

Mariana 3 Block Diagram -- Pine Trail-M

01

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G-Sensor

Thermal Sensor

Intel

PineView-M

559 Micro-BGA

Clock Gengerator
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CPU VCORE
IMVP 6 (Page 38)

10.1" WSVGA
(1024x600) LCD
(Page 16)

LVDS

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SO-DIMM 1
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System Power
3V/5VPCU SVR (Page 37)

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RGB

VCCP Power
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X2 DMI

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SSD Module
(Option) (Page 20)

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10/100M
Ethernet
Realtek
RTL8103EL

PCIe

Intel

TigerPoint

360 BGA

PCIe /USB

Mini PCIe Slot

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WWAN Module/
SSD Module

HP/Mic
Audio
Jack

HDA CODEC
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HD Audio

PCIe /USB

Mini PCIe Slot

WLAN
Module

USIM Card

USB

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Audio AMP
TIC TPA6017A2

LPC BUS

Internal
MIC

Internal
SPK

ITE8502E
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USB

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USB

Card Reader
RTS5159 (Page 22)

5 in 1 (SD/MMC/
MS/MSPRO/XD)

USBx3

USB PORT X 3
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Int. KB
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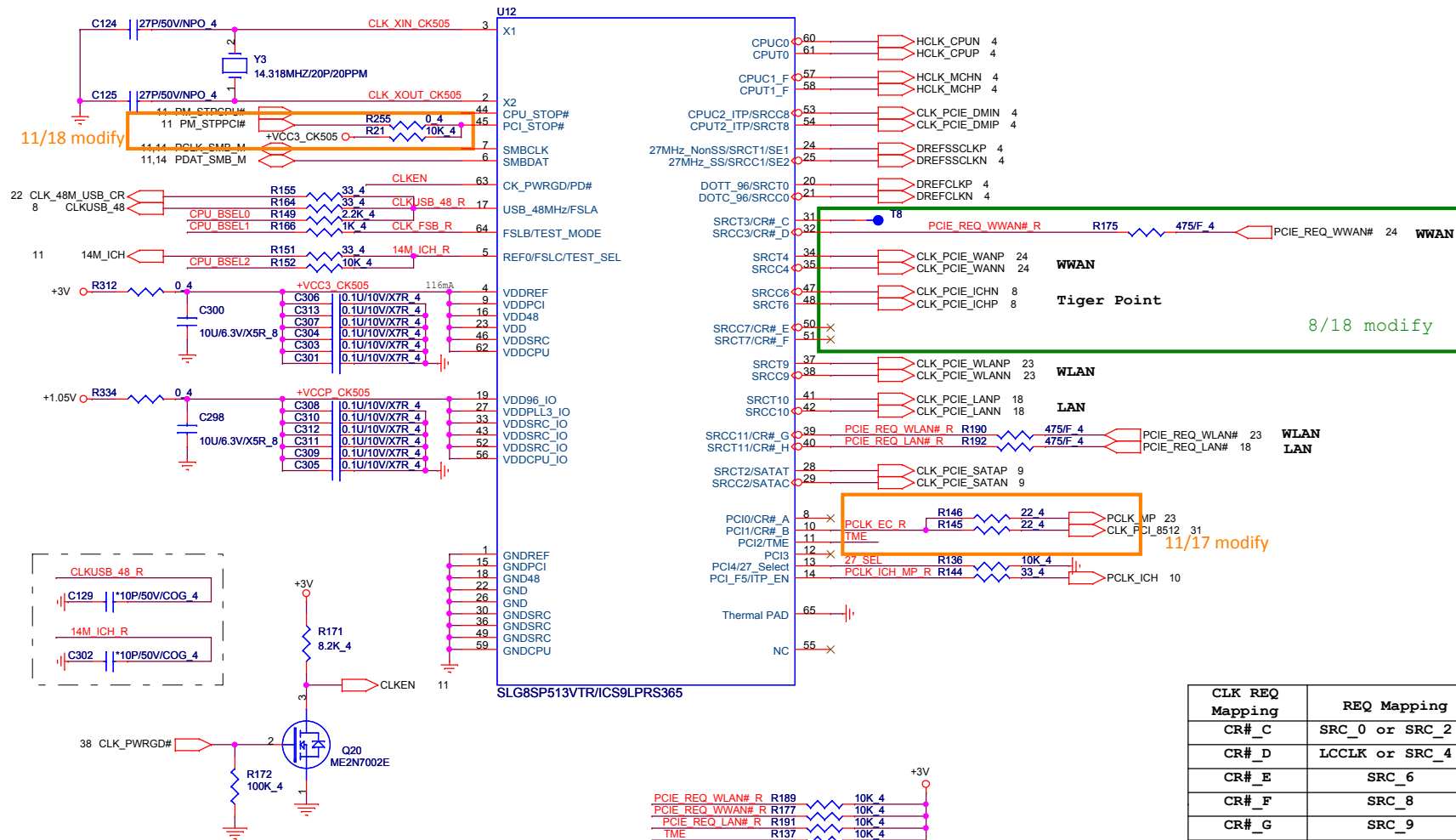
Battery
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39	VCC1.5V/ GFX CORE
40	Power Block Dianram

Power States

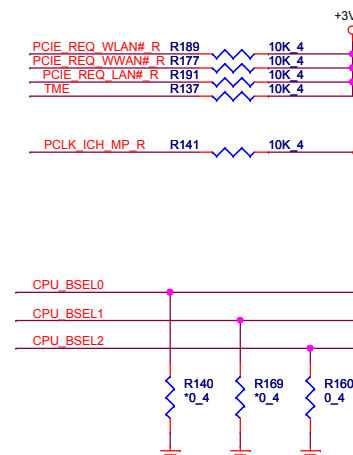
POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	10V~+20V	34,35,36,37,38	MAIN POWER		S0~S5
+3VRTC	+3.0V~+3.3V	11,12,31	RTC		S0~S5
3VPCU	+3.3V	11,15,18,25,26,28,30,31,34,36	ITE8052 POWER	3V5V_EN	S0~S5
5VPCU	+5V	11,30,31,32,33,34,36	DC/DC POWER IC SOURCE	3V5V_EN	S0~S5
+15V	+15V	15,30,32,34	LARGE POWER	3V5V_EN	S0~S5
LANVCC	+3.3V	18,30	LAN POWER	LAN_ON	
5V_S5	+5V	12,20,30	PCH SUS POWER	S5_ON	S0~S3
3V_S5	+3.3V	8,11,12,21,22,30	Sys Management,PCH Resume Well,Intel HD Audio,USB,WLAN WiMAX POWER	S5_ON	S0~S3
5VSUS	+5V	15,30,35,36	SLP_S4# CTRLD POWER	SUSON	S0~S3
3VSUS	+3.3V	26,30,35,36	SLP_S4# CTRLD POWER	SUSON	S0~S3
+VCC_GFX_CORE	+0.9V~+1.2V	6,36	VGA CORE POWER	MAIN_ON	S0
0.9VSMDDR_VTERM	+0.75V	5,14,32	DDR2 SODIMM REFERENCE POWER	MAIN_ON	S0
+5V	+5V	12,15,16,17,19,25,27,28,30	SLP_S3# CTRLD POWER	MAIN_ON	S0
+3V	+3.3V	3,4,6,9,10,11,12,14,15,16,17,18,19,21,22,23,24,26,28,30,32,33,34,35	SLP_S3# CTRLD POWER	MAIN_ON	S0
+1.8V	+1.8V	6,21,32	LVDS,NVM POWER	MAIN_ON	S0
+1.5V	+1.5V	6,8,12,17,22,23,36	Mini PCIe,Express Card POWER	MAIN_ON	S0
+1.05V	+1.05V	3,4,6,9,12,30,33	PCH CORE POWER	MAIN_ON	S0
VCC_CORE		6,30,35	CPU CORE POWER	VRON	S0
+LCDVCC	+3.3V	15	LCD Power	L_VDD_EN	S0
BAT-V	+10V~+17V	31	MAIN BATTERY	CHG_PBATT	S0~S5

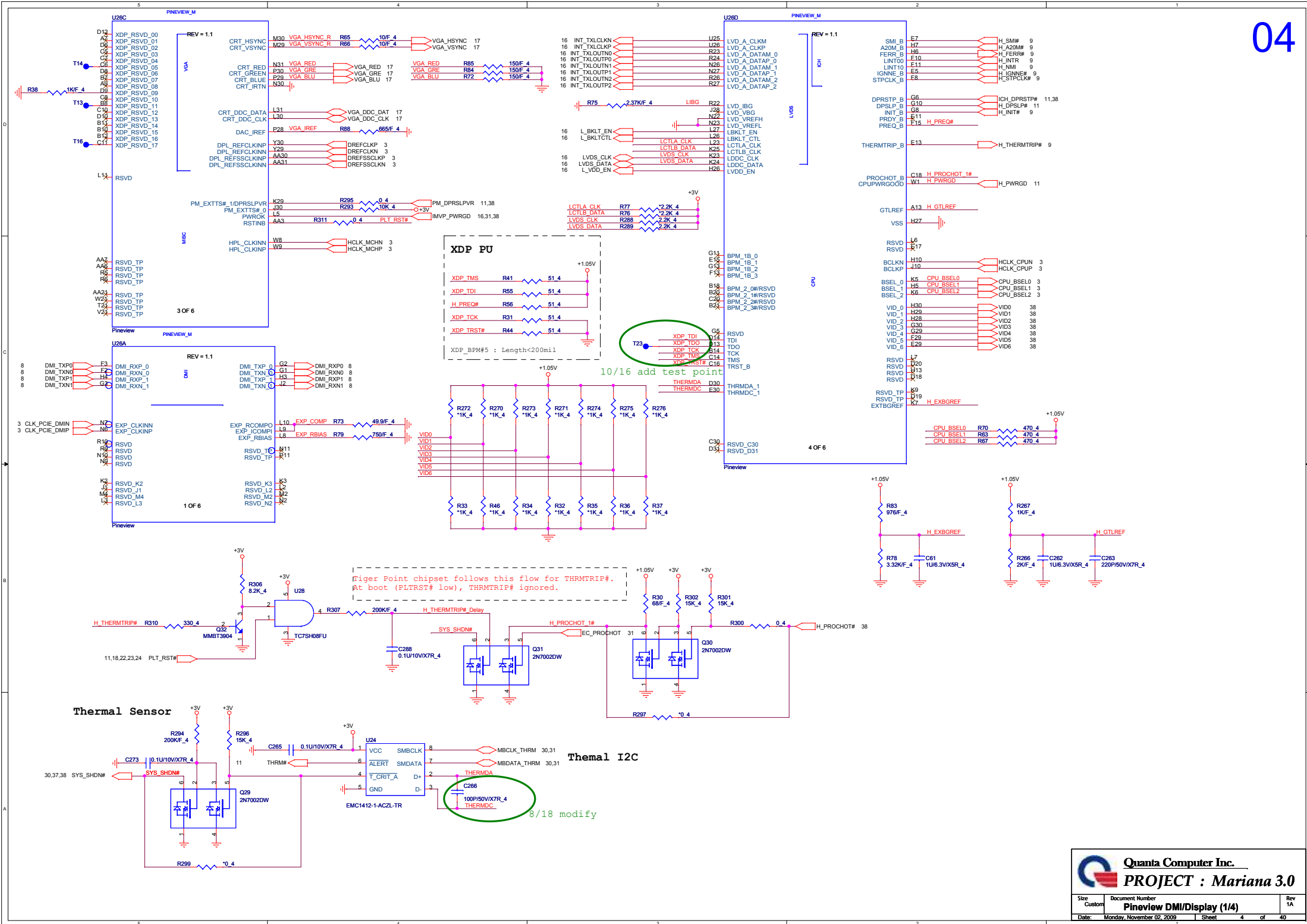


CLK REQ Mapping	REQ Mapping
CR#_C	SRC_0 or SRC_2
CR#_D	LCCLK or SRC_4
CR#_E	SRC_6
CR#_F	SRC_8
CR#_G	SRC_9
CR#_H	SRC_10

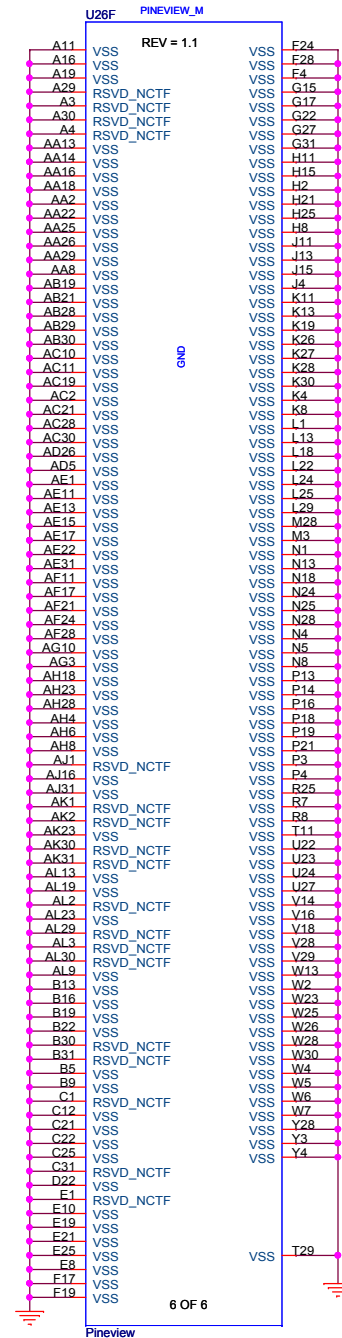
27 Select PIN13	PIN 20/21	PIN 24/25
* 0	DOT_96 / DOT_96#	LCDCCLK / LCDCCLK#
1	SRC_0 / SRC_0#	27M / 27M_SS


ITP_EN (PIN14)	PIN53/54
* 0	SRC8#/SRC8
1	ITP/ITP#

[illegible]









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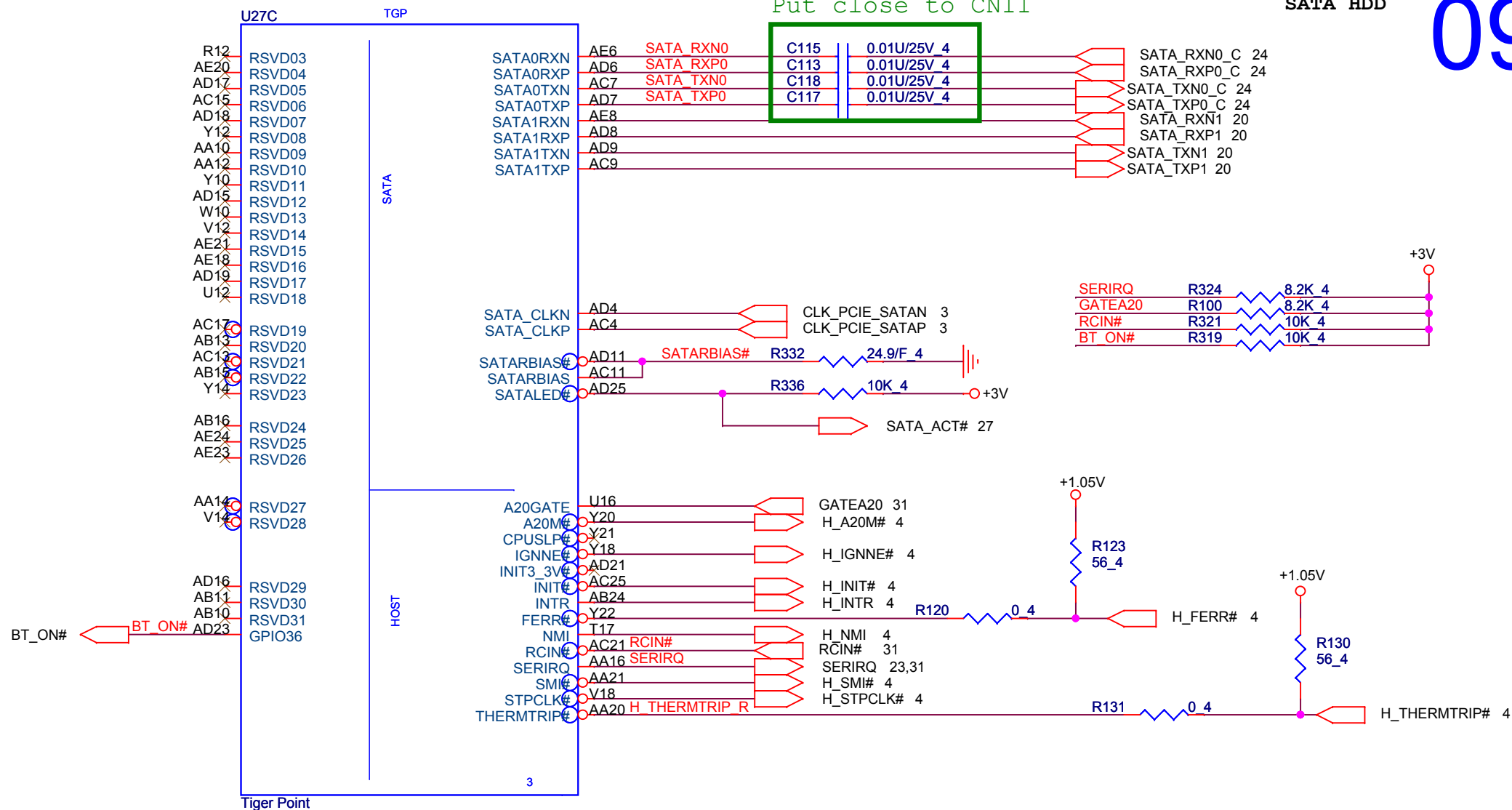
Size Custom	Document Number Pineview GND (4/4)	Rev 1A
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09

SATA HDD

Put close to CN11



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Size
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Document Number

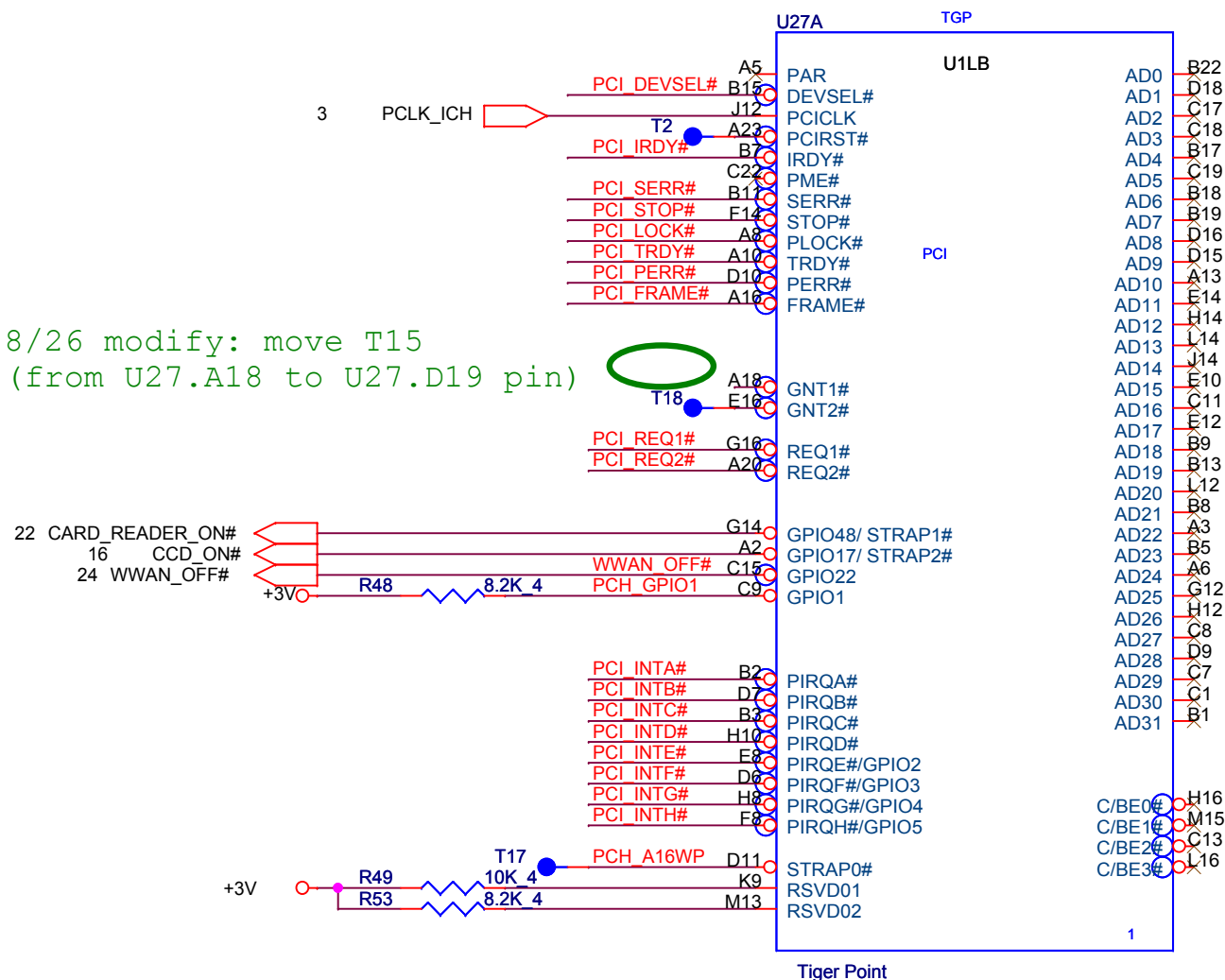
TigerPoint Sata/Host(2/6)

Rev
1A

Date: Monday, November 02, 2009

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8/26 modify: move T15
(from U27.A18 to U27.D19 pin)

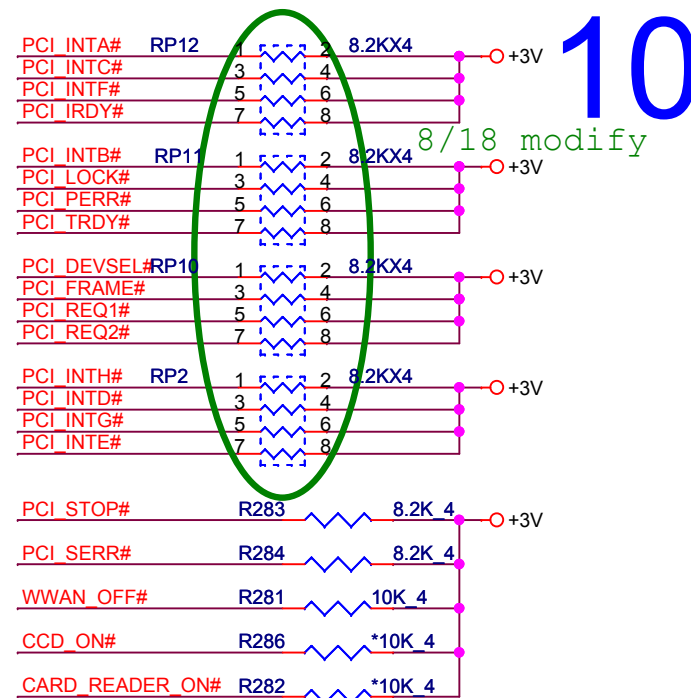


ICH Boot BIOS select

PCH_GPIO17 (INT PU)	PCH_GPIO48 (INT PU)	Boot BIOS Location
0	1	SPI
1	0	PCI
1	1	LPC (Default)

A16 SWAP Override strap

PCH_A16WP (INT PU)	Low = A16 swap override enabled High = Default
-----------------------	---



IRQ	Description
PIRQA	USB UHCI Controller #1, #4
PIRQB	AC'97 Codec; option for SMBUS
PIRQC	USB UH Controller #3; SATA/IDE Native Mode
PIRQD	USB UHCI Controller #2
PIRQE	Internal LAN; Option for SCI, TCO, HPET#0,1,2
PIRQF	Option for SCI, TCO, HPET#0,1,2
PIRQG	Option for SCI, TCO, HPET#0,1,2
PIRQH	USB EHCI Controller; Option for SCI, TCO, HPET#0,1,2

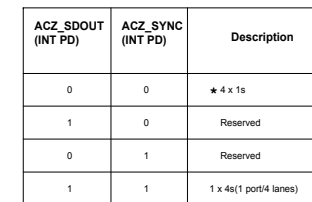
PCI_GNT#2	Internal PU Should not be PD
-----------	---------------------------------

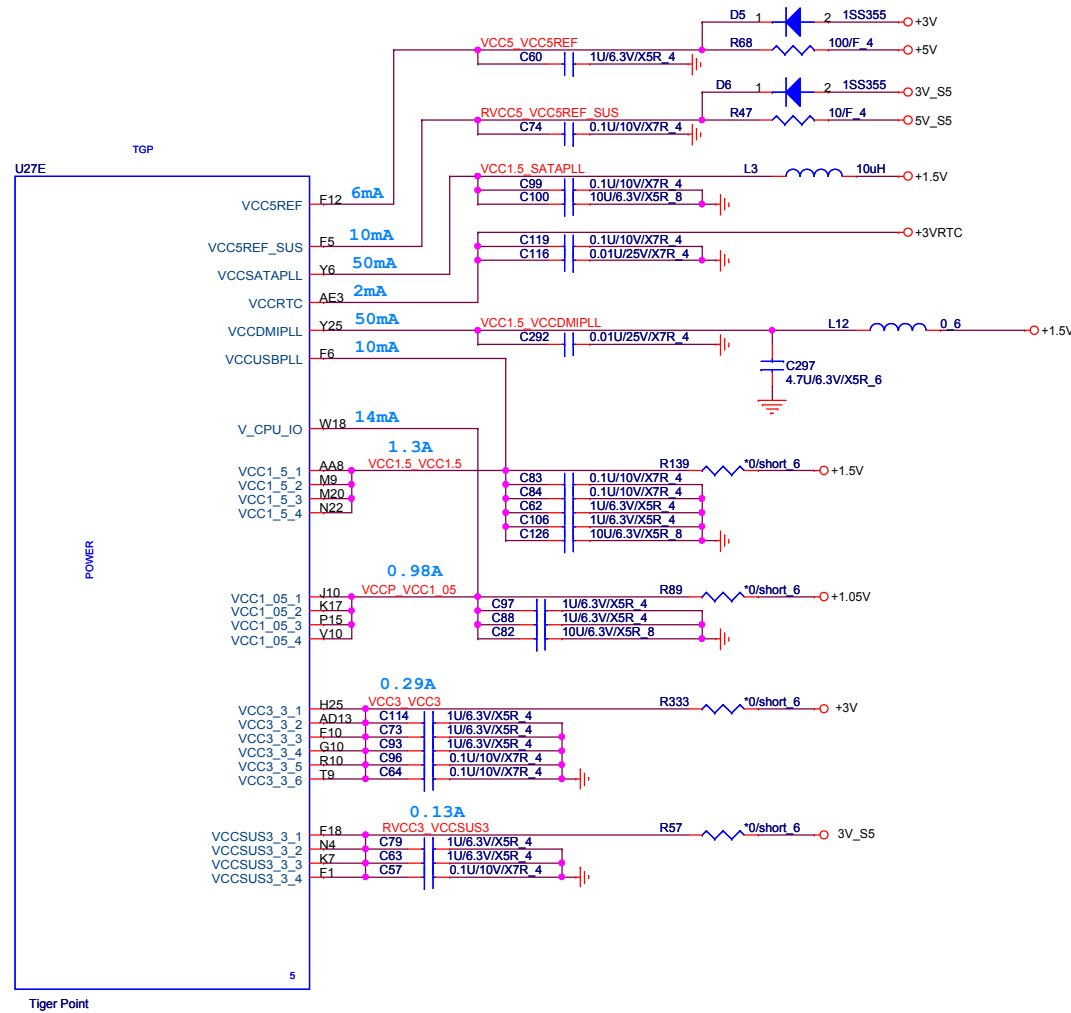


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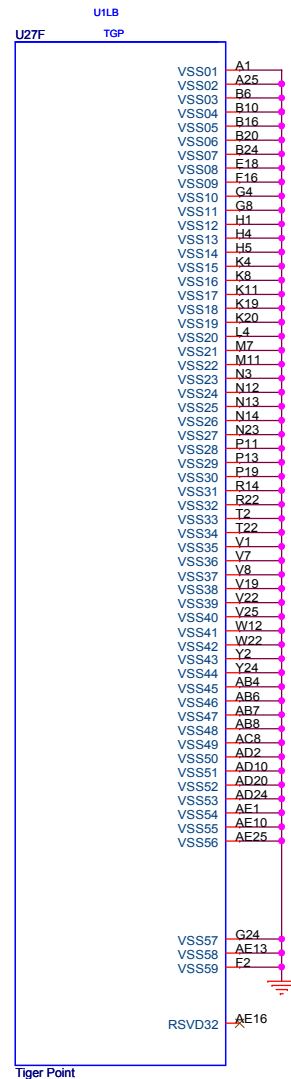
PROJECT : Mariana 3.0

Size Custom	Document Number TigerPoint PCI(3/6)	Rev 1A
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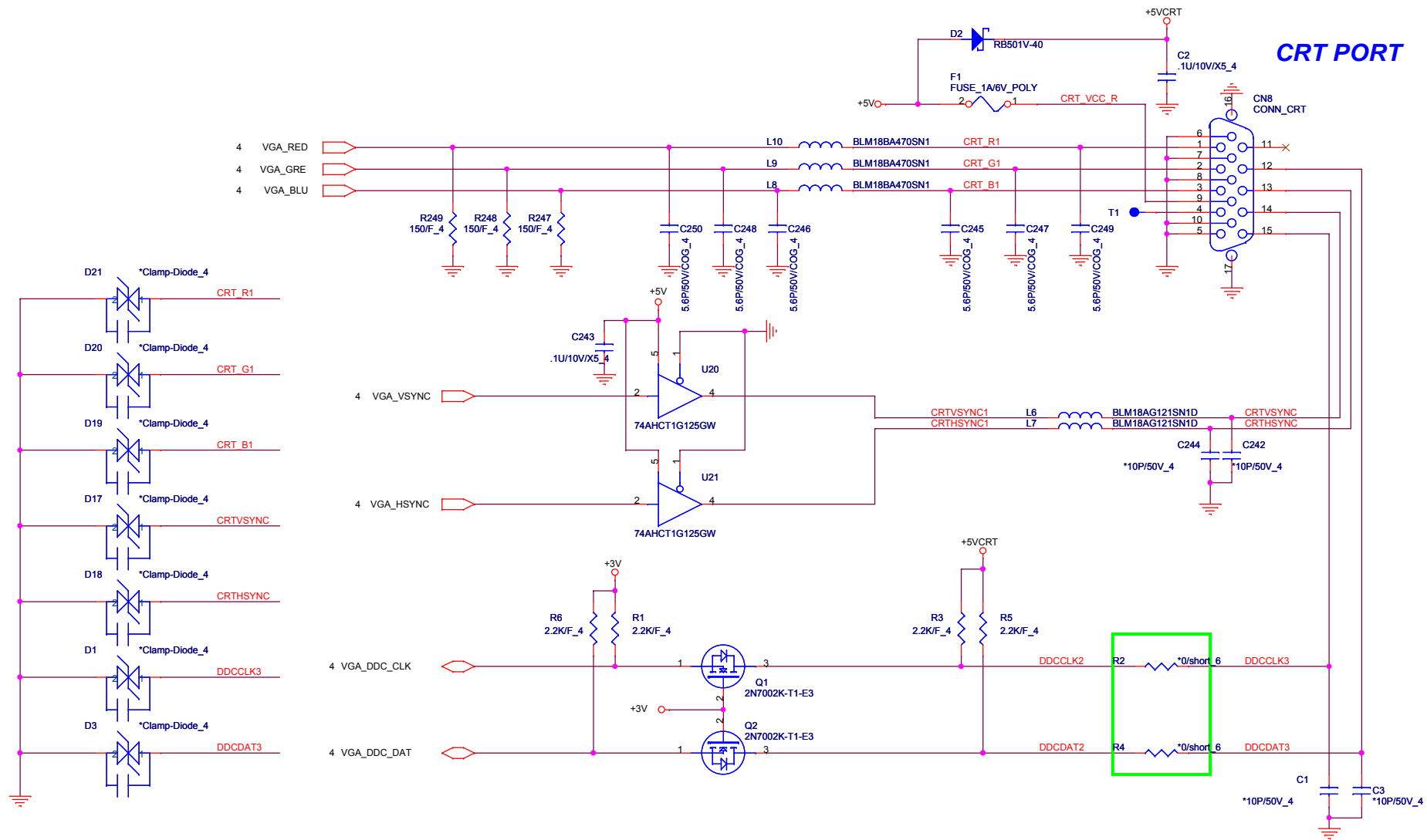
Tiger Point



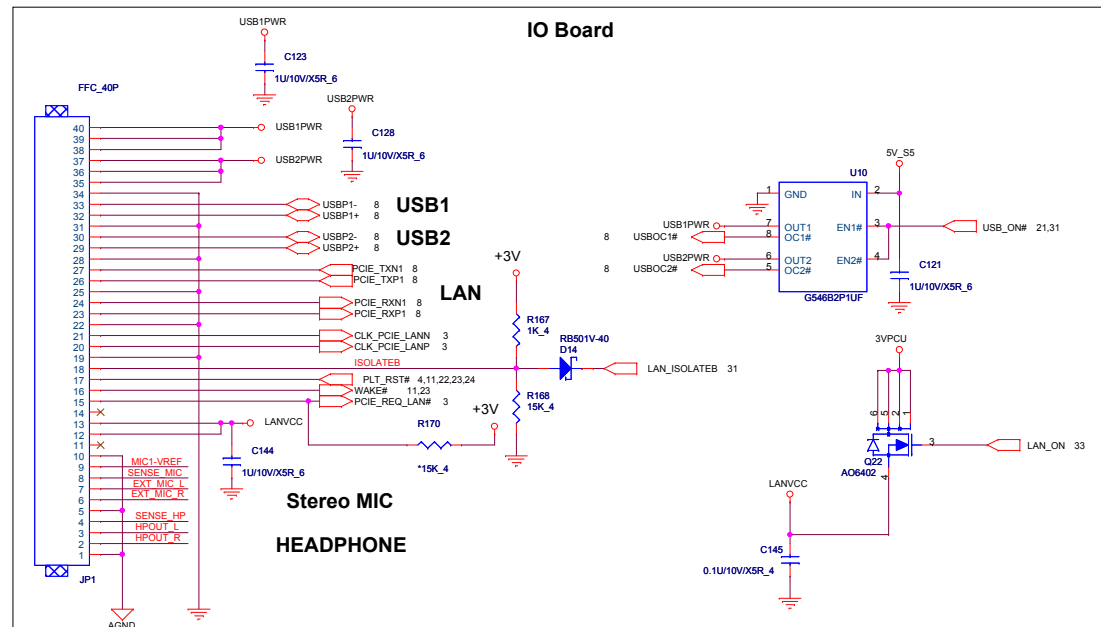
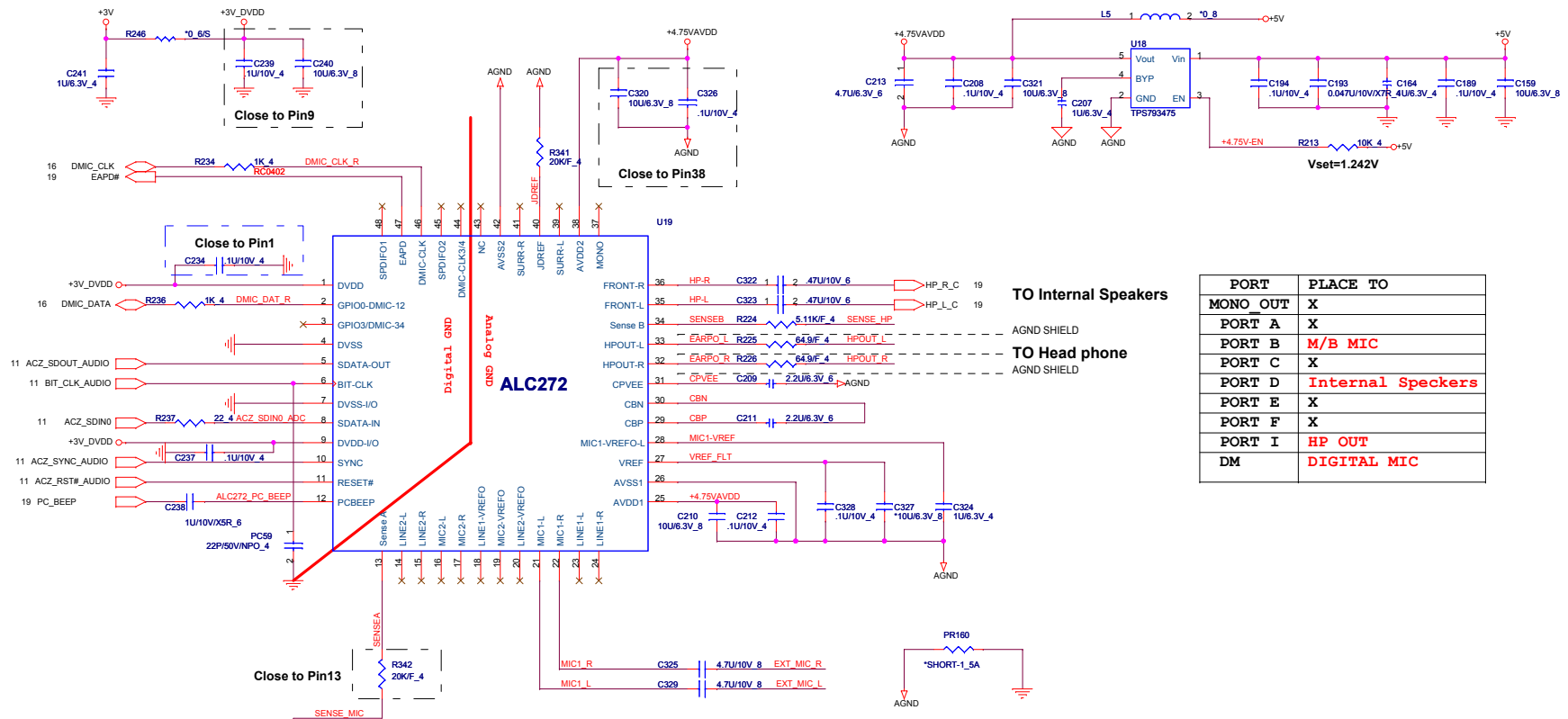
A

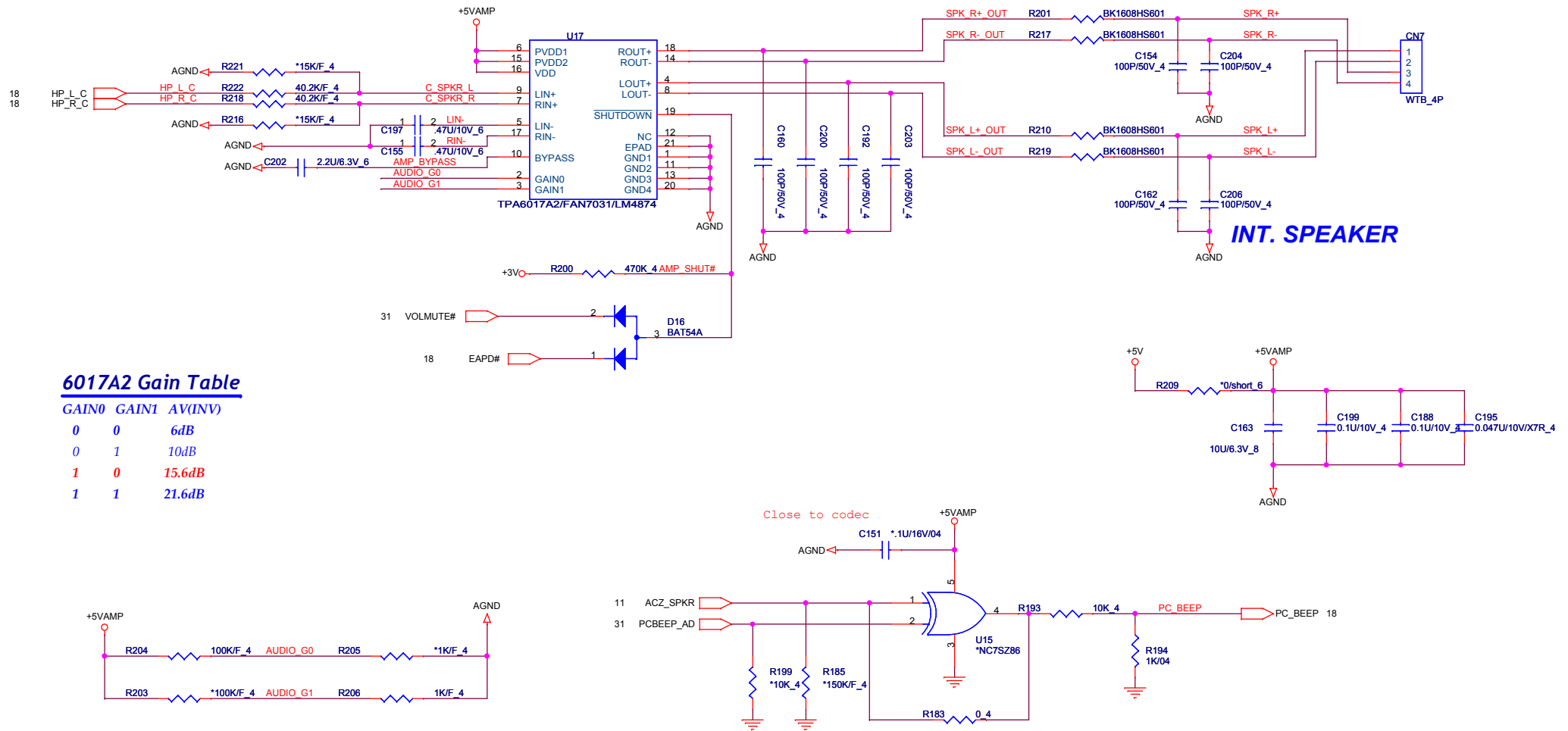
A

		
<u>Quanta Computer Inc.</u>		
PROJECT : Mariana 3.0		
Size Custom	Document Number HD Decoder(BCM70015)NA	Rev 1A
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HD Audio Bus

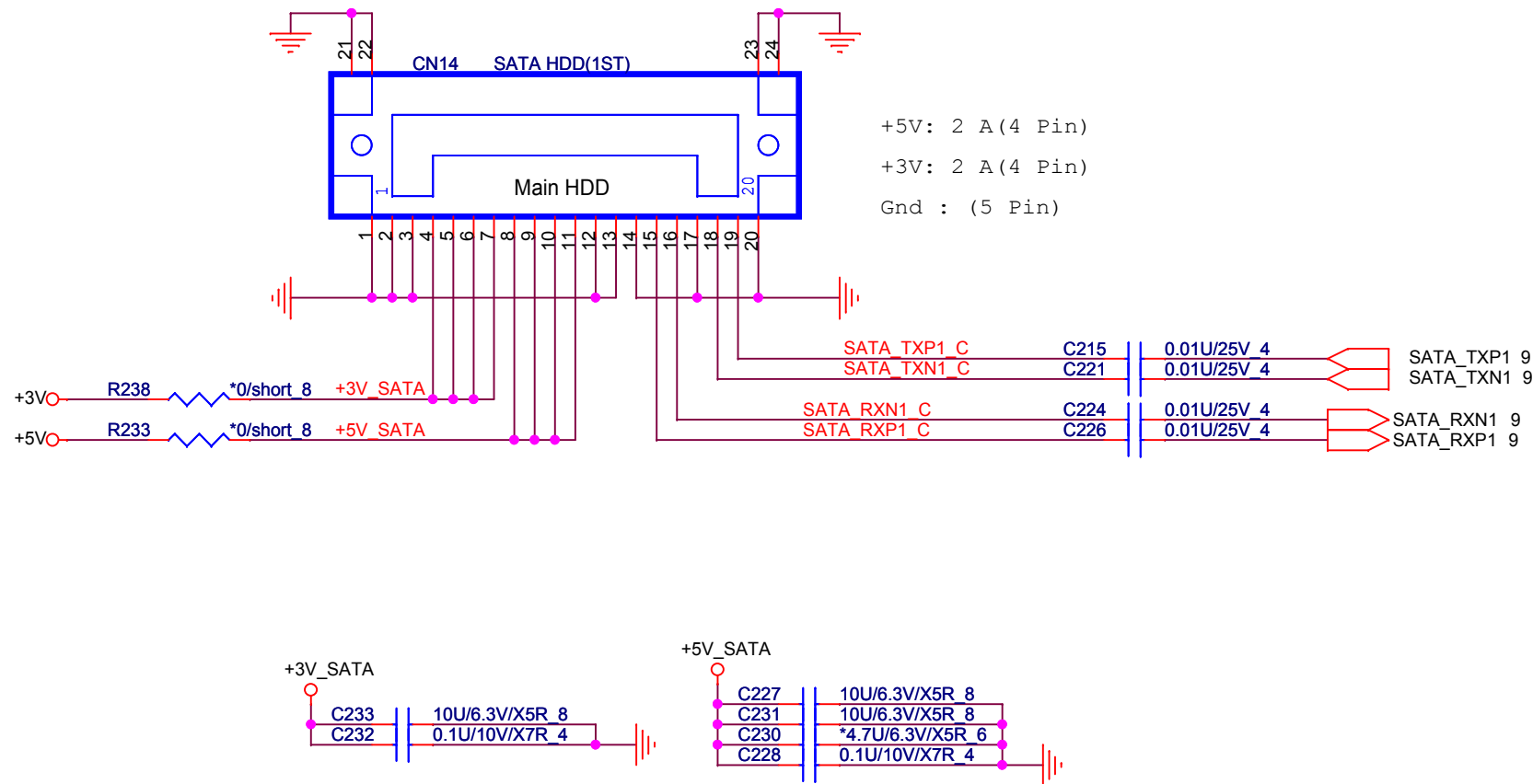




HDD

20

DC Current rating: 0.5 A



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SATARev
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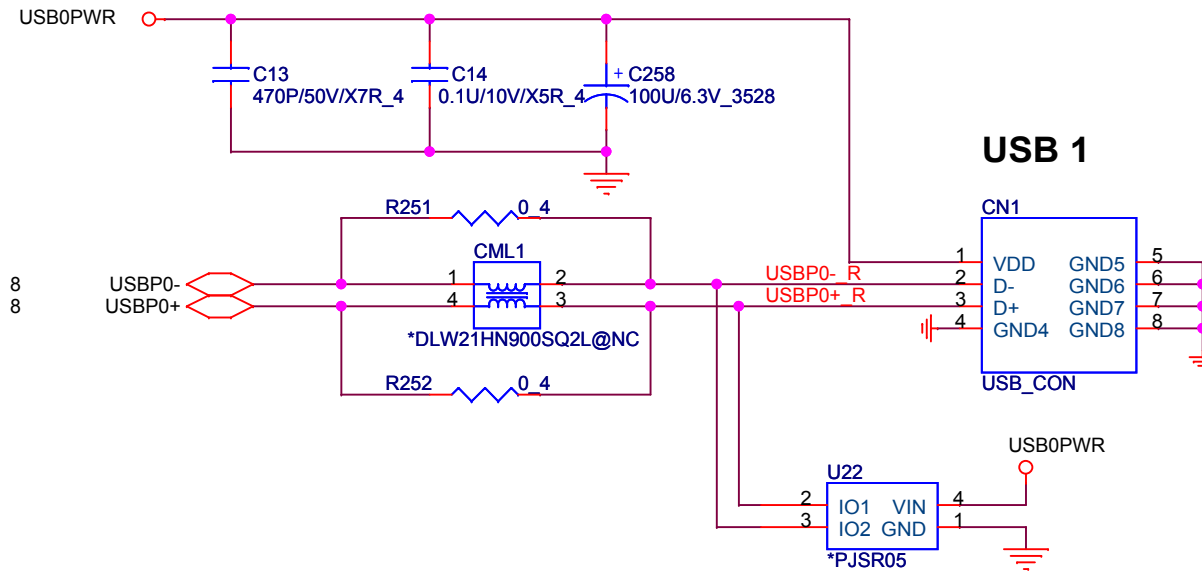
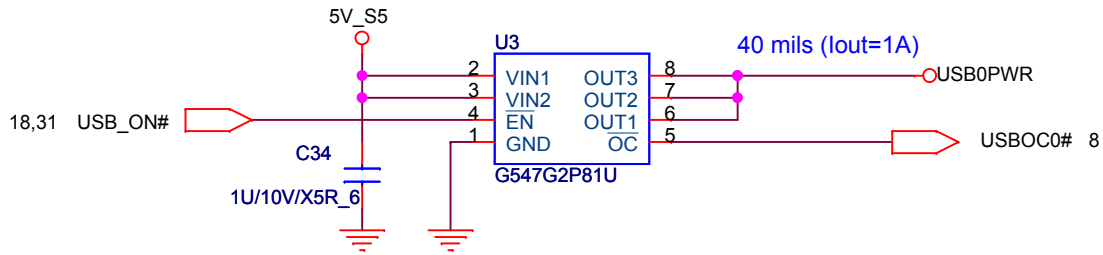
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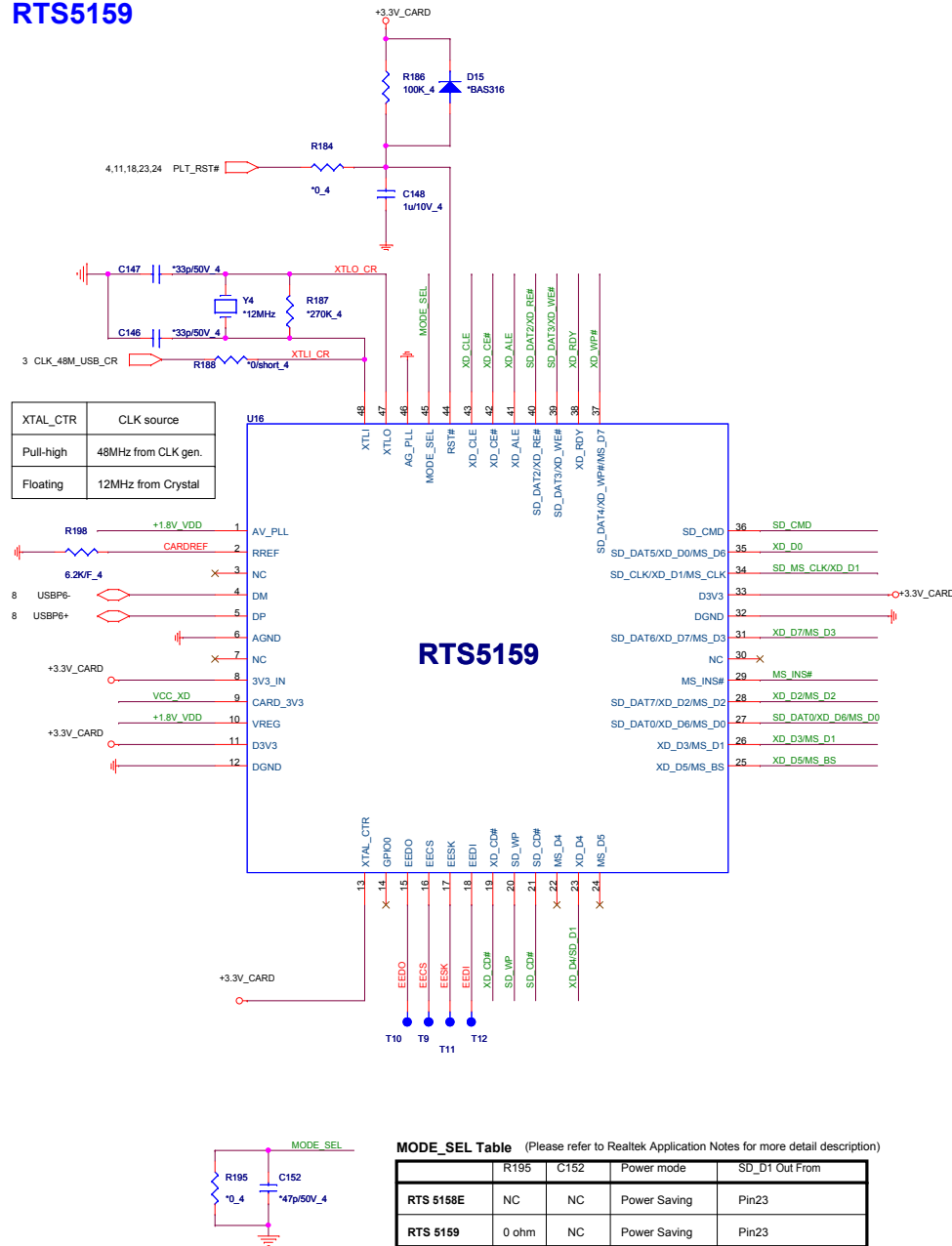
USB

Rev
1A

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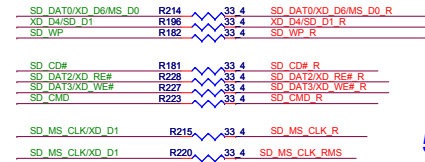
RTS5159



MODE_SEL Table (Please refer to Realtek Application Notes for more detail description)

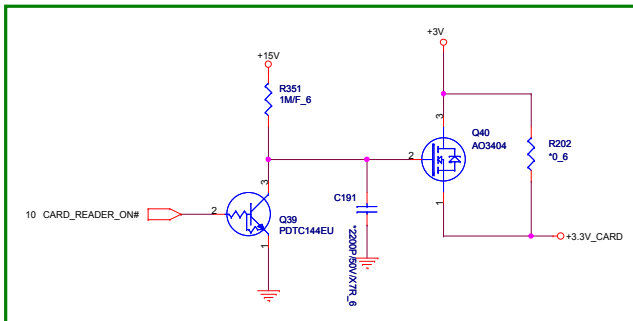
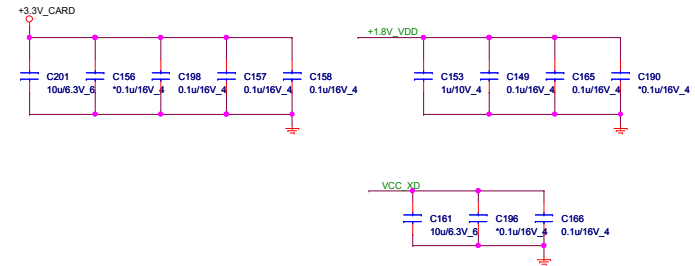
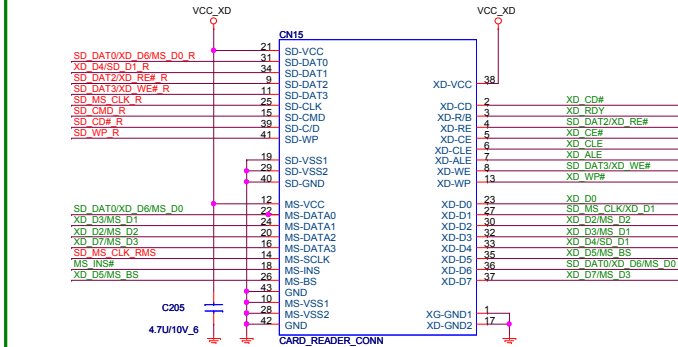
	R195	C152	Power mode	SD_D1 Out From
RTS 5158E	NC	NC	Power Saving	Pin23
RTS 5159	0 ohm	NC	Power Saving	Pin23

Power Saving mode need install Realtek icon driver.
USB Hotfix KB941600 is also needed for Vista SP0 but SP1.



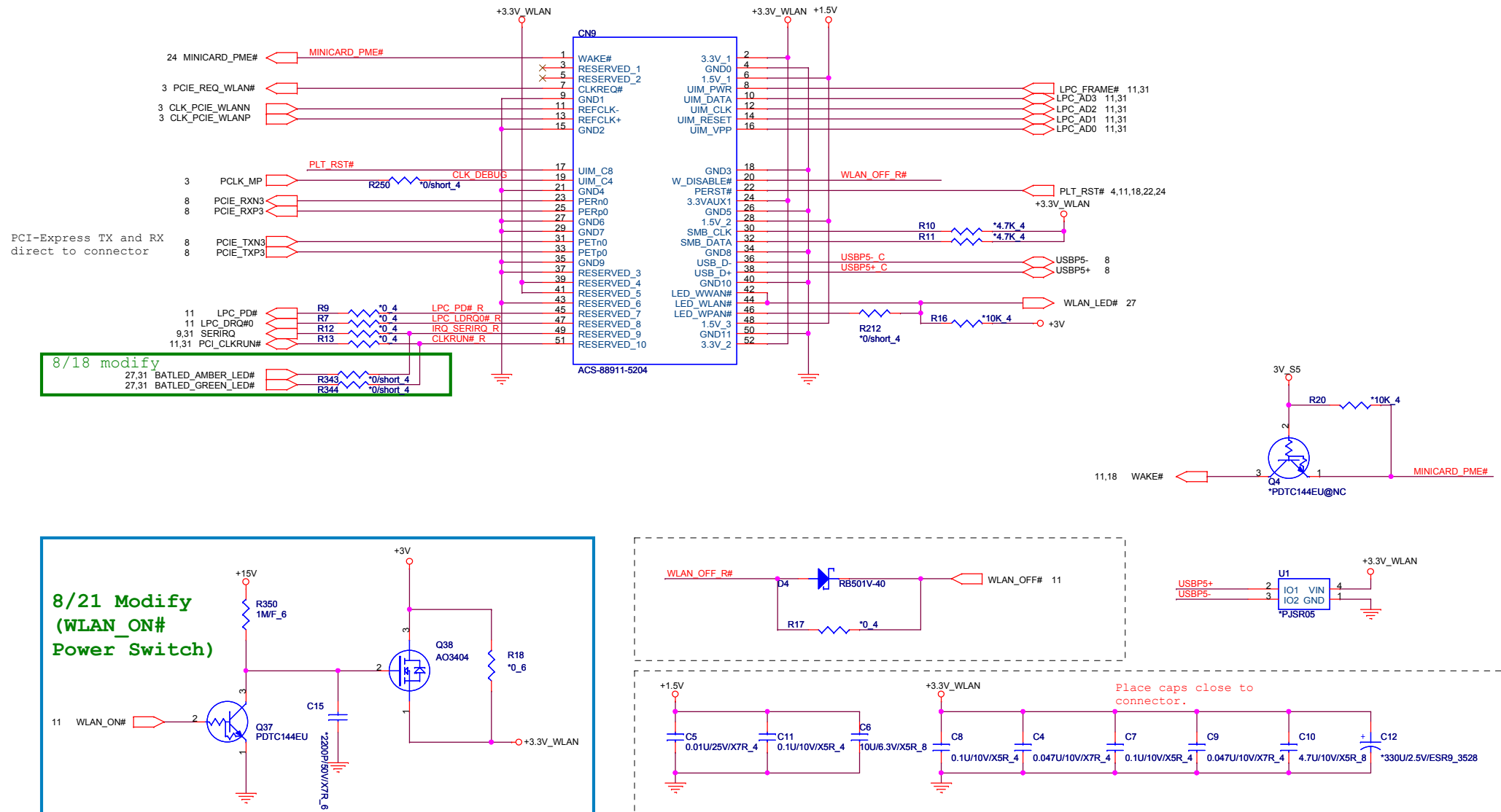
5 IN 1 CARD READER

```
10/01: change card reader connector from 3in1 to 5in1
```



8/21 Modify Card_Reader_On# Power Switch

MiniCard WLAN connector

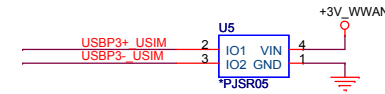
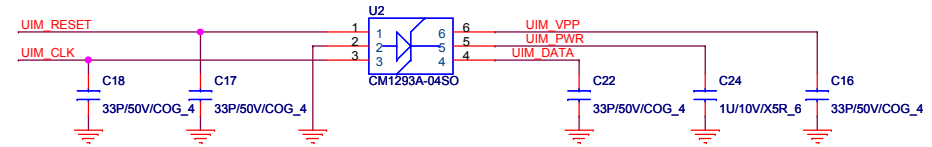


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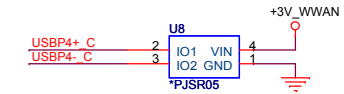
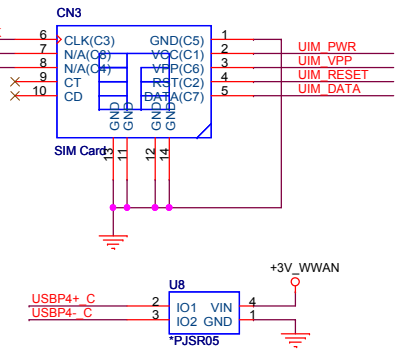
PROJECT : Mariana 3.0

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Custom	WLAN	1A
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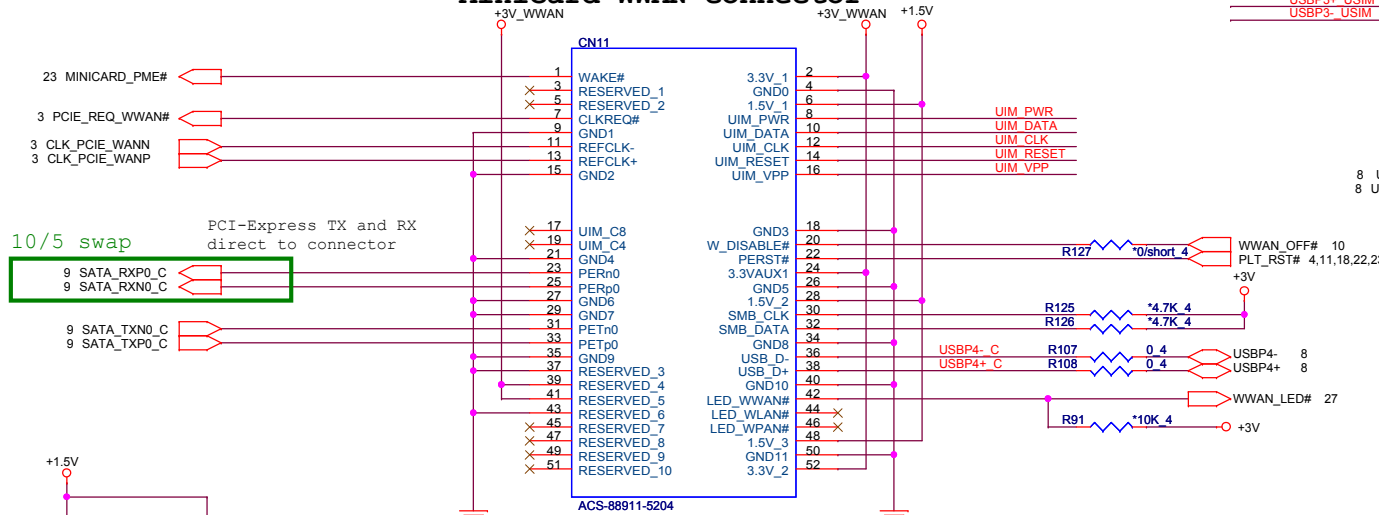
Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routing as short as possible



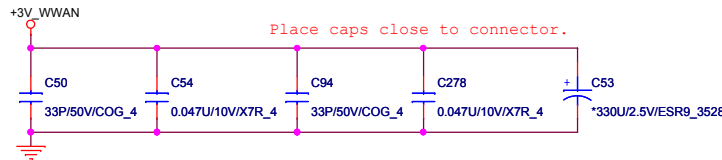
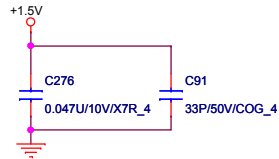
SIM Card CONN



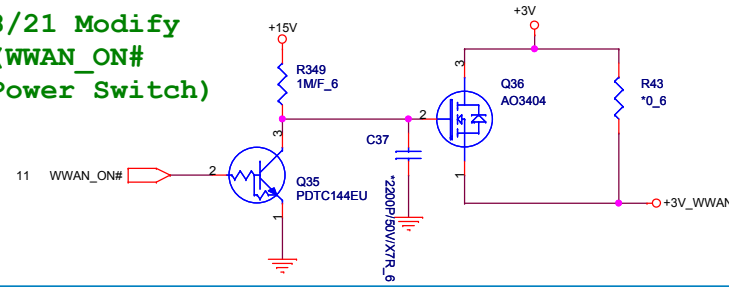
MiniCard WWAN connector

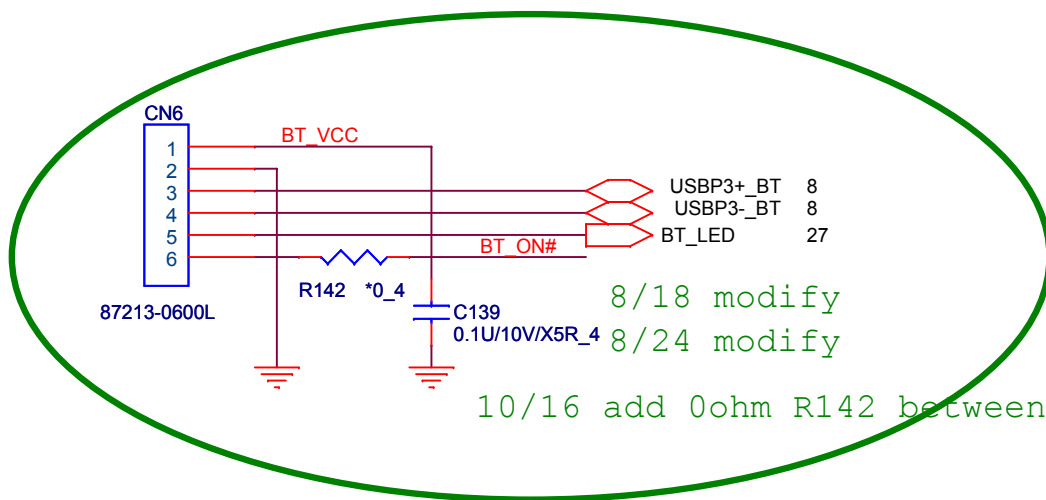
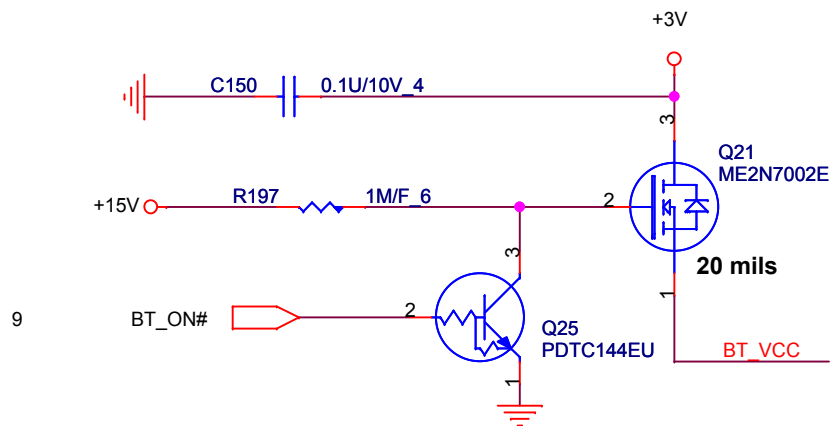


10/5 swap
PCI-Express TX and RX
direct to connector



8/21 Modify (WWAN_ON# Power Switch)





8/18 modify
8/24 modify
10/16 add 0ohm R142 between CN6.pin6 and BT_ON#.



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Size
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Document Number

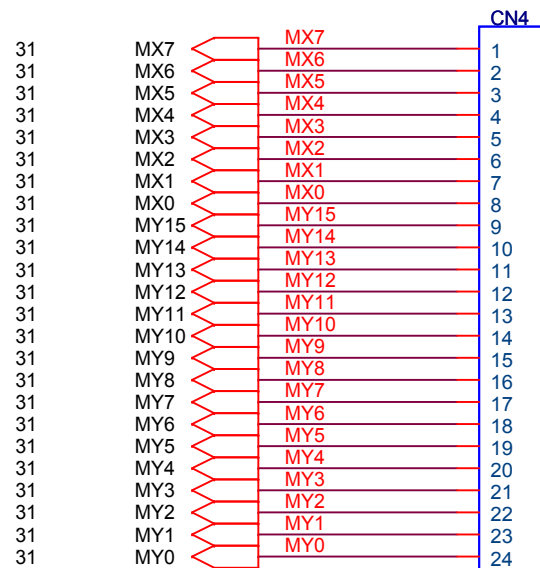
BLUETOOTH

Rev
1A

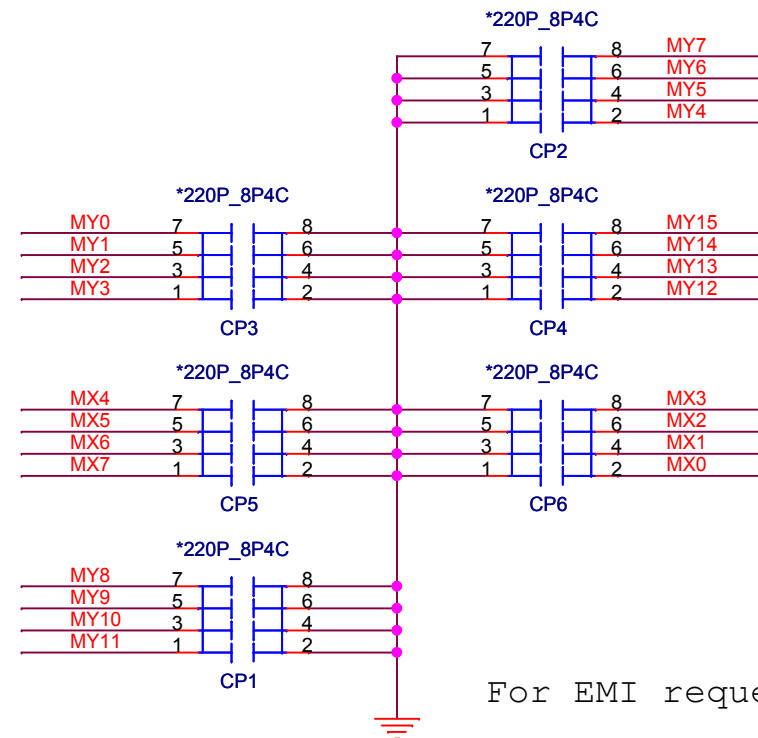
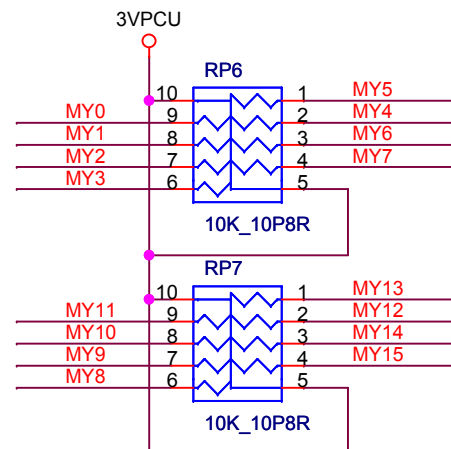
Date: Friday, October 16, 2009

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KEYBOARD

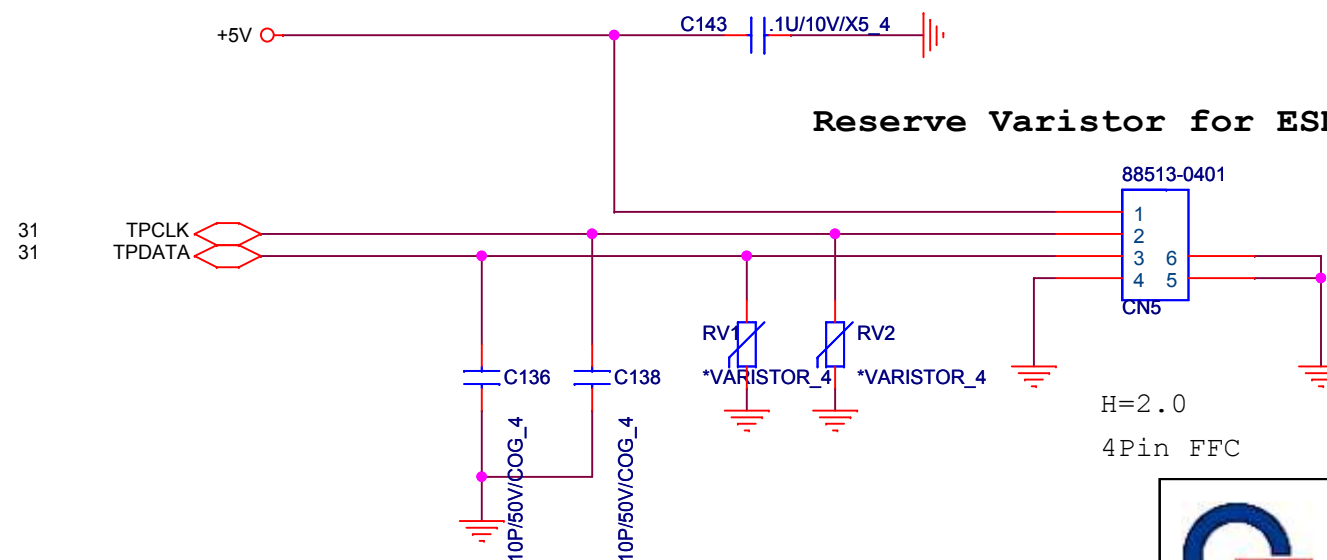


KB-CON(85201-24051)



For EMI request

Touch pad



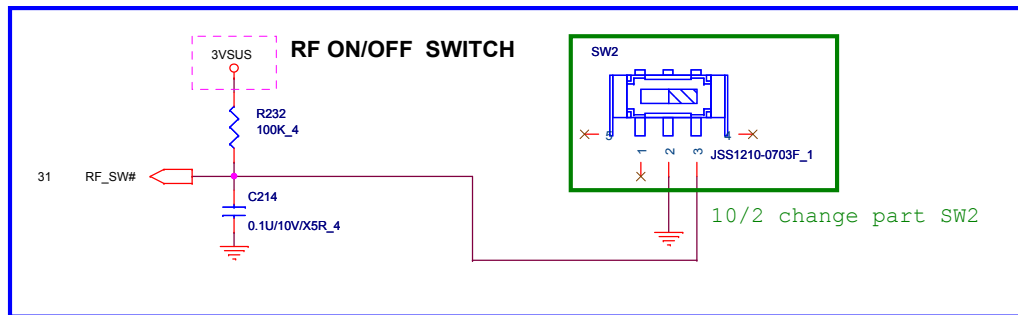
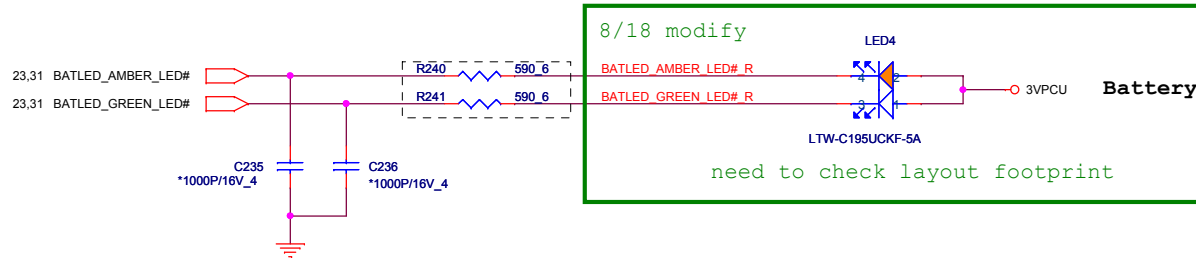
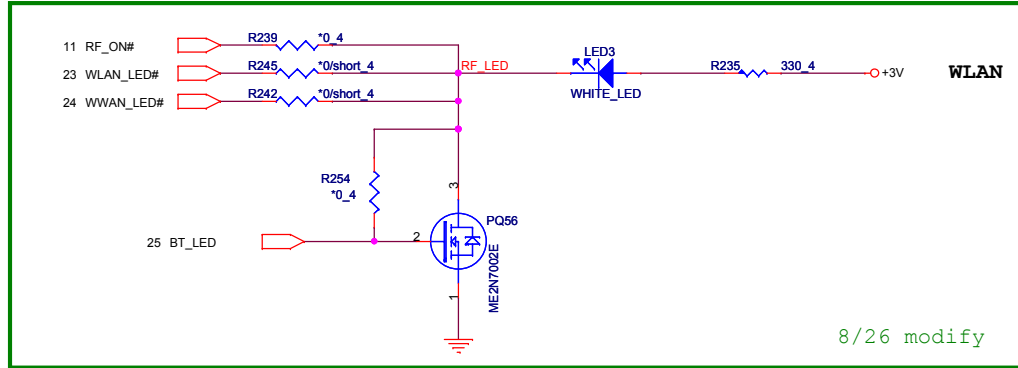
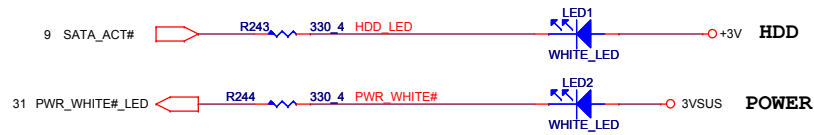
Reserve Varistor for ESD Mika 20090422

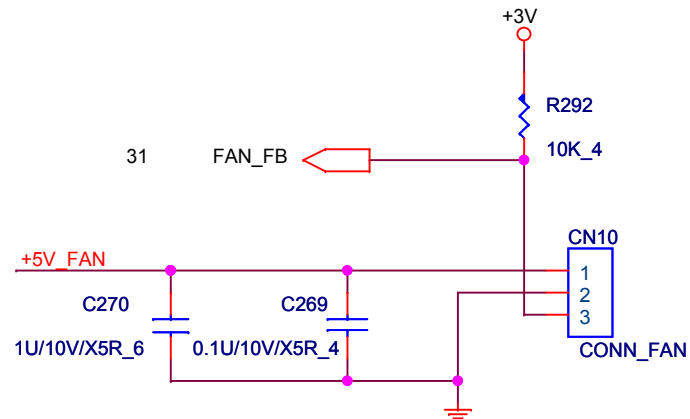
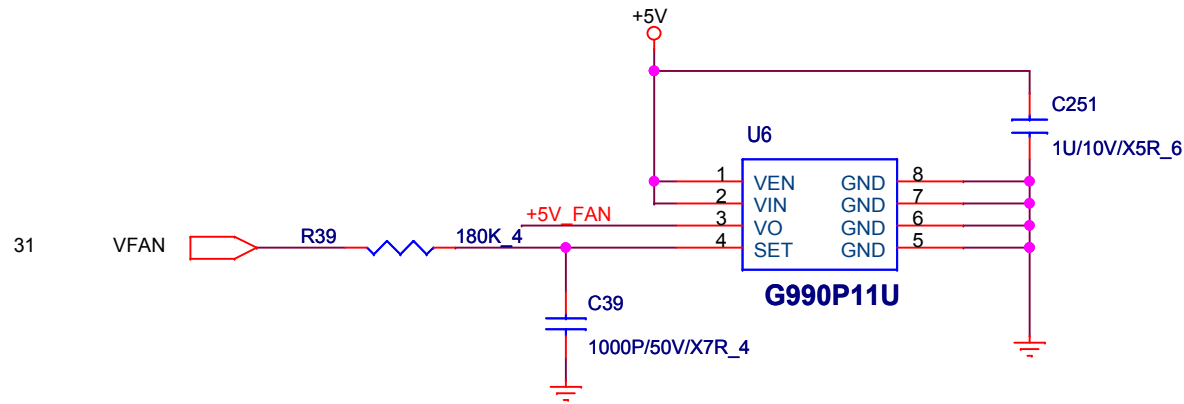


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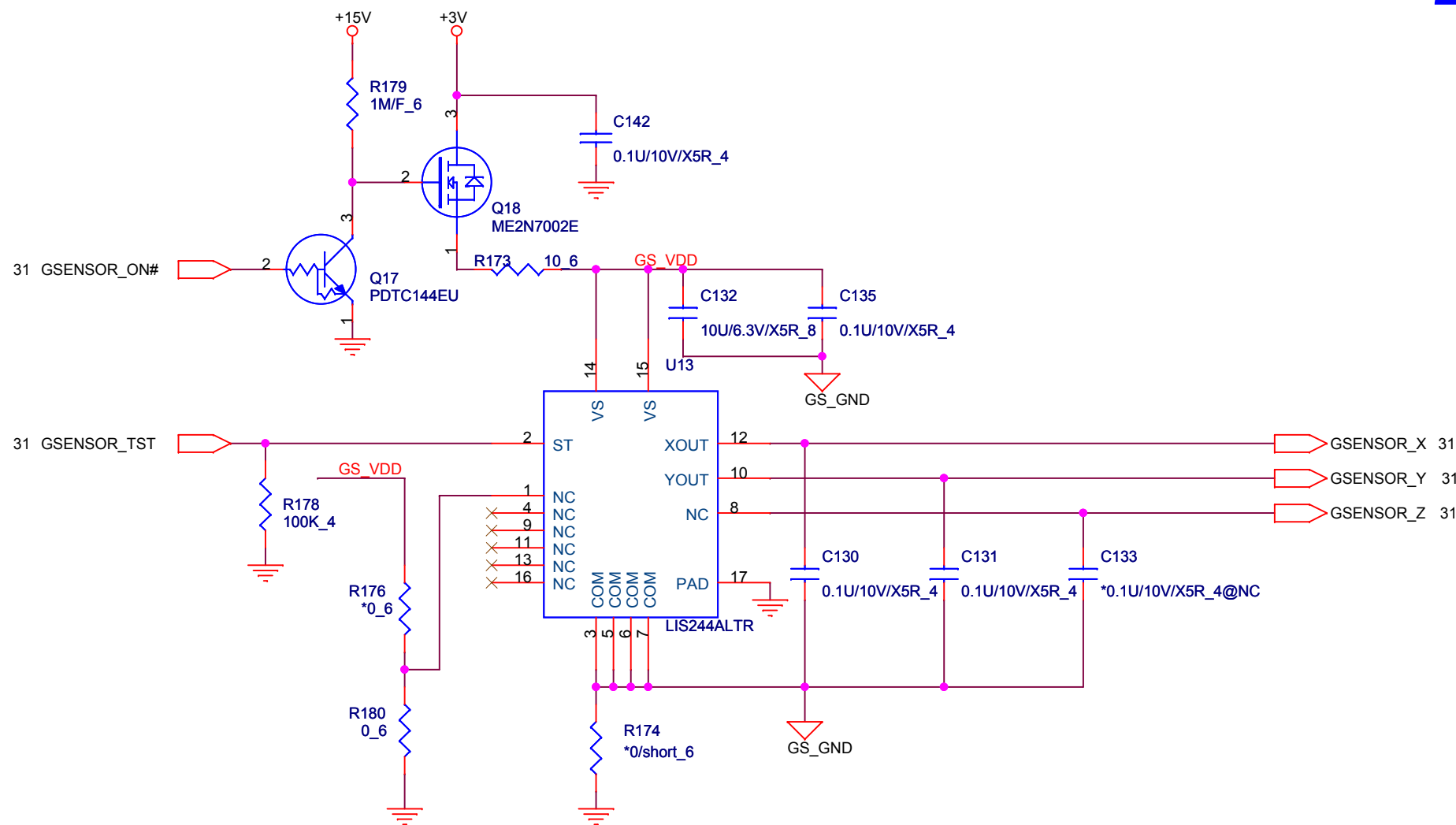
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FAN

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1A

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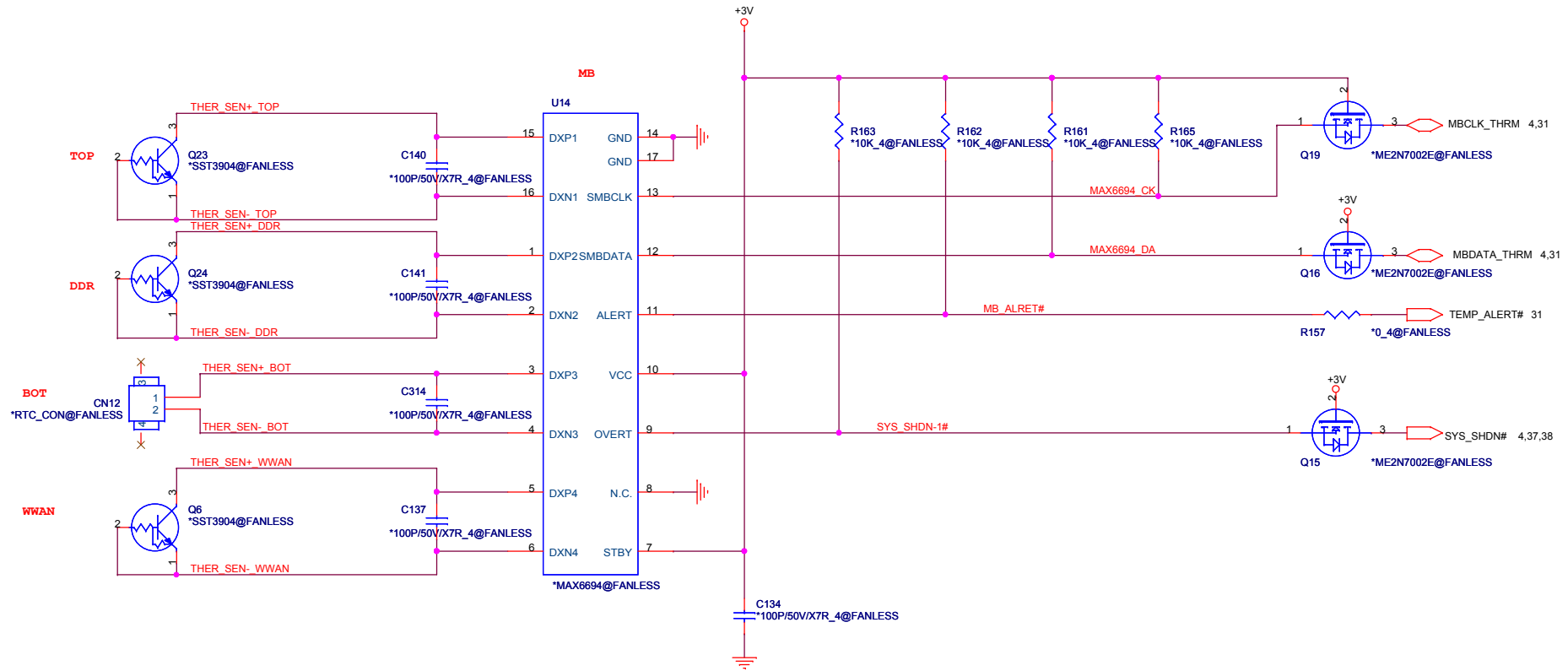


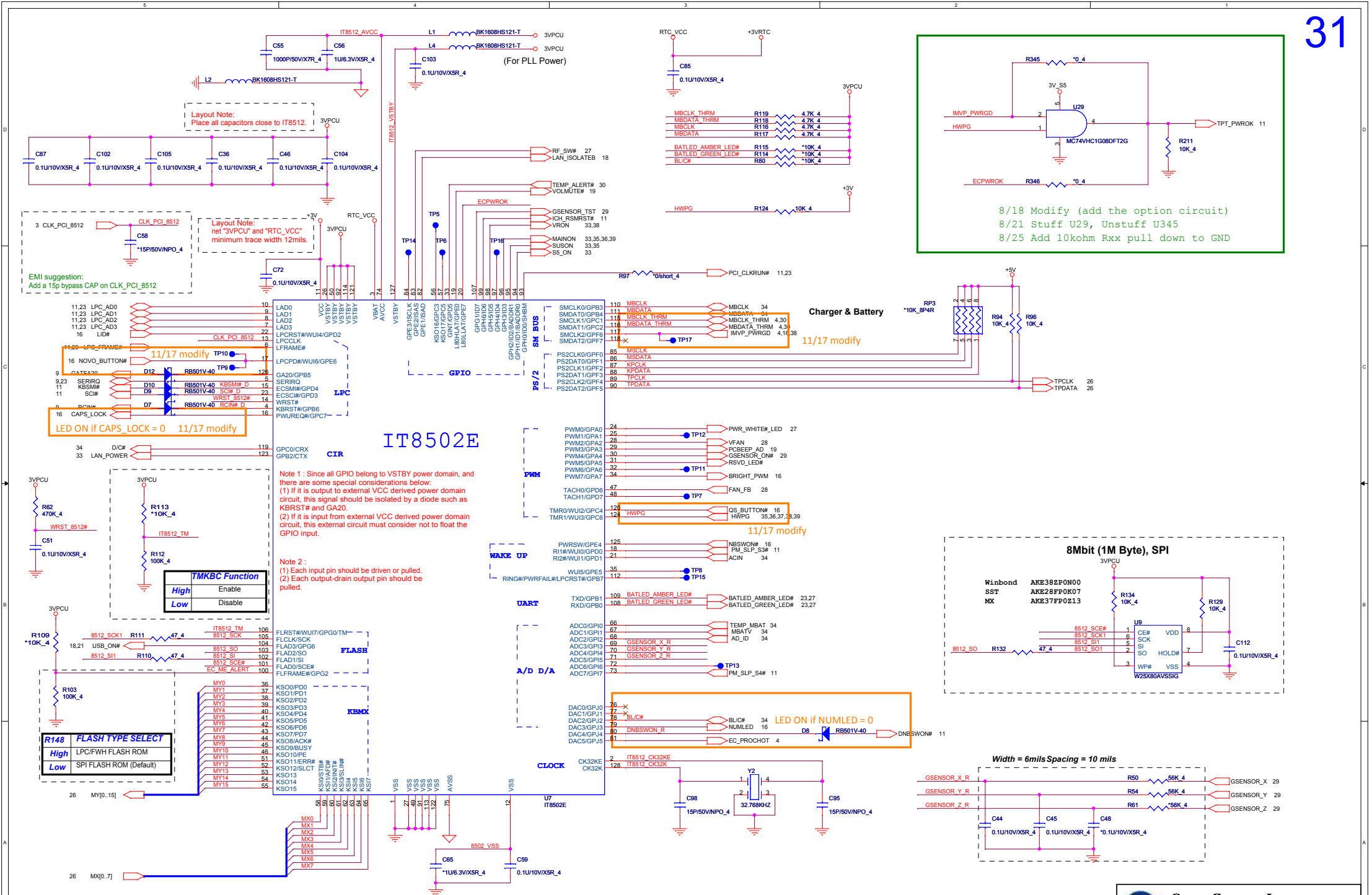
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G-SENSORRev
1A

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SCREW HOLE

HOLE8

*H-C87D87N



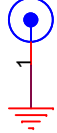
HOLE3

*H-C87D87N



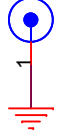
HOLE2

*H-TC197BC276D91P2



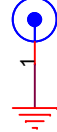
HOLE7

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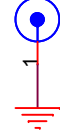
HOLE1

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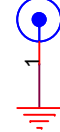
HOLE9

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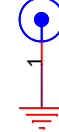
HOLE10

*H-C276D91P2



HOLE5

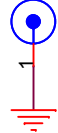
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CPU

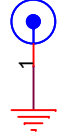
HOLE11

*H-C198D107P2



HOLE12

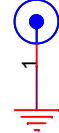
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Mini PCIE

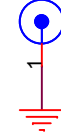
HOLE4

*H-TC197BC115D107P2



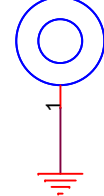
HOLE6

*H-TC197BC115D107P2



PAD1

*ESDPAD



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PROJECT : Mariana 3.0

Size
Custom

Document Number

Screw Hole/EMI

Rev
1A

Date: Tuesday, November 17, 2009

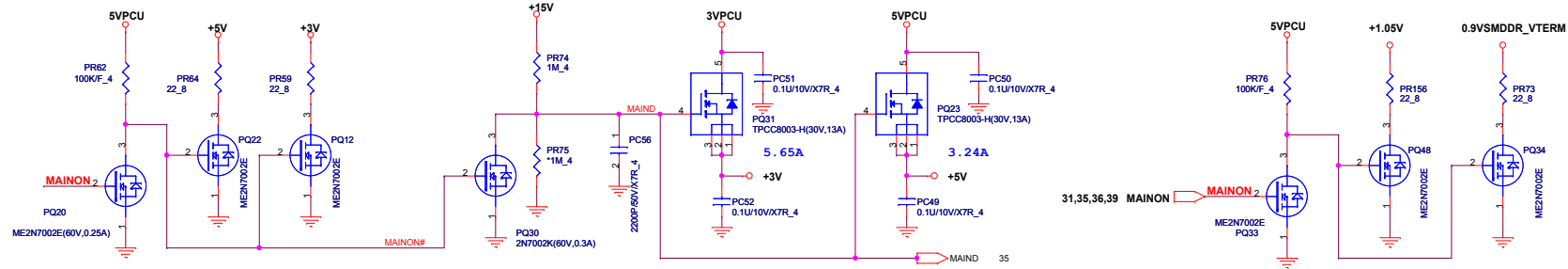
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DISCHARGE

33

+3V, +5V

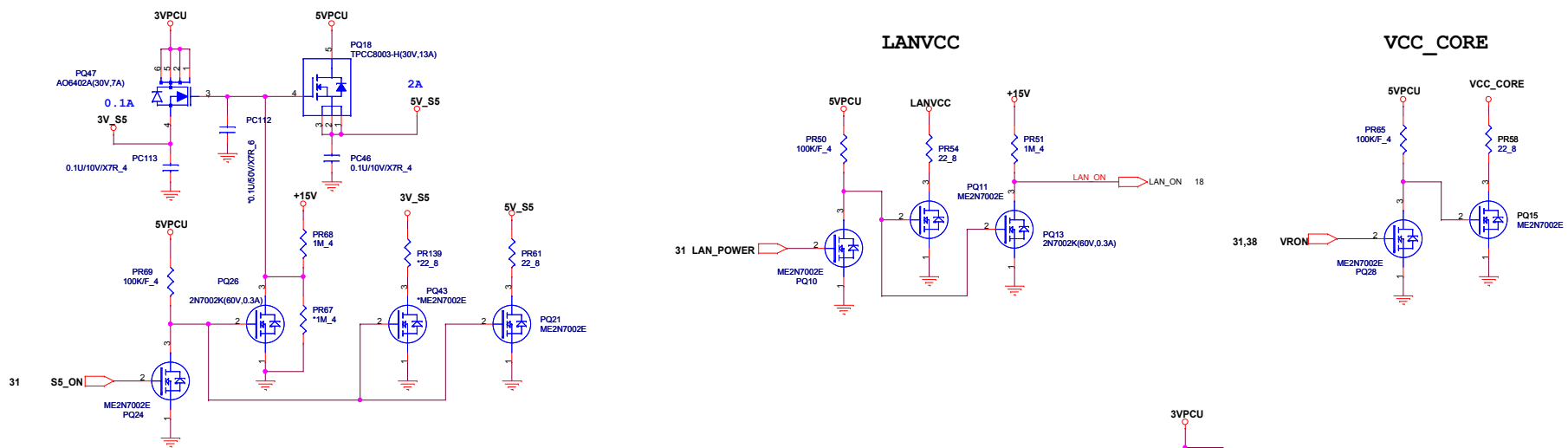
+1.05V, SMDDR_VTERM



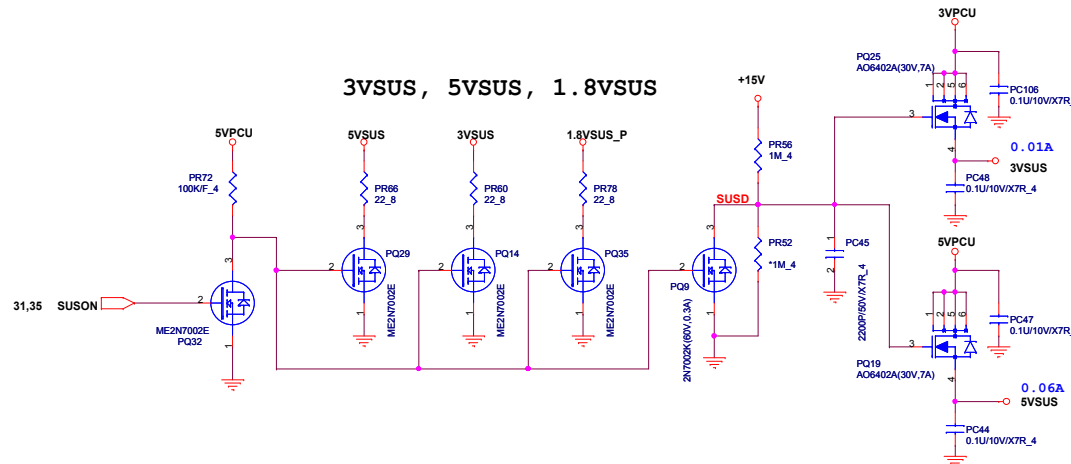
3V_S5, 5V_S5

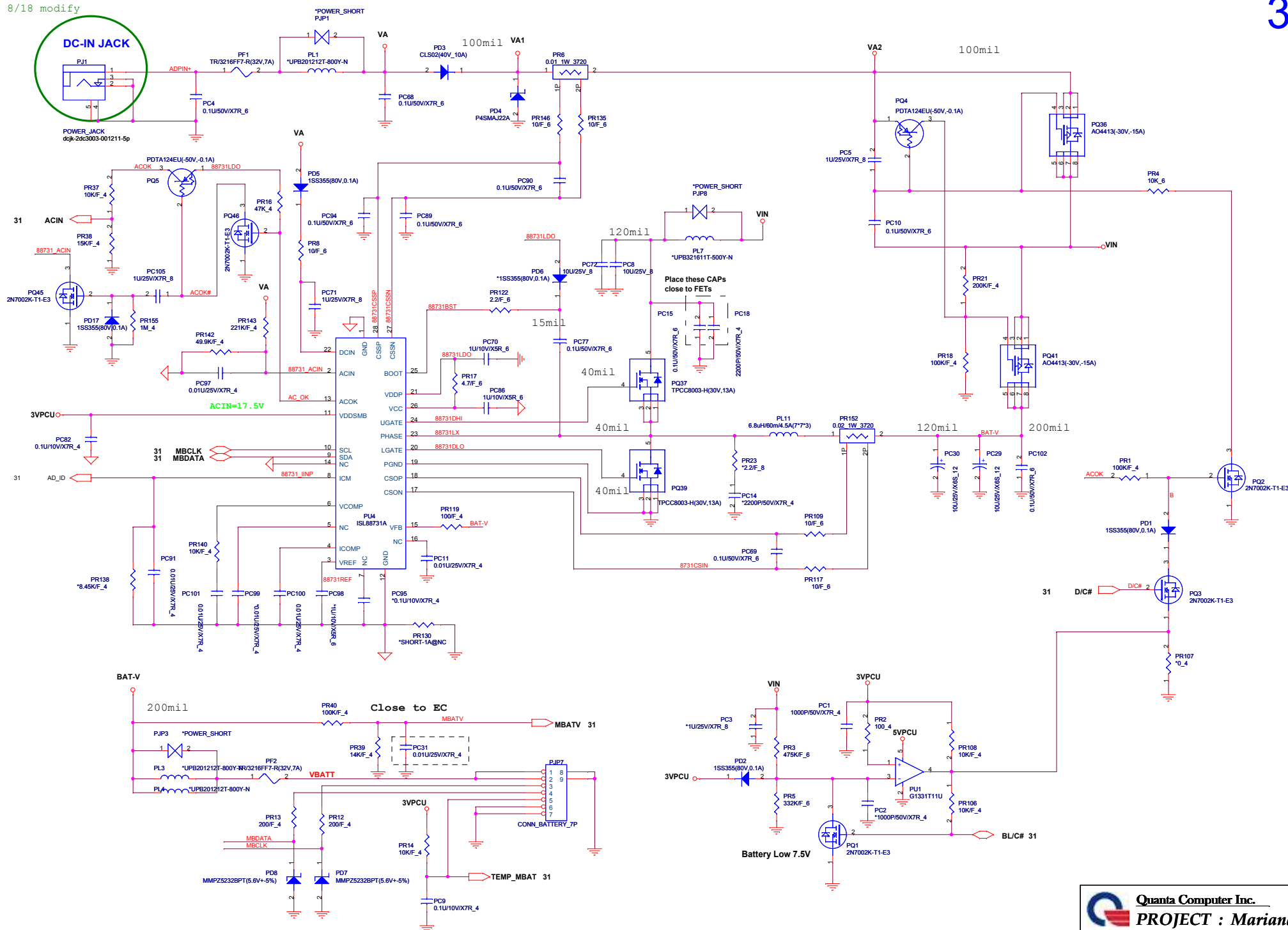
LANVCC

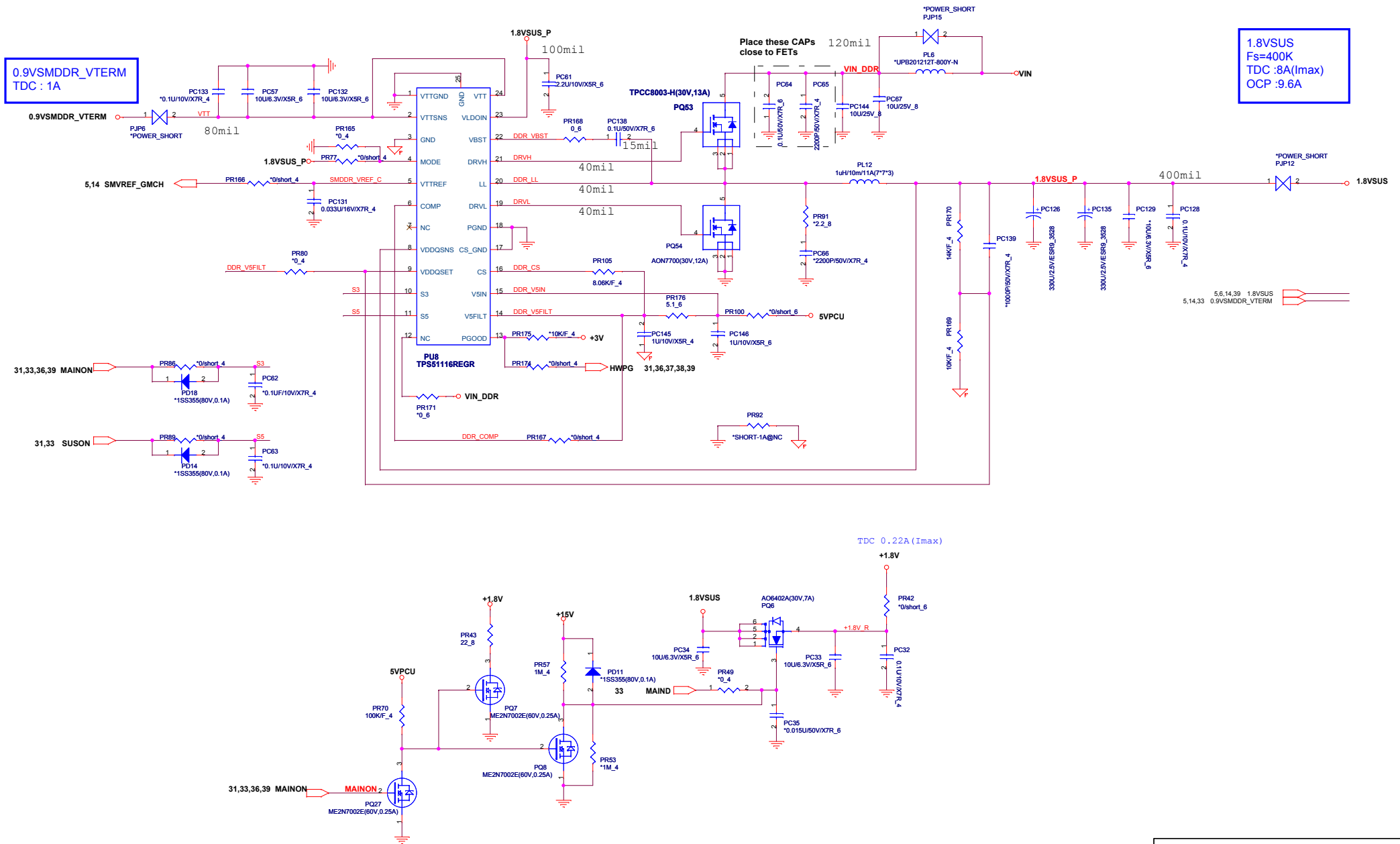
VCC_CORE



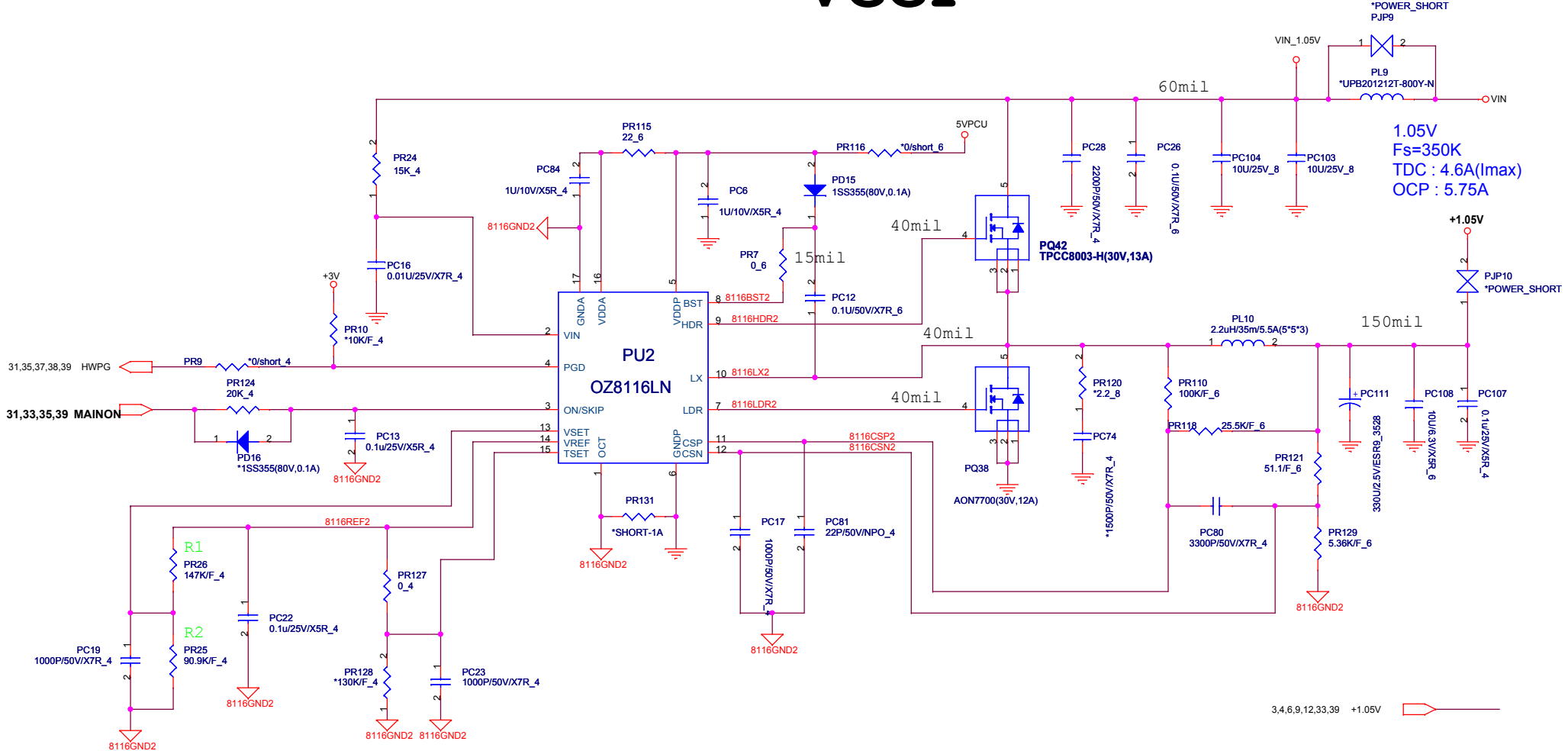
3VSUS, 5VSUS, 1.8VSUS







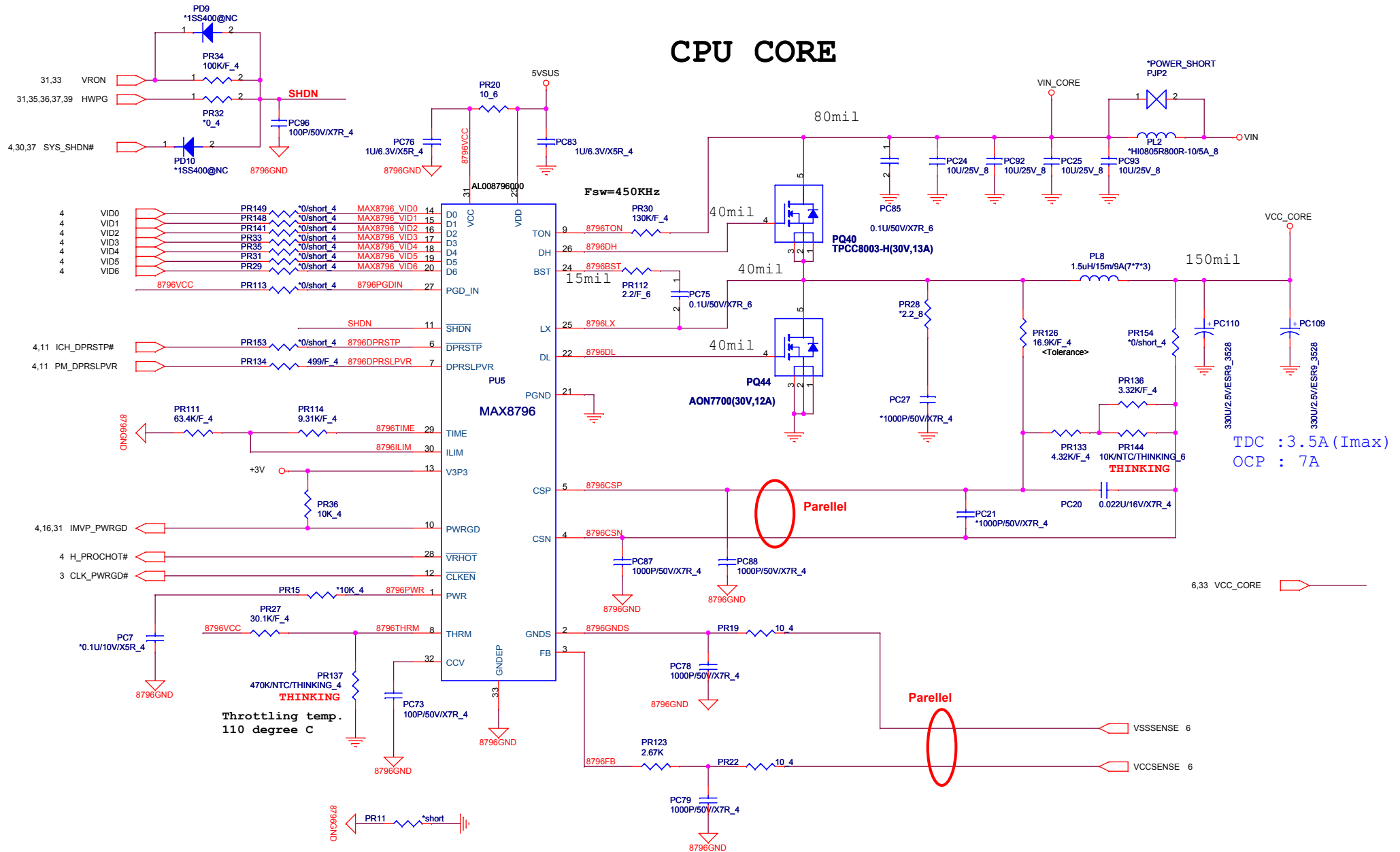
VCCP

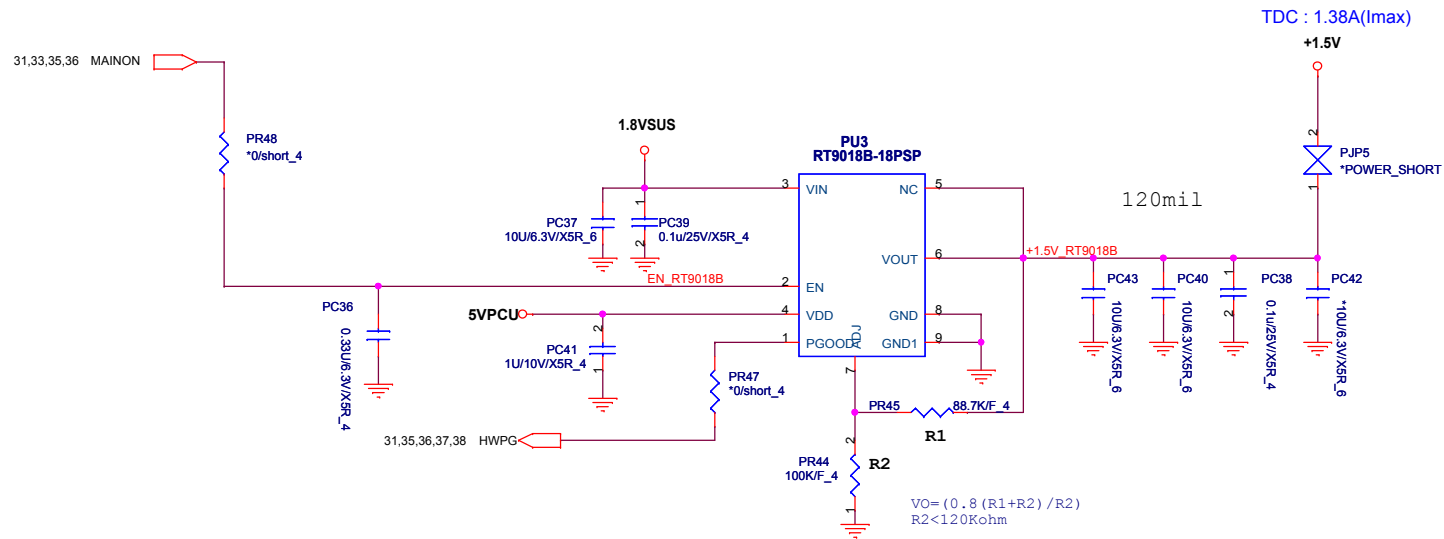


3,4,6,9,12,33,39 +1.05V



CPU CORE



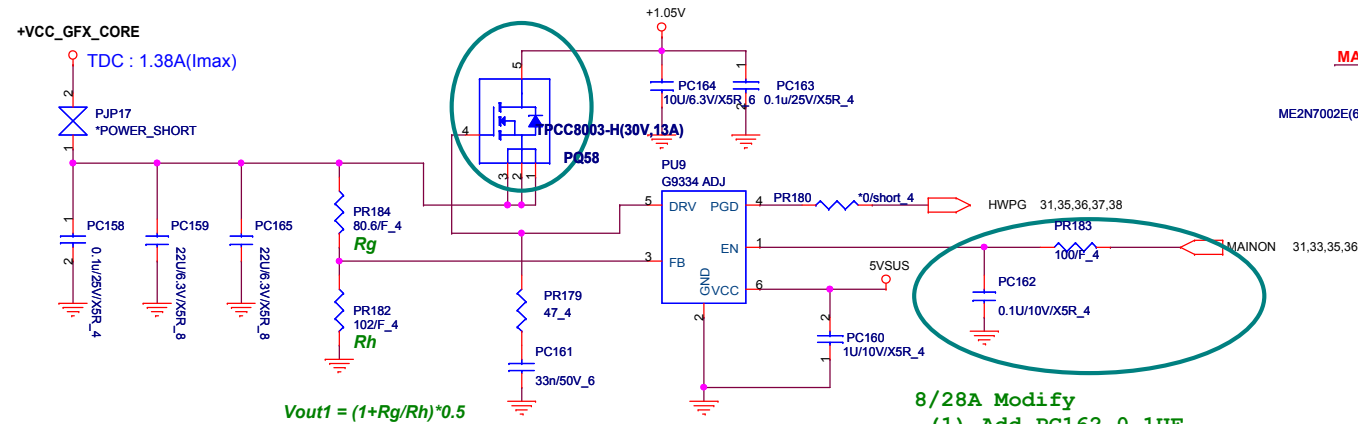


6,8,12,23,24 +1.5V
6 +VCC_GFX_CORE

8/28B Modify

(1) Change PQ57 AO6402 to PQ58 AON7410

P.S. Later, will change P/N from AON7410 to TPCC8003-H(30V,13A)

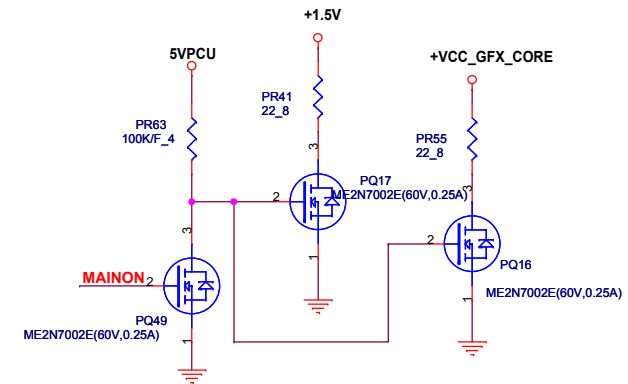


$$V_{out1} = (1 + R_g/R_h) * 0.5$$

8/28A Modify

(1) Add PC162 0.1UF

(2) Change PR183 from 0 to 100



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