

Compal confidential

Schematics Document

Mobile Bantias/Dothan uFCBGA/uFCPGA
with Intel ODEM_MCH RevB+ICH4-M
core logic

2003-09-01

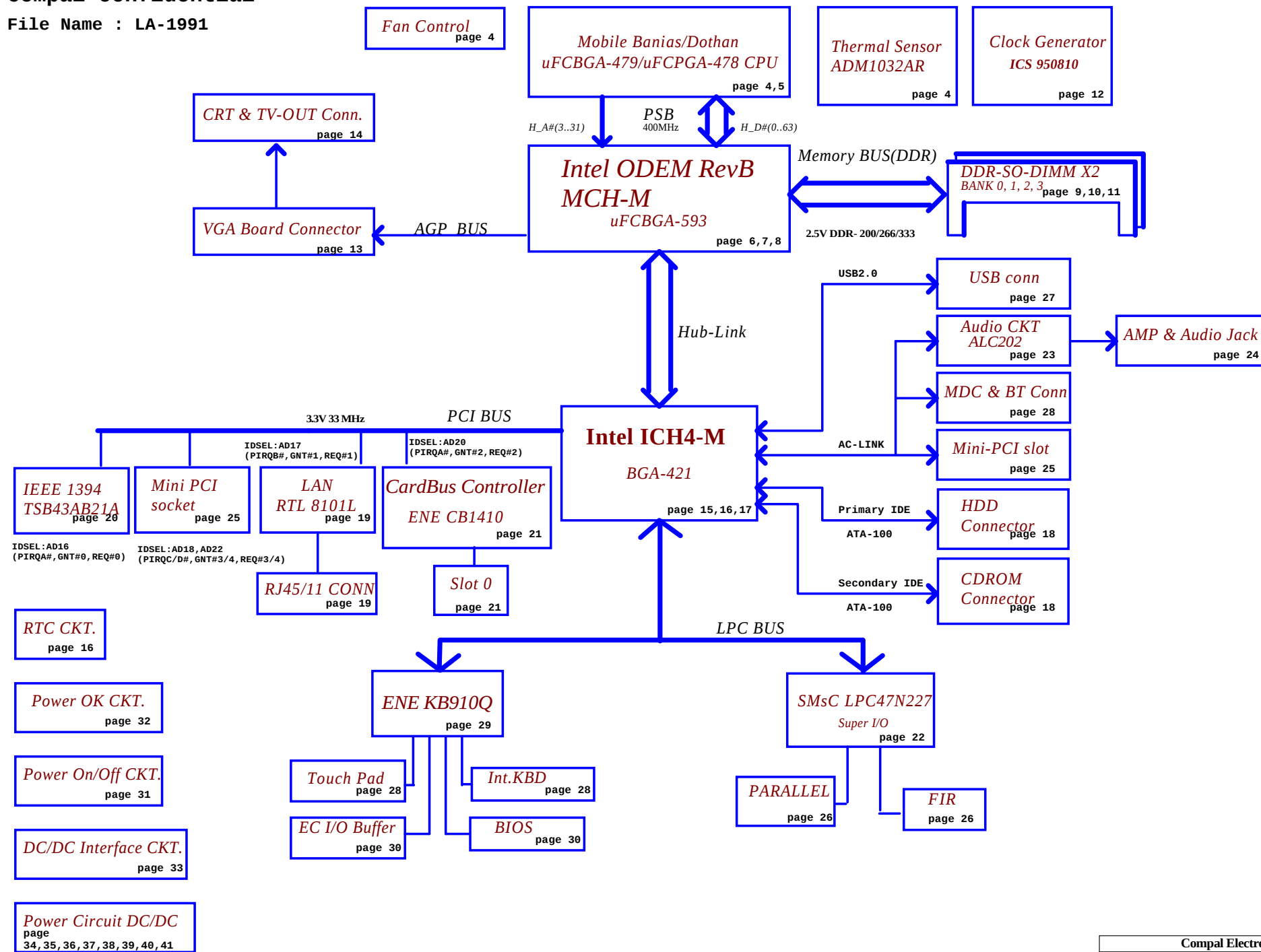
REV:1.0

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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.			
Title		SCHEMATIC, M/B LA-1991	
Size	Document Number	Rev	
	401266	1A	
Date:	星期五, 九月 05, 2003	Sheet	1 of 45

Compal confidential

File Name : LA-1991



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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number	Rev	
	401266	1A	
Date:	星期五, 九月 05, 2003	Sheet	2 of 45

Voltage Rails

Power Plane	Description	S0-S1	S3	S5
VIN	Adapter power supply (19V)	NA	NA	NA
B+	AC or battery power rail for power circuit	NA	NA	NA
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+VCCP	1.05V rail for Processor I/O	ON	OFF	OFF
+1.25VS	1.25V switched power rail for DDR Vtt	ON	OFF	OFF
+1.2VS	1.2V switched power rail for MCH core power	ON	OFF	OFF
+1.5VALW	1.5V always on power rail	ON	ON	ON*
+1.5VS	1.5V switched power rail for AGP interface	ON	OFF	OFF
+1.8VS	1.8V switched power rail for CPU PLL & Hub-Link	ON	OFF	OFF
+2.5V	2.5V power rail for DDR	ON	ON	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3V power rail	ON	ON	OFF
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5V	5V power rail	ON	ON	OFF
+5VS	5V switched power rail	ON	OFF	OFF
+12VALW	12V always on power rail	ON	ON	ON*
+12V	12V power rail	ON	ON	OFF
+12VS	12Vswitched power rail on power rail	ON	OFF	OFF
RTCVCC	RTC power	ON	ON	ON

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

Symbol note:

 :means digital ground.

 :means analog ground.

@ :means reserved.

Internal PCI Devices

DEVICE	PCI Device ID
HUB	D30
USB	D29
AC97 MODEM	D31
AC97	D31
ATA 100	D31
ETHERNET	D8 (AD24)
LPC I/F	D31
SMBUS	D31

External PCI Devices

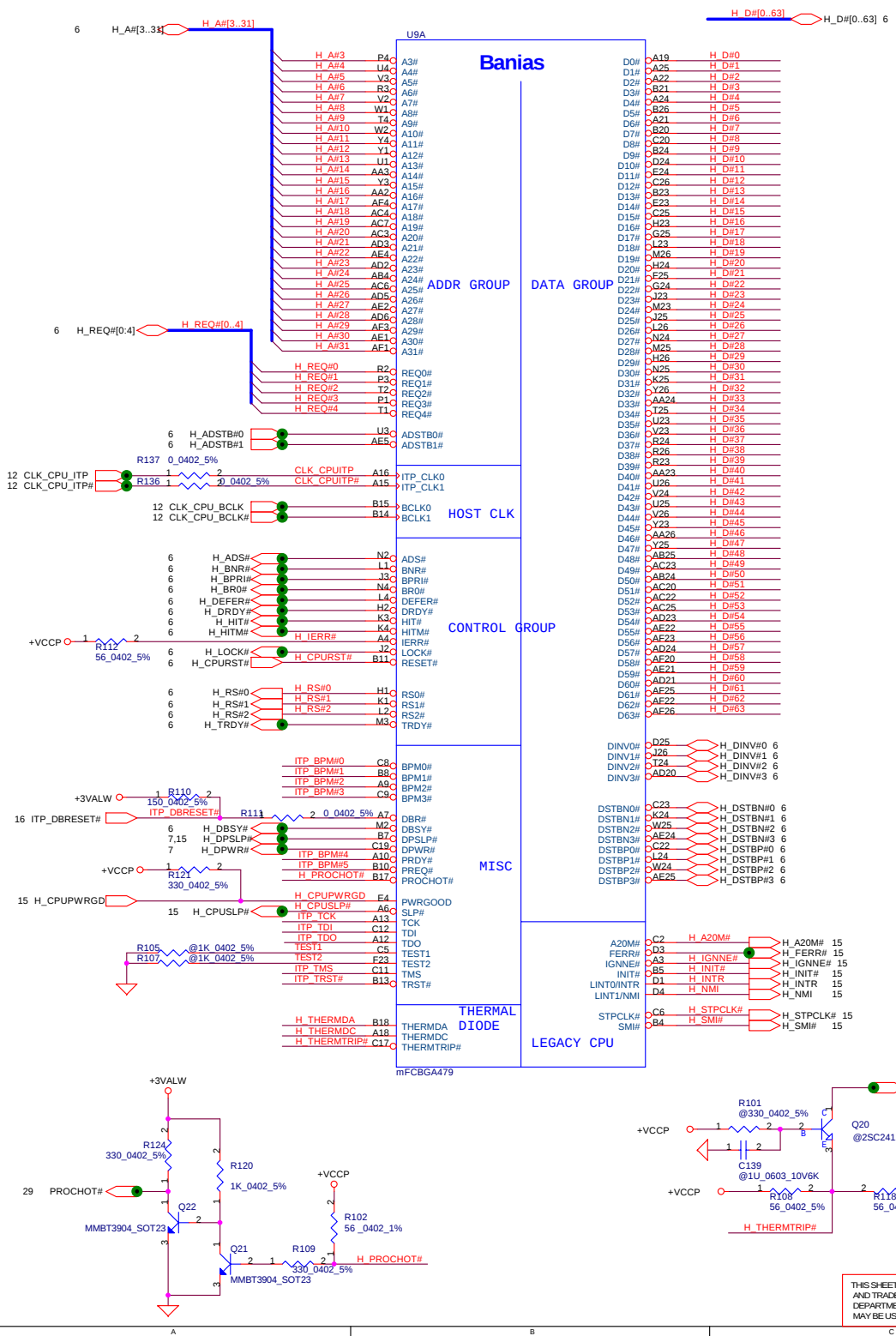
DEVICE	PCI Device ID	IDSEL #	REQ/GNT #	PIRQ
1394	D0	AD16	0	A
LAN	D1	AD17	1	B
CARD BUS	D4	AD20	2	C
Wireless LAN	D2	AD18	3	D
Mini-PCI	D6	AD22	4	D
AGP BUS	N / A	AGP_DEVSEL#	N / A	A

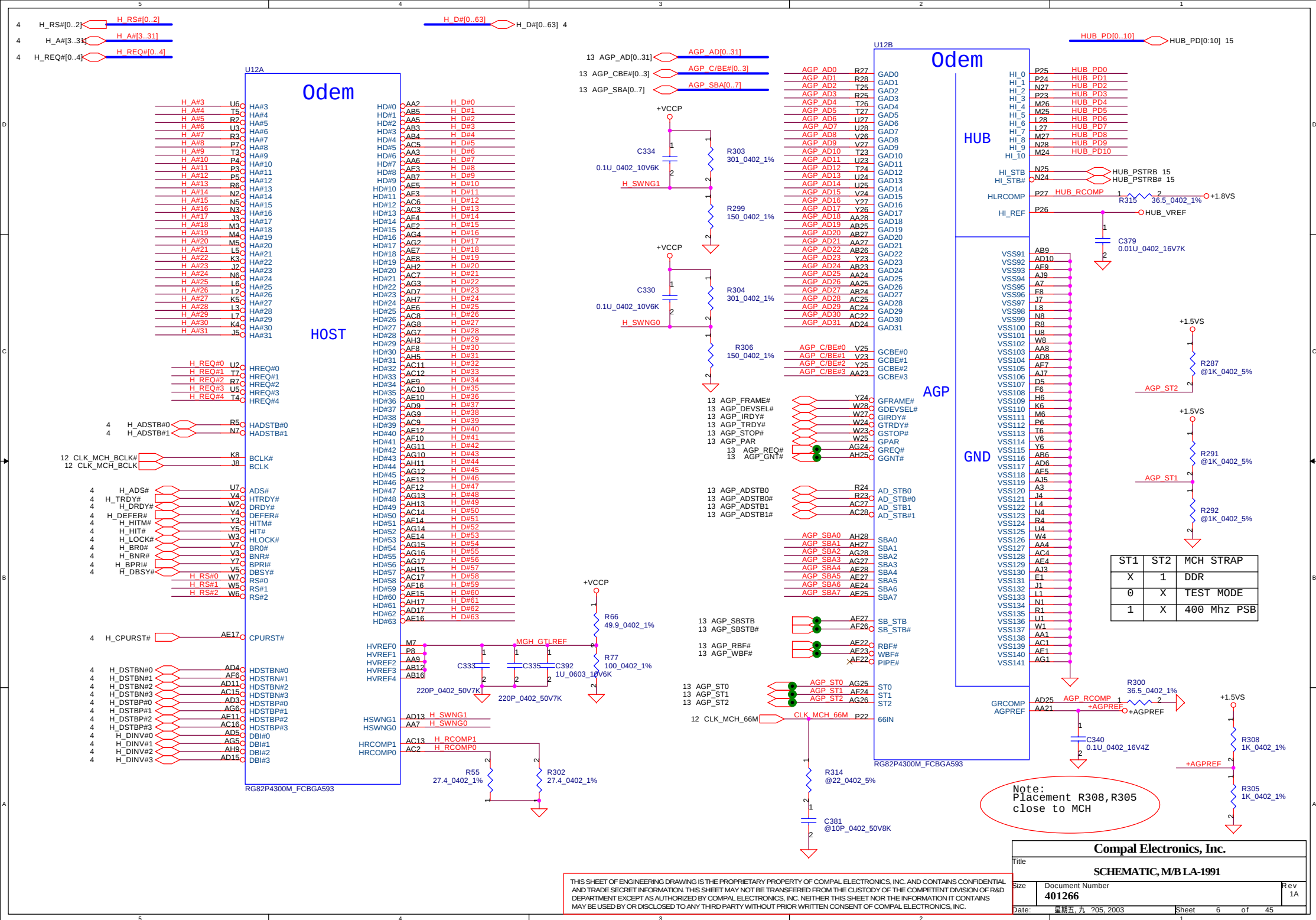
I2C / SMBUS ADDRESSING

DEVICE	HEX	ADDRESS
DDR SO-DIMM 0	A0	1 0 1 0 0 0 0 X
DDR SO-DIMM 1	A2	1 0 1 0 0 0 1 X
CLOCK GENERATOR (EXT.)	D2	1 1 0 1 0 0 1 X

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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number		Rev
	401266		1A
Date:	星期五, 九月 05, 2003	Sheet	3 of 45





9,10 DDR_MMA[0..12]  DDR_MMA[0..12]
 9 DDR_SDQ[0..63]  DDR_SDQ[0..63]
 9 DDR_SDQS[0..8]  DDR_SDQS[0..8]
 9 DDR_CB[0..7]  DDR_CB[0..7]

DDR MMA0 E12
 DDR MMA1 F17
 DDR MMA2 E16
 DDR MMA3 G17
 DDR MMA4 G18
 DDR MMA5 E18
 DDR MMA6 F19
 DDR MMA7 G20
 DDR MMA8 G19
 DDR MMA9 F21
 DDR MMA10 F13
 DDR MMA11 E20
 DDR MMA12 G21
 ×G22

DDR SDQS0 F26
 DDR SDQS1 C26
 DDR SDQS2 C23
 DDR SDQS3 B19
 DDR SDQS4 D12
 DDR SDQS5 C8
 DDR SDQS6 C6
 DDR SDQS7 E3
 DDR SDQS8 F15

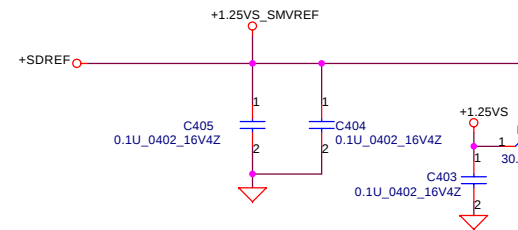
9,10 DDR_SWE#  G11
 9,10 DDR_SRAS#  F11
 9,10 DDR_SCAS#  G8

9 DDR_CLK0  J25
 9 DDR_CLK0#  K25
 9 DDR_CLK1  G5
 9 DDR_CLK1#  F5
 9 DDR_CLK2  G24
 9 DDR_CLK2#  E24
 10 DDR_CLK3  G25
 10 DDR_CLK3#  J24
 10 DDR_CLK4  G6
 10 DDR_CLK4#  G7
 10 DDR_CLK5  K23
 10 DDR_CLK5#  J23

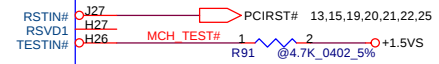
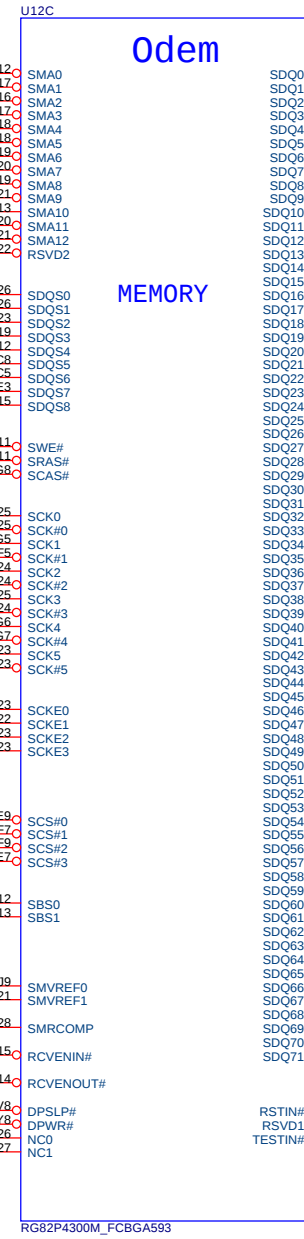
9,10 DDR_CKE0  G23
 9,10 DDR_CKE1  E22
 10 DDR_CKE2  H23
 10 DDR_CKE3  F23

9,10 DDR_SCS#0  E9
 9,10 DDR_SCS#1  E7
 10 DDR_SCS#2  F9
 10 DDR_SCS#3  E7

9,10 DDR_SBS0  G12
 9,10 DDR_SBS1  G13



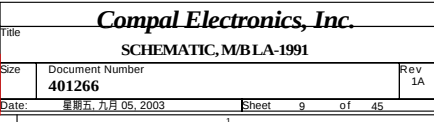
4,15 H_DPSP#  V8
 4 DPWR#  Y8
 NC0  AD26
 NC1  AD27

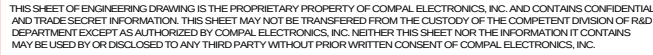


NOTE:1.M_RCV# max 2Via
 2.G15 to Via max=40mils
 3.G14 to Via max=40mils
 4.Via to Via must = 100mils +-5mils

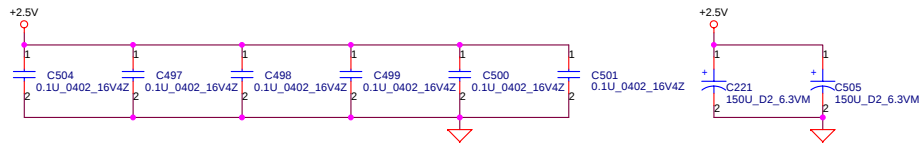
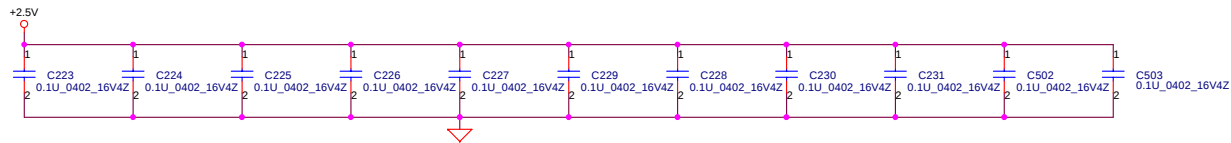
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Title			
Compal Electronics, Inc.			
SCHEMATIC, M/B LA-1991			
Size	Document Number	Rev	
	401266	1A	
Date:	星期五, 九月 05, 2003	Sheet	7 of 45

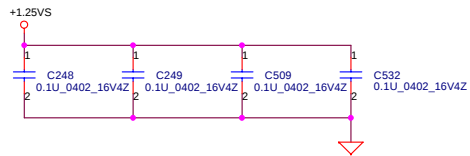
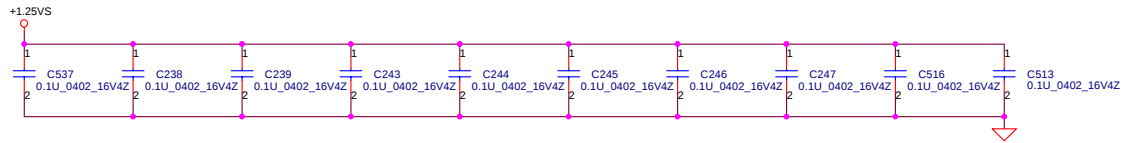
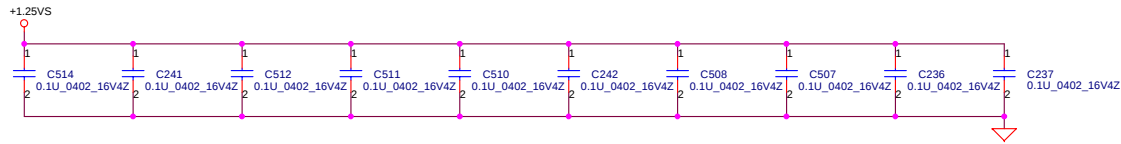
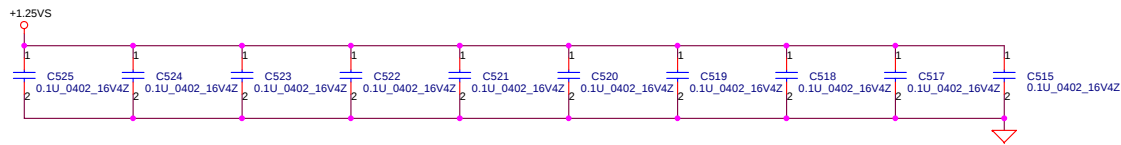
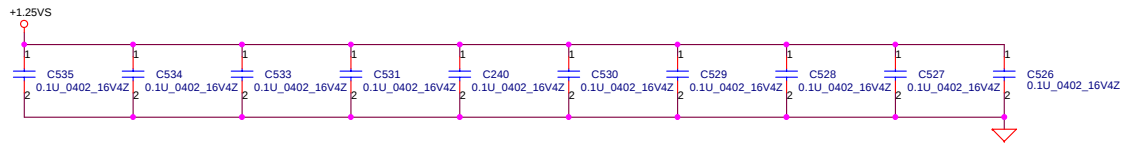
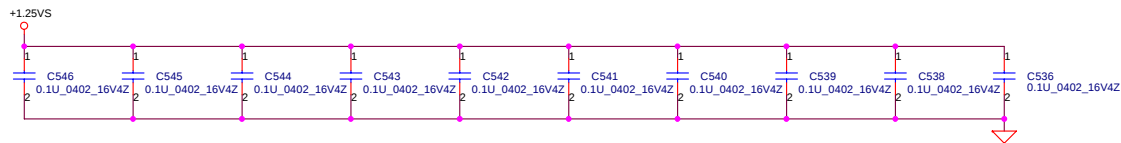




Layout note :
Distribute as close as possible
to DDR-SODIMM.



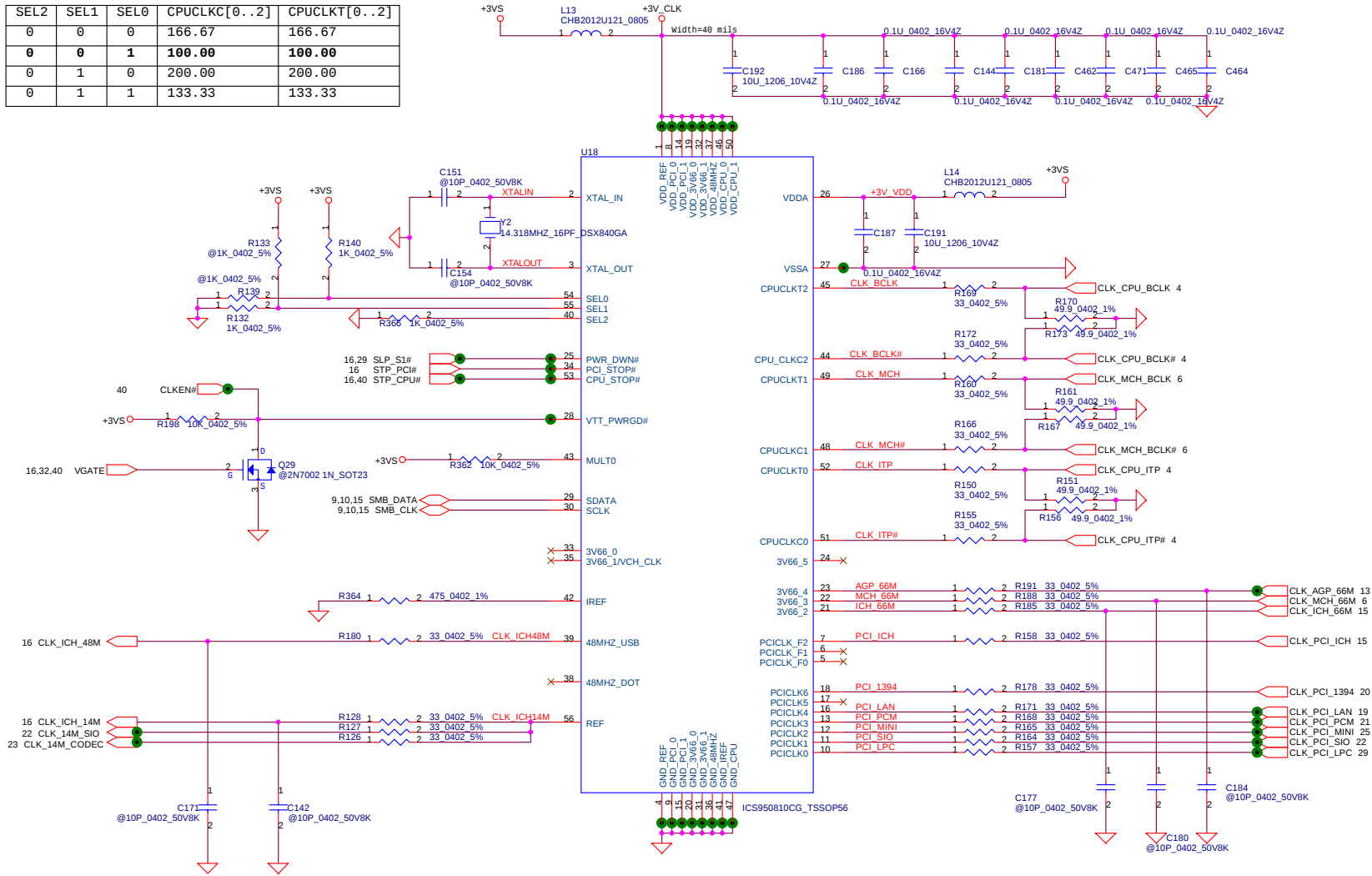
Layout note :
Place one cap close to every 2 pull up resistors termination to
+1.25V



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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number		Rev
	401266		1A
Date:	星期五, 九月 05, 2003	Sheet	11 of 45

SEL2	SEL1	SEL0	CPUCLKC[0..2]	CPUCLKT[0..2]
0	0	0	166.67	166.67
0	0	1	100.00	100.00
0	1	0	200.00	200.00
0	1	1	133.33	133.33

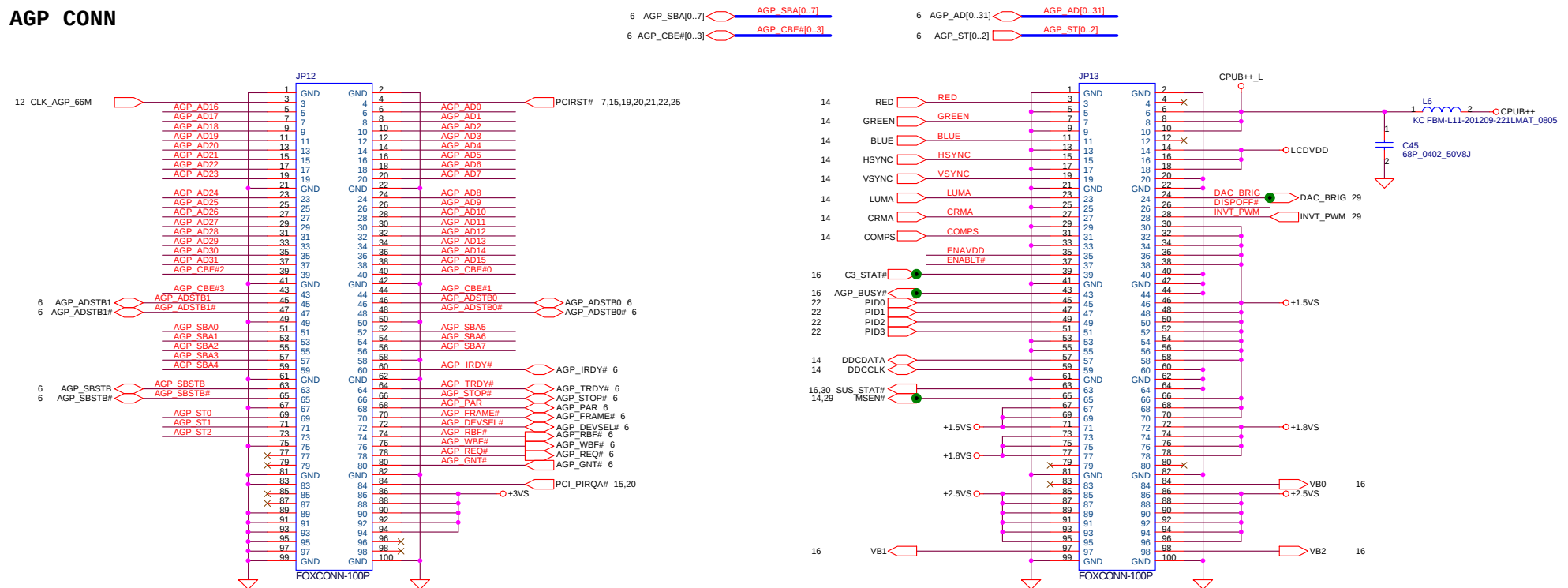


Clock Generator

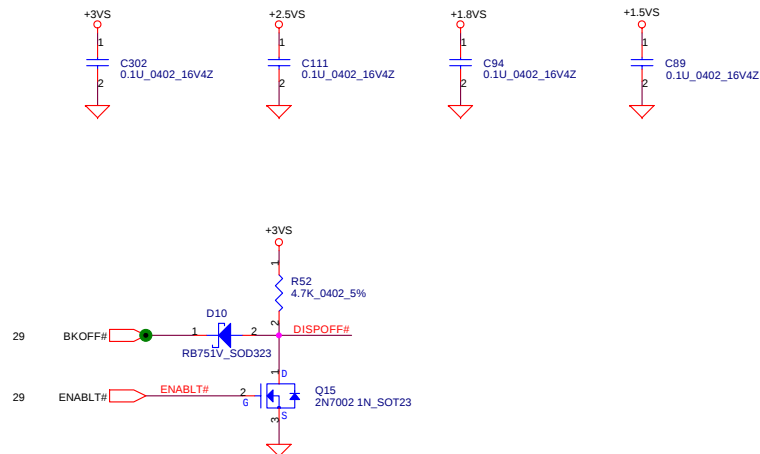
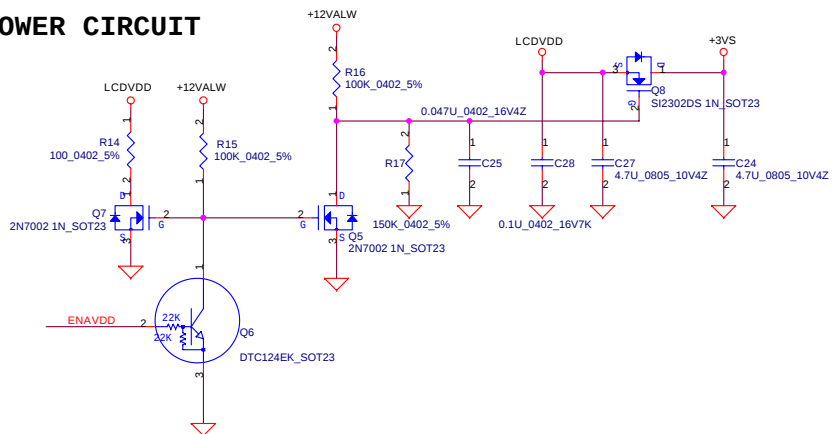
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Title				Compal Electronics, Inc.	
				SCHEMATIC, M/BLA-1991	
Size	Document Number			Rev	
	401266			1A	
Date:	星期五, 九月 05, 2003	Sheet	12	of	45

AGP CONN



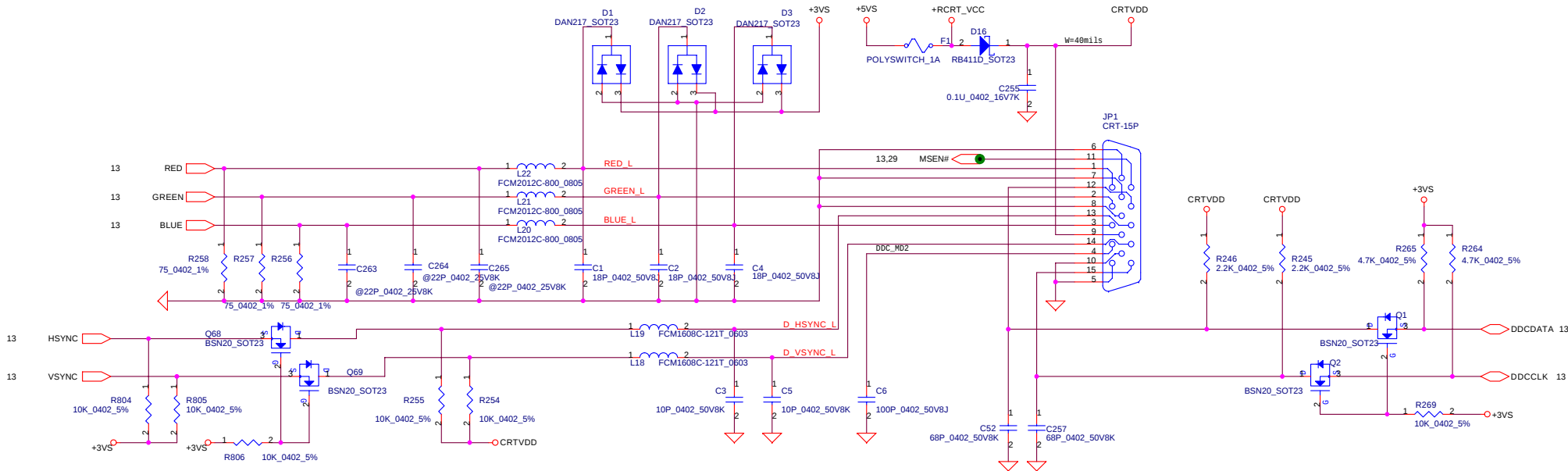
LCD POWER CIRCUIT



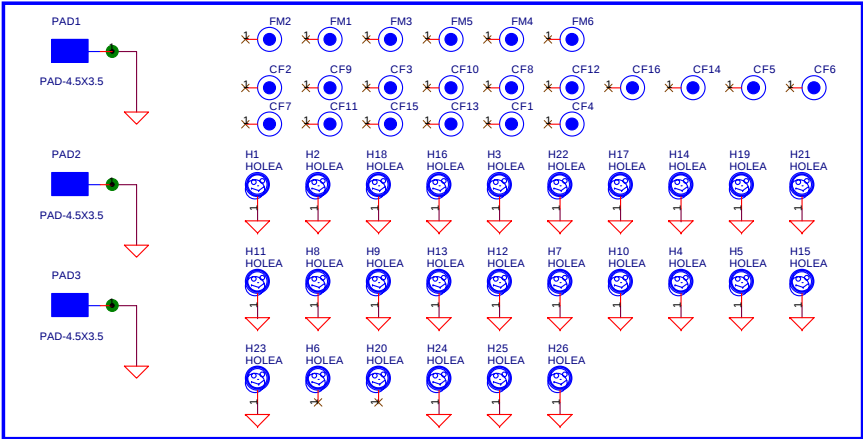
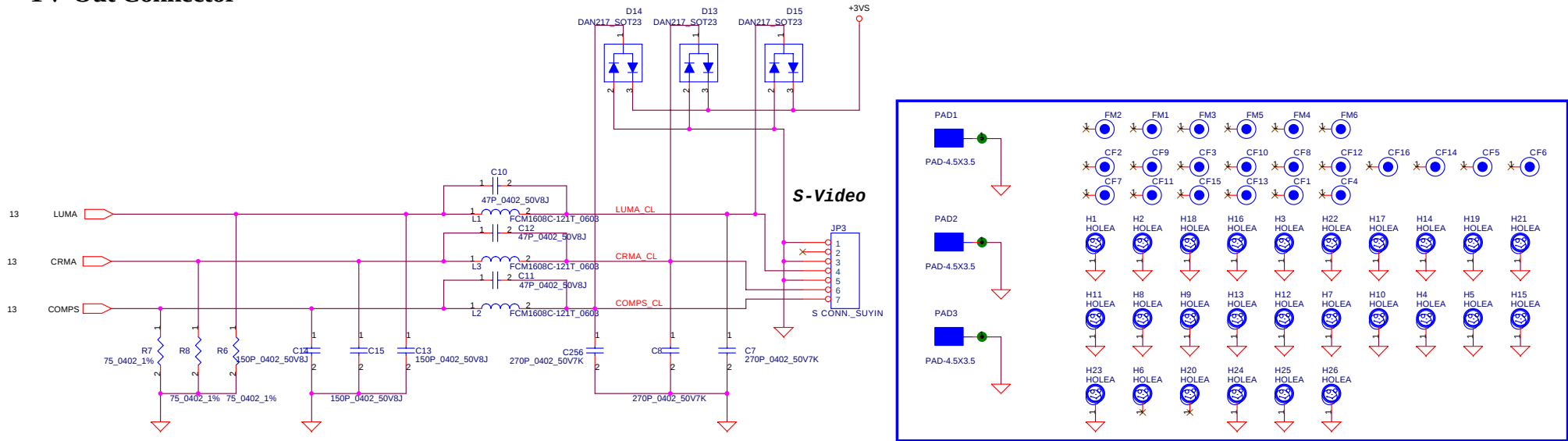
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Compal Electronics, Inc.			
SCHEMATIC, M/B LA-1991			
Title	Document Number	Rev	1A
Size	401266		
Date	2003 09 05	Sheet	13 of 45

CRT Connector

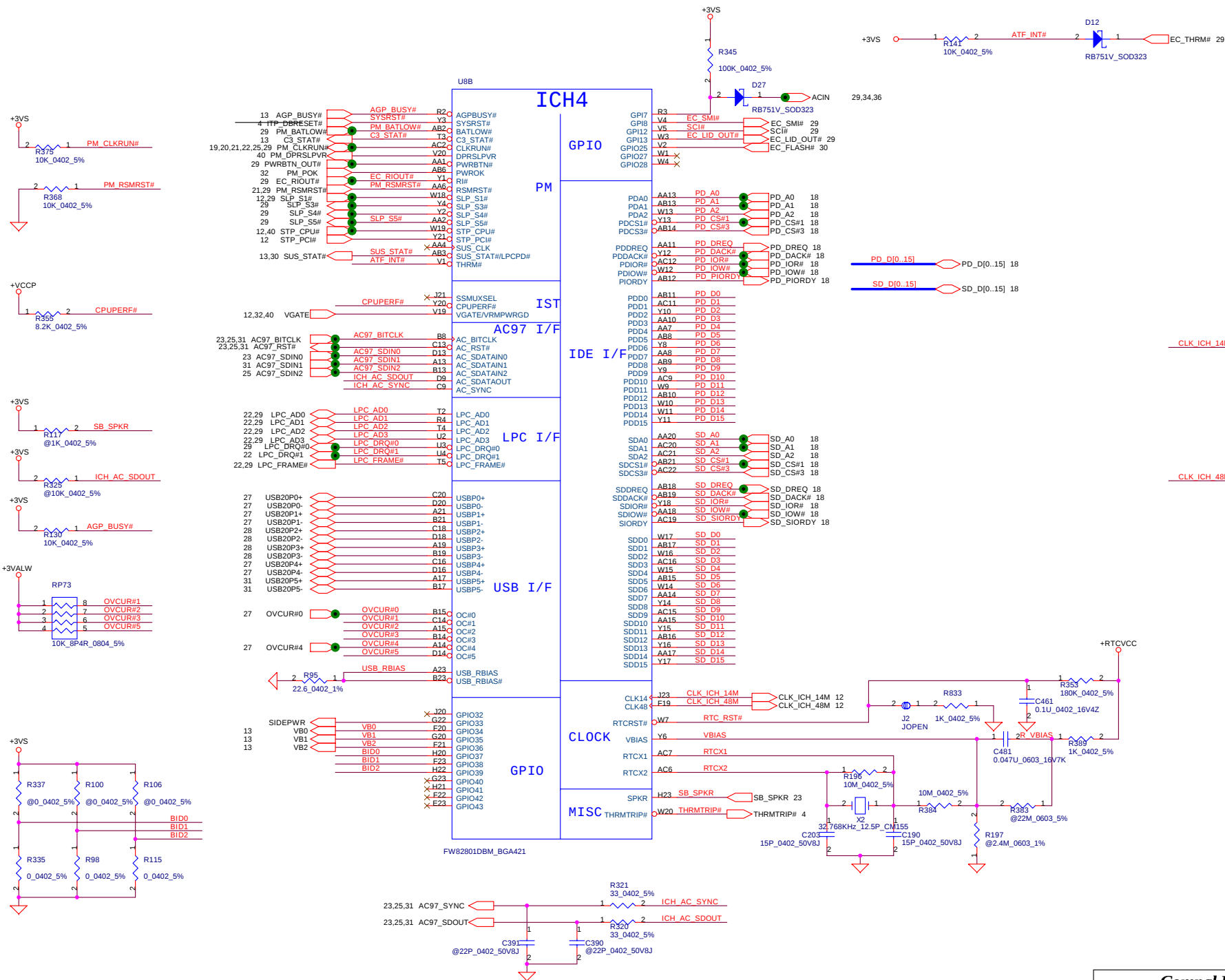


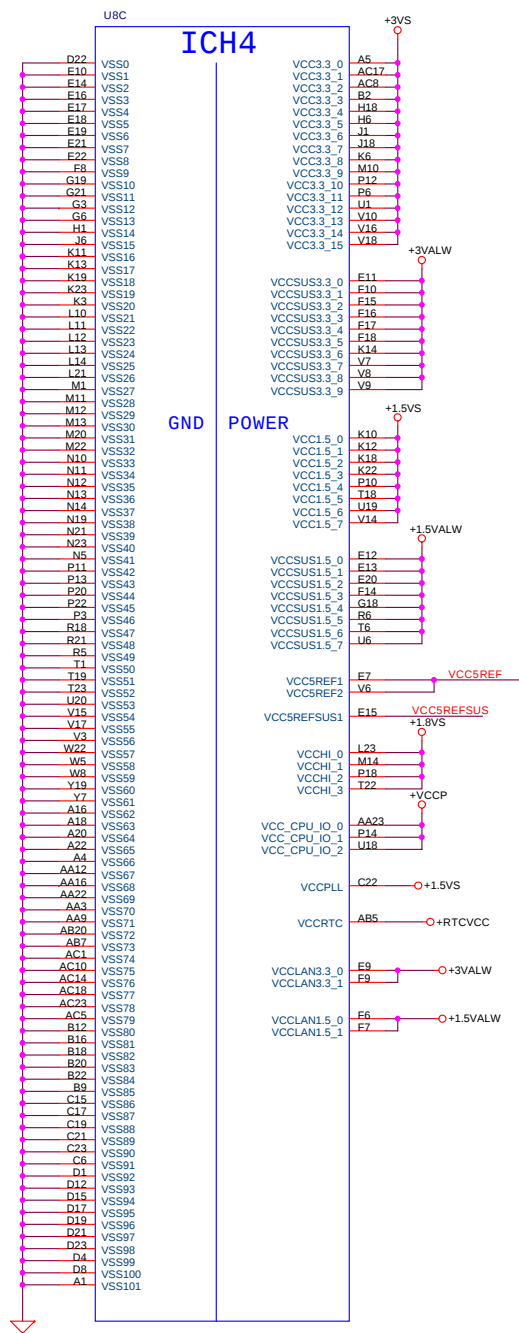
TV-Out Connector



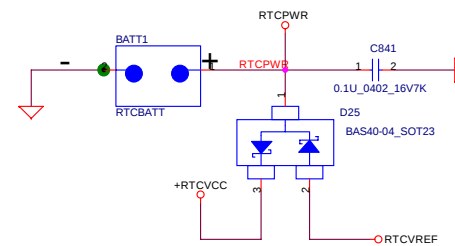
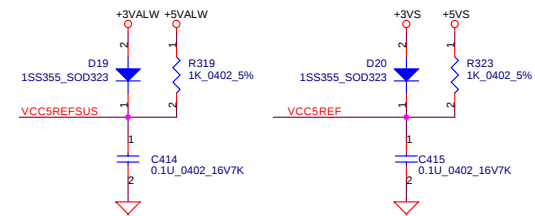
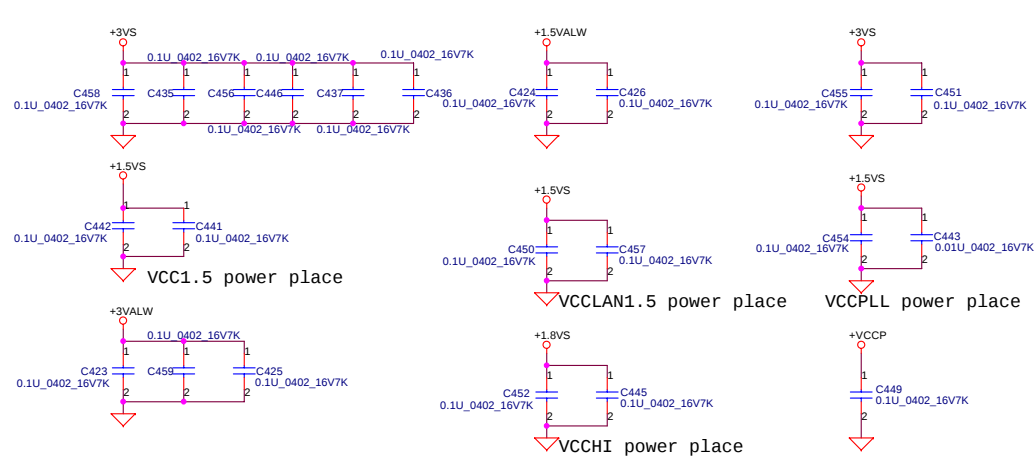
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

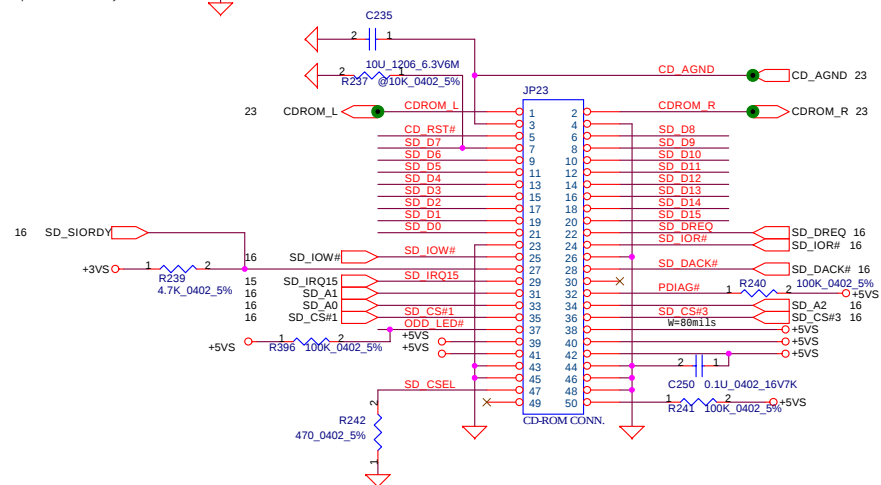
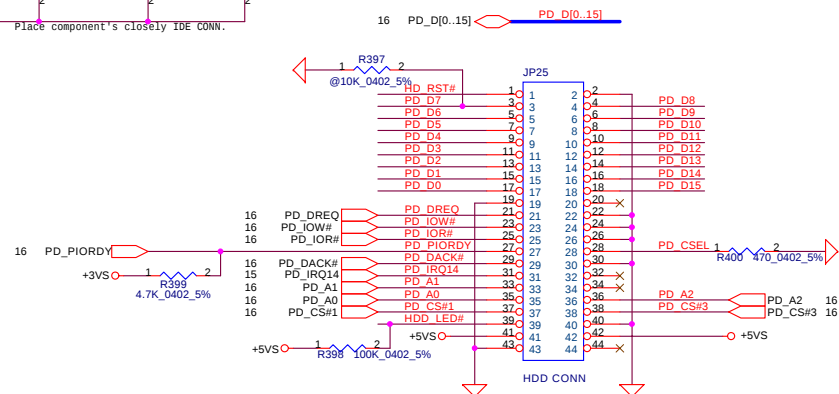
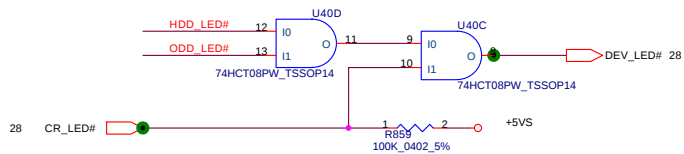
Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number	Rev	
	401266	1A	
Date:	日期五, 九月 05, 2003	Sheet	14 of 45

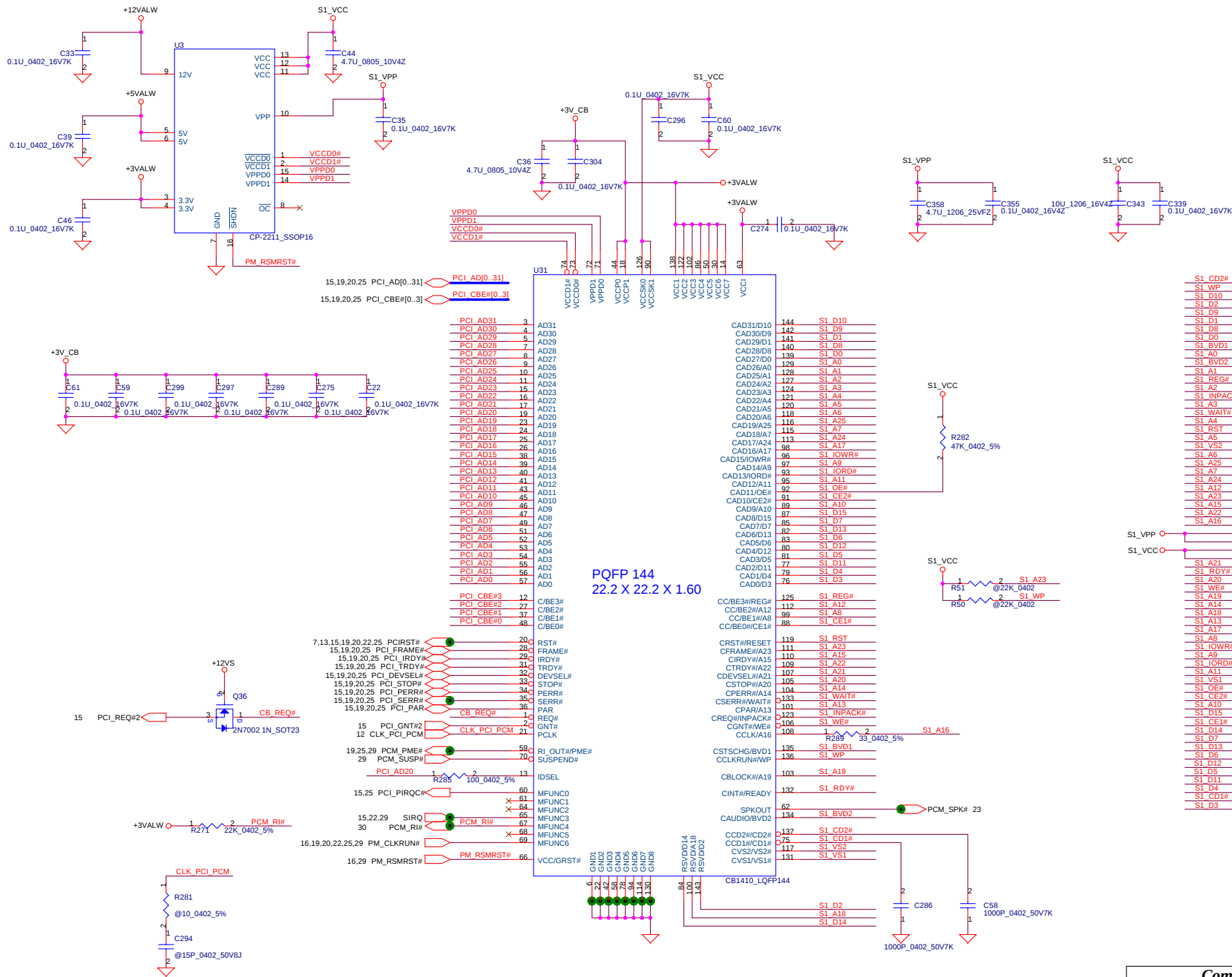


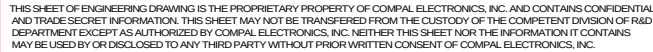


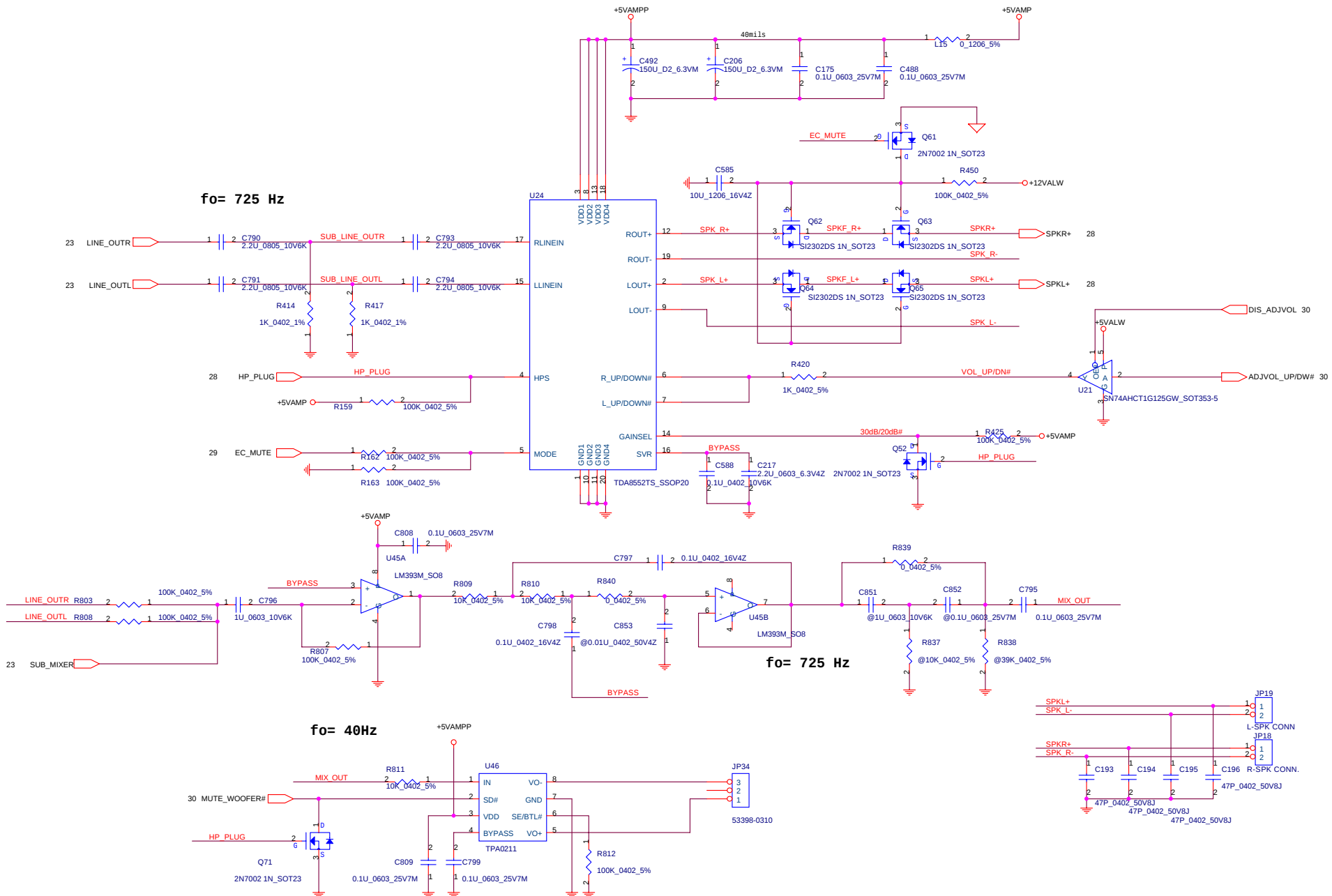
FW82801DBM_BGA421





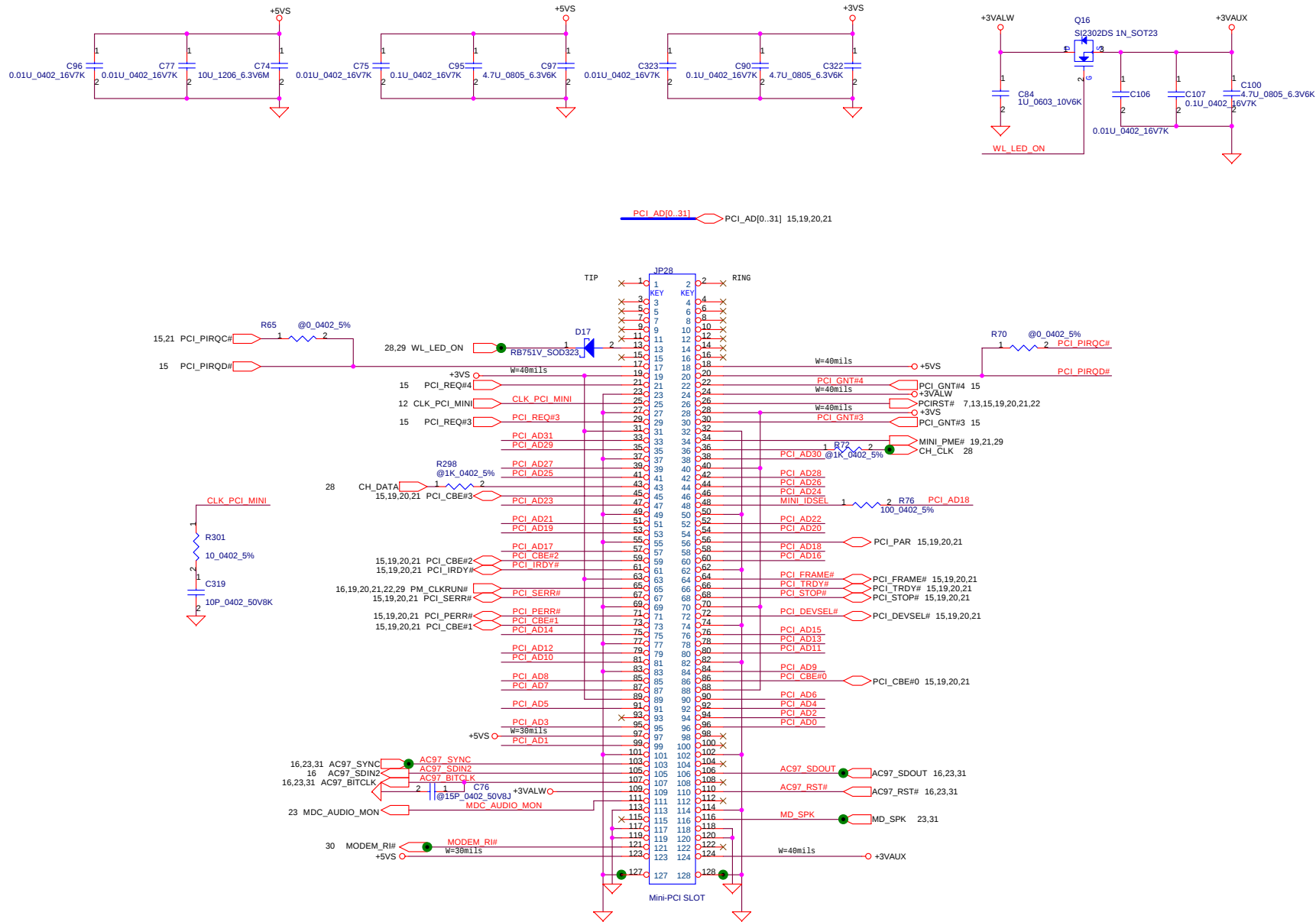






THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

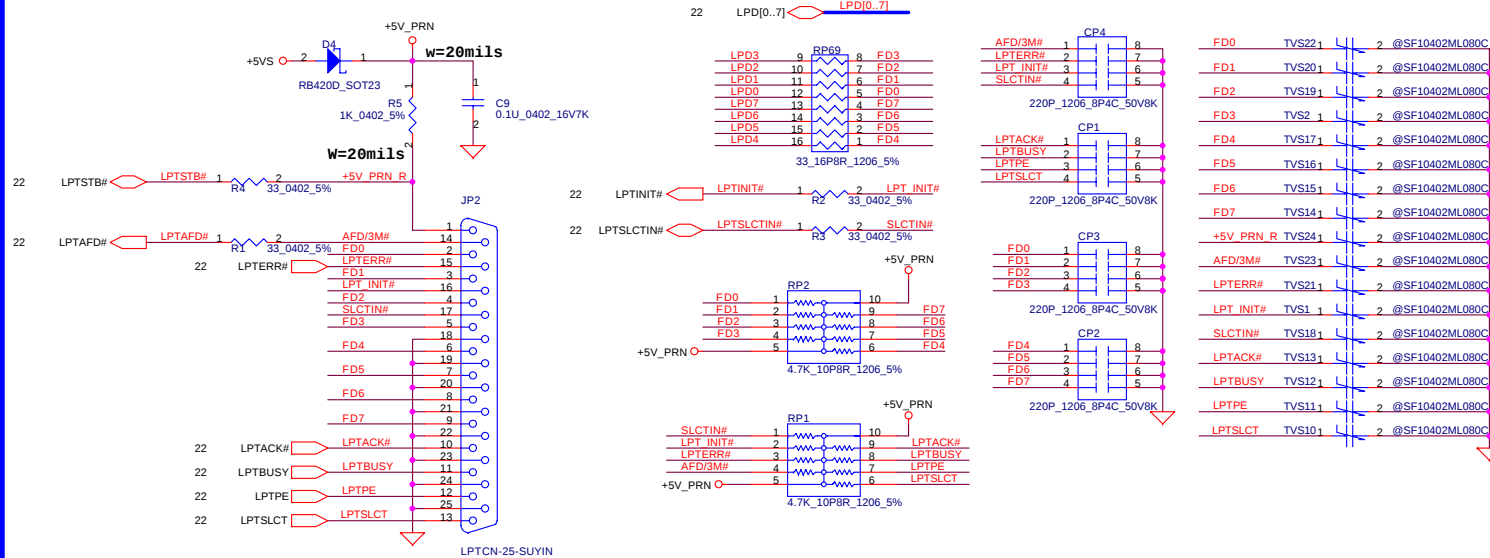
Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number	Rev	
	401266	1A	
Date	2003 09 05	Sheet	24 of 45



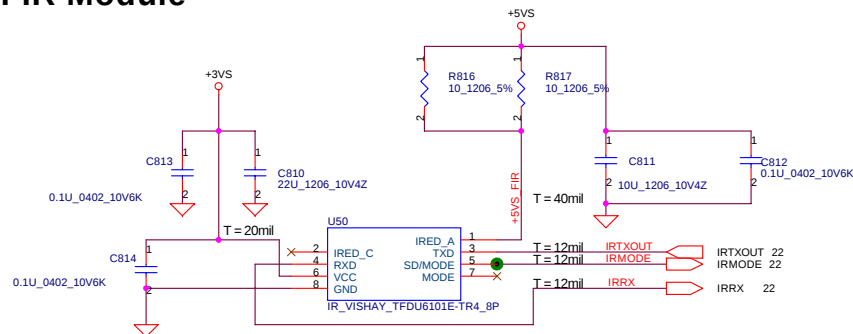
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Compal Electronics, Inc.			
Title			
SCHEMATIC, MBLA-1991			
Size	Document Number	Rev	
	401266	1A	
Date:	星期五, 九月 05, 2003	Sheet	25 of 45

Parallel Port



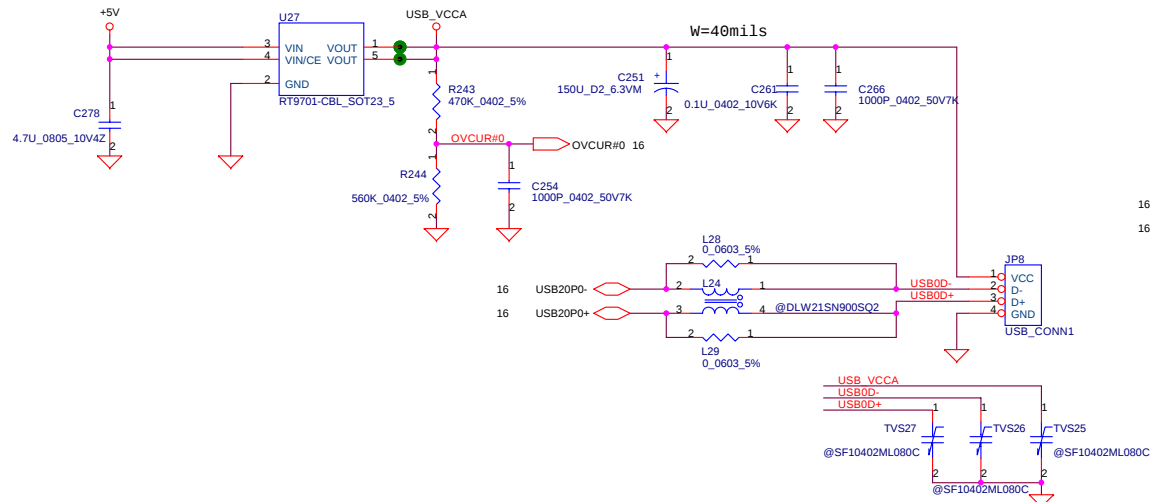
FIR Module



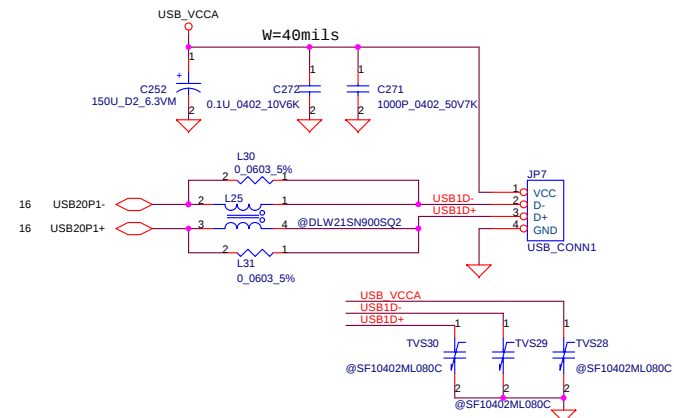
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/B LA-1991			
Size	Document Number	Rev	
	401266	1A	
Date:	2003.09.05	Sheet	26 of 45

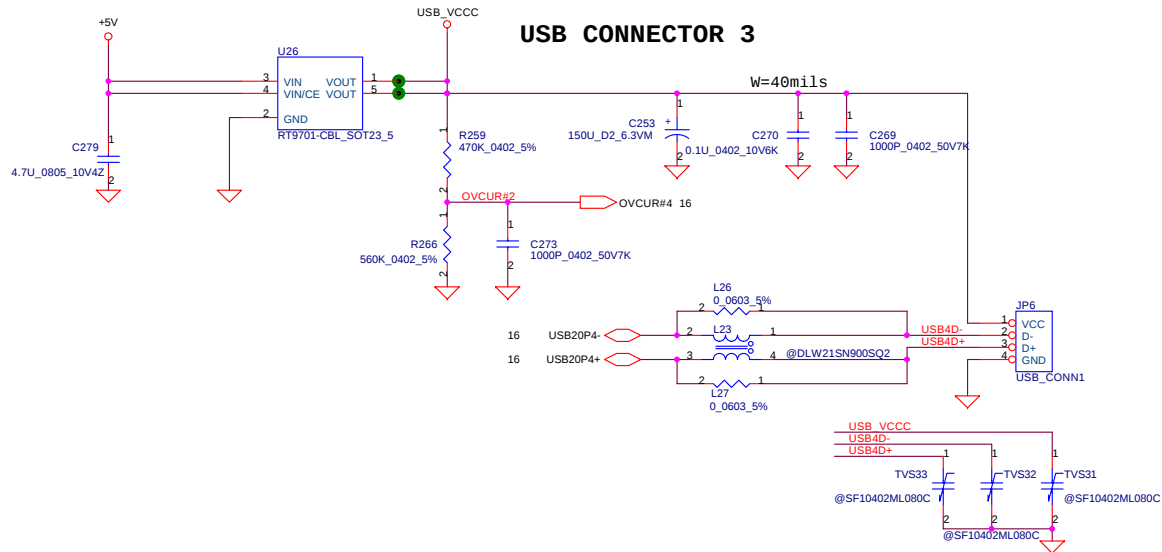
USB CONNECTOR 1



USB CONNECTOR 2



USB CONNECTOR 3



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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.

SCHEMATIC, M/BLA-1991

Size	Document Number	Rev
	401266	1A
Custom		
Date:	星期五, 九月 05, 2003	Sheet 27 of 45

T/P & LED CONN.

INT_MIC

JP20

25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26

30 DOT_D7

30 DOT_D6

30 DOT_D5

29,31 KS10

29,31 KS11

29,31 KS12

29,31 KS13

29 KS14

29 KS15

29 KS16

29 KS17

29 KS18

31 ASPIRE#

30 SUSP_LED#

25,29 WL_LED_ON

30 POWER_LED#

18 DEV_LED#

30 FULL_LED#

30 CHARGING_LED#

29 TP_CLK

29 TP_DATA

29,31 KSO17

50 DOT_D0

30 DOT_D1

30 DOT_D2

30 DOT_D3

30 DOT_D4

29 LID_SW#

30 DOT_R/W

30 DOT_CS#

30 DOT_PRES#

30 DOT_RS

31,34 51_ON#

30 EC_ACT#

30 BACKLED#

29 BT_LED#

+5VS

+5VALW

C815

0.1uF_0402_10V6K

IPEX_20004-050E

INT_KBD_CONN.

KS[0..7]

KS[0..15]






KS[0..7] 29,31

KS[0..15] 29

JP21			
KS015	1	1	2
KS010	3	3	4
KS011	5	5	6
KS014	7	7	8
KS013	9	9	10
KS012	11	11	12
KS03	13	13	14
KS06	15	15	16
KS08	17	17	18
KS07	19	19	20
KS04	21	21	22
KS02	23	23	24
KS10	25	25	26
KS01	27	27	28
KS05	29	29	30
KS13	31	31	32
KS12	33	33	34
KS00	35	35	36
KS15	37	37	38
KS14	39	39	40
KS09	41	41	42
KS16	43	43	44
KS17	45	45	46
KS11	47	47	48

ACES_85203-2402

CP7

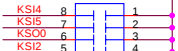


CP9



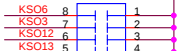
100P_1206_8P4C_50V8

CP6



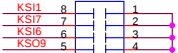
100P_1206_8P4C_50V8

CP10



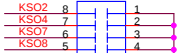
100P_1206_8P4C_50V8

CP5



100P_1206_8P4C_50V8

CP8



CardReader CONN.

The diagram illustrates the wiring for the CardReader CONN. The connections are as follows:

- SPKR+ (24)** and **SPKL+ (24)** connect to pins 1 and 2 of the 3P32 connector.
- INT_MIC** connects to pin 3.
- MIC_IN (23)** connects to pin 4.
- HP_PLUG (24)** connects to pin 5.
- USB20P2+ (16)** and **USB20P2- (16)** connect to pins 6 and 7.
- The **3P32** connector is labeled with pins 1 through 19.
- +3VS** and **+5VS** power connections are shown at the bottom.
- Capacitors **C495** (0.1u_0402_10V6K) and **C199** (0.1u_0402_10V6K) are connected to the power lines.

[illegible]

Keep +3VALW for ENE, +3VS for NS

+3VALW

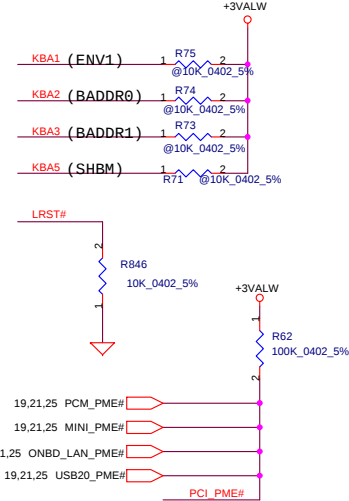
EC_AVCC

RTCVCC

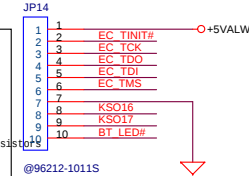
BADDR1-0	Index	I/O Address	Data
0 0	2E		2F
0 1	4E		4F
1 0	(HCFGBAH, HCFGBAL)	(HCFGBAH, HCFGBAL)+1	
1 1		Reserved	

	ENV0	ENV1	TRIS
IRE	0	0	0
* OBD	0	1	0
DEV	1	0	0
PROG	1	1	0

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



EC DEBUG port



For KB910
Pin16 : Change to +3VALW (R841)
Pin36 : Reserve for SCI#
Pin165 : PCIRST# pull low 10K (R846)
Pin125,126,127,131 : Remove 591 pull up resistor
Pin158 : R94 remove
Pin160 : Change R93 to 0 ohm
Pin11,12,105,124,128 : Add 00101 strap pin

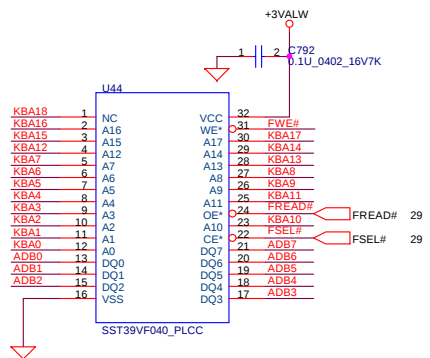
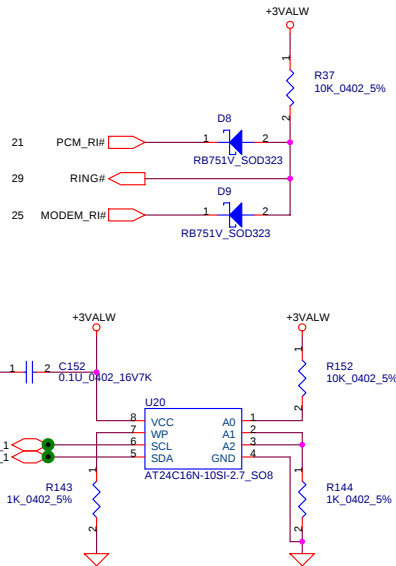
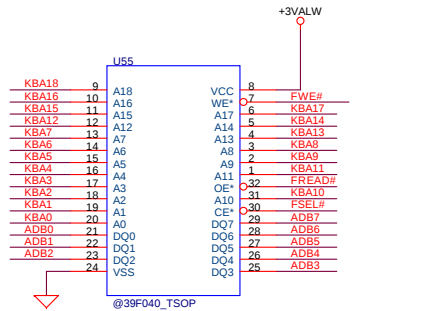
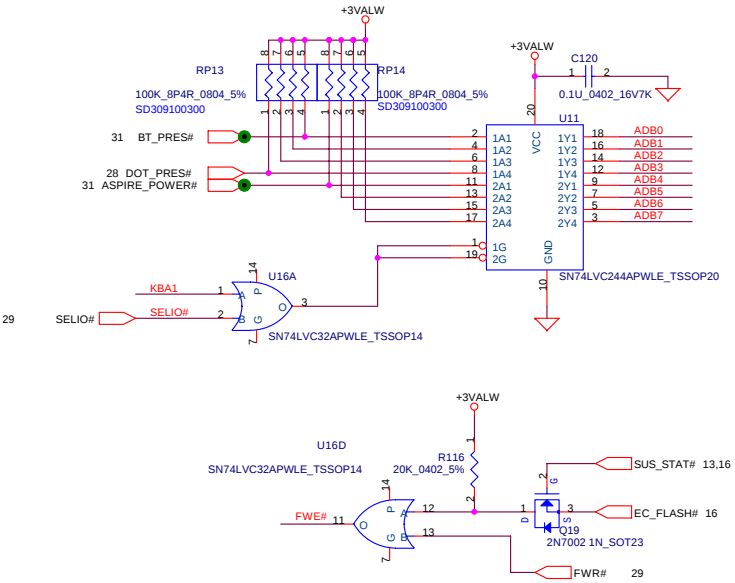
Compal Electronics, Inc.

SCHEMATIC, M/B LA-1991

Size	Document Number	Rev
	401266	1A
Date	2003.05.05	Sheet 29 of 45

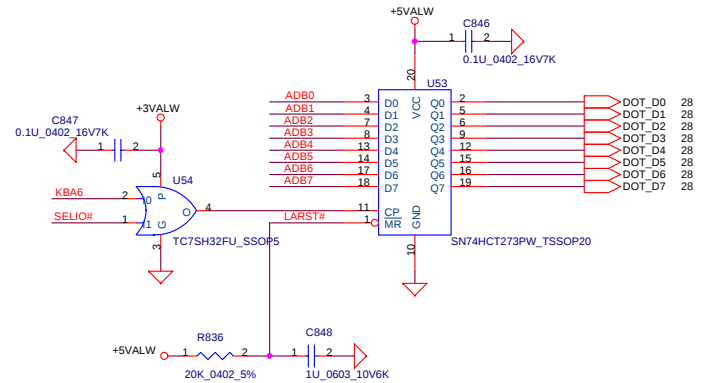
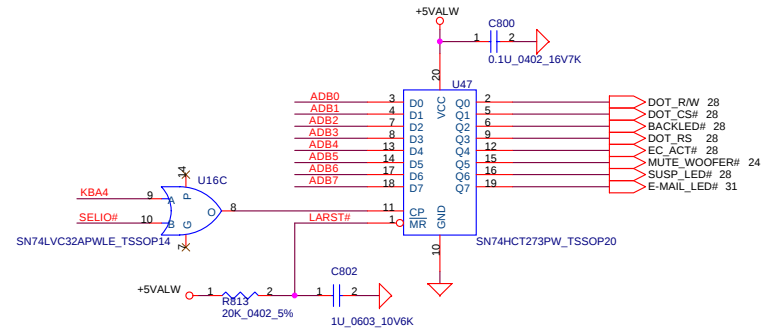
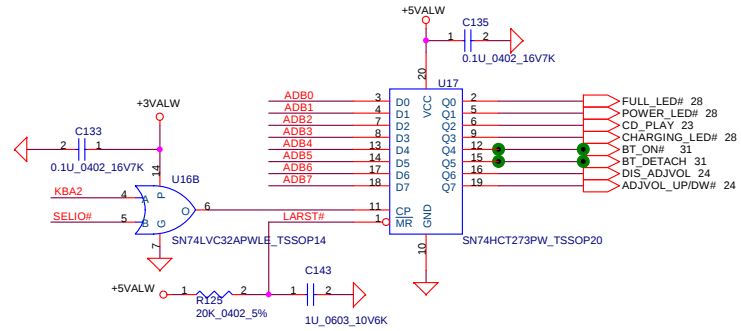
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

INPUT



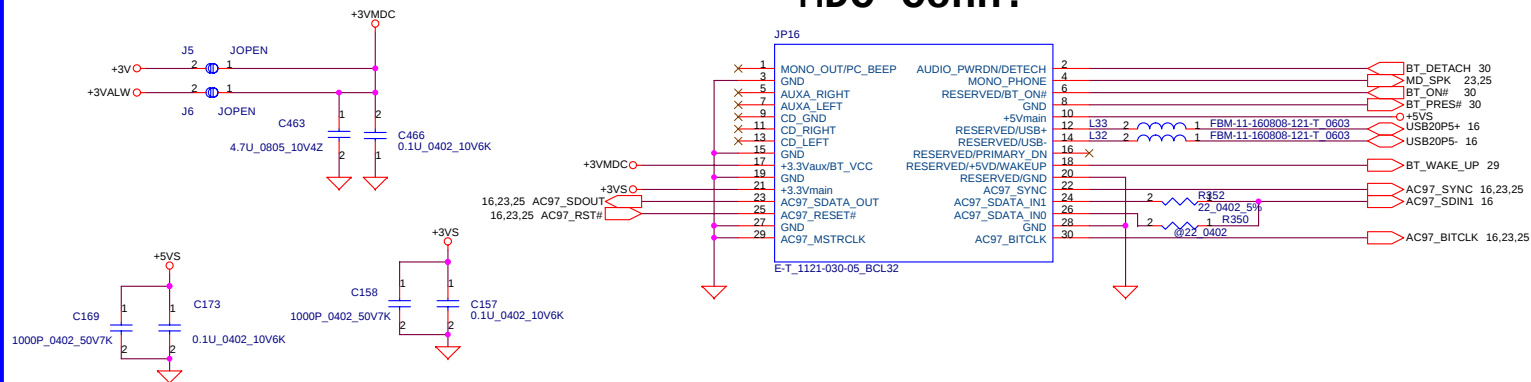
29 KBA[0..19] KBA[0..19]
29 ADB[0..7] ADB[0..7]

OUTPUT

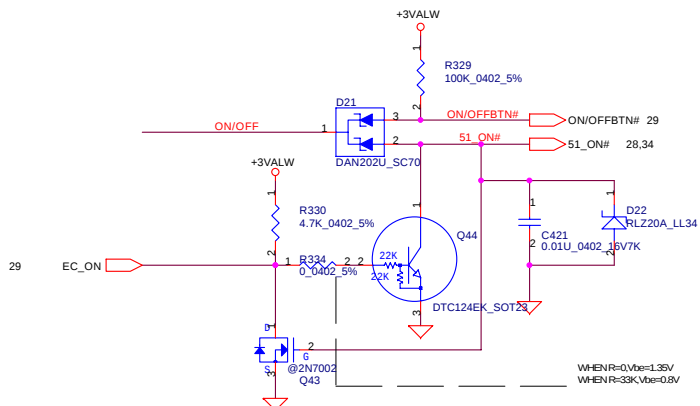


THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

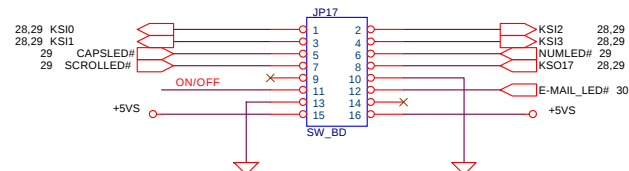
MDC Conn.



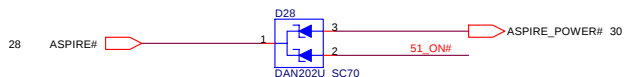
ON/OFF BUTTON



SWITCH CONN

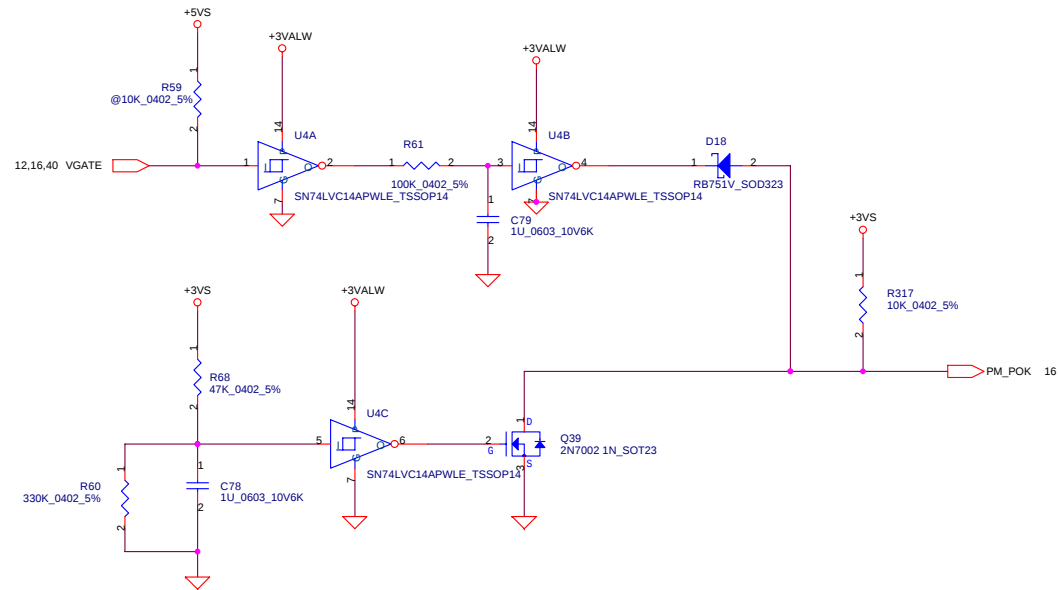


ASPIRE POWER



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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

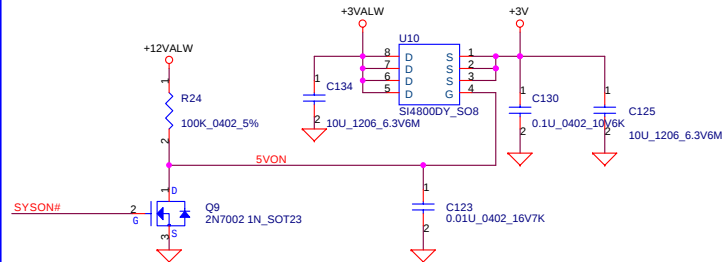
Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number	Rev	
	401266	1A	
Custom	Date	Sheet	of
	2003 05 05	31	45



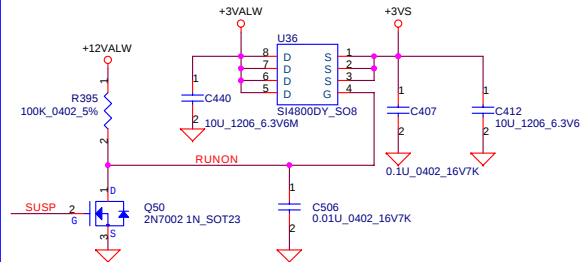
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Compal Electronics, Inc.			
Title		SCHEMATIC, M/BLA-1991	
Size	Document Number		Rev
	401266		1A
Date	星期五, 九月 05, 2003	Sheet	32 of 45

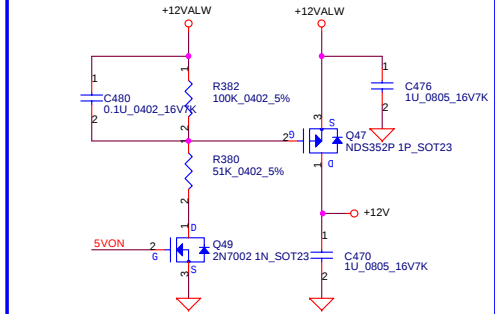
+3VALW to +3V Transfer



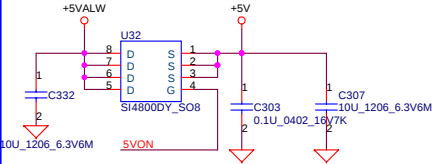
+3VALW to +3VS Transfer



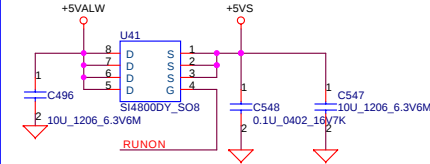
+12VALW TO +12V Transfer



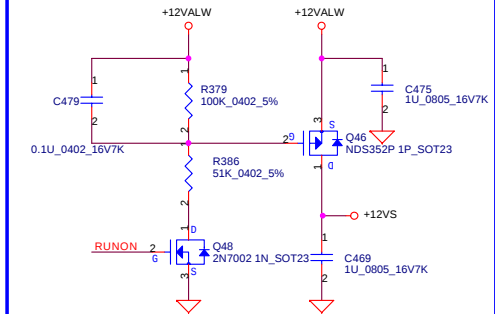
+5VALW to +5V Transfer



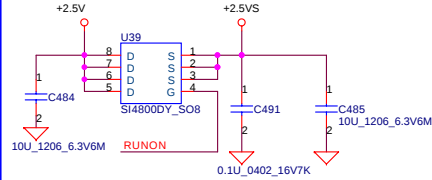
+5VALW to +5VS Transfer



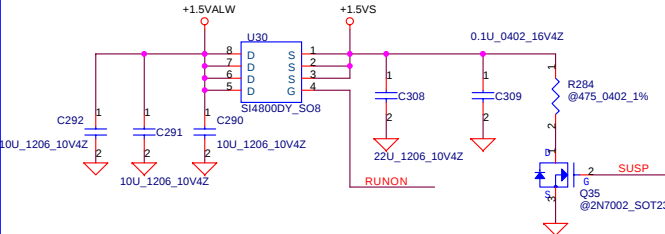
+12VALW TO +12VS Transfer



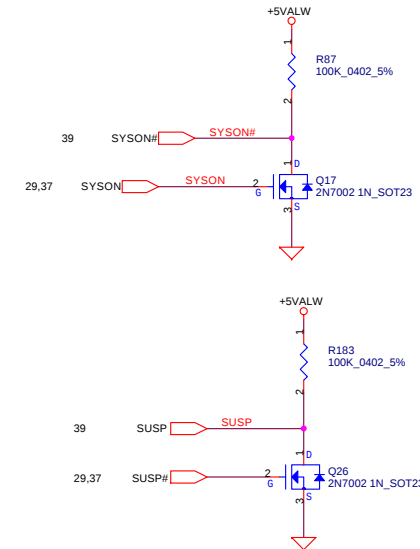
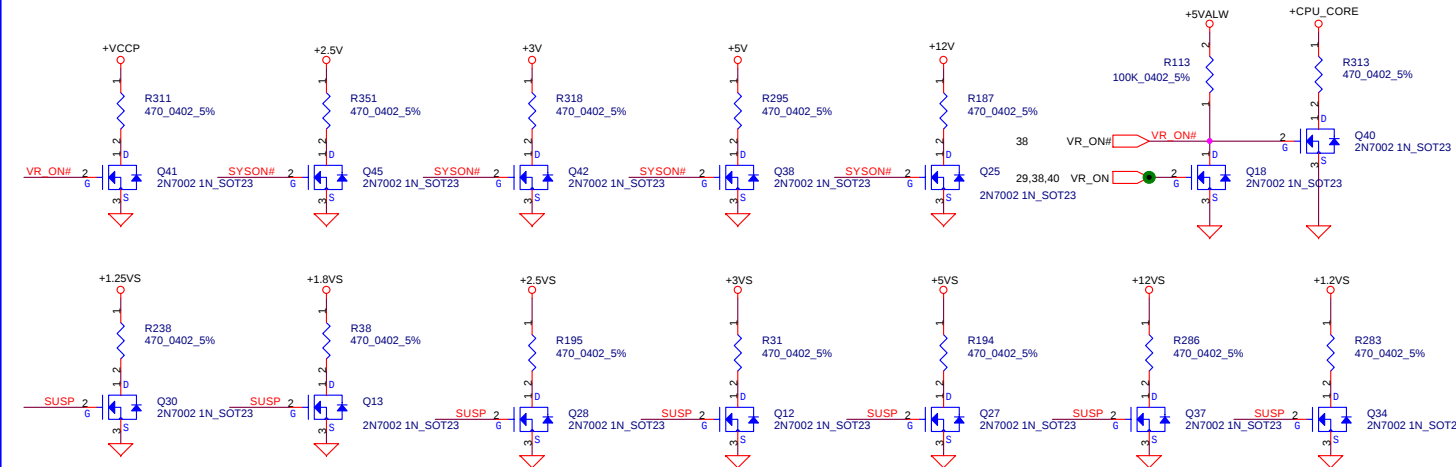
+2.5V to +2.5VS Transfer



+1.5VALW to +1.5VS Transfer

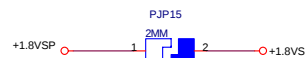
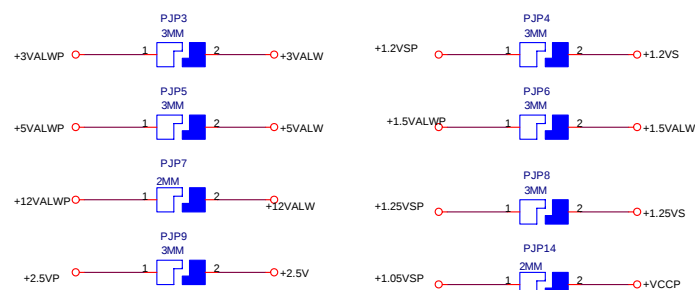
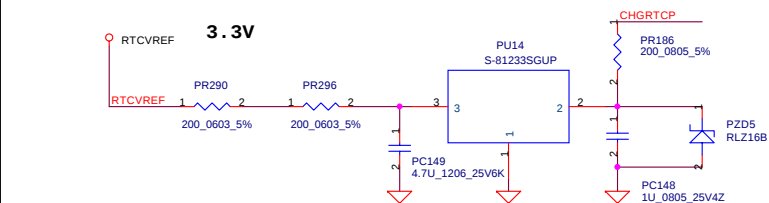
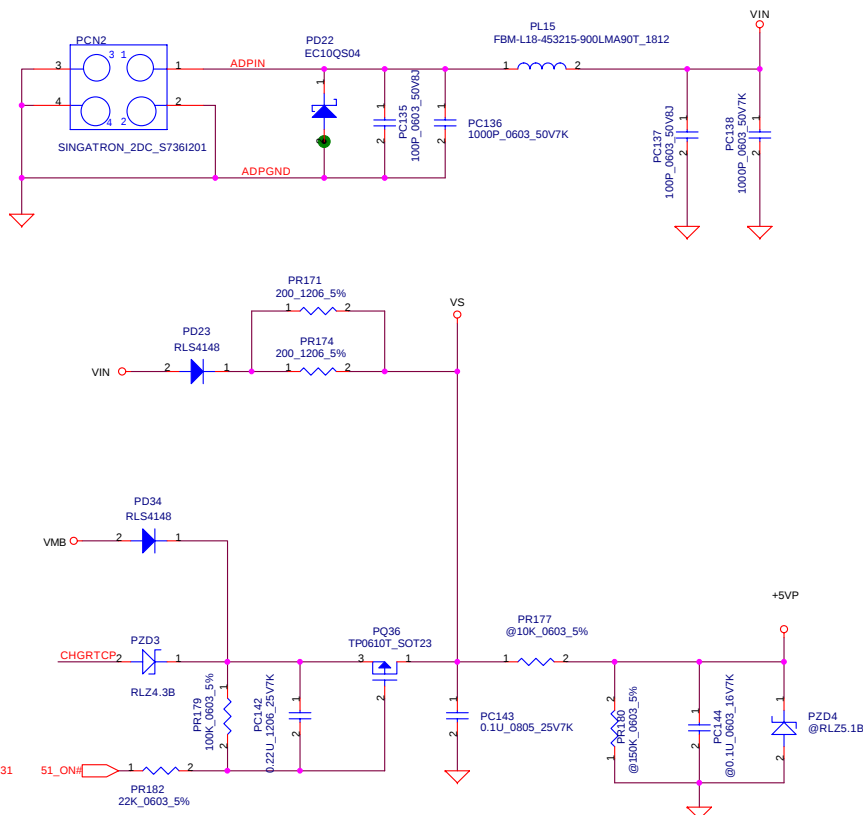


Discharge circuit



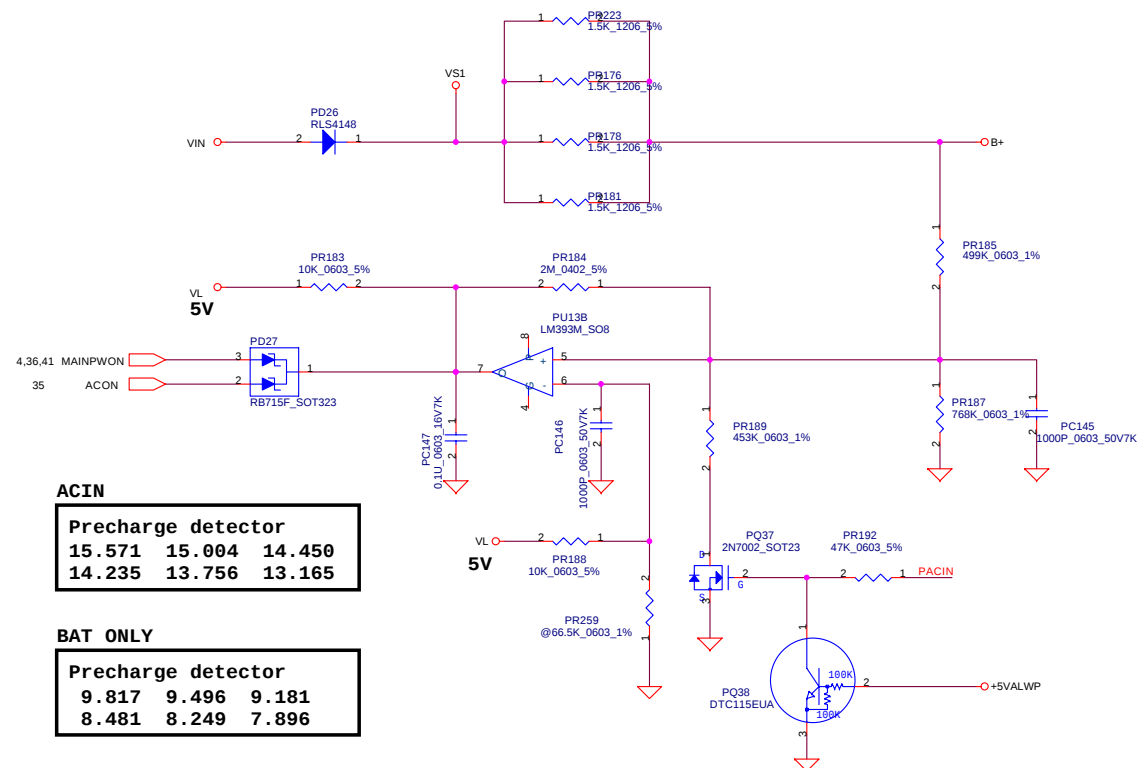
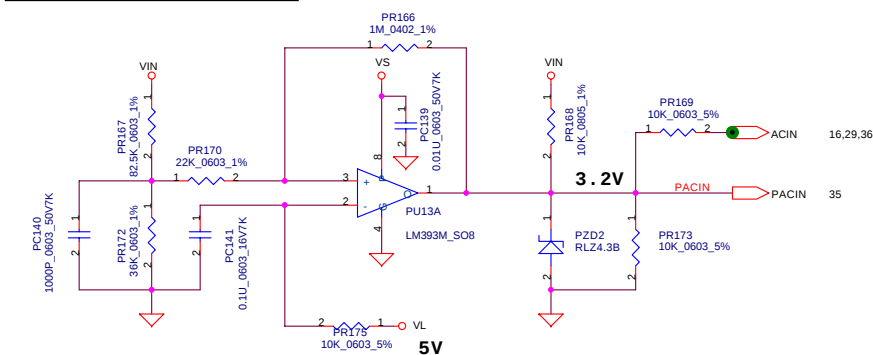
Compal Electronics, Inc.			
Title			
SCHEMATIC, MBLA-1991			
Size	Document Number	Rev	
	401266	1A	
Date:	日期五, 九月 05, 2003	Sheet	33 of 45

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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.



VIN detector

17.905	17.233	16.587
17.391	16.737	16.073



ACIN

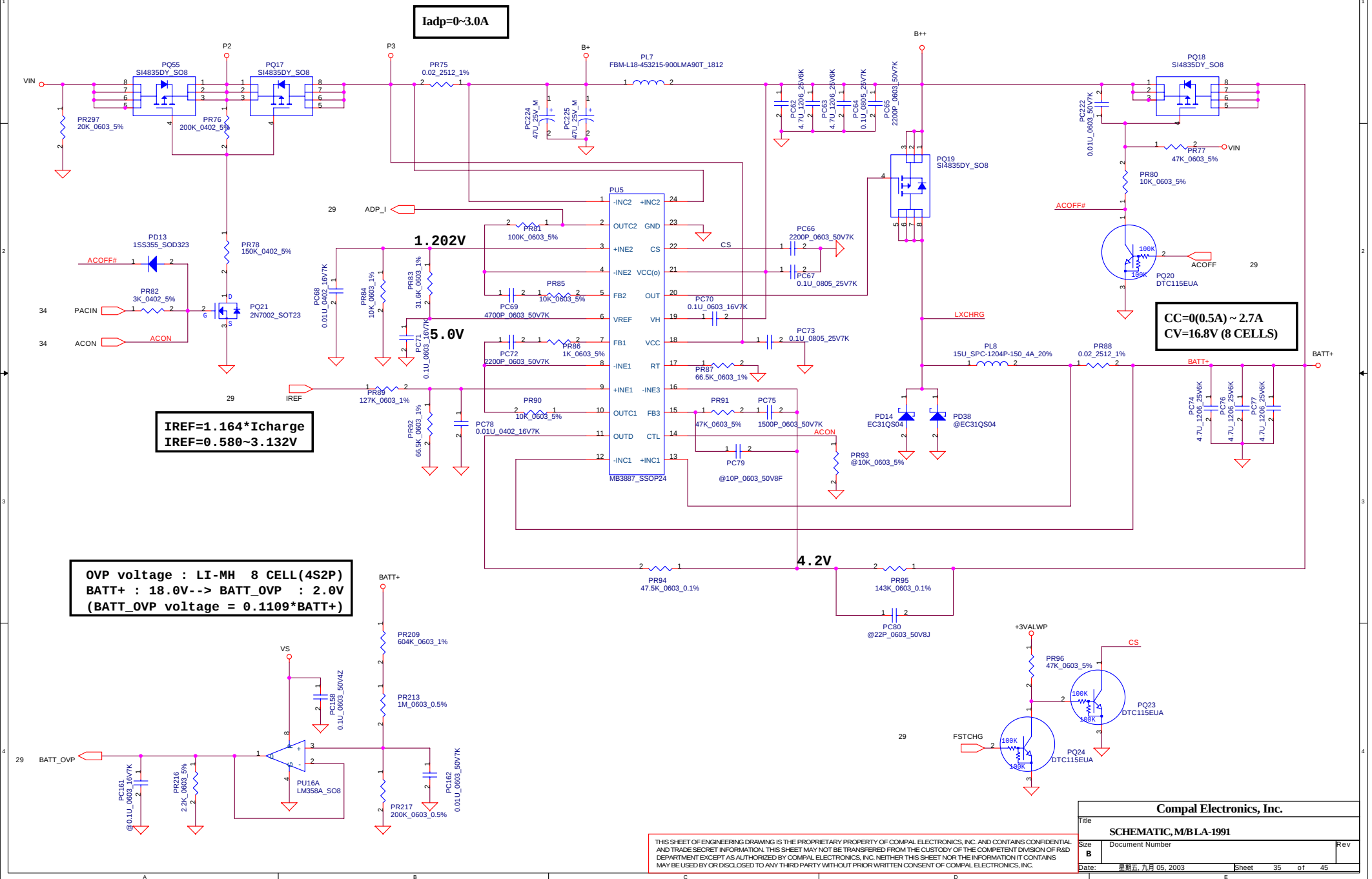
Precharge detector

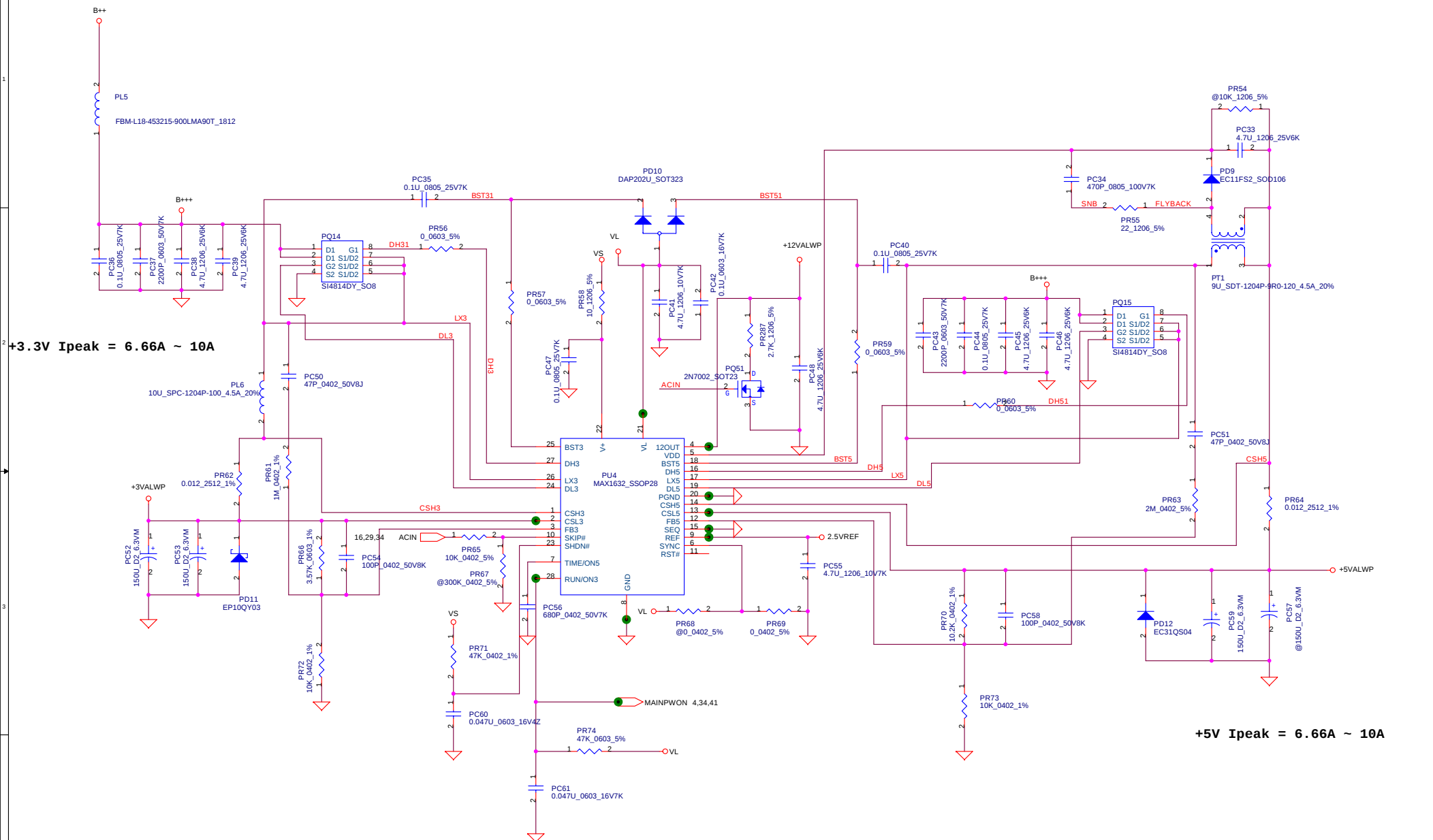
15.571	15.004	14.450
14.235	13.756	13.165

BAT ONLY

Precharge detector

9.817	9.496	9.181
8.481	8.249	7.896

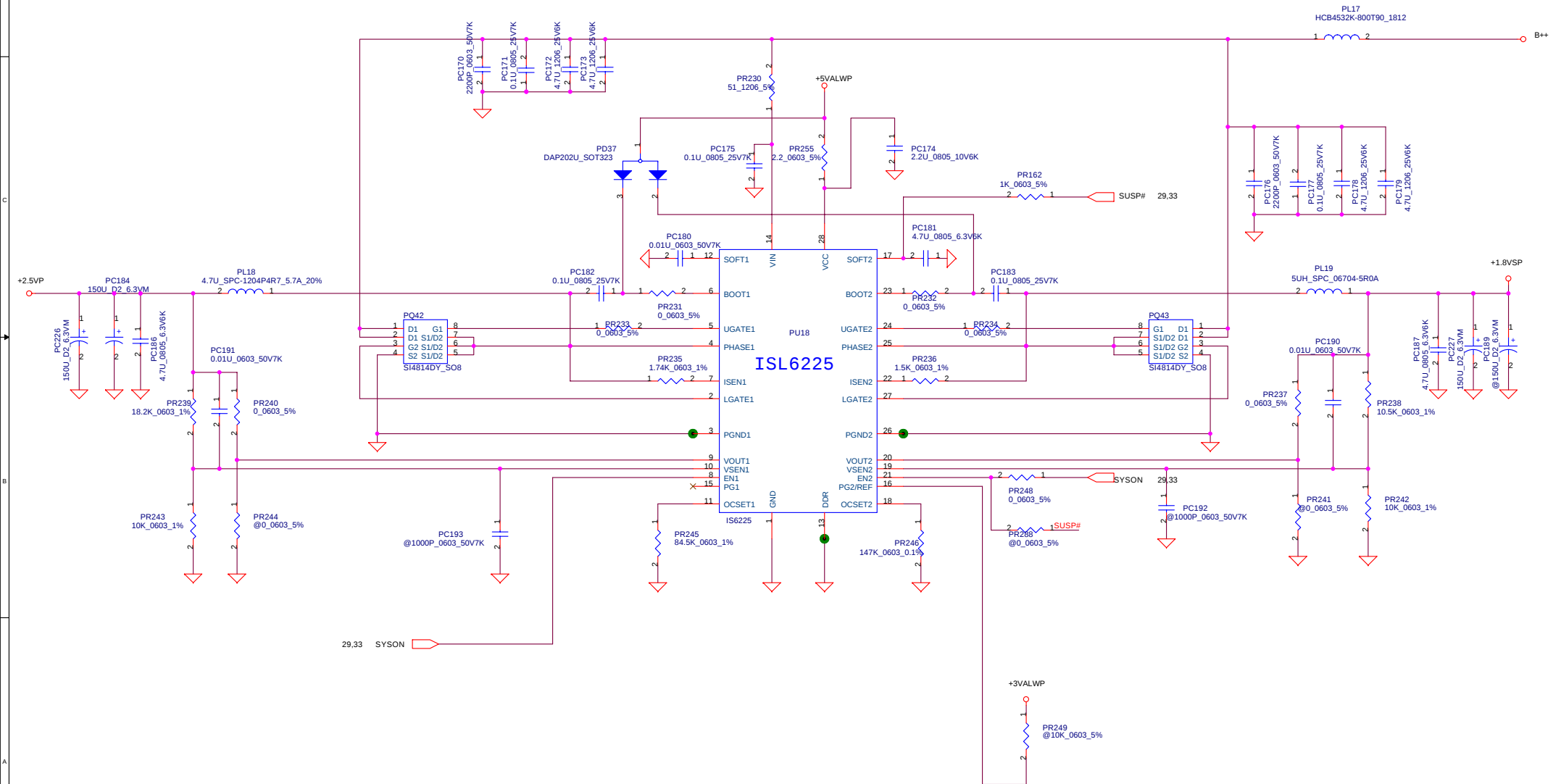




THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Title			SCHEMATIC, M/BLA-1991		
Size	Document Number				Rev
B					
Date:	民國五, 九月 05, 2003		Sheet	36	of 45

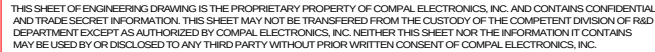
+2.5VP/+1.8VSP

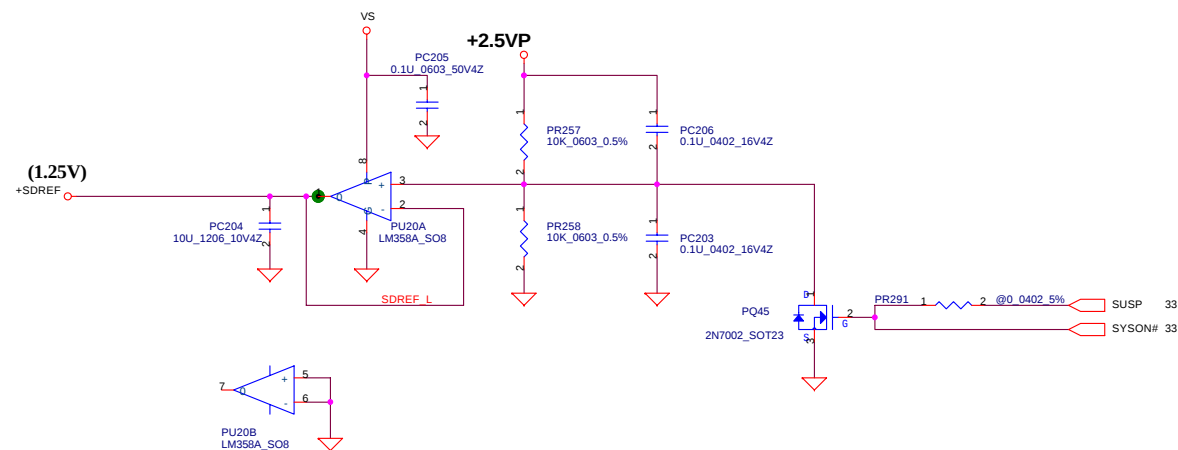
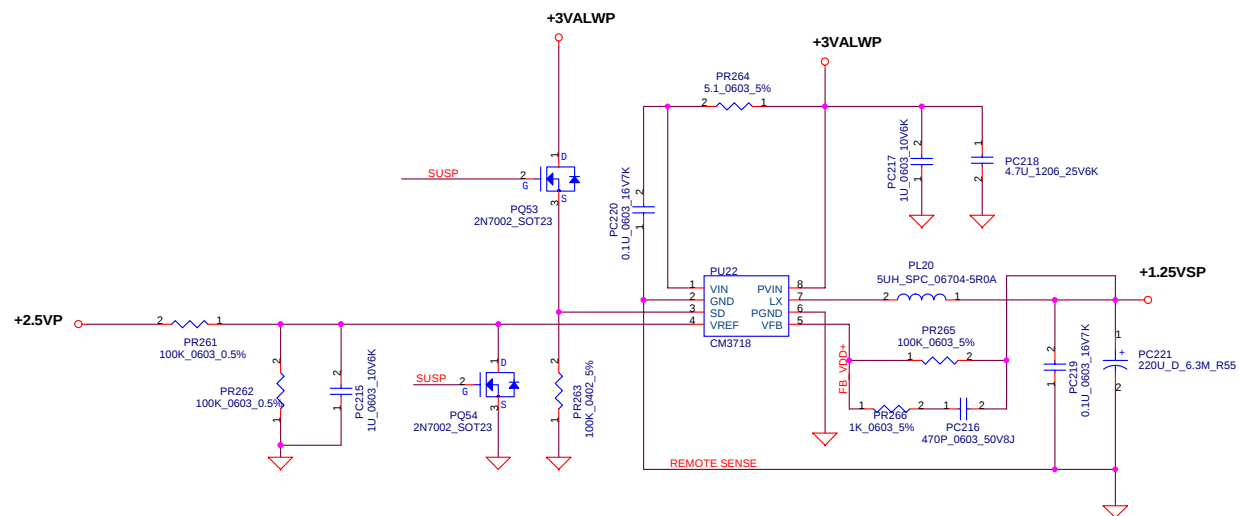


THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/B LA-1991			
Size	Document Number		Rev
B			
Date:	星期五, 九月 05, 2003	Sheet	37 of 45

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/B LA-1991			
Size	Document Number		Rev
B			
Date: 星期五, 九月 05, 2003	Sheet	38 of 45	

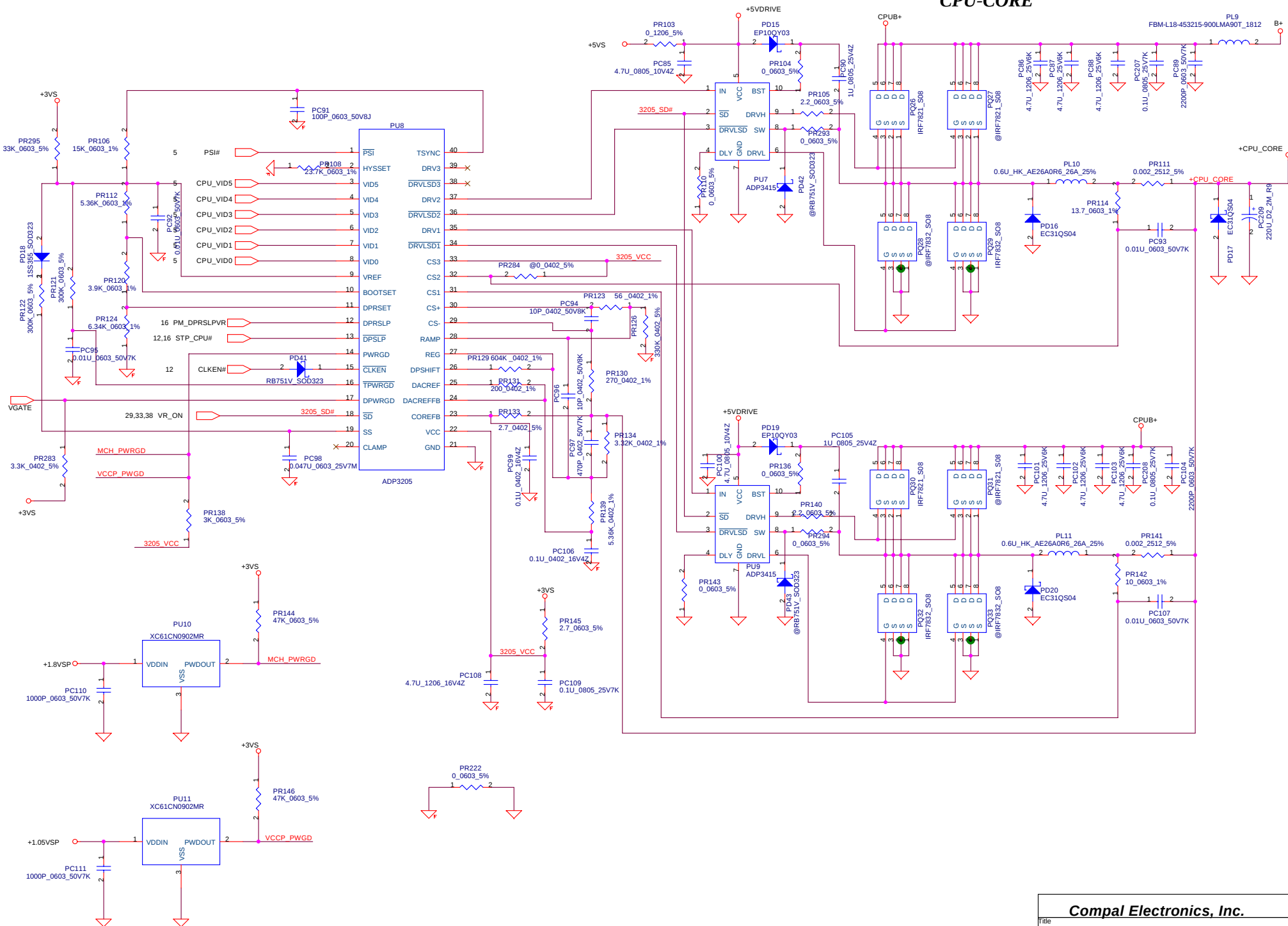




THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS

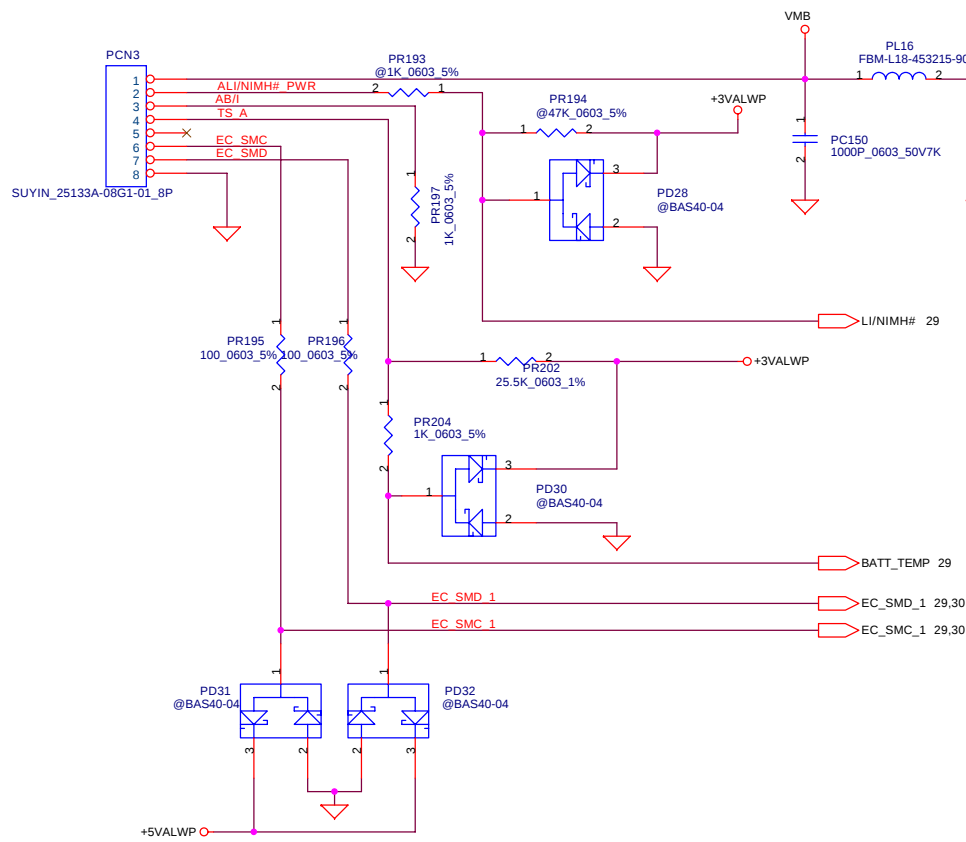
Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number		Rev
Date: 星期五, 九月 05, 2003	Sheet	39 of 45	

CPU-CORE

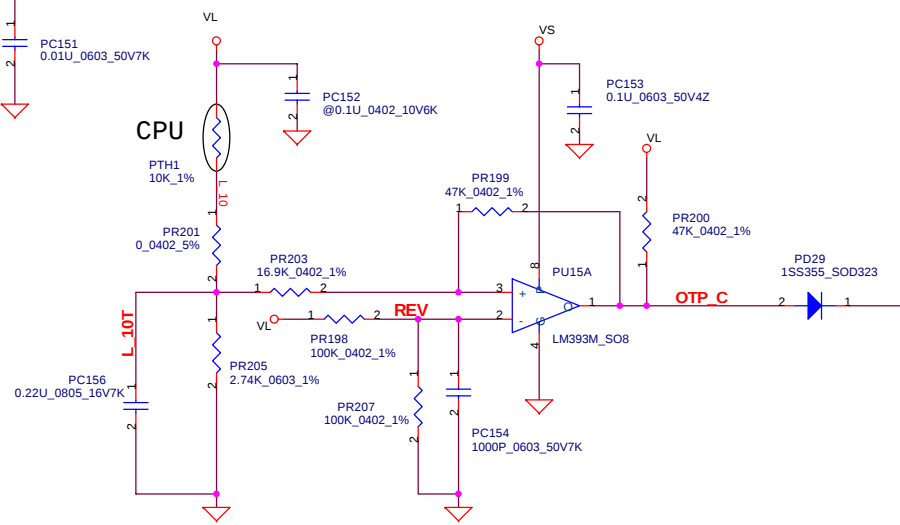


THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS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

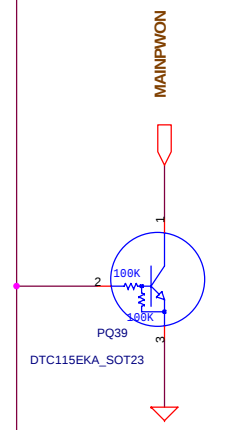
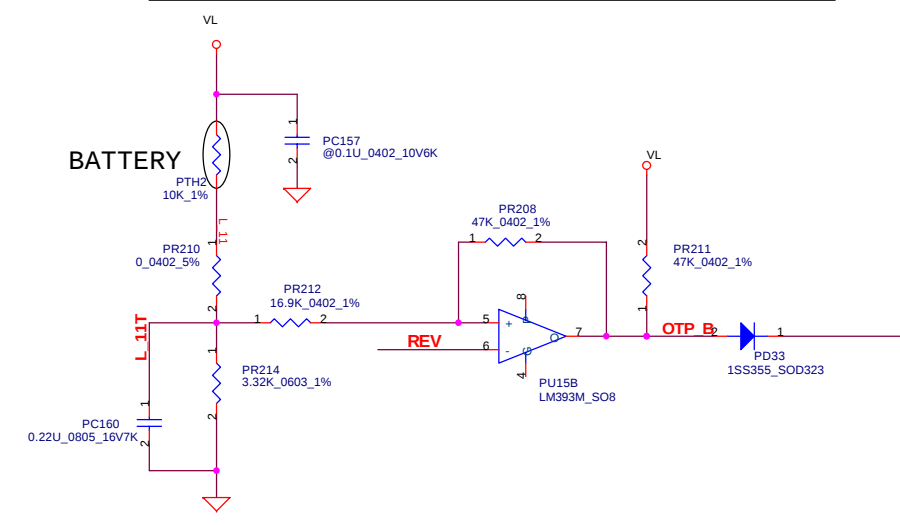
Compal Electronics, Inc.			
SCHEMATIC, M/B LA-1991			
Title	Document Number	Rev	
Size B			
Date: 2003.09.05	Sheet 40 of 45		



PH1 under CPU bottom side :
 CPU thermal protection at 90 +-3 degree C
 Recovery at 50 +-3 degree C



PH2 near main Battery CONN :
 BAT. thermal protection at 84 +-3 degree C
 Recovery at 45 +-3 degree C



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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Title			
SCHEMATIC, M/B LA-1991			
Size	Document Number	Rev	
B	401266	0.1	
Date:	星期五, 九月 05, 2003	Sheet	41 of 45

4.34.36

A1-TEST 2003/05/28

- 1. P18 : Add C854 1U_0603
- 2. P23 : Add C849,C850 1U_0603 for LINEIN
- 3. P24 :
 - 1. Add Q71 2N7002 for mute sub woofer
 - 2. Add R839 0_0402 for pass through
 - 3. C795 change to 0.1U_0603
 - 4. R809, R810 change to 10K_0402
 - 5.Add R840,C853,C851,C852,R838 for reserve
- 4. P25 : Q16 change to SI2302_N for high active signal
- 5. P29 : Change from NS87591L to KB910
 - A. Add R841,R843,R845 0_0402
 - B. Add R846,R852,R853,R849,R855,R851 10K_0402
 - C. Delete R94 ,R93, R71,R73,R75

A2-TEST 2003/05/28

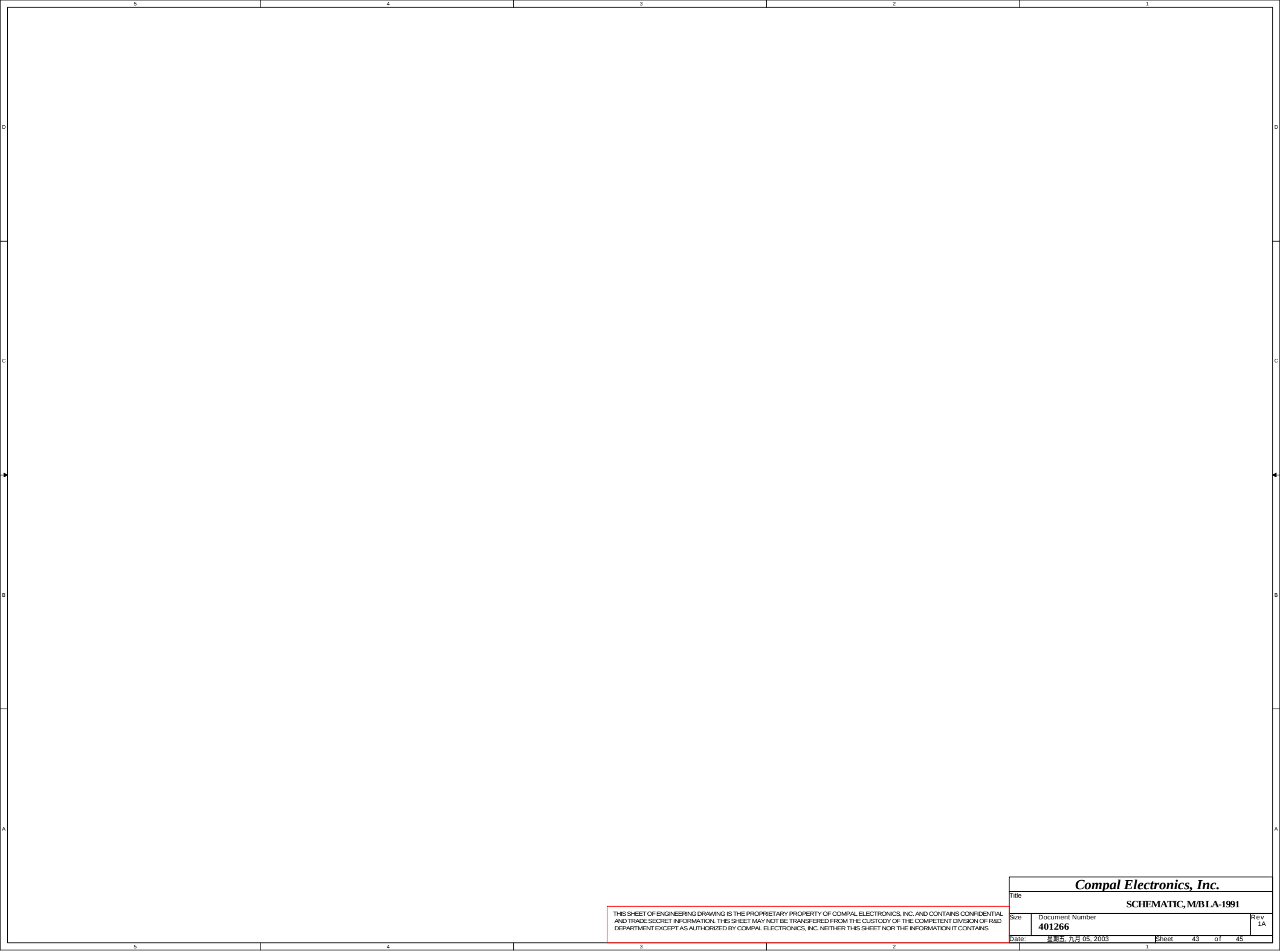
- 1. P29 : Remove R841 , Add R71
- 2. P23 : Add C855,C856= 0.1U_0402

B-regression TEST 2003/09/02

- 1. P29 : Add C857
- 2. P31: Add D28

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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number		Rev
	401266		1A
Date:	星期五, 九月 05, 2003		Sheet 42 of 45



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 IT CONTAINS

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number		Rev
401266			1A
Date:	星期五, 九月 05, 2003	Sheet	43 of 45

REV: 0.2D

- 1. To change the mute circuitry for SI build.
 - a. Connect EAPD (pin U22.47) to JP24.2 and reserve a 0_0402_5% (R431) resistor for testing.
 - b. Install R162 (0_0402_5%) and no install R163.
 - c. Add R432 (100K_0402_5%) and Q51 (2N7002) to invert EAPD signal for amplifier and mute LED.

REV: 0.2E

- 1. For EMI requirement.
 - Add C204 0.1U_0402_16V4Z
- 2. To exchange TP and PS2 signals for EC requirement.
- 3. For cost down plan.
 - To exchange the capacitor of C83,C136 from 150U_D2_6.3VM to 100U_6.3V_M.

REV: 0.2F

- 1. For cost down plan.
 - Move audio line-out BLOCK capacitor from TP to MB. To add C565,C566 100U_6.3V_M.
- 2. For solving audio noise when IR active. (A2C039)
 - a. Del C206.
 - b. To change C492 from 150U_D2_6.3VM to 10U_1206_6.3V7K.
- 3. For EMI requirement.
 - Add R435~R440 0_0402_5%.

REV: 0.2G

- 1. For solving power LED signal wrong on PR/APR side.
 - a. Add R441 1K_0402_5%.
 - b. Q52 2N7002.
- 2. For solving power button must be pressed twice issue.
 - 1. Add D27 RB751V.
 - 2. Add R330 4.7K_0402_5%.
 - 3. Change R345 from 10K_0402_5% to 100K_0402_5%.
- 3. Per HPQ requirement to change audio component.
 - To change C174 and C201 to 0.022U_0603_25V7K.

REV: 0.2H (For SI gerber)

- 1. Per HPQ requirement to change audio component.
 - To change R427 from 20K_0402_5% to 39.2K_0402_1%.

REV: 0.3 (For SI SMT)

- 1. Per HPQ requirement to change LED color from BLUE to GREEN.
 - a. Change D5,D6,D7,D26 from HSMB-C172_BLUE_0805 to HSMG-C170_GRN_0805.
 - b. Change R9,R10,R11,R421 from 140_0402_1% to 330_0402_5%.
- 2. To improve RTC crystal accuracy.
 - Change C190,C203 from 12P_0402_50V8J to 15P_0402_50V8J.

REV: 0.3A (For PV Build)

- 1. Per HPQ requirement to add FET to shut off power to the Bluethumb module.
 - a. Add Q53 SI2301DS.
 - b. Add C568 1U_0603_10V6K.
 - c. Add C570 0.01U_0402_16V7K.
 - d. Add C571 0.1U_0402_16V7K.
 - e. Add C569 4.7U_0805_6.3V6K.
 - f. Add Q54 2N7002.
 - g. Add R442 100K_0402_5%.
 - h. Del R424.
 - i. Change Q16.2 signal source from Wireless_OFF# to Wireless_OFF.
- 2. For supporting WLAN and BT devices exist in the same system.
 - a. Connect Mini-PCI JP28-36 to Bluethumb JP32-7 using a series resistor of 1K_0402_5% (R72).
 - b. Connect Mini-PCI JP28-43 to Bluethumb JP32-6 using a series resistor of 1K_0402_5% (R298).

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 IT CONTAINS

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/BLA-1991			
Size	Document Number		Rev
	401266		1A
Date:	星期五, 九月 05, 2003	Sheet	44 of 45

Item	Reason for change	PG #	Modify List	Date	B.Ver #
1	ME add a limit area, layout place not enough	38	delete PR6 change PR12 from 0_0603_5% to 0_0402_5% change PR15 from 10K_0603_1% to 10K_0402_1%	2003.06.18	
2	Customer request change adapter. The Vin voltage changed to 18V(minimum). So, we need to change Vin detector and Pre-charge detector	34	change PR170 from 100K_0603_1% to 73.2K_0603_1% change PR172 from 39K_0603_1% to 40.2K_0603_1% change PR187 from 732K_0603_1% to 768K_0603_1% change PR189 from 402K_0603_1% to 453K_0603_1%	2003.06.23	
3	For common parts design		change PR166 from 1M_0603_1% to 1M_0402_1% change PR184 from 2M_0603_5% to 2N_0402_5% change capacitor from 4.7U_1210_25V to 4.7U_1206_25V of all location (PC62,PC63,PC74,PC76,PC77,PC38,PC39,PC45,PC46,PC172,PC173,PC178,PC179,PC3,PC4,PC9,PC10,PC86,PC87,PC88,PC101,PC102,PC103,PC48,PC33,PC218) change PC164 and PC149 from SE035475Z07 to SE142475K00	2003.07.16	
4	delete unnecessary 0ohm resister		delete PR247,PR19,PR109,PR113,PR115,PR116,PR117,PR118,PR107,PR125,PR127,PR132,PR135,PR137,PR254,PR79,PR260,PR292,PR119	2003.07.16	
5	adjust Vin detector	34	change PR170 from 73.2K_0603_1% to 22K_0603_1% change PR172 from 40.2K_0603_1% to 36K_0603_1% change PR167 from 84.5K_0603_1% to 82.5K_0603_1%	2003.07.21	
6	adjust PACIN voltage from 3.3V to 3.2V	34	change PR168 from 8.2K_0805_5% to 10K_0805_1%	2003.9.01	
7	EMI test failure	40	change PR105 and PR140 from 0_0603_5% to 2.2_0603_5%	2003.9.01	

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 IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Compal Electronics, Inc.			
Title			
SCHEMATIC, M/B LA-1991			
Size	Document Number		Rev
B	401266		
Date:	星期五, 九月 05, 2003		Sheet 45 of 45