

Compal Confidential

EBQ10 LA-2741 Schematics Document

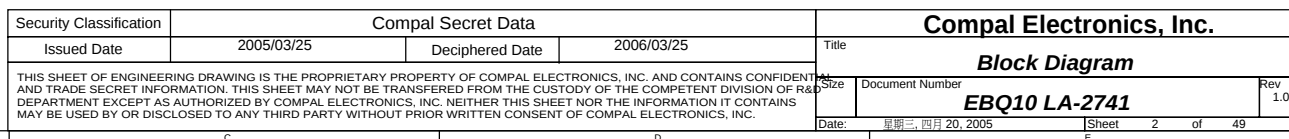
Intel Dothan with 915PM(GM)/910GML + DDRII + ICH6M
(nVidia NV43M or ATi M24/M26)

2005 - 03 - 25

REV: 0.3

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Model Name : EBQ10
File Name : LA-2741



Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+0.9VS	0.9V switched power rail for DDR terminator	ON	OFF	OFF
+1.05VS	1.05V switched power rail	ON	OFF	OFF
+1.5VALW	1.5V always on power rail	ON	ON	ON*
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDR	ON	ON	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3.3V power rail	ON	ON	OFF
+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
CardBus(SD)	AD20	2	PIRQA/PIRQB
1394	AD16	0	PIRQE
LAN	AD17	1	PIRQF
Mini-PCI(WLAN)	AD18	3	PIRQG/PORQH
Mini-PCI(TV-Tuer)	AD19	4	PIRQH/PORQA

EC SM Bus1 address

Device	Address	Device	Address
Smart Battery	0001 011X b	ADM1032	1001 110X b
EEPROM(24C16/02)	1010 000X b		

EC SM Bus2 address

ICH6M SM Bus address

Device	Address
Clock Generator (ICS 954226)	1101 001Xb
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb

STATE \ SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%			
Ra/Rc/Re	100K +/- 5%			
Board ID	Rb / Rd / Rf	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 Table

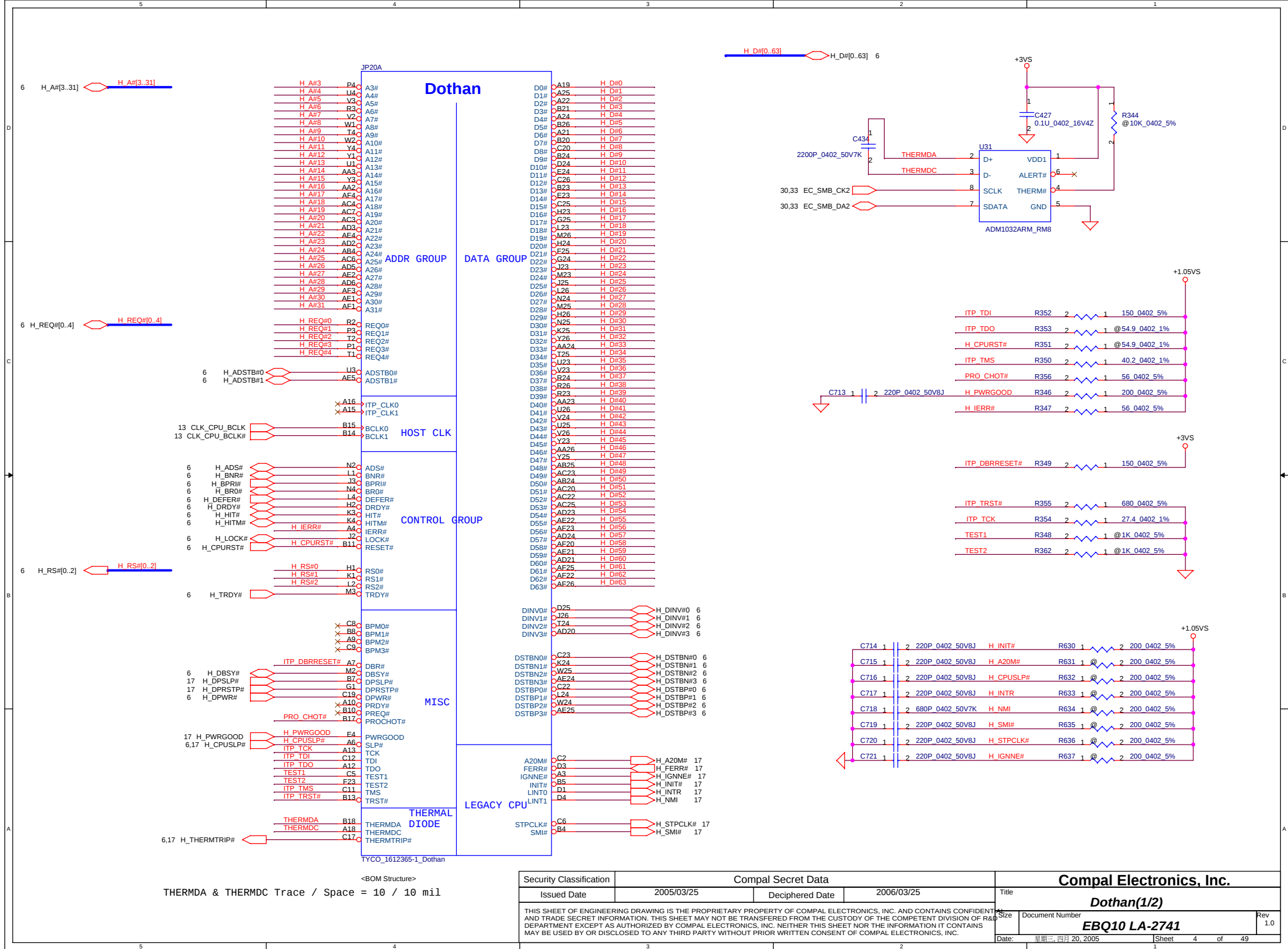
Board ID	PCB Revision
0	0.1
1	0.2
2	0.3
3	1.0
4	
5	
6	
7	

BTO Option Table

BTO Item	BOM Structure
VGA	PM@
Card Reader	5IN1@
Giga LAN	8100C@ 8110S@
New Card	NEWCARD@
IEEE1394	1394@
TV Tuner	TUNER@
INT MIC.	MIC@
KILL SW	WLAN@
CIR	CIR@
HW EQ	EQ@ NOEQ@

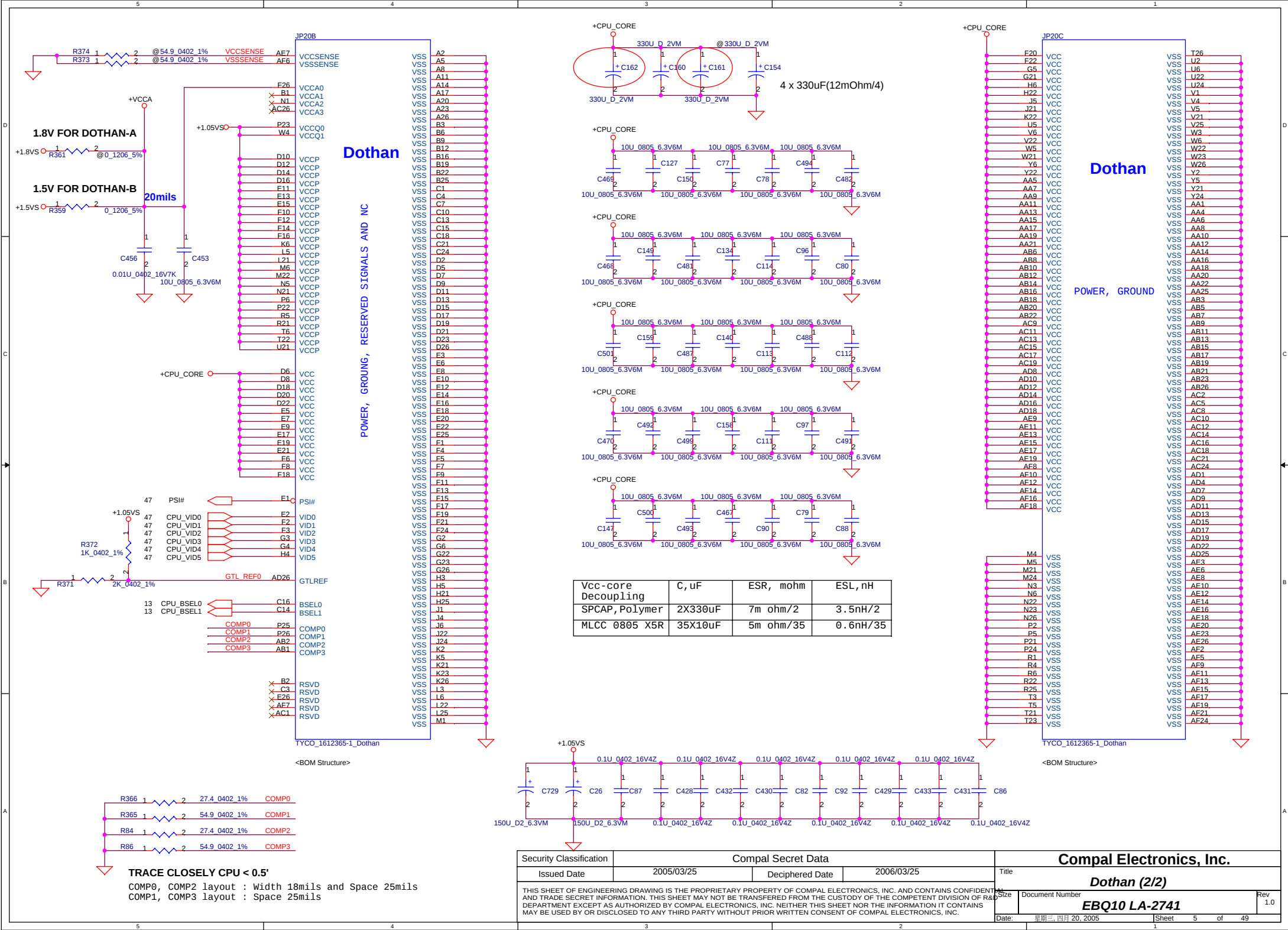
SKU ID Table

SKU ID	SKU
0	
1	
2	
3	
4	
5	
6	
7	



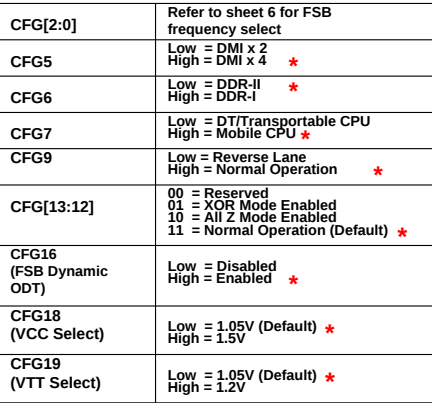
THERMDA & THERMDC Trace / Space = 10 / 10 mil

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				Dothan(1/2)				
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Vcc-core Decoupling	C, uF	ESR, mohm	ESL, nH
SPCAP, Polymer	2X330uF	7m ohm/2	3.5nH/2
MLCC 0805 X5R	35X10uF	5m ohm/35	0.6nH/35

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11 DDRA_SDQ[0..63] <-- DDRA_SDQ[0..63]
11 DDRA_SDM[0..7] <-- DDRA_SDM[0..7]
11 DDRA_SMA[0..13] <-- DDRA_SMA[0..13]

12 DDRB_SDQ[0..63] <-- DDRB_SDQ[0..63]
12 DDRB_SDM[0..7] <-- DDRB_SDM[0..7]
12 DDRB_SMA[0..13] <-- DDRB_SMA[0..13]



915GM@ ALVISO_BGA1257

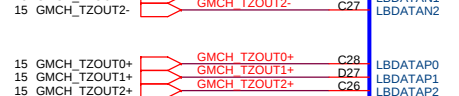
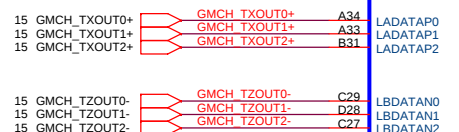
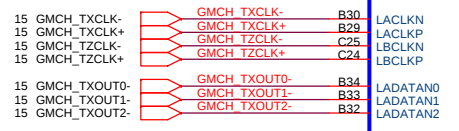
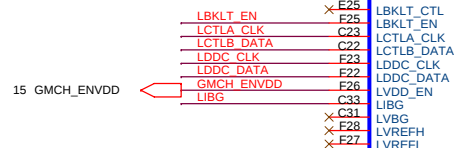
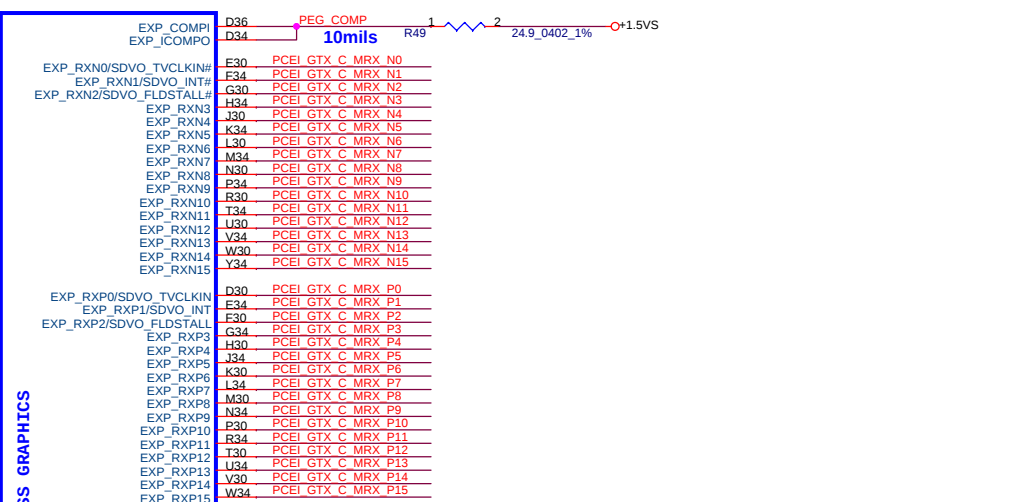
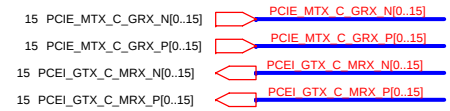
DDR MEMORY SYSTEM A



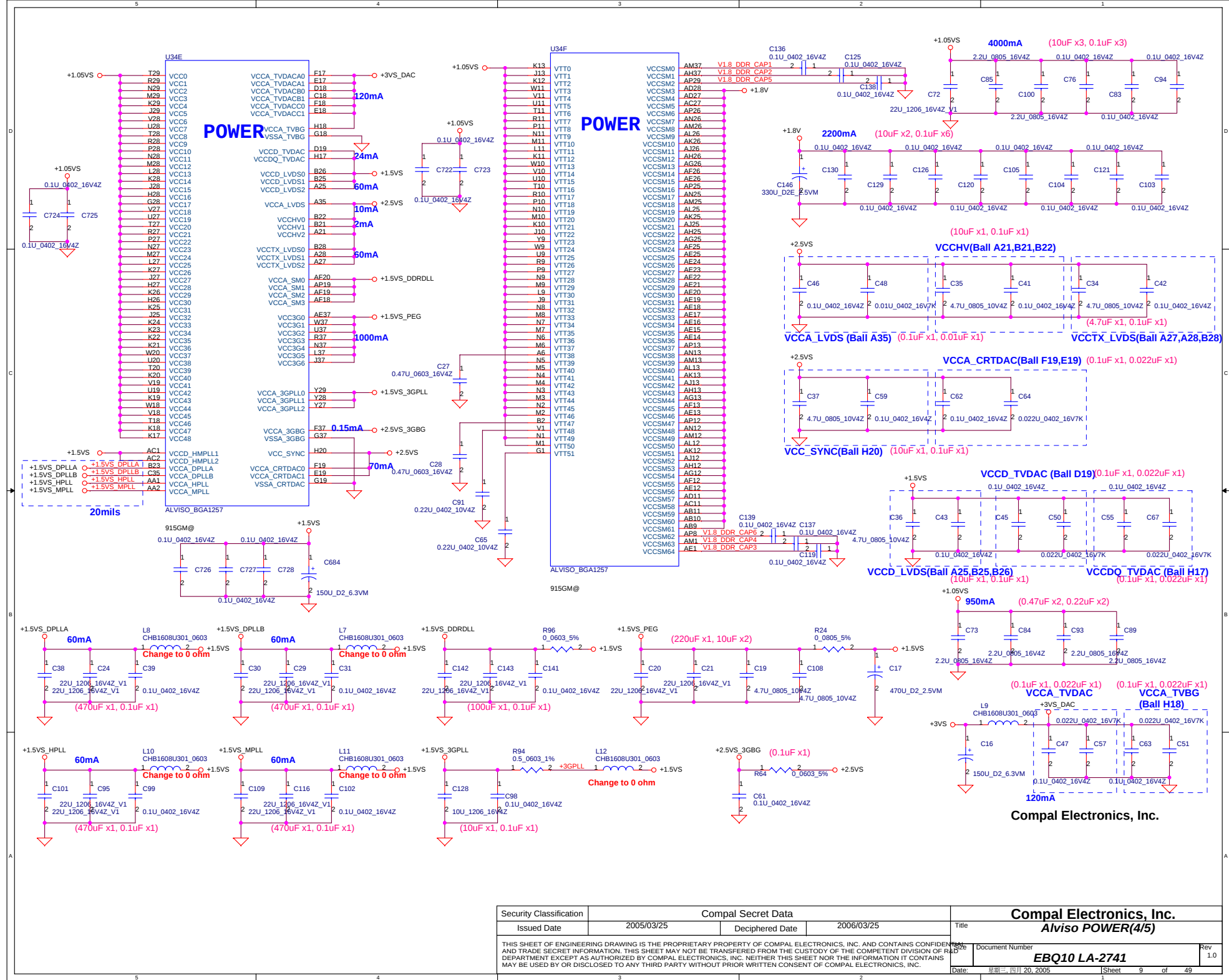
915GM@ ALVISO_BGA1257

DDR SYSTEM MEMORY B

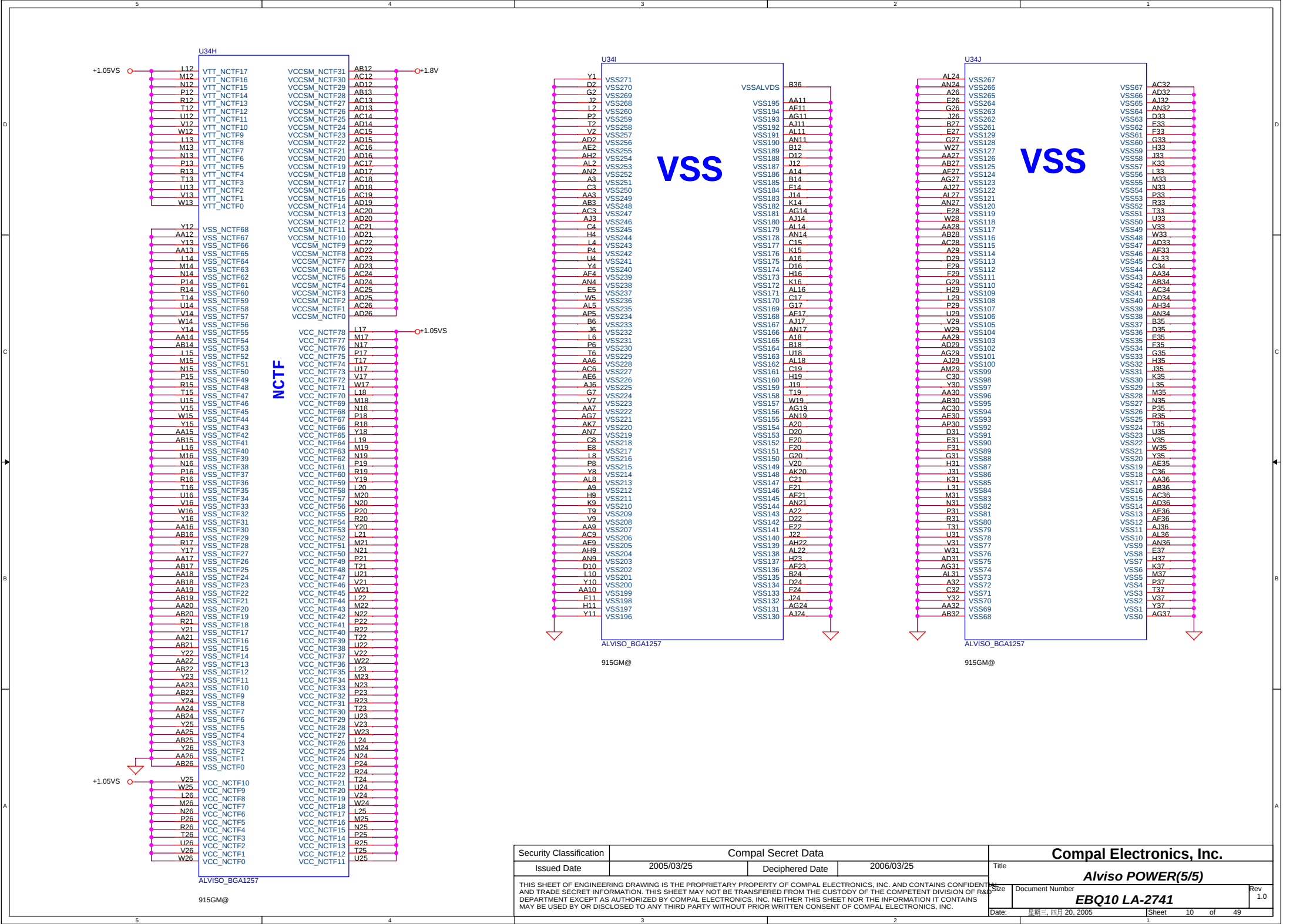
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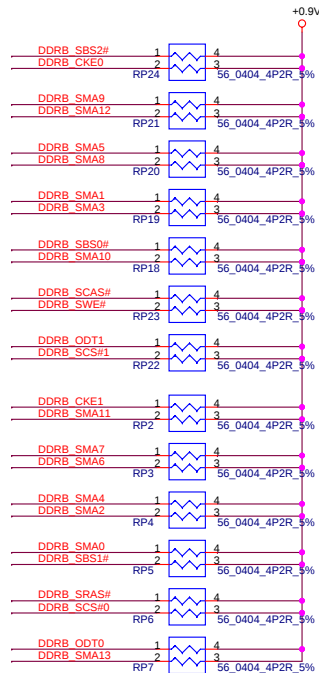
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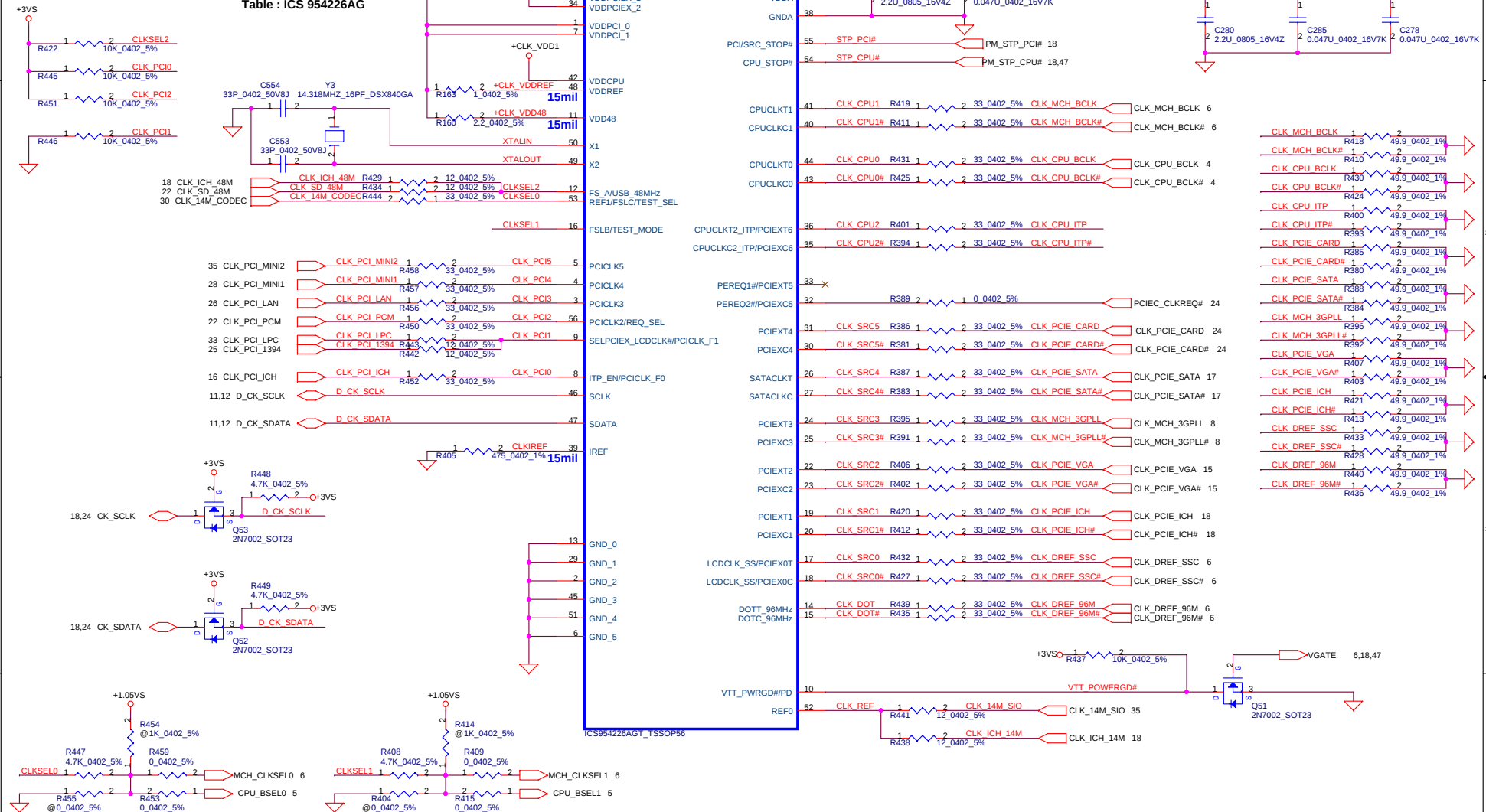
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ENTR R&D	Document Number	Rev
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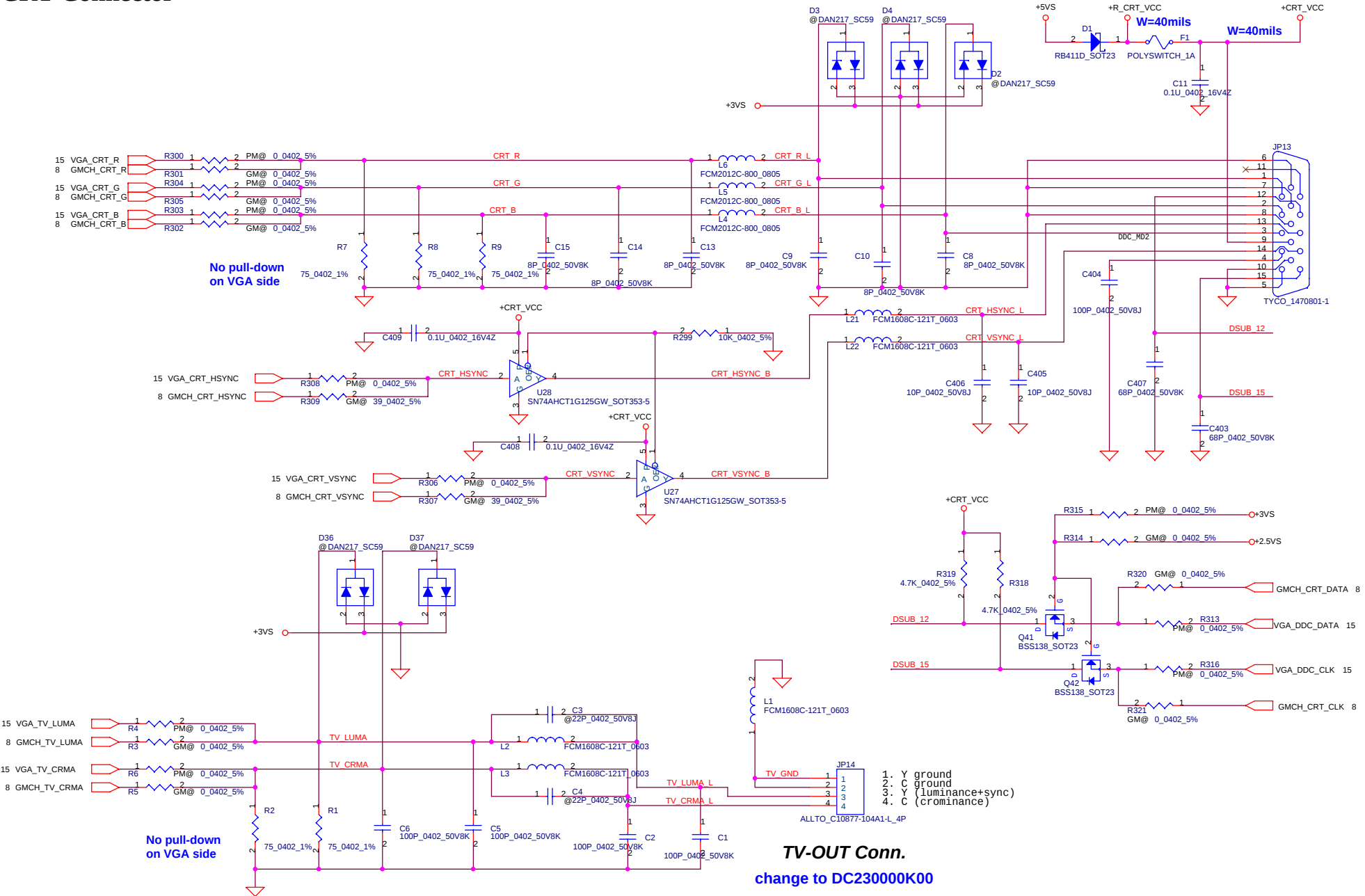
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1	0	1	100	100	33.3
0	0	1	133	100	33.3
0	1	1	166	100	33.3
0	1	0	200	100	33.3

Table : ICS 954226AG



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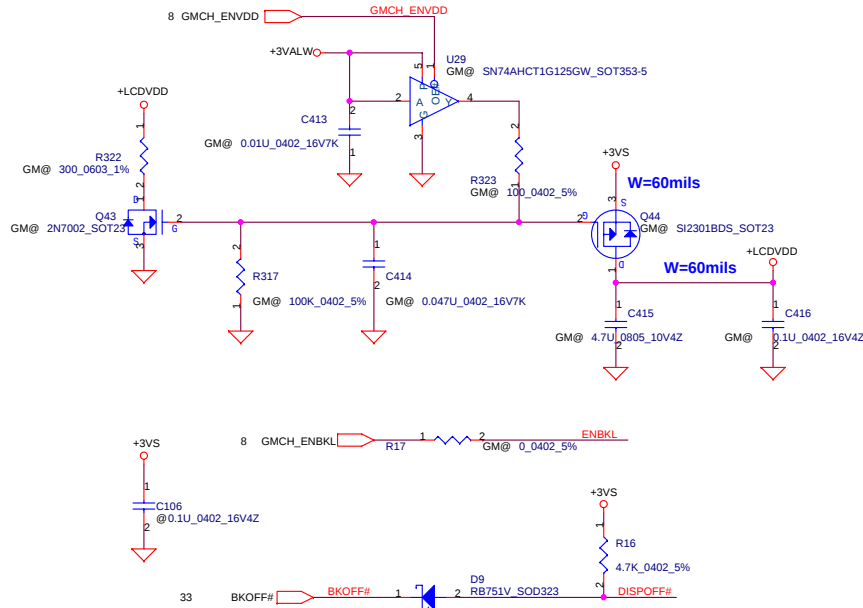
CRT Connector



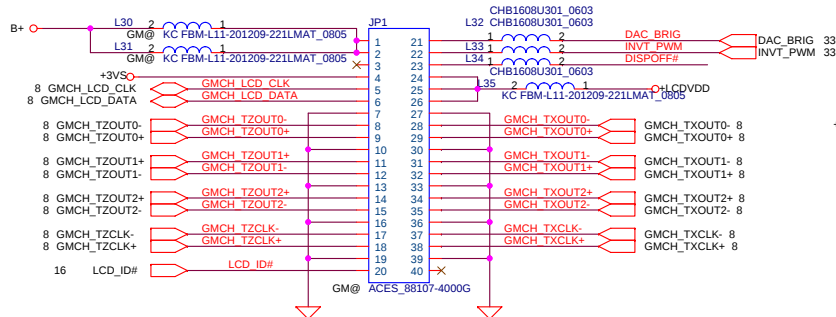
TV-OUT Conn.
change to DC230000K00

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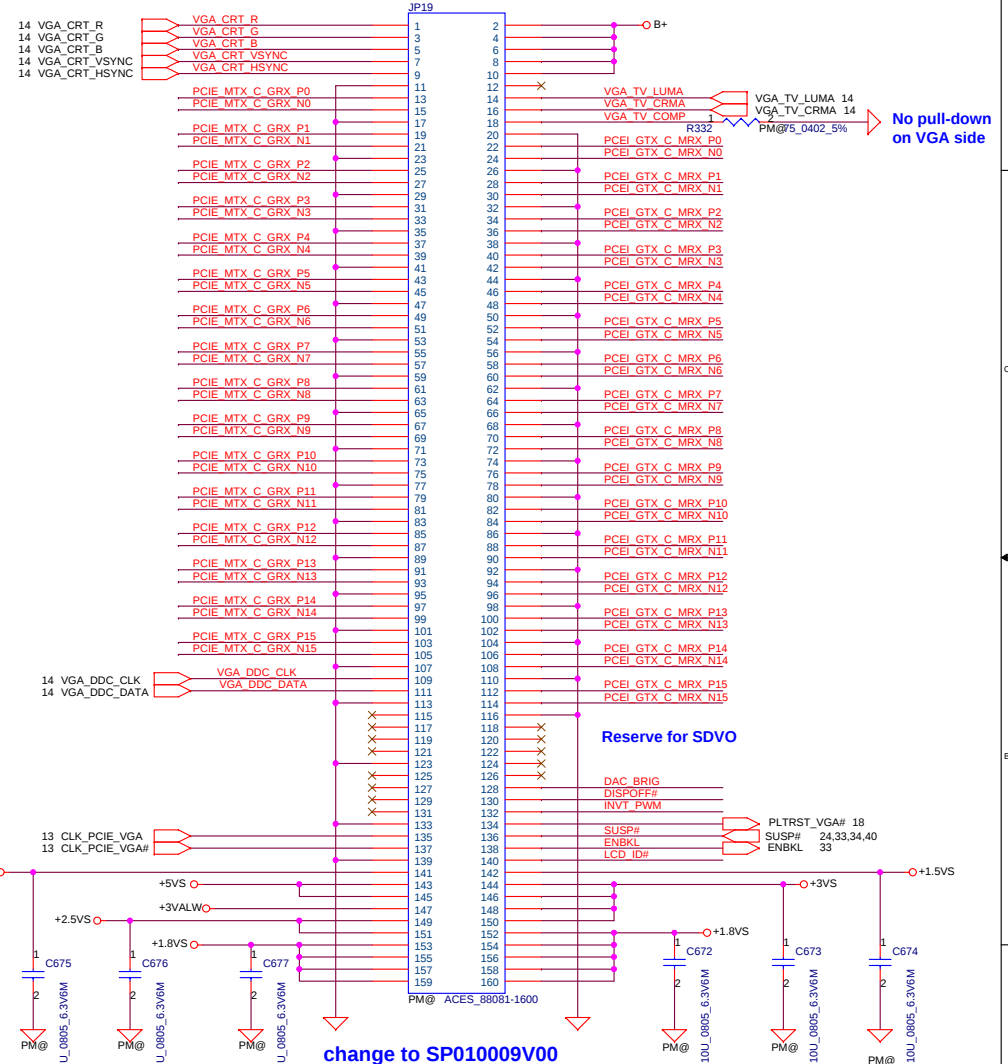
LCD POWER CIRCUIT



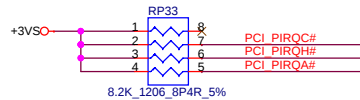
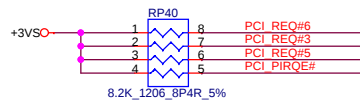
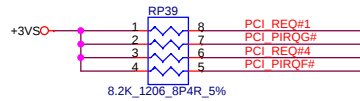
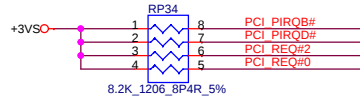
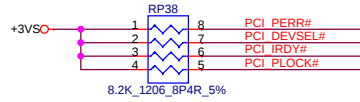
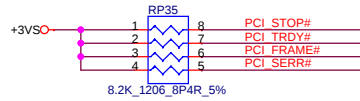
LCD/PANEL BD. Conn.



VGA BOARD Conn.

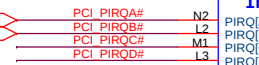
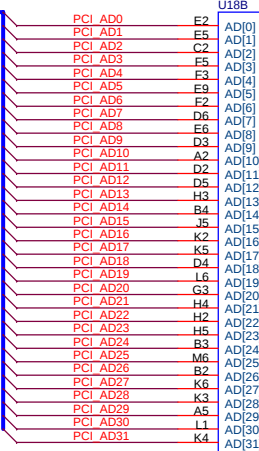


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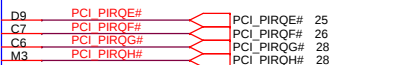
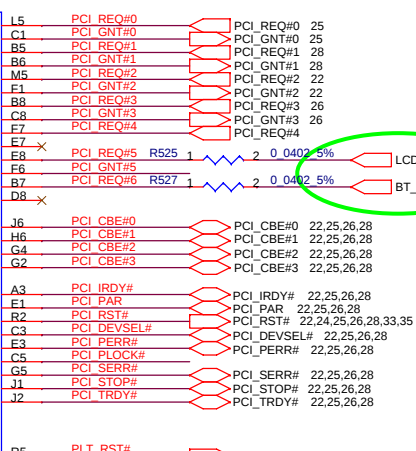
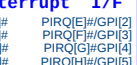


22,25,26,28 PCI_AD[0..31]

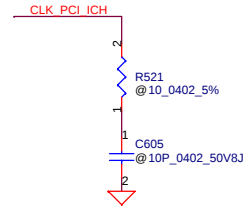
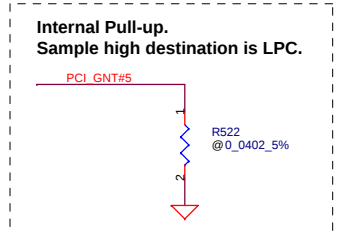
22,25,26,28 PCI_FRAME#
22 PCI_PIRQA#
22 PCI_PIRQB#



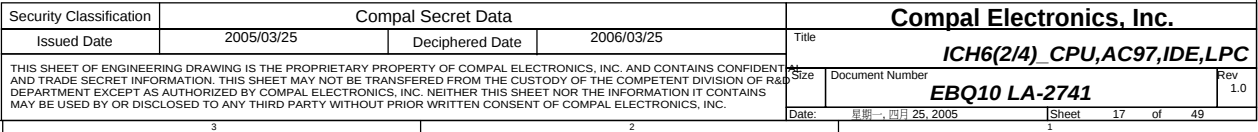
RESERVED
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SATA[1]RXP/RSVD[2]
SATA[1]TXN/RSVD[3]
SATA[1]TXP/RSVD[4]
SATA[3]RXN/RSVD[5]
SATA[3]RXP/RSVD[6]
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SATA[3]TXP/RSVD[8]
TP[3]/RSVD[9]
ICH6_BGA609

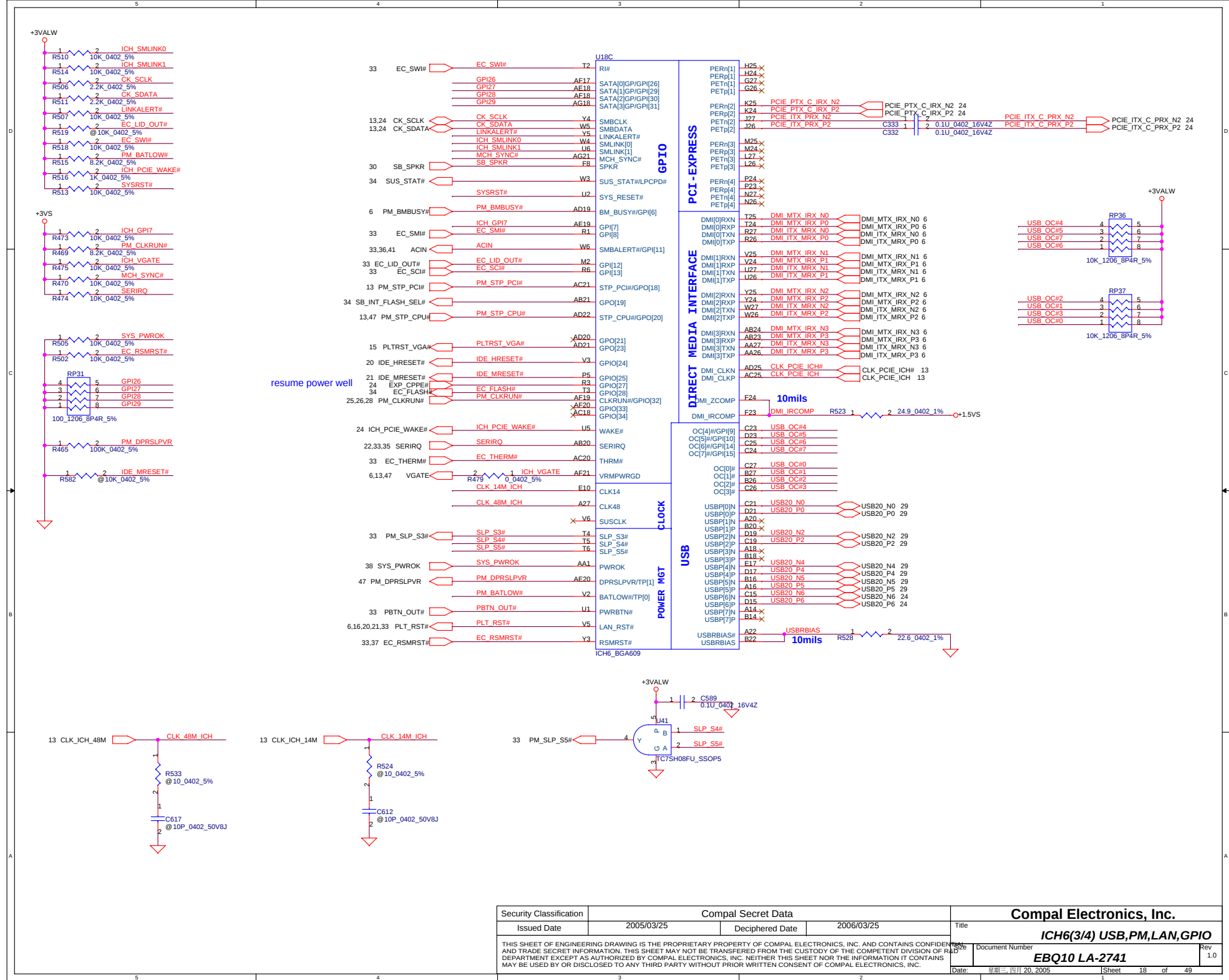


LCD_ID#
High when used EDID panel
Low when used non-EDID panel



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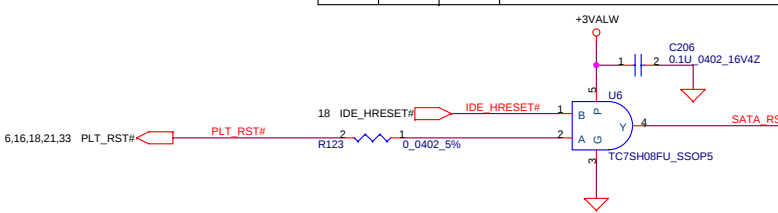
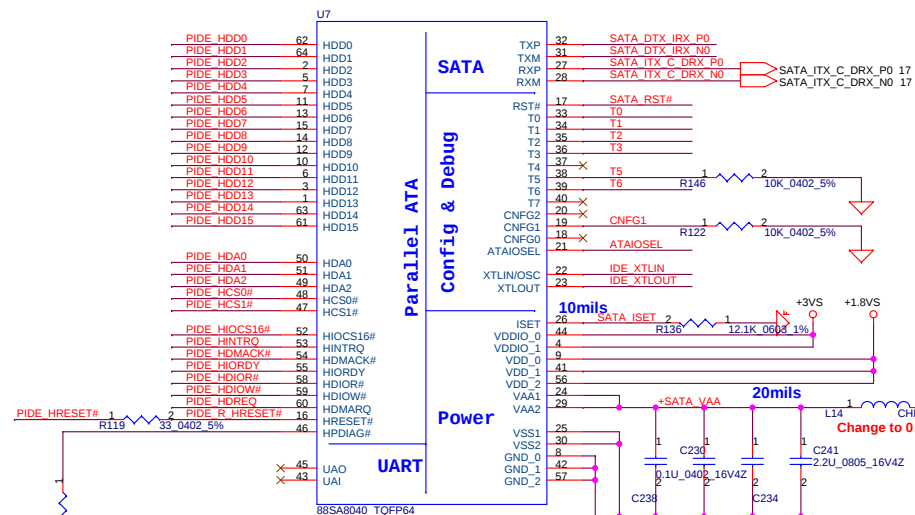
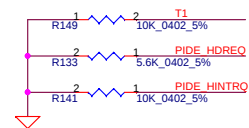
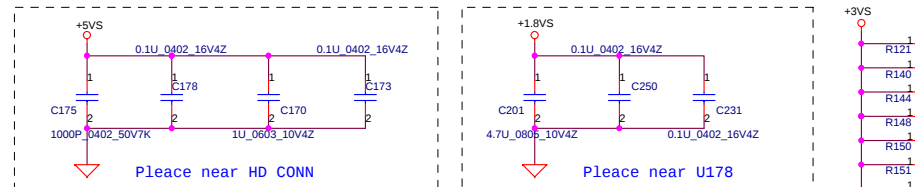


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Issued Date	2005/03/25	Deciphered Date	2006/03/25	Title	ICH6(3/4) USB,PM,LAN,GPIO	
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				Date	日期: 四月 20, 2005	
3		2		Sheet	18 of 49	

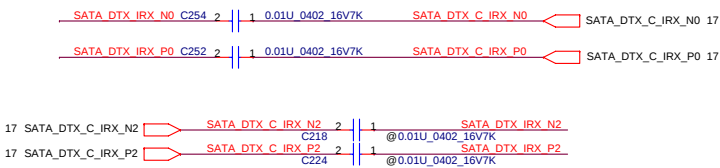
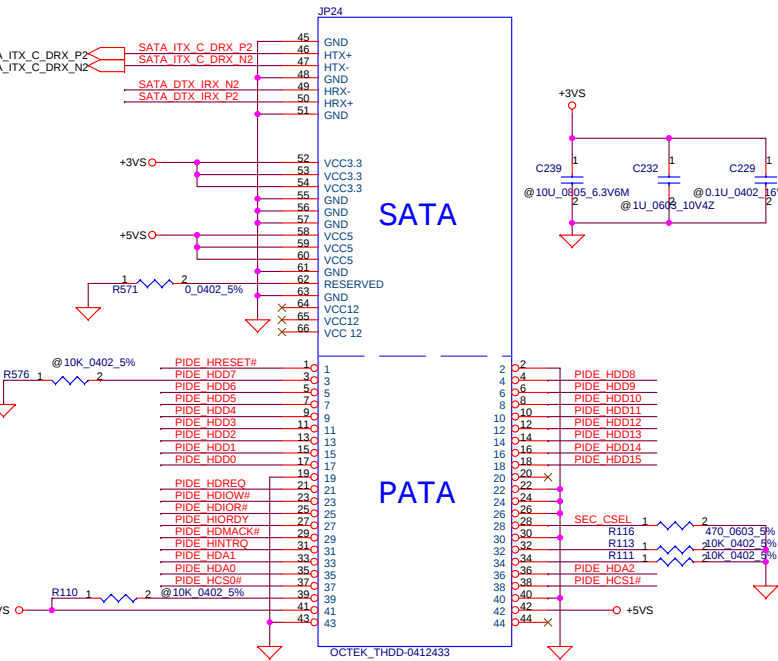
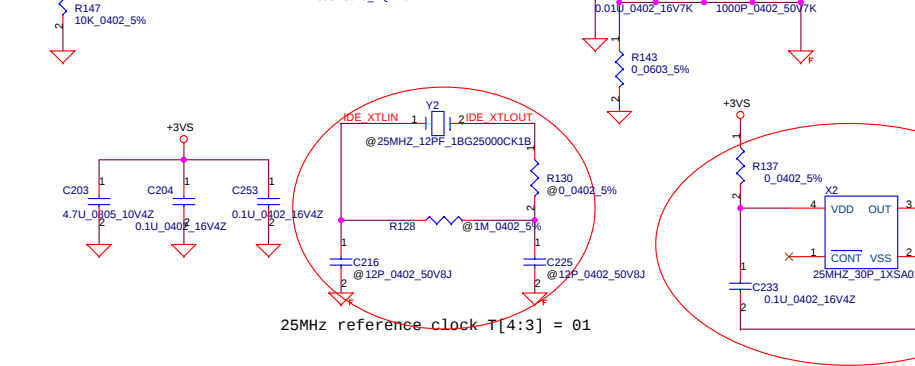
SATA Module

Sets maximum transfer rate and UDMA mode

CNF62 INT PD	CNF61 INT PD	CNF60 INT PD	NOTE
0	0	0	Device Mode 100MB/s
0	0	1	Device Mode 133MB/s
0	1	0	Device Mode 150MB/s
1	0	0	Host Mode 100MB/s
1	0	1	Host Mode 133MB/s
1	1	0	Host Mode 150MB/s
0	1	1	Reserved
1	1	1	Reserved

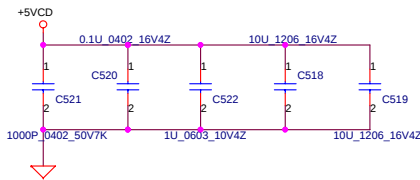


PATA/SATA HDD Conn.



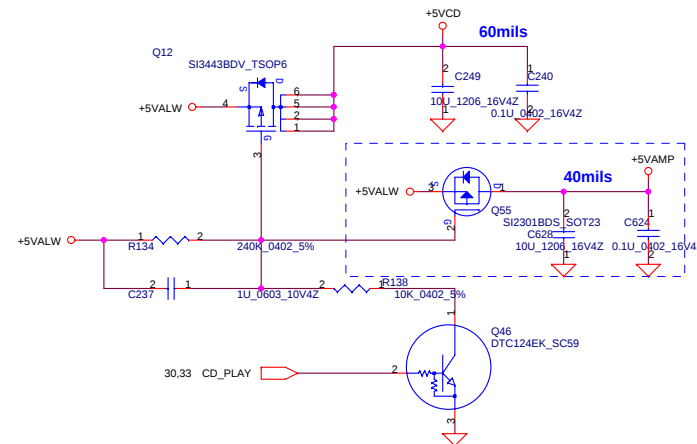
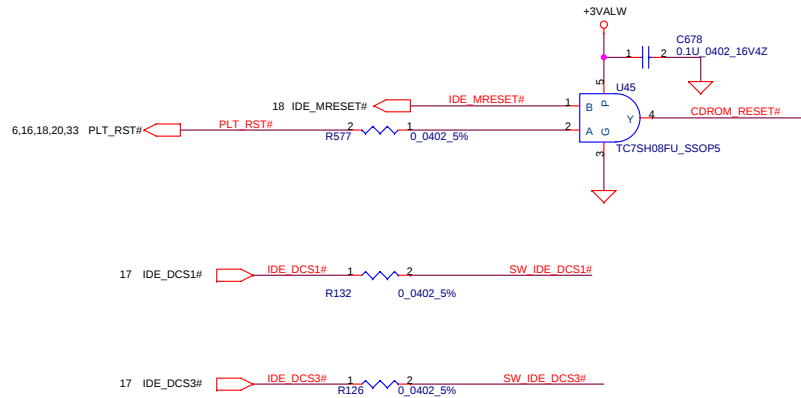
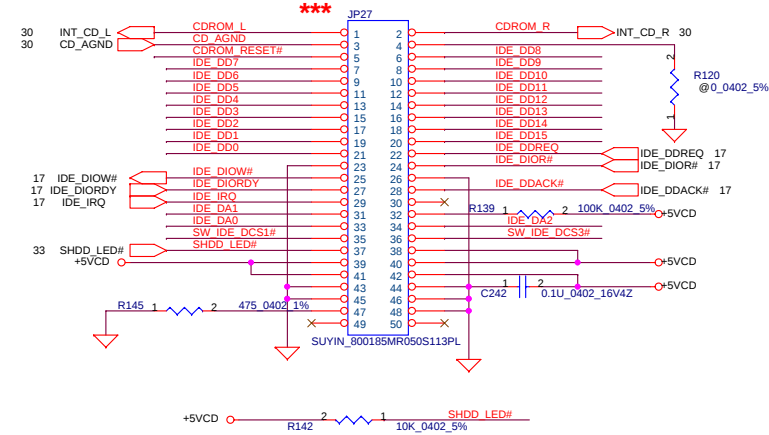
reserved for SATA HDD

Placea caps. near ODD CONN.

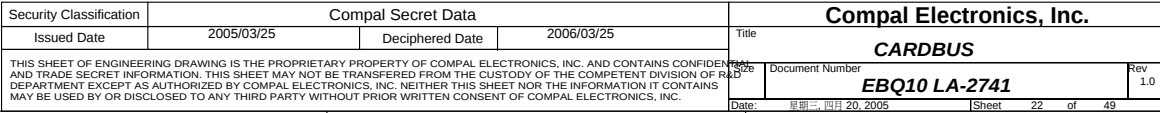


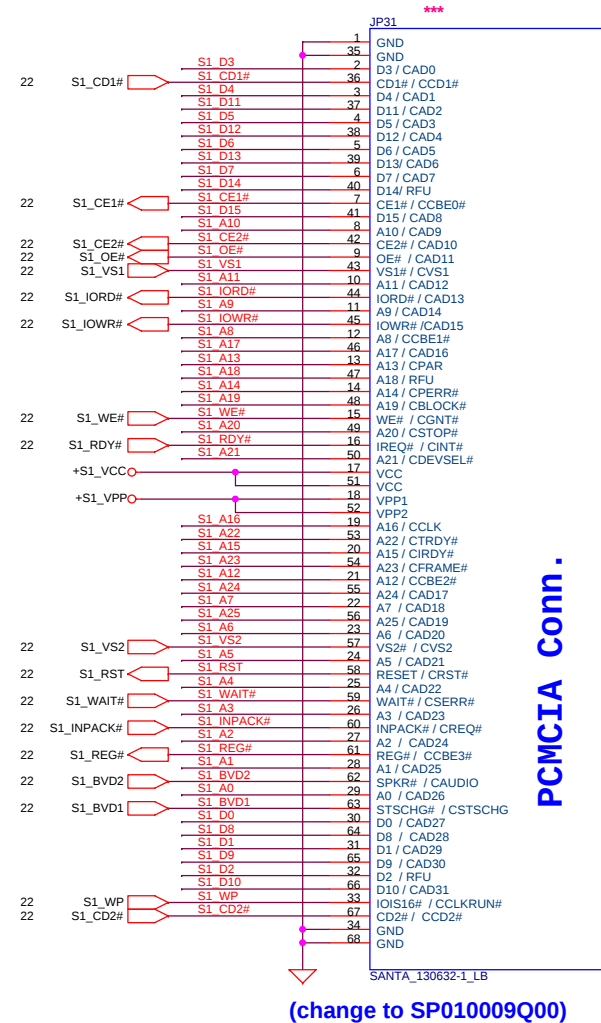
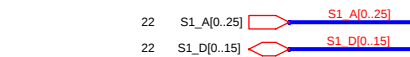
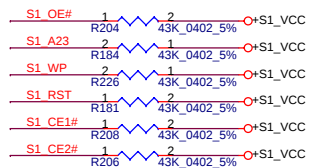
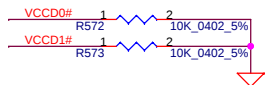
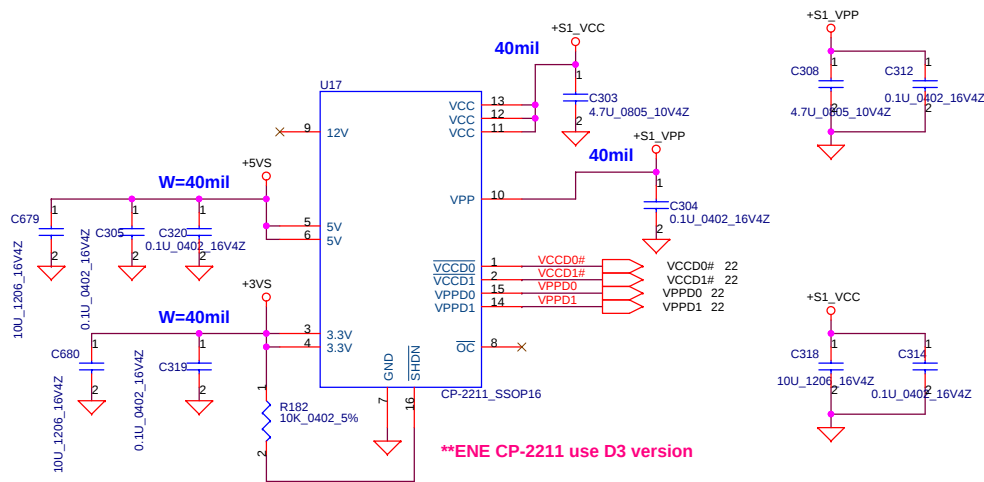
17 IDE_DD[0..15] IDE_DD[0..15]
17 IDE_DA[0..2] IDE_DA[0..2]

ODD Conn. (EAT10)

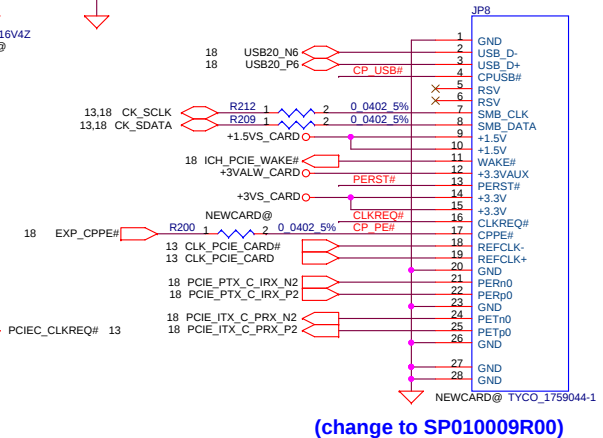
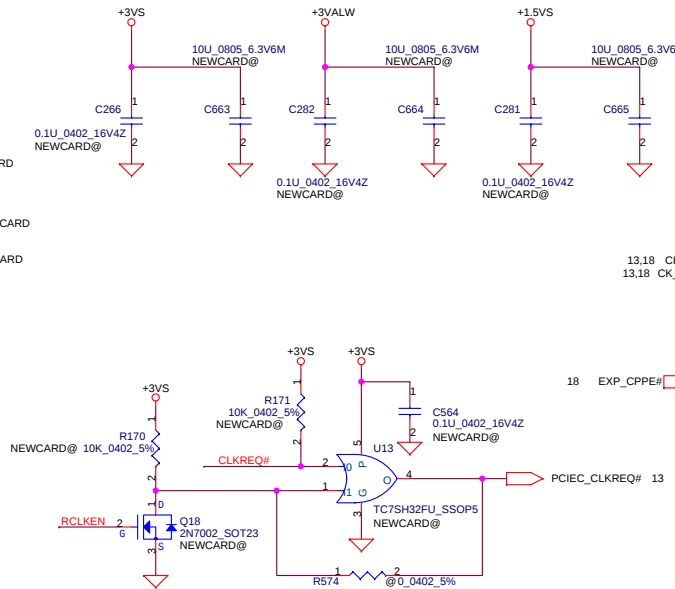
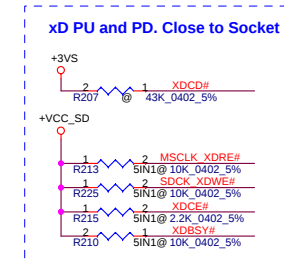
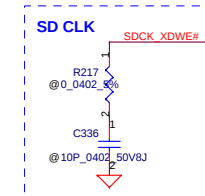
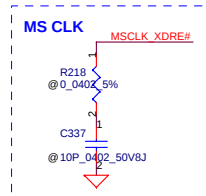


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Date	2005 年 04 月 20 日	Sheet	21	of	49

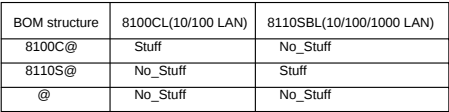




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Issued Date	2005/03/25		Deciphered Date	2006/03/25		Title		
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				Size	Document Number	Rev		
				EBQ10 LA-2741				
Date:		星期三, 四月 20, 2005		Sheet		23	of	49

[illegible]

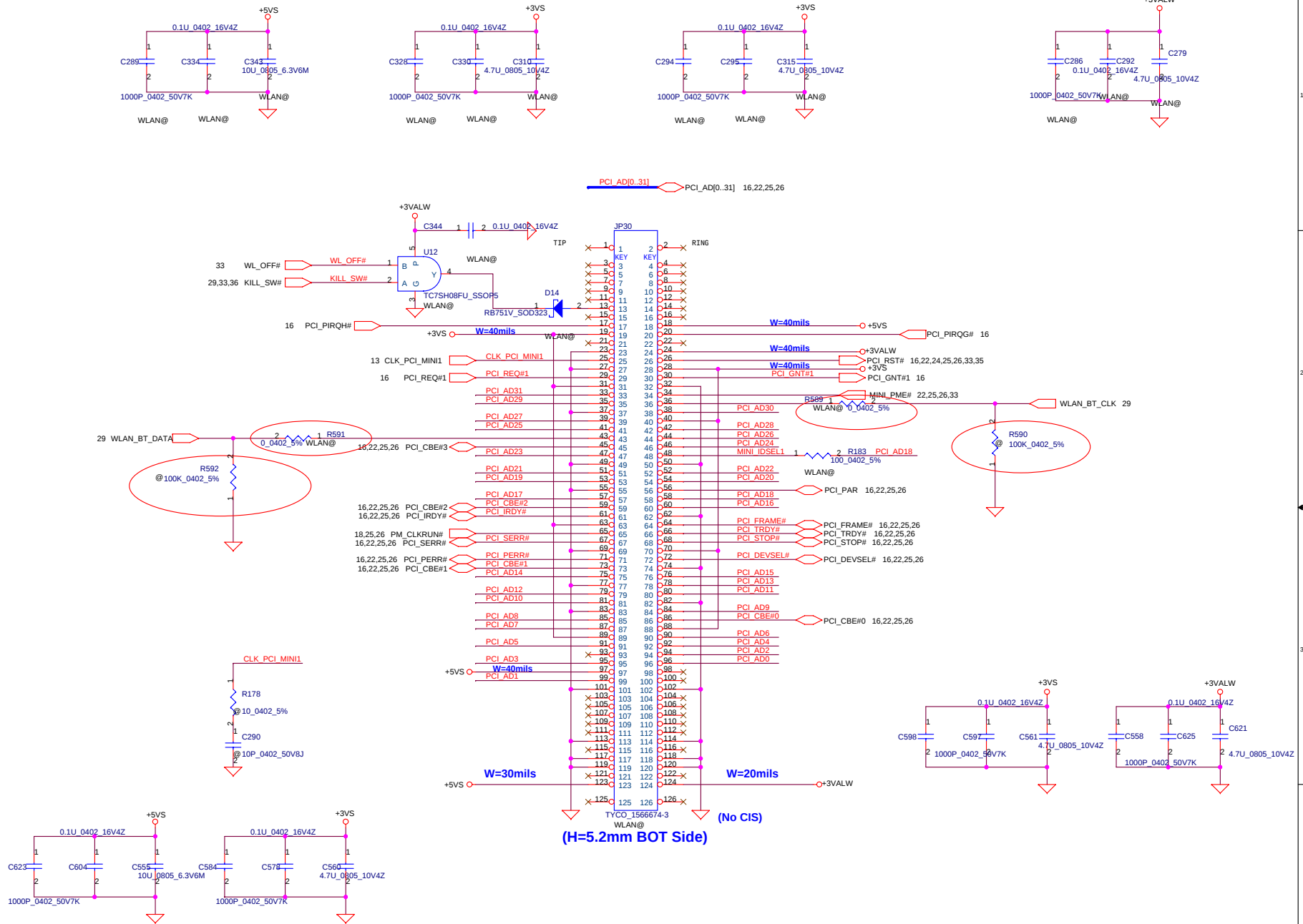
Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2005/03/25	Deciphered Date	2006/03/25	Title	5IN1 & NEW Card Socket	
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				Date:	星期二, 四月 20, 2005	Sheet 24 of 49

1.0

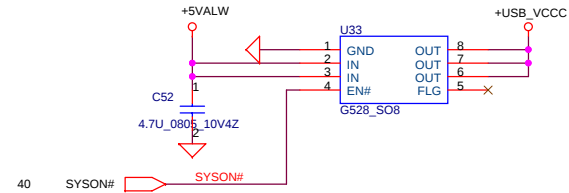
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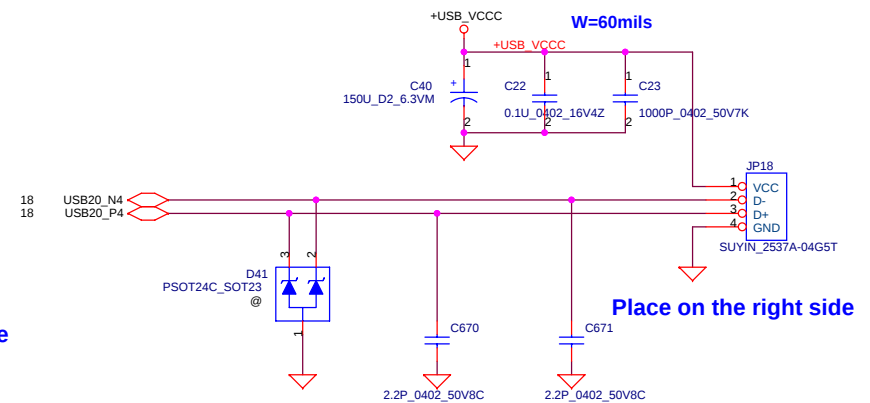
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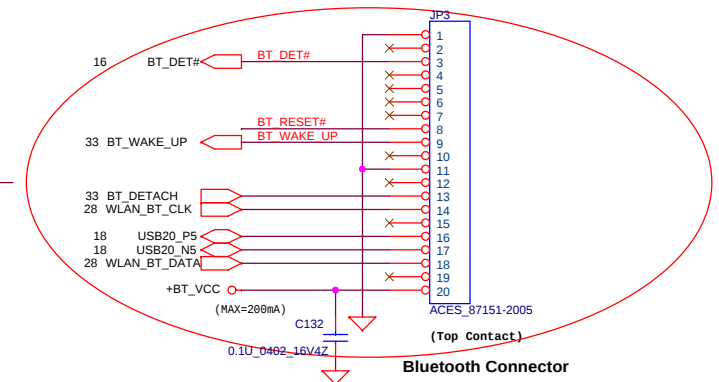
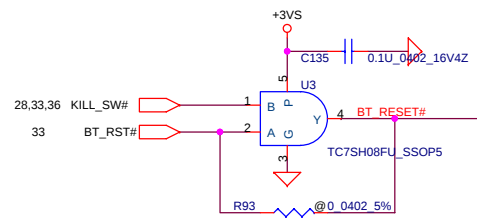
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Issued Date	2005/03/25	Deciphered Date	2006/03/25	Title	
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Date: 星期二, 四月 20, 2005				Sheet	28 of 49



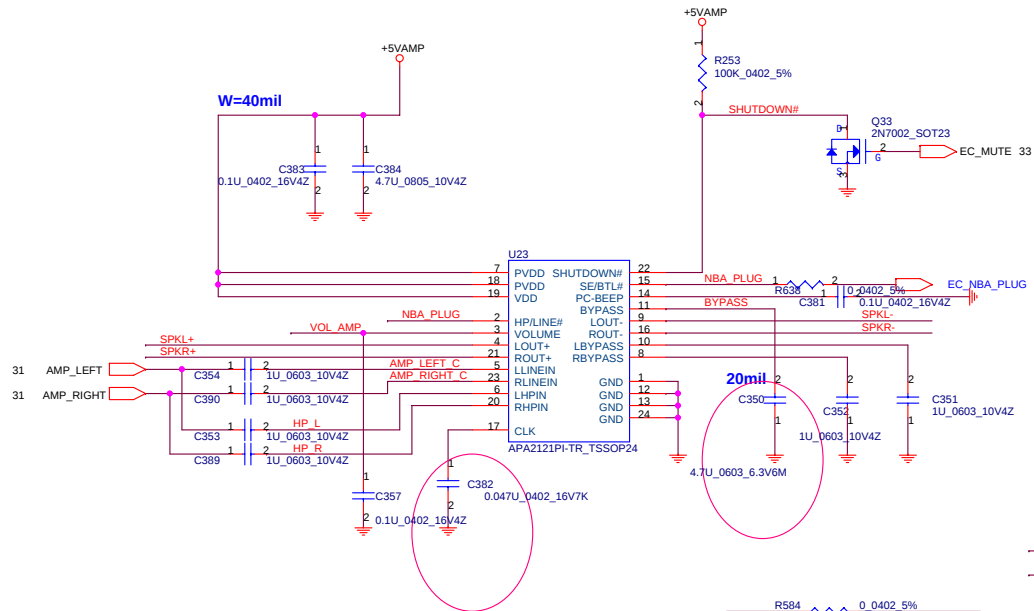
USB CONN. 3



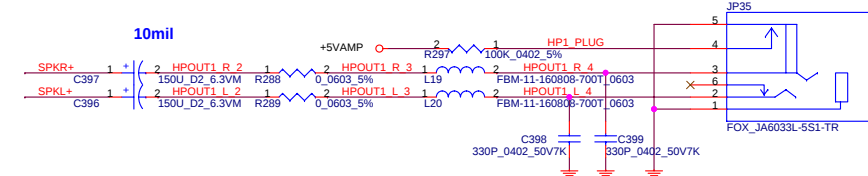
Place on the right side



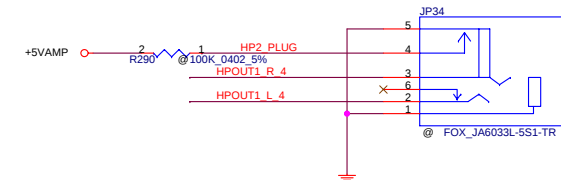
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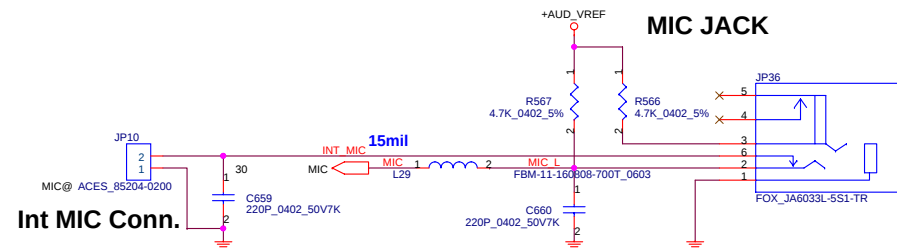
Headphone JACK 1



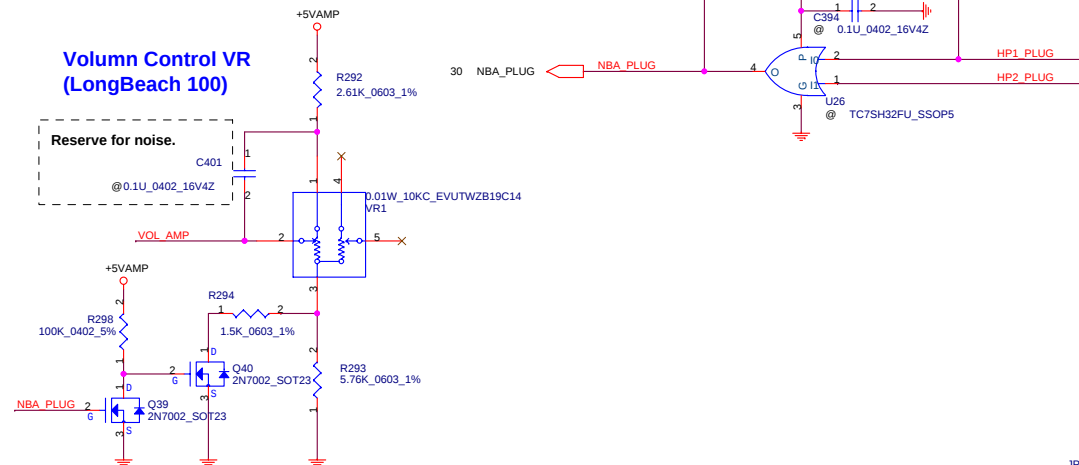
Headphone JACK 2



MIC JACK



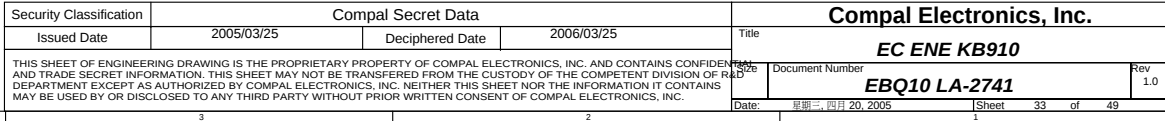
Volumn Control VR (LongBeach 100)

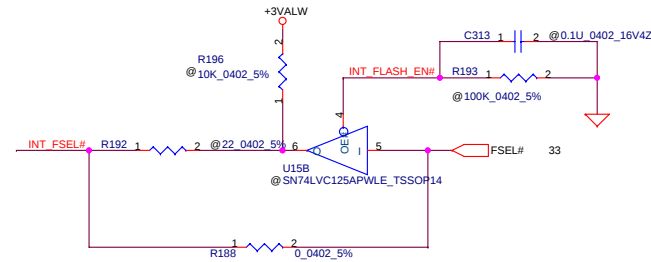
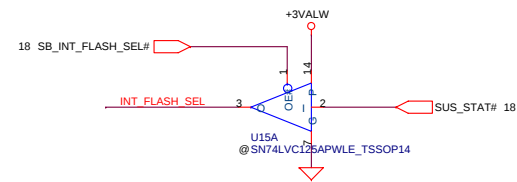
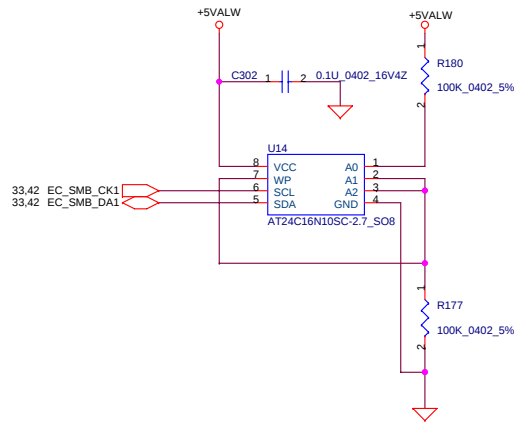
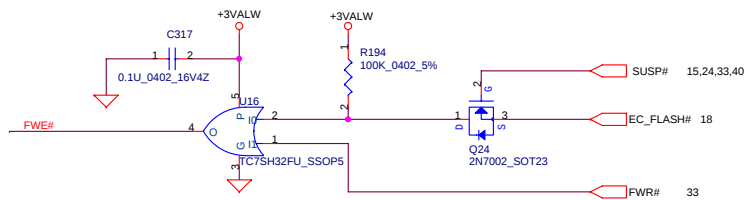


BTL MODE
R293/R294=1.19K
Vmax=0.431V , GAINmax=14dB
Vmin=4.05V, GAINmin=-80dB

SE MODE
Vmax=1.53V , GAINmax=-6db
Vmin=4.28V, GAINmin=-80db

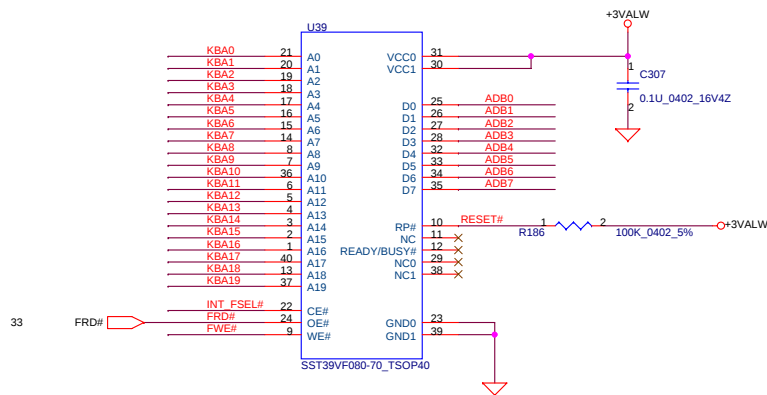
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2005/03/25	Deciphered Date	2006/03/25	Title	AMP & Audio Jack
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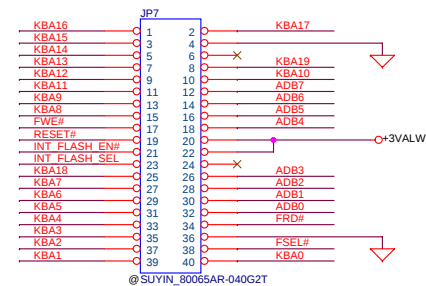


33 KBA[0..19] KBA[0..19]
33 ADB[0..7] ADB[0..7]

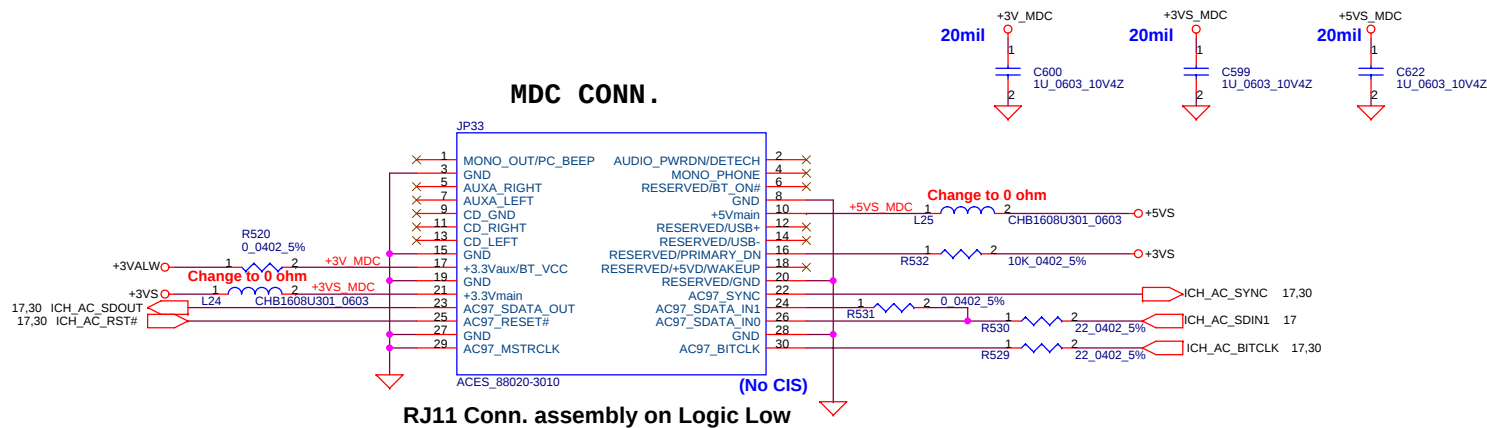
1MB Flash ROM



1MB ROM Socket



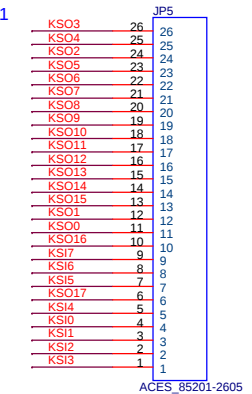
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				Document Number
				EBQ10 LA-2741
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				Date: 星期二, 四月 20, 2005
				Sheet 34 of 49



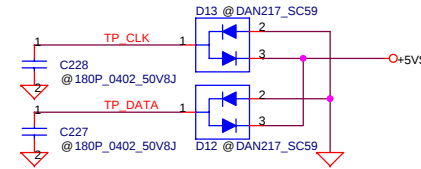
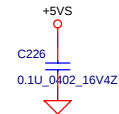
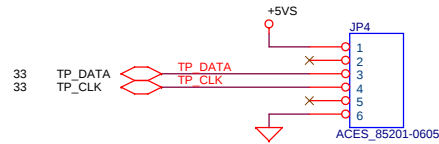
INT_KBD CONN.



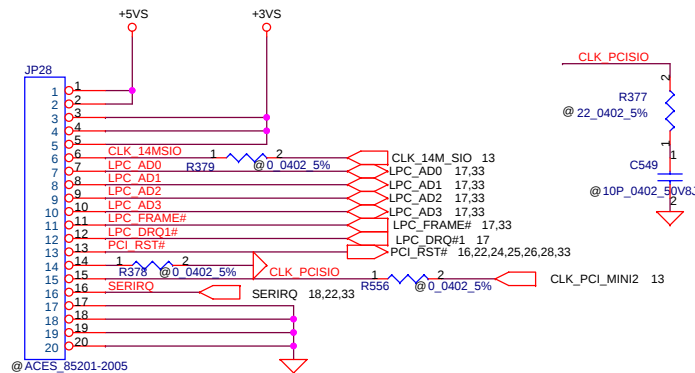
K/B pin.1



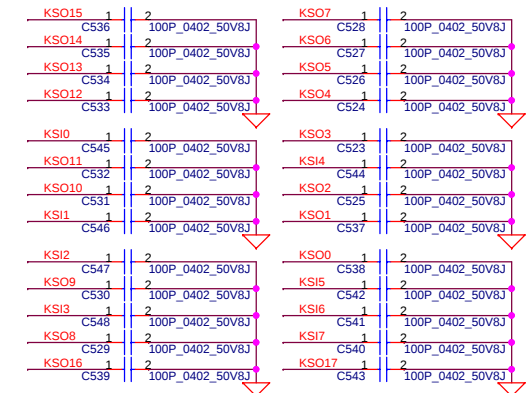
To TP/B Conn.



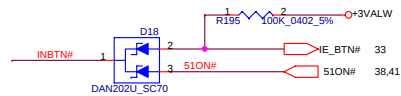
LPC Debug Port



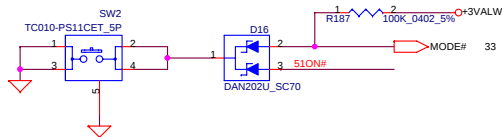
close to MINIPCI Conn.



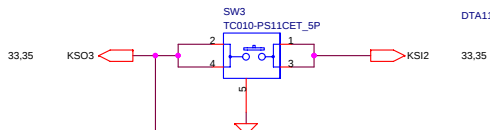
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				Document Number
				Rev
				1.0
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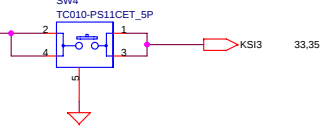
Vivace(SW-DJ) Button



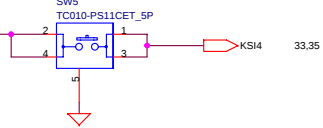
Play/Pause Button



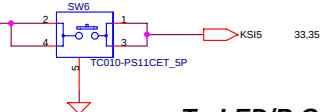
Stop/Eject Button



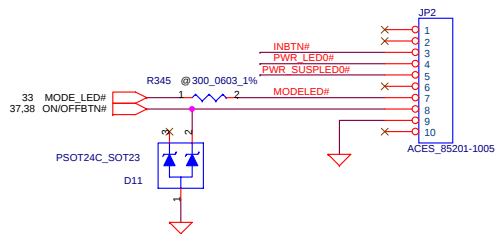
Next(FR) Button



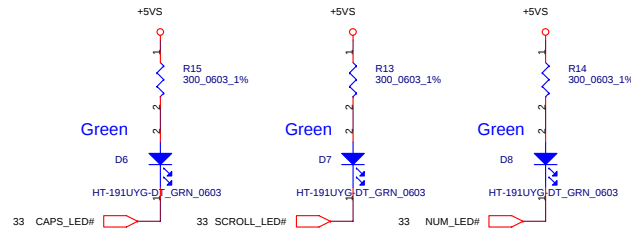
Previous(FF) Button



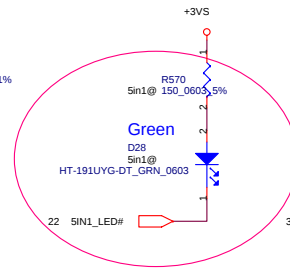
To LED/B Conn.



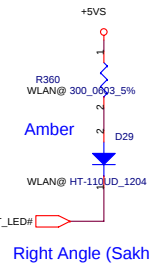
CAP Lock LED Scroll Lock LED Number Lock LED



5 In 1 Card LED (Close to Socket)

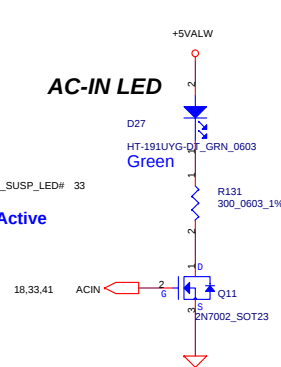


Wireless/BT LED (Close to Killer SW)

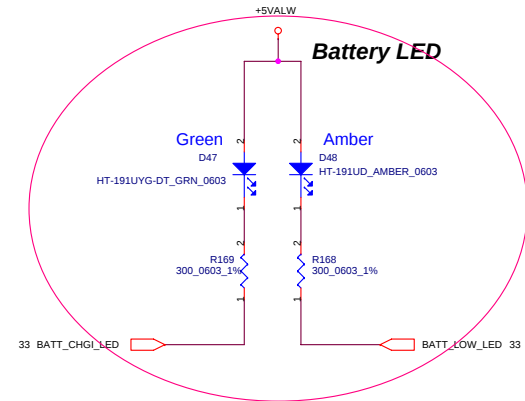


Right Angle (Sakhir)

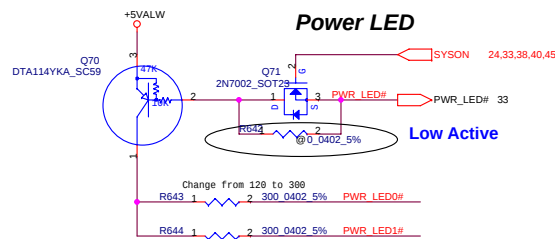
AC-IN LED



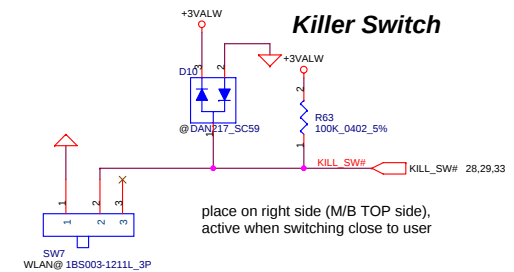
Battery LED



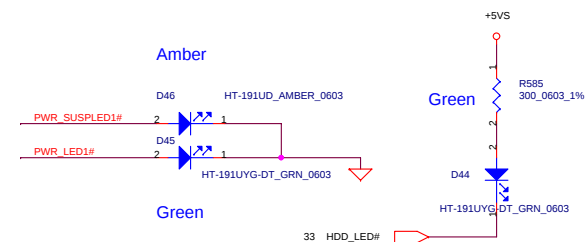
Power LED



Killer Switch



HDD LED



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TOP Side

Button Side

36.37 ON/OFFBTN#

ON/OFFBTN#

51ON#

33 36,41

+3VALW

R247 100K_0402_5%

D22 DAN202U_SC70

+3VALW

R246 4.7K_0402_5%

33.37 EC_ON

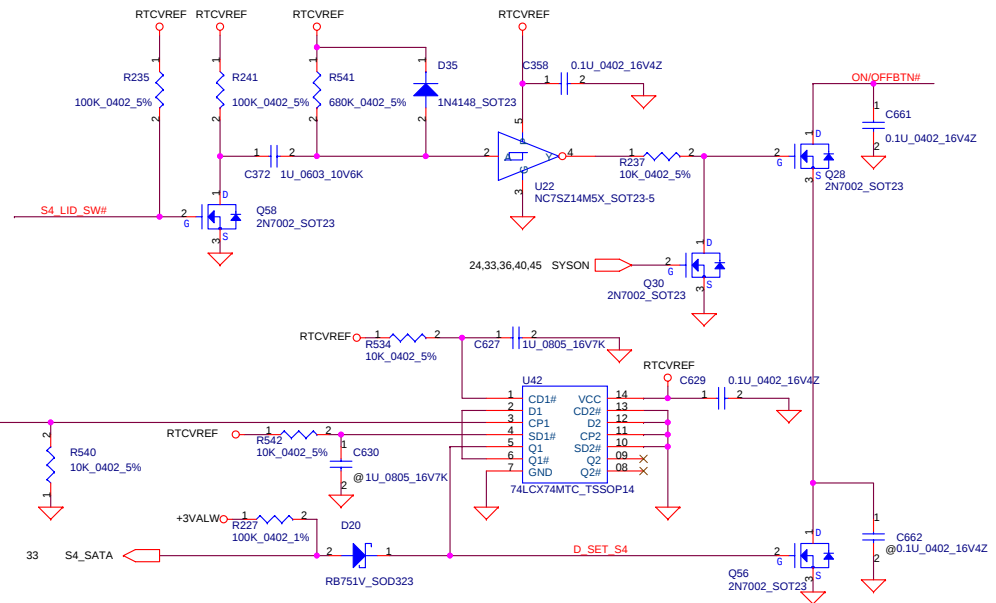
R245 33K_0402_5%

Q34 DTC124EK_SC59

Q35 2N7002_SOT23

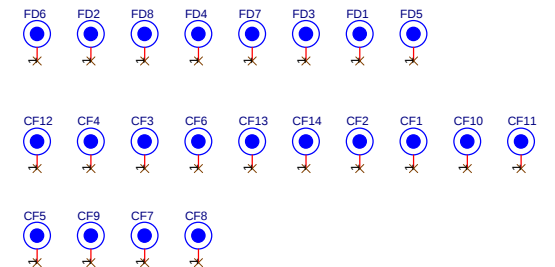
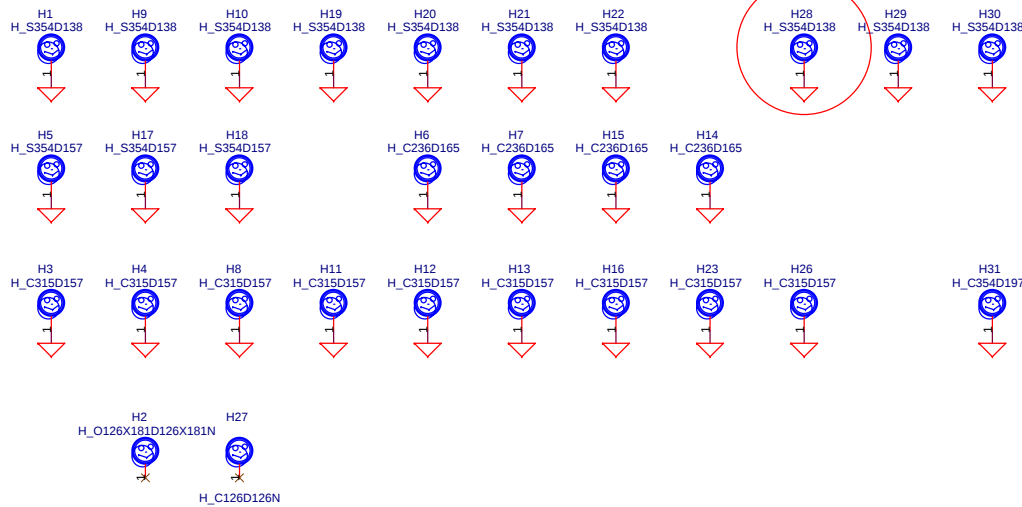
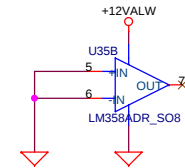
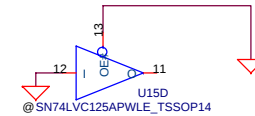
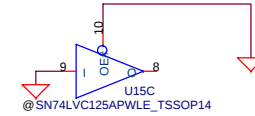
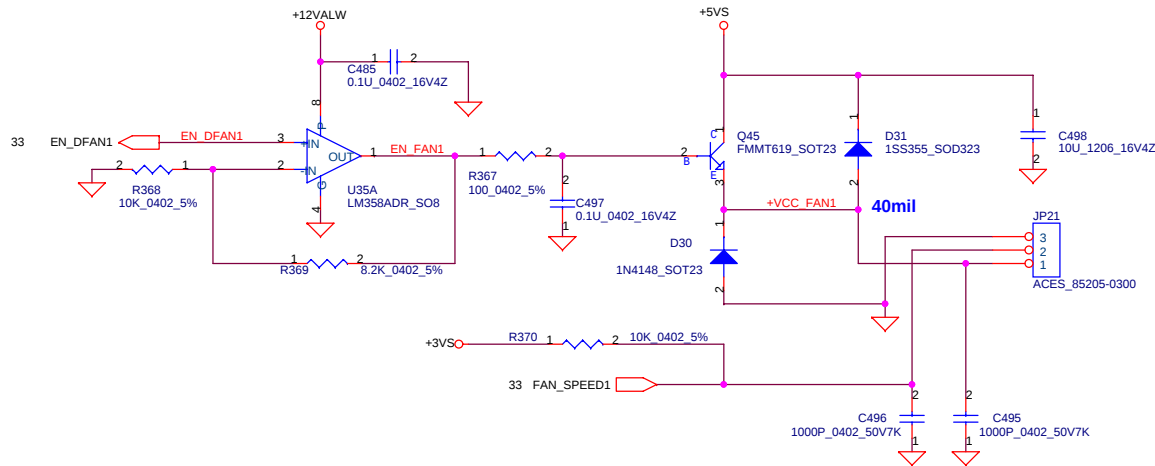
C377 1000P 0402_50V7K

D24 RILZ20A_LL34



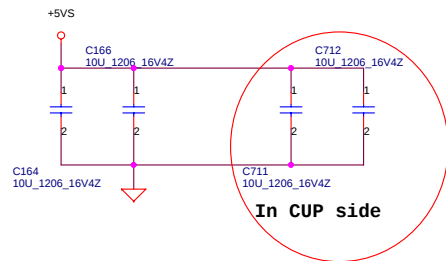
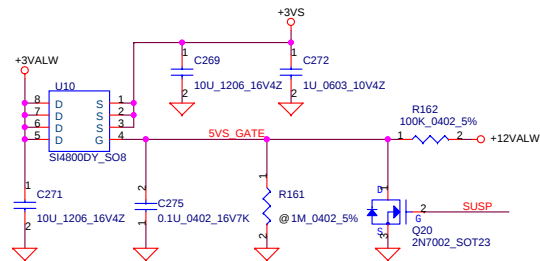
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Issued Date	2005/03/25	Deciphered Date	2006/03/25	Title	POWER OK/Reset/RTC	
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FAN Conn

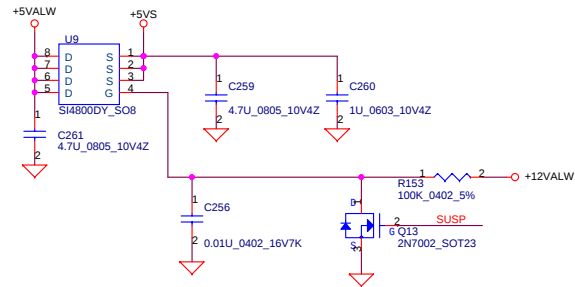


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				Document Number
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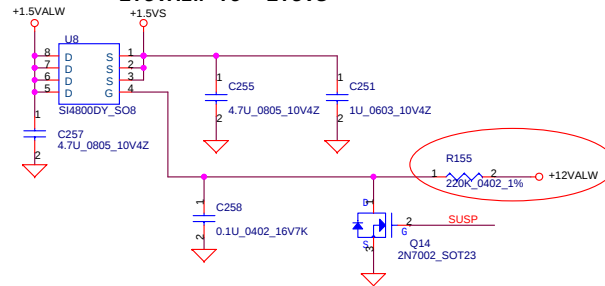
+3VALW TO +3VS



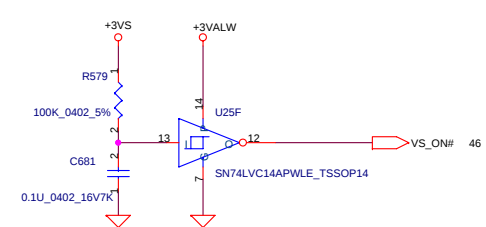
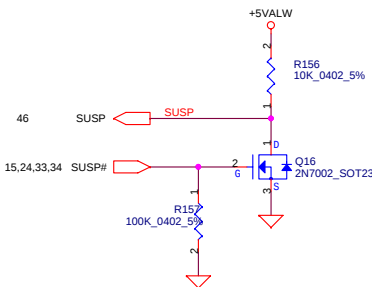
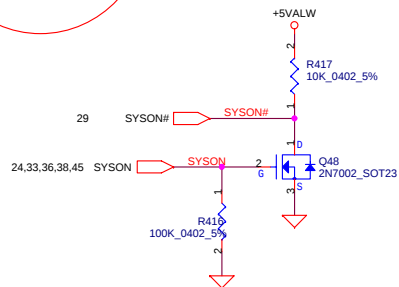
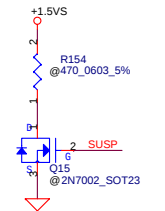
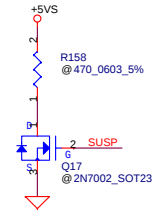
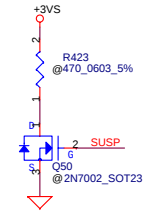
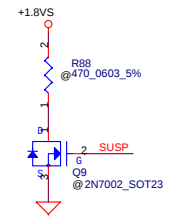
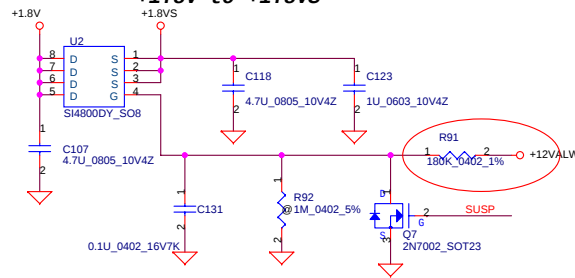
+5VALW TO +5VS



+1.5VALW TO +1.5VS

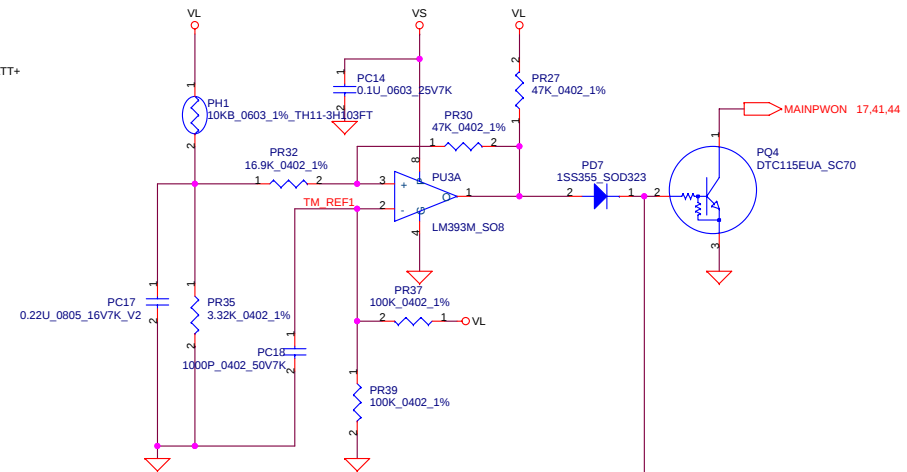
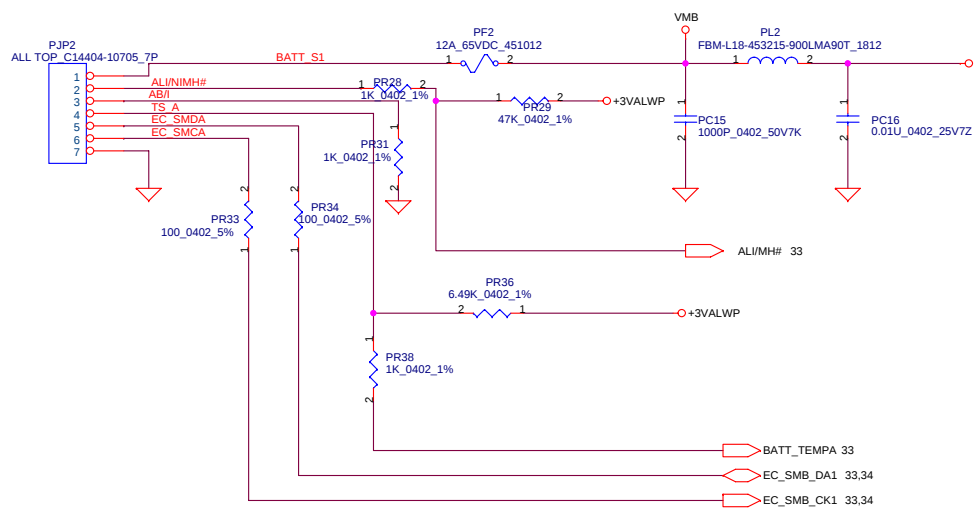


+1.8V to +1.8VS

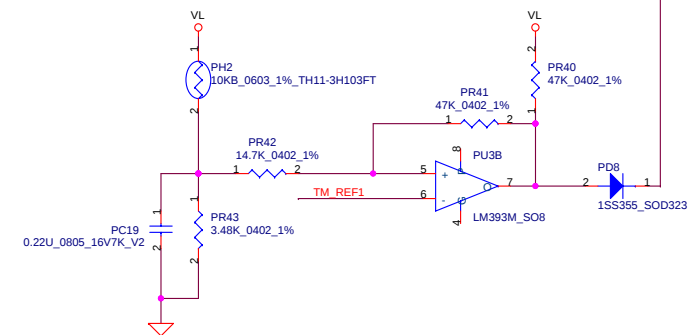


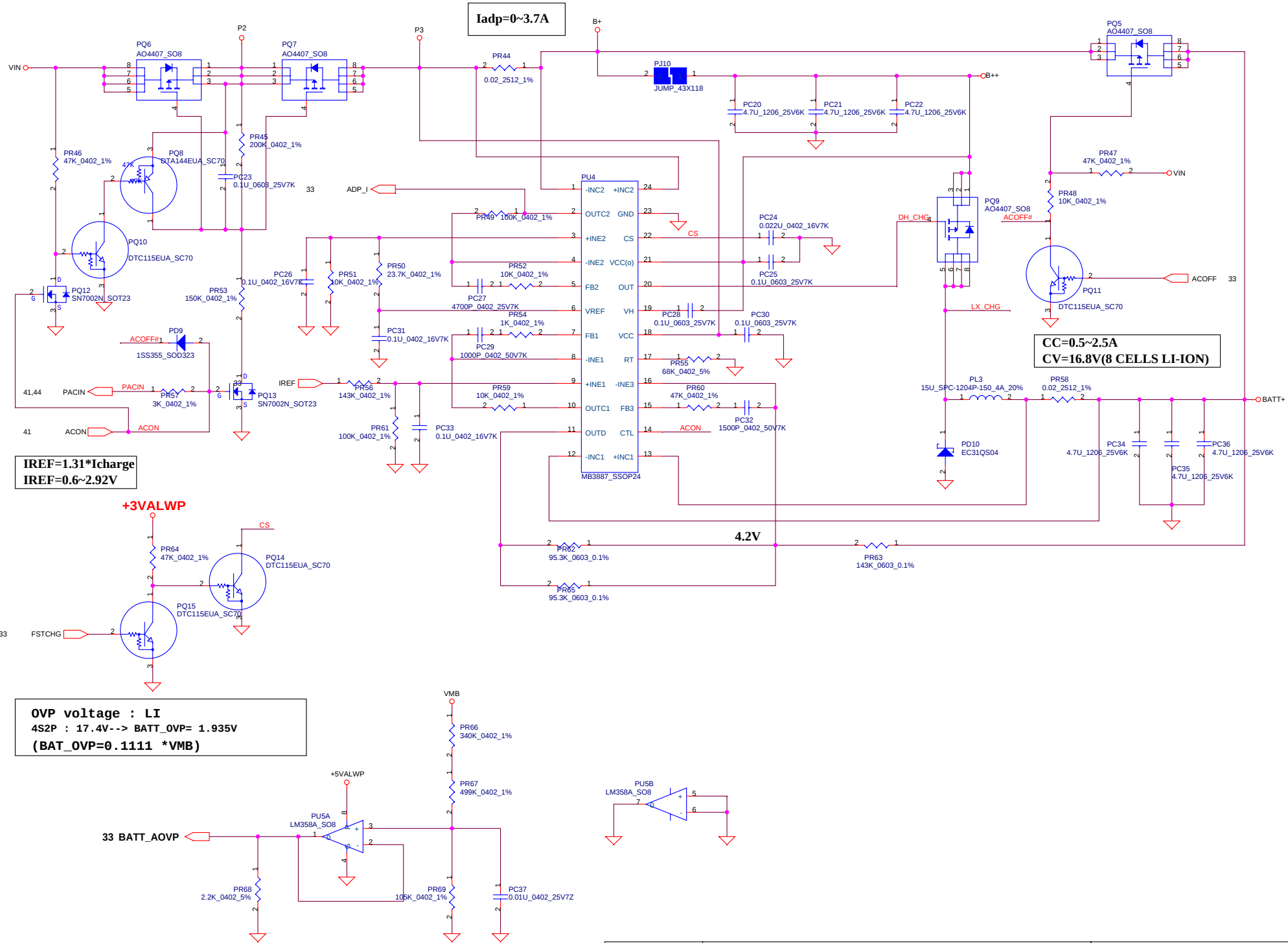
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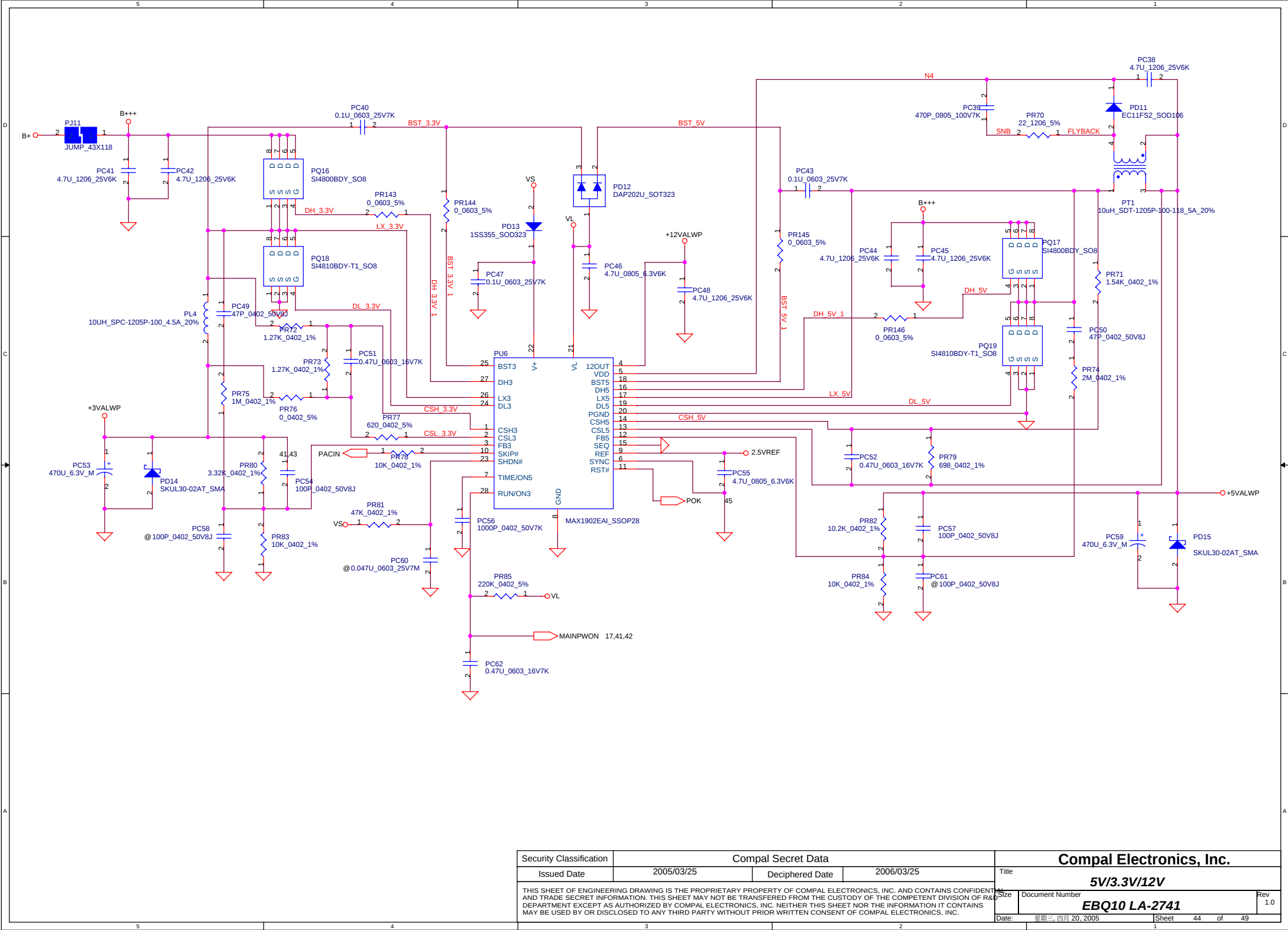
PH1 under CPU botten side :
CPU thermal protection at 84 degree C
Recovery at 45 degree C



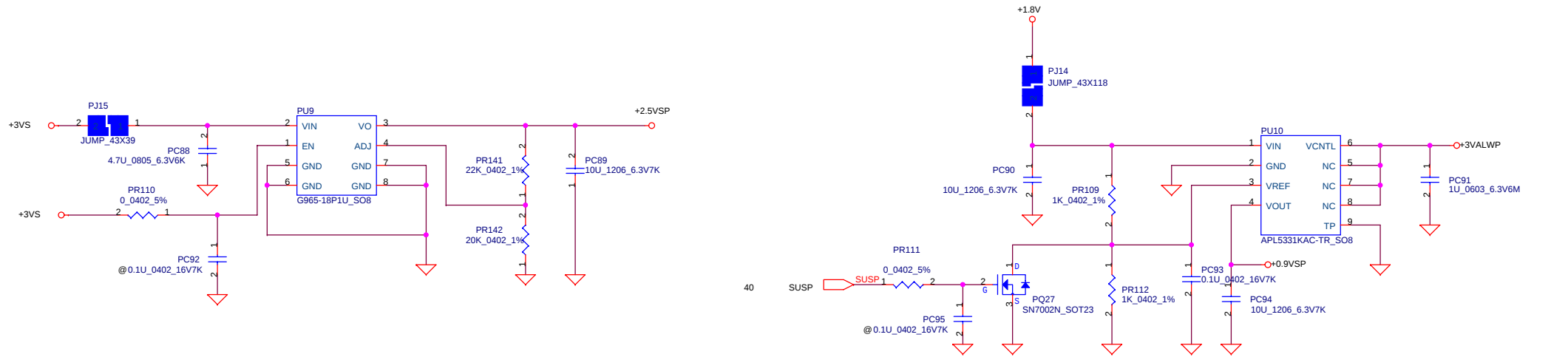
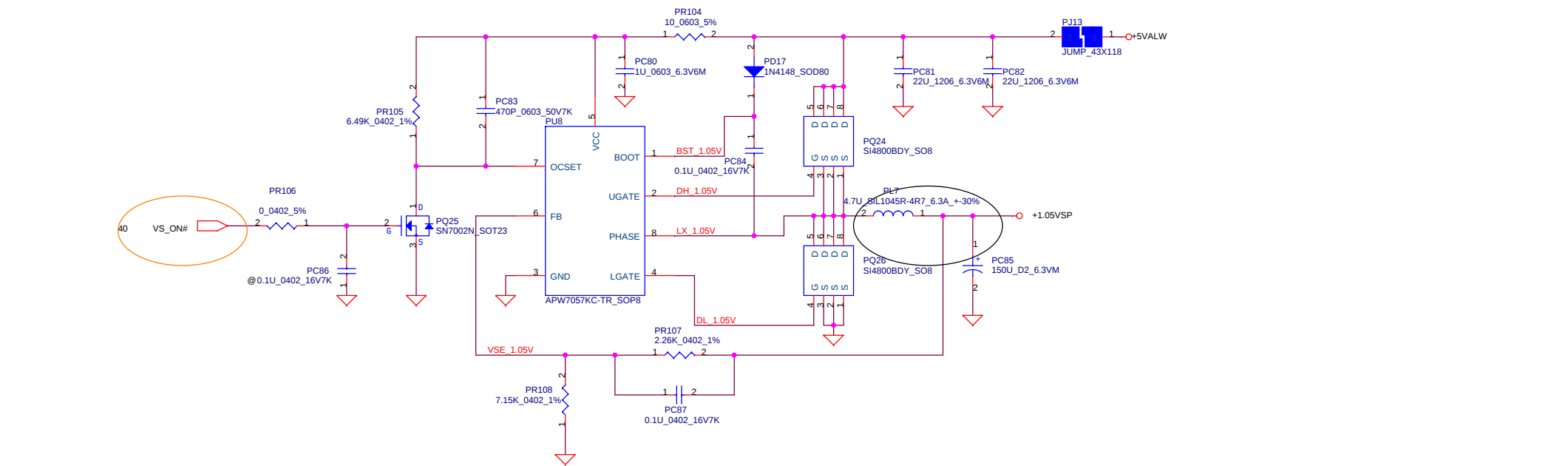
PH2 near main Battery CONN :
BAT. thermal protection at 79 degree C
Recovery at 45 degree C







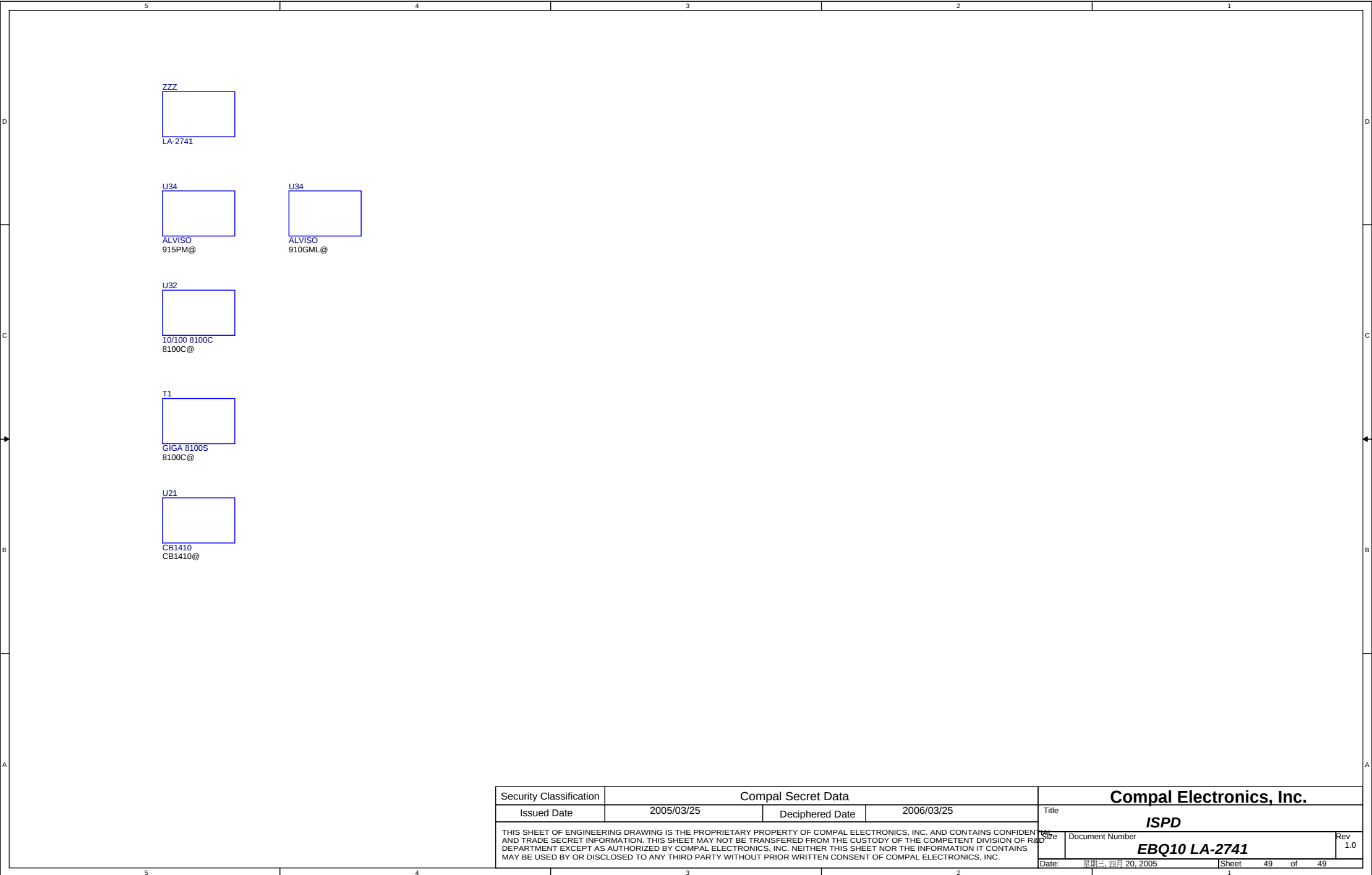
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5	4	3	2	1
2005.1.31	NO DATE	PAGE	MODIFICATION LIST	PURPOSE
Change JP17 P/N to SP070012100	3/24	P.4	Reserve R,C circuit	for reboot issue
Change JP19 P/N to SP010009V00		P.39	Change SW1 footprint	
Change JP23 P/N to SP070005L00		P.37	Change SW7 pin define	for LID swith light
Change JP26 P/N to SP070013200		P.37	Add D11 for ESD concern	
		P34	Add EC_NBA_PLUG pin for linux's EQ	
		P34	Change R173 to 18K for Board ID	
		P9	Reserve Cap 0.1uF	
		P29	Delete AV-IN,RF-IN connector	
		P33	change VR to SMD type	
2005.2.02				
Change 5in1 LED(D28) from Blue to Green				
Change Power LED(D45), Battery Charge LED(D47)				
Battery Low LED(D48) to single die LED	3/25	P.5	Add R729	for 3Dmark2003 issue
Remove transistors(Q19,Q21,Q22)	3/29	P.29	Delete Mini_PCI (TV tuner connector)	
Change Q23 from transistor to 2N7002	4/2	P.40	Delete H24,H32	
2005.2.04	4/4	P.14	Change R7,R8,R9 to 75ohm 1%	
Change U19 to G528		P.31	modify U46D circuit	
		P.39	modify U35B circuit	
		P.15	Add L32-L35 for EMI's request	
	4/6	P.36	Modify Power LED and Suspend LED	
2005.2.05				
Add C161,C162 and @C154	4/15	P.38	Modify schematic for Lid switch	
2005.2.15	4/25	P.11	ADD C730,C731,C732,C733 for EMI request	
ADD R586 (0 ohm) between 1394 GRST# and PCI_RST#	4/25	P.17	ADD C734 for HW request	
R108 @				
ADD SPEAKER_ID between EC and Codec				
Connect WLAN and BT with R589(0 ohm),R590(100k pull low),R591(0 ohm) and R592(100k pull low)				
2005.2.16				
R73 on with 8100CL and 8110S				
Use SM bus into Codec				
Swap BT connector				
Add Page32 HW EQ				
2005.2.18				
Change H28 digital GND to analog GND				
Swap back the BT connector				
2005.2.21				
Add R611 and R612 to NOEQ@				
C161,C162 change to 330uF				
R108 Change to 220K ohm				
R590,R592 change to @				
Change D40 and R578 to @				
Change 5in1 LED to +3VS and R570 to 150 ohm.				
Change R91 to 180K ohm and R155 to 220K ohm				
Add two 10uF on +5VS C711 and C712				
Change SATA crystal to Oscillator				
Change C309 and C316 to 12PF				
2005.2.23				
Help power to updat PL7, PR90 and PR99				
Change R164 and R165 to 470ohm				
Change C350 to 4.7UF; Change C382 to @				
2005.2.24				
Add R625 and R626 @; remove H25				
Change H28 to digital GND				
Add R629 0 ohm on U19.5 FLG pin				
Help power to update PR20 and PR21 to 510 ohm				
2005.3.2				
Add KBC Cap. for EMI's request on p36				

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