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Iris Schematic Beema

2015-10-15
REV : X00



DY : None Installed

Iris AMD 2SP vostro

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21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.			
Cover Page			
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Iris AMD Block Diagram

Co-layer

- Vostro VGA Conn. 55
- Inspiron HDMI Conn. 54

Main Board

- DDR3L (SINGLE CHANNEL)
- DX11 IGP
- eDP (X1)
- HDMI (X1)
- VGA DAC
- PCIE GEN2 I/F (GFX 1x4)
- PCIE GEN2 I/F (GPP 4x1)
- INT. CLKGEN
- USB 2.0(x8)
- USB 3.0(x2)
- SATA GEN1/2 (x2)
- HD AUDIO
- SD I/F
- SPI I/F
- LPC I/F
- INT. RTC

IO Board

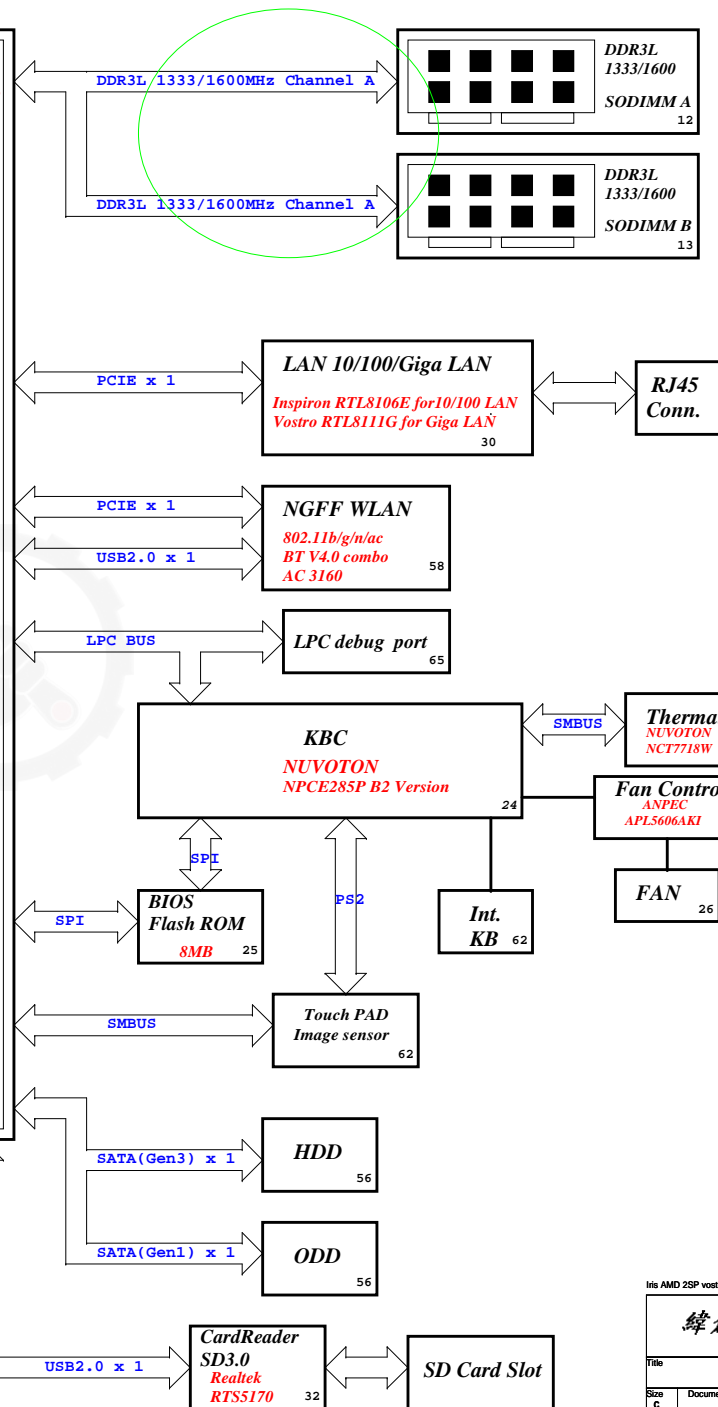
- Camera Digital MIC 52
- HDA CODEC Realtek ALC3234 27
- Universal Jack
- USB2(USB2.0)
- USB3(USB2.0)
- USB1(USB3.0)


Connections:

- VGA
- HDMI 1.4a
- eDP
- USB2.0 x 1
- USB2.0 x 1
- HDA
- USB2.0 x 1
- USB2.0 x 1
- USB2.0 x 1
- USB3.0 x 1

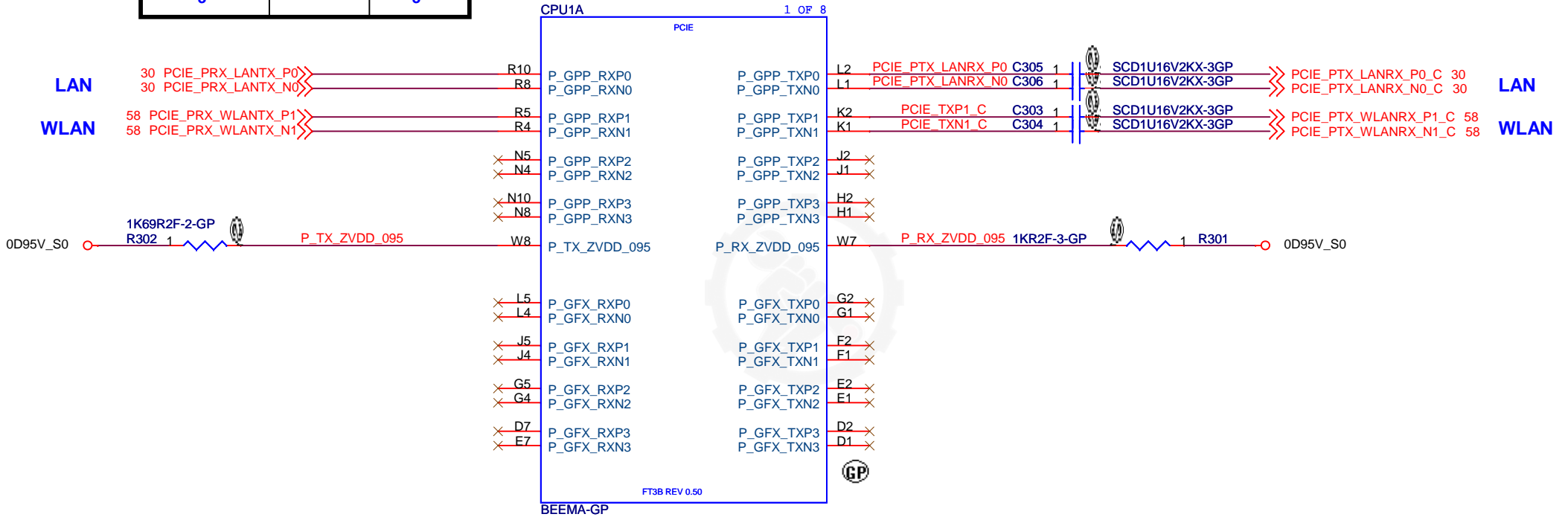
Other components:

- LCD 52
- Touch Panel
- 2CH SPEAKER (2CH 2W/4ohm)
- MIC_IN/GND
- HP_R/L

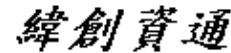


Iris AMD 25P vostro			
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Title			
Block Diagram			
Size	Document Number		Rev
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GPP CLK port	Device	CLKREQ#
0	LAN WLAN	0
1		1
2		2
3		3

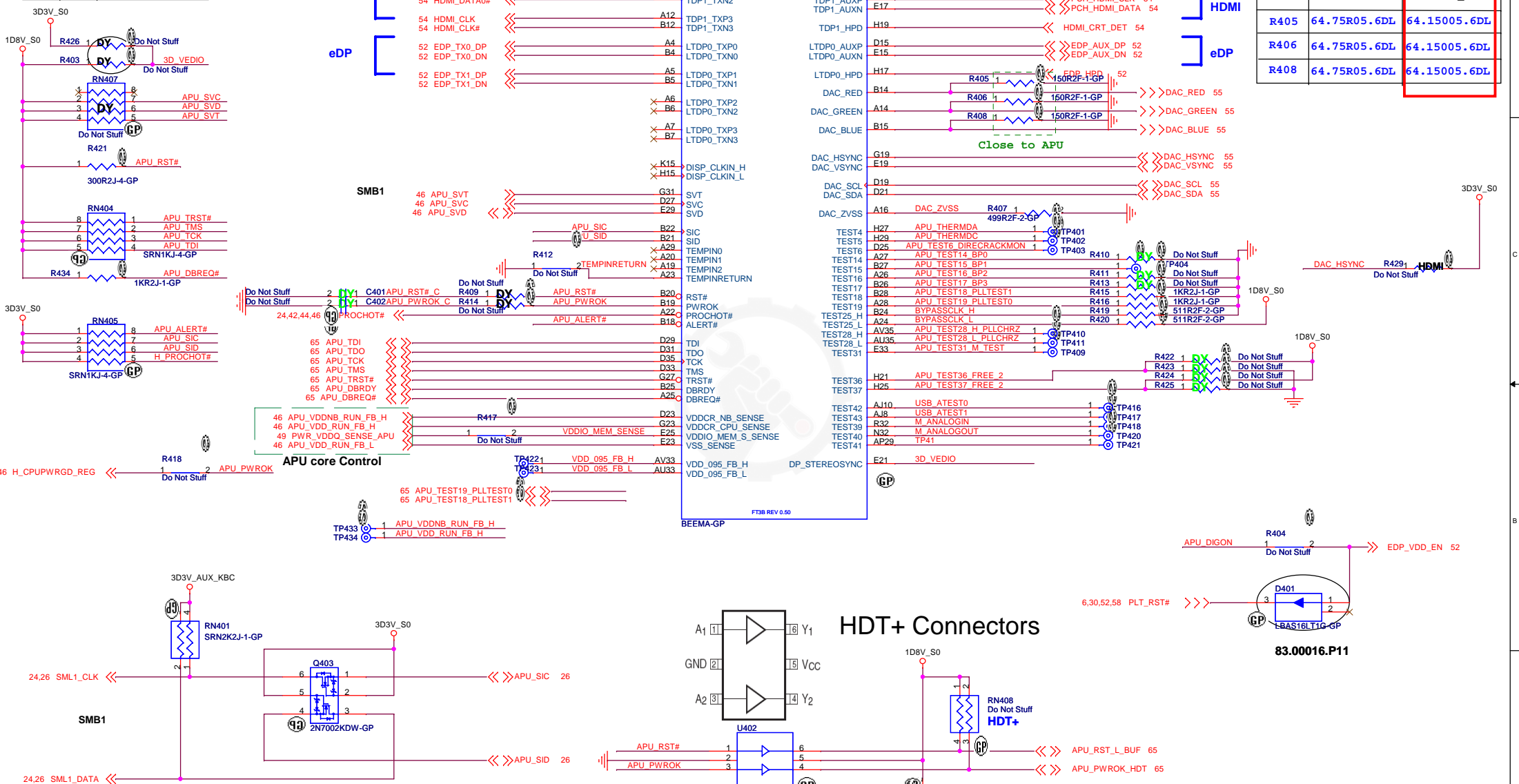


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CPU (PCIE)	
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Pre-PWROK METAL VID CODES

SVD	SVC	Output Voltage
0	0	1.1
1	0	1.0
0	1	0.9
1	1	0.8



HDMI&CRT PARTNUMBER CHANGE		
Location	HDMI	CRT_A
R405	64.75R05.6DL	64.15005.6DL
R406	64.75R05.6DL	64.15005.6DL
R408	64.75R05.6DL	64.15005.6DL

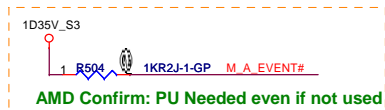
HDT+ Connectors

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Title: **CPU (DISPLAY/SVIZ/JTAG/TES)**

Size: A3	Document Number: Iris AMD BEEMA	Rev: X00
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Title

CPU (DDR)

Size

Document Number

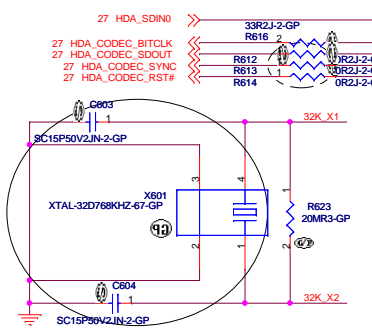
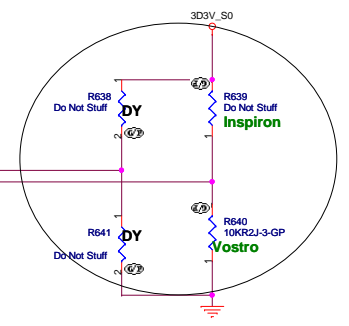
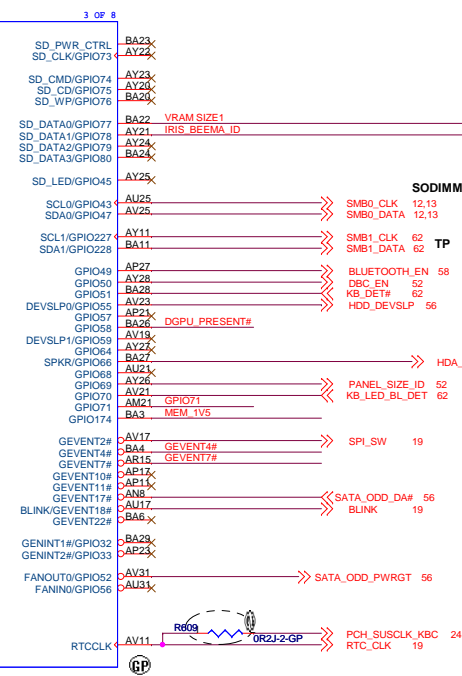
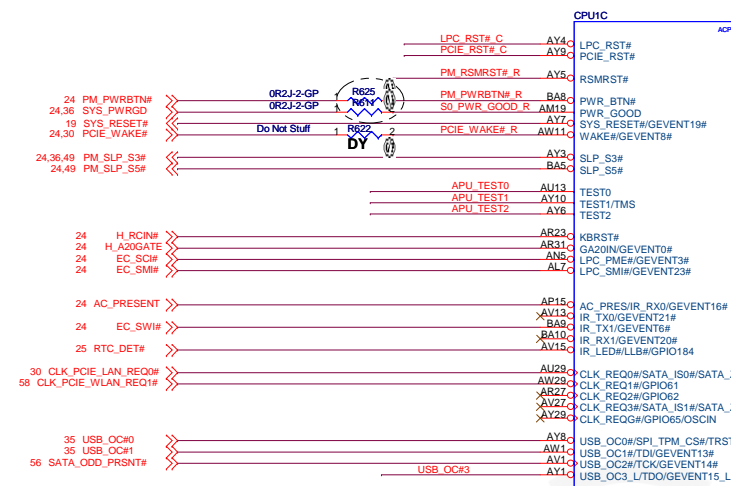
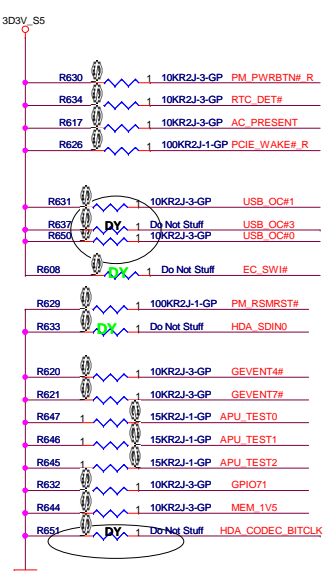
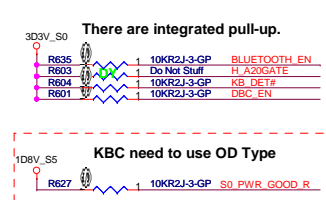
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Rev	
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Date: Thursday, October 08, 2015

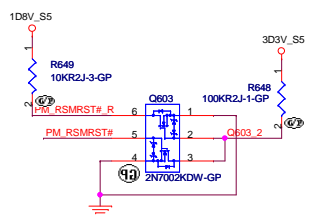
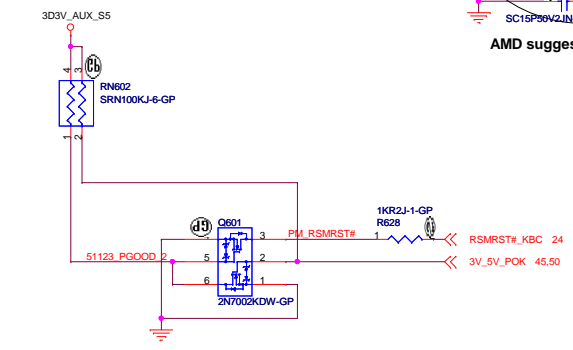
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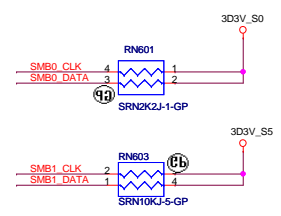
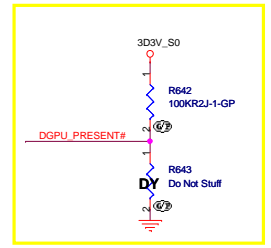


XTAL	CLK, Hz
0 System & USB	48M
1 RTC	32.768K
2 LAN	25M
3	

AMD suggests Xtal ESR must be less than 65R



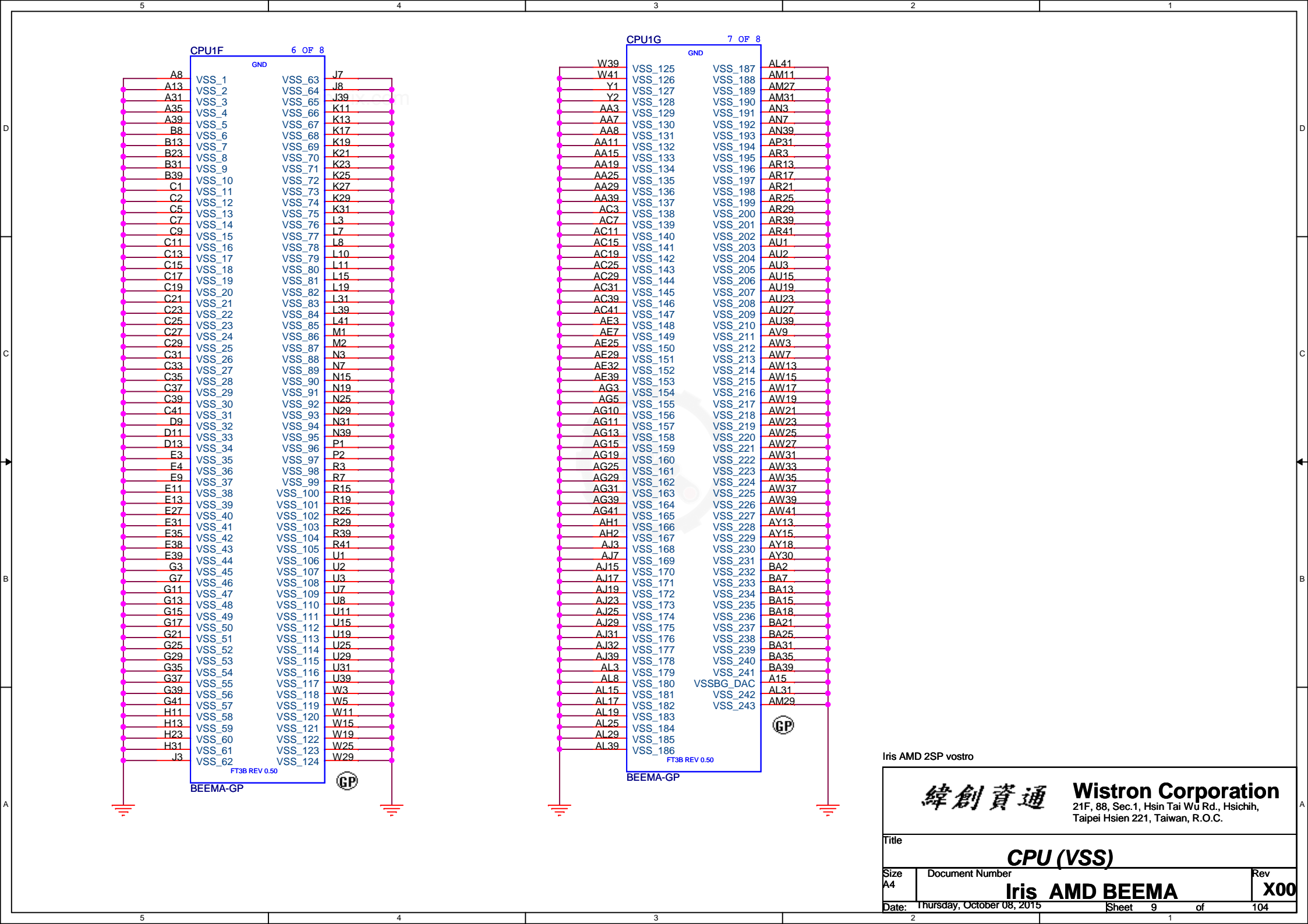
Report APU H=UMA L=DISCRETE



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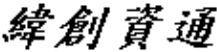
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Title		
CPU (VSS)		
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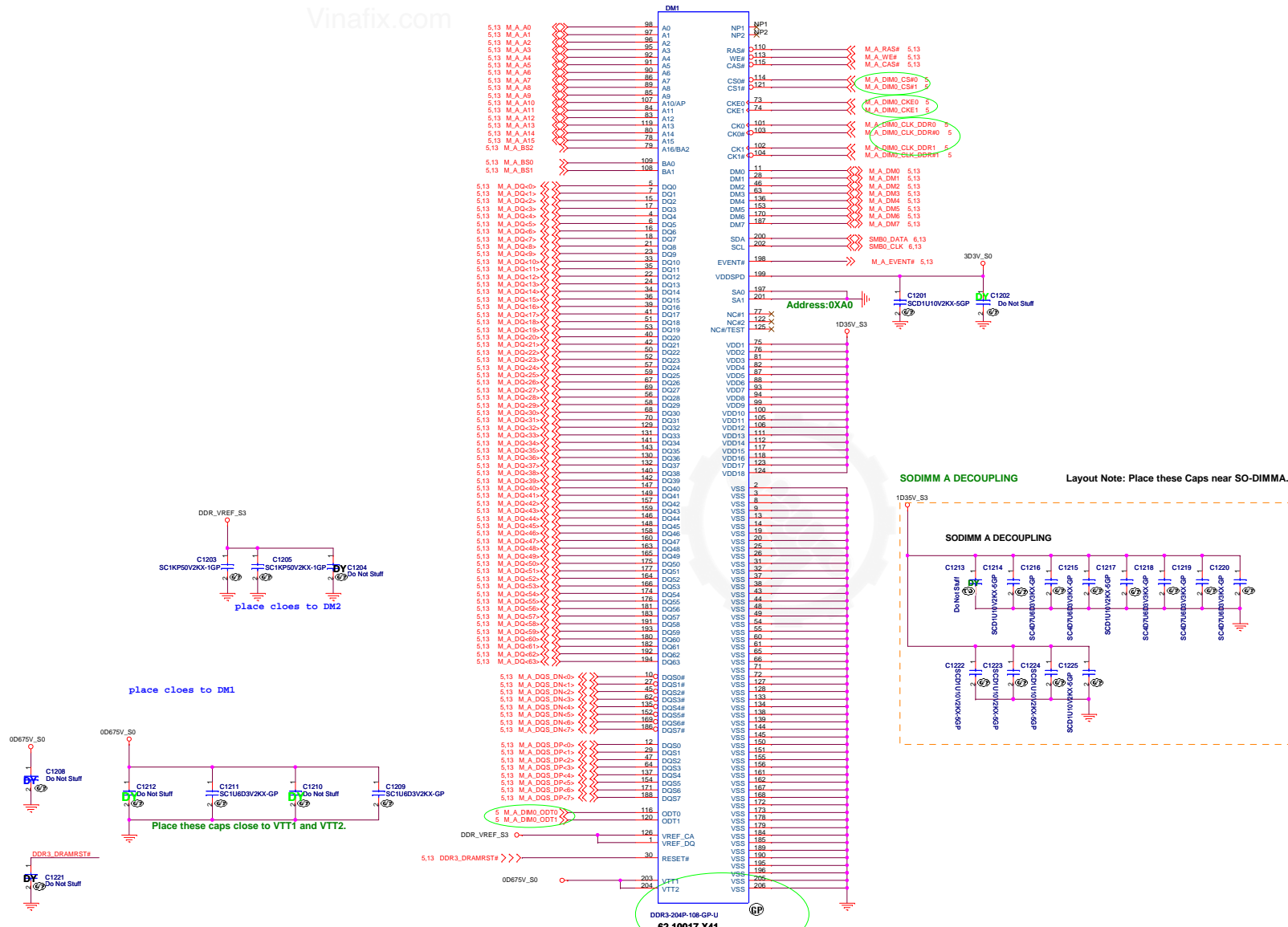


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SSID = DDR3-SODIMM1



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DDR3-SODIMM1			
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1 Channel 2 DIMM

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DDR3-SODIMM2			
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A4

Document Number

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Rev

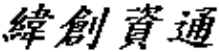
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SATA HDD

ODD

SATA	
Pair	Device
0	SATA HDD
1	ODD

LAN

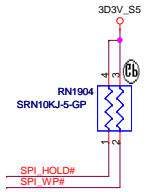
WLAN

GPP CLK port	Device	CLKREQ#
0	LAN	0
1	WLAN	1

USB Table

Pair	Device
0	USB2.0 PORT2 (DB Conn)
1	USB2.0 PORT3 (DB Conn)
2	
3	NA
4	Card Reader
5	WLAN + BT (Mini PCI-E)
6	Touch Panel
7	camera
0/8	USB3.0 & USB 2.0 (MB port1)
1/9	

XTAL	CLK, Hz
0	System & USB 48M
1	RTC 32.768K
2	LAN 25M



SYSTEM STRAPPINGS

REQUIRED SYSTEM STRAPS

	LPC_CLK0	LPC_CLK1	LPC_FRAME#	SPI_SELECT	RTC_CLK	SYS_RESET#	BLINK
PULL HIGH	Boot Fail Timer Enabled	CLKGEN ENABLED DEFAULT	SPI ROM DEFAULT	1.8V SPI ROM DEFAULT	Coin Battery DEFAULT	NORMAL POWR UP /RESET TIMING DEFAULT	PWROK and RST_L pin routed to APU DEFAULT
PULL LOW	Boot Fail Timer Disabled DEFAULT	CLKGEN DISABLED	LPC ROM	3.3V SPI ROM	Direct DC	Reserved	Reserved

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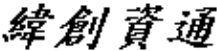
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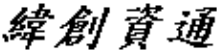
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Size A4	Document Number Iris AMD BEEMA	Rev X00
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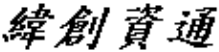


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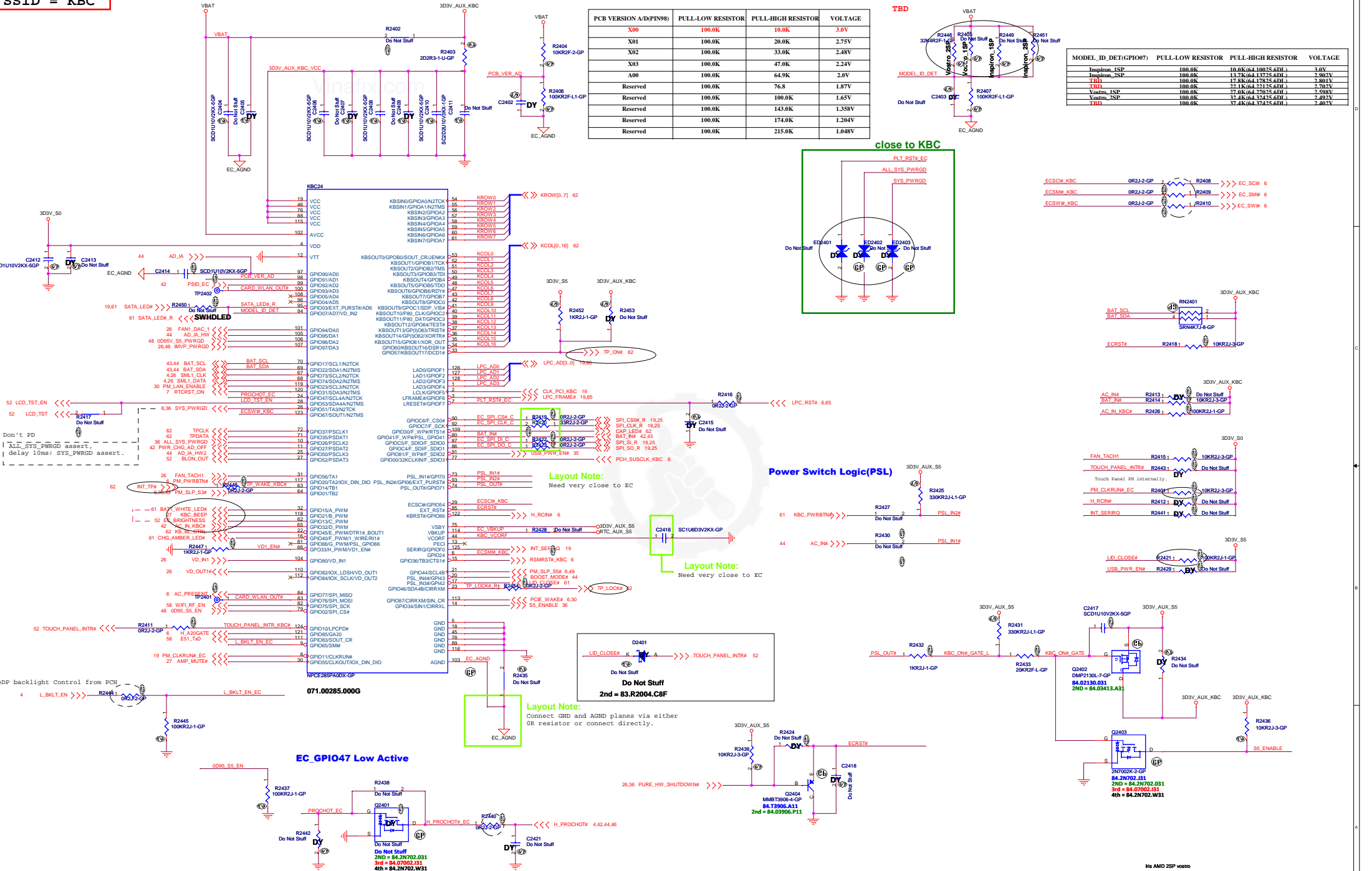
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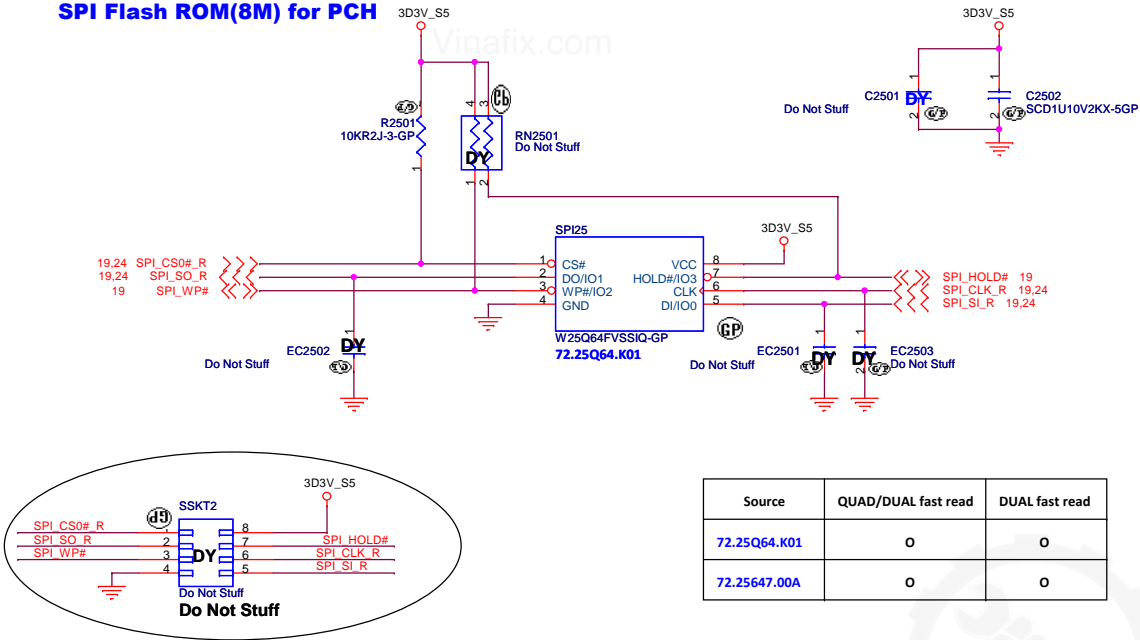
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SSID = KBC

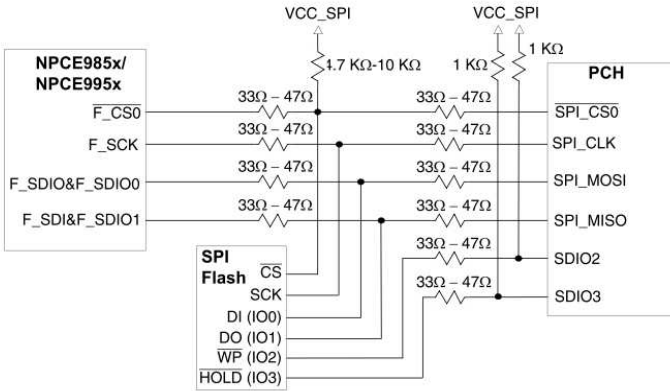


SSID = Flash.ROM

SPI Flash ROM(8M) for PCH

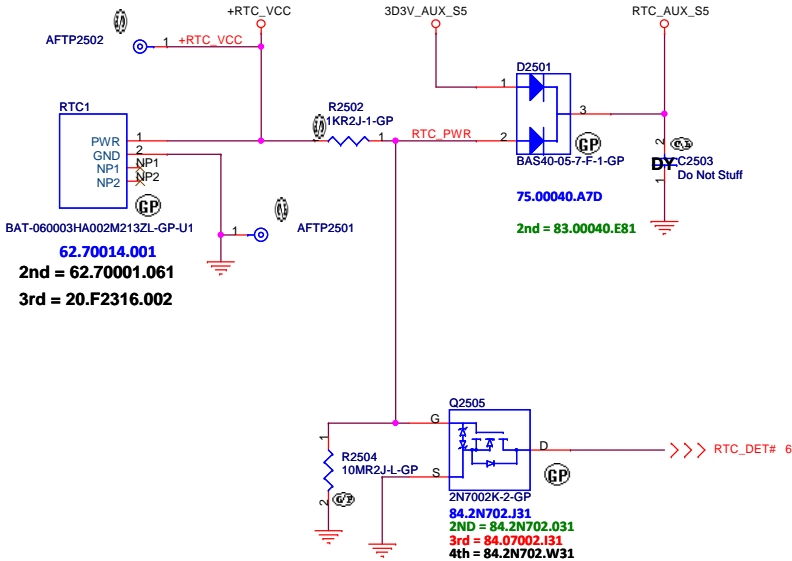


Single SPI shared flash connection (SPI Quad I/O mode)

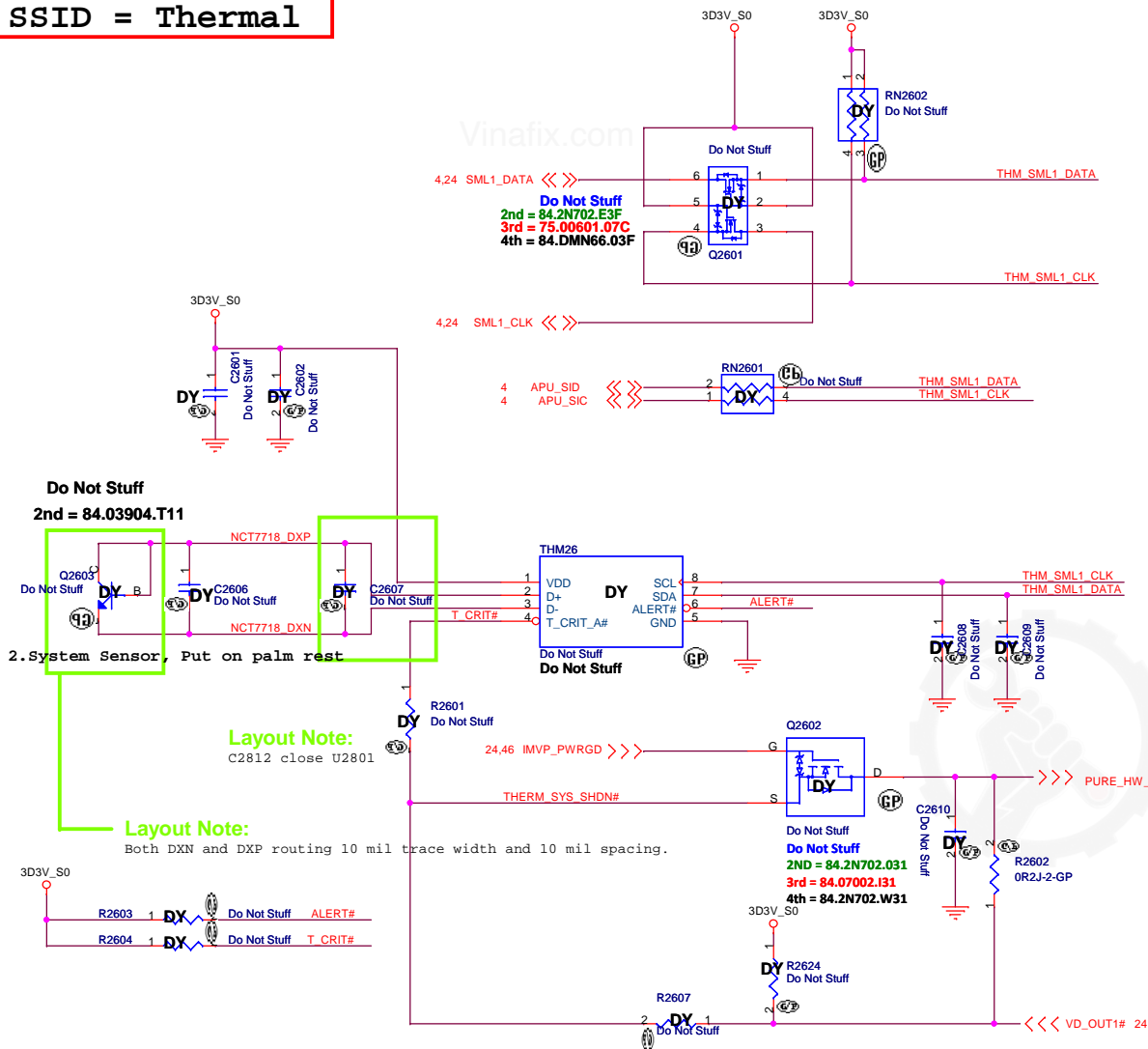


Refer to "NPCE985x/ NPCE995x board design reference guide"

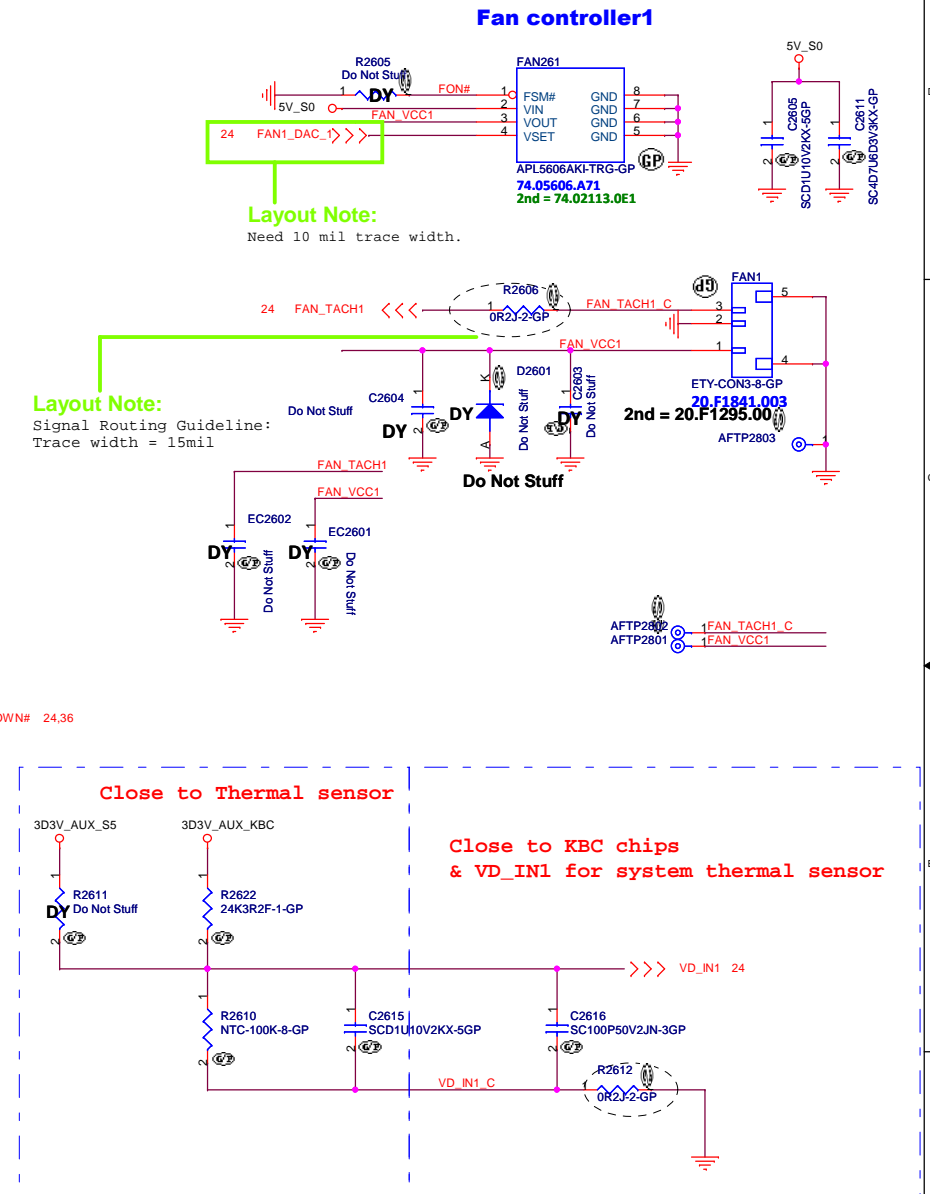
SSID = RTC



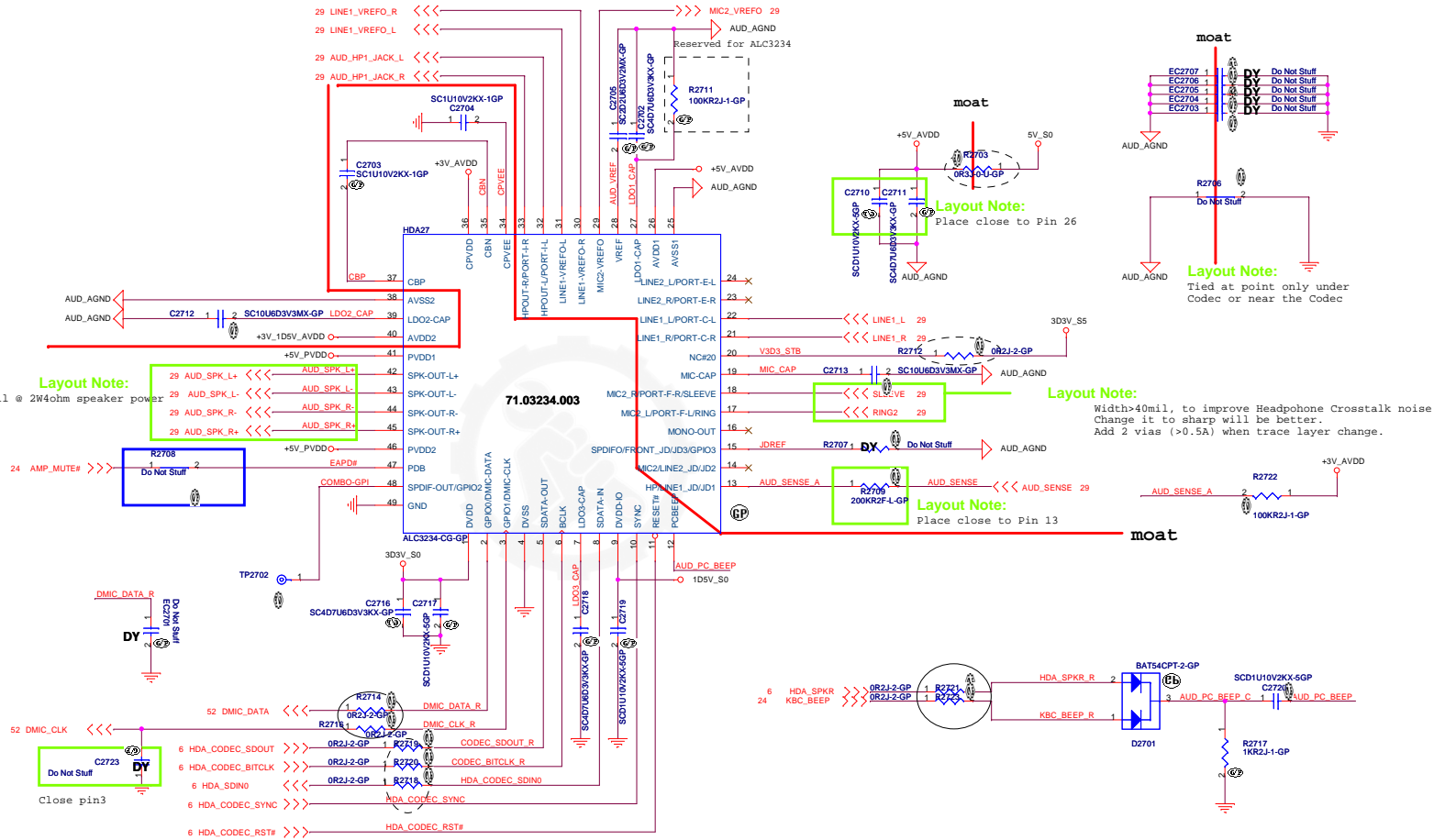
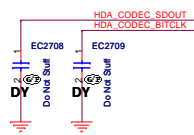
SSID = Thermal



TEMPERATURE (°C)		T_CRIT#				
		2KΩ	7.5KΩ	10.5KΩ	14KΩ	18.7KΩ
ALERT#	2KΩ	77	87	97	107	117
	7.5KΩ	79	89	99	109	119
	10.5KΩ	81	91	101	111	121
	14KΩ	83	93	103	113	123
	18.7KΩ	85	95	105	115	125




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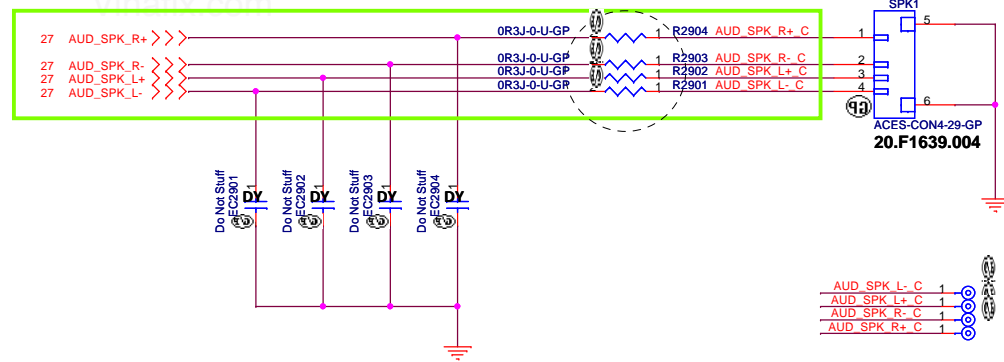
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Title			
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SSID = Speaker/Universal Jack

Layout Note:

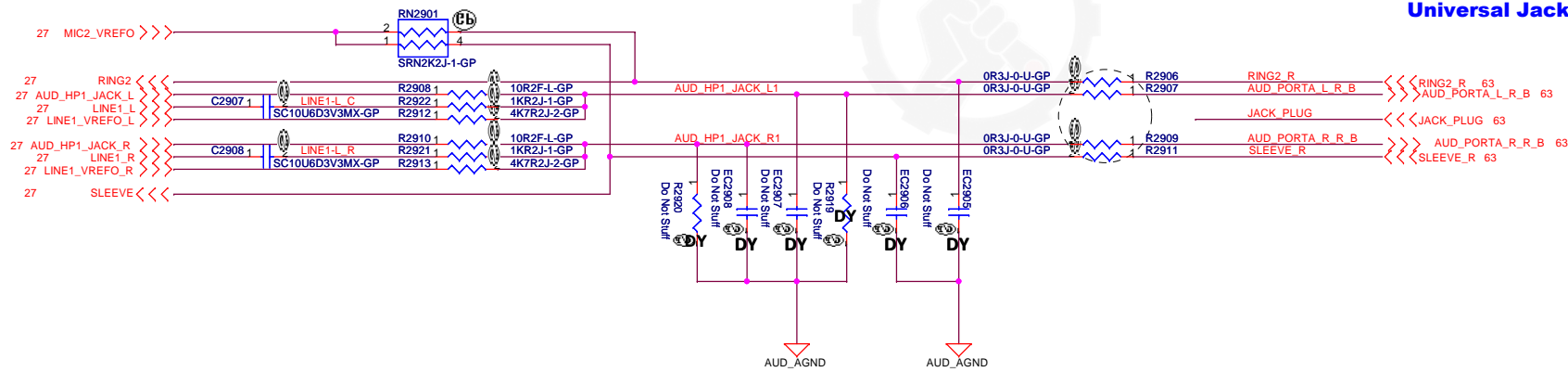
Speaker trace width >40mil @ 2W4ohm speaker power



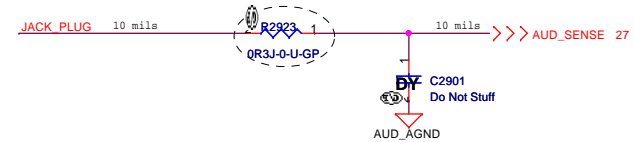
Speaker

LAYOUT NOTE

SLEEVE & RING 2 trace width > 40mil



Universal Jack (Moved to I/O Board)



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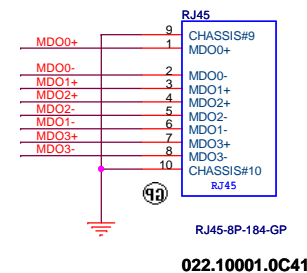
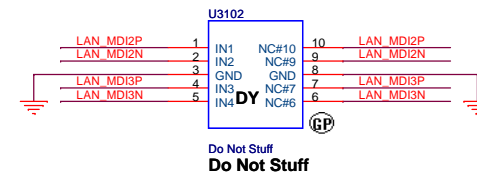
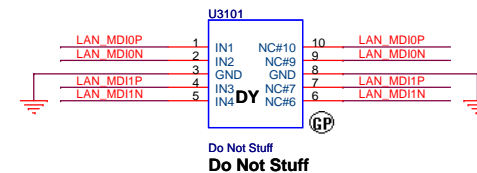
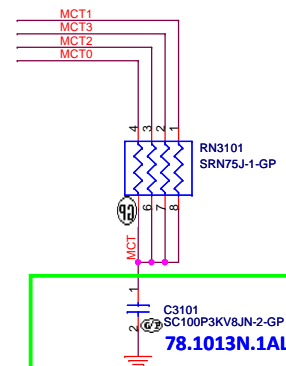
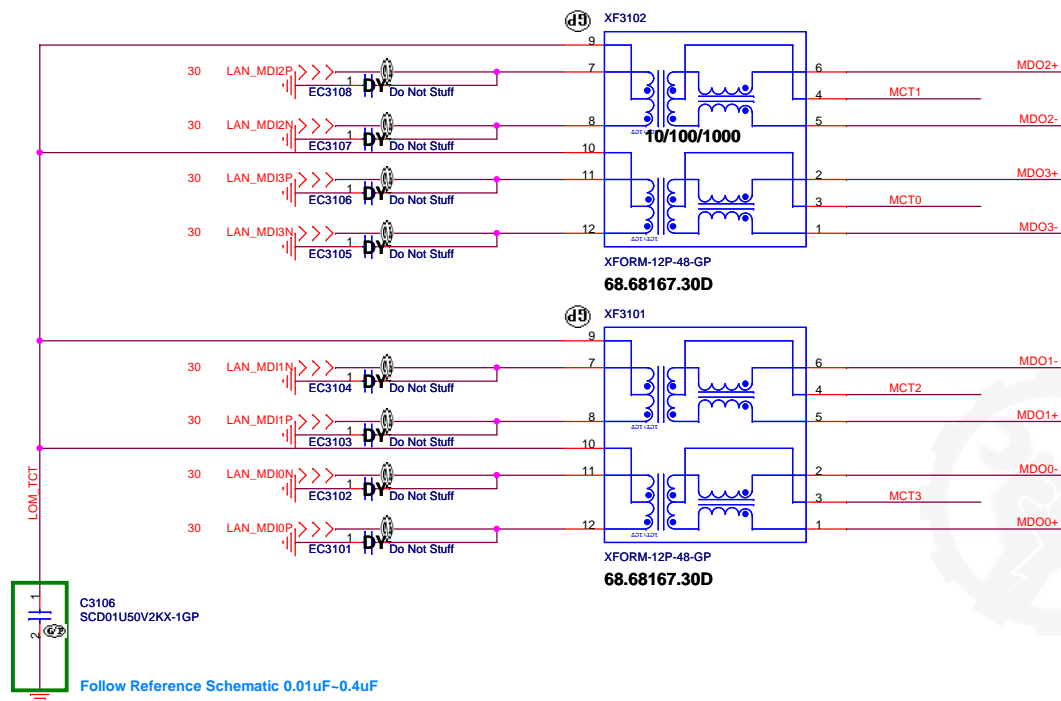
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Title			Speaker/Universal Jack	
Size	Document Number	Rev		
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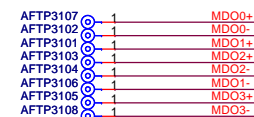
SSID = LOM

LAN TransFormer (10/100/1000M & 10/100M co-lay)

Layout note:
30 mil spacing between MDI differential pairs.



Layout:
Place near RJ45



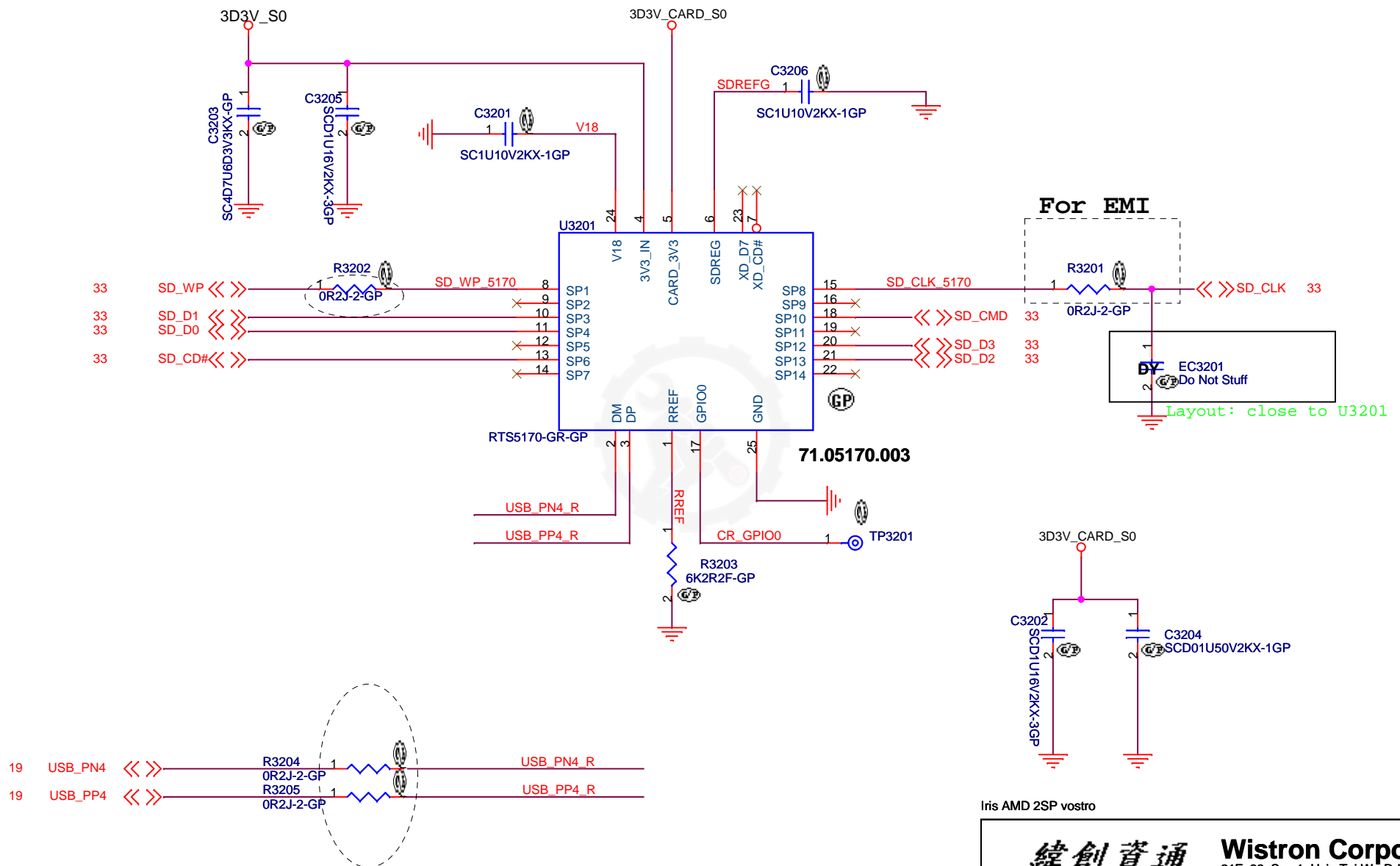
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Title			XFORM&RJ45	
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Main Func = Card Reader

The maximum range of the PMOS output current in RTS5170 (Card Reader IC) is 400mA



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Title

Card Reader

Size
A4

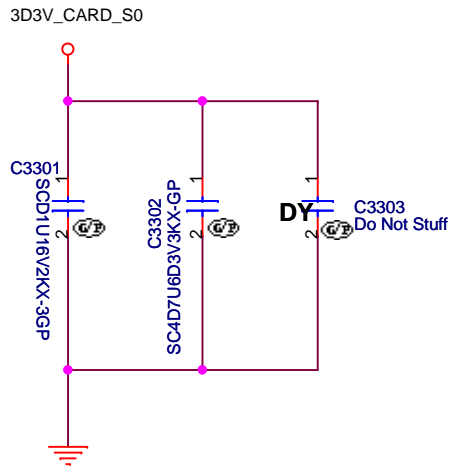
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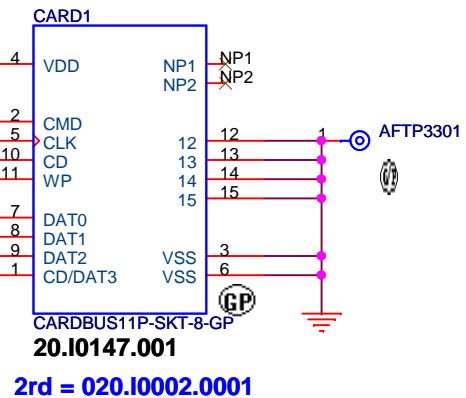
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32 SD_CMD
32 SD_CLK
32 SD_CD#
32 SD_WP
32 SD_D0
32 SD_D1
32 SD_D2
32 SD_D3

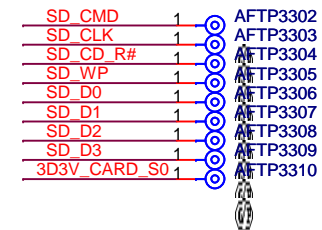
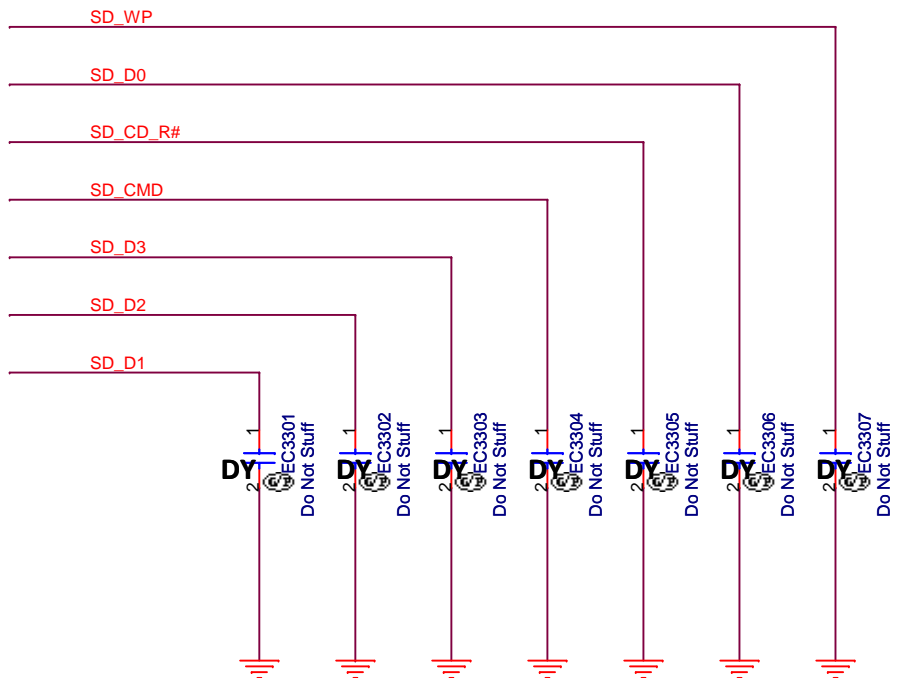
R3301 1 2 Do Not Stuff

3D3V_CARD_S0

400mA



For EMI Reserved



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Title

Card Reader CONN

Size
A4

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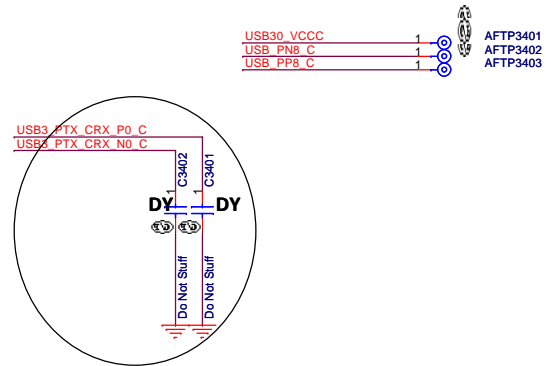
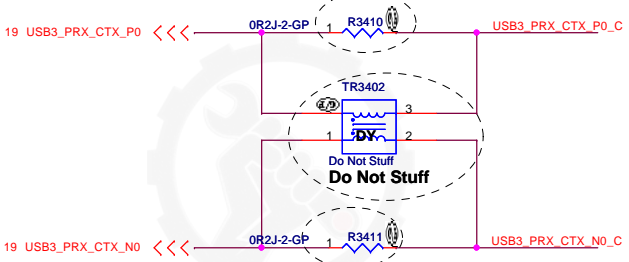
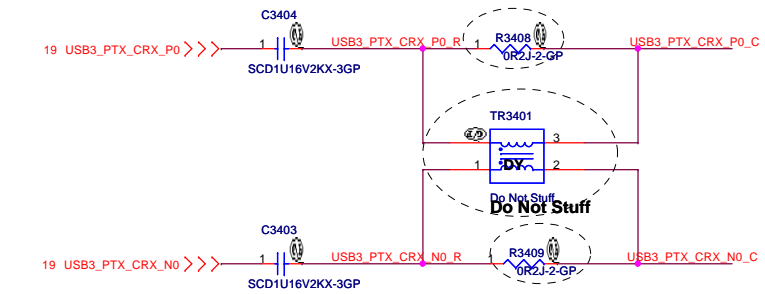
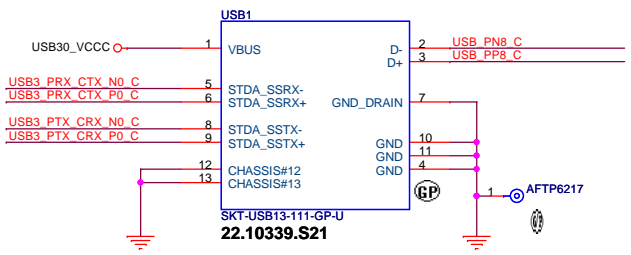
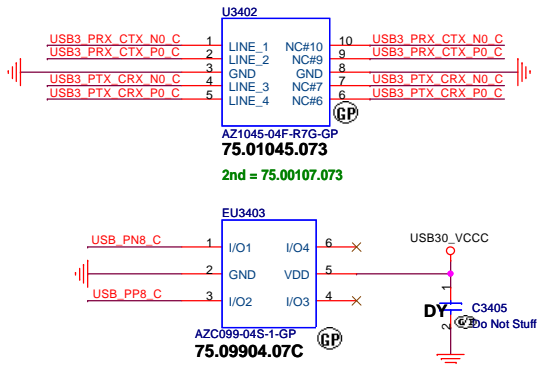
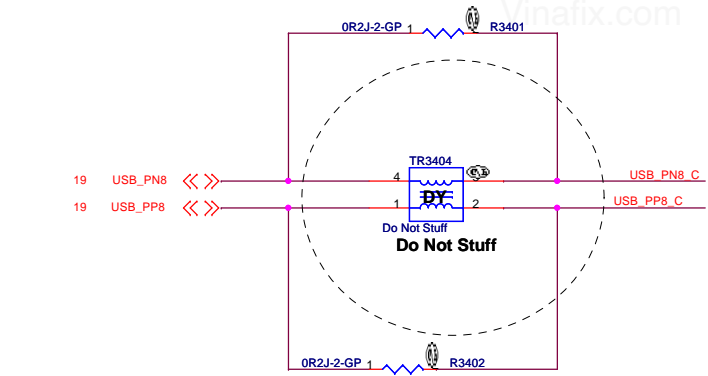
Date: Thursday, October 08, 2015

Sheet 33 of 104

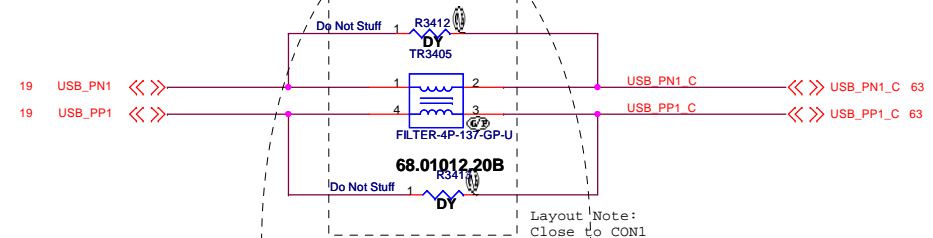
Main Func = USB3.0 Port1

USB2.0 Port2 and USB2.0 Port3 are on IOBD

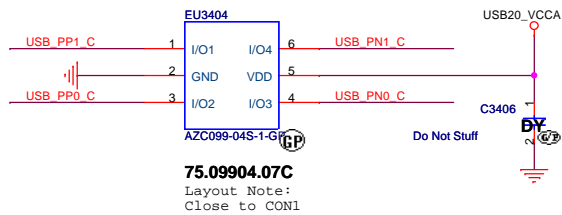
USB3.0 Port1



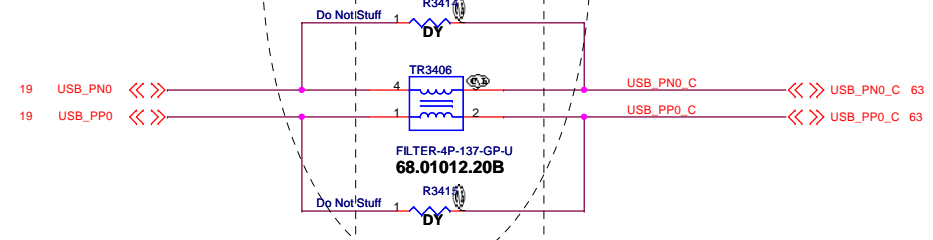
USB2 (USB2.0) CMC



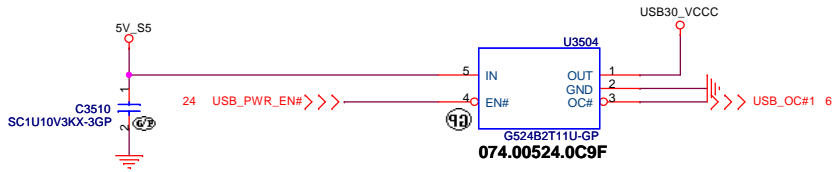
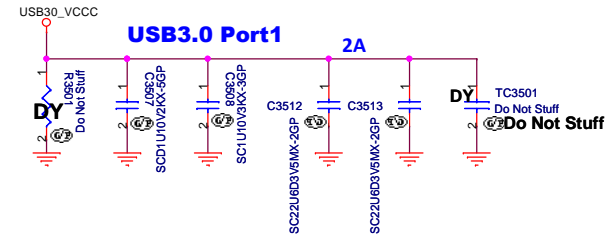
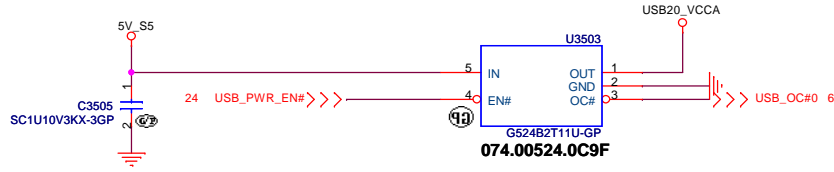
USB ESD Diode



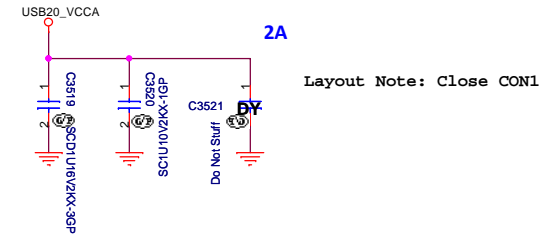
USB3 (USB2.0) CMC



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USB2.0 Port3 (IO Board)

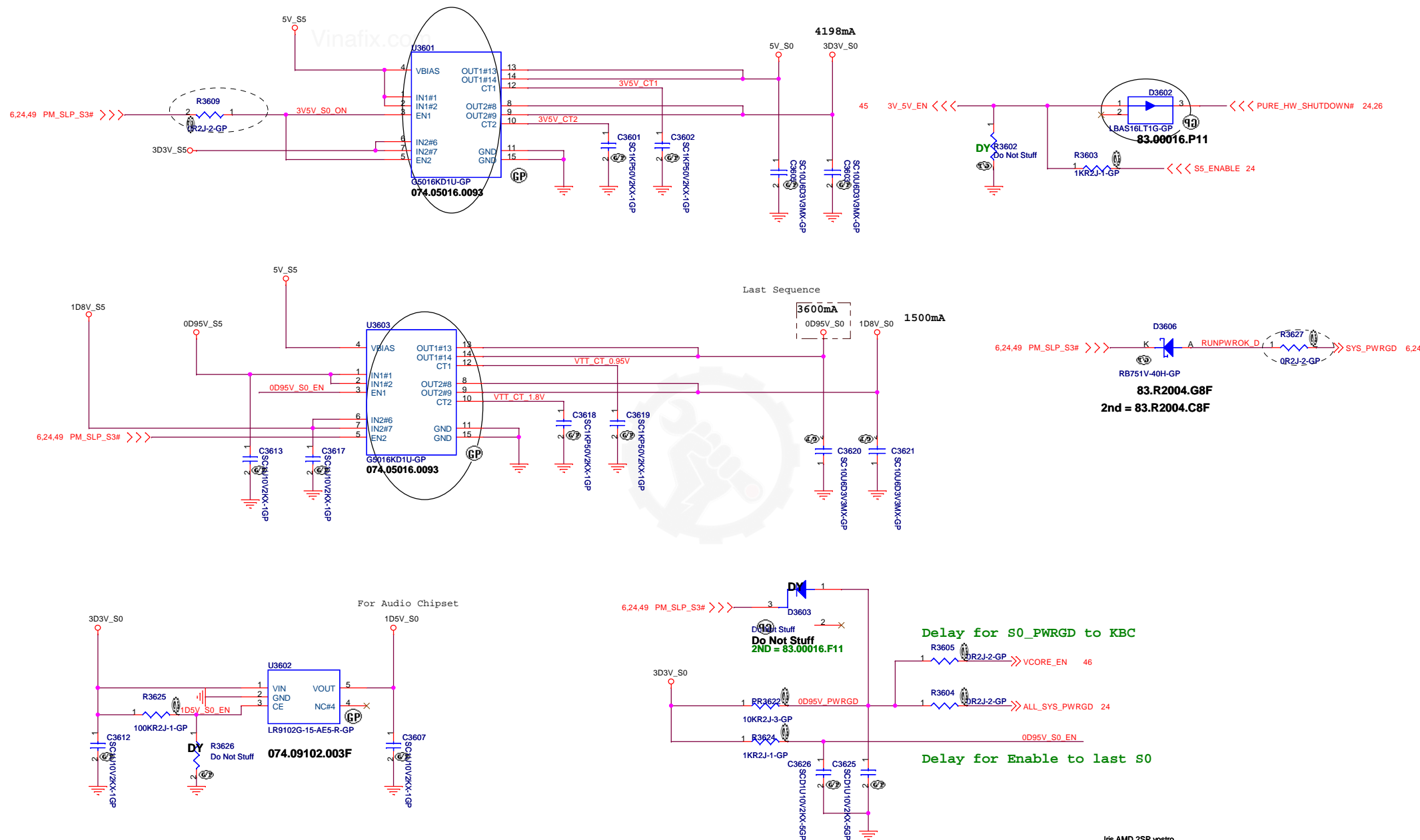


Iris AMD 2SP vostro

緯創資通 Wistron Corporation
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Title		
USB Power SW		
Size	Document Number	Rev
Iris AMD BEEMA		X00
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Power Sequence



Iris AMD 2SP vostro

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Taipei Hsien 221, Taiwan, R.O.C.

Title			
Power Plane Enable			
Size	Document Number	Rev	
A3	Iris AMD BEEMA	X000	
Date:	Thursday, October 08, 2015	Sheet	36 of 104

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Iris AMD 2SP vostro

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Title			
(Reserved)			
Size A4	Document Number Iris AMD BEEMA		Rev X00
Date:	Thursday, October 08, 2015	Sheet 38 of	104

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<div>Title<div>(Reserved)</div></div>	
<div>Size<div>A4</div></div>	<div><div>Document Number</div><div>Iris AMD BEEMA</div></div> <div><div>Rev</div><div>X00</div></div>
<div><div>Date: Thursday, October 08, 2015</div><div>Sheet 39 of 104</div></div>	

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Title			
Reserved			
Size A4	Document Number Iris AMD BEEMA		Rev X00
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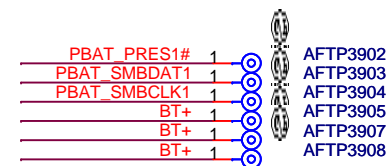
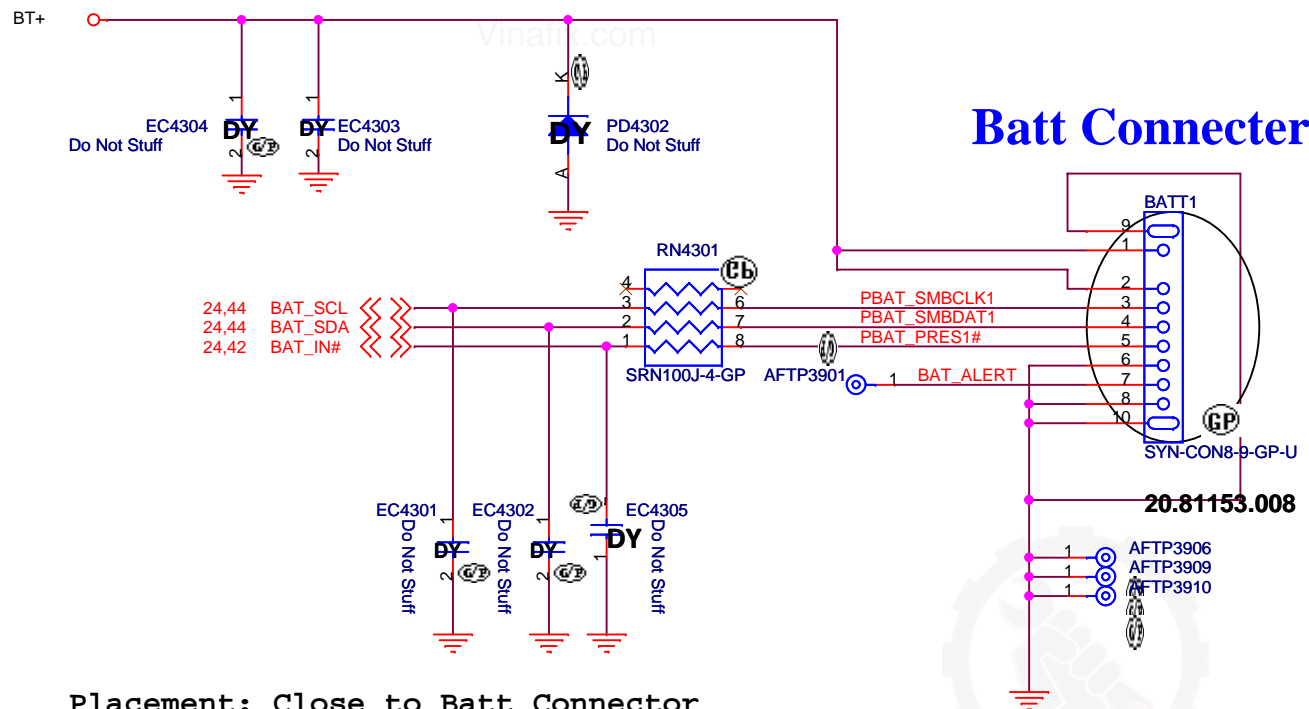
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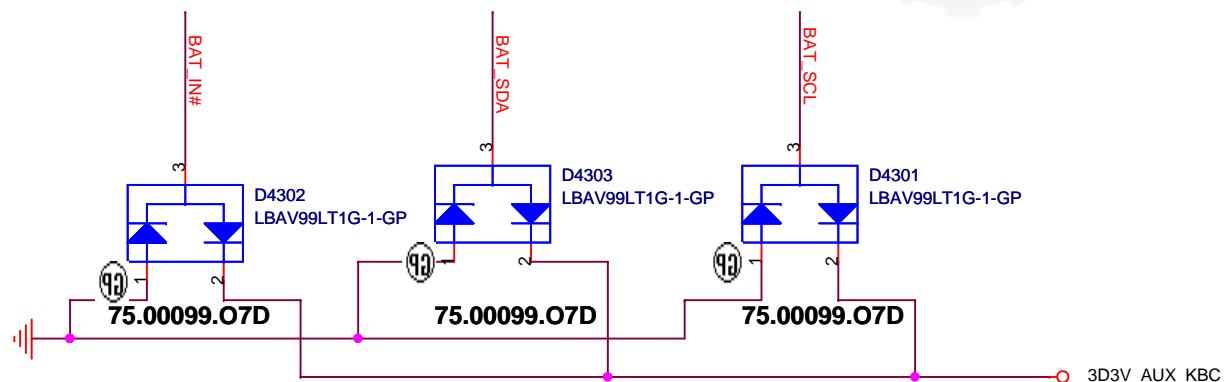
Iris AMD 2SP vostro

<div>緯創資通</div>		<div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div>	
Title			
Reserved			
Size A4	Document Number Iris AMD BEEMA		Rev X00
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SSID = BATT CONN



Placement: Close to Batt Connector



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Title

BATT CONN

Size
A4

Document Number

Iris AMD BEEMA

Rev

X00

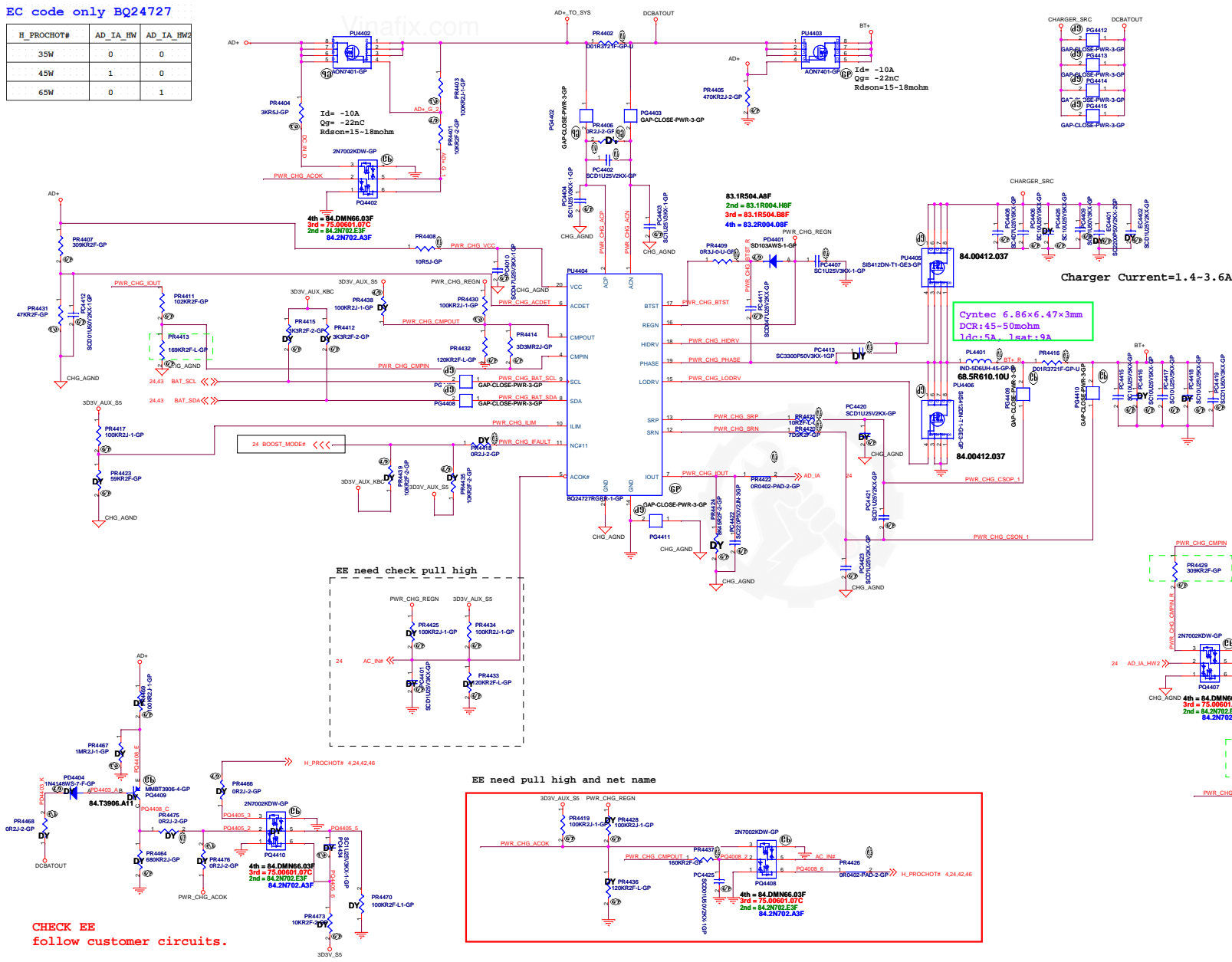
Date: Thursday, October 08, 2015

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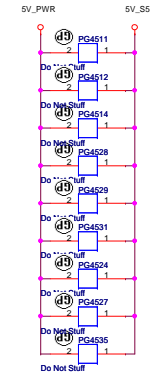
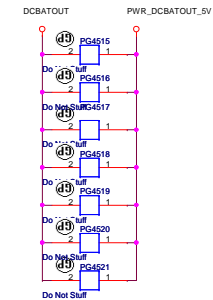
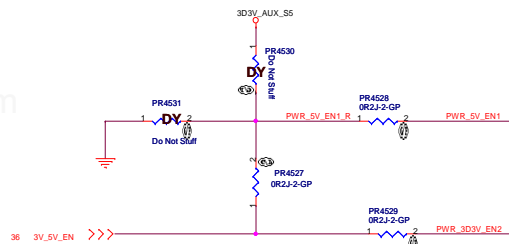
SSID = Charger

EC code only BQ24727

H_PROCHOT#	AD_IA_HW	AD_IA_HW2
35W	0	0
45W	1	0
65W	0	1

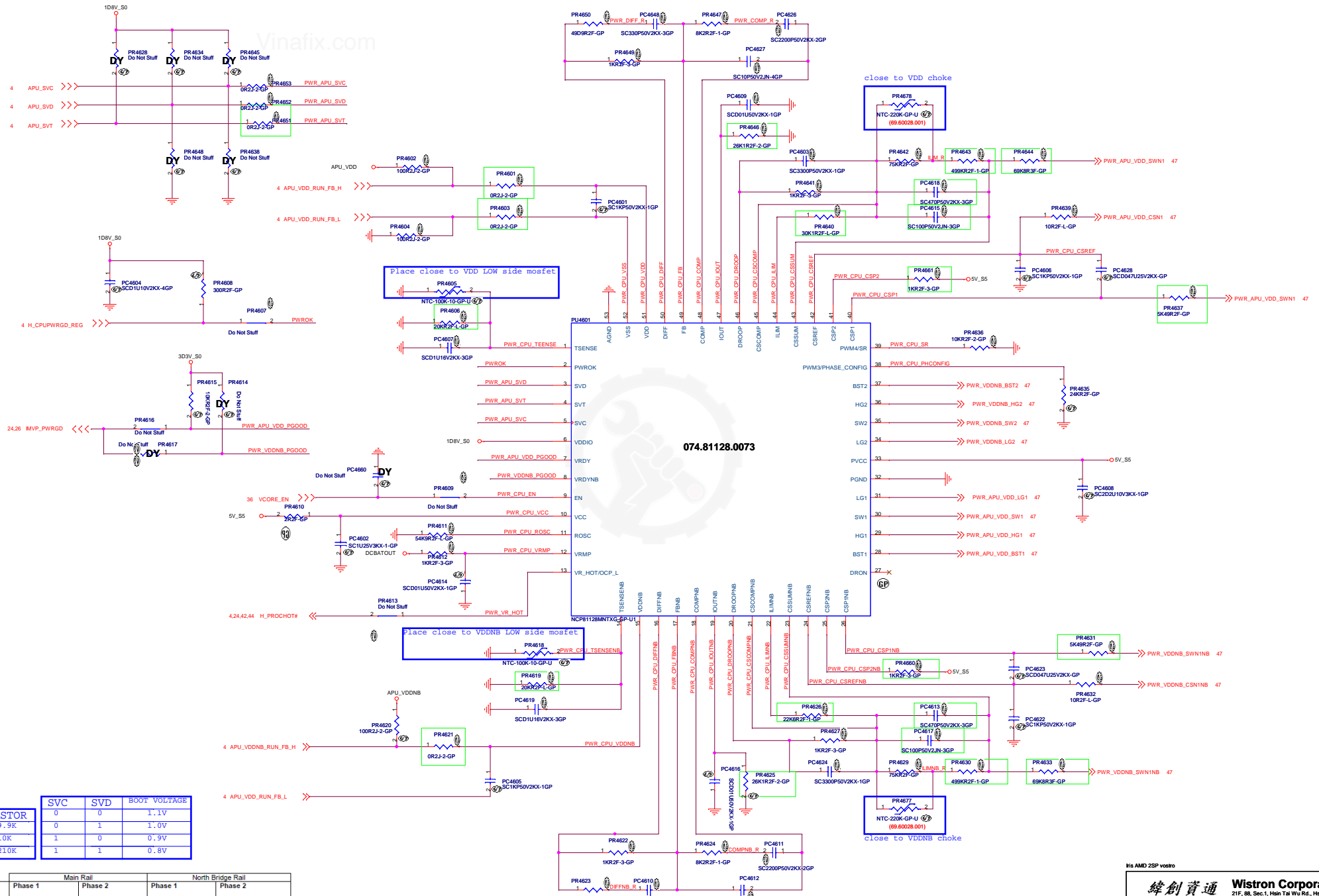


Battery type	4 series	3 series	2 series
PR4407	309kohm	287kohm	287kohm
PR4431	47kohm	47kohm	47kohm
ADCET	18.178V	17.055V	17.055V



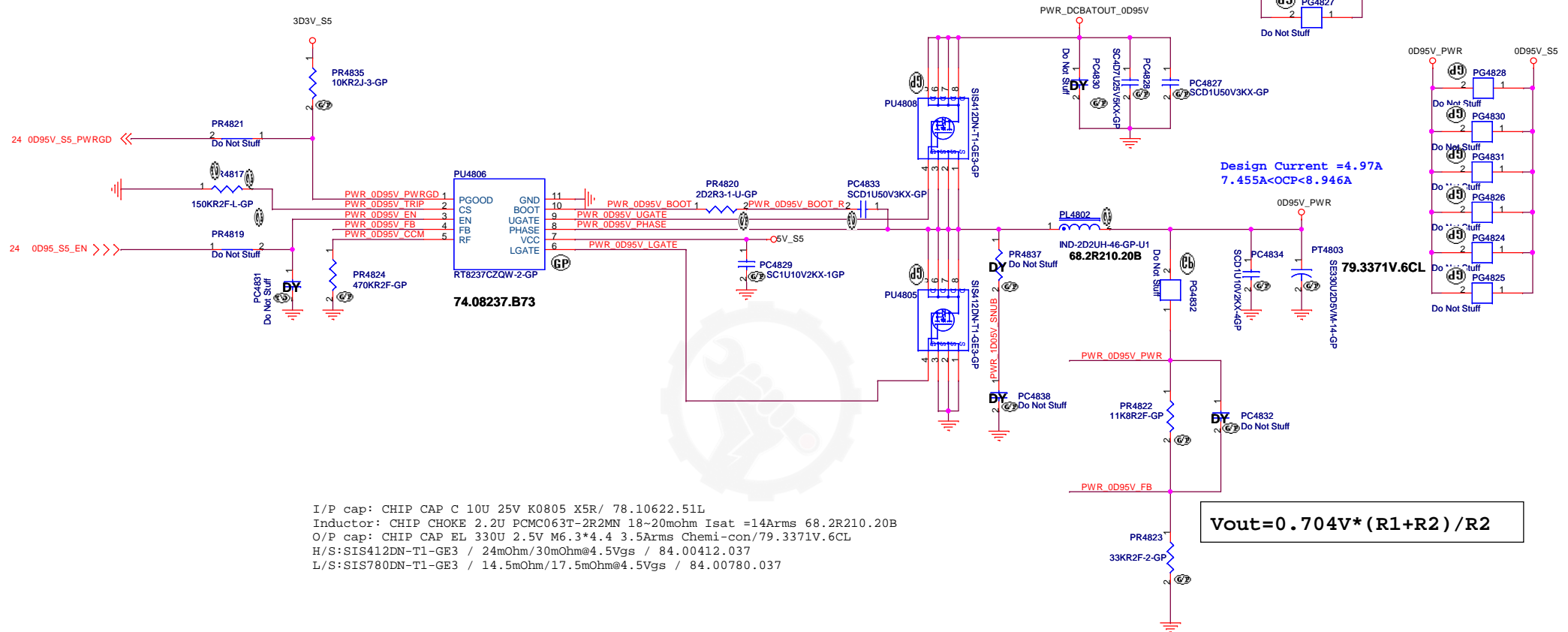
I/P cap: CHIP CAP C 10U 25V K0805 X5R/ 78.10622.51L
Inductor: CHIP CHOKe 2.2U P3CM0637-2R2Mn 18mohm/20mohm Isat = 14Arms 68.2R210.20B
O/P cap:CHIP CAP EL 220U 6.3V M6.3*4.4 /Chemt-con/ 18mohm / 79.22710.3KL
H/S:ISi412 / 24mOhm/30mOhm@4.5Vgs / 84.00412.037
L/S:SiS1780 / 14.5mOhm/17.5mOhm@4.5Vgs / 84.00780.037

SSID = CPU.Regulator



via AMD 2SP-vostro


```
SSID = PWR.Plane.Regulator_0D95V
```



I/P cap: CHIP CAP C 10U 25V K0805 X5R/ 78.10622.51L
Inductor: CHIP CHOKE 2.2U PCMC063T-2R2MN 18-20mohm Isat =14Arms 68.2R210.20B
O/P cap: CHIP CAP EL 330U 2.5V M6.3*4.4 3.5Arms Chemi-con/79.3371V.6CL
H/S: SIS142DN-T1-GE3 / 24mOhm/30mOhm@4.5Vgs / 84.00412.037
L/S: SIS780DN-T1-GE3 / 14.5mOhm/17.5mOhm@4.5Vgs / 84.00780.037

Iris AMD 2SP vostro

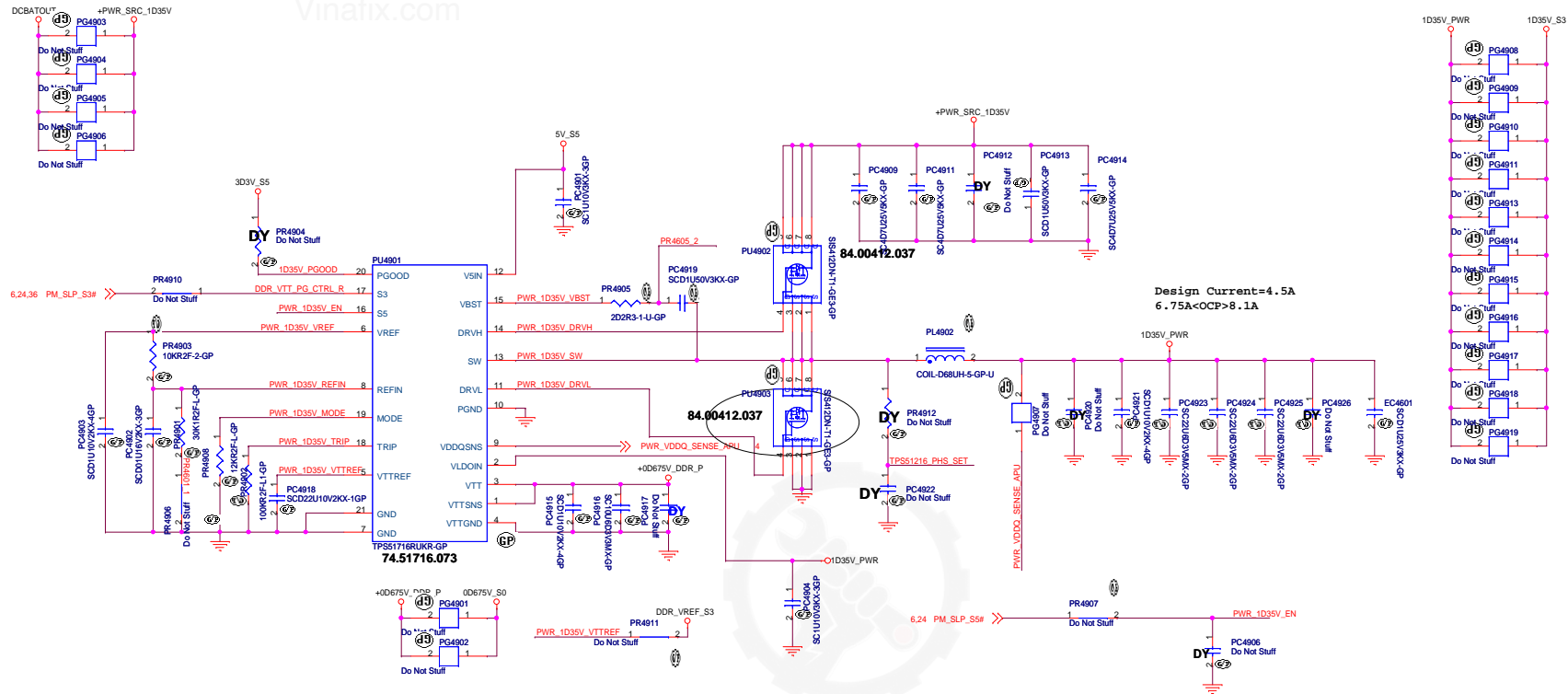
緯創資通 **Wistron Corporation**
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Taipei Hsien 221, Taiwan, R.O.C.

Title	RT8237_0D95V
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Size A3	Document Number <i>Iris</i> AMD BEEMA
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SSID = PWR.Plane.Regulator_1p35v0p675v



State	S3	S5	VDDR	VTTREF	VTT
S0	Hi	Hi	On	On	On
S3	Lo	Hi	On	On	Off (Hi-Z)
S4/S5	Lo	Lo	Off	Off	Off

TPS51716 MODE

PR4608	Frequency	Discharge Mode
33k ohm	500kHz	Non-tracking Discharge
22k ohm	670kHz	
12k ohm	670kHz	
1k ohm	500kHz	Tracking Discharge

I/P cap: 10U 25V K0805 X5R / 78.10622.51L
 Inductor: CHIP IND 0.1UH M PCMC063T-R10MN 1.5~1.7mohm Isat =60Arms 68.R1010.10T
 O/P cap: CHIP CAP C 22U 6.3V M0805 X5R / 78.22610.51L
 H/S: SIS412 / 24mOhm/30mOhm@4.5Vgs / 84.00412.037
 L/S: SIS780 / 14.5mOhm/17.5mOhm@4.5Vgs / 84.00780.037

Iris AMD 2SP vostro

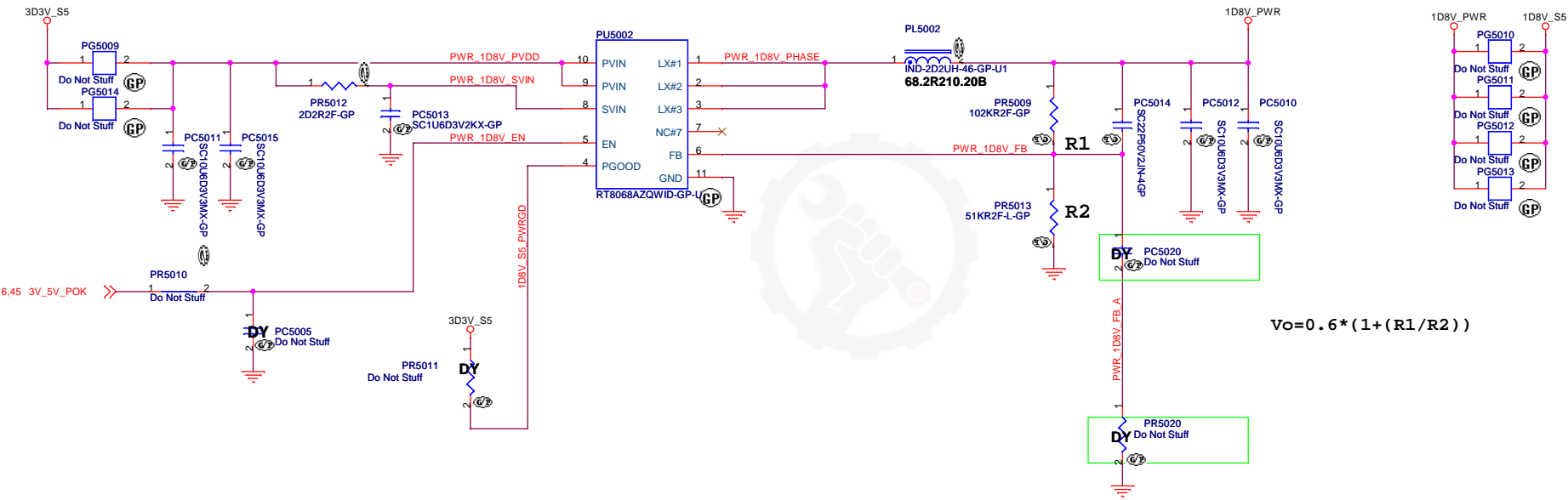
緯創資通 Wistron Corporation		21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title TPS51716_1D35V_S3/0D675V_S0			
Size C	Document Number	Iris AMD BEEMA	Rev X00
Date: Thursday, October 08, 2015	Sheet 49	of	104

SSID = PWR.Plane.Regulator_1p8v

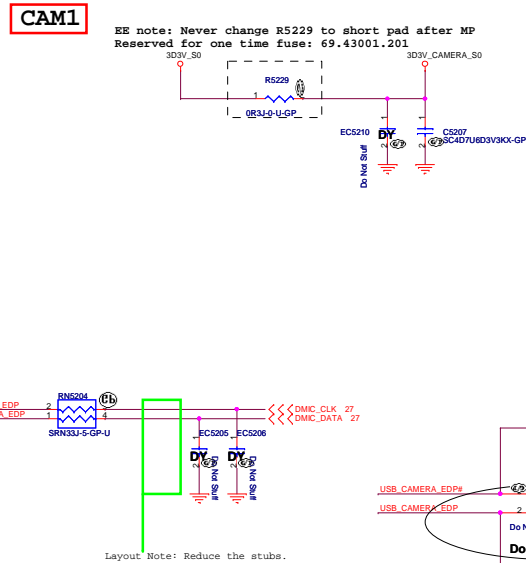
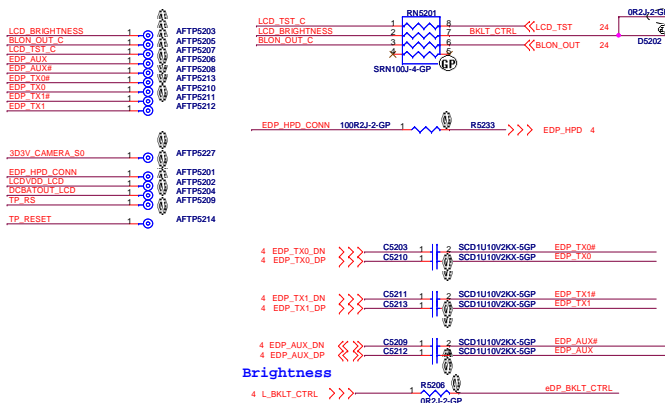
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RT8068A for 1D8V_S5

Design Current=1.4A

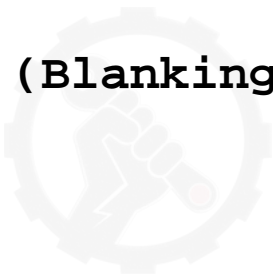






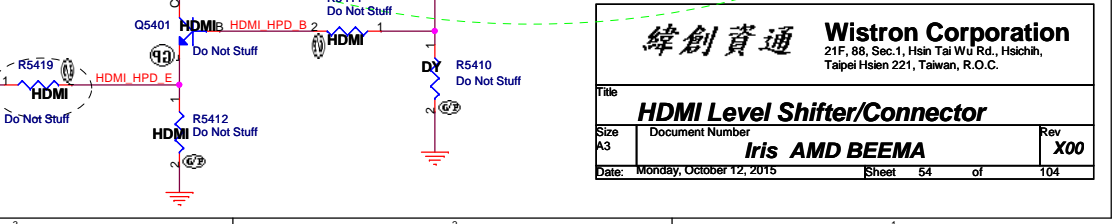
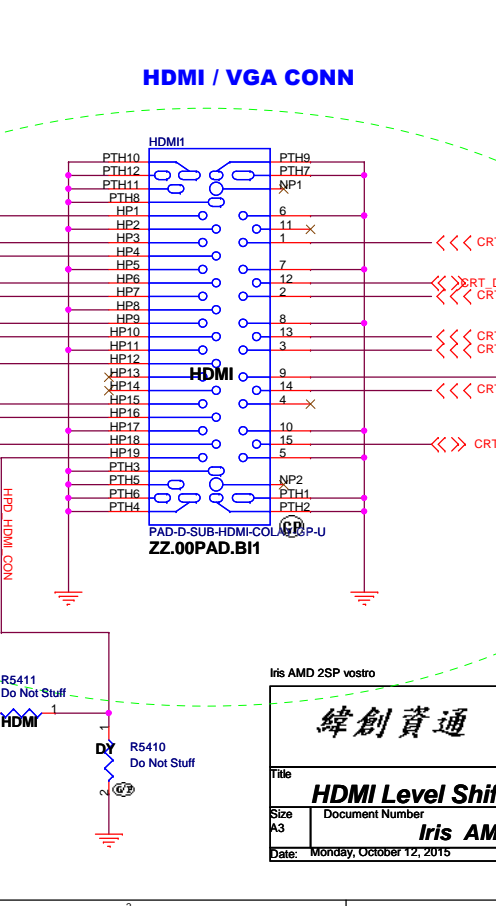
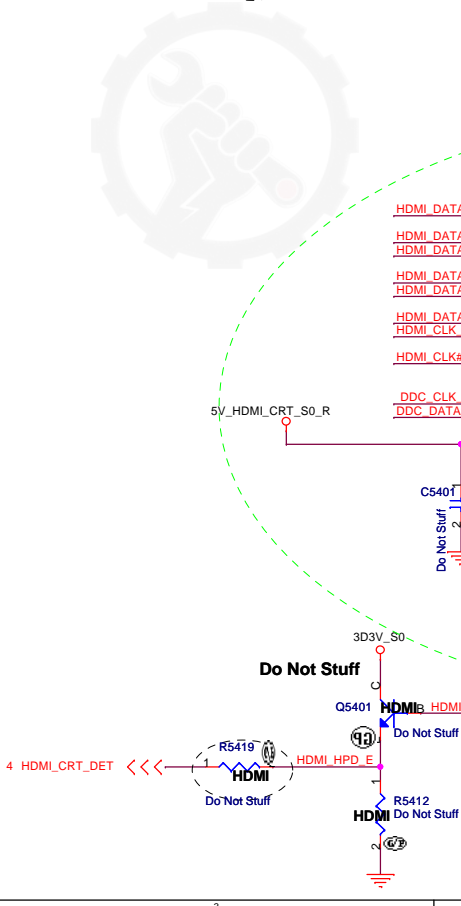
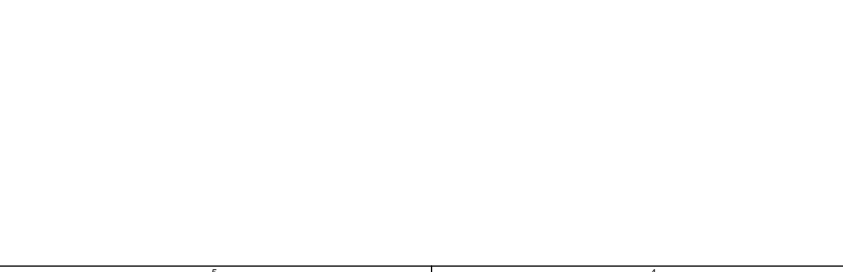
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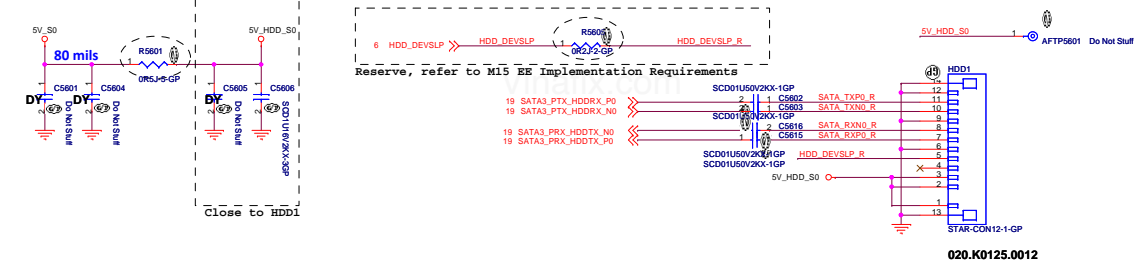
Iris AMD 2SP vostro			
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Title			
		Reserved	
Size	Document Number	Rev	
A3	Iris AMD BEEMA	X00	
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The diagram illustrates the timing relationships for HDMI signals. It shows the clock signals (HDMI_CLK#_R and HDMI_CLK#_R) and data signals (HDMI_DATA0#_R, HDMI_DATA0_R, HDMI_DATA1#_R, HDMI_DATA1_R, HDMI_DATA2#_R, and HDMI_DATA2_R). The signals are shown as waveforms with setup and hold times indicated by arrows. The setup and hold times are labeled as C5402, C5403, C5404, C5405, C5409, and C5406. The signals are labeled as Do Not Stuff and Do Not Stuff. The signals are shown as waveforms with setup and hold times indicated by arrows. The setup and hold times are labeled as C5402, C5403, C5404, C5405, C5409, and C5406. The signals are labeled as Do Not Stuff and Do Not Stuff.

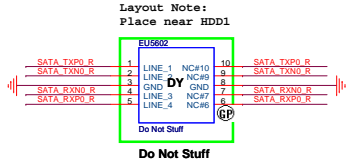


SSID = SATA

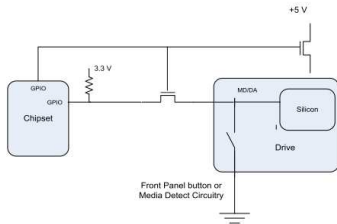
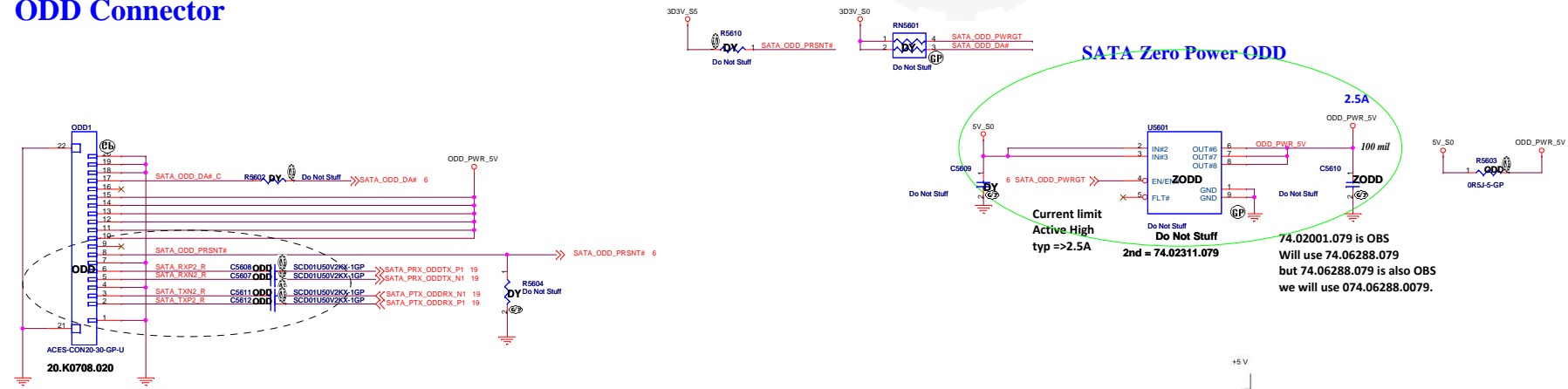
SATA HDD Connector



delete HDD redriver



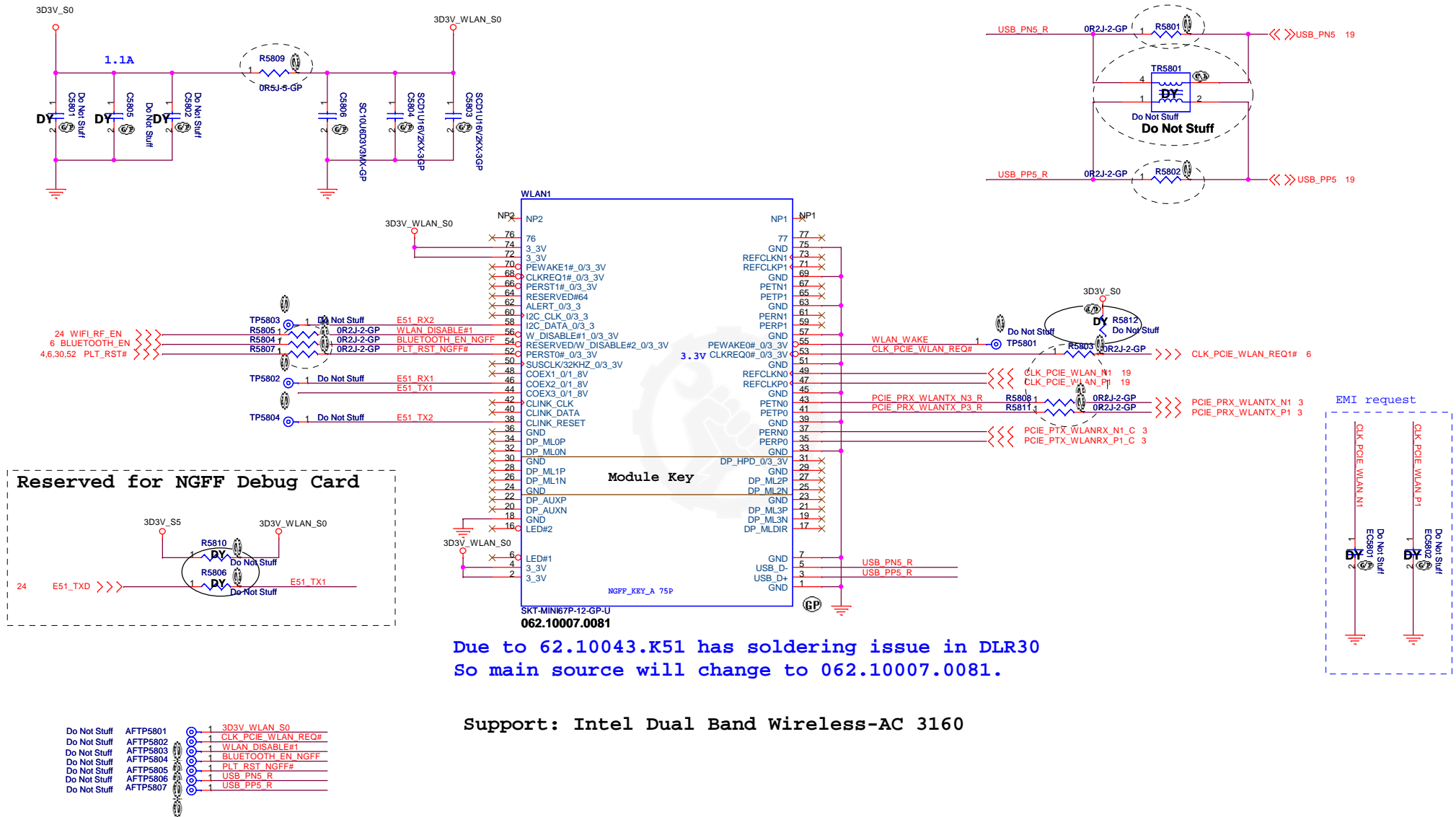
ODD Connector



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Main Func = WLAN

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Due to 62.10043.K51 has soldering issue in DLR30
So main source will change to 062.10007.0081.

Iris AMD 25P vostro

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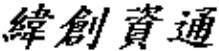
Title			
WLAN CONN			
Size	Document Number	Rev	
A3	Iris AMD BEEMA	X00	
Date:	Thursday, October 08, 2015	Sheet	58 of 104

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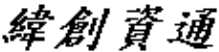
Iris AMD 2SP vostro

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Title			
Reserved			
Size A4	Document Number Iris AMD BEEMA		Rev X00
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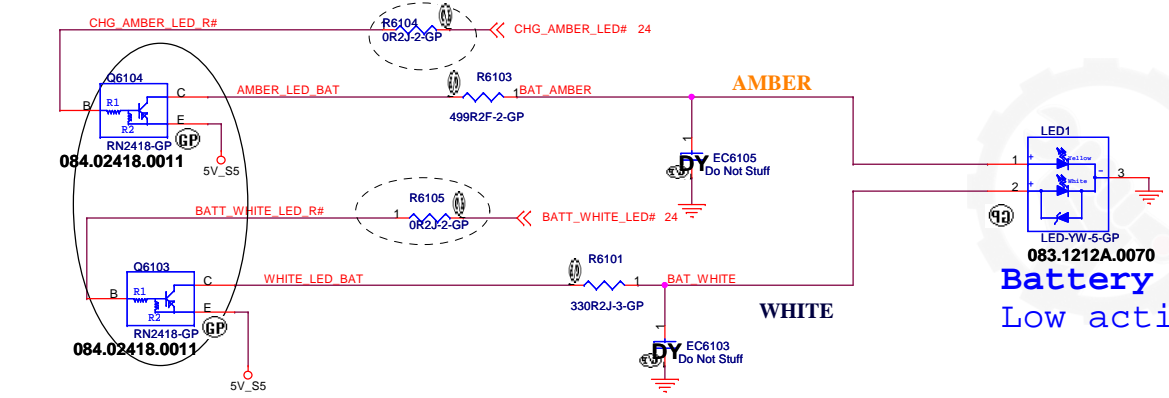
		Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title (Reserved)			
Size A4	Document Number Iris AMD BEEMA		Rev X00
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SSID = LED board/Power Button

Power button

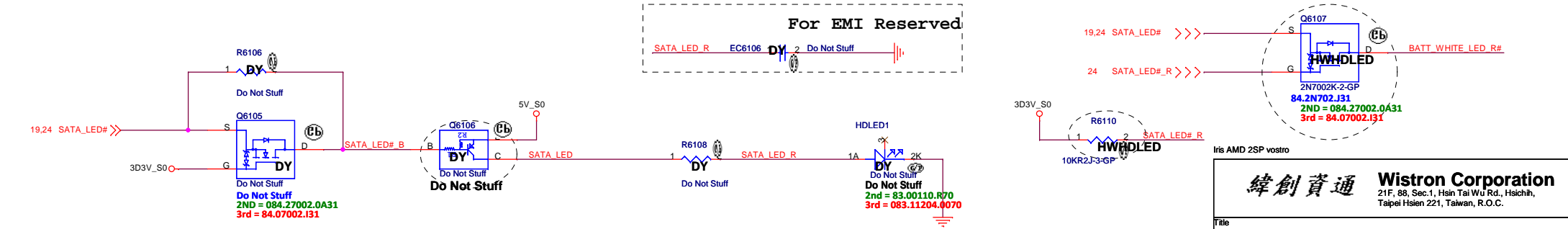
Battery LED1 (AMBER_LED)
Low activated from KBC GPIO

EC6101 must be used 1000pF.



Battery LED2 (WHITE_LED)
Low activated from KBC GPIO

Main Func = HDD LED



SATA HDD LED
LOW activated from PCH GPIO

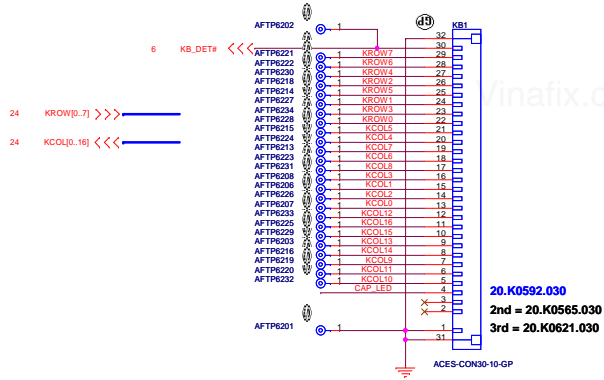
Wistron Corporation
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LED Board/Power Button
Iris AMD BEEMA

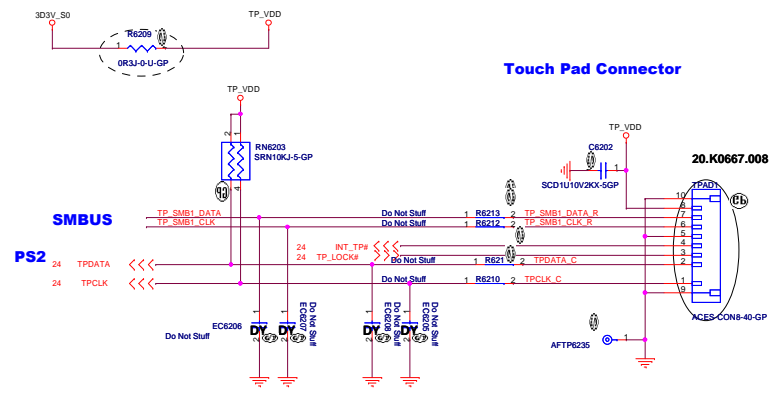
Size A3 Document Number Rev X00
Date: Thursday, October 08, 2015 Sheet 61 of 104

SSID = KBC

Internal Keyboard Connector (DVC40)



SSID = Touch.Pad

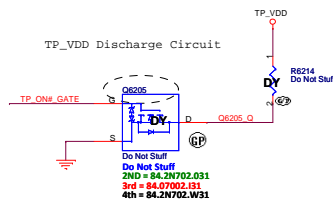


Pin number	Pin name
8	TP_VDD
7	TP_SMB1_DATA_R
6	TP_SMB1_CLK_R
5	GND
4	INT_TP#
3	TP_CLOCK#
2	TPDATA_C
1	TPCLK_C

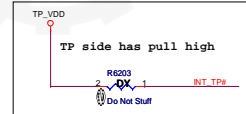
CAP LED Control



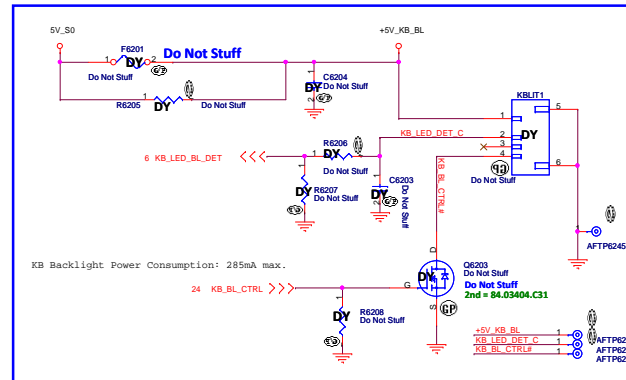
TP_VDD Discharge Circuit



Need to check if it is Active High or Active Low and check if there is PH on TPAD side.



Keyboard Backlight



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Key Board/Touch Pad		
Title	Document Number	Rev
A2	Iris AMD BEEMA	X00
Date: Thursday, October 08, 2015	Sheet 62 of 104	

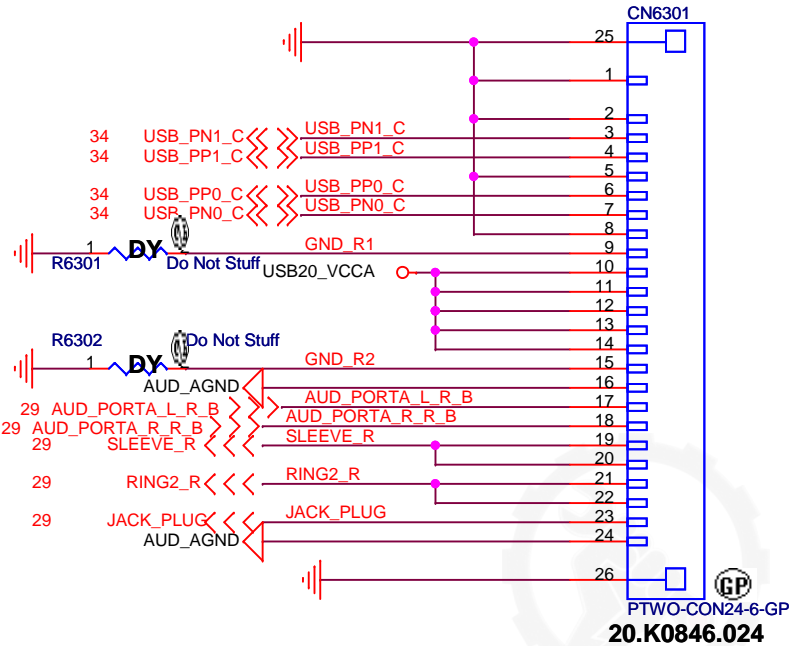
I/O Board Connector

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USB2 (USB2.0)
USB3 (USB2.0)

USB2 (USB2.0)
USB3 (USB2.0)

Universal Jack



Pitch: 1mm
Power: 5 pins
GND: 4 pins
AGND: 2 Pins



USB_PN1_C	1	⊙	AFTP6301	Do Not Stuff
USB_PP1_C	1	⊙	AFTP6302	Do Not Stuff
USB_PN0_C	1	⊙	AFTP6303	Do Not Stuff
USB_PP0_C	1	⊙	AFTP6304	Do Not Stuff
RING2_R	1	⊙	AFTP6305	Do Not Stuff
AUD_PORTA_L_R_B	1	⊙	AFTP6306	Do Not Stuff
JACK_PLUG	1	⊙	AFTP6307	Do Not Stuff
AUD_PORTA_R_R_B	1	⊙	AFTP6309	Do Not Stuff
SLEEVE_R	1	⊙	AFTP6310	Do Not Stuff
USB20_VCCA	1	⊙	AFTP6311	Do Not Stuff

AUD_AGND	1	⊙	AFTP6313	Do Not Stuff
	1	⊙	AFTP6314	Do Not Stuff

Iris AMD 2SP vostro

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Title			
IO Board Connector			
Size A4	Document Number Iris AMD BEEMA		Rev X00
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Title <div>Reserved</div>	
Size <div>A4</div>	Document Number <div>Iris AMD BEEMA</div>
Date <div>Thursday, October 08, 2015</div>	Rev <div>X00</div>
Date <div>Thursday, October 08, 2015</div> Sheet <div>64</div> of <div>104</div>	

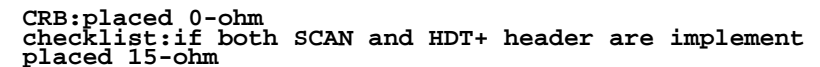
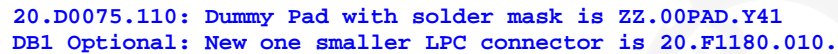
5

4

3

2

1



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Debug port

Iris AMD BEEMA

Rev
X00

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Iris AMD 2SP vostro

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Title			
Reserved			
Size	Document Number		Rev
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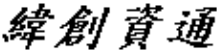
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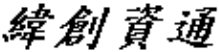


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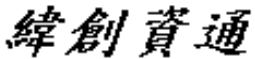
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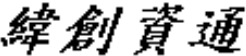


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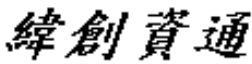
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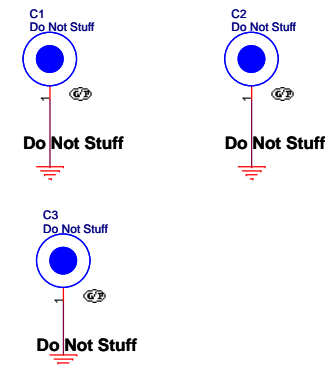
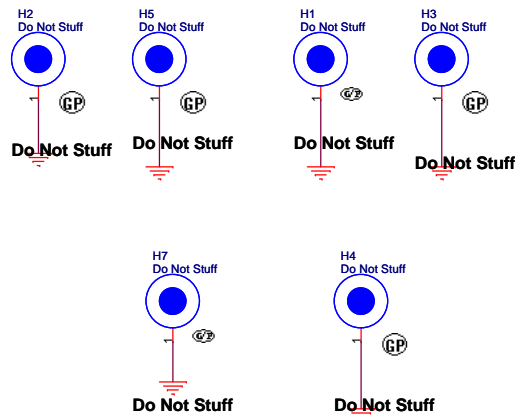
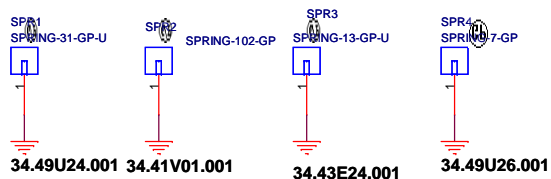
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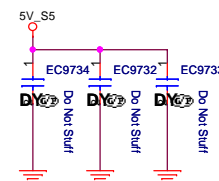
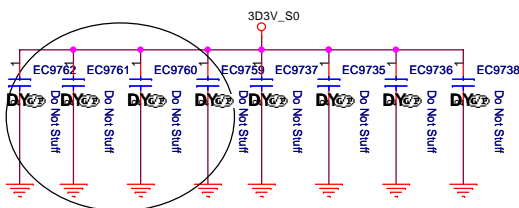
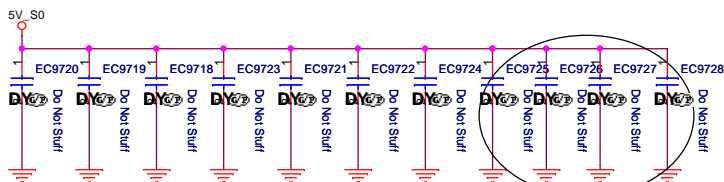
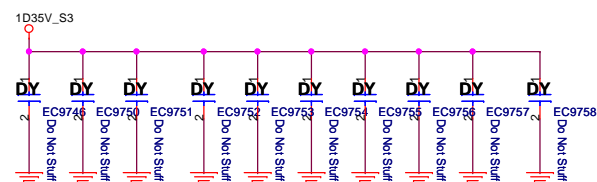
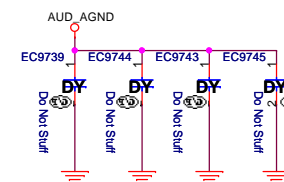
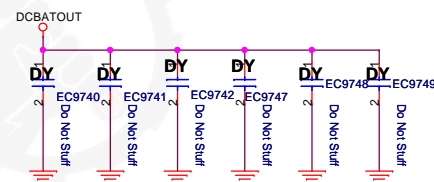
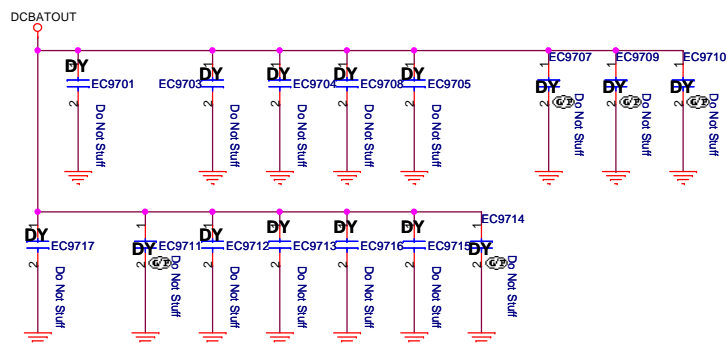
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SSID = Mechanical

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SSID = EMI



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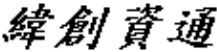
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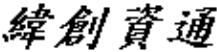


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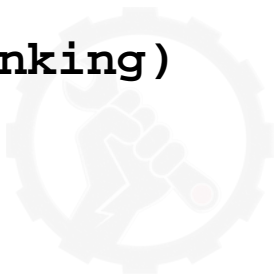
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Change notes -

DATE	VERSION	DATE	Page	Modify List	OWNER
	X00	2015/09/07	52	delete CCD connetor	
	X00	2015/09/07		chang WLAN1to 062.10007.0081, BATT1 to 20.81153.008, CN6301to 20.K0846.024,DCIN to 20.F2132.006,RJ45 to 022.10001.0C41	
	X00	2015/09/08	44-50	add power team schematic	
	X00	2015/09/08		delete KB2 connector add HDD re_driver schematic change DT mode schematic to DY	
	X00	2015/09/09	47	change PT4705 to 79.33612.6CL ,add PT4706	
	X00	2015/09/09	61	reserve HDLED function part	
	X00	2015/09/09	4	add VDD_095_FB_H,VDD_095_FB_L connect to TP	
	X00	2015/09/10	86	delete 1D35V_VGA_S0 power and relate capacitances	
	X00	2015/09/11	42	add PAD EL4201~EL4203, add EC4201~EC4203	
	X00	2015/09/11	45/47	add power team schematic(delete PU4705, stuff PU4707,stuff PU4708, change PU4507 TO new sample)	
	X00	2015/09/14	56	reserve SATA_ODD_PRSNT#,SATA_ODD_DA#,CLK_PCIE_WLAN_REQ1# pull high resisters	
	X00	2015/09/14	56	delete HDD redriver	
	X00	2015/09/14	24	exchange GPIO 15&GPIO13 exchange GPIO5&GPIO7	
	X00	2015/09/14	6	remove GPIO77(VRAM_SIZE1) GPIO78: cedar--inspiron ,janus--Vostro	
	X00	2015/09/14		change 20.I0147.001 to 020.I0002.0001, 75.03101.07D to 75.00099.07D,69.60040.001 to 69.50007.A31,84.00124.H1K to 84.05212.B11 74.22966.093 to 074.05016.0093	
	X00	2015/09/16		change R5808,R5811,R5203,R5204,R5206,R2714,R2716 to 0 ohm	
	X00	2015/09/19	46	update power team schematic (change power IC)	
	X00	2015/09/19		change someZZ PAD to 0 ohm	
	X00	2015/09/21		change PD4201 to 83.P6SMB.JAG,Q6106 to 084.02418.0011,PQ4205 to 084.05112.001K	
	X00	2015/09/24	24	setting mode ID	
	X00	2015/09/24	10,46	add power MLCC &update power schematic	
	X00	2015/09/25	25	follow audio vender advice: change C2907,C2908 to 10uF/0603	
	X00	2015/09/26	46	reserve generate TP_VDD power schematic TP_ON--GPIO57,INT_TP#--GPIO14,TP_LOCK#--GPIO46	
	X00	2015/0928		according the swap report change the component pin net name	

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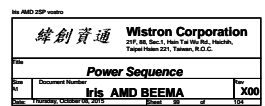
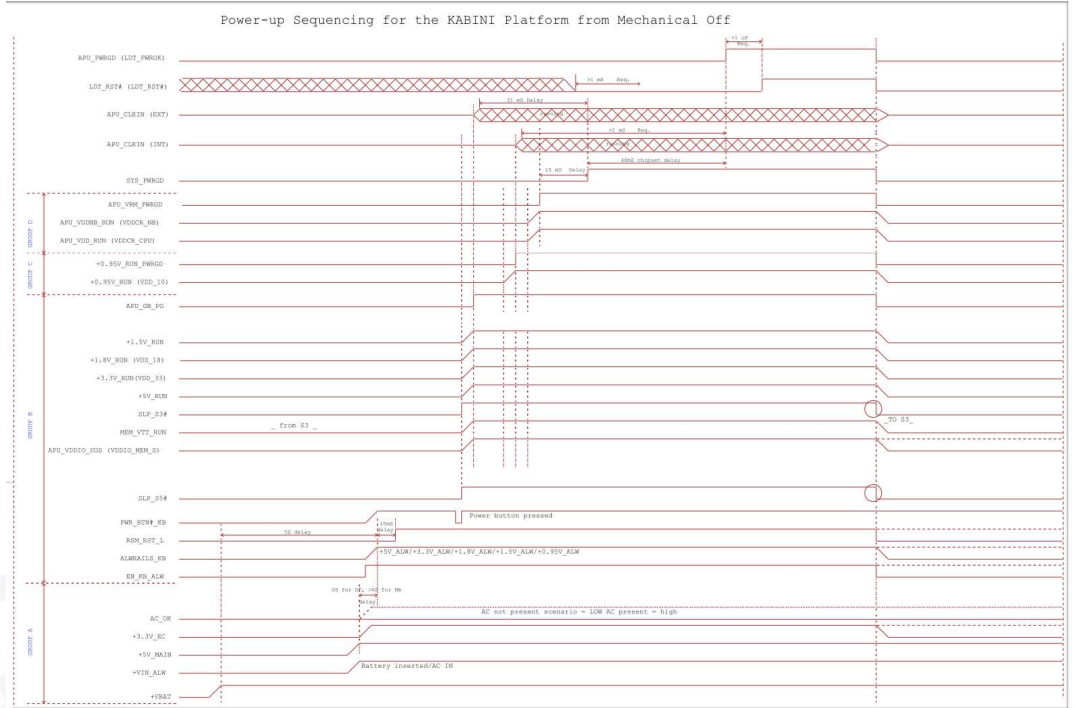
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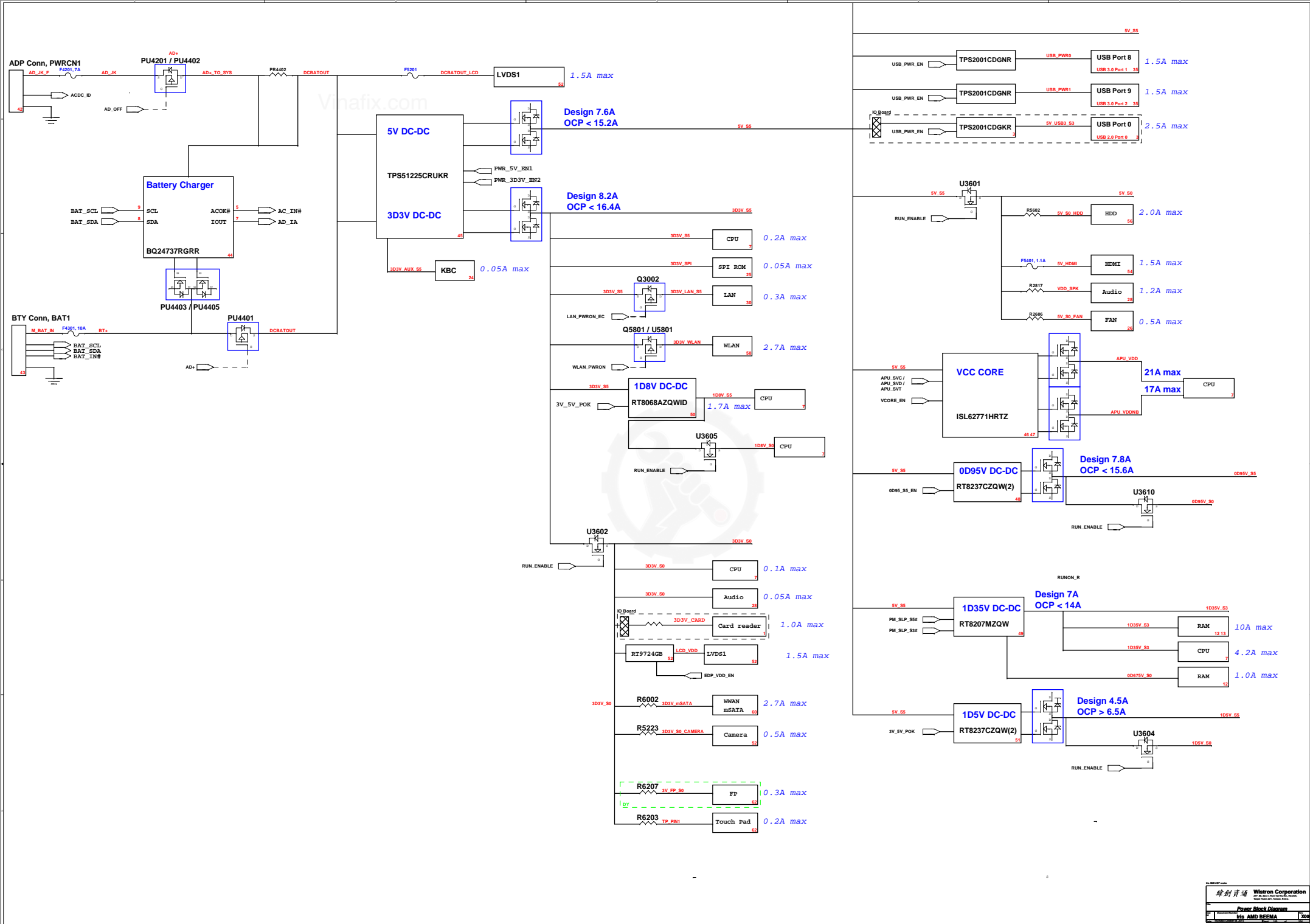
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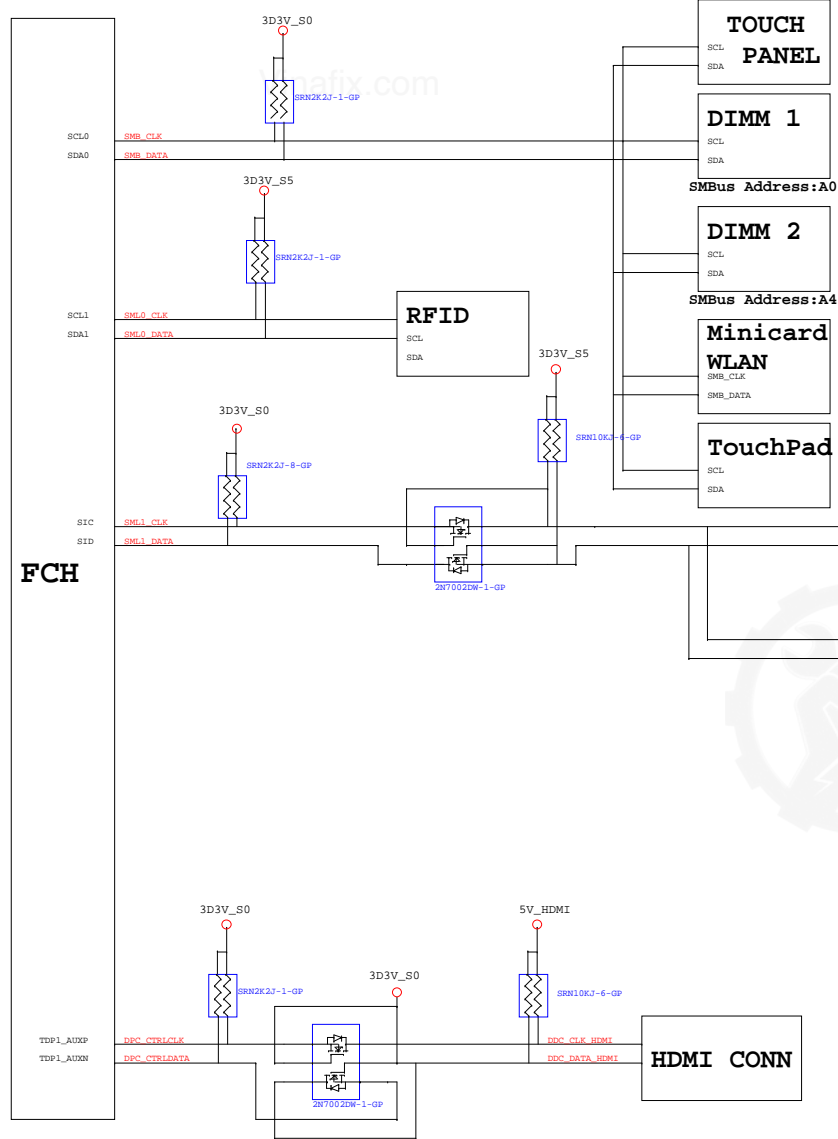
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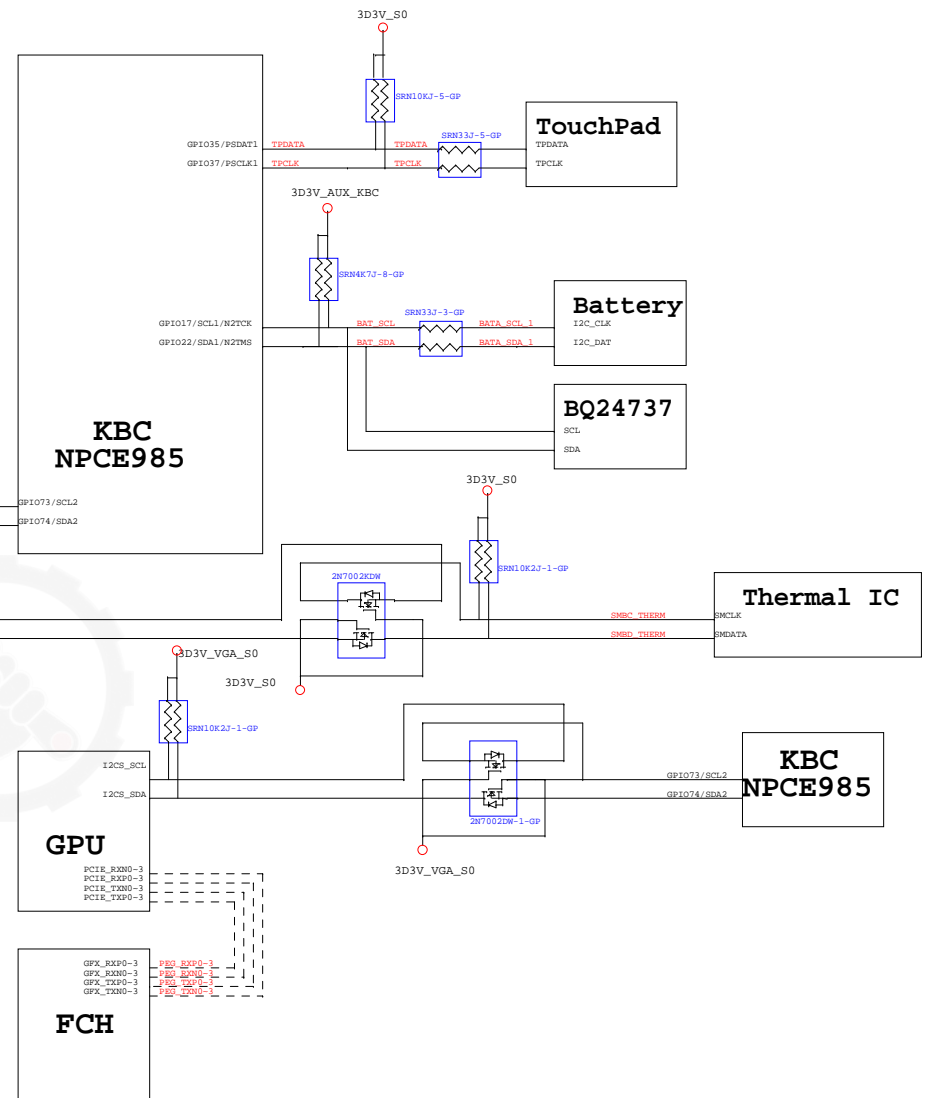




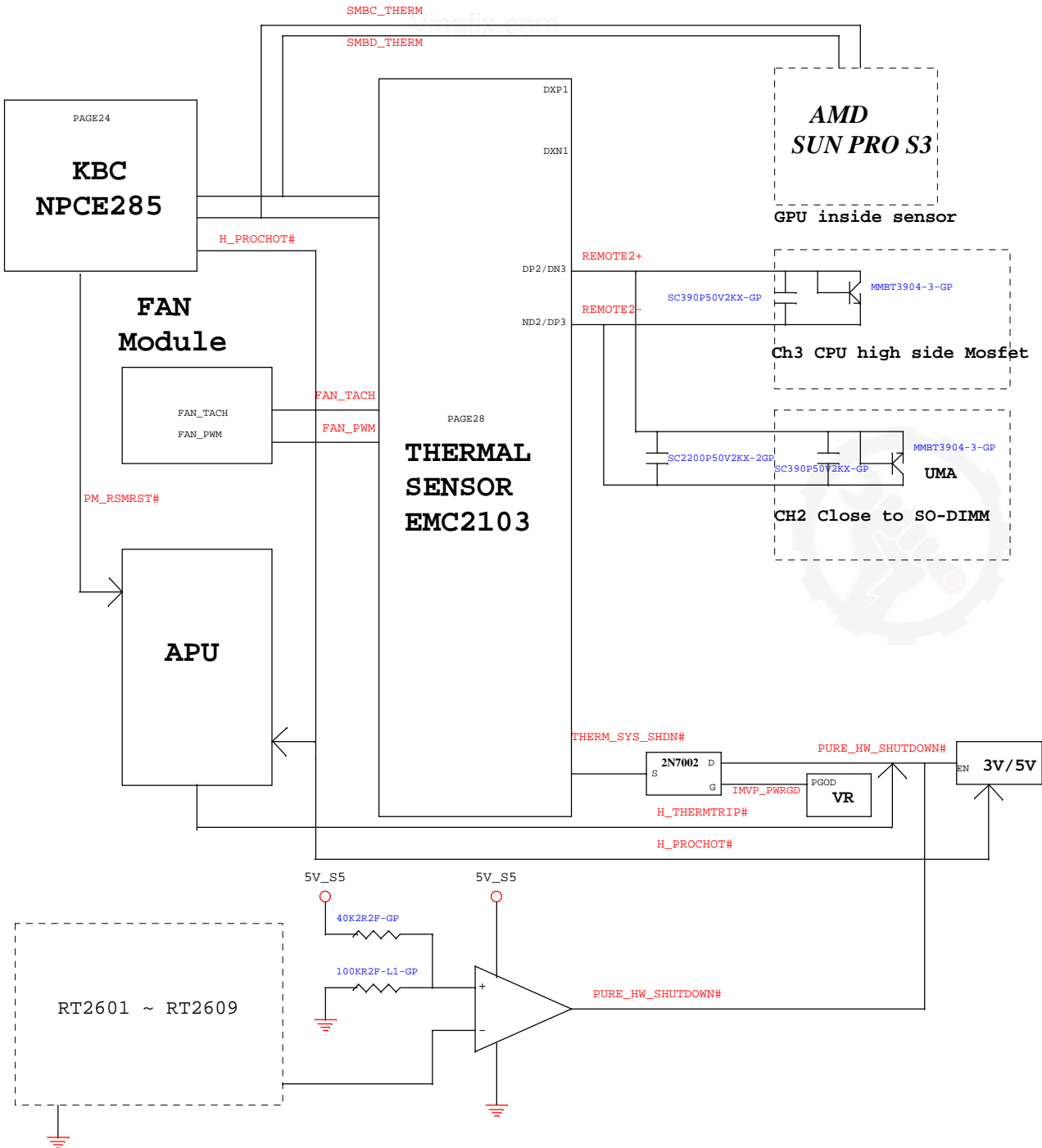
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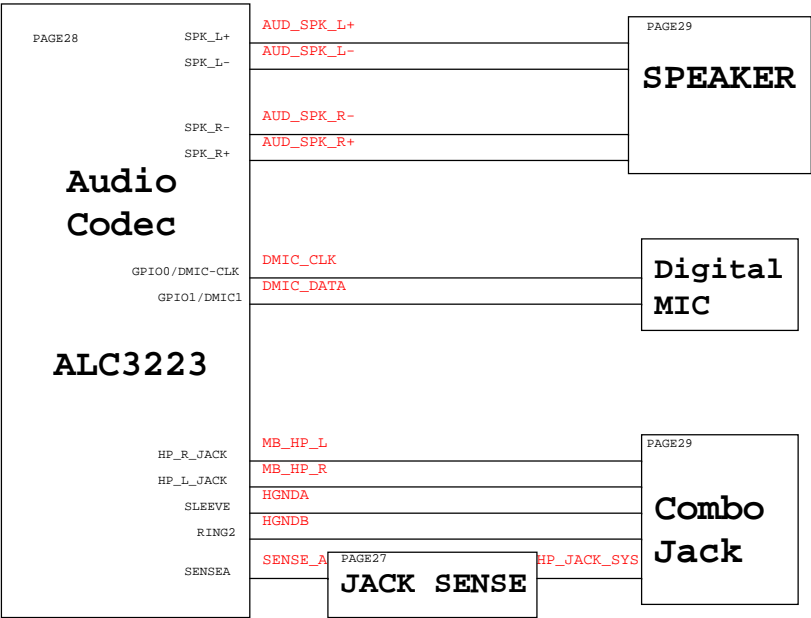
KBC SMBus Block Diagram



Thermal Block Diagram



Audio Block Diagram

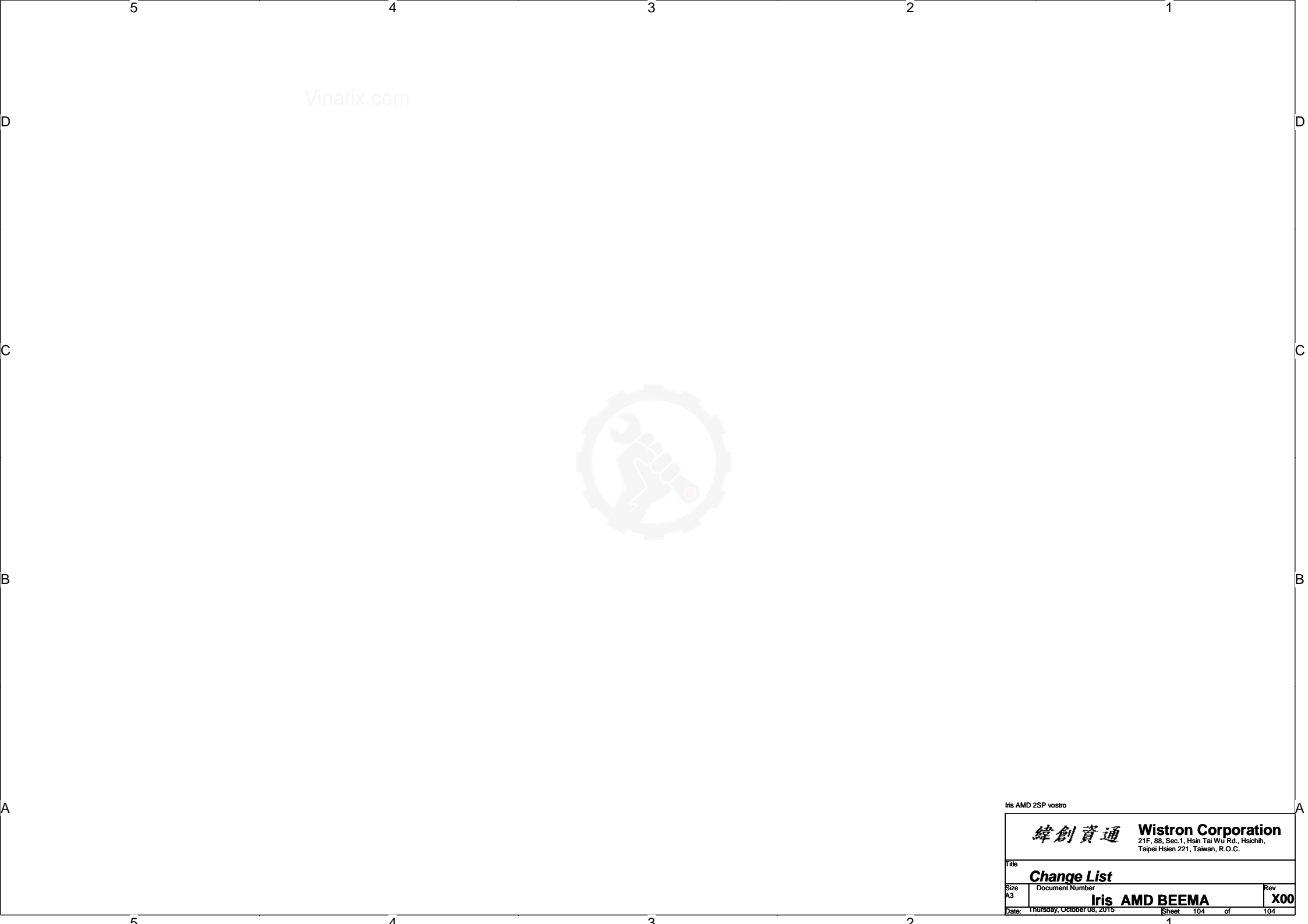


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