Compal Confidential

Schematics Document

AMD Turion/Sempron + Nvidia MCP67-MV

2007-01-12

Rev:0.1

Security Classification	Compal Secret Data		
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Title: Cover Sheet

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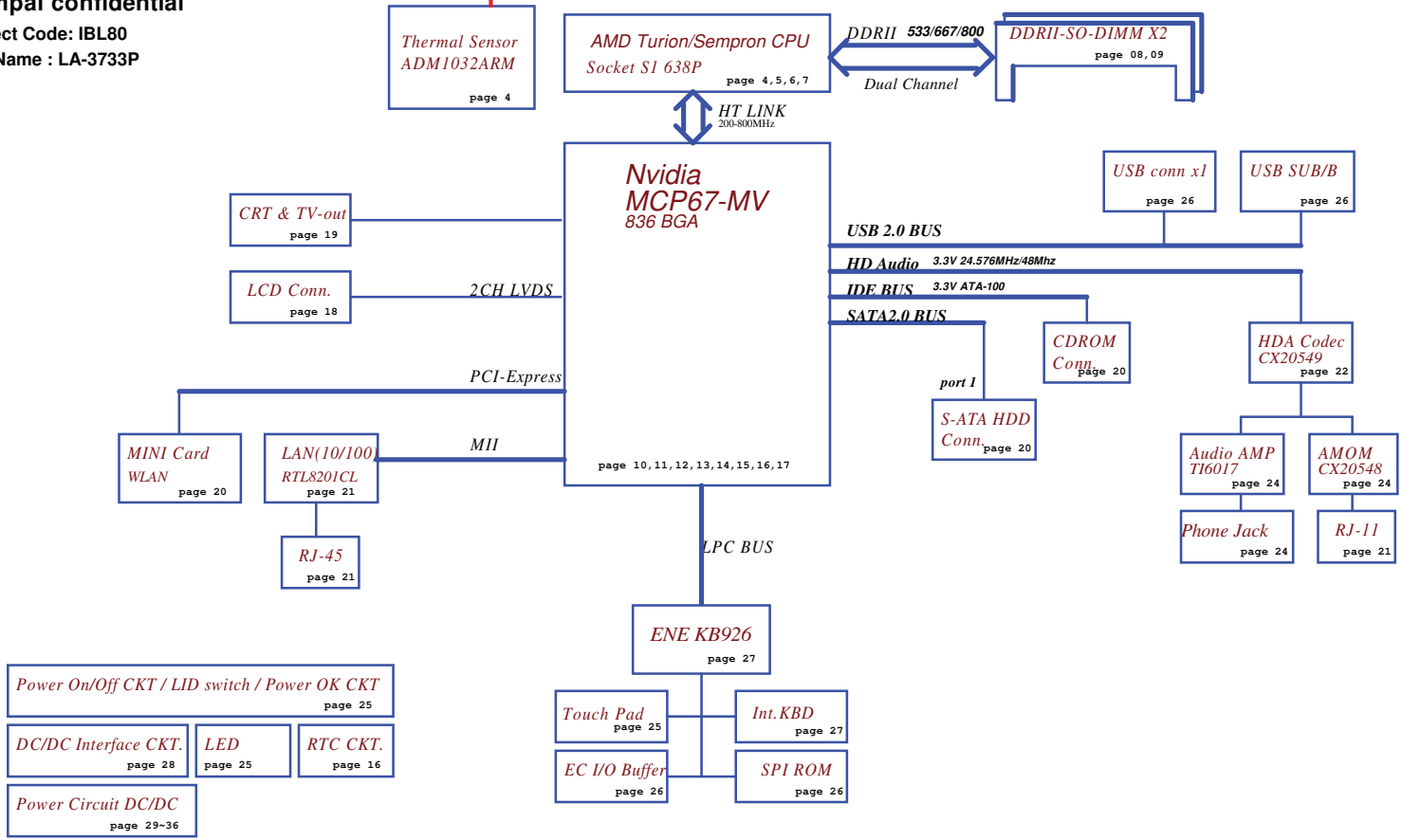
Project Code: IBL80

File Name : LA-3733P



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Title	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
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+0.9V	0.9V switched power rail for DDR terminator	ON	ON	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.2VALW	1.2V always on power rail	ON	ON	ON*
+1.2VS	1.2V switched power rail	ON	OFF	OFF
+1.2V_HT	1.2V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDR	ON	ON	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+RTCVCC	RTC power	ON	ON	ON

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

SIGNAL / STATE	SLP_S1#	SLP_S3#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	LOW	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	ON	OFF	OFF	OFF

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%
Ra/Rc/Re	100K +/- 5%

Board ID	Rb / Rd / Rf	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_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

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts

BTO Option Table

BTO Item	BOM Structure
DIP CAP & RTC	45@

EC SM Bus1 address

Device	Address
Smart Battery	0001 011X b

EC SM Bus2 address

Device	Address
ADM1032	1001 100X b

MCP67 SM Bus address

Device	Address
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 001Xb
MINI CARD	

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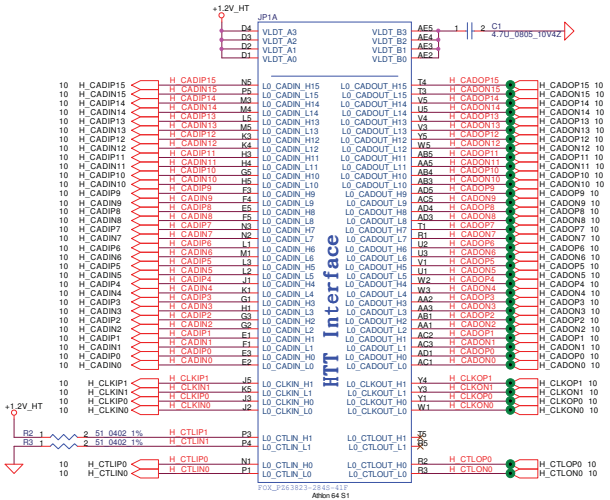
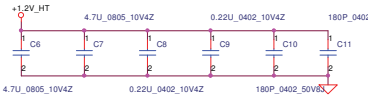
PROCESSOR HYPERTRANSPORT INTERFACE

VLDT_Ax AND VLDT_Bx ARE CONNECTED TO THE LDT_RUN POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE

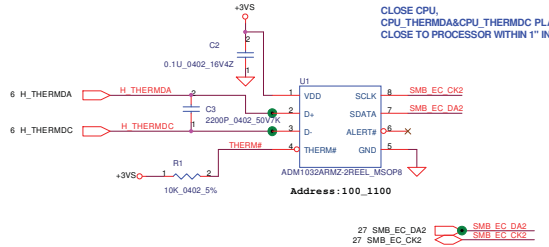




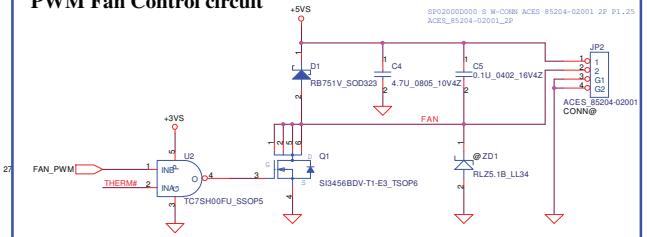
LAYOUT: Place bypass cap on topside of board

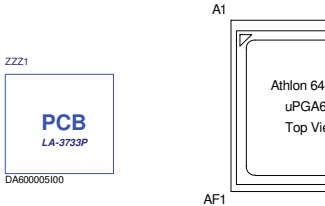
NEAR HT POWER PINS THAT ARE NOT CONNECTED DIRECTLY TO DOWNSTREAM HT DEVICE, BUT CONNECTED INTERNALLY TO OTHER HT POWER PINS
PLACE CLOSE TO VLDT0 POWER PINS

Thermal Sensor ADM1032ARMZ



PWM Fan Control circuit





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Title	AMD CPU HT I/F		
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Processor DDR2 Memory Interface

VDD_VTT_SUS_CPU IS CONNECTED TO THE VDD_VTT_SUS POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE

PLACE THEM CLOSE TO CPU WITHIN 1"

10:8:10:8:10

DDRII Cmd/Ctrl//Clk

DDRII Data

To reverse SODIMM socket

To normal SODIMM socket

PLACE CLOSE TO PROCESSOR WITHIN 1.2 INCH

PLACE CLOSE TO PROCESSOR WITHIN 1.2 INCH

VDD_VREF_SUS_CPU

LAYOUT:PLACE CLOSE TO CPU

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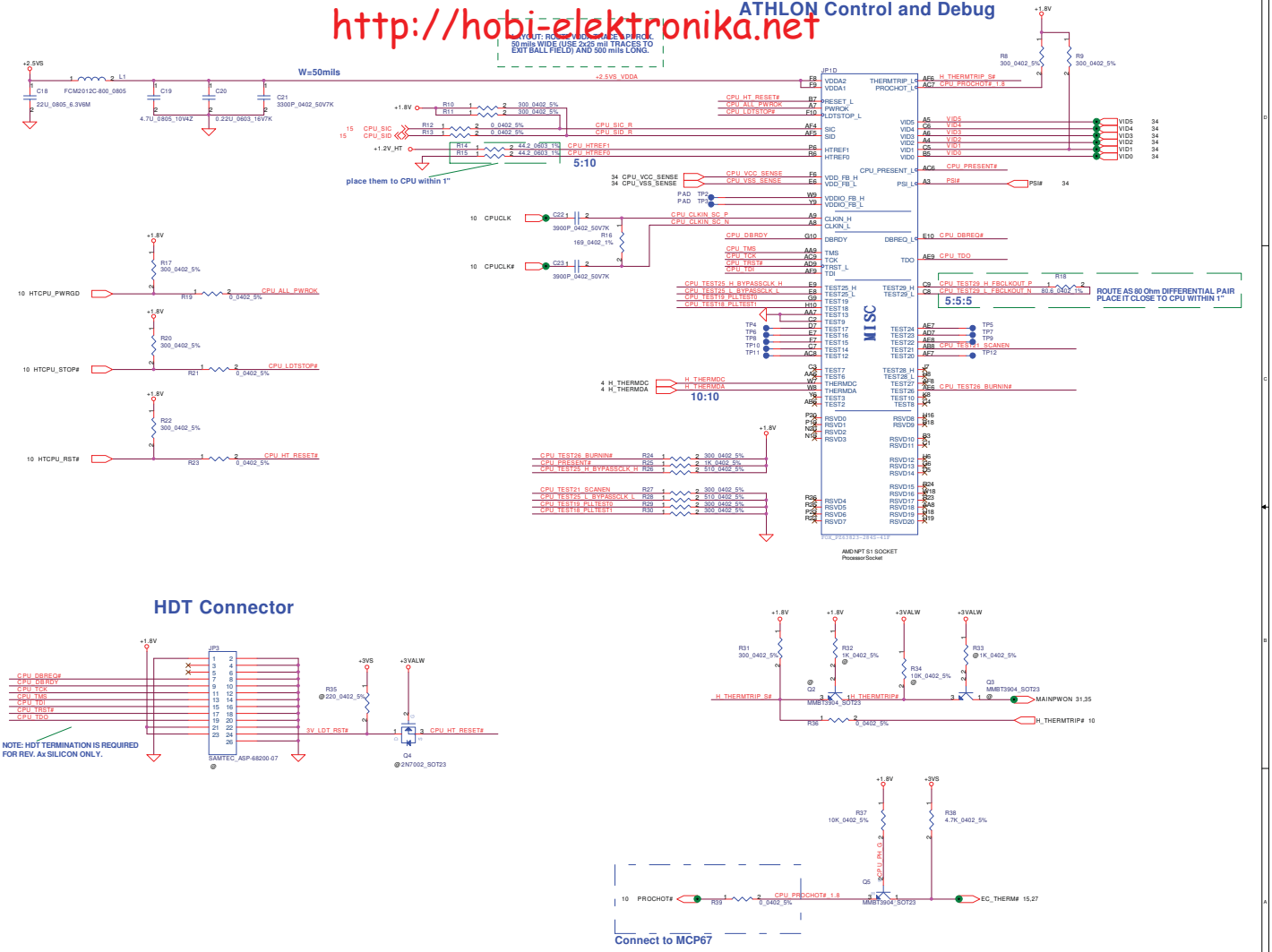
ATHLON Control and Debug



HDT Connector

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Title	AMD CPU CTRL & DEBUG		
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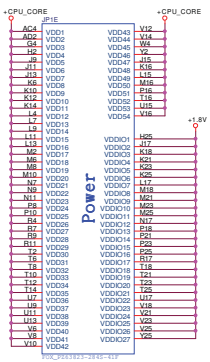
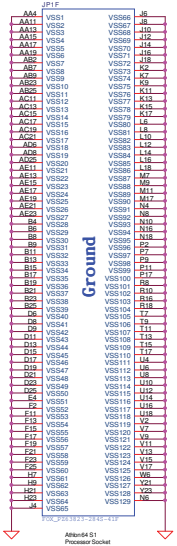
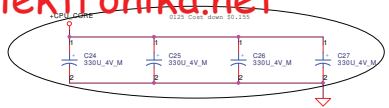
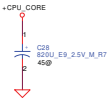
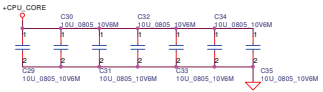
PROCESSOR POWER AND GROUND



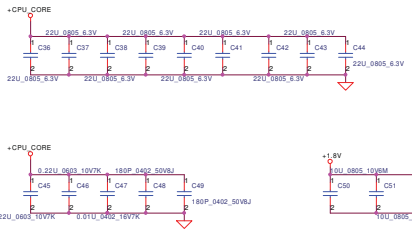




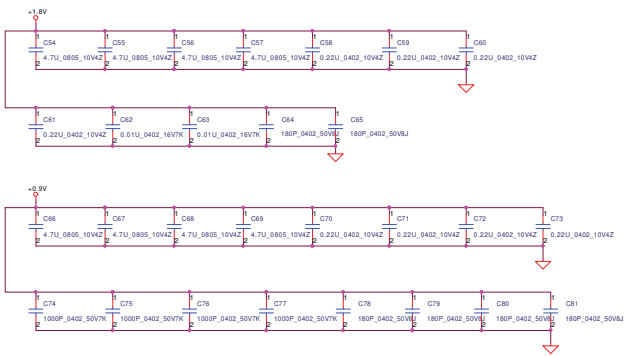




CPU SOCKET S1 DECOUPLING



DECOUPLING BETWEEN PROCESSOR AND DIMMs
PLACE CLOSE TO PROCESSOR AS POSSIBLE



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Title	AMD CPU PWR & GND		
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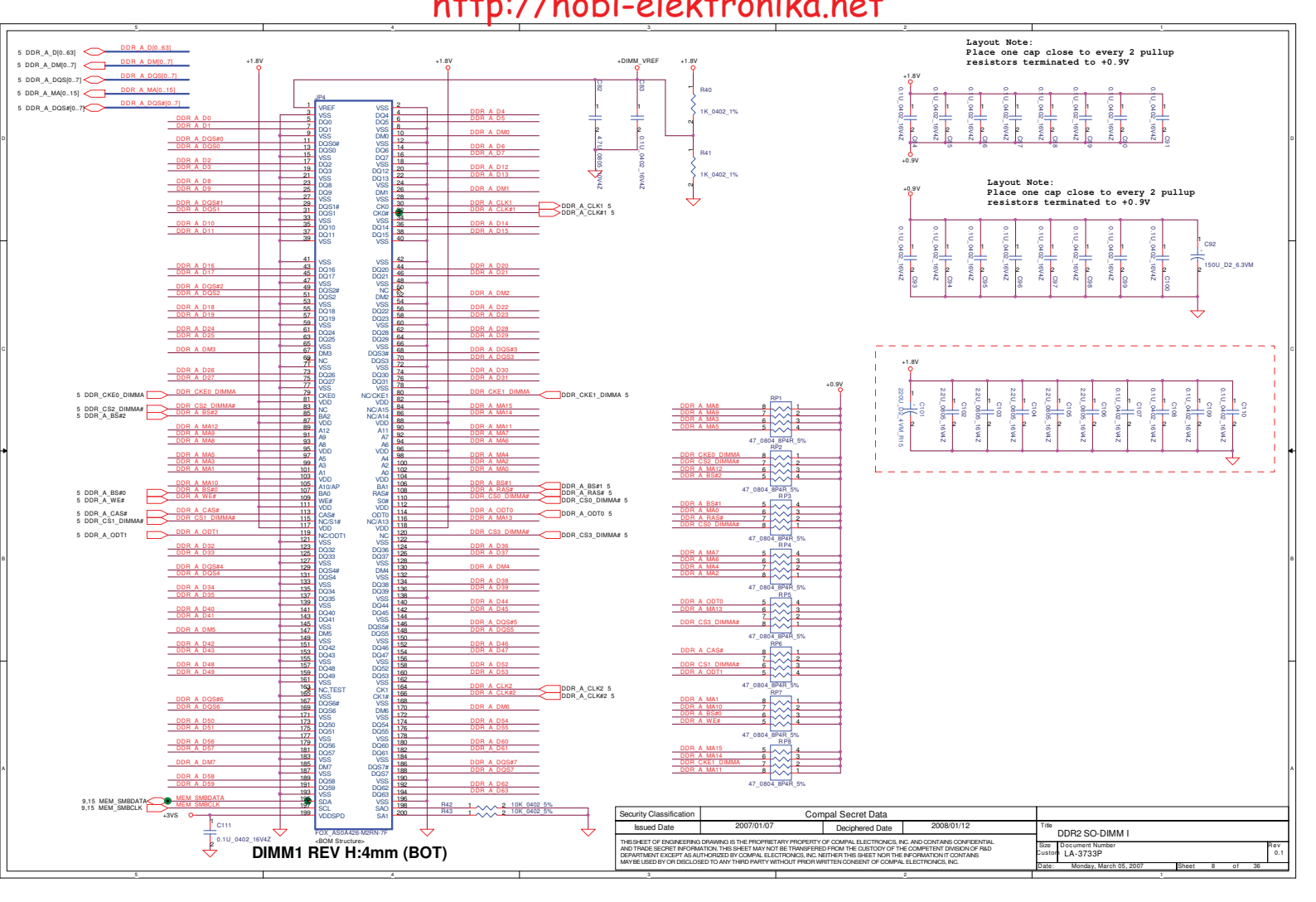

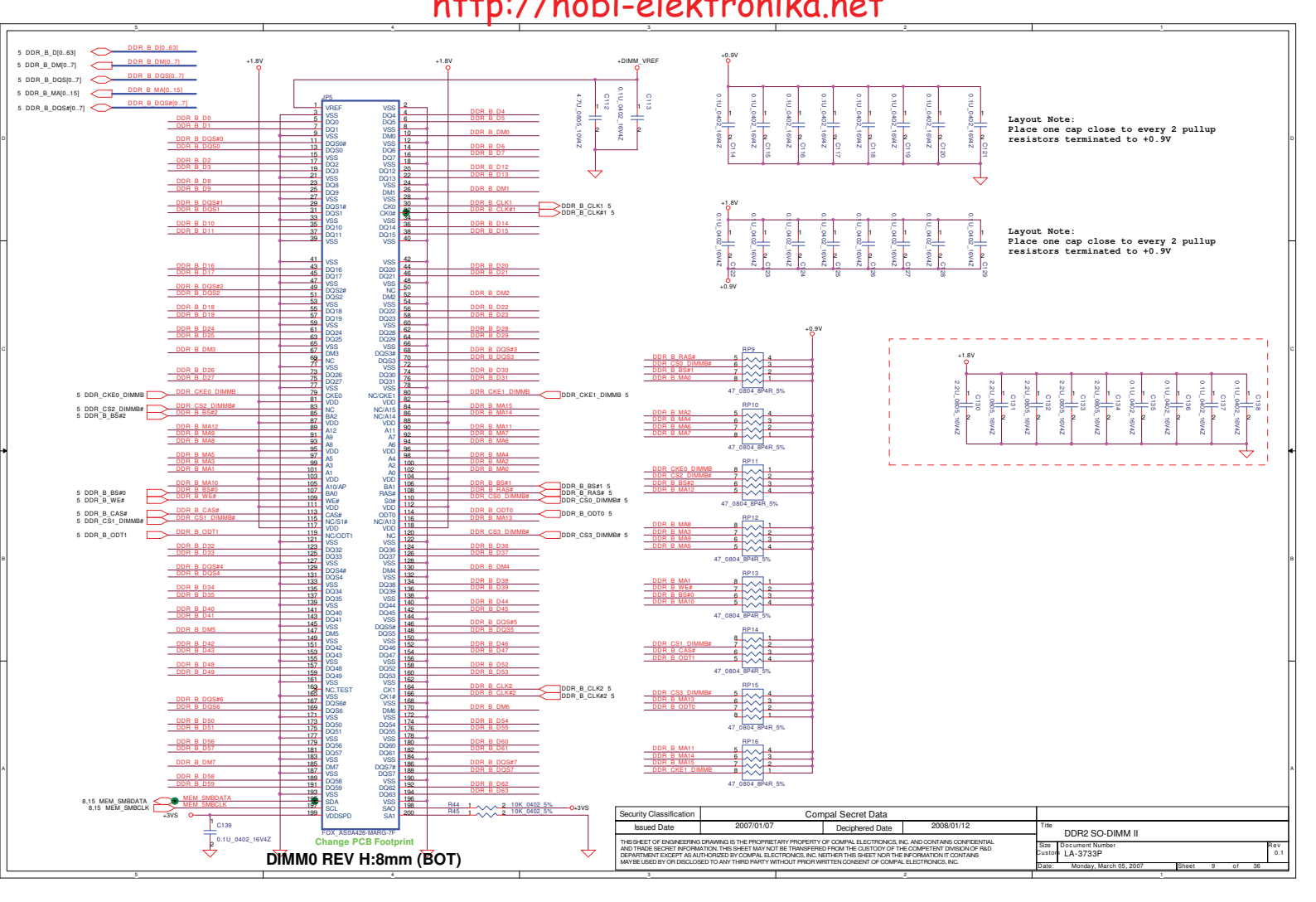

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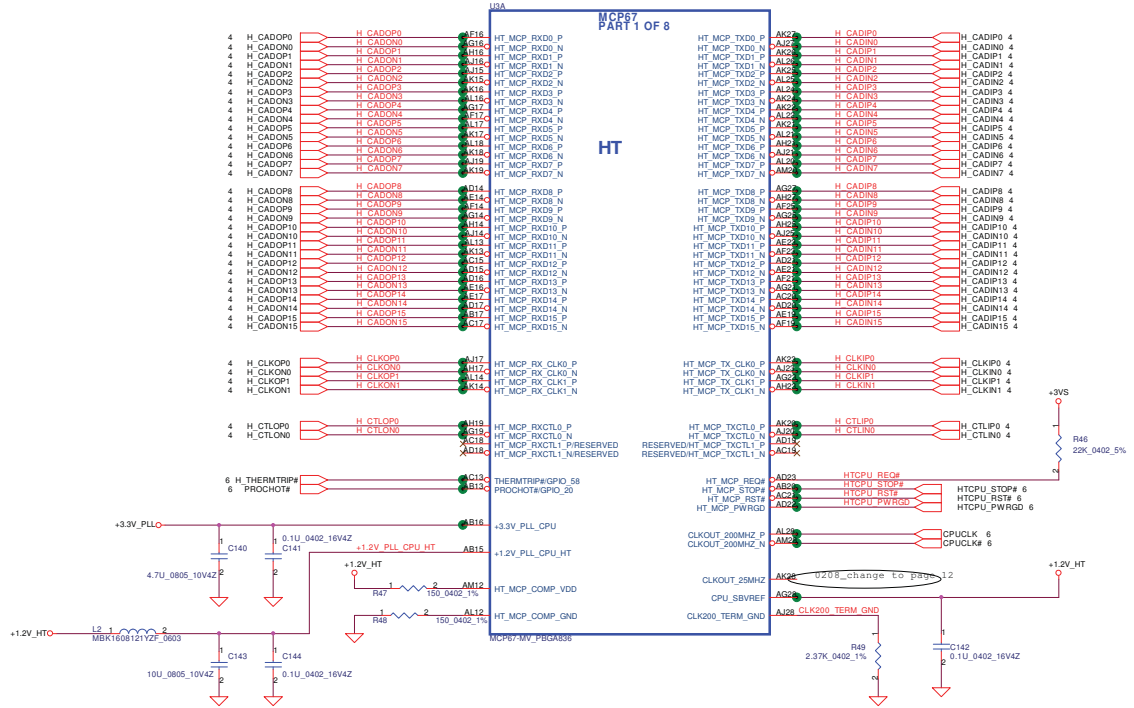

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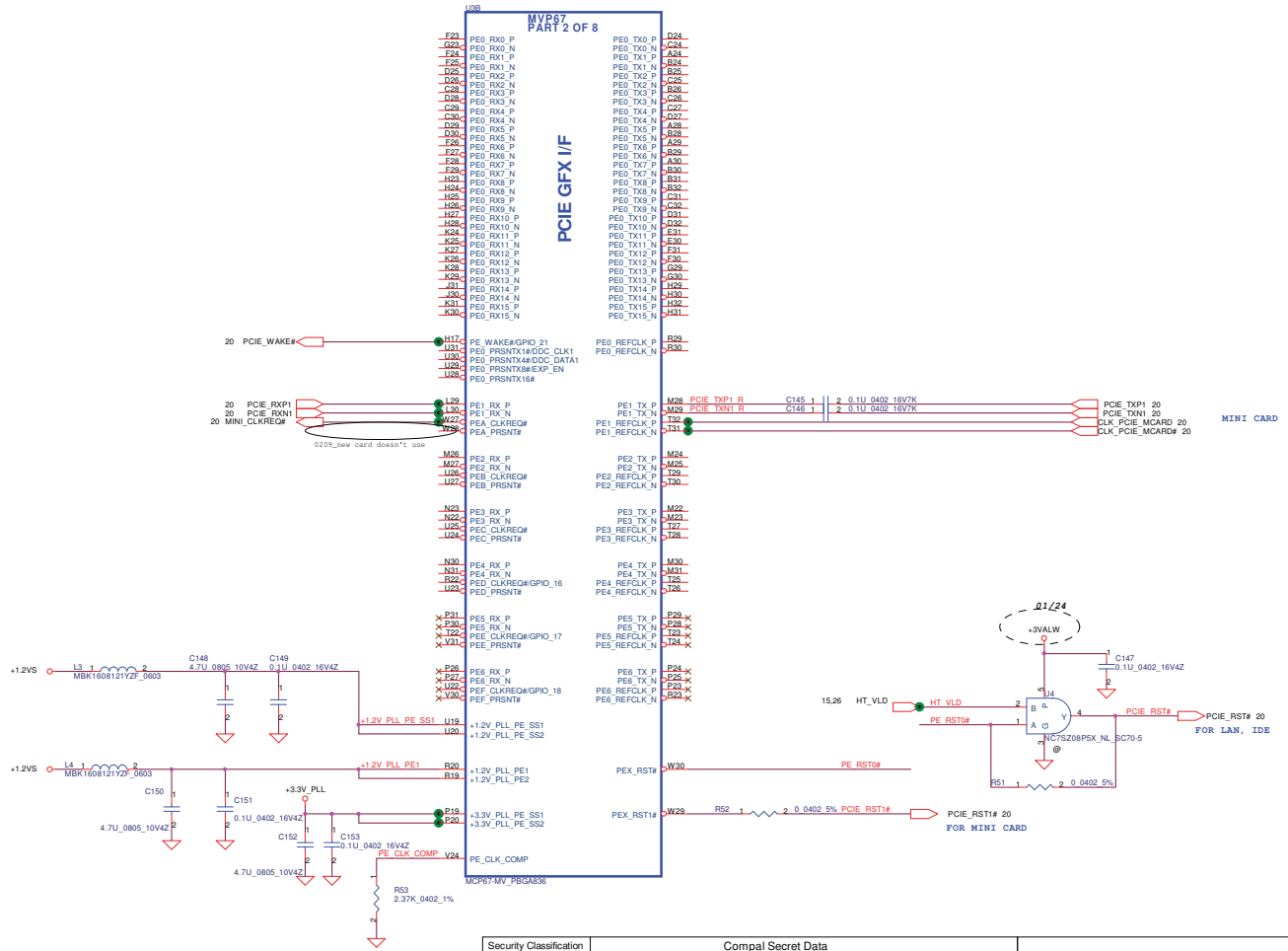

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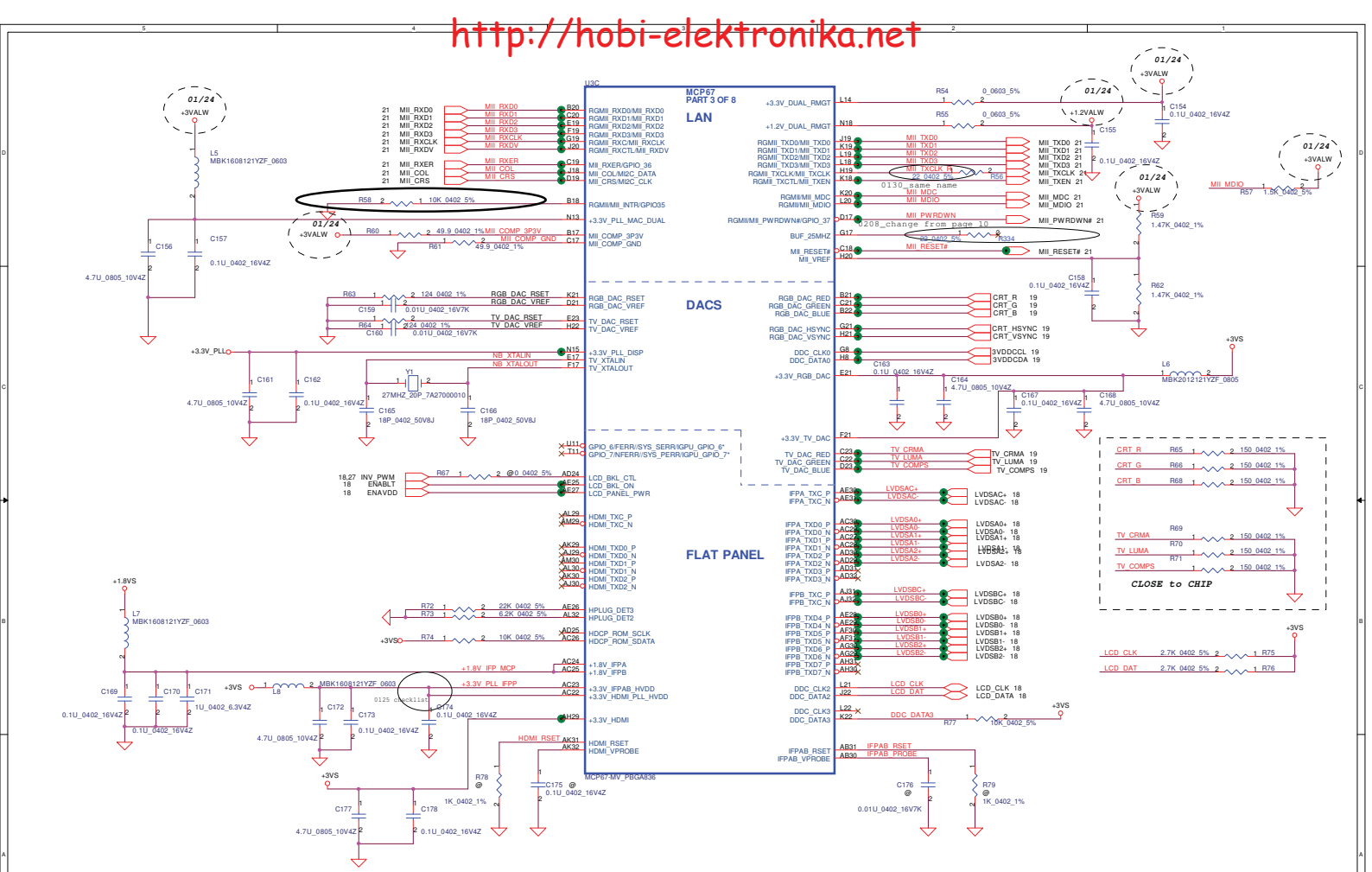

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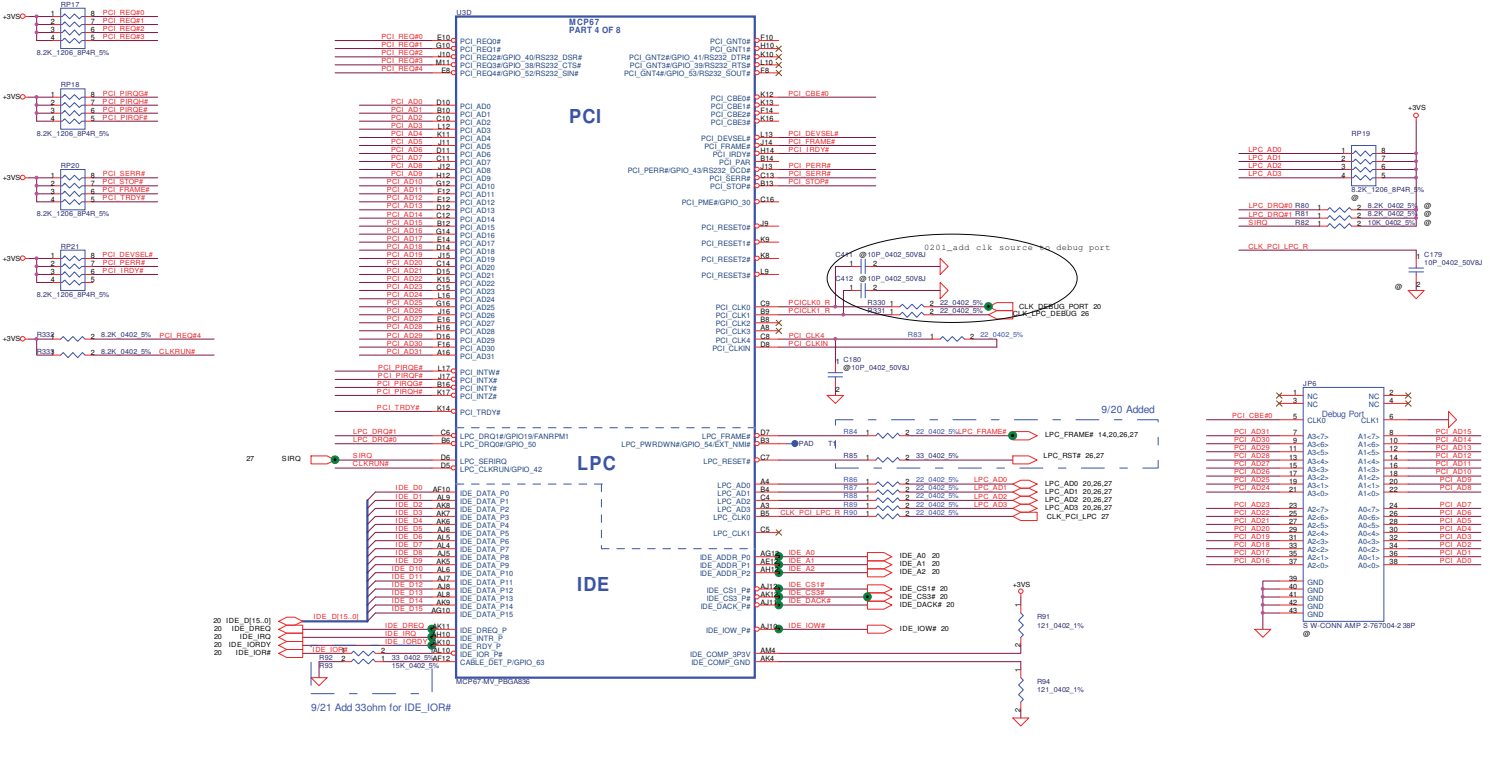

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Title	MCP67 PCI/ LPC/ IDE		
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PLACE SATA AC COUPLING CAPS CLOSE TO MCP67

U3E

MCP67 PAR 5 OF 8

SATA

USB

HDA

HDA_SDOUT	LPC_FRAME	FUNCTION
"0"	"0"	LPC BIOS*
"0"	"1"	PCI BIOS
"1"	"0"	SPI BIOS
"1"	"1"	RESERVED

*DEFAULT

STRAP FOR SIO 14.318MHz

STRAP FOR MII

MCP67-MV_PBGA836

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Title: MCP67 SATA/ USB/ HDAUDIO

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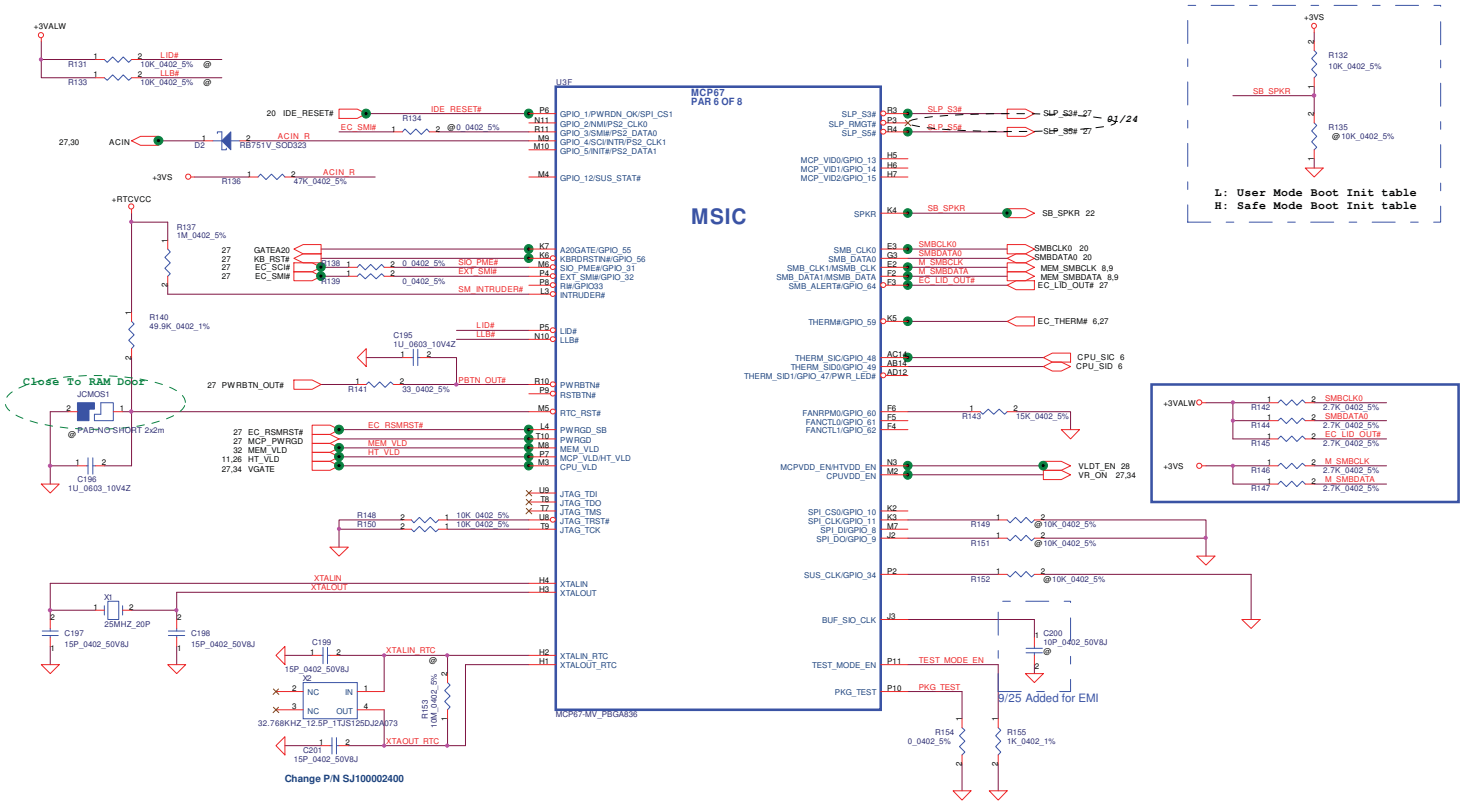

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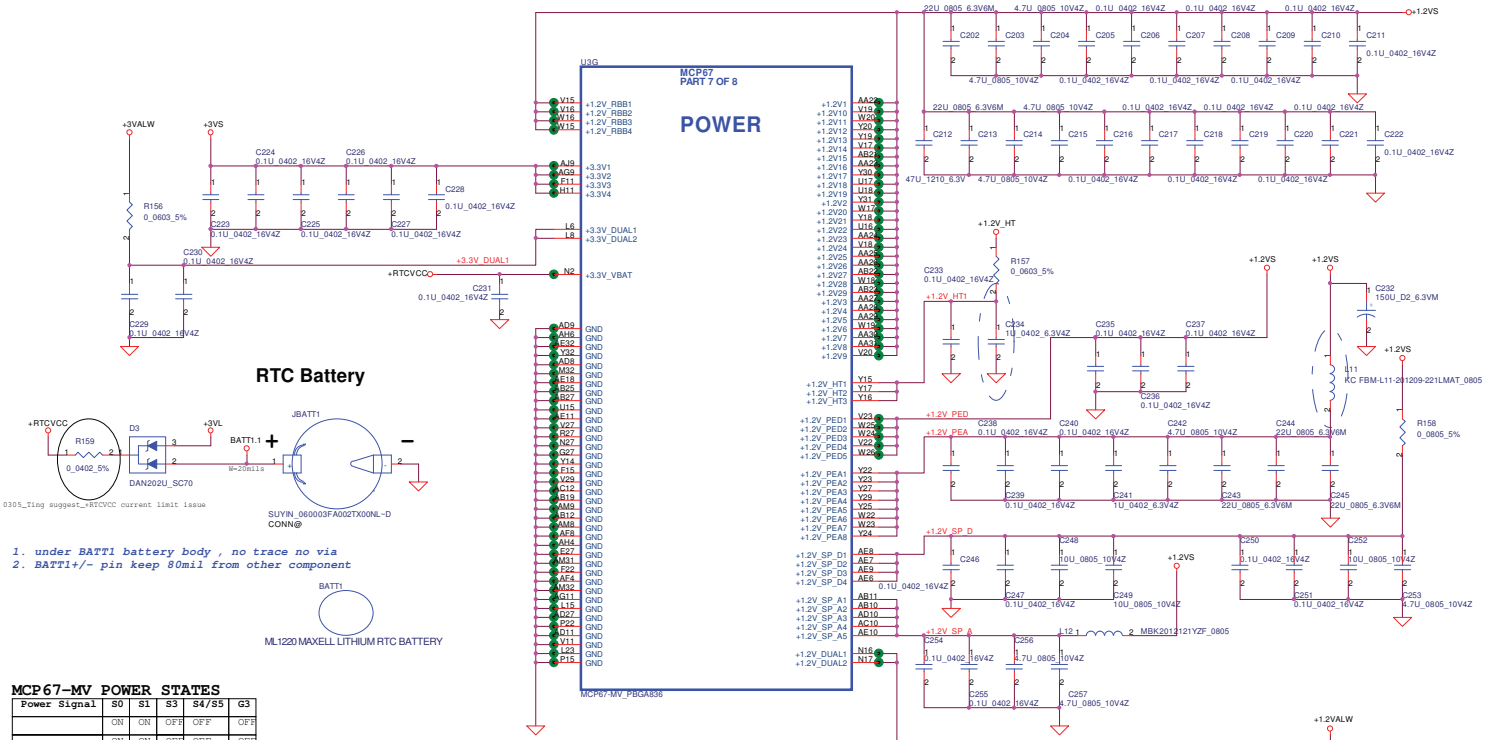

MCP67-MV POWER STATES

Power Signal	S0	S1	S3	S4/S5	G3
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF
	ON	ON	OFF	OFF	OFF

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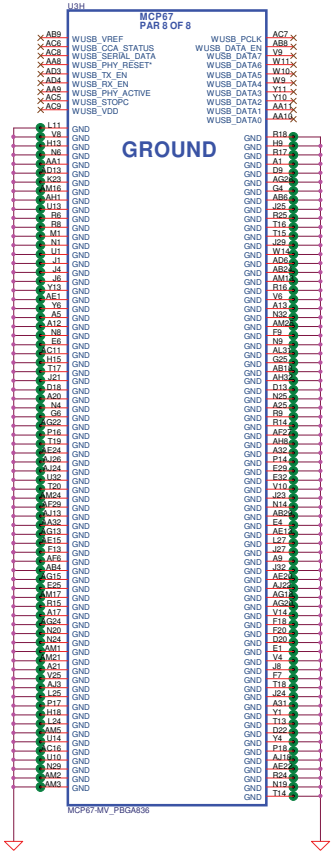

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Title: MCP67 GROUND

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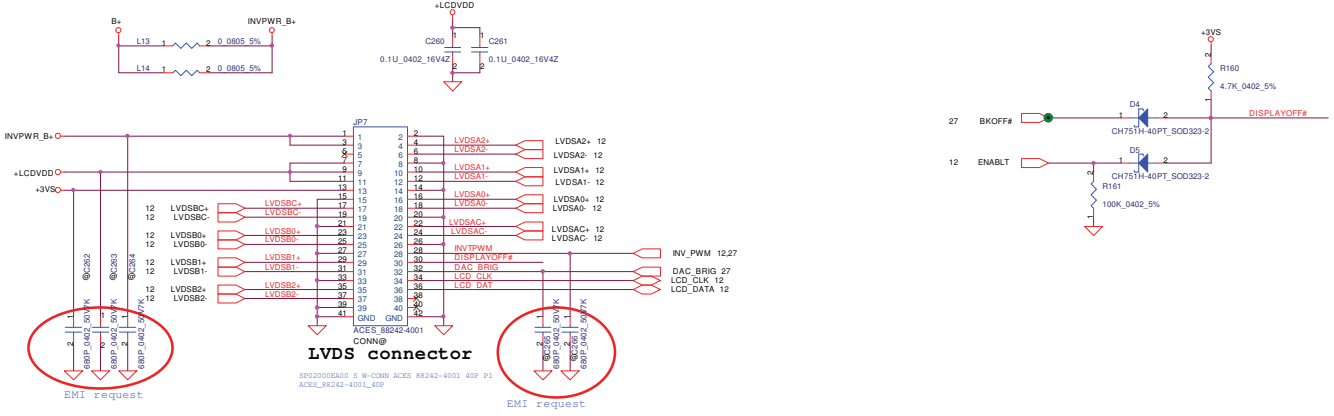
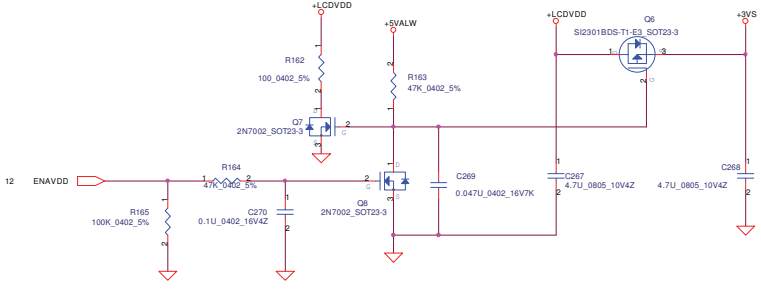
LVDS CONN





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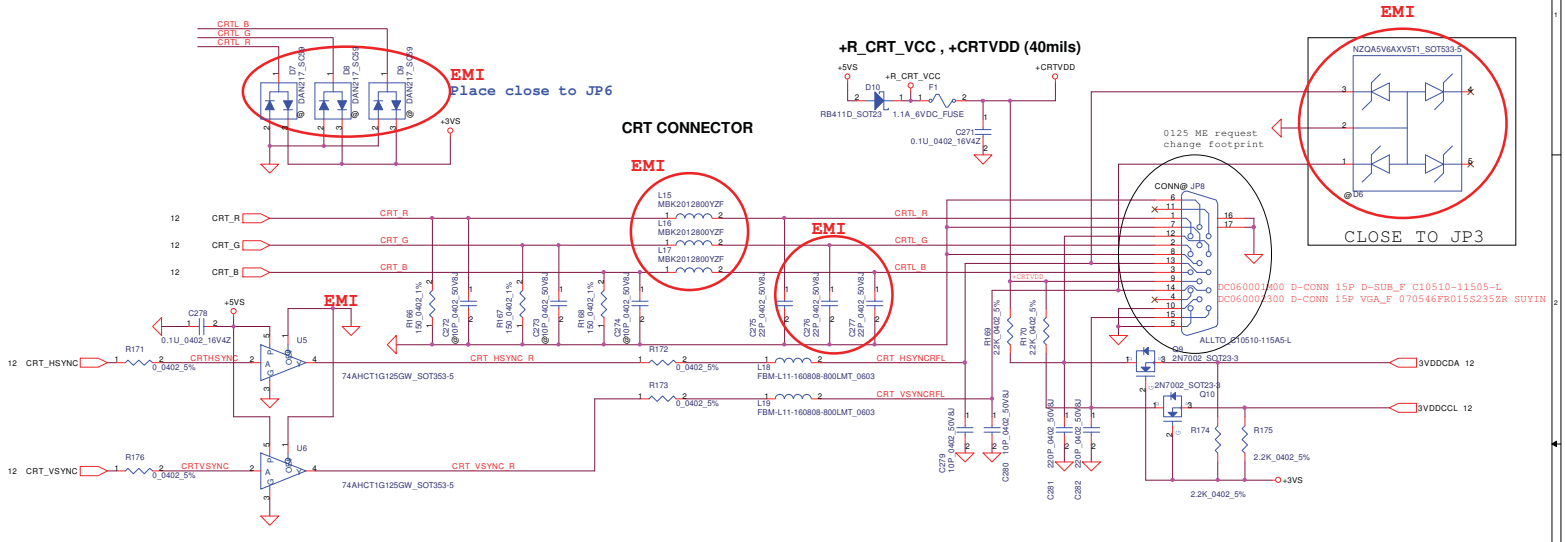
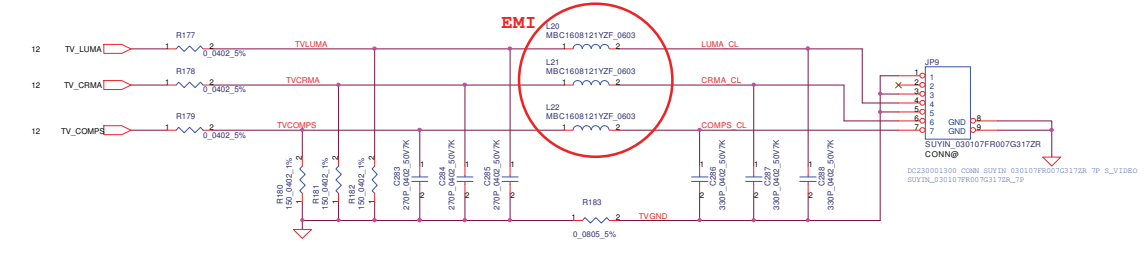


TV-Out Connector
S-Video



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	CRT & TVout Connector		
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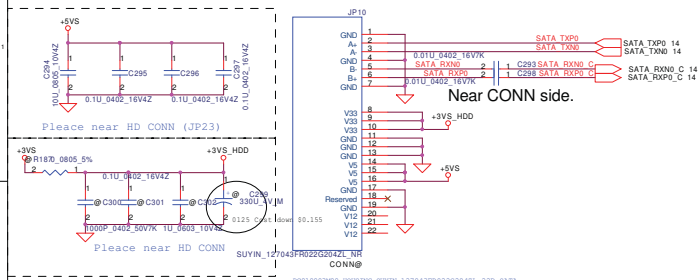
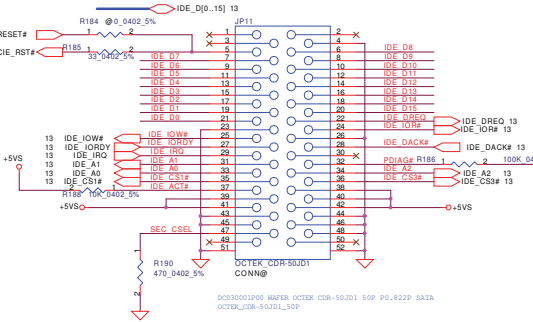
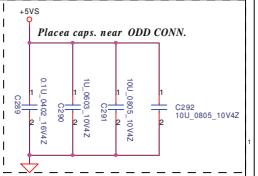
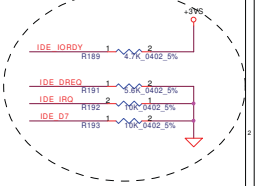
HDD Connector



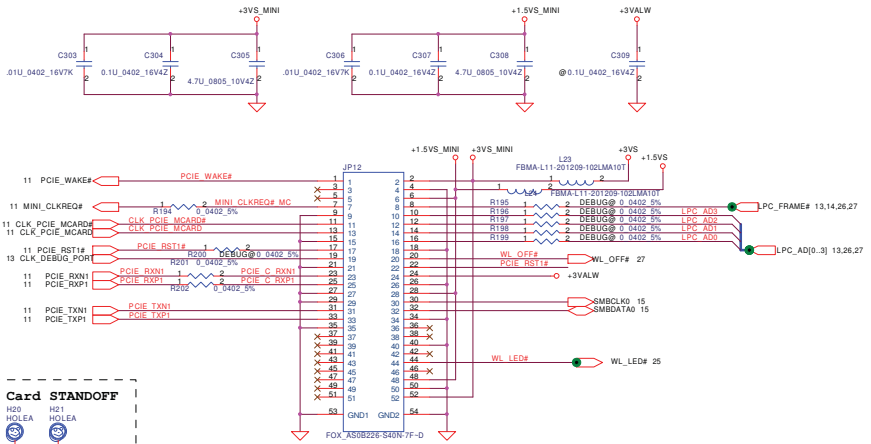
CD-ROM Connector

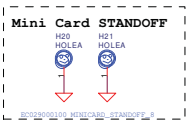






Mini-Express Card---WLAN





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Title: **HDD/ODD/Mini Card CONN.**

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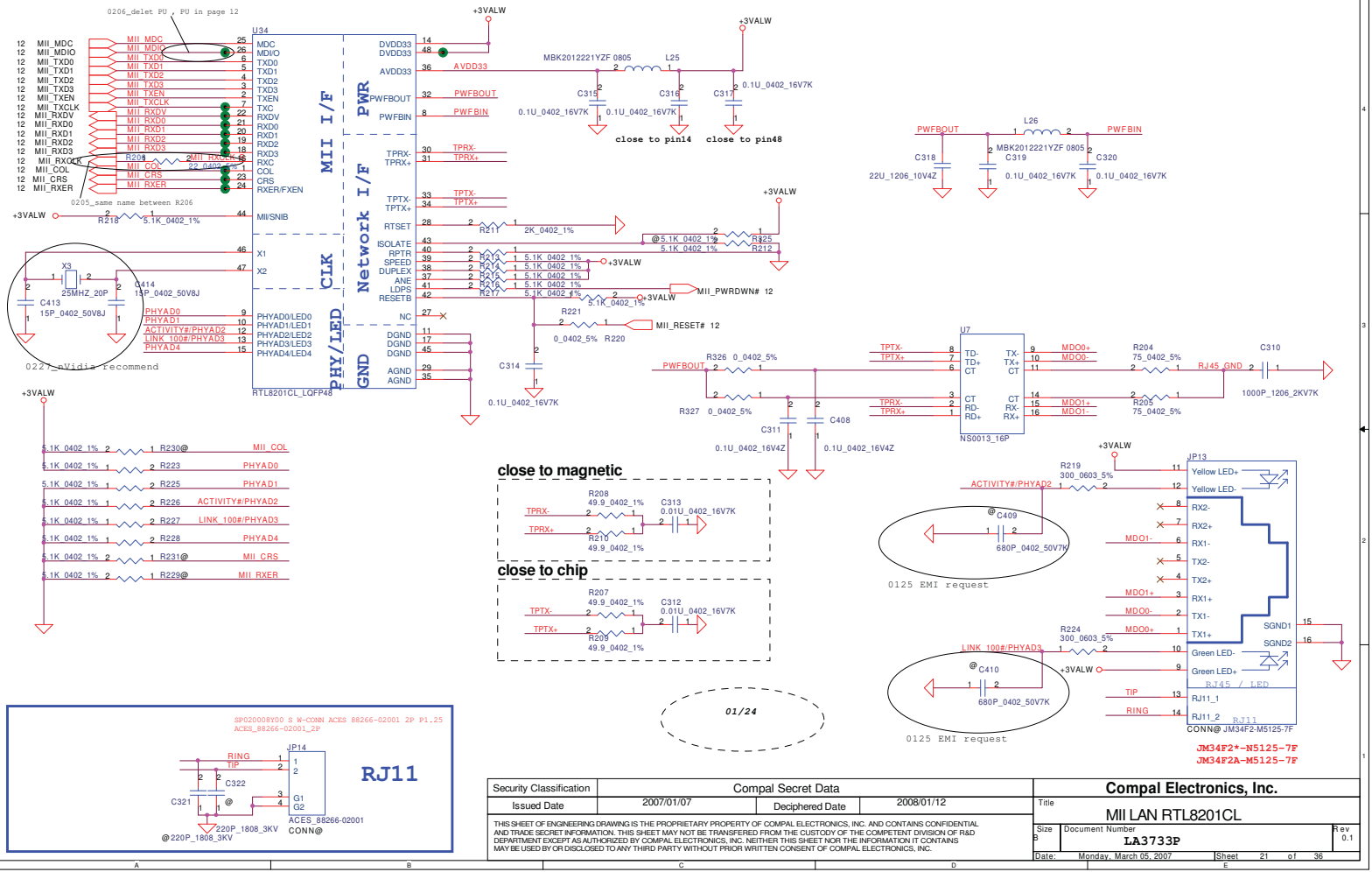

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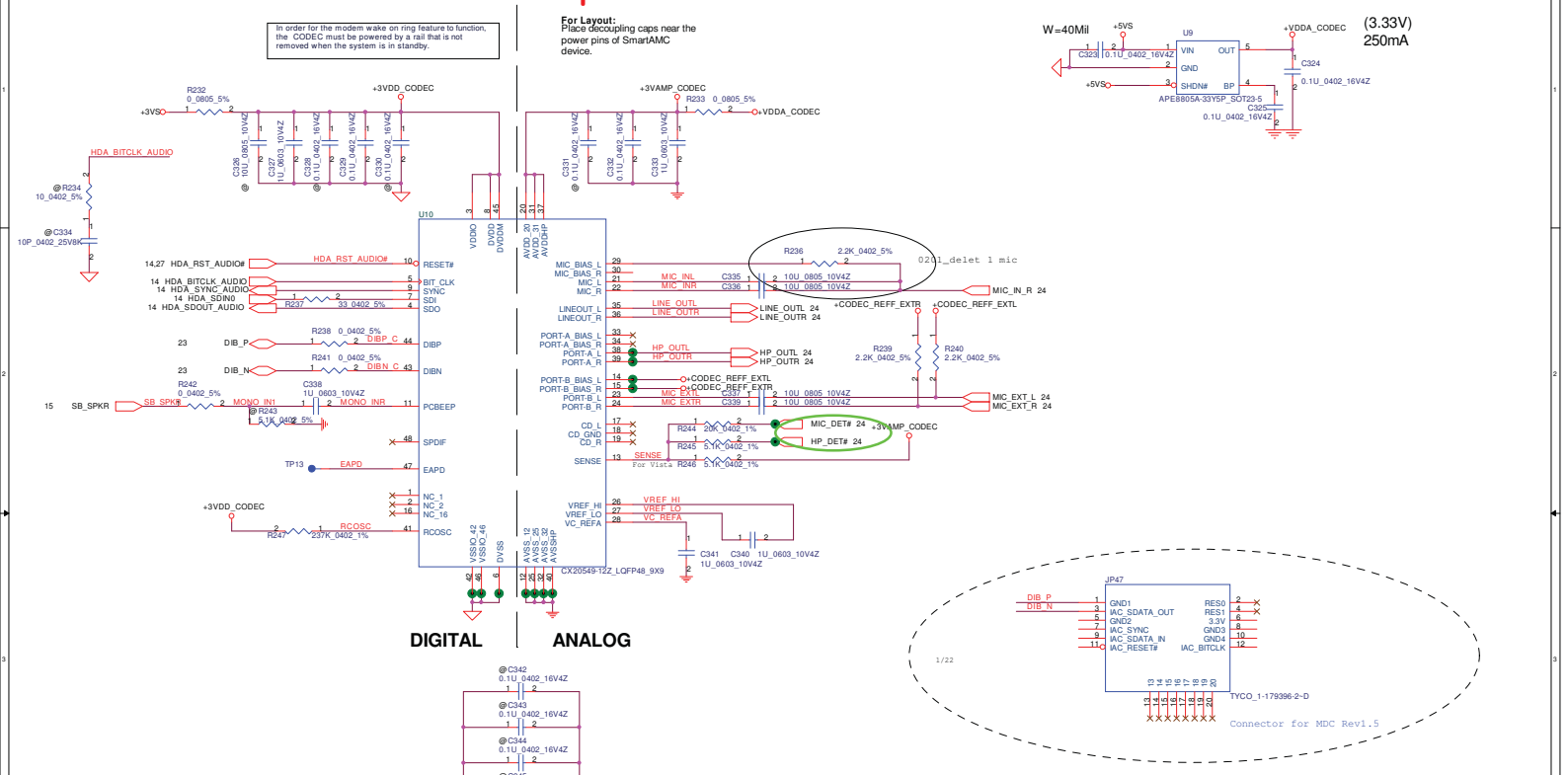
AUDIO CODEC

CODEC POWER



HP_DET#	MIC_DET	LINEOUT	PORT-A <Earphone OUT>	MIC	EQ
0(LOW)	0(LOW)	OFF	ON	ON	Disable
0(LOW)	NC	OFF	ON	OFF	Disable
NC	0(LOW)	ON	OFF	ON	Enable
NC	NC	ON	OFF	OFF	Enable

Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.

Title: AMOM_codec

Size: Custom | Document Number: LA-1733P | Rev: 0.1

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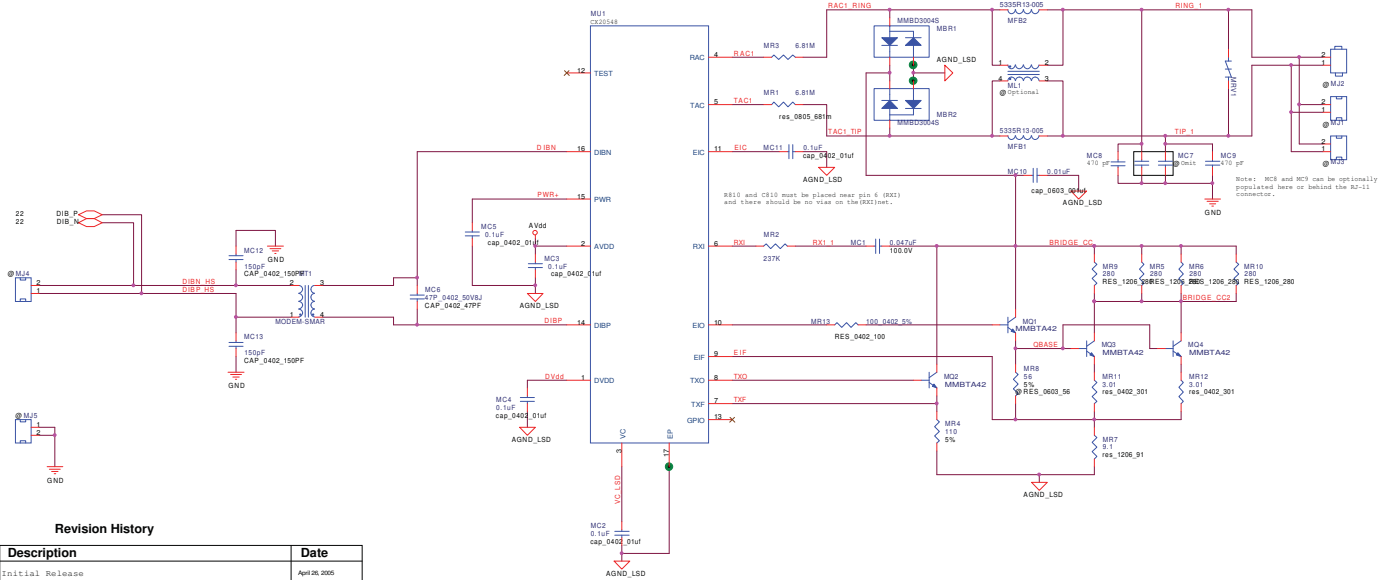

Revision History

REV	Description	Date
0	Initial Release	April 26, 2005
1	No changes to schematic. PCB updated to -003. Updated footprints and corrected via spacing errors.	August 18, 2005
2	Changed MC8 and MC9 pads. No schematic changes. PCB updated to -005.	November 3, 2005
3	Added MR11 and MR12. PCB updated to -007.	November 18, 2005
4	Added MR13. PCB updated to -009.	January 3, 2006
4.01	AVL update only.	April 20, 2006

Security Classification	Compal Secret Data	
Issued Date	2007/01/07	Deciphered Date: 2008/01/12

Compal Electronics, Inc.

Title: AMOM-CX20548

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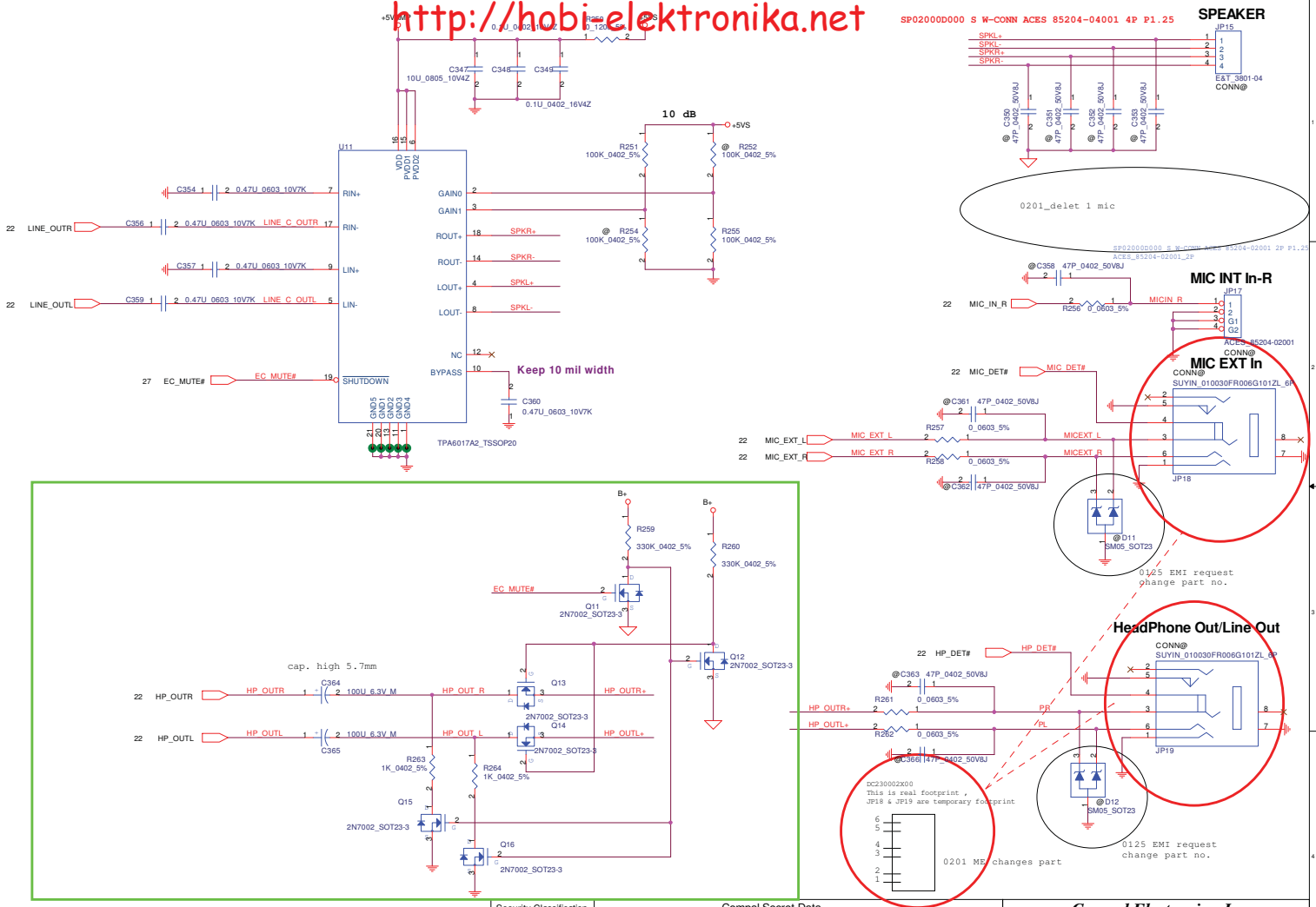

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Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.			
Title	AMP & Audio Jack		
Size	Document Number		Rev
	LA-3733P		0.1
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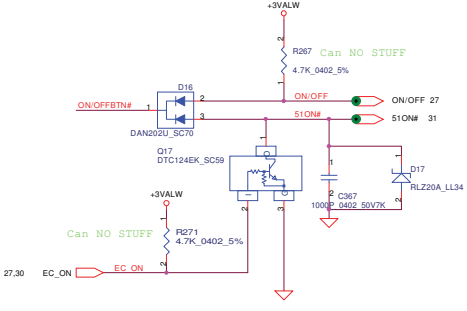
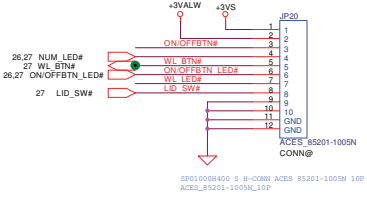
M/BtoS/B

Power ON/OFF

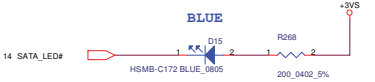




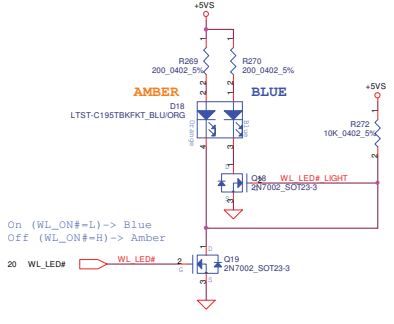
POWER LED(Left 1)

Battery Charge LED(Left 2)

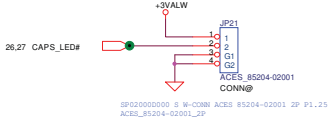
HDD LED(Left 3)



Wireless ON/OFF LED(Left 4)

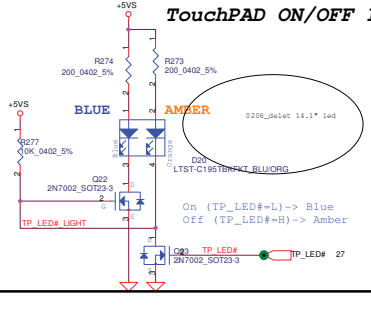


M/B to SB(Caps Lock LED)

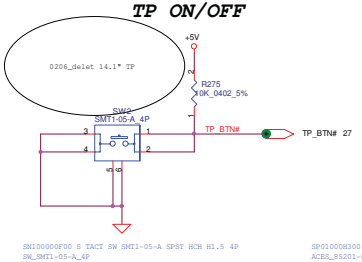


D21, D25, D23 Footprint can not match part number.

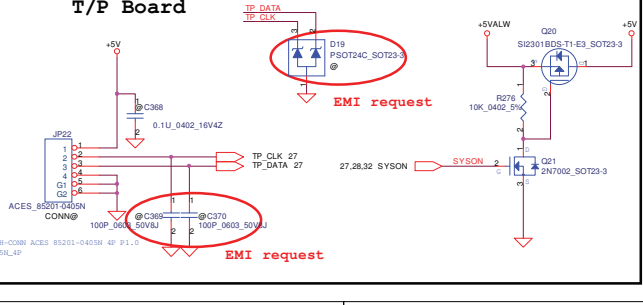
TouchPAD ON/OFF LED



TP ON/OFF



T/P Board



Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.	
Title	LED/SW
Size	Document Number: LA-3733P
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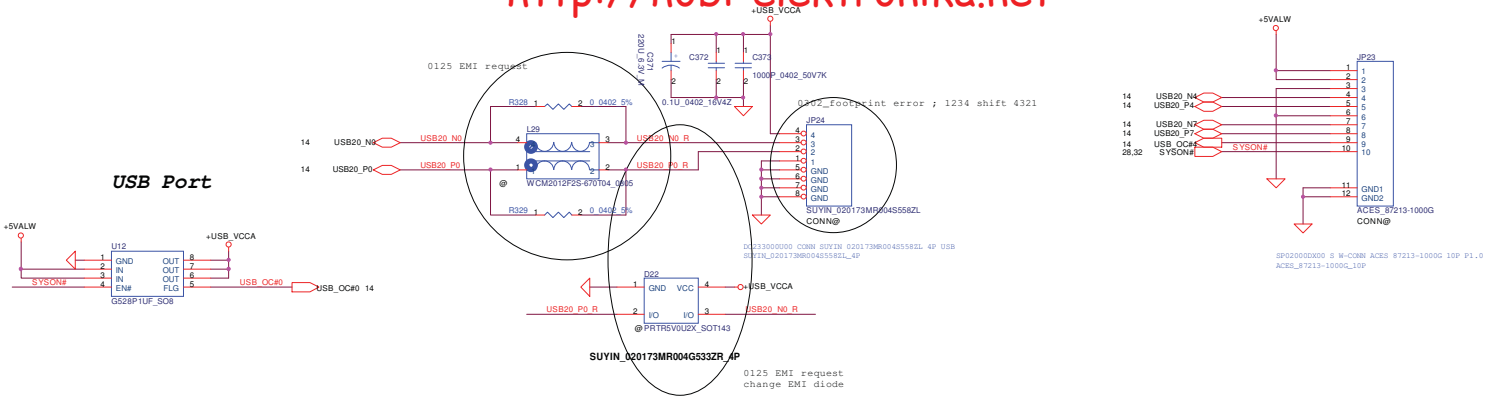
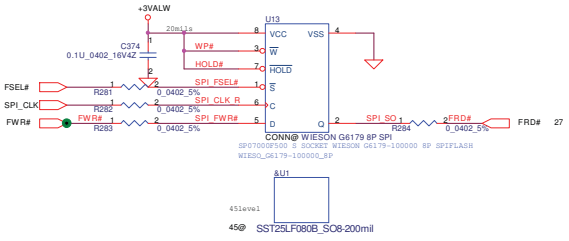
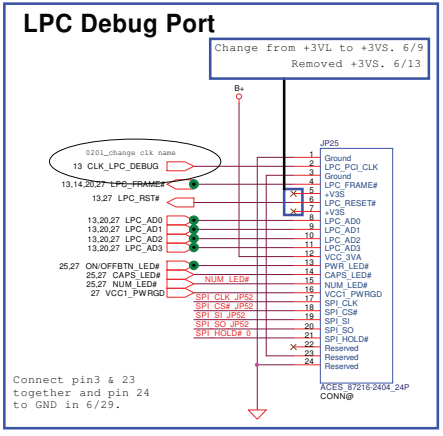
USB Port

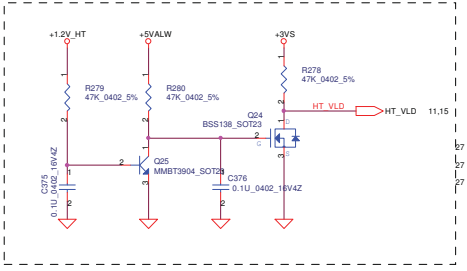


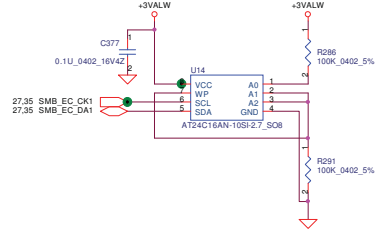
SPI ROM



LPC Debug Port







Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

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Compal Electronics, Inc.

Title: **USB/BIOS ROM**

Size	Document Number	Rev
	LA-3733P	0.1

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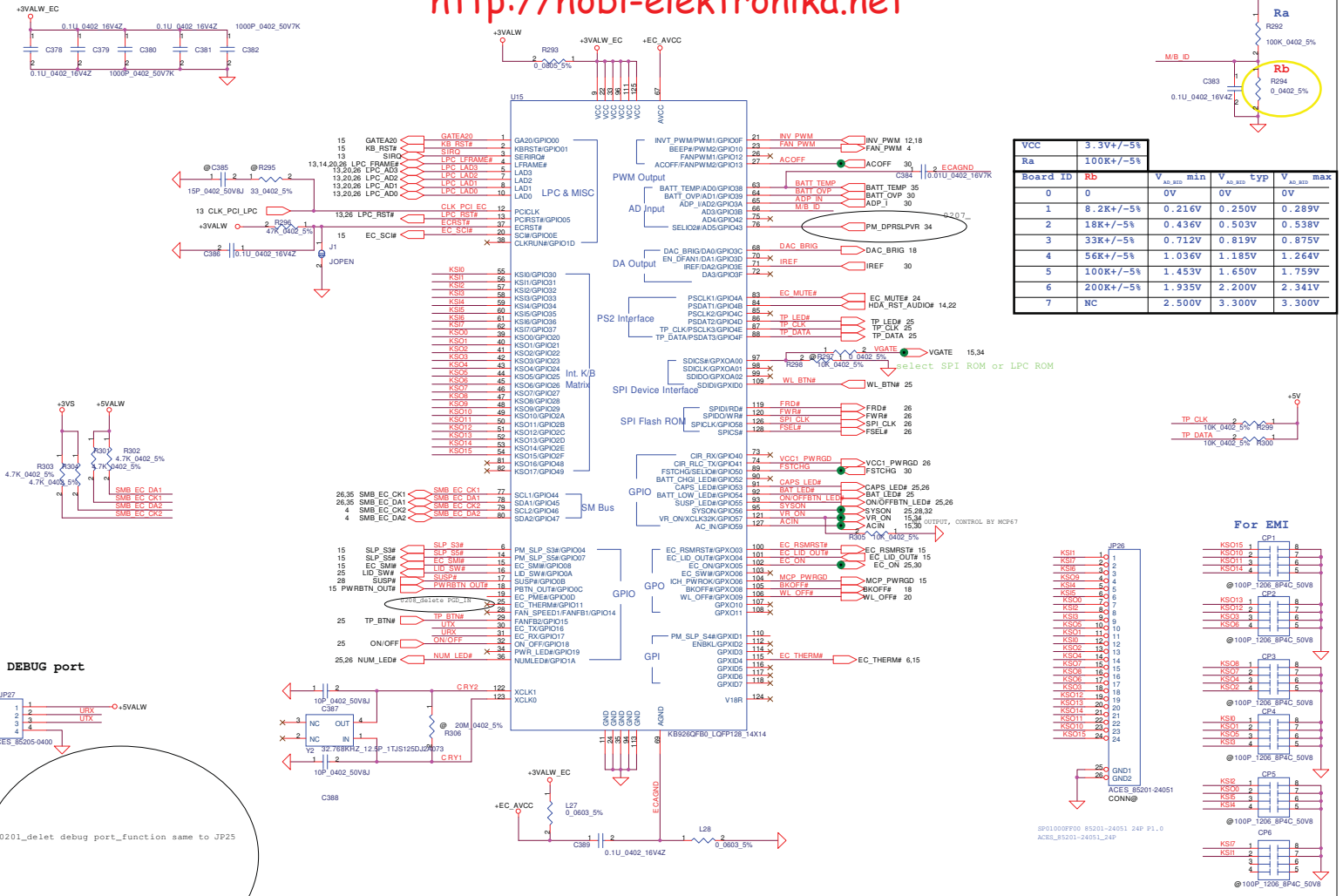

Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Title	Compal Electronics, Inc.
	EC KB926/KB conn
Size	Document Number: LA-3733P
Rev	0.1
Date:	Monday, March 05, 2007
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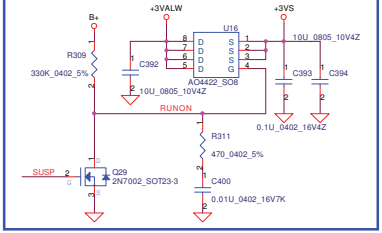
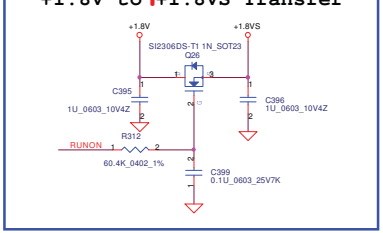
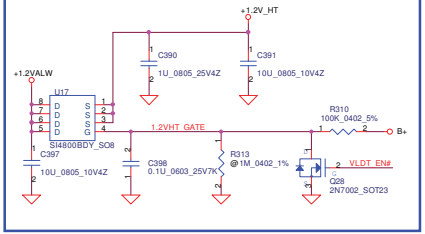
+3VALW to +3VS Transfer

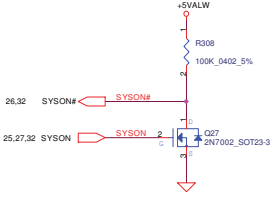


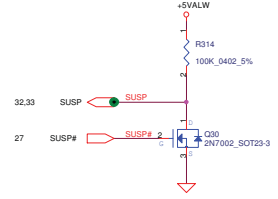
+1.8V to +1.8VS Transfer

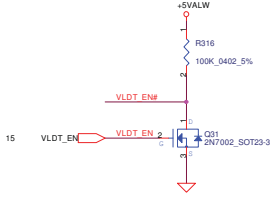


+1.2VALW to +1.2VHT

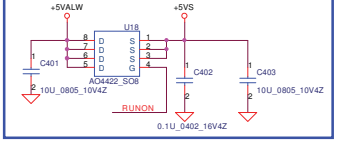




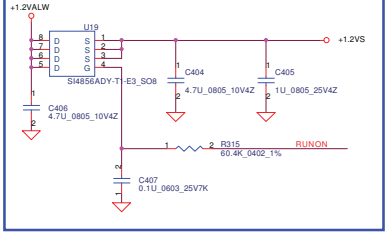




+5VALW to +5VS Transfer

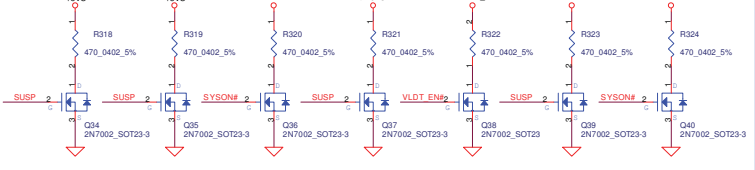


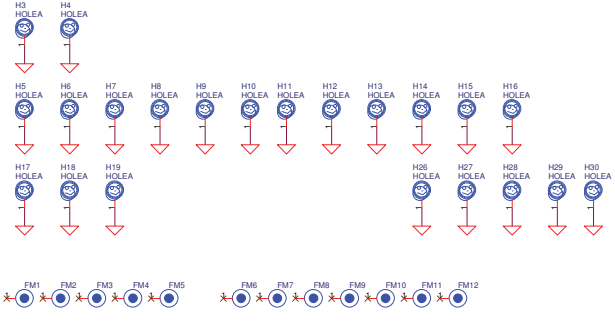
+1.2VALW TO +1.2VS



01/24

Discharge circuit





Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Title	Compal Electronics, Inc.		
	DC/DC Interface		
Size	Document Number		Rev
	LA-3733P		0.1
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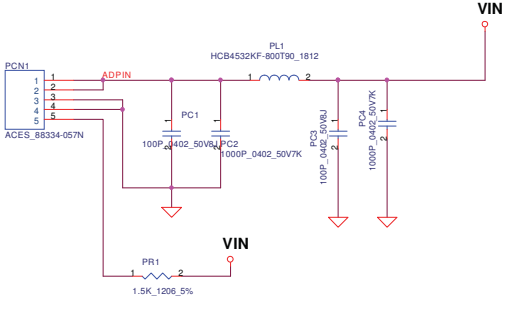

Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Title: **DC CONN**

Size	Document Number	Rev
Custom	LA-3733P	

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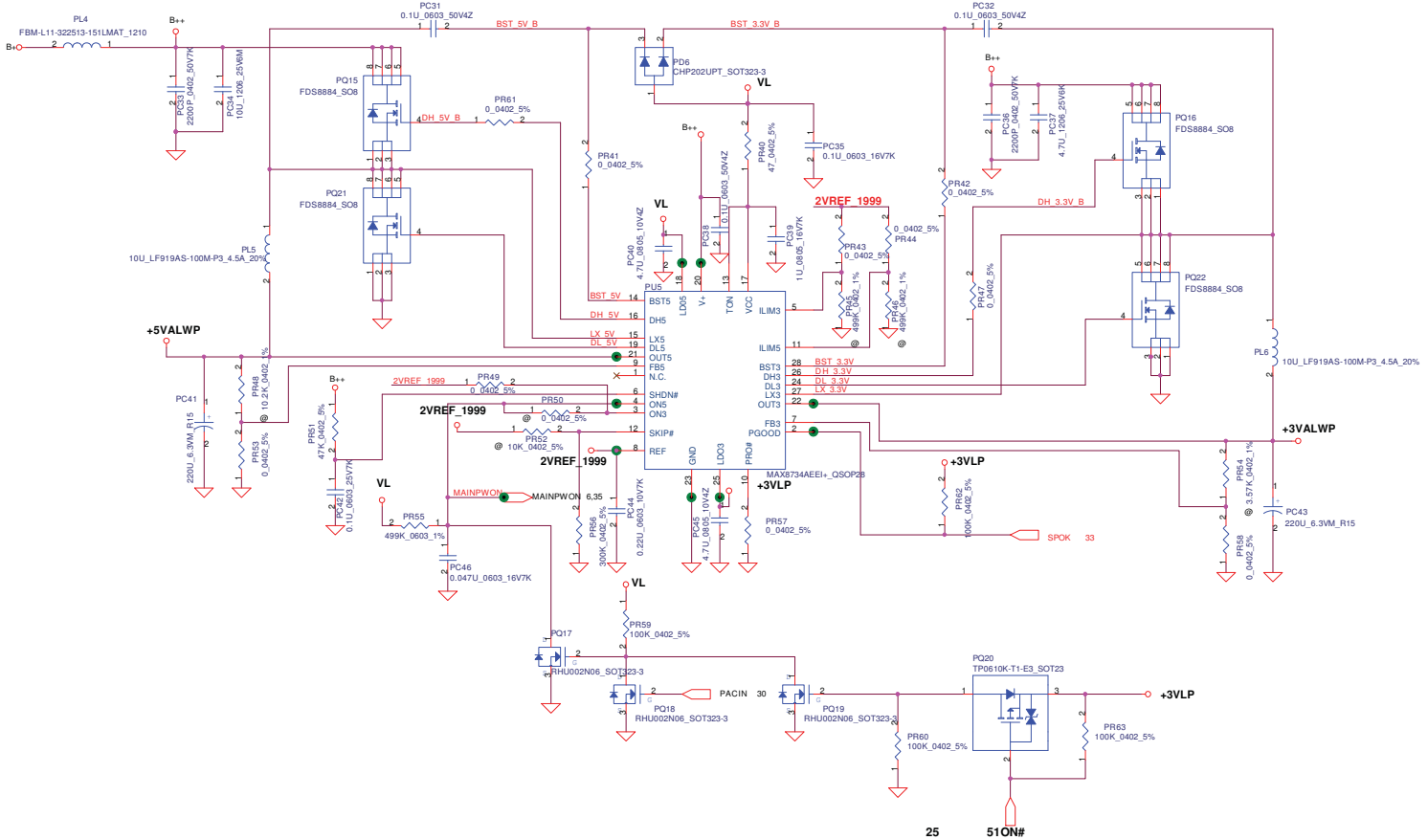
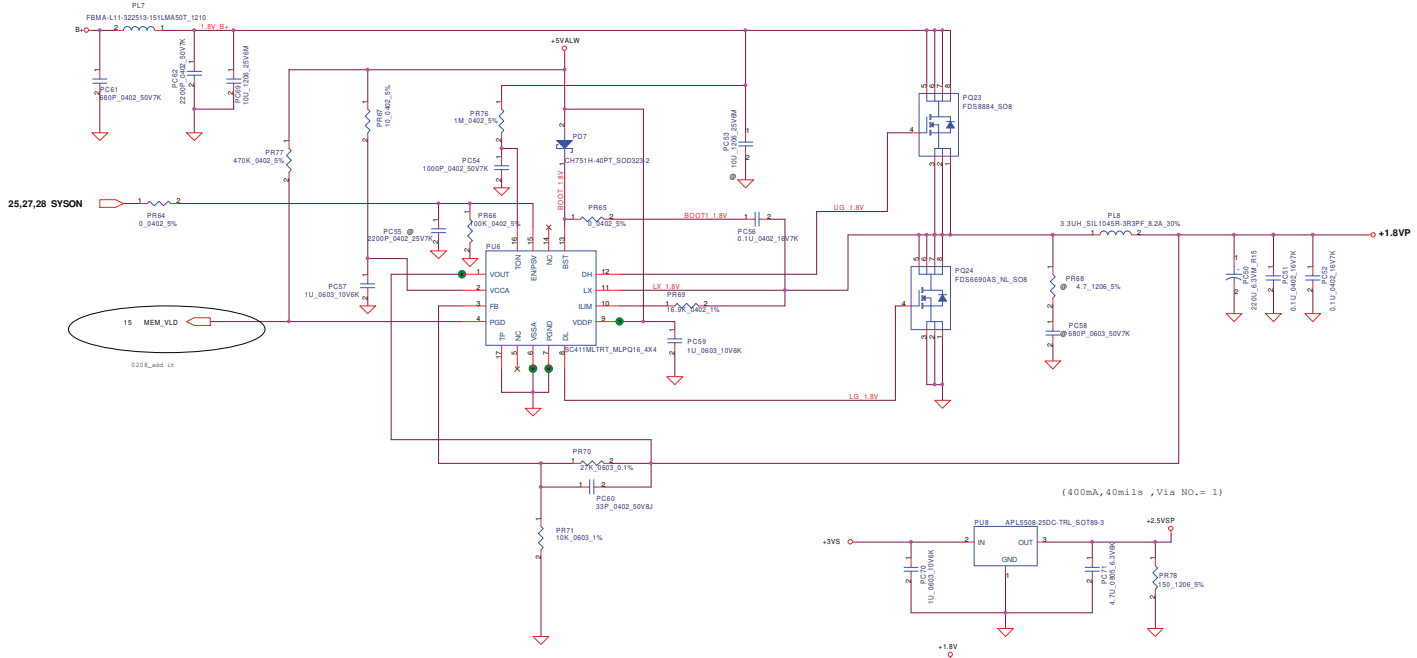
Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date		Deciphered Date	Title: Charger

Size: Custom	Document Number		Rev
Date: Monday, March 05, 2007	Sheet 39	of 51	



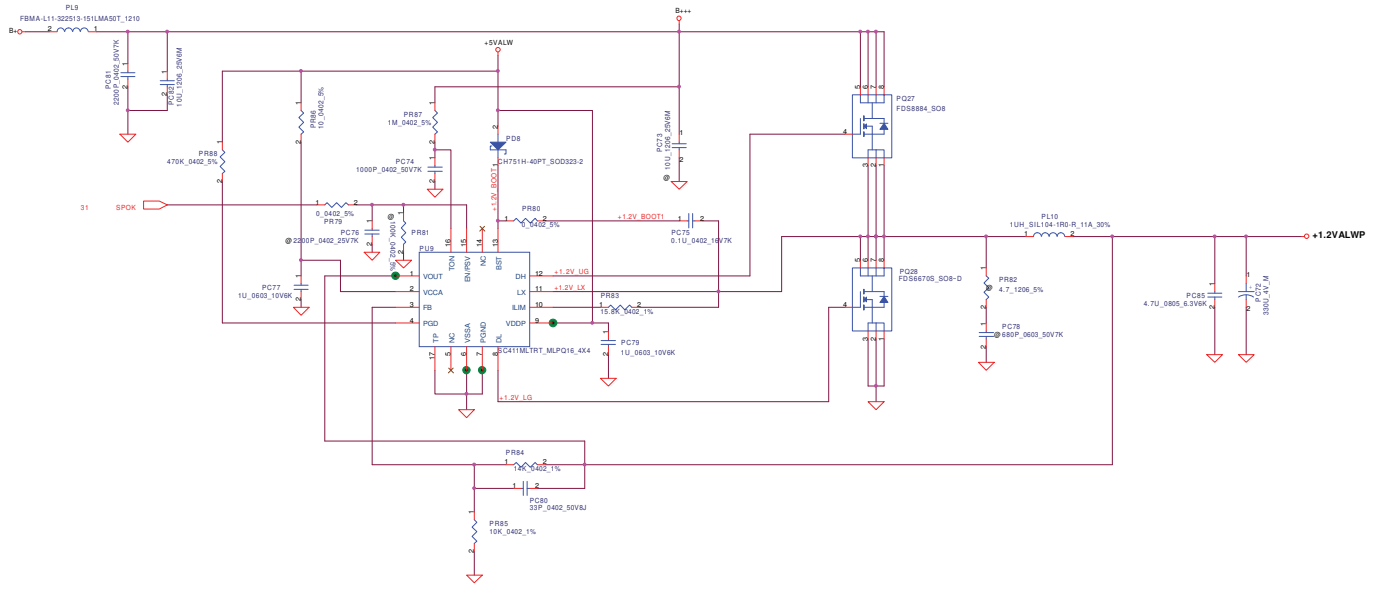
Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.	
Title	3.3VALWP / 5VALWP
Size	Document Number
Rev	
Date: Monday, March 05, 2007	Sheet 31 of 36



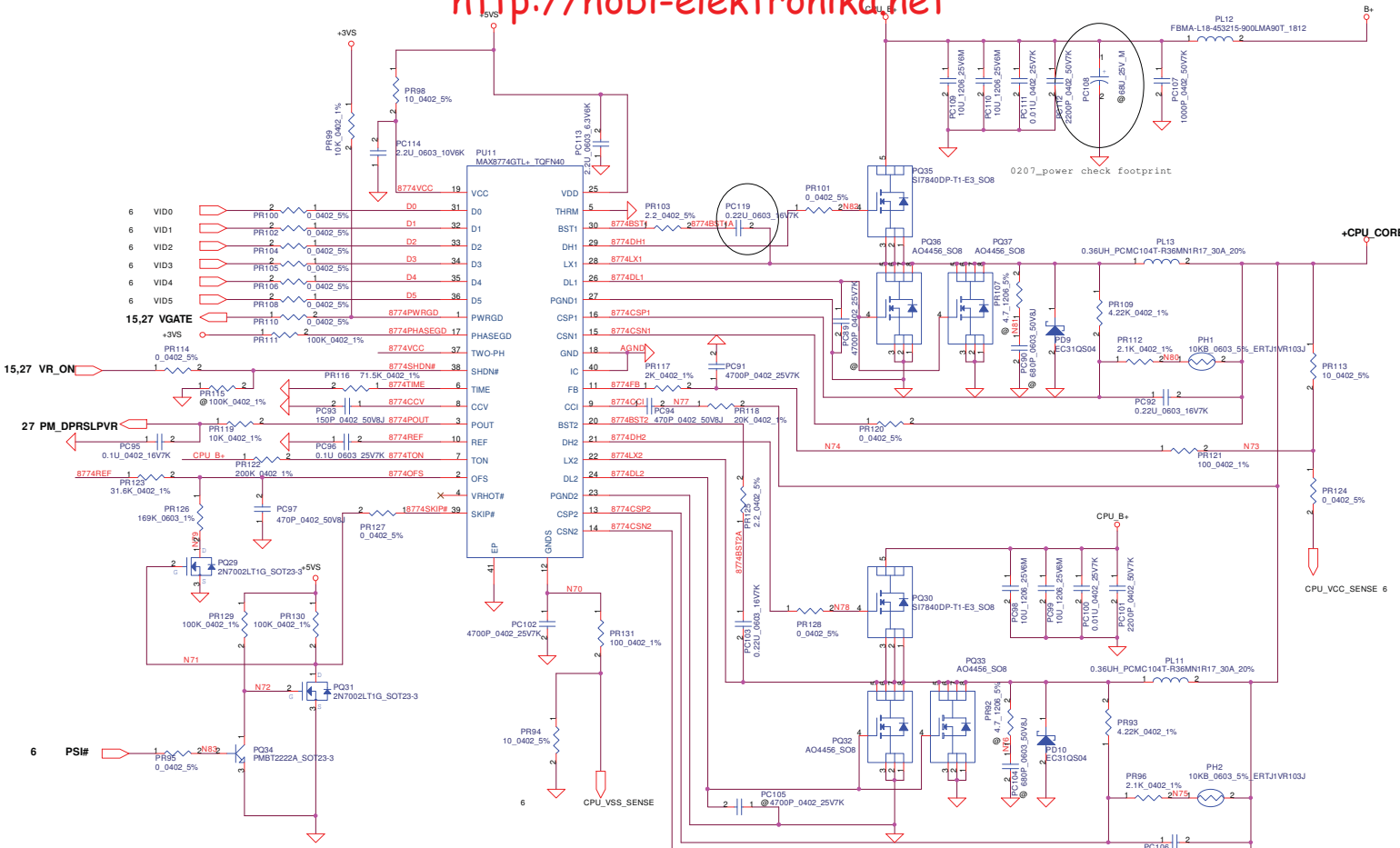
Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.			
Title	1.8VP/0.9VSP/2.5VSP		
Size	Document Number		Rev
	LA-3733P		0.1
Date:	Monday, March 05, 2007	Sheet	32 of 36



Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.			
Title	1.2V_VP/1.5VSP/1.05VP		
Size	Document Number		Rev
	LA-3733P		0.1
Date:	Monday, March 05, 2007	Sheet	33 of 36



Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.

Title: **+CPU_CORE**

Size	Document Number	Rev
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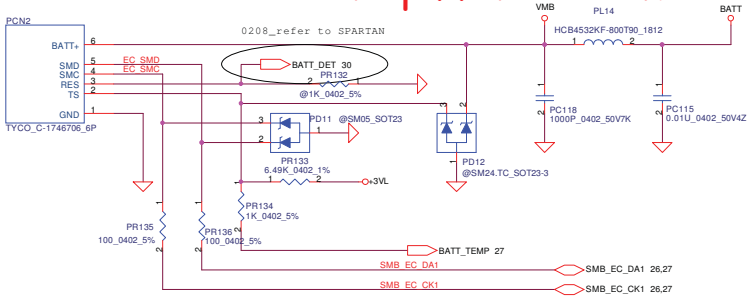
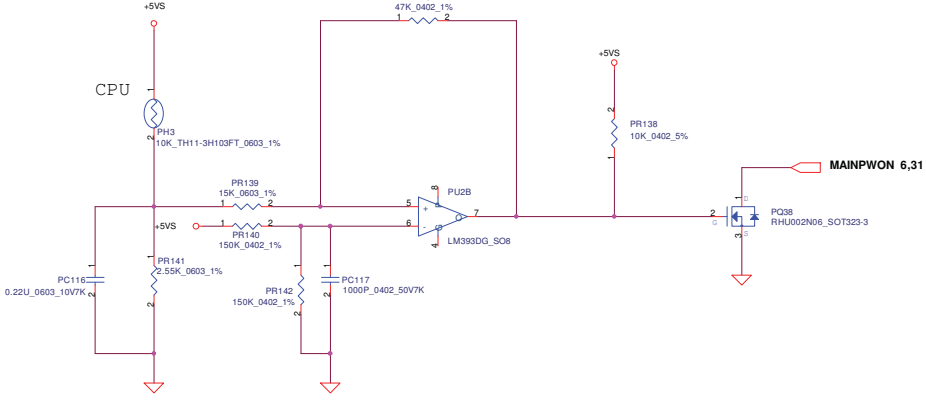


PH1 under CPU botten side :
CPU thermal protection at 90 +-3 degree C
Recovery at 47 +-3 degree C



Security Classification	Compal Secret Data		
Issued Date	2007/01/07	Deciphered Date	2008/01/12

Compal Electronics, Inc.			
Title: BATTERY CONN			
Size: Custom	Document Number: LA-3733P		Rev
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Version change list (P.I.R. List)

Power section

Item	Reason for change	PG#	Modify List	Date	Phase
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Compal Electronics, Inc.

Title: PWR PIR

Size: Custom | Document Number | Rev: 0.1

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Power On Sequence (AC IN mode)