

ATW05

LA-1441 REV0.2 Schematics Document

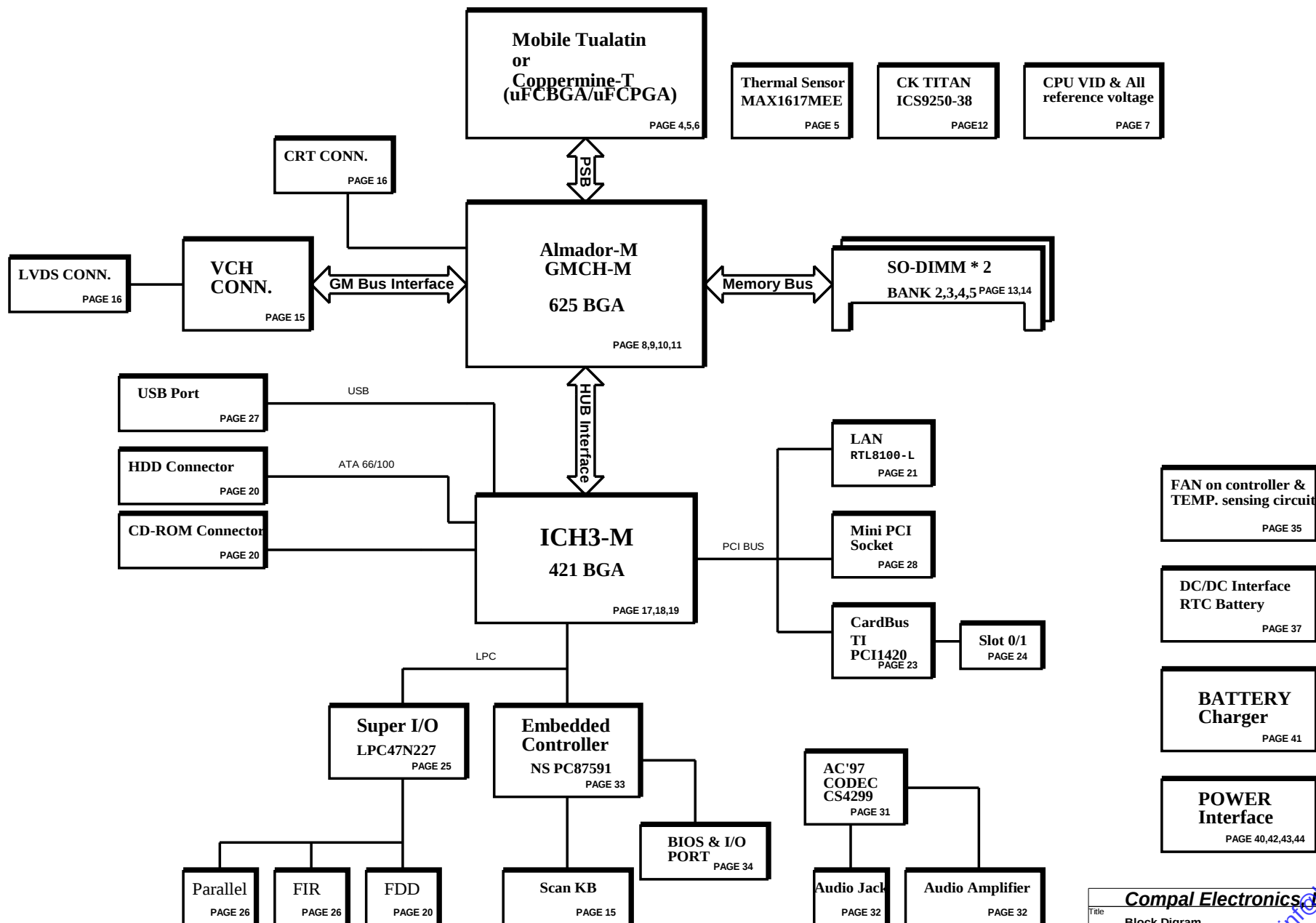
*uFCBGA/uFCPGA Coppermine-T or
Tualatin CPU
with Almador-MG
chipset*

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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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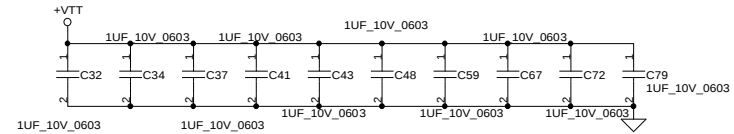
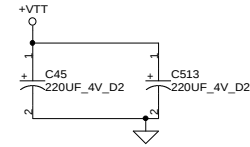
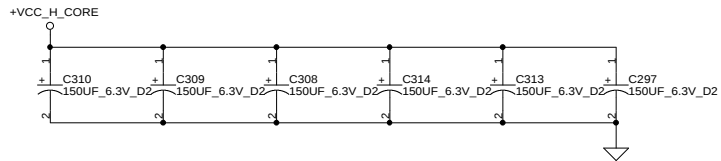
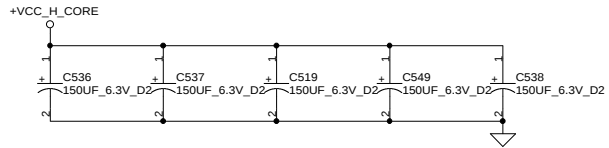
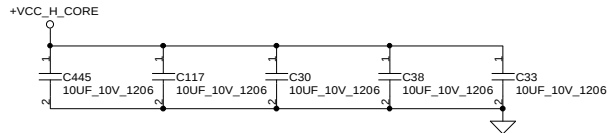
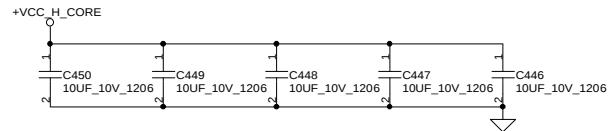
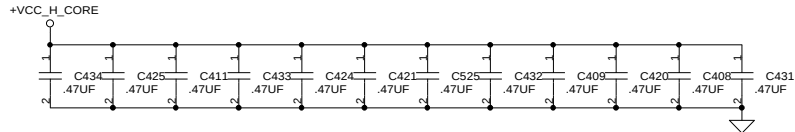
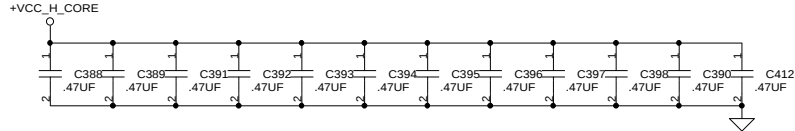


Layout note :

Place close to CPU, Use 2~3 vias per PAD.
Place .47uF caps underneath balls 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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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)	



PM_GMUXSEL = 1 : for Performance mode
0 : for CPU default power

PM_DPRSLPVR = 1: for Deeper Sleep mode
0 : for Performance mode

	MUX_SEL	A/B#	MUX_outputs MUX_inputs	Mode Battery
1	1	X		
1 Override#	0	0	From Non-volatile register(SOPRB)	Performance
1	0	1	From Non-volatile register(SOPRA)	Deeper sleep

Support SpeedStep :

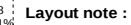
Stuffed : U17, U49, R460, R461
Not Stuffed : RP30, R321

Without Support SpeedStep :

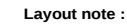
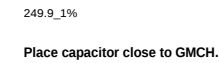
Stuffed : RP30, R321
Not Stuffed : U17, U49, R460, R461

Layout note :

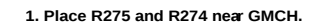
1. Place R303 and R322 between and GMCH and CPU.
2. Place decoupling caps near CPU.(Within 500mils)



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



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

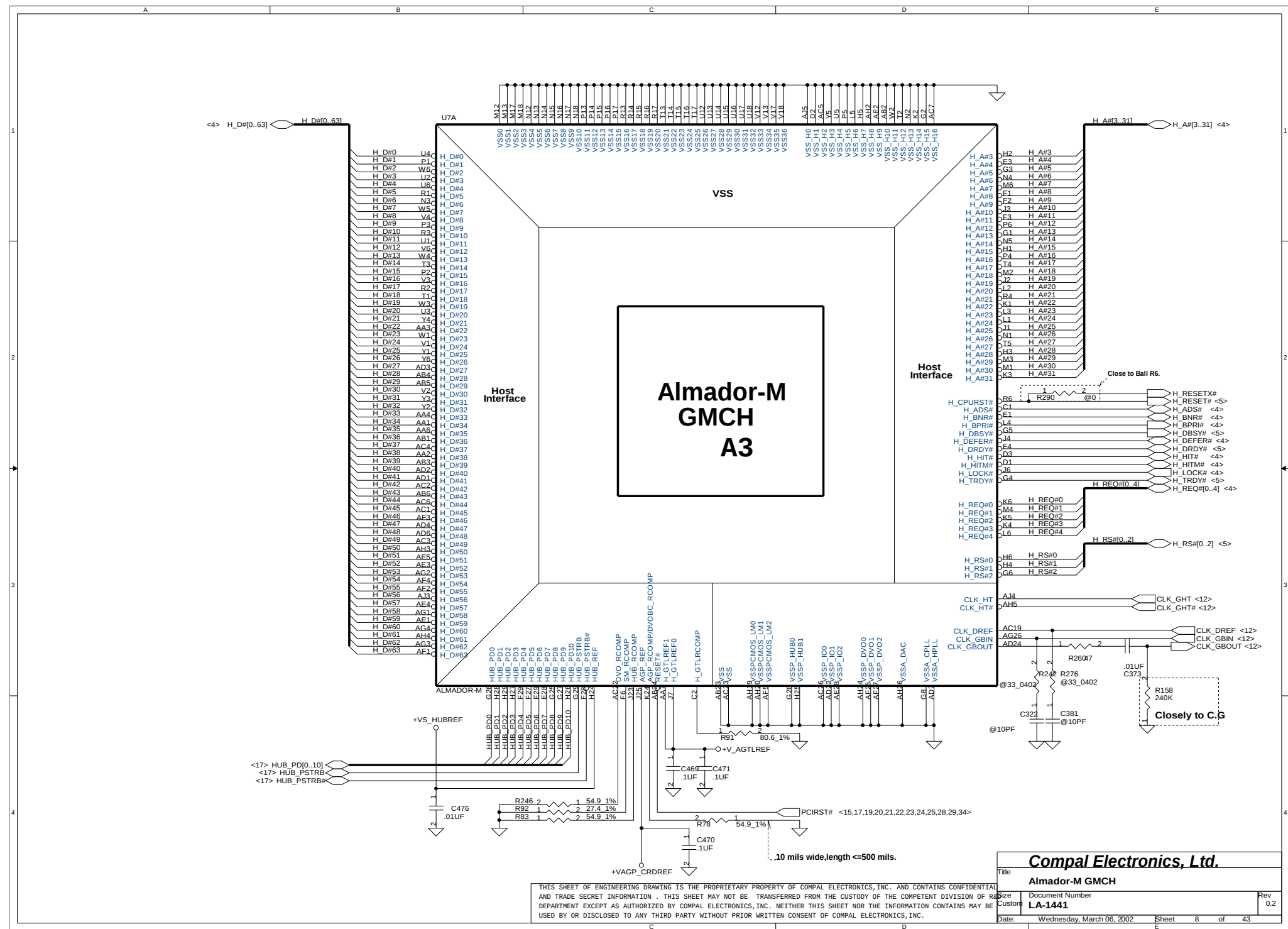


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CPU VID & All Reference Voltage

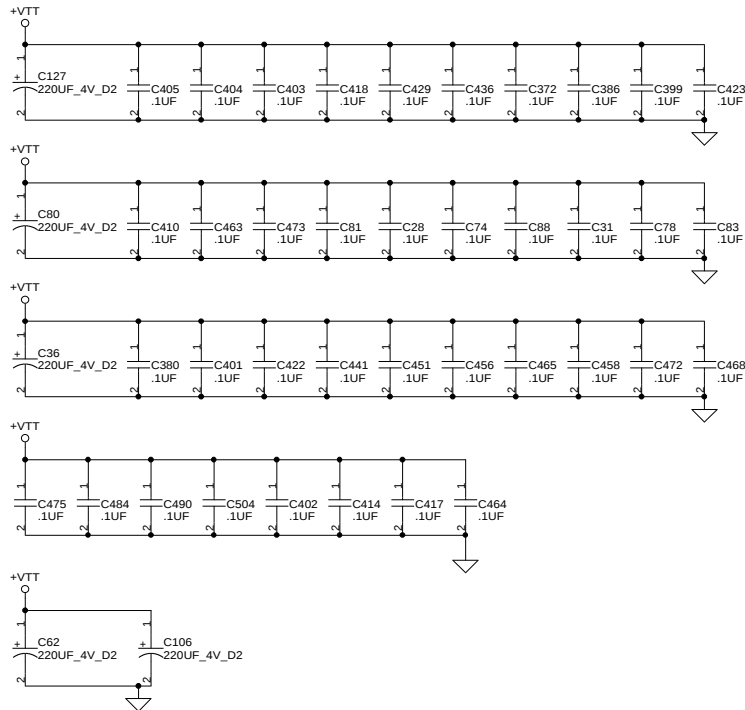
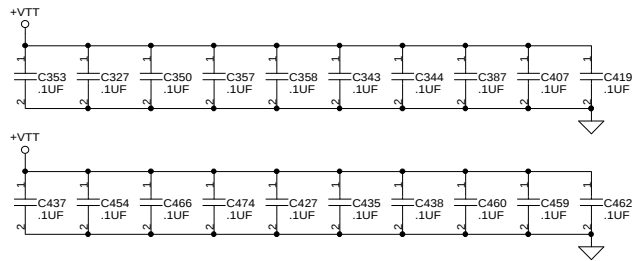
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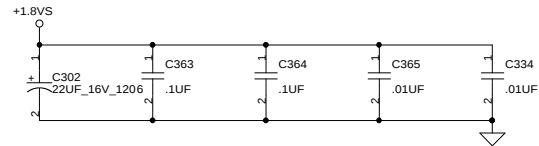




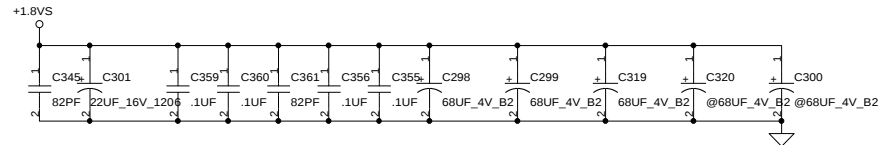
Layout note :
Distribute as close as possible
to GMCH Processor Quadrant .



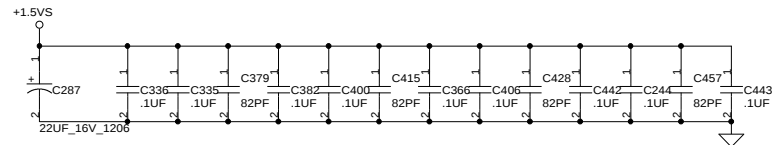
Layout note :
Distribute as close as possible
to VCCPCMOS_LM .



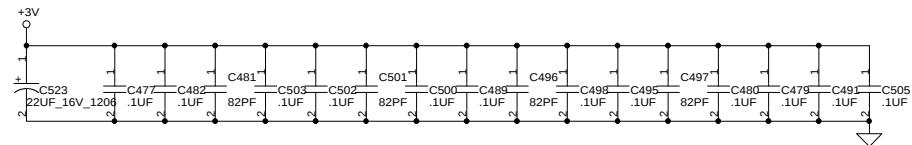
Layout note :
Distribute as close as possible
to GMCH Local Memory Quadrant .



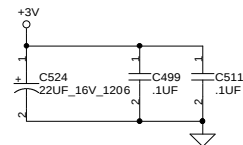
Layout note :
Distribute as close as possible
to GMCH AGP/DVO Quadrant .



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

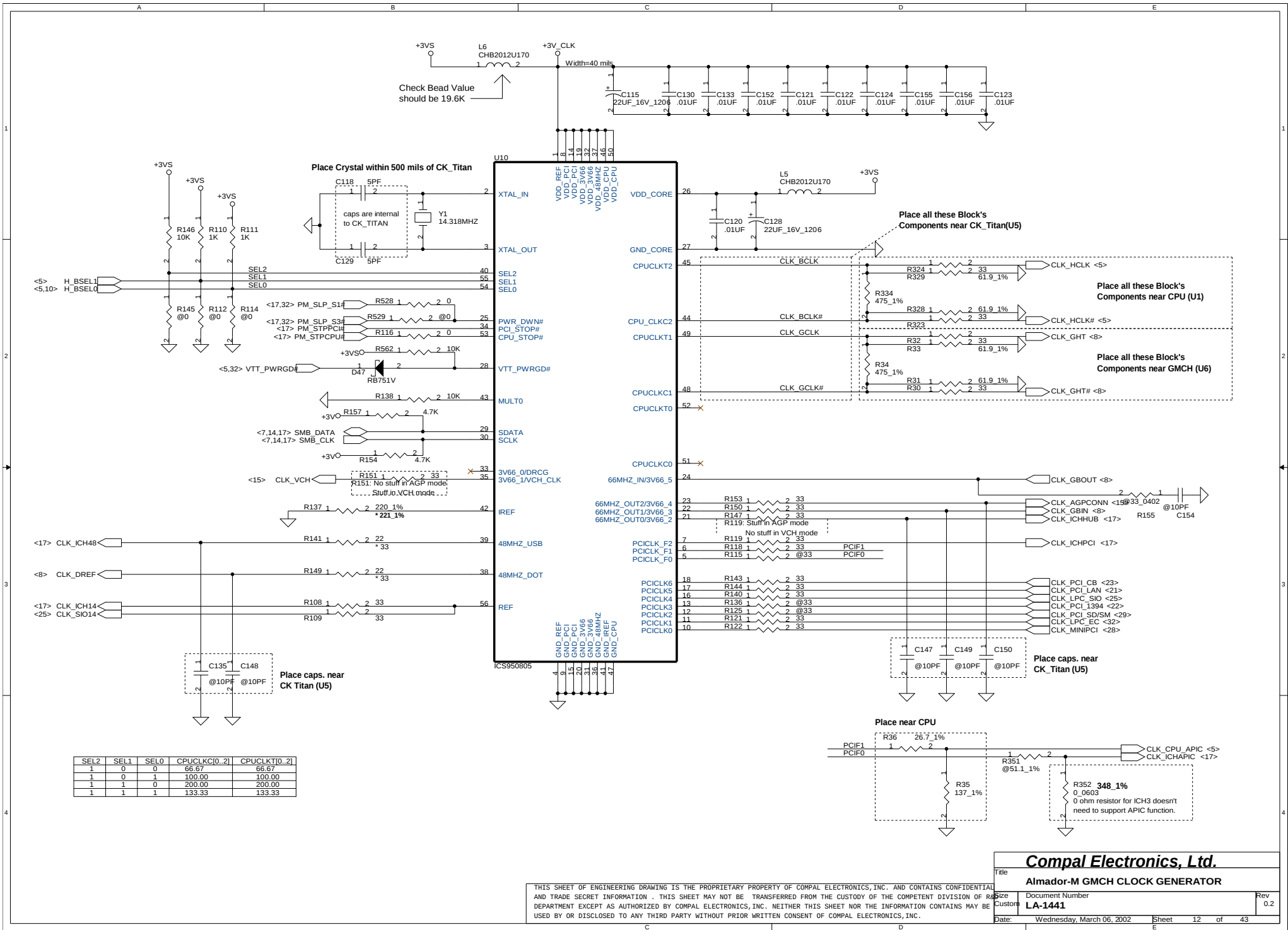


Layout note :
Distribute as close as possible
to IO Quadrant .

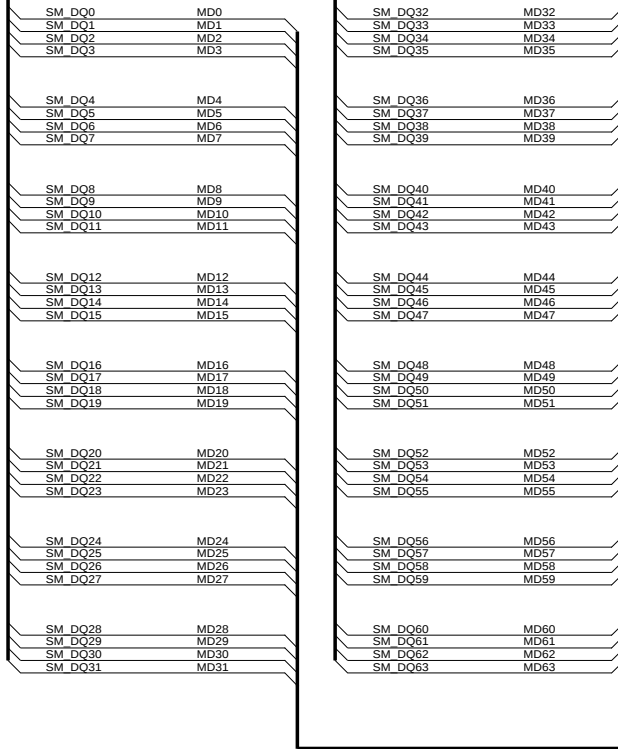


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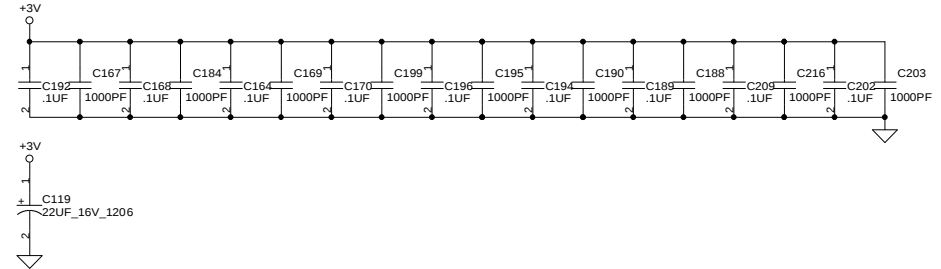
Compal Electronics, Ltd.			
Title			
GMCH-M Decoupling			
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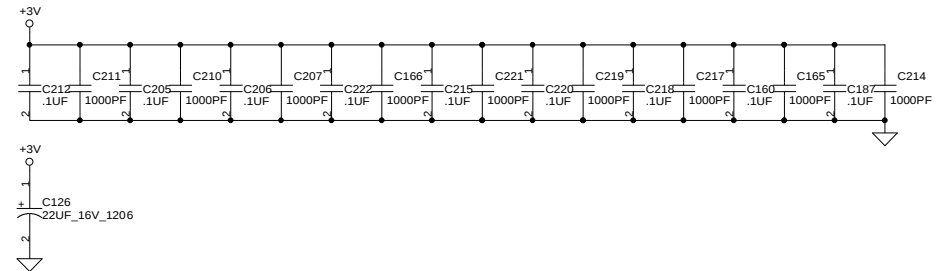
<9,14> SM_DQ[0..63] MD[0..63] <9,14>



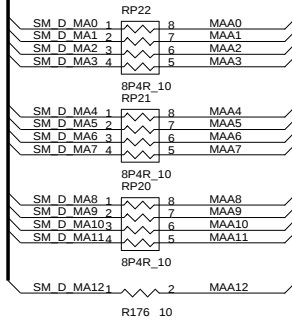
Layout note :
One .1uF cap per power pin .
Place each cap close to SODIMM(DIMM 0) pin .



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



<9> SM_D_M A[0..12] MAA[0..12] <14>

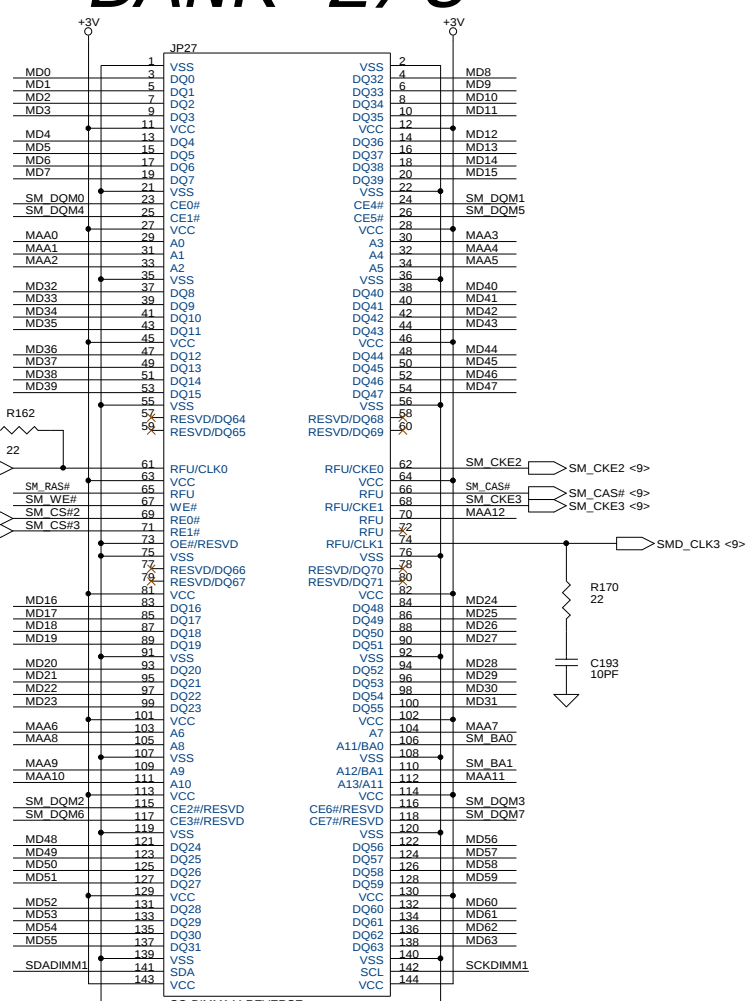
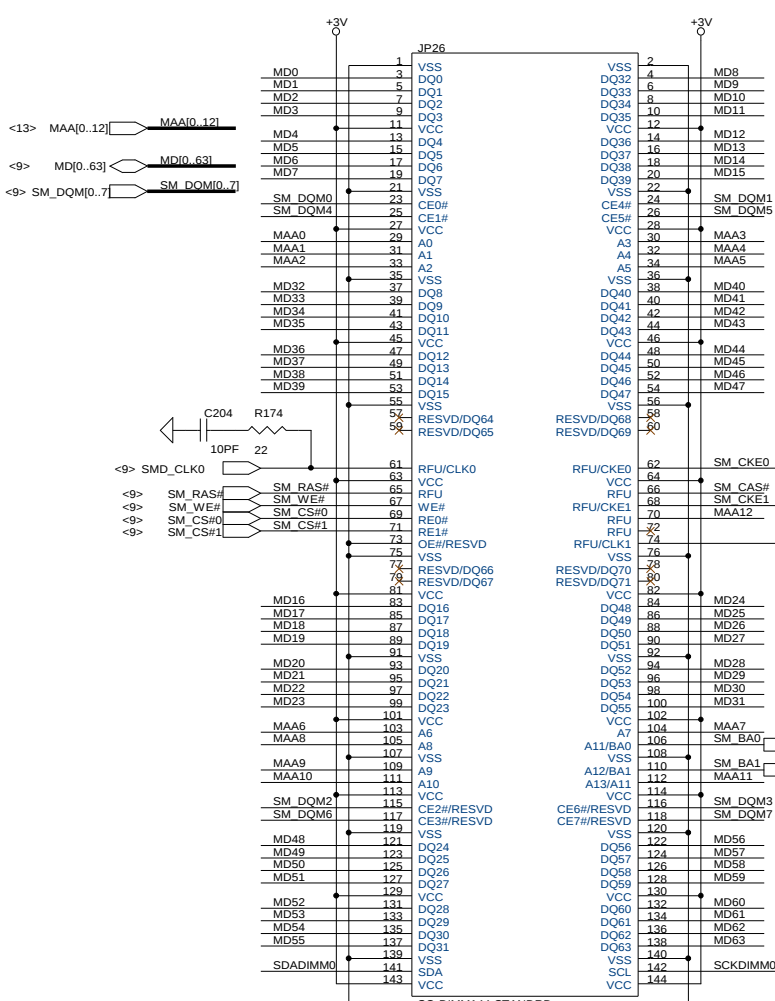
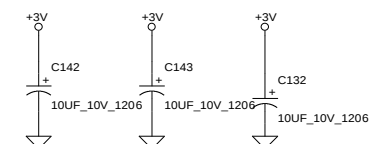


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SODIMM Damping & Decoupling			
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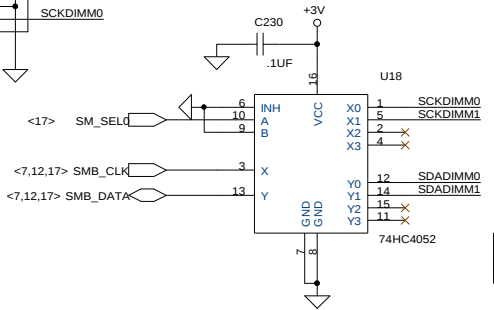
SO-DIM 144 PINS RAM MODULE CONN. *BANK 0/1*

BANK 2/3

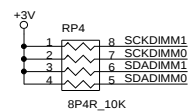


DIMM0

DIMM1

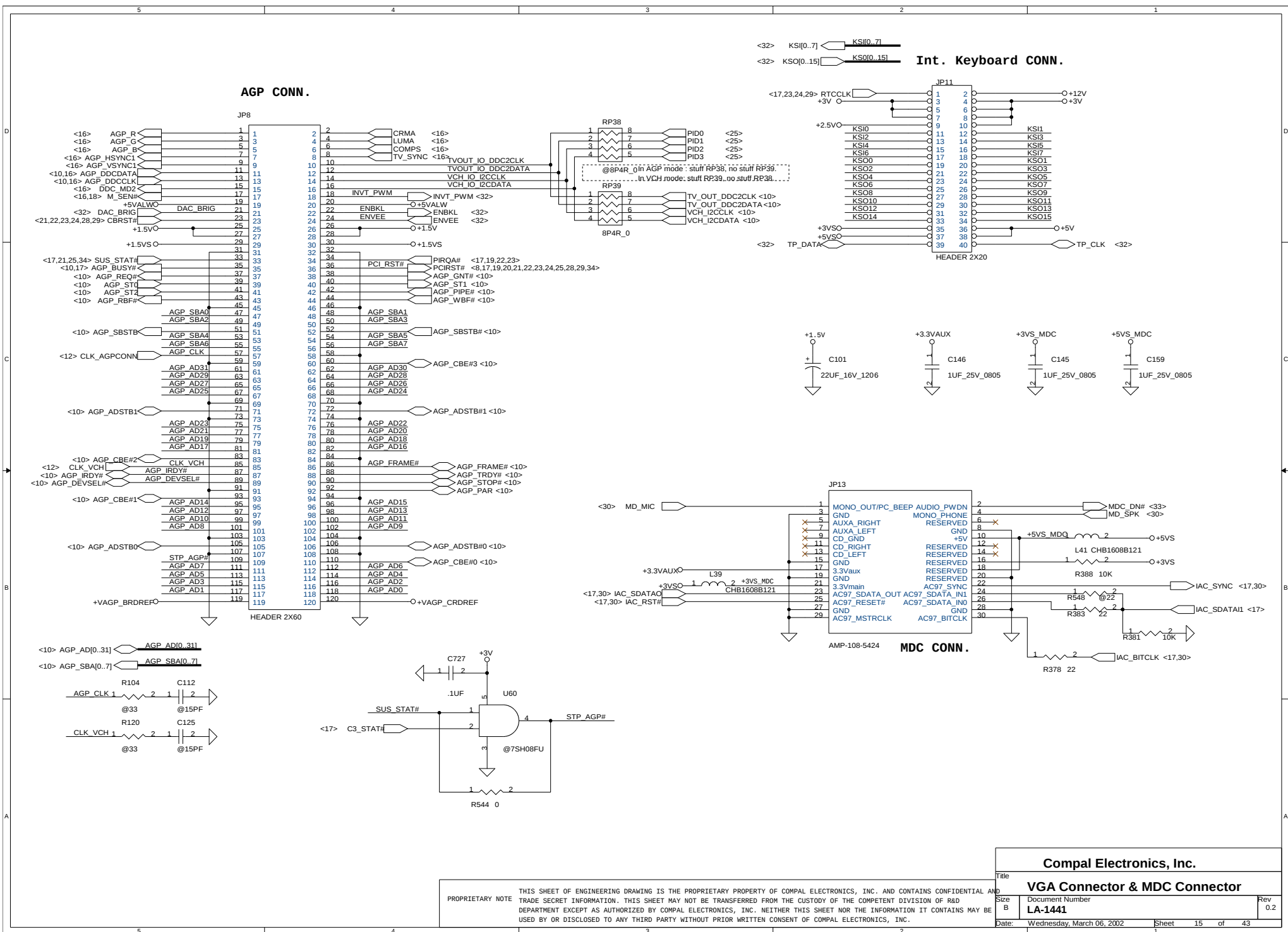


SM_SEL0	X/Y
0	SCKDIMM0
1	SCKDIMM1

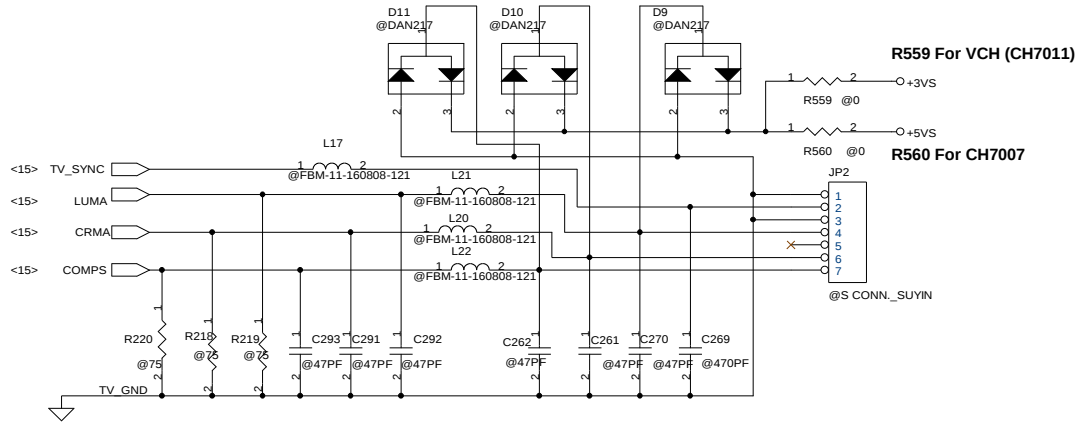


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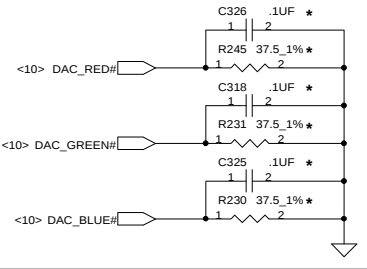
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S.O. DIMM CONNECTOR		
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TV_OUT CONN.

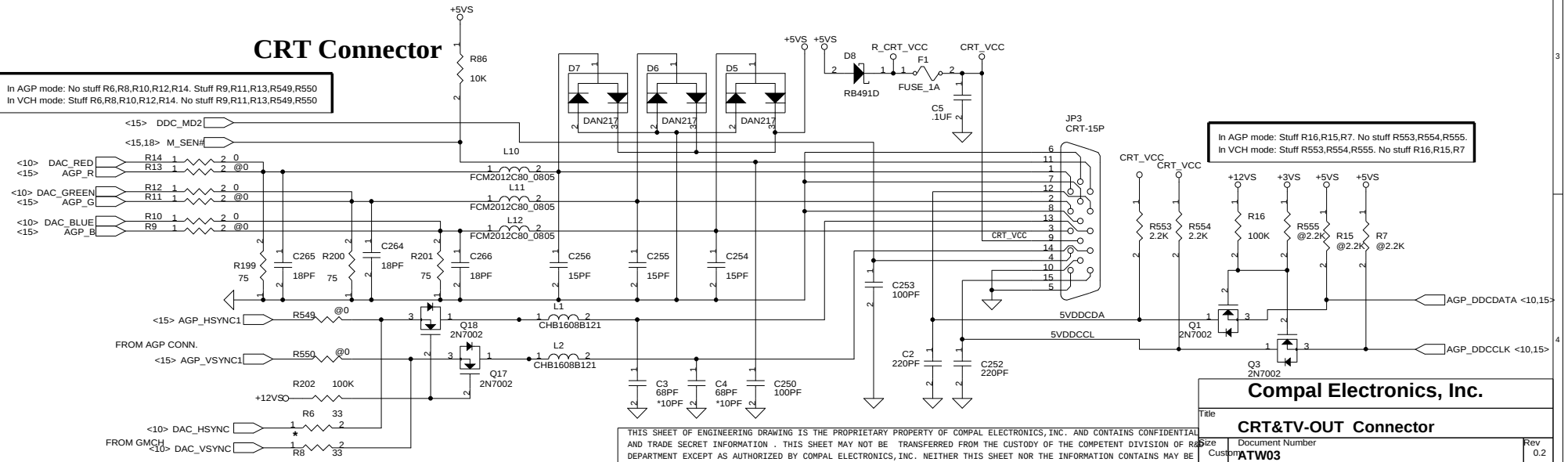


In AGP mode: No stuff C326,R245,C318,R231,C325,R230.
In VCH mode: Stuff C326,R245,C318,R231,C325,R230

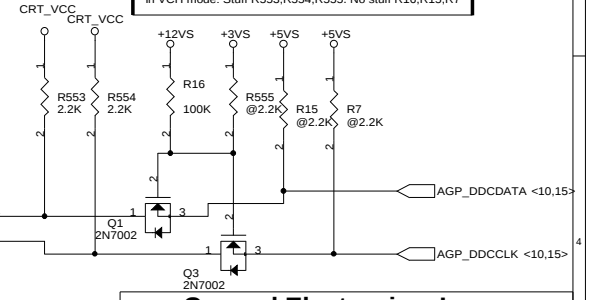


CRT Connector

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



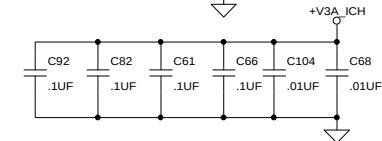
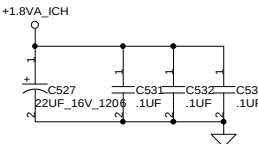
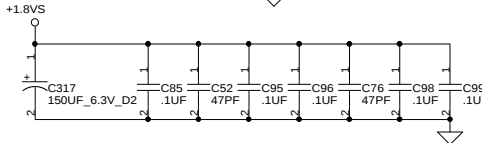
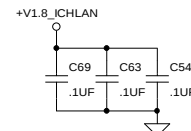
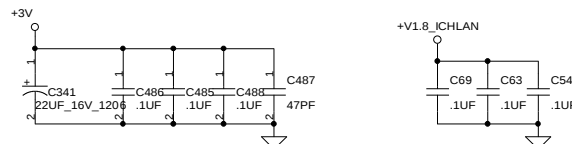
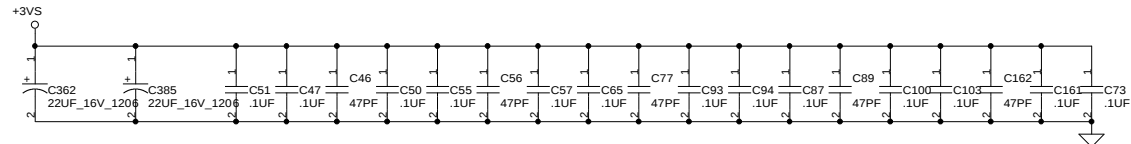
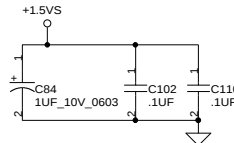
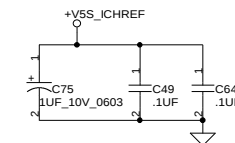
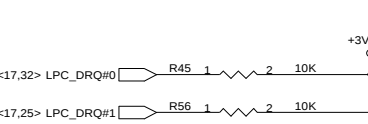
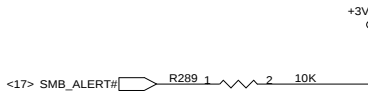
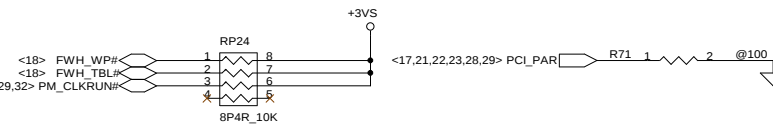
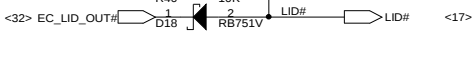
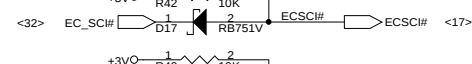
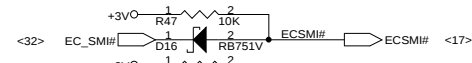
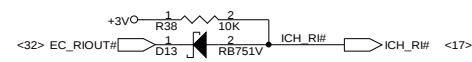
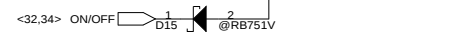
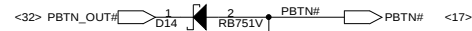
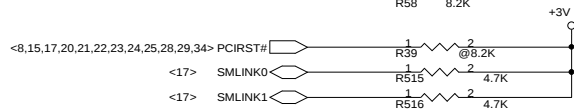
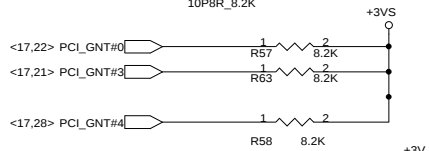
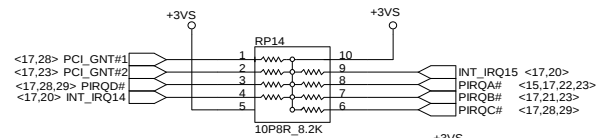
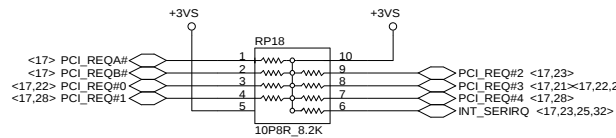
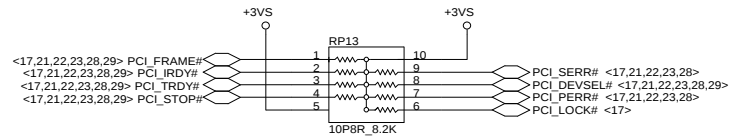
Compal Electronics, Inc.

CRT&TV-OUT Connector

Document Number: ATW03
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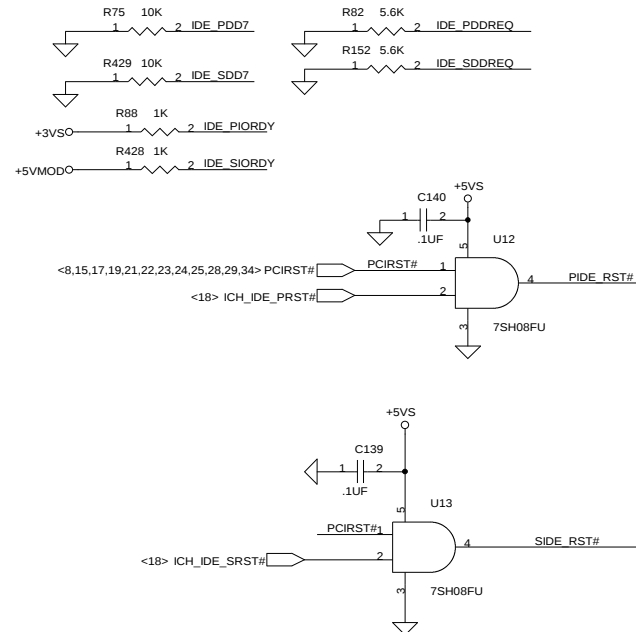
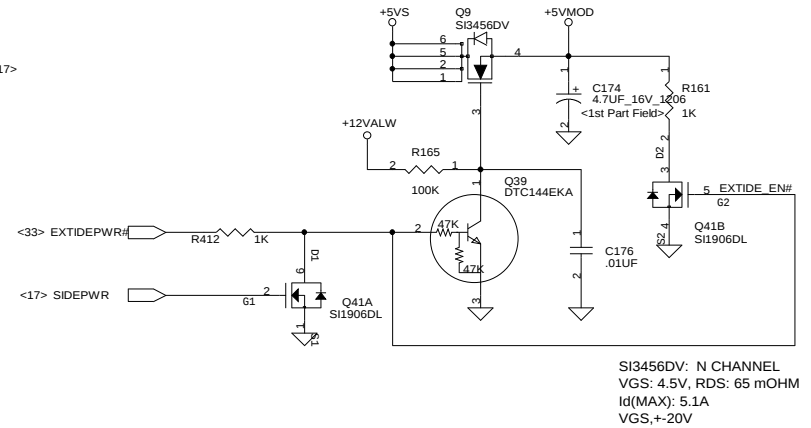
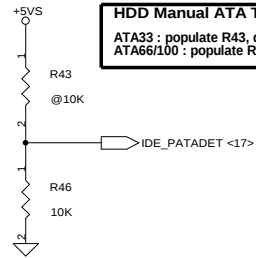
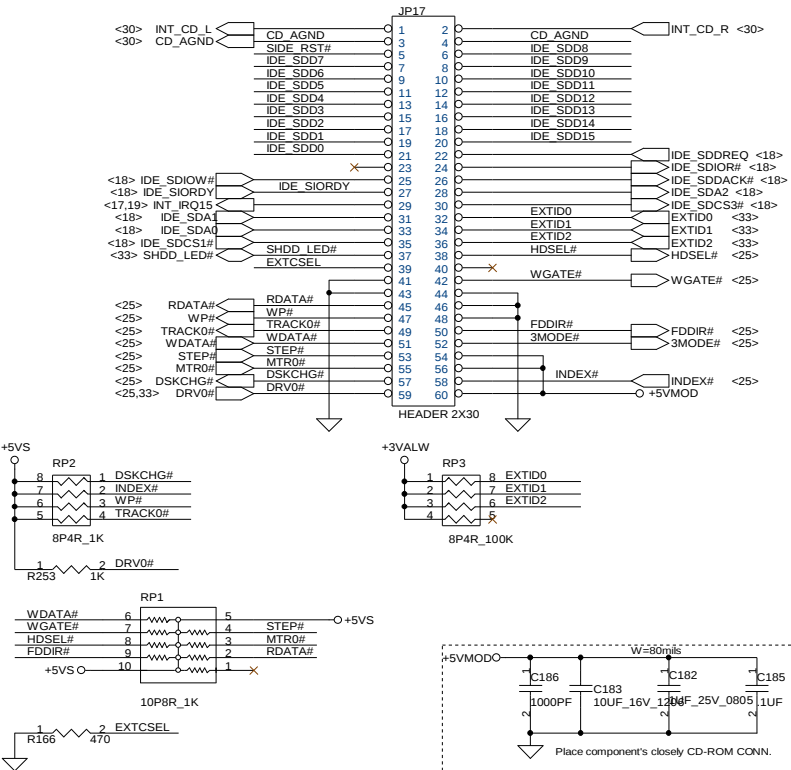
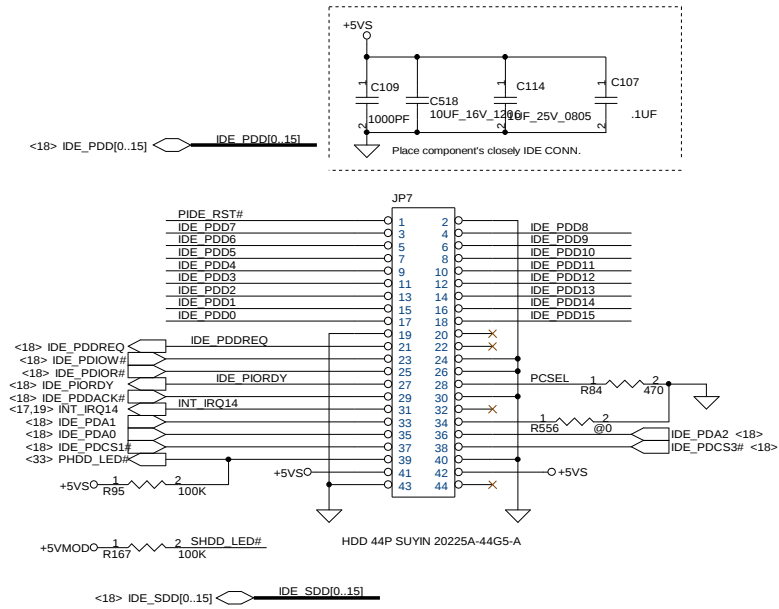




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Compal Electronics, Ltd.			
Title	ICH3-M Pullups & Decoupling		
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IDE,CD-ROM Module CONN.



Compal Electronics, Inc

IDE/ FDD MODULE CONN.

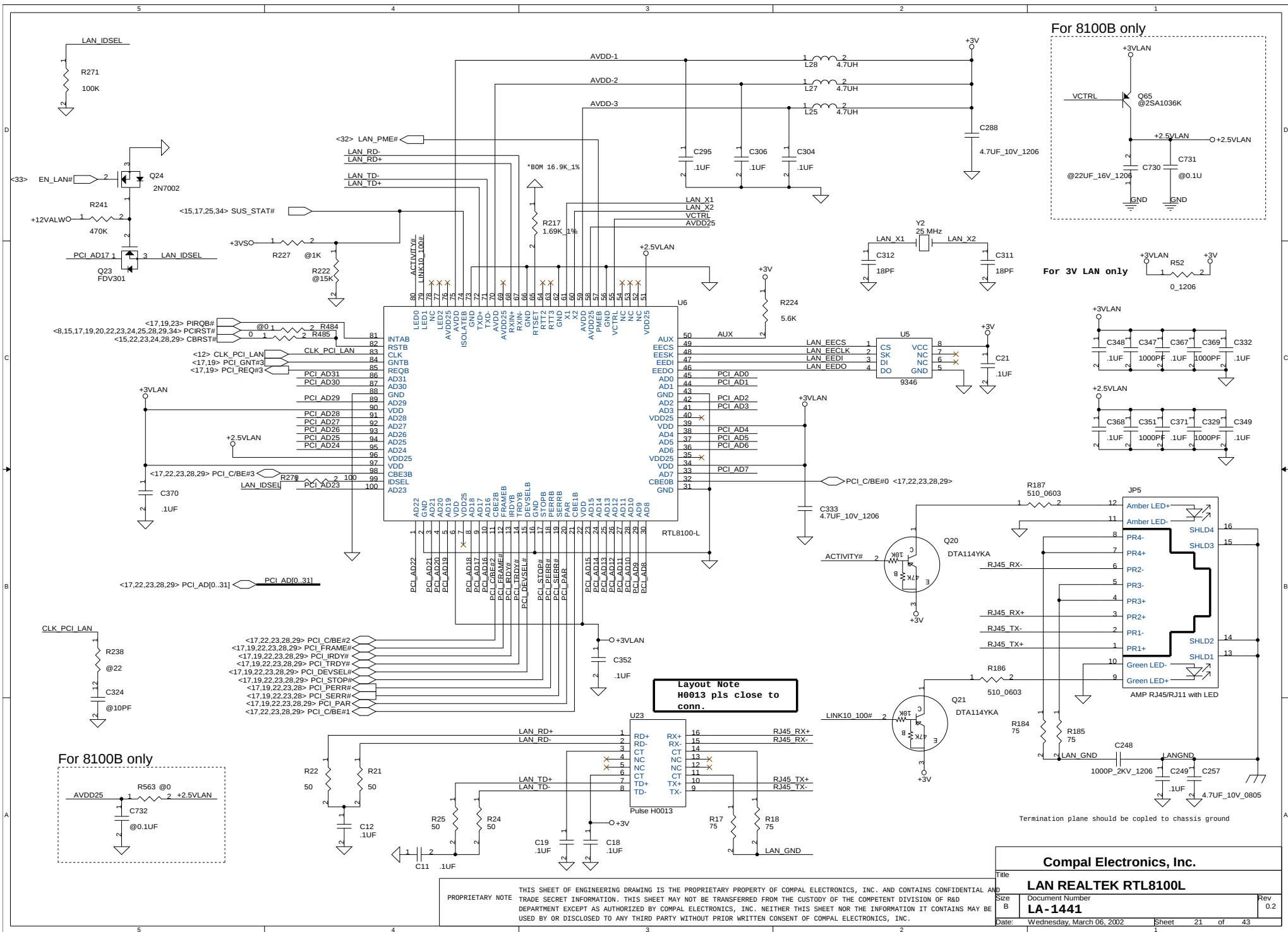
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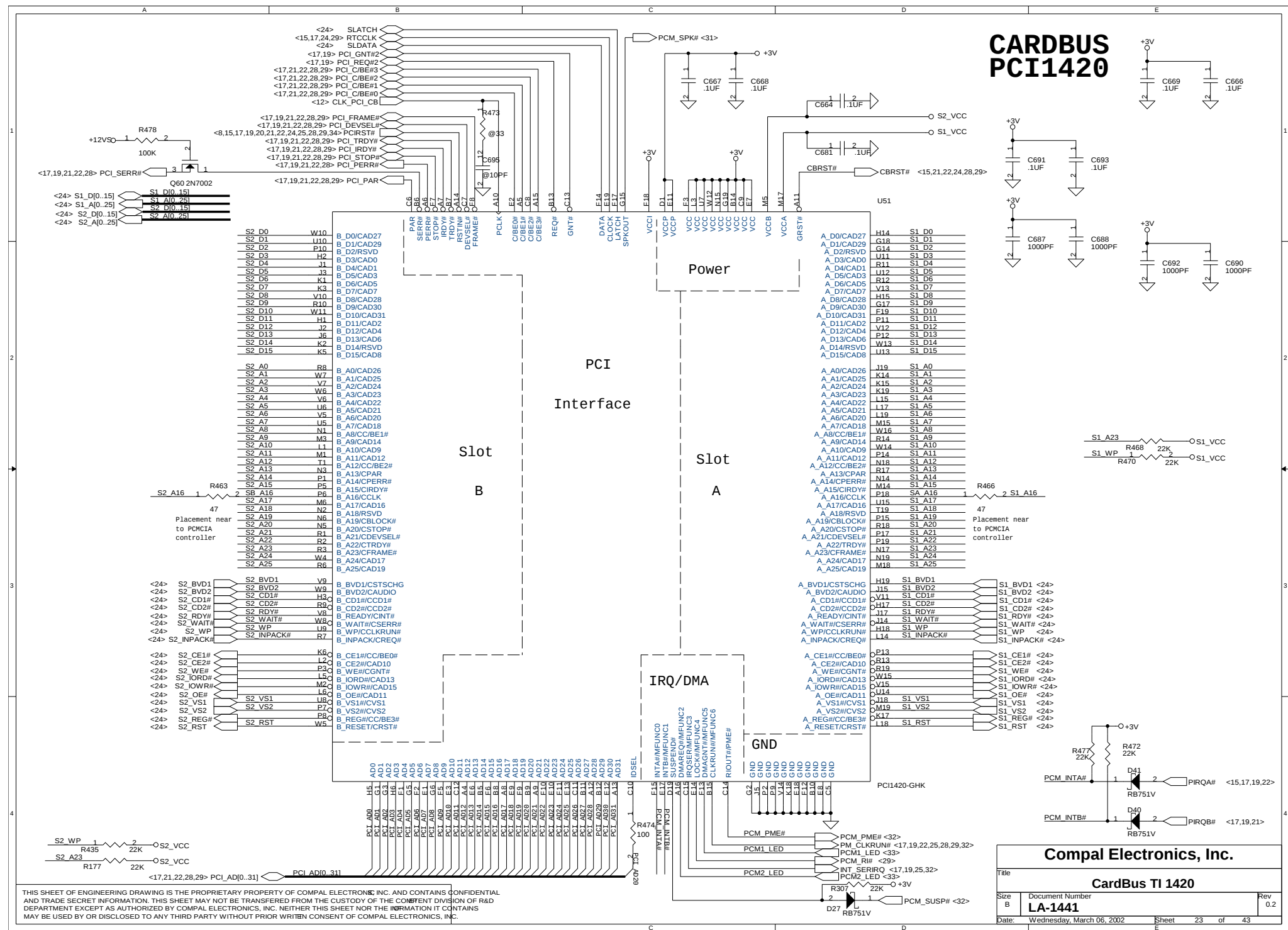
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LA-1441

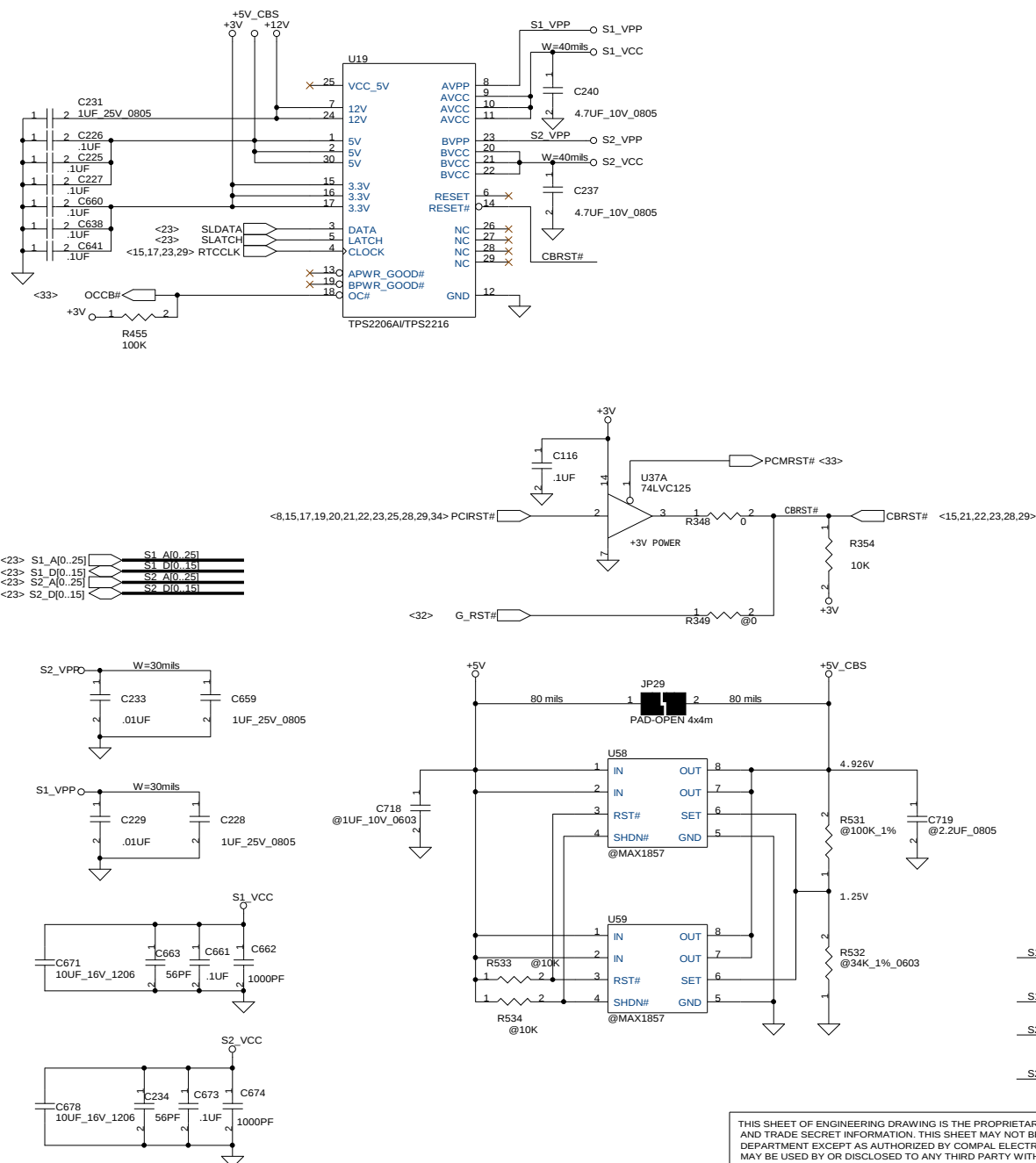
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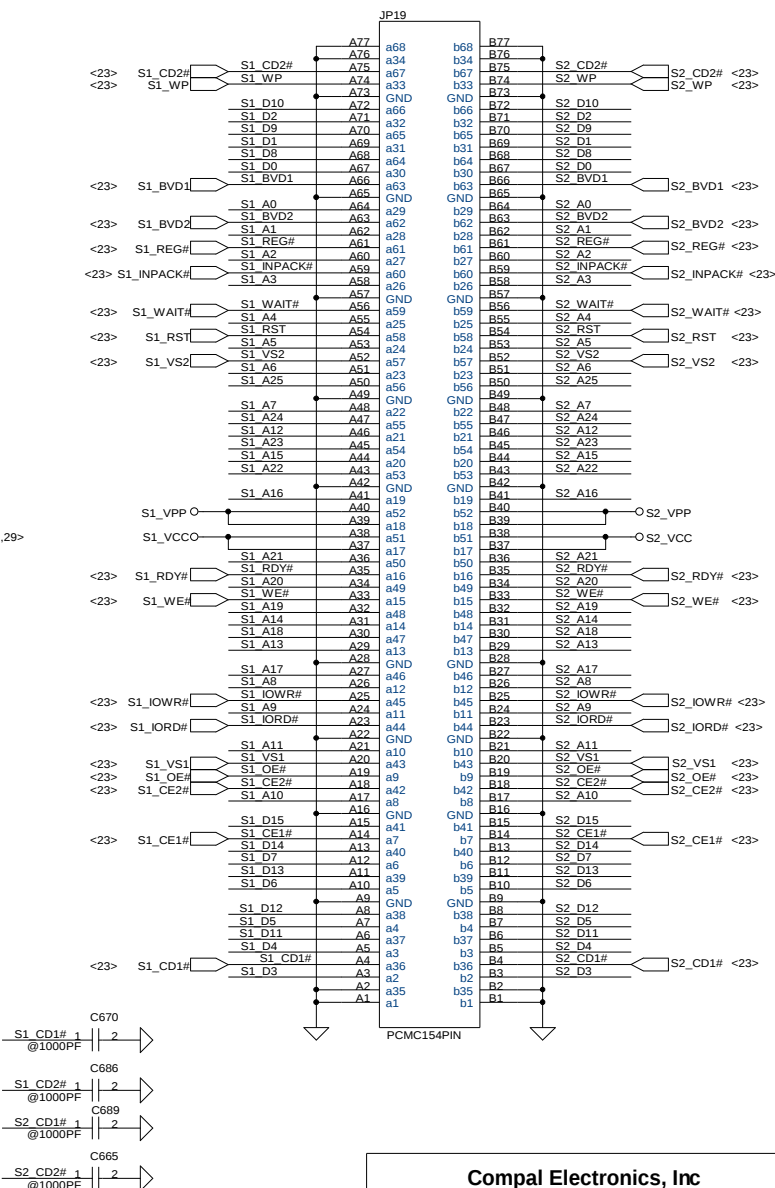




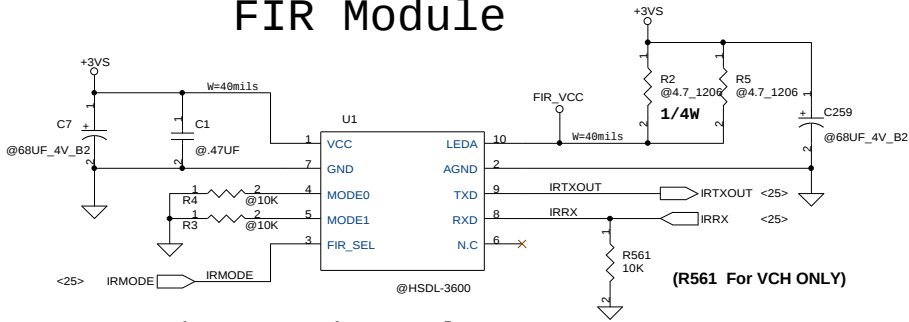
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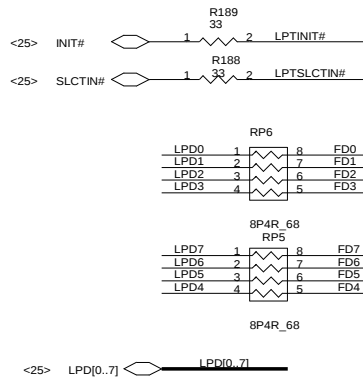
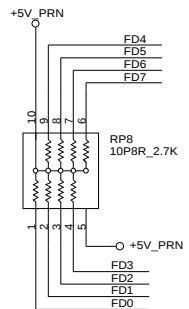
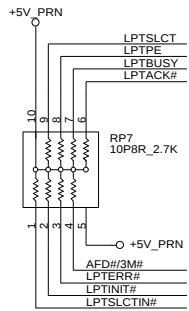
CARDBUS
SOCKET



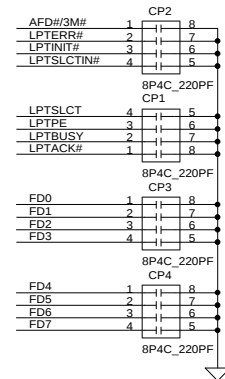
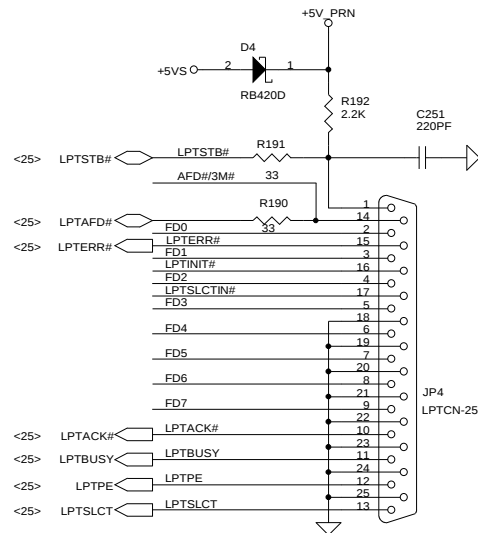
FIR Module



The component's most place
cloely IRDA MODULE.



PARALLEL PORT



Compal Electronics, Inc.

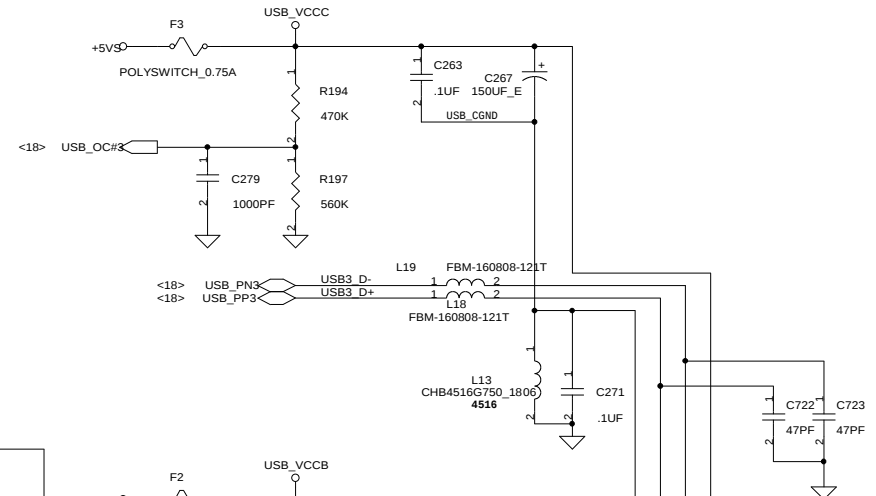
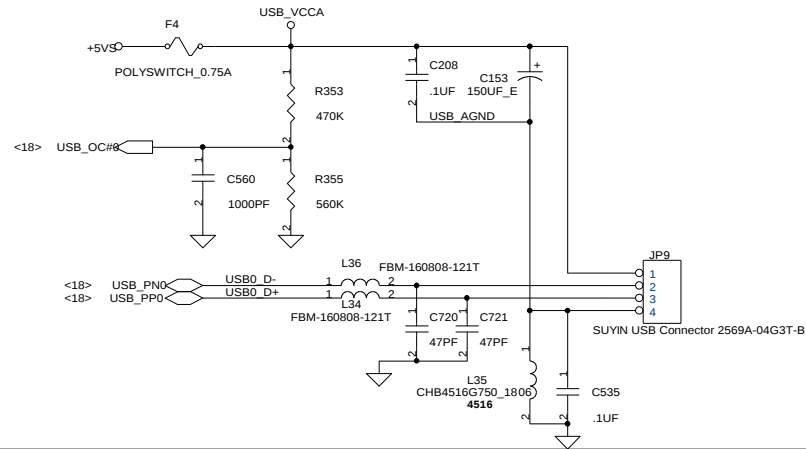
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CONFIDENTIAL
Size Document Num
DIVISION OF R&D
CONTAINS **LA-1441**

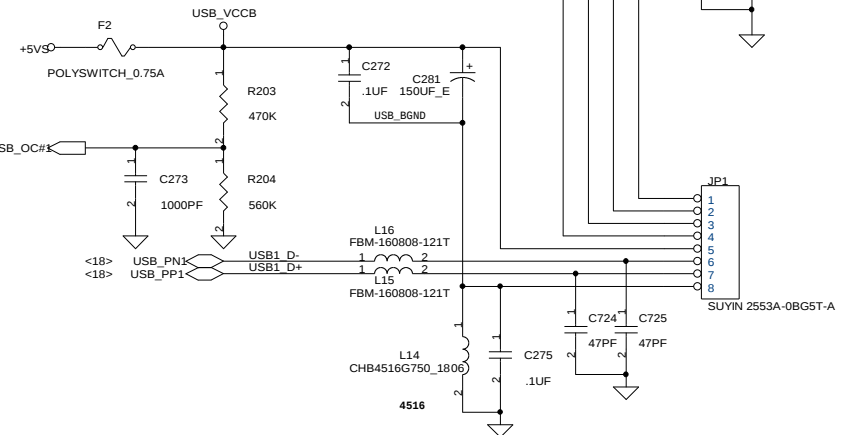
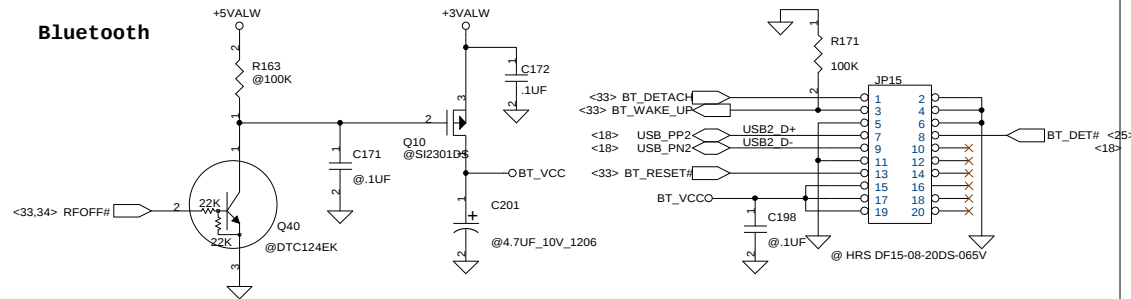
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USB PORT



Bluetooth



Compal Electronics, Inc

Title: USB PORT & BLUE TOOTH

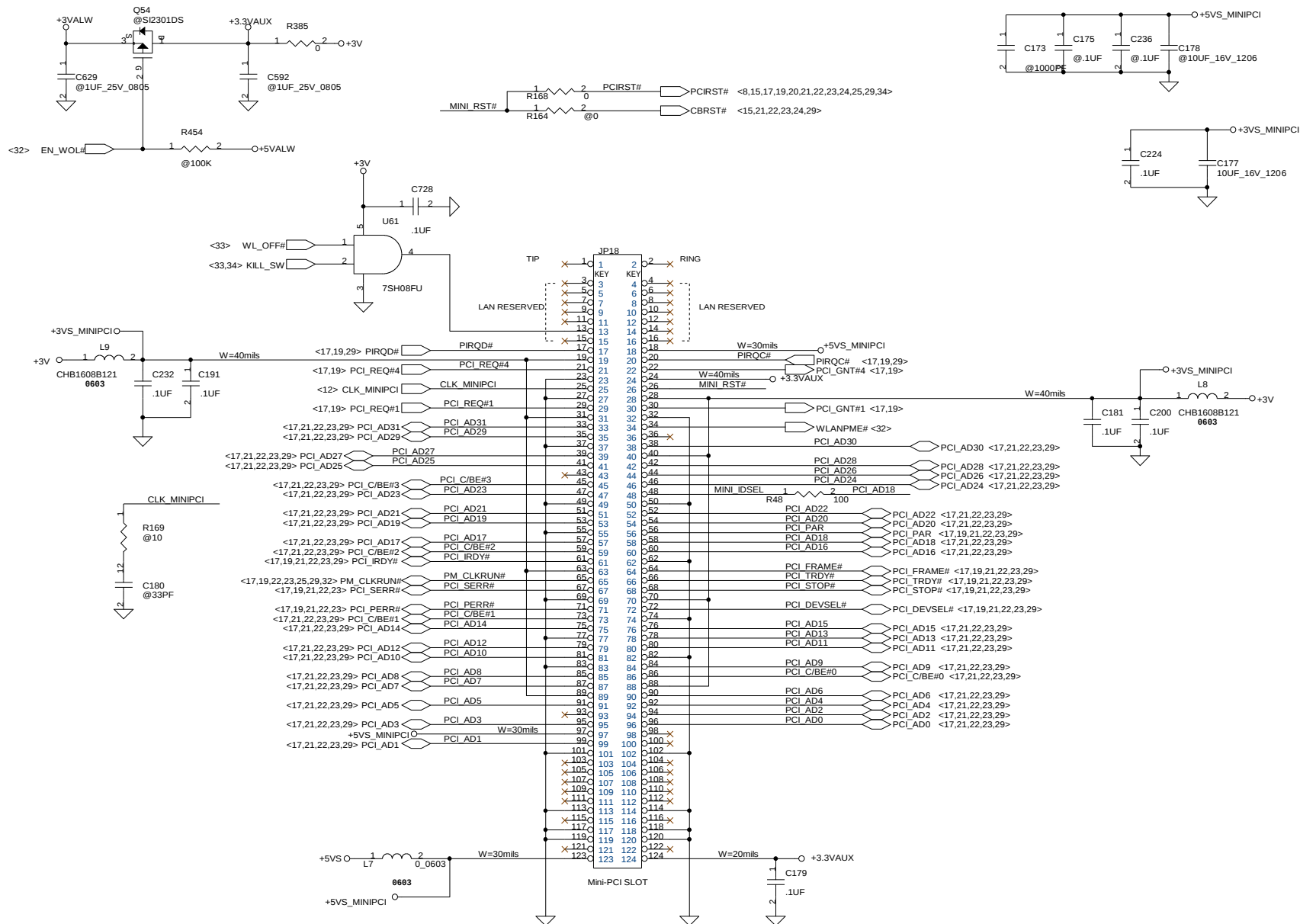
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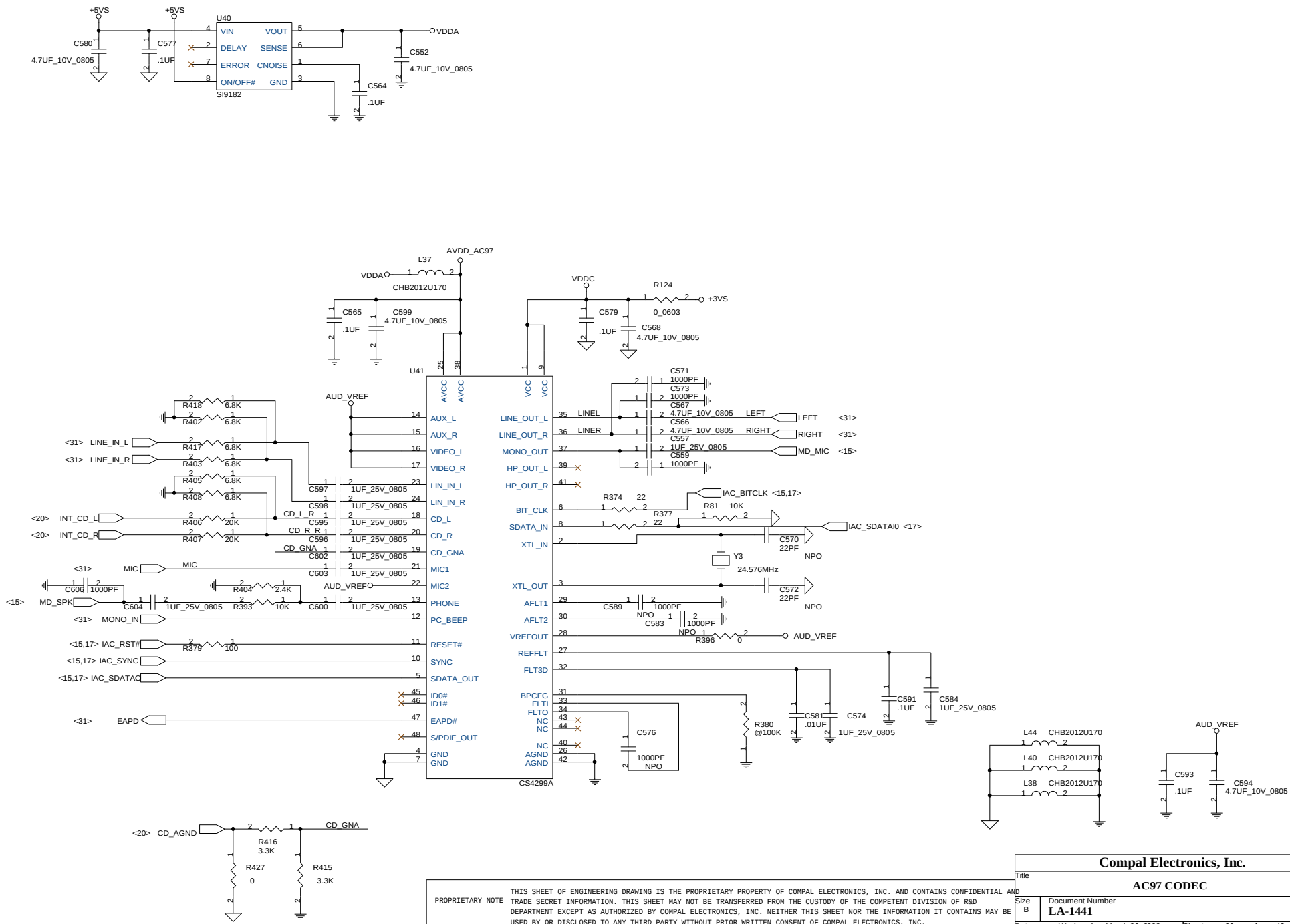
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Compal Electronics, Inc			
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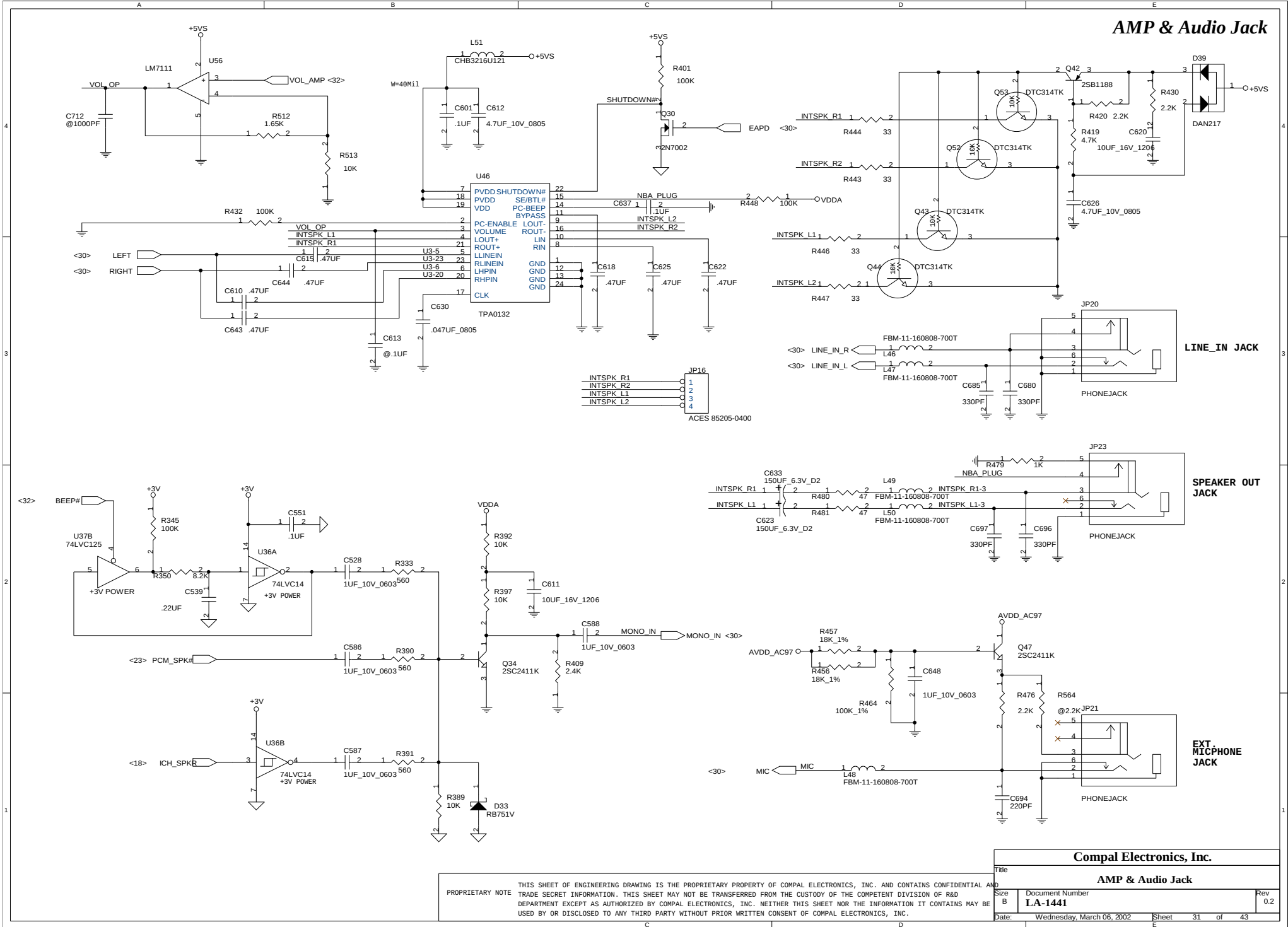


Compal Electronics, Inc.

Title			
AC97 CODEC			
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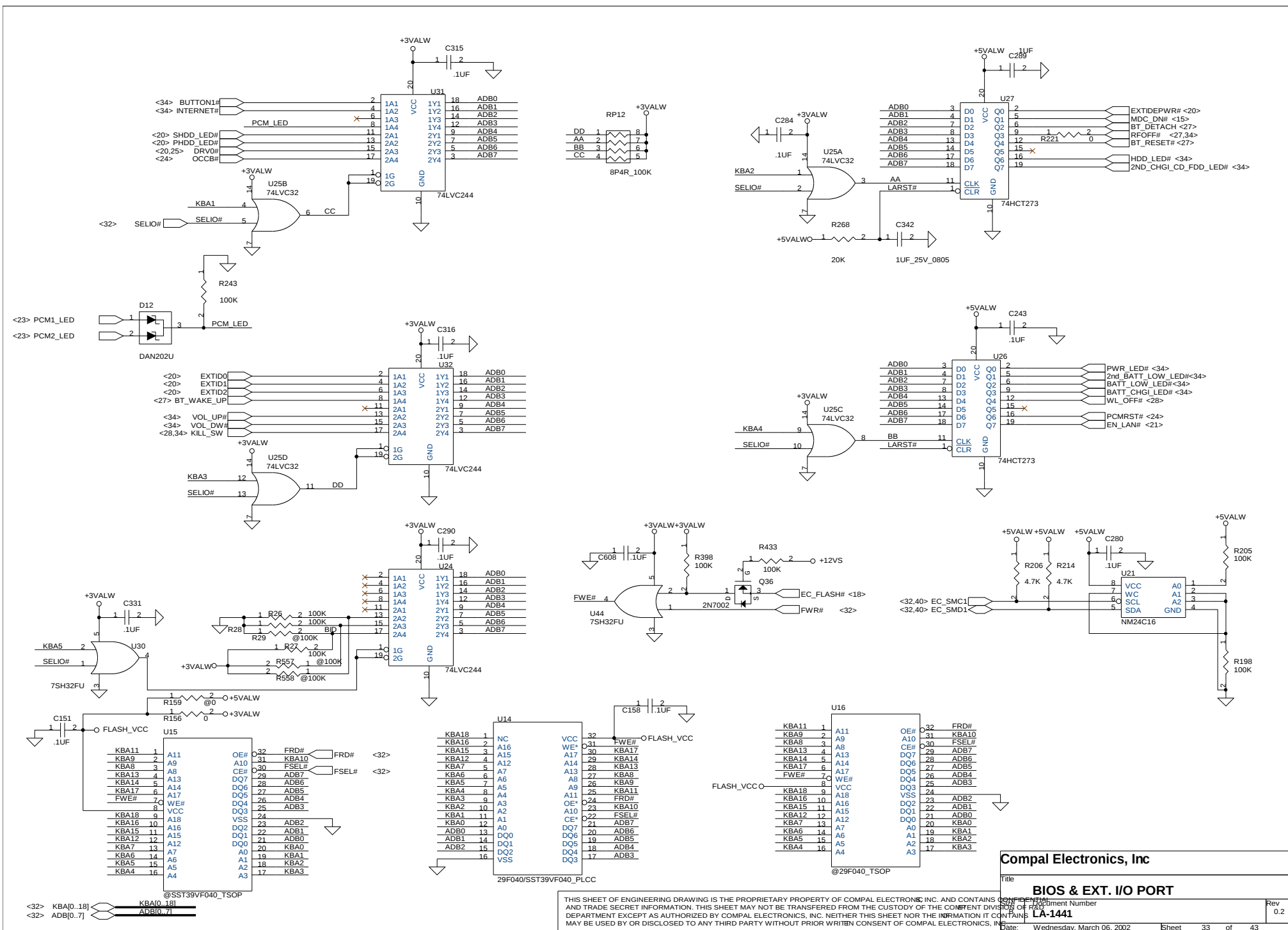
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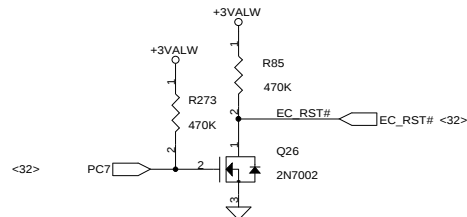


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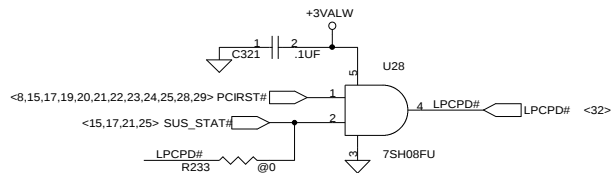
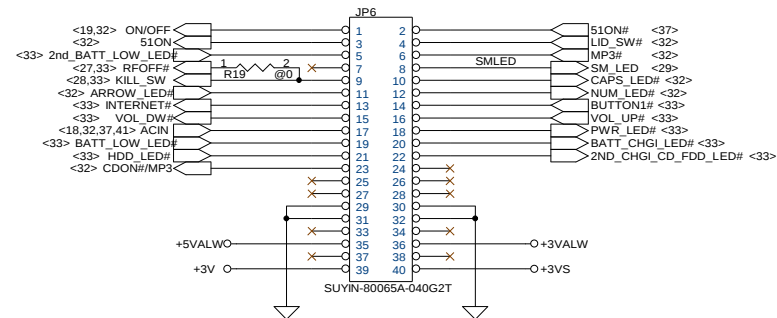
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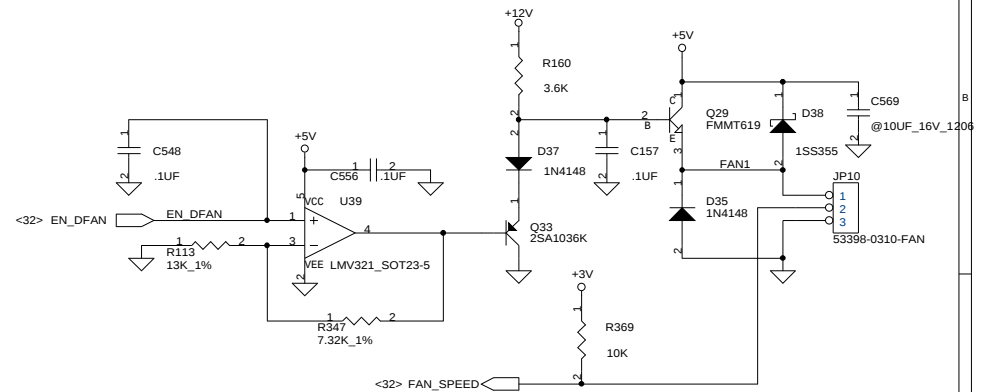


Switch Board Connector



For PC87591 REV 0.A Only

FAN CONN.



Compal Electronics, Inc.

Title
Switches & Connectors

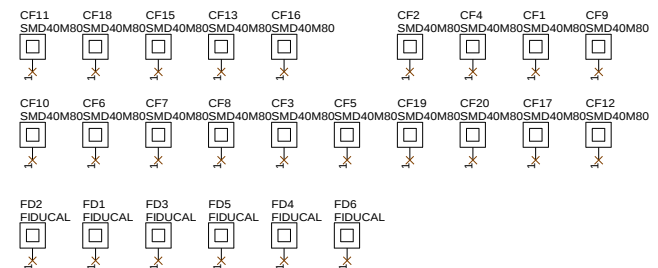
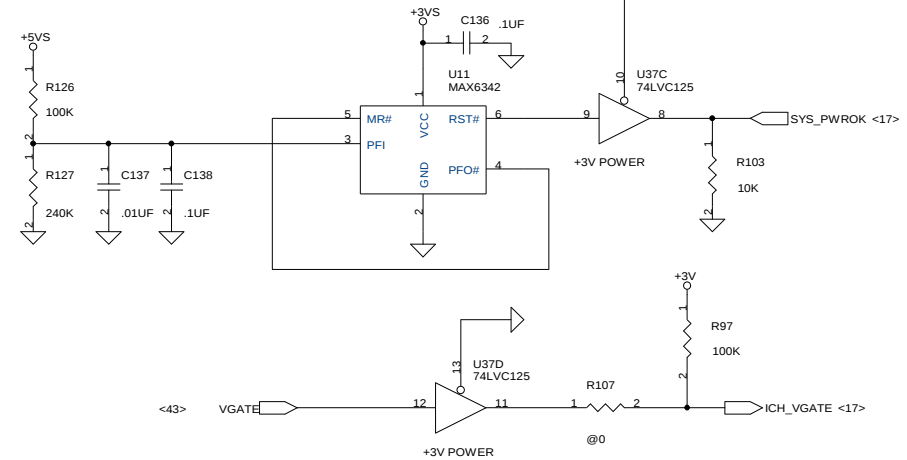
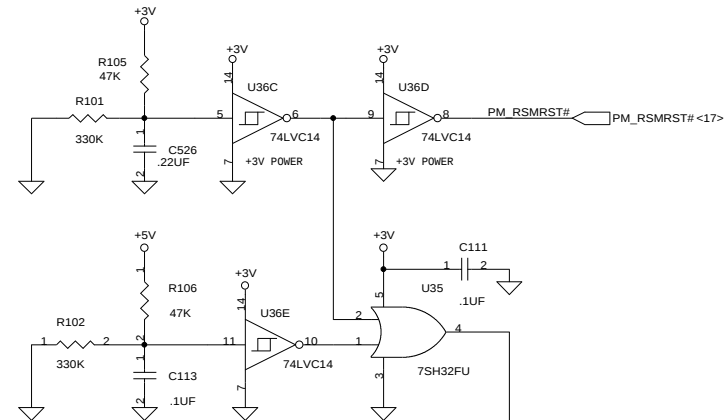
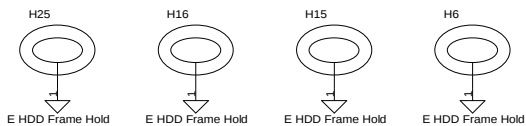
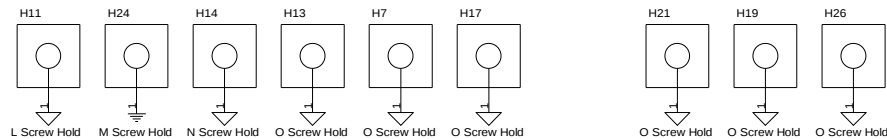
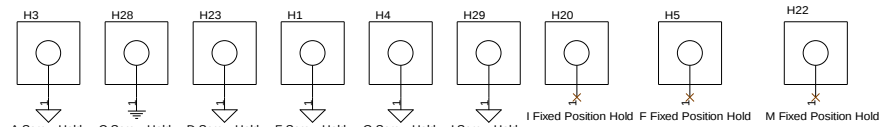
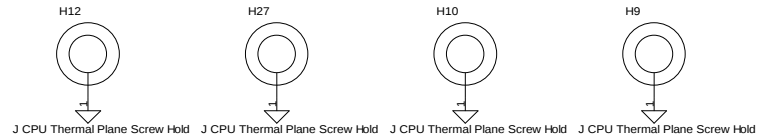
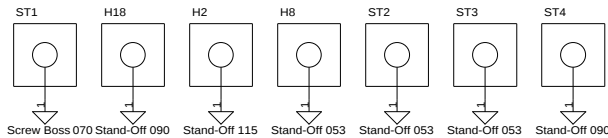
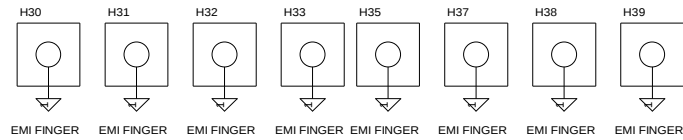
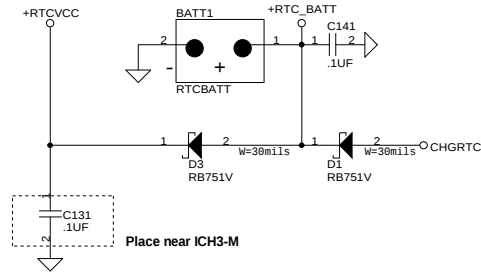
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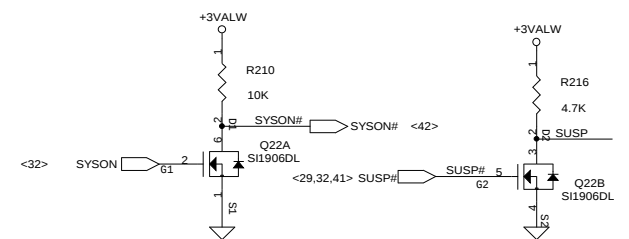
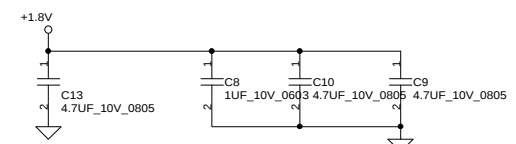
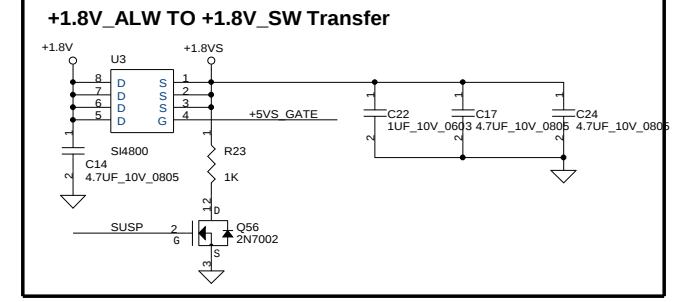
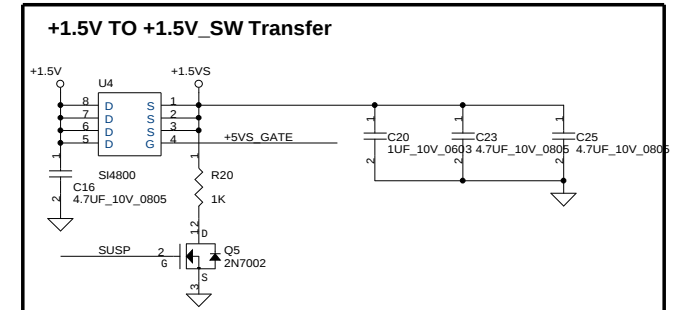
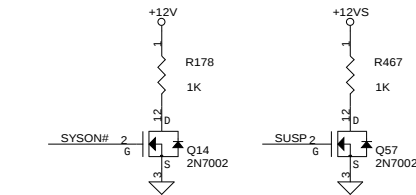
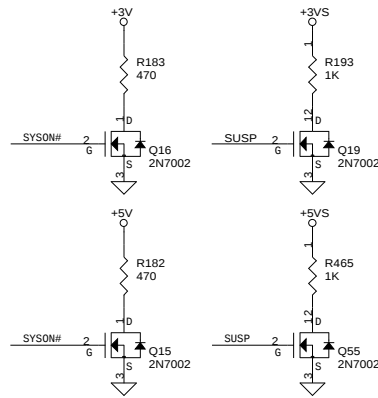
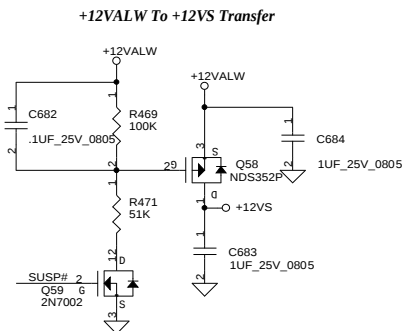
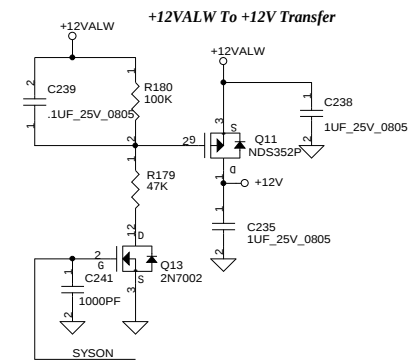
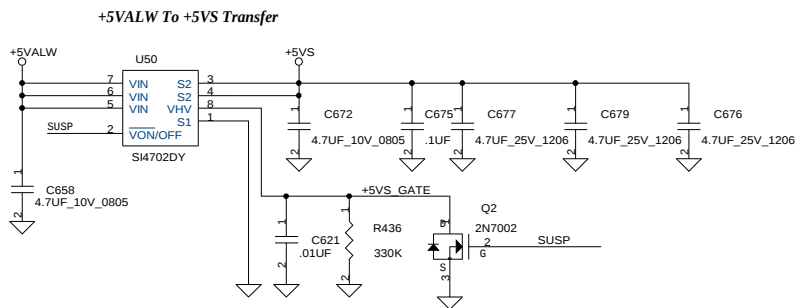
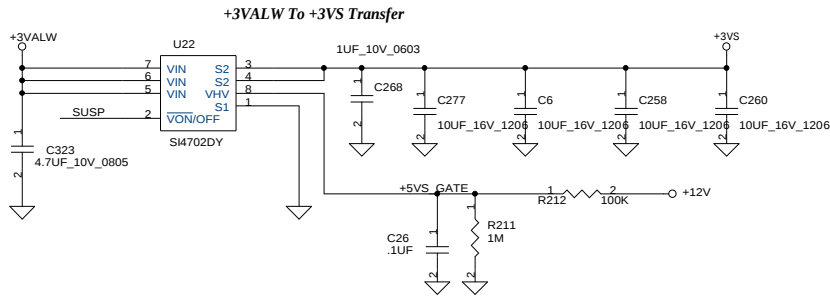
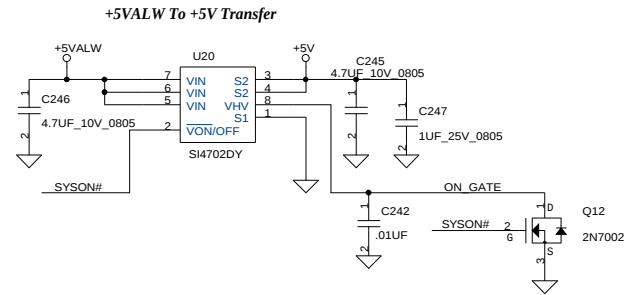
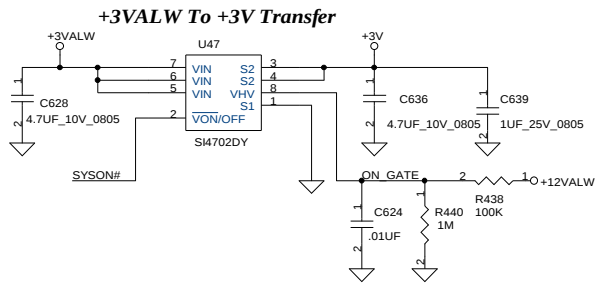
RTC Batt. Connector



Compal Electronics, Inc.

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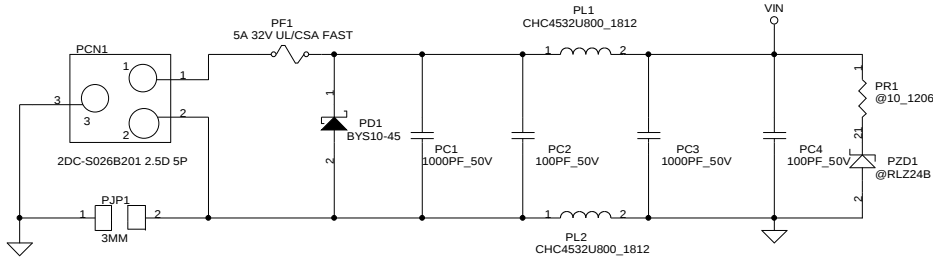
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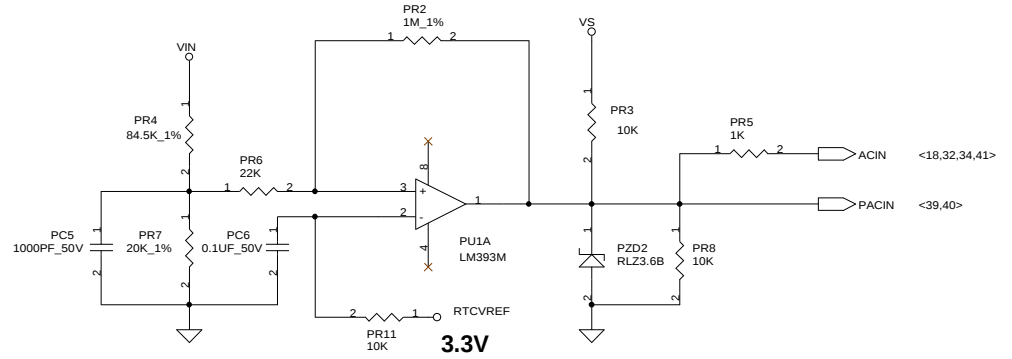
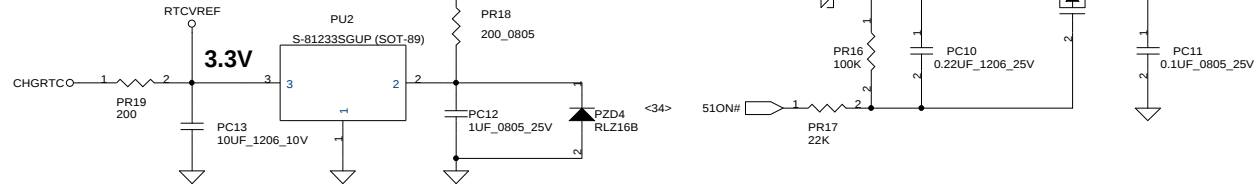
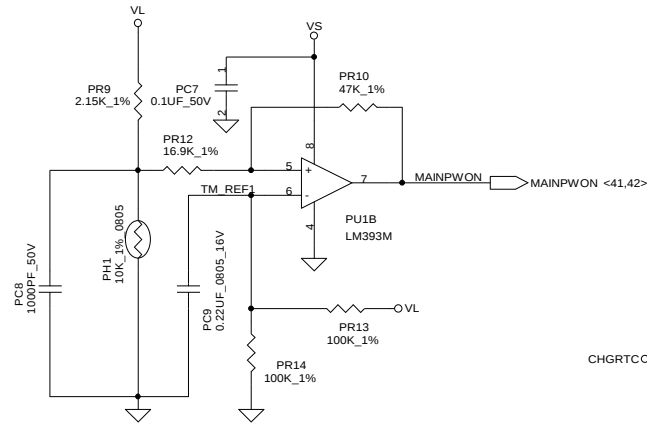
Compal Electronics, Ltd.			
Title: DC-DC Interface / RTC Batt. Conn.			
Size: Custom	Document Number: LA-1441		Rev: 0.2
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Vin Detector

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



+12VALWPO 2 PJP2 1 +12VALW (120mA, 20mils ,Via NO.= 1)
JOPEN/+12V

+5VALWFO 1 PJP3 2 +5VALW (5A, 200mils ,Via NO.= 10)
PAD-OPEN 4x4m

+3VALWFO 1 PJP4 2 +3VALW (5A, 200mils ,Via NO.= 10)
PAD-OPEN 4x4m

+1_5VPO 2 PJP5 1 +1.5V (1.5A, 60mils ,Via NO.= 3)
3MMA/CPU_IO

+1_8VPO 2 PJP6 1 +1.8V (3A, 120mils ,Via NO.= 6)
3MMA/CPU_IO

+VTP 1 PJP7 2 +VTT (6A, 240mils ,Via NO.= 12)
PAD-OPEN 4x4m

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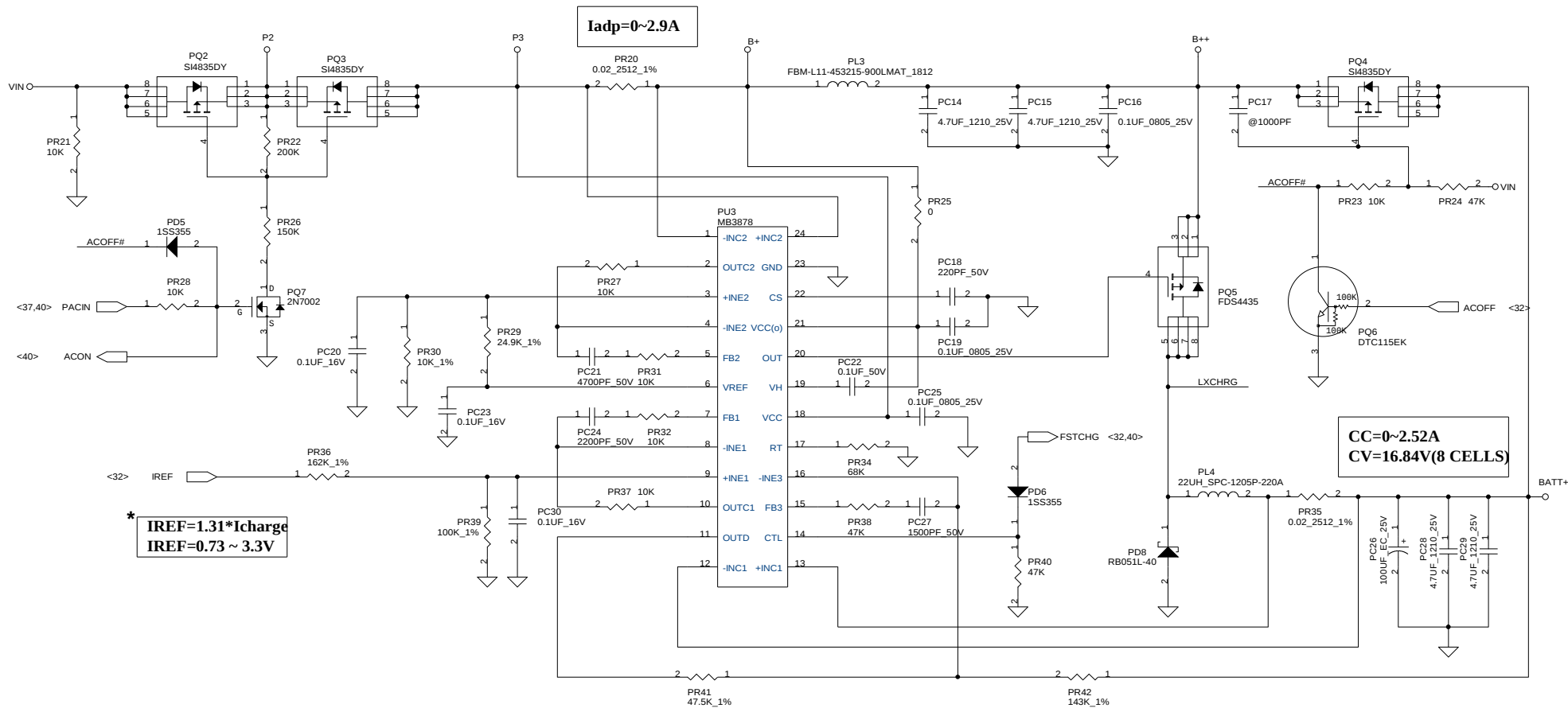
COMPAL ELECTRONICS, INC

Title Connector / DC-DC Interface

Size B Document Number LA-1441

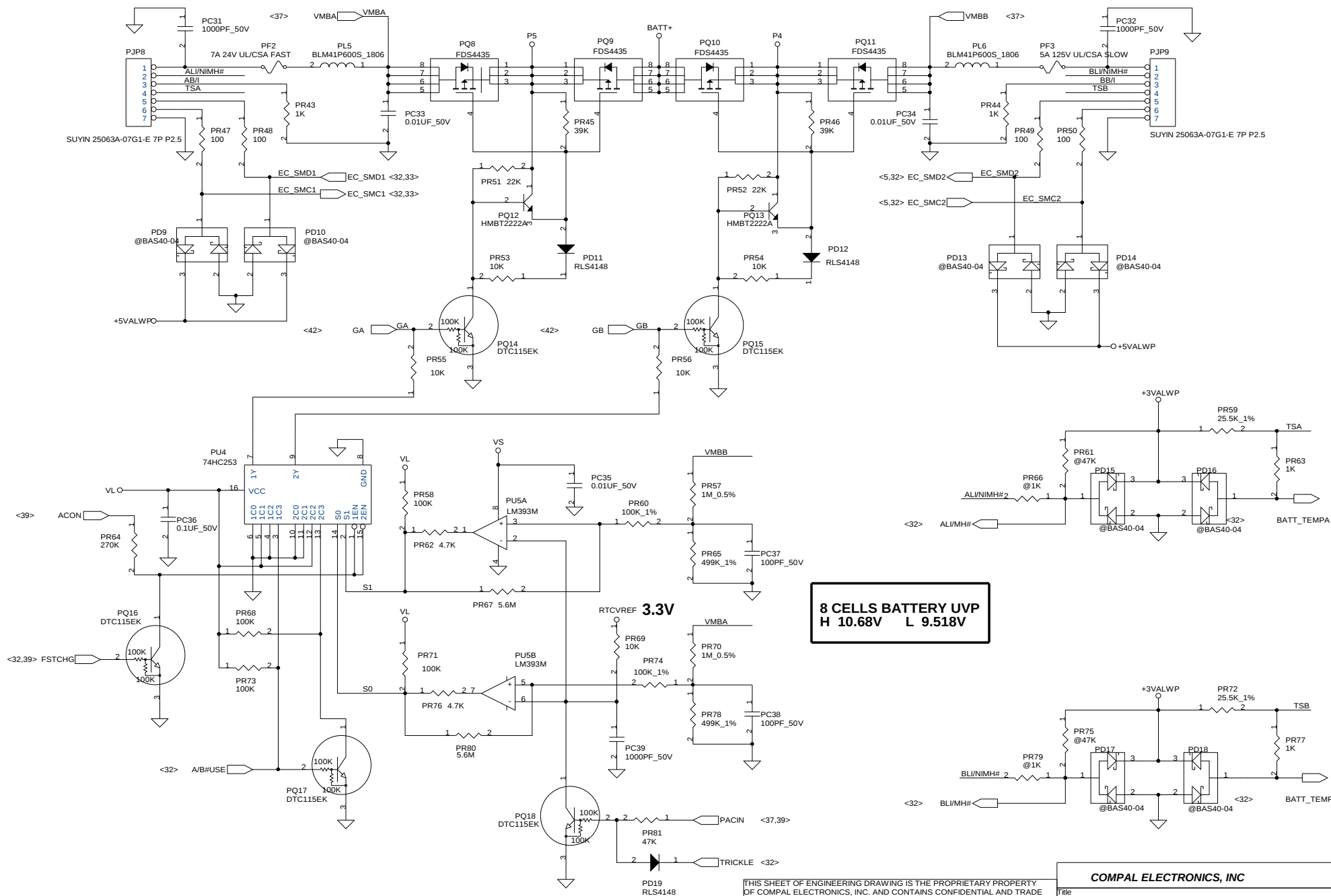
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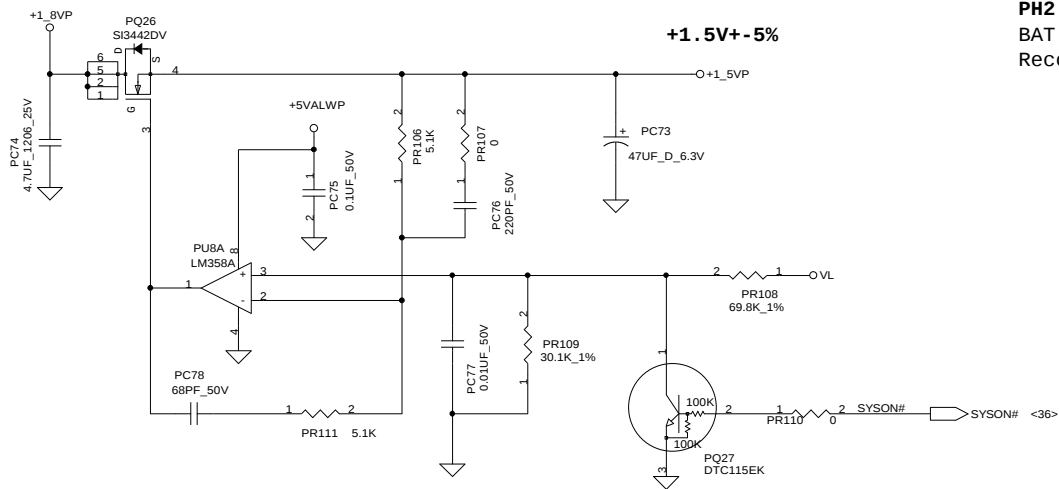
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COMPAL ELECTRONICS, INC			
Title	CHARGER		
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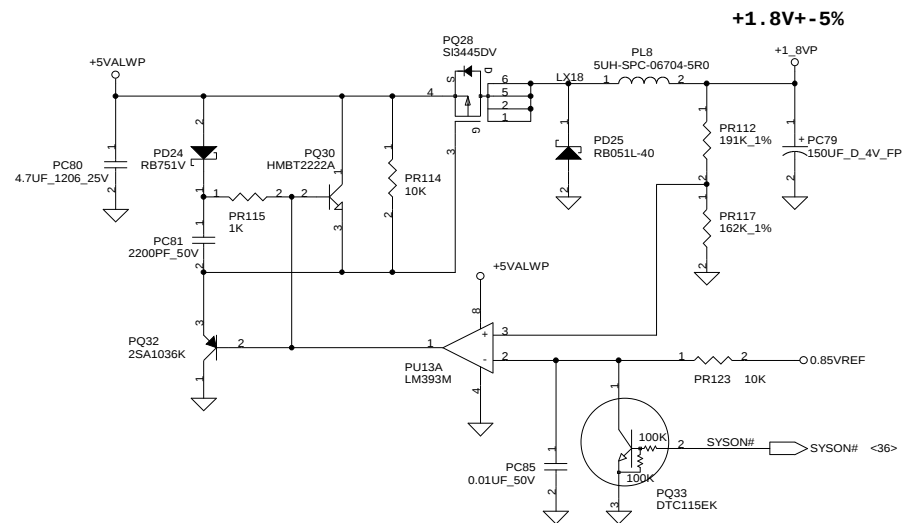
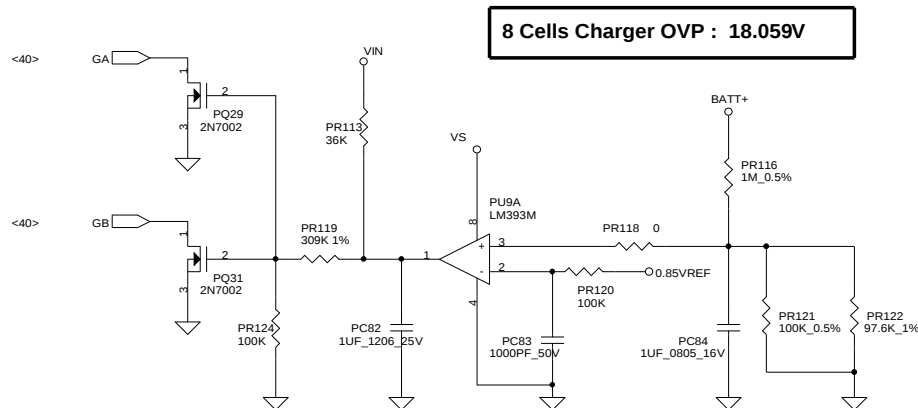
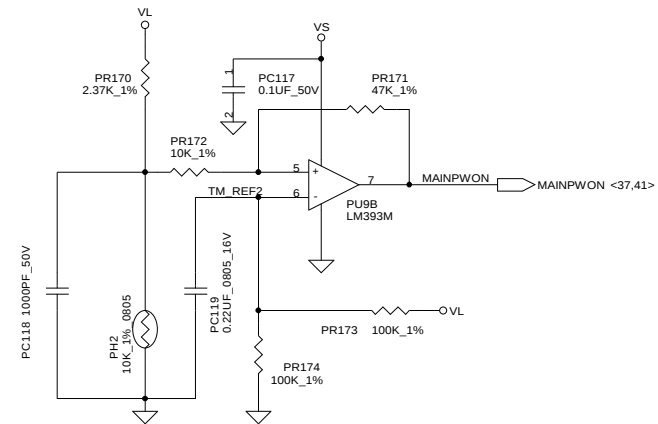


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COMPAL ELECTRONICS, INC			
Title	Charger Slecter		
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PH2 near main Battery CONN :
 BAT. thermal protection at 73 degree C
 Recovery at 50(51) degree C



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