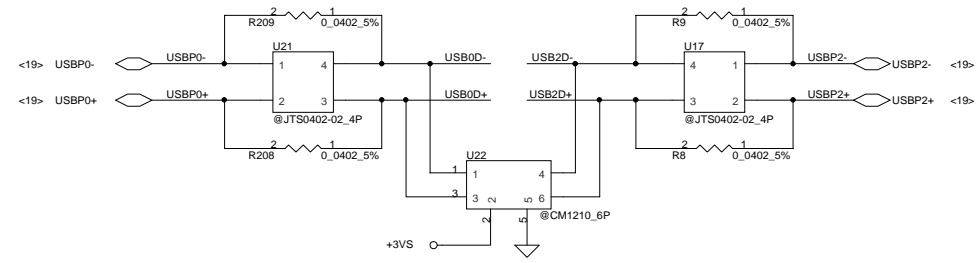
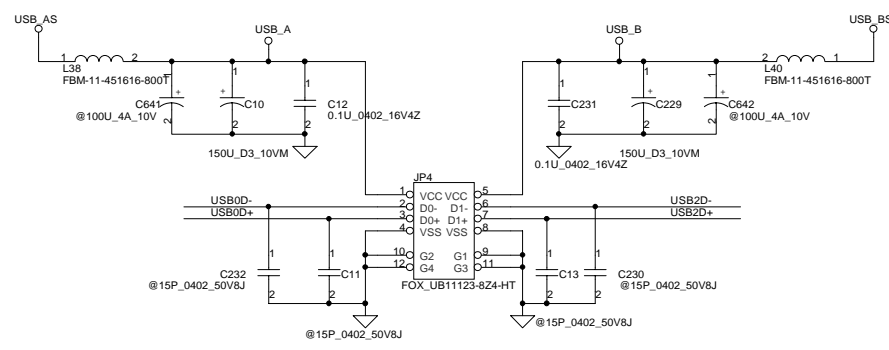


Note:
USB_AS=USB_BS=Trace width=40mils



Power SW Function Button

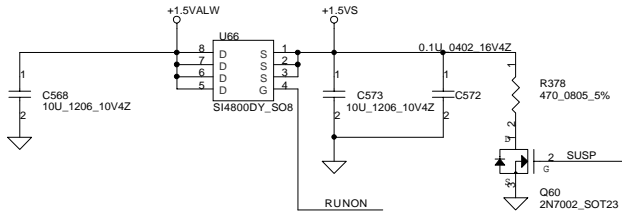
USB PORT



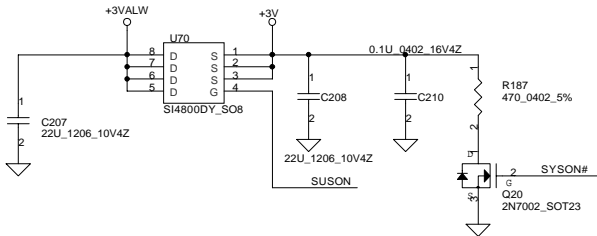
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Title SCHEMATIC, M/BLA-1452			
Size	Document Number 401230	Rev 1B	
Date:	星期五, 四月 25, 2003	Sheet	32 of 47

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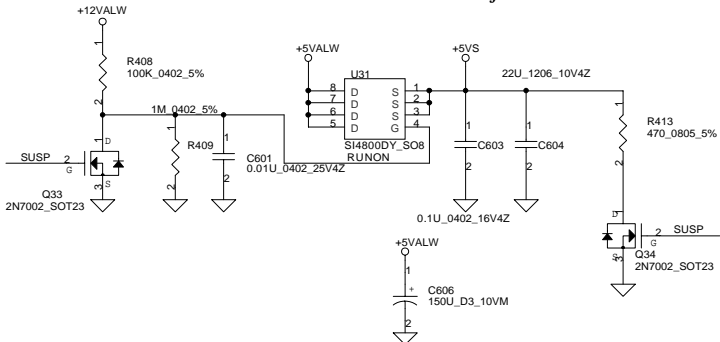
+1.5VALW to +1.5VS Transfer



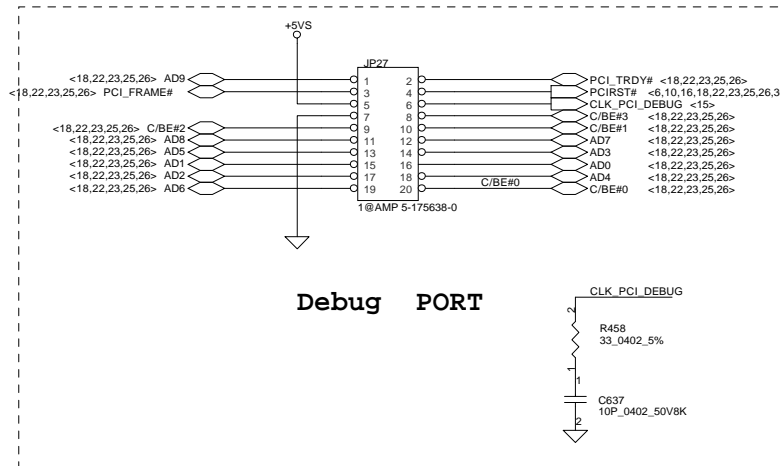
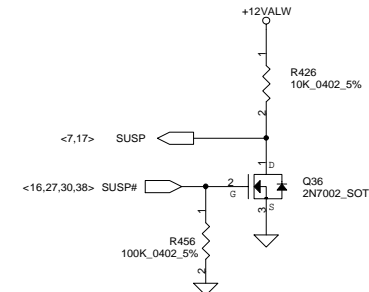
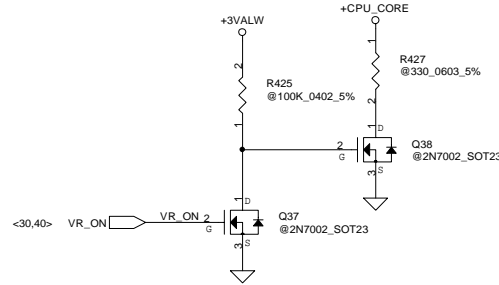
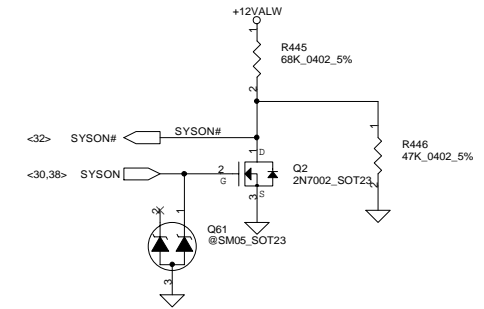
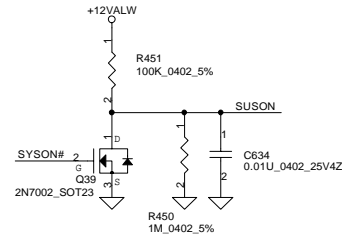
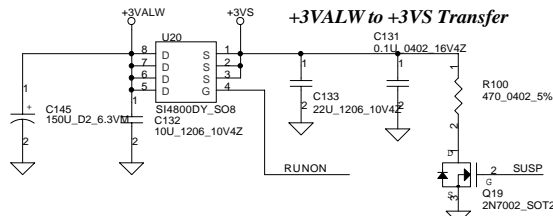
+3VALW to +3V Transfer



+5VALW to +5VS Transfer



+3VALW to +3VS Transfer

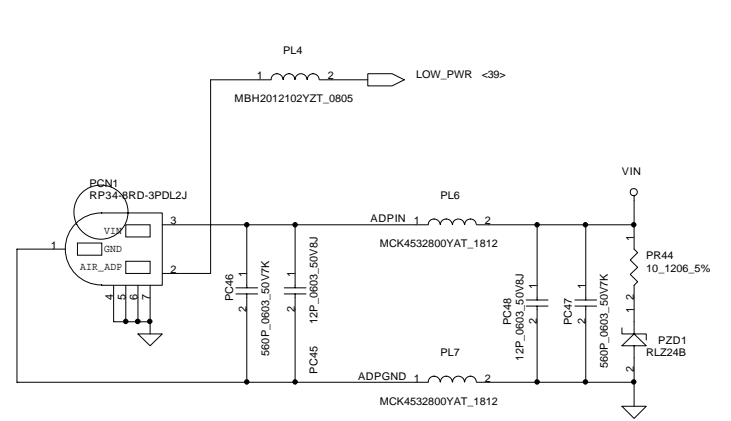


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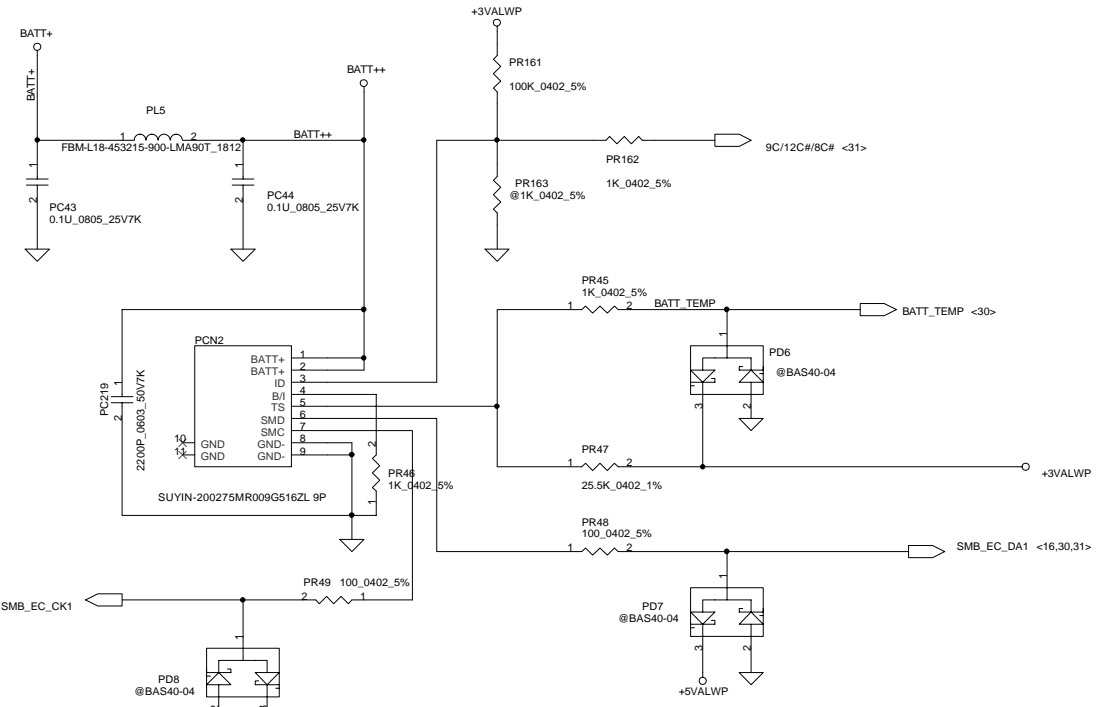
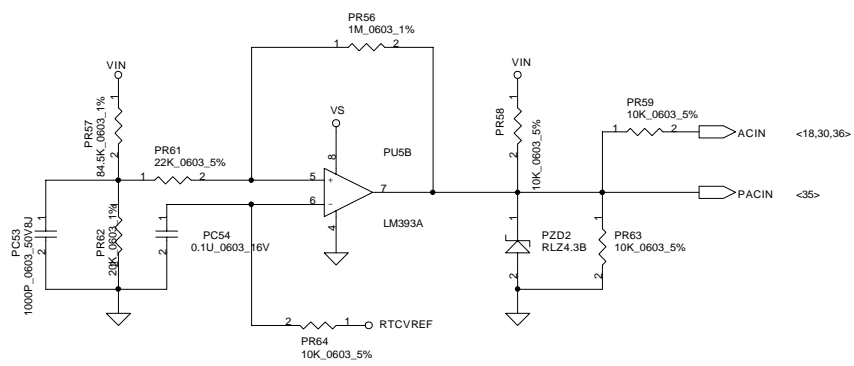
Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 33 of 47

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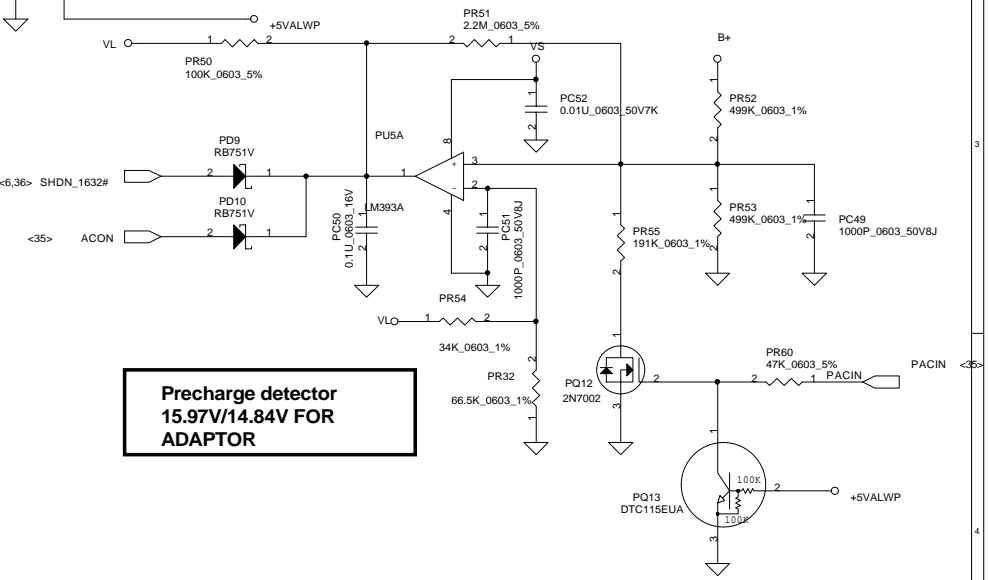


PCN2 battery connector pin assignment
SMART Battery:
 1. BATT+
 2. BATT+
 3. 9C/12C#/8C#
 4. B/I
 5. TS
 6. SMB_EC_DA1
 7. SMB_EC_CK1
 8. GND
 9. GND

Vin Detector
 17.90V/17.24V



Precharge detector
 15.97V/14.84V FOR ADAPTOR

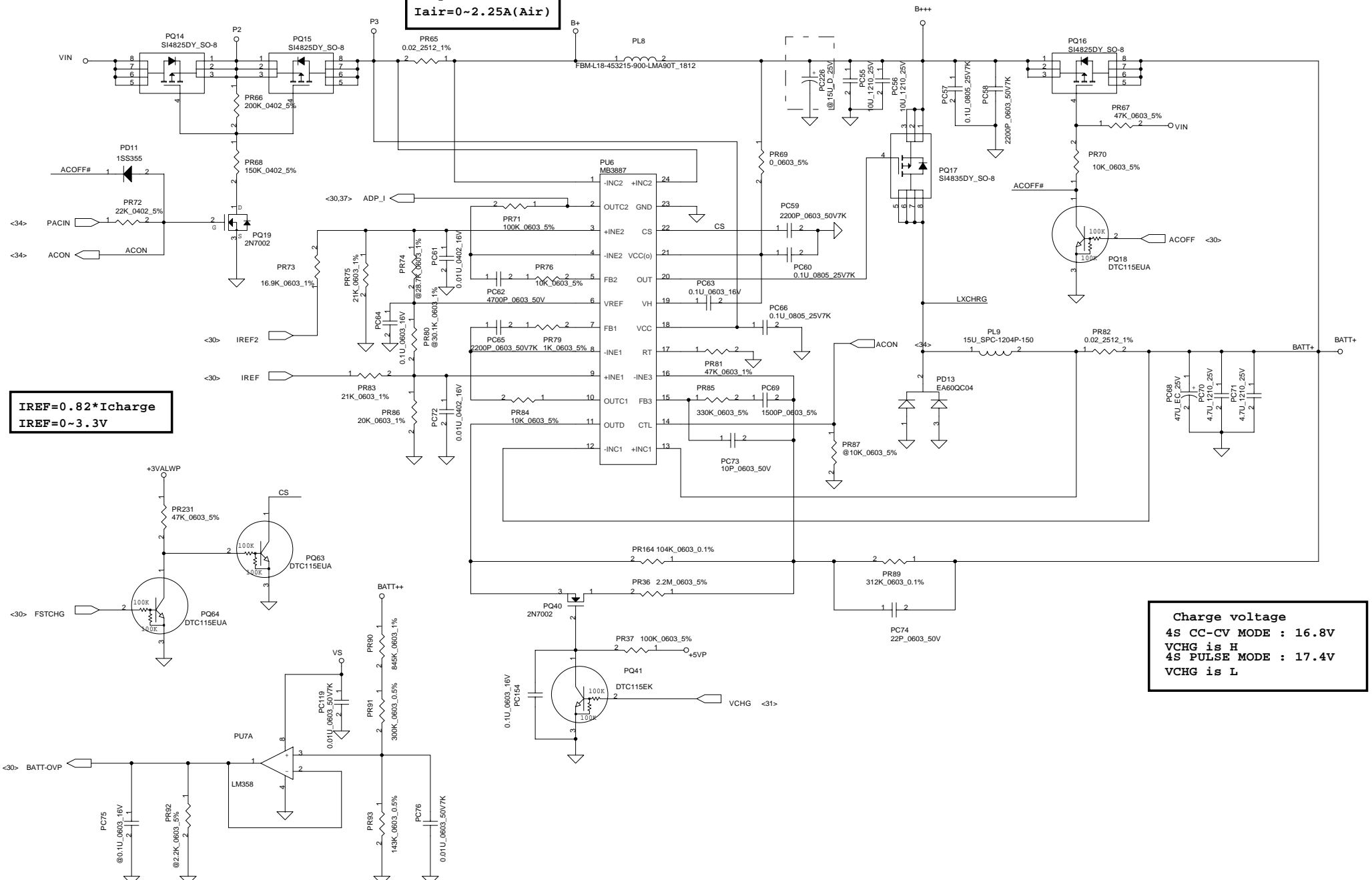


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Title			
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Size	Document Number	Rev	
	401230	1B	
Date:	星期五, 四月 25, 2003	Sheet	34 of 47

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I_{adp}=0~4.10A (90W)
I_{adp}=0~3.20A (70W)
I_{air}=0~2.25A (Air)



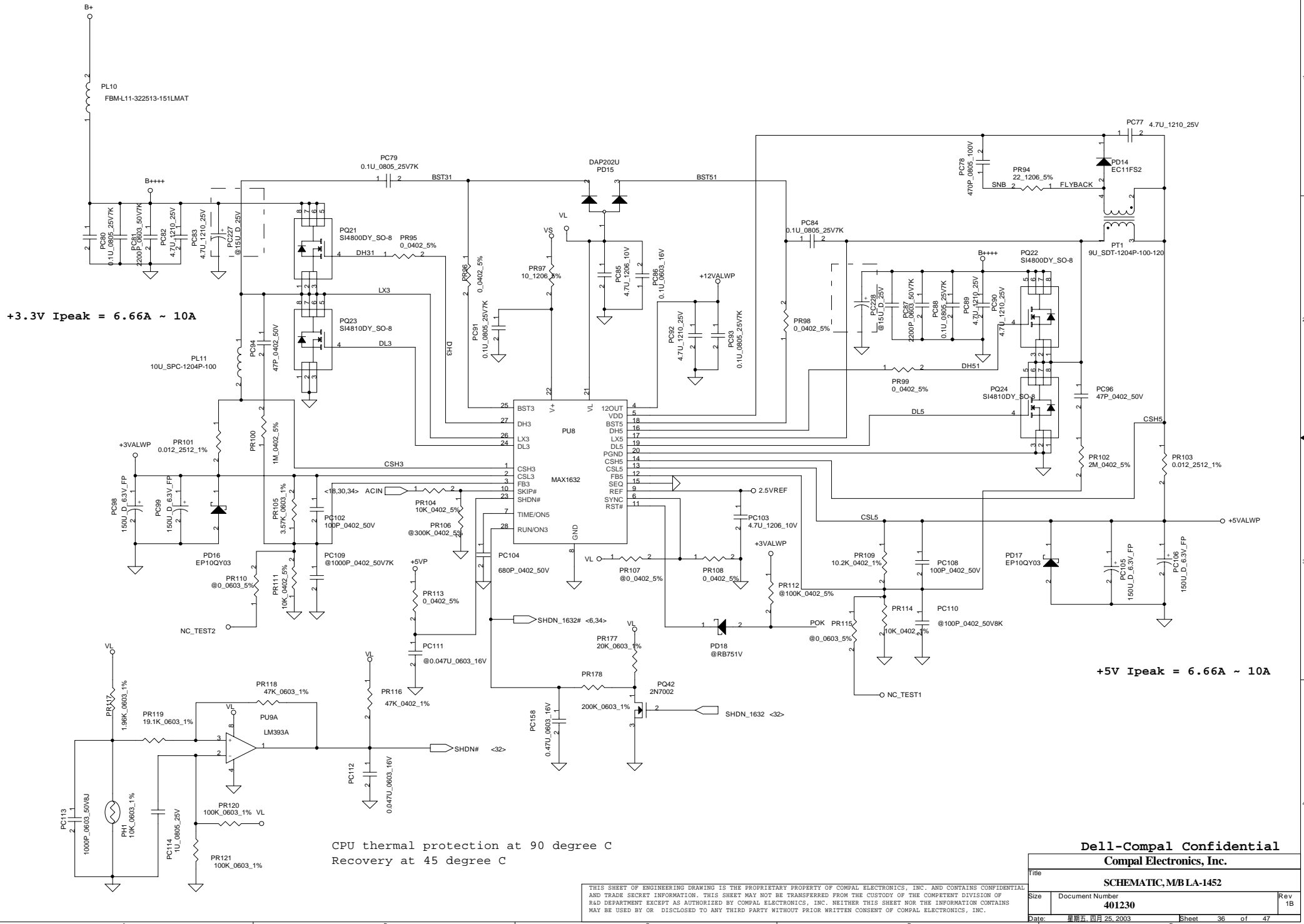
I_{REF}=0.82 * I_{charge}
I_{REF}=0~3.3V

Charge voltage
4S CC-CV MODE : 16.8V
VCHG is H
4S PULSE MODE : 17.4V
VCHG is L

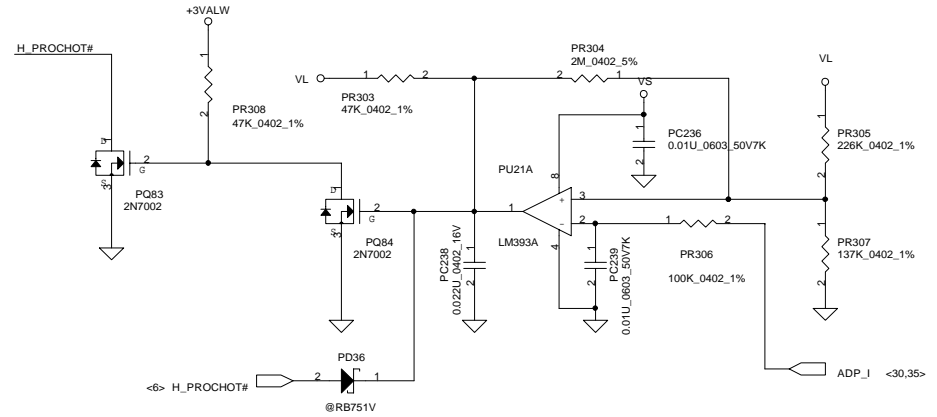
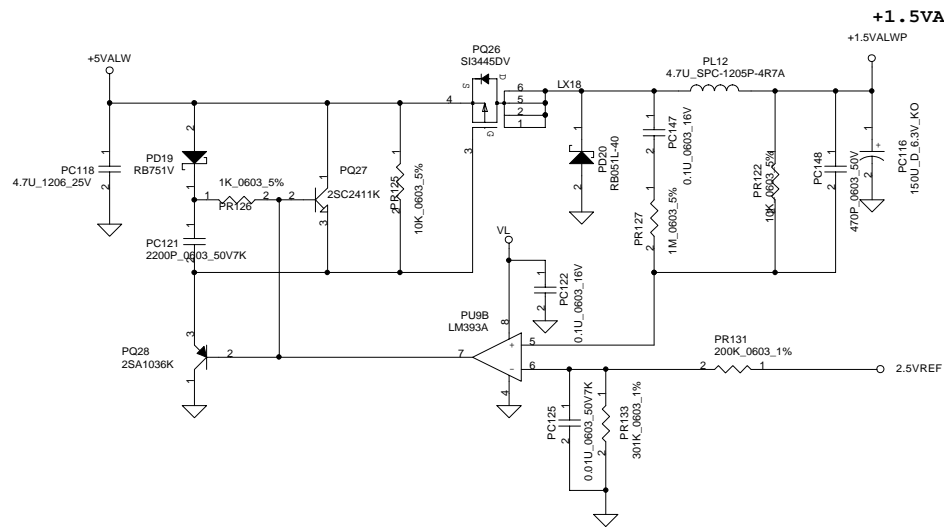
OVP voltage :
LI-4S :18.0V----BATT-OVP=2.00V
LI-3S :13.5V----BATT-OVP=1.50V
BATT-OVP=0.2206*BATT++

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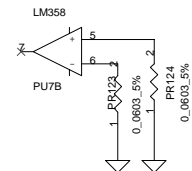
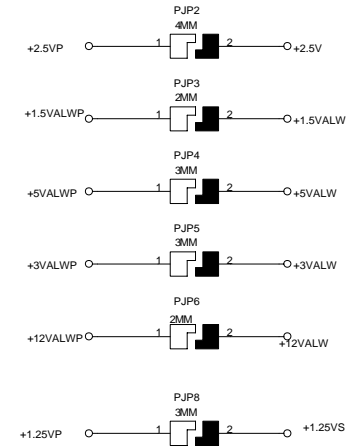
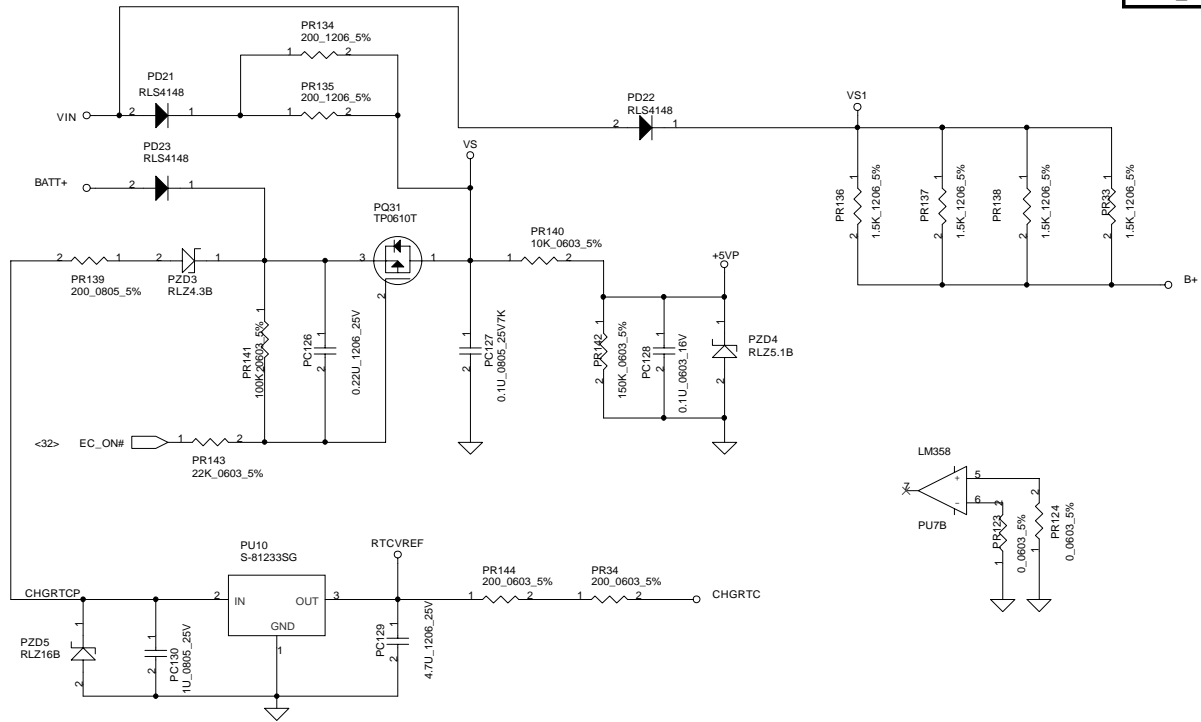
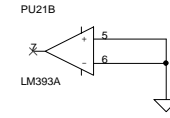
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	401230	1B	
Date:	星期五, 四月 25, 2003	Sheet	35 of 47



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Adaptor Current Detector
 ADP_I : 2.01V.... clock throttle(lin=5.025A)
 ADP_I : 1.81V....No clock throttle(lin=4.525A)



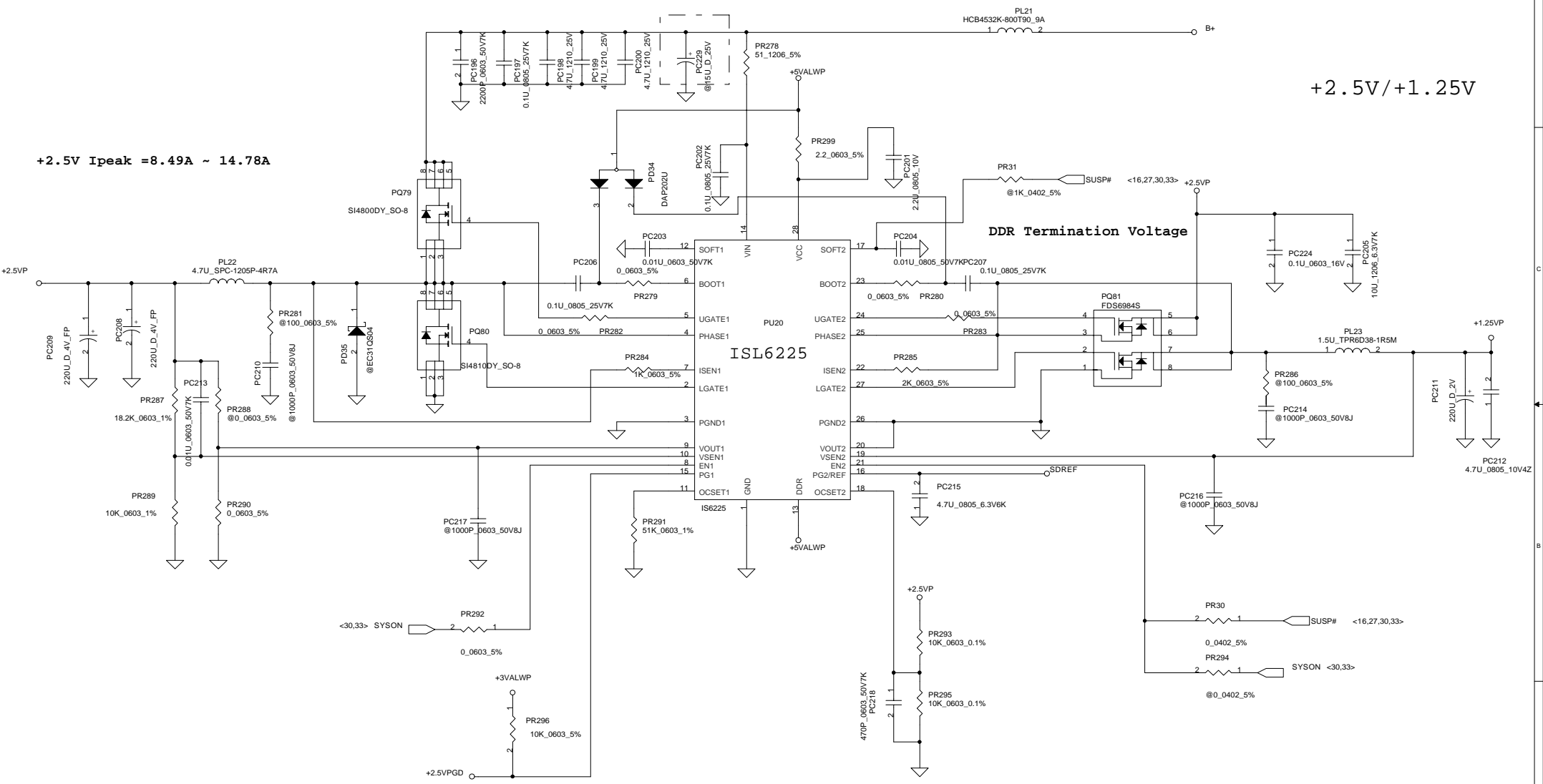
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Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 37 of 47

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+2.5V I_{peak} = 8.49A ~ 14.78A

+2.5V/+1.25V



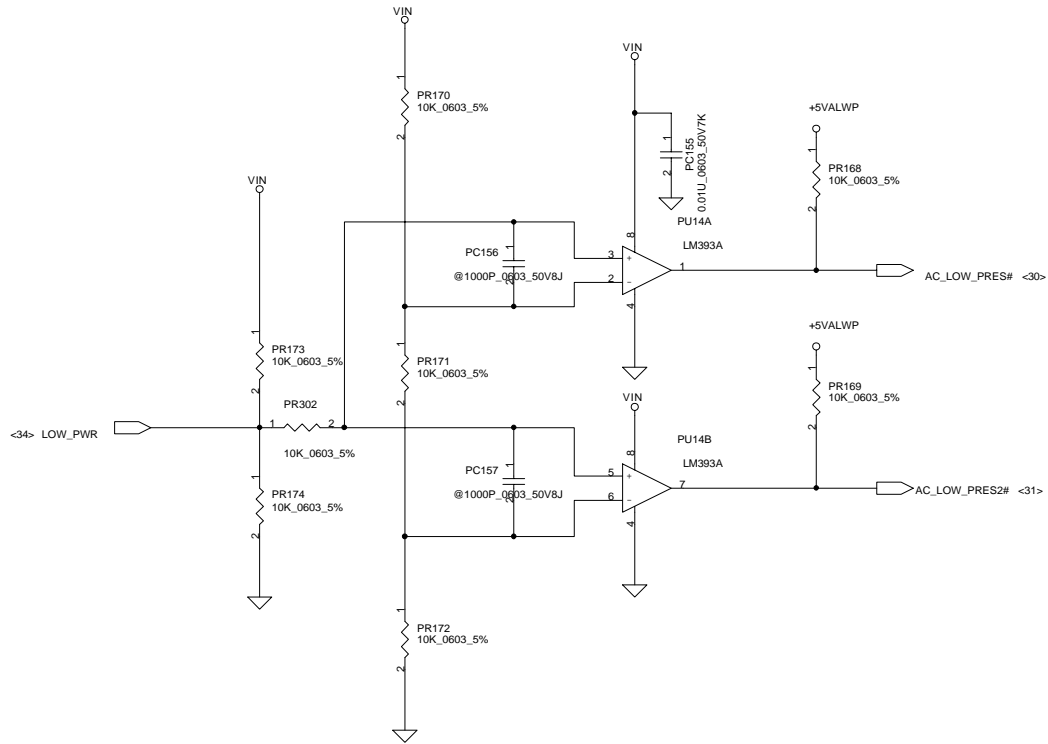
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Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
B	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 38 of 47

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AC Adapter Detector



AC Adapter	LOW_PWR	AC_LOW_PRES#	AC_LOW_PRES2#	IREF2
90W	0V	0	0	2.96V
70W	Float	0	1	2.31V
AIRLINE	20V	1	1	1.62V

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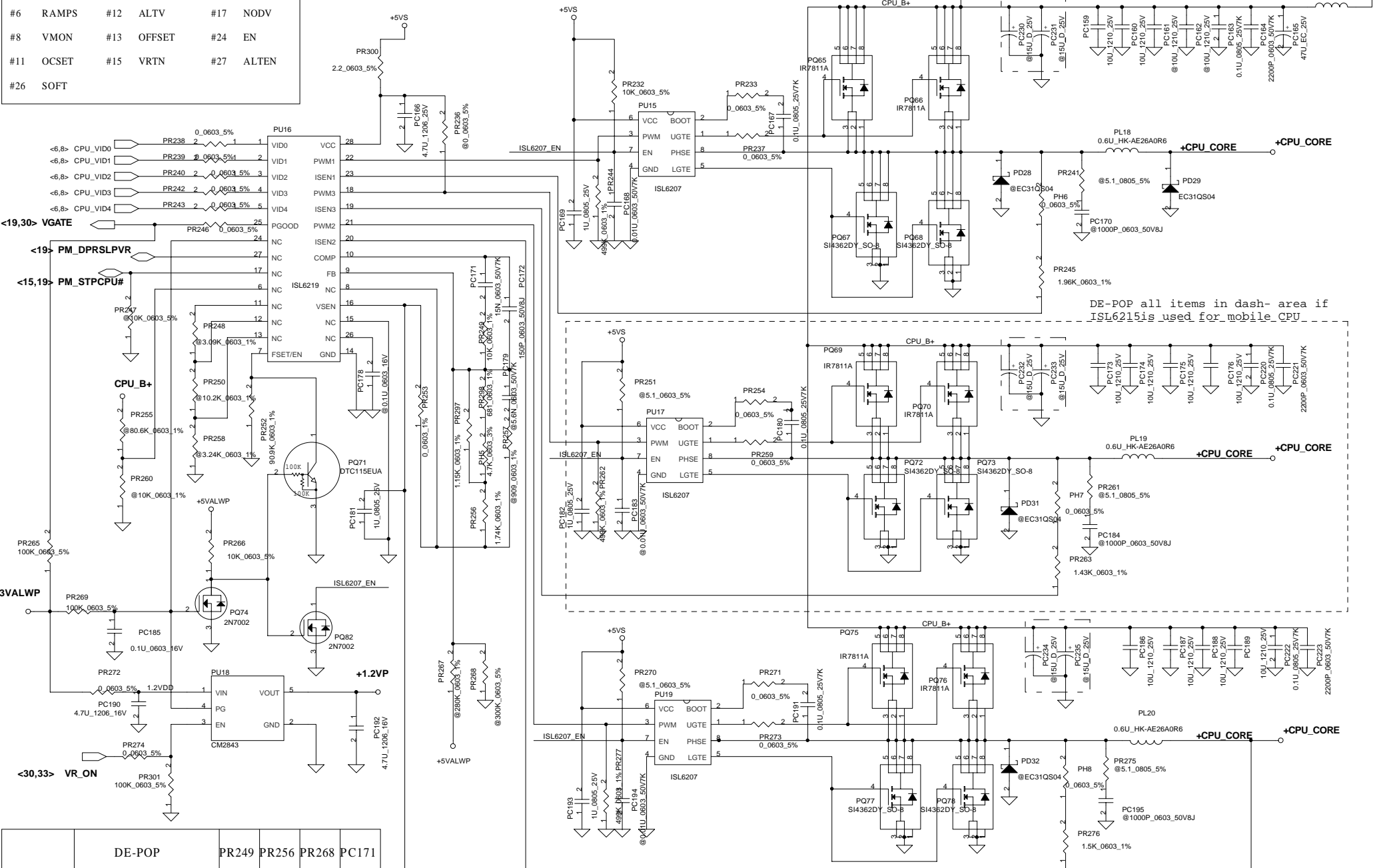
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Schematic, M/B LA-1452

Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 39 of 47

Different Pin Definition for ISL6215 in PU16

#6	RAMPS	#12	ALTV	#17	NODV
#8	VMON	#13	OFFSET	#24	EN
#11	OCSET	#15	VRTN	#27	ALTEN
#26	SOFT				



	DE-POP	PR249	PR256	PR268	PC171
ISL6219 for desk-top	PR247, PR255, PR260 PR248, PR250, PR258, PC178, PC172, PR236	7.5K	1.74K	unpop	5.6nF
ISL6215 for mobile	PR266, PQ74, PQ71 PR253, PC179, PR257	6.04K	1.5K	130K	4.7nF

PTC solution	1. PH6, PH7, PH8 pop thermal resistor 2. Non-pop PR298 and PH5 3. PR297 0 ohm
NTC solution	1. PH6, PH7, PH8 pop 0 ohm resistor 2. Pop PR298 681_0603_18, PR297 1.15K_0603_18 3. Pop PH5 4.7K thermal resistor

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SCHEMATIC, M/B LA-1452

Title	SCHEMATIC, M/B LA-1452	
Size	Document Number	Rev
B	401230	1B
Date:	2003年04月25日	Sheet 40 of 47

THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
1	Fireware issue	The ICH4 GNTA# strap pull up for EC BIOS	0.1A	18	Depop R153, GNTA# have internal pull up	0.1	SST
2	Leakage current issue	Reduce Broadcom 4401L leakage current	0.1A	22	Depop L39 and pop L7, connctor power source from +3VALW to +3V, R31, R32, R33 pull up to +3VAUXLAN, Q3,Q4,Q5 pin3 connect to +3VAUXLAN	0.1	SST
3	Fix schematics part value	L21, L22, L23, L26 part value different with BOM	0.1B	15	Change L21, L22, L23, L26 part value from CHE2012U121 to BLM21A601SPT on schematics	0.1	SST
4	BOM issue	R445 include wrong part number	0.1B	33	Change R445 part number from SD028470200 to SD028680200. PN indicate value from 47K_0402_5% to 68K_0402_5%	0.1	SST
5	HDD leakage current issue	When AC in +5VSHDD will go up to 5V	0.1C	21	Q6 change to SI2302DS as schematics, SIDEPR active low when HDD power on	0.1	SST
6	Capture library package issue	2N7002 Drain is pin1, Source is pin3	0.1C	28	Fixed Q30, Q31, Q32 Capture library, pin1 fixed to pin3, pin3 fixed to pin1	0.1	SST
7	BOM issue	Fixed R196-R199 from 56.2K ohm to 56.2 ohm	0.1C	23	Change R196-R199 PN from SD014562207 to SD014562A00 on schematics	0.1	SST
8	Fix LOM EEPROM issue	U8 (AT93C46) is used X16 organization	0.1C	22	NC or pop R452 to pull up U8 pin6 for X16 organization select	0.1	SST
9	Fix CLKRUN# leakage issue	ICH4 not implement CLKRUN#, GPIO24 is resume power well.	0.1D	19	Add a diode D46 to isolate GPIO24 from ICH4 to PCI devices, and depop D46.	0.2	PT
10	LOM EEPROM issue	U8 (AT93C46) is used X16 organization. U8 pin6 pull up or NC for X16 organization select, pull down for X8 organization select.	0.1D	22	U8 pin6 pull up +3VAUXLAN via R452, and depop R452.	0.2	PT
11	SW BD LED keep turn on	SW BD LED control transistor Emitter connct to +5VALW be keep LED always turn on	0.1D	32	Change JP5 pin9 from +5VS to +3VS	0.2	PT
12	Fix VCCA_SM voltage drop issue	Add current rating for VCCA_SM, VCCA_DPLL, VCCA_FSB (1.5VS)	0.1E	10	Change L3, L4, L27, L28 from MLF2012DR68XT to FBM-L11-201209-121LMA05	0.2	PT
13	Change address and control signals layout topology	Change ddr address and control signal layout topology	0.1E	12,13	DDR address and control signals layout topology same the ddr data layout topology	0.2	PT
14	Fix EE issue item 89	Signal COMP/B and Y/G connect error	0.1E	17	Swap COMP/B and Y/G to correct connection	0.2	PT
15	Fix EE issue item 91	BEEP# from EC should be high active	0.1E	28	Change net name BEEP# to BEEP	0.2	PT
16	Fix EE issue item 92	Fix FSB 400MHz when 845GL pop	0.1E	15	Add R455 (8.2K_5%) pull down for H_BSEL0	0.2	PT
17	Fix EE issue item 95	When AC insertion SUSP# may be floating before the KBC can programit.	0.1E	33	Add R456 (100K_5%) pull down SUSP#	0.2	PT
18	Fix EE issue item 47	Provide enough current rating	0.1F	15	L22 and L26 change frome BLM21A601SPT (300mA) to FBM-L11-201209-121LMA05 (500mA) and depop L22	0.2	PT
19	Card Bus power bead current rating not enough	Provide enough current rating	0.1F	24	L5 and L6 change frome FBM-L11-160808-800LMT_0603 (300mA) to FBM-L11-201209-121LMA05 (500mA)	0.2	PT
20	Fix EE issue item 102	Fix Intel CPU FSB frequency issue	0.1F	10,15	H_SEL0 connect to R270 pin1 from CLK generator, HSEL0 connector to R270 pin2 from CPU. Depop R270 on GL board.	0.2	PT
21	Battery charge issue	ACIN pull up +3VALW can't change power supplier to battery when AC exit	0.1F	18	Depop R161	0.2	PT
22	NO	Change PCMCIA connector	0.1F	24	Change PCMCIA connctor from AMP_0-1376275-1 to JAE_JC21-BRB	0.2	PT
23	Fix INTRUDER issue	ESD protect for Q22	0.1F	32	Add C638, C639 for Q22 protection	0.2	PT
24	Remove PS2 connector	No necessary	0.1G	29	Remove RP7, JP26	0.2	PT
25	Add debug port	GL board have not pop minipci connector, we need a port 80 debug tool	0.1G	33	Add R458, C637 and JP27	0.2	PT
27	For cost save	For cost save	0.1G	32	Depop C10, C229 (150U Poly Cap), add C641, C642 (100U Petit Cap)	0.2	PT
28	It no need	Use R19 pop and depop to control H_SEL0 high or low	0.1G	15	Remove R455	0.2	PT
29	Fix EE issue item 134	Change ddr address and control signal layout topology	0.1H	12,13	Change DDR address and control signal to go back SST topology	0.2	PT
30	Fix EE issue item 149	Pop Petit Cap after EA test	0.1H	32	Depop C641, C642 and pop C10, C229	0.2	PT
31	Fix EMI issue	EMI team's recommendation	0.1I	10	Pop R52, C79 for CLK_CLK_PCI_LAN; R428, C614 for CLK_PCI_MINI; R406, C597 for CLK_PCI_LPC; R321, C395 for CLK_ICH_66M	0.2	PT

Compal Electronics, Inc.		
Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	~P期五, 四月 25, 2003	Sheet 41 of 47

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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
32	No	Connect MiniPci connector metal door to short to GND	0.1I	26	Add JP24 pin 127, 128 on schematics short to GND, JP24 footprint pin 127, 128 (metal lock door) be short to GND	0.2	PT
33	No	Some text mode use wire, change to line	0.1I	10,30,40	Some text mode use wire, change to line	0.2	PT
34	Fix power on issue	Use PCIRST# to set the SHDN_1632# work after PCIRST# high when power on	0.1I	6	Add Q62 gate connect to PCIRST#, source connect to SHDN_1632#	0.2	PT
35	No	Change to use approve part	0.1I	31	RP18 (8.2K +-5% 4P2R) change to R453, R454 (8.2K_0402_5%)	0.2	PT
36	No	Hard Disk source power change to +5VS	0.1I	21	Q6 change back to SI2301DS (PMOS) pin3 connect to +5VS	0.2	PT
37	Fix EE issue item 134	Change DDR address and control signal topology back to REV0.1	0.1I	12,13	Change DDR address and control signal topology back to REV0.1	0.2	PT
38	Fix EE issue item 171	For CRT Hsync and Vsync to allow tuning	0.1I	17	Add series resistors R459, R460 for Hsync and Vsync	0.2	PT
39	No	Schematic version change for PT build	0.2	ALL	Change revision from 0.1I to 0.2	0.2	PT
40	Fix issue item 20	Slow rising and falling time	0.2A	10	Pop R234, C249 for CLK_MCH_DISPLAY; R286, C333 for CLK_MCH_66M	0.2	PT
41	Fix CRT rising and falling time issue	Fast rising and falling time	0.2A	17	Pop L1, L2, L15 Change Form FCM-2012C-800 to FBM-10-201209-260T for PE board	0.2	PT
42	No	Change Board ID output level	0.2A	30	Pop R393 100K_0603_1% for Board ID	0.2	PT
43	No	Add off-page reference	0.2A	24	Add off-page on pg24 FCMCIA connector	0.2	PT
44	No	Net in for Rev 0.2A Gerber	0.2B	ALL	Modify Text	0.2A	PT-2
45	Fix DFX issue	C387 effect DIMM door lock	0.2C	21	Add C643 22uF_1206 replace C387's layout location and C387 leave DIMM area.	0.2A	PT-2
46	No	Add JP18 PCMCIA connector GND pads	0.2C	24	JP18 pin75,76,77,78,79,80,81,82 connect to GND	0.2A	PT-2
47	No	PM_GMUXSEL for mobil platform to support SpeedStep, desktop platform just GPIO fuction	0.2C	19	Remove PM_GMUXSEL signal net	0.2A	PT-2
48	Fix PIR2 issue	PIR not match schemaitcs	0.2F	22	Pop L39 and depop L7	0.2A	PT-2
49	Fix PIR19 issue	PIR not match schemaitcs	0.2F	24	L5, L6 change to FBM-L11-201209-221LMAT (3A). And Depop L5	0.2A	PT-2
50	Fix PIR23 issue	PIR not match schemaitcs	0.2F	32	Depop C638	0.2A	PT-2
51	Fix PIR24 issue	PIR not match schemaitcs	0.2F	30	Rp7 pop for pull up P52 signal	0.2A	PT-2
52	Fix PIR25 issue	PIR not match schemaitcs	0.2F	33	JP27 pop on GL board for debug and depop on PE board	0.2A	PT-2
53	Fix EE issue item 62	Schematics component's PN not match BOM	0.2G	29	JP13 (TP CONN) PN change to "SP020010910" in schematics to match BOM	0.2A	PT-2
54	Fix EE issue item 63	Schematics component's PN not match BOM	0.2G	29	JP25 (MDC CONN) PN change to "SP02F00410L" in schematics to match BOM	0.2A	PT-2
55	Fix EE issue item 64	Schematics component's PN not match BOM	0.2G	32	JP4 (USB CONN) PN change to "DC23310241L" in schematics to match BOM	0.2A	PT-2
56	3VDDCDA, 3VDDCCK rising time issue	3VDDCDA, 3VDDCCK rising slow on SMBus EA measurement	0.2G	17	R5, R201 change from I0K_0402_5% to 2k_0402_5%	0.3	ST
57	EE issue list item 91	CLK_PCI_ICH timing out of spec	0.2H	18	Pop R349 (22_0402_5%), C480 (10P_0402_50V8K) for CLK_PCI_ICH AC termination	0.3	ST
58	EE issue list item 103	Depop sub thermal sensors for cost save	0.2H	8	Depop U25, U23, C394, C482, R308, R351 and R306	0.3	ST
59	Fix Boardcom 4401L wake up from S3 issue	Fix Boardcom 4401L wake up from S3 issue	0.2H	22	Add R461, R462 and depop R462. Option VESD and VDDBUS power source from +3VS to +3VAUXLAN. C97, C96, C77, C74, C88, C87, C80 bypass +3VWOL	0.3	ST
60	EE issue list item 103	H_BSEL0 of 845PE should get 1.5V at input and CLK chip should be seeing 3.3V with 533MHz CPU	0.2H	15	Add R463 (0_0402_5%) Pop on PE board. R19 move to CPU side and power source +3VS.	0.3	ST

Compal Electronics, Inc.

Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	~P期五, 四月 25, 2003	
	Sheet	42 of 47

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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
61	ESD protection on 2nd FAN	ESD protection on 2nd FAN	0.2I	7	Reserve Q63 (SM05) for 2nd FAN ESD protection	0.3	ST
62	Fix EE issue item 105	H_BSEL0 circuit not correct	0.2I	10, 15	Series resistor R270 for CPU and MCH	0.3	ST
63	No	Change Board ID for ST build	0.2I	30	R394 change from 10K_0603_1% to 24.9K_0603_1%	0.3	ST
64	No	Change for ITP test on PCBA	0.2I	6, 8	Depop R313, R305 and pop R310, R372, R183, R184, R304	0.3	ST
65	Fix EE issue item 126	Using larger cap for high-pot margin	0.2J	22	C211, C212 change package from 1206 size to 1808.	0.3	ST
66	RJ11 ISN failed	EMI team recommend to resolve RJ11 ISN test failed	0.2J	29	Cut a separated GND for MDC and connect to system GND via a schottky diode. Reserve a jump for connect system and MDC GND.	0.3	ST
67	Fix EE issue item 140	Connect 9C/12C#/8C# to EC GPIO for future 9Cell support if required	0.2K	31, 34	Connect 9C/12C#/8C# from PR162 to U30 pin17 and remove R388	0.3	ST
68	TI TPS793475DBVR damage issue	When power on, there are 1.5A sink current when TPS793475DBVR started	0.2K	29	For power solution, C558 change package size from 0402 to 0603 for value tolerance	0.3	ST
69	Fix EE issue item 136	Add hardware circuit to sense Adapter current and automatically generate PROCHOT to the CPU to generate automatic throttling	0.2K	6	R311 change to 4.7K_0402_5%, H_PROCHOT# connect to PD36	0.3	ST
70	Fix ThermTrip function	When thermal protective resistor PH1 work, SHDN_1632# can't tie to low	0.2K	6	R320 connect to Q59 base, R316 connect to Q59 collector and VL power source. Add Q64 between Q59 and Q62. Q62 change pin1 Drain to connect SHDN_1632#	0.3	ST
71	RJ11 ISN failed	Change solution for ISN failed	0.3	29	Remove PJP9-13 and D47	0.3	ST
72	Fix EE issue item 136	Follow Intel desing guide recommend pull up resistor value	0.3	6	R311 change back to 62_0402_5%	0.3	ST
73	Fix EE issue item 141	Prevent noise issue	0.3	28	Depop R328 for noise prevention	0.3	ST
74	No	For cost save	0.3	7	Depop C148, C150 (470U_D4_2.5VM) and C152 (330U_D2E_2.5VM)	0.3	ST
75	Fix PROTO3 EE issue item 44	Minipci connector pop for PE board only	0.3B	26	Add 2@ symbol for JP24 for PE board pop only	0.3	ST
76	No	Vendor schematics review recommendation	0.3B	22	R35 change from 10K_0402_5% to 1K_0402_5%	0.3	ST
77	Fix PROTO3 EE issue item 45	Remove minipci suport component for GL board cost save	0.3B	26	Remove R405, R399, C600, C596, C613, C612, C599, C598, C609, L35, C616, C610, L36, R401, R403 on GL board	0.3	ST
78	No	Modify material value	0.3C	23, 26, 27, 28	Change value L11, L30, L31, L35, L36 from BDM21A05_0805 to BLM21A05_0805	0.3	ST
79	No	Modify material part number	0.3C	27	U24 STAC9750 change from (SA097500000) to (SA097500010) for both BOM	0.3	ST
80	No	Depop Fan2 Control circuit	0.3C	7	Delete R11, D11, D20, U1, R10, R6, Q1, C234, Q8, JP19	0.3	ST
79	No	EMI require	1.0	17	Pop D1, D3, D18 for EMI requirement	1.0	QT
80	No	Modify Fiduiial Mark & Screw Hole value for non pop	1.0	29	Fiduiial Mark & Screw Hole value add @ symbol	1.0	QT
81	No	BD_ID change for QT build	1A	30	R394 change from 24.9K_0603_1% to 43K_0603_1%	1.0	QT

Compal Electronics, Inc.		
Title SCHEMATIC, M/B LA-1452		
Size	Document Number 401230	Rev 1B
Date:	~P期五, 四月 25, 2003	Sheet 43 of 47

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Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
82	INTRUDER# issue	Sometimes when normal shutdown, INTRUDER# record a event	1A	32	Q22 change from 2N7002 to BJT DTC115EKA	1.0	QT
83	No	Because Q22 change to DTC115EKA, C639 is no necessary	1B	32	Depop C639 (1000P_0402_50V7K)	1.0	QT
84	Fix Qual issue item 35	Improve IAC_SDATA_IN1 singnal quaility	1B	29	The serie resistor R441 change from 22_0402_5% to 10_0402_5%	1.0	Pilot
85	Fix audio not switching to headphones or ext speakers immediately	For audio switching to headphones or ext speakers immediately	1C	28	Depop C580 and change C588 from 4.7uf to 0.47uf	1.0	RTS

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Compal Electronics, Inc.		
Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	~P期五, 四月 25, 2003	
	Sheet 44 of 47	

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
1	CPU_CORE can't power up	Pin7 of PU16 can't be used as on/off control pin	0.1B	40	1. Change VCC power source of PU16 from +5VALWP to +5VS	0.1	SST
2	current limited is not up to 60A	Current limited is about 37A while PH6,PH7,PH8 is 1.5K that is not enough for design target.Because we don't use PTC resistor on PCB now, the value must be tuned later.	0.1B	40	1. Change PH6,PH7,PH8 from 1.5K_0603_5% to 3K_0603_1%	0.1	SST
3	Turn on voltage of PQ19 is not enough	Vgs of PQ19 is 2V while PR72 is 47K. That is not enough. While PR72 is 22K, the Vgs can be improved to 2.5V.	0.1B	35	1. Change PR72 from 47K_0402_5% to 22K_0402_5%	0.1	SST
4	current rating is not enough.	FBM-L11-322513-151LMAT is 5A that is not enough.So FBM-L18-453215-900LMA90T1812 is 9A that is better.	0.1B	35	1. Change PL8 from FBM-L11-322513-151LMAT to FBM-L18-453215-900LMA90T1812.	0.2	PT
5	Fix noise issue	On SST PCB, we can sound some noise due to PC77, the ceramic capacitor has sounded noise with thinner type.	0.1C	36	1. Change PC77 from 2.2U_1206_25V to 4.7U_1210_25V	0.2	PT
6	Fix CPU_CORE Transient Response fail	The transient response is too slow. We must to tune feedback resistor and capacitor to fix it.	0.1E	40	1. Change PR249 from 3.48K_0603_1% to 5.76K_0603_1%. 2. Change PR257 from 49.9_0603_1% to 1.1K_0603_1% 3. Populate PC172 68PF_0603_50V.	0.2	PT
7	SDREF output voltage is over spec.	Add bypass capacitor pallel pin18 of ISL6225	0.1E	38	Populate PC218 470P_0603_50V7K	0.2	PT
8	PG of CM28423 has a glitch while VCC is ready and VR_ON is float	Add pulldown resistor tie to GND while VR_ON is float that can be made sure the logic is low.	0.1E	40	Add PR301 100K_0603_1%	0.2	PT
9	Change VCC power source of PU15, PU17, PU19 from +5VALWP to +5VS	Negative voltage was observed on +5VALWP when system powered off	0.1E	40	1. Change VCC power source of PU15, PU17, PU19 from +5VALWP to +5VS	0.2	PT
10	Prevent abnormal function OVP caused by ISL6219 while system powerwd off ; bouble pulses was observed at output PW1, PW2, PWM3 of ISL6219	ISL6219 caused OVP when on/off pin changed from high to low level	0.1E	40	1. Add FQ82 2N7002 2. Change PR232 from 5.1_0603_5% to 10K_0603_5% 3. Change PC168 from 1U_0805_25V to 0.01U_0603_50V. 4. Depop PR251, PR270, PC183, PC194 5. Tie the EN pin of PU15, PU17, PU19 to Pin1 of PQ82	0.2	PT
11	Fine-tune current sharing of CPU VR phasel,2,3 to have thermal balance	uneven current sharing found	0.1E	40	1. Change PH6, PH7, PH8 form 3K_0603_1% to 0_0603_5% 2. Change PR245 from 0_0603_5% to 1.96K_0603_1% 3. Change PR263 from 0_0603_5% to 1.43K_0603_1% 4. Change PR276 from 0_0603_5% to 1.5K_0603_1%	0.2	PT
12	Fine-tune CPU load-line with NTC	Fine-tune CPU load-line with NTC	0.1E	40	1. Keep PR268 nonpop 2. Change PR256 from 2K_0603_1% to 1.74K_0603_1% 3. Change PR297 from 0_0603_5% to 1.15K_0603_1% 4. Change PH5from depop to 4.7K_0603_1% 5. Change PR298 from depop to 681_0603_1% 6. Change PR257 from 49.9_0603_1% to 909_0603_1% 7. Change PC179 from 3900P_0603_50V to 5.6N_0603_50V 8. Change PR249 from 3.48K_0603_5% to 7.5K_0603_1% 7. Change PC171 from 6800P_0603_50V to 5.6N_0603_50V 8. Change PC172 from depop to 47P_0603_50V	0.2	PT
13	Audio noise found	Still find root cause	0.1E	35, 36, 38, 40	1. reserve 15U_D_25V capacitors on PC226-PC235,	0.2	PT
14	PC212 location space change	requested by ME to put a connector around	0.1E	38	1. change the size of PC212 from D size to 0805 and pop 4.7U_0805_10V	0.2	PT
15	Remove PD5	no possibilty to have a reverse voltage at Vin when adapter plug-in because of the DC-jack orientation structure	0.2C	34	1.delete PD5 from schematics	0.2A	PT-2
16	Prevent PU14 from burn out	When pin1 (GND pin) of DC-jack PCN1 disconnected from B/M (damaged by force from outside), there is a large current going through PU14 resulted in PU14 damaged	0.2C	39	Add PR302 10K_0603_5%	0.2A	PT-2

Compal Electronics, Inc.		
Title		
SCHEMATIC, M/B LA-1452		
Size	Document Number	Rev
	401230	1B
Date:	星期五, 四月 25, 2003	Sheet 45 of 47

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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
17	100MHz EMI broad-band over spec.	Improve 100MHz EMI broad-band	0.2E	34	Add a FBM-L18-453215-900-LMA90T_1812 bead on PL7	0.2A	PT-2
18	100MHz EMI broad-band over spec.	Improve 100MHz EMI broad-band	0.2H	34	1. Change PL6,PL7 from FBM-L18-453215-900-LMA90T_1812 to MCK4532800YAT_1812 2. Add PL4 MBH2012102YZT_0805 3. Change PC45 from 100P to 560P, PC46 from 1000P to 12P,PC47 from 100P to 12P and PC48 from 1000P to 560P	0.3	ST
19	Precharge function has some bug, while AC Adapter plug in first time	Precharge can reduce surge current from AC adapter,while Adapter plugged in	0.2H	34	1. Change PR51 from 1M to 2.2M,PR55 from 215K to 191K. 2. Change PR54 from 10K to 34K,add PR32 66.5K. 3. Change PC51 from 0.1U_16V to 1000P_50V. 4. Change PC50 from 1000P_50V to 0.1U_16V. 5. Change net +5VP and RTCVREF to VL. 6. Change PR113 from 47K_0402_5% to 0_0402_5%. 7. De-pop PC111 and change PC158 from 0.1U_16V to 0.47U_16V.	0.3	ST
20	Power rating of 0.02_2010 is not enough.	rating power of 0.02_2010 is 0.5W that is very poor for 90W adpater	0.2H	35	1. Change PR65 from 0.02_2010_1% to 0.02_2512_1%.	0.3	ST
21	Power open issue	Change size of thermal resistor and cost down	0.2H	36	Change PH1 from 10K_0805_1% to 10K_0603_1%.	0.3	ST
22	Power good glitch issue in ISL6225	The glitch occurs while secondary PWM is enabled that effects system boots up	0.2H	38	1. Add PR31 1K_0402_5%.. 2. De-pop PR294	0.3	ST
23	Fix open issue #137	DELL don't approve item22 solution, prefer using new version ISL6225	0.2J	38	1. De-pop PR31 1K_0402_5%. 2. De-pop PR294 0_0402_5%. 3. Add PR30 0_0402_5%.	0.3	ST
24	Fix open issue #124	Fix open issue #124 and using ISL6219A	0.2J	40	1. Change PR232 from 10K_0603_5% to 5.1_0603_5%. 2. Populate PR251 and PR270 5.1_0603_5%. 3. Populate PC183 and PC194 0.01U_0603_50V. 4. De-pop PQ82,PD31,PD,32	0.3	ST
25	Fix ISN fail issue	Fix ISN fail with 200KHz	0.2J	35	1. Change PR81 from 66.5K_0603_1% to 47K_0603_1% 2. Change PC55 and PC56 from 4.7U_1210_25V to 10U_1210_25V 3. Change PL9 from 15UH to 22UH	0.3	ST
26	Fix open issue #123	Rds(on) of SI4835DY is too high,change PQ14,15,16 to SI4825DY for power stress	0.2J	35	Change PQ14,PQ15,and PQ16 from SI4835DY to SI4825DY	0.3	ST
27	Adapter shut down while running P4MaxPower 100%	Adapter current over 5.5A 4 sec while running P4MaxPower 100%	0.3	37	1. add PR303, PR306 47K_0402_1%. 2. add PR304 1M_0402_1%. 3. add PR305 226K_0402_1% 4. add PR307 147K_0402_1% 5. add PR308 100K_0402_1% 6. add PC236 0.01U_0603_50V 7. add PC239 0.1U_0603_16V 8. add PC238 1000P_0402_50V 9. add PQ83, PQ84 2N7002 10. add PU21 LM393A	0.3	ST
28	Modify thermal protect temp. from 95C to 87C	Based on thermal team requirement	0.3A	36	1. ChangePR119 from 21K_0603_1% to 17.8K_0603_1% 2. Change PR117 from 1.74K_0603_1% to 2.05K_0603_1%	0.3	ST

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Compal Electronics, Inc.		
Title SCHEMATIC, M/B LA-1452		
Size	Document Number 401230	Rev 1B
Date:	星期五, 四月 25, 2003	Sheet 46 of 47

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	B.Ver#	Phase
29	modify compension for reduce output capacitor	modify compension for reduce output capacitor	0.3A	40	1. De-pop PR257 and PC179. 2. Change PC171 from 5.6N_0603_50V to 15N_0603_50V 3. Change PC172 form 47P_0603_50V to 150P_0603_50V 4. Change PR249 from 7.5K_0603_1% to 10K_0603_1%	0.3	ST
30	Fix item25 about ISN test without changing inductor	Fix item25 about ISN test without changing inductor	0.3A	35	1. Change PL9 from 22UH_SPC-1205P-220A to 15UH_SPC-1204P-150	0.3	ST
31	Capacitor DFX issues	Component layout pad overlap (reserved for noise issue) causes some components shifting when pass the re-flow	0.3D	35 36 38 40	remove PC226, PC227, PC228, PC229, PC230, PC231, PC232, PC233, PC234, PC235	1.0	QT
32	Noise issue in B+ power	Add reserved caps. back for noise issue	0.3E	35 36 38 40	reserve PC226, PC227, PC228, PC229, PC230, PC231, PC232, PC233, PC234, PC235	1.0	QT
33	Change OTP from 87C to 90C	Change OTP from 87C to 90C	1.0B	36	1. Change PR117 from 2.05K_0603_1% to 1.96K_0603_1% 2. Change PR119 from 17.8K_0603_1% to 19.1K_0603_1%	1.0	QT
34	Fine tune adaptor detector	Fine tune adaptor detector	1.0B	37	1. Change PC238 from 1000P_0603_50V% to 0.022U_0402_16V 2. Change PC239 from 0.1U_0603_16V to 0.01U_0603_50V 3. Change PR304 from 1M_0402_1% to 2M_0402_5% 4. Change PR307 from 147K_0402_1% to 137K_0402_1%	1.0	QT
35	Use new version ISL6225	Use new version ISL6225	1.0B	38	1. Change PU20 from ISL6225CA to ISL6225BCA	1.0	QT
36	Fix surge voltage in +CPU_CORE while power up	Fix surge voltage in +CPU_CORE while power up	1.0B	40	1. Add PR244,PR262,PR277 499K_0603_1% 2. No populate PR251,PR270,PC183 and PC194. 3. Change PR232 from 5.1_0603_5% to 10K_0603_5%. 4. Add PQ82 2N7002	1.0	QT

Compal Electronics, Inc.		
Title SCHEMATIC, M/B LA-1452		
Size	Document Number 401230	Rev 1B
Date:	星期五, 四月 25, 2003	Sheet 47 of 47

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