Compal Confidential

Fortworth Banias
EAL20 LA-2461 Schematic

uFC-PGA Dothan / Montara-GM+
M11P-128M VRAM / ICH4-M

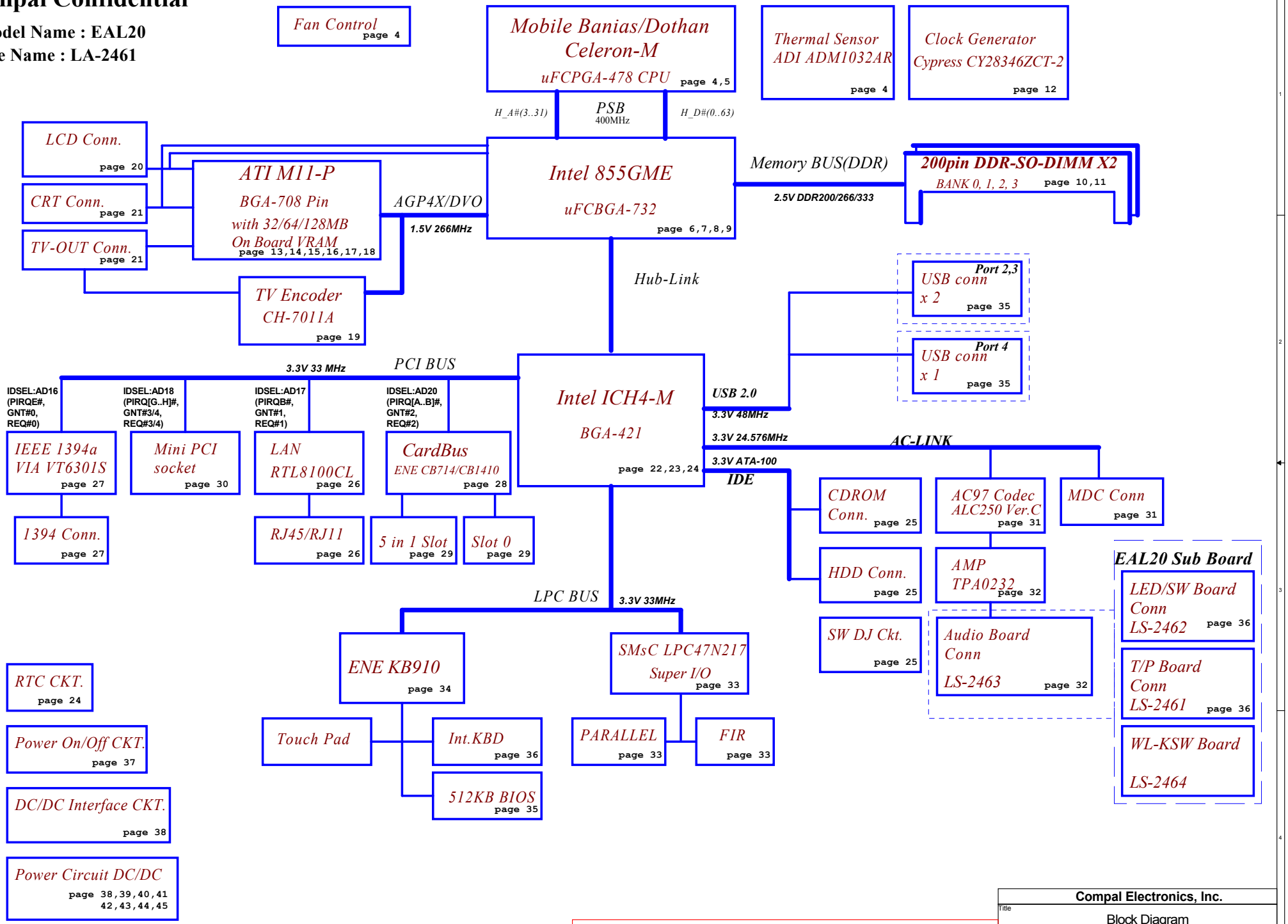
2004-07-21

REV: 0.3

Compal Electronics, Inc.		
Title: Cover Sheet		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 1 of 47	

Compal Confidential

Model Name : EAL20
File Name : LA-2461



Compal Electronics, Inc.		
Title	Block Diagram	
Size	Document Number: EAL20 LA-2461	Rev 0.3
Date: 星期三, 八月 04, 2004	Sheet 2 of 47	

Voltage Rails

Power Plane	Description	S0-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
+VCCP	1.05V rail for Processor I/O	ON	OFF	OFF
+1.25VS	1.25V switched power rail for DDR Vtt	ON	OFF	OFF
+VGA_CORE	1.2V/1.0V switched power rail for VGA core power	ON	OFF	OFF
+1.35VS	1.35V switched power rail for GMCH 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 system DDR	ON	ON	OFF
+2.5VS	2.5V power rail for VGA DDR	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3.3V switched 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.

ICH4-M 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

KB910 I2C / SMBUS ADDRESSING

DEVICE	HEX	ADDRESS
SM1 24C16	A0H	1 0 1 0 0 0 0 X b
SM1 SMART BATTERY	16H	0 0 0 1 0 1 1 X b
SM2 ADM0132 CPU THERMAL MONITOR	98H	1 0 0 1 1 0 0 X b
SM2 ALC250 AUDIO CODEC	00H	0 0 0 0 0 0 0 X b

External PCI Devices

DEVICE	PCI Device ID	IDSEL #	REQ/GNT #	PIRQ
1394	D0	AD16	0	E
LAN	D1	AD17	1	F
CARD BUS	D4	AD20	2	A
5IN1	D4	AD20	2	B
Mini-PCI	D2	AD18	3,4	G,H
AGP BUS	N/A	AGP_DEVSEL#	N/A	A

Symbol note:

:means digital ground.

:means analog ground.

@ :means reserved.

Fortworth Banias Comparison Table

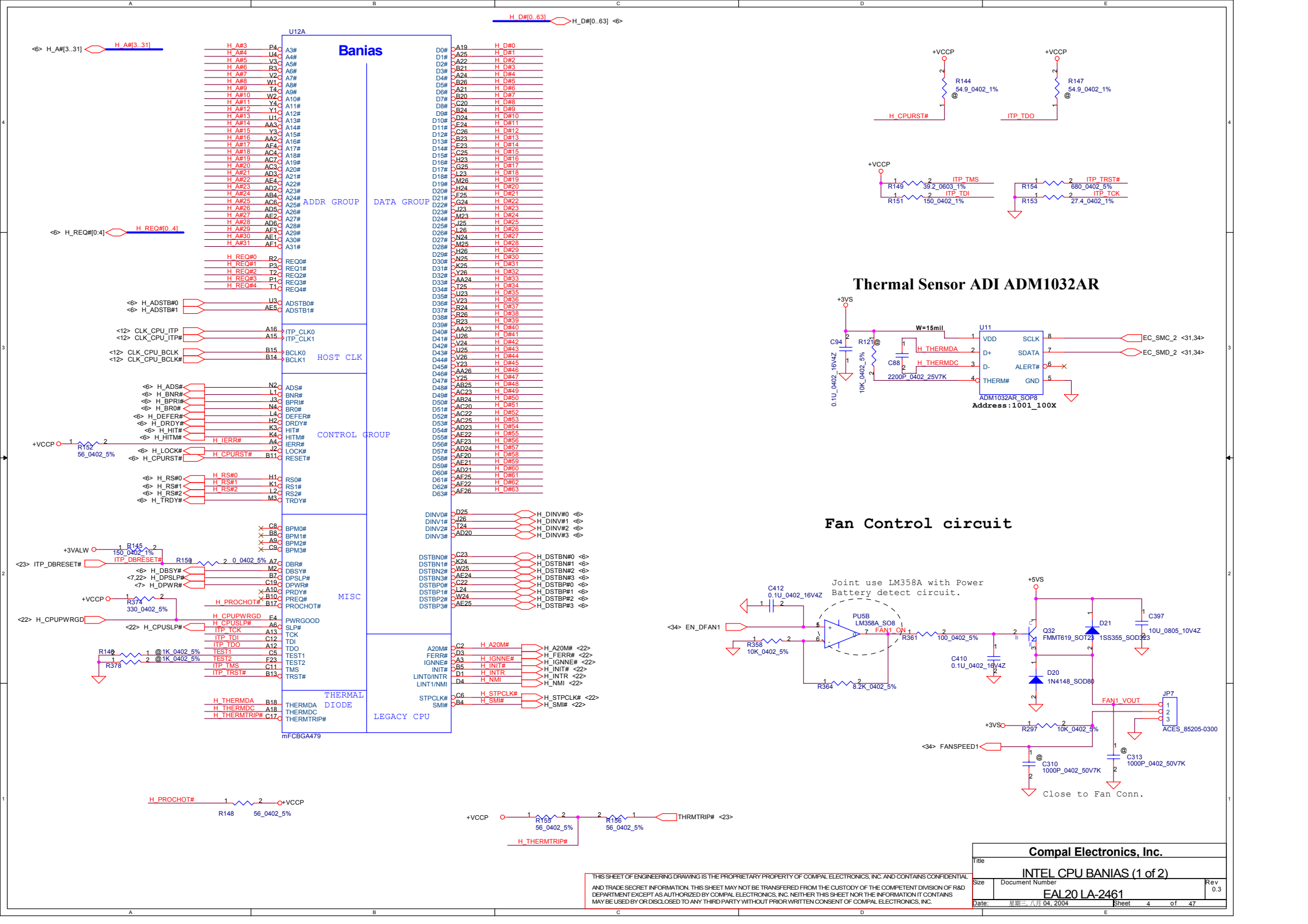
Item	* Descrite	UMA	Page
VGA	ATI M11P	UMA	13 ~ 16
VRAM	128MB/64MB	N/A	13 ~ 14
TV Encoder	N/A	CH7011A	19

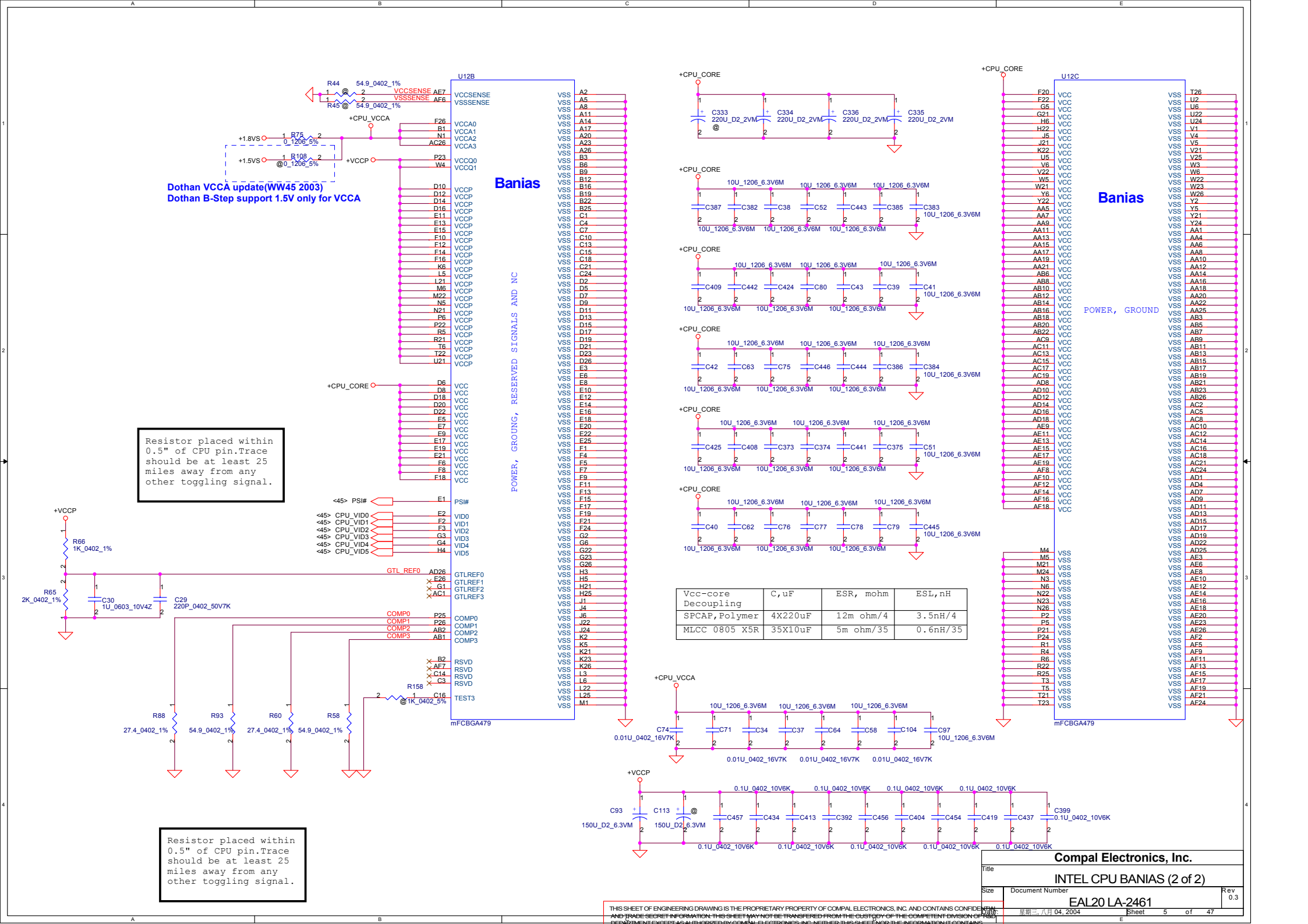
Board ID Table for AD channel

Vcc	3.3V +/- 5%
Ra	10K +/- 5%

BID/PID	Rb/Rc	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_BID} max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	1.412 V	1.486 V	1.560 V
2	18K +/- 5%	2.015 V	2.121 V	2.227 V
3	33K +/- 5%	2.406 V	2.533 V	2.659 V
4	56K +/- 5%	2.660 V	2.800 V	2.940 V
5	NC	3.135 V	3.300 V	3.465 V

Board ID	PCB Revision
* 0	0.1
1	0.2
2	0.3
3	0.4
4	0.5
5	
6	
7	

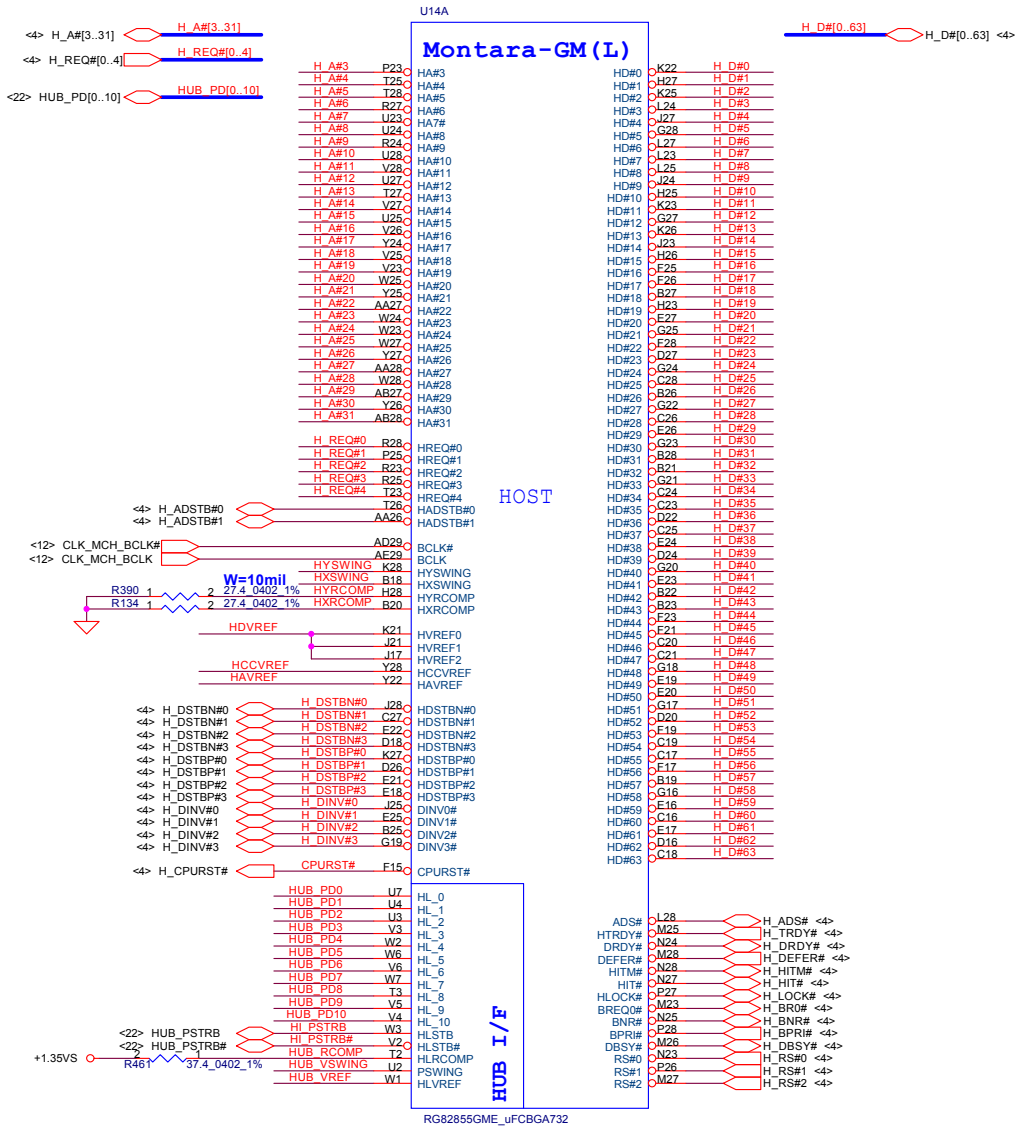

Banias
U12A
ADDR GROUP
DATA GROUP
HOST CLK
CONTROL GROUP
MISC
THERMAL DIODE
LEGACY CPU
mFCBGA479
H_D#[0..63]
H_A#[3..31]
H_REQ#[0..4]
Thermal Sensor ADI ADM1032AR
ADM1032AR_SOP8
Address:1001_100X
Fan Control circuit
Joint use LM358A with Power Battery detect circuit.
Close to Fan Conn.
ACES_85205-0300
Compal Electronics, Inc.
INTEL CPU BANIAS (1 of 2)
EAL20 LA-2461
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 TRANSFERED 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.



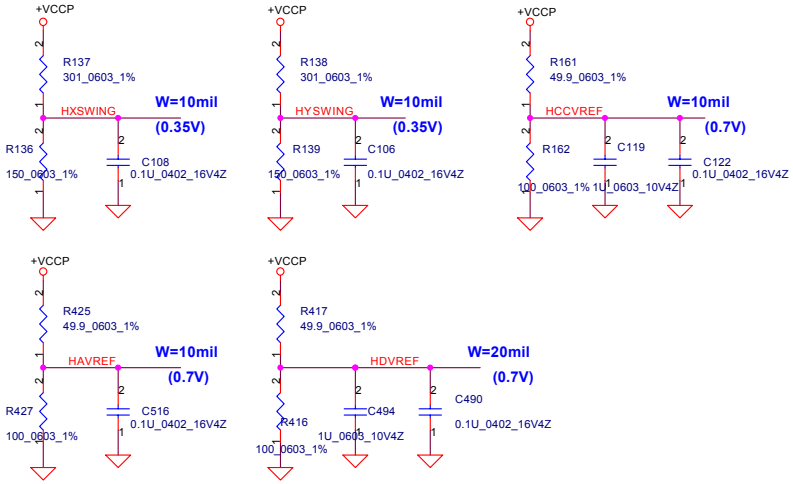
Vcc-core Decoupling	C,uF	ESR, mohm	ESL,nH
SPCAP,Polymer	4X220uF	12m ohm/4	3.5nH/4
MLCC 0805 X5R	35X10uF	5m ohm/35	0.6nH/35

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 TRANSFERED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS

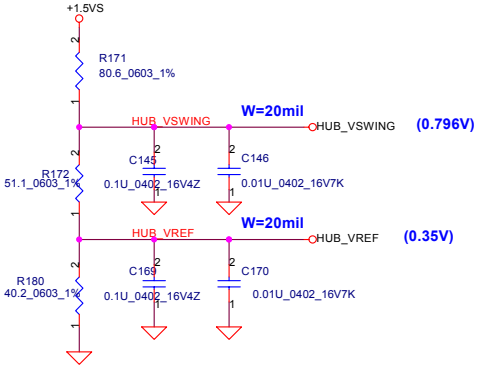
Compal Electronics, Inc.		
Title: INTEL CPU BANIAS (2 of 2)		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 5 of 47	



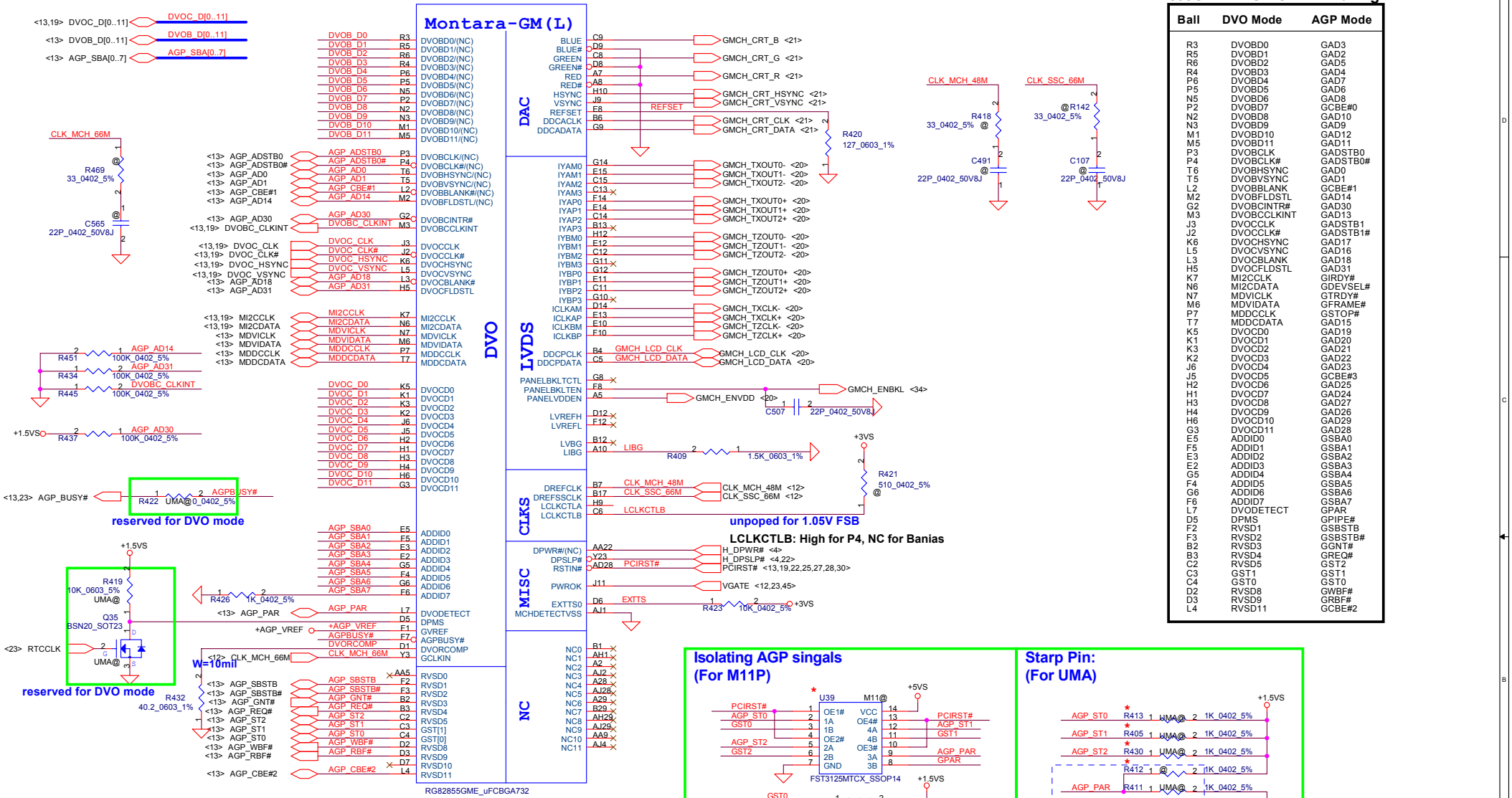
HOST REF VOLTAGE

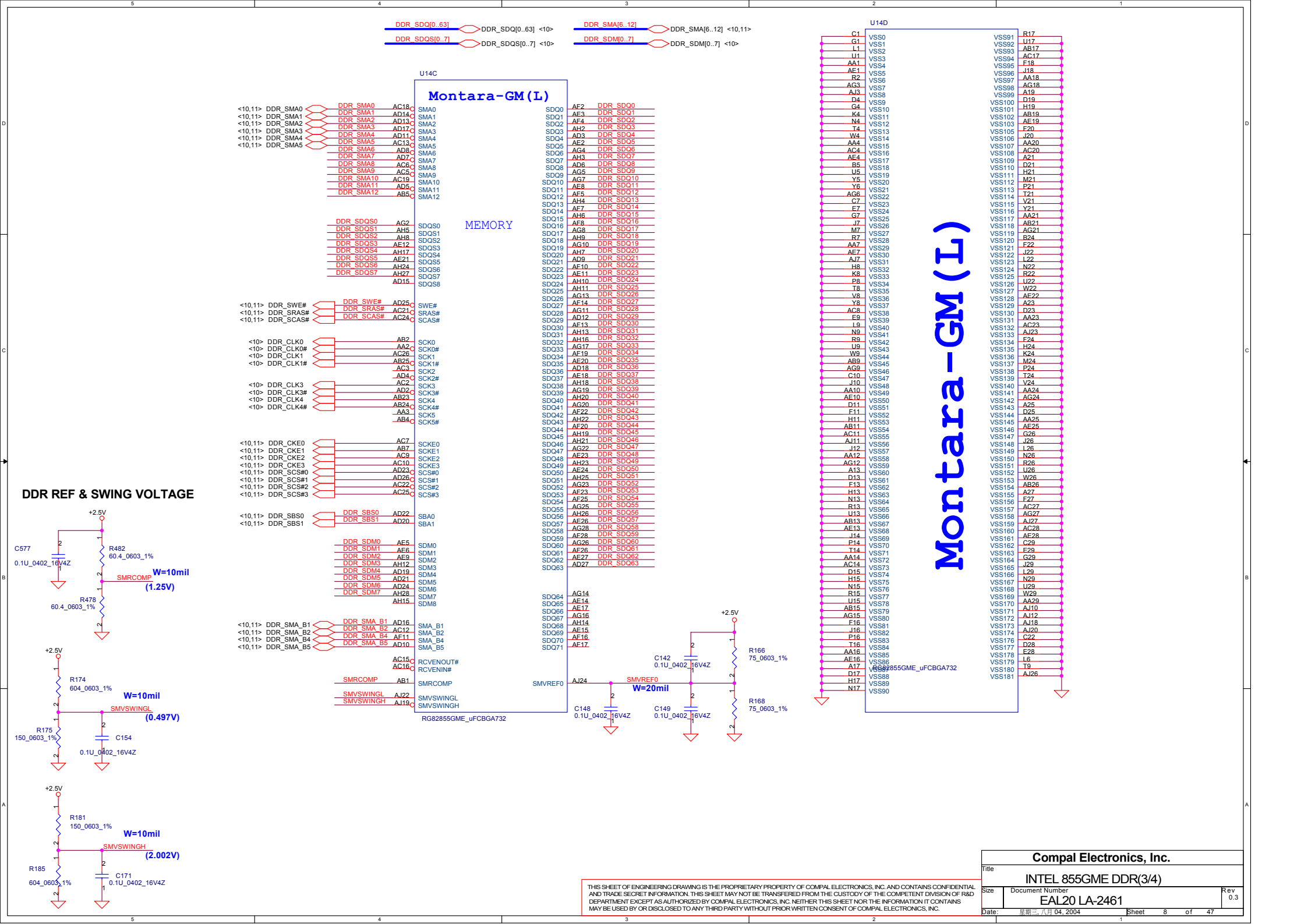


HUB I/F REF VOLTAGE

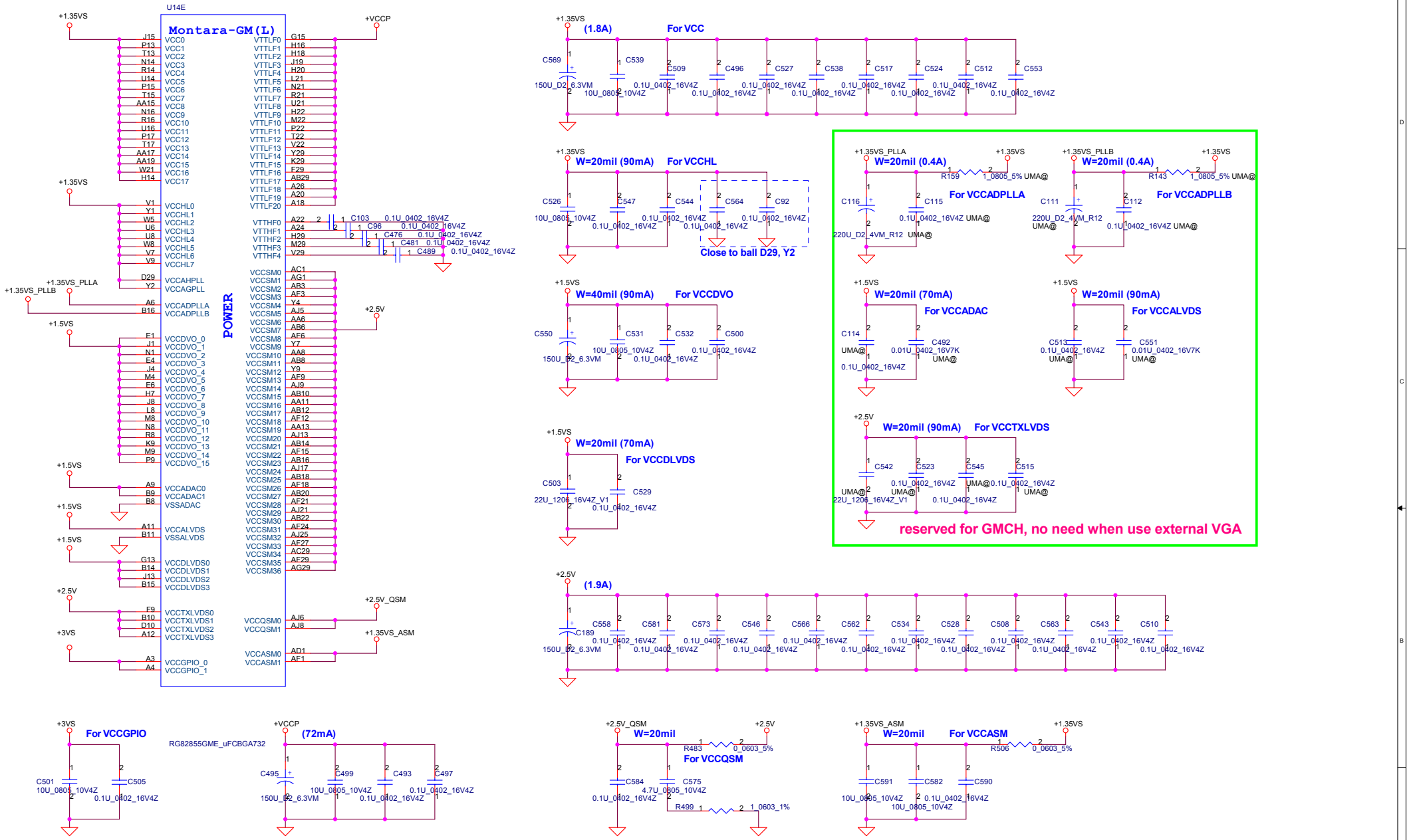


Compal Electronics, Inc.		
Title: INTEL 855GME-HOST(1/4)		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 6 of 47	

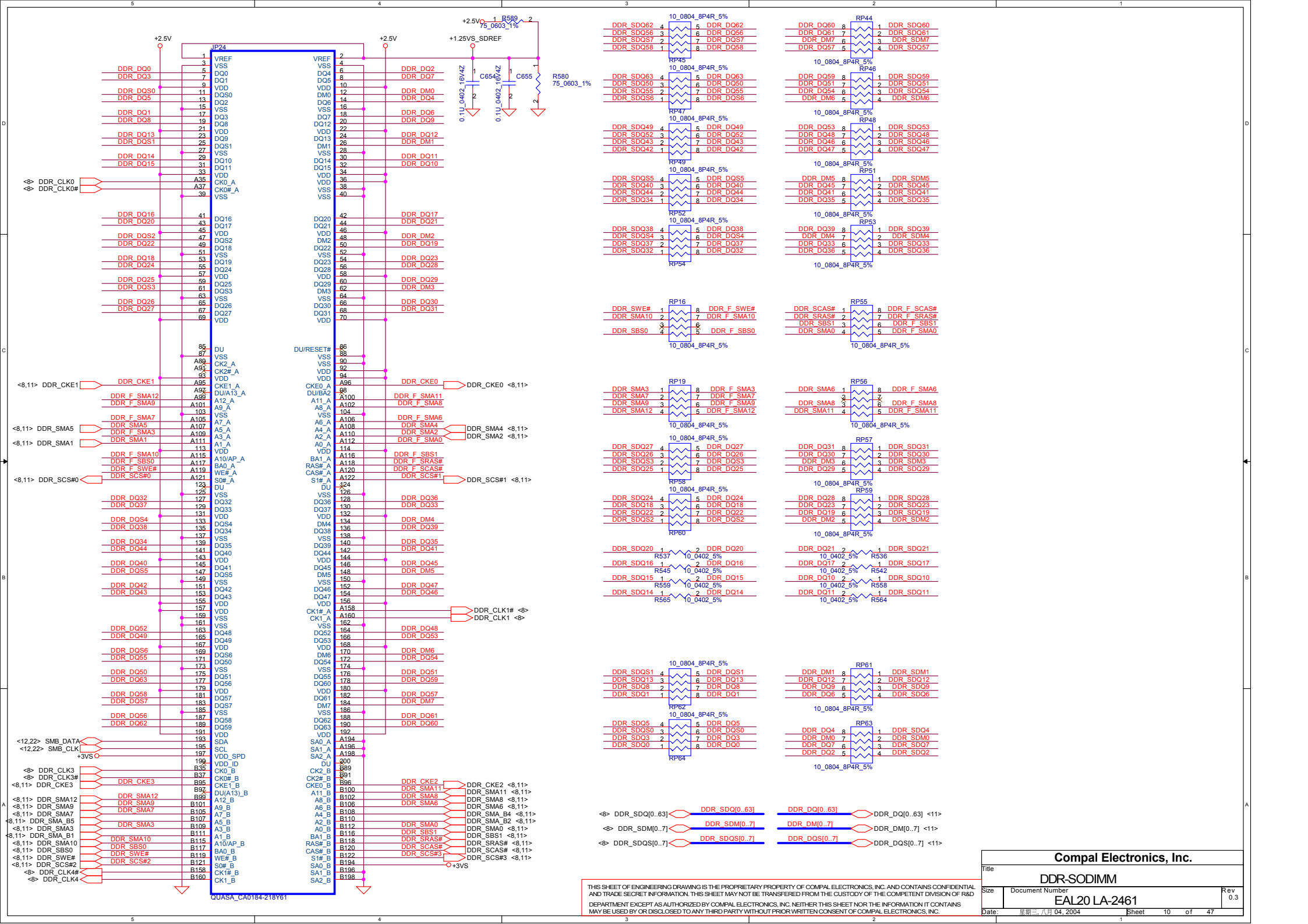




Compal Electronics, Inc.	
Title	INTEL 855GME DDR(3/4)
Size	Document Number: EAL20 LA-2461
Rev	0.3
Date:	星期三, 八月 04, 2004
Sheet	8 of 47



Compal Electronics, Inc.	
Title	INTEL 855GME GMCH(4/4)
Size	Document Number: EAL20 LA-2461
Rev	0.3
Date: 星期三, 八月 04, 2004	Sheet 9 of 47



Compal Electronics, Inc.	
Title	DDR-SODIMM
Size	Document Number: EAL20 LA-2461
Rev	0.3
Date:	星期三, 八月 04, 2004
Sheet	10 of 47

Layout note :

Distribute as close as possible to DDR-SODIMM.

+2.5V

C608 0.1U_0402_16V4Z
C633 0.1U_0402_16V4Z
C634 0.1U_0402_16V4Z
C570 0.1U_0402_16V4Z
C519 0.1U_0402_16V4Z
C502 0.1U_0402_16V4Z
C557 0.1U_0402_16V4Z
C574 0.1U_0402_16V4Z
C572 0.1U_0402_16V4Z

+2.5V

C593 0.1U_0402_16V4Z
C556 0.1U_0402_16V4Z
C594 0.1U_0402_16V4Z
C607 0.1U_0402_16V4Z

+2.5V

C118 150U_D2_6.3VM
C215 150U_D2_6.3VM

Layout note :

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

+1.25VS

C185 C202 C144 C141 C136 C200 C199 0.1U_0402_16V4Z
C175 0.1U_0402_16V4Z

+1.25VS

C131 C157 C182 C128 C203 C201 C208 0.1U_0402_16V4Z
C220 0.1U_0402_16V4Z

+1.25VS

C213 C133 C198 C173 C223 C127 C155 0.1U_0402_16V4Z
C140 0.1U_0402_16V4Z

+1.25VS

C186 C219 C143 C137 C165 C120 C166 0.1U_0402_16V4Z
C225 0.1U_0402_16V4Z

+1.25VS

C150 C207 C178 C159 C123 C124 C121 0.1U_0402_16V4Z
C134 0.1U_0402_16V4Z

+1.25VS

C227 C230 C224 0.1U_0402_16V4Z
C228 0.1U_0402_16V4Z

+1.25VS

RP5: DDR_DQ62 DDR_DQ56 DDR_DQS7 DDR_DQ58 / DDR_DQ60 DDR_DQ61 DDR_DM7 DDR_DQ57
RP4: DDR_DQ63 DDR_DQ50 DDR_DQ55 DDR_DQS6 / DDR_DQ59 DDR_DQ51 DDR_DQ54 DDR_DM6
RP7: DDR_DQ49 DDR_DQ52 DDR_DQ43 DDR_DQ42 / DDR_DQ53 DDR_DQ48 DDR_DQ46 DDR_DQ47
RP6: DDR_DQS5 DDR_DQ40 DDR_DQ44 DDR_DQ34 / DDR_DM5 DDR_DQ45 DDR_DQ41 DDR_DQ35
RP9: DDR_DQ38 DDR_DQS4 DDR_DQ37 DDR_DQ32 / DDR_DQ39 DDR_DM4 DDR_DQ33 DDR_DQ36
RP8: DDR_DQ27 DDR_DQ26 DDR_DQS3 DDR_DQ25 / DDR_DQ31 DDR_DQ30 DDR_DM3 DDR_DQ29
RP11: DDR_DQ24 DDR_DQ18 DDR_DQ22 DDR_DQS2 / DDR_DQ28 DDR_DQ23 DDR_DQ19 DDR_DM2
RP10: DDR_DQS1 DDR_DQ13 DDR_DQ8 DDR_DQ1 / DDR_DM1 DDR_DQ12 DDR_DQ9 DDR_DQ6
RP13: DDR_DQ5 DDR_DQS0 DDR_DQ3 DDR_DQ0 / DDR_DQ4 DDR_DM0 DDR_DQ7 DDR_DQ2
RP12: DDR_DQ20 DDR_DQ16 DDR_DQ15 DDR_DQ14 / DDR_DQ21 DDR_DQ17 DDR_DQ10 DDR_DQ11
RP24: DDR_DQS1 DDR_DQ13 DDR_DQ8 DDR_DQ1 / DDR_DM1 DDR_DQ12 DDR_DQ9 DDR_DQ6
RP23: DDR_DQ5 DDR_DQS0 DDR_DQ3 DDR_DQ0 / DDR_DQ4 DDR_DM0 DDR_DQ7 DDR_DQ2
RP26: DDR_DQ20 DDR_DQ16 DDR_DQ15 DDR_DQ14 / DDR_DQ21 DDR_DQ17 DDR_DQ10 DDR_DQ11
RP25: DDR_DQS1 DDR_DQ13 DDR_DQ8 DDR_DQ1 / DDR_DM1 DDR_DQ12 DDR_DQ9 DDR_DQ6
RP28: DDR_DQ5 DDR_DQS0 DDR_DQ3 DDR_DQ0 / DDR_DQ4 DDR_DM0 DDR_DQ7 DDR_DQ2
RP27: DDR_DQ27 DDR_DQ26 DDR_DQS3 DDR_DQ25 / DDR_DQ31 DDR_DQ30 DDR_DM3 DDR_DQ29
RP30: DDR_DQ62 DDR_DQ56 DDR_DQS7 DDR_DQ58 / DDR_DQ60 DDR_DQ61 DDR_DM7 DDR_DQ57
RP29: DDR_DQ63 DDR_DQ50 DDR_DQ55 DDR_DQS6 / DDR_DQ59 DDR_DQ51 DDR_DQ54 DDR_DM6

56_0804_8P4R_5%

DDR_SMA[6..12] → DDR_SMA[6..12] <8,10>
DDR_DQ[0..63] → DDR_DQ[0..63] <10>
DDR_DQS[0..7] → DDR_DQS[0..7] <10>
DDR_DM[0..7] → DDR_DM[0..7] <10>

<8,10> DDR_SCS#2 — R173 — DDR_SCS#2
DDR_SCS#1 — R169 — DDR_SCS#1 <8,10>
56_0402_5%

RP15: <8,10> DDR_SWE# → DDR_SWE#; DDR_SMA10; <8,10> DDR_SBS0 → DDR_SBS0; <8,10> DDR_SMA_B1 → DDR_SMA_B1
RP14: DDR_SCS#0 <8,10>; DDR_SCAS# <8,10>; DDR_SCS#3 <8,10>; DDR_SRAS# <8,10>

RP18: <8,10> DDR_SMA3 → DDR_SMA3; <8,10> DDR_SMA_B5 → DDR_SMA_B5; DDR_SMA7; DDR_SMA9
RP17: DDR_SBS1 <8,10>; DDR_SMA1 <8,10>; DDR_SMA0 <8,10>; DDR_SMA2 <8,10>

RP21: DDR_SMA12; <8,10> DDR_CKE3 → DDR_CKE3; <8,10> DDR_CKE1 → DDR_CKE1; <8,10> DDR_SMA5 → DDR_SMA5
RP20: DDR_SMA4 <8,10>; DDR_SMA_B4 <8,10>; DDR_SMA6; DDR_SMA_B2 <8,10>
RP22: DDR_SMA8; DDR_SMA11; DDR_CKE0 <8,10>; DDR_CKE2 <8,10>

Compal Electronics, Inc.

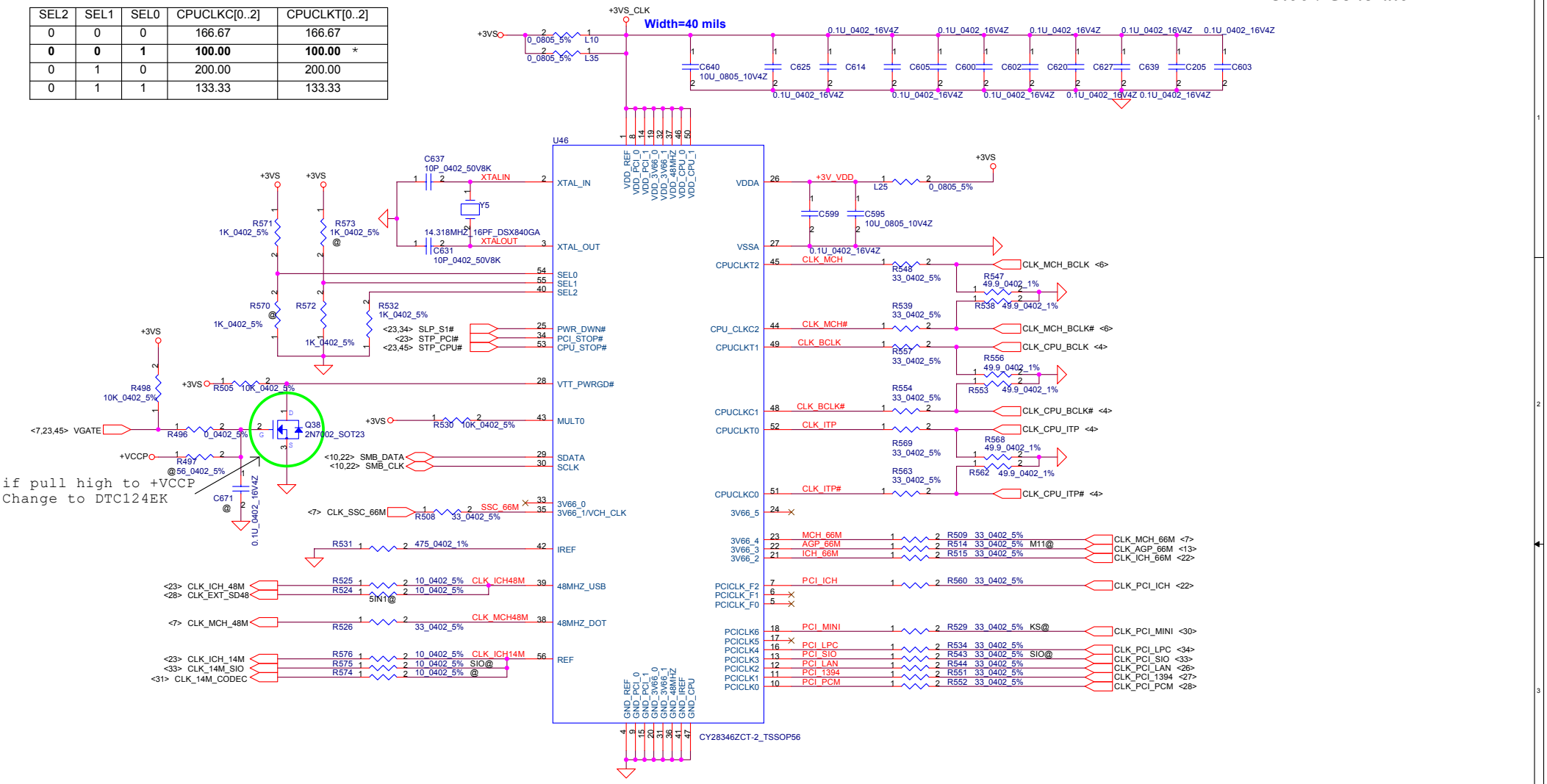
Title: DDR SODIMM Decoupling

Size: | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期三, 八月 04, 2004 | Sheet 11 of 47

Clock Generator

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



Compal Electronics, Inc.

Title: Clock Generator		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 12 of 47	

U7A

M10-P/ (M9+X)
(1/6)

ZV PORT / EXT TMDS / GPIO / ROM

PCI/AGP

AGP8X

LVDS

TMDS

DAC2

SSC

DAC1

CLK

THRM

4M32
Samsung: K4D263238E-GC33
Hynix: HY5DU283222AF-33

8M32
Samsung: K4D553238E-JC33
Hynix: HY5DU573222AFM-33

POWER_SEL
High for 1.0V
* Low for 1.2V

Memory Config.
GPIO10=High, 128MB
GPIO10=Low, 64MB

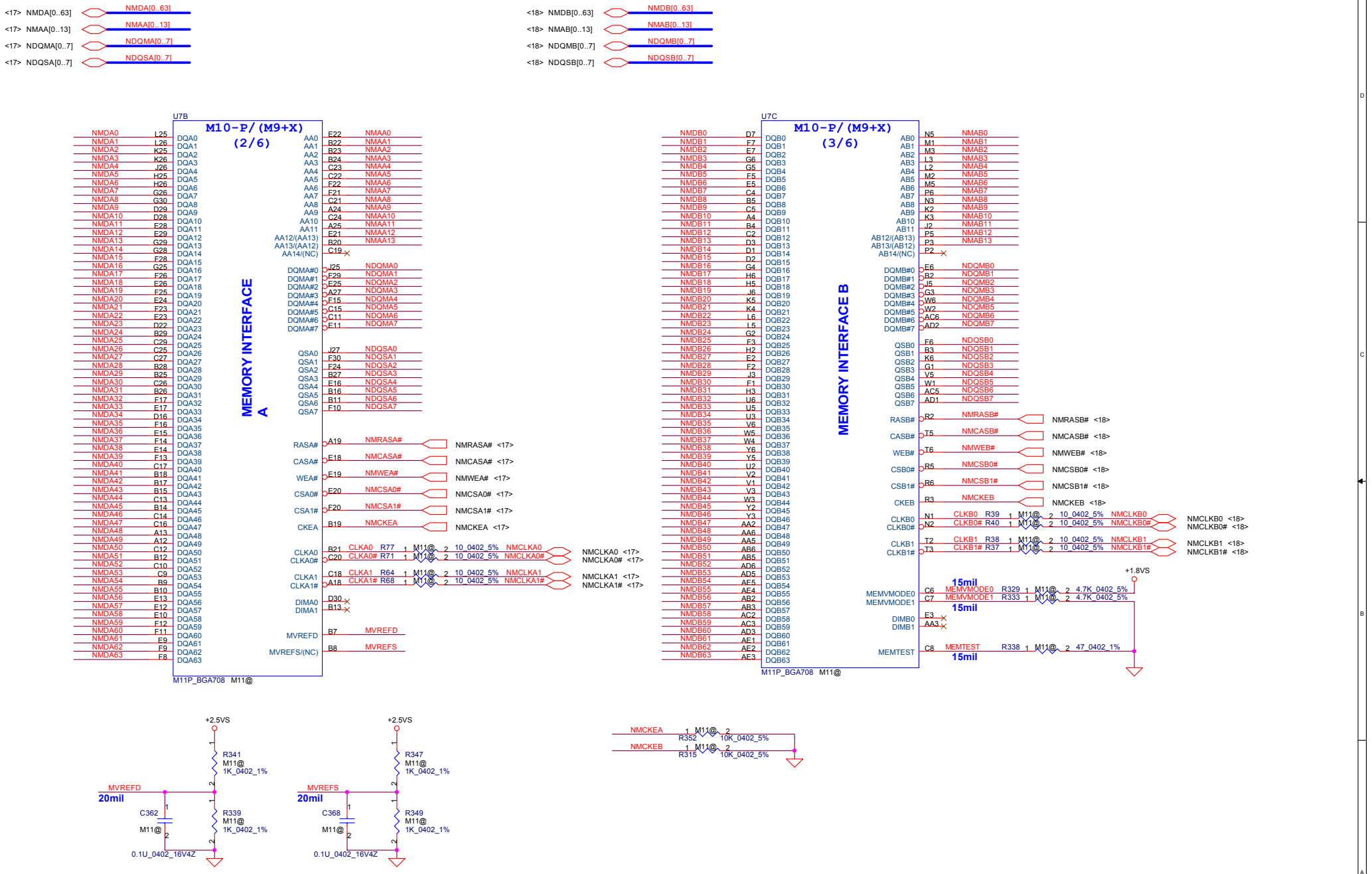
GPIO10	R	S	T	
0	0	0	0	4Mx32 Samsung x4
0	0	1	0	4Mx32 Hynix x4
1	1	0	0	8Mx32 Samsung x4
1	1	1	0	8Mx32 Hynix x4
0	0	0	1	4Mx32 Samsung x2 Ch. A
0	0	1	1	4Mx32 Hynix x2 Ch. A

DDR SPREAD SPECTRUM

Pin3 : Reserved for P1819 Spread Rate selection.

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 TRANSFERED 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: ATI M10-P/M11-AGP/DISPLAY(1/4)
Size: Custom
Document Number: EAL20 LA-2461
Rev: 0.3
Date: 星期三, 八月 04, 2004
Sheet 13 of 47

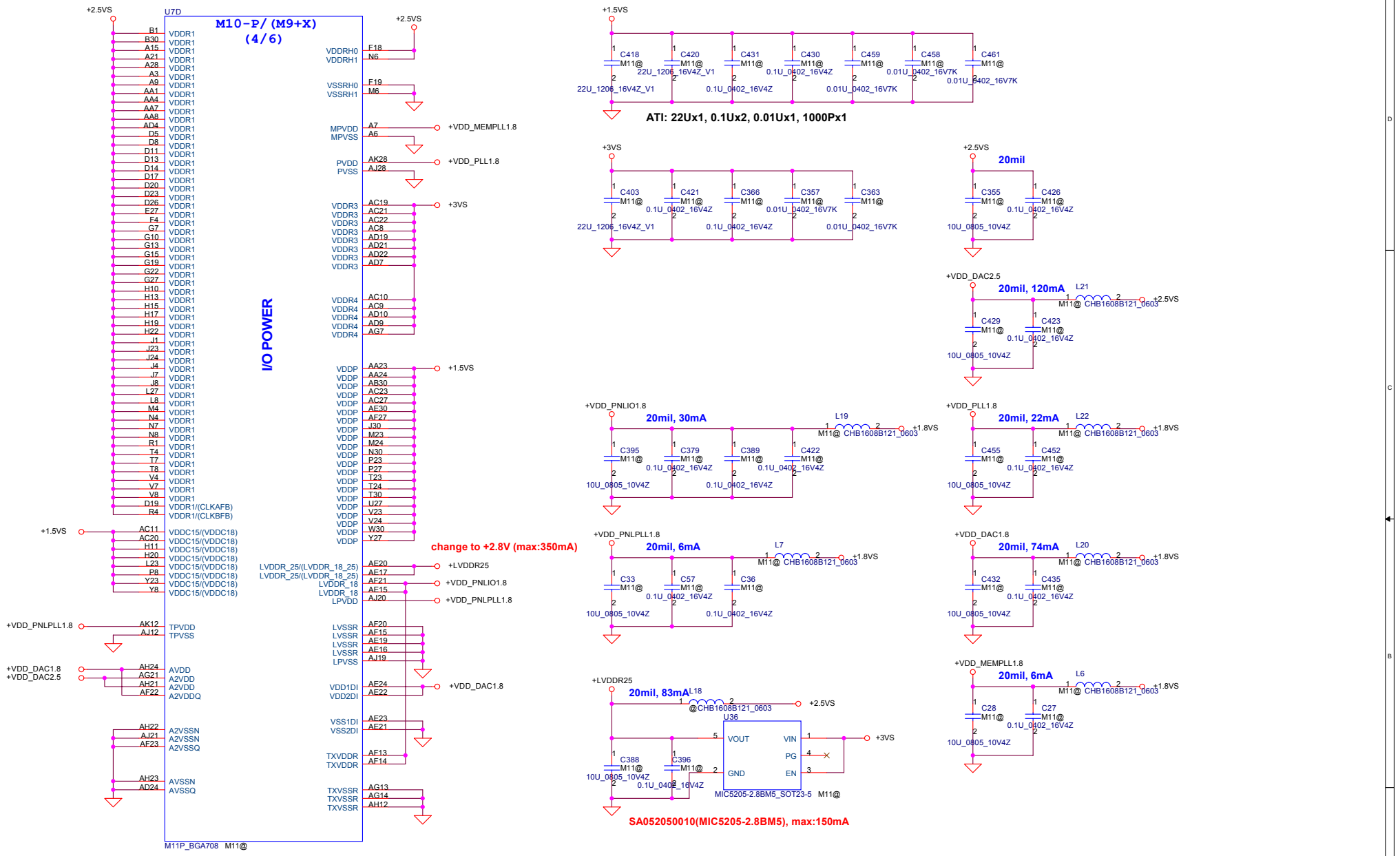


Compal Electronics, Inc.

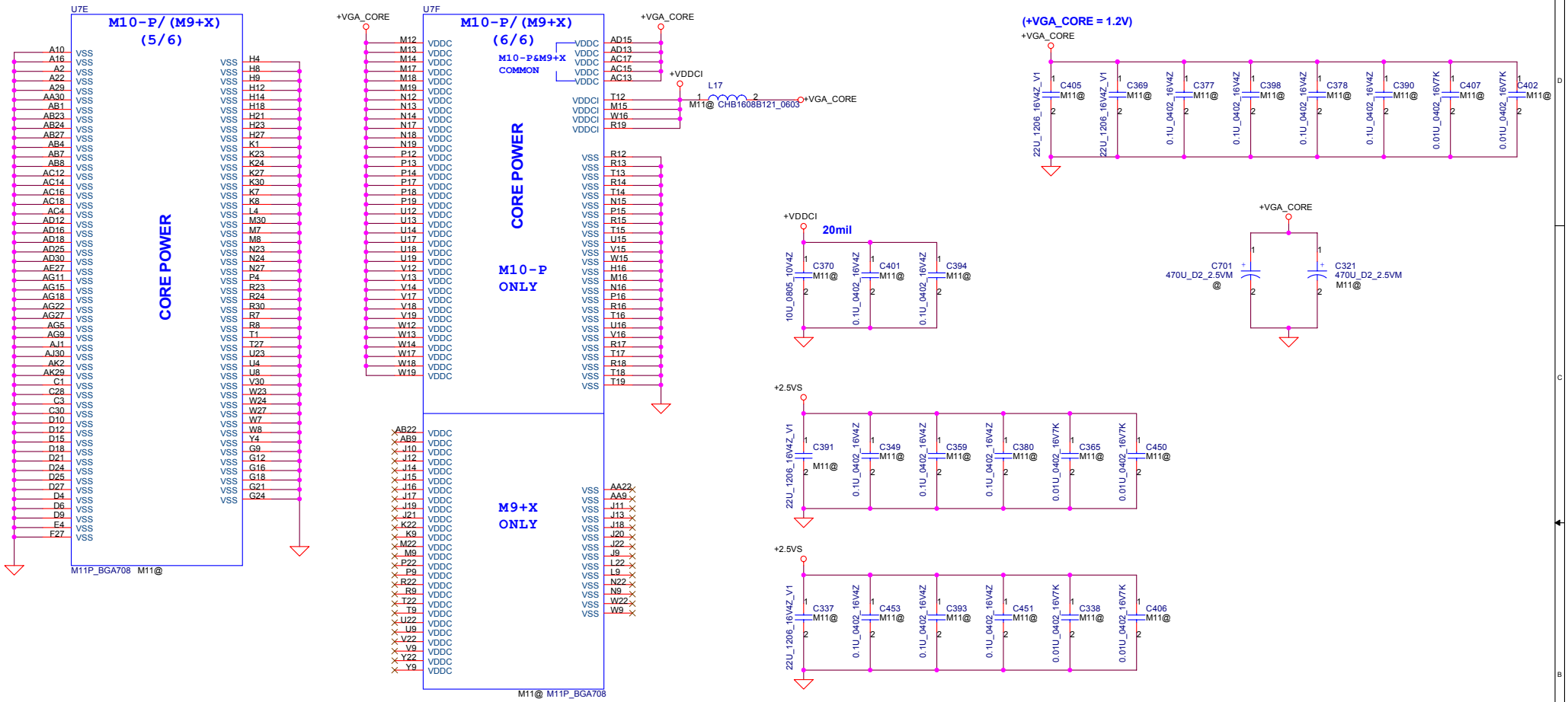
Title: ATI M10-P/M11-MEMORY(2/4)

Size: Custom | Document Number: EAL20 LA-2461 | Rev: 0.3

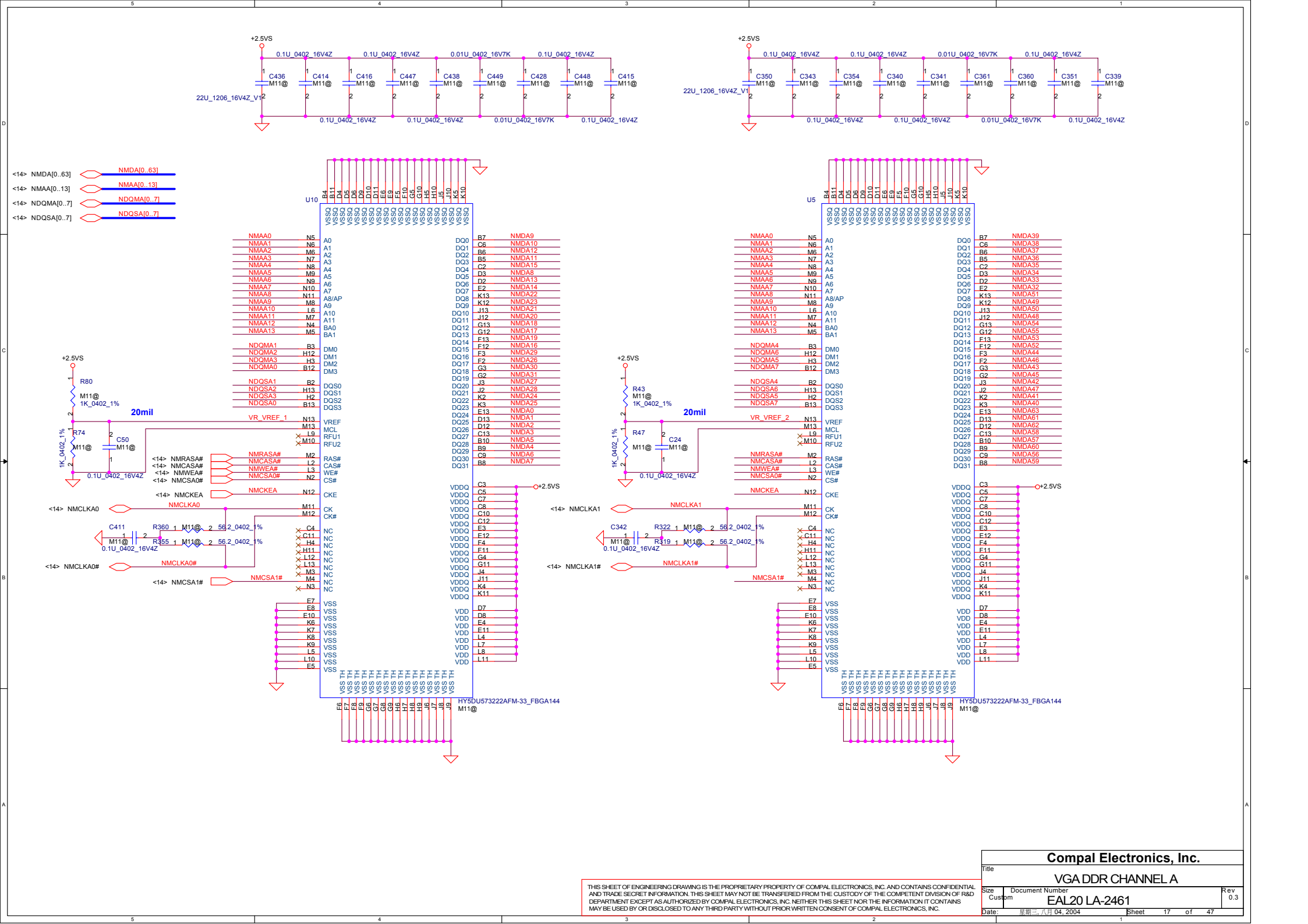
Date: 星期三, 八月 04, 2004 | Sheet 14 of 47



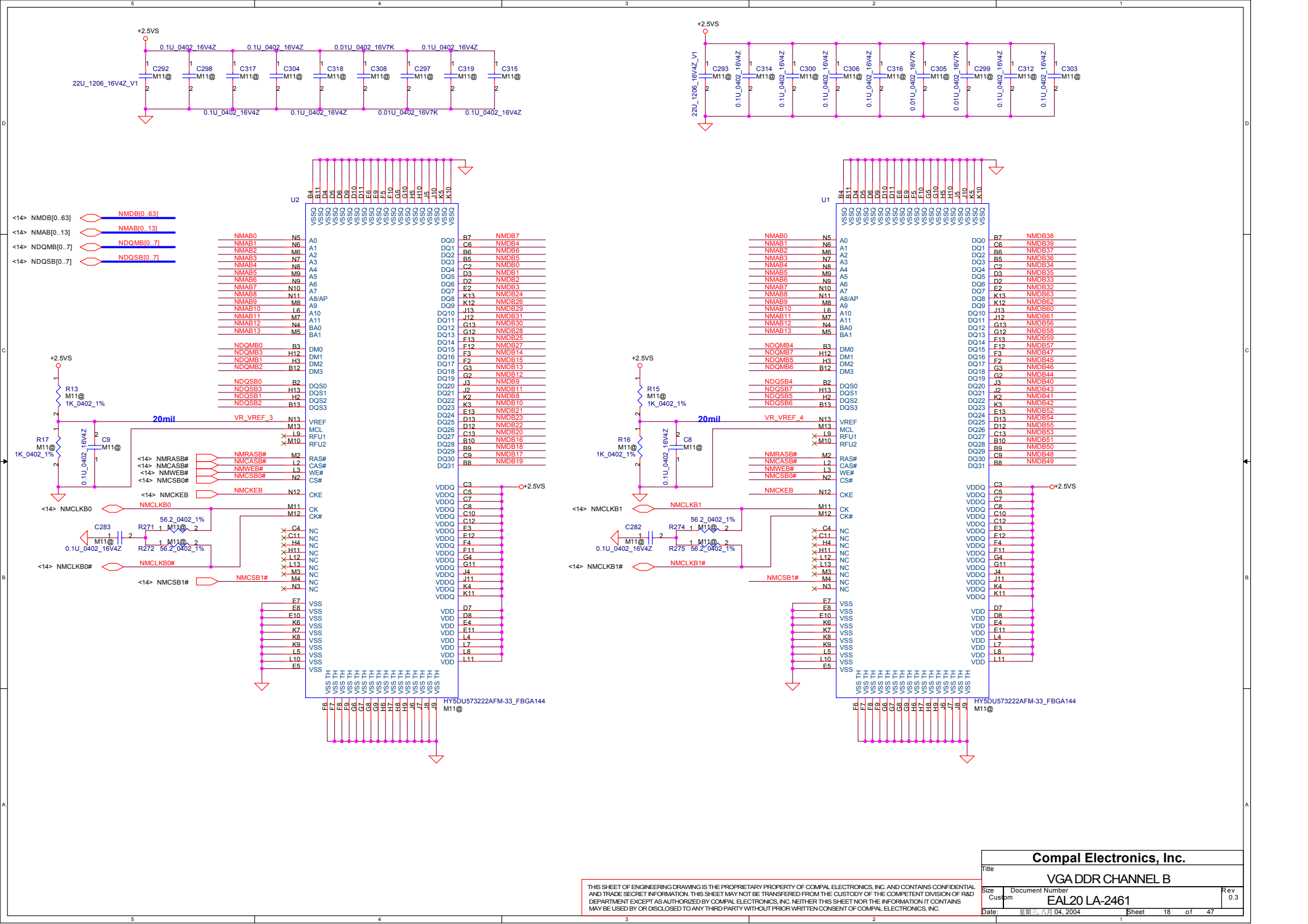
Compal Electronics, Inc.	
Title	ATI M10-P/M11-POWER(3/4)
Size: Custom	Document Number: EAL20 LA-2461
Rev	0.3
Date: 星期三, 八月 04, 2004	Sheet 15 of 47



Compal Electronics, Inc.	
Title	ATI M10-P/M11-POWER/GND(4/4)
Size: Custom	Document Number: EAL20 LA-2461
Rev	0.3
Date: 星期三, 八月 04, 2004	Sheet 16 of 47



Compal Electronics, Inc.		
Title: VGA DDR CHANNEL A		
Size: Custom	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 17 of 47	



Compal Electronics, Inc.

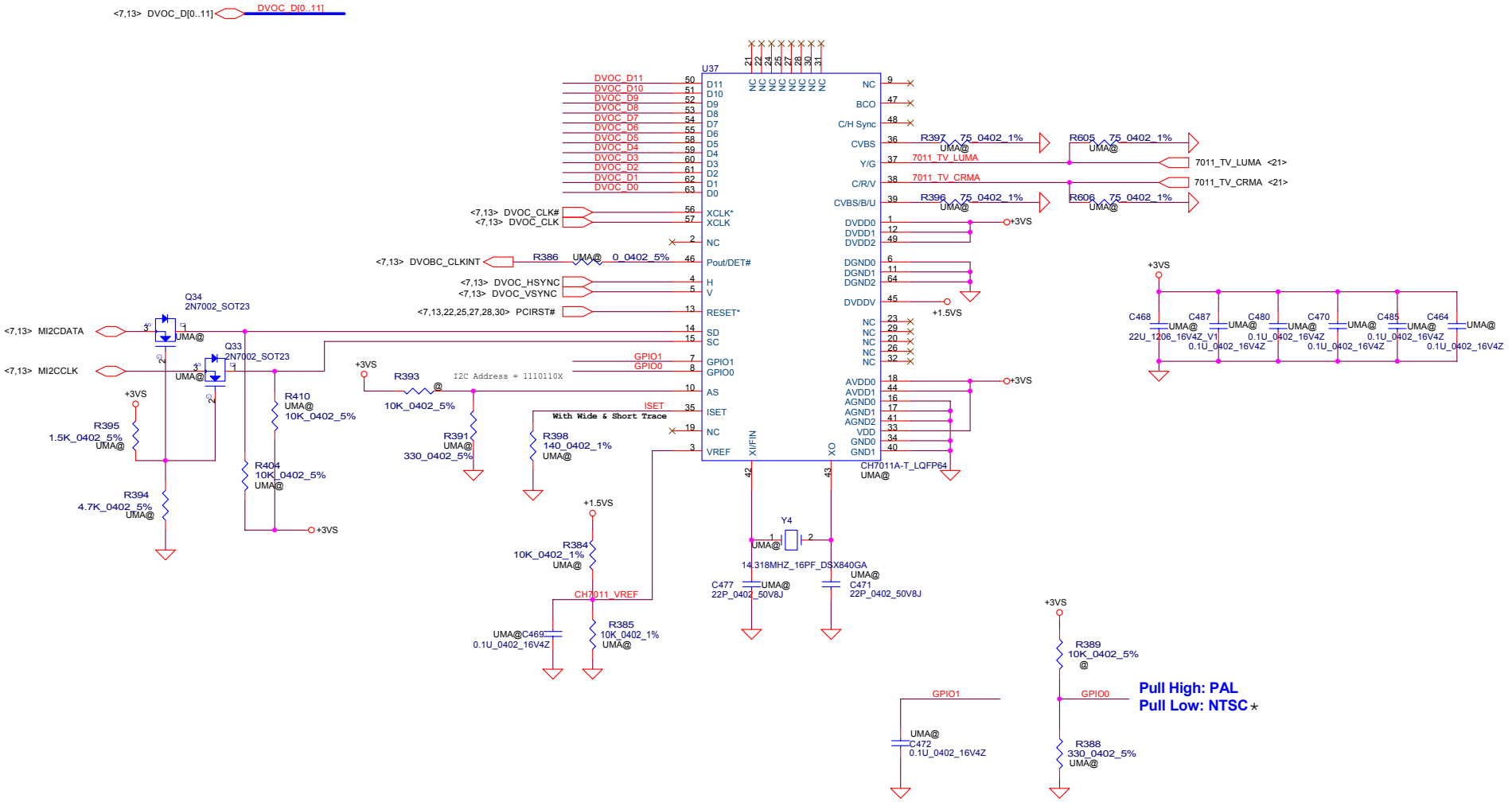
Title: VGA DDR CHANNEL B

Size: Custom | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期三, 八月 04, 2004 | Sheet 18 of 47

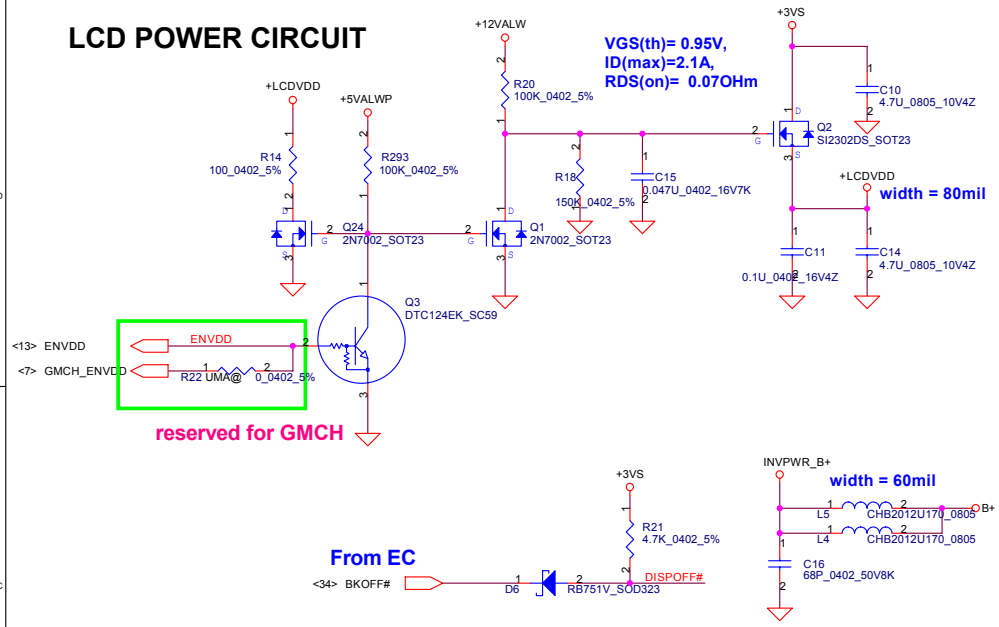
TV Encoder

remove this page when use M11P



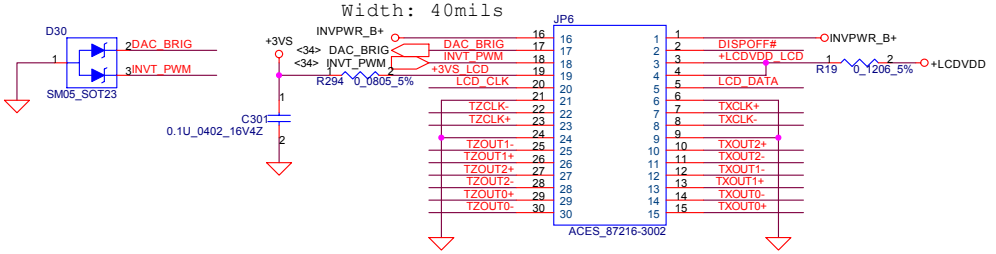
Compal Electronics, Inc.		
Title: TV Encoder CH7011A		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 19 of 47	

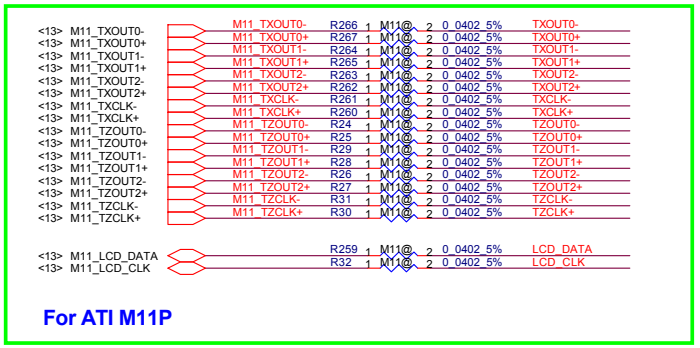
LCD POWER CIRCUIT

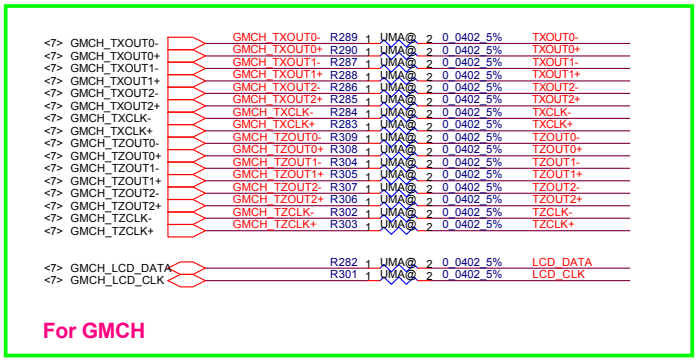


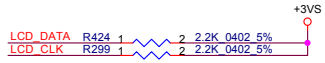
LCD CONN.

Width: 40mils



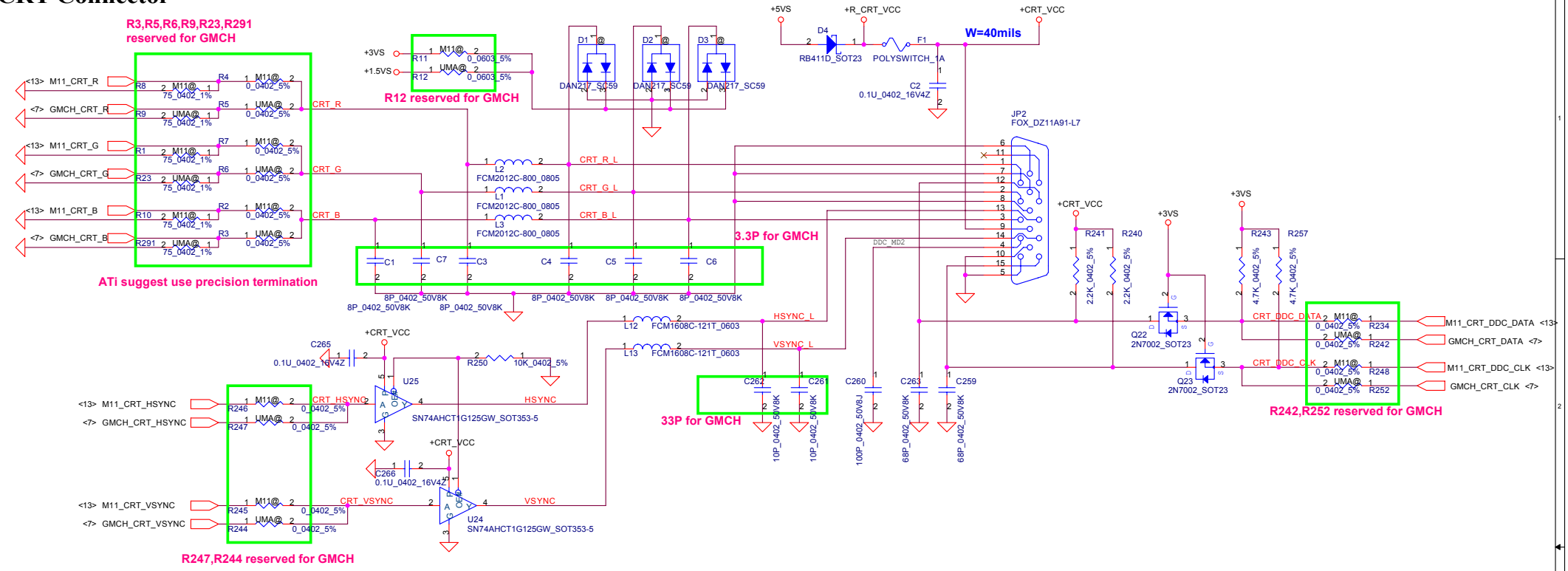




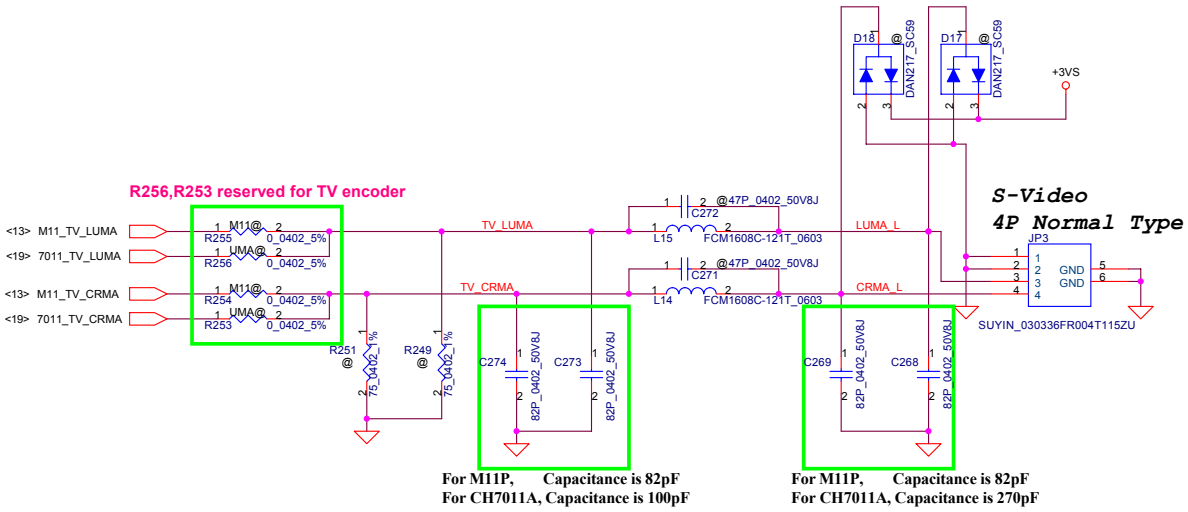


Compal Electronics, Inc.		
Title: LCD CONN		
Size: Custom	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 某期二, 八月 04, 2004	Sheet 20 of 47	

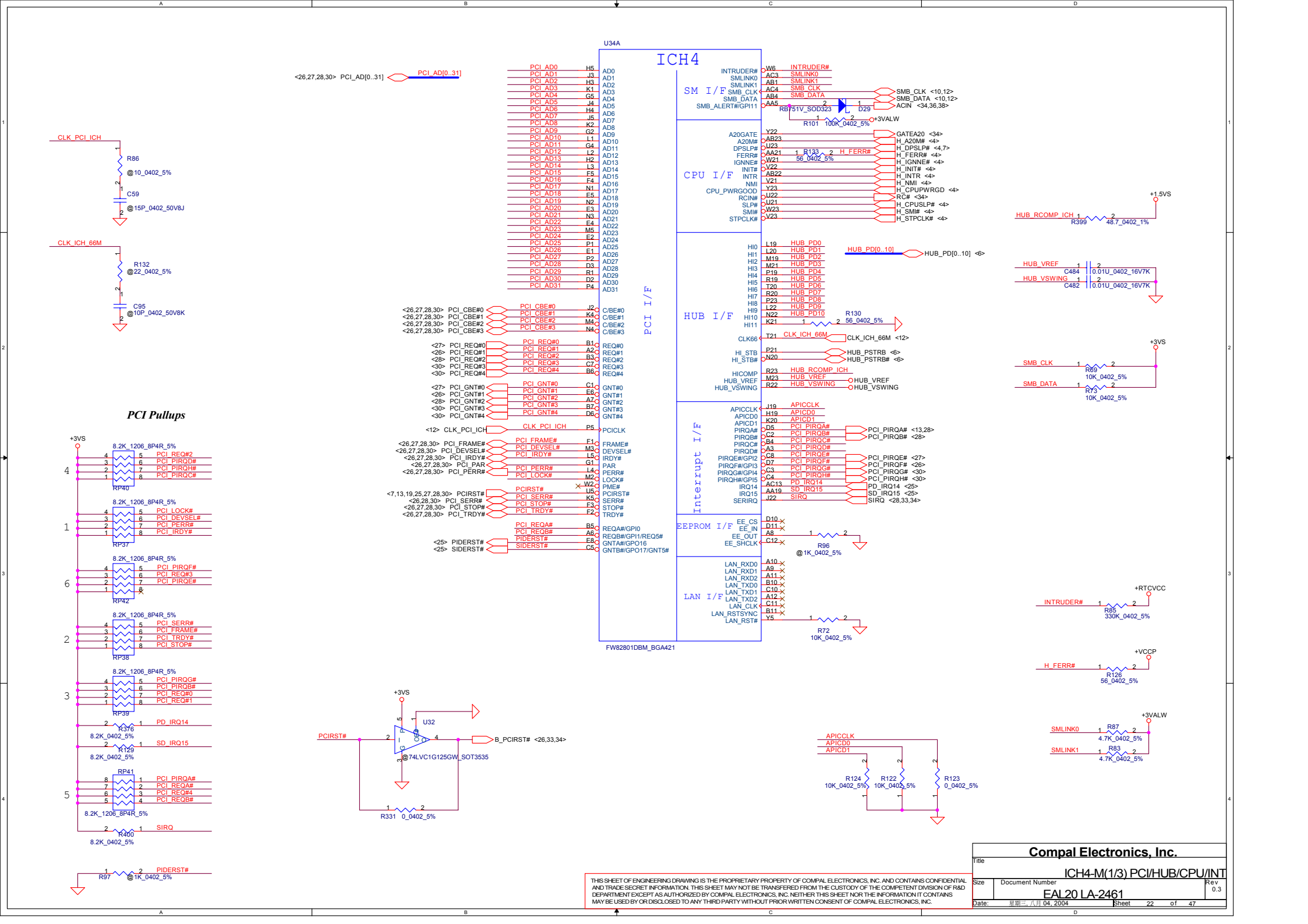
CRT Connector



TV-Out Connector



Compal Electronics, Inc.		
Title: CRT & TV-OUT Connector		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 21 of 47	

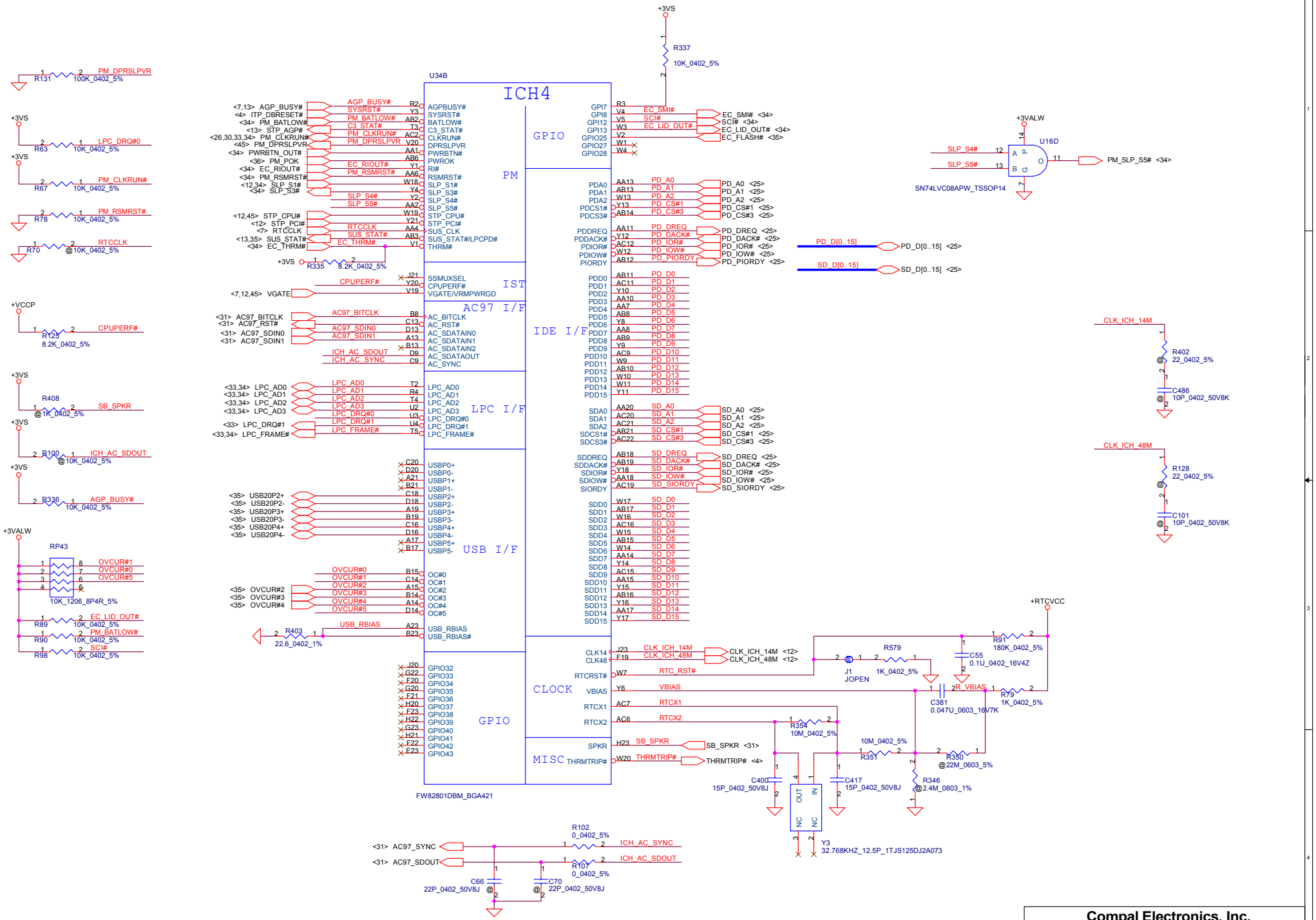


Compal Electronics, Inc.

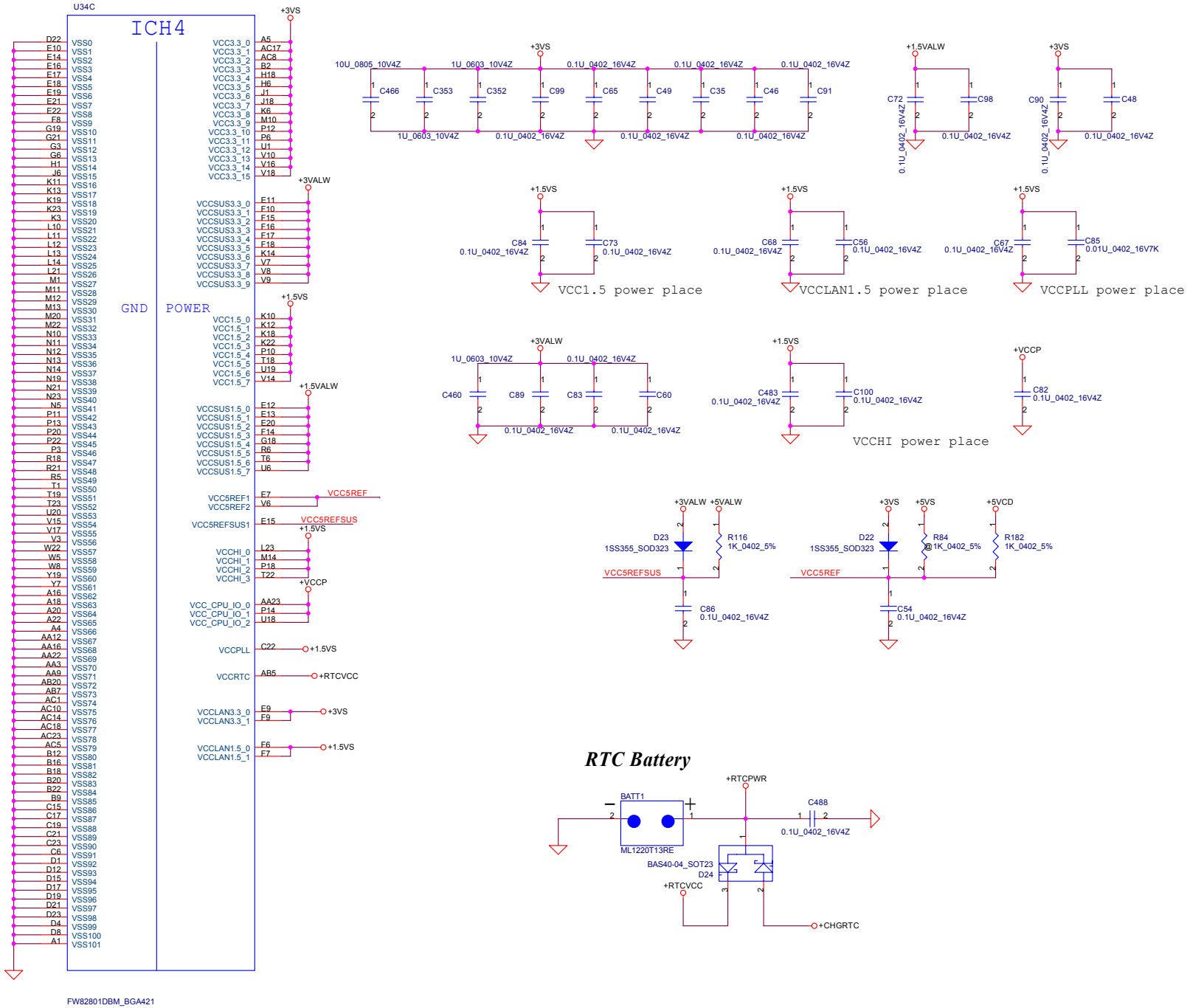
Title: ICH4-M(1/3) PCI/HUB/CPU/INT

Size | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期三, 八月 04, 2004 | Sheet 22 of 47

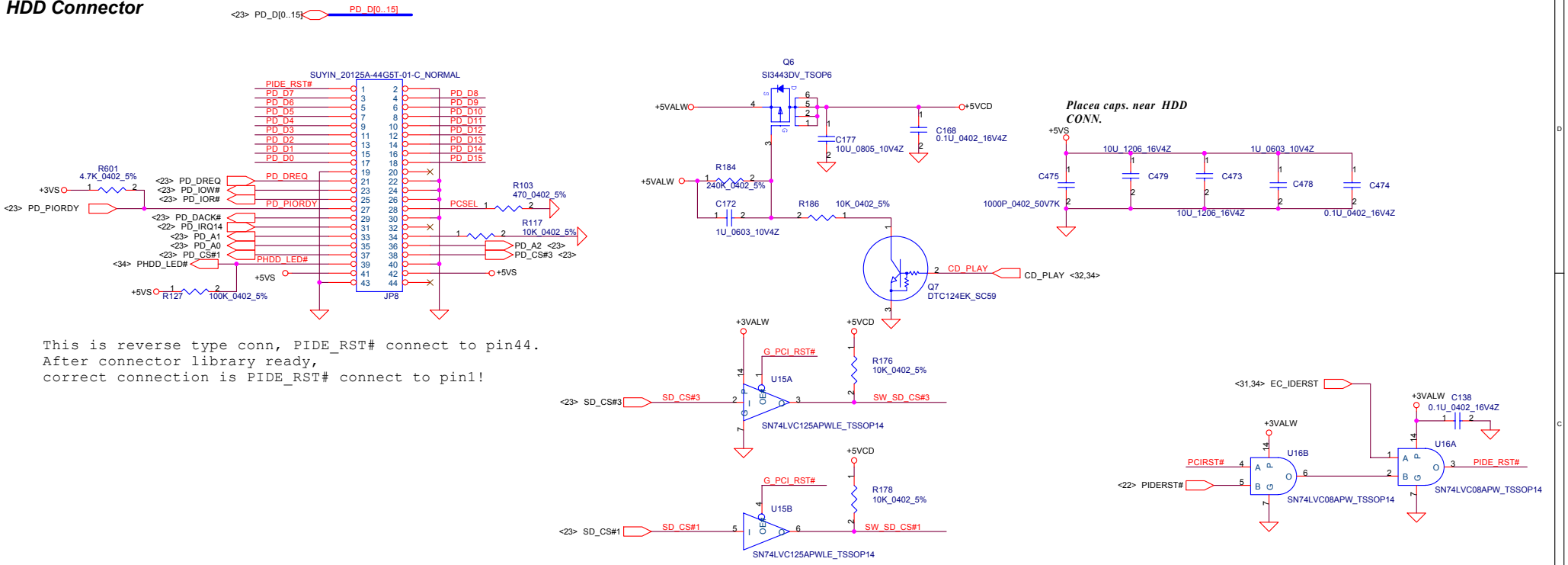


Compal Electronics, Inc.	
Title	ICH4-M(2/3) PM/AC97/USB/IDE
Size	Document Number: EAL20 LA-2461
Rev	0.3
Date:	星期三, 八月 04, 2004
Sheet	23 of 47



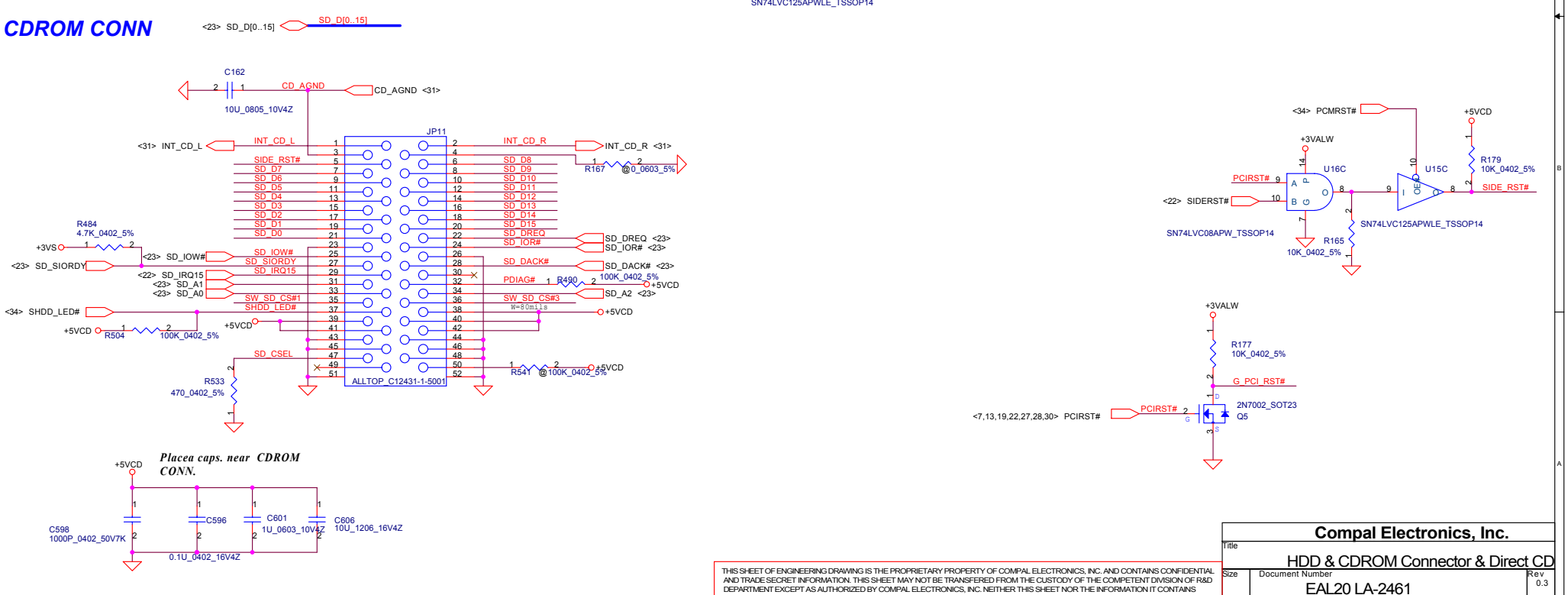
Compal Electronics, Inc.	
Title	ICH4-M(3/3) PWR/GND
Size	Document Number: EAL20 LA-2461
Rev	0.3
Date: 星期三, 八月 04, 2004	Sheet 24 of 47

HDD Connector



This is reverse type conn, PIDE_RST# connect to pin44.
After connector library ready,
correct connection is PIDE_RST# connect to pin1!

CDROM CONN



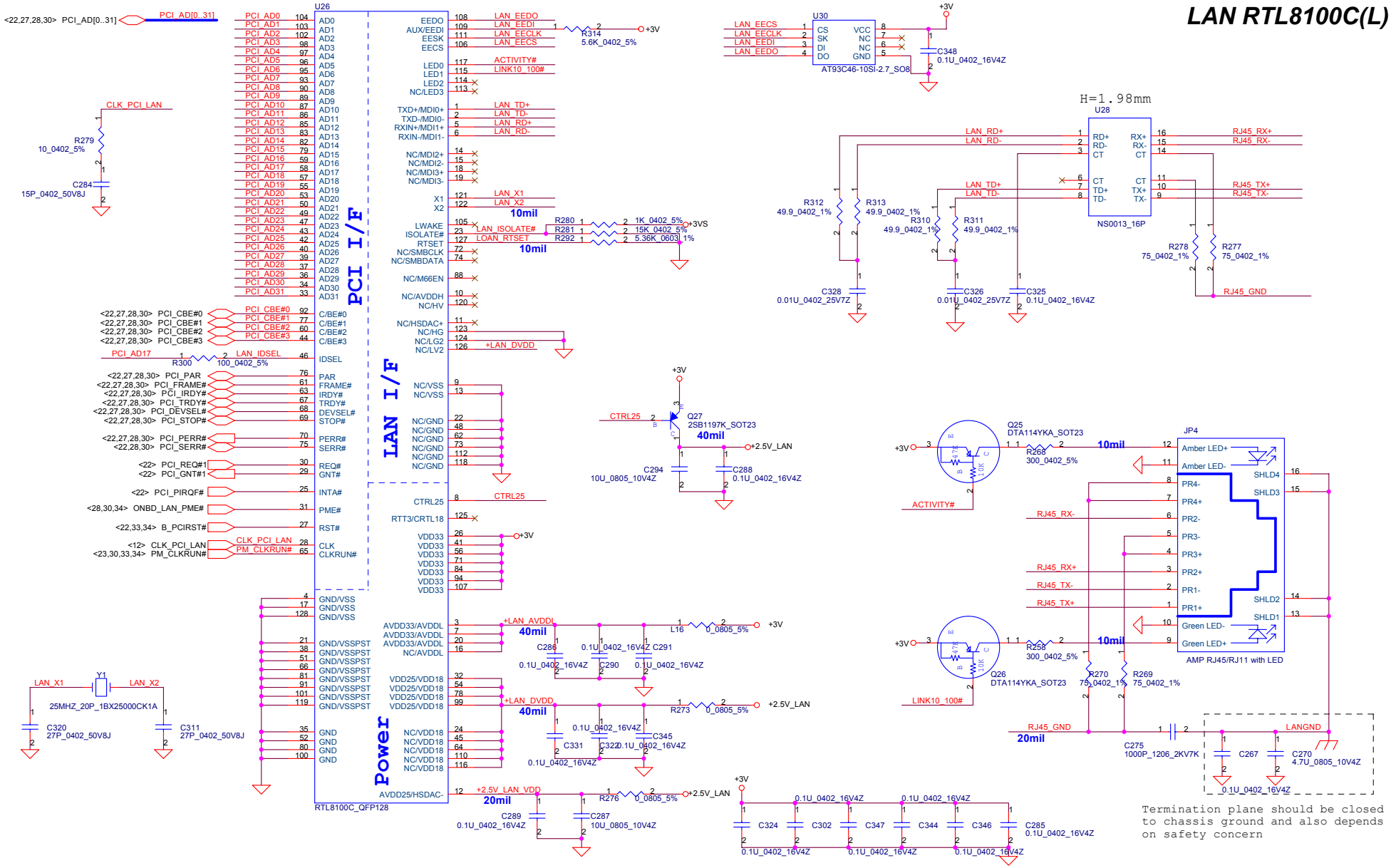
Compal Electronics, Inc.

Title: HDD & CDROM Connector & Direct CD

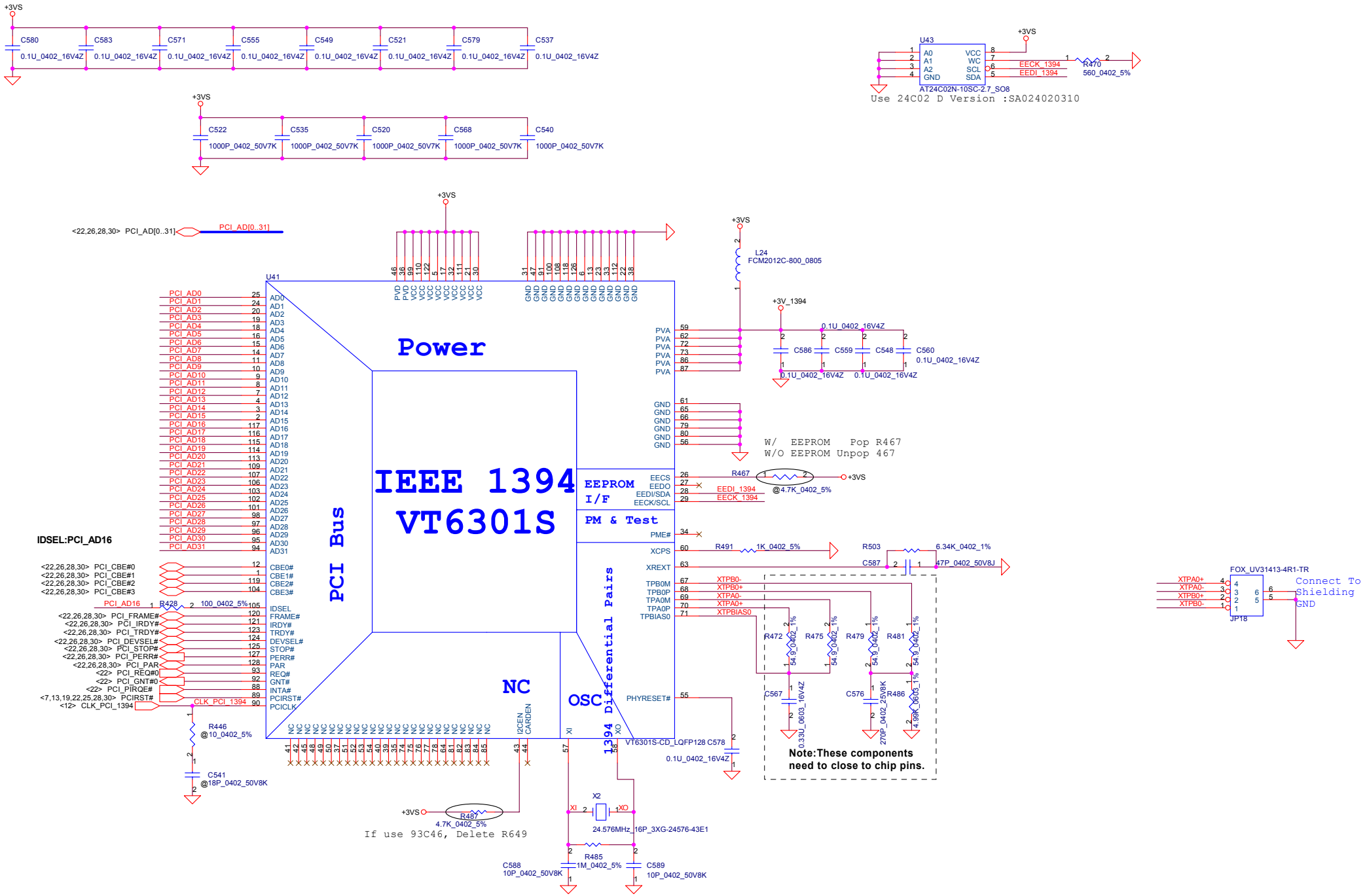
Size | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期三, 八月 04, 2004 | Sheet 25 of 47

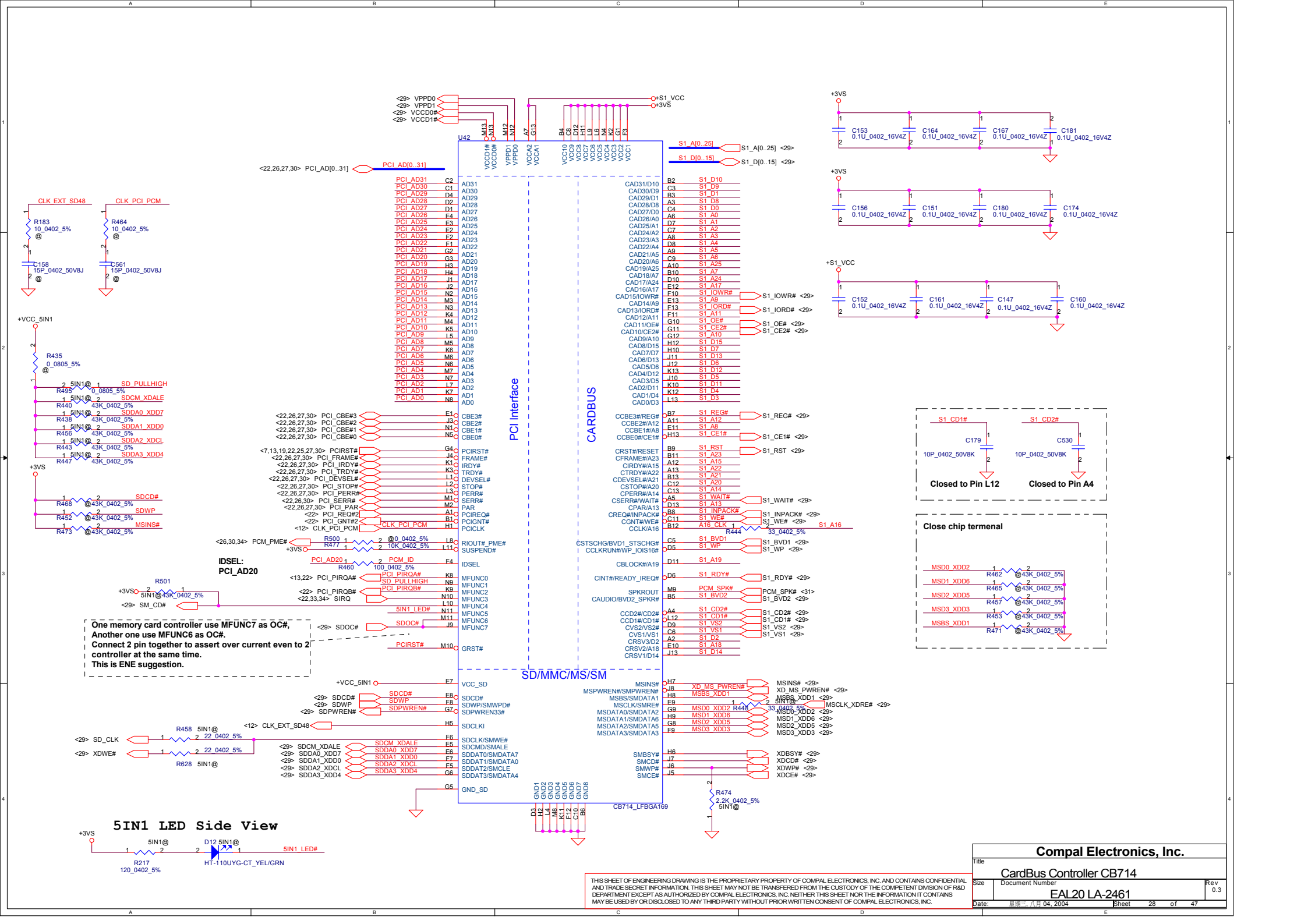
LAN RTL8100C(L)



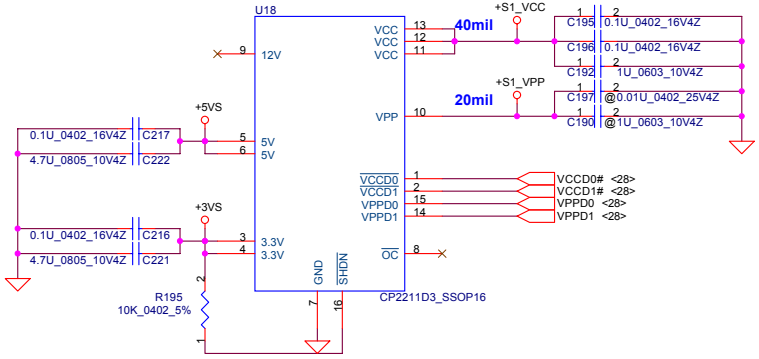
Compal Electronics, Inc.		
Title: LAN RTL8100CL		
Size: Custom	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 26 of 47	



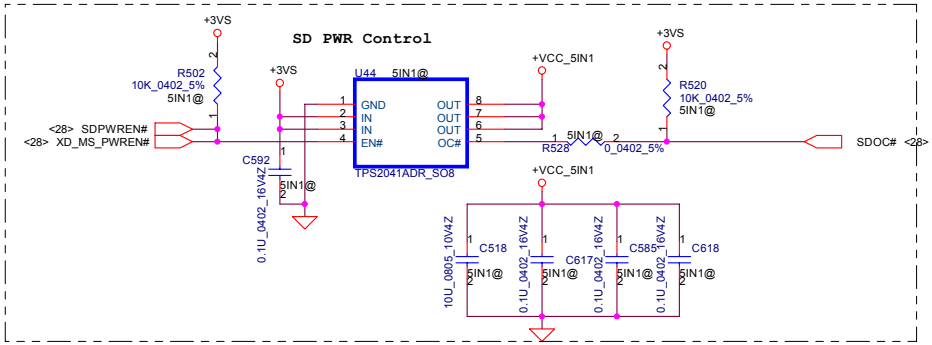
Compal Electronics, Inc.		
Title: IEEE1394a VIA VT6301S		
Size: Custom	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 27 of 47	


U42
PCI Interface
CARDBUS
SD/MMC/MS/SM
CB714_LFBGA169
IDSEL:
PCI_AD20
One memory card controller use MFUNC7 as OC#,
Another one use MFUNC6 as OC#.
Connect 2 pin together to assert over current even to 2
controller at the same time.
This is ENE suggestion.
Close chip termenal
Closed to Pin L12
Closed to Pin A4
5IN1 LED Side View
HT-110UYG-CT_YEL/GRN
Compal Electronics, Inc.
CardBus Controller CB714
EAL20 LA-2461
Rev 0.3
Sheet 28 of 47
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERED 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.

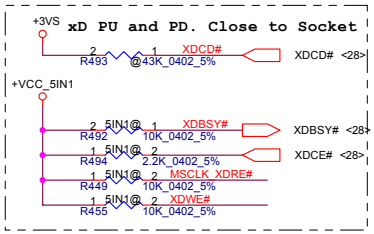
PCMCIA Power Controller



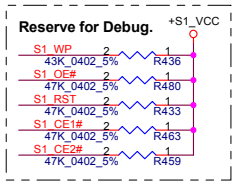
SD PWR Control



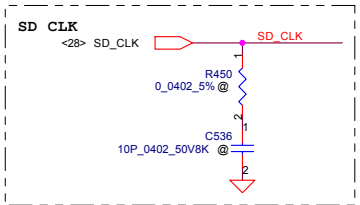
xD PU and PD. Close to Socket



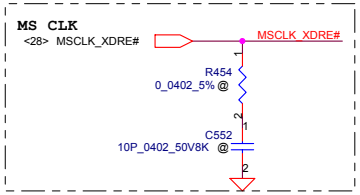
Reserve for Debug.



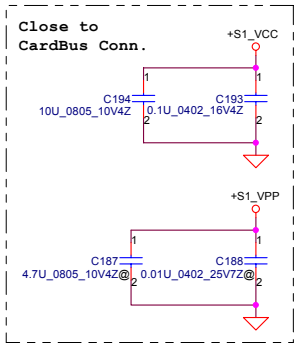
SD CLK



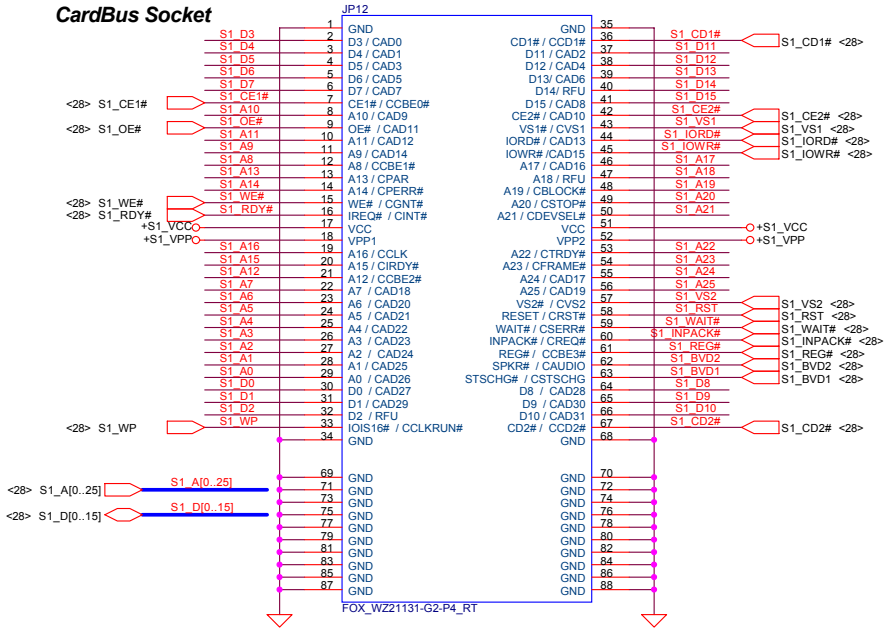
MS CLK



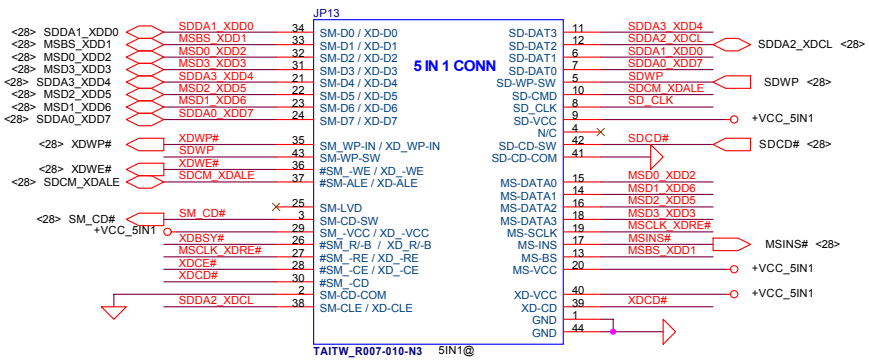
Close to CardBus Conn.



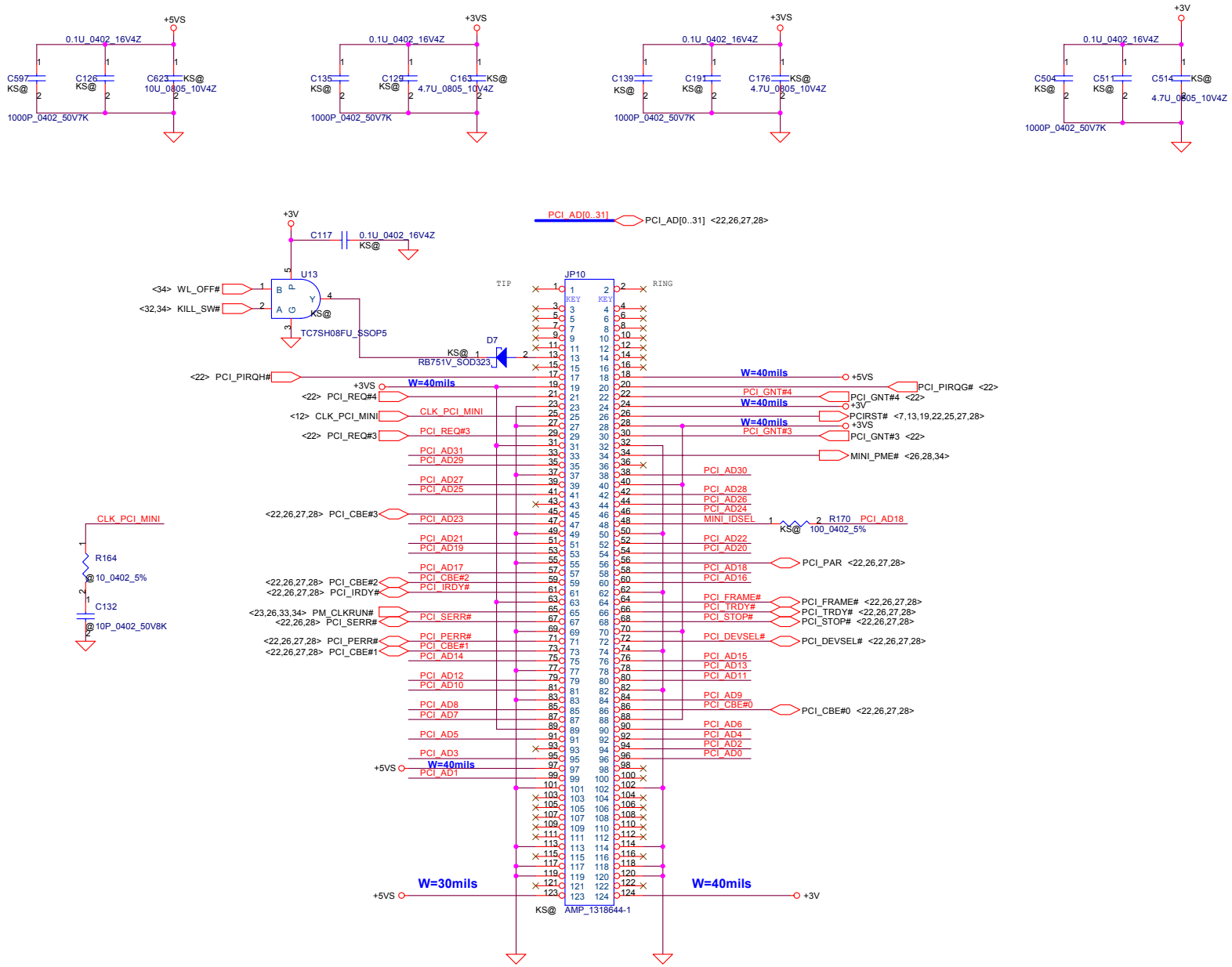
CardBus Socket



5in1 Socket



Compal Electronics, Inc.		
Title: Cardbus Slot & 5in1 Socket		
Size: Custom	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 29 of 47	



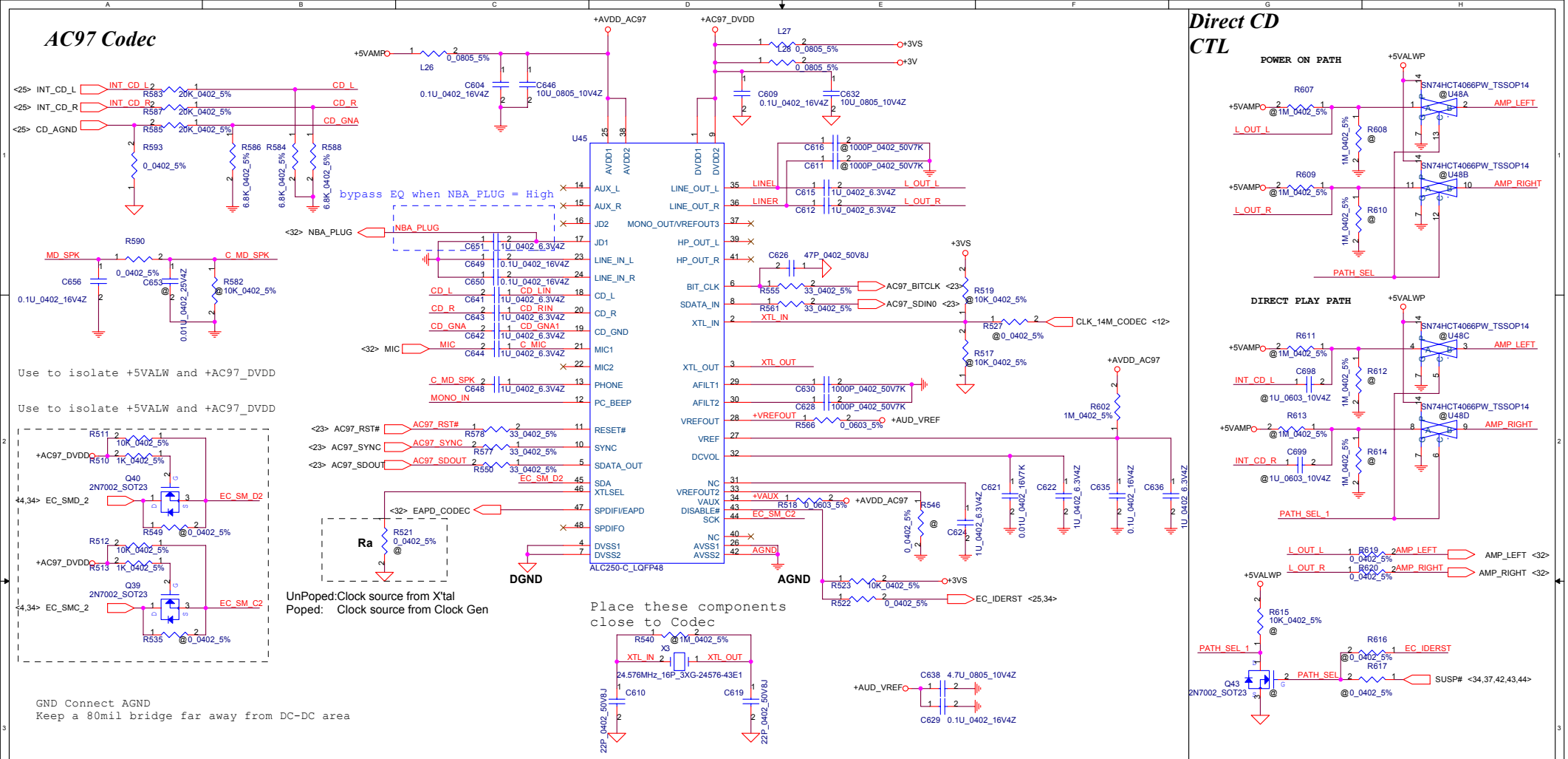
Compal Electronics, Inc.

Title: Mini PCI Slot

Size | Document Number: EAL20 LA-2461 | Rev: 0.3

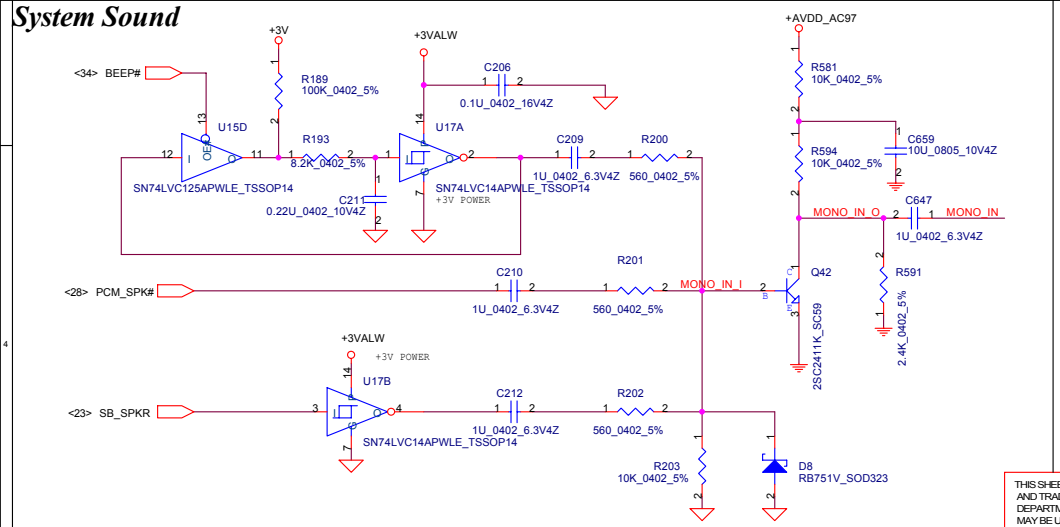
Date: 星期三, 八月 04, 2004 | Sheet 30 of 47

AC97 Codec

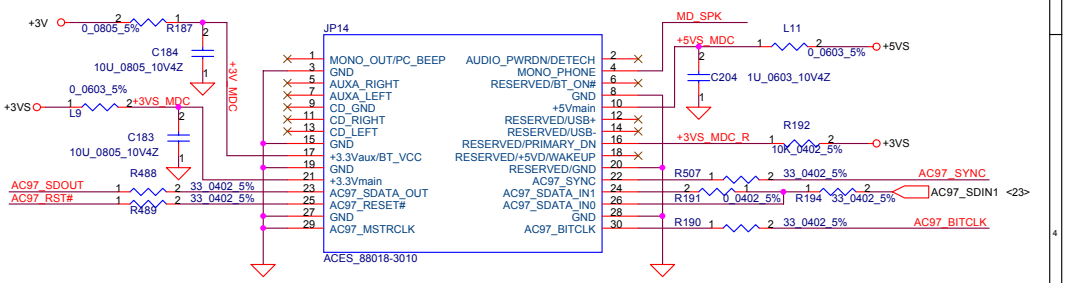


Direct CD CTL

System Sound

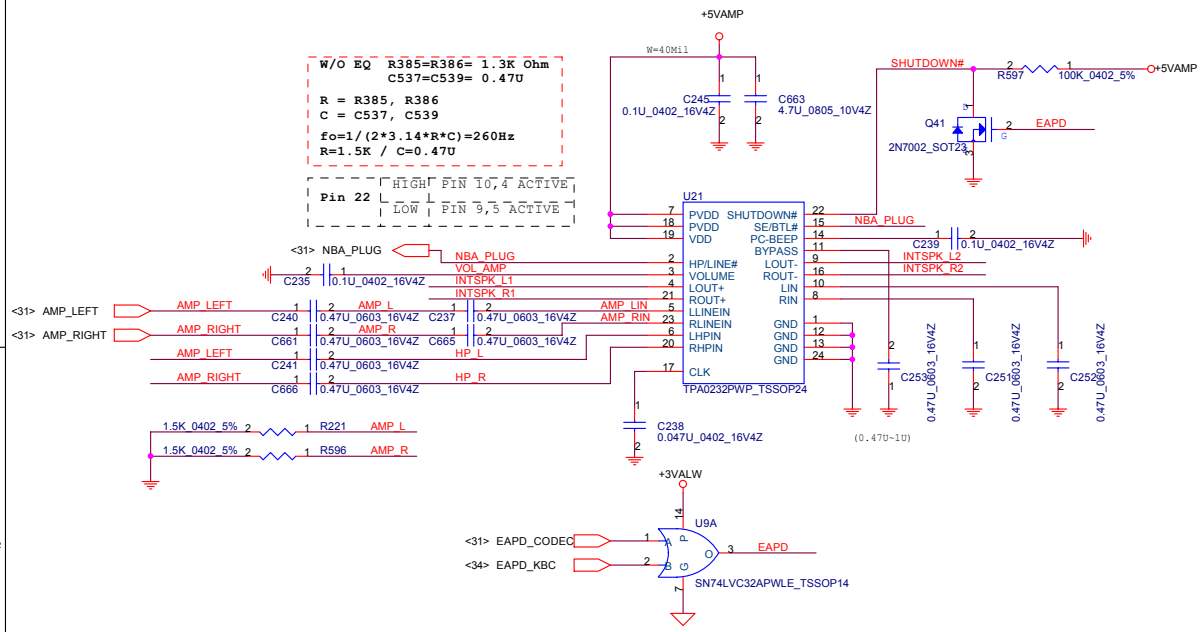


MDC Connector

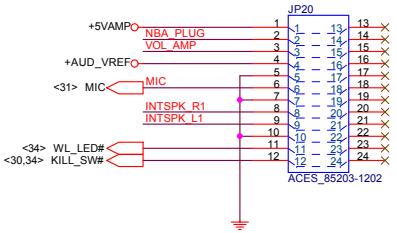


Compal Electronics, Inc.	
Title	AC97 CODEC ALC250 Ver.C
Size: Custom	Document Number: EAL20 LA-2461
Rev	0.3
Date:	星期三, 八月 04, 2004
Sheet	31 of 47

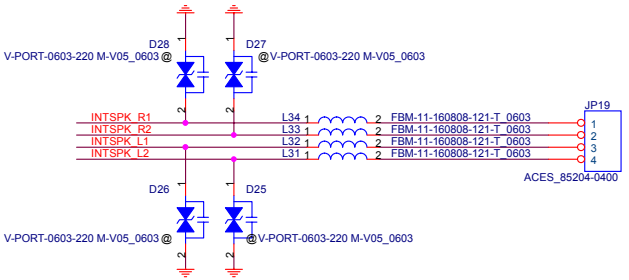
Audio AMP



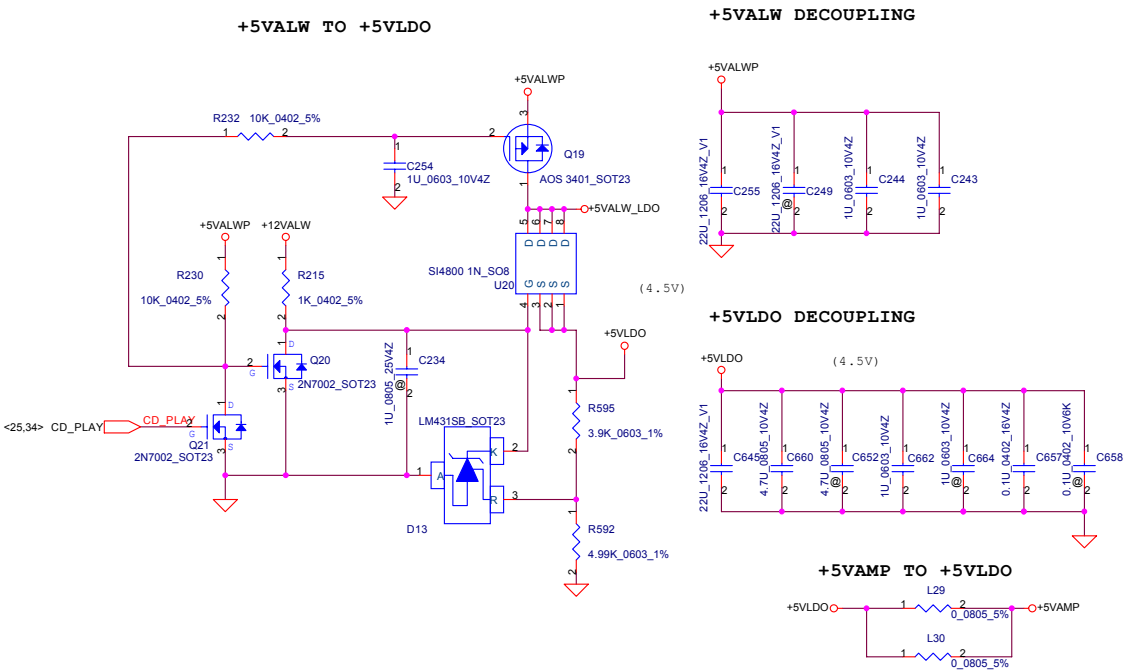
Audio Board Connector



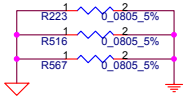
Speaker Connector



Regulator for AMP

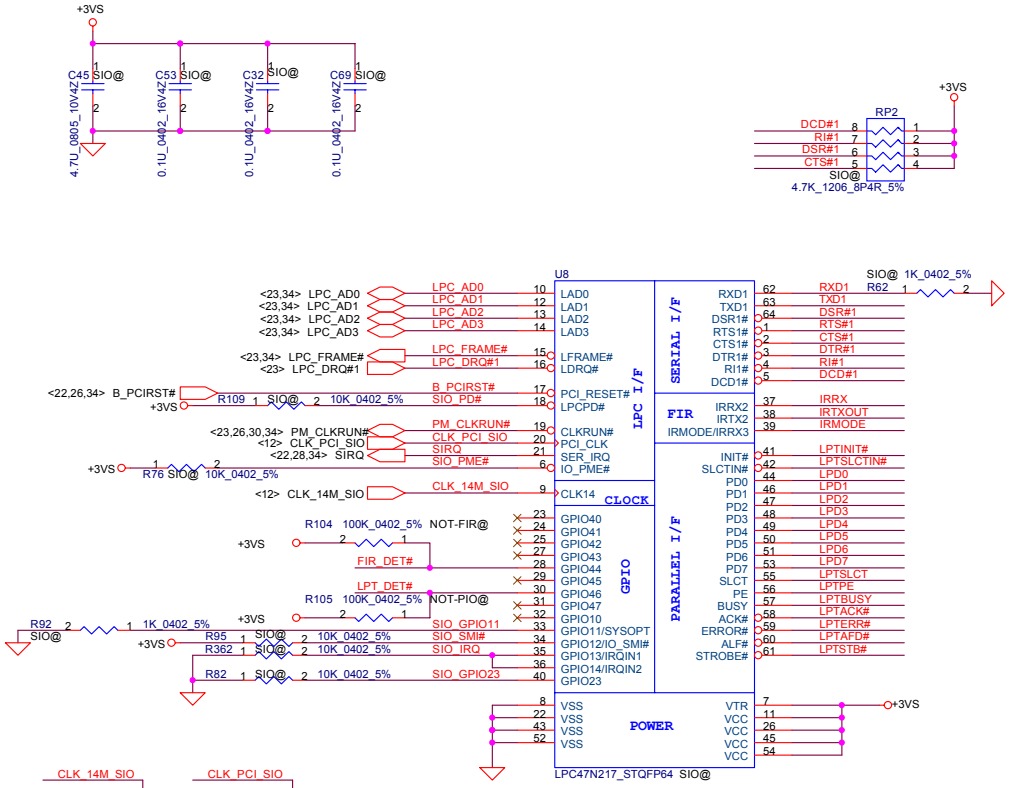


Moat Bridge



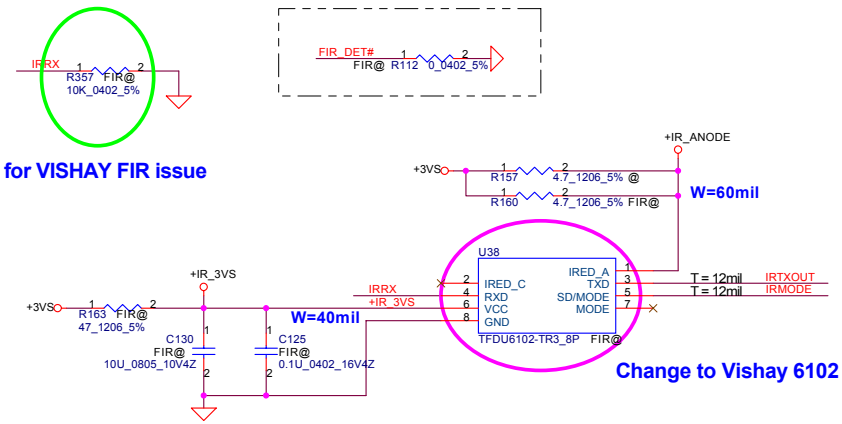
Compal Electronics, Inc.		
Title: AMP & Audio Jack		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Custom		
Date: 星期三, 八月 04, 2004	Sheet 32 of 47	

SUPER I/O SMsC LPC47N217

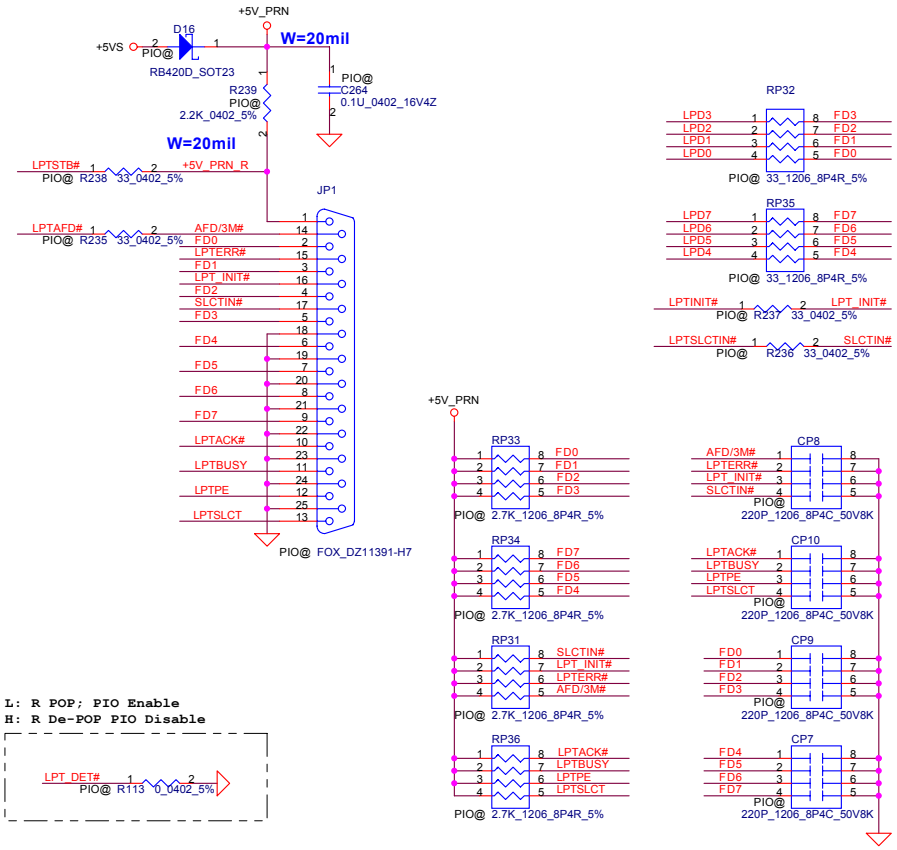


FIR Module

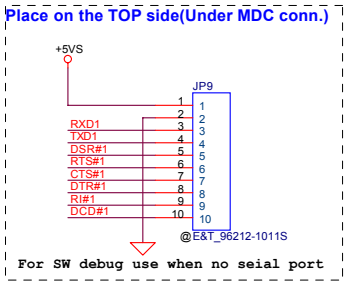
L: R POP; FIR Enable
H: R De-POPFIR Disable



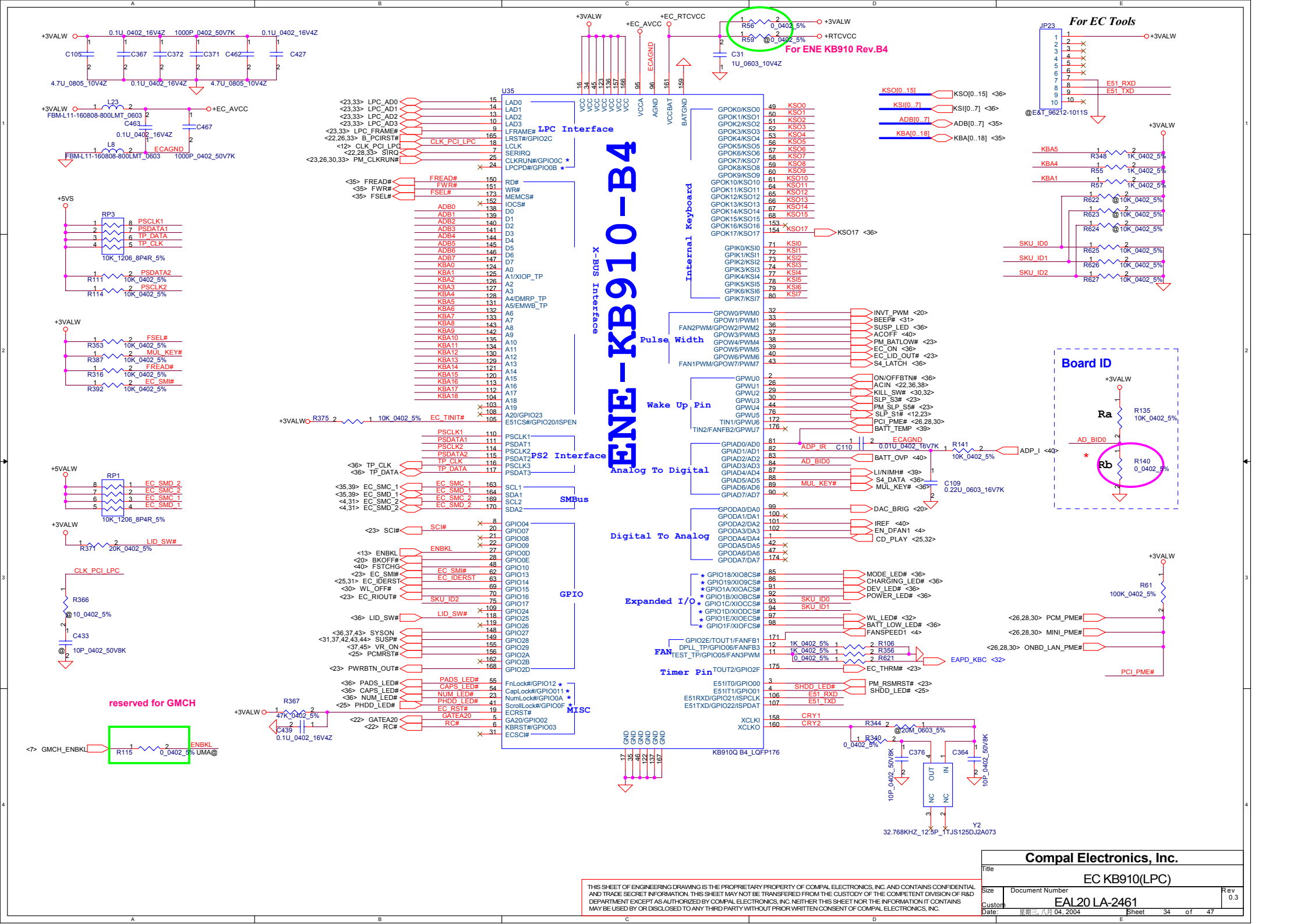
Parallel Port

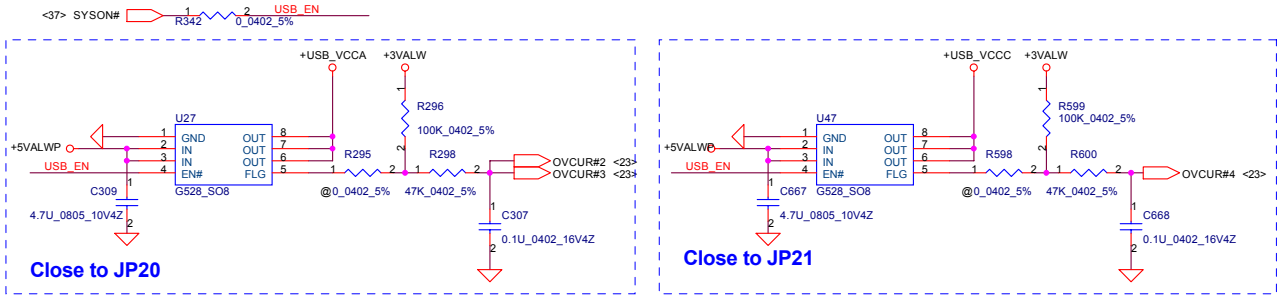


L: R POP; PIO Enable
H: R De-POP PIO Disable

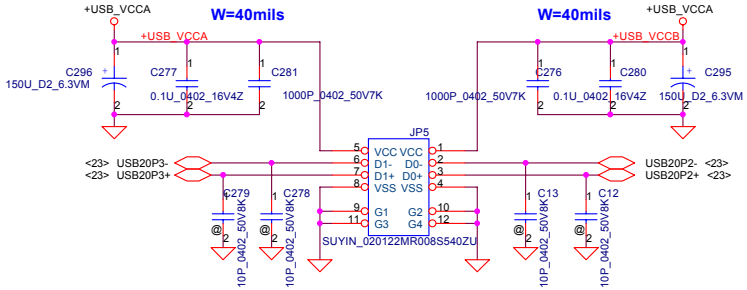


Compal Electronics, Inc.	
Title	SMsC LAP47N217 SIO,PIO,FIR
Size: Custom	Document Number: EAL20 LA-2461
Rev	0.3
Date: 星期三, 八月 04, 2004	Sheet 33 of 47


ENE-KB910-B4
U35
LPC Interface
X-BUS Interface
Internal Keyboard
Pulse Width
Wake Up Pin
Analog To Digital
Digital To Analog
PS2 Interface
SMBus
GPIO
Expanded I/O
FAN
Timer Pin
MISC
KB910Q B4_LQFP176
For ENE KB910 Rev.B4
For EC Tools
Board ID
reserved for GMCH
Compal Electronics, Inc.
EC KB910(LPC)
EAL20 LA-2461

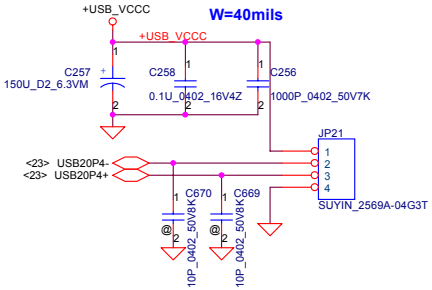


USB CONN. 1

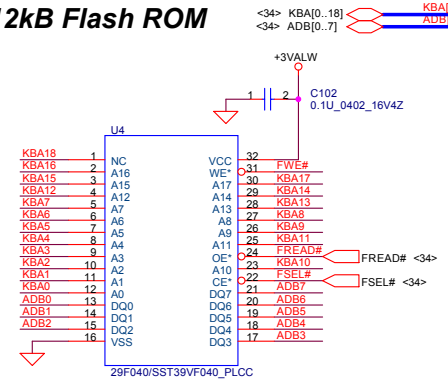


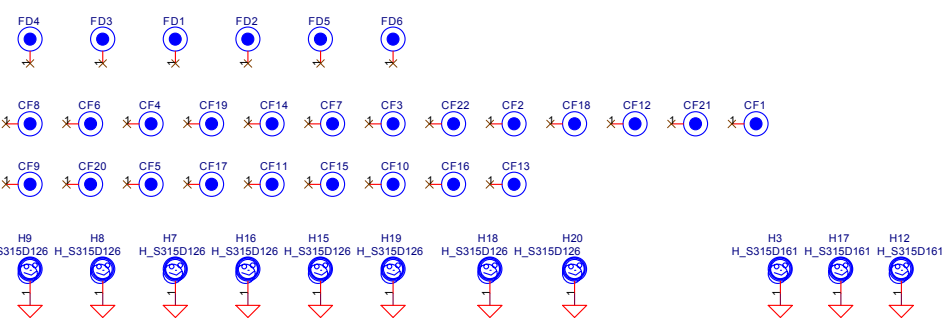
USB CONN. 2

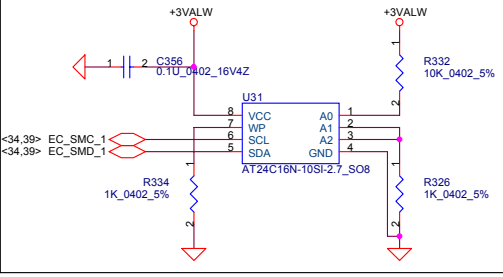
USB CONN. 3

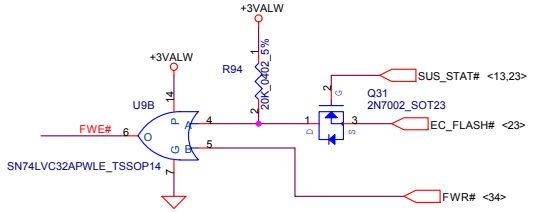


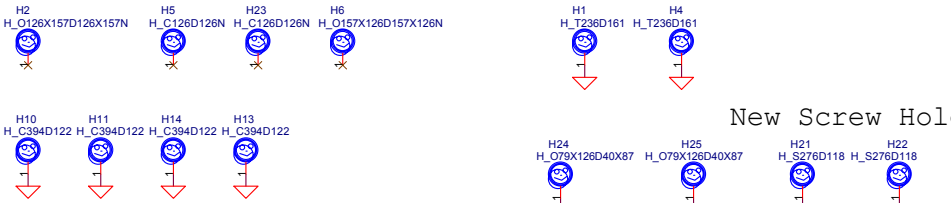
512kB Flash ROM







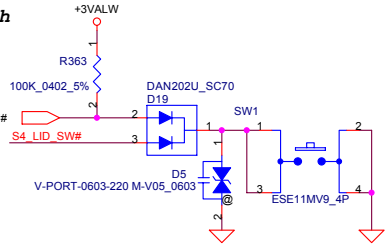




New Screw Hole

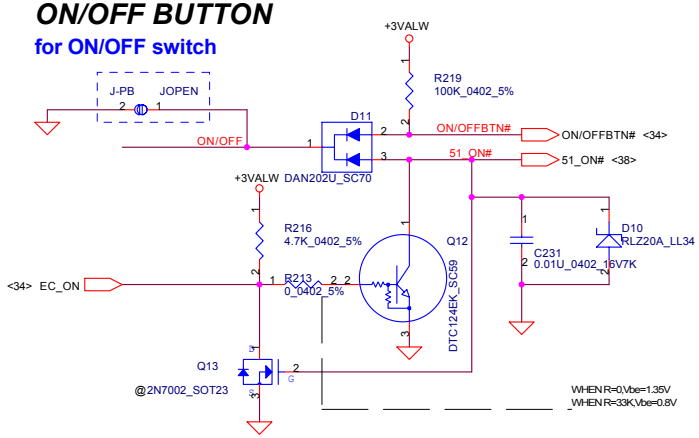
Compal Electronics, Inc.	
Title	BIOS/WL-SW/Screw Hole/USB
Size	Document Number: EAL20 LA-2461
Rev	0.3
Date: 星期三, 八月 04, 2004	Sheet 35 of 47

LID Switch



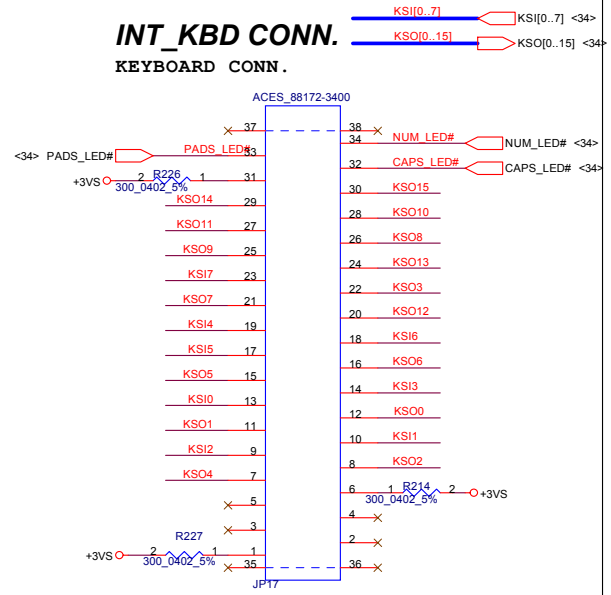
ON/OFF BUTTON

for ON/OFF switch

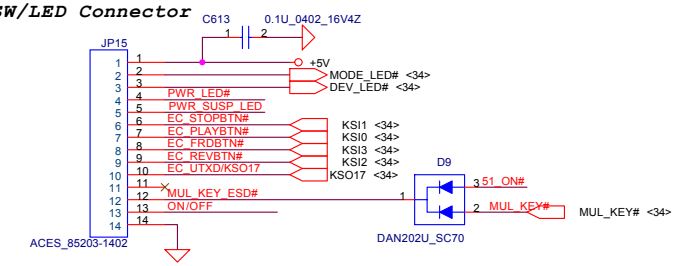


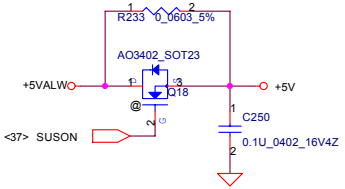
INT_KBD CONN.

KEYBOARD CONN.

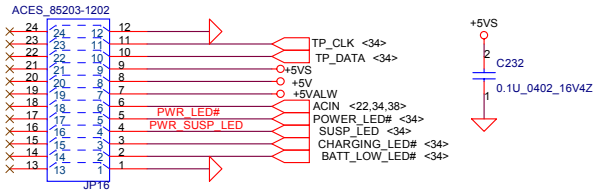


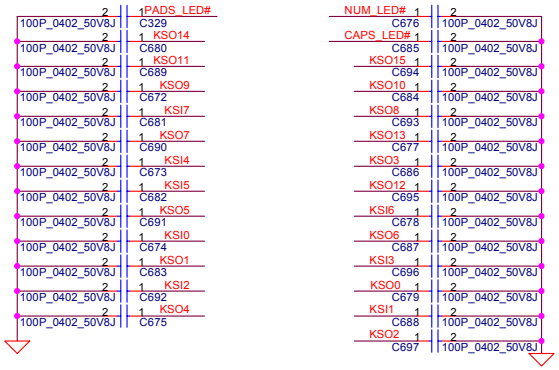
SW/LED Connector



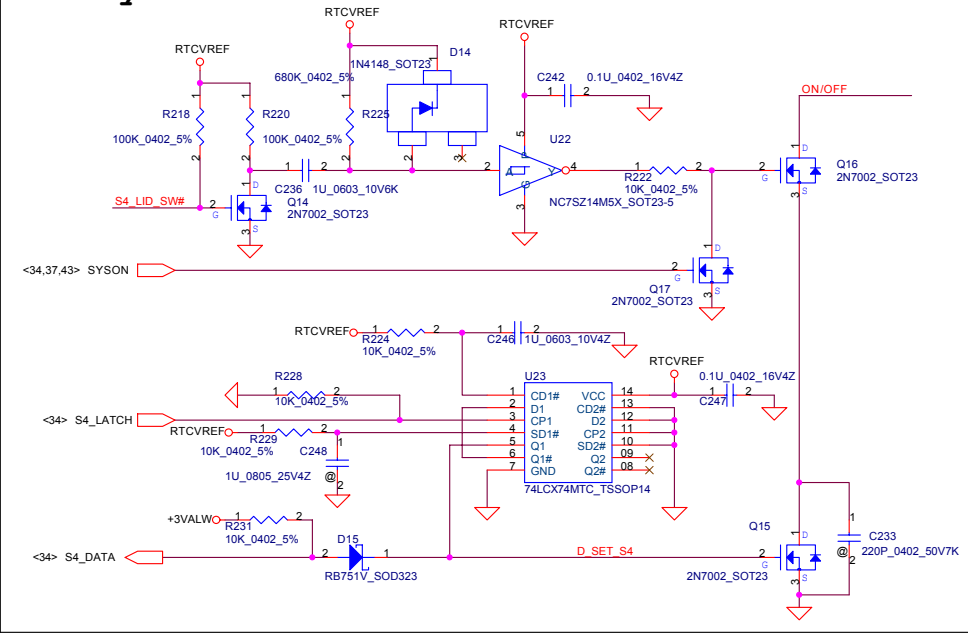


Touch Pad Connector

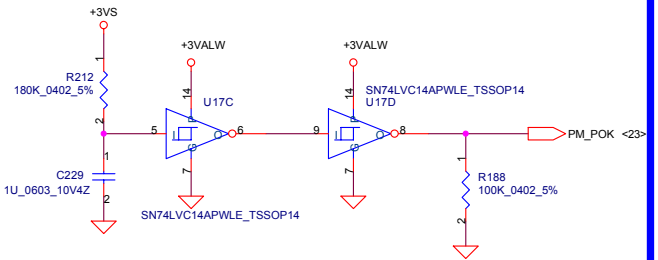




Battery mode Hibernation



Power OK Circuit



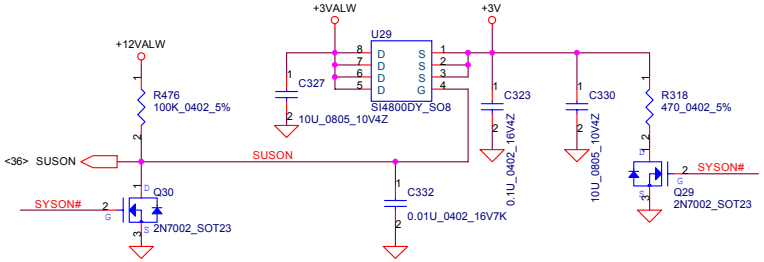
Compal Electronics, Inc.

Title: S4R,LID,PIO,SYS CONN

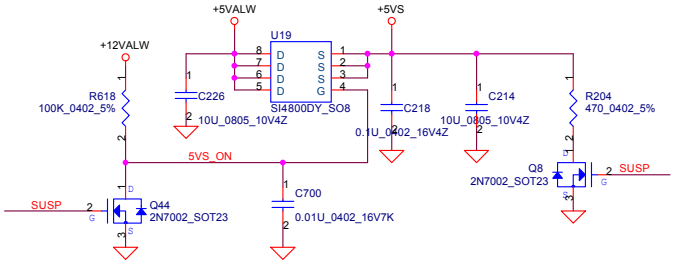
Size | Document Number: EAL20 LA-2461 | Rev: 0.3

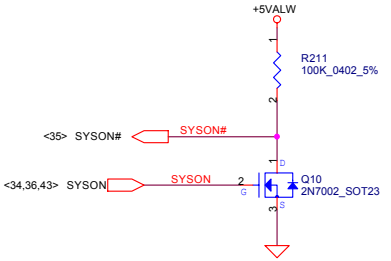
Date: 星期三, 八月 04, 2004 | Sheet 36 of 47

+3VALW to +3V Transfer

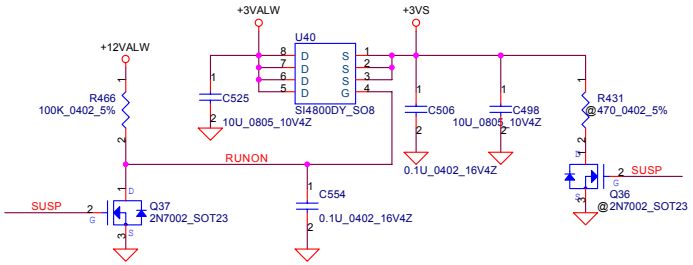


+5VALW to +5VS Transfer

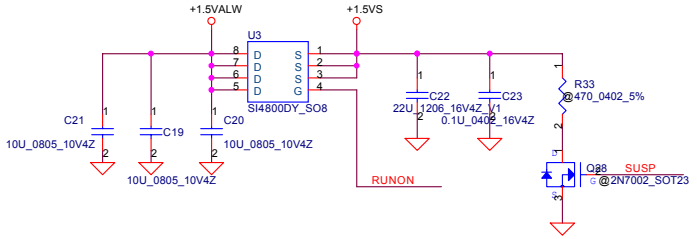


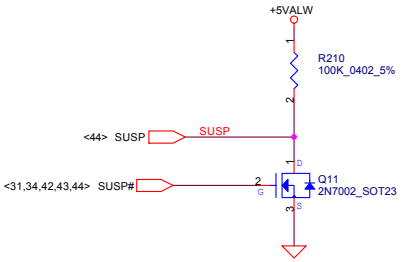


+3VALW to +3VS Transfer



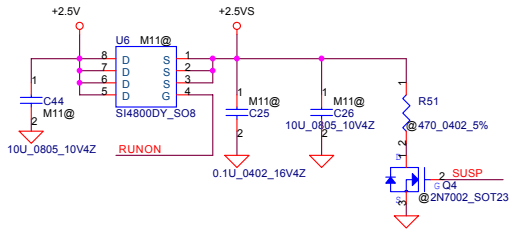
+1.5VALW to +1.5VS Transfer

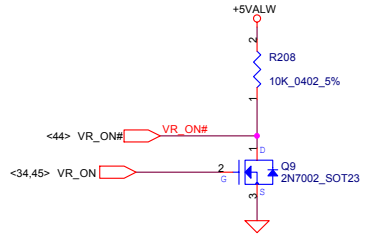




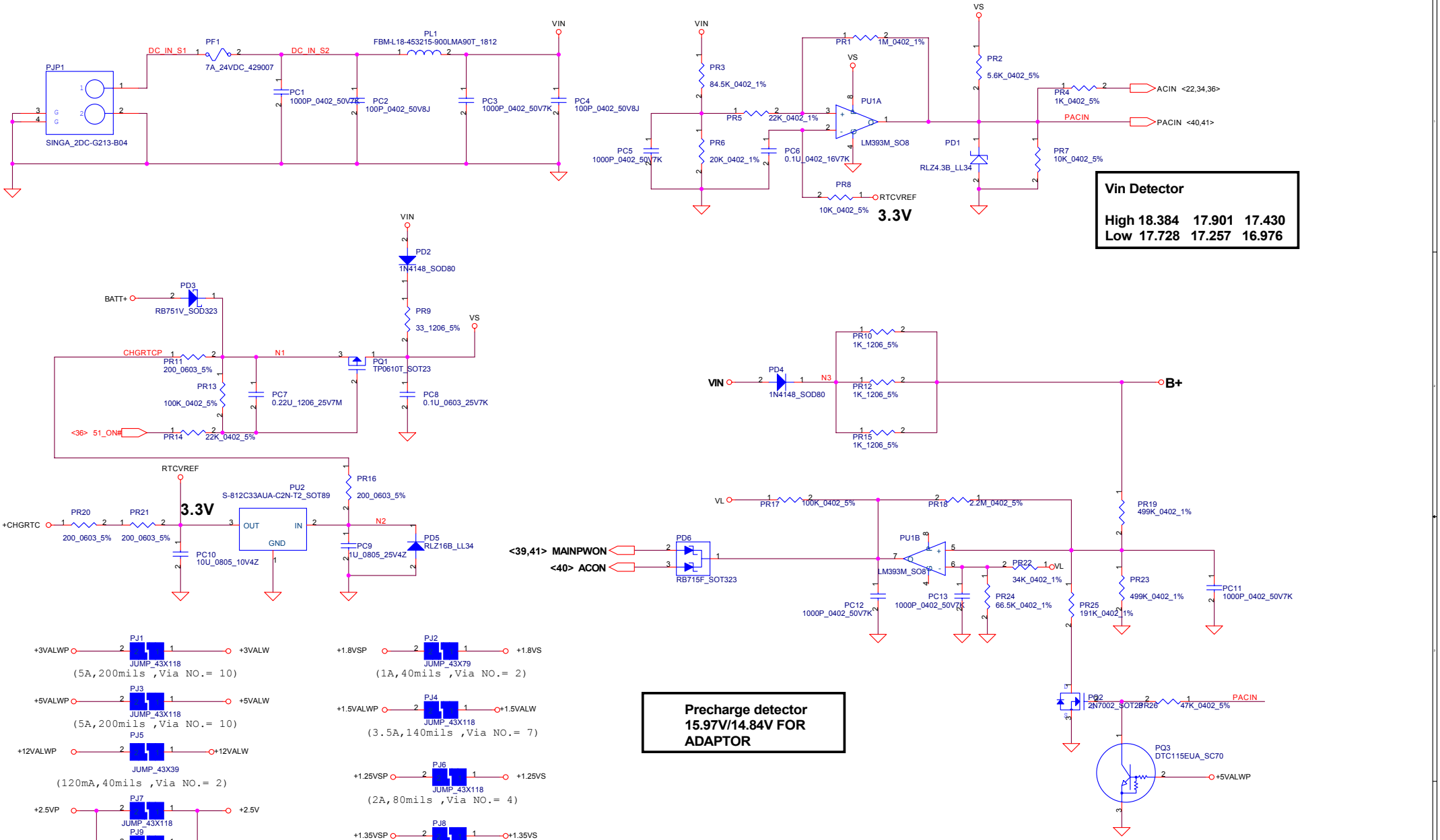
remove on integrated VGA sku

+2.5V to +2.5VS Transfer





Compal Electronics, Inc.		
Title: DC/DC Interface		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 37 of 47	



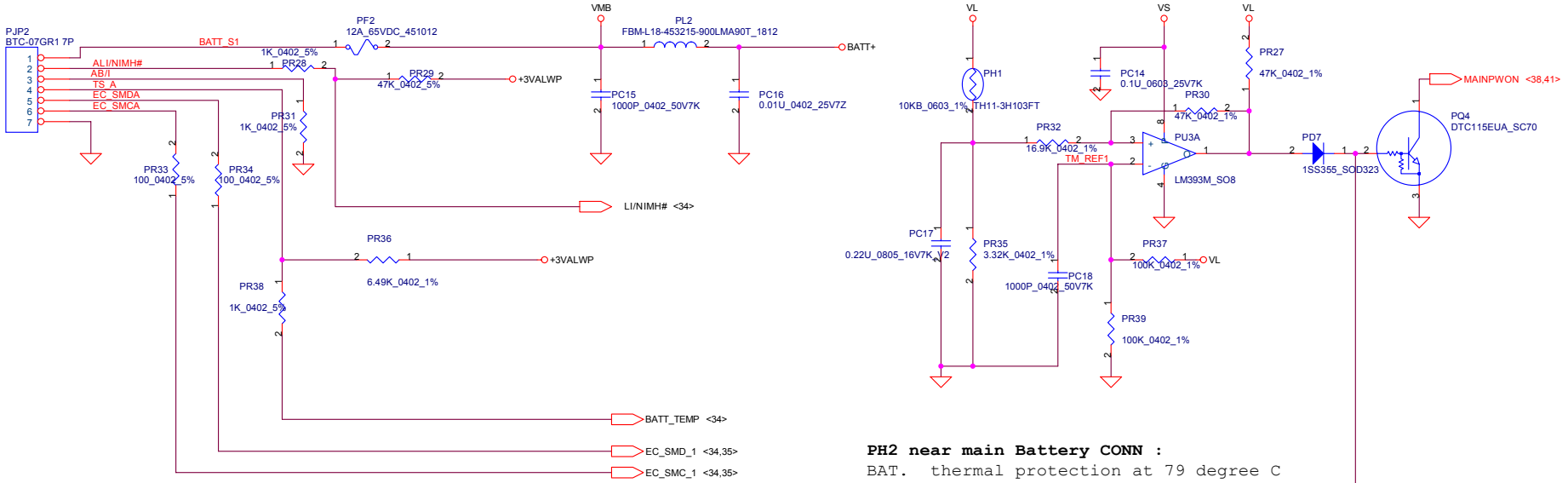
Compal Electronics, Inc.

Title: DCIN & DETECTOR

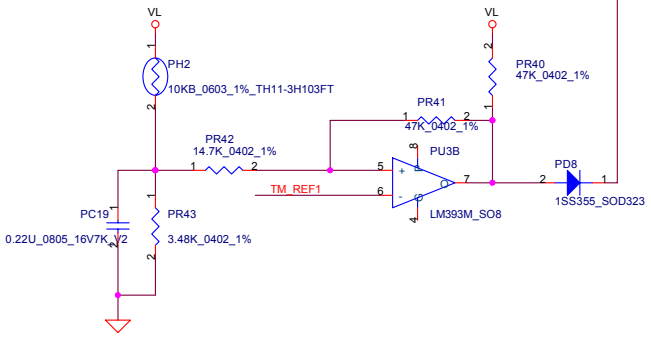
Size | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期三, 八月 04, 2004 | Sheet 38 of 47

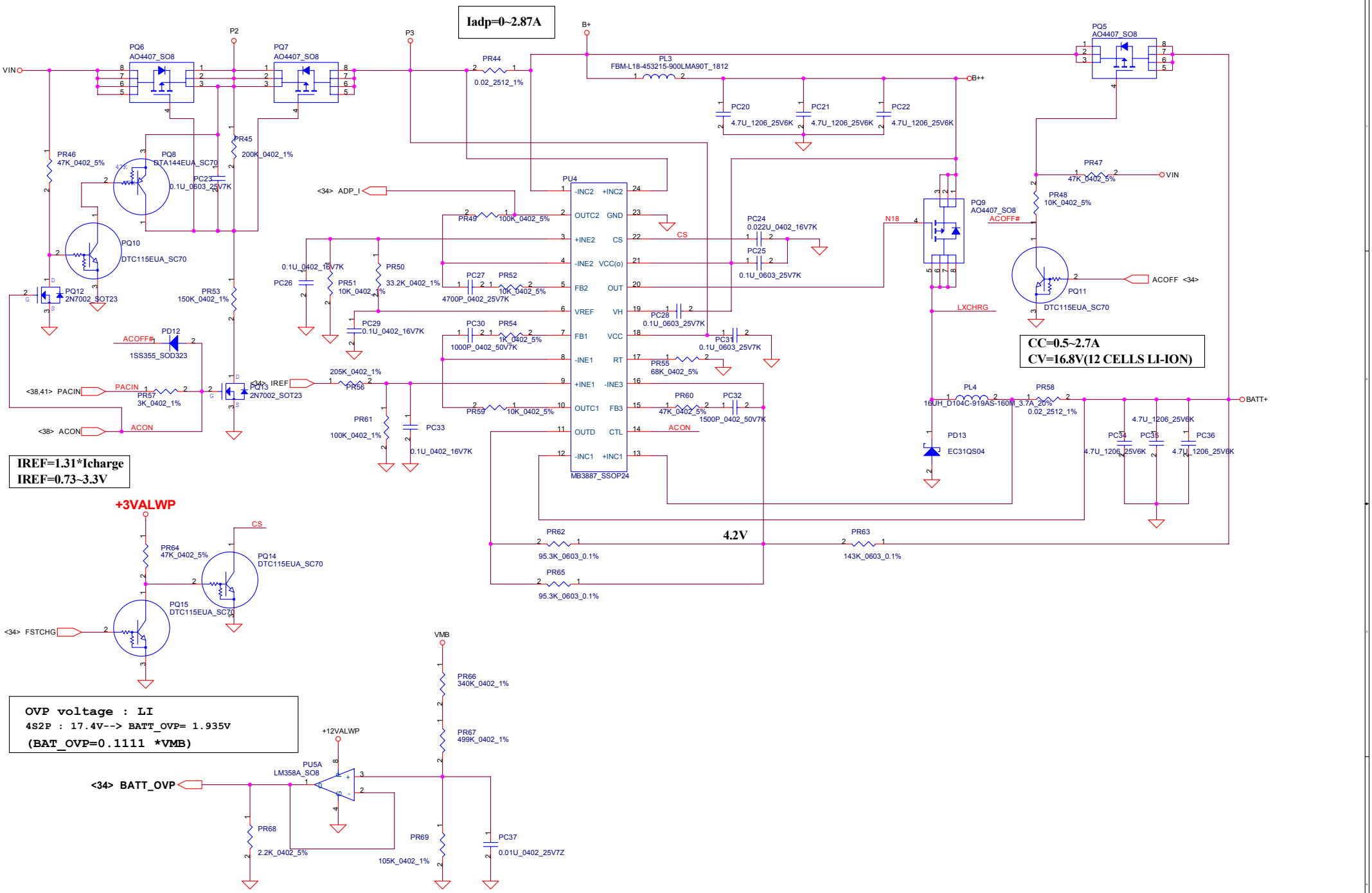
PH1 under CPU botten side :
CPU thermal protection at 84 degree C
Recovery at 45 degree C



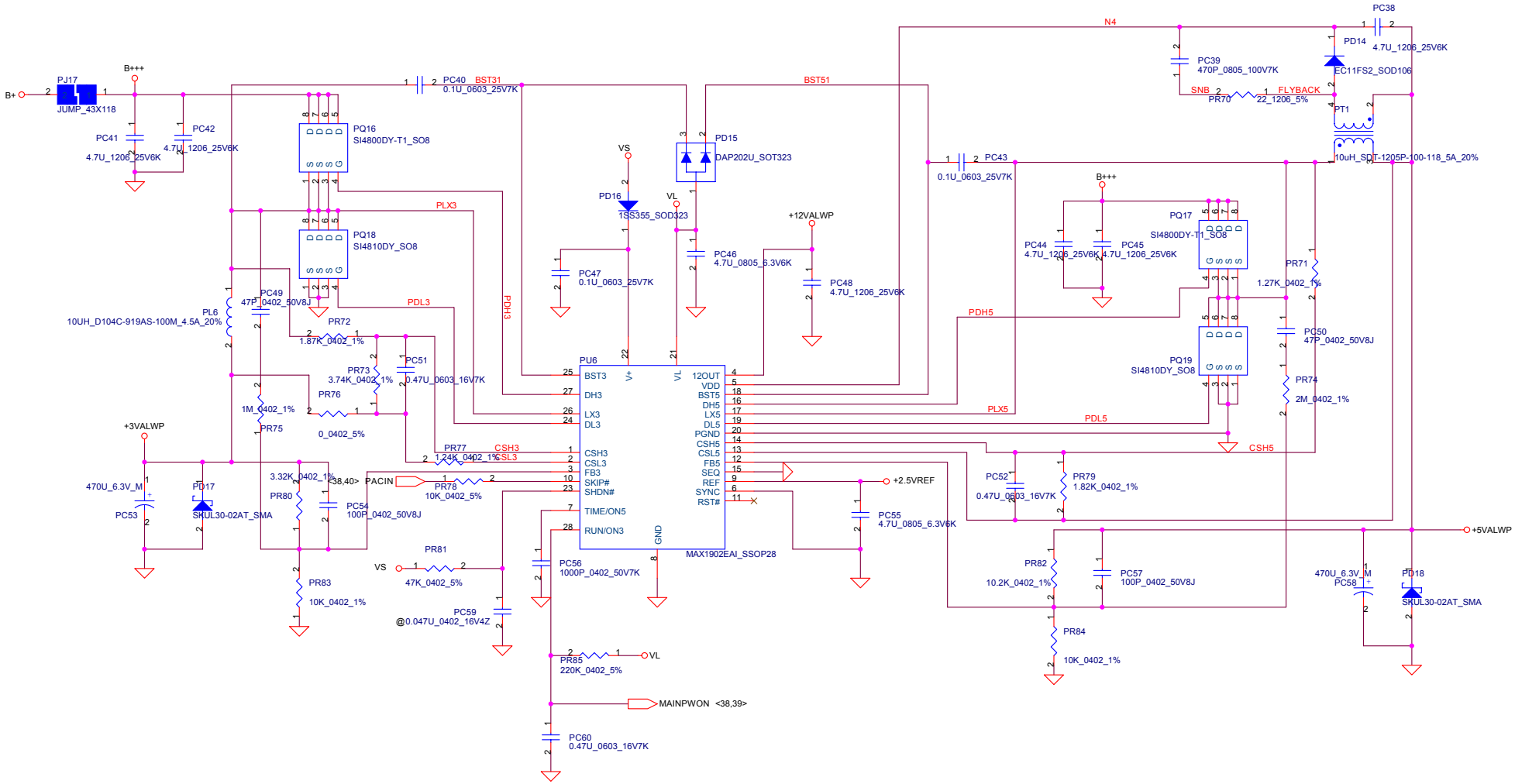
PH2 near main Battery CONN :
BAT. thermal protection at 79 degree C
Recovery at 45 degree C



Compal Electronics, Inc.
Title: BATTERY CONN / OTP
Size | Document Number: EAL20 LA-2461 | Rev: 0.3
Date: 星期三, 八月 04, 2004 | Sheet 39 of 47

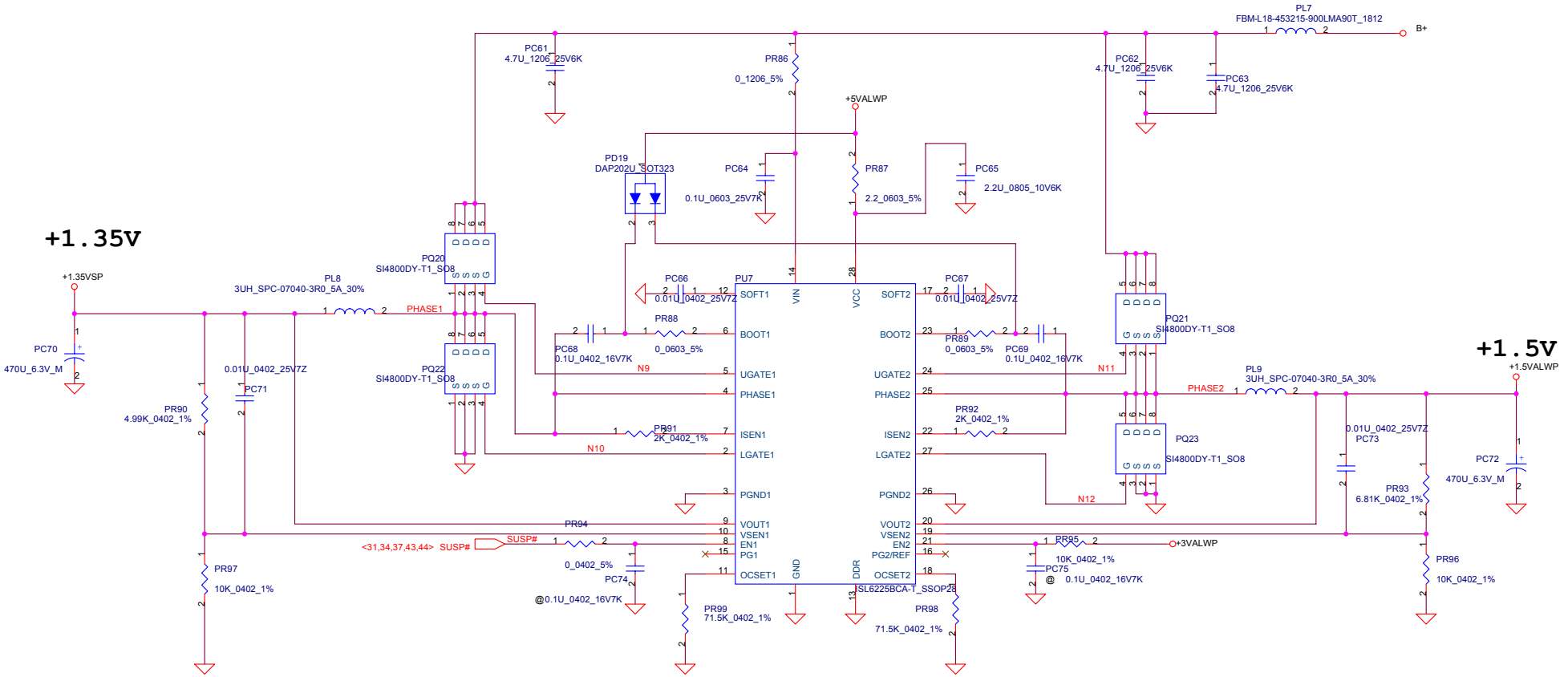


Compal Electronics, Inc.
Title: CHARGER
Size: Document Number: EAL20 LA-2461
Rev: 0.3
Date: 星期三, 八月 04, 2004
Sheet 40 of 47



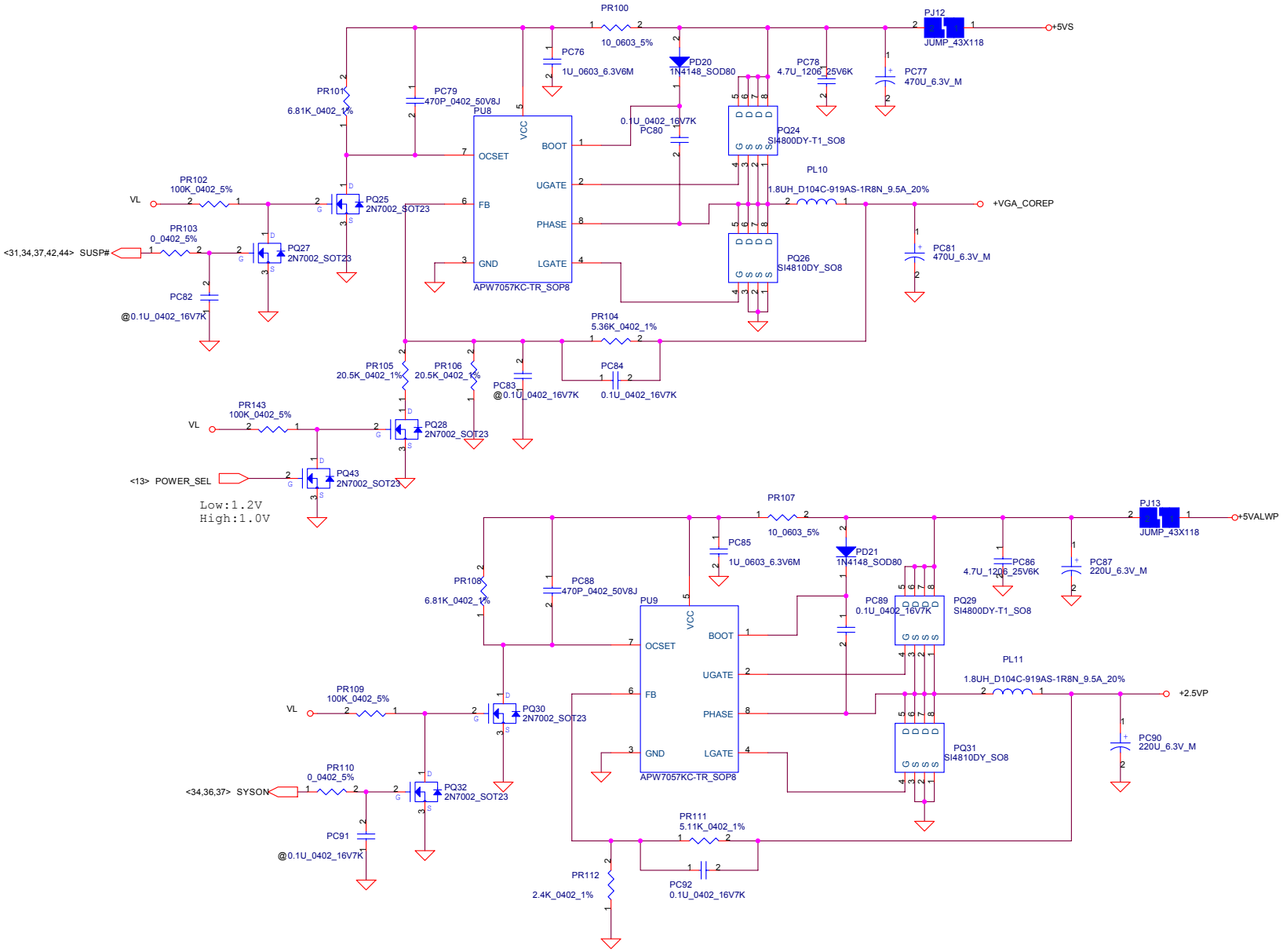
Compal Electronics, Inc.

Title	5V/3.3V/12V	
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 41 of 47	

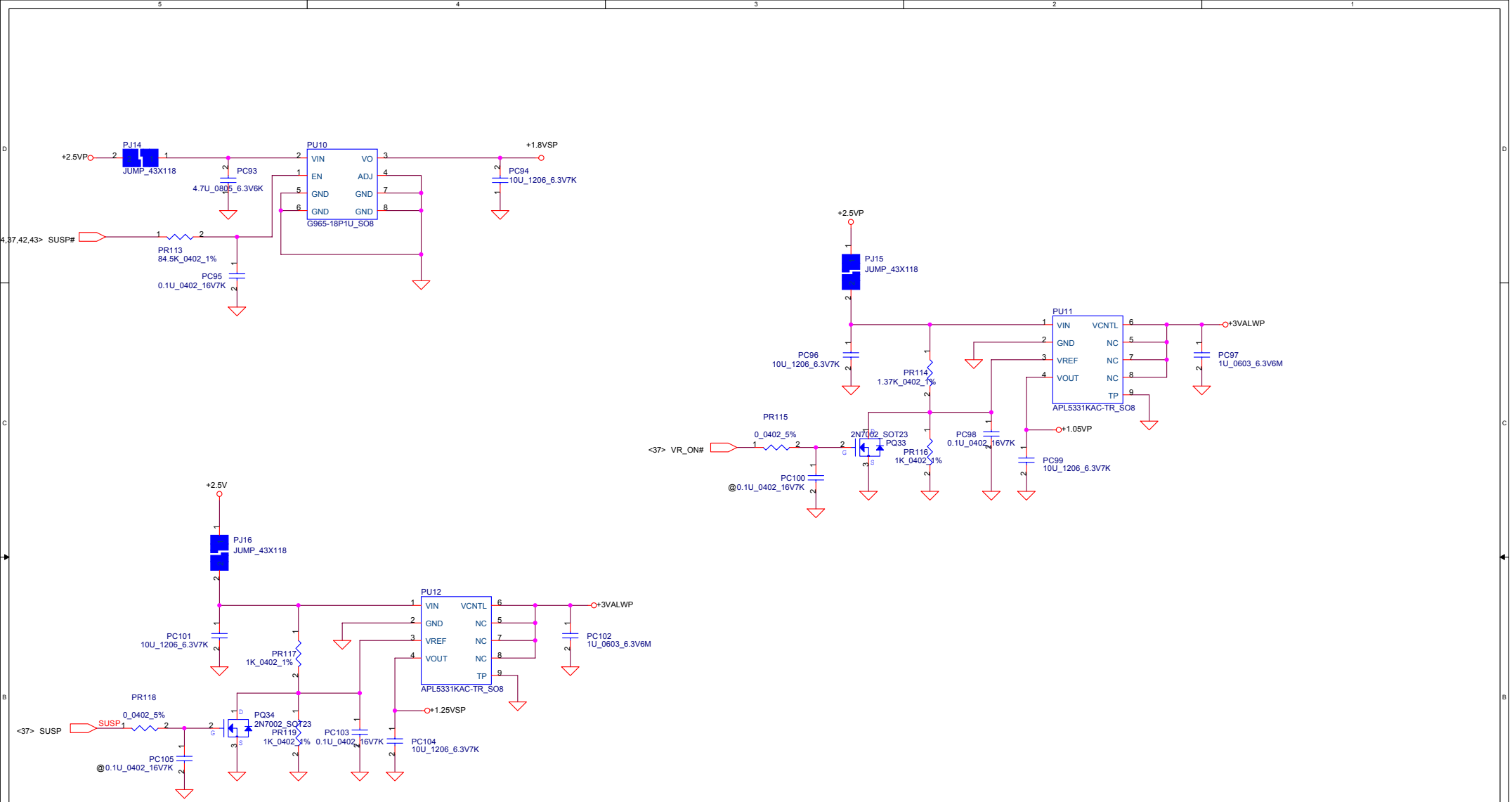


Compal Electronics, Inc.

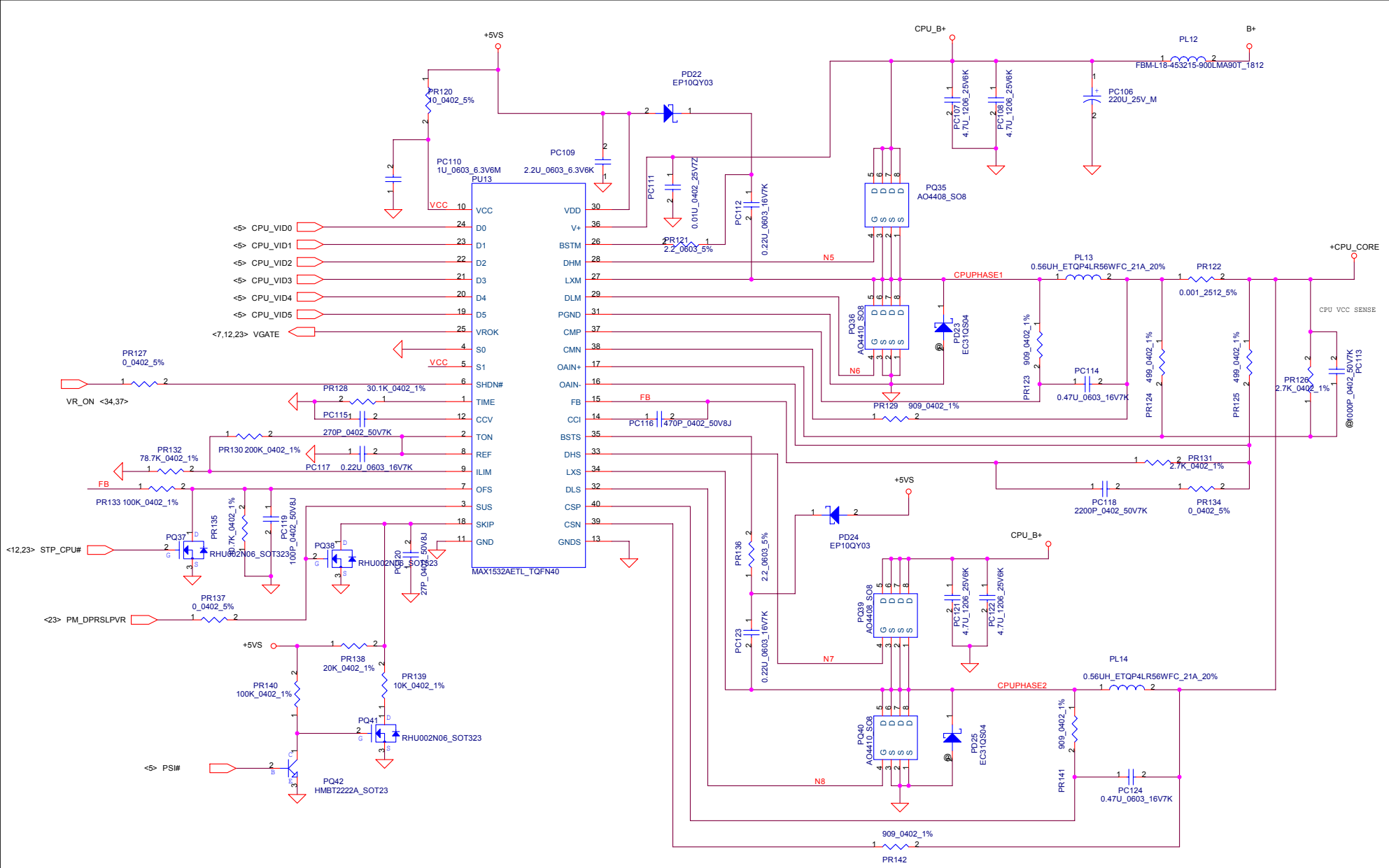
Title	1.35V/1.5V	
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 42 of 47	



Compal Electronics, Inc.		
Title: 2.5V/VGA_CORE		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期四, 八月 05, 2004	Sheet 43 of 47	



Compal Electronics, Inc.		
Title: 1.8V/1.25V/1.05V		
Size	Document Number: EAL20 LA-2461	Rev: 0.3
Date: 星期三, 八月 04, 2004	Sheet 44 of 47	



Compal Electronics, Inc.

Title: CPU_CORE

Size | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期四, 八月 05, 2004 | Sheet 45 of 47

PWR PIR LIST

EVT

page	Reason for change	Modify list
41	Improve design margin	Change PD17,PD18 from SSM14 to SKUL30-02AT
43	Change 2.5V,VGA_CORE OCP to 8A	Change PR101,PR108 from 5.11K to 6.81K
39	Improve design margin	Change PF2 rating from 7A to 12A

DVT

43	Reverse POWER_SEL signal level for HW request	Add PR143(100K),PQ43
41	Adjust 3.3V OCP	Change PR72 from 1.27K to 1.87K_0402_1% Change PR73 from 1.27K to 3.74K_0402_1% Change PR77 from 620 to 1.24K_0402_1%
41	Adjust 5V OCP	Change PR71 from 1.54K to 1.27K_0402_1% Change PR79 from 698 to 1.82K_0402_1%
43	Change choke for design margen	Change PL10,PL11 from 4.7UH to 1.8UH
44	Add 1.8V delay time for HW	Change PR113 from 0 to 84.5K_0402_1% Add 0.1U at PC95
45	For EMI requirement	Change PR121,PR136 from 0 to 2.2_0603_5%
45	Adjust CPU_CORE voltage	Change PR126,PR131 from 3K to 2.7K_0402_1%
42	Modify 1.5V enable signal for HW request	Change PR95 from 0 to 10K_0402_1%

PVT

43	Modify PL10 and PL11 Footprint	
38	Change DC-IN Jack as "SINGA_2DC-G213-B04_4P"	
41	Change PL5 as PJ17	
43	Raise VGA_CORE voltage to 1.21V for HW requirement	Change PR104 from 5.11K_0402_1% to 5.36K_0402_1%
45	Adjust CPU_CORE voltage	Change PC118 from 0.022U to 2200P

EAL20 LA-2461 SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.1 TO 0.2

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	6/23	P31	POP R521	CODEC CLOCK SOURCE FROM CLOCK GEN
2	6/23	P35	CHANGE R342.1 CONNECTION FROM SYSON TO SYSON#	CHANGE USB POWER TO LOW ACTIVE
3	6/23	P29	CHANGE R492.2 PULL HIGH FROM +3VS TO +VCC_5IN1	CHANGE PULL HIGH POWER
4	6/23	P36	SWAP PIN OF JP16	CHANGE JP16 DIRECTION
5	6/23	P12	RESERVE C671	ADD CAP TO CONTROL VGATE RISING TIME
6	7/05	P12	CHANGE CLK_PCI_ICH CONNECT FROM U49.11 TO U49.7 CHANGE CLK_PCI_1394 CONNECT FROM U49.7 TO U49.11	CHANGE ICH PCI CLK SOURCE TO FREE RUN CLOCK, TO SOLVE SYSTEM CAN NOT SHUTDOWN ISSUE
7	7/05	P29	CHANGE 5IN1 CONNECTOR FROM TAISOL TO TAITWAN	CHANGE CONNECTOR VENDOR
8	7/06	P29	DEL R251,R249	DEL 75OHM TERMINATION
		P13	ADD R603,R604	ADD 75OHM TERMINATION CLOSE TO CHIP
		P19	RESERVE R605,R606	RESERVE 75OHM TERMINATION CLOSE TO CHIP
9	7/06	P22	INSERT D29 BETWEEN GPI11 AND ACIN	PREVENT SB LEAKAGE DURING DC-IN TO SOLVE POWER BOTTON NO FUNCTION ISSUE
10	7/06	P13	ADD R317 100K_0402_5% PULL DOWN POWER_SEL	PREVENT SIGNAL FLOATING
11	7/06	P29	CHANGE R528 CONNECTION	FOR CUSTOMER REQUEST
12	7/06	P36	DEL CP1~CP6, ADD C329,C672~C697	FOR EMI REQUEST
13	7/06	P36	CHANGE Q16.1 CONNECT TO ON/OFF	TO CORRECT LID SW FUNCTION
14	7/06	P20	CHANGE R294 FROM 0603 TO 0805,R19 FROM 0805 TO 1206	TO INCREASE RATING
15	7/07	P31	RESERVE 1M_0402_5% R607~R614,HCT4066 U48 RESERVE 10K_5%_0402 R615,0_0402_5% R617,RESERVE R616	TO CONTROL POWER ON/OFF AUDIO CD PATH ADD MUX SW CONTROL
16	7/07	P12	ADD L35 BETWEEN +3VS AND +3VS_CLK	FOR CUSTOMER REQUST
17	7/08	P37	CHANGE C554 FROM 0.01U TO 0.1U CHANGE U19.4 NET FROM RUNON TO 5VS_ON ADD R618,Q44,C700, ADD 5VS_ON NET	CHANGE POWER ON SEQUENCE CONTROL +5VS CONTROL GATE
18	7/09	P06	CHANGE R461 FROM 27.4 TO 37.4OHM	CHANGE RESISTANCE FOR 855GME
19	7/09	P26	CHANGE C325 FROM 0.01U TO 0.1U,R292 FROM 5.9K TO 5.36K	CHANGE R,C TO PASS LAN TEST
20	7/09	P29	CHANGE CP2211 U18 FROM C1 TO D3 VERSION	CHANGE FOR MATERIAL EOL

EAL20 LA-2461 SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.2 TO 0.3

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	7/15	P19	CHANGE R389,R393 BOM STUCTURE FROM UMA@ TO @	REMOVE IN UMA SKU
2	7/20	P16	RESERVE D2 SIZE CAP C701 ON +VGA_CORE PLANE	ADD ONE MORE BULK CAP FOR VGA CORE
3	7/20	P28	ADD D12,R217,R438,R440,R443,R447,R448,R456,R458,R474 ,R495,R501 BOM STRUCTURE 5IN1@	CHANGE BOM STRUCTURE TO CONTROL BOM
		P29	ADD C518,C585,C592,C617,C618,R449,R455,R492,R494,R502 ,R520,R528,JP13,U44 BOM STRUCTURE 5IN1@	
		P12	ADD R524 BOM STRUCTURE 5IN1@	
4	7/20	P31	NEW ADD R619 BETWEEN L_OUT_L AND AMP_LEFT NEW ADD R620 BETWEEN L_OUT_R AND AMP_RIGHT	ADD RES TO BYPASS MUX
5	7/20	P12	CHANGE R574 TO RESERVE	CHANGE AC CODEC CLOCK SOURCE
		P31	CHANGE R527,R521 TO RESERVE CHANGE X3,C610,C619 TO MOUNT	
6	7/20	P31	CHANGE U45.47 NET NAME FROM EAPD TO EAPD_CODEC	USE KBC TO MUTE AMP
		P34	NEW ADD R621 BETWEEN EAPD_KBC AND U35.11	
		P32	ADD U9A, CONNECT U9A.1 TO EAPD_CODEC,U9A.2 TO EAPD_KBC U9A.3 TO EAPD	
7	7/21	P34	RESERVE R622.2,R623.2,R624.2 PULL HIGH TO +3VALW NEW ADD R625.2,R626.2,R627.2 PULL LOW TO GND ADD SKU_ID0 CONNECT BETWEEN U35.93,R622.1,R625.1 ADD SKU_ID1 CONNECT BETWEEN U35.94,R623.1,R626.1 ADD SKU_ID2 CONNECT BETWEEN U35.75,R624.1,R627.1	ADD SKU ID FUNCTION FOR EC RECOGNIZES
8	7/26	P28	Modify "5IN1@ " to "5IN1@"	
		P29	Modify "5IN1@ " to "5IN1@"	
		P30	Modify "KS@ " to "KS@"	
		P33	Modify R157 remark from "FIR@" to "@"	
		P21	Modify JP3 footprint from "SUYIN_030336FR004T115ZU_4P_EAL20" to "030336FR004T115ZU_4P_EAL20"	
9	7/29	P36	Shift SW/LED Connector signal up one pins, leave JP15.11 as NC.	
		P35	Add 3 screw hole, H23(H_C126D126N), H24 and H25 (H_O79X126D40X87) H23 for M/B location Keeping. H24 and H25 for Double USB holding.	
10	7/31	P20	L5 and L4 change as 0_0805_5%	
		P31	L9 and L11 change as 0_0603_5%, L26, L27 and L28 change as 0_0805_5%	
		P32	L29 and L30 change as 0_0805_5%, L26, L31, L32, L33 and L34 change as 0_0603_5%	
		P28	SDCK_XDWE# saperate SD_CLK and XDWE#, add R628 for XDWE#	Some card can't detect because reflection
		P29	R455.2 and JP13.36 SDCK_XDWE# change XDWE#. R450.1 and JP13.8 SDCK_XDWE# change SD_CLK.	
		XXX	Update schematic name from LA2641 to LA2461.	
11	8/02	P20	Add D30 for EMI ESD test fail.	
		P32	L31, L32, L33 and L34 change as Bead.	
12	8/03	P04	Delete P@ on PU5B.	
12	8/04	P19	Update R396 and R397 as 75_0402_1%.	
		P13	Update R603, R604 and R365 as 75_0402_1%.	

Compal Electronics, Inc.

Title: PIR LIST

Size | Document Number: EAL20 LA-2461 | Rev: 0.3

Date: 星期三, 八月 04, 2004 | Sheet 47 of 47