

ATW05

LA-1441 REV0.2 Schematics Document

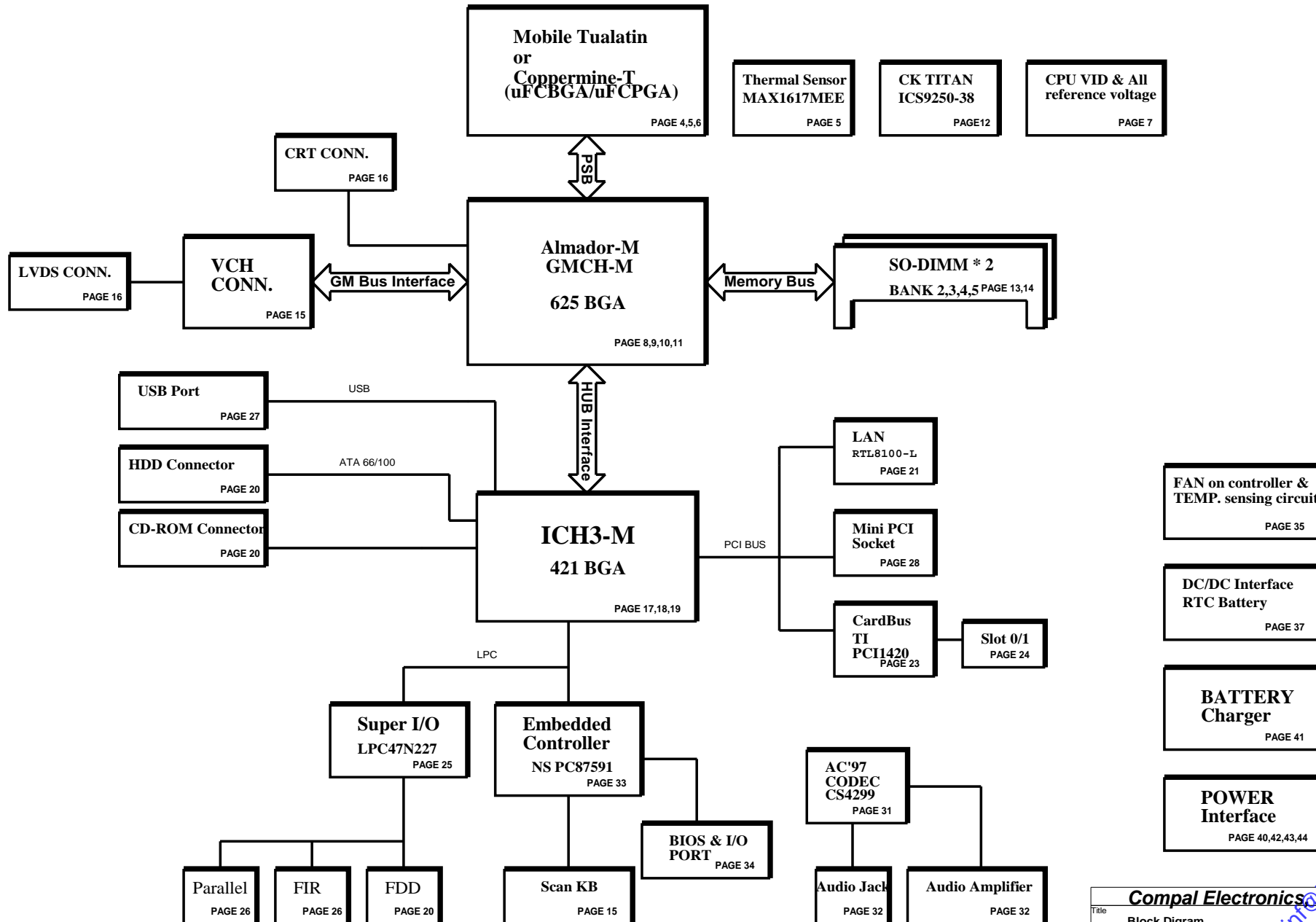
*uFCBGA/uFCPGA Coppermine-T or
Tualatin CPU
with Almador-MG
chipset*

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BLOCK DIAGRAM

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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
+VCC_H_CORE	Core voltage for CPU	ON	OFF	OFF
+VTT	1.2V switched power rail for CPU AGTL Bus	ON	OFF	OFF
+1.5V	1.5V power rail	ON	ON	OFF
+1.5VS	AGP 4X	ON	OFF	OFF
+1.8V	1.8V power rail	ON	ON	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+2.5V	2.5V power rail	ON	ON	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*
+5V	5V power rail	ON	ON	OFF
+5VS	5V switched power rail	ON	OFF	OFF
+12VALW	12V always on power rail	ON	ON	ON*
+12VS	12V switched 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.

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
CardBus	AD20	2	PIRQA/PIRQB
LAN	AD17	3	PIRQB
Mini-PCI	AD18	1/4	PIRQC/PIRQD

EC SM Bus1 address

Device	Address	Device	Address
Smart Battery	0001 011X b	MAX1617MEE	1001 110X b
EEPROM(24C16/02)	1010 000X b	Smart Battery	0001 011X b
(24C04)	1011 000Xb	Docking	0011 011X b
		DOT Board	XXXX XXXXb

EC SM Bus2 address

ICH3-M SM Bus address

Device	Address
Clock Generator (ICS9238-50)	1101 0000
SDRAM Select (74HC4052)	1010 0000
CPU Voltage VID select (F3565)	0110 111Xb

PIR

REV 0.1

Date	Page	Description
0201	10	R229 change 225 to 255
0204	31	Add R564 @2.2K on pin 3 of MicPhone Jack
	42	Modify PU10 pin 11 error

REV 0.2

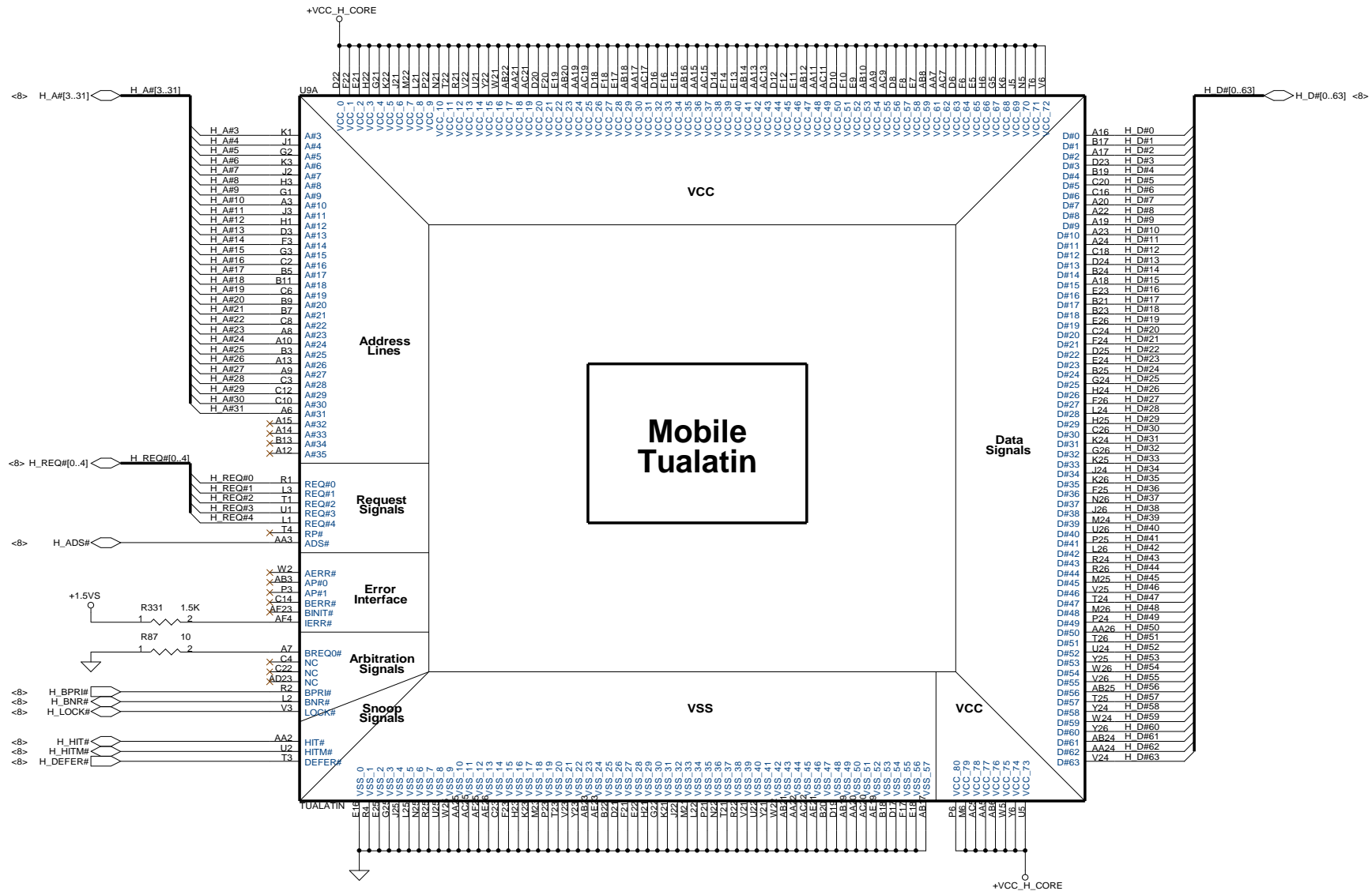
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Notes & PIR

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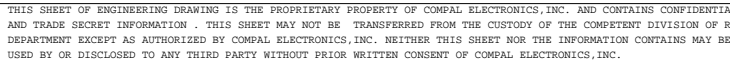
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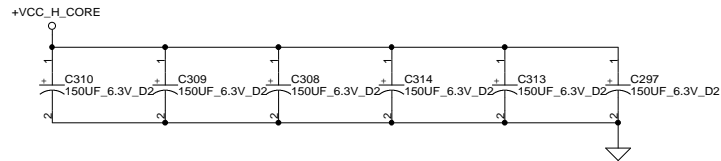
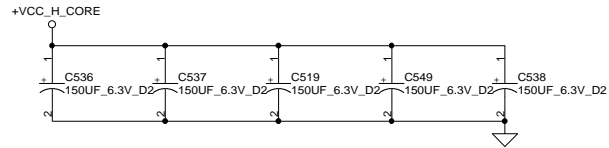
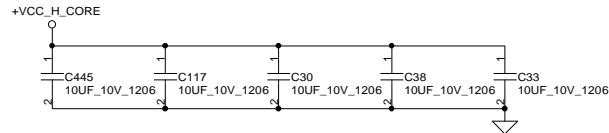
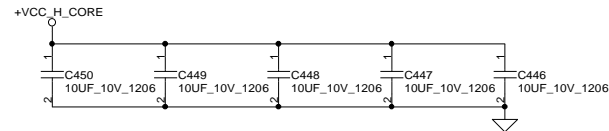
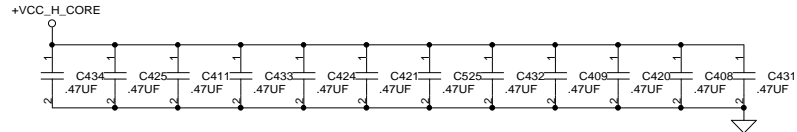
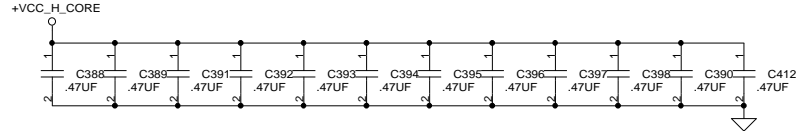
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Mobile Tualatin Micro-FCPGA			
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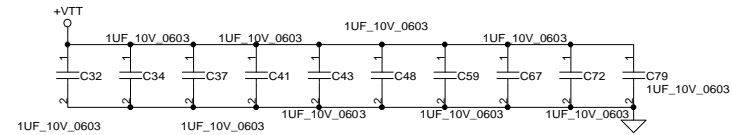
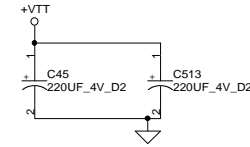
Layout note :

Place close to CPU, Use 2~3 vias per PAD.
Place .47uF caps underneathballs on solder side.
Place 10uF caps on the peripheral near balls.
Use 2~3 vias per PAD.



Layout note :

Place close to CPU,
Use 2 vias per PAD.



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Almador-M GMCH

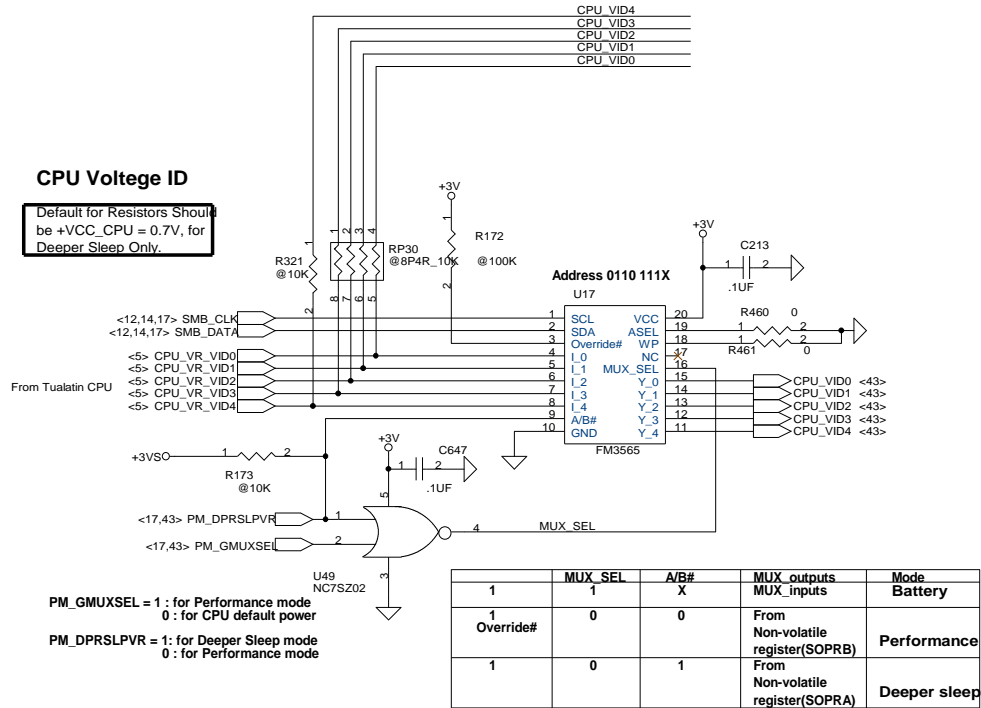
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Tualatin

D4	D3	D2	D1	D0	CPU_Core(V)	QS(MP)
0	0	1	1	1	1.40V (Performance)	
0	1	1	0	0	1.15V (Battery)	
1	0	1	0	1	0.85V (Deeper Sleep)	

CPU Voltage ID

Default for Resistors Should be +VCC_CPU = 0.7V, for Deeper Sleep Only.



SpeedStep function Note for SMT

Support SpeedStep :

Stuffed : U17, U49, R460, R461
Not Stuffed : RP30, R321

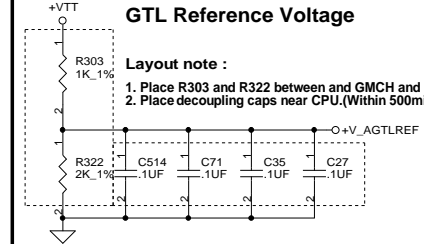
Without Support SpeedStep :

Stuffed : RP30, R321
Not Stuffed : U17, U49, R460, R461

GTL Reference Voltage

Layout note :

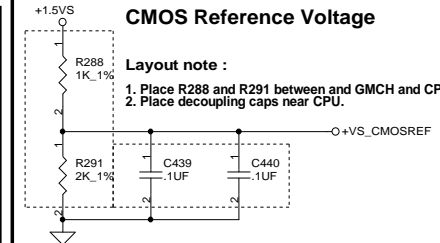
1. Place R303 and R322 between and GMCH and CPU.
2. Place decoupling caps near CPU.(Within 500mils)



CMOS Reference Voltage

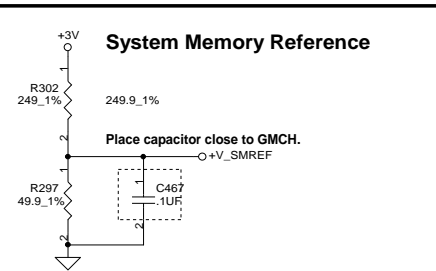
Layout note :

1. Place R288 and R291 between and GMCH and CPU.
2. Place decoupling caps near CPU.



System Memory Reference

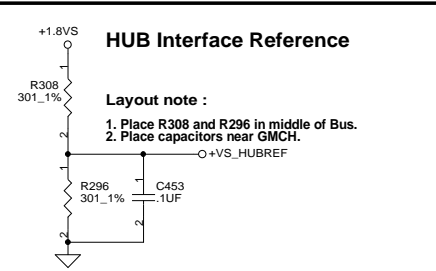
Place capacitor close to GMCH.



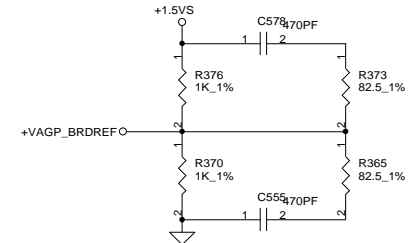
HUB Interface Reference

Layout note :

1. Place R308 and R296 in middle of Bus.
2. Place capacitors near GMCH.

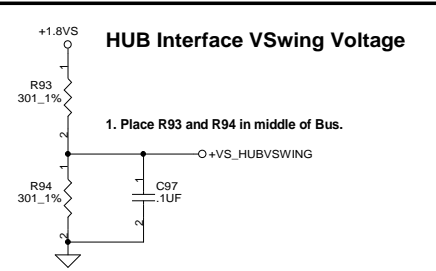


Place Reference Circuit near GMCH

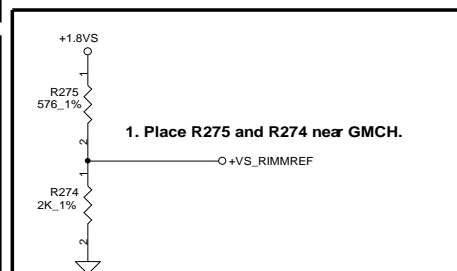


HUB Interface VSing Voltage

1. Place R93 and R94 in middle of Bus.



1. Place R275 and R274 near GMCH.

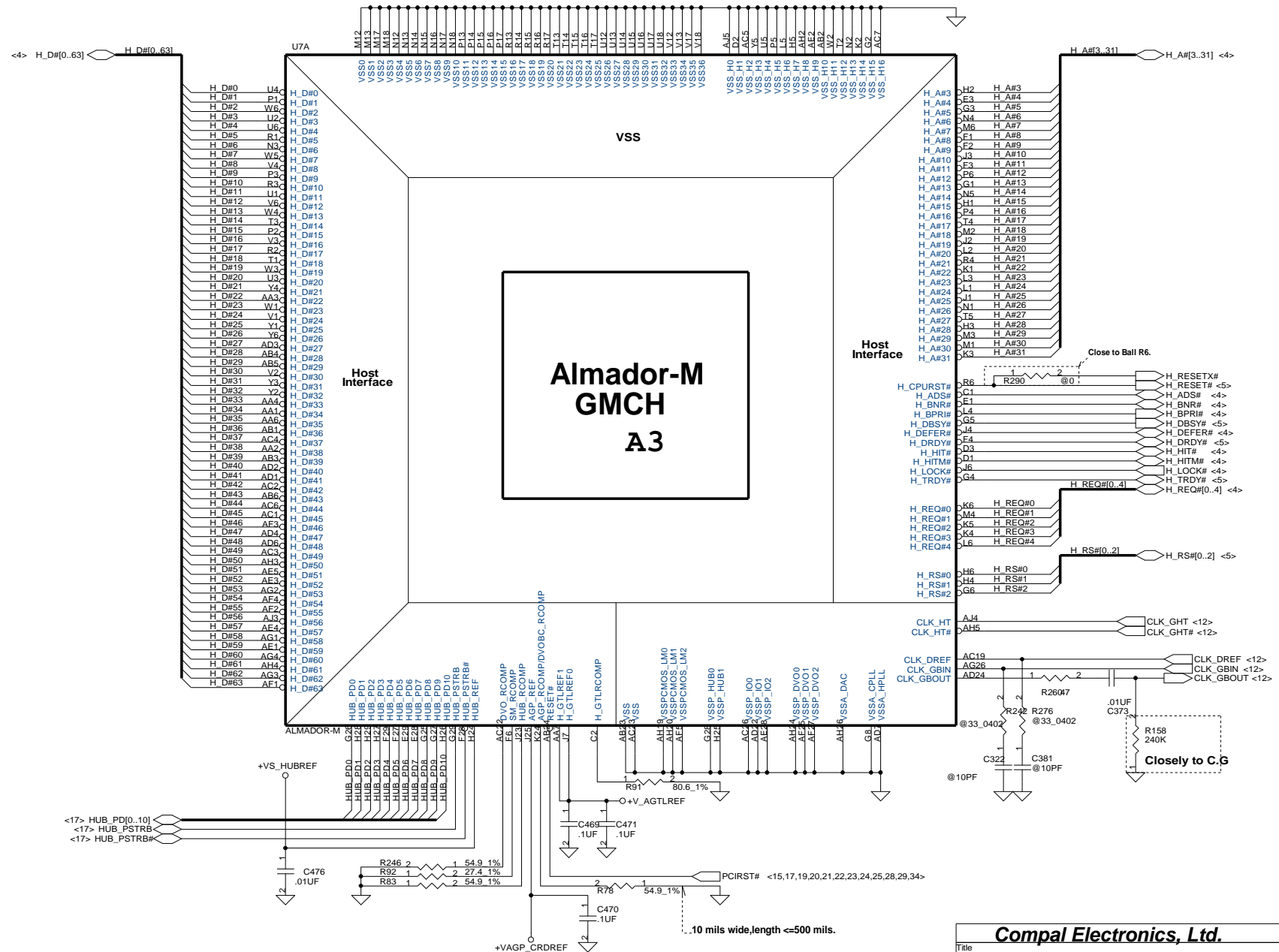


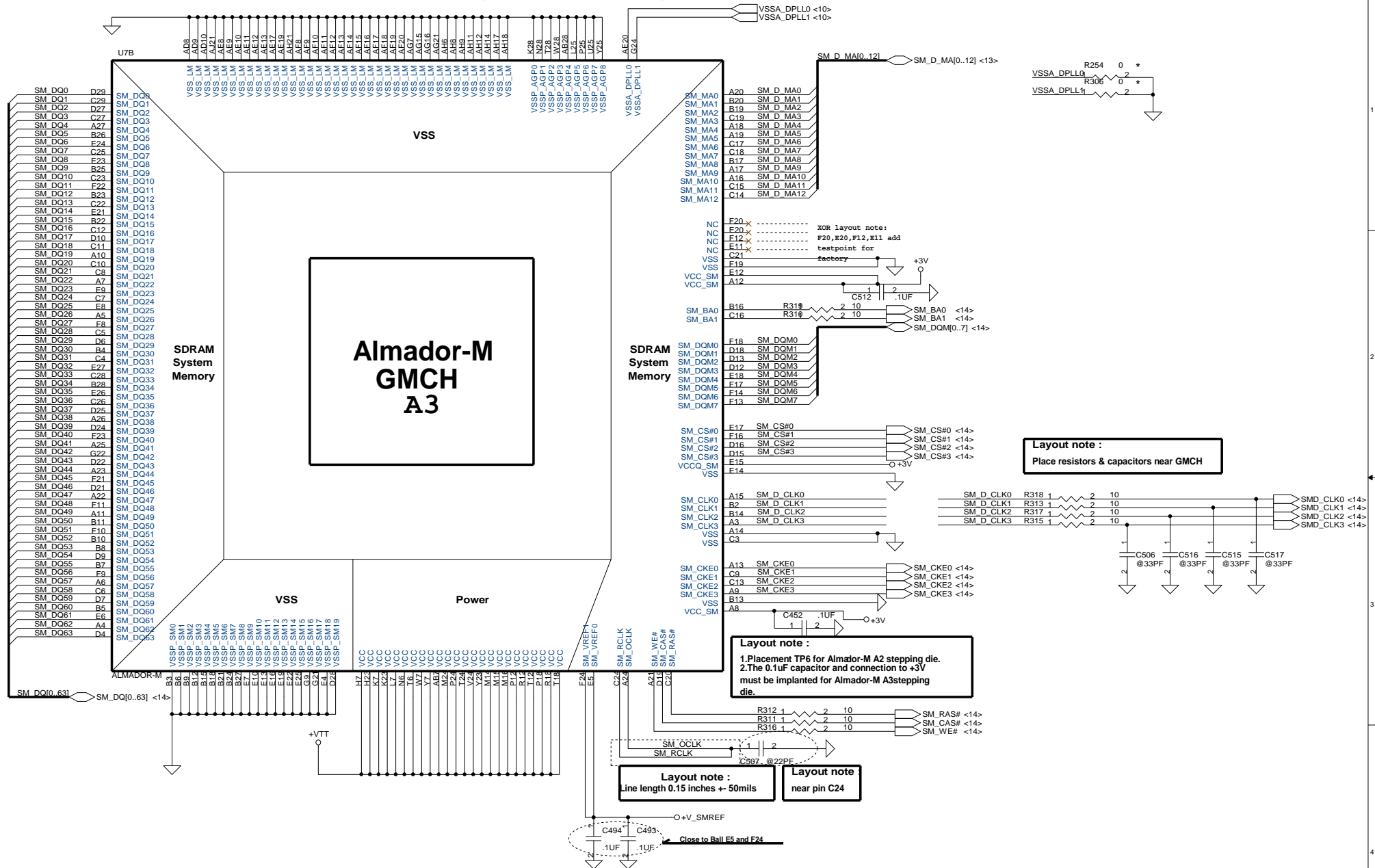
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CPU VID & All Reference Voltage

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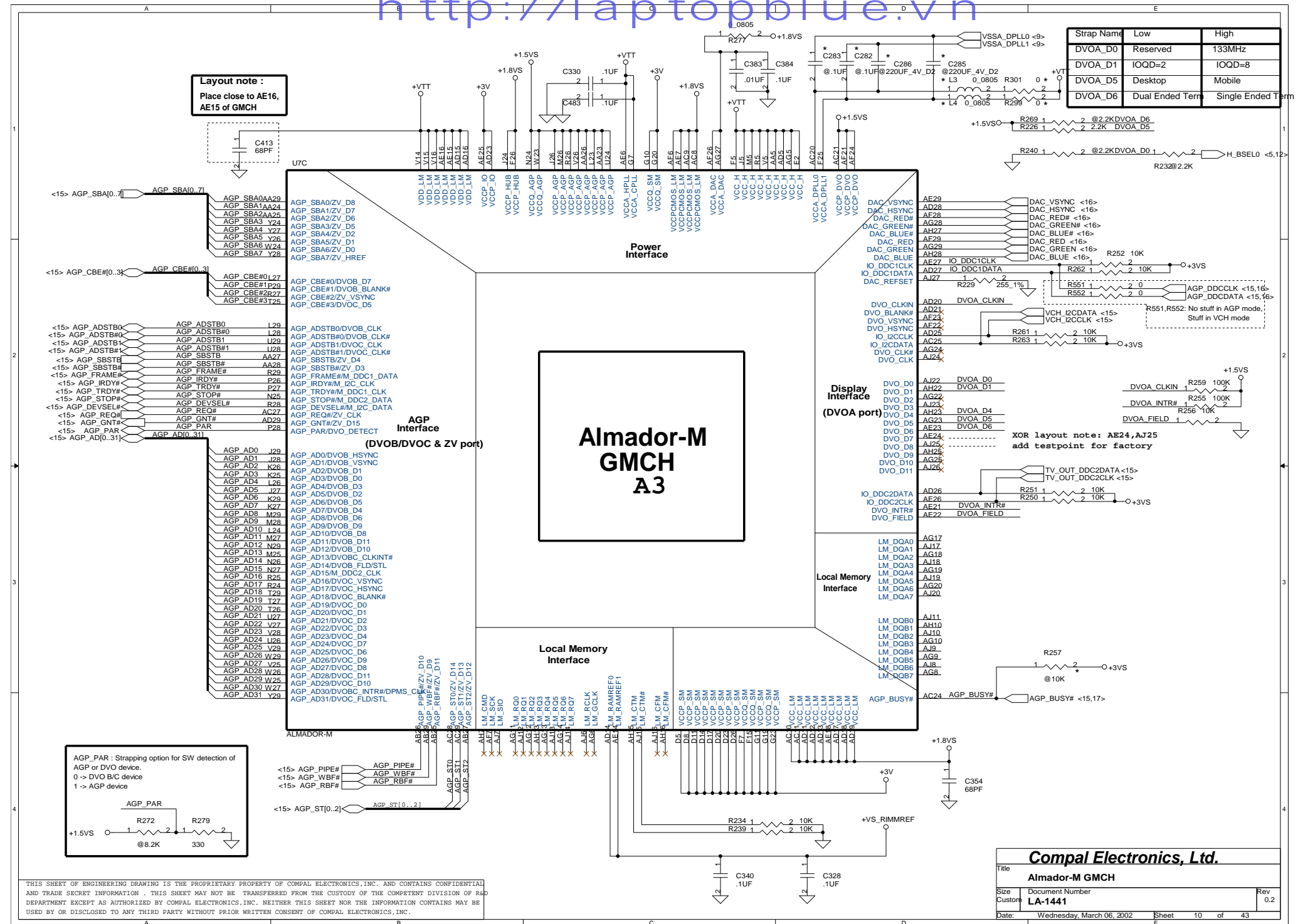
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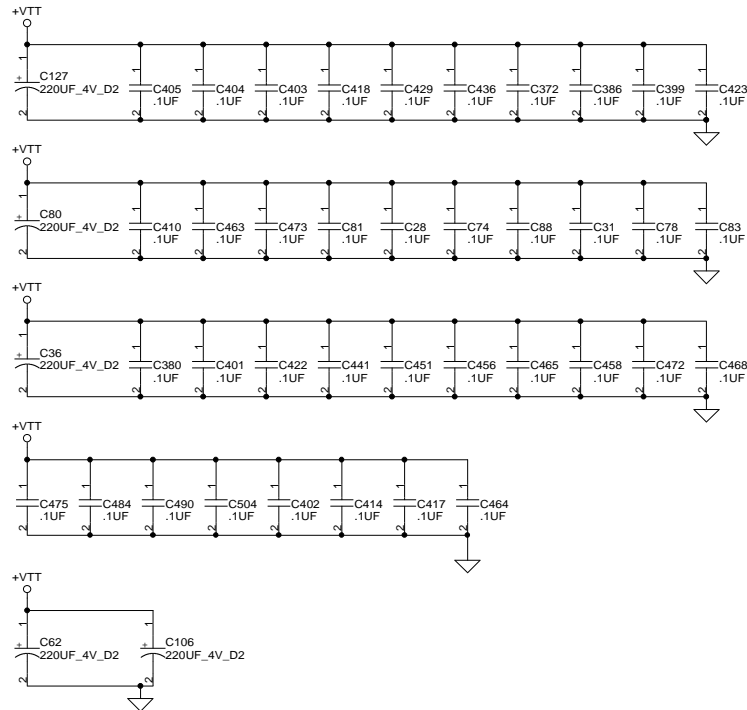
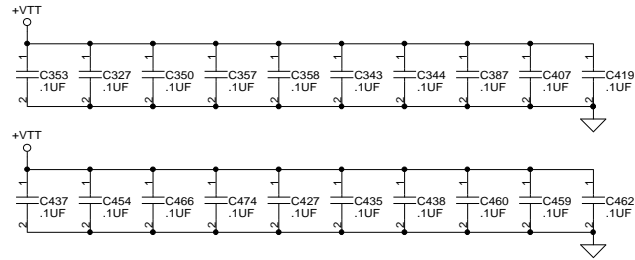


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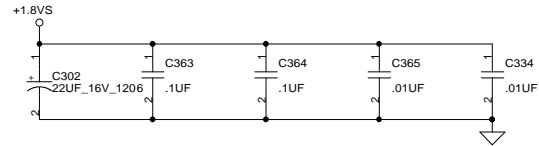
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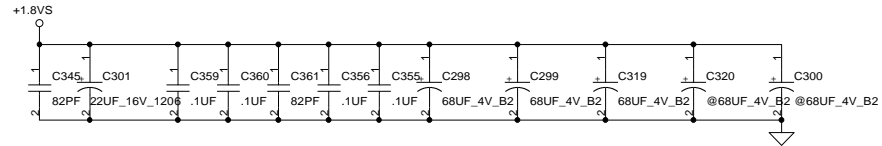
Layout note :
Distribute as close as possible
to GMCH Processor Quadrant .



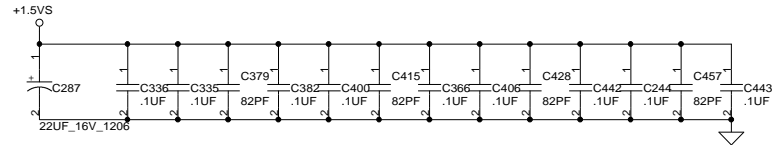
Layout note :
Distribute as close as possible
to VCCPCMOS_LM .



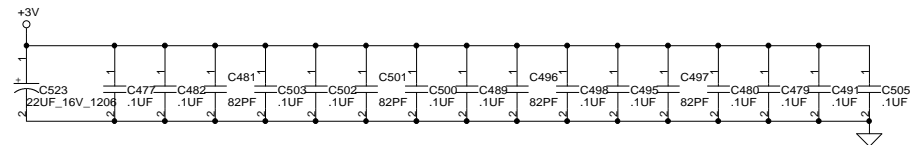
Layout note :
Distribute as close as possible
to GMCH Local Memory Quadrant .



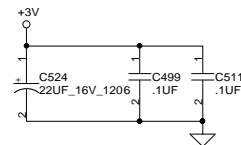
Layout note :
Distribute as close as possible
to GMCH AGP/DVO Quadrant .



Layout note :
Distribute as close as possible
to GMCH System Memory Quadrant .

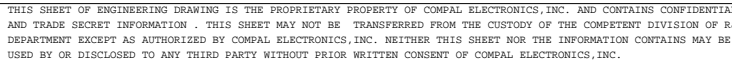


Layout note :
Distribute as close as possible
to IO Quadrant .

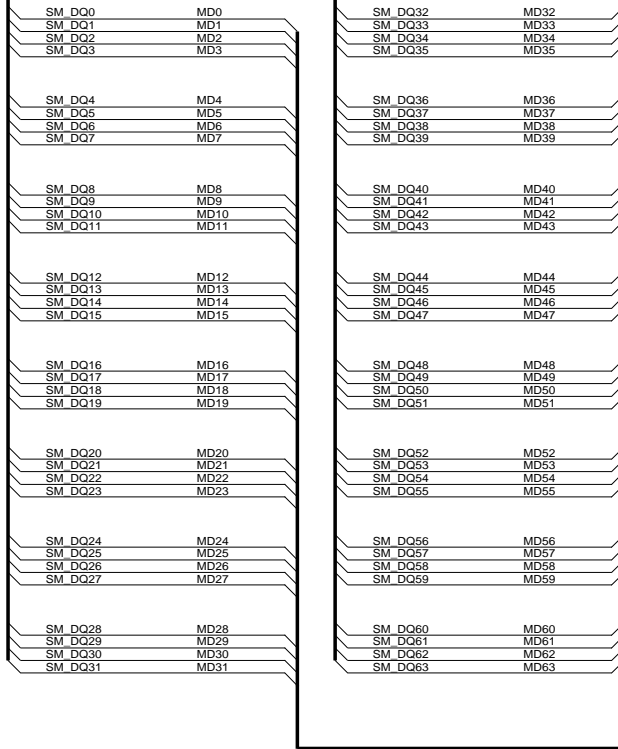


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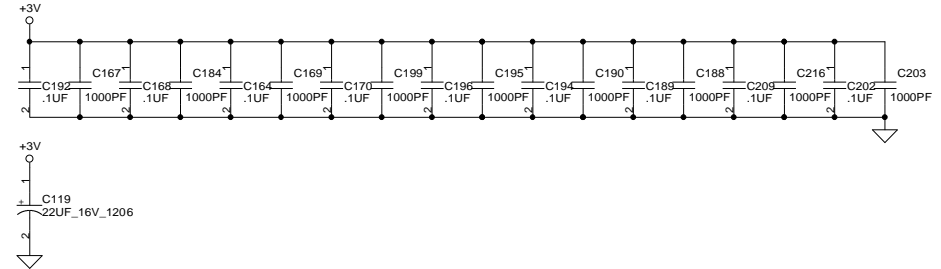
Compal Electronics, Ltd.			
Title			
GMCH-M Decoupling			
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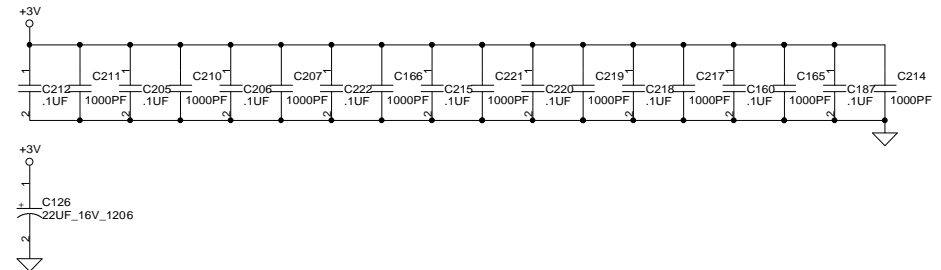
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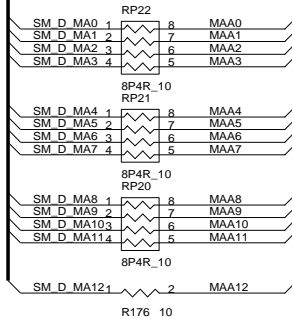
Layout note :
One .1uF cap per power pin .
Place each cap close to SODIMM(DIMM 0) pin .



Layout note :
One .1uF cap per power pin .
Place each cap close to SODIMM(DIMM 1) pin .

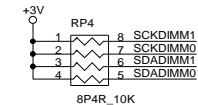


<9> SM_D_MAA[0..12] MAA[0..12] <14>



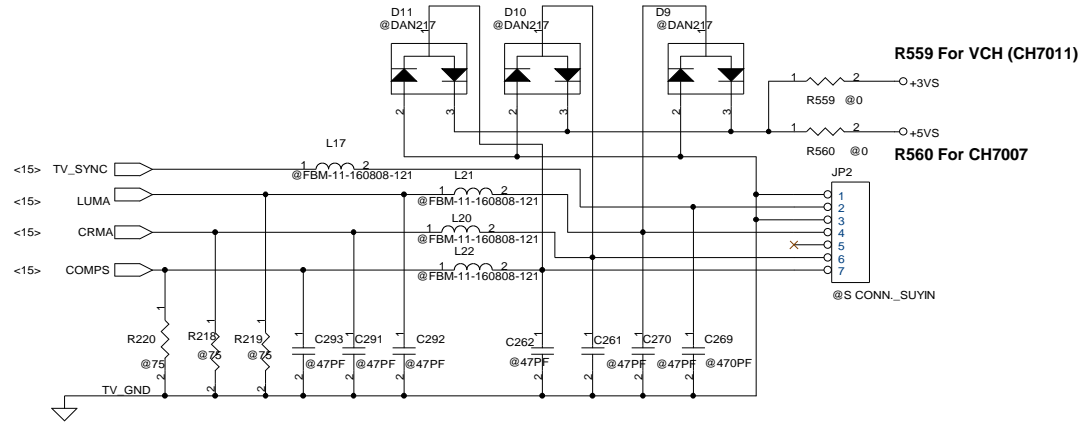
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SODIMM Damping & Decoupling			
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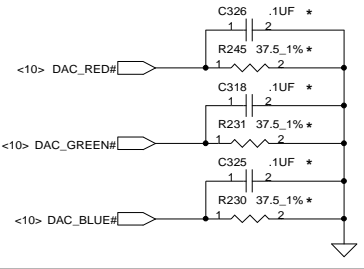




TV_OUT CONN.

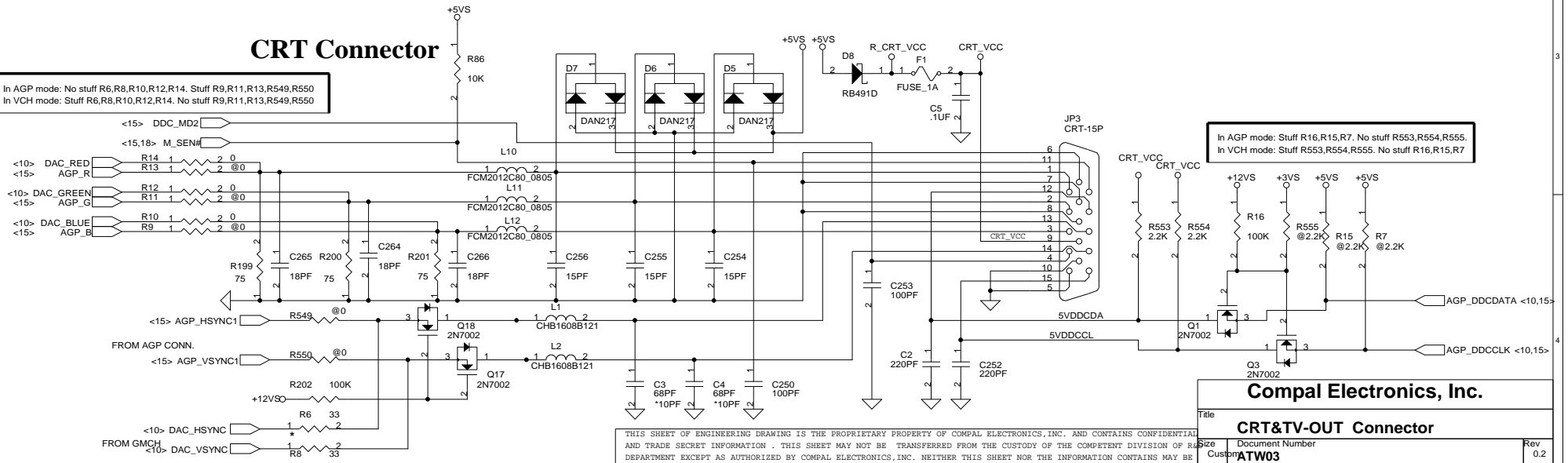


In AGP mode: No stuff C326,R245,C318,R231,C325,R230.
In VCH mode: Stuff C326,R245,C318,R231,C325,R230

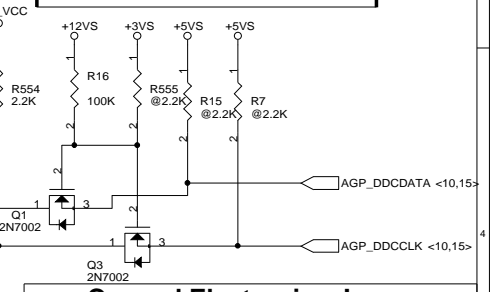


CRT Connector

In AGP mode: No stuff R6,R8,R10,R12,R14. Stuff R9,R11,R13,R549,R550
In VCH mode: Stuff R6,R8,R10,R12,R14. No stuff R9,R11,R13,R549,R550



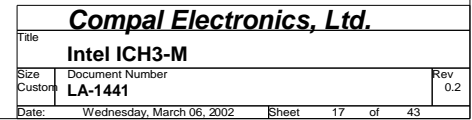
In AGP mode: Stuff R16,R15,R7. No stuff R553,R554,R555.
In VCH mode: Stuff R553,R554,R555. No stuff R16,R15,R7

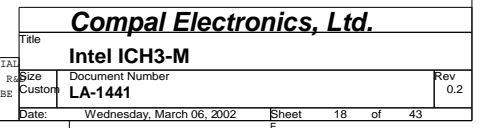


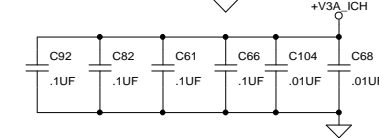
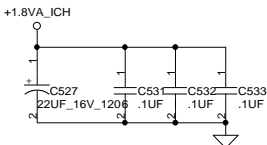
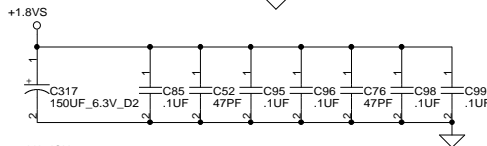
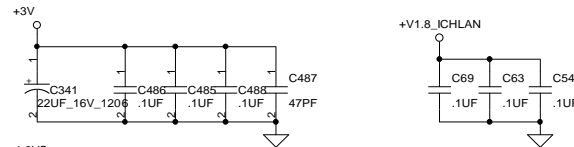
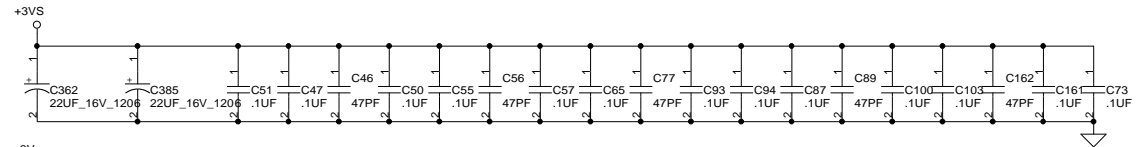
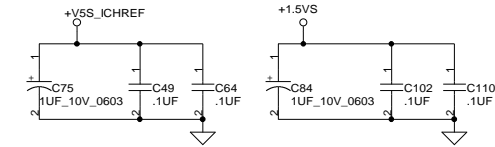
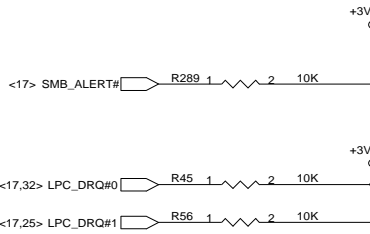
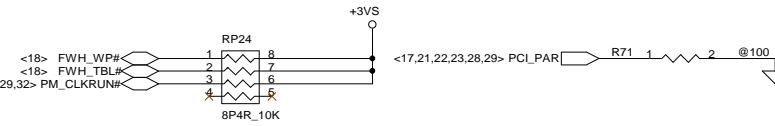
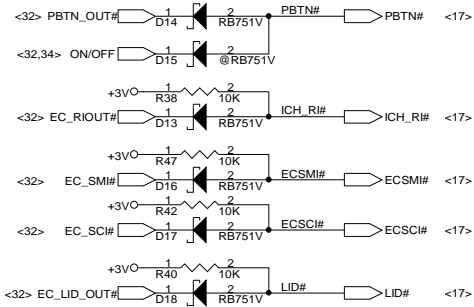
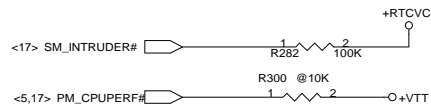
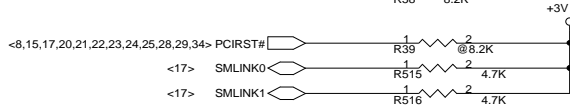
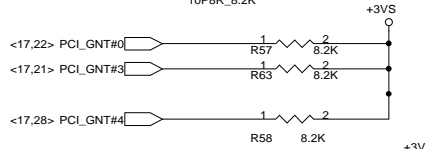
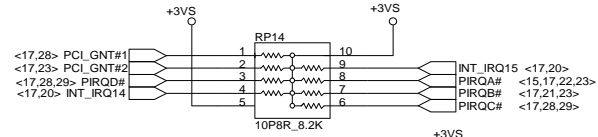
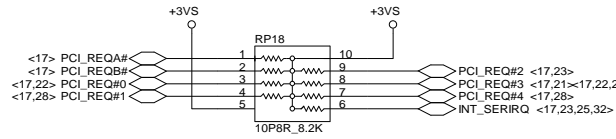
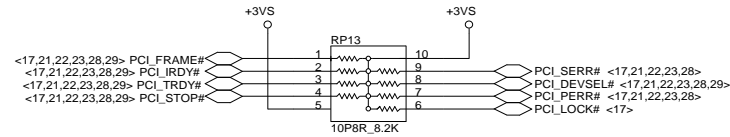
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CRT&TV-OUT Connector

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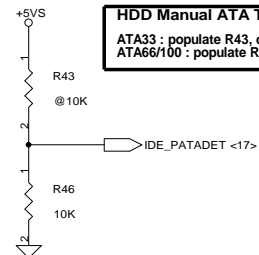




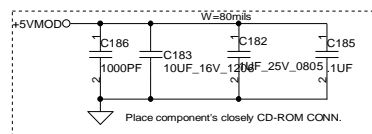
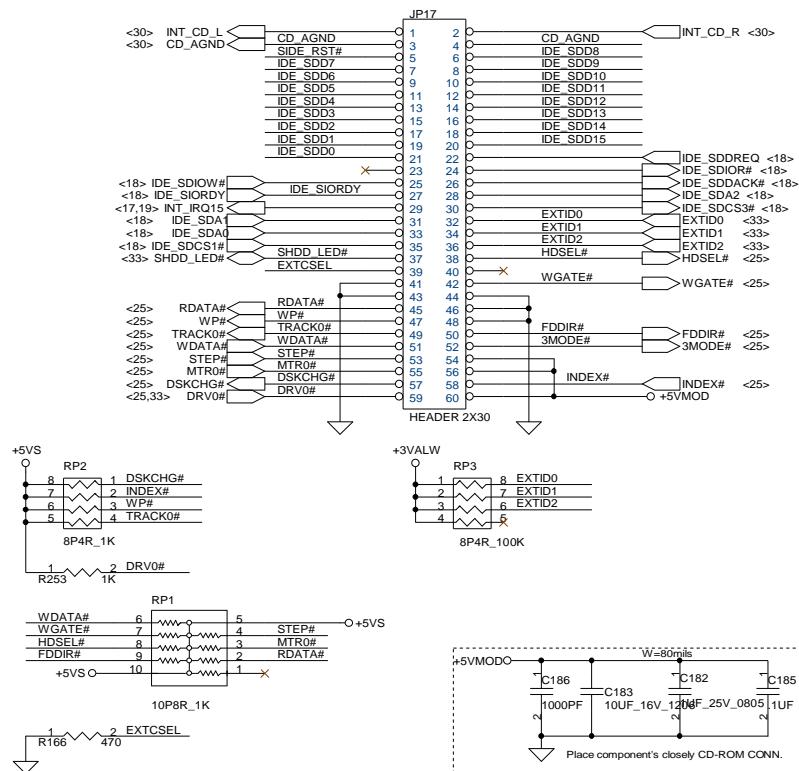
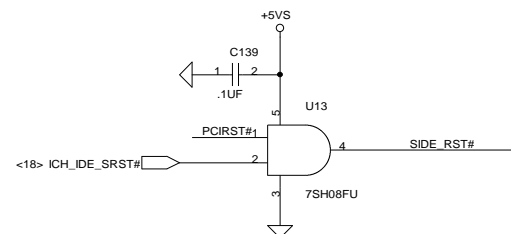
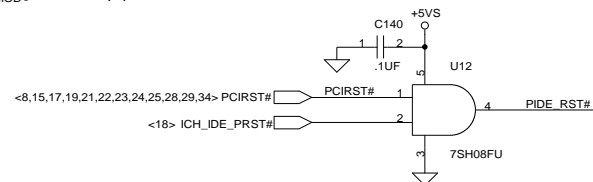
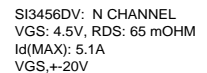


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Compal Electronics, Ltd.			
Title ICH3-M Pullups & Decoupling			
Size	Document Number	Rev	
Custom	LA-1441	0.2	
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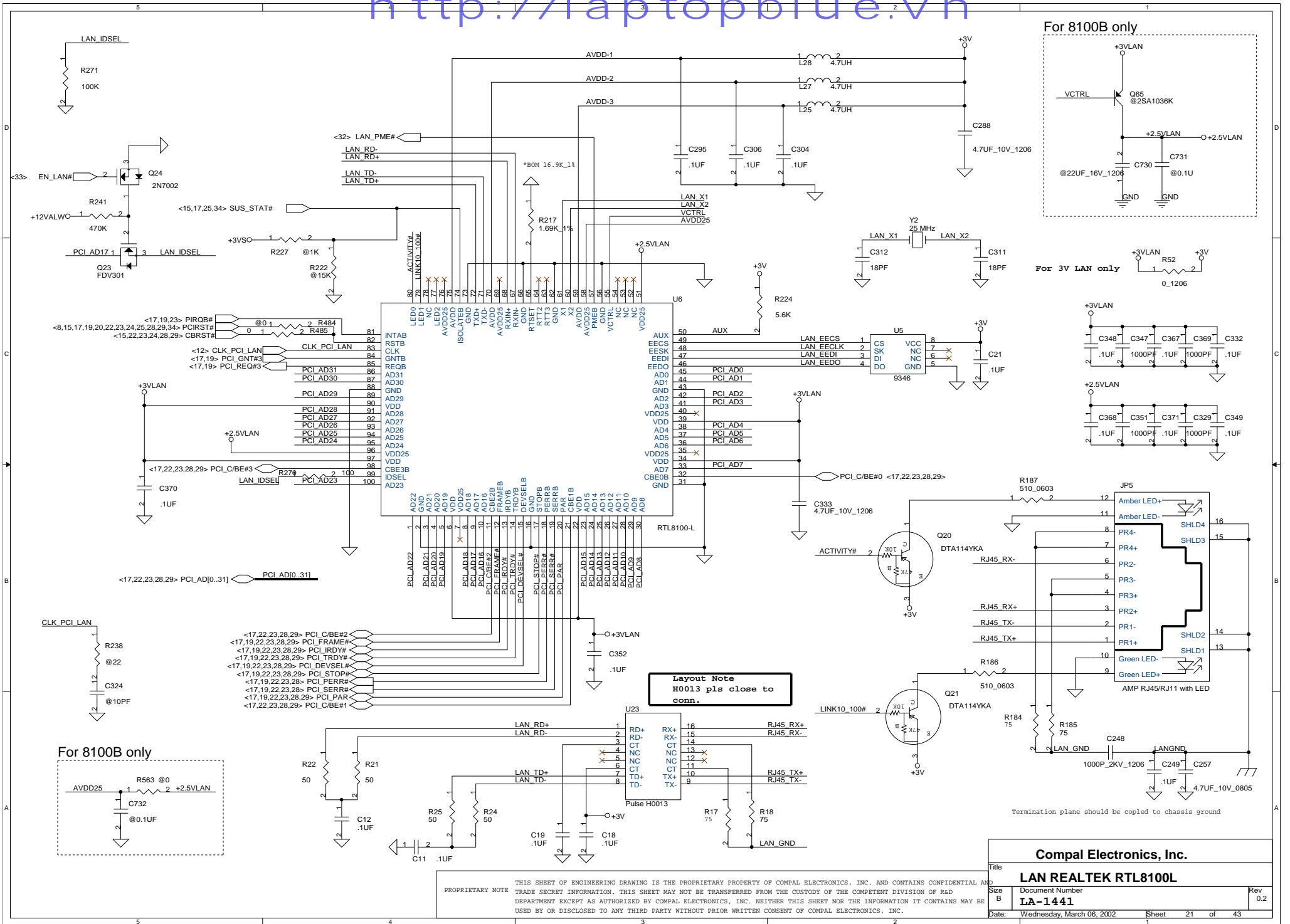


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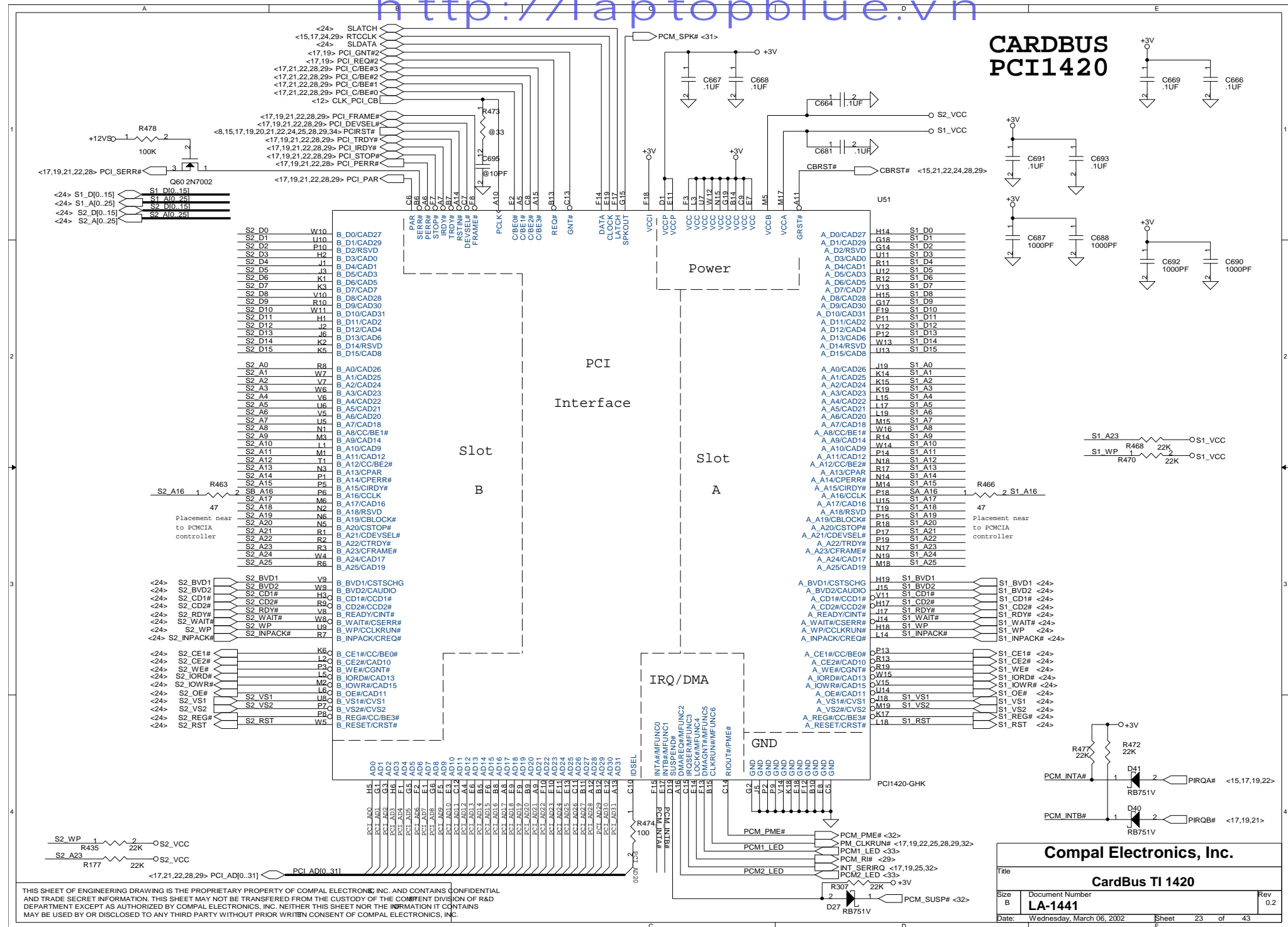
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Size of Document Number
VISION OF R&D
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ING
Date: Wednesday, March 06, 2002 Sheet 20 of 43

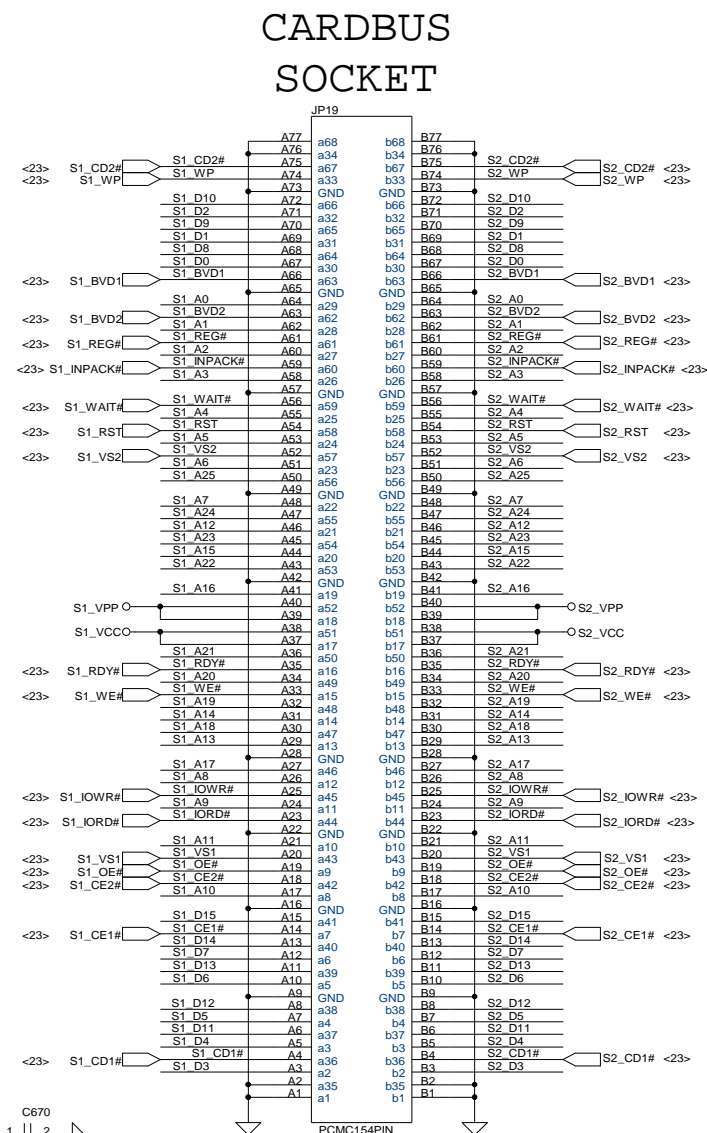
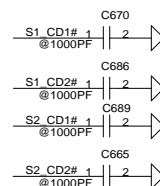
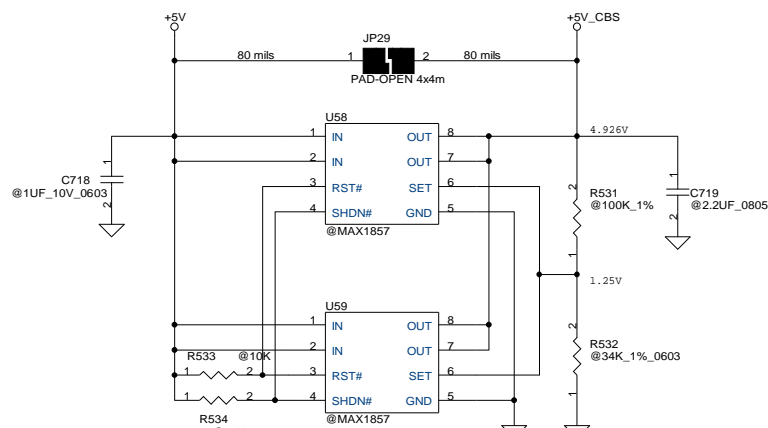
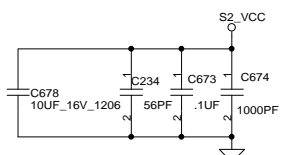
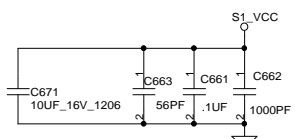
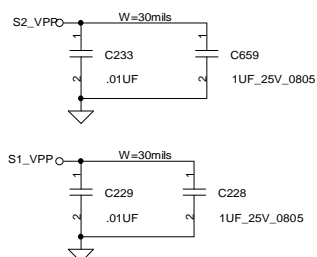
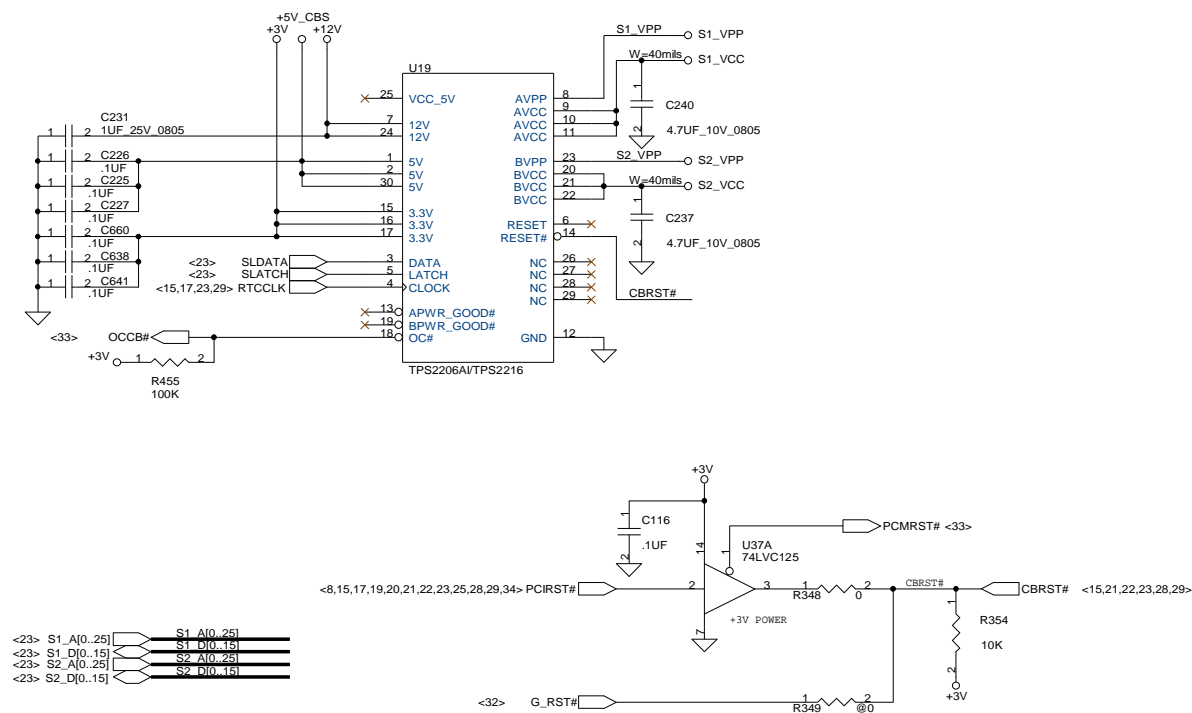




Compal Electronics, Inc.			
Title			
IEEE 1394 Interface (RESERVE)			
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PCMCIA POWER CTRL.



Compal Electronics, Inc

FCI PCMCIA SOCKET

Title

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CONTAINS LA-1441
INC

Dev:

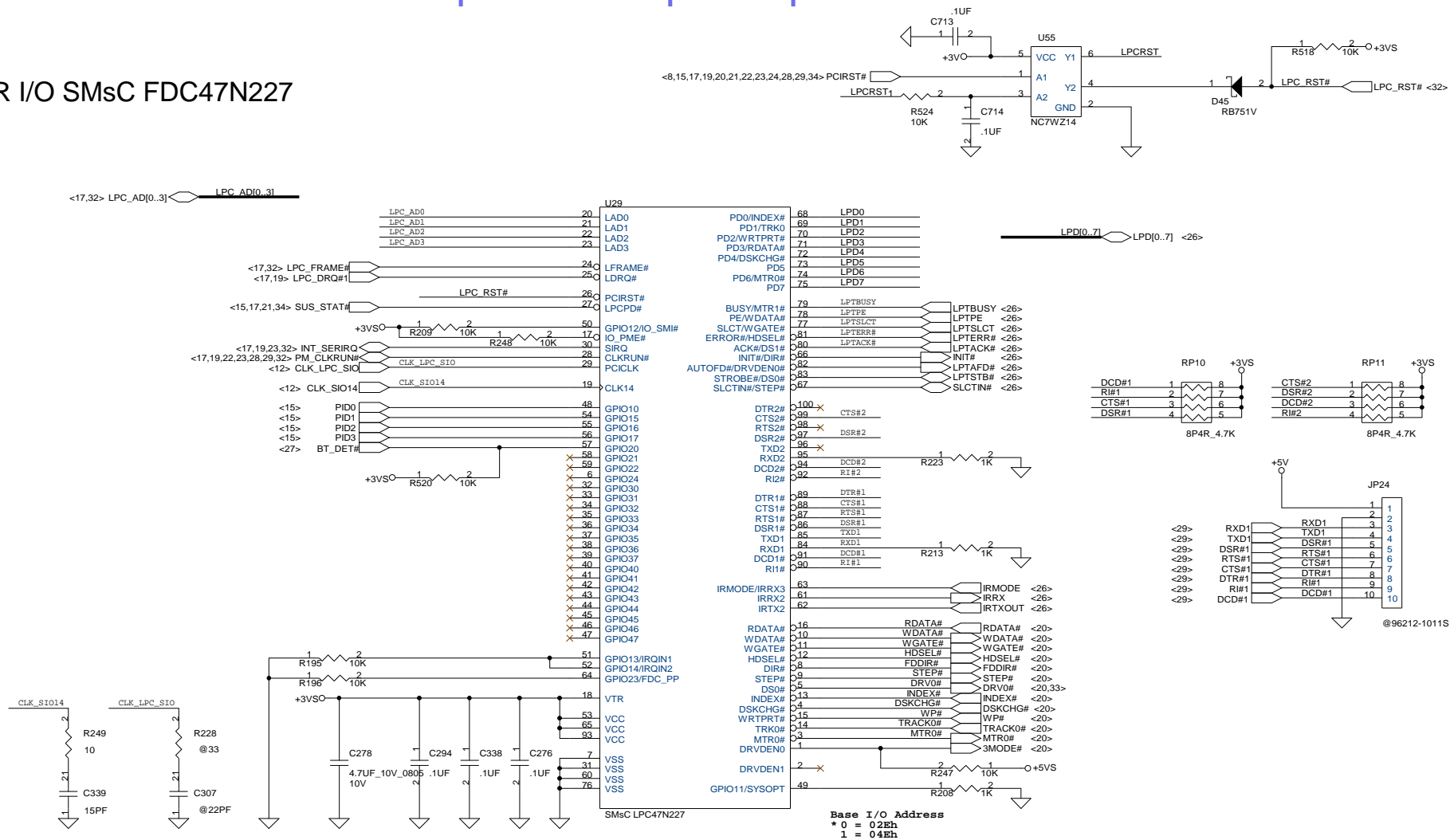
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Document Number: **LA-1441**
 Date: **Wednesday, March 14, 1990**

SUPER I/O SMsC FDC47N227



PROPRIETARY NOTE

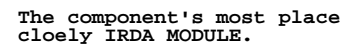
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Compal Electronics, Inc.

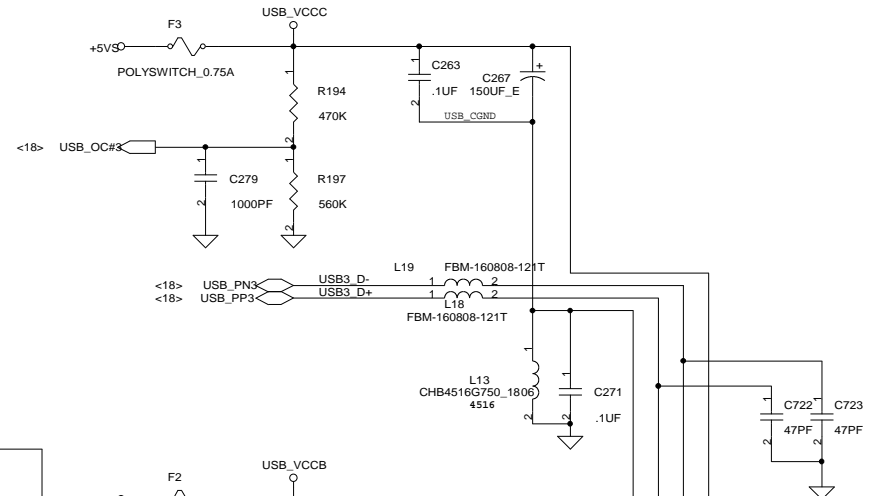
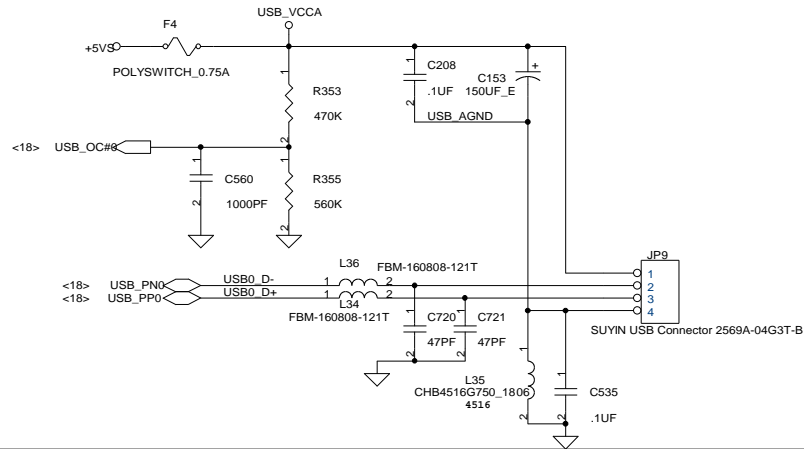
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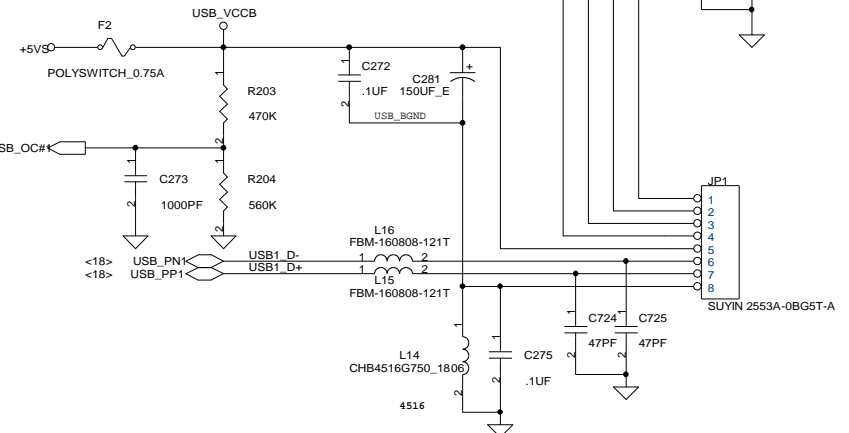
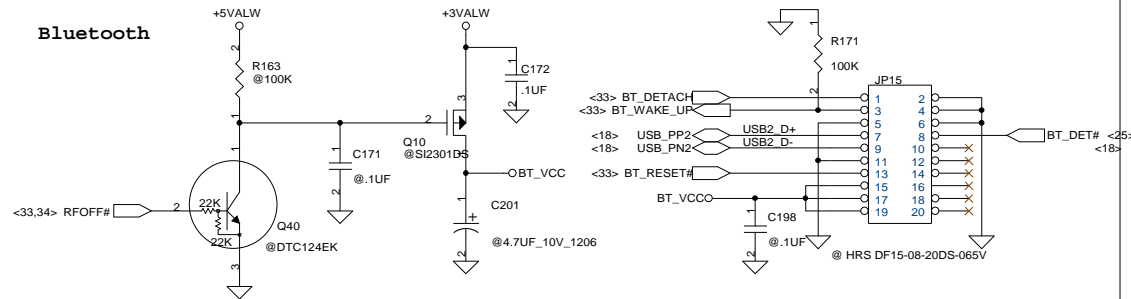
Date: Wednesday, March 06, 2002 Sheet 25 of 43



USB PORT



Bluetooth

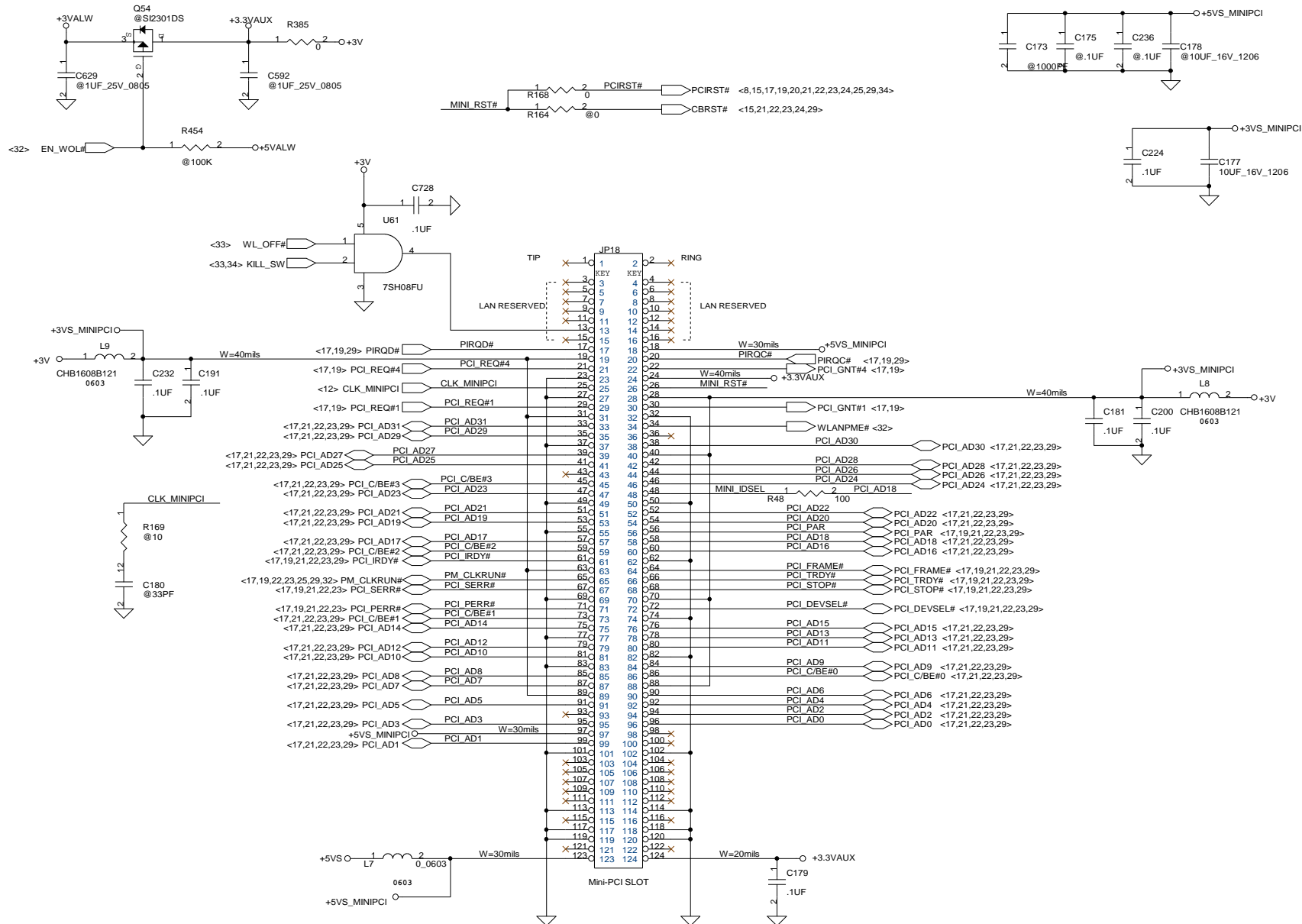


Compal Electronics, Inc

Title
USB PORT & BLUE TOOTH

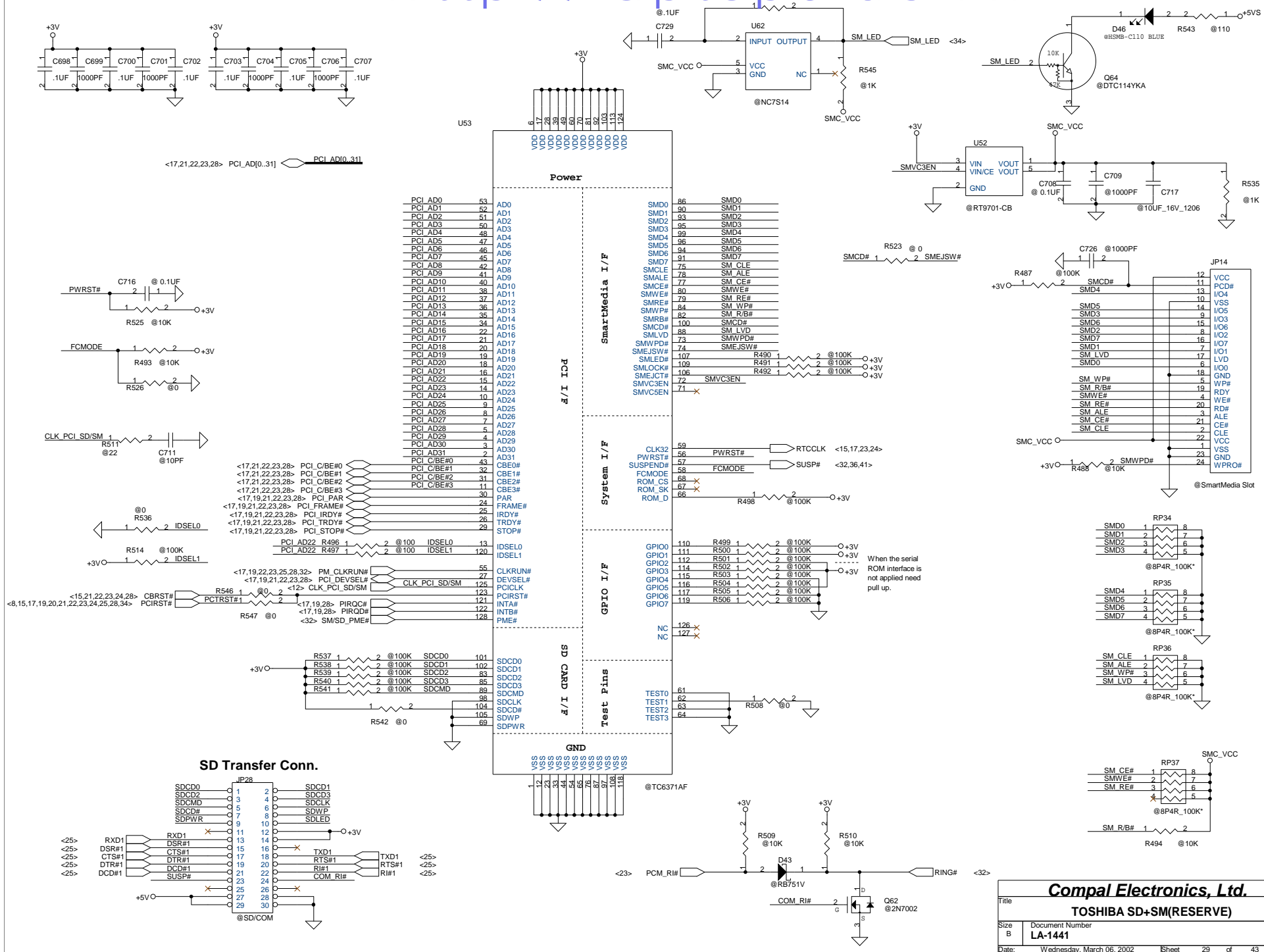
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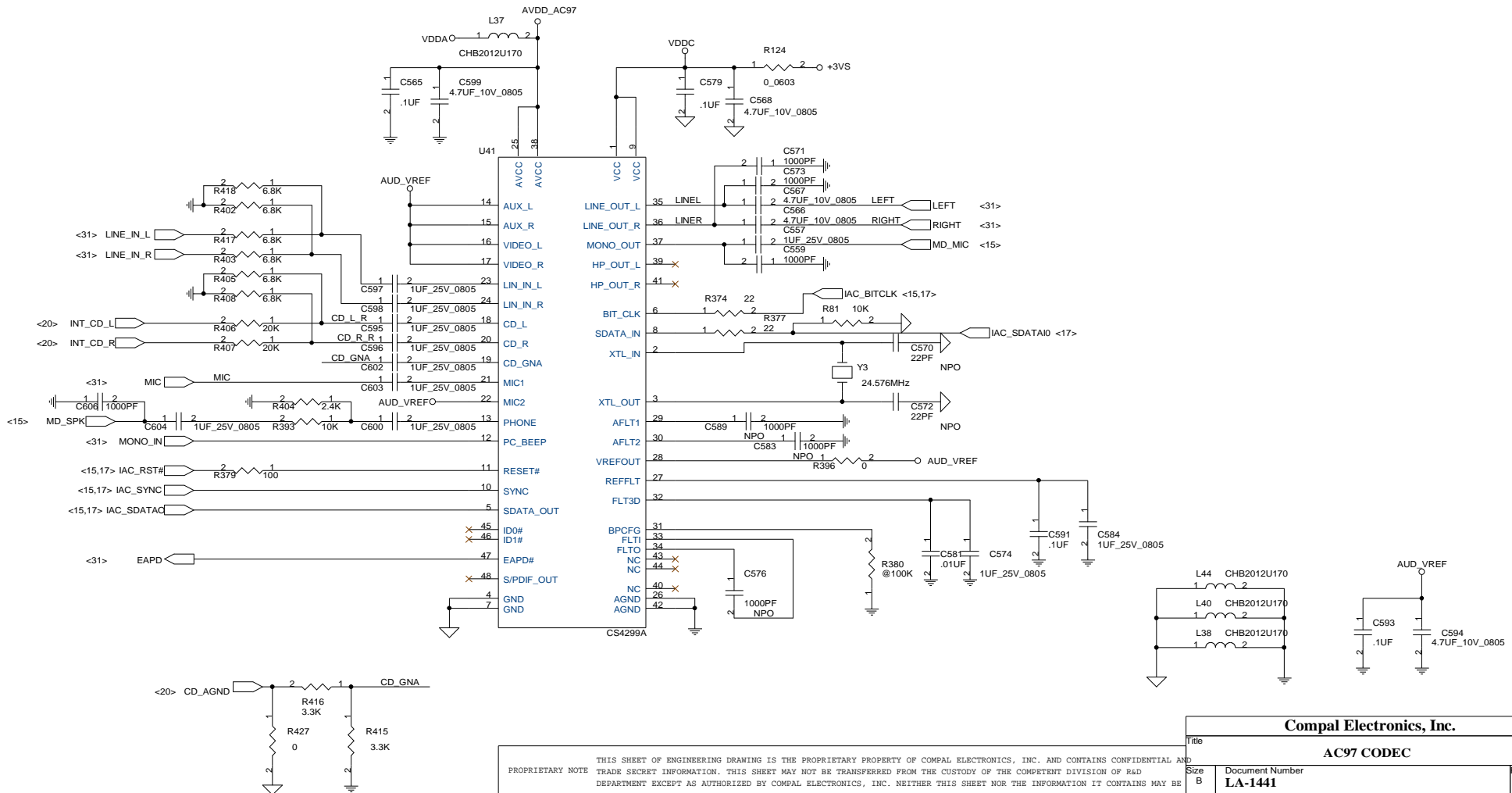
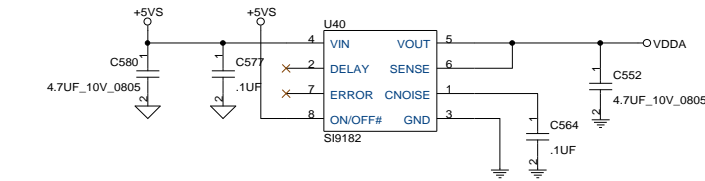
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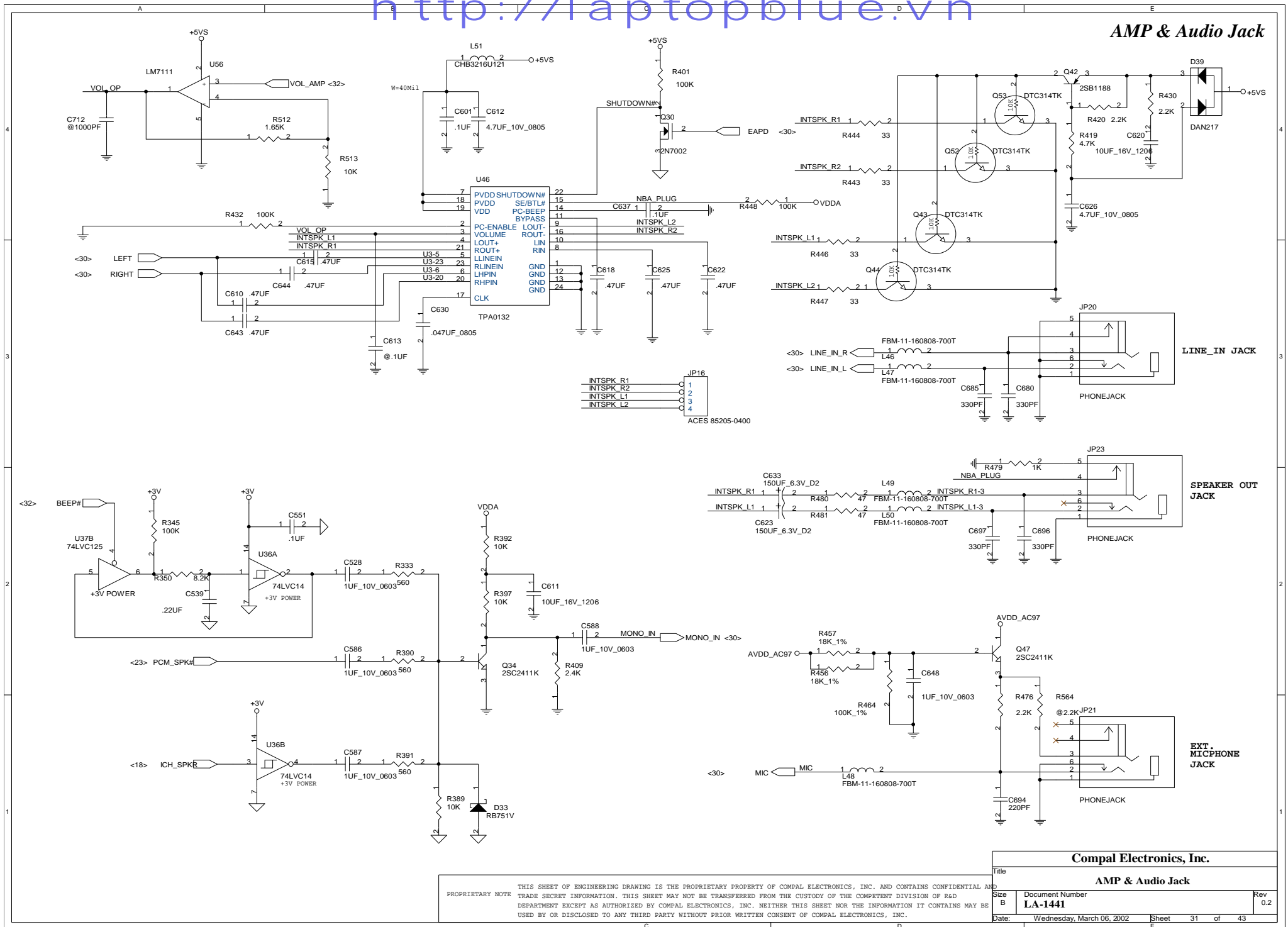
Compal Electronics, Inc			
Title	MINI_PCI		
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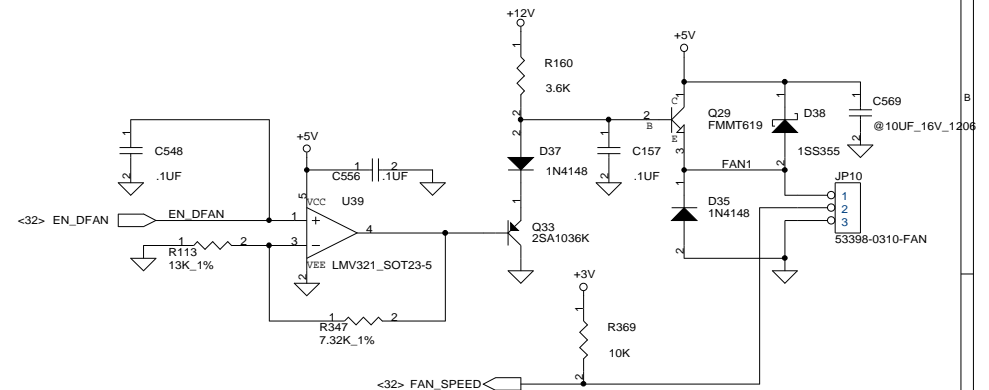


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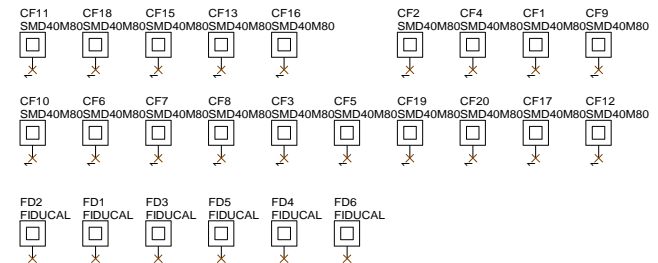
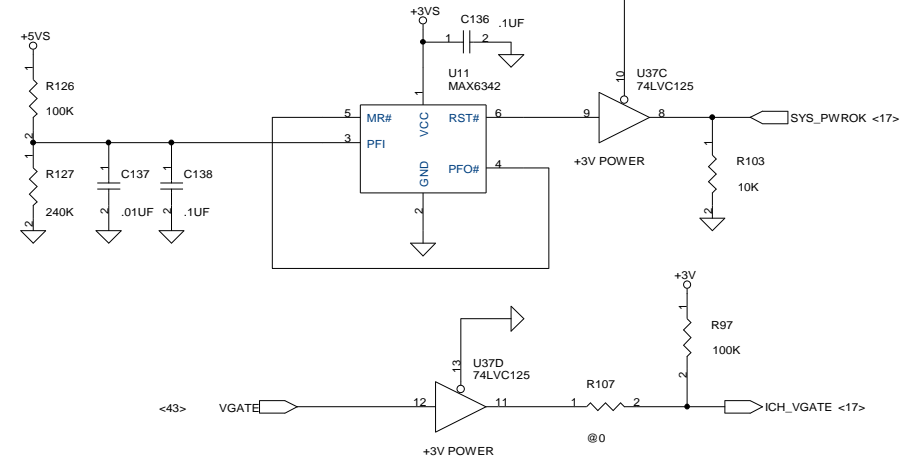
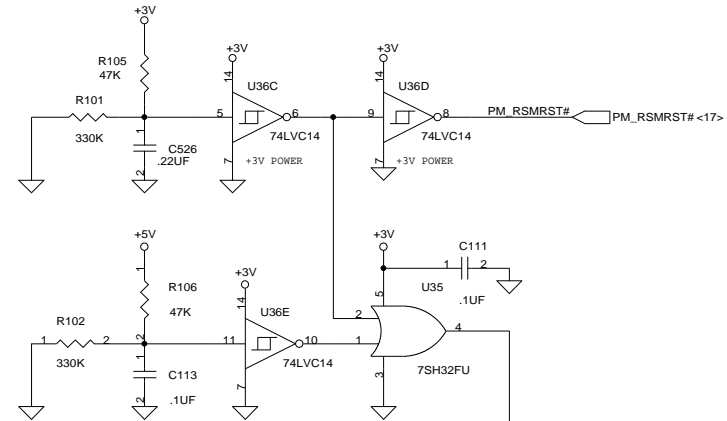
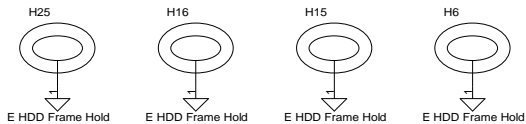
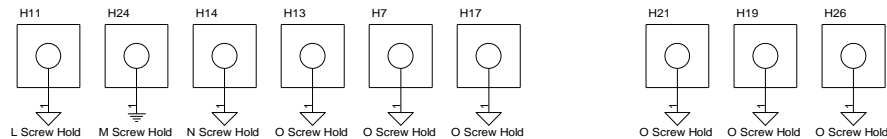
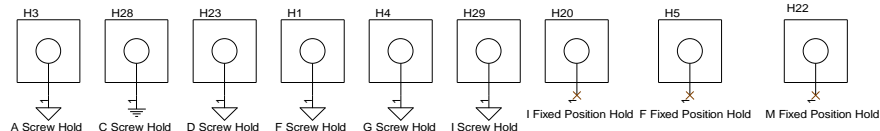
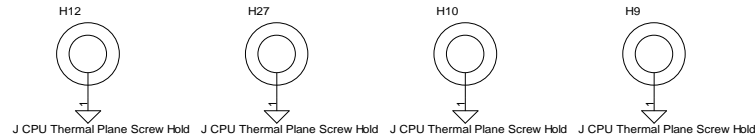
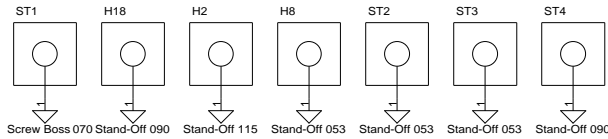
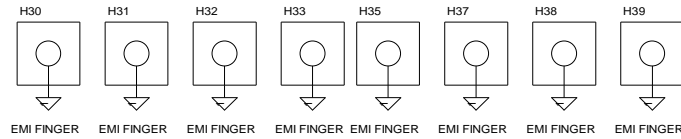
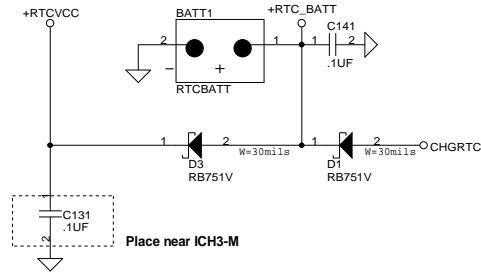








RTC Batt. Connector



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Compal Electronics, Inc.			
Title	RESET		
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+3VALW To +3V Transfer

+5VALW To +5V Transfer

+1.5V TO +1.5V_SW Transfer

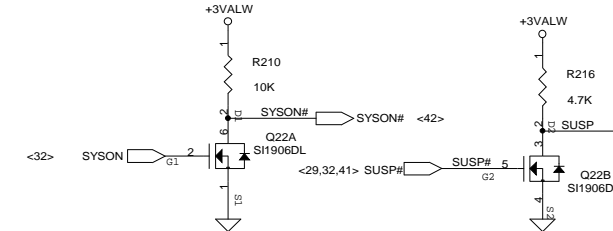
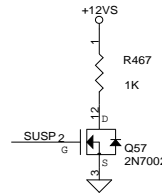
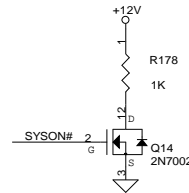
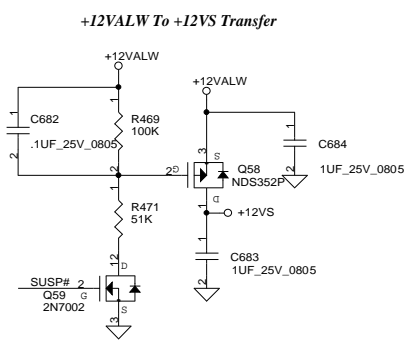
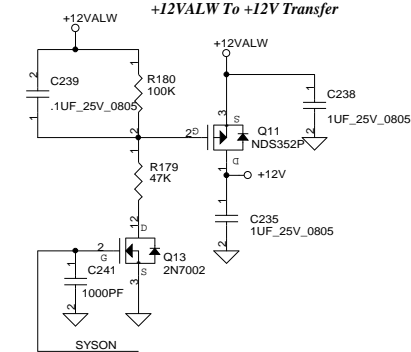
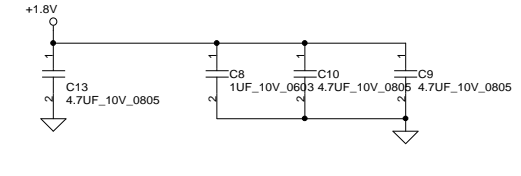
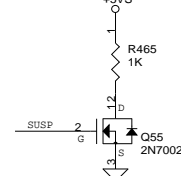
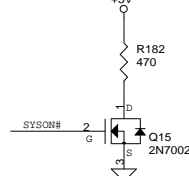
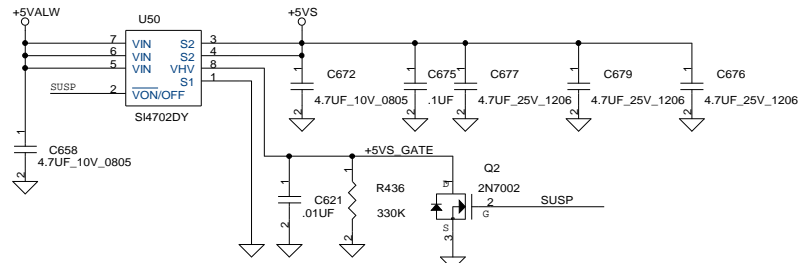
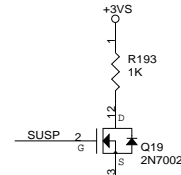
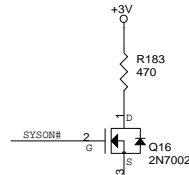
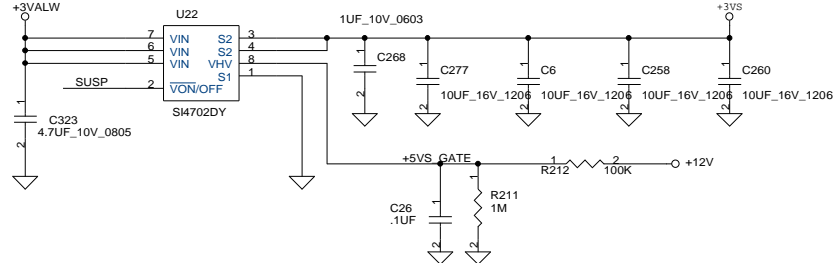
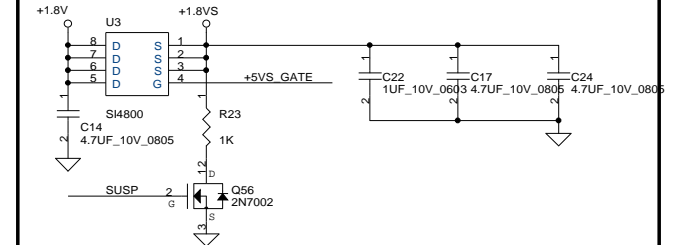
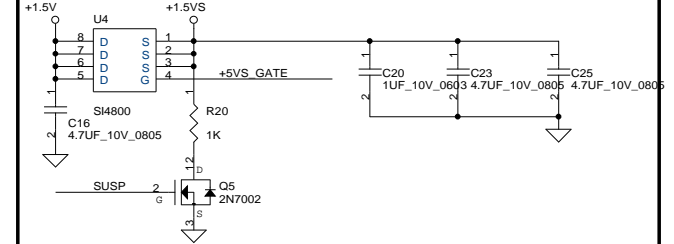
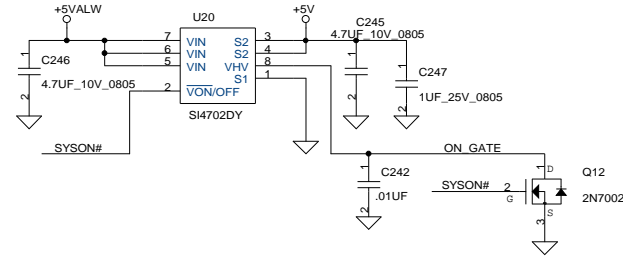
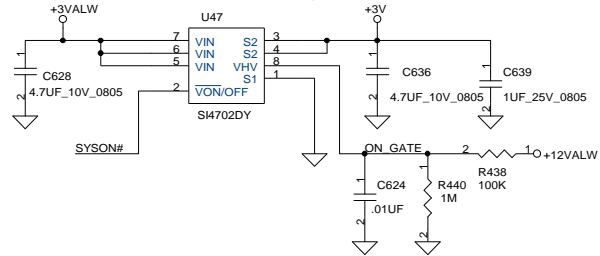
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+3VALW To +3VS Transfer

+5VALW To +5VS Transfer

+12VALW To +12V Transfer

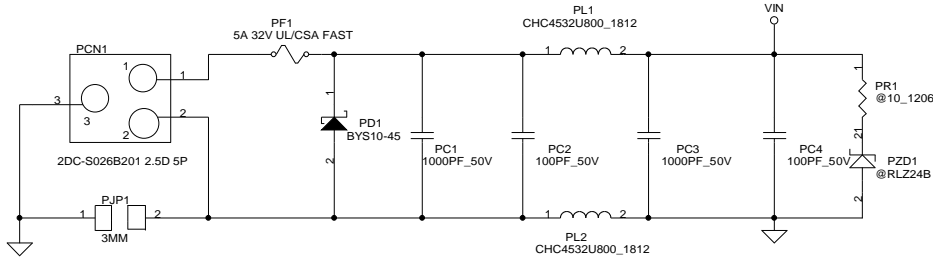
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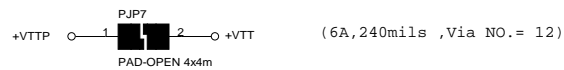
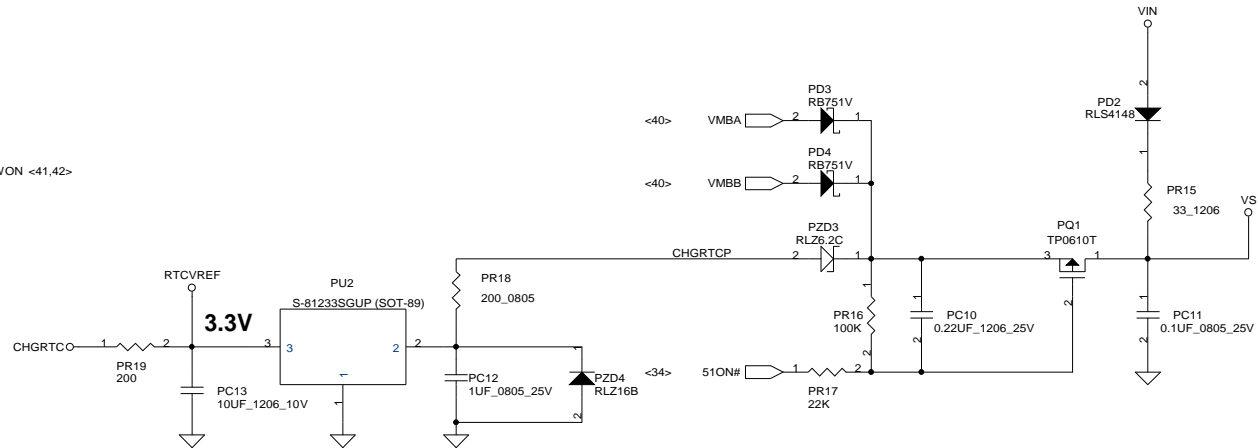
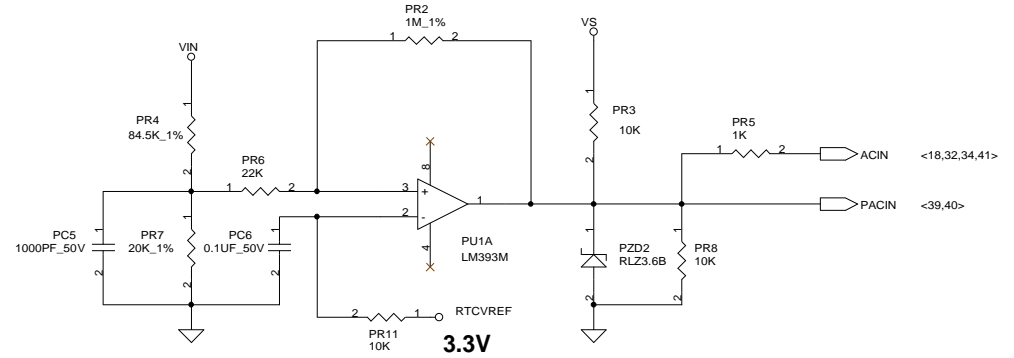
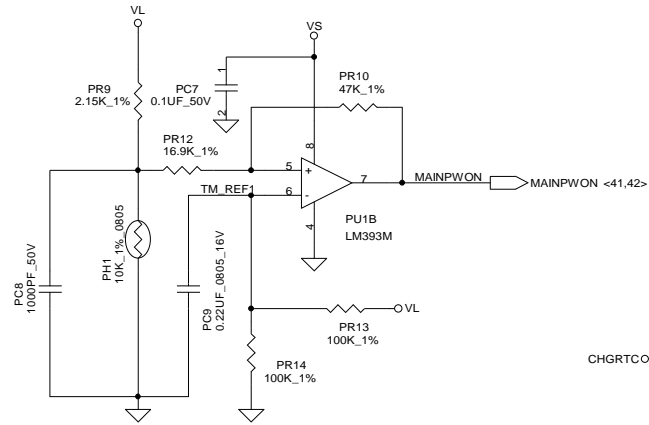
Compal Electronics, Ltd.			
Title	DC-DC Interface / RTC Batt. Conn.		
Size	Document Number	Rev	
Custom	LA-1441	0.2	
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Vin Detector

High 18.764 17.901 17.063
Low 17.745 16.903 16.038



PH1 under CPU botten side :
CPU thermal protection at 82 degree C
Recovery at 50(51) degree C



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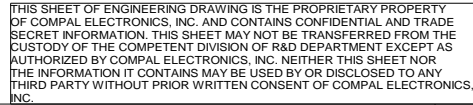
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Size B Document Number LA-1441

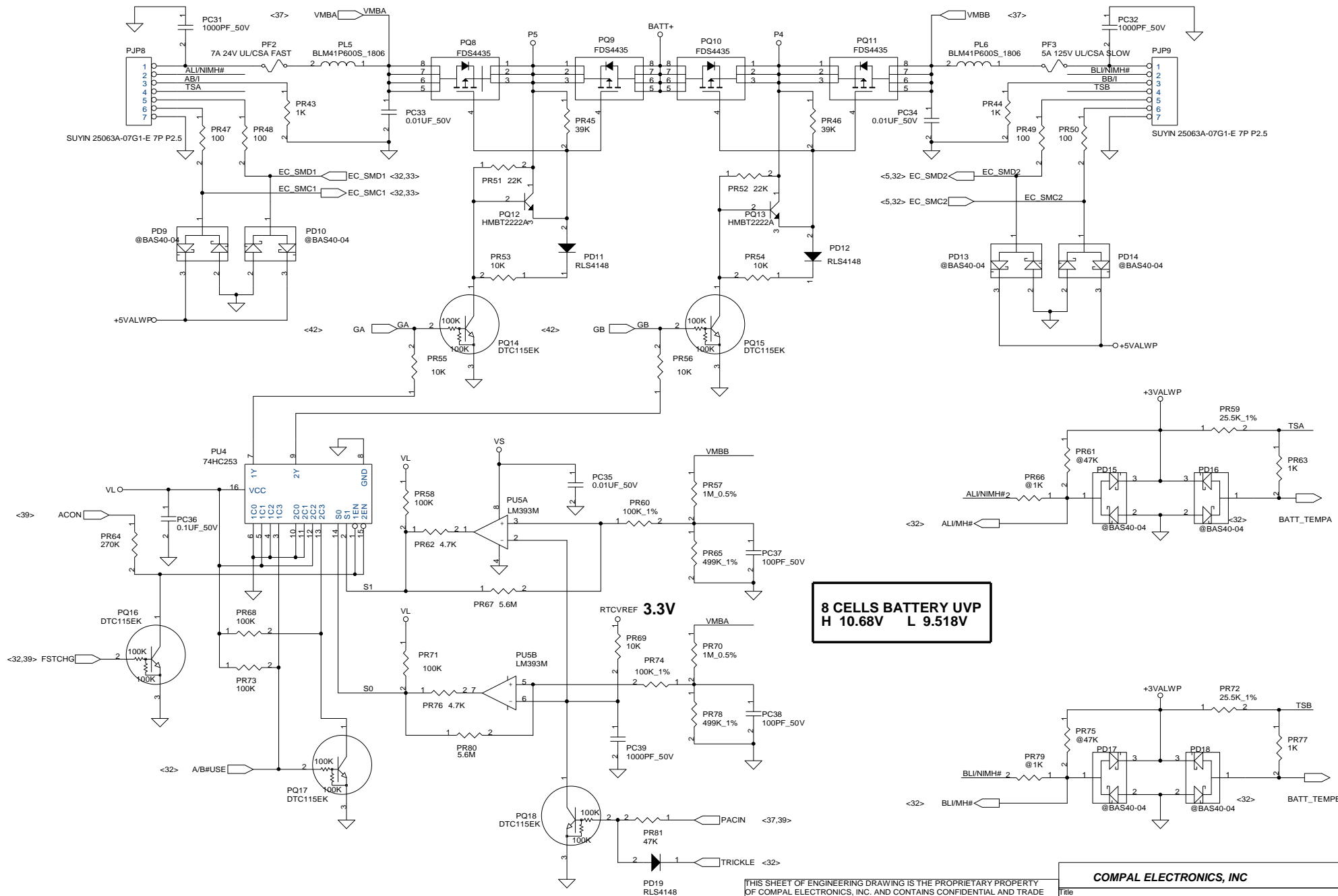
Rev 0.2

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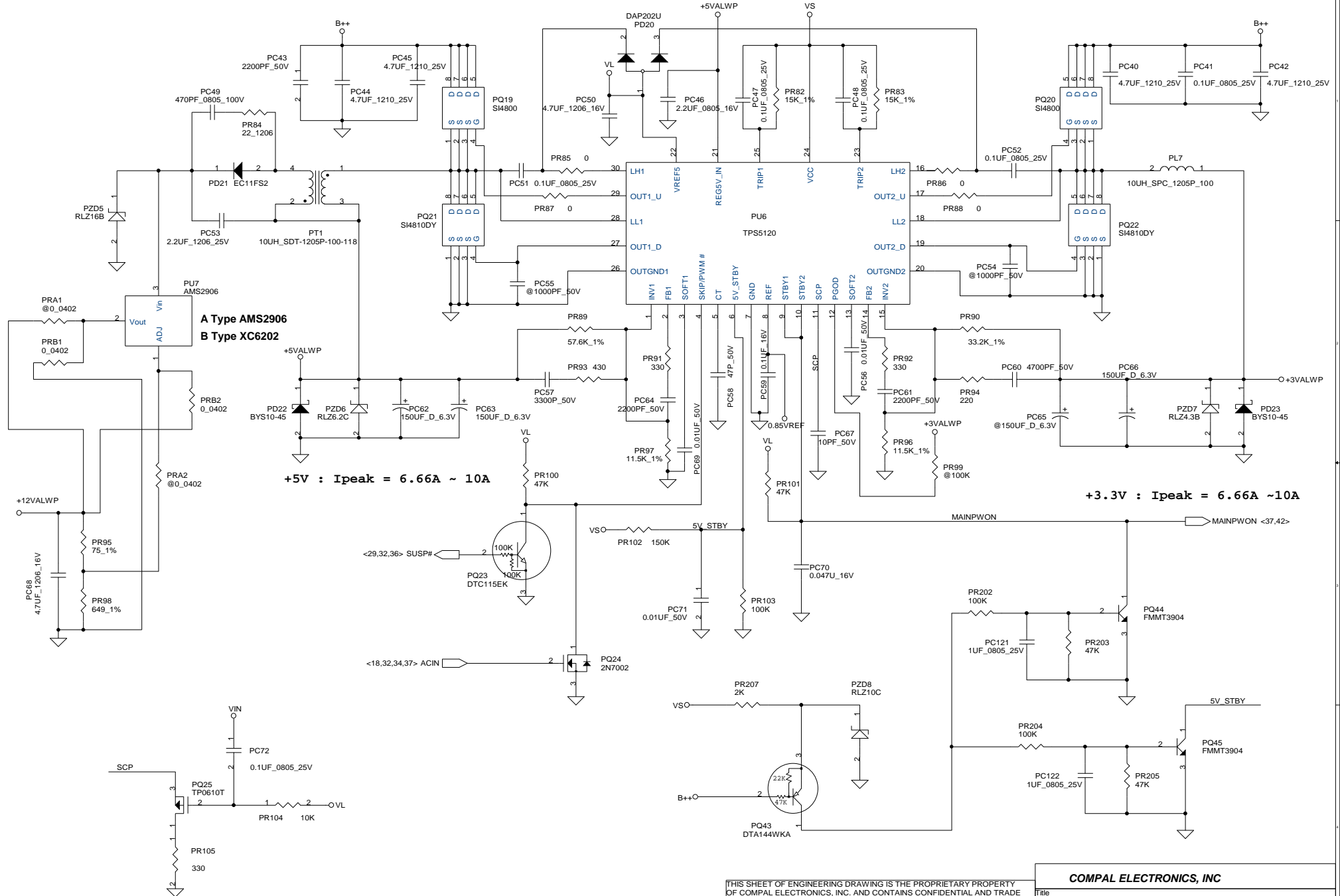
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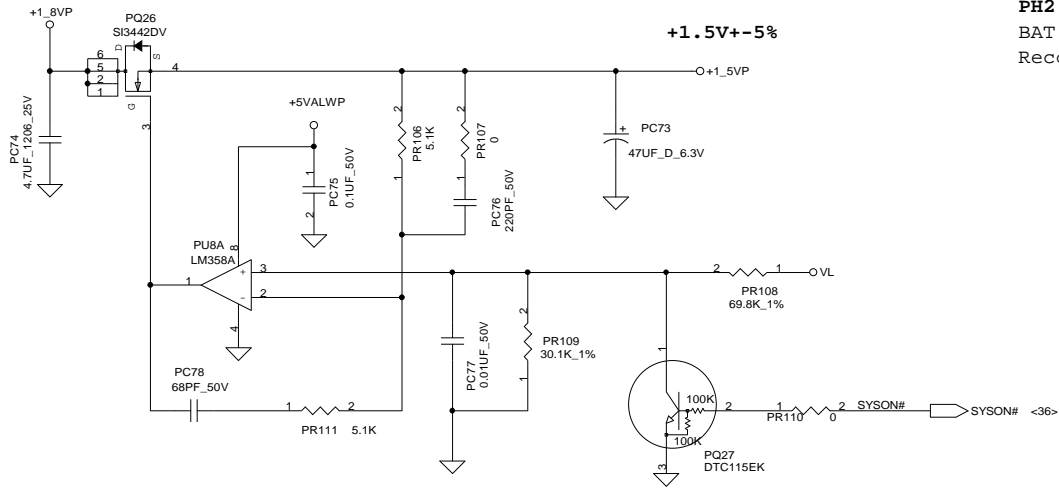
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Size	Document Number	ATW05	
B		Rev 0.2	
Date: Wednesday, March 06, 2002		Sheet	39 of 43

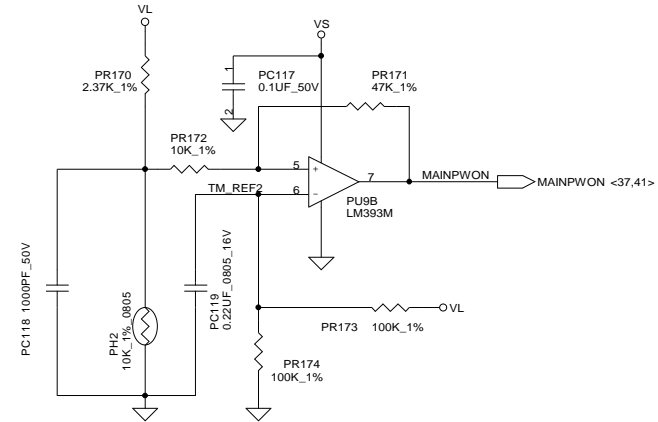


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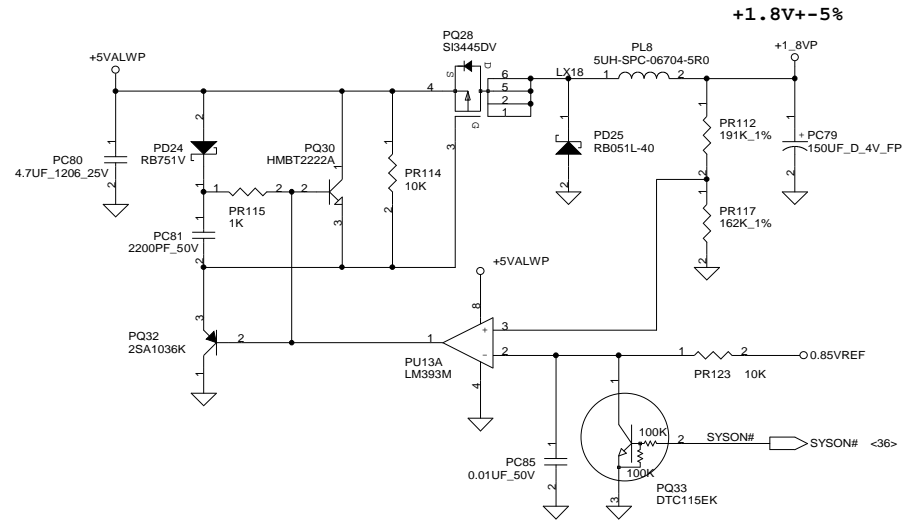
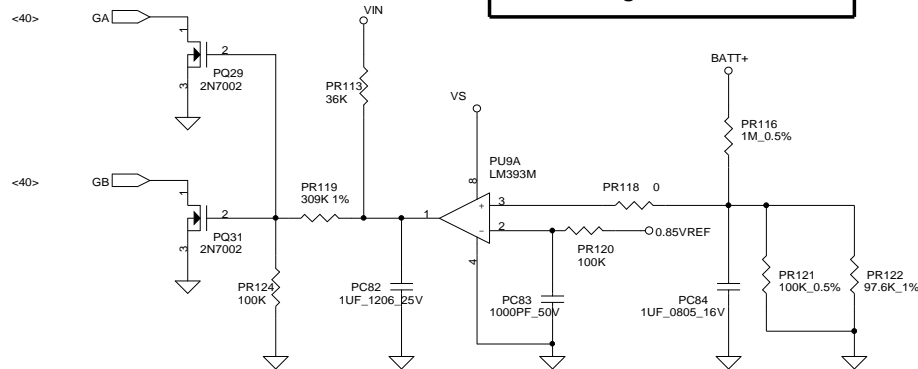
COMPAL ELECTRONICS, INC			
Title		5V/3.3V/12V	
Size	Document Number	ATW05	
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PH2 near main Battery CONN :
 BAT. thermal protection at 73 degree C
 Recovery at 50(51) degree C



8 Cells Charger OVP : 18.059V



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COMPAL ELECTRONICS, INC

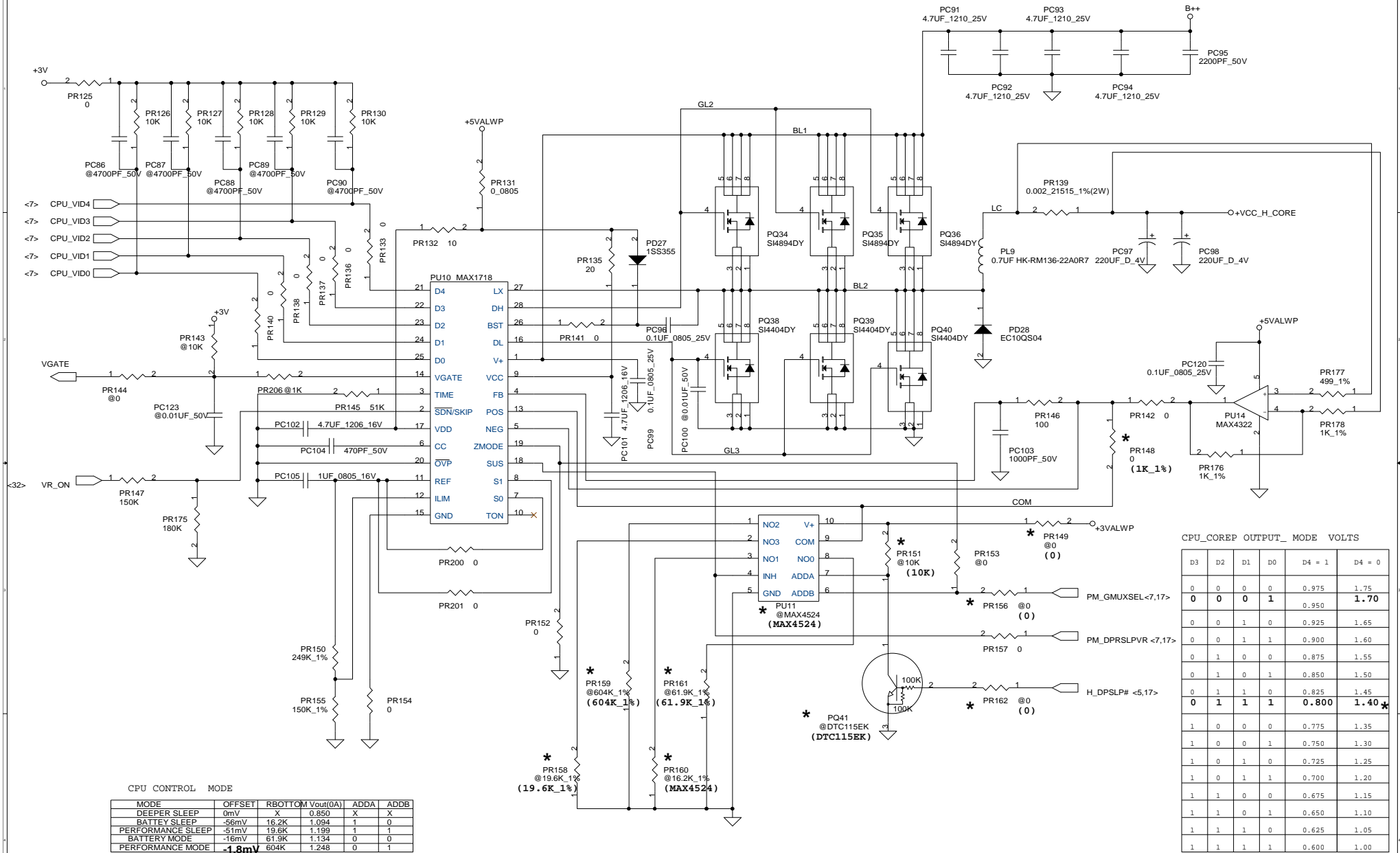
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1.8V / 1.5V / OVP

Size
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Document Number
ATW05

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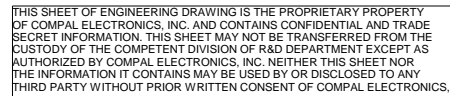
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