

HAZ00/HTW01

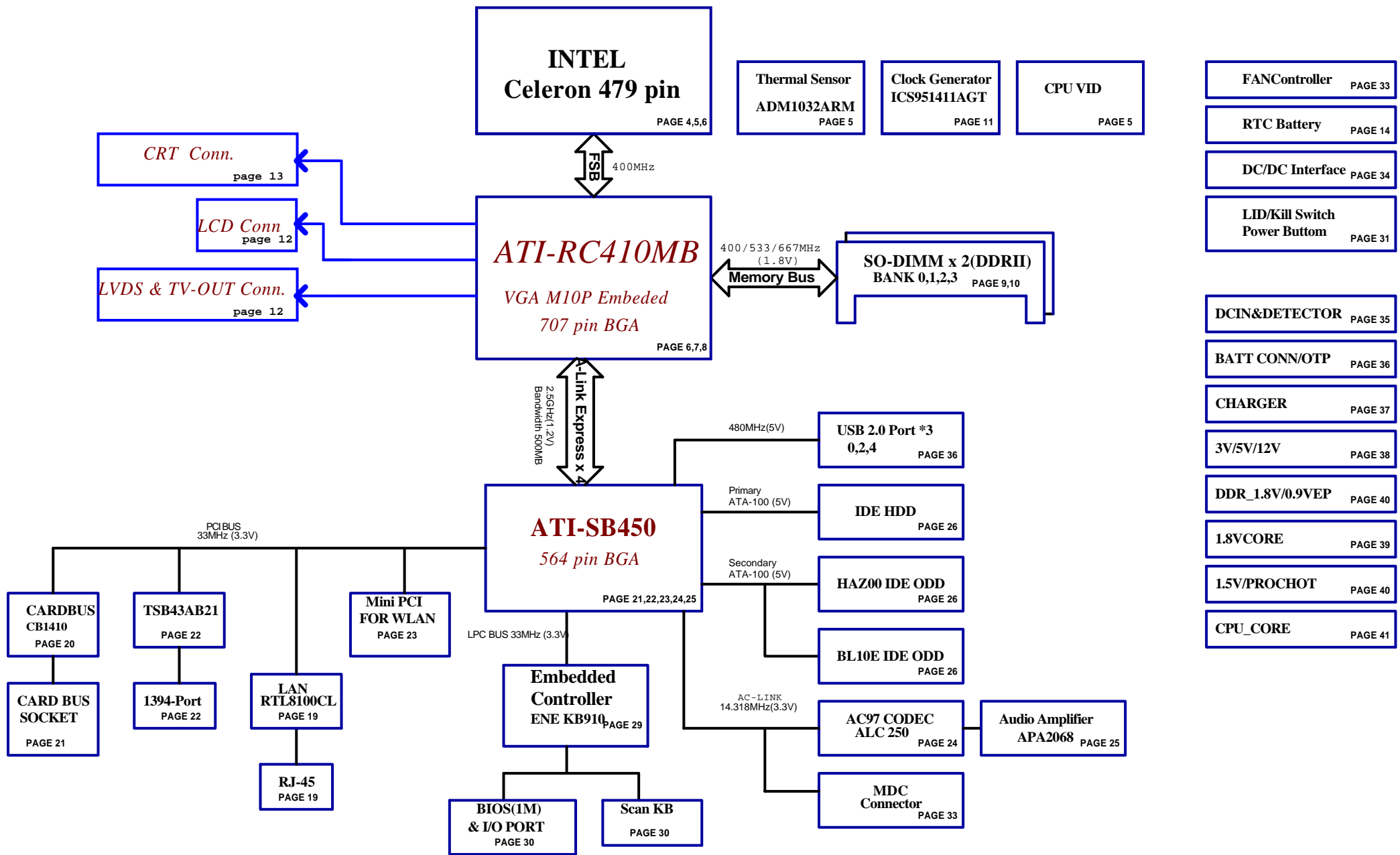
LA-2861 REV 1.0 Schematic

UFC-PGA Dothan/ RC410MD(RC410MB)/ SB450

2005-07-11 Rev.1.0

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				Date:	Thursday, August 04, 2005
				Sheet	1 of 42
				Rev	1.0

HAZ00 & HTW01 LA-2861 FUNCTION BLOCK DIAGRAM



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				Date:	Thursday, August 04, 2005
				Sheet	2 of 42

Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	ON	ON	ON
B+	AC or battery power rail for power circuit.	ON	ON	ON
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+CPUVID	1.2V switched power rail for CPU AGTL Bus	ON	OFF	OFF
+VGA_CORE	1.0V/1.2V switched power rail for VGA chip	ON	OFF	OFF
+1.2VS	1.2VS for PCI-Express	ON	OFF	OFF
+0.9VS	0.9V switched power rail	ON	OFF	OFF
+1.5VS	DOTHAN B	ON	OFF	OFF
+1.8VS	1.8VS switched power rail	ON	OFF	OFF
+1.8VALW	1.8V always on power rail	ON	ON	ON*
+1.8V	1.8V power rail	ON	ON	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+12VALW	12V always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON

Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
TI 1410	AD20	2	PIRQA/PIRQB
LAN	AD22	1	PIRQG
Mini-PCI(WLAN)	AD18	3	PIRQF/PIRQG
1394	AD16	0	PIRQA

EC SM Bus1 address

Device	Address	Device	Address
Smart Battery	0001 011X b	ADM1032	1001 110X b

SB450 SM Bus address

Device	Address
Clock Generator (ICS951413BGLFT)	1101 001Xb
DDR DIMM0	1010 0100b A4
DDR DIMM1	1010 0110b A6

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STATE	SIGNAL	SLP_S3#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON		HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)		HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)		LOW	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)		LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)		LOW	LOW	ON	OFF	OFF	OFF

Board ID Table for AD channel

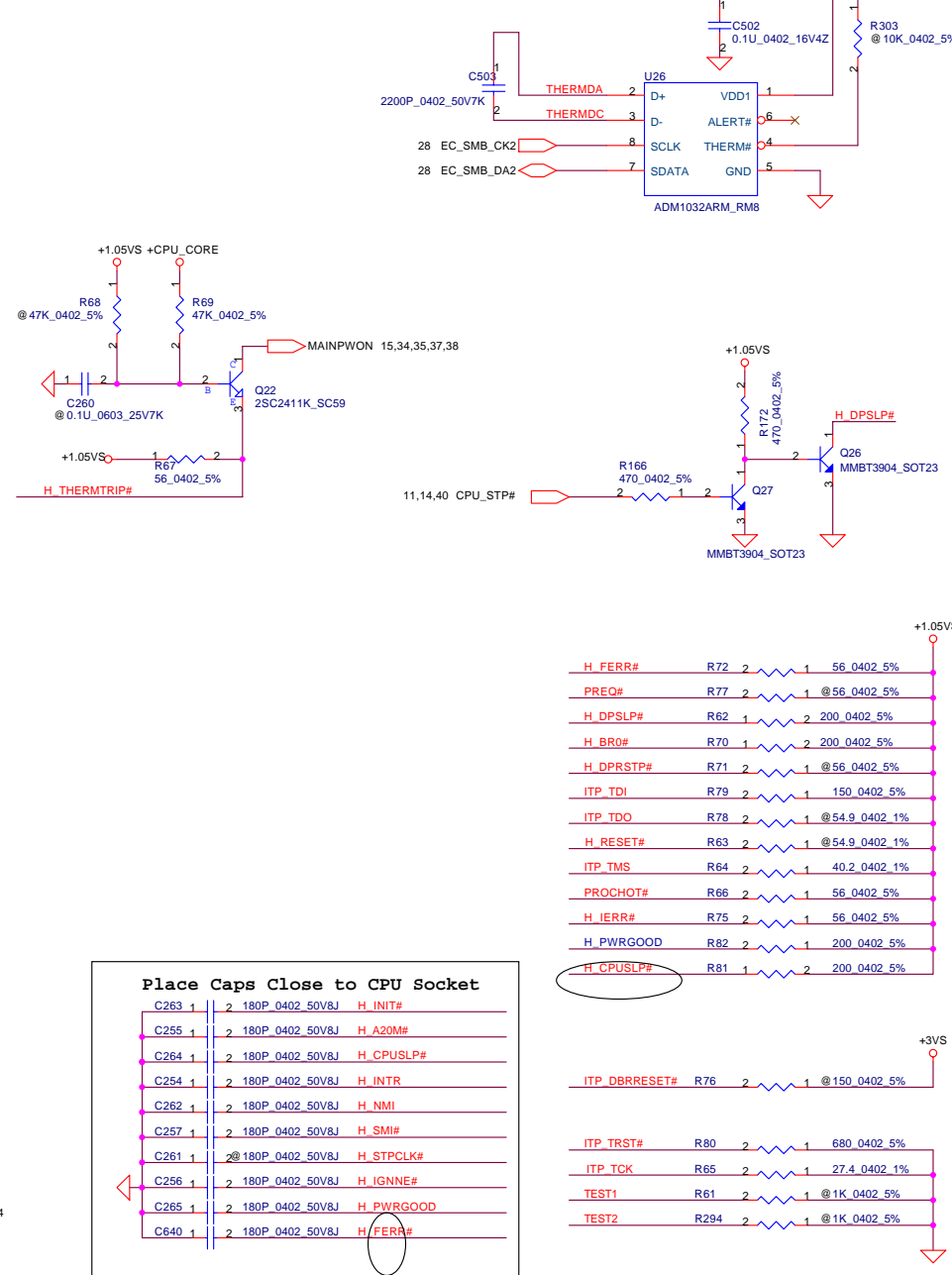
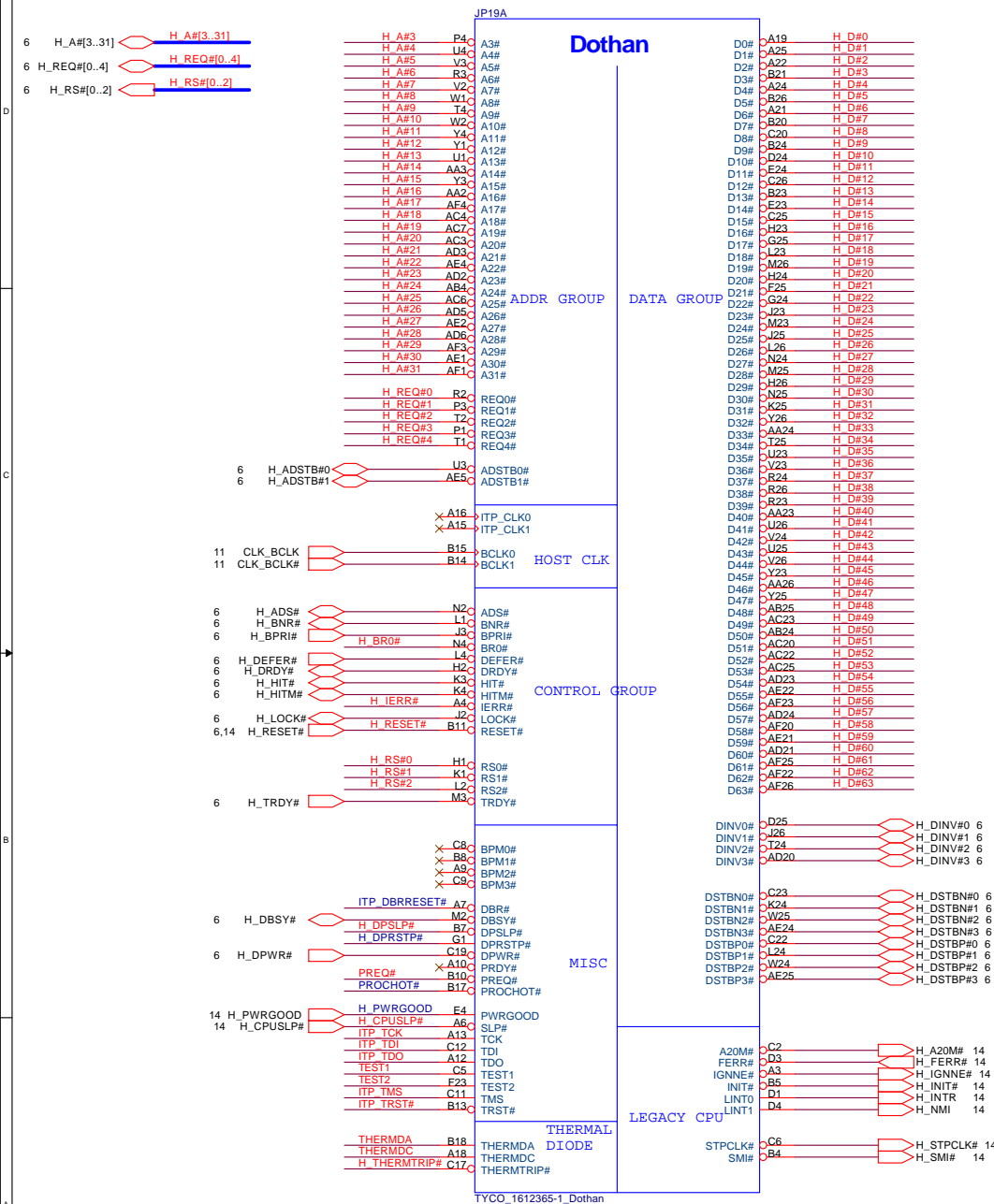
Vcc	3.3V +/- 5%			
Ra	100K +/- 5%			
Board ID	Rb	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

Board ID	PCB Revision
0	0.1, 0.2
1	0.3
2	1.0
3	
4	
5	
6	
7	

SKU ID	SKU Status
0	
1	
2	
3	
4	
5	1 Buttons
6	
7	7 Buttons

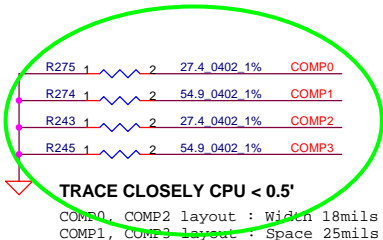
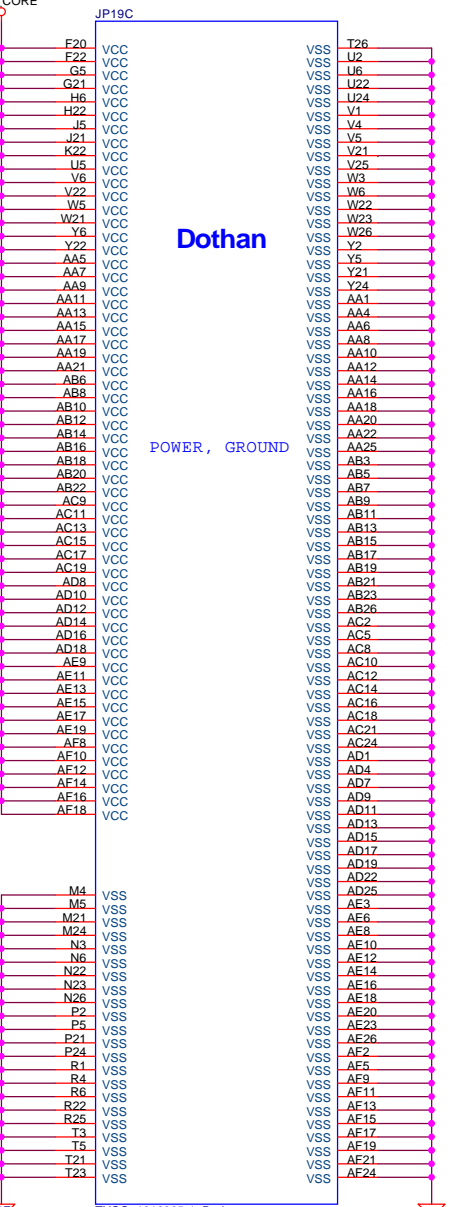
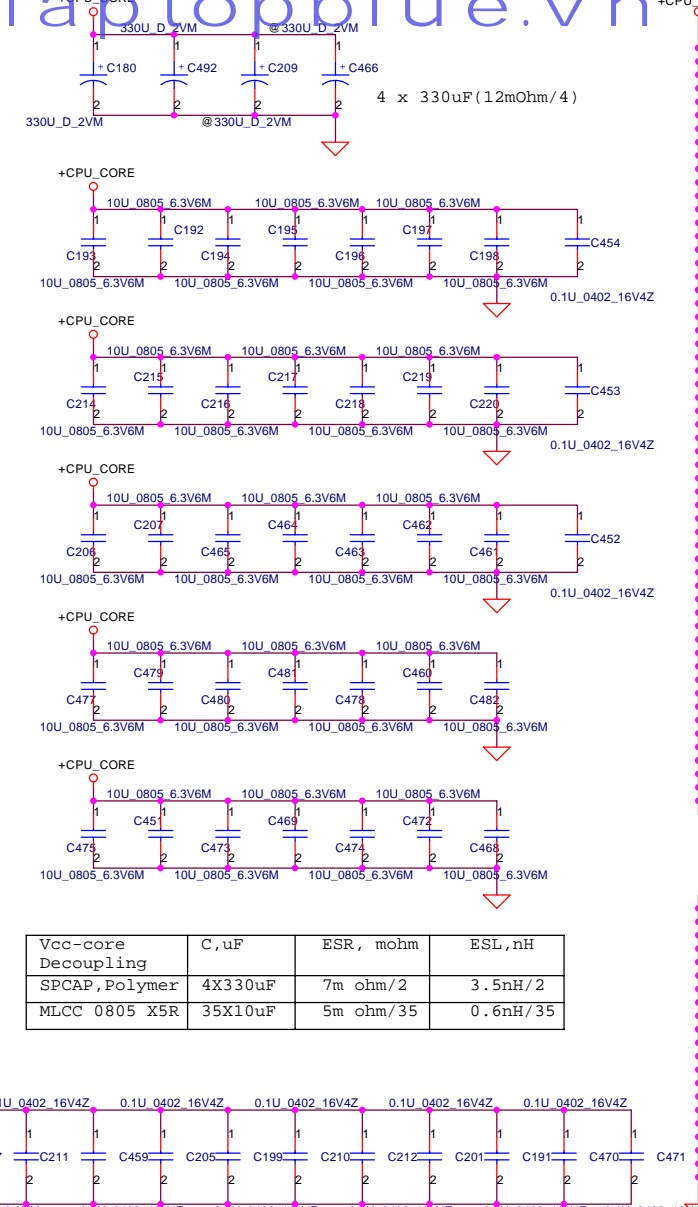
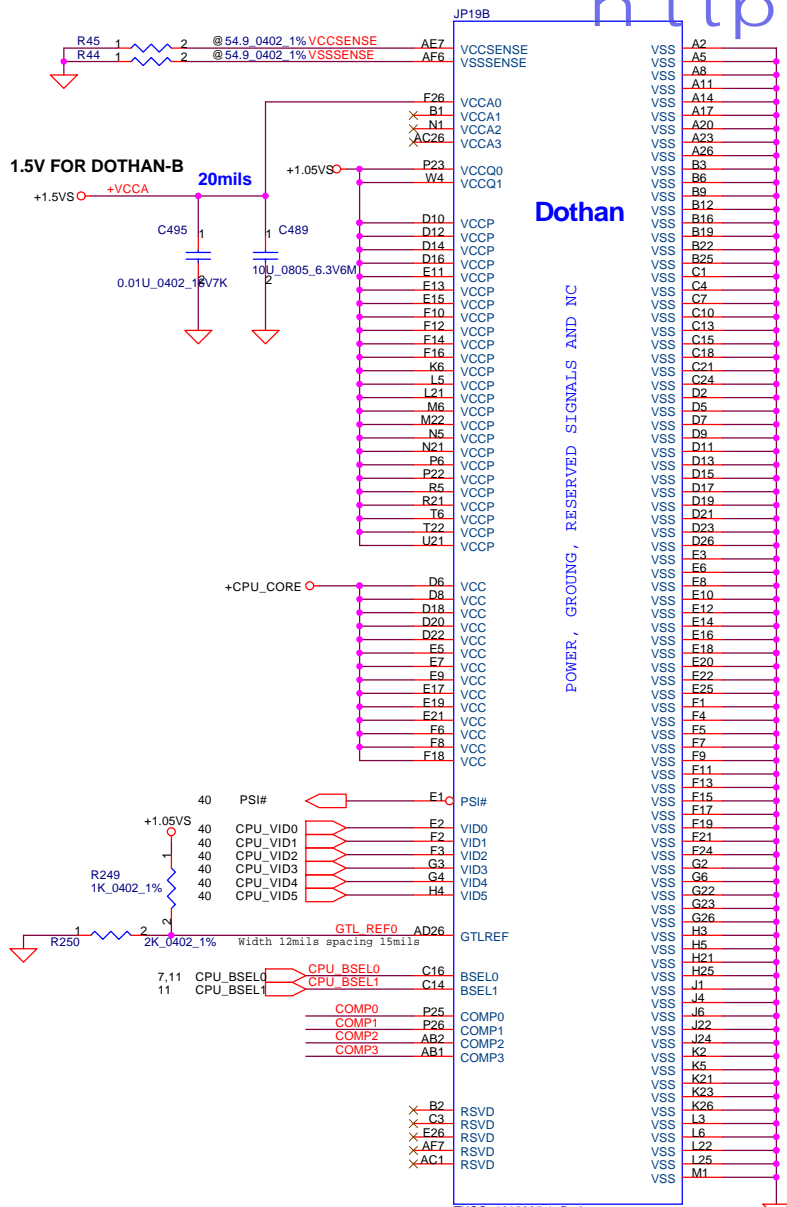
	HDD Password
0	NO
1	Yes

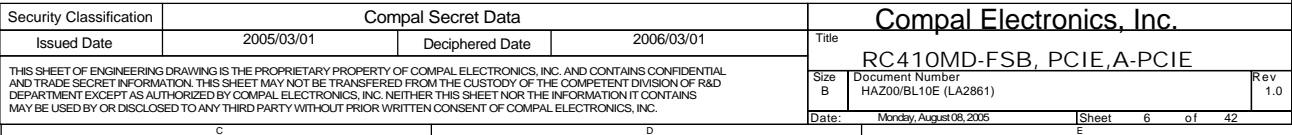
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Date:	Thursday, August 04, 2005			Sheet	3	of 42

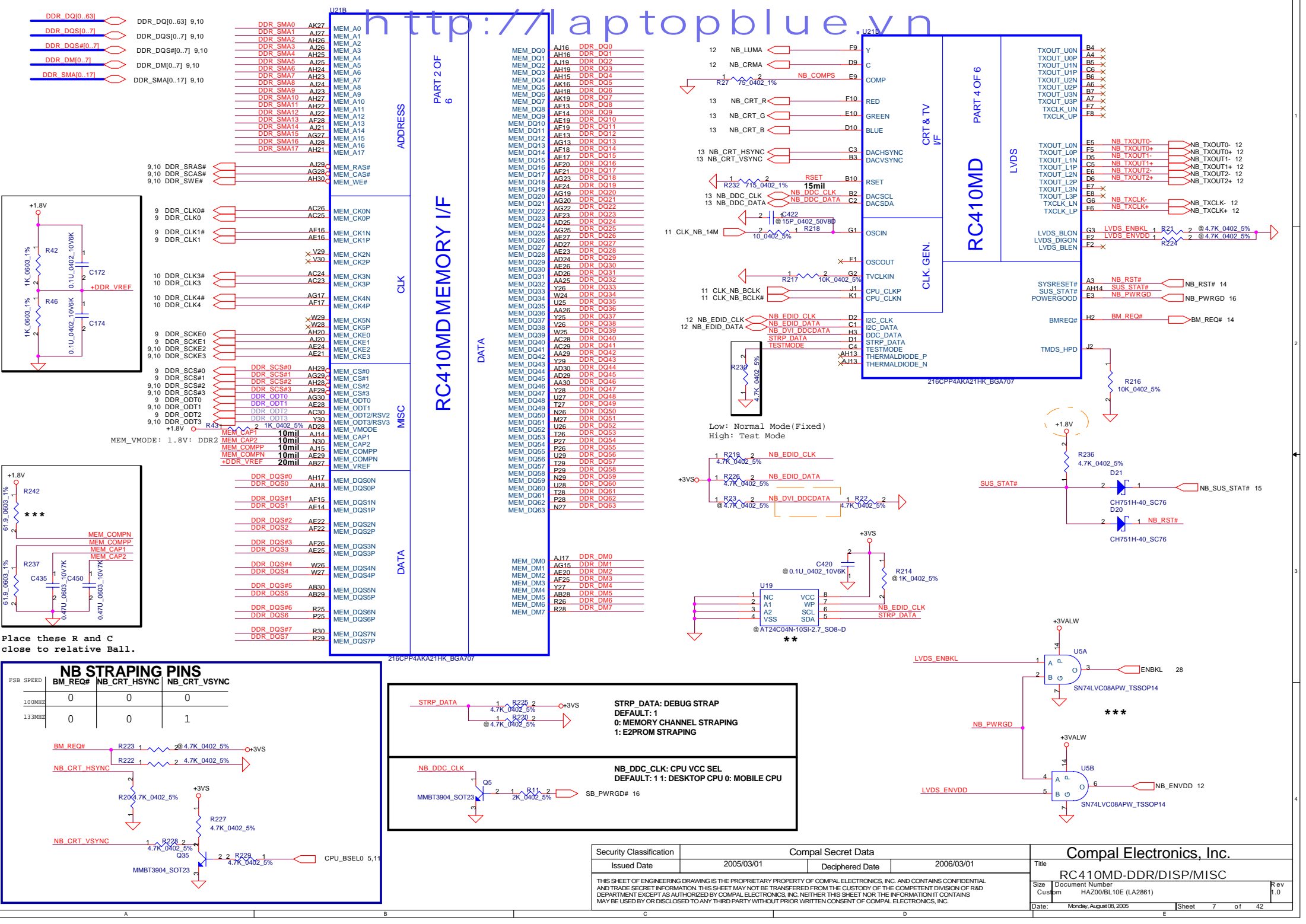


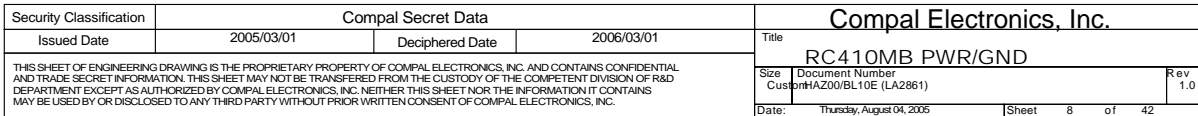
THERMDA & THERMDC Trace / Space = 10 / 10 mil

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				Date	Monday, August 08, 2005
				Sheet	4 of 42
				Rev	1.0

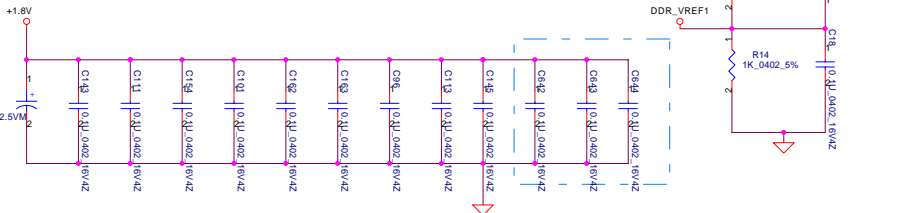




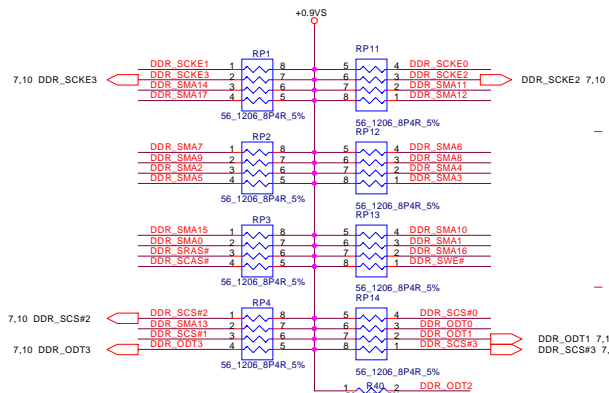
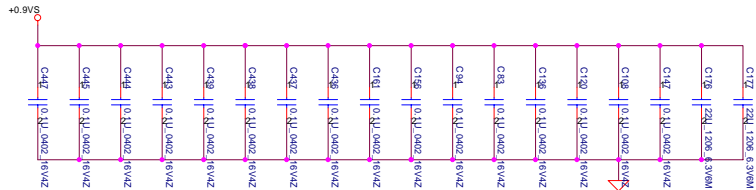




Layout Note:
Place near JDIM1



Layout Note:
Place one cap close to every 2 pullup resistors terminated to V_DDR_MCH_REF

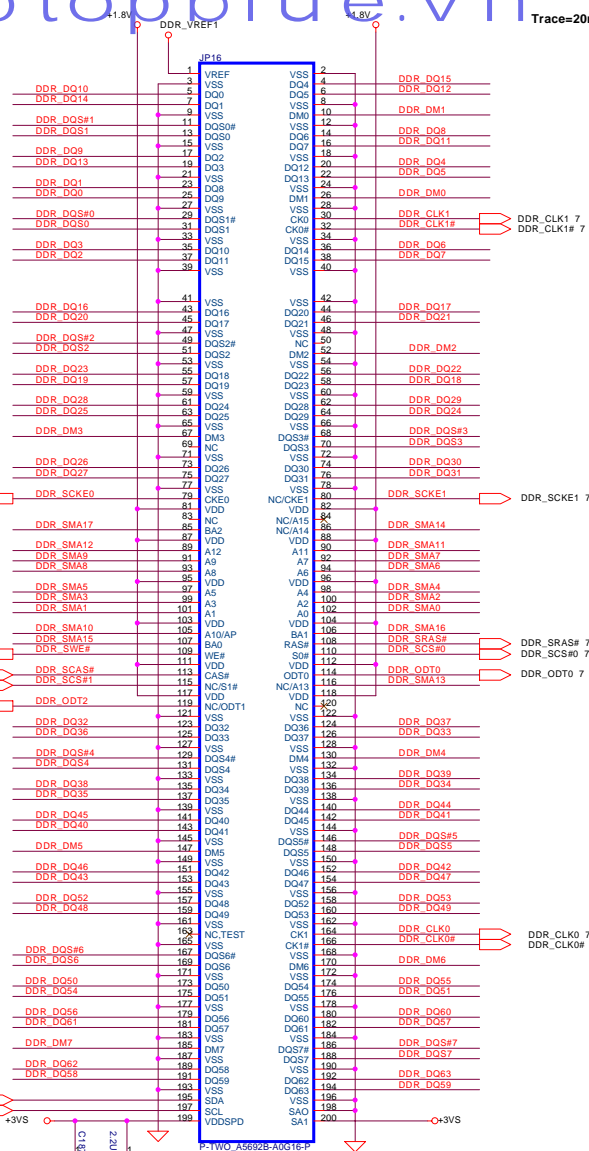


Layout Note:
Place these resistor closely JDIM2,all trace length<750 mil

Layout Note:
Place these resistor closely JDIM2,all trace length Max=1.3"

7 DDR_SCKE0
7,10 DDR_SWE#
7,10 DDR_SCAS#1
7 DDR_ODT2

10,11,15 SB_SMDATA
10,11,15 SB_SMCLK

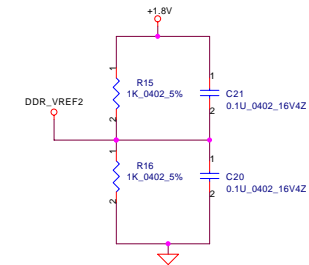


DIMMA
Reverse

ATI recommendation

DDR_DQ0#.63i
DDR_DQS0.7i
DDR_DQS#0.7i
DDR_DM0.7i
DDR_SMA0.17i

DDR_DQ[0..63] 7,10
DDR_DQS[0..7] 7,10
DDR_DQS#0.7 7,10
DDR_DM[0..7] 7,10
DDR_SMA[0..17] 7,10

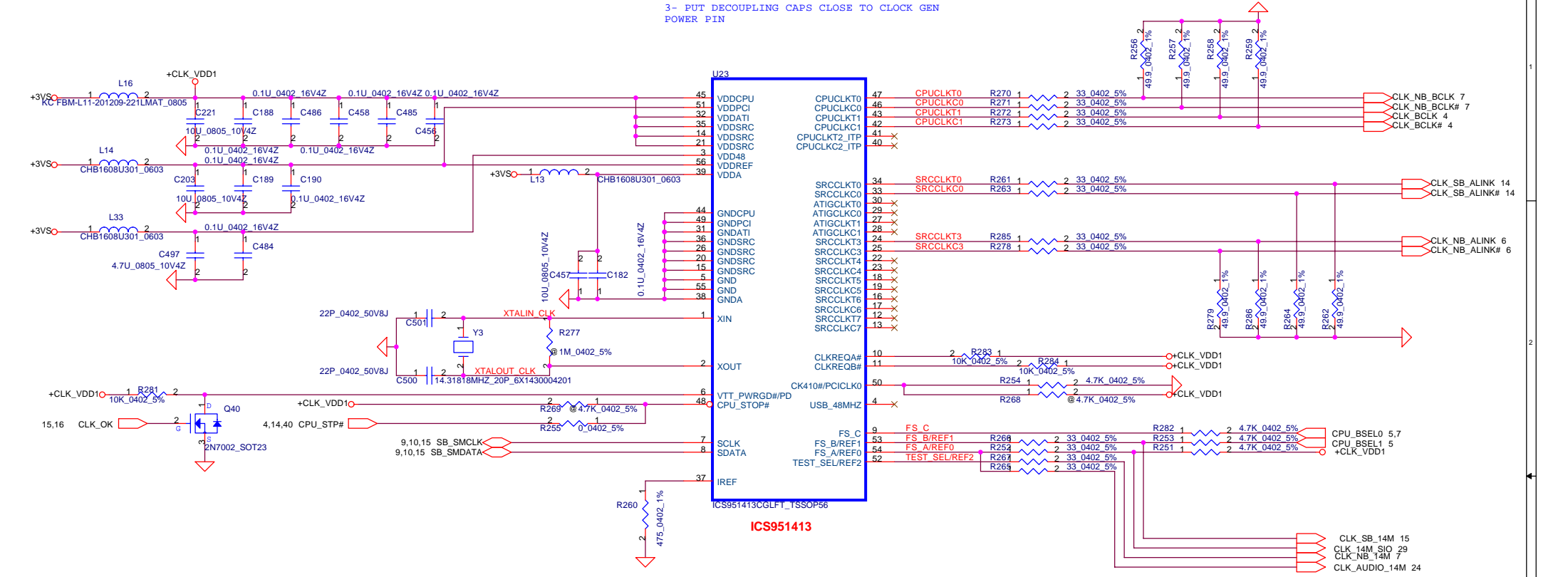


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				Date:	Monday, August 08, 2006	Sheet 10 of 42

Clock Generator

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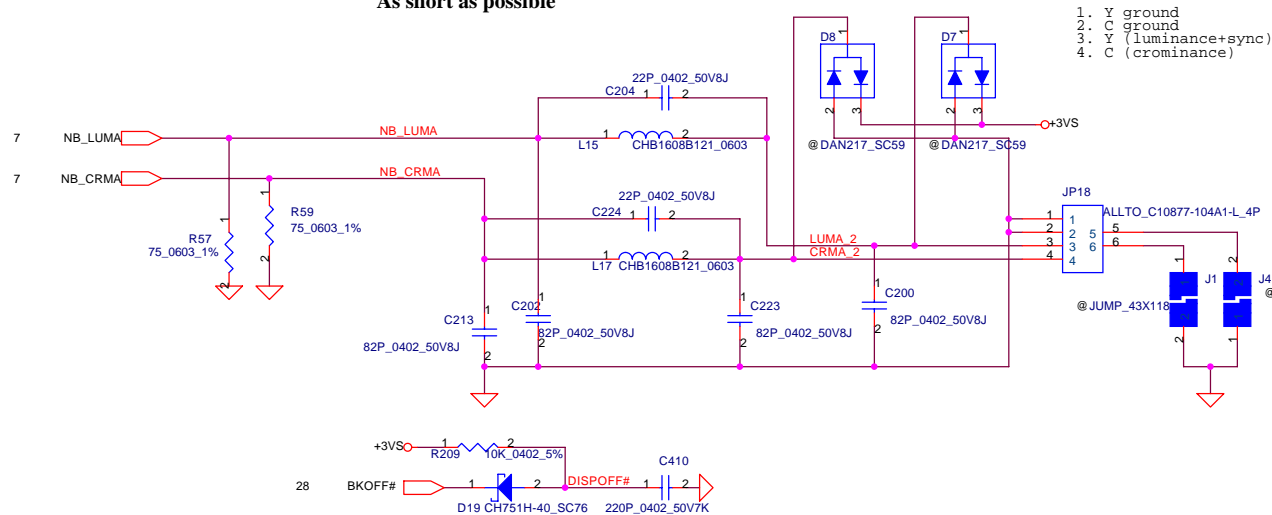
- 1- PLACE ALL THE SERIES TERMINATION RESISTORS AS CLOSE TO CLOCK GEN AS POSSIBLE
- 2- ROUTE ALL CPUCLK/#, NBCLK/#, ITPCLK/# AND SCR/# ,AS DIFFERENT PAIR RULE
- 3- PUT DECOUPLING CAPS CLOSE TO CLOCK GEN POWER PIN



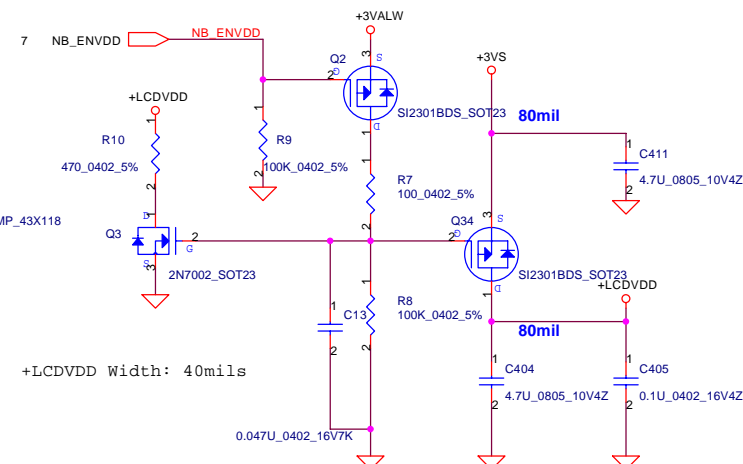
FS_C	FS_B	FS_A	CPU	SRC	PCI	REF	USB
1	0	1	100.00	100.00	33.33	14.318	48.000
0	0	1	133.33	100.00	33.33	14.318	48.000
1	1	1	---	---	---	---	---

TV-OUT CONNECTOR

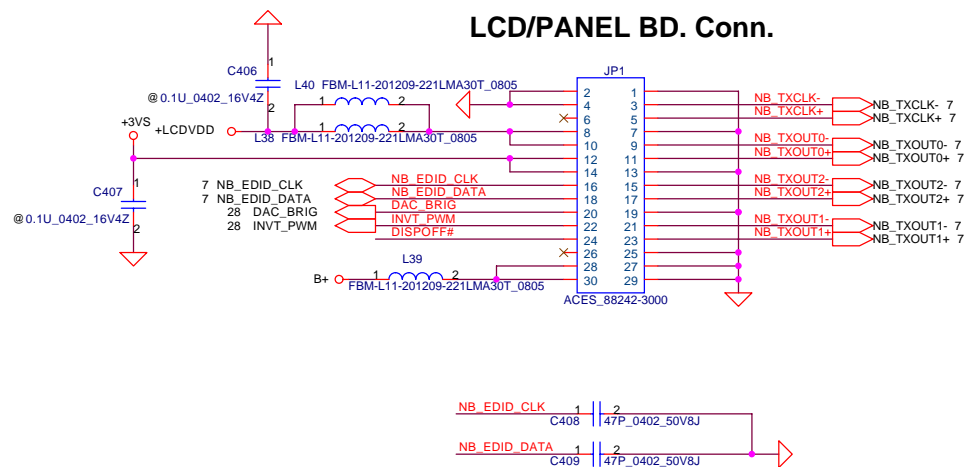
Reduce LUMA_1 and CRMA_1 length
As short as possible



PANEL +LCDVDD CTRL CKT

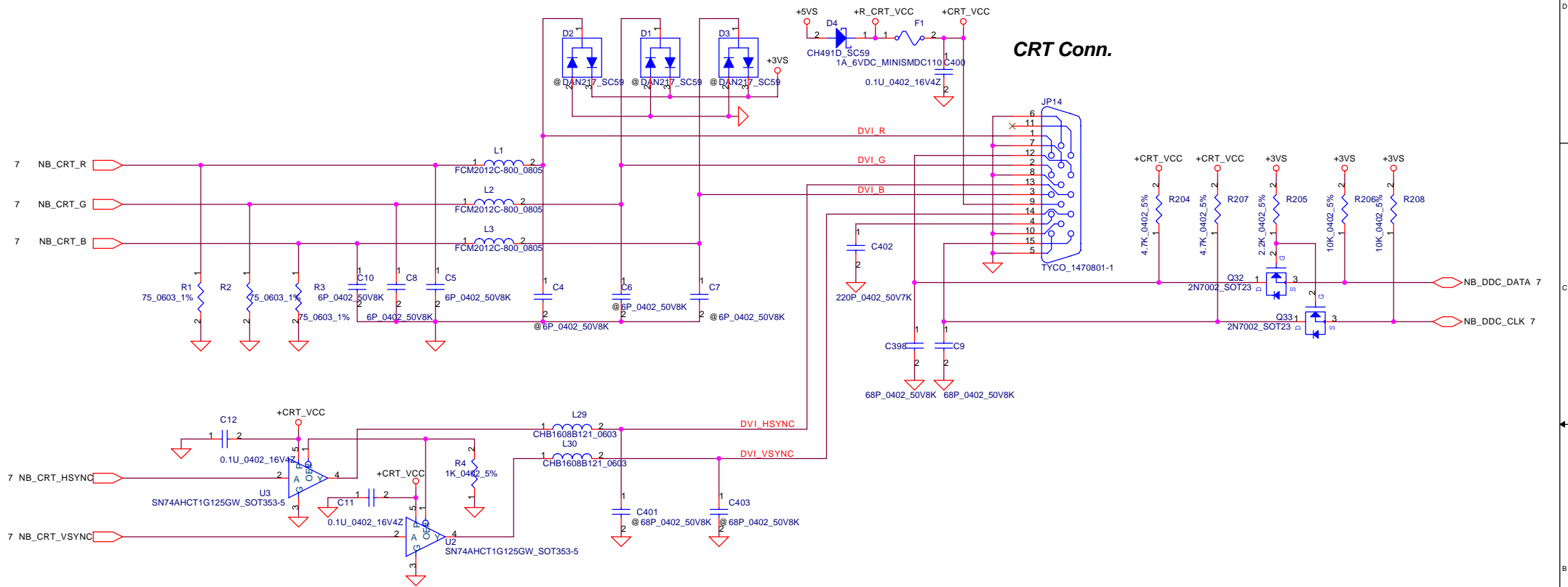


LCD/PANEL BD. Conn.

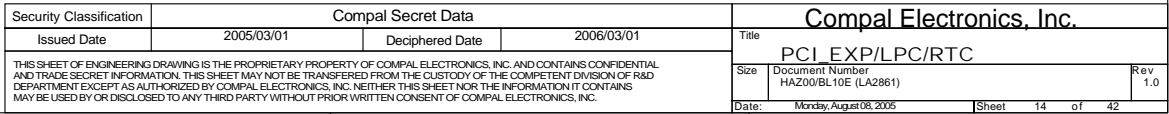


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Size	B	Document Number	HAZ00/BL10E (LA2861)	Rev	1.0
Date:	Monday, August 08, 2005		Sheet	12	of 42

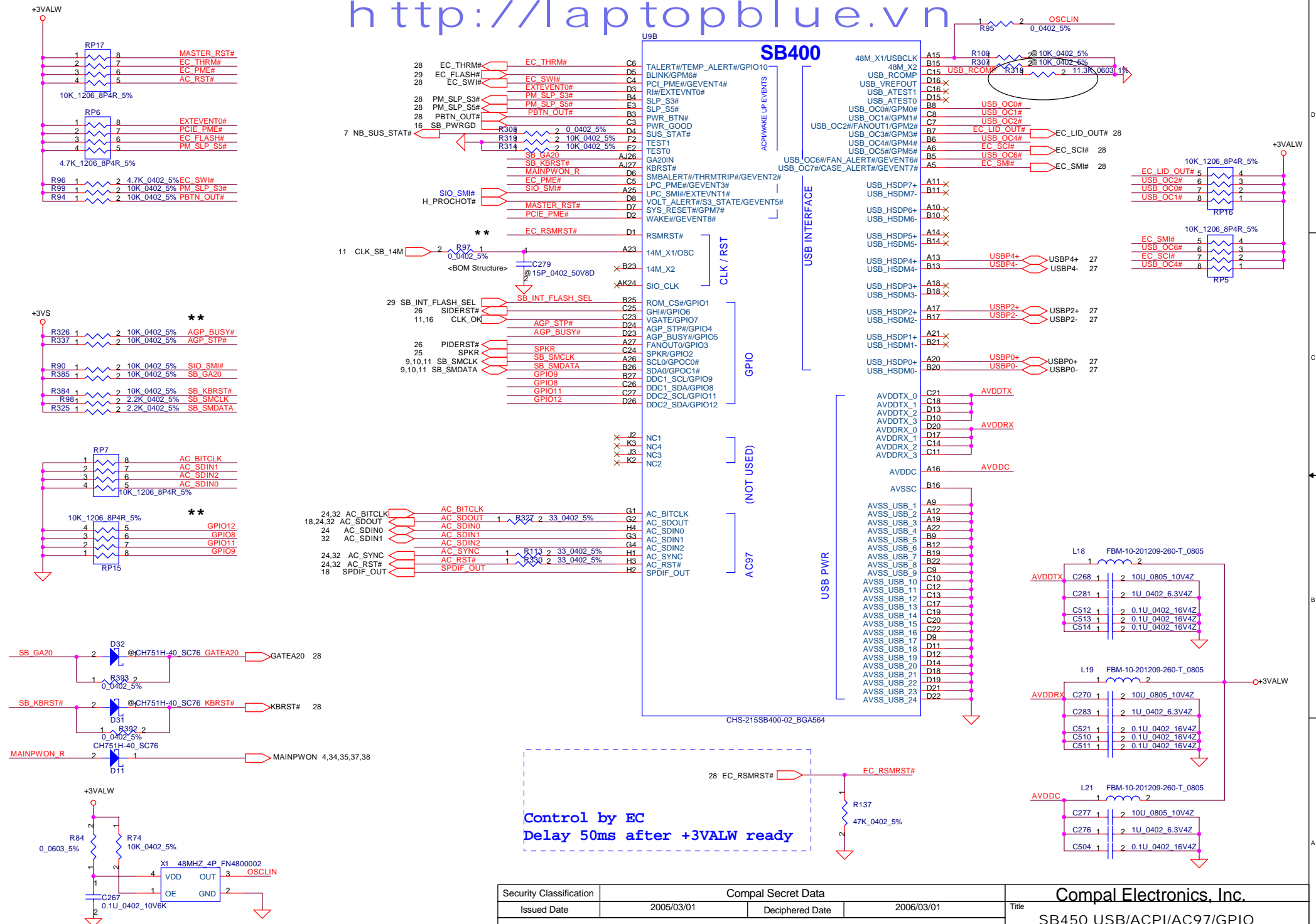
CRT CONNECTOR



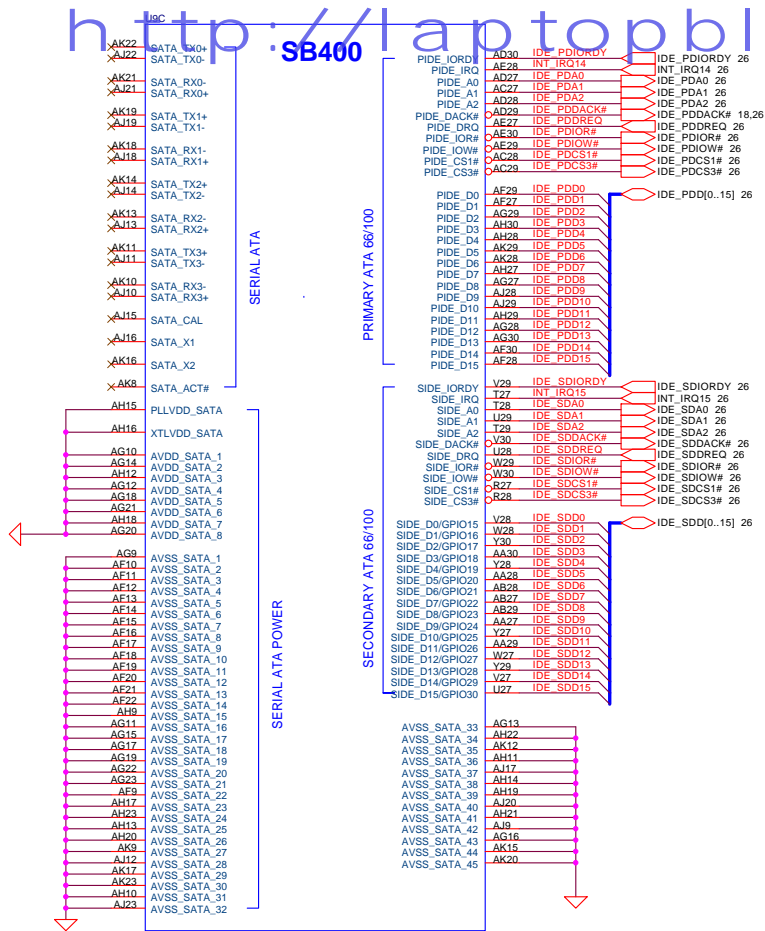
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Size	B	Document Number	HA200/BL10E (LA2861)	Rev	1.0
Date:	Thursday, August 04, 2005	Sheet	13	of	42



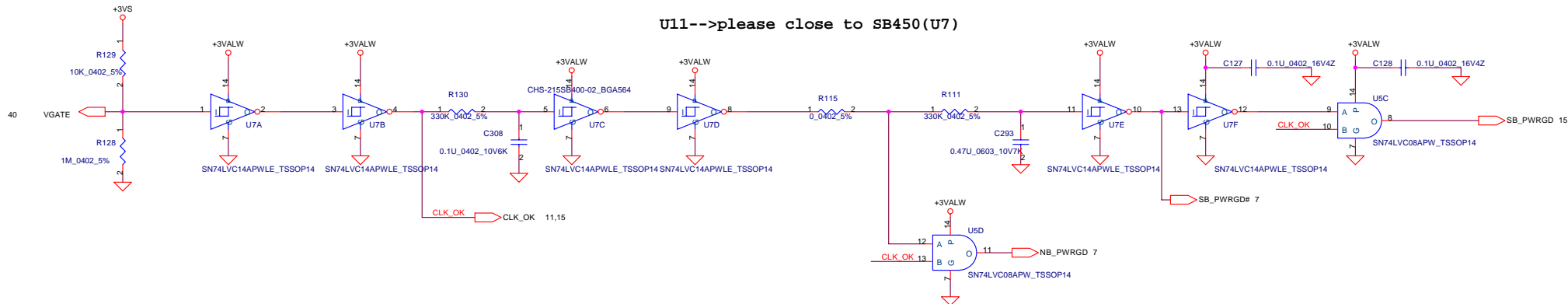
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				Size	Document Number	Rev
				Cust#	IA200/LB10E (LA2861)	1.0
Date:				Monday, August 08, 2005		Sheet 15 of 42



U11-->please close to SB450(U7)



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Customer		HAZ00/BL10E (LA2861)			1.0
Date		Monday, August 08, 2005		Sheet	16 of 42

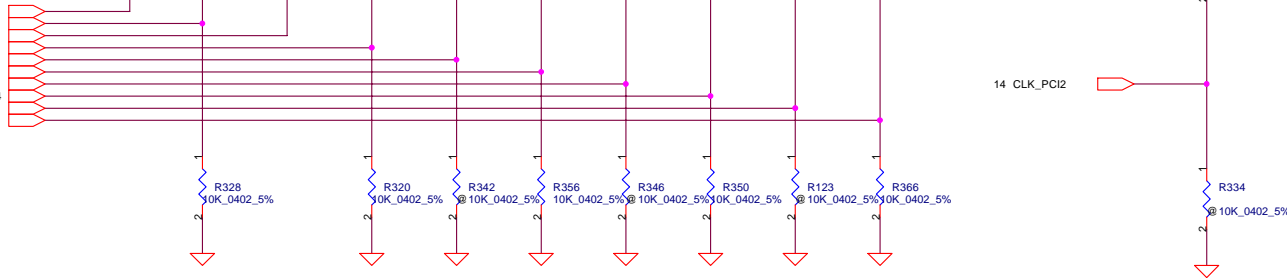


CHS-215SB400-02 BGA564

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				B	HAZ00/BL10E (LA2861)	1.0
Date:	Thursday, August 04, 2006			Sheet	17	of 42

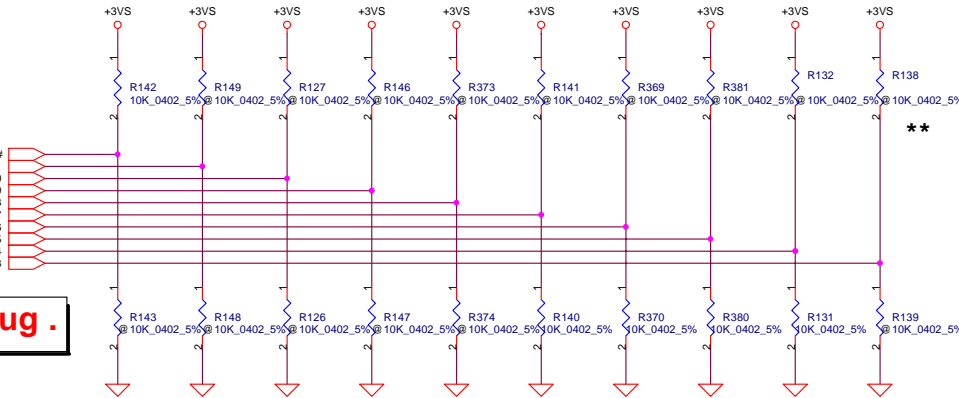
REQUIRED STRAPS

14 AUTO_ON#
15,24,32 AC_SDOUT
14 RTC_CLK
15 SPDIF_OUT
14 CLK_PCI3
14,19 CLK_PCI_LAN
14,28 CLK_PCI_LPC
14,22 CLK_PCI_1394
14 CLK_PCI7
14,29 CLK_PCI_SIO



	AUTO_ON#	AC97_SDOUT	RTC_CLK	SPDIF_OUT	CLK_PCI3	CLK_PCI_LAN	CLK_PCI_LPC	PCI_CLK6	PCI_CLK7	PCI_CLK8	CLK_PCI_MINI2
PULL HIGH	MANUAL PWR ON DEFAULT	USE DEBUG STRAPS	INTERNAL RTC DEFAULT	PU for 48Mhz XTAL mode DEFAULT	USB PHY PWRDOWN DISABLE	Internal PLL	PCIE CM_SET low DEFAULT	CPU I/F = K8 DEFAULT	ROM TYPE H,H = PCI ROM H,L = LPC ROM I		Clock input buffer DEFAULT
PULL LOW	AUTO PWR ON	IGNORE DEBUG STRAPS DEFAULT	EXTERNAL RTC (NOT SUPPORTED W/ IT8712)	48M OSC mode DEFAULT	USB PHY PWRDOWN ENABLE DEFAULT	External Clock DEFAULT	PCIE CM_SET HIGH	CPU I/F = P4 DEFAULT	L,H = LPC ROM II L,L = FWH ROM		Crytsal Pad

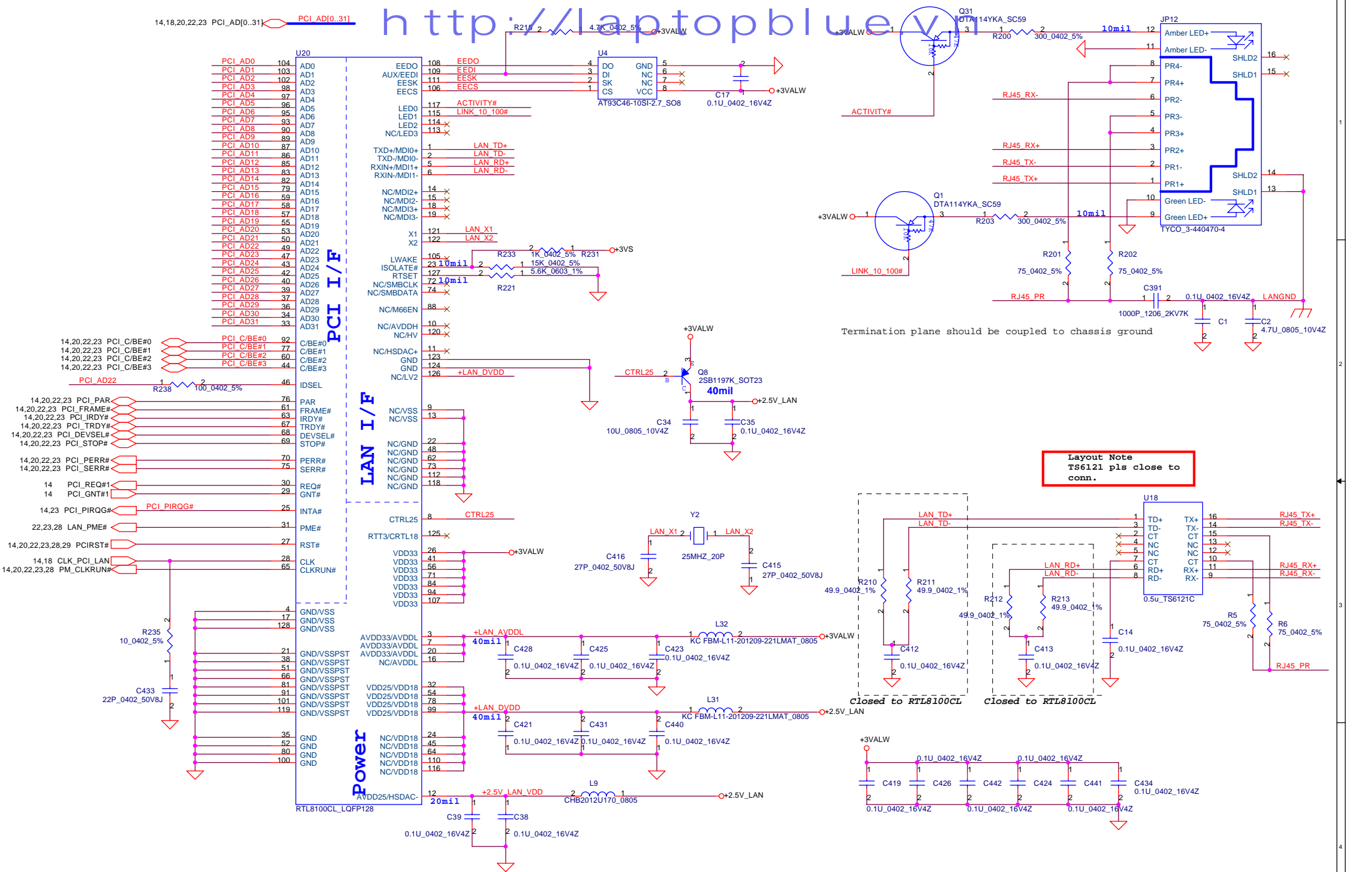
16,26 IDE_PDDACK#
14,19,20,22,23 PCI_AD31
14,19,20,22,23 PCI_AD30
14,19,20,22,23 PCI_AD29
14,19,20,22,23 PCI_AD28
14,19,20,22,23 PCI_AD27
14,19,20,22,23 PCI_AD26
14,19,20,22,23 PCI_AD25
14,19,20,22,23 PCI_AD24
14,19,20,22,23 PCI_AD23



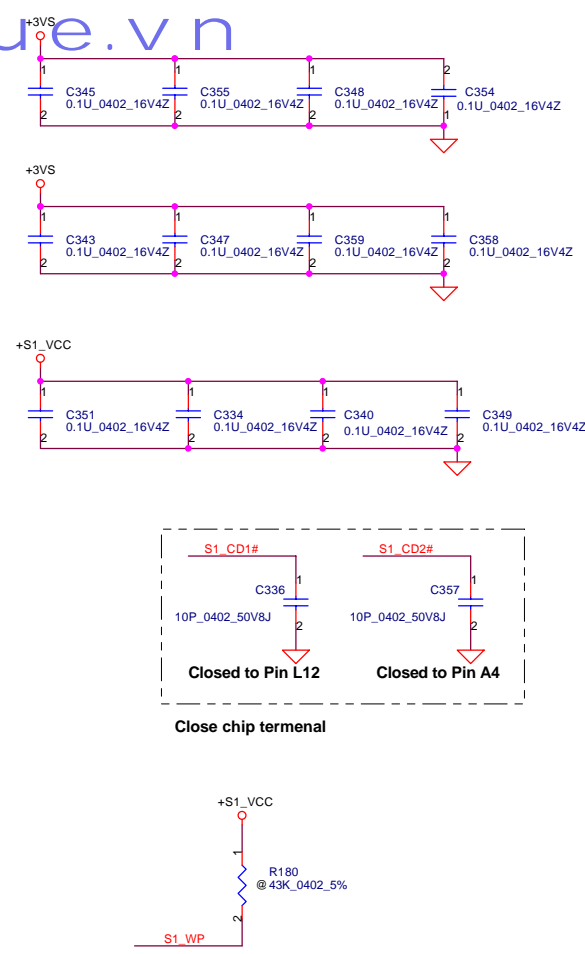
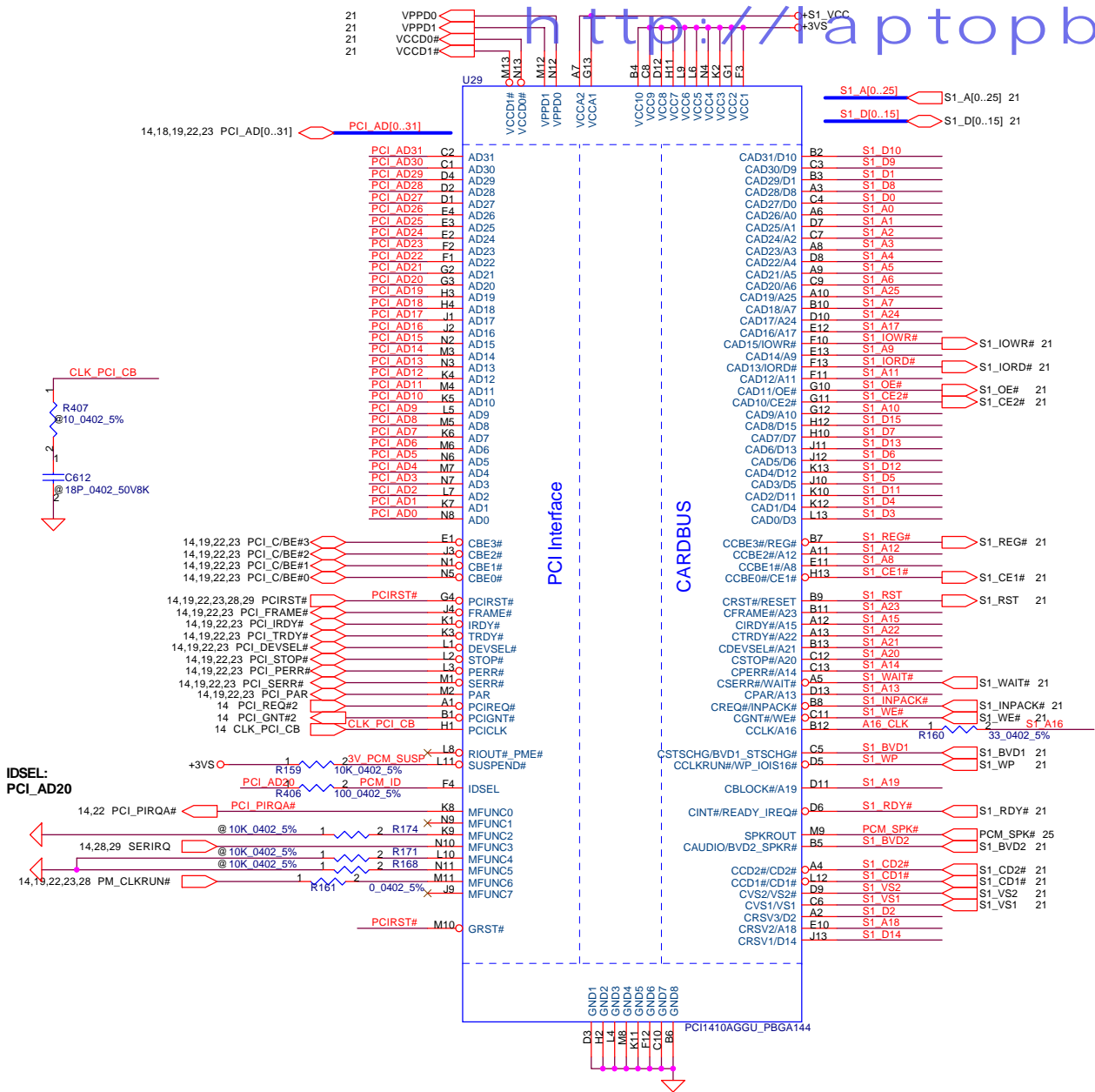
Pop R634 when debug .

DEBUG STRAPS

	IDE_PDDACK#	PCI_AD31	PCI_AD30	PCI_AD29	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	Reserved	Reserved	Reserved	Reserved	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	Reserved
PULL LOW	USE SHORT RESET					USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	



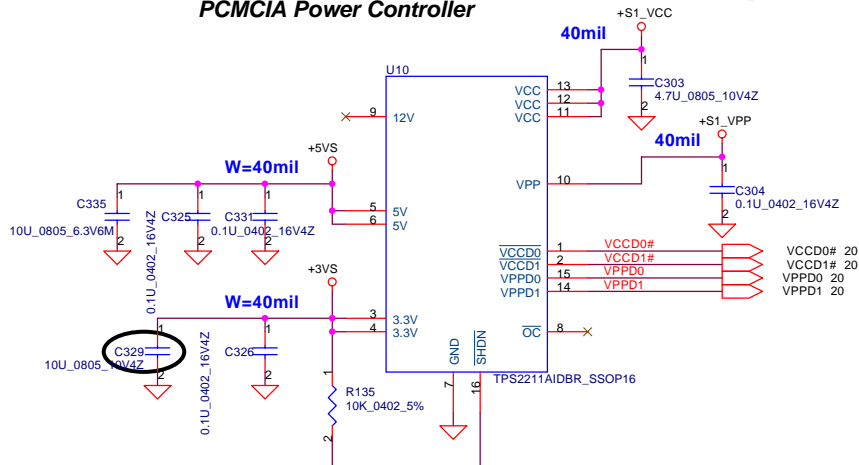
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				Date: Monday, August 08, 2005	Sheet 19 of 42



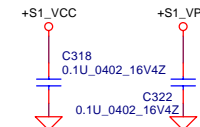
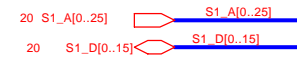
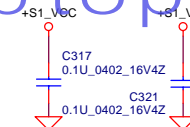
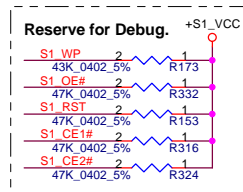
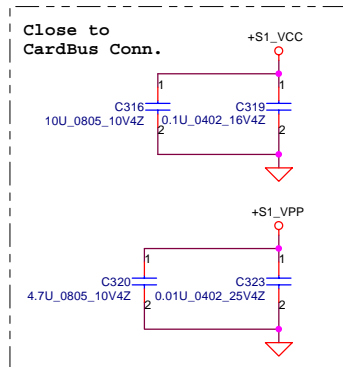
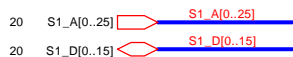
IDSEL:
PCI_AD20

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				Sheet	20 of 42

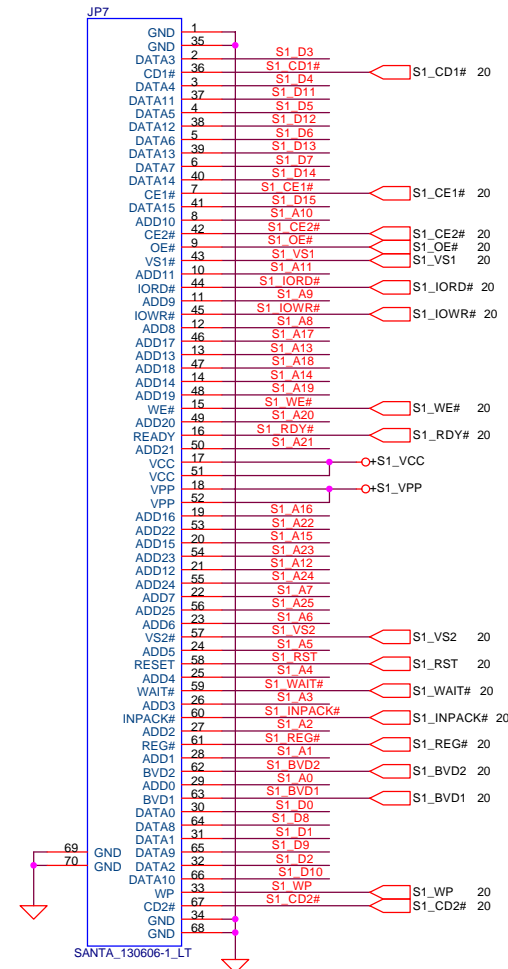
PCMCIA Power Controller



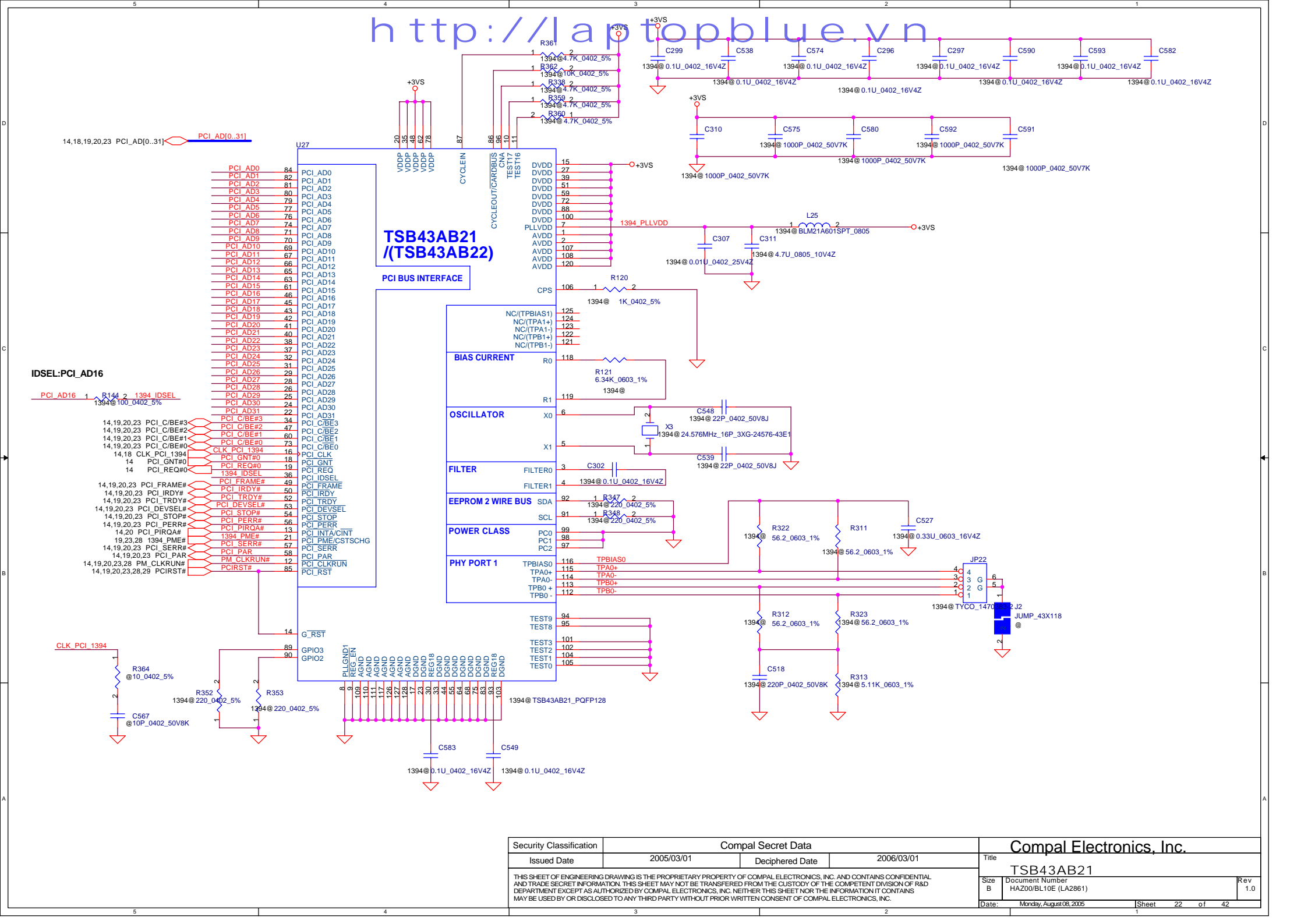
CardBus Socket

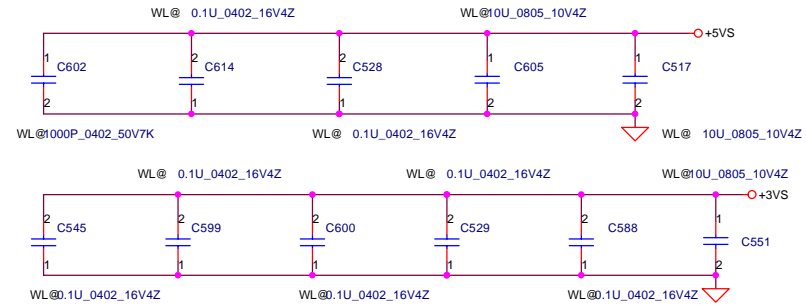


CardBus Socket



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Size	B	Document Number	HA200/BL10E (LA2861)	Rev	1.0
Date:	Thursday, August 04, 2005			Sheet	21 of 42

[illegible]

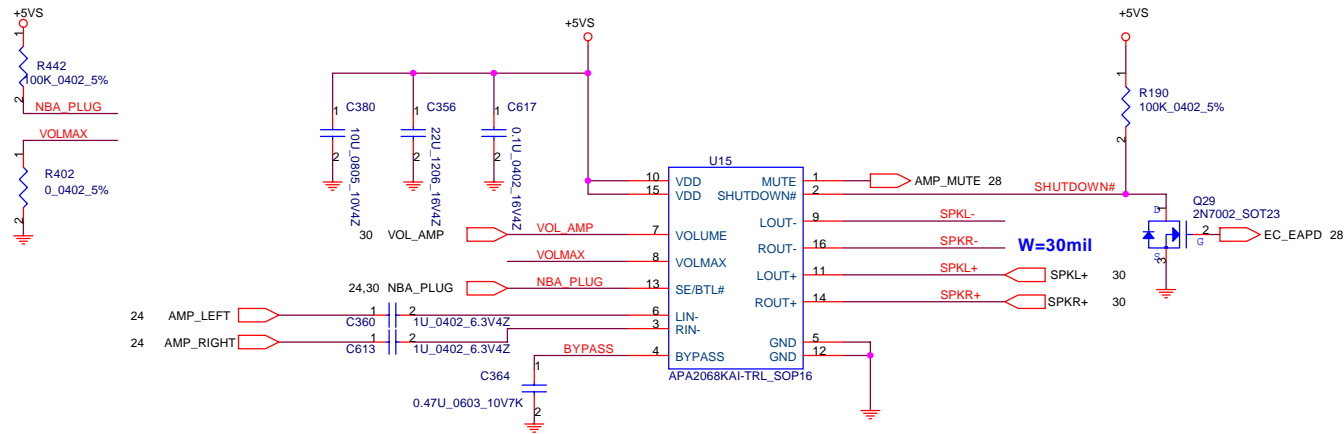


The diagram shows the timing relationship between the CLK_PCI_MINI signal and the PCI C/BE# signals. The CLK_PCI_MINI signal is a square wave with a period of 0.0402 5% and a duty cycle of 50%. The PCI C/BE# signals are shown as a series of pulses, with the first pulse occurring at the rising edge of the CLK_PCI_MINI signal. The signals are labeled as follows:

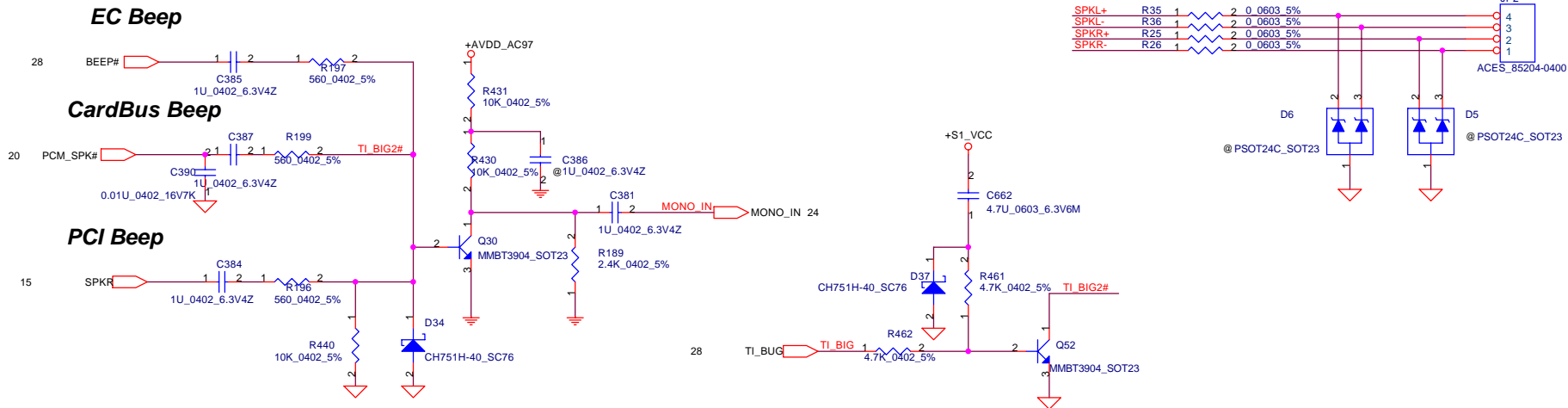
- CLK_PCI_MINI
- R456
- PCI C/BE#0
- PCI AD6
- PCI AD4
- PCI AD2
- PCI AD0
- PCI AD1
- PCI AD3
- PCI AD5
- PCI AD7
- PCI AD8
- PCI C/BE#1
- PCI C/BE#2
- PCI C/BE#3
- PCIRST#
- PCI FRAME#
- PCI TRDY#
- PCI AD9

The diagram is labeled with the part number ** and the reference number JP29.

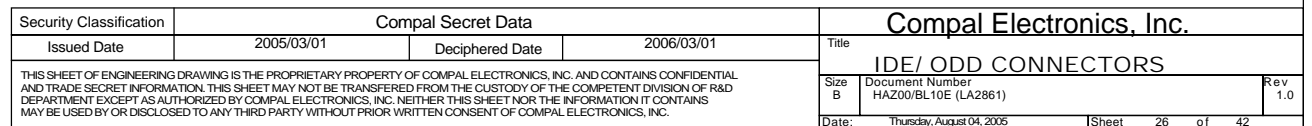
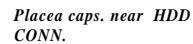
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Issued Date	2005/03/01	Deciphered Date	2006/03/01	Title	MINI PCI SLOT	
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				Date:	Monday, August 08, 2005	I Sheet 23 of 42



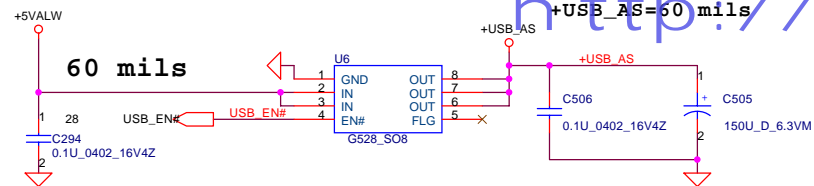
Speaker Conn.



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				Size B	Document Number HAZ00/BL10E (LA2861)	Rev 1.0
Date:				Monday, August 08, 2006	Sheet 25 of 42	



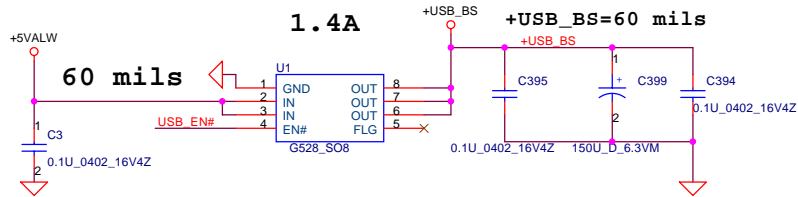
1.4A



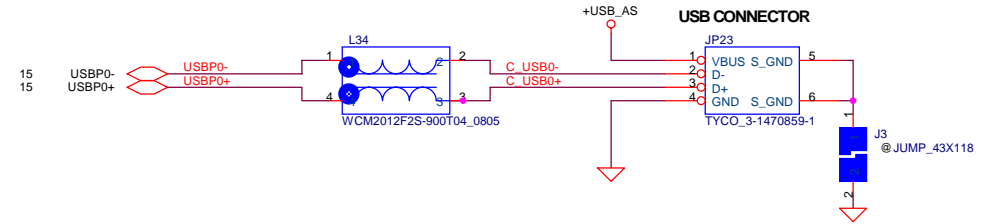
+USB_AS=60 mils

Keep 20 mils minimum spacing between
USB signals and others signals

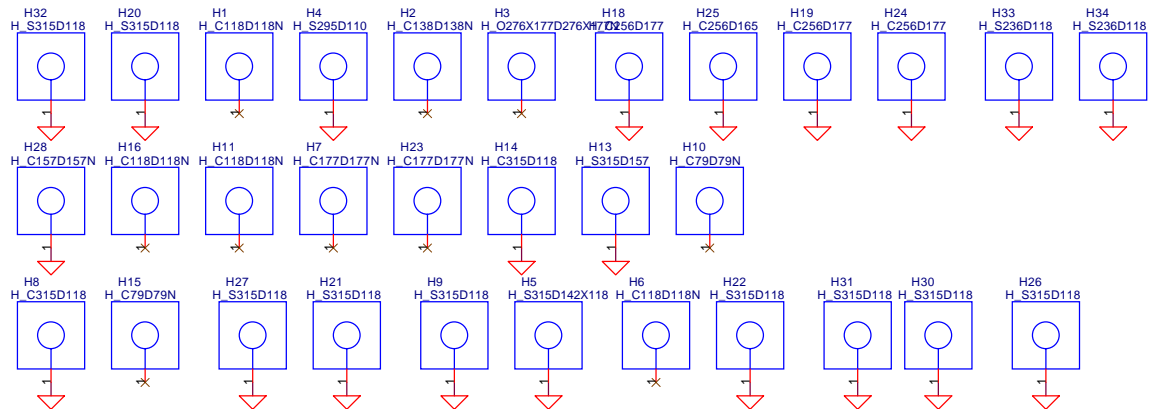
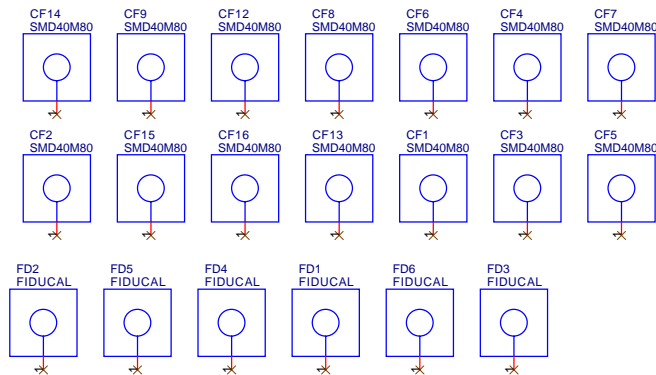
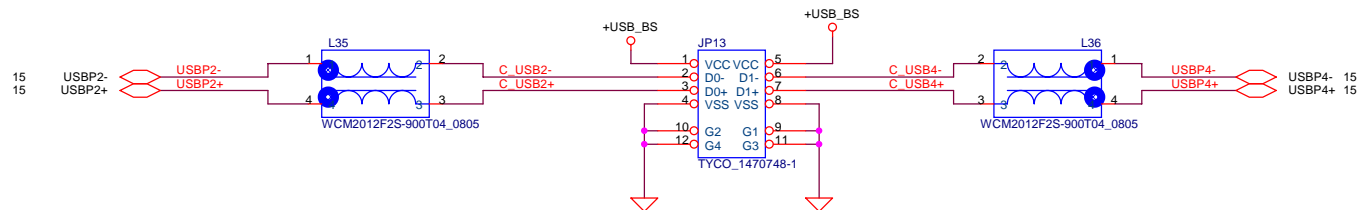
1.4A



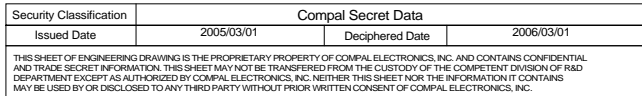
+USB_BS=60 mils

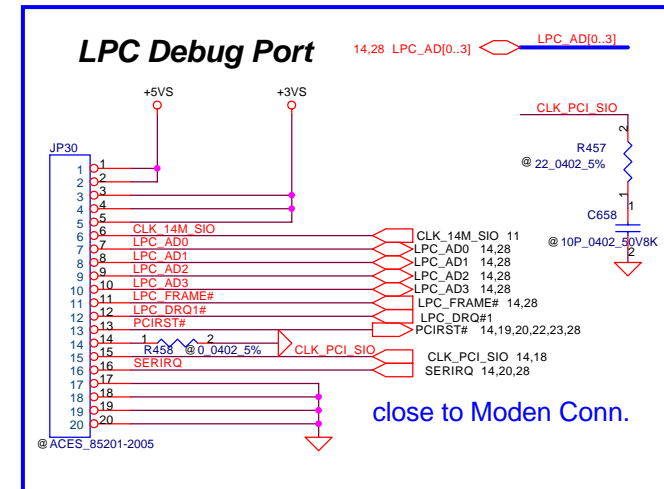
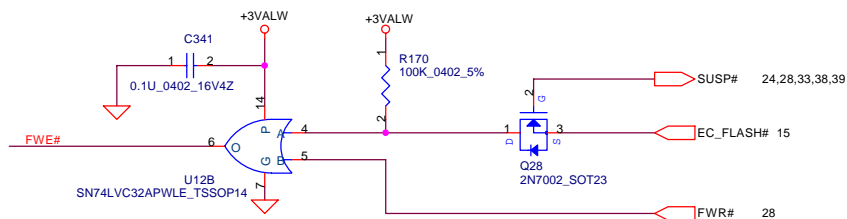
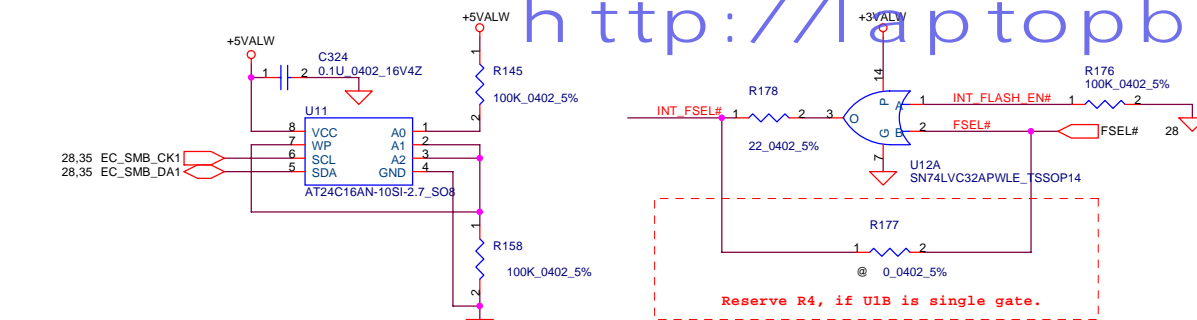


USB CONNECTOR



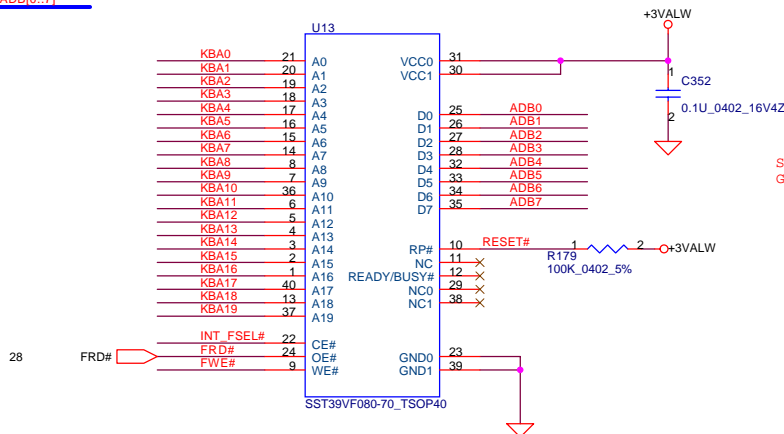
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Size B	Document Number HAZ00/BL10E (LA2861)	Rev 1.0		Date: Thursday, August 04, 2005
Sheet 27 of 42				



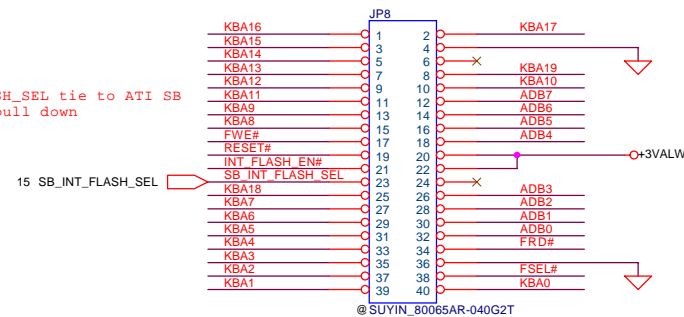


1MB Flash ROM

28 KBA[0..19] ↔ KBA[0..19]
28 ADB[0..7] ↔ ADB[0..7]



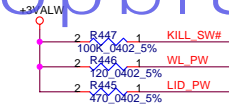
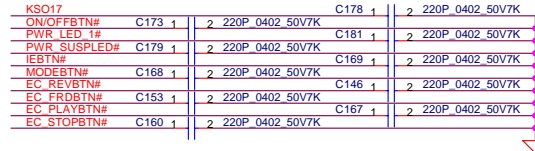
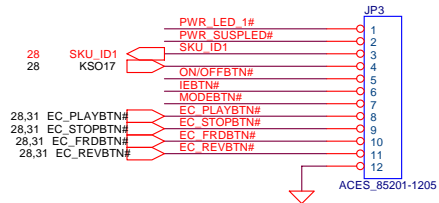
1MB ROM Socket



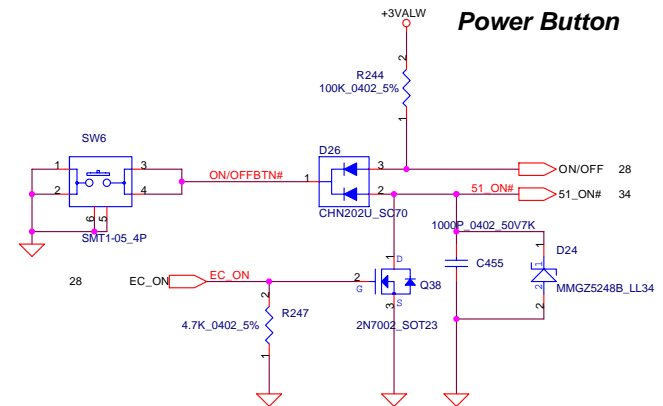
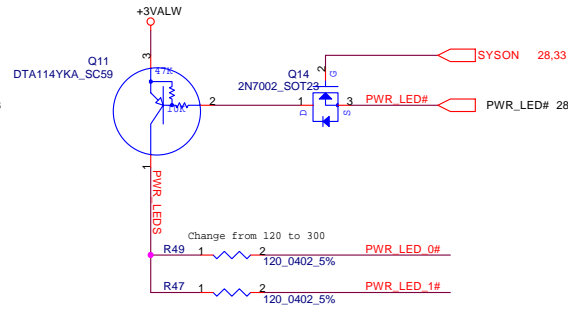
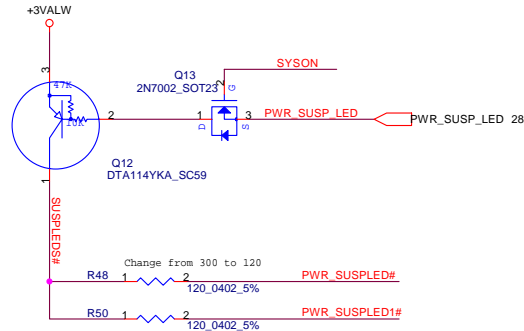
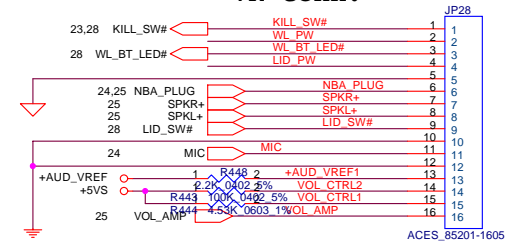
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Size	B	Document Number	HAZ00/BL10E (LA2861)	Rev
Date:	Monday, August 08, 2005	Sheet	29 of 42	1.0

Switch Board Conn.

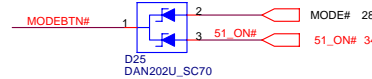
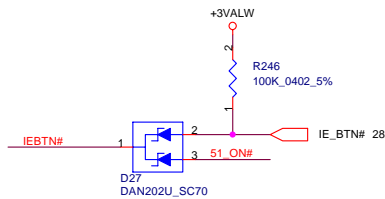
http://laptopblue.vn



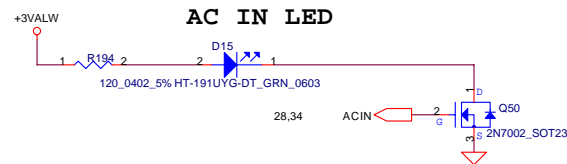
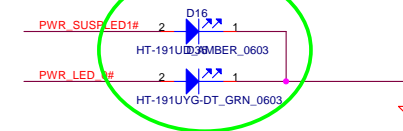
VR Conn.



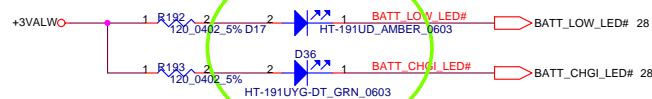
Power Button



POWER/ON LED



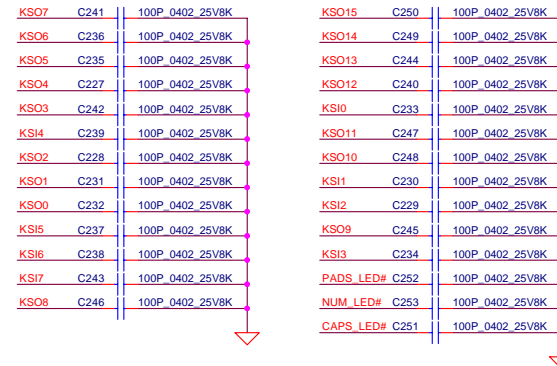
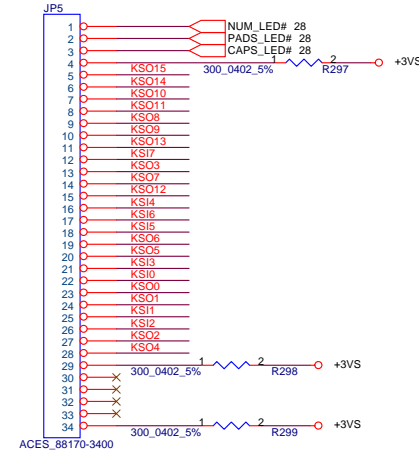
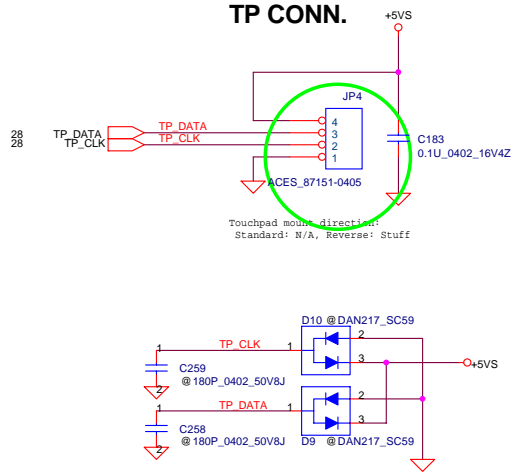
BATTERY CHG



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Date: Thursday, August 04, 2005				Rev 1.0
Sheet 30 of 42				

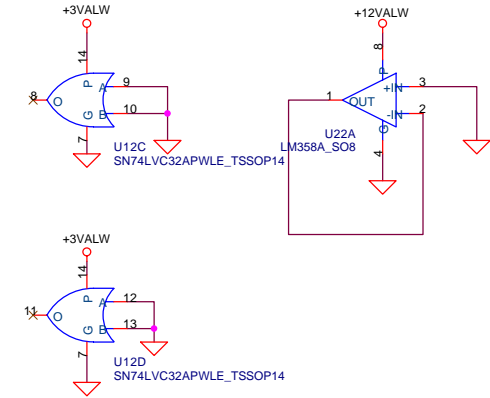
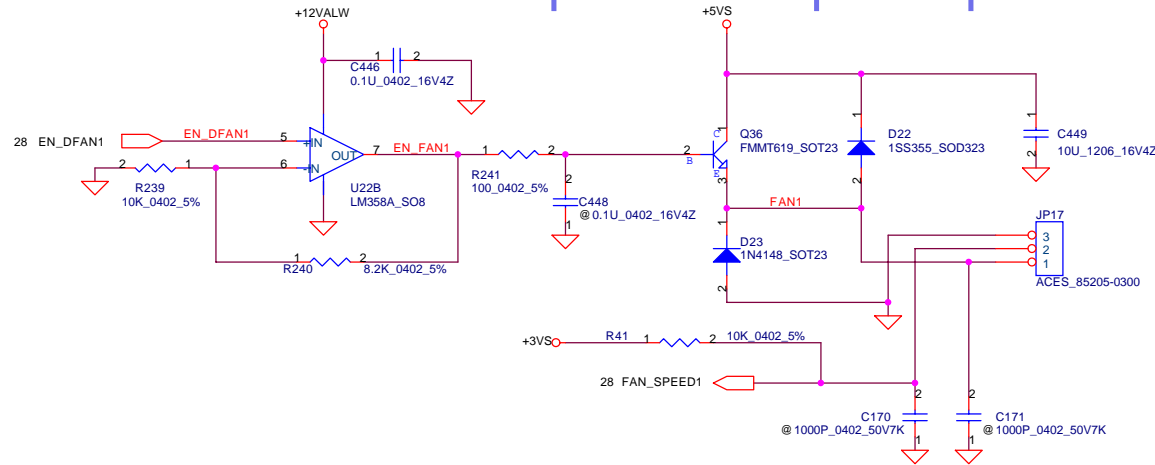
KS[0..7] 28,30
KSO[0..15] 28

INT_KBD CONN.

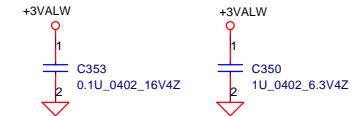
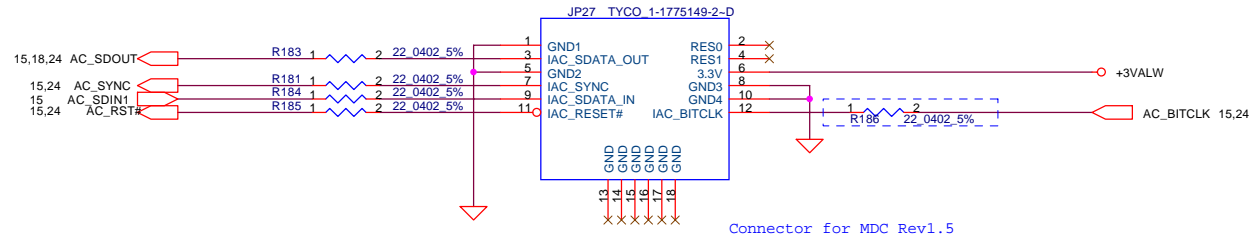


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Size		Document Number		Rev	
Custom		HAZ00/BL10E (LA2861)		1.0	
Date		Thursday, August 04, 2005		Sheet 31 of 42	

FAN Conn



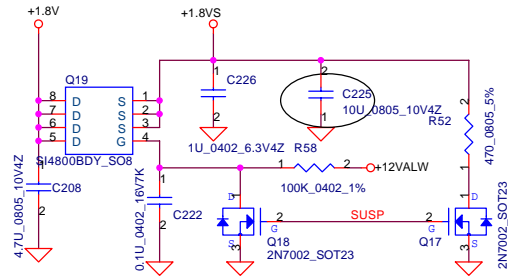
MDC CONN.



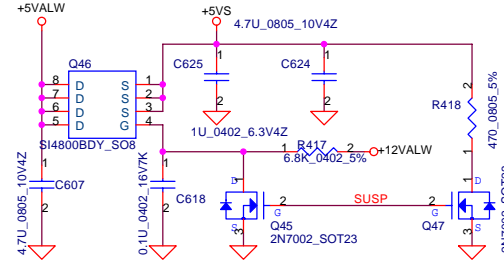
Connector for MDC Rev1.5

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				Date:	Thursday, August 04, 2005
				Sheet	32 of 42

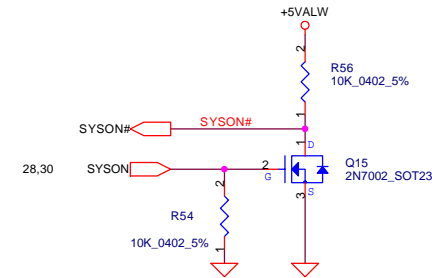
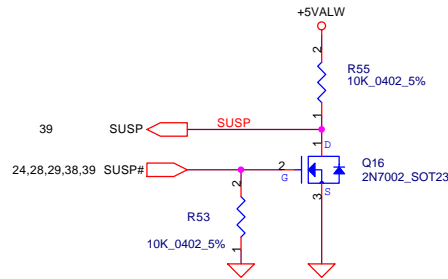
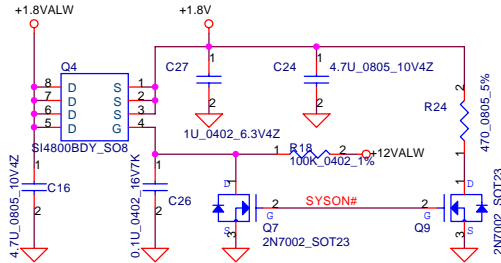
+1.8VALW TO +1.8VS



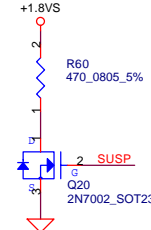
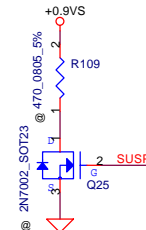
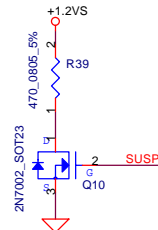
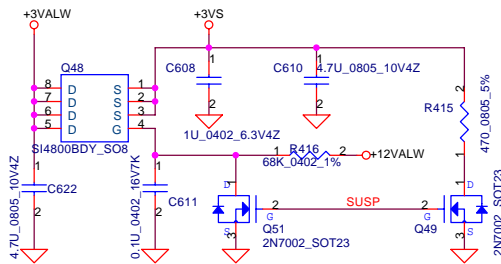
+5VALW TO +5VS



+1.8VALW TO +1.8V

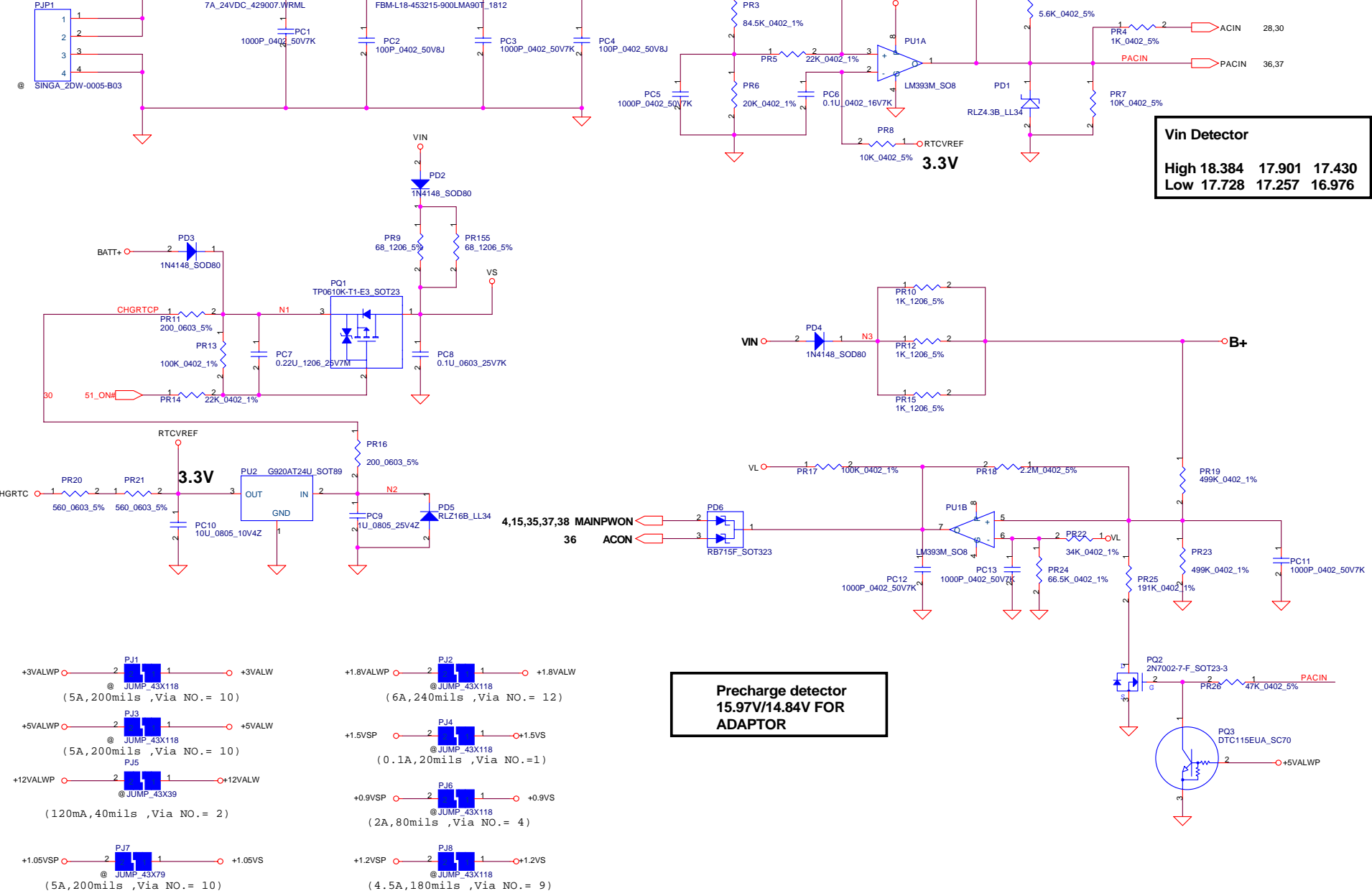


+3VALW TO +3VS



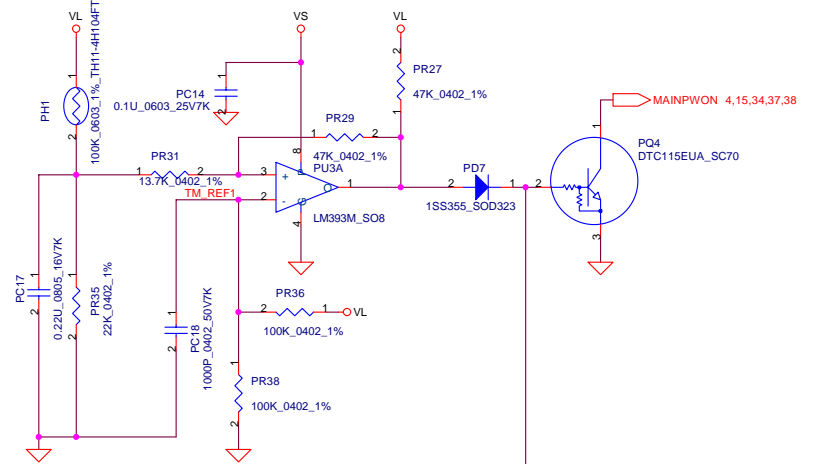
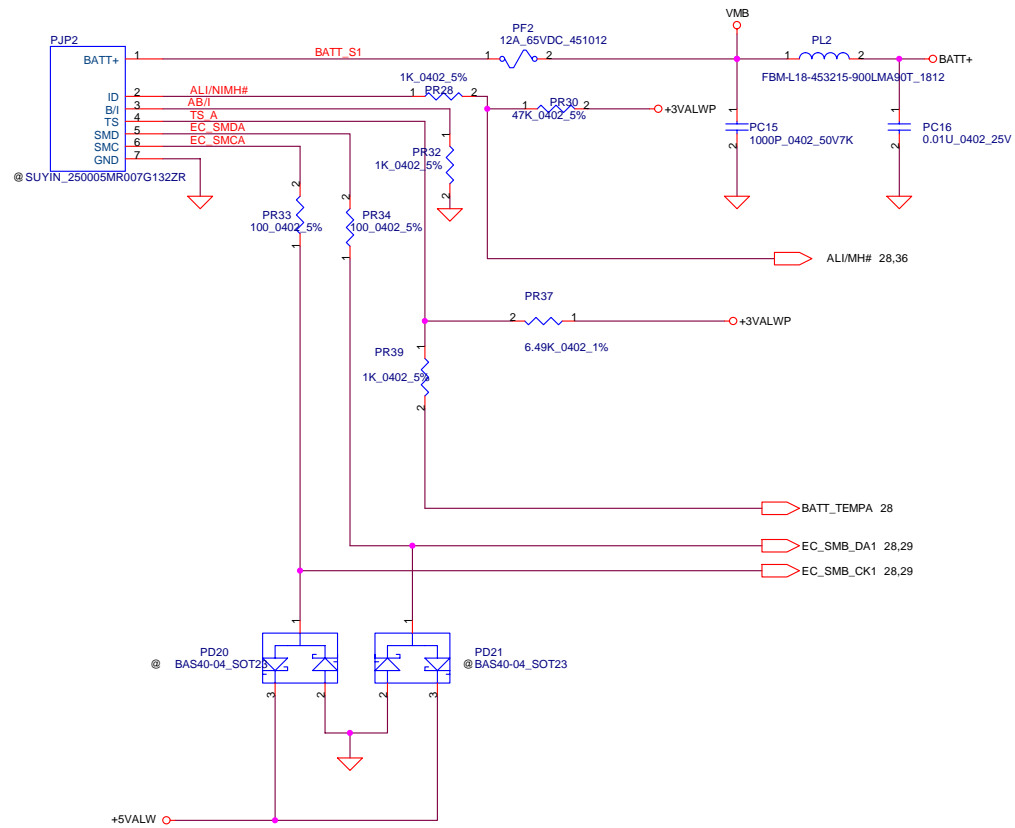
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				Date: Monday, August 08, 2005	Sheet 33 of 42

DC301000F00



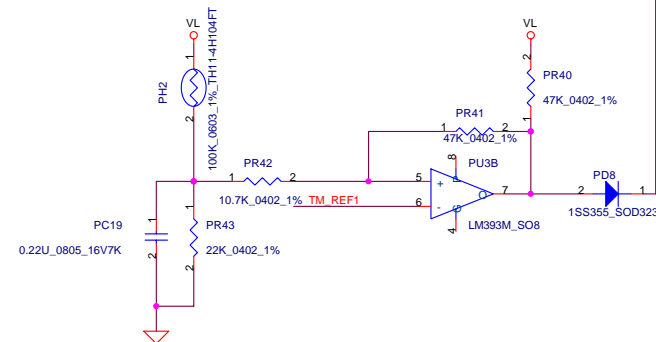
PH1 under CPU bottom side :

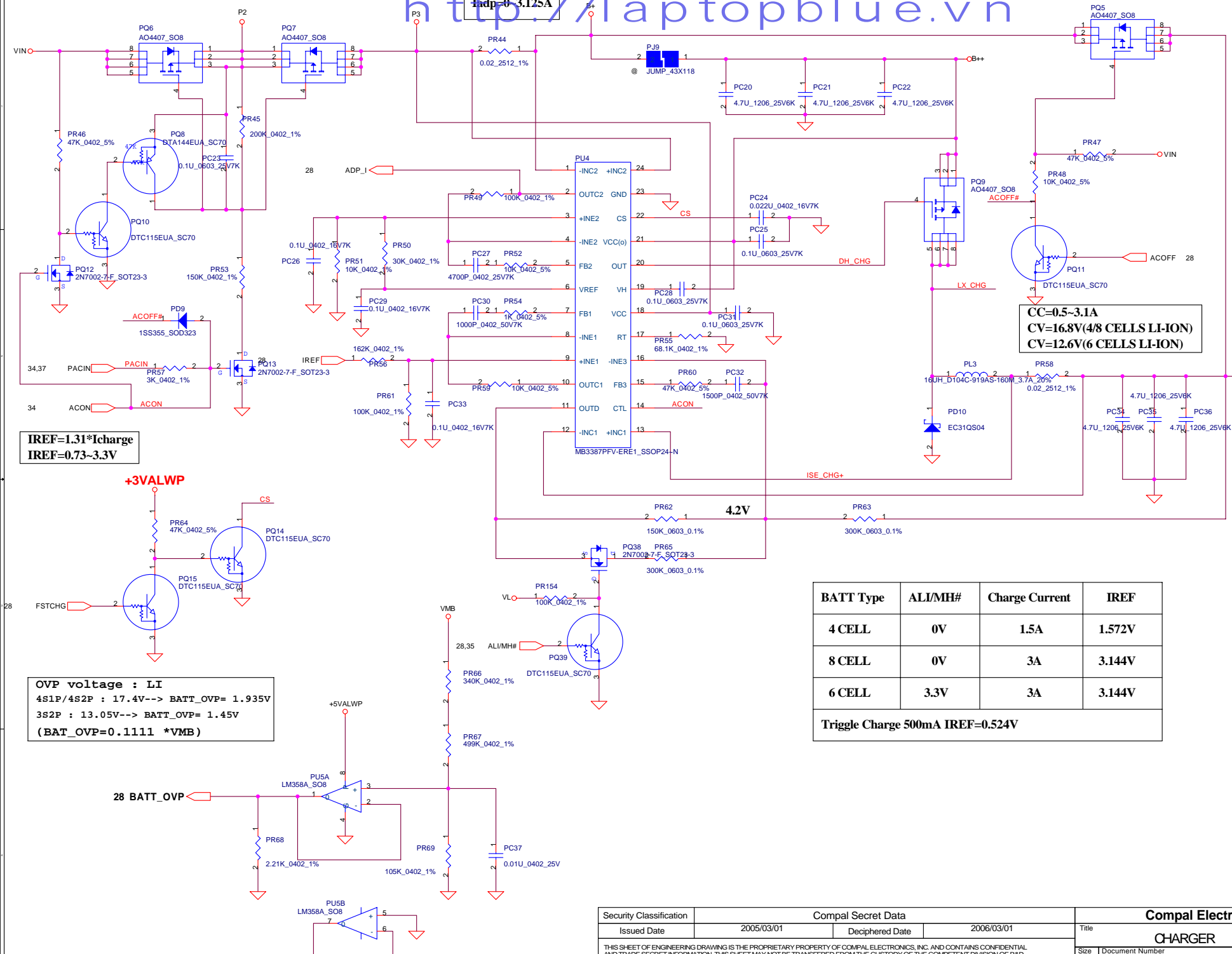
CPU thermal protection at 84 degree C
Recovery at 45 degree C



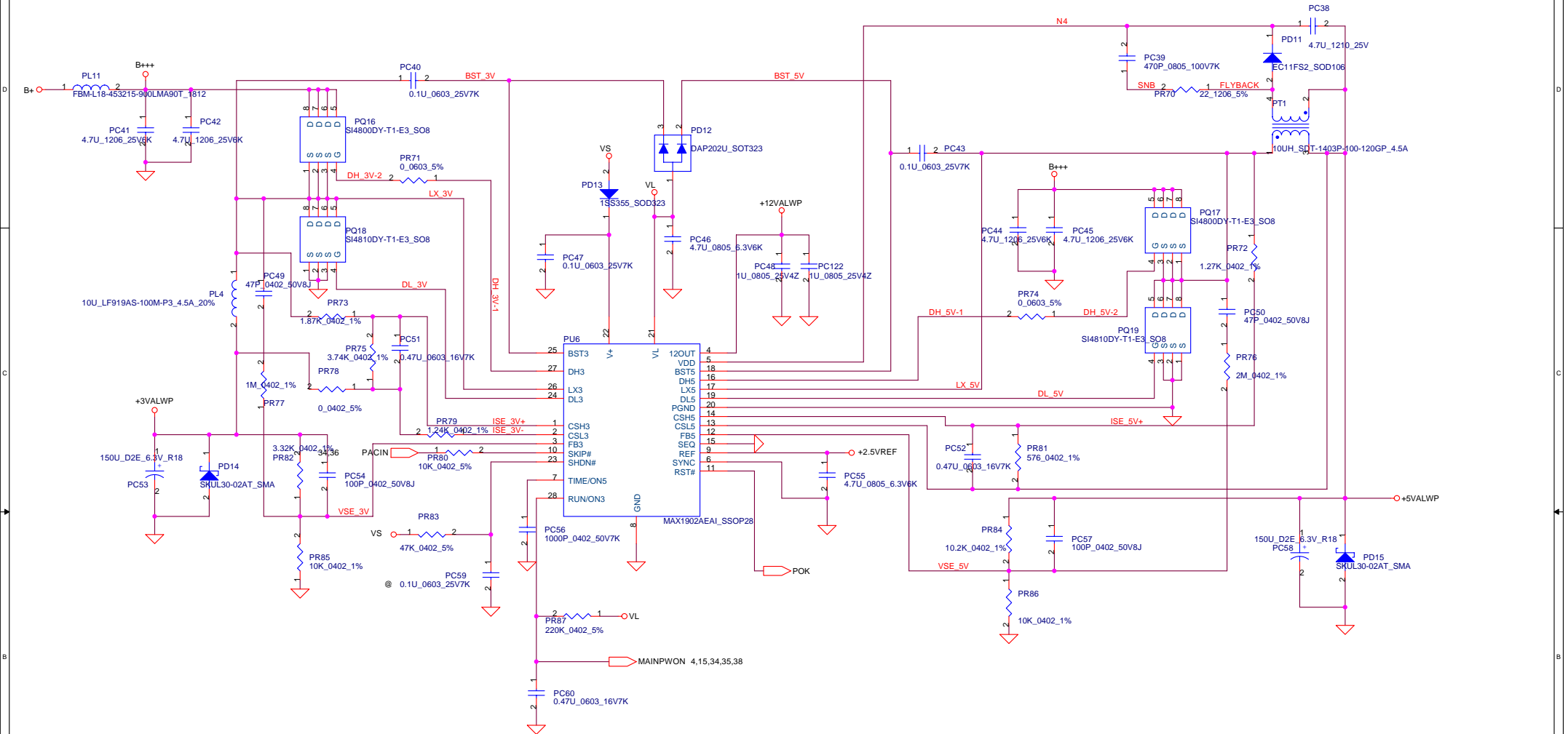
PH2 near main Battery CONN :

BAT. thermal protection at 79 degree C
Recovery at 45 degree C



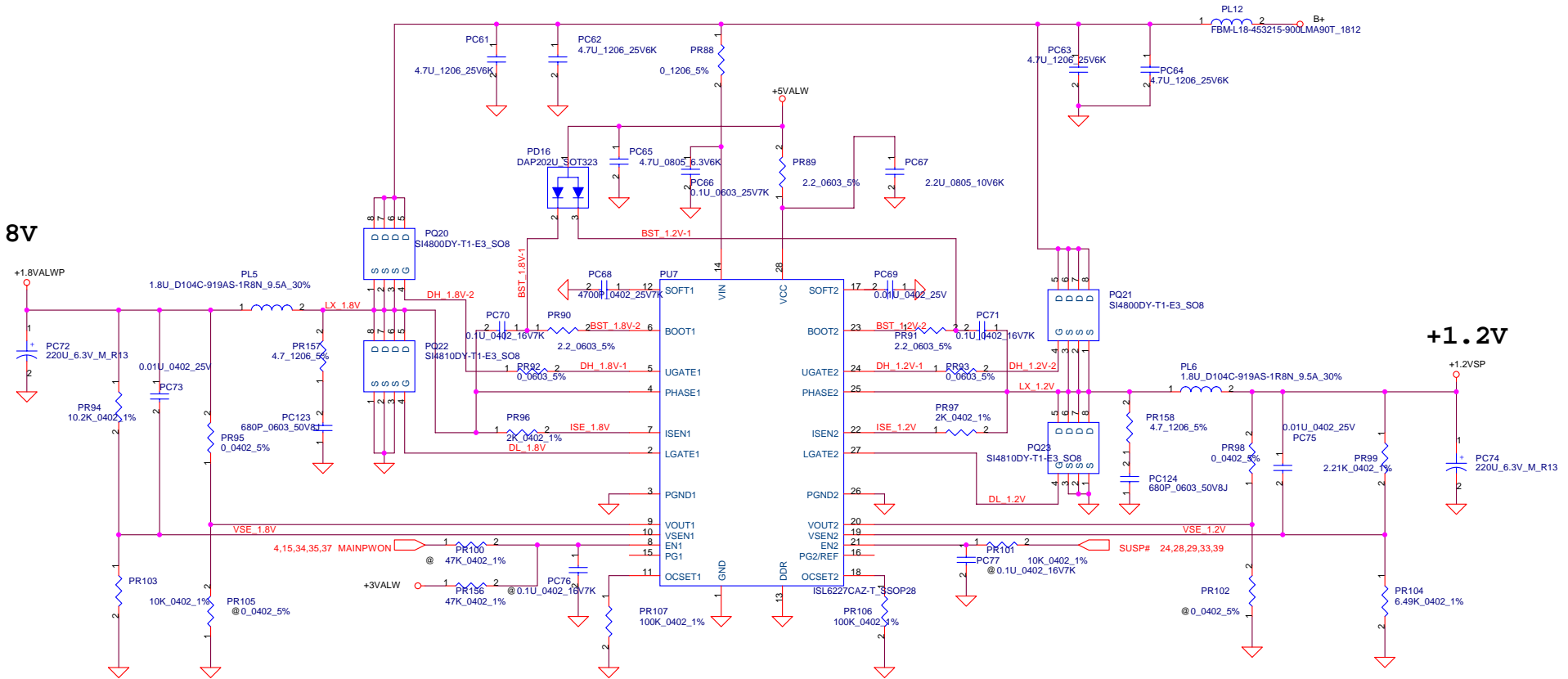


BATT Type	ALI/MH#	Charge Current	IREF
4 CELL	0V	1.5A	1.572V
8 CELL	0V	3A	3.144V
6 CELL	3.3V	3A	3.144V
Triggle Charge 500mA IREF=0.524V			



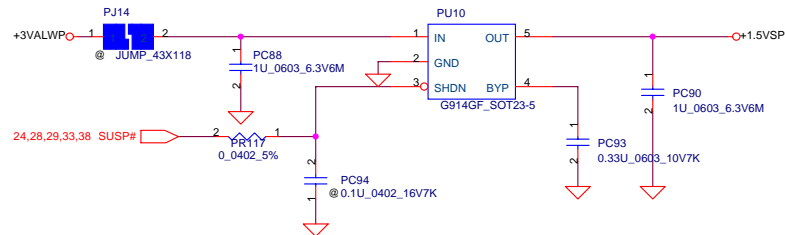
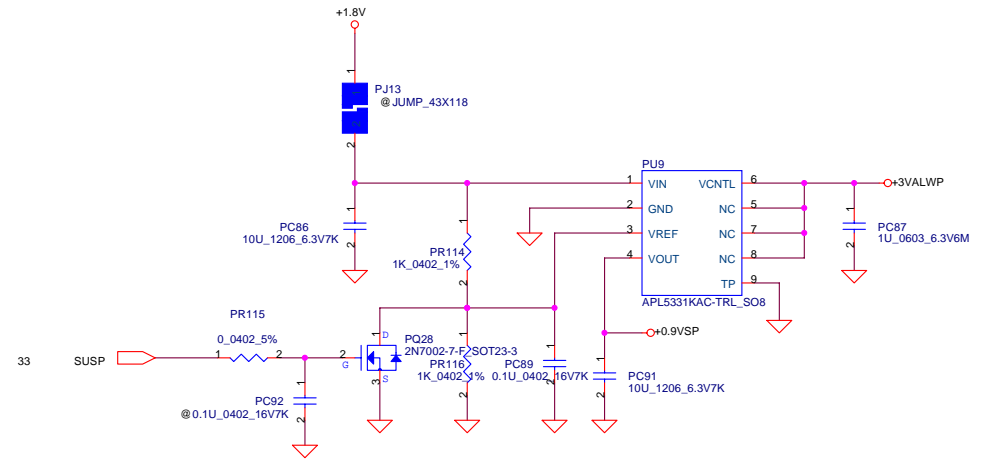
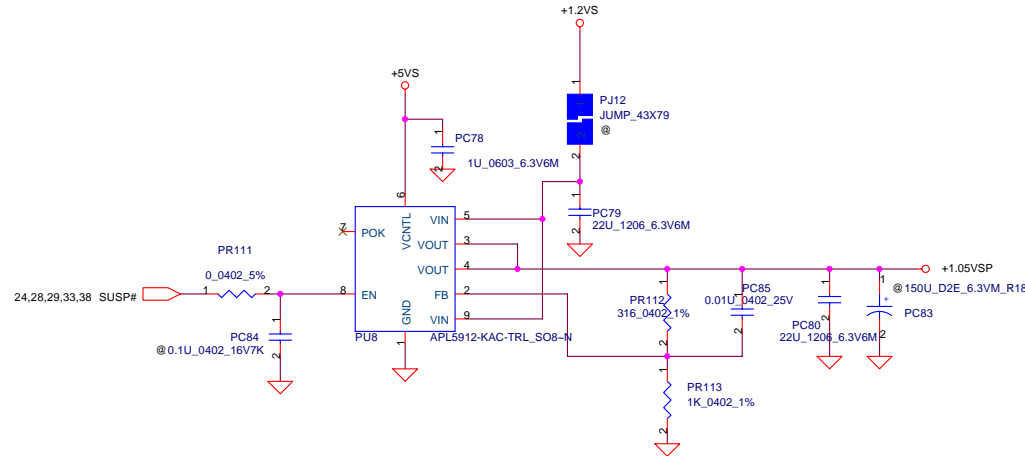
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Size	Document Number	Rev			0.3
Date:	Thursday, August 04, 2005	Sheet	37	of	42

+1.8V



+1.2V

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Issued Date	2005/03/01	Deciphered Date	2006/03/01	Title	
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Size	Document Number	Rev		Date: Thursday, August 04, 2005	
		0.3		Sheet 38 of 42	



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Size		Document Number				Rev
						0.3
Date:		Thursday, August 04, 2005		Sheet	39	of 42



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0.1==>0.2		Writed by Timo	
Date	Page	Action	Purpose
6/12	9	Add C642, C643 and C644	For Increase the DDR bypass capaciots
6/12	10	Add C645, C646 and C647	For Increase the DDR bypass capaciots
	12	Modify JP18 circuit	Making TV out function become correct
	15	Add @ on R317	Metting ATI reference circuit
	24	Del @ on R436	Solving MDC issue and sound slow issue
	26	Del R306 (move to sub board)	To differentiate between HAZ00 and HTW01 BIOS
	28	Add @ on Super I/O circuit	For DVT build
	29	Modify pin74 net-name of KB910	Solving reserve button no function
	31	Modify D16, D17	
		Add D35, D36	Change from double colors to signal color LED
6/22	27	Add H34, H33	For Me update new drawing

0.2==>0.3		Writed by Timo	
7/8	8	Add C648, C649 and C650	Seperate the AVDD and DVDD for TVout and CRT
	17	Add C651~C657	
		Change C585, C587, C566, C533, C560, C573, C536 from 10 to 4.7U	For height limited of SB
	34	Change C225 from 4.7 to 10U	For height limited of SB
7/11	25	Del R456	
		Add Q52	For insert card bus device beep sound issue.
	27	Del R449~R454	For EMI request
7/13		Del Super I/O circuit	
	29	Add JP30, R457, C658	For LPC debug port
	23	ADD JP29, R456	For Port80 Debug card connector
	28	ADD R459, R460	For HDD password detect pin
	12	ADD J1, J4	
	22	ADD J2	
	27	ADD J3	For EMI request

0.3==>1.0		Writed by Timo	
7/28	25	Add C662, R461, D37, R462, Q52	For Insert card bus device PoPo noise sound
	29	Change R101 from 8.2k to 18kohm	For Board ID change
	14	Change C587, C585, C651, C652, C566, C553, C560, C573, C653, C654, C655, C656, C536, C657	
	17	from 4.7U to 1U	For avoide the interfere area of HDD
		Change C288 from 150U fo 470UF	Making the capacitors of 1.8VS source blance of SB
		Add C660, C661	Making the capacitors of 1.8VALW and 3VS sources blance of SB
7/30	4	Add @ in C261	For throttle issue
	5	Add @ in C180	For cost down
	12	Add L38, L39, L40	For EMI issue

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				Date:	Monday, August 08, 2005
				Sheet	41 of 42
				Rev	1.0

EVT

page	Reason for change	Modify list
37	12V noise	Change PC38 from 4.7u_1206_25V to 4.7u_1210_25V
37	Lead free parts	Change PC53,PC58 to NEC lead free parts.
38	Modify 1.8V power sequence for HW requirement	Change PR100 from 0_0402_5% to 47K_0402_1% Add 0.1u_0402_16V at PC76
39	Modify 1.05V circuit	Delete PQ24,PQ26,PL7,PD17,PC82,PC81,PR109,PQ25,PQ27,PR110 Change PU8 to APL5912-KAC-TRL Change PC85 to 0.01u_0402_25V Change PR112 to 316_0402_1% Change PR13 to 1K_0402_1%
39	Delete reserved 1.5V circuit	Delete PU11,PC95,PR118,PR120,PQ29,PR119,PC99,PC97,PC98,PC96
39	Change 1.5V IC	Change PU10 from APL5151 to G914
40	Add snubber for CPU CORE	Add 4.7_1206_5% to PR131,PR151 Add 680P_0603_50V to PC108,PC120
37,38	Add bead at 3V/5V and 1.2V/1.8V input for EMI requirement	Add PL11,PL12 to replace PJ10,PJ11

DVT

34	Change VS resistor to 33 ohm	Change PR9 from 47_1206_5% to 33_1206_5%
34	Change 1N4148 to lead free P/N	Change PD2,PD3,PD4 P/N to SC11N414880
40	Change HMBT2222 to lead free P/N	Change PQ37 P/N to SB322220080
38	Raise 1.8V to 1.82V for HW requirement	Change PR94 from 10K_0402_1% to 10.2K_0402_1%

PVT

34	Change VS resistor to standard part	Change PR9 from 33_1206_5% to 68_1206_5% Add 68_1206_5% at PR155
38	Change 1.8VALWP power sequence for HW requirement	Change 47K_0402_1% from PR100 to PR156 Delete PC76 Change PC68 from 0.01u_0402_25V to 4700P_0402_25V

Pre-MP

38	Add BOOST 2.2 ohm and snubber at 1.8V / 1.2V for EMI	Add 4.7_1206_5% to PR157,PR158 Add 680P_0603_50V to PC123,PC124 Change PR90,PR91 from 0_0603_5% to 2.2_0603_5%
42	Change CPU CORE mosfet for EMI	Change PQ30,PQ34 from AO4408 to IRF7821 Change PQ31,PQ35 from AO4410 to IRF7832
42	Delete CPU VID 0 ohm debug resistor	Delete PR122,PR123,PR125,PR127,PR129,PR130

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				Date:	Thursday, August 04, 2005
				Sheet	42 of 42
				Rev	0.3