

Compal Confidential

DCL55 Schematics Document

Banias ICP uFCBGA/uFCPGA Package with Montara-GM Core Logic

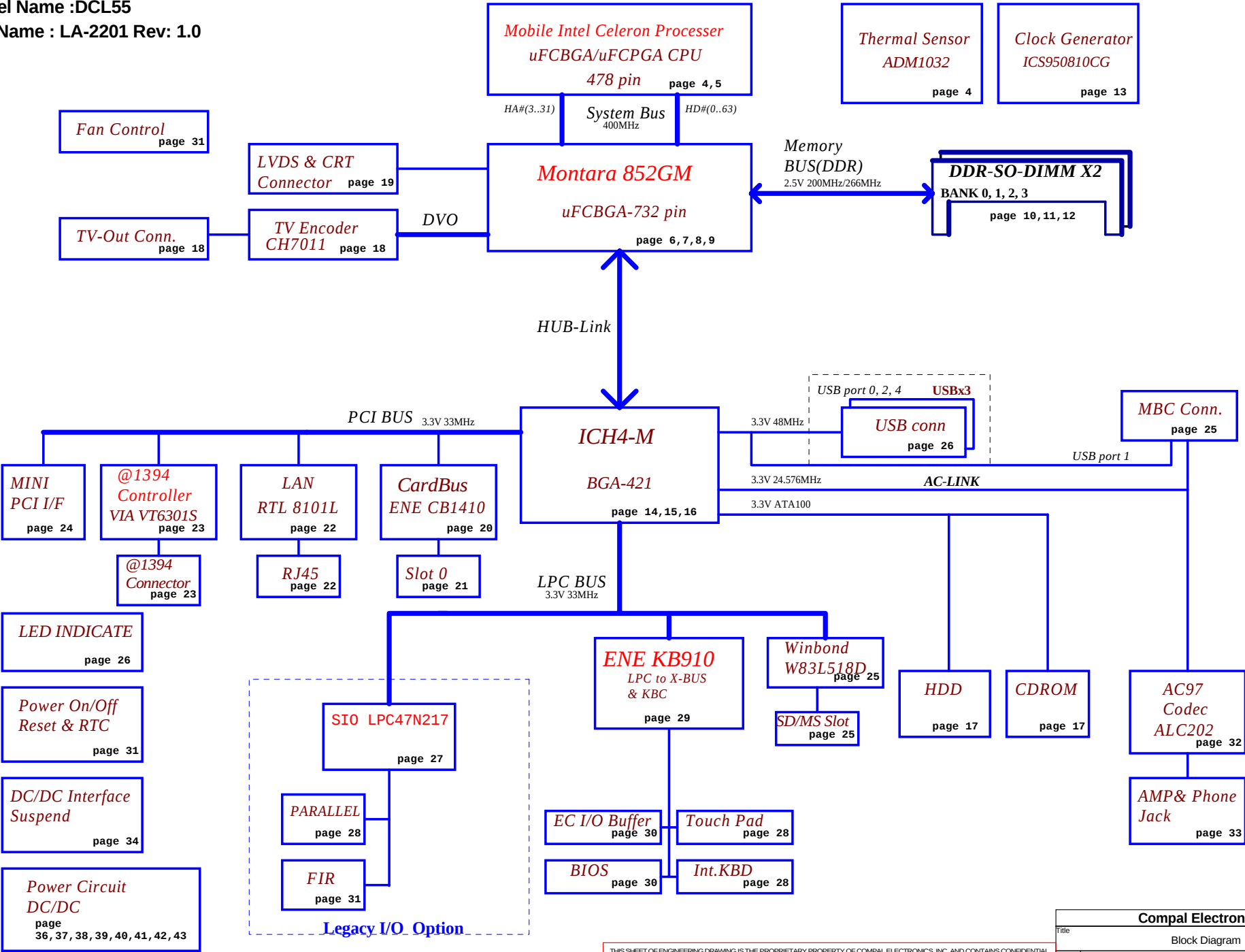
2003-12-29

REV: 1.0

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Title			
Cover Sheet			
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Model Name :DCL55
File Name : LA-2201 Rev: 1.0



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Block Diagram			
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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
+1.2VS	1.2VS switched power rail for GMCH	ON	OFF	OFF
+1.25VS	1.25V switched power rail	ON	OFF	OFF
+1.5VALW	1.5V power rail	ON	ON	ON
+1.5V	1.5V power rail	ON	ON	OFF
+1.5VS	1.5V power rail for GMCH	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+2.5V	2.5V power rail	ON	ON	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3.3V power rail	ON	ON	OFF
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5V	5V power rail	ON	ON	OFF
+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.

Board ID Table for AD channel

Vcc	3.3V +/- 5%			
Ra	100K +/- 5%			
Board ID	Rb	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

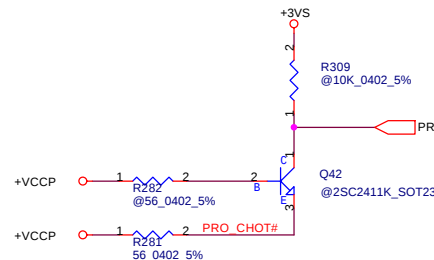
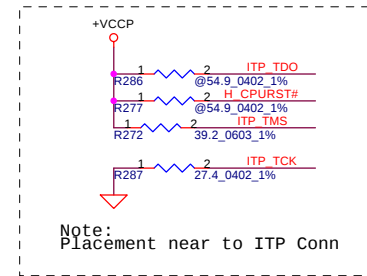
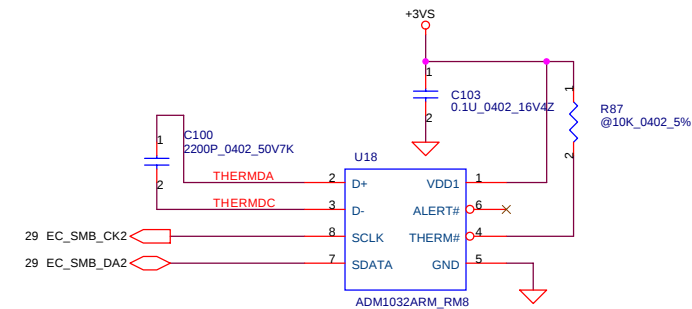
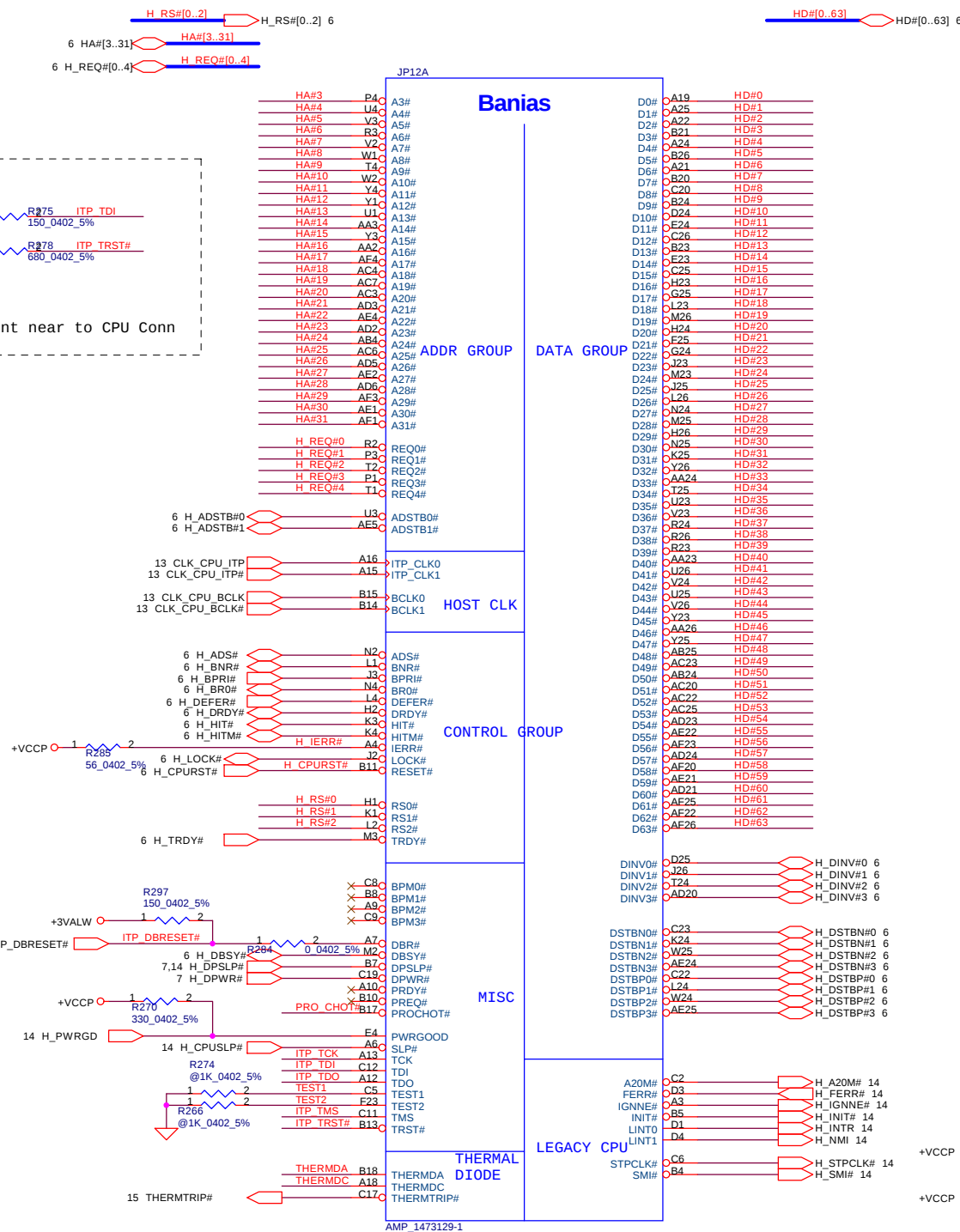
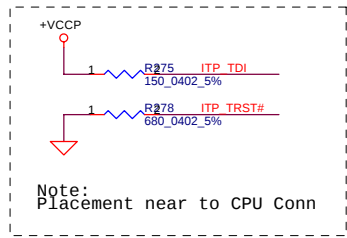
Board ID	PCB Revision
0	0.1
1	0.2
2	1.0
3	
4	
5	
6	
7	

External PCI Devices

Device	IDSEL#	REQ#GNT#	Interrupts
CardBus	AD20	2	PIRQA
LAN	AD17	3	PIRQF
Mini-PCI	AD18/AD20	1/4	PIRQG/PIRQH
1394	AD16	0	PIRQE

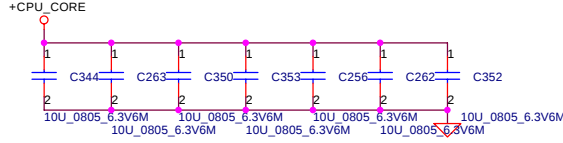
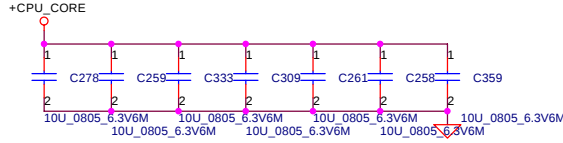
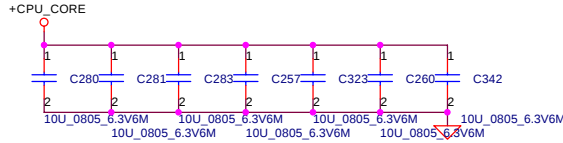
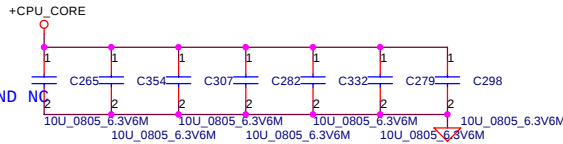
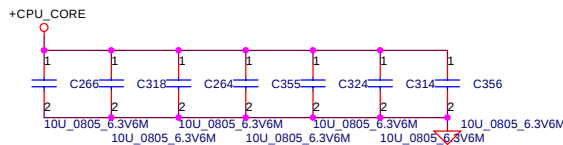
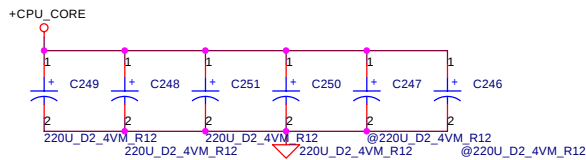
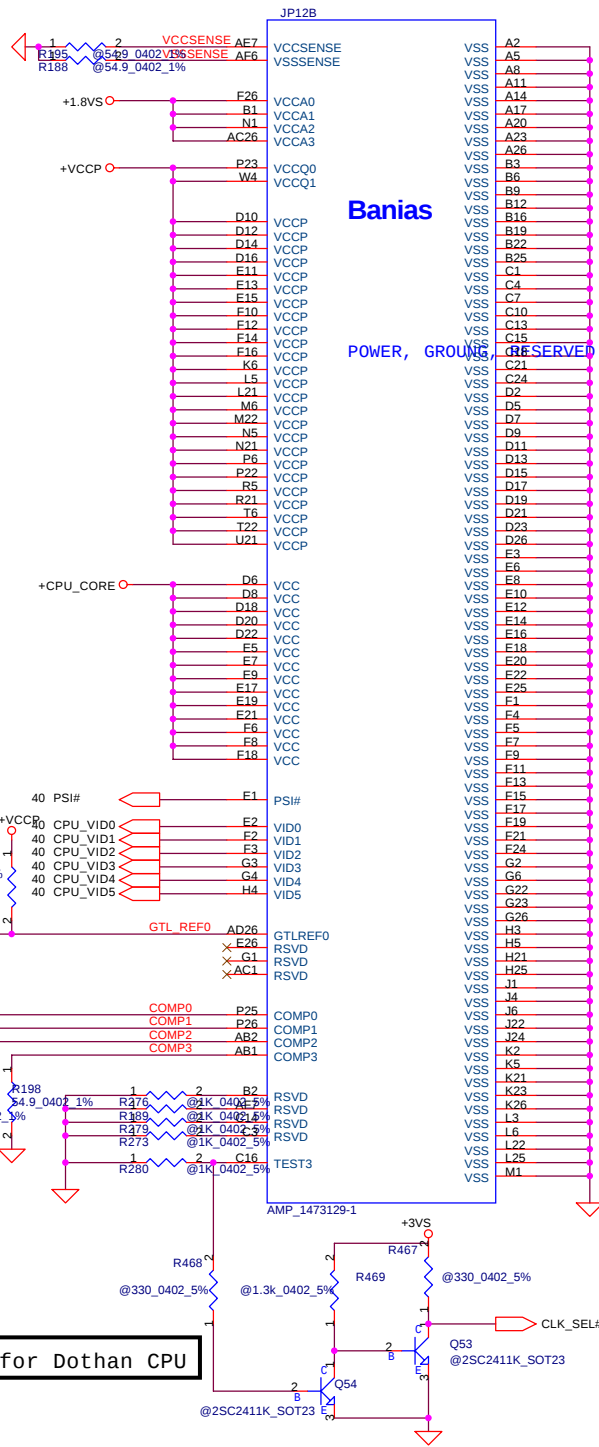
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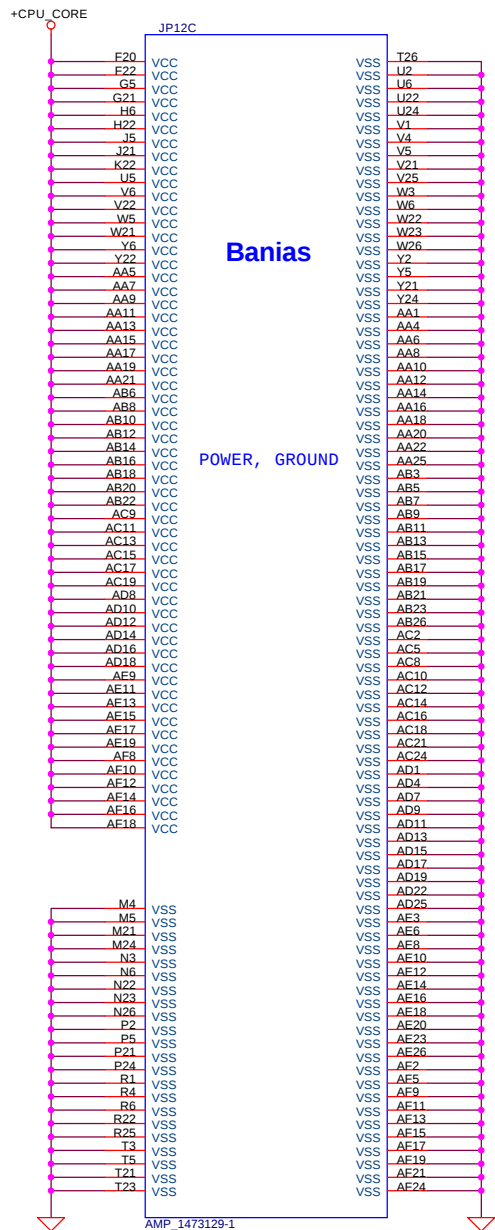
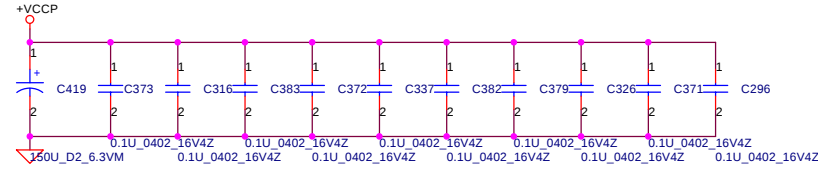
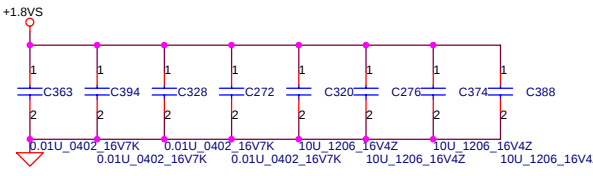


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Title		
Banias Processor in mFCPGA479 with ITP		
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Vcc-core Decoupling	C, uF	ESR, mohm	ESL, nH
SPCAP, Polymer	4X220uF	12m ohm/4	3.5nH/4
MLCC 0805 X5R	35X10uF	5m ohm/35	0.6nH/35



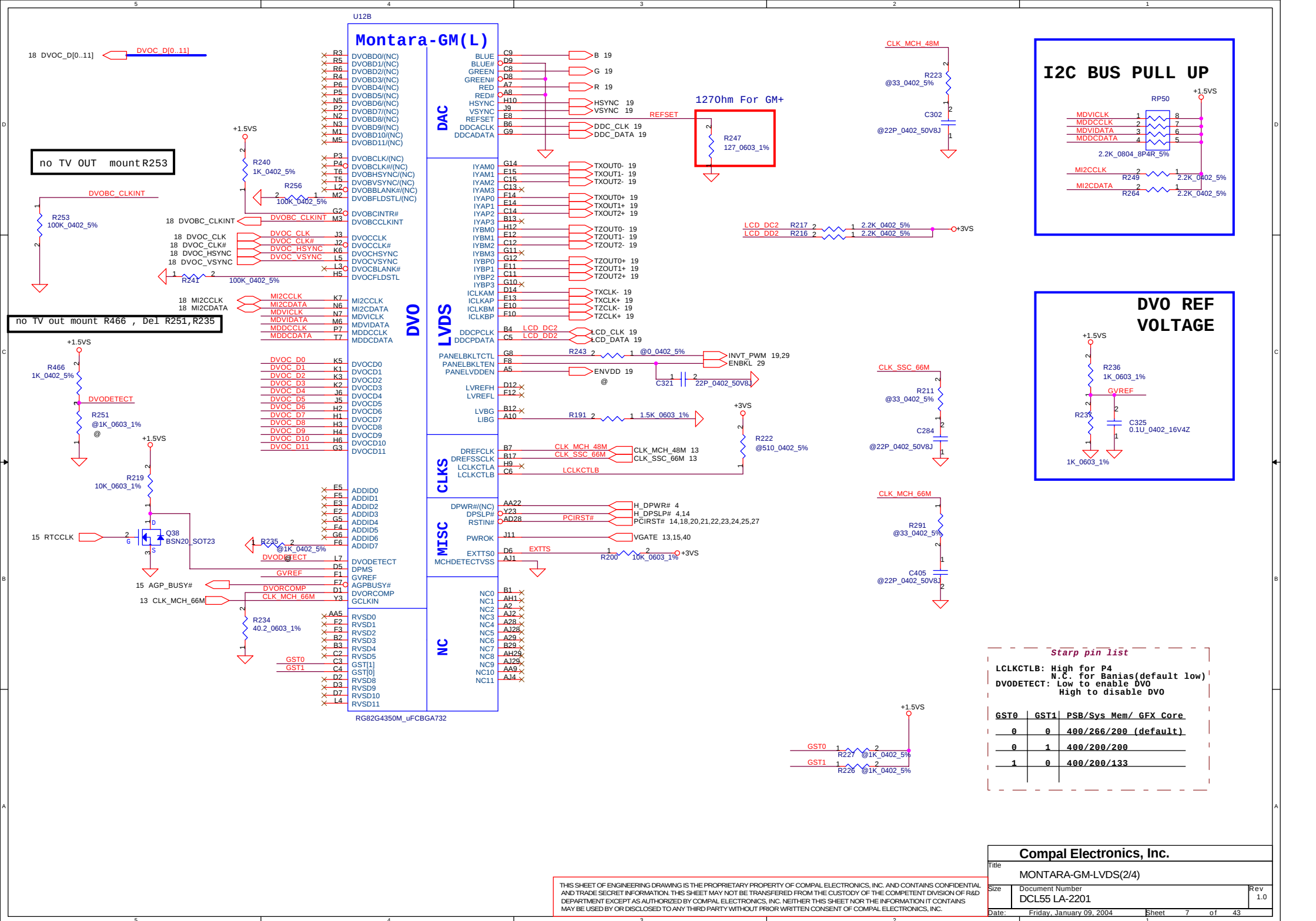
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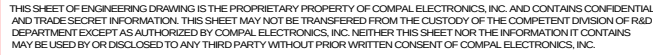
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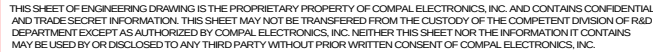
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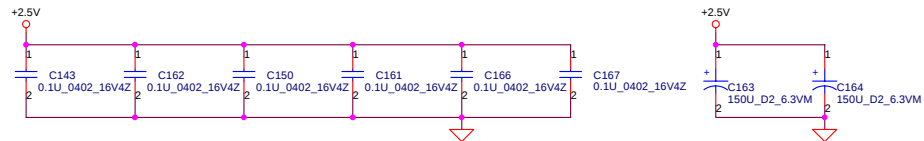
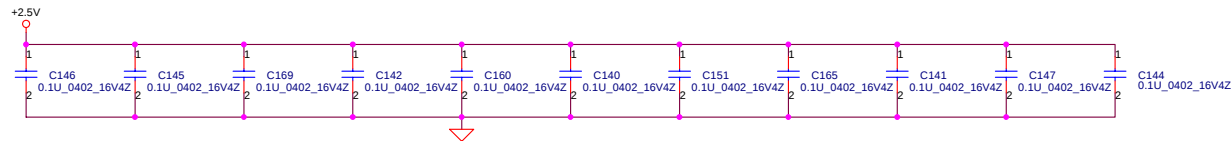
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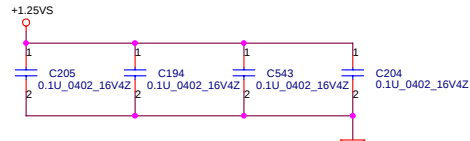
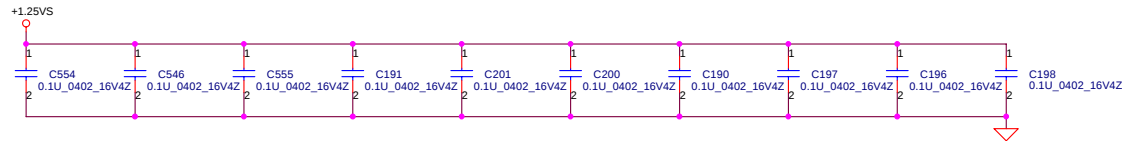
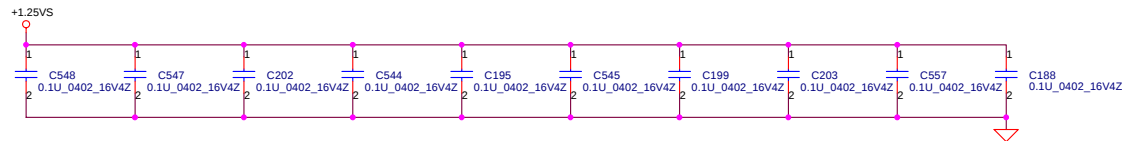
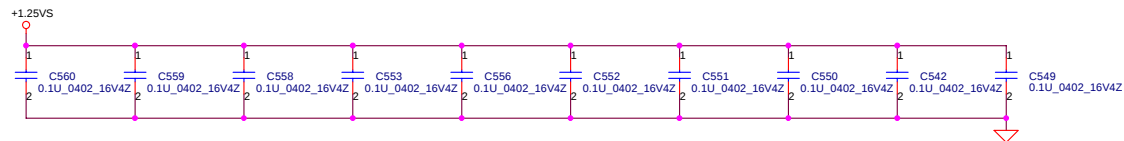
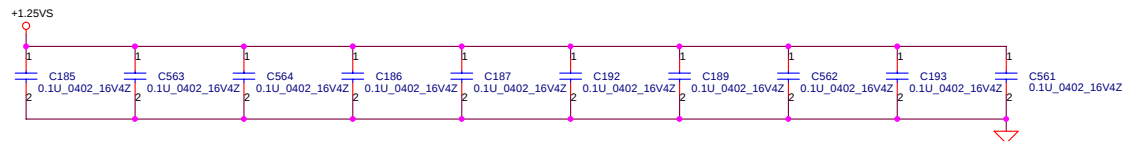
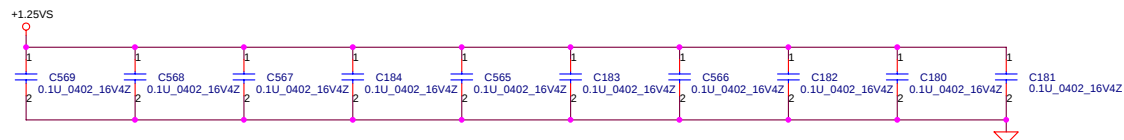




Layout note :
Distribute as close as possible
to DDR-SODIMM.



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



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DDR SODIMM Decoupling			
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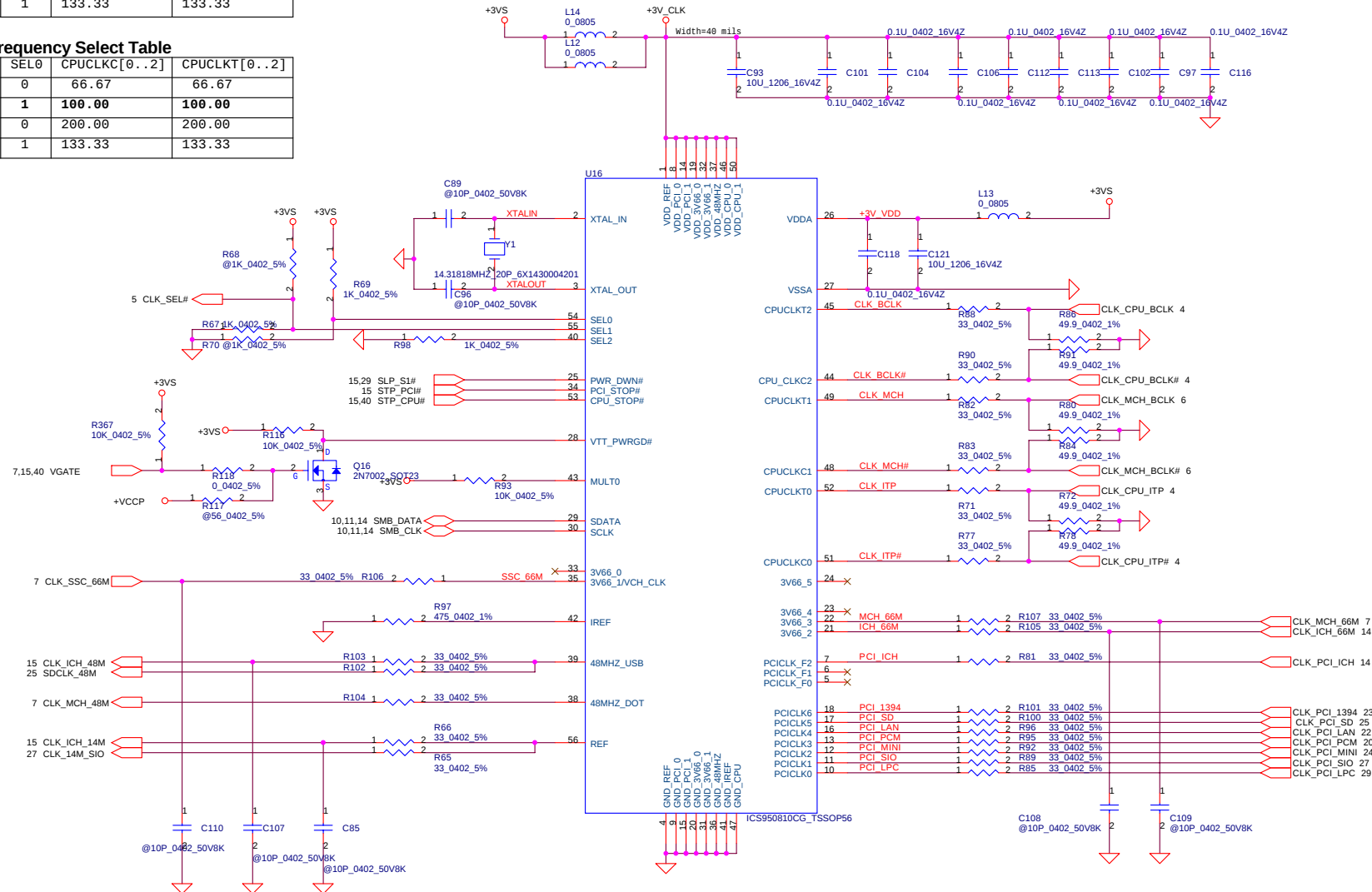
Clock Generator

ICS950810 Frequency Select Table

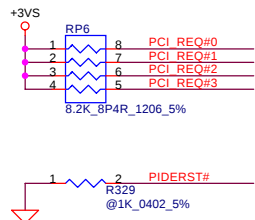
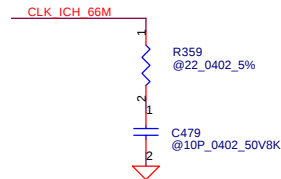
SEL2	SEL1	SEL0	CPUCLKC[0..2]	CPUCLKT[0..2]
0	0	0	166.67	166.67
0	0	1	100.00	100.00
0	1	0	200.00	200.00
0	1	1	133.33	133.33

CY28346-2 Frequency Select Table

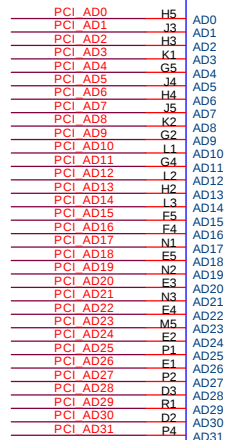
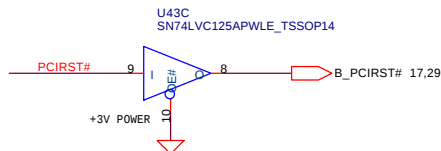
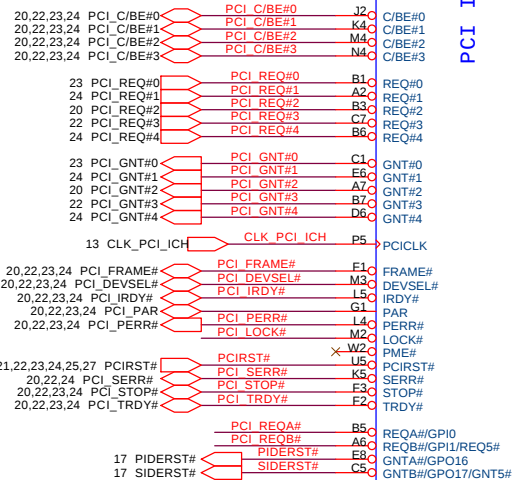
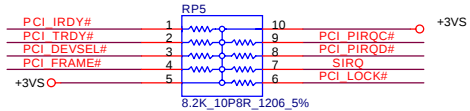
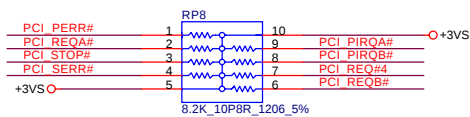
SEL2	SEL1	SEL0	CPUCLKC[0..2]	CPUCLKT[0..2]
0	0	0	66.67	66.67
0	0	1	100.00	100.00
0	1	0	200.00	200.00
0	1	1	133.33	133.33



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PCI Pullups



PCI I/F

ICH4

SM I/F

CPU I/F

HUB I/F

Interrupt I/F

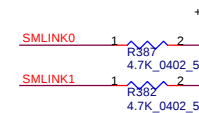
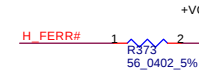
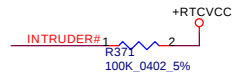
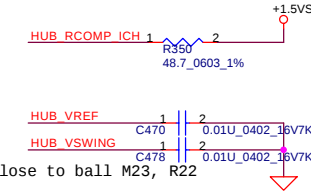
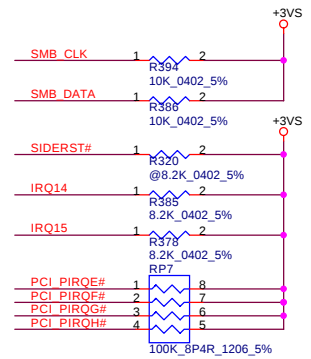
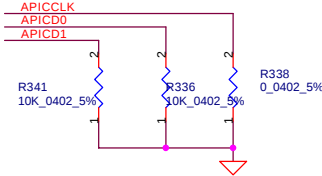
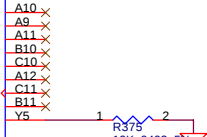
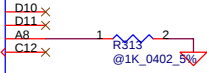
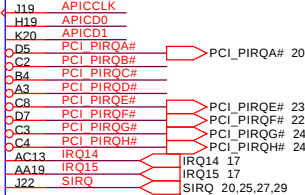
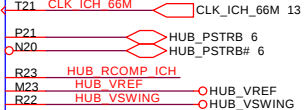
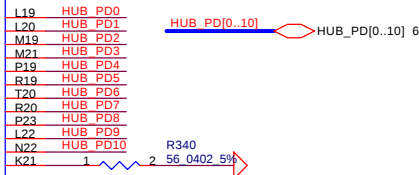
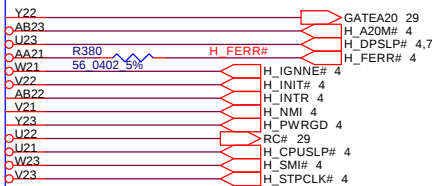
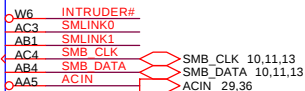
EEPROM I/F

LAN I/F

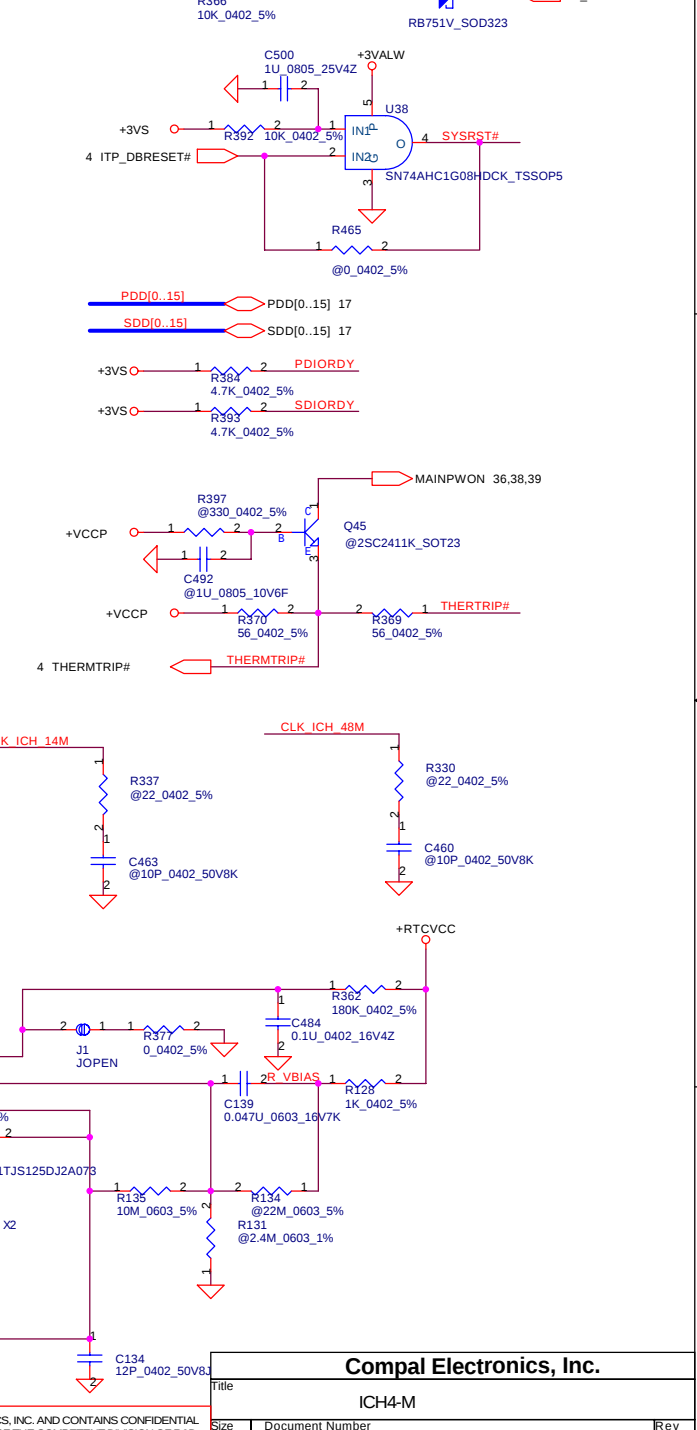
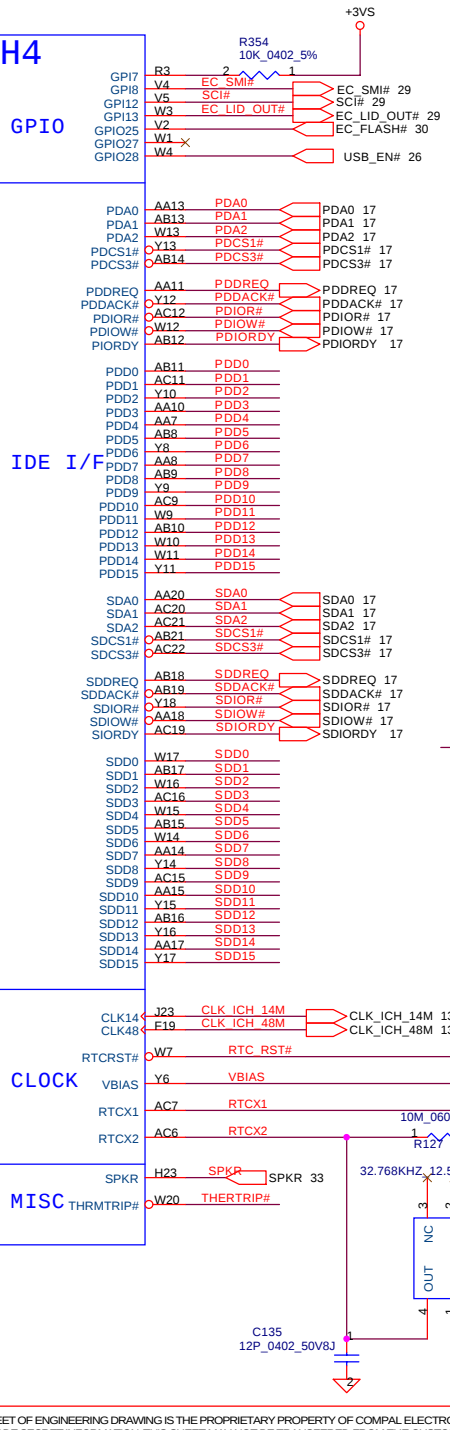
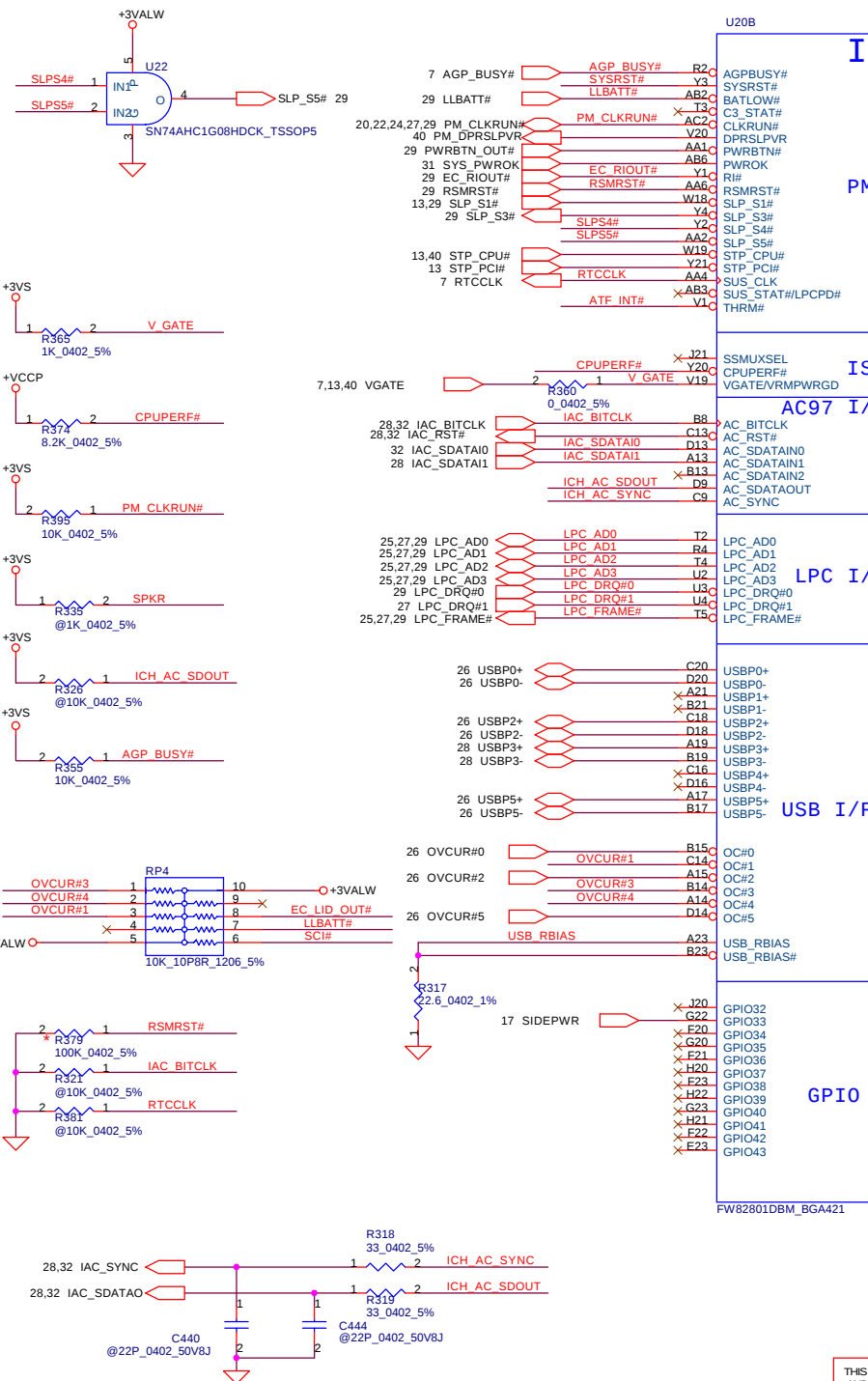
U20A

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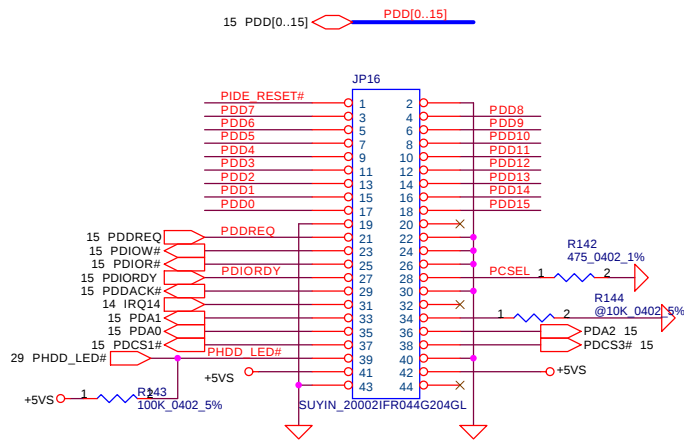
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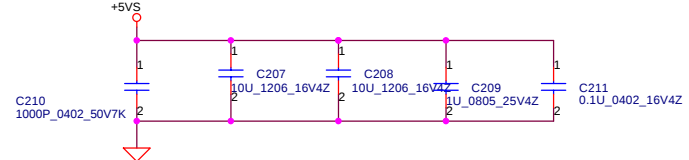
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HDD Connector

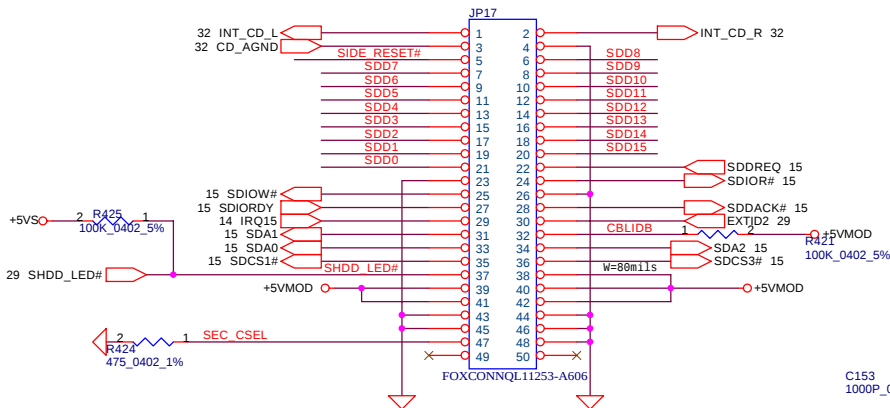


Place caps. near HDD CONN.

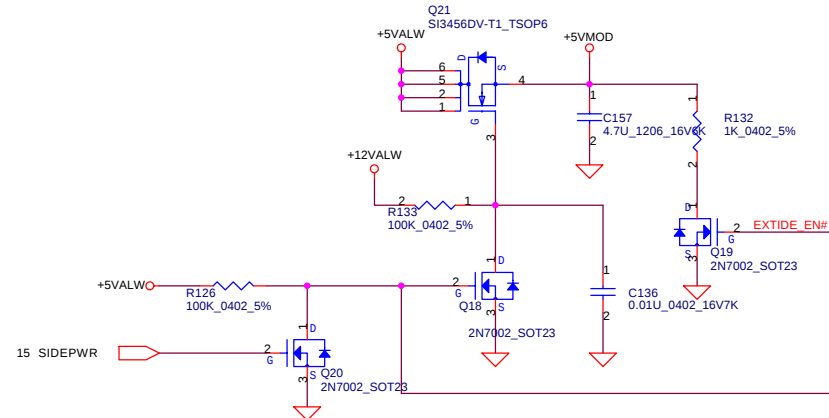
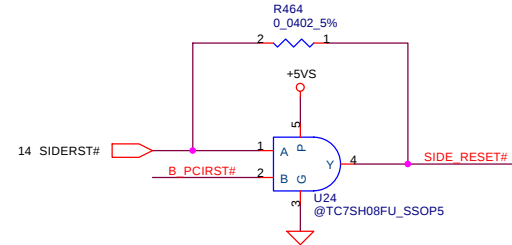
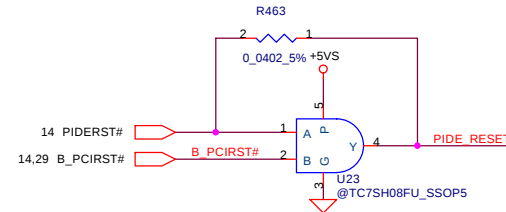
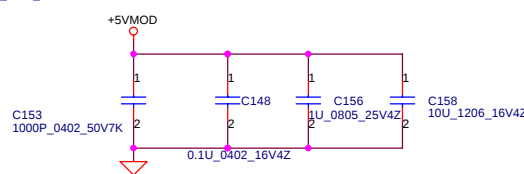


CD-ROM Connector

SDD[0..15]



Place caps. near CDROM CONN.



SI3456DV: N CHANNEL
VGS: 4.5V, RDS: 65 mOHM
Id(MAX): 5.1A
VGS, +20V

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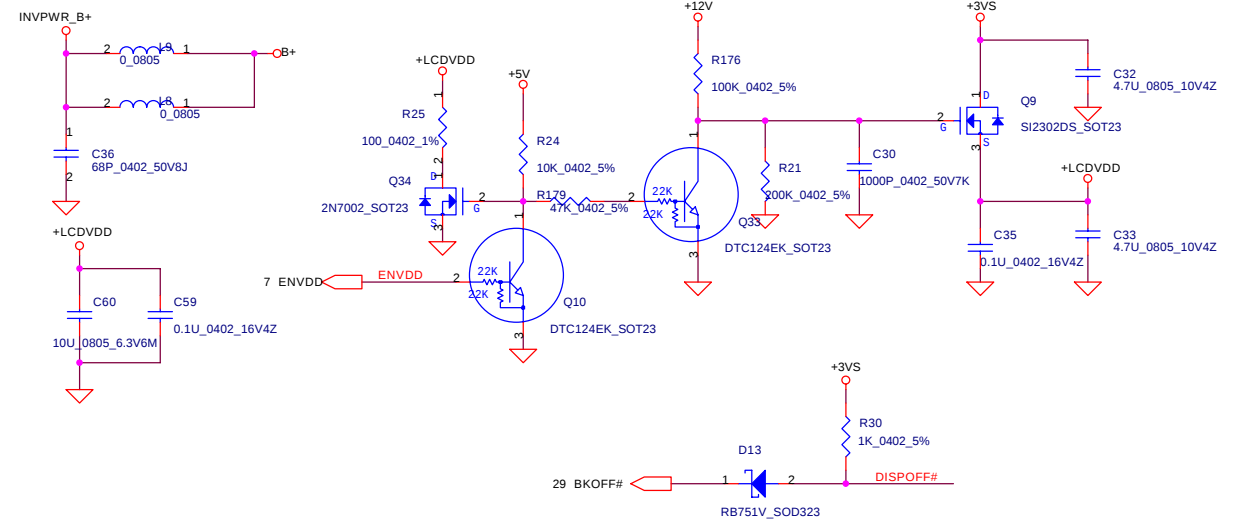
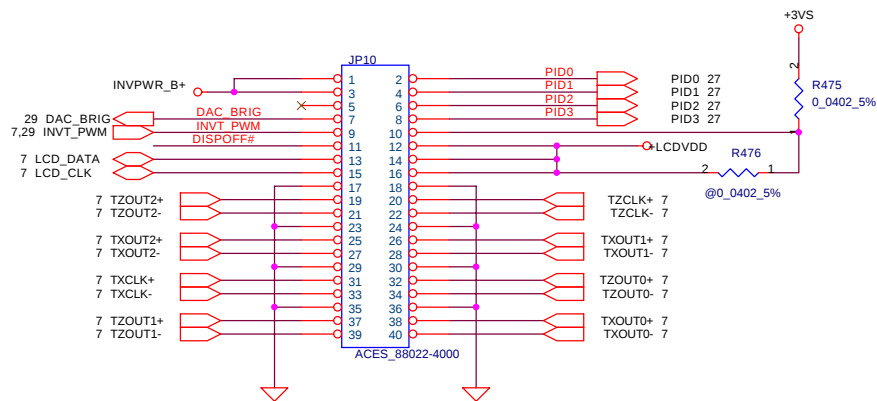
Title			IDE/CD-ROM Module	
Size	Document Number		DCL55 LA-2201	
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TV Encoder

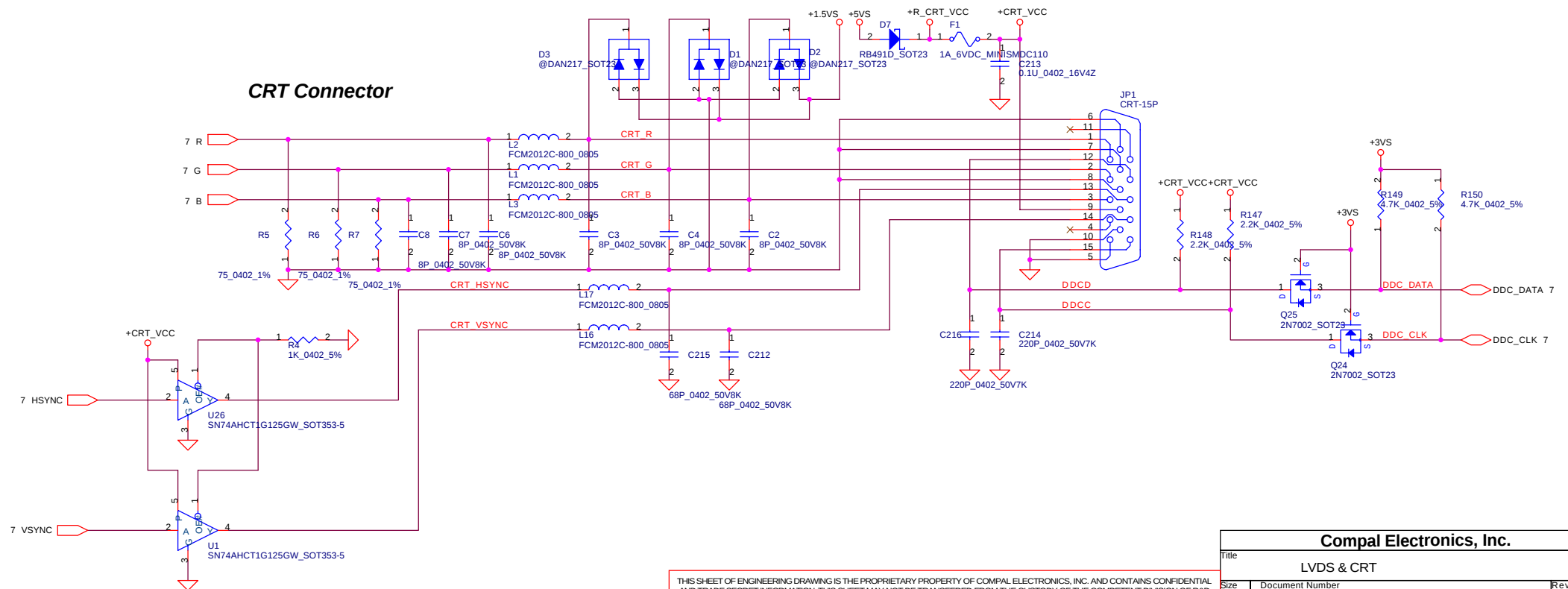


Compal Electronics, Inc.			
Title			
TV Encoder			
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LVDS Connector



CRT Connector



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14,22,23,24 PCI_AD[0..31]

PCI_AD31 3
PCI_AD30 4
PCI_AD29 5
PCI_AD28 7
PCI_AD27 8
PCI_AD26 9
PCI_AD25 10
PCI_AD24 11
PCI_AD23 15
PCI_AD22 16
PCI_AD21 17
PCI_AD20 19
PCI_AD19 23
PCI_AD18 24
PCI_AD17 25
PCI_AD16 26
PCI_AD15 38
PCI_AD14 39
PCI_AD13 40
PCI_AD12 41
PCI_AD11 43
PCI_AD10 45
PCI_AD9 46
PCI_AD8 47
PCI_AD7 49
PCI_AD6 51
PCI_AD5 52
PCI_AD4 53
PCI_AD3 54
PCI_AD2 55
PCI_AD1 56
PCI_AD0 57

PQFP 144
22.2 X 22.2 X 1.60

14,22,23,24 PCI_C/BE#3 12
14,22,23,24 PCI_C/BE#2 27
14,22,23,24 PCI_C/BE#1 37
14,22,23,24 PCI_C/BE#0 48
7,14,18,21,22,23,24,25,27 PCIRST# 20
14,22,23,24 PCI_FRAME# 28
14,22,23,24 PCI_IRDY# 29
14,22,23,24 PCI_TRDY# 31
14,22,23,24 PCI_DEVSEL# 32
14,22,23,24 PCI_STOP# 33
14,22,23,24 PCI_PERR# 34
14,22,24 PCI_SERR# 35
14,22,23,24 PCI_PAR# 36
14 PCI_REQ#2 1
14 PCI_GNT#2 2
13 CLK_PCI_PCM 21
29,30,34,39,42 SUSP# 1
22,23,24,29 PCM_PME# 58
PCI_AD20 1
PCI_PIRQA# 1
29 PCM_RI# 64
14,25,27,29 SIQ# 65
15,22,24,27,29 PM_CLKRUN# 67
21 CBRST# 66

CLK_PCI_PCM
R259 10_0402_5%
C361 18P_0402_50V8K

C/BE#3 12
C/BE#2 27
C/BE#1 37
C/BE#0 48
RST# 20
FRAME# 28
IRDY# 29
TRDY# 31
DEVSEL# 32
STOP# 33
PERR# 34
SERR# 35
PAR# 36
REQ# 1
GNT# 2
CLK 21
RI_OUT#/PME# 58
SUSPEND# 70
IDSEL 13
MFUNC0 60
MFUNC1 61
MFUNC2 64
MFUNC3 65
MFUNC4 67
MFUNC5 68
MFUNC6 69
VCC/GRST# 66

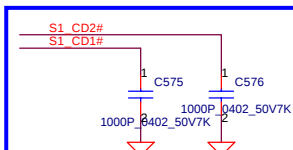
GND1 6
GND2 42
GND3 43
GND4 56
GND5 78
GND6 94
GND7 114
GND8 130
RSVD/D14 84
RSVD/A18 100
RSVD/D2 143

CC/BE3#/REG# 125
CC/BE2#/A12 112
CC/BE1#/A8 99
CC/BE0#/CE1# 88
CRST#/RESET 119
CFRAME#/A23 111
CIRDY#/A15 110
CTRDY#/A22 109
CDEVSEL#/A21 107
CSTOP#/A20 105
CPERR#/A14 104
CSERR#/WAIT# 133
CPAR/A13 101
CREQ#/INPACK# 123
CGNT#/WE# 106
CCLK/A16 108
CSTSCHG/BVD1 135
CCLKRUN#/WP 136
CBLOCK#/A19 103
CINT#/READY 132
SPKOUT 62
CAUDIO/BVD2 134
CCD2#/CD2# 137
CCD1#/CD1# 125
CVS2/VS2# 117
CVS1/VS1# 131
CB1410_IQFP144

CAD31/D10 144
CAD30/D9 142
CAD29/D1 141
CAD28/D8 140
CAD27/D0 139
CAD26/A0 129
CAD25/A1 128
CAD24/A2 127
CAD23/A3 124
CAD22/A4 121
CAD21/A5 120
CAD20/A6 118
CAD19/A25 116
CAD18/A7 115
CAD17/A24 113
CAD16/A17 98
CAD15/IOWR# 96
CAD14/A9 97
CAD13/IORD# 93
CAD12/A11 95
CAD11/OE# 92
CAD10/CE2# 91
CAD9/A10 89
CAD8/A10 87
CAD7/D7 85
CAD6/D13 82
CAD5/D6 83
CAD4/D12 80
CAD3/D5 81
CAD2/D11 77
CAD1/D4 79
CAD0/D3 76
S1_D10 144
S1_D9 142
S1_D1 141
S1_D8 140
S1_D0 139
S1_A0 129
S1_A1 128
S1_A2 127
S1_A3 124
S1_A4 121
S1_A5 120
S1_A6 118
S1_A25 116
S1_A7 115
S1_A24 113
S1_A17 98
S1_IOWR# 96
S1_A9 97
S1_IORD# 93
S1_OE# 92
S1_OE# 91
S1_CE2# 89
S1_D15 87
S1_D7 85
S1_D13 82
S1_D6 83
S1_D12 80
S1_D5 81
S1_D11 77
S1_D4 79
S1_D3 76
S1_REG# 125
S1_A12 112
S1_A8 99
S1_CE1# 88
S1_RST 119
S1_A23 111
S1_A15 110
S1_A22 109
S1_A21 107
S1_A20 105
S1_A14 104
S1_WAIT# 133
S1_A13 101
S1_INPACK# 123
S1_WE# 106
S1_A16 108
S1_BVD1 135
S1_WP 136
S1_A19 103
S1_RDY# 132
PCM_SPK# 62
S1_BVD2 134
S1_CD2# 137
S1_CD1# 125
S1_VS2 117
S1_VS1 131
S1_D2 84
S1_A18 100
S1_D14 143

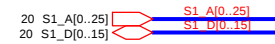
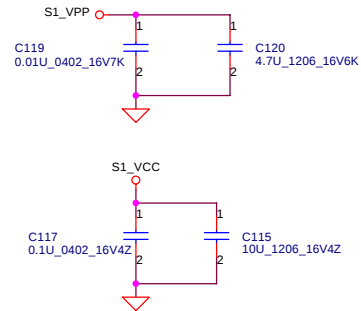
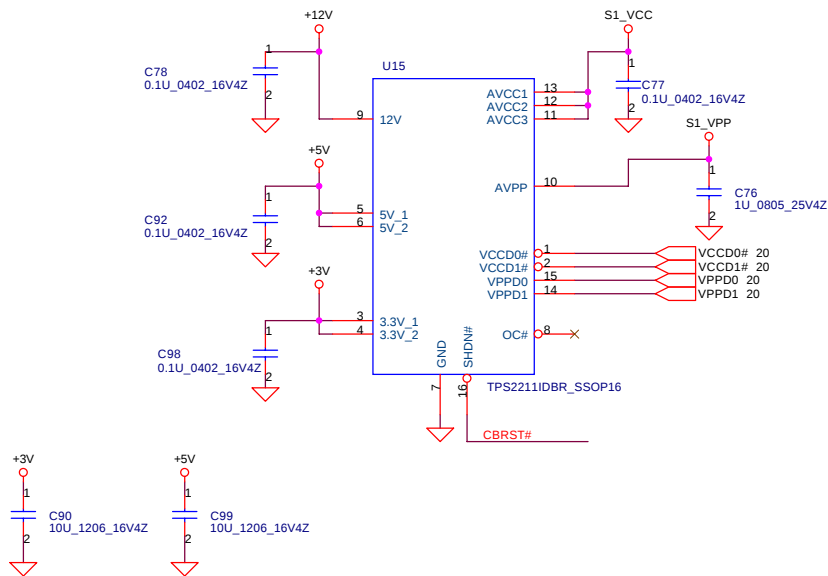
S1_A[0..25]
S1_D[0..15]

PCM_SPK#
R55 10K_0402_5%

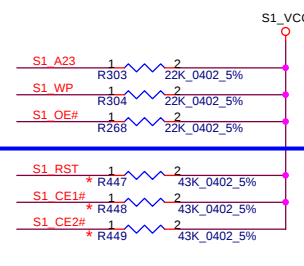
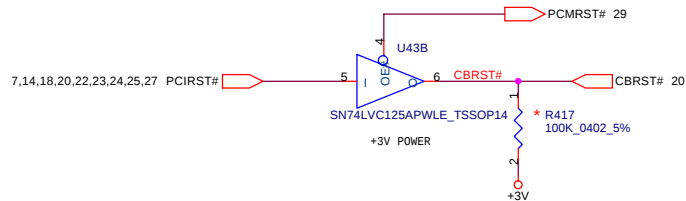
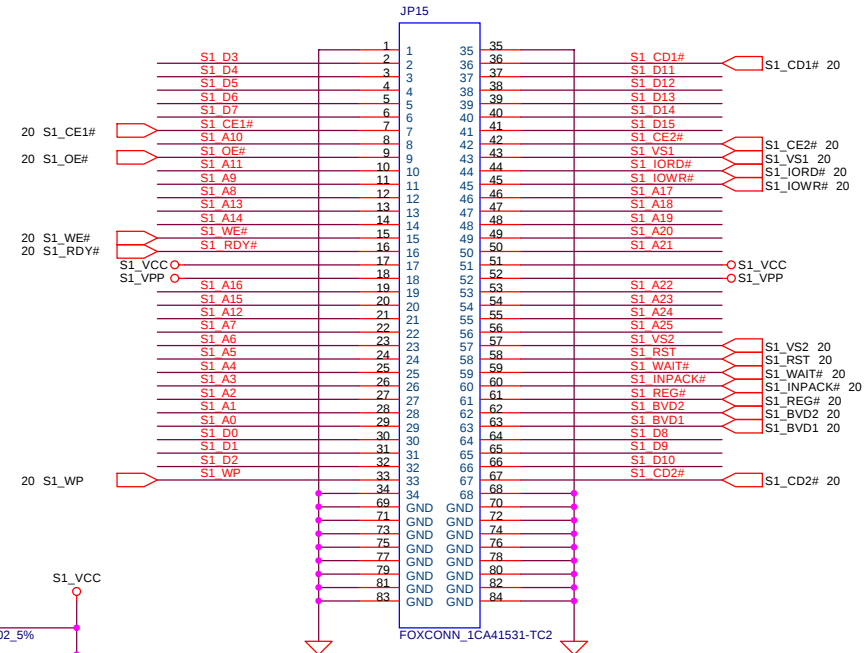


Reserve for CB1410 B0 Version

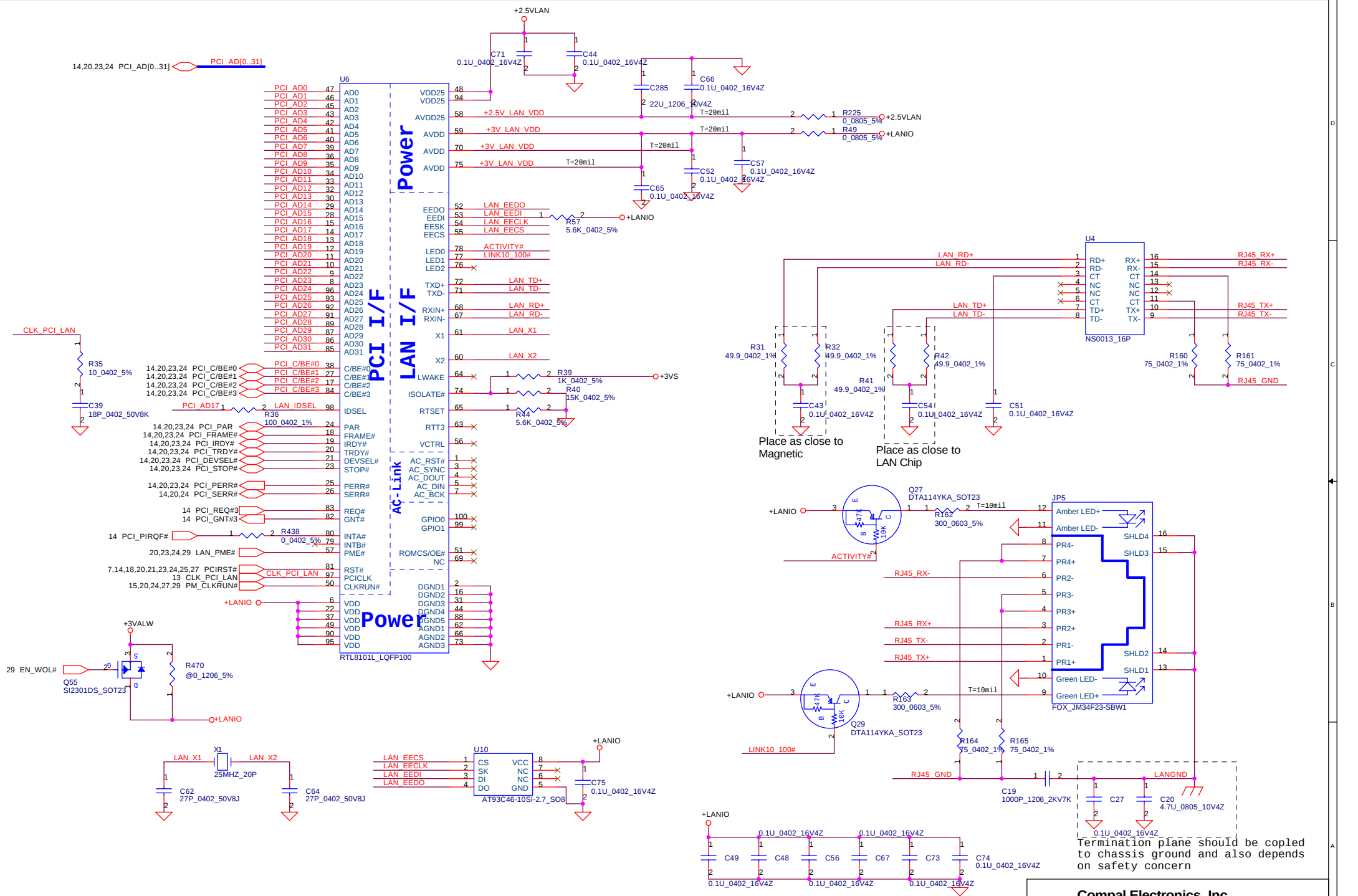
PCMCIA Power Controller



CardBus Socket



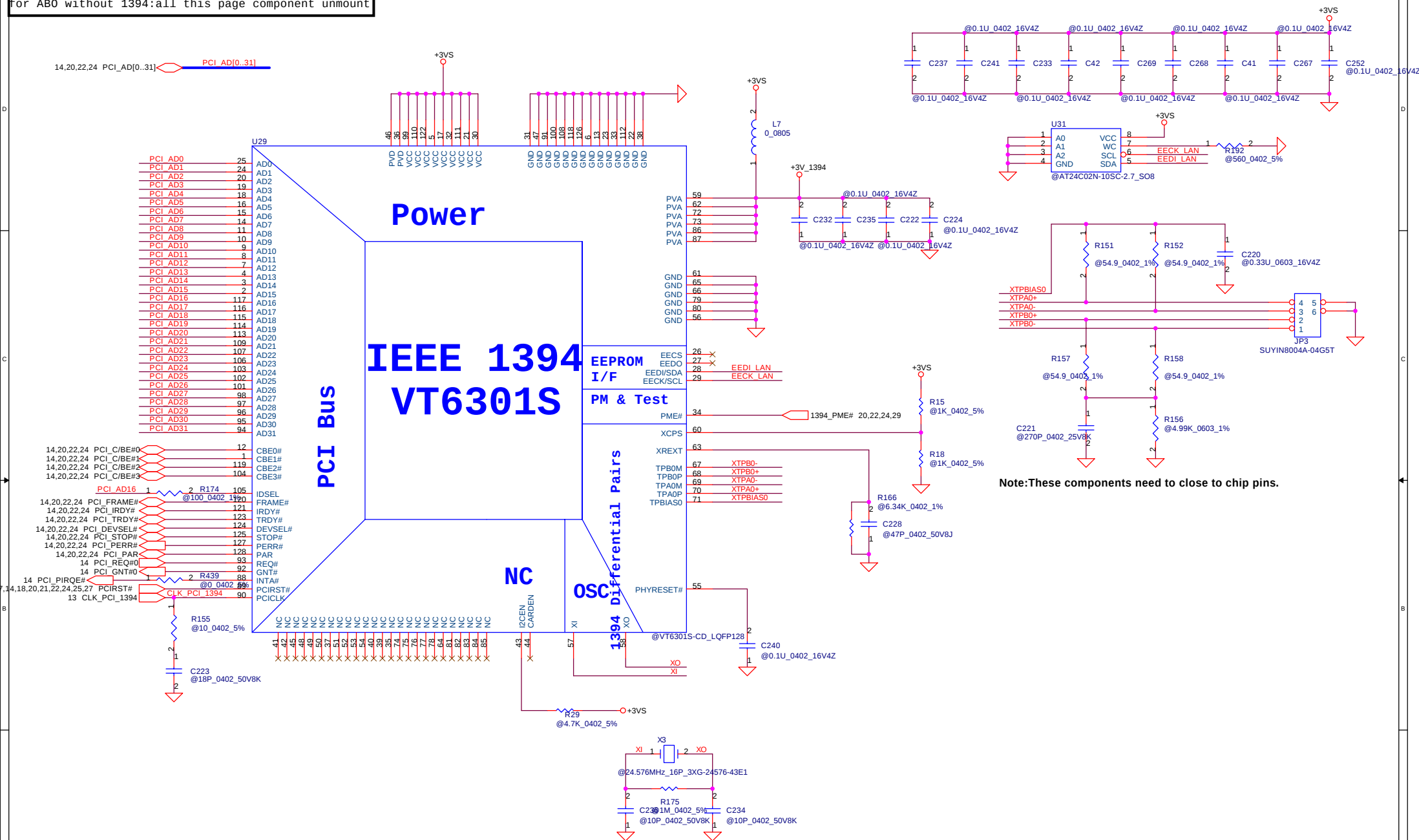
Reserve for CB1410 B0 Version



Compal Electronics, Inc.		
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for AB0 without 1394:all this page component unmount
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Compal Electronics, Inc.

Title	IEEE-1394 VT6301S
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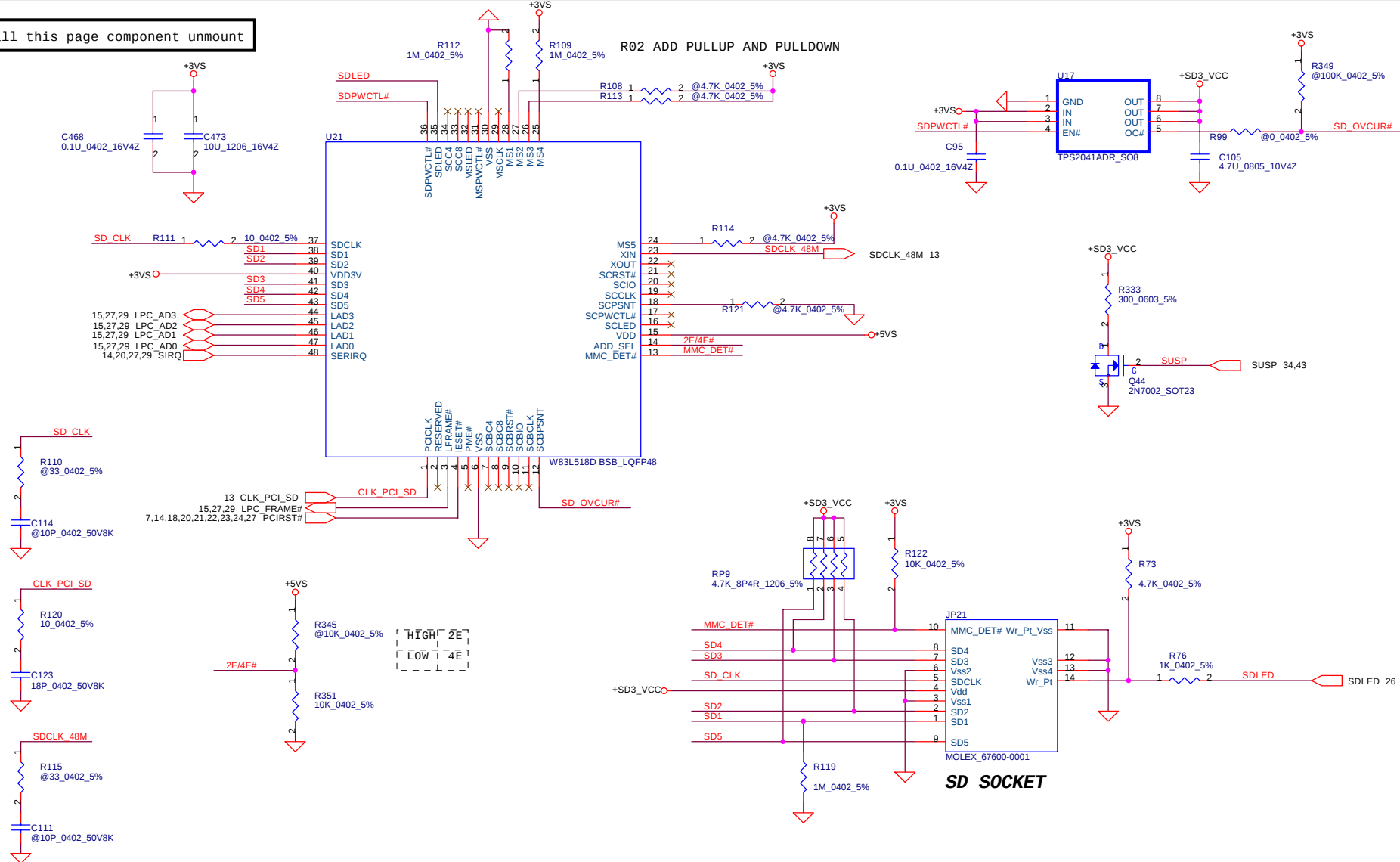
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FOR AB0: all this page component unmount



Compal Electronics, Inc.

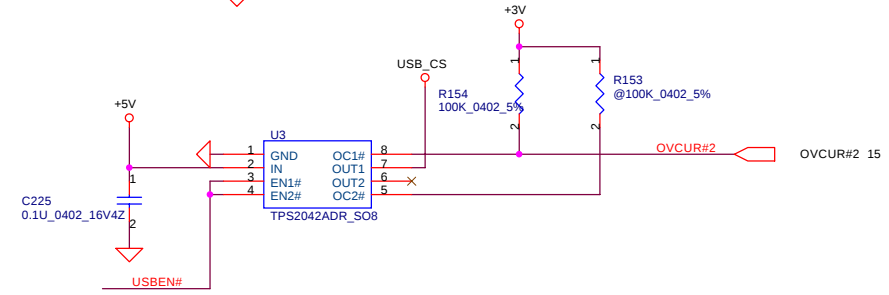
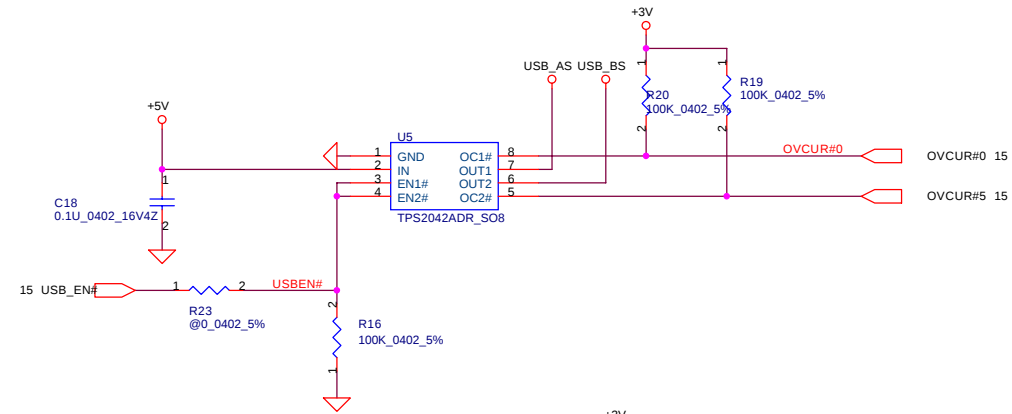
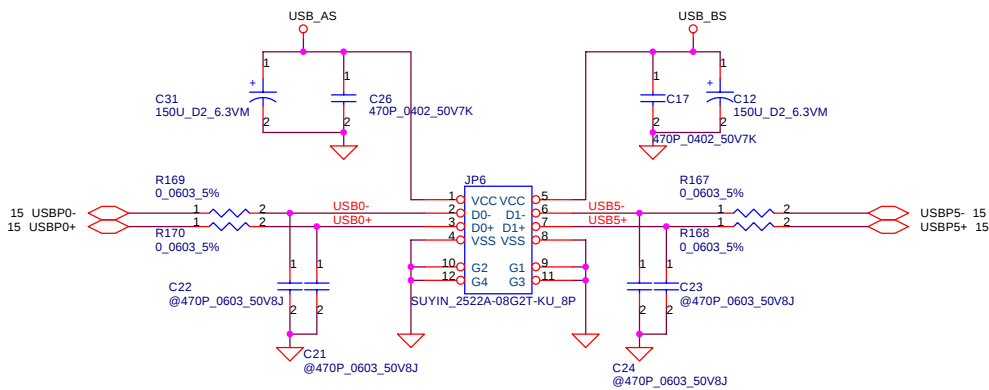
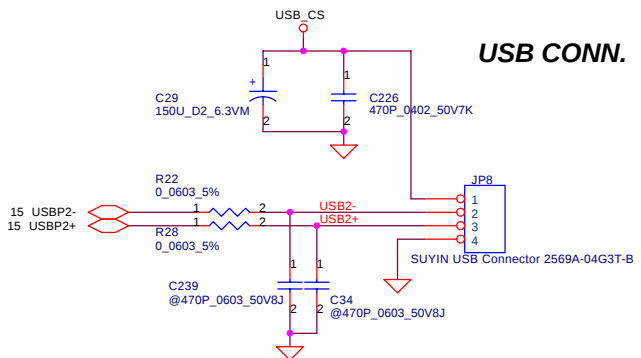
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Size B	Document Number DCL55 LA-2201
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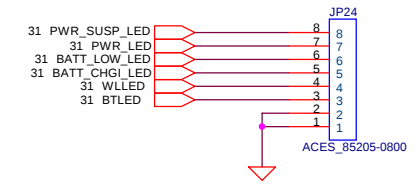
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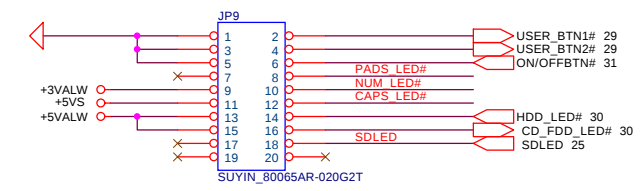
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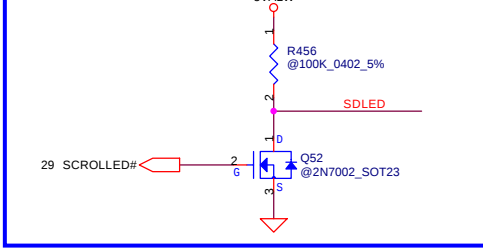
LED/B CONN.



POWER/B CONN.



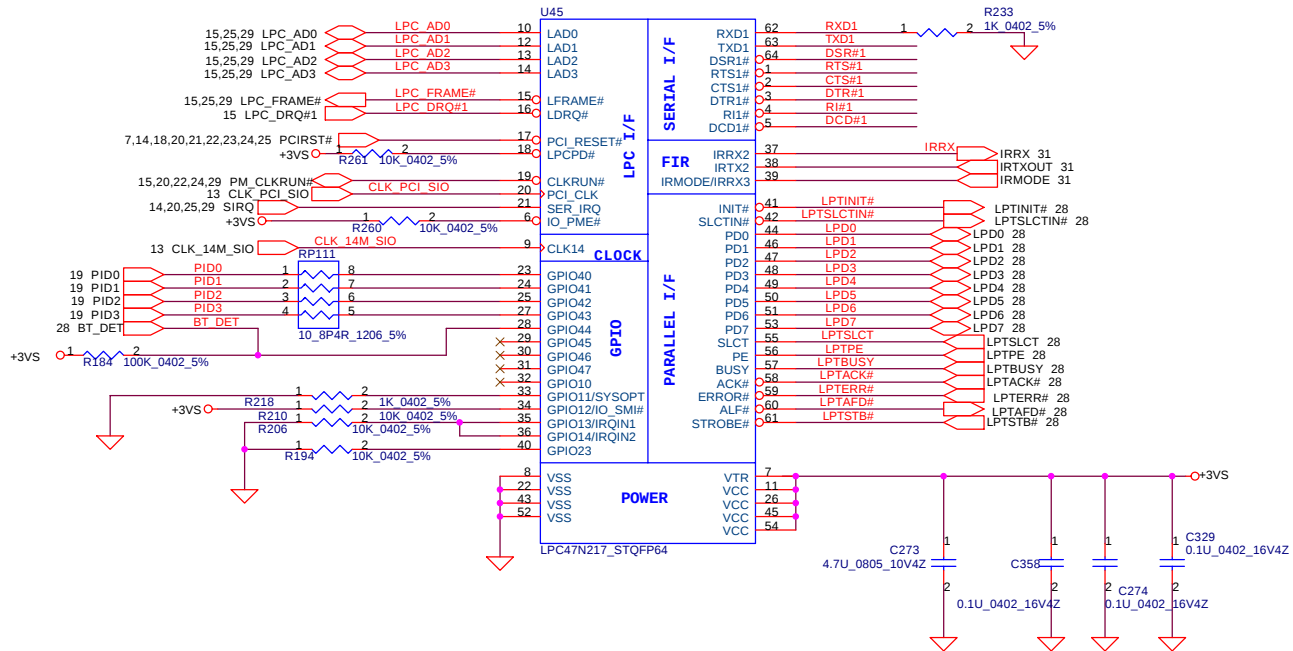
Reserve For ABO



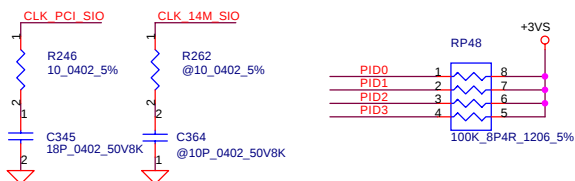
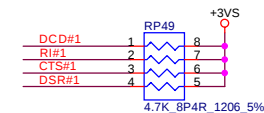
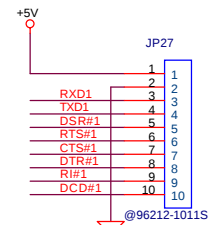
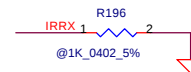
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USB & LED		
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SUPER I/O SMsC FDC47N227



Base I/O Address
* 0 = 02Eh
1 = 04Eh

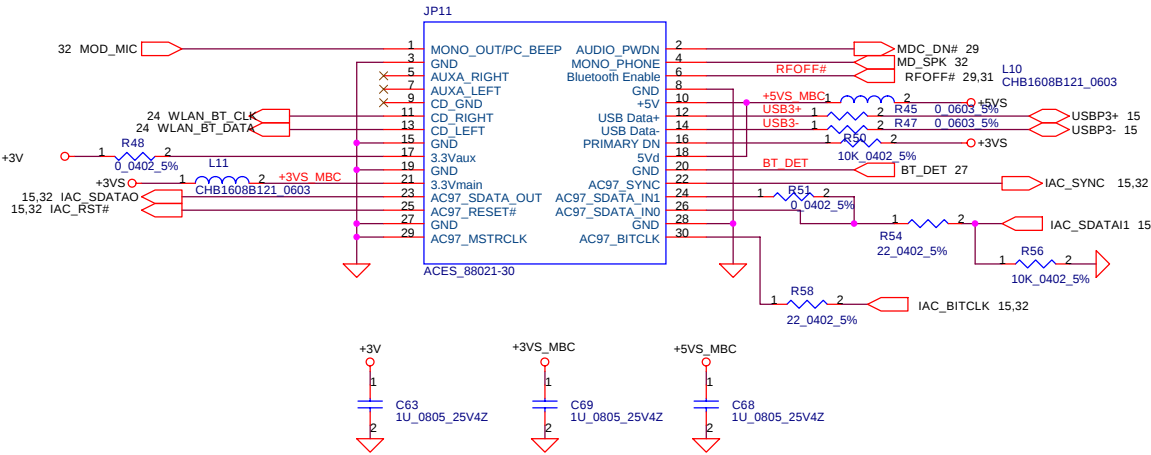


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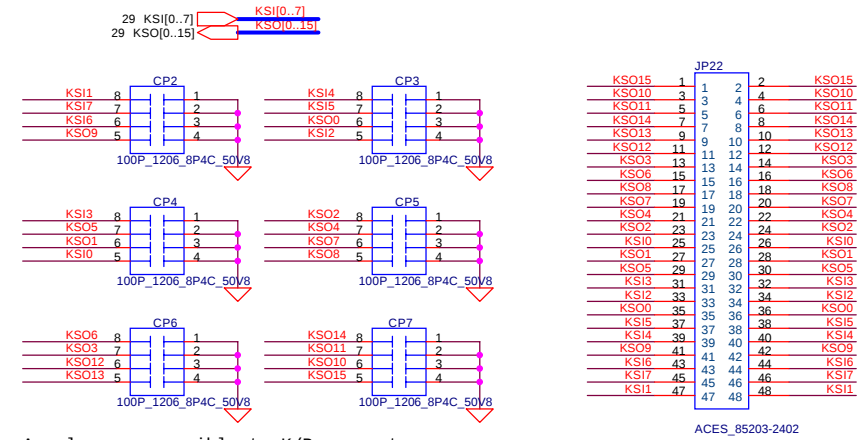
Compal Electronics, Inc.

Title			
SUPER I/O			
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MBC CONN.

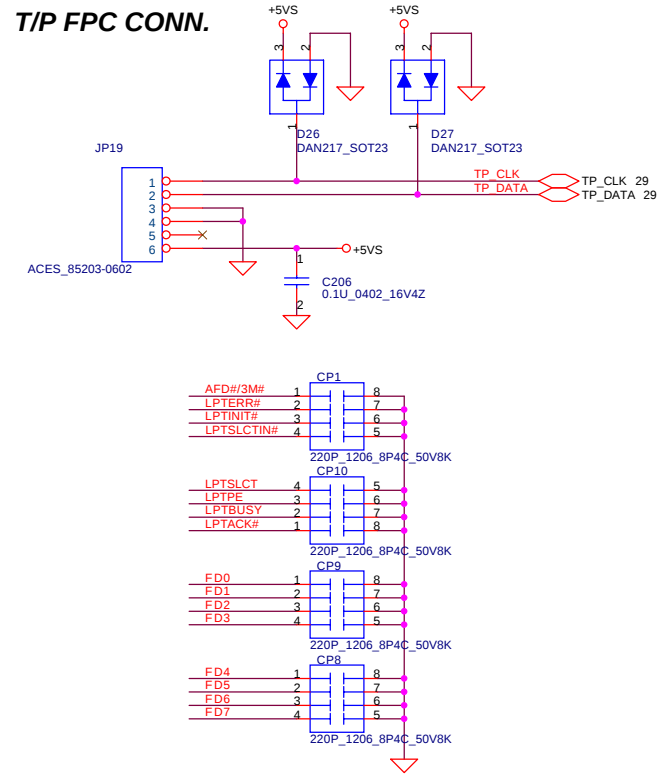


INT_KBD CONN.

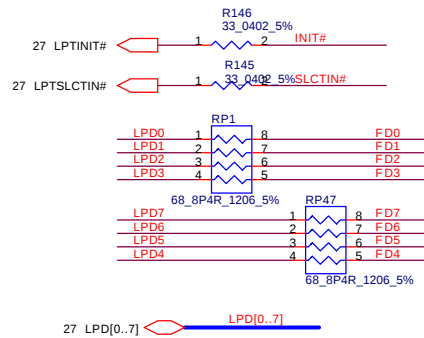
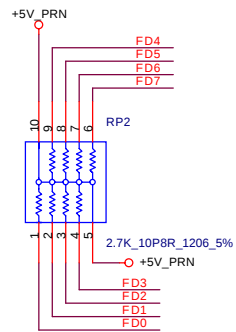
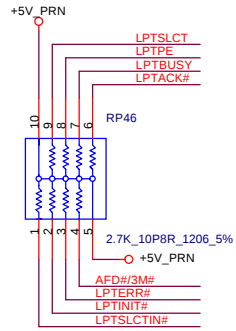
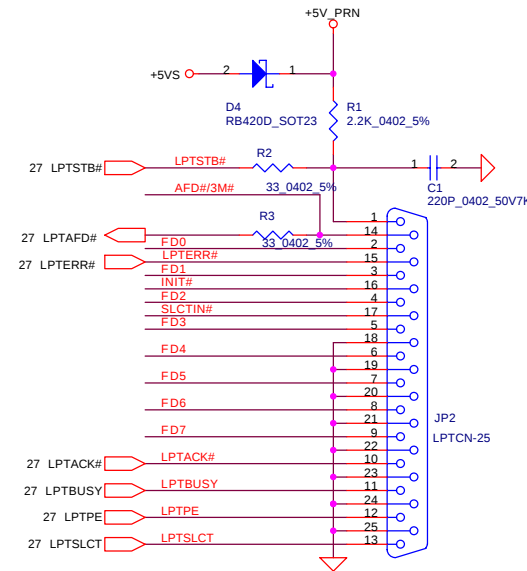


As close as possible to K/B connector

T/P FPC CONN.



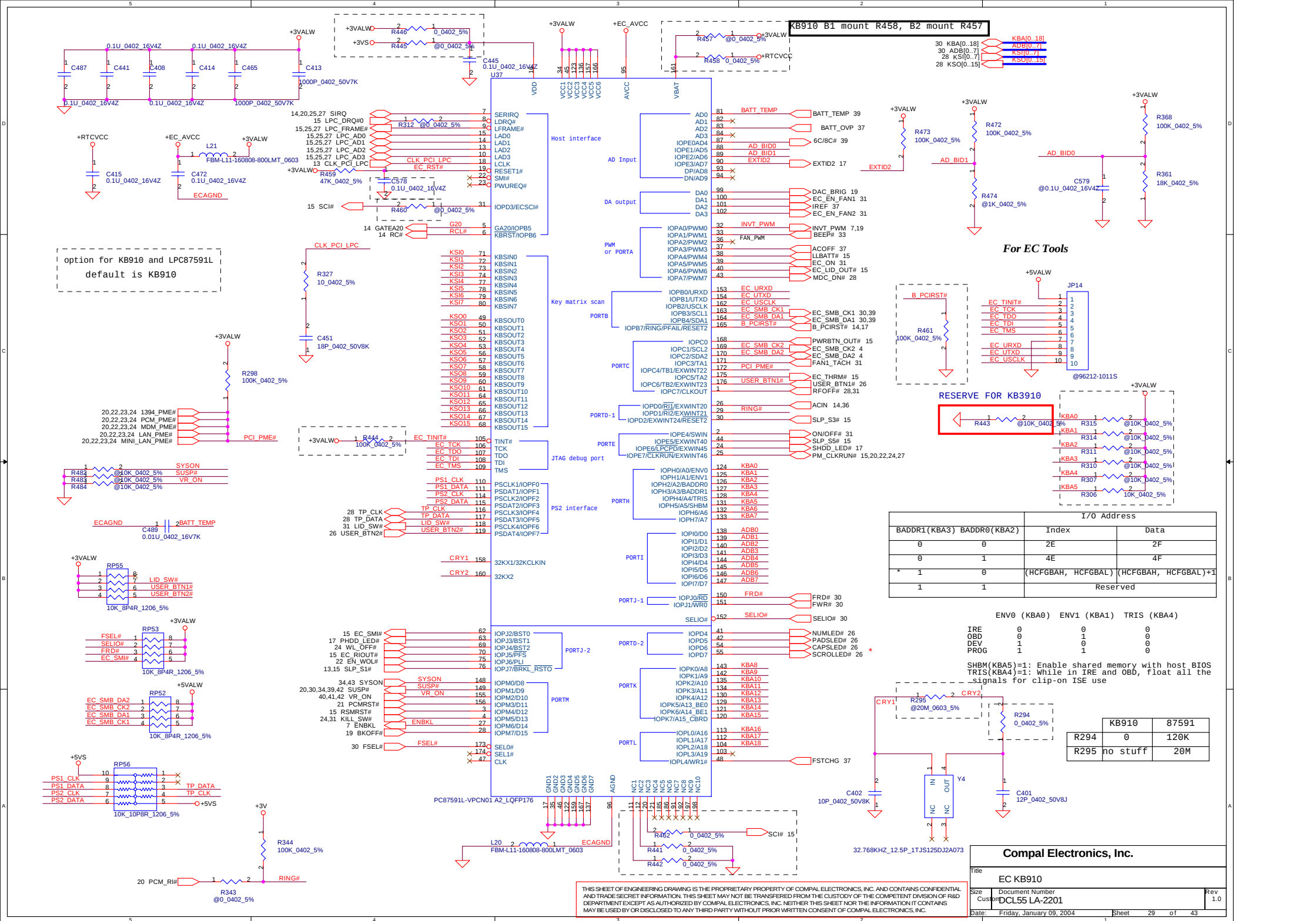
PARALLEL PORT

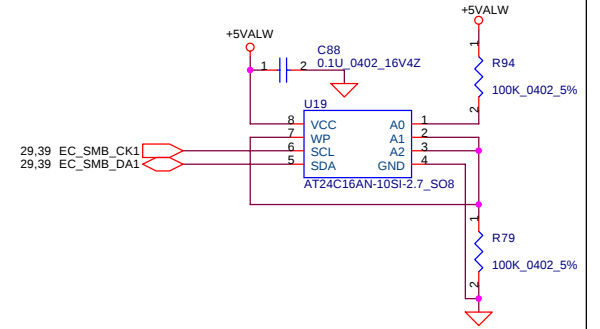
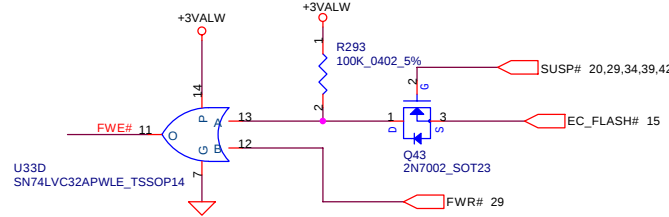
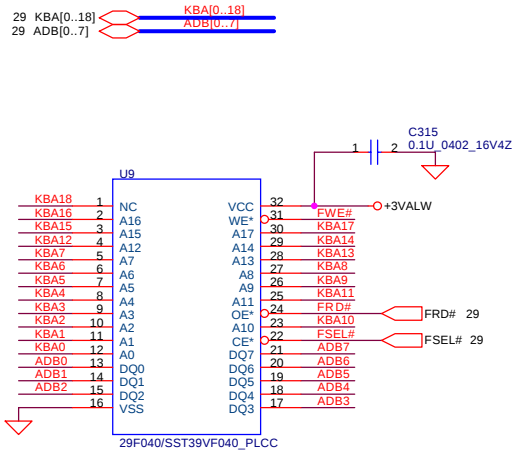
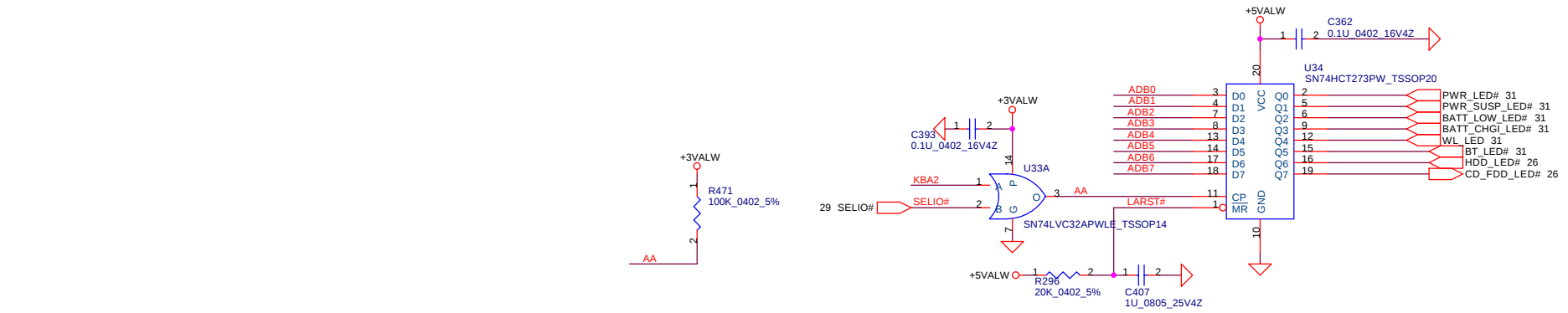


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Compal Electronics, Inc.

Title	PARALLEL/MDC PORT		
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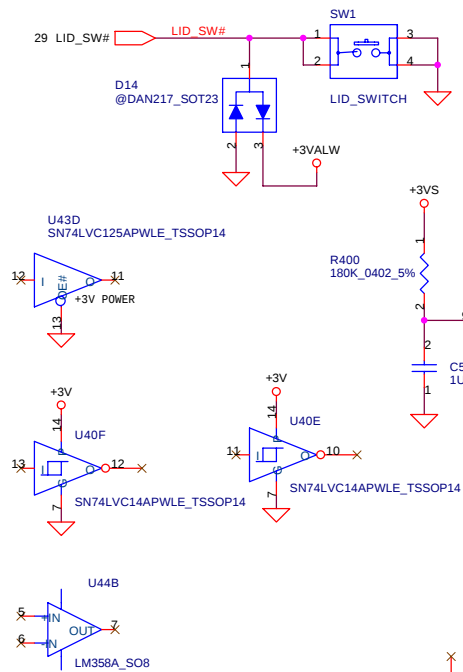




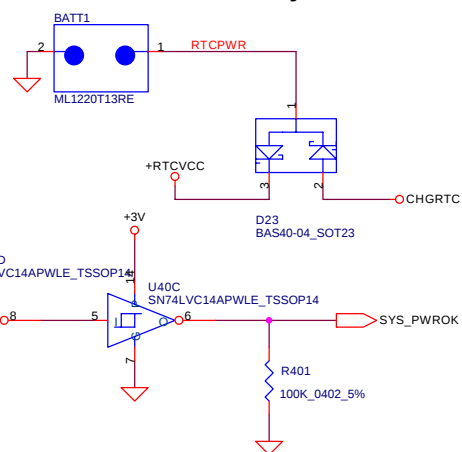
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Compal Electronics, Inc.			
Title			
BIOS & EXT. I/O PORT			
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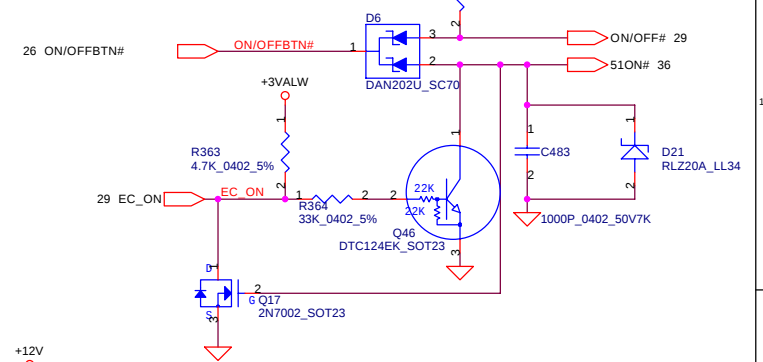
Power ON Circuit



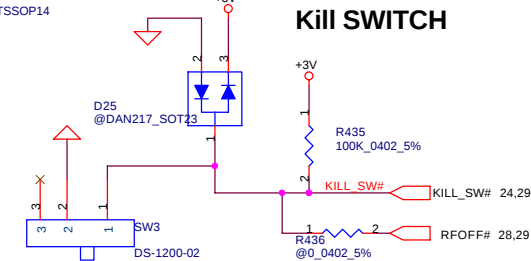
RTC Battery



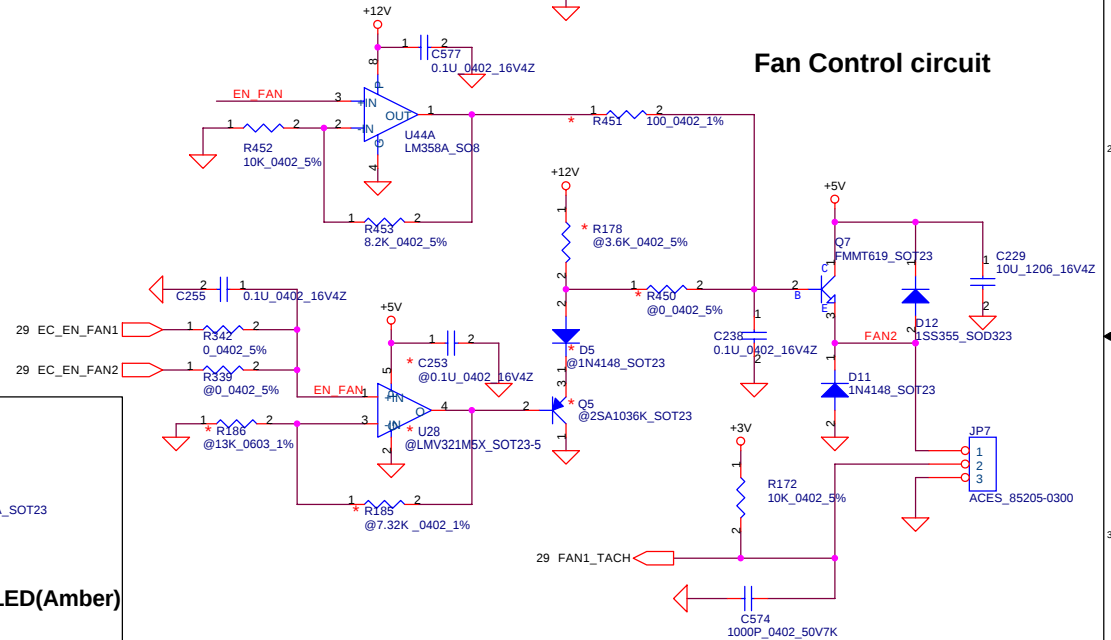
Power BTN



Kill SWITCH



Fan Control circuit

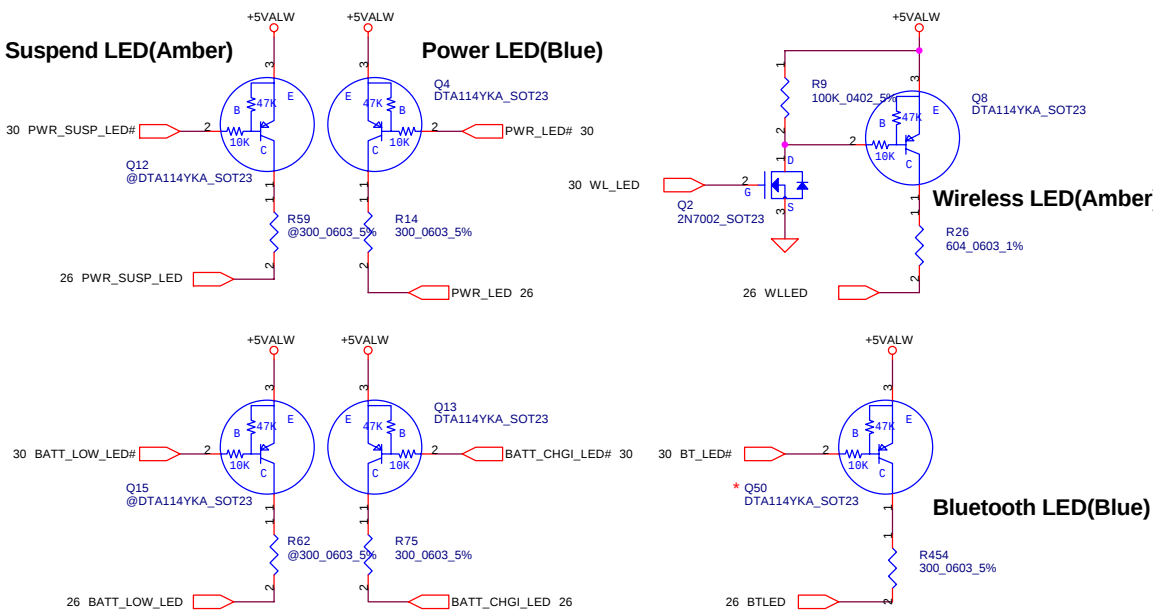


Suspend LED(Amber)

Power LED(Blue)

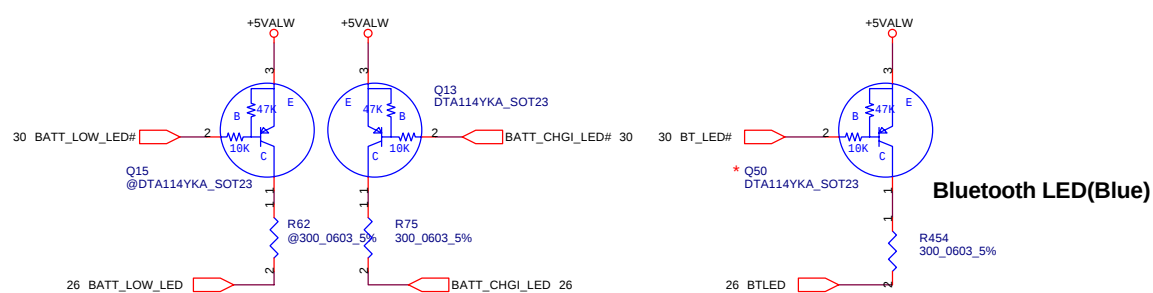
Wireless LED(Amber)

Bluetooth LED(Blue)

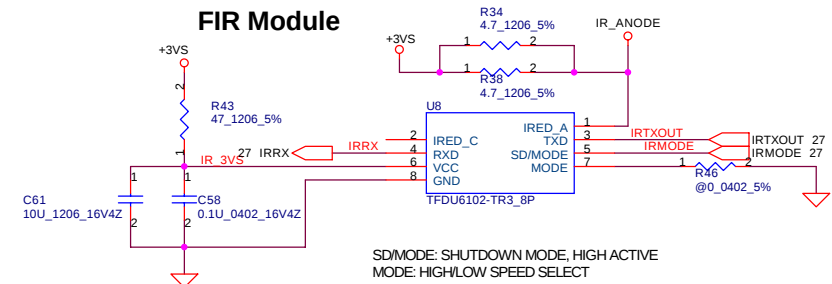


BATT Low LED(Amber)

BATT Charge LED(Blue)



FIR Module

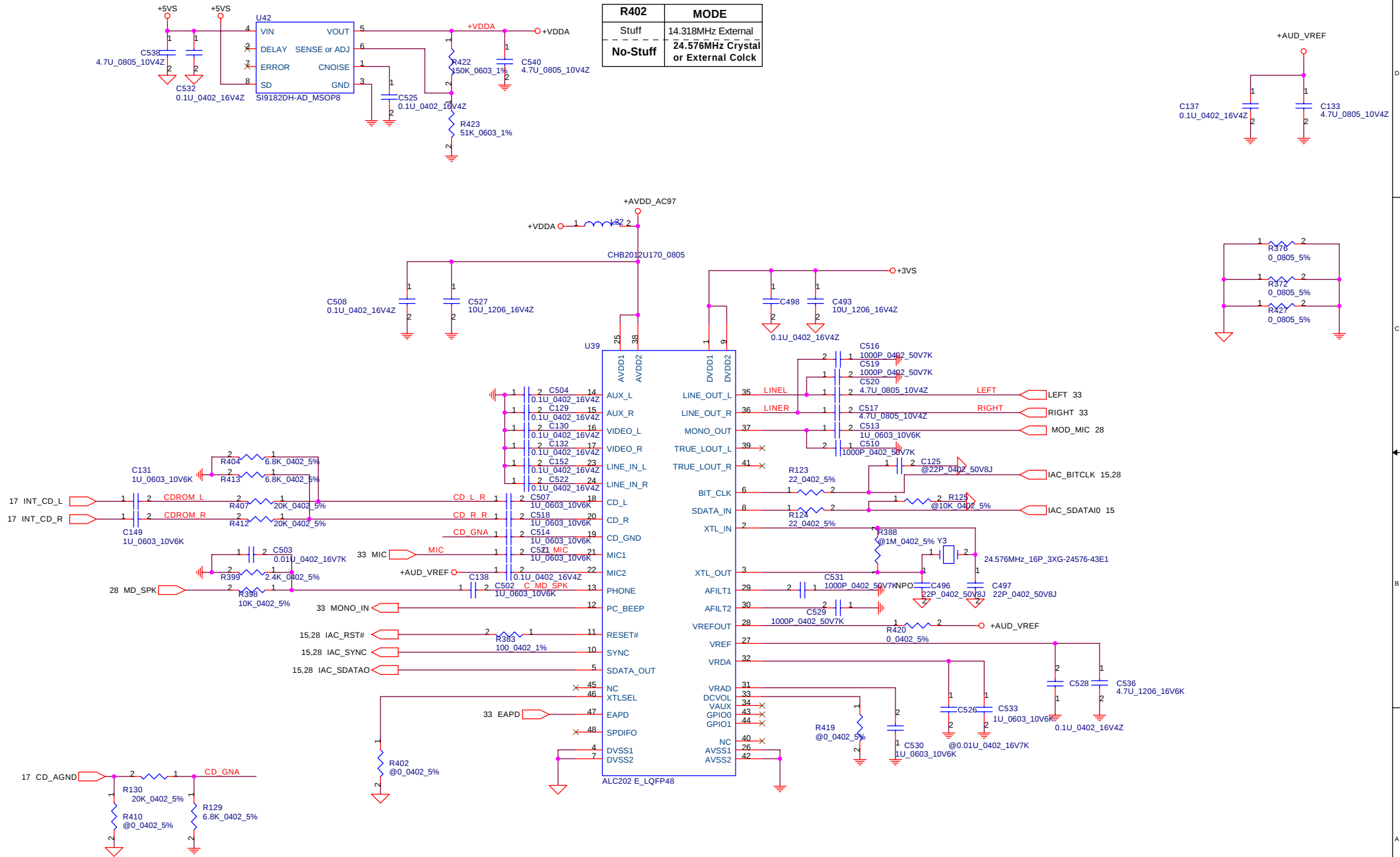


Compal Electronics, Inc.

Title	Power OK/Reset/RTC battery/Lid Switch/Int. KB		
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AC97 Codec



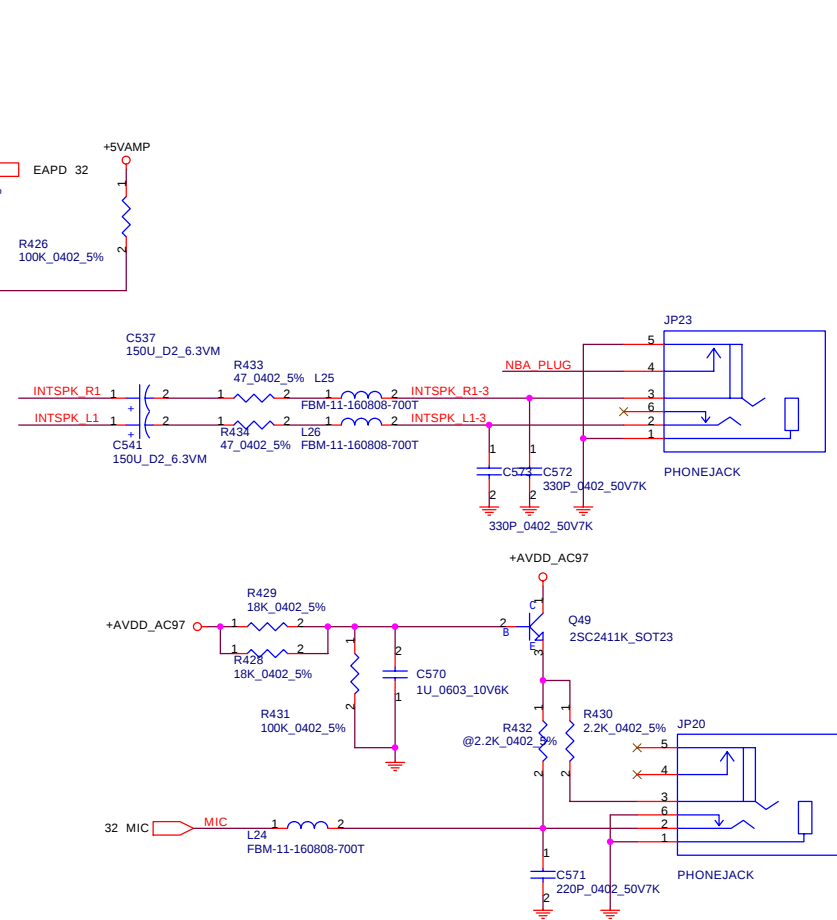
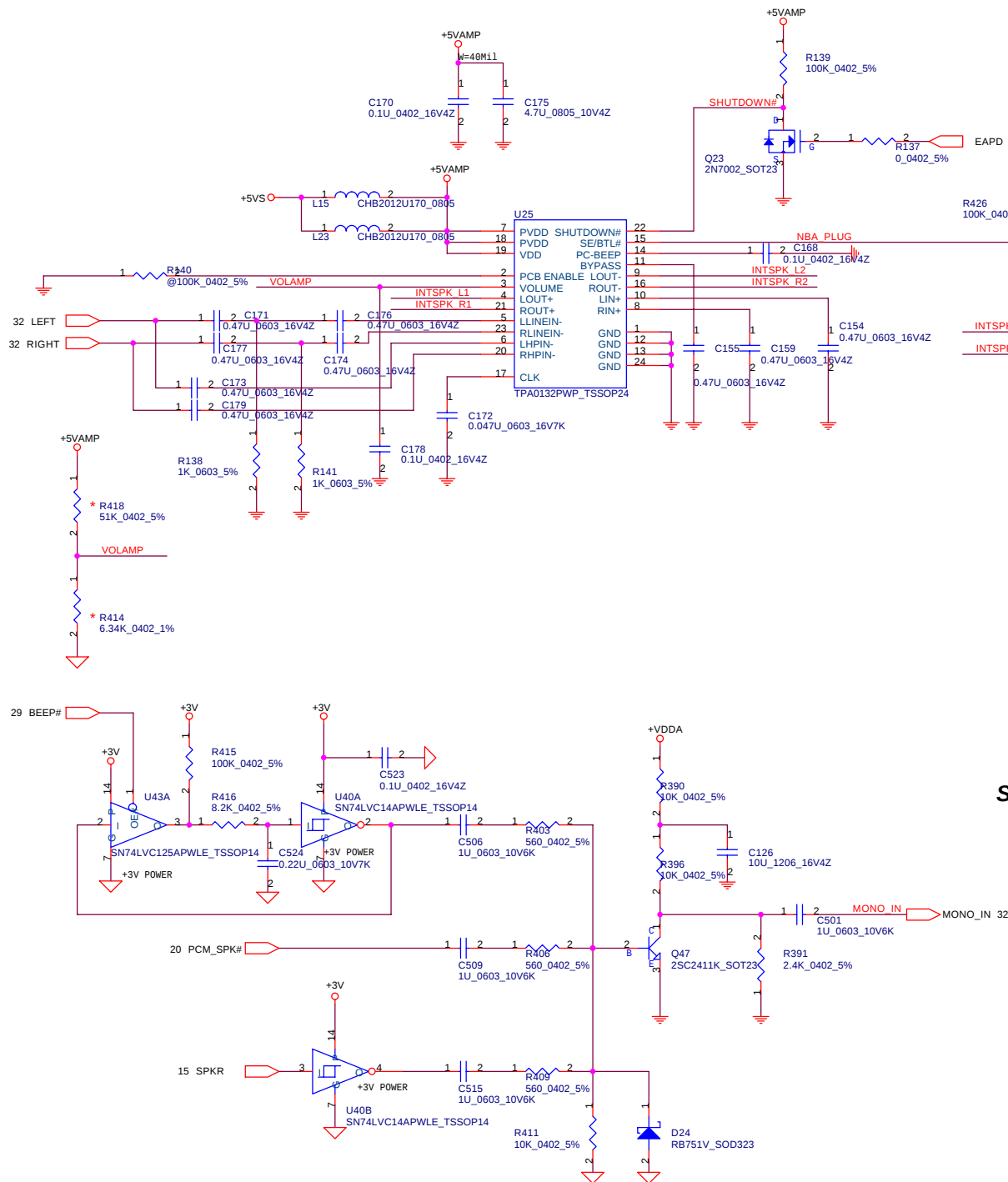
Compal Electronics, Inc.

Title	AC97 Codec
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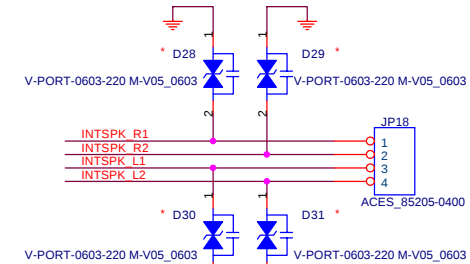
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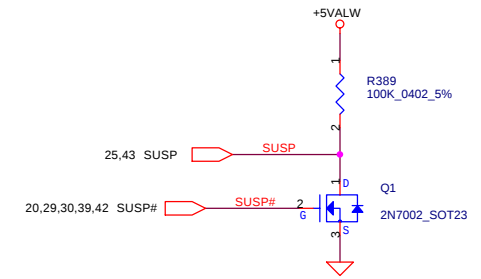
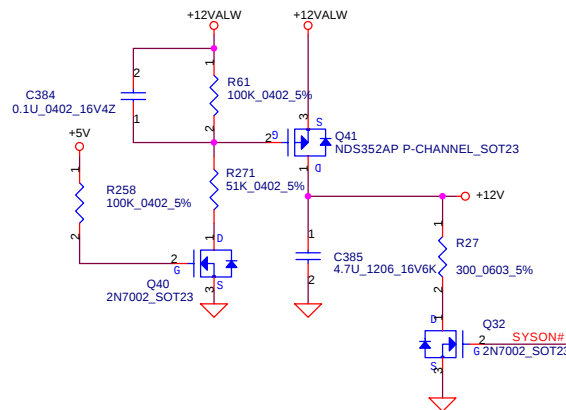
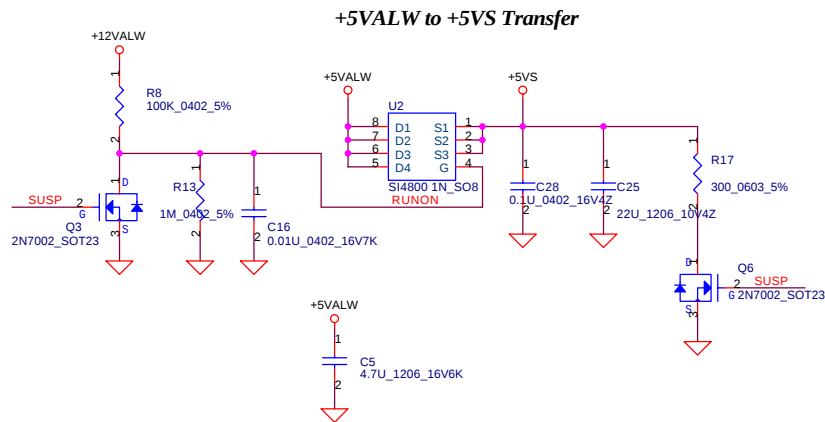
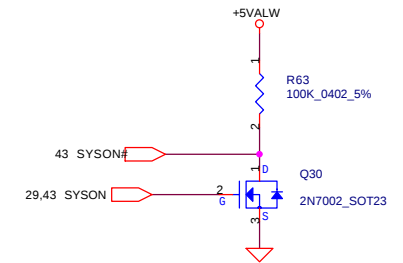
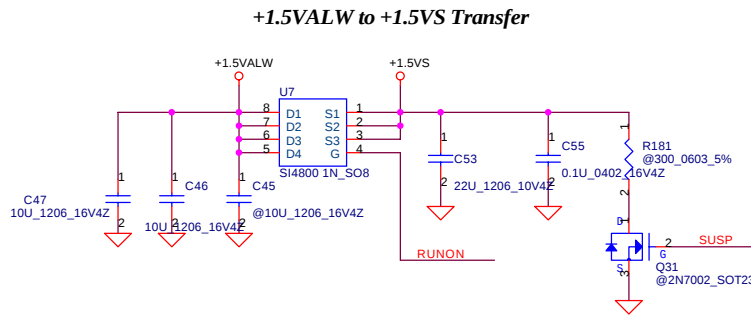
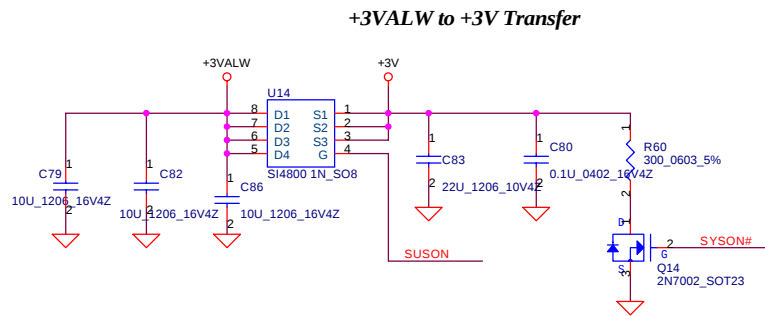
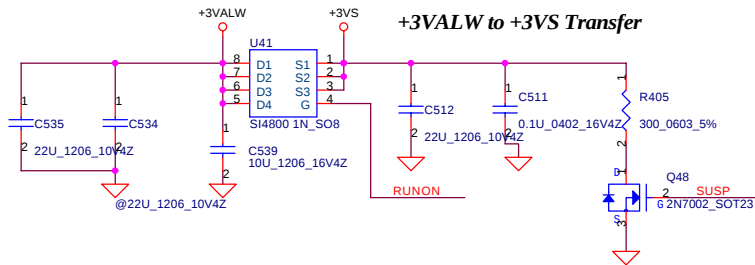
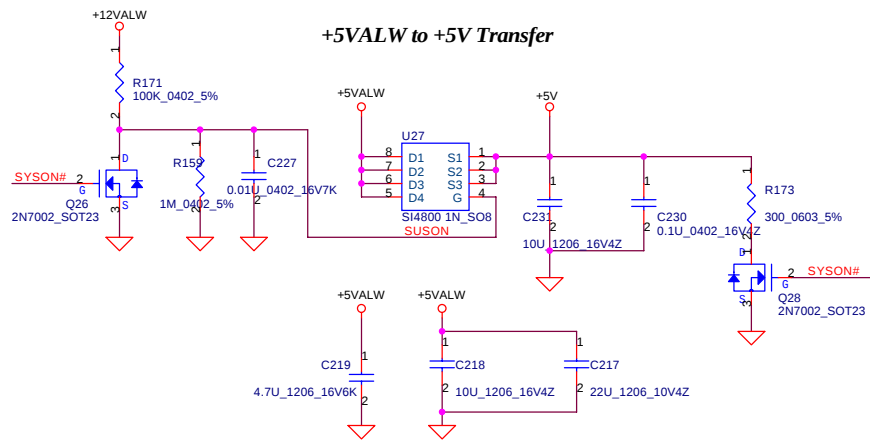


SPEAKER CONN.



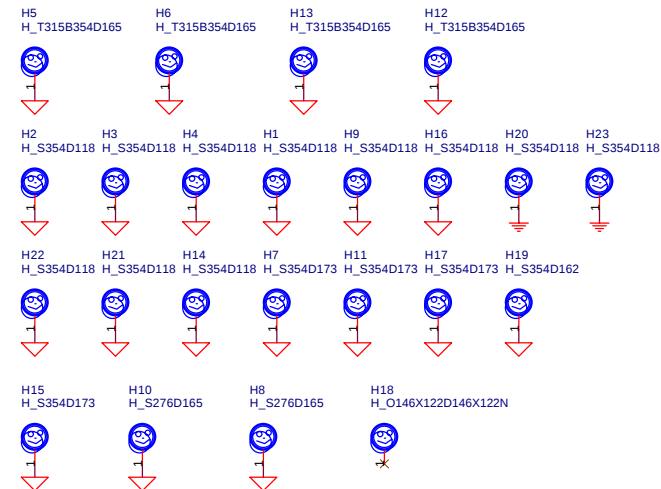
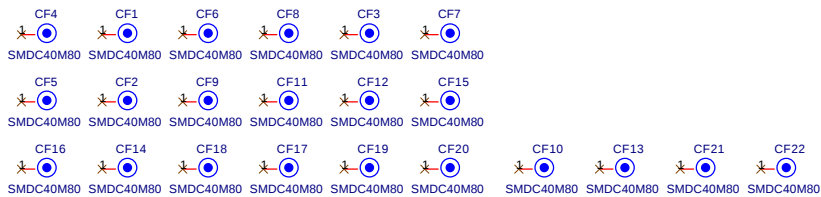
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Title			
AMP & Audio Jack			
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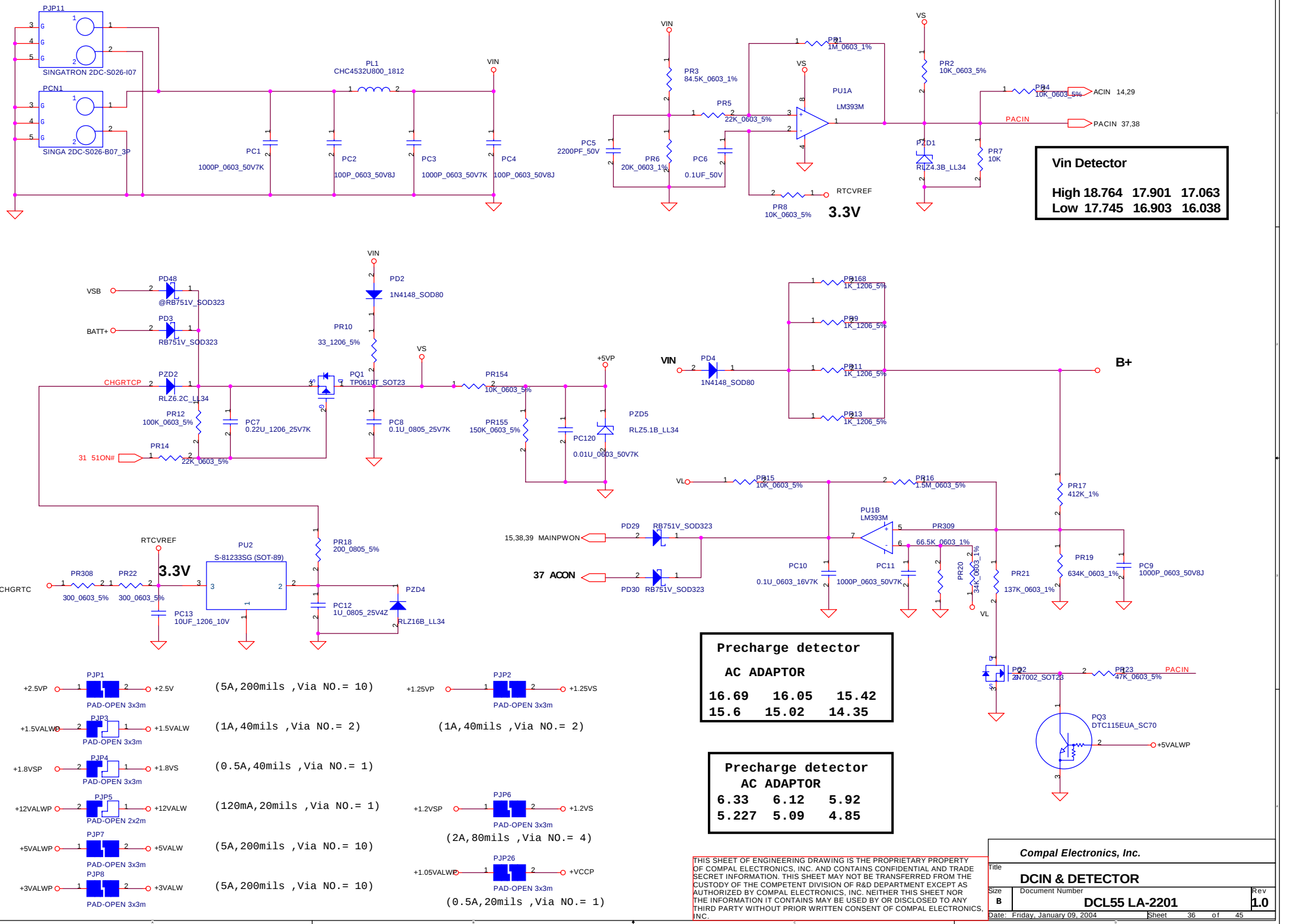
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DC/DC Circuit Interface			
Size	Document Number		Rev
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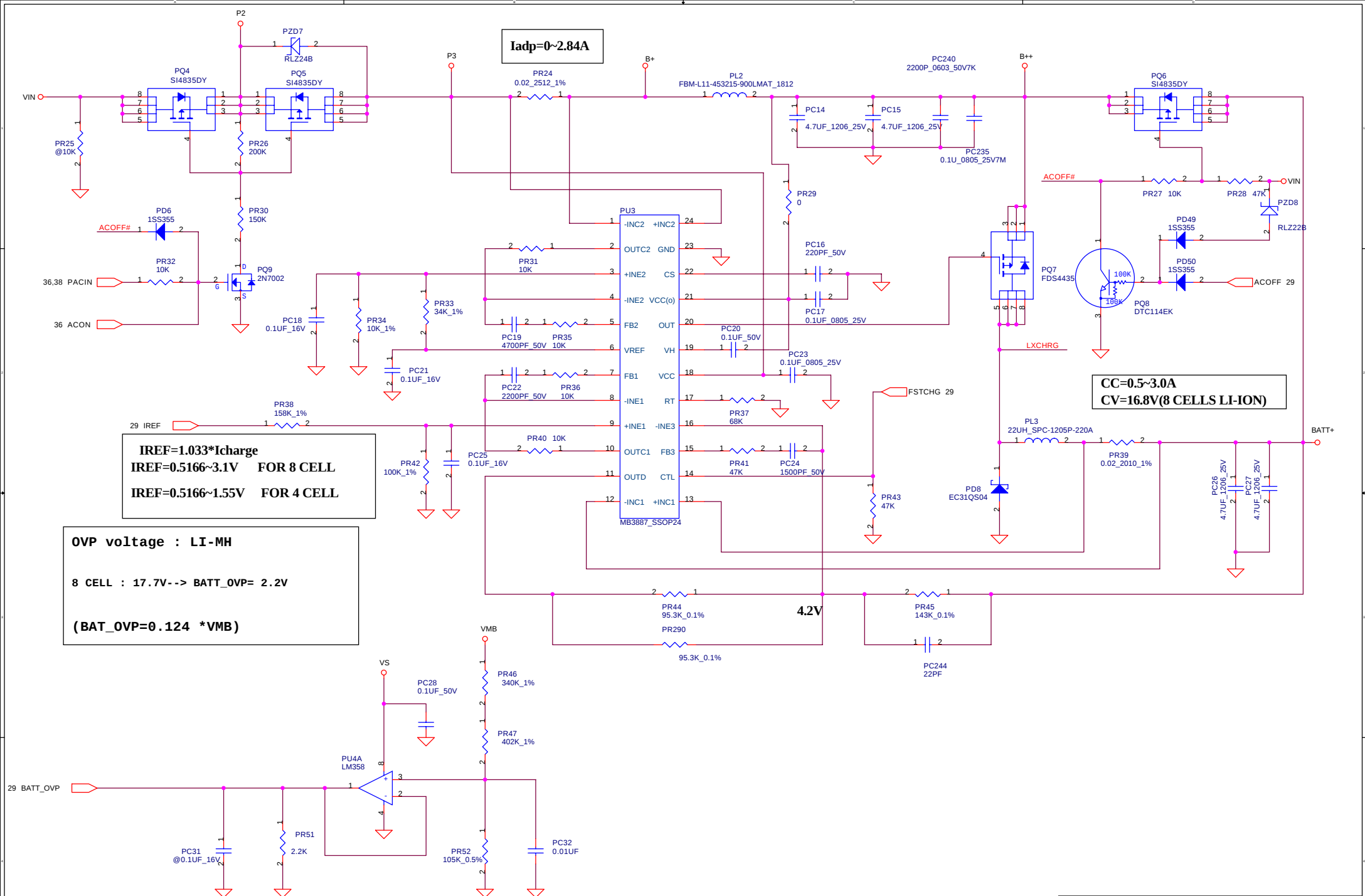


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Compal Electronics, Inc.			
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Size	Document Number		Rev
	DCL51 LA-1881		1.0
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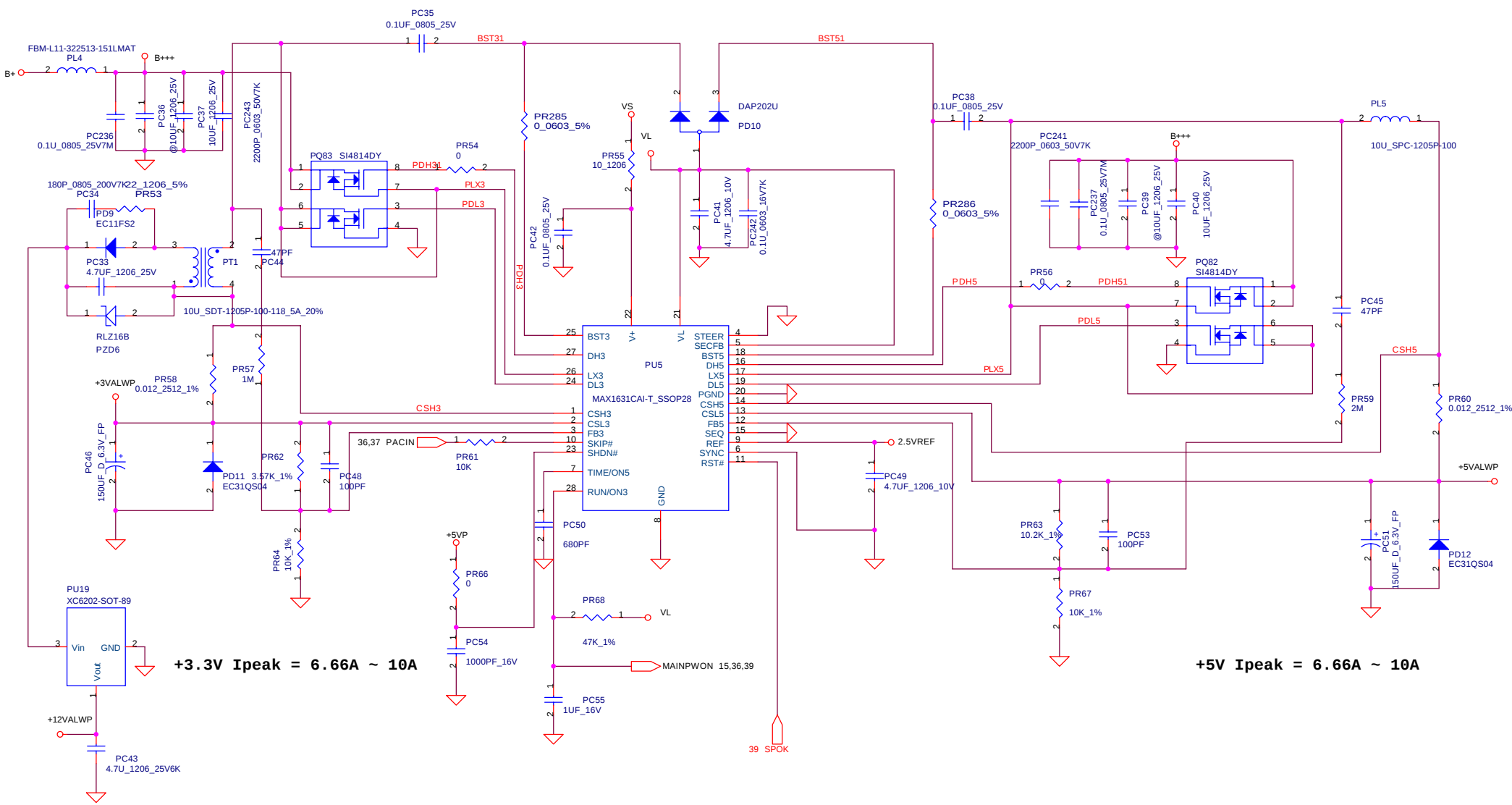
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Title			CHARGER
Size	Document Number		Rev
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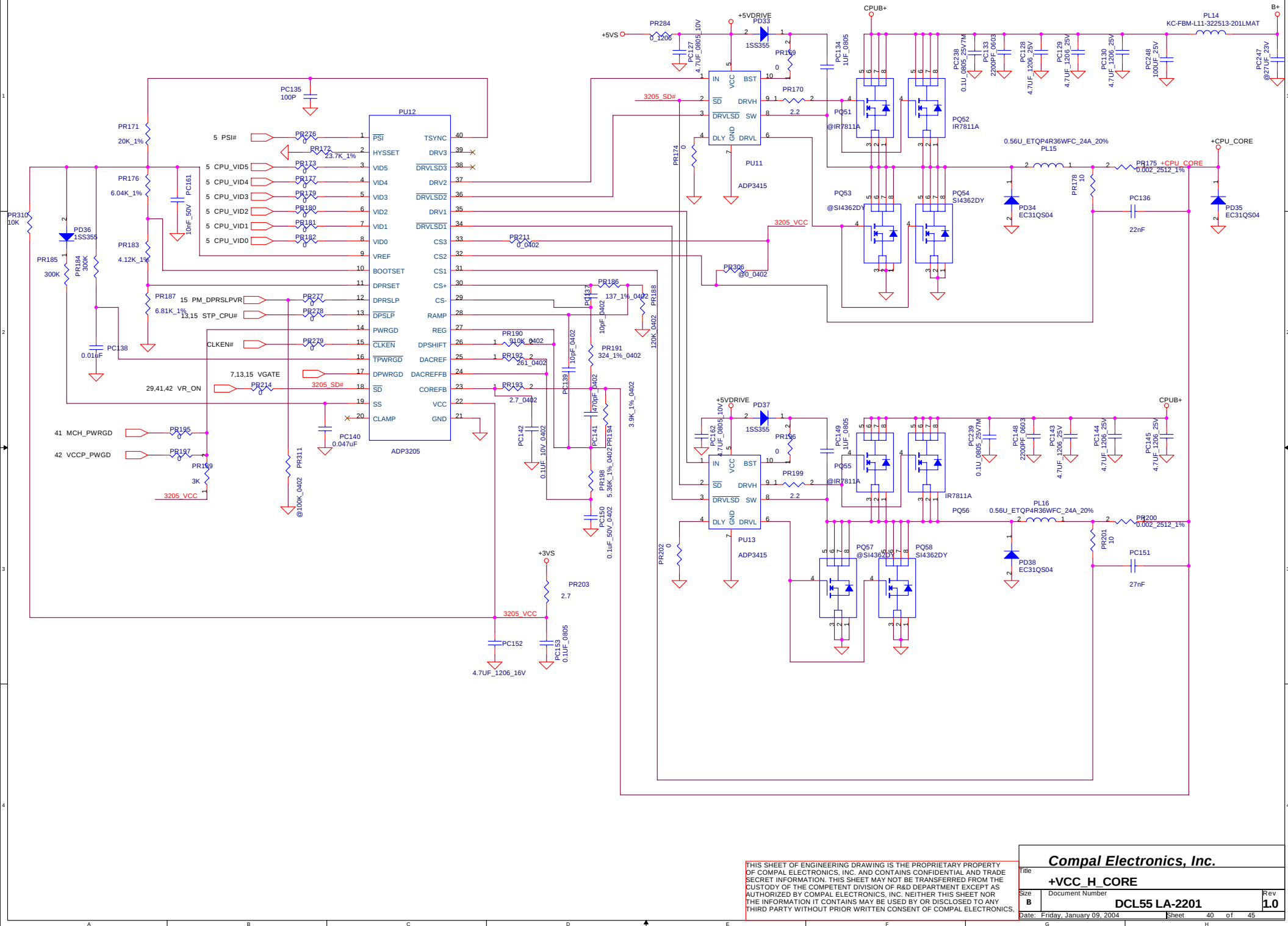
+3.3V Ipeak = 6.66A ~ 10A

+5V Ipeak = 6.66A ~ 10A

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Title	5V/3.3V/12V		
Size	Document Number	Rev	
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CPU-CORE



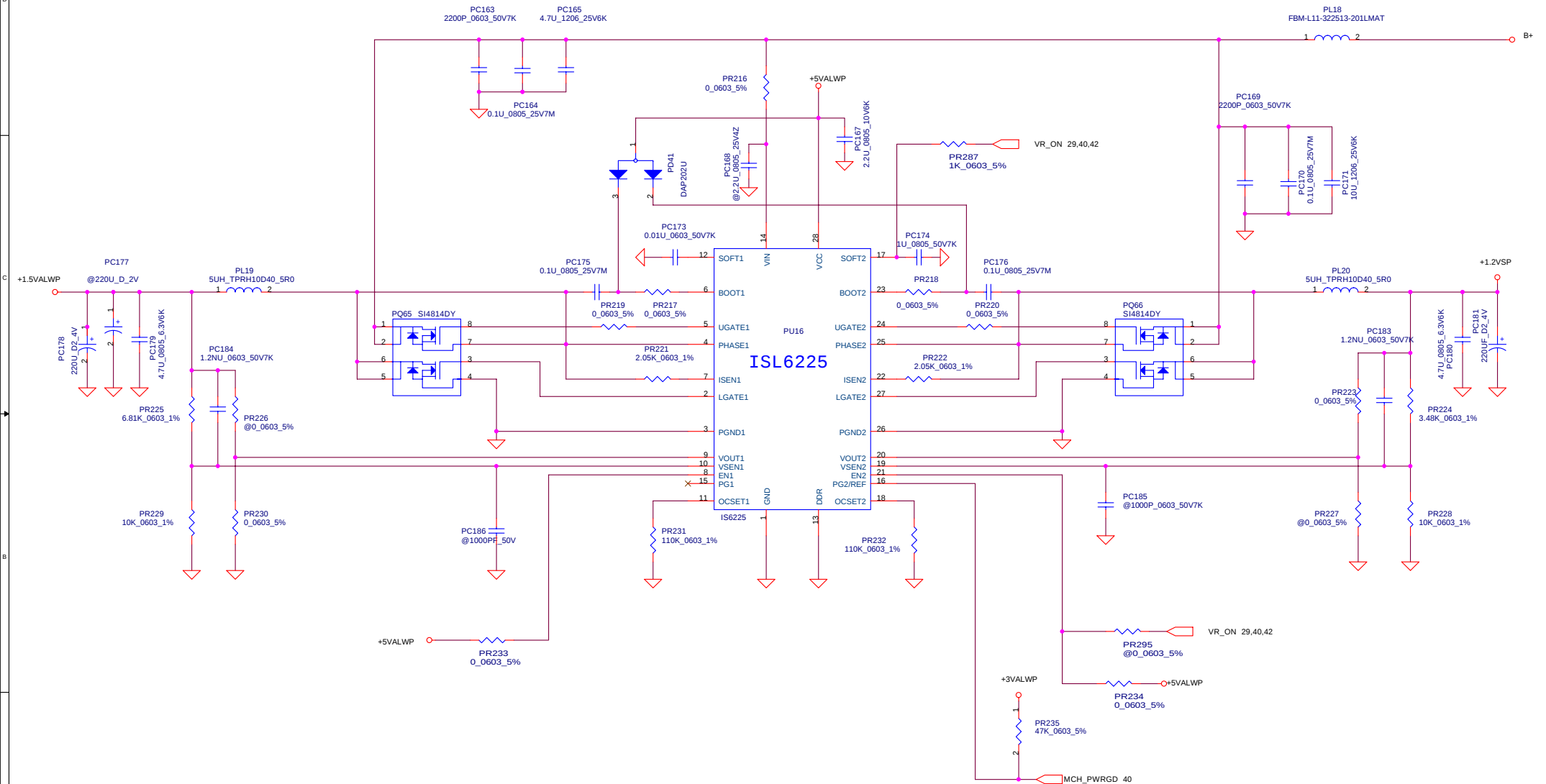
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+VCC_H_CORE

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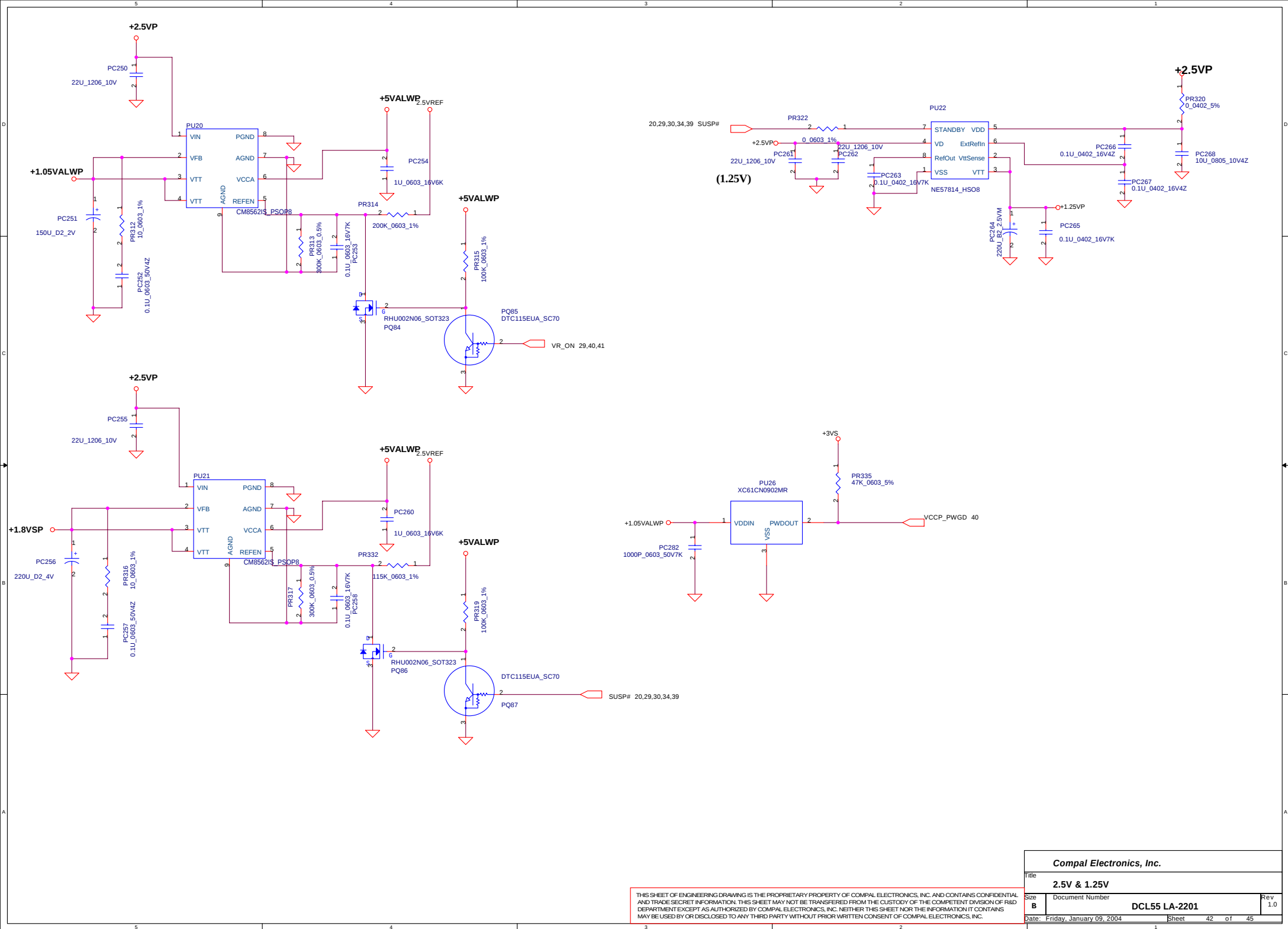
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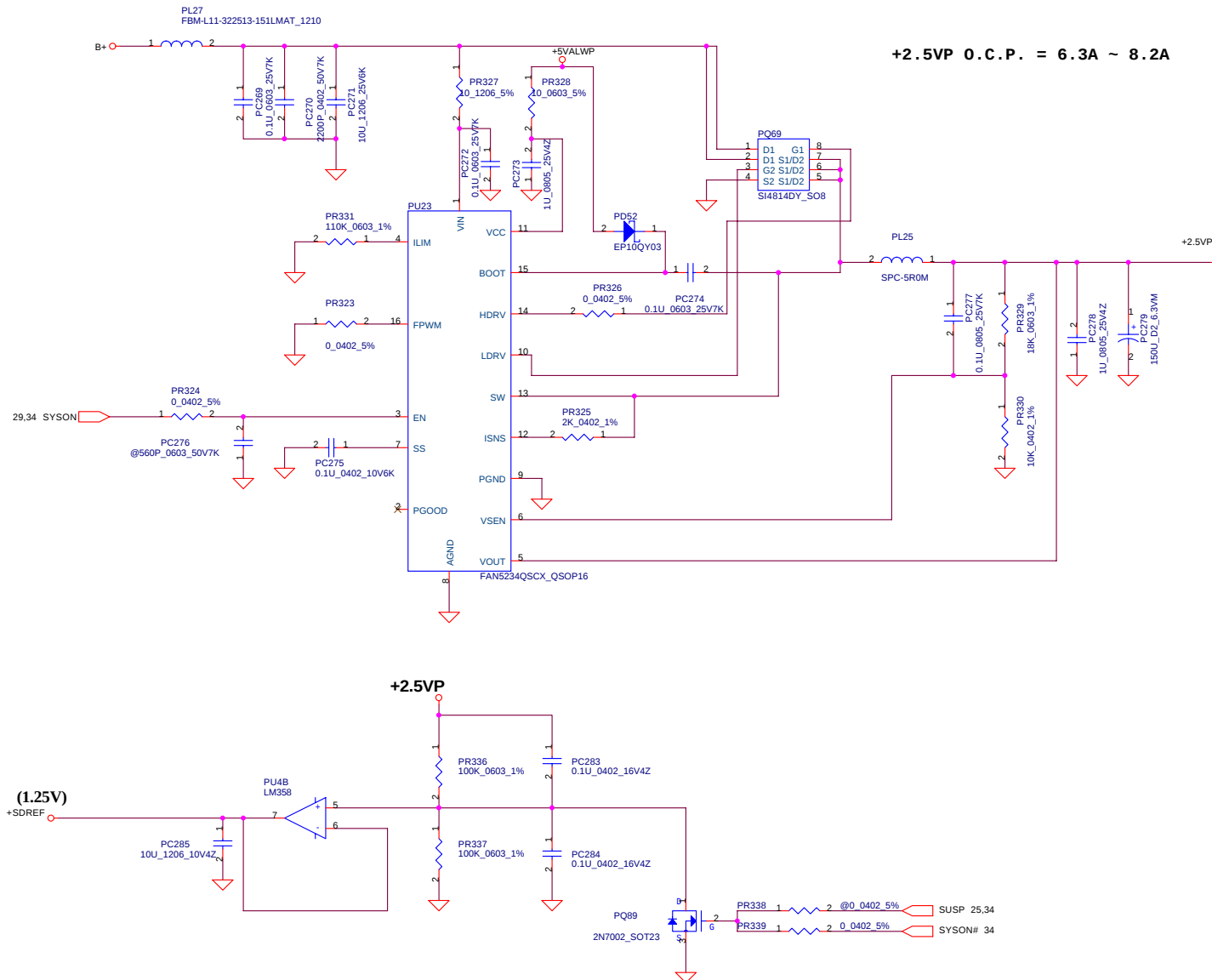


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Title			
1.5V & 1.2V			
Size	Document Number		Rev
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Title			
2.5V & 1.25V			
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Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	Rev.	PG #	Modify List	VER	Phase
1		Set c4 mode controlled by bios based difference CPU		40	DELETE PR311:100K ; ADD PR277:0		PVT
2		Modify 1.05VP voltage level		42	1. change PR314 to 200k		PVT
3		modify 1.05VP,1.8VP soft start time		42	add PC253, PC258 Tto be 0.1U		PVT
4		add +SDREF signal circuit		43	add PR339:0; PQ89: 2N7002; PC283,PC284 :0.1U 16V;PR336,PR337:100K;PC285:10U 1206		PVT
5		Add one set power good:VCCP_PWGD		42,41	ADD LDO PU26 :XC61CN;PR335:47K;PC282:1000P 50V,PCHANGE R235 FROM 10K TO 47K		PVT
6							
7							
8							
9							

Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	Rev.	PG #	Modify List	VER	Phase
1		reserve +SDREF signal circuit		8	reserve R477,R479		PVT
2		reserve +SDREF signal circuit		10	reserve R480,R481		PVT
3		EMI performance		8	change C420_net from MRCOMP to +2.5V		PVT
4		reserve syson,susp#,vr_on pull low resister		29	reserve R482,R483,R484		PVT
5		cost down			change L18,L19,L14,L13,L12,L8,L9,L7 to 0 ohm del C534,C45		PVT
6		board version update		29	change R361 from 8.2k to 18k		
7		for customer request			del TV_out , 1394 funtion		
8							
9							