

Iris Schematic Beema

2015-10-15
REV : X00

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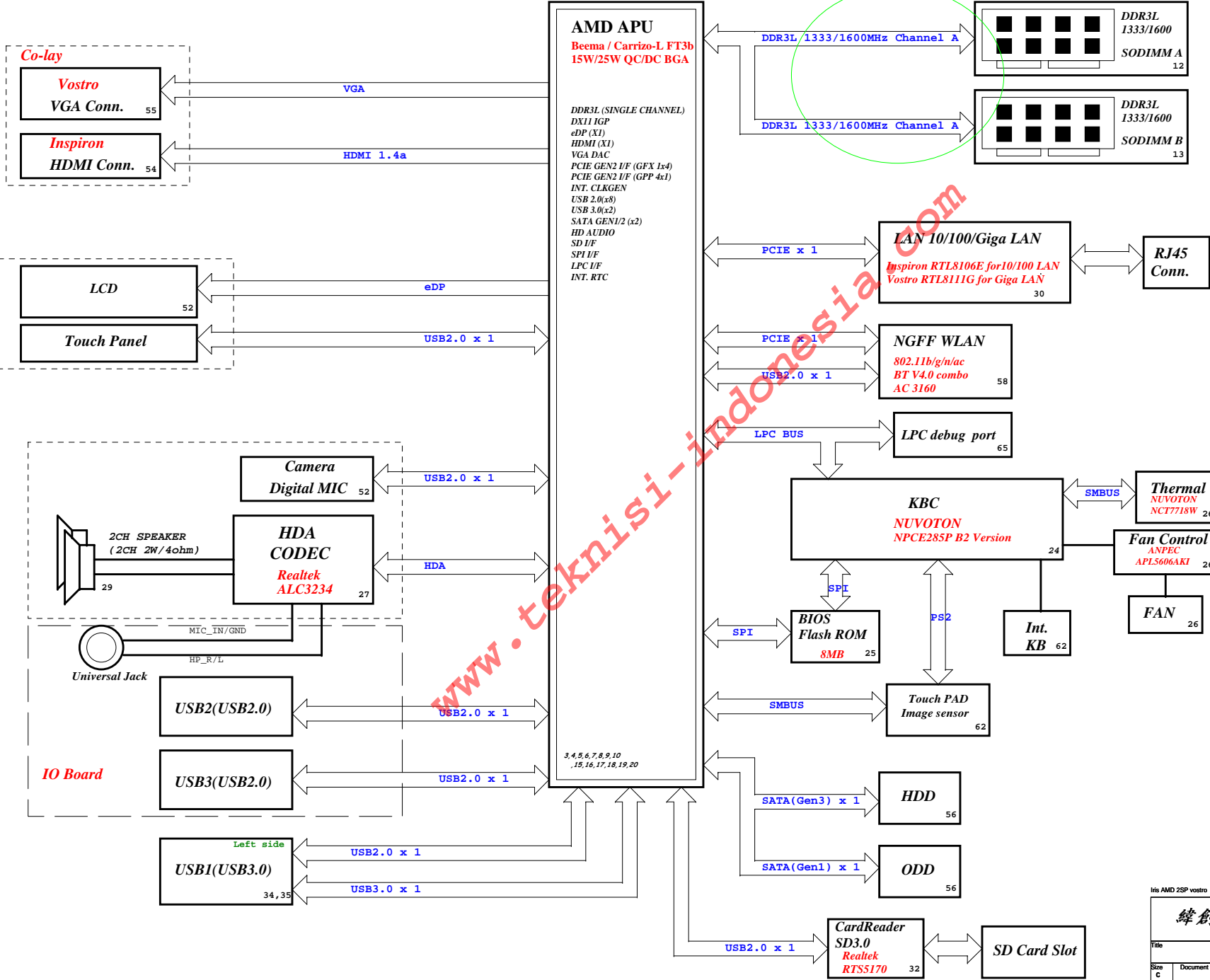
DY : None Installed

Iris AMD 2SP vostro

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Cover Page			
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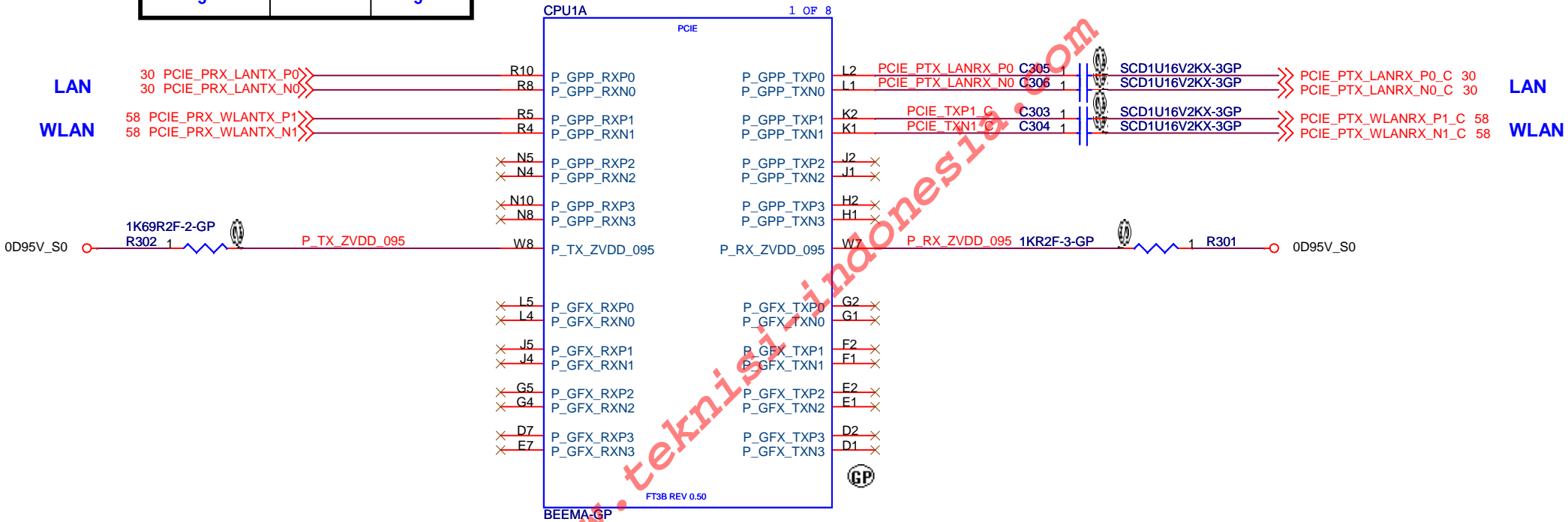
Project code:4PD087010001
PCB P/N: 15276-SA
Revision: X00

Iris AMD Block Diagram

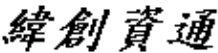


CHARGER		44
BQ24727RGRR		
INPUTS	OUTPUTS	
AD+	DCBATOUT	
BT+		
SYSTEM DC/DC		45
RT6575DGQW		
INPUTS	OUTPUTS	
DCBATOUT	5V_AUX_S5	
	5V_S5	
	3D3V_S5	
CPU Core Power		46, 47
NCP81128MNTXG		
INPUTS	OUTPUTS	
DCBATOUT	VCC_CORE	
DDR3L SUS		49
TPS51716GRUKR		
INPUTS	OUTPUTS	
DCBATOUT	1D35V_S3	
	0D675V_S0	
CPU 1.05V		48
RT8237C2QW		
INPUTS	OUTPUTS	
DCBATOUT	1D05V_S0	
VDDIO_AZ		36
TLV70215DBVR		
INPUTS	OUTPUTS	
3D3V_S0	1D5V_S0	
Switches		36
INPUTS	OUTPUTS	
5V_S5	5V_S0	
3D3V_S5	3D3V_S0	
0D95V_S5	0D95V_S0	
PCB LAYER		
L1:TOP		
L2:VCC		
L3:Signal		
L4:Signal		
L5:GND		
L6:BOT		

GPP CLK port	Device	CLKREQ#
0	LAN WLAN	0
1		1
2		2
3		3



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Title

CPU (PCIE)

Size

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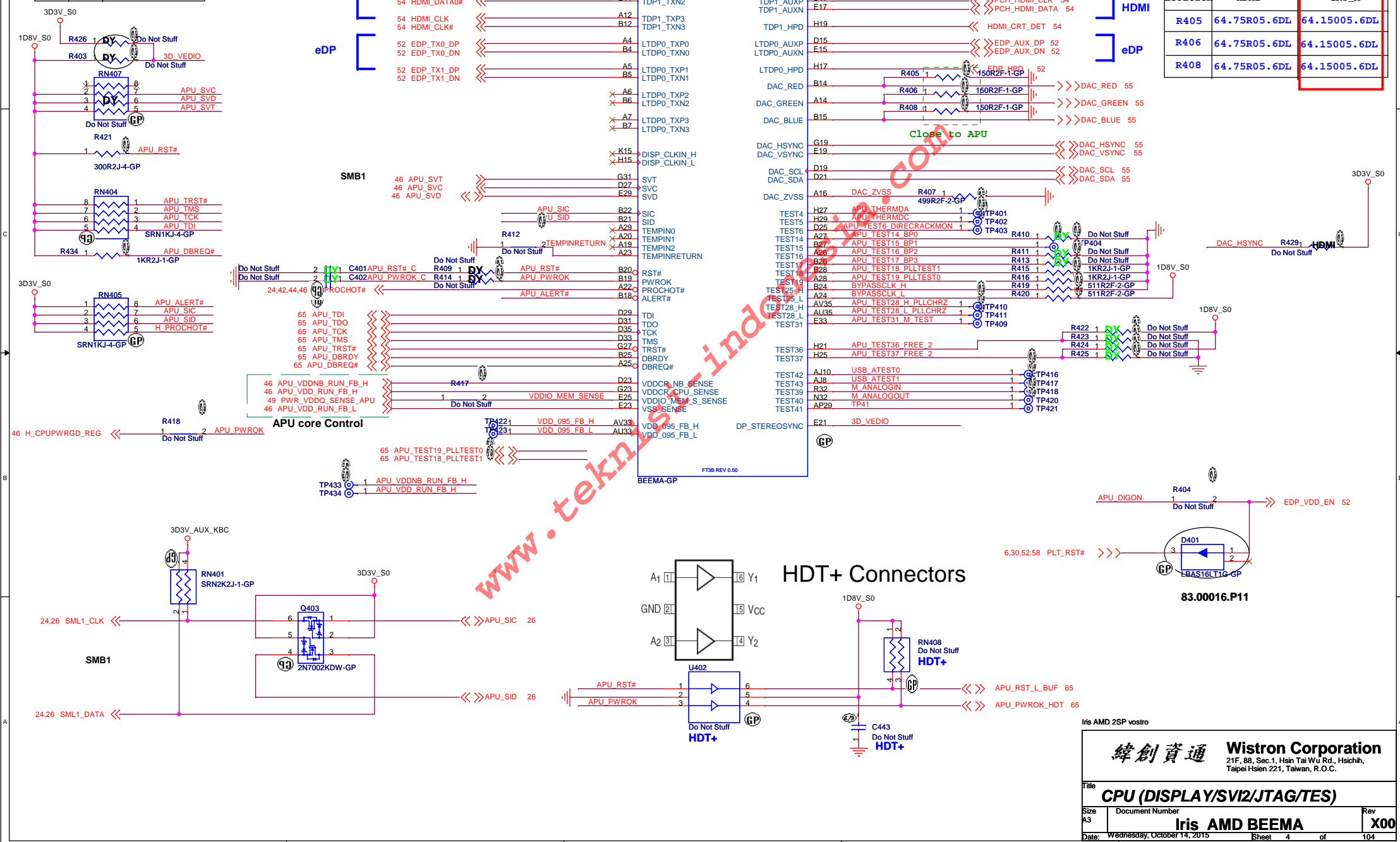
Iris AMD BEEMA

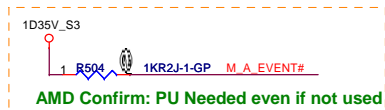
X00

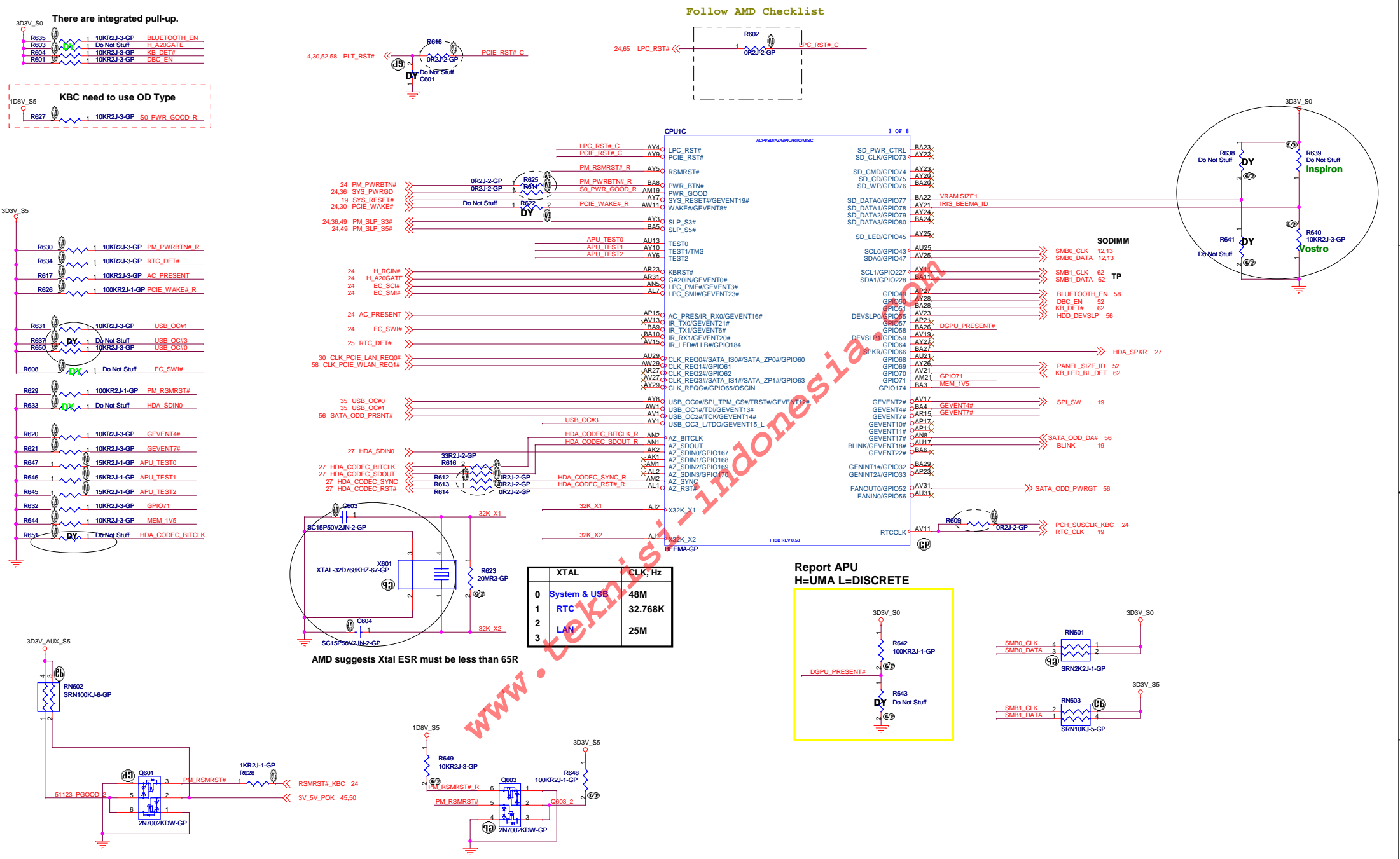
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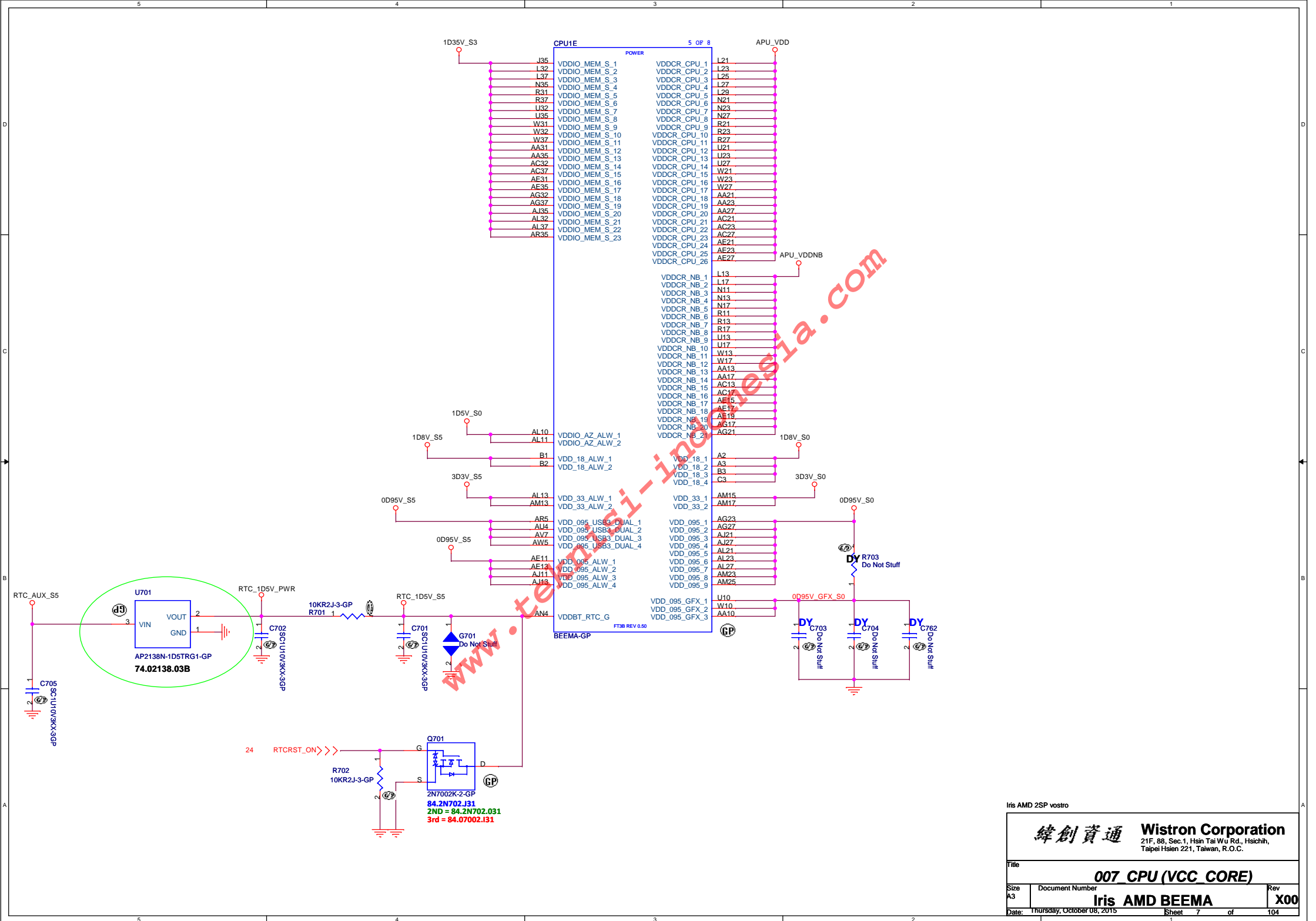
Sheet 3 of 104

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









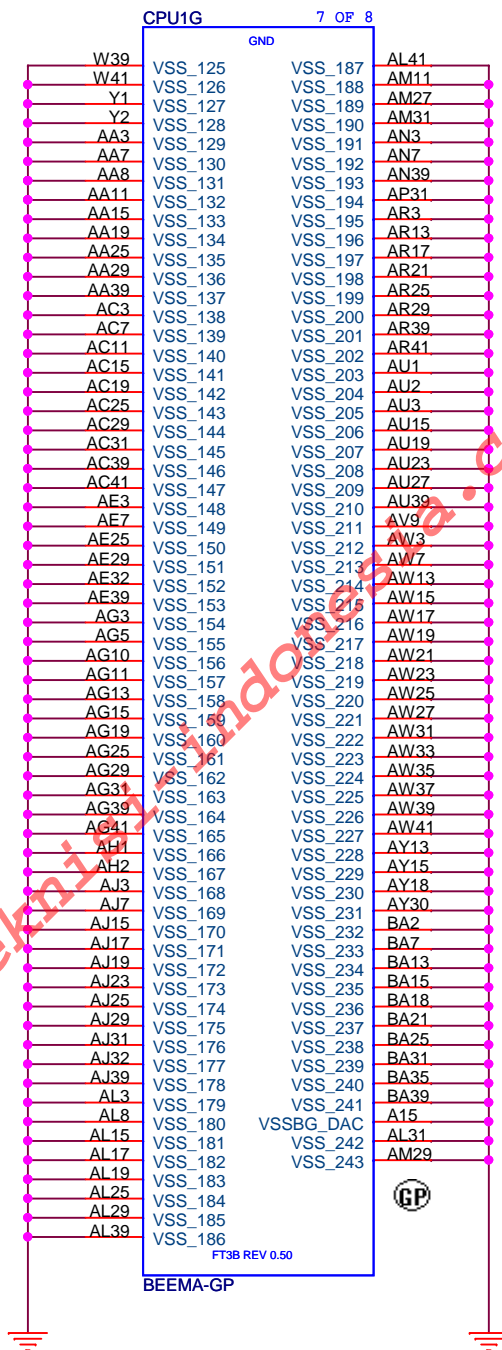
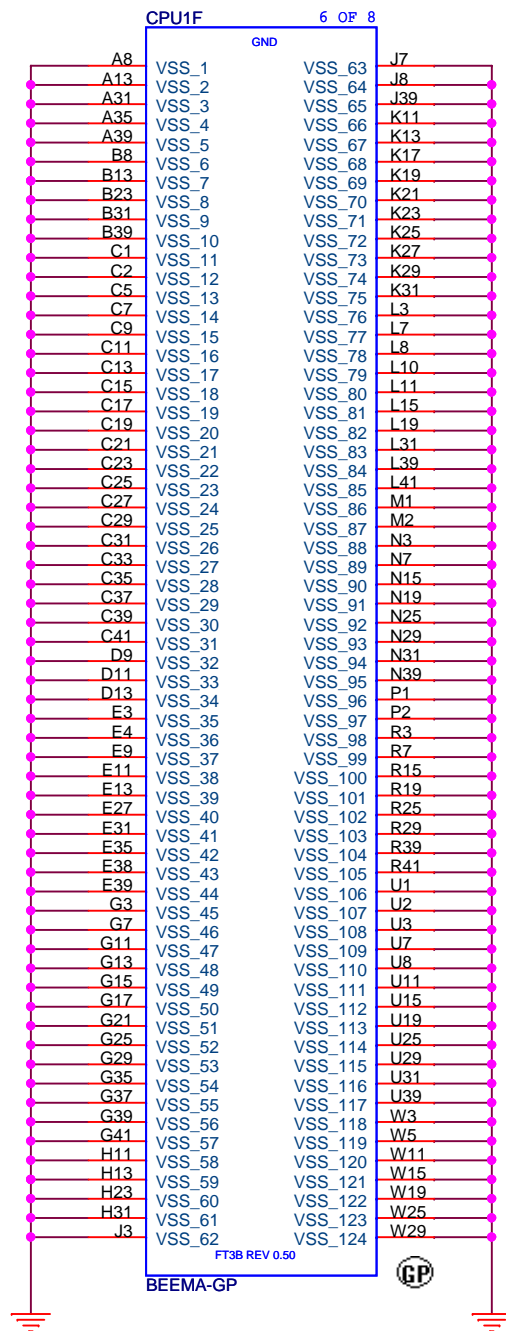
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Title			007 CPU (VCC CORE)	
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CPU (VSS)

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A4

Document Number

Rev

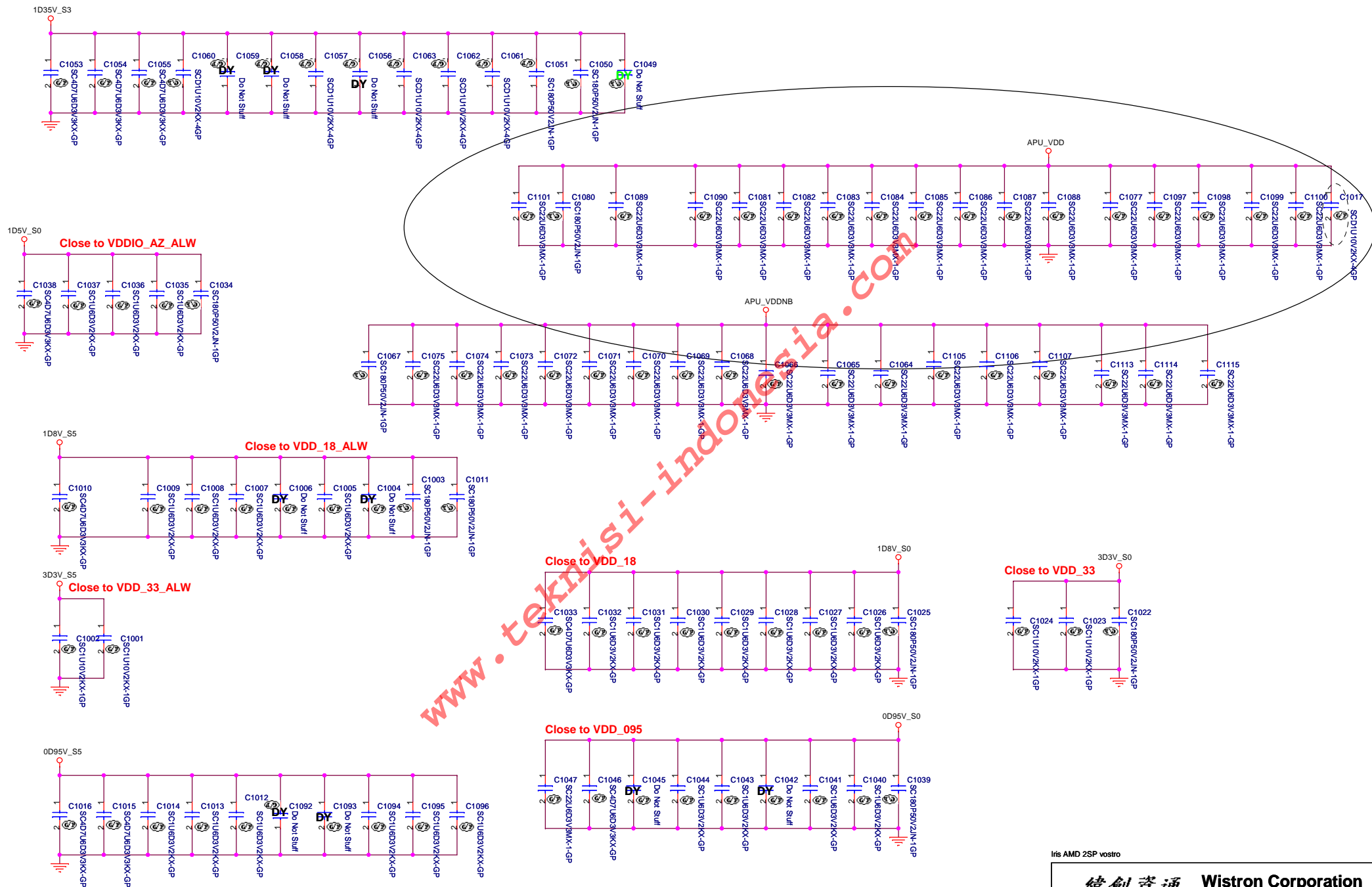
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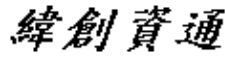
104



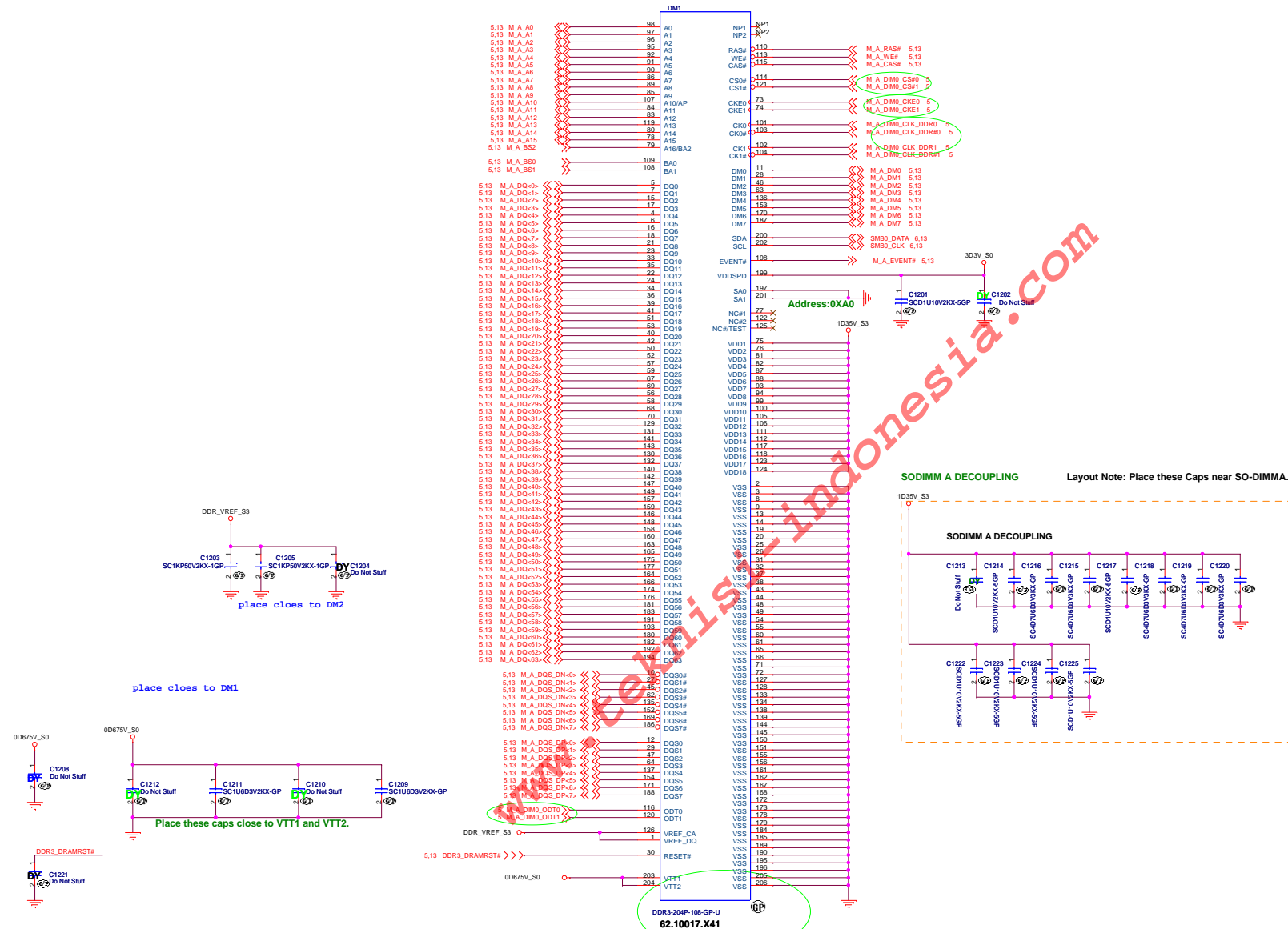
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SSID = DDR3-SODIMM1



1 Channel 2 DIMM

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Title			
DDR3-SODIMM2			
Size A2	Document Number		Rev
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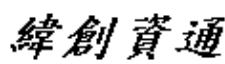
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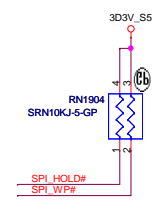
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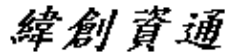
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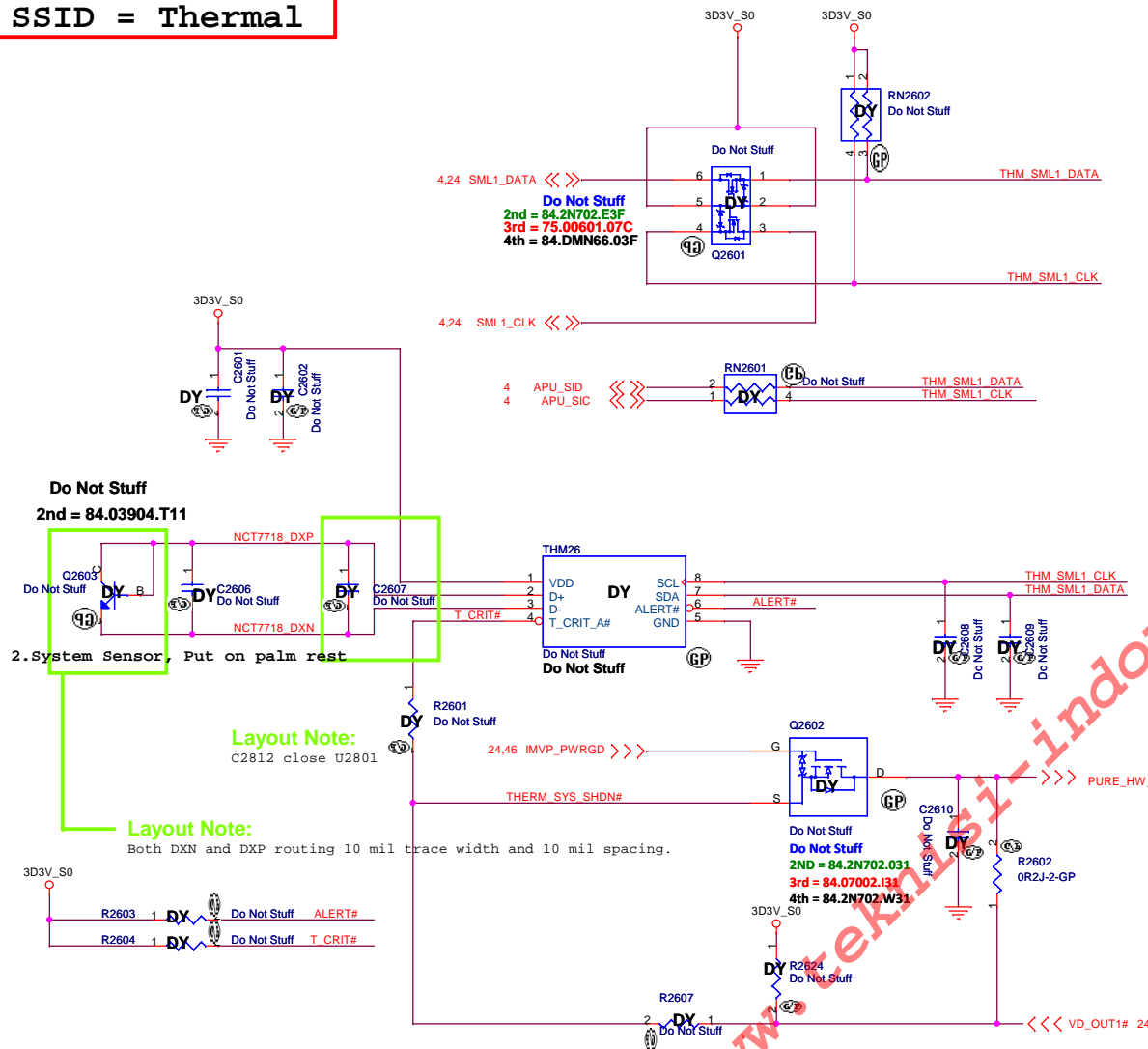
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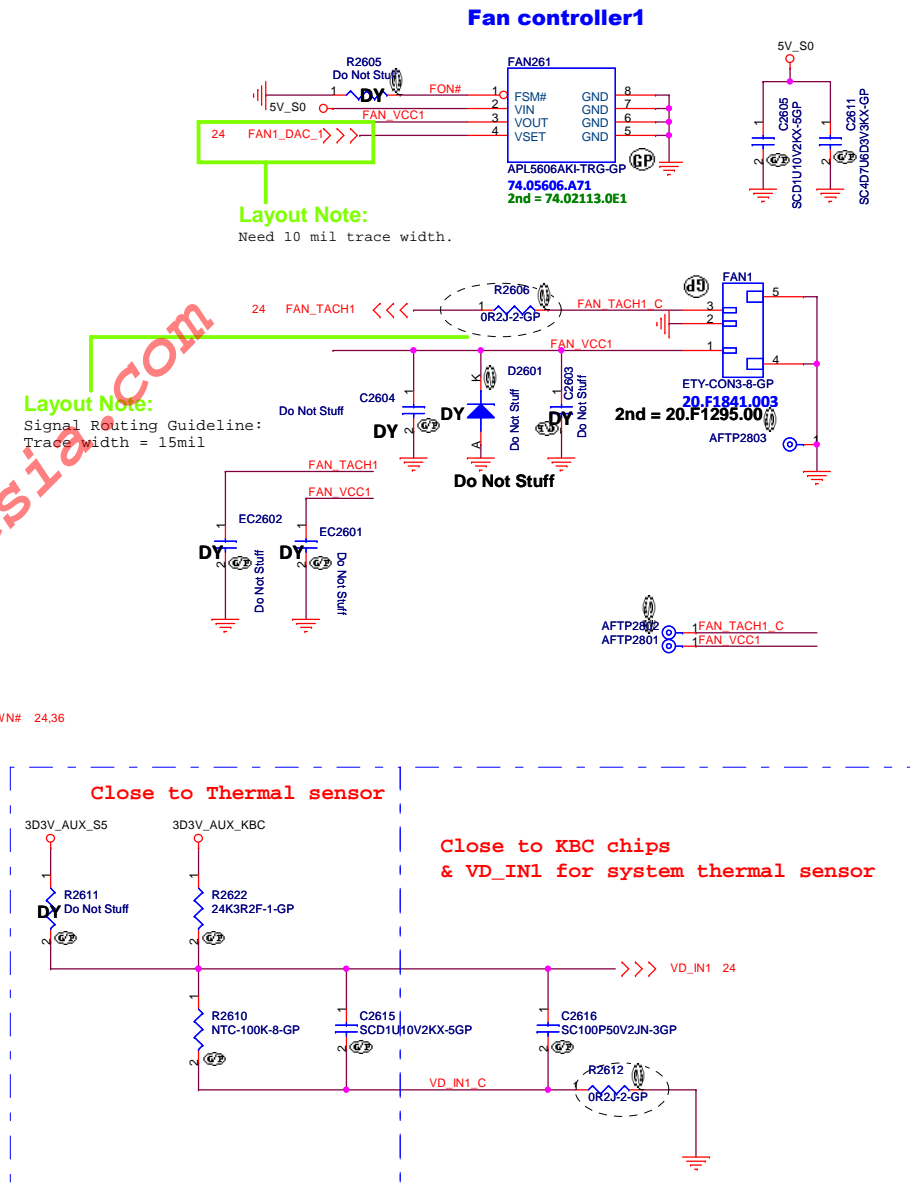
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SSID = Thermal

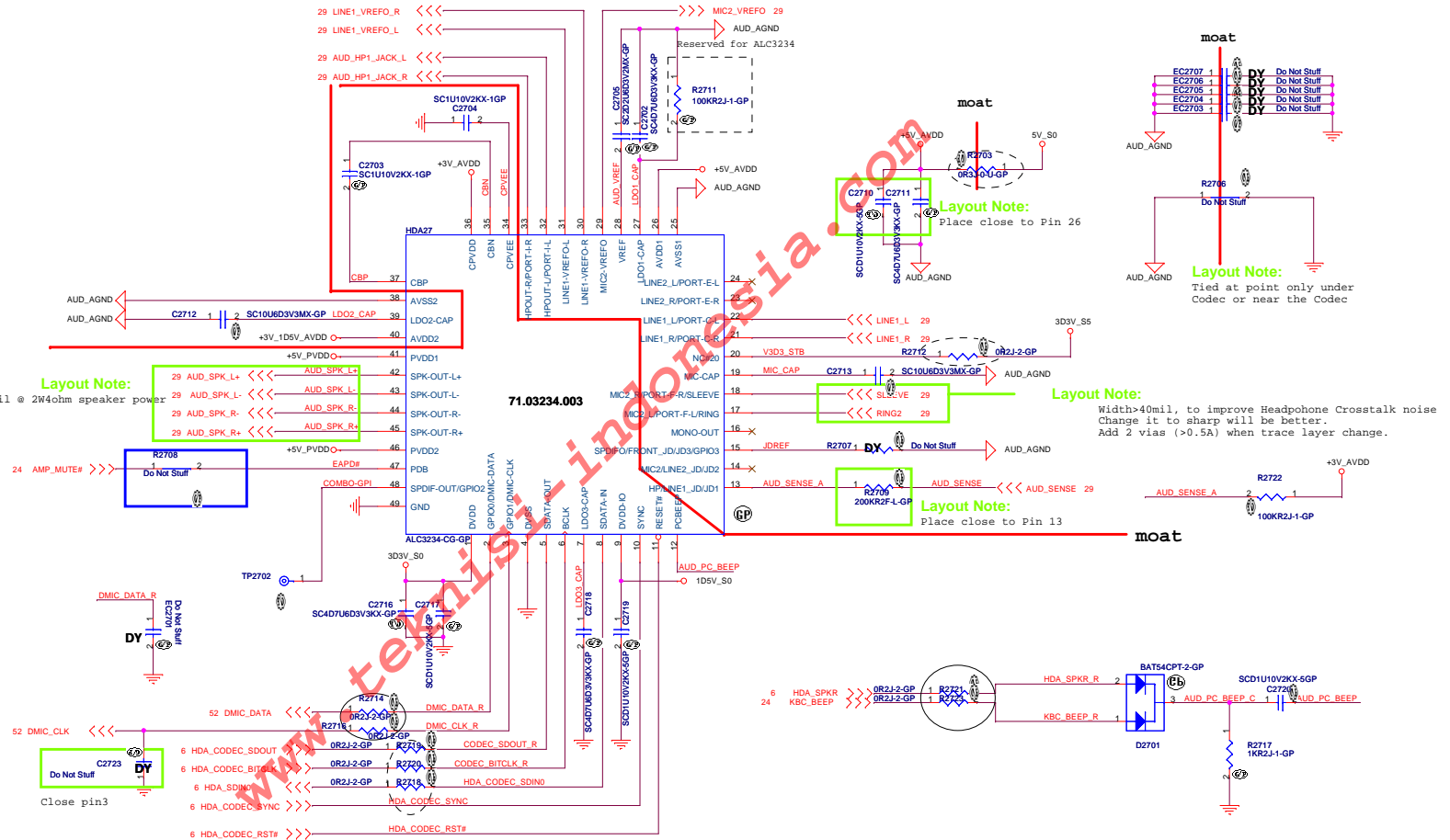
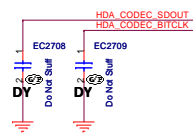
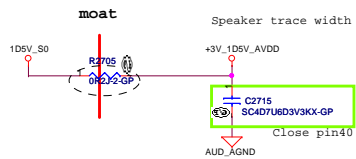
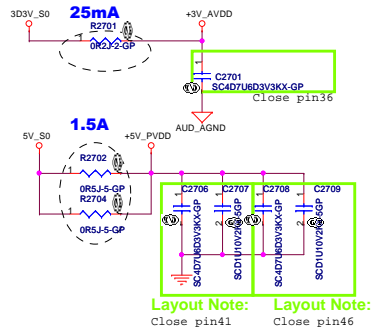


TEMPERATURE (°C)		T_CRIT#				
		2KΩ	7.5KΩ	10.5KΩ	14KΩ	18.7KΩ
ALERT#	2KΩ	77	87	97	107	117
	7.5KΩ	79	89	99	109	119
	10.5KΩ	81	91	101	111	121
	14KΩ	83	93	103	113	123
	18.7KΩ	85	95	105	115	125



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SSID = AUDIO



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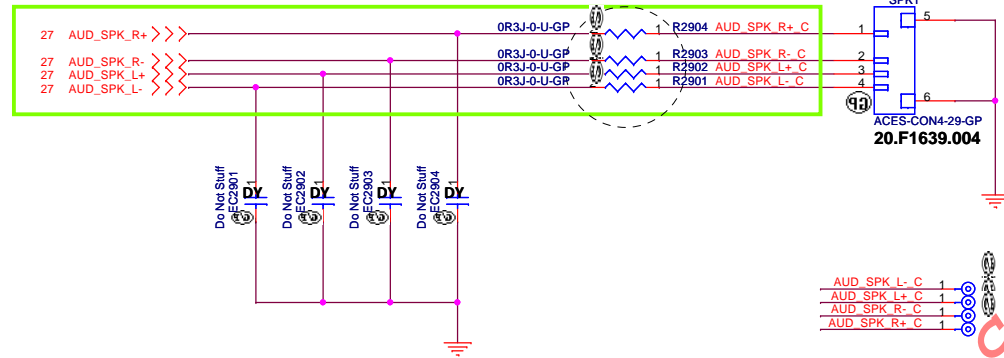
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SSID = Speaker/Universal Jack

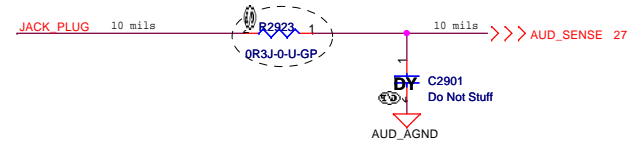
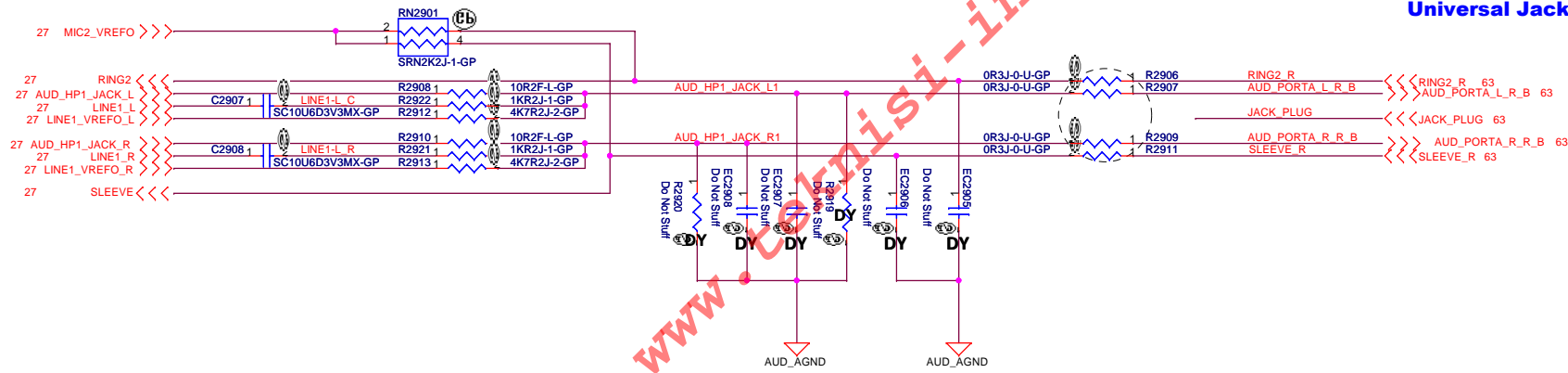
Layout Note:

Speaker trace width >40mil @ 2W4ohm speaker power



LAYOUT NOTE

SLEEVE & RING 2 trace width > 40mil

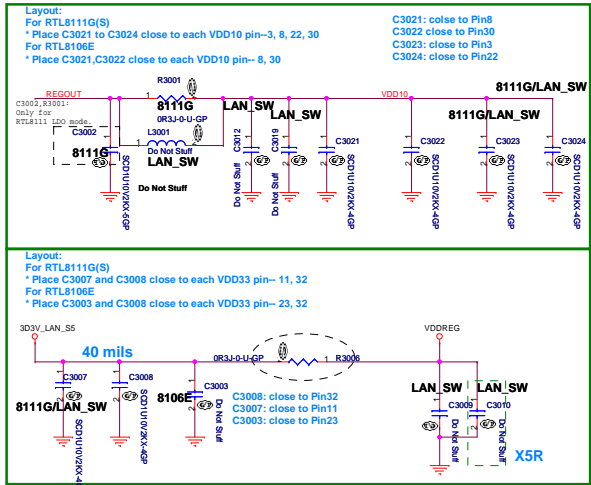


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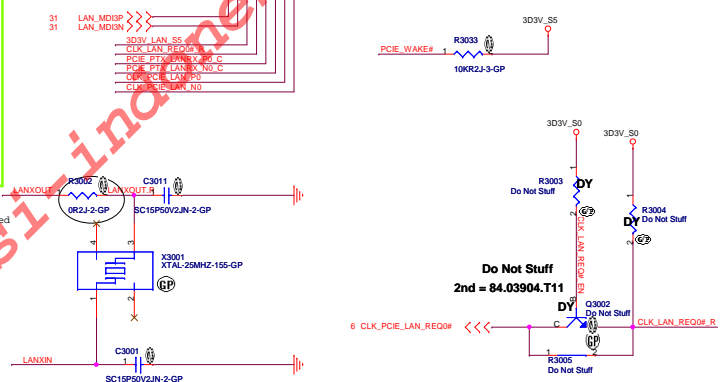
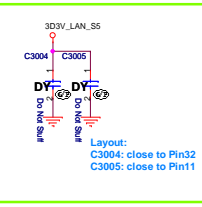
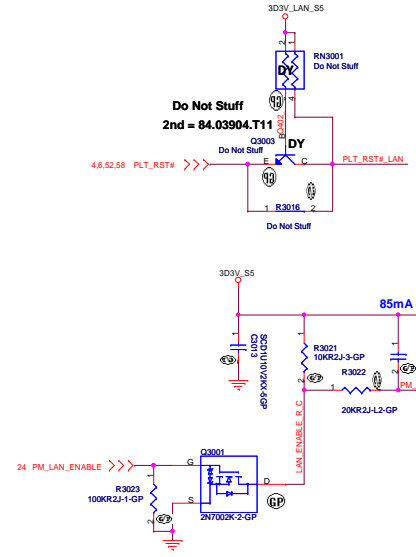
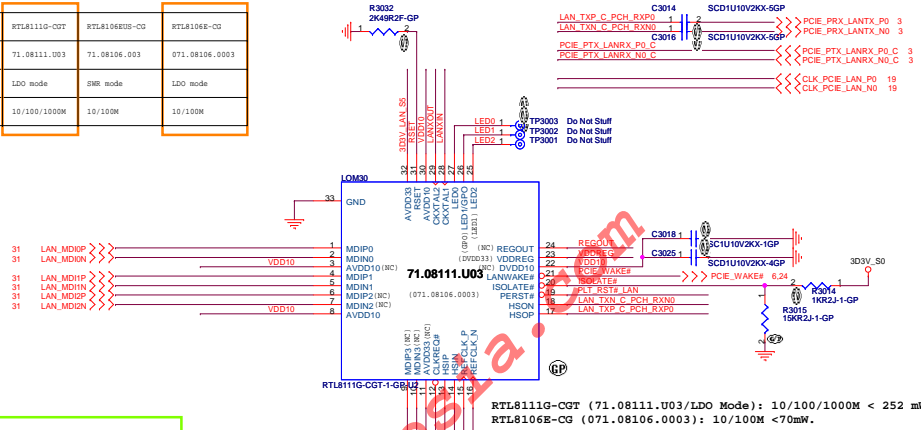
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LAN CHIP (10/100/1000M & 10/100M co-lay)



RTL8111G00B-CG	RTL8111G-CGT	RTL8106E00B-CG	RTL8106E-CG
71.08111.U03	71.08111.003	71.08106.003	71.08106.0003
SWR mode	LDO mode	SWR mode	LDO mode
10/100/1000M	10/100/1000M	10/100M	10/100M

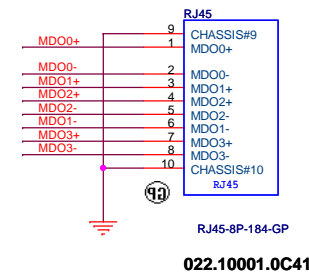
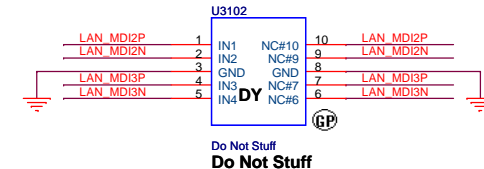
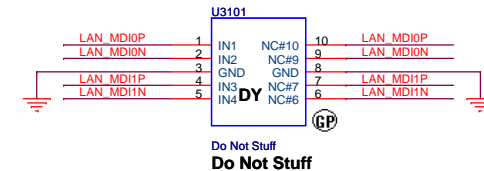
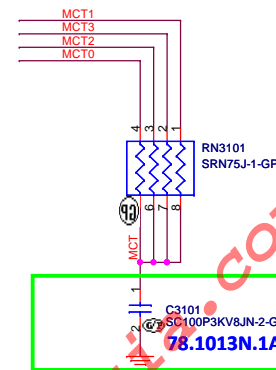
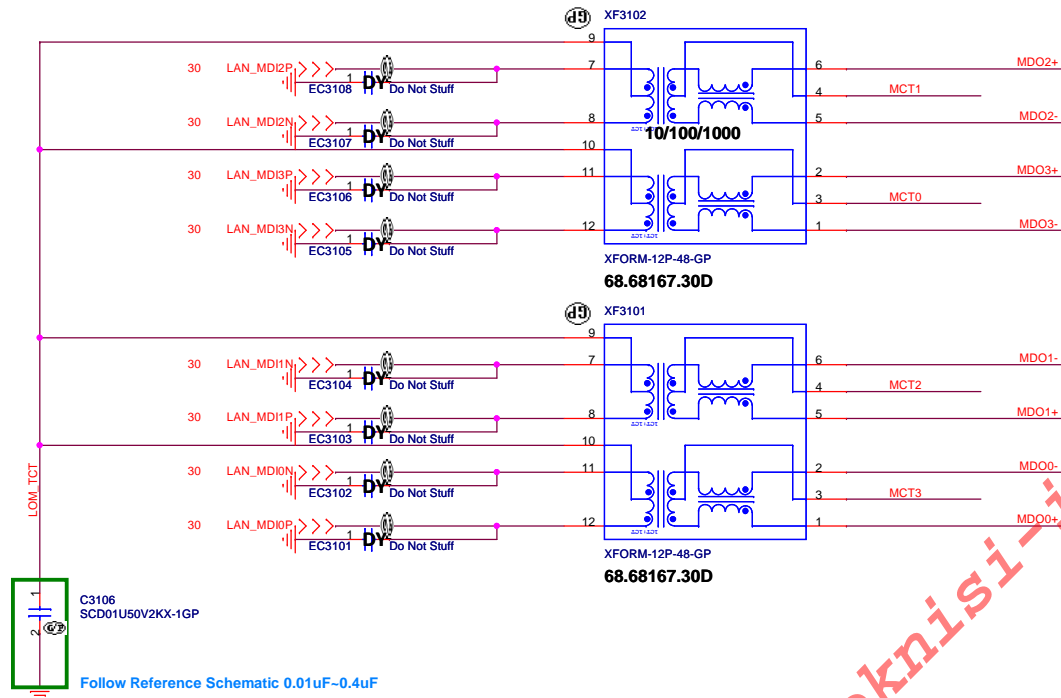


	1.0V Source	R3001	C3002	C3023	C3024	C3007	L3001	C3012	C3019	C3009	C3010	C3003
RTL8111G-CGT (71.08111.U03)	LDO	O	O	O	O	O	X	X	X	X	X	X
RTL8111GUS-CG (71.08111.U03)/ RTL8106EUS-CG (71.08106.003)	SWR	X	X	O	O	O	O	O	O	O	O	X
RTL8106E-CG (71.08106.0003)	LDO	X	X	X	X	X	X	X	X	X	X	O

SSID = LOM

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

Layout note:
30 mil spacing between MDI differential pairs.



Layout:
Place near RJ45



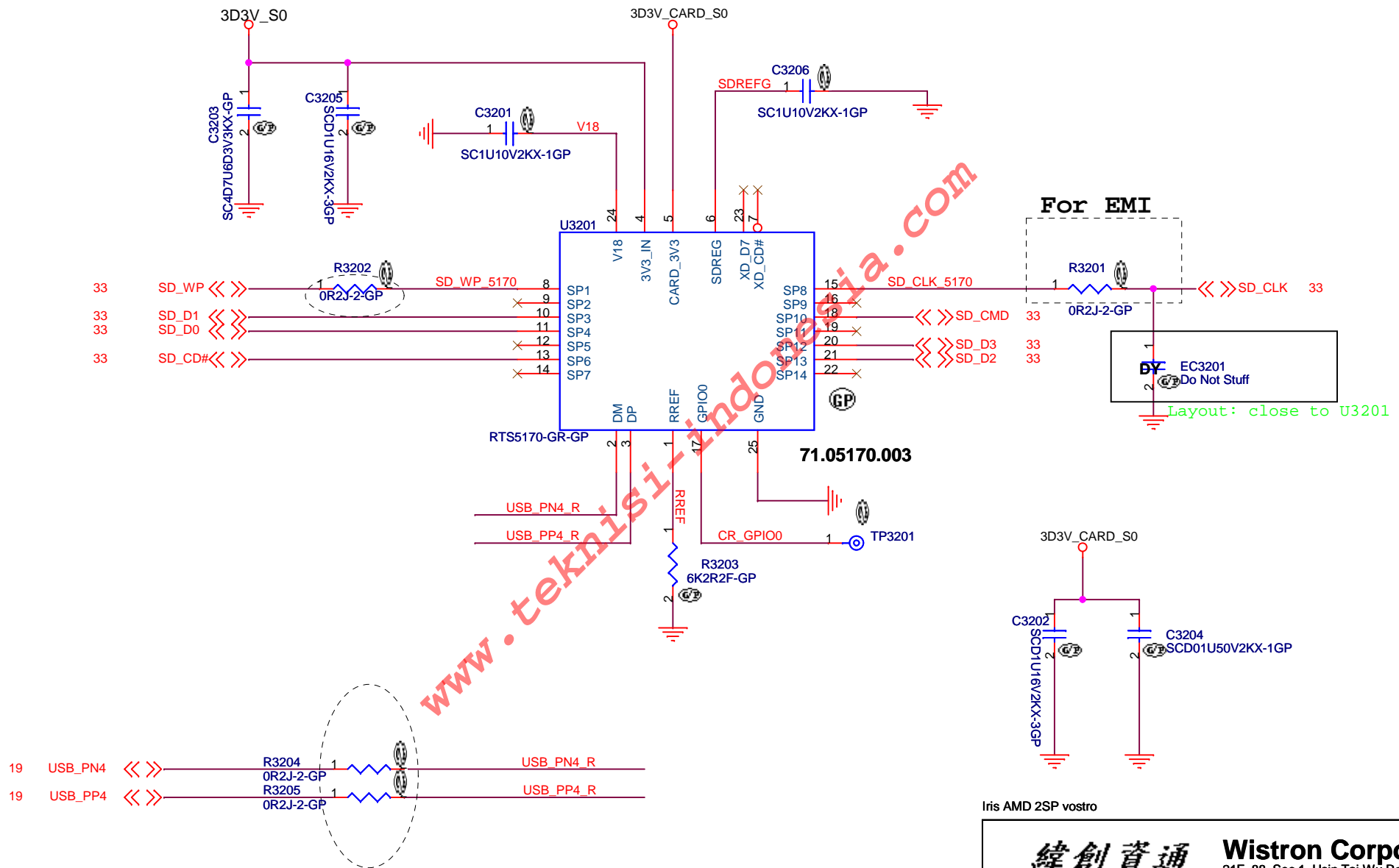
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Main Func = Card Reader

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



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Title

Card Reader

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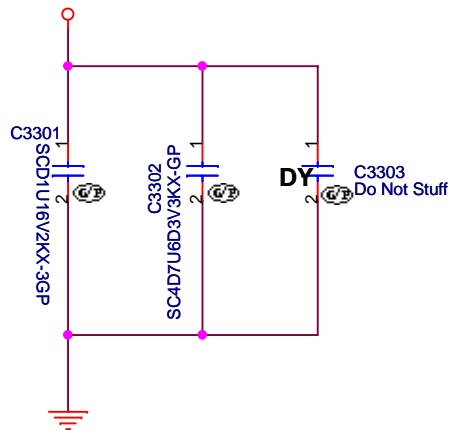
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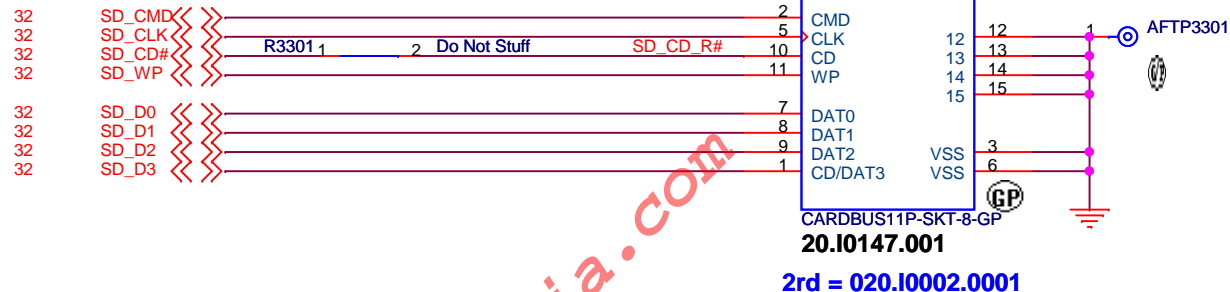
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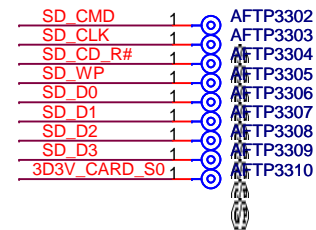
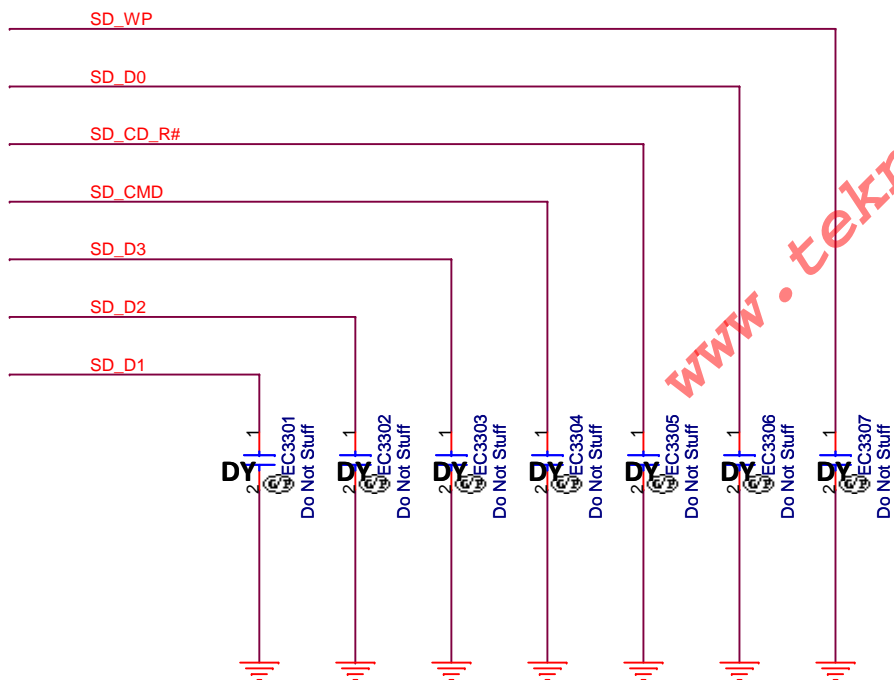
3D3V_CARD_S0



3D3V_CARD_S0



For EMI Reserved



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Card Reader CONN

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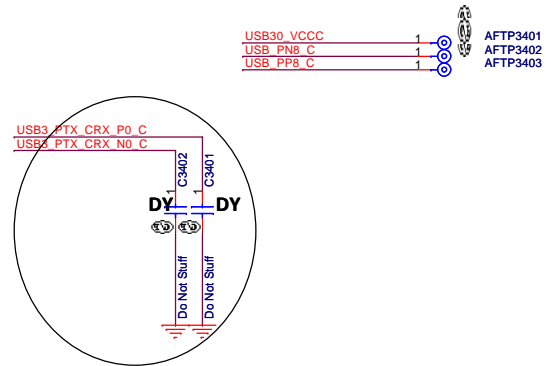
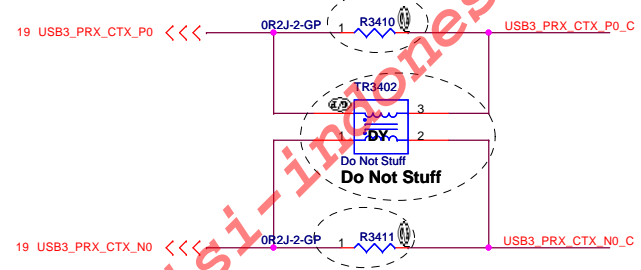
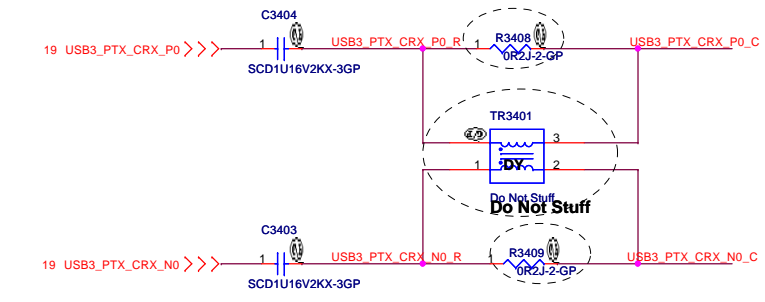
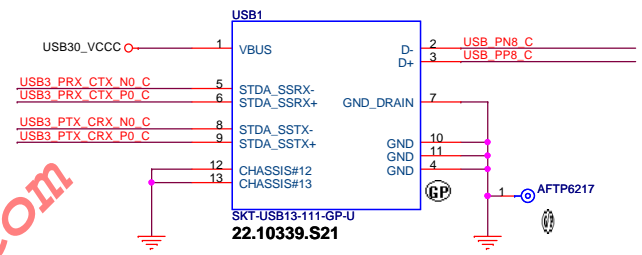
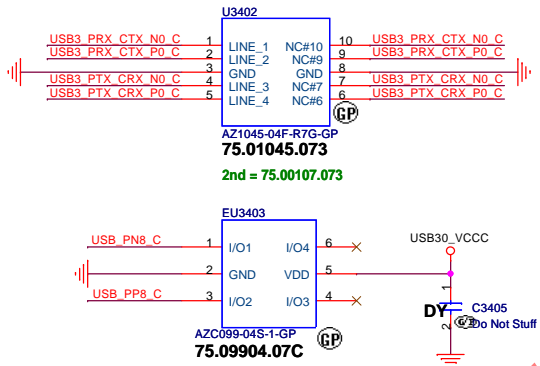
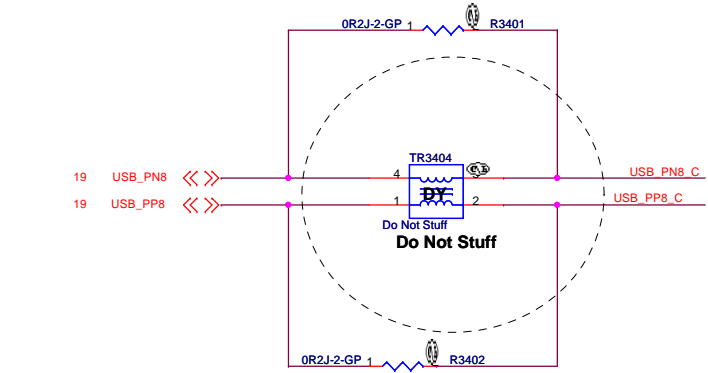
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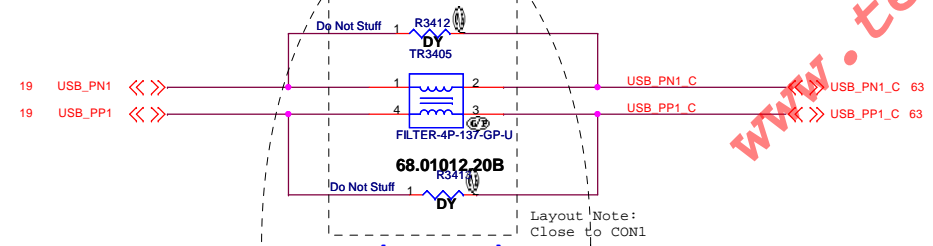
Main Func = USB3.0 Port1

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

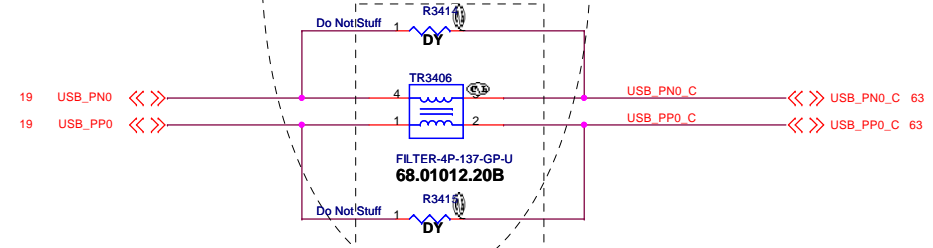
USB3.0 Port1



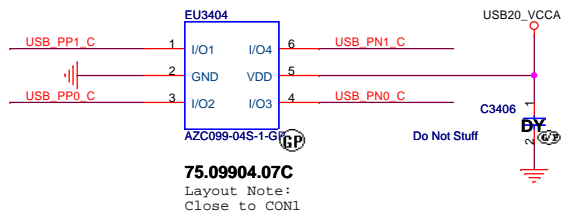
USB2 (USB2.0) CMC

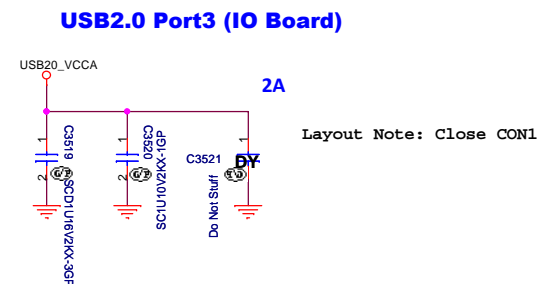
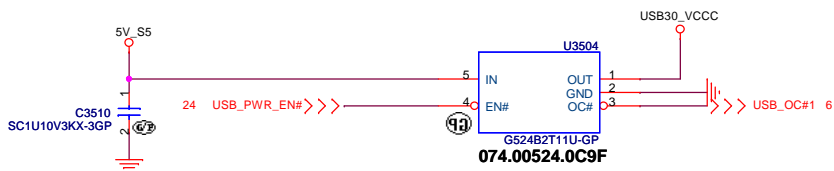
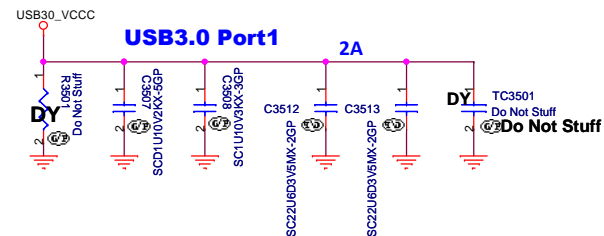
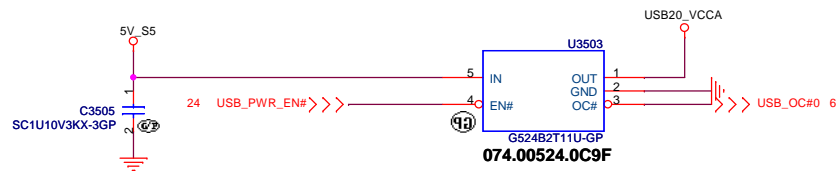


USB3 (USB2.0) CMC



USB ESD Diode



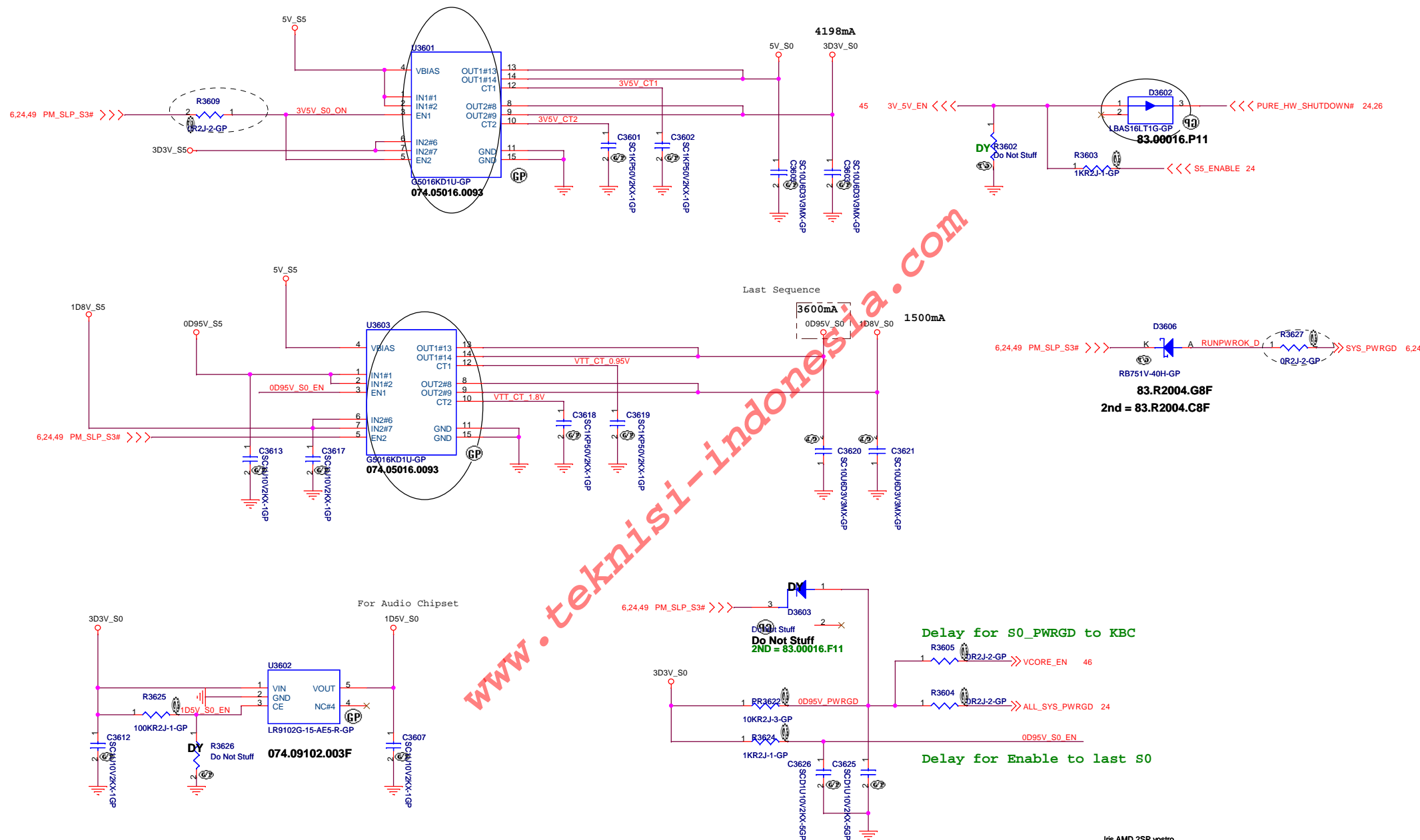


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Title		
USB Power SW		
Size	Document Number	Rev
	Iris AMD BEEMA	X00
Date: Thursday, October 08, 2015	Sheet 35 of 104	

Power Sequence



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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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Title (Reserved)		
Size A4	Document Number Iris AMD BEEMA	Rev X00
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Size A4	Document Number Iris AMD BEEMA	Rev X00
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Title			
Reserved			
Size A4	Document Number Iris AMD BEEMA		Rev X00
Date: Thursday, October 08, 2015		Sheet 41	of 104

SSID = DCIN

Layout Note:

PSID Layout width > 25mil

PS ID_R 1

Do Not Stuff

PS ID_R2

Do Not Stuff

PS ID

33R2J-2-GP

PSID_EC 24

60ohm@100MHz
DCR=0.02 ohm
Max current = 6000mA

Id=-9.6A
Qg=-25nC
Rdson=18~30mohm

DT MODE

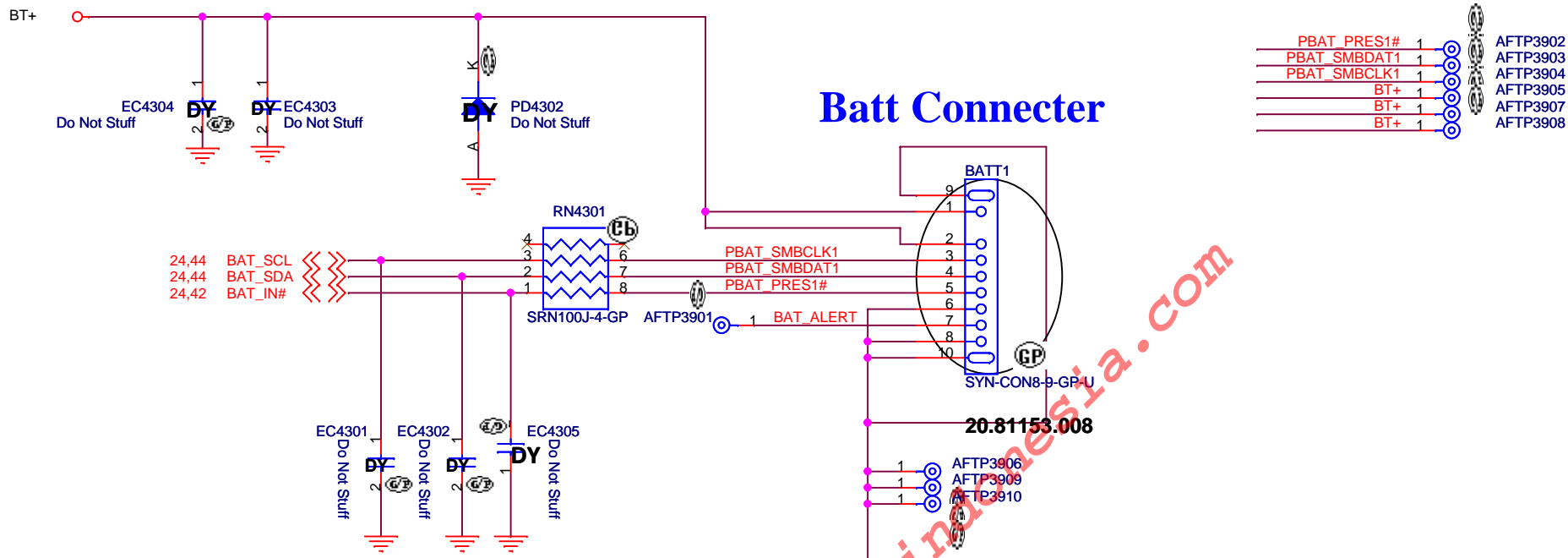
4,24,44,46 H_PROCHOT# <<<

Iris AMD 2SP vostro

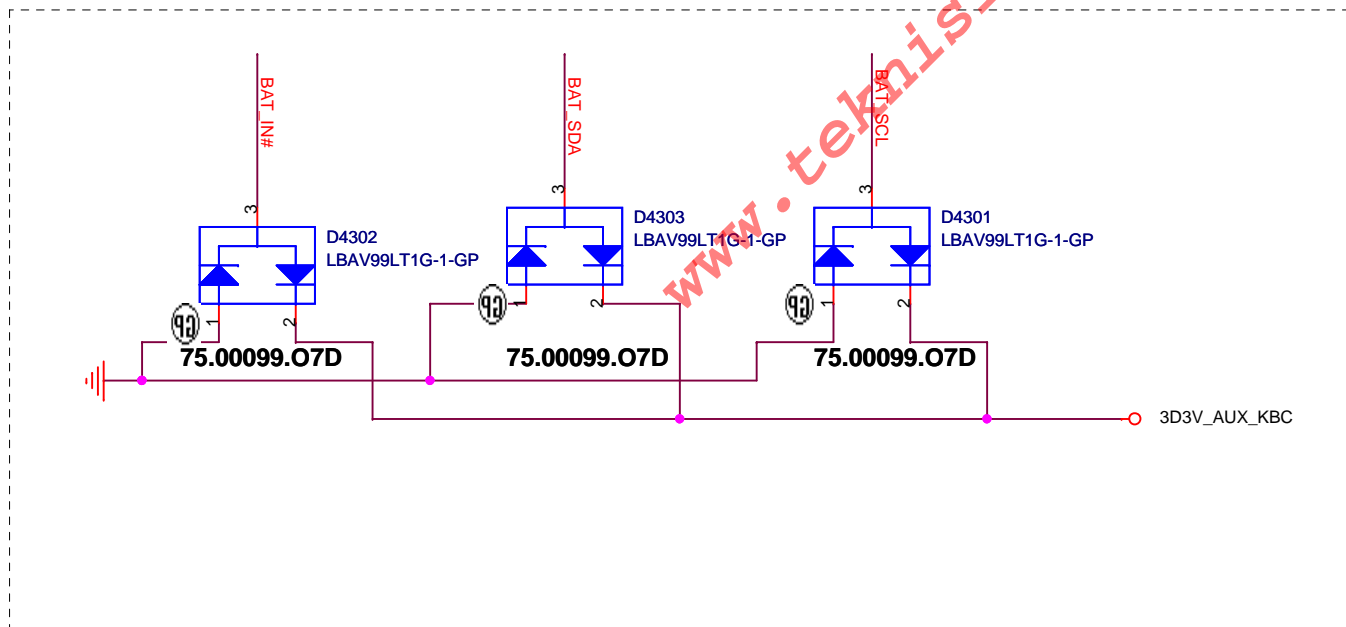
緯創資通 Wistron Corporation
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File		
Size		
A3		
Date: Monday, October 12, 2015		
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Document Number		
Iris AMD BEEMA		
Rev		
X00		

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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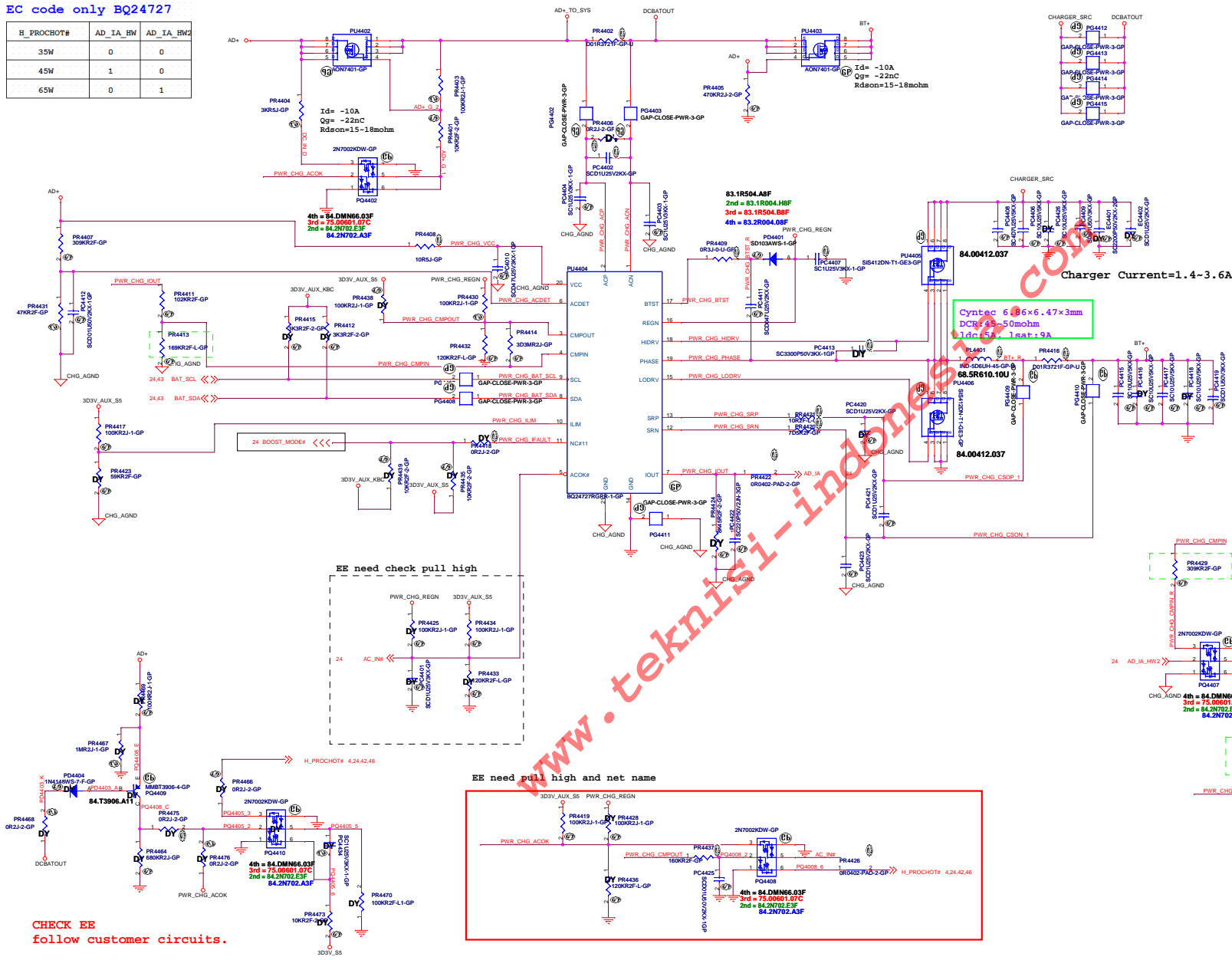
of

104

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

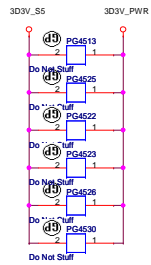
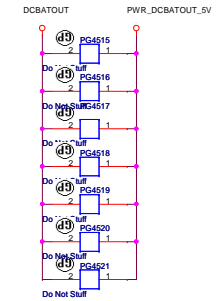
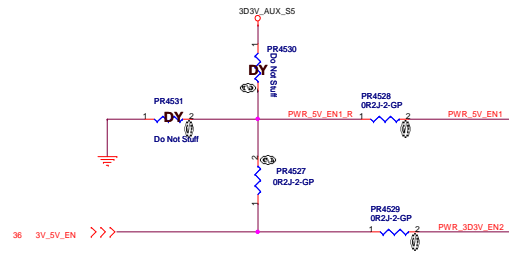
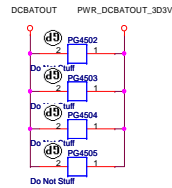
Charger Current=1.4~3.6A

The PCB layout shows a USB Type-C connector at the top left, connected to a USB Type-A connector at the bottom left. Various components are placed around the connectors, including resistors (R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, R134, R135, R136, R137, R138, R139, R140, R141, R142, R143, R144, R145, R146, R147, R148, R149, R150, R151, R152, R153, R154, R155, R156, R157, R158, R159, R160, R161, R162, R163, R164, R165, R166, R167, R168, R169, R170, R171, R172, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R189, R190, R191, R192, R193, R194, R195, R196, R197, R198, R199), capacitors (C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199), and a microcontroller (U100). The board is labeled "Charger".

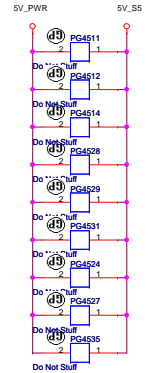
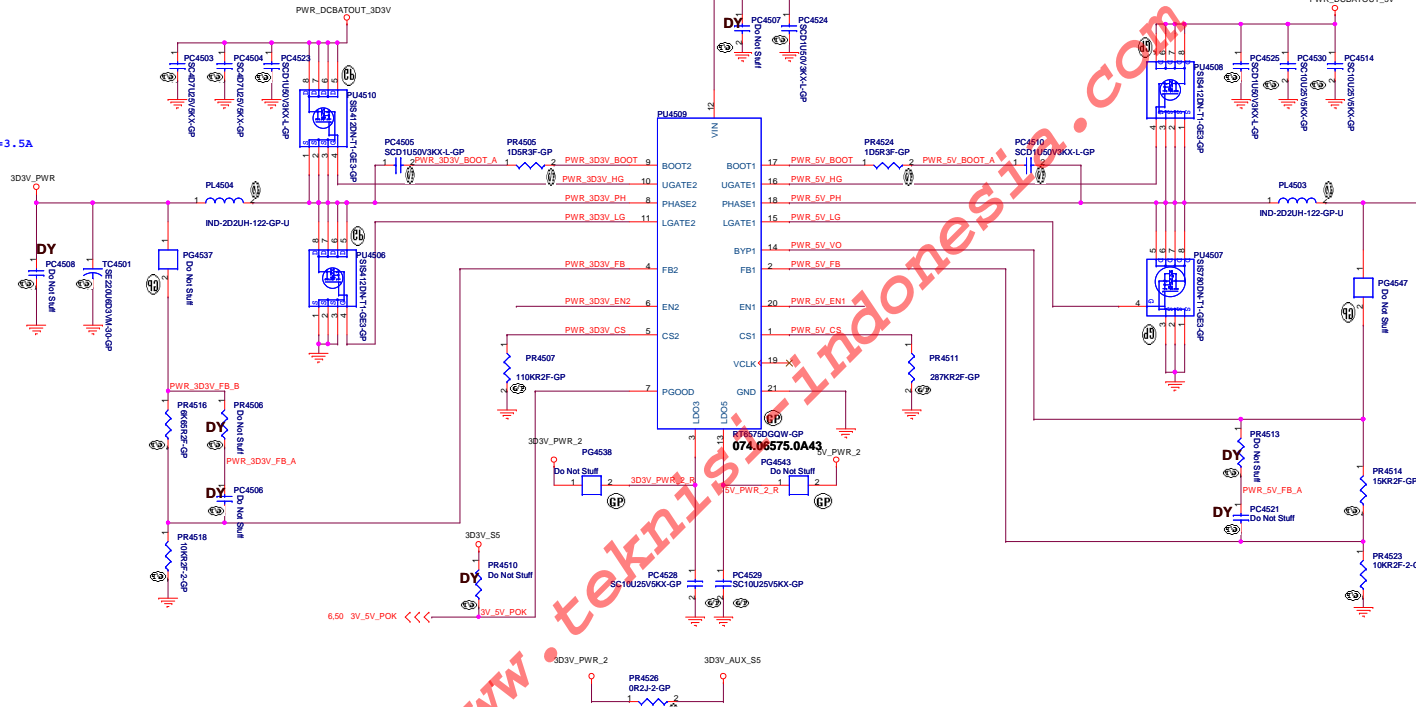
CHECK EE
follow customer circuits.

EE need pull high and net name

```
SSID = PWR.Plane.Regulator_5v3p3v
```



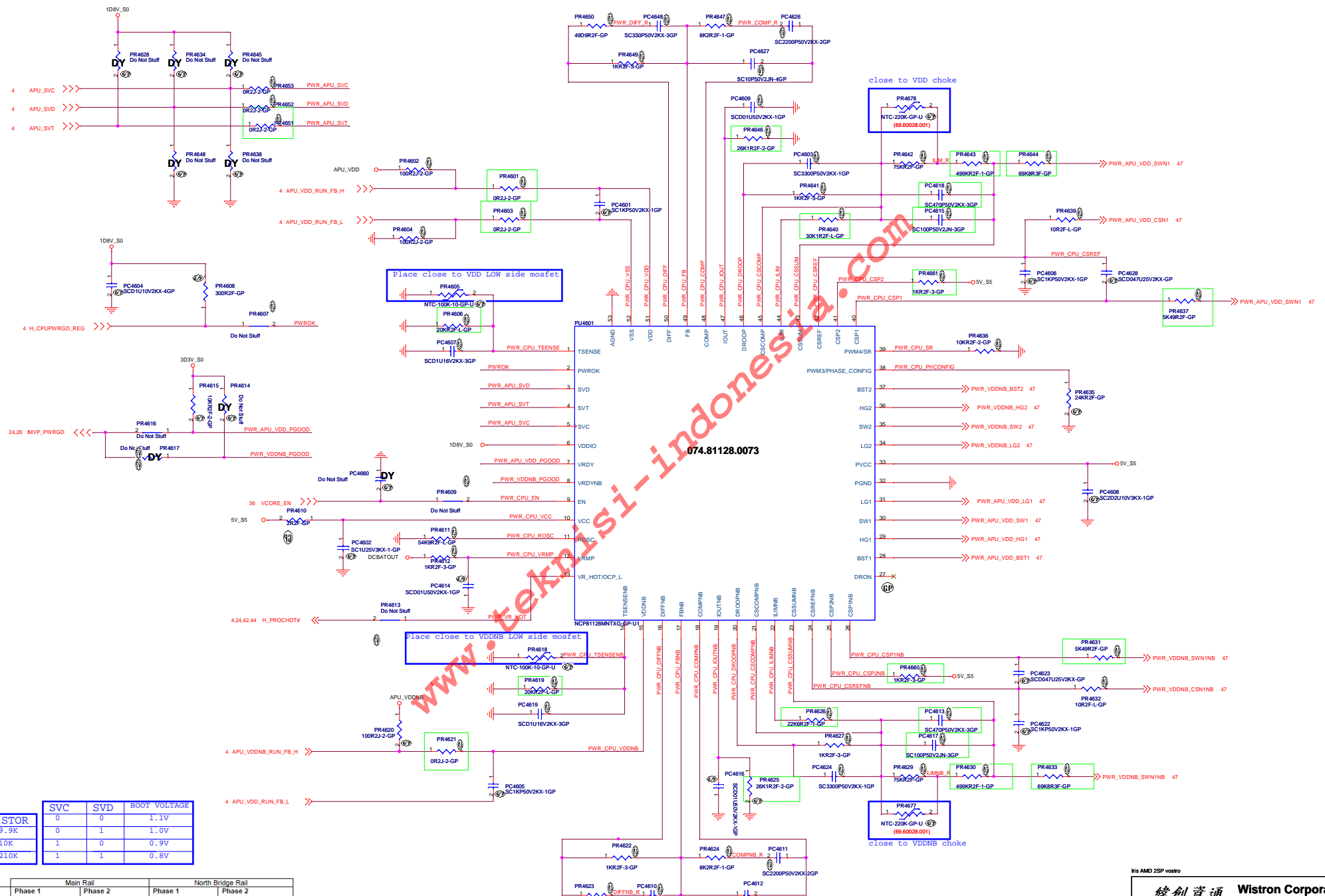
Design Current = 3.5A
5.25A < OCP < 6.3A



```
I/P cap: CHIP CAP C 10U 25V K0805 X5R/ 78.10622.51L
Inductor: CHIP IND 3.3UH P060306T-3R3M Cyntec 28mohm/30mohm Isat =13.5Arms 68.3R310.20A
O/P cap:CHIP CAP EL 220U 6.3V M6.3*4.4 /Chemi-con/ 18mOhm/ 17.22710.3KL
H/S:SI5412 / 24mOhm/30mOhm@4.5Vgs /84.00412.037
L/S:SI5780 / 14.5mOhm/17.5mOhm@4.5Vgs /84.00780.037
```

I/P cap: CHIP CAP C 10U 25V K0805 X5R/ 78.10622.51L
Inductor: CHIP CHOKe 2.2u PCMC063T-2R2Mn 18mohm/20mohm Isat =14Arms 68.2R210.20B
O/P cap:CHIP CAP EL 220U 6.3V M6.3*4.4 /Chem-i-con/ 18mohm / 79.22710.3KL
H/S:ISi412 / 24mOhm/30mOhm@4.5Vgs / 84.00412.0378
L/S:SiS1780 / 14.5mOhm/17.5mOhm@4.5Vgs / 84.00180.037

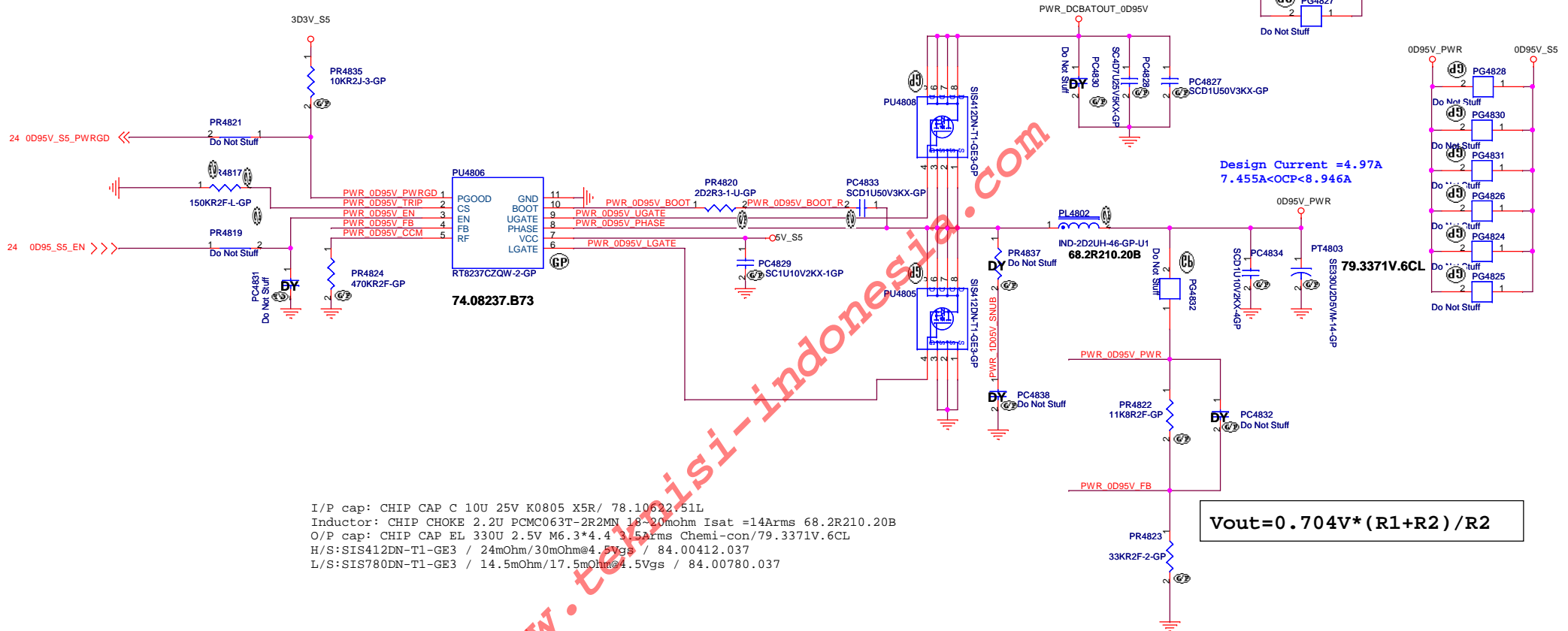
```
SSID = CPU.Regulator
```



		SVC	SVD	BOOT VOLTAGE
SR	RESISTOR	0	0	1.1V
10	10K-49.9K	0	1	1.0V
20	56K-110K	1	0	0.9V
30	120K-210K	1	1	0.8V

Config	Resistor value	Main Rail		North Bridge Rail	
		Phase 1	Phase 2	Phase 1	Phase 2
1	220k open	SW1.HG1.BST1.LG1	SW2.HG2.BST2.LG2	PWM3	PWM4
2	10k	PWM3	SW1.HG1.BST1.LG1	PWM4	SW2.HG2.BST2.LG2
3	75k	PWM3	PWM4	SW1.HG1.BST1.LG1	SW2.HG2.BST2.LG2
4	24k	SW1.HG1.BST1.LG1	PWM3	SW2.HG2.BST2.LG2	PWM4

SSID = PWR.Plane.Regulator_0D95V

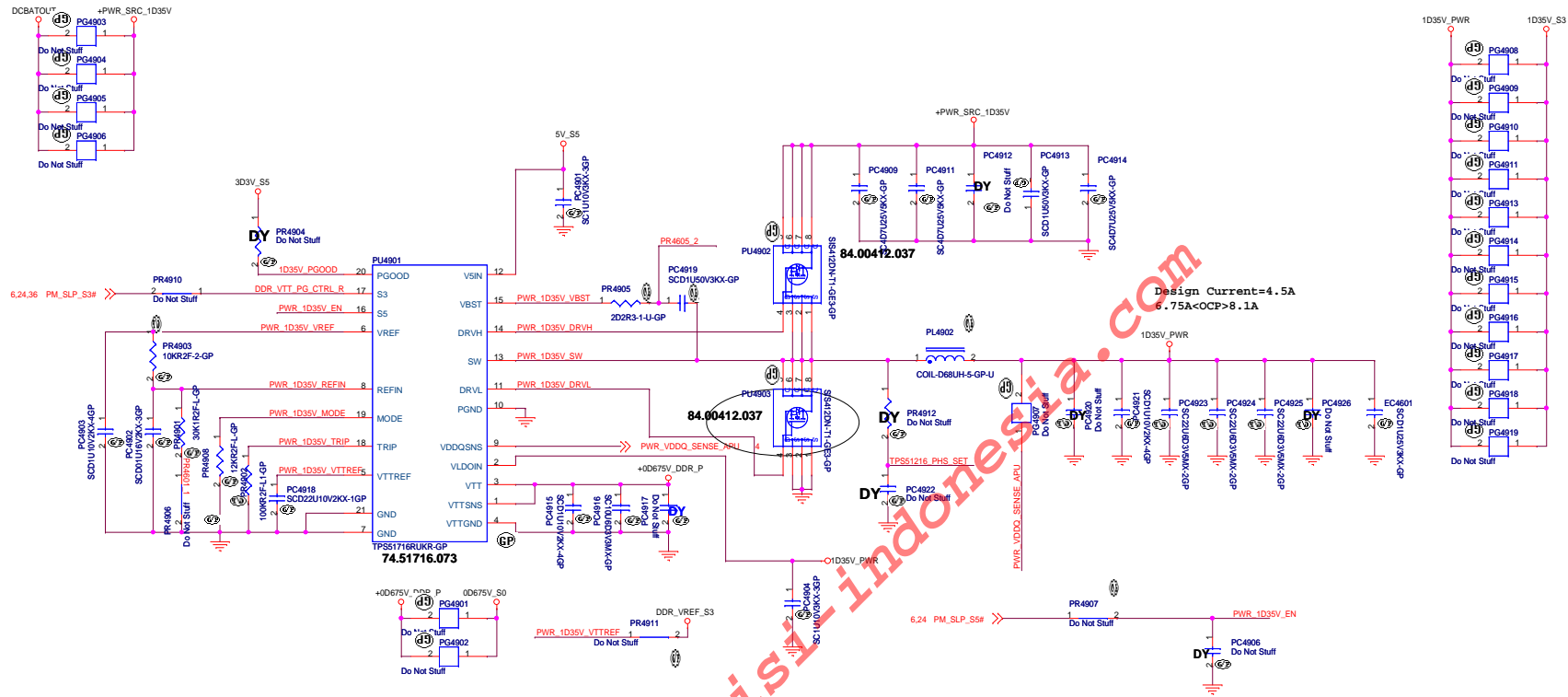


I/P cap: CHIP CAP C 10U 25V K0805 X5R/ 78.10622.51L
Inductor: CHIP CHOKE 2.2U PCMC063T-2R2MN 18~20mohm Isat =14Arms 68.2R210.20B
O/P cap: CHIP CAP EL 330U 2.5V M6.3*4.4 3.5Arms Chemi-con/79.3371V.6CL
H/S: SIS412DN-T1-GE3 / 24mOhm/30mOhm@4.5Vgs / 84.00412.037
L/S: SIS780DN-T1-GE3 / 14.5mOhm/17.5mOhm@4.5Vgs / 84.00780.037

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Title RT8237_0D95V			
Size A3	Document Number Iris AMD BEEMA	Rev X00	
Date: Thursday, October 08, 2015	Sheet 48	of	104

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

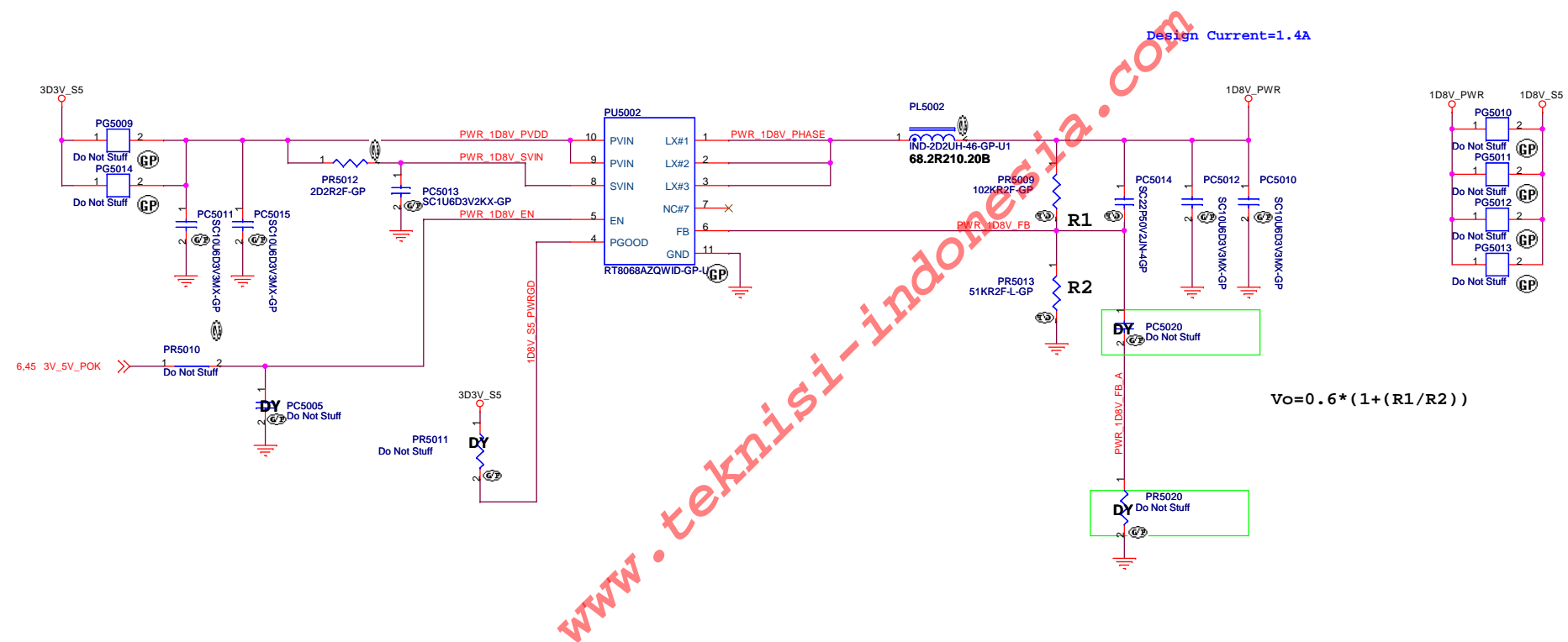
I/P cap: 10U 25V K0805 X5R / 78.10622.51L
 Inductor: CHIP INP 0.1uH M PCMC063T-R10MN 1.5-1.7mohm Isat =60Arms 68.R1010.10T
 O/P cap: CHIP CAP 0.22U 6.3V M0805 X5R / 78.22610.51L
 H/S: SIS412 / 24mOhm / 30mOhm@4.5Vgs / 84.00412.037
 L/S: SIS780 / 14.5mOhm / 17.5mOhm@4.5Vgs / 84.00780.037

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Title TPS51716_1D35V_S3/0D675V_S0			
Size C	Document Number	Iris AMD BEEMA	Rev X00
Date: Thursday, October 08, 2015	Sheet 49	of	104

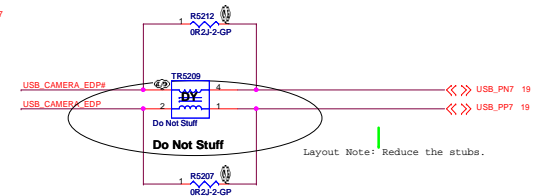
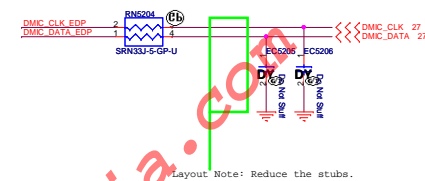
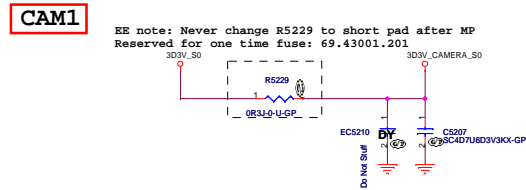
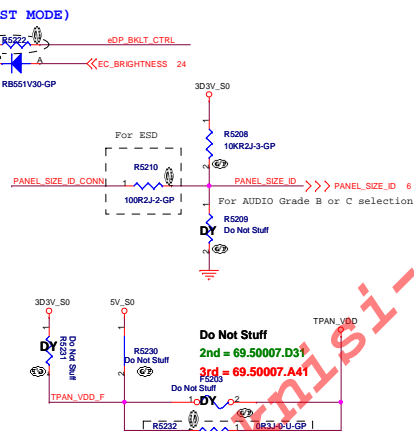
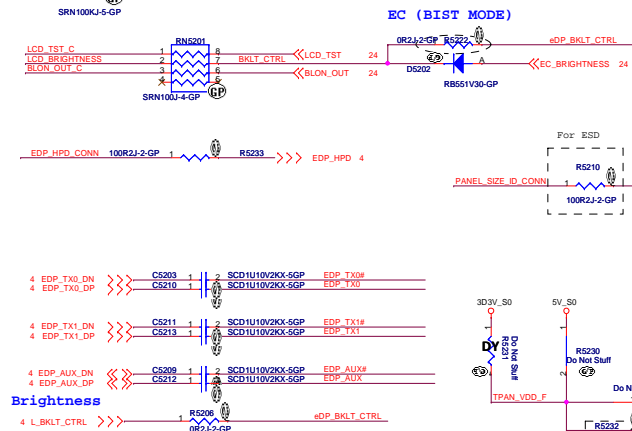
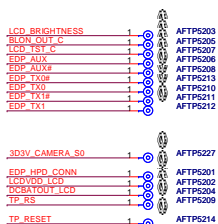
SSID = PWR.Plane.Regulator_1p8v

RT8068A for 1D8V_S5

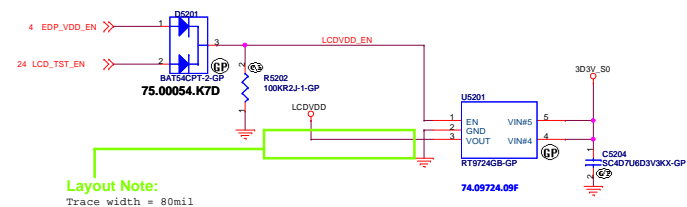


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LCDVDD



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Title

Reserved

Size

A3

Document Number

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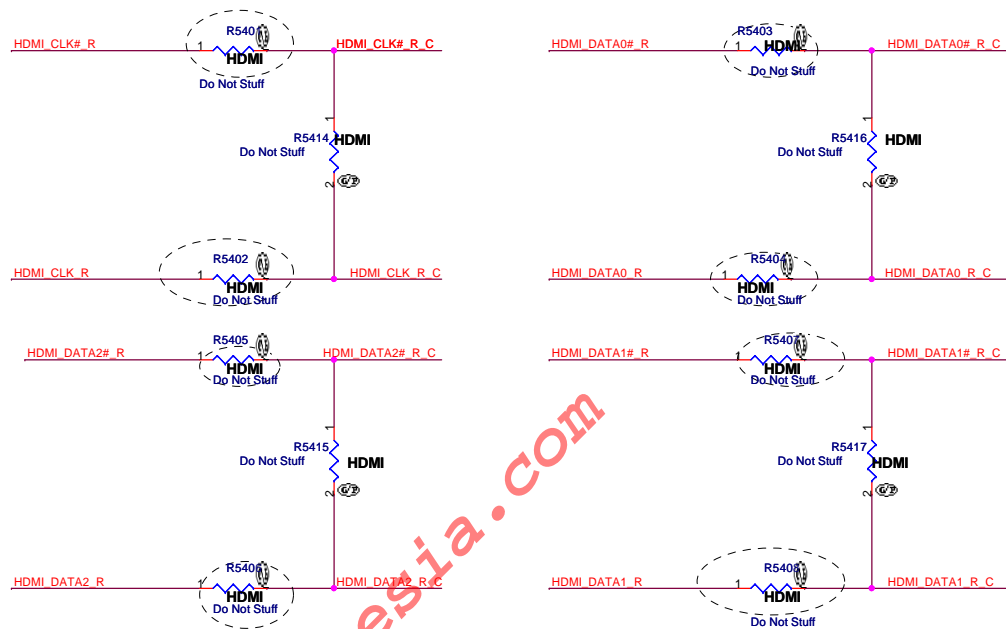
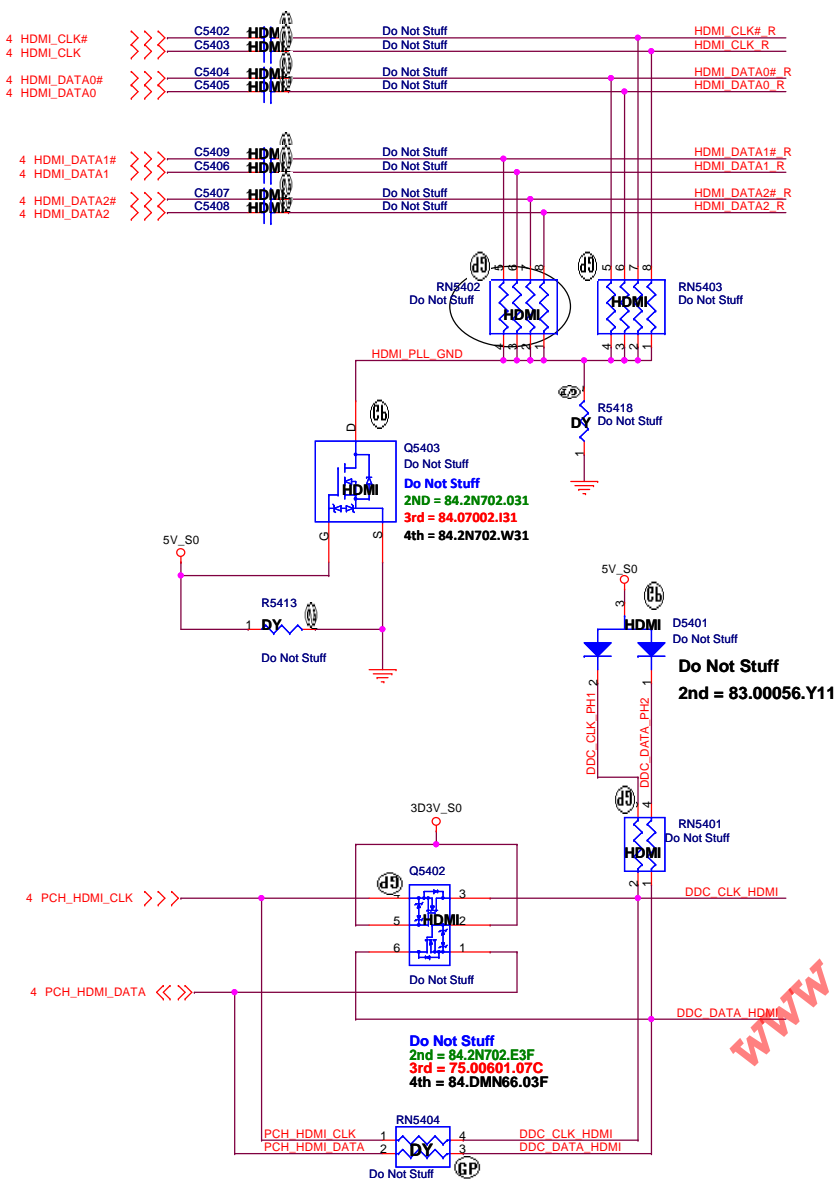
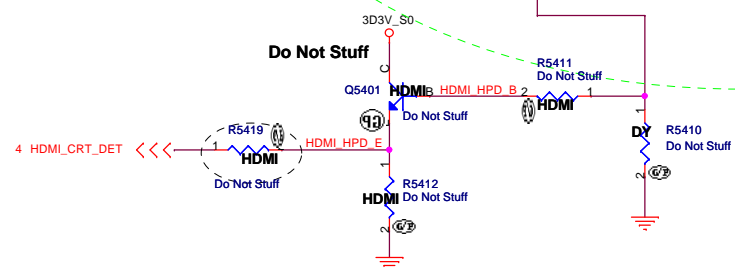
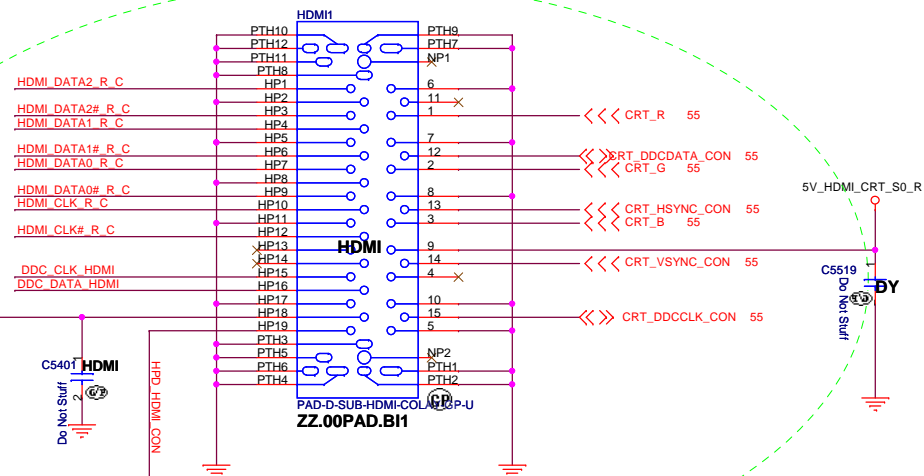
Date: Thursday, October 08, 2015

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Rev

X00

SSID = HDMI Level Shifter/Connector

**HDMI / VGA CONN**

Iris AMD 2SP vostro

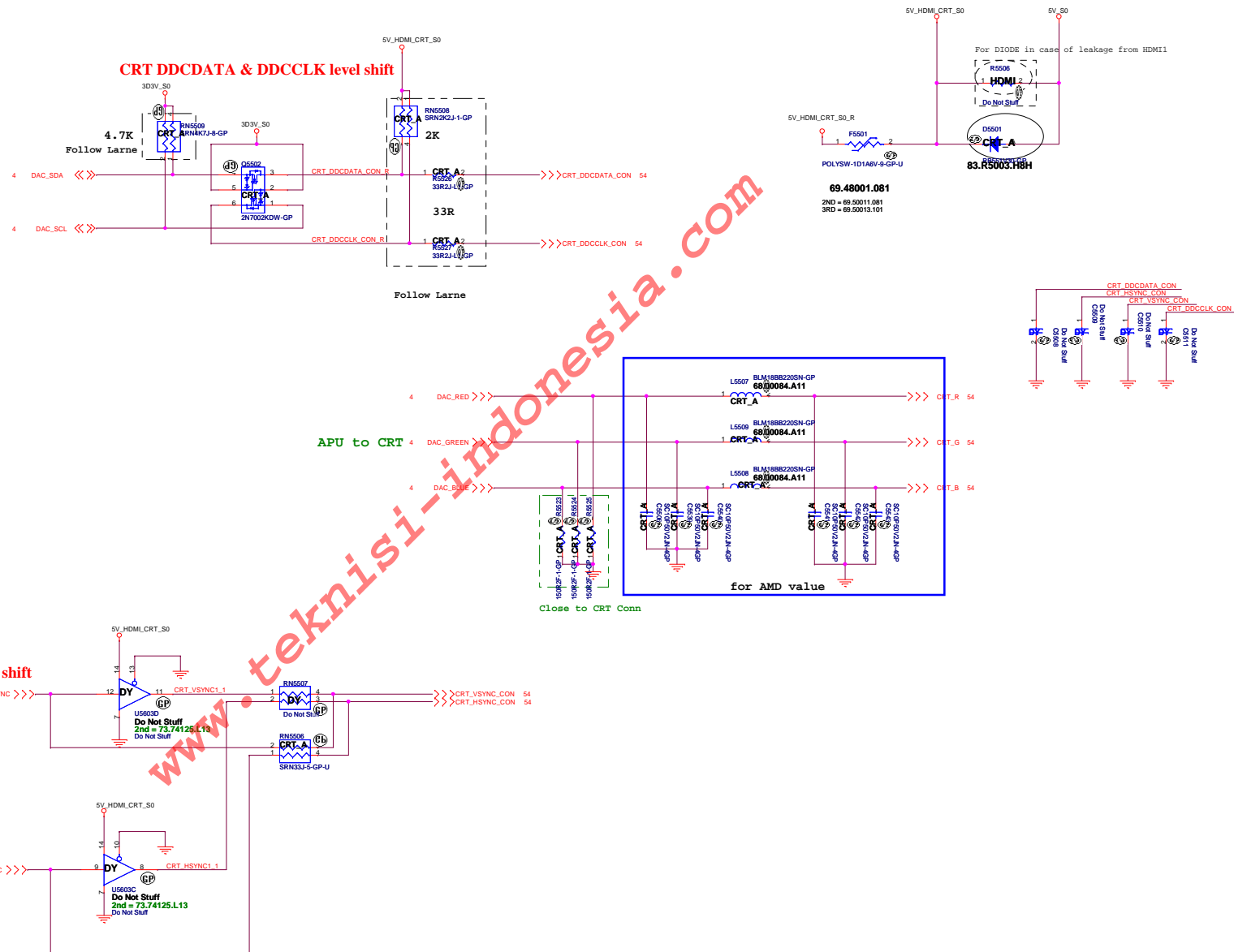
緯創資通

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Title	HDMI Level Shifter/Connector
-------	-------------------------------------

Size A3	Document Number <i>Iris AMD BEEMA</i>	Rev <i>X00</i>
Date: Monday, October 12, 2015	Sheet 54 of 104	

SSID = VGA



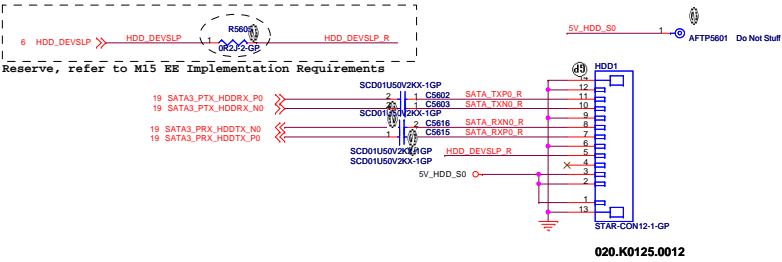
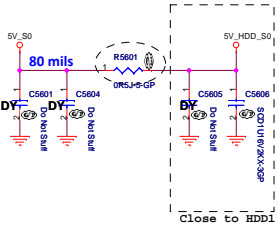
Iris AMD 2SP vostro

緯創資通 Wistron Corporation
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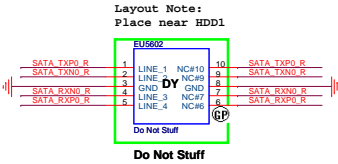
File	VGA		
Size	Document Number	Rev	
A2	Iris AMD BEEMA	X00	
Date:	Thursday, October 08, 2015	Sheet	55 of 104

SSID = SATA

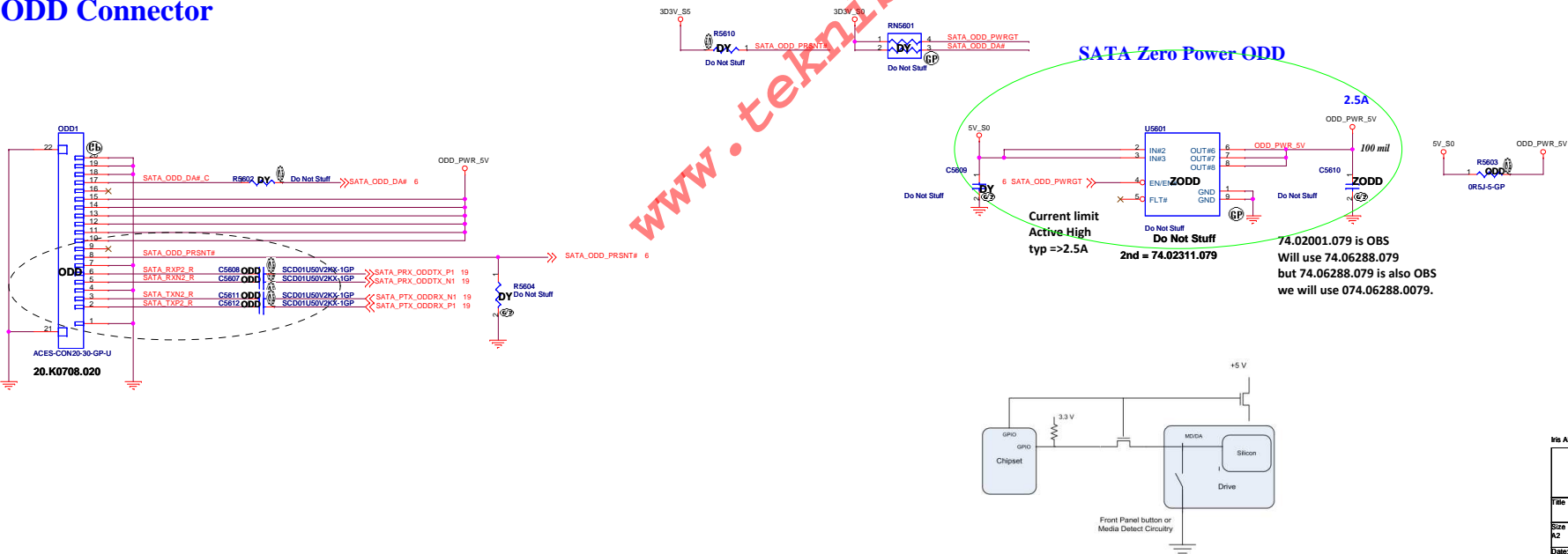
SATA HDD Connector



delete HDD redriver



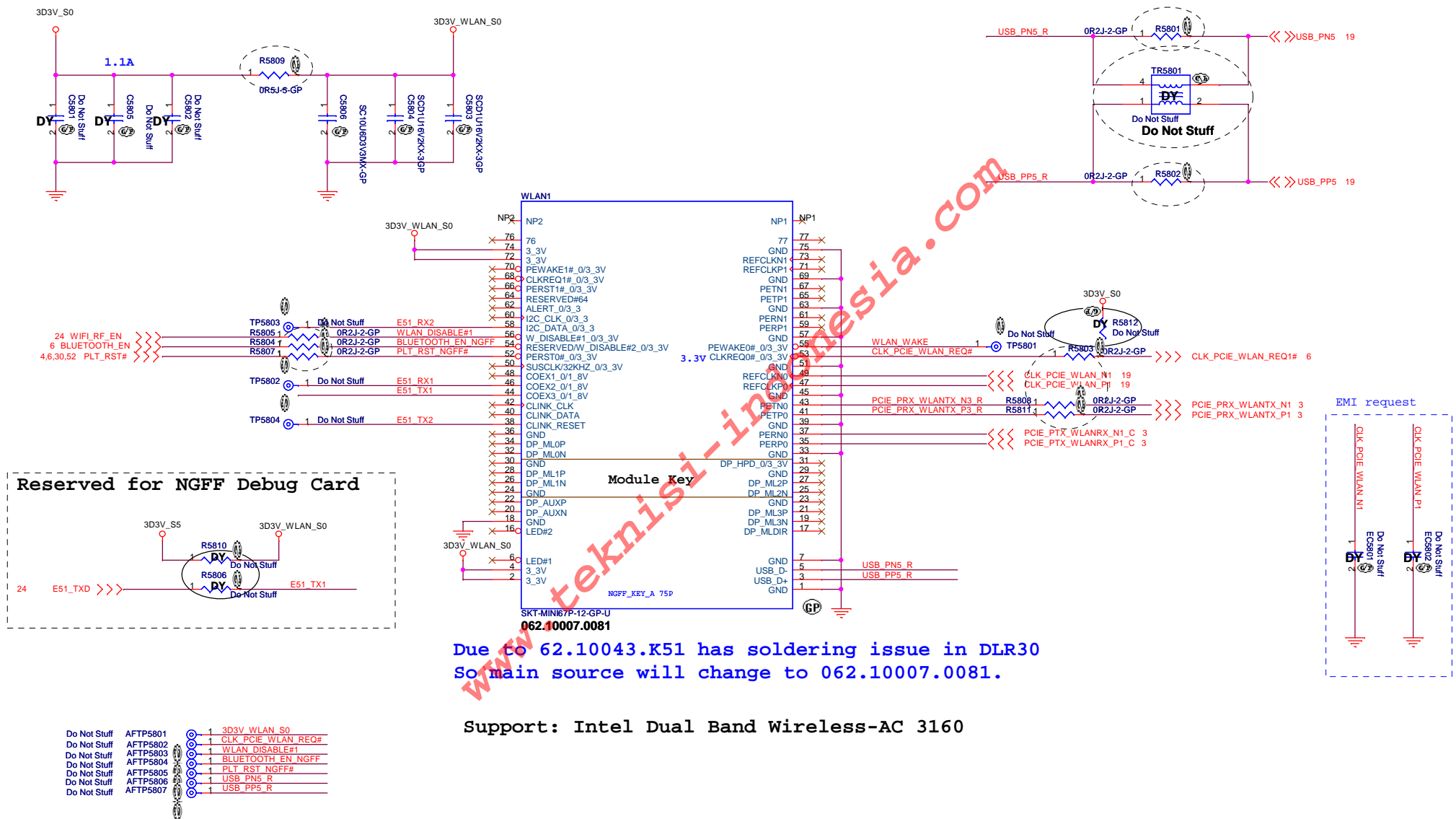
ODD Connector



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Main Func = WLAN



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

Support: Intel Dual Band Wireless-AC 3160

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Title		
Reserved		
Size	Document Number	Rev
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Date: Thursday, October 08, 2015		Sheet 59 of 104

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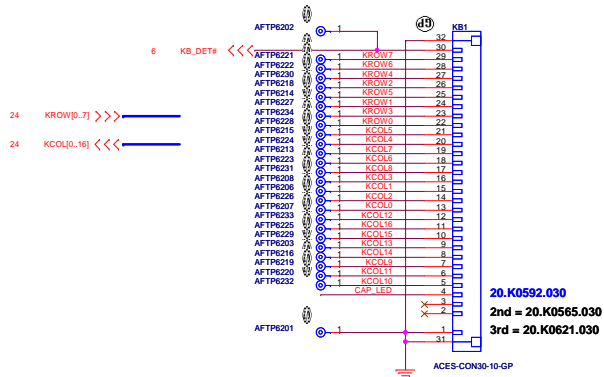
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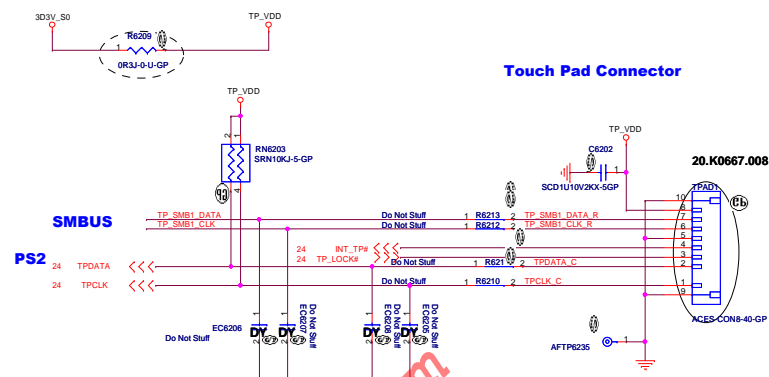
<div><div>緯創資通</div><div>Wistron Corporation</div><div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div></div>		
Title <div>(Reserved)</div>		
Size <div>A4</div>	Document Number <div>Iris AMD BEEMA</div>	Rev <div>X00</div>
Date: Thursday, October 08, 2015		Sheet 60 of 104

SSID = KBC

Internal Keyboard Connector (DVC40)



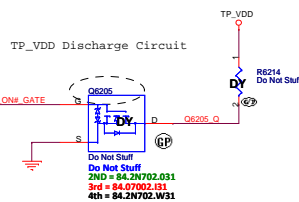
SSID = Touch.Pad



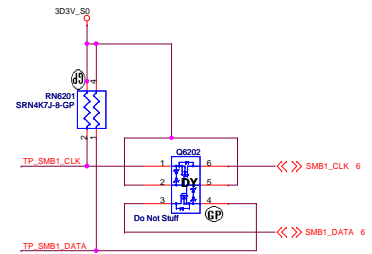
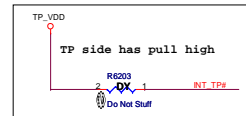
Pin number	Pin name
8	TP_VDD
7	TP_SMB1_DATA_R
6	TP_SMB1_CLK_R
5	GND
4	INT_TP#
3	TP_CLOCK#
2	TPDATA_C
1	TPCLK_C

CAP LED Control

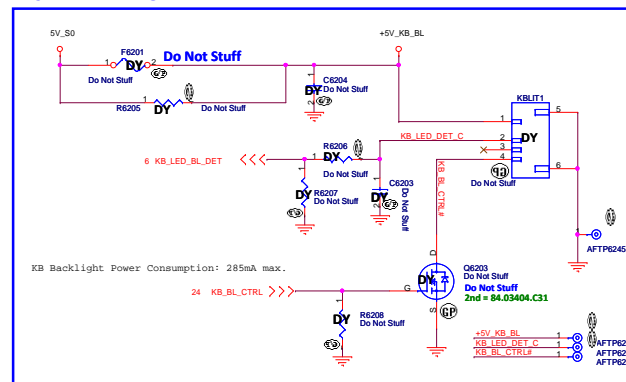
LOW actived from KBC GPIO



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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Wistron Corporation		
21F, 8B, Sec.1, Hsin Tai Wu Rd., Hsuehchun, Taipei Hsien 221, Taiwan, R.O.C.		
Key Board/Touch Pad		
Size A2	Document Number	Rev X00
Iris AMD BEEMA		
Date: Thursday, October 08, 2015	Sheet 62	of 104

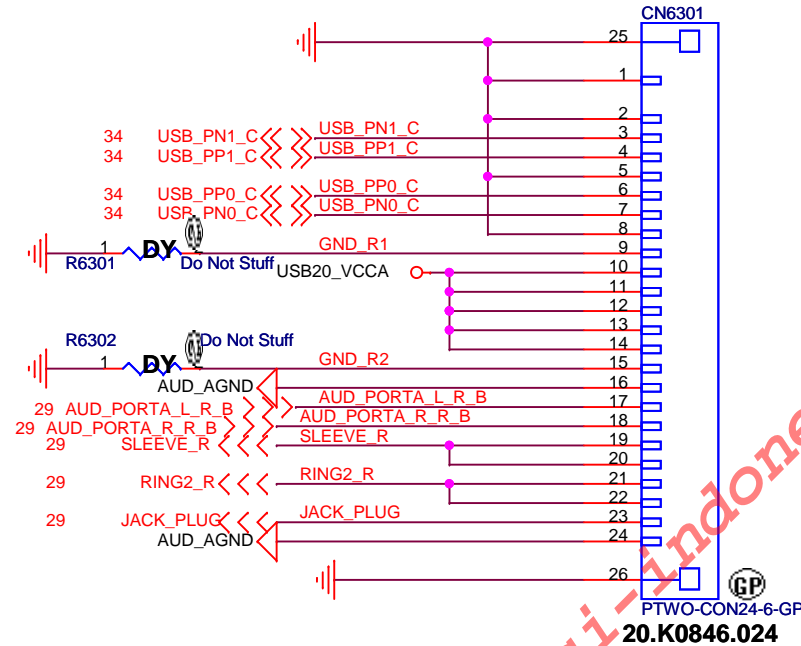
I/O Board Connector

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

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Title

IO Board Connector

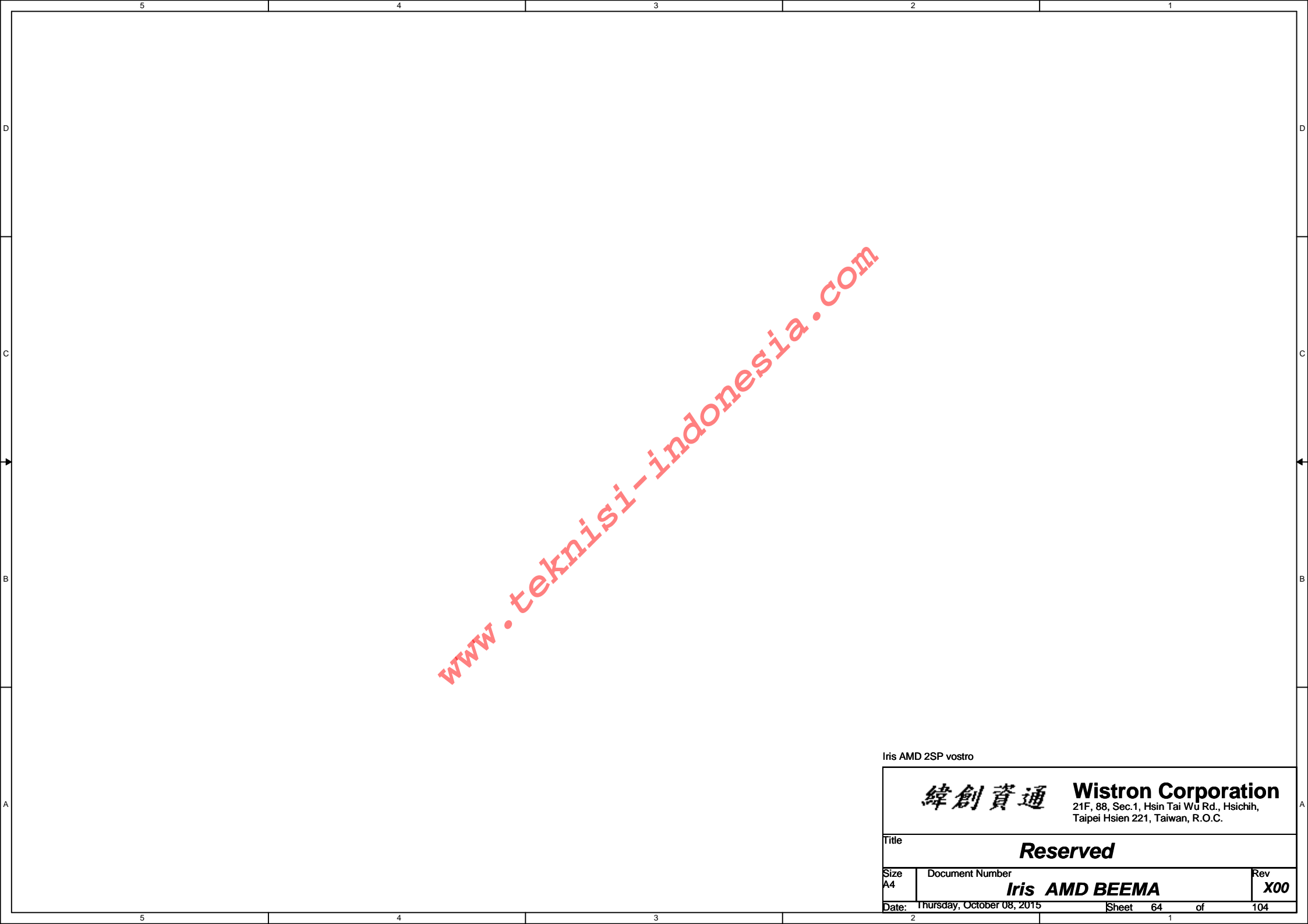
Size
A4

Document Number
Iris AMD BEEMA

Rev
X00


Date: Thursday, October 08, 2015

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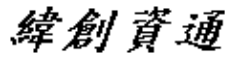
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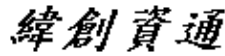
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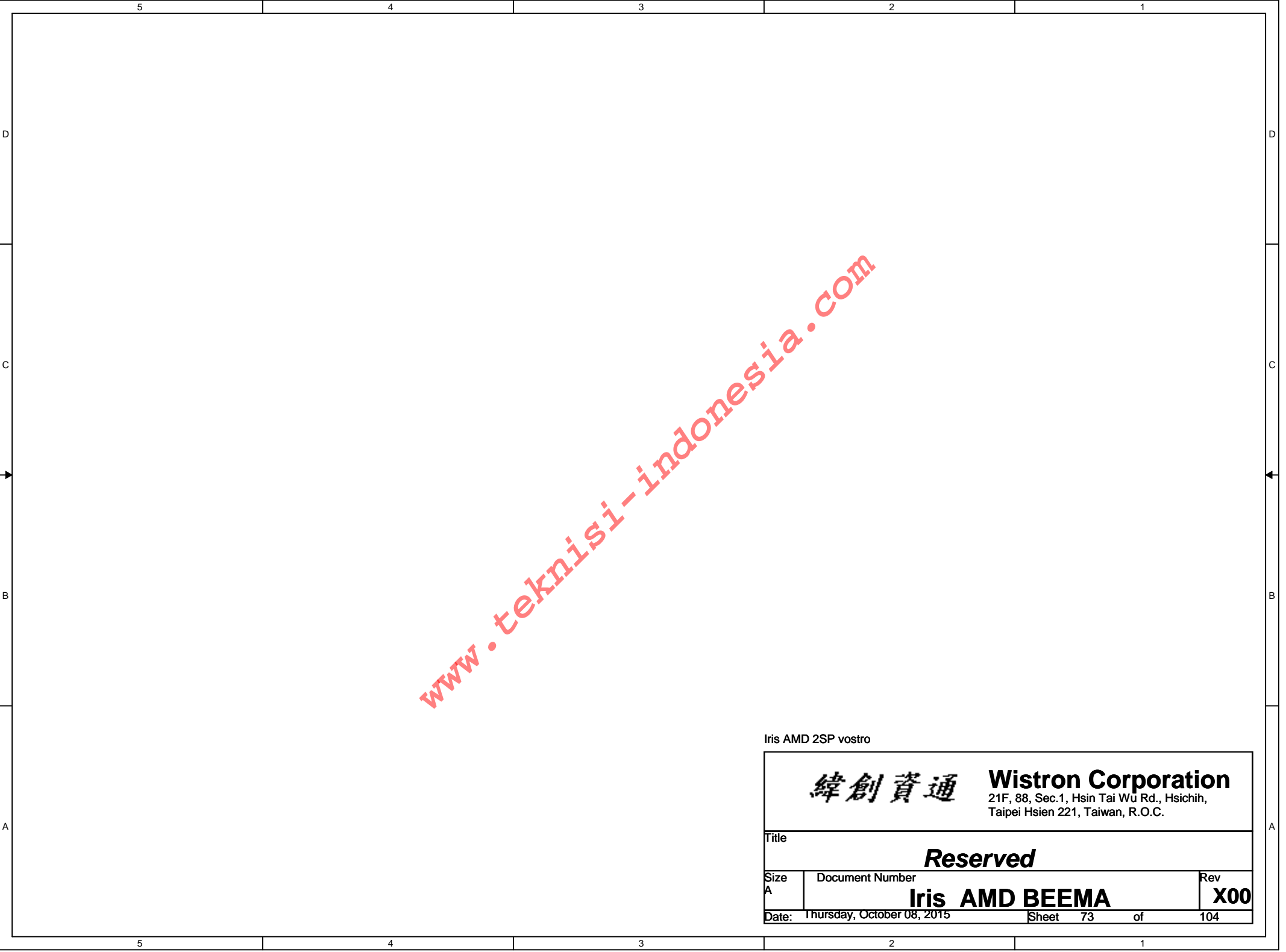
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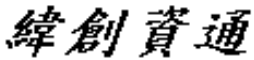
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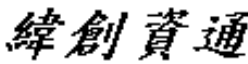
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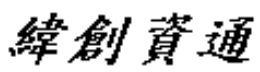
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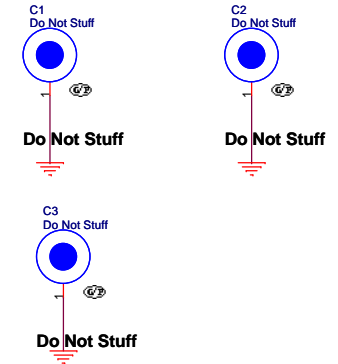
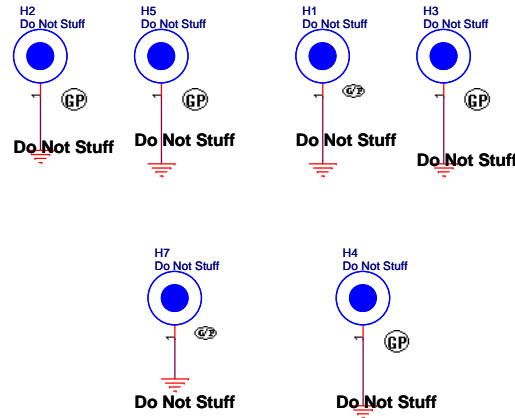
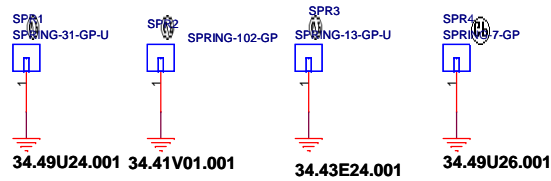
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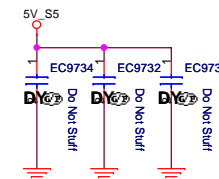
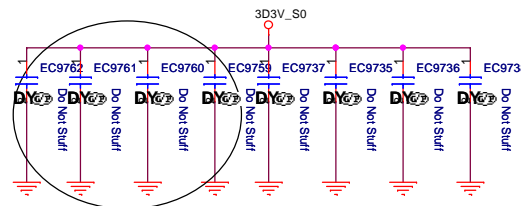
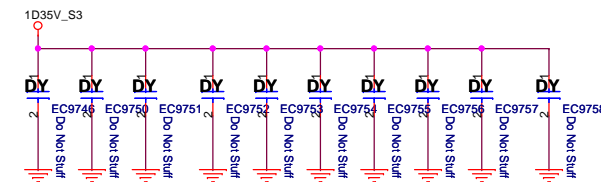
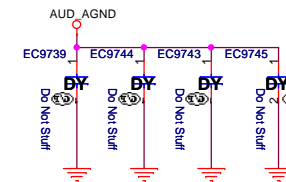
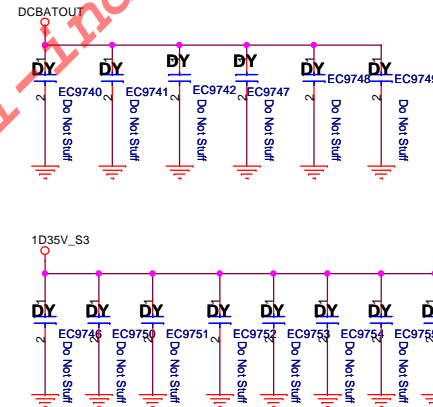
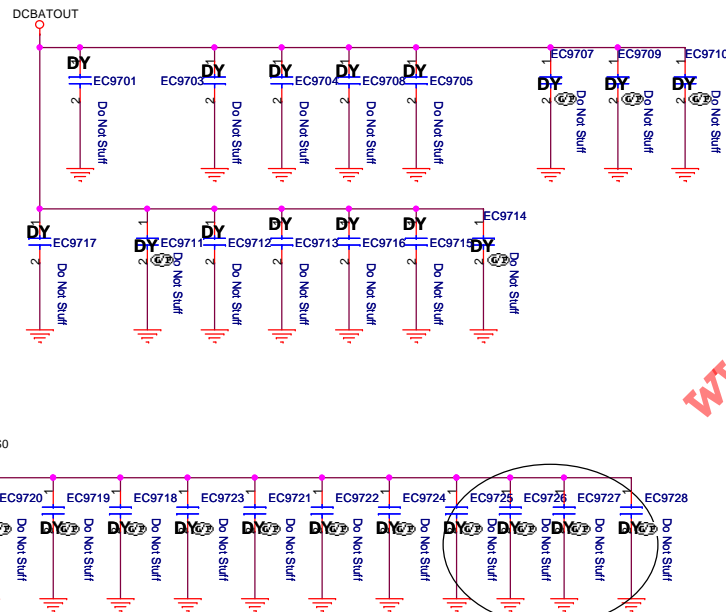
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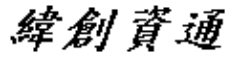
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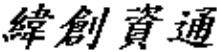
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Change notes -

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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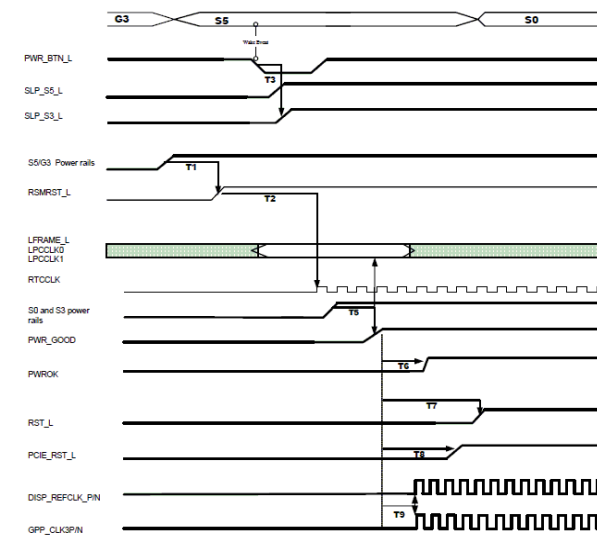
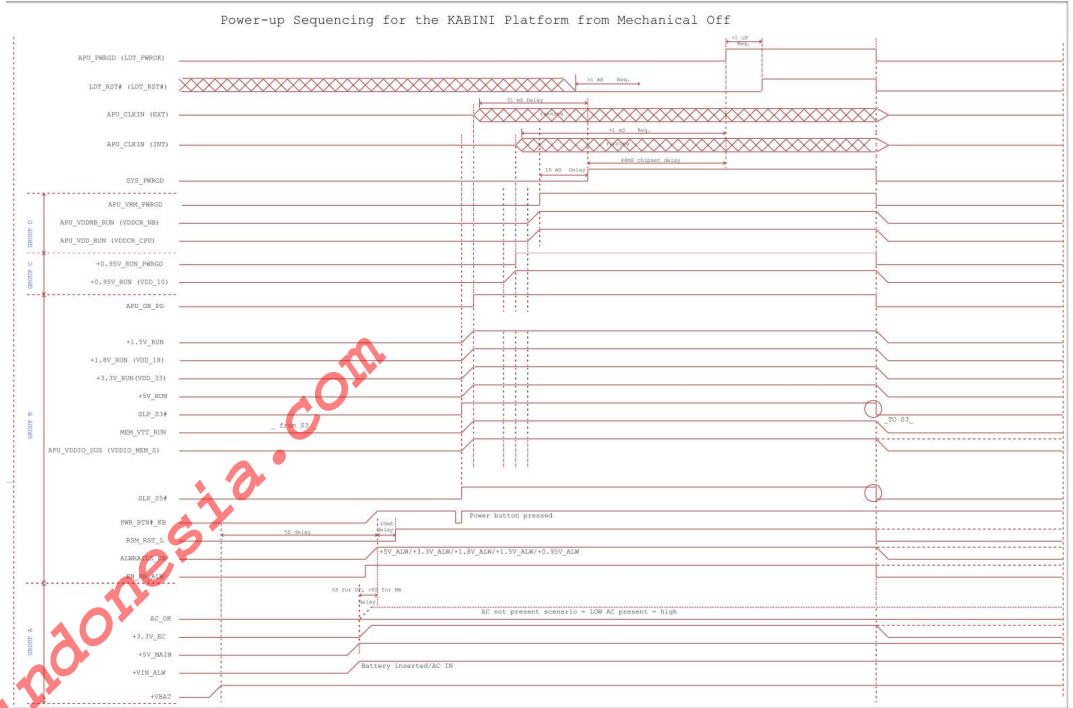
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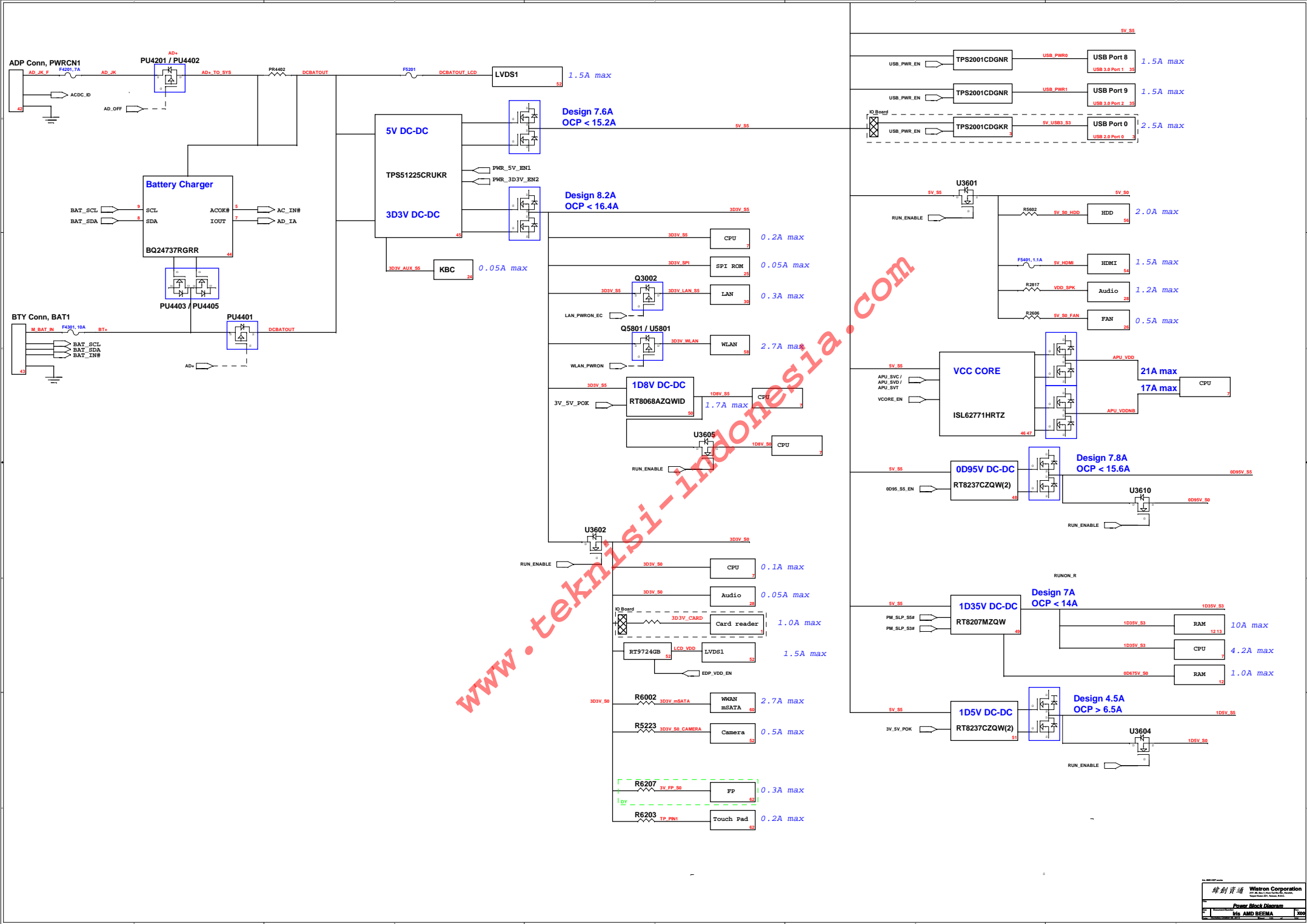
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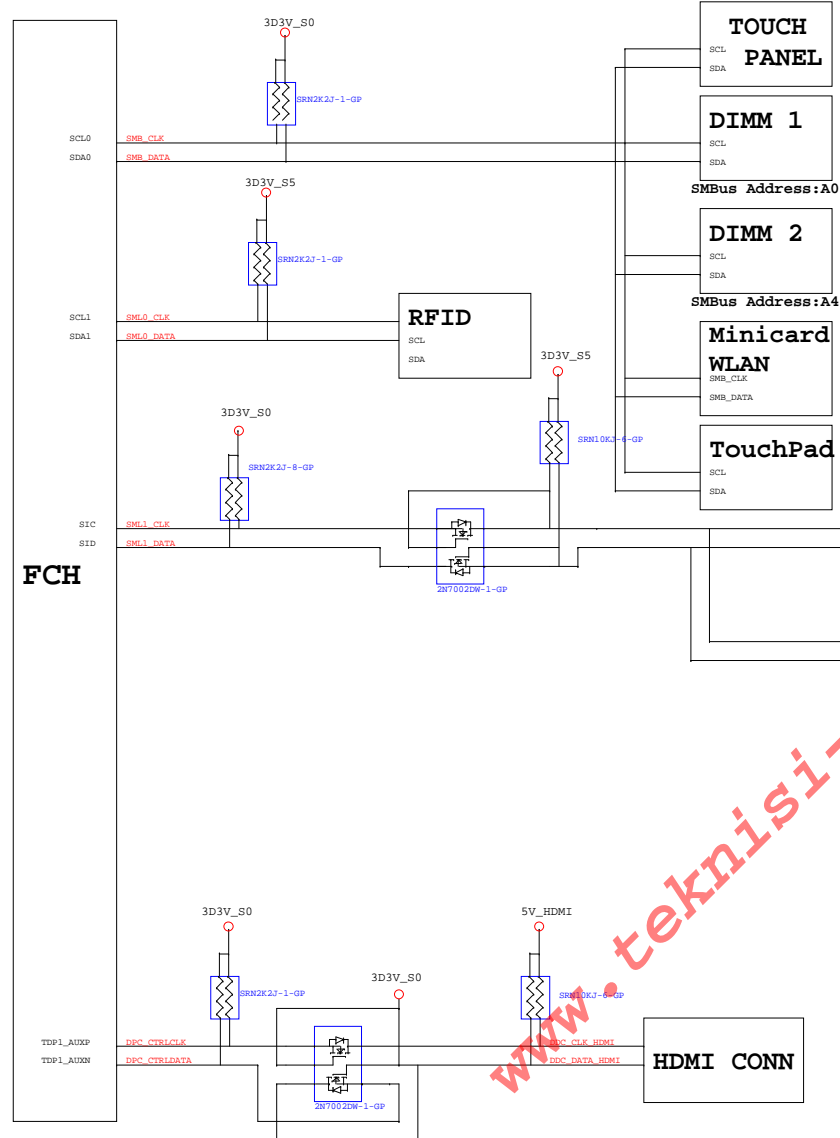
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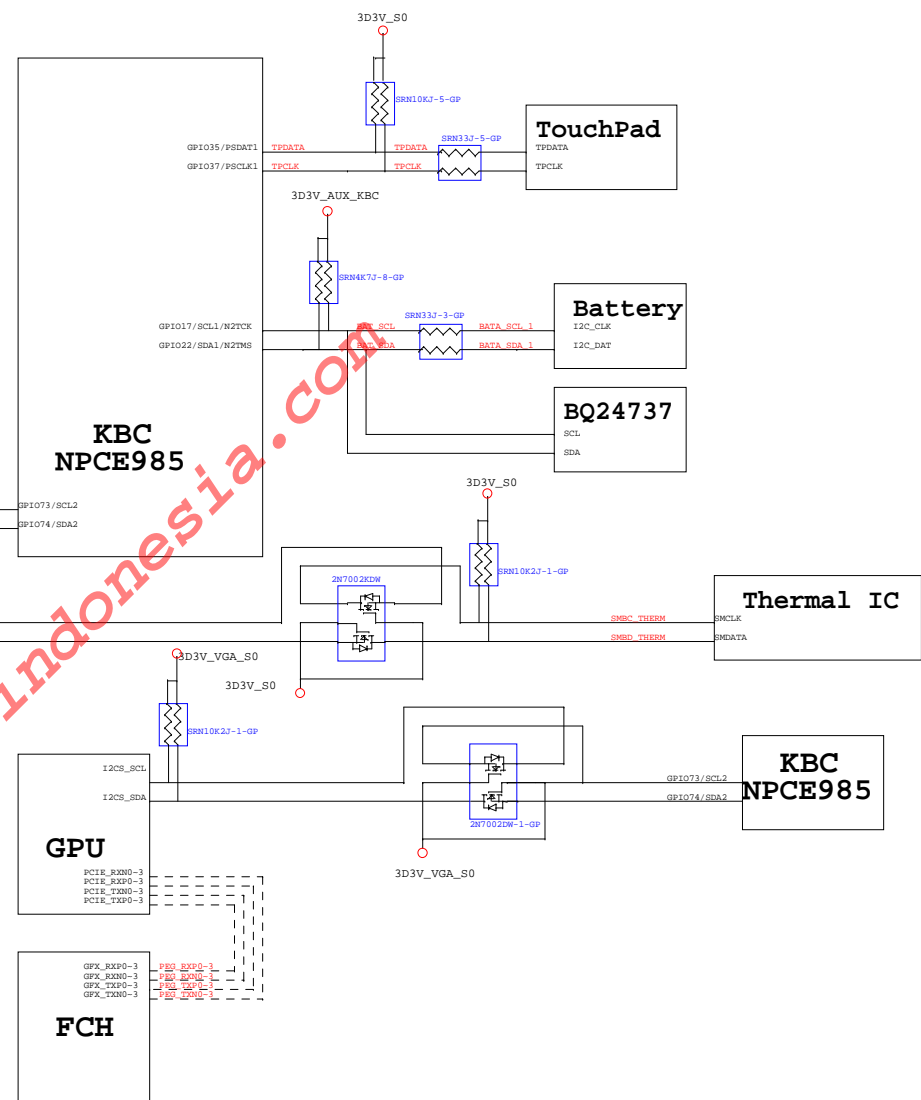




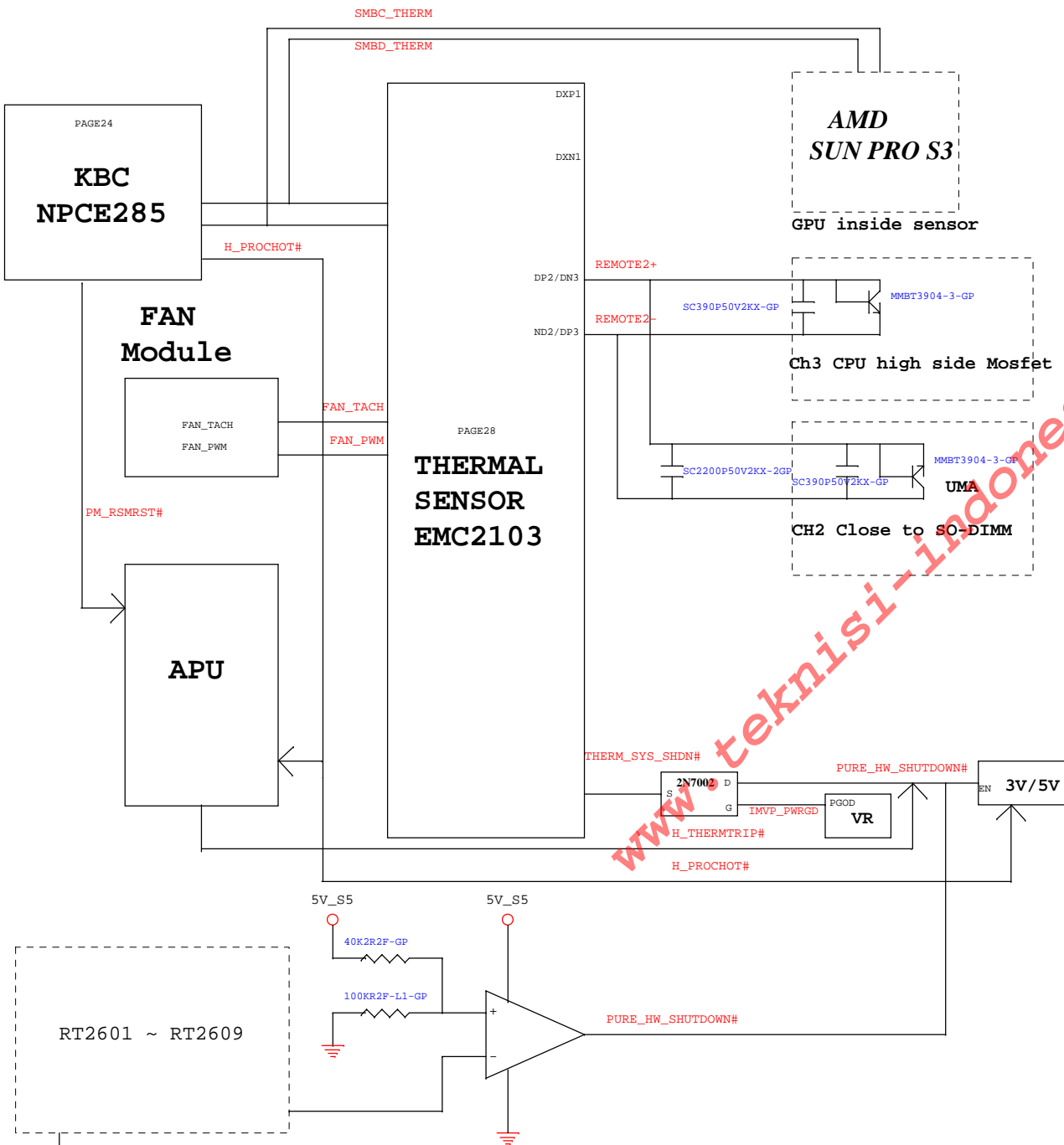
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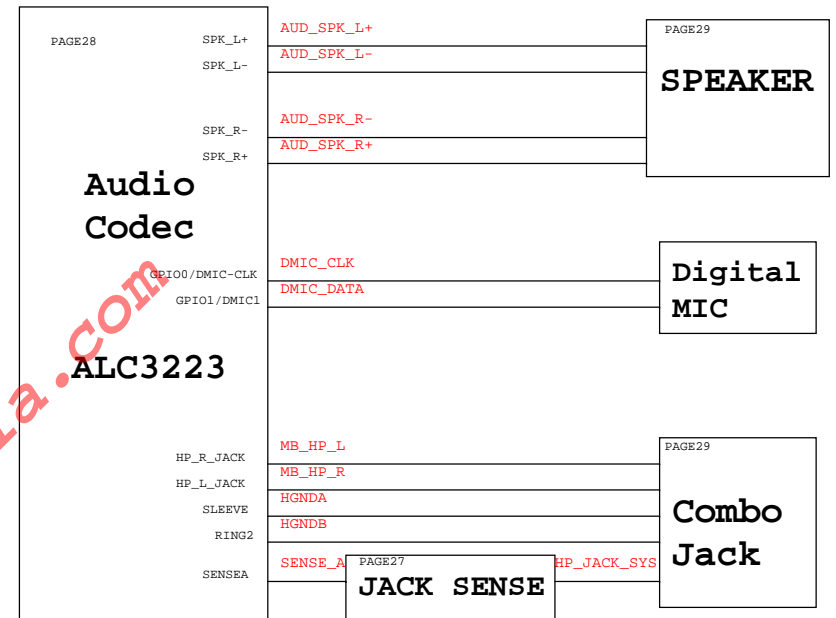
KBC SMBus Block Diagram



Thermal Block Diagram



Audio Block Diagram



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