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HSF Property : **Halos**

# RALPH

# MY BUILD

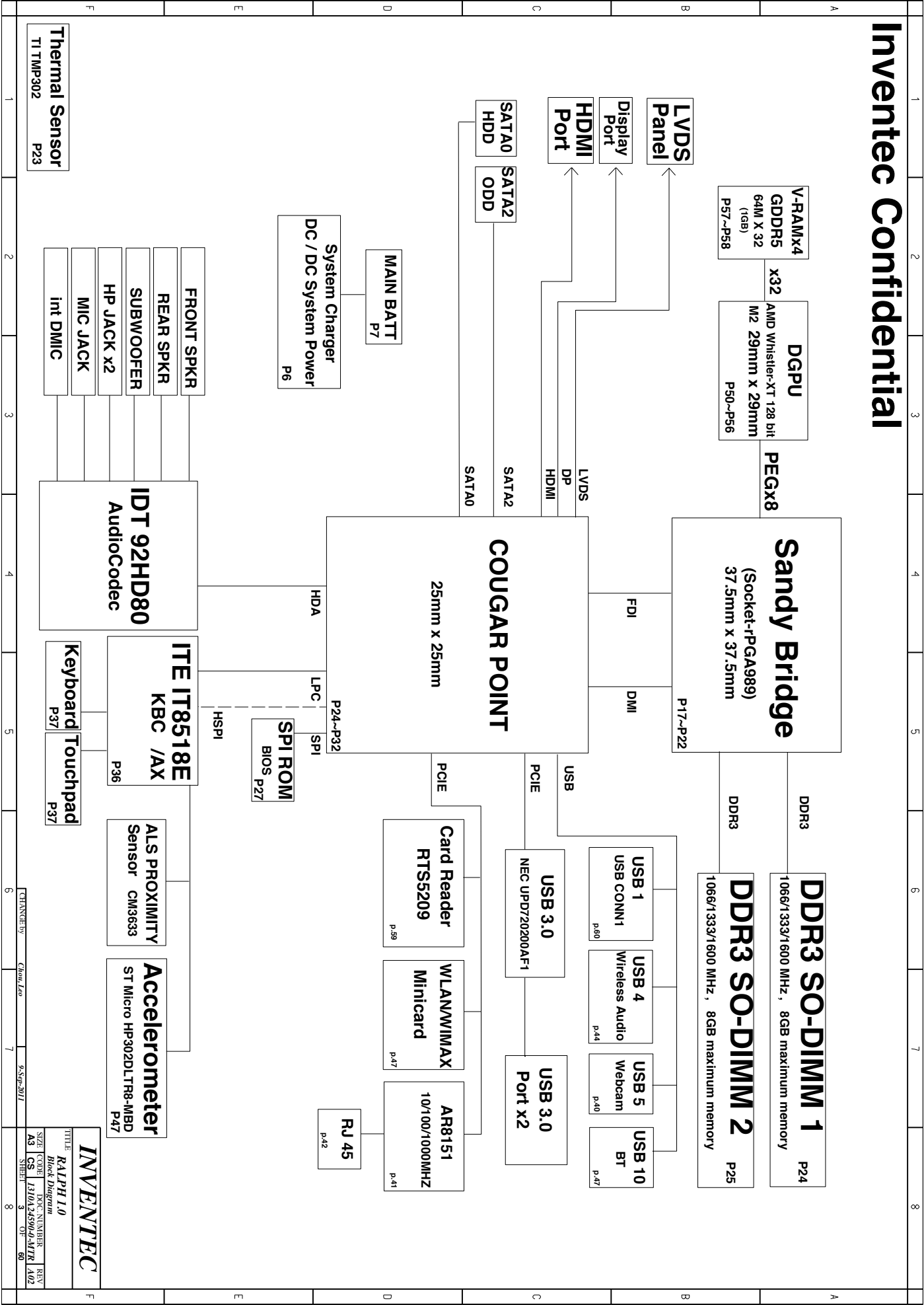
2011/09/20

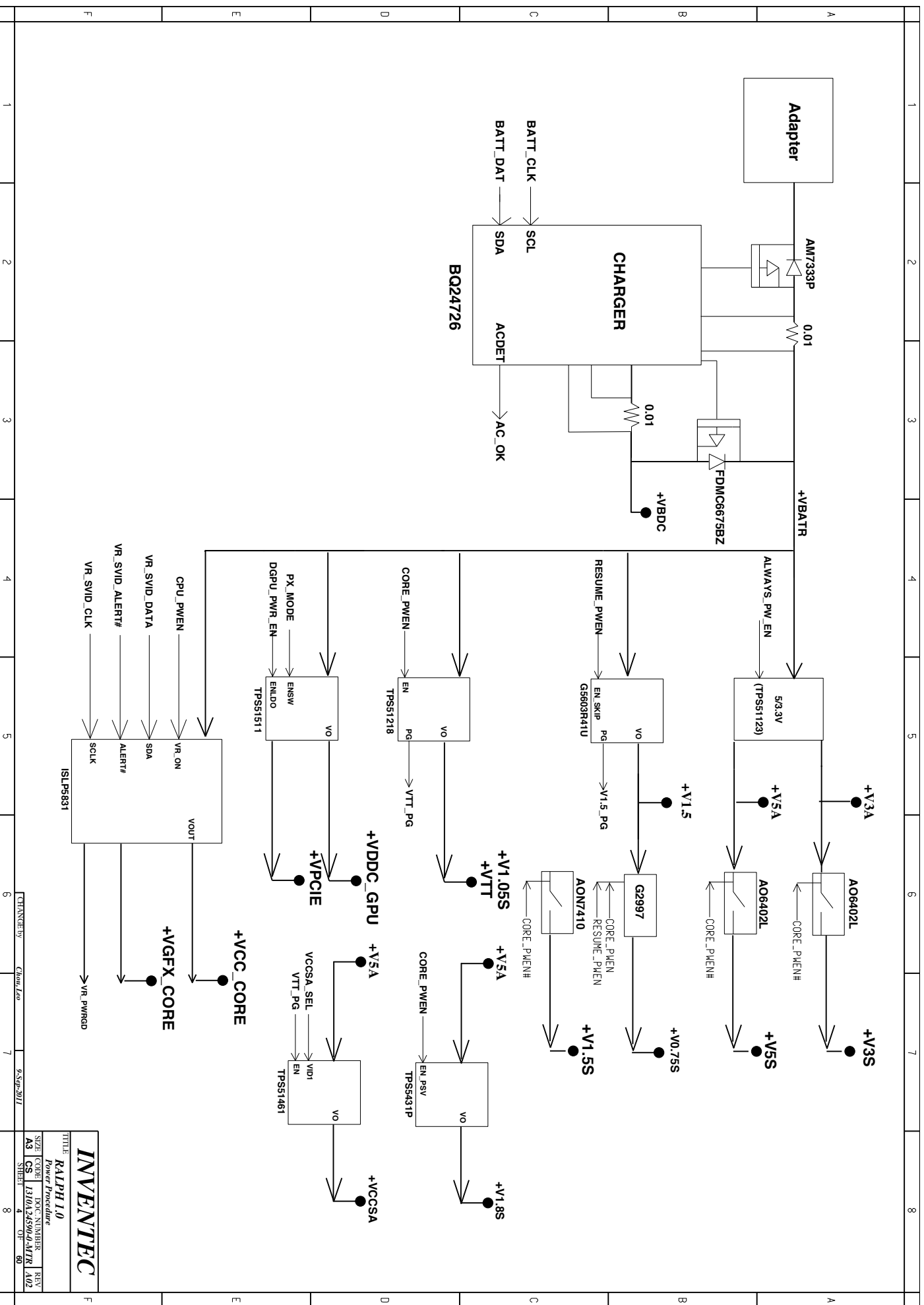
<div> <div>INVENTEC</div> <div>RALPH 10</div> </div>				TITLE	
<div> <div>DESIGNER</div> <div>Chen Leo</div> </div>		2011/9/8	POWER	DATE	2011/9/8
<div> <div>DESIGN</div> <div>Hsu Andy</div> </div>		2011/9/8			
<div> <div>CHECK</div> <div>Hsu Andy</div> </div>		2011/9/8			
<div> <div>RESPONSIBLE</div> <div>Hsu Andy</div> </div>		2011/9/8			
<div> <div>SIZE</div> <div>3</div> </div>				VER.	A02
<div> <div>FILE NAME</div> <div>RALPH-01-MR-0008</div> </div>					
<div> <div>PIN</div> <div>11002439001</div> </div>					

	1	2	3	4	5	6	7	8
A	<div>Index</div>							
B								
C	<div>PAGE</div> <div>01. PROJECT NAME</div> <div>02. INDEX</div> <div>03. Block Diagram</div> <div>04. POWER Procedure</div> <div>05. BLANK</div> <div>06. Charge Circuit</div> <div>07. Charge Circuit</div> <div>08. +V3A &amp; +V5A</div> <div>09. +V1.5 &amp; +V0.75</div> <div>10. +V1.8S &amp; +VDDC_GPU</div> <div>11. +VTT</div> <div>12. +VCCSA</div> <div>13. +VCC_CORE &amp; +VGFX_CORE</div> <div>14. +VCC_CORE &amp; +VGFX_CORE</div> <div>15. +V5S &amp; +V3S</div> <div>16. BLANK</div> <div>17. CPU-1</div> <div>18. CPU-2</div> <div>19. CPU-3</div> <div>20. CPU-4</div> <div>21. CPU-5</div> <div>22. CPU-6</div> <div>23. Fan</div> <div>24. DDR3-1</div> <div>25. DDR3-2</div> <div>26. BLANK</div> <div>27. PCH-1</div> <div>28. PCH-2</div> <div>29. PCH-3</div> <div>30. PCH-4</div> <div>31. PCH-5</div>				<div>PAGE</div> <div>32. PCH-6</div> <div>33. PCH-7</div> <div>34. PCH-8</div> <div>35. PCH-9</div> <div>36. KBC</div> <div>37. Keyboard &amp; TouchPad</div> <div>38. DISPLAY PORT CONN</div> <div>39. HDMI CONN</div> <div>40. LVDS</div> <div>41. LAN</div> <div>42. RJ-45</div> <div>43. USB3.0 RE-DRIVER</div> <div>44. USB2.0 CONN</div> <div>45. Audio, PWB, ODD Board &amp; HDD CONN</div> <div>46. Wireless Audio, LDPS, CR, JOG, USB CONN</div> <div>47. WLAN &amp; HDD PROTECTION</div> <div>48. EMI CAP. &amp; SCREW</div> <div>49. BLANK</div> <div>50. GPU-1</div> <div>51. GPU-2</div> <div>52. GPU-3</div> <div>53. GPU-4</div> <div>54. GPU-5</div> <div>55. GPU-6</div> <div>56. GPU-7</div> <div>57. VRAM-1</div> <div>58. VRAM-2</div> <div>Daughter Board</div> <div>59. Card Reader BOARD</div> <div>60. ODD, W/A &amp; POWER BOARD</div>			
D								
E								
F								

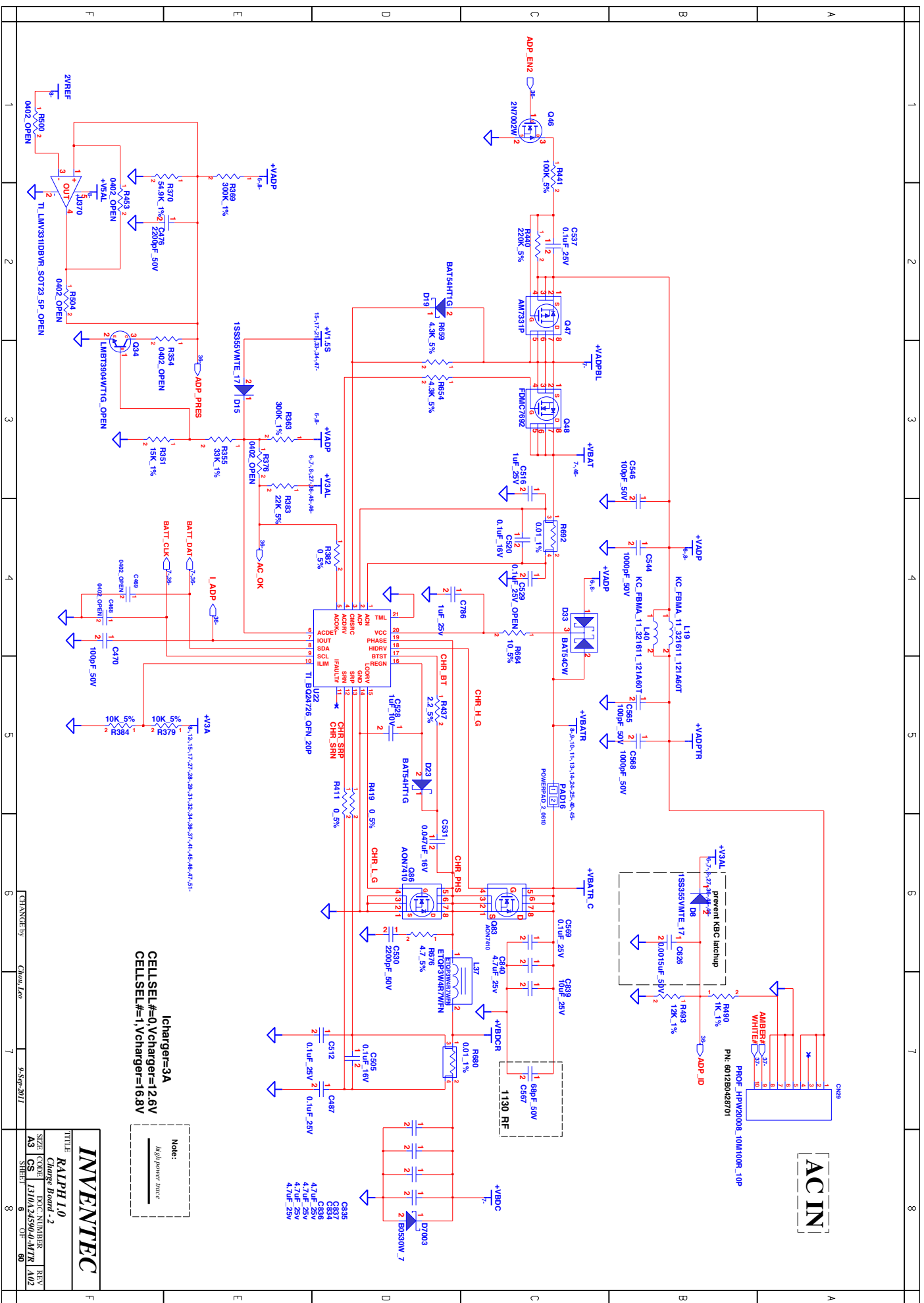
TITLE: <b>RA1PH1.0</b>			
SIZE: <b>A3</b>	CODE: <b>CS</b>	DOC. NUMBER: <b>1310A24500a-MTR</b>	REV: <b>A02</b>
SHEET: <b>2</b>		OF: <b>60</b>	

Inventec Confidential





	1	2	3	4	5	6	7	8		
A	<div>BLANK</div>								A	
B									B	
C									C	
D									D	
E									E	
F	1	2	3	4	5	6	7	8	F	
						CHANGED by		Chun, Leo	9-Sep-2011	



lcharger=3A  
CELLSEL#=0,Vcharger=12.6V  
CELLSEL#=1,Vcharger=16.8V

## References

CELLSEL#=0,Vcharger=12.6V

**CELLSEL#=1,Vcharger=16.8V**

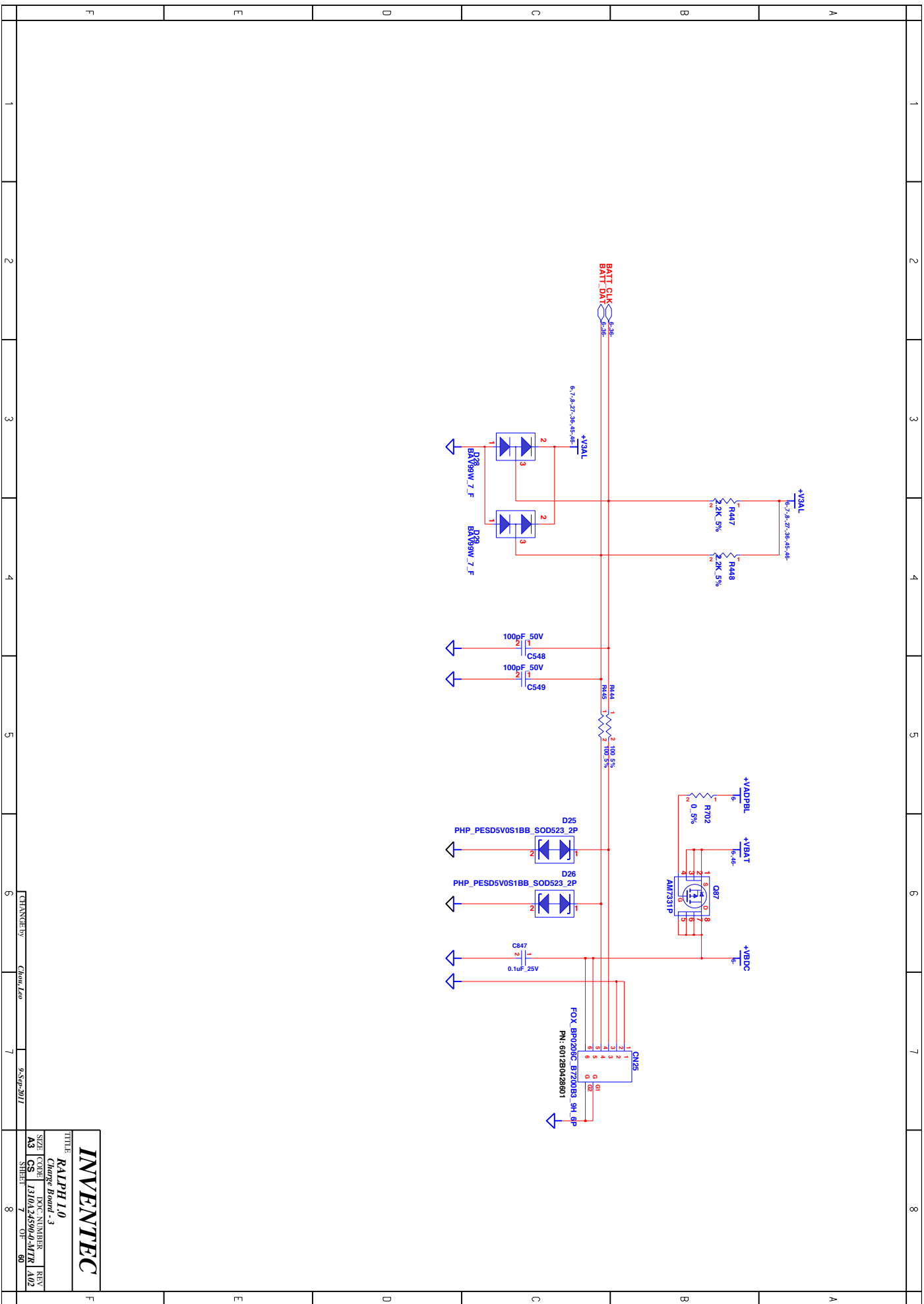
**INVENTEC**

FILE  
**RALPH 1.0**  
Charge Board - 2

SIZE	CODE	DOC. NUMBER	R
A3	CS	I310A24590-0-MTR	A

SHEET 6 OF 60

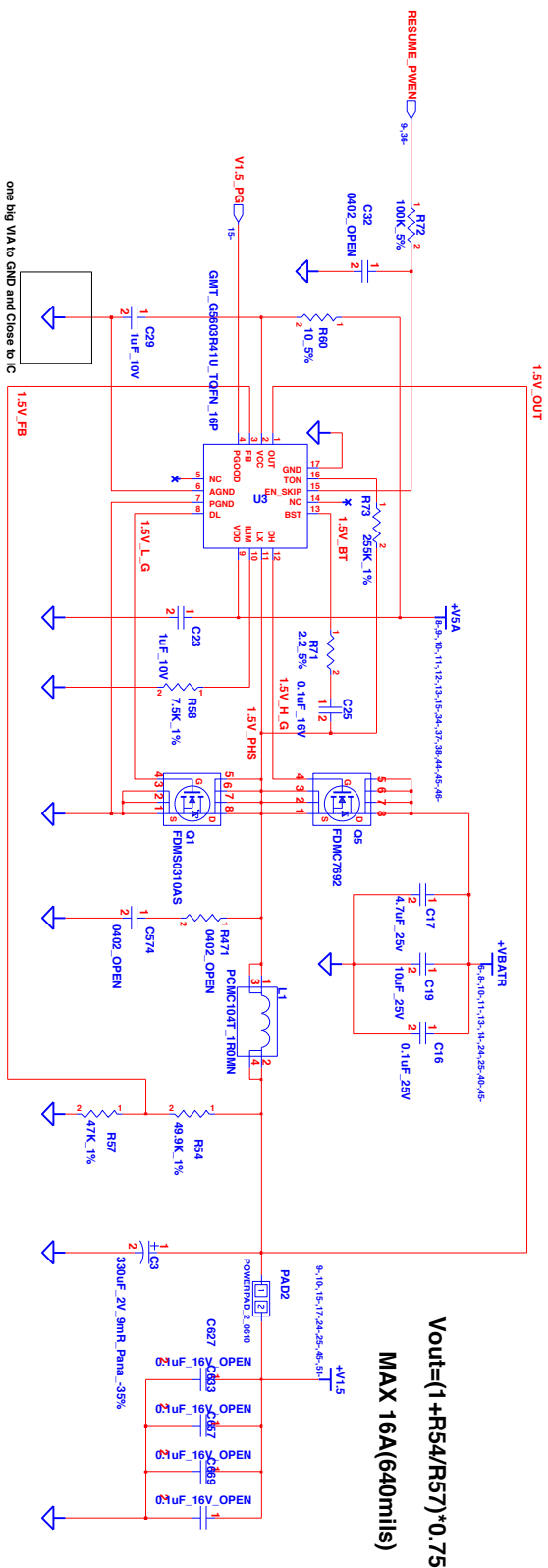
SHEET 6 OF 60



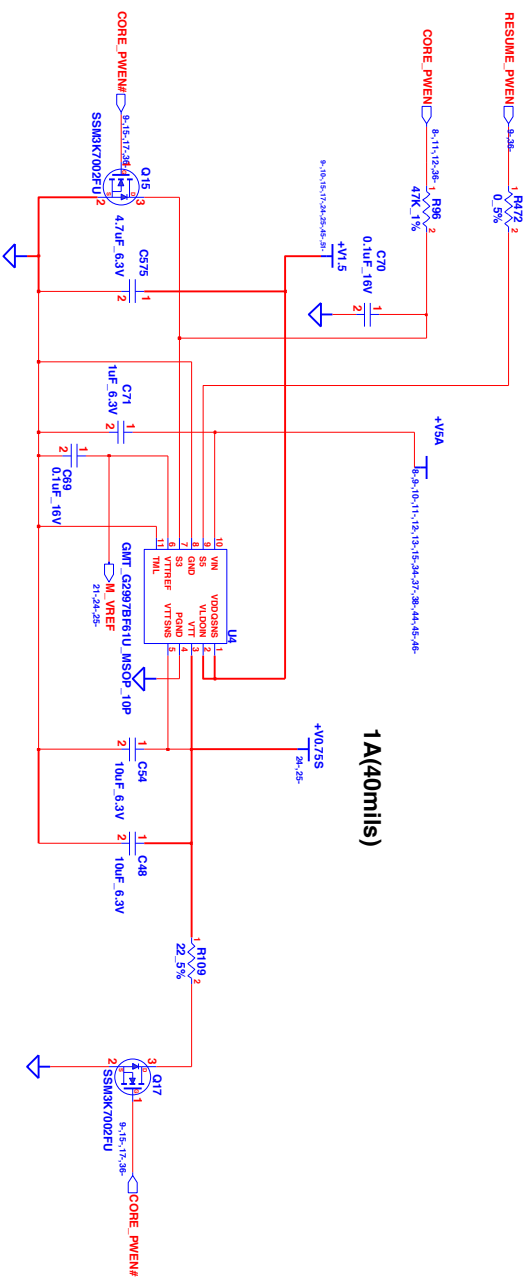
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TITLE			
RALPH 1.0			
Change Board - 3			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	J310A.24590.0-MTR	A02
SHEET		7	OF 60
		8	







$V_{out} = (1 + R_{54}/R_{57}) \times 0.75$   
MAX 16A(640mils)



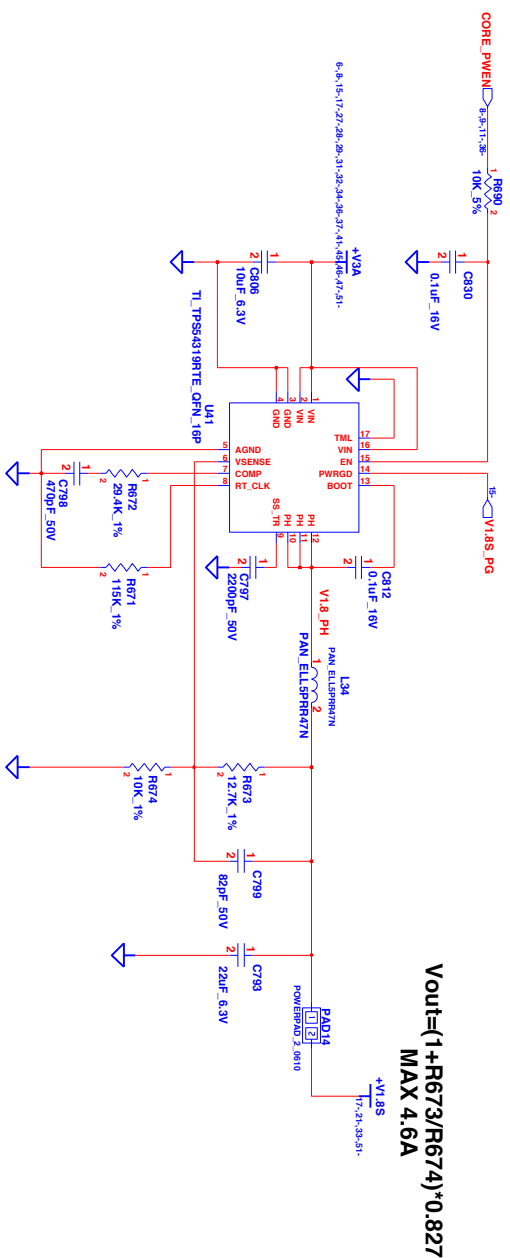
NOTE: DDR3 REGULATOR

INVENTEC	
RAPH I.0	
SIZE	CODE
A3	CS
DATE	REV
13/04/2014	4.02

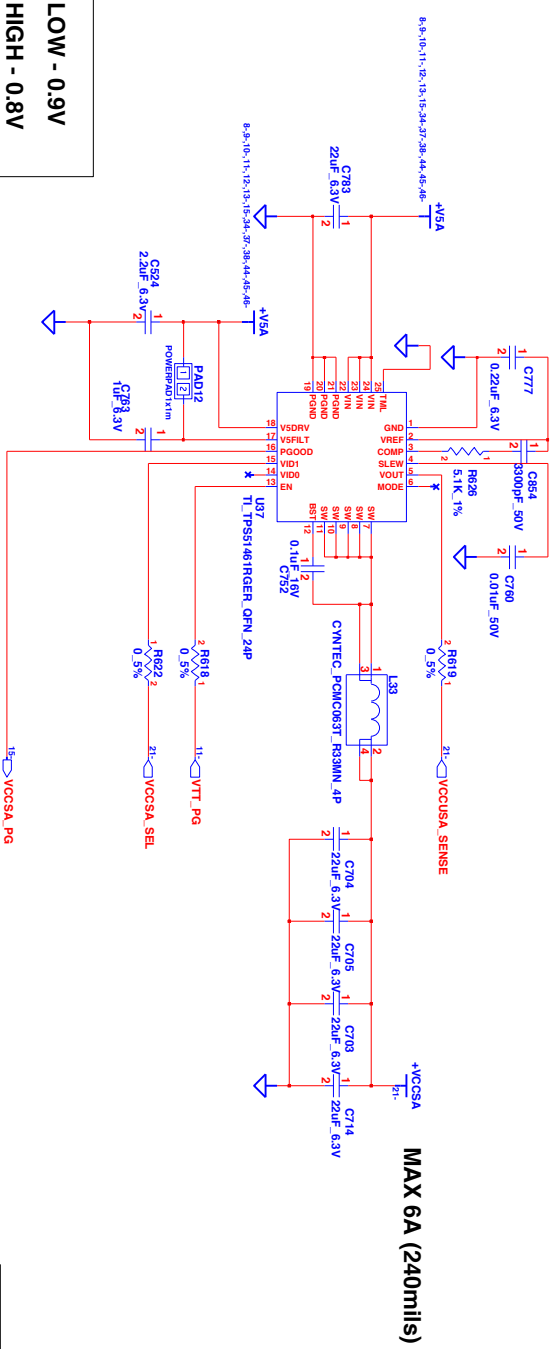
CHANGED BY: *Chun.Lee* 9-Sep-2011







LOW - 0.9V  
HIGH - 0.8V

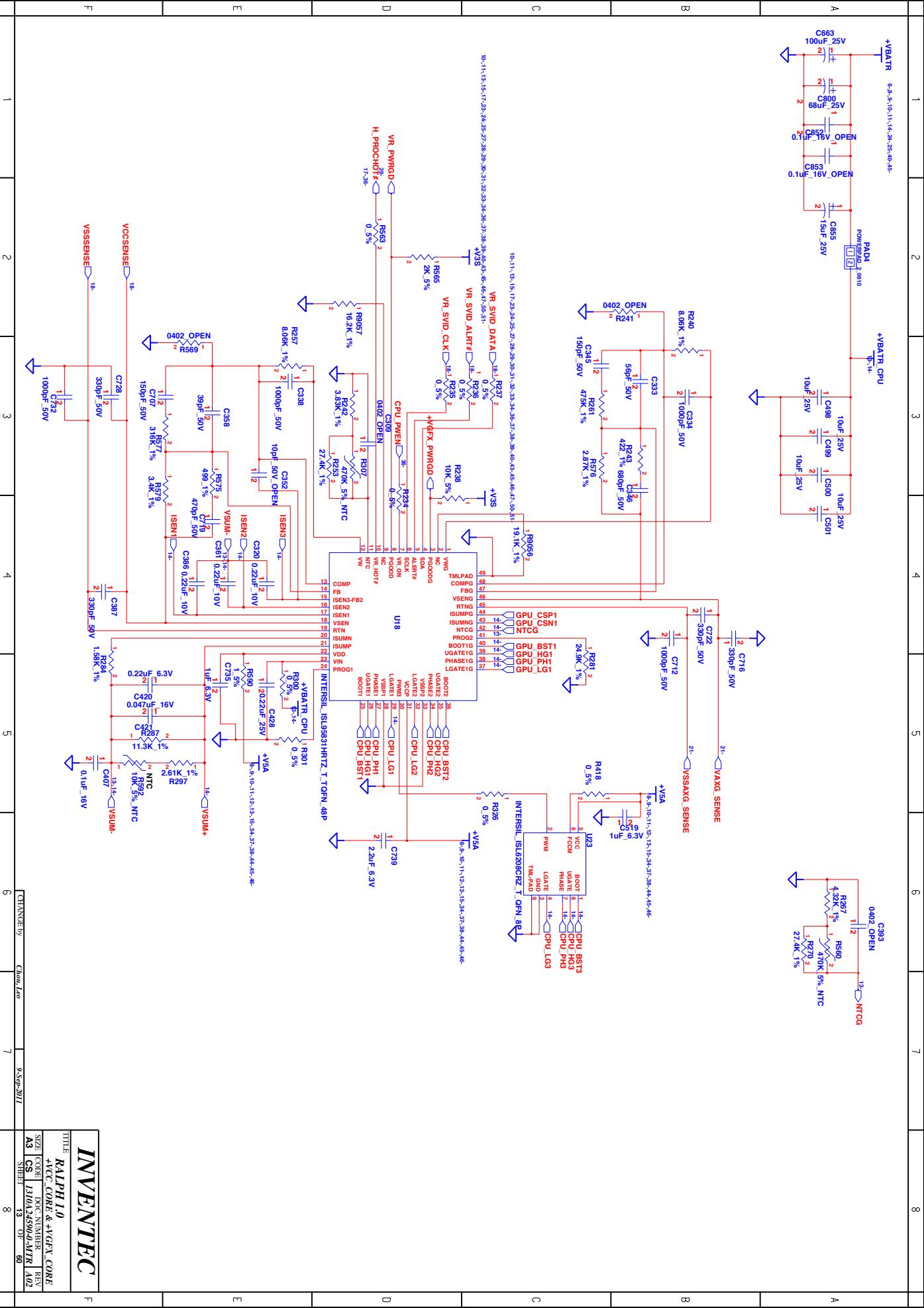


INVENTEC

RALPH 1.0

SIZE CODE DOC NUMBER REV  
A3 CS 1310A24500-0-MTR A02  
Sheet 12 of 60

CHANGED BY: *Chun, Leo* 9-Sep-2011



INVENTEC

RALPH1.0

AVCC, CORE & +V5A, CORE

SIZE CODE: 1310A2500-0-MTR

REV: 402

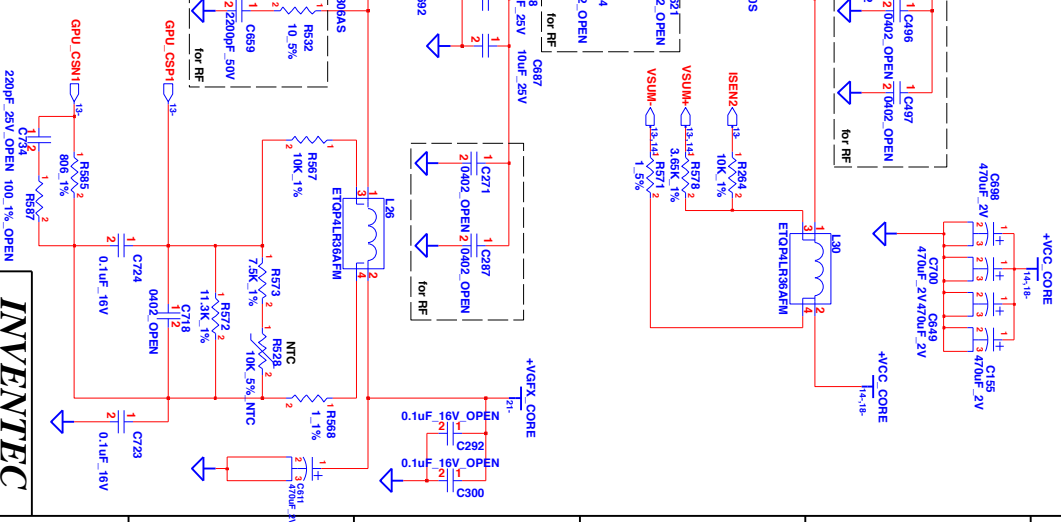
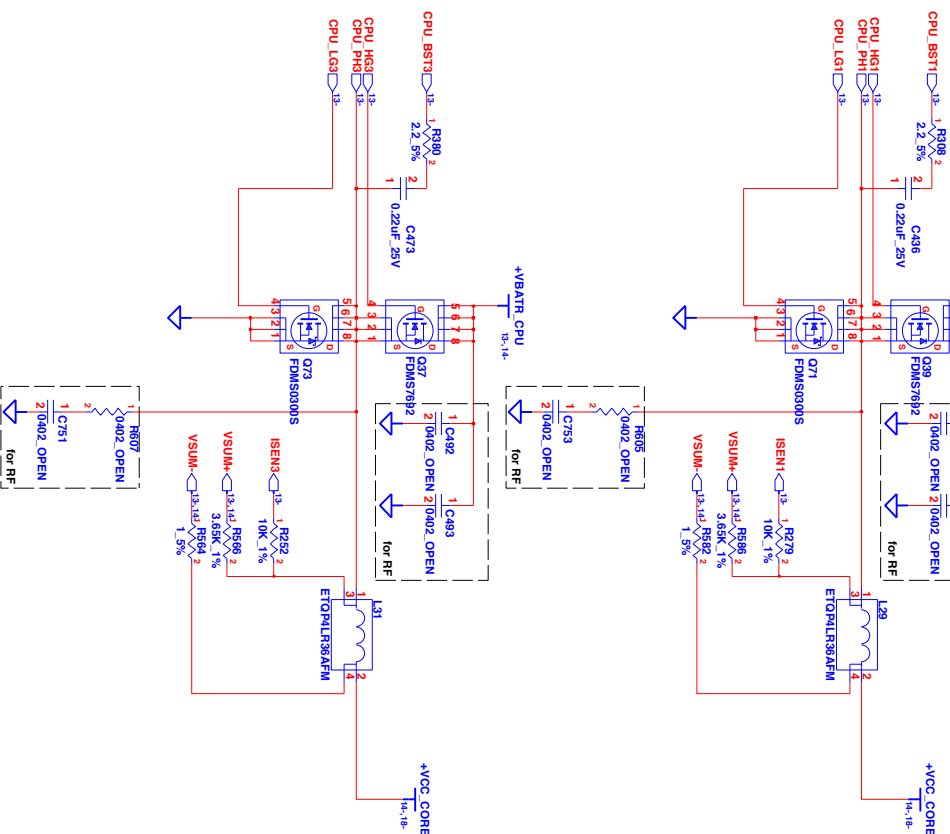
DATE: 13-07-2011

DESIGNER: 8

CHECKED BY: 7

DATE: 9-Sep-2011

# VCC\_CORE (SV 35W-->MAX 53A) (Quad 45W-->MAX 94A)



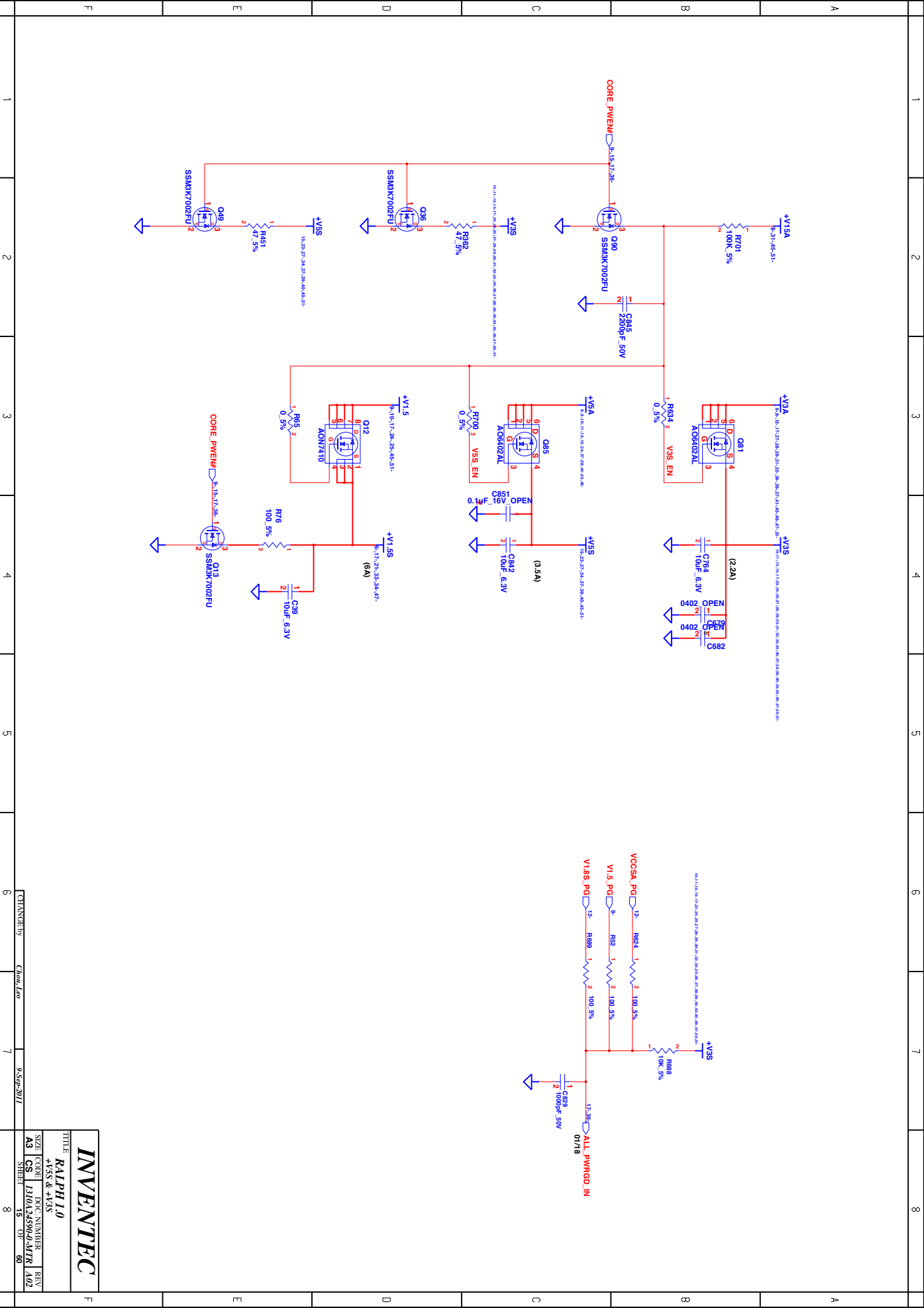
INVENTEC  
RALPH I.O  
+VCC\_CORE & +VCC\_CORE  
SIZE CODE DOC NUMBER REV  
A3 CS 1310A34500A-MTR A02  
START 14 07 80

CHANGED BY

Chun.Lee

9-Sep-2011

8



INVENTEC

RALPH 1.0

SIZE CODE

REV

CS

1310A24500-0-MTR

15

01

60

9-SEP-2011

Chun, Leo

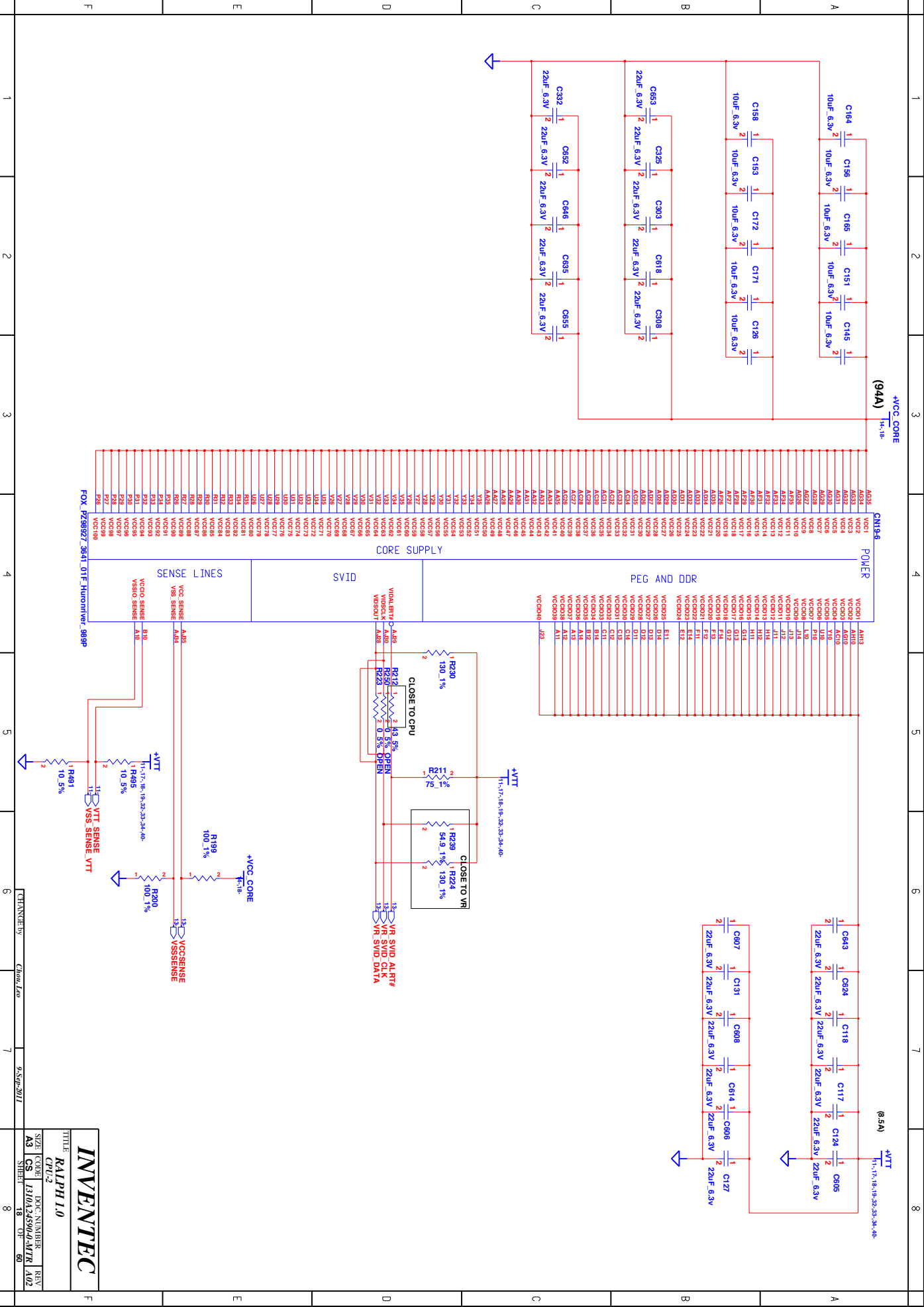
CHANGED BY

1





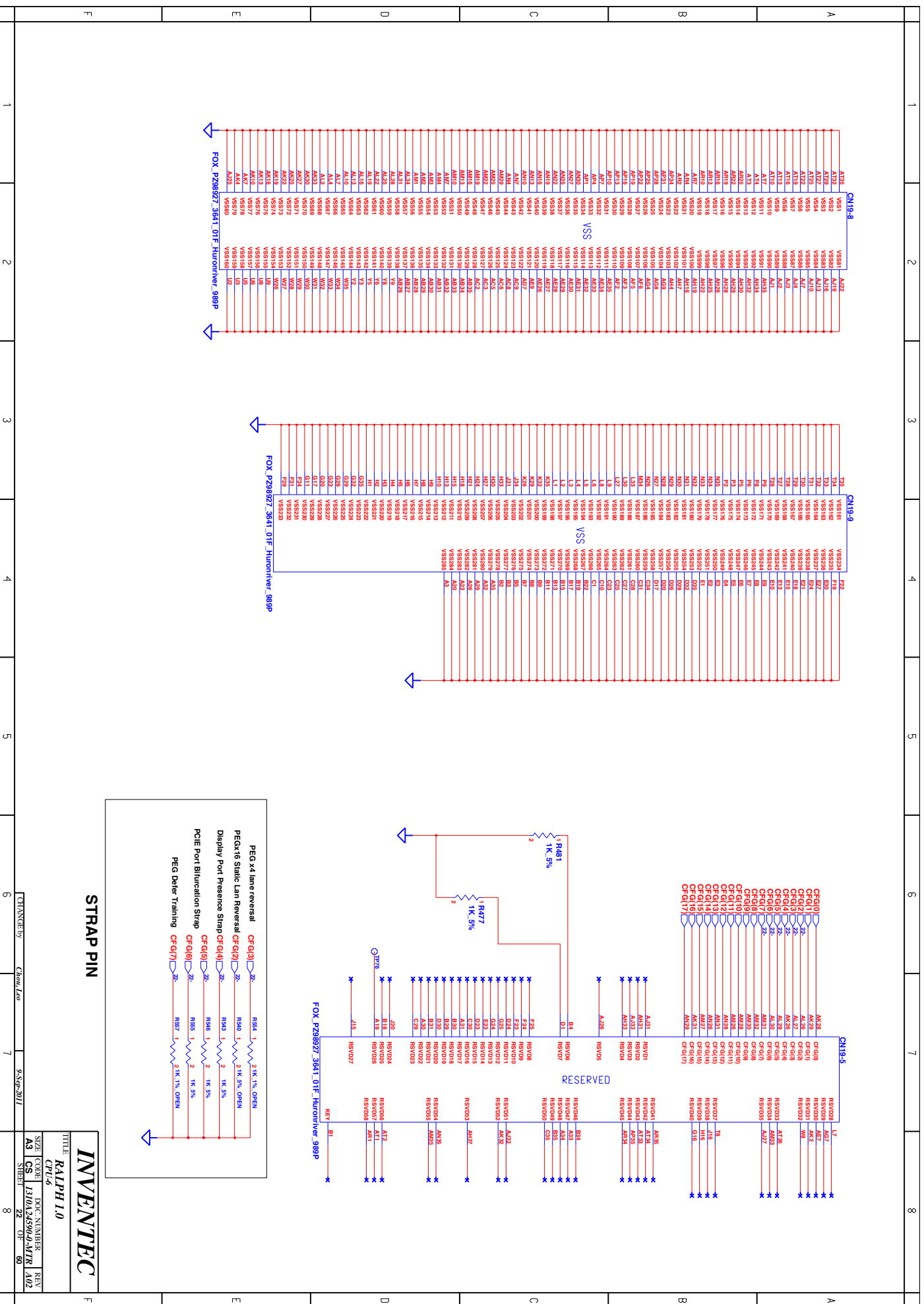




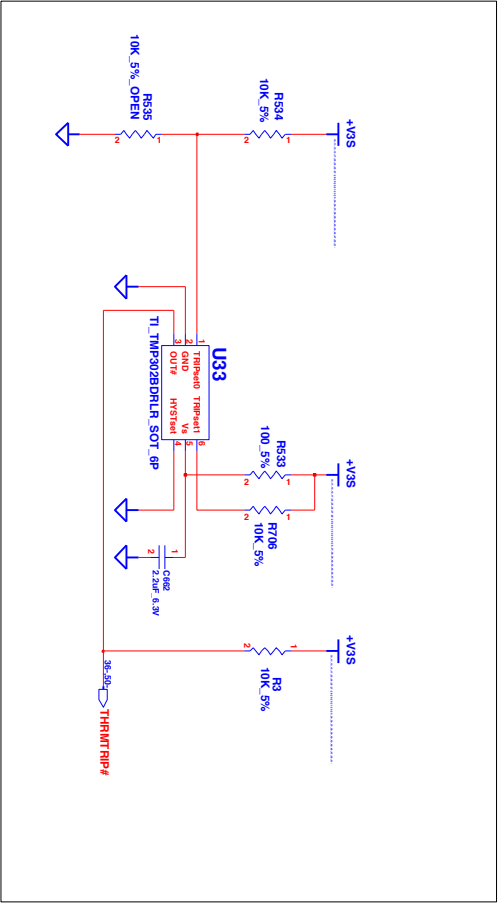








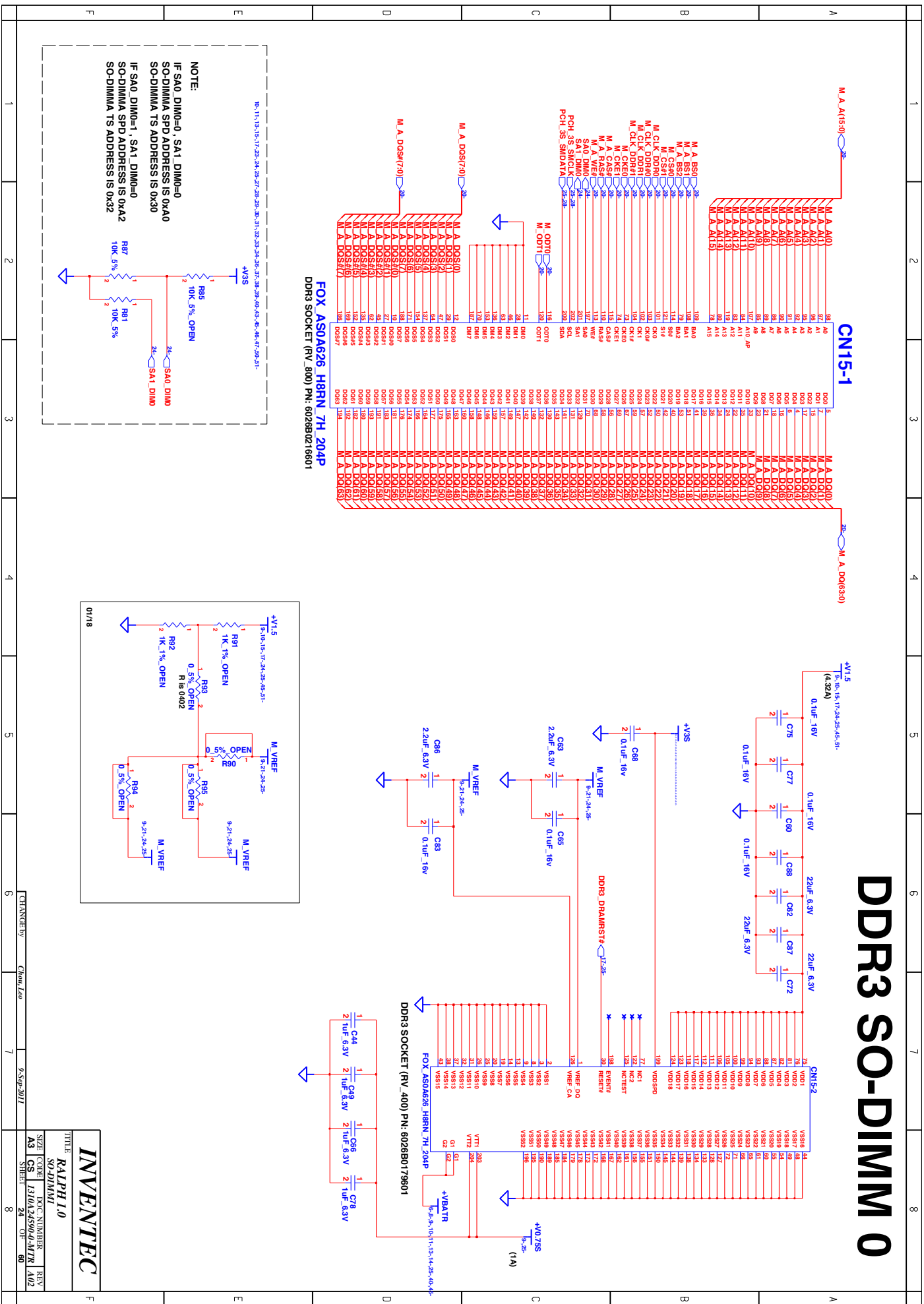
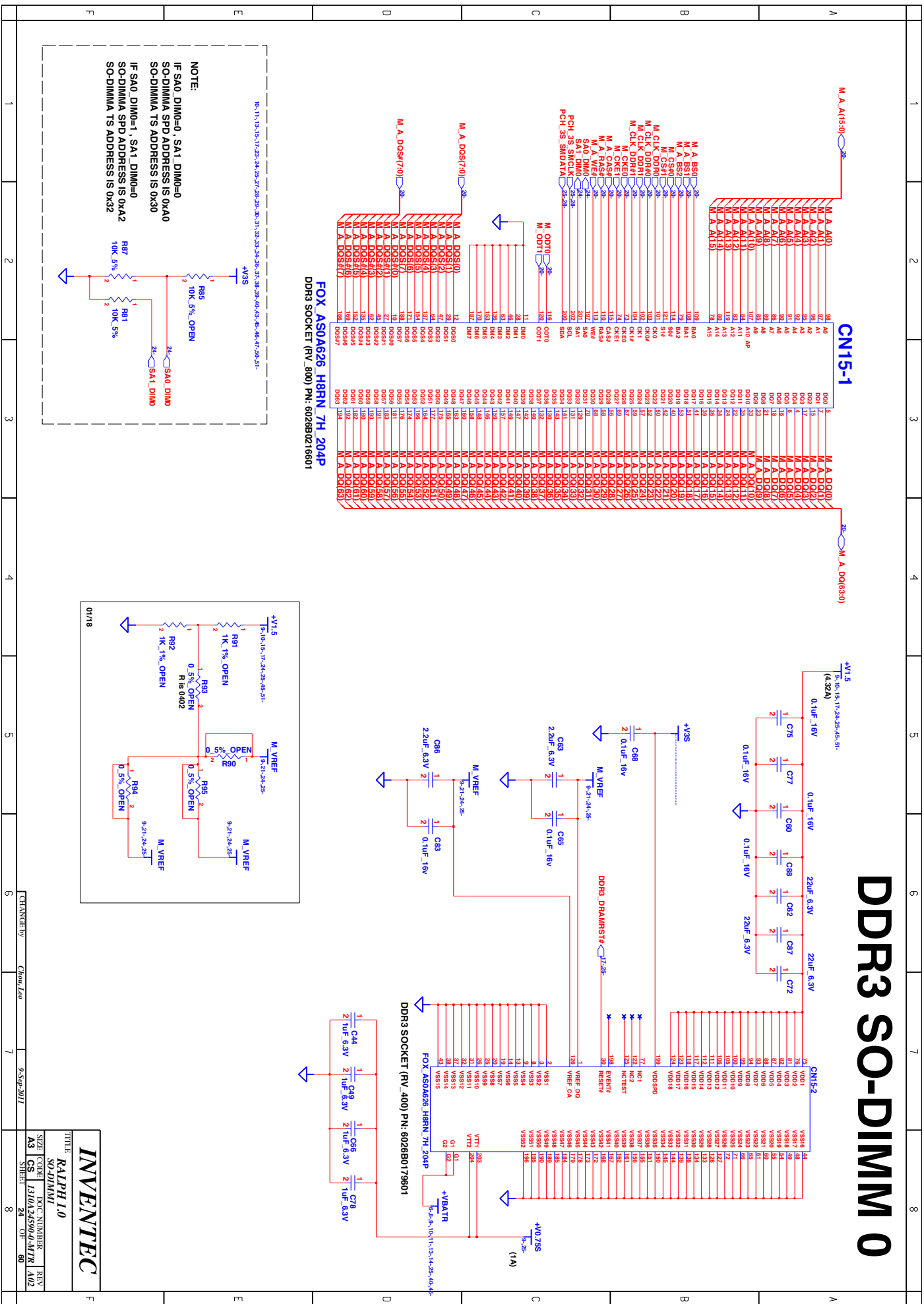
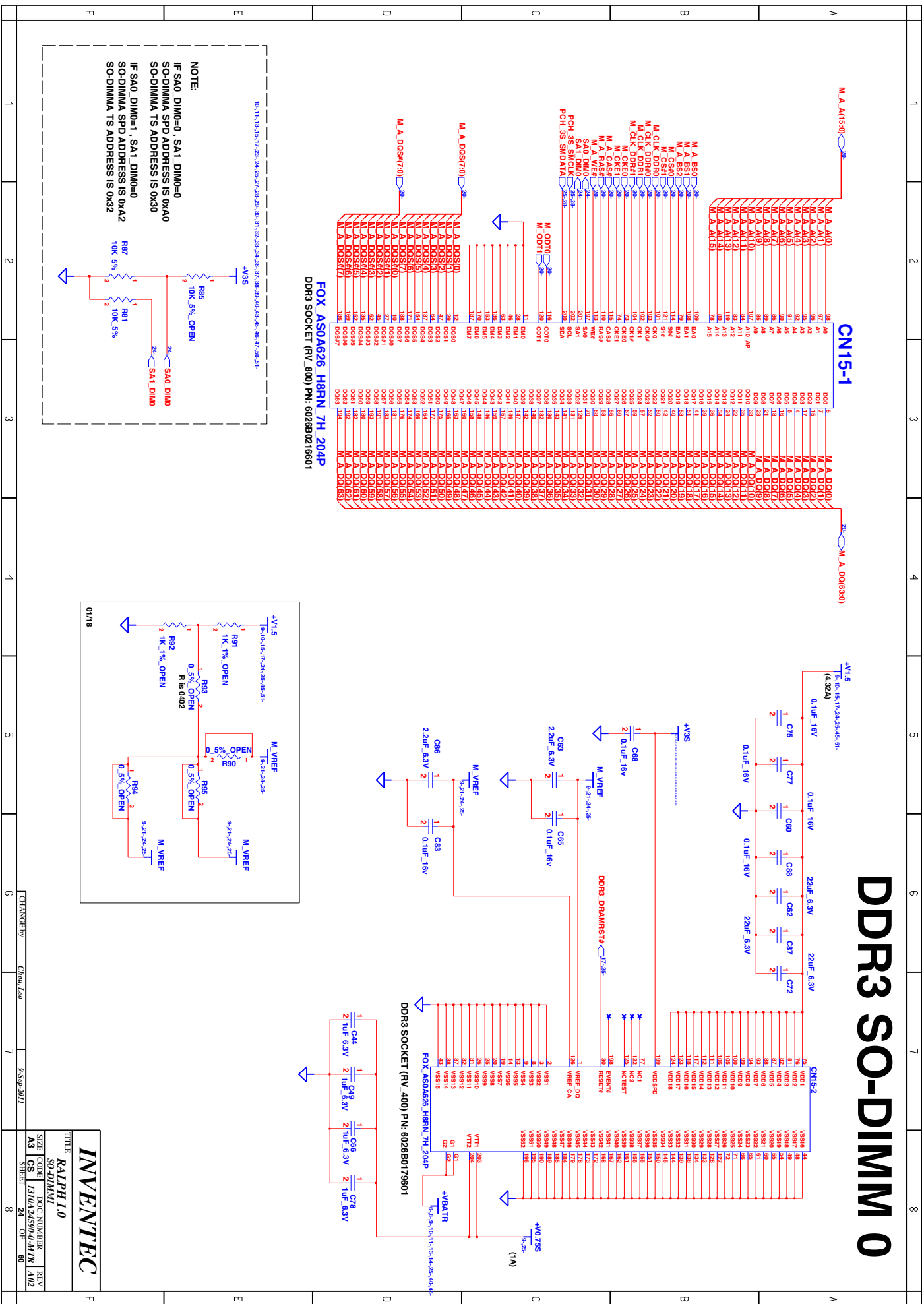
# FAN CONN



SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A24590-0-MTR	A02
SHEET 23 OF 60			

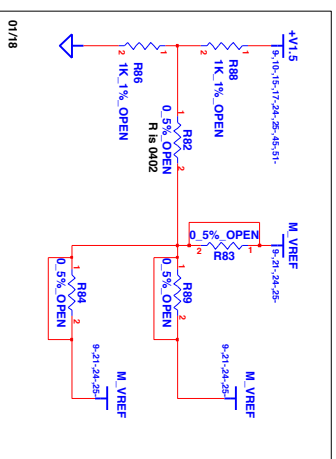
***Chou, Leo***

9-Sep-2011

[illegible][illegible]



**CN14-2**



<i><b>INVENTEC</b></i>			
TITLE <i><b>RALPH 1.0</b></i>			
NO <i><b>NO-DIMM2</b></i>			
SIZE	CODE	DOC NUMBER	REV
<b>A3</b>	<b>CS</b>	<i><b>310A.24500-0-MTR</b></i>	<b>A02</b>
SHEET	25	OF	60
CHANGE BY <i>Chun-Liao</i>		9-Sep-2011	

1

2

3

4

5

9

7

A

A

W

W



9

9

三

三

7

7

1

2

3

4

5

9

7

# PCH

**INVENTEC**

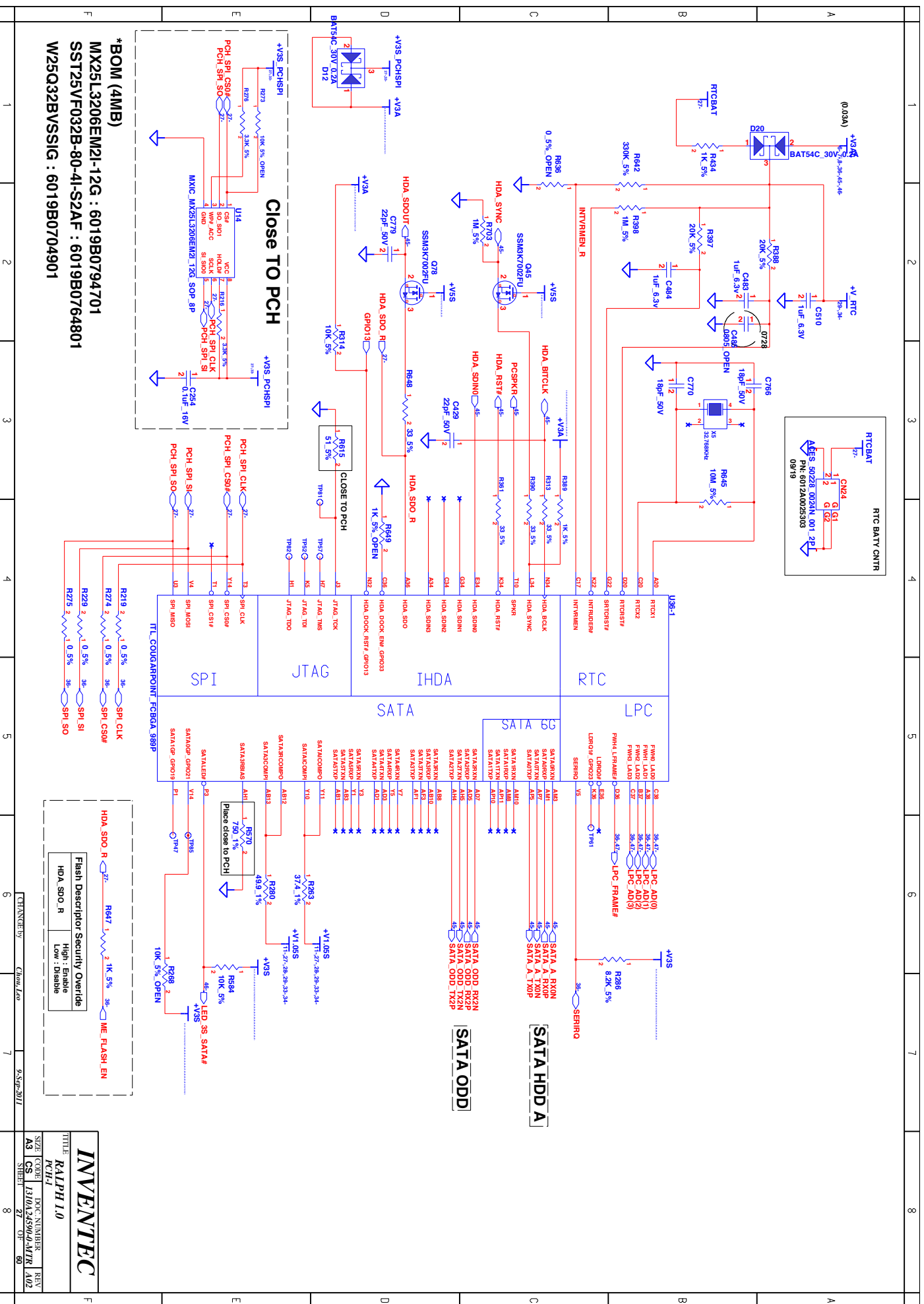
# RALPH 1.0

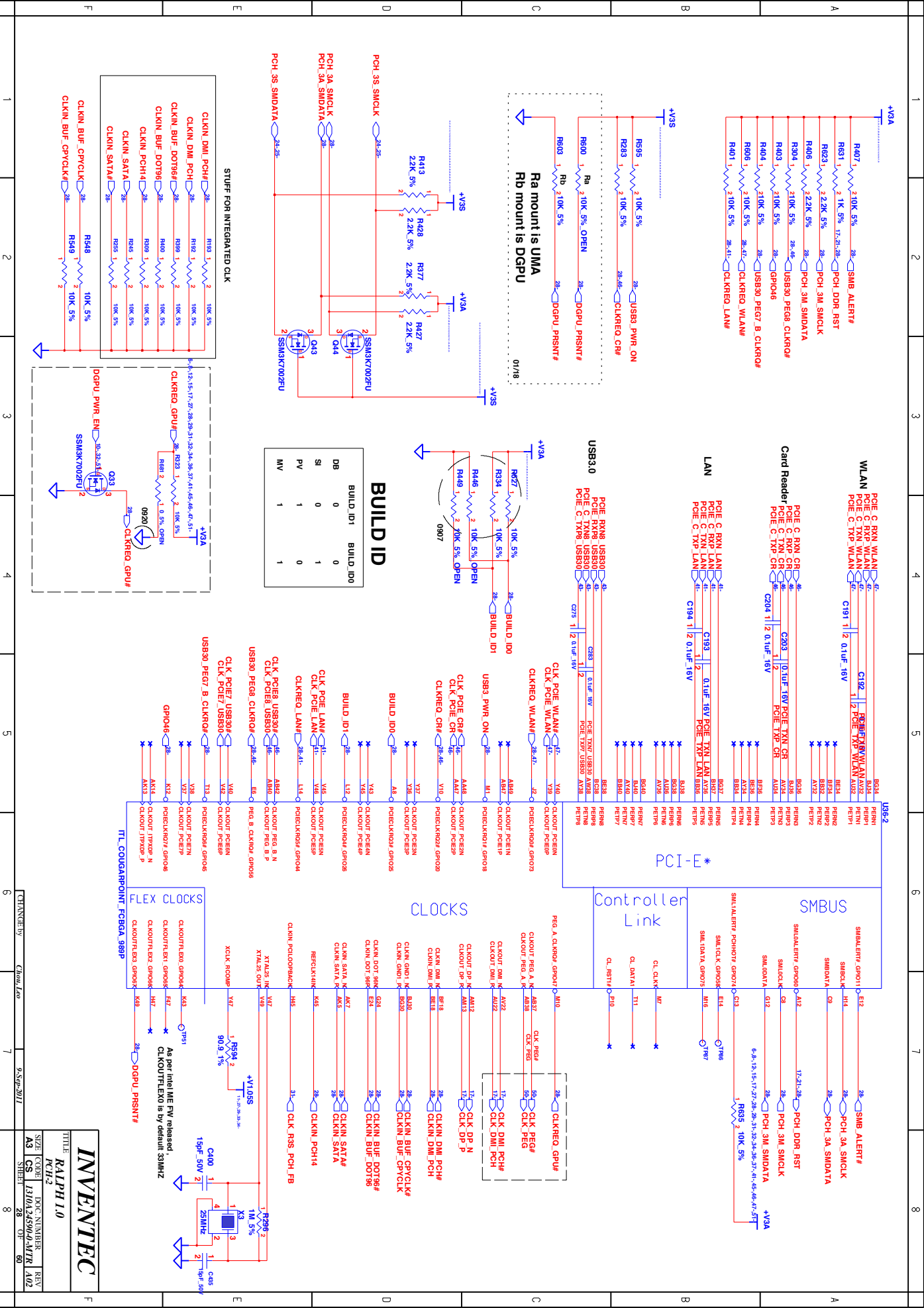
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SIZE	CODE	DOC. NUMBER	REV
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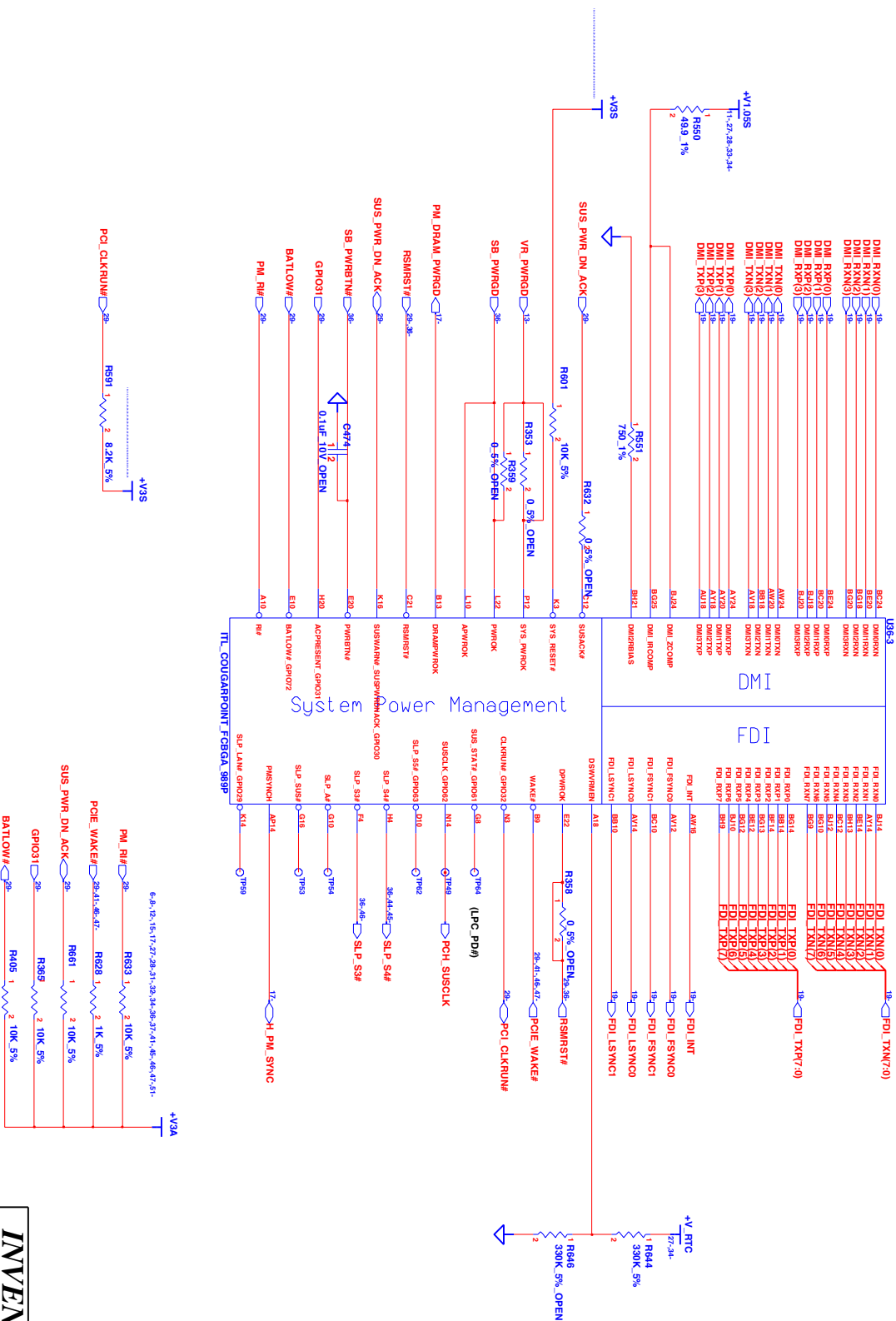
SHEET 26 OF 60

AS	CS	1310A24390-0-MILK
SHEET 26 OF 60		





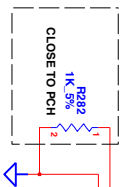
Note: 1.SLP\_SUS and SUSACK# are NC if DSW is not supported  
2.DPWROK should connect to RSMRST# if DSW not supported



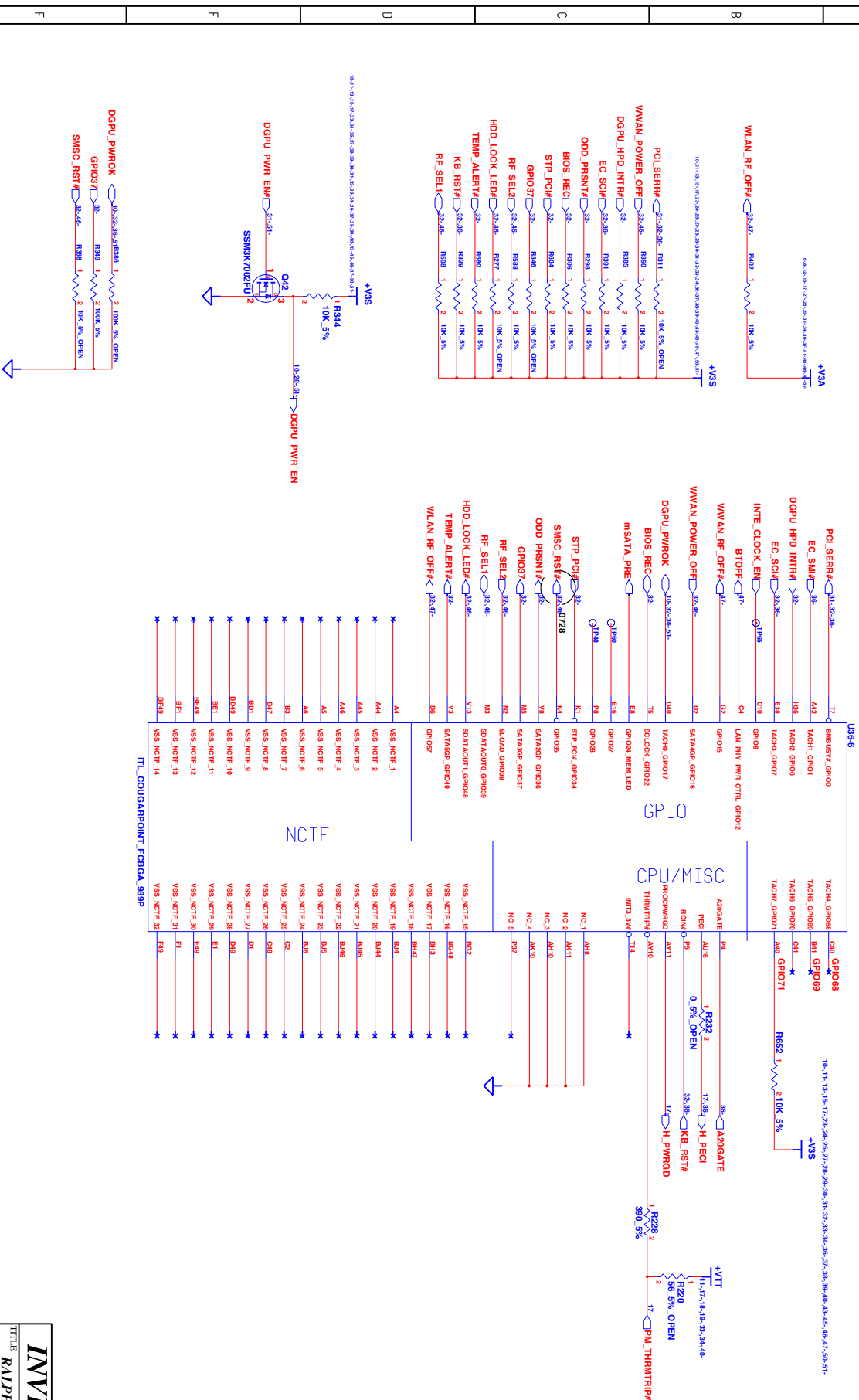
INVENTEC  
RALPH 1.0  
REV 1.0

SIZE CODE  
A3 CS 1310A24500-4-MTR A02  
SHEET 29 OF 60

CHANGED BY: Chiu, Leo 9-Sep-2011

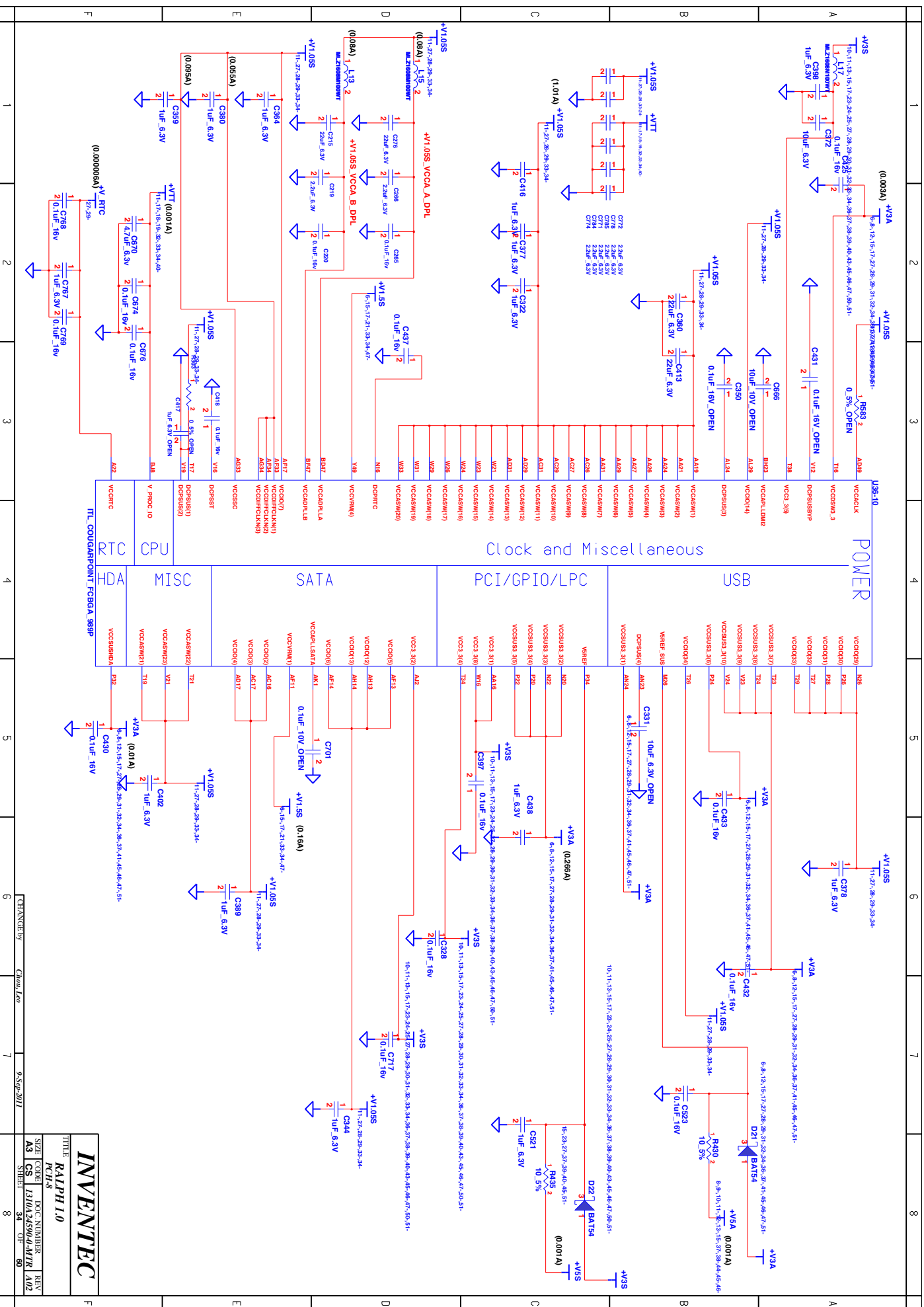








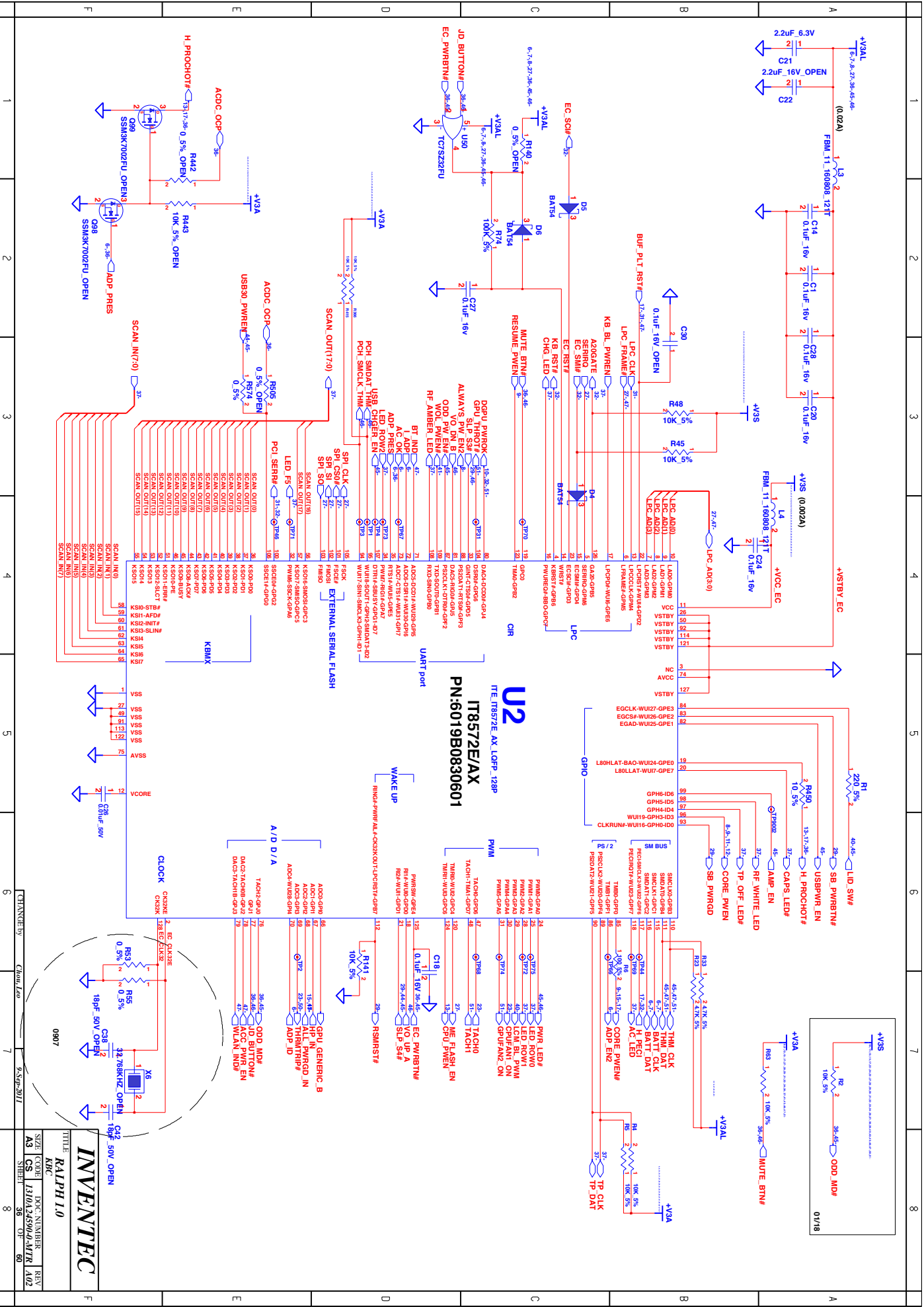




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***INVENTEC***  
TITLE ***RALPH 1.0***  
***PCH.9***

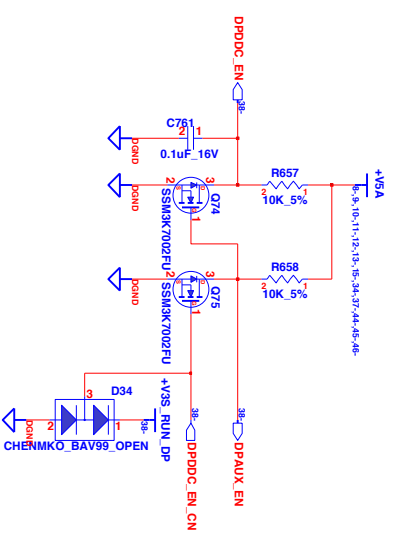
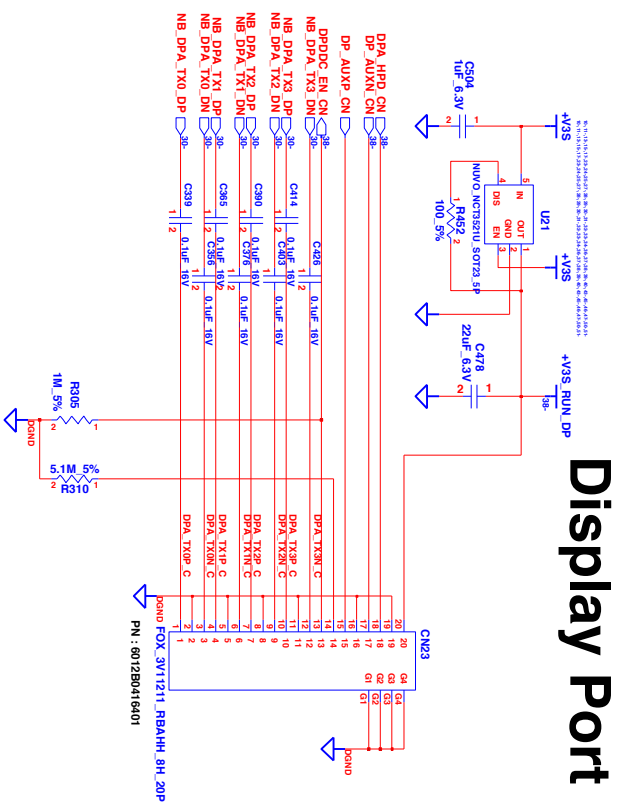
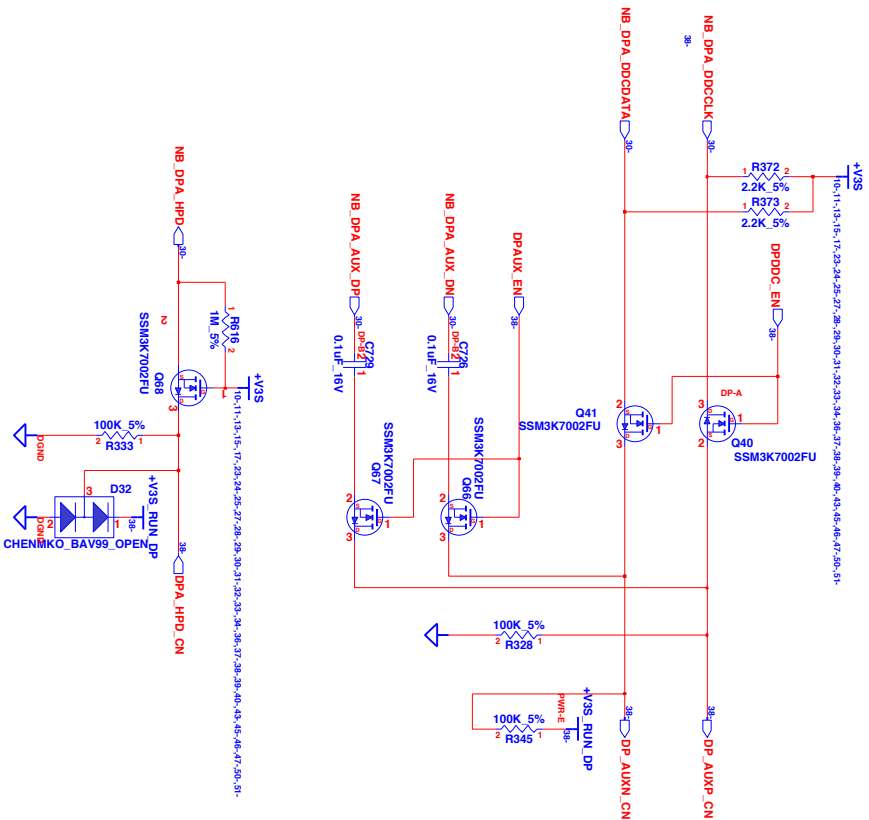
**INVENTEC**



INVENTEC  
RALPH 1.0

SIZE	CODE	DOC. NUMBER	REV
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DATE	3/10/2011	3/10/2011	3/10/2011





***INVENTEC***

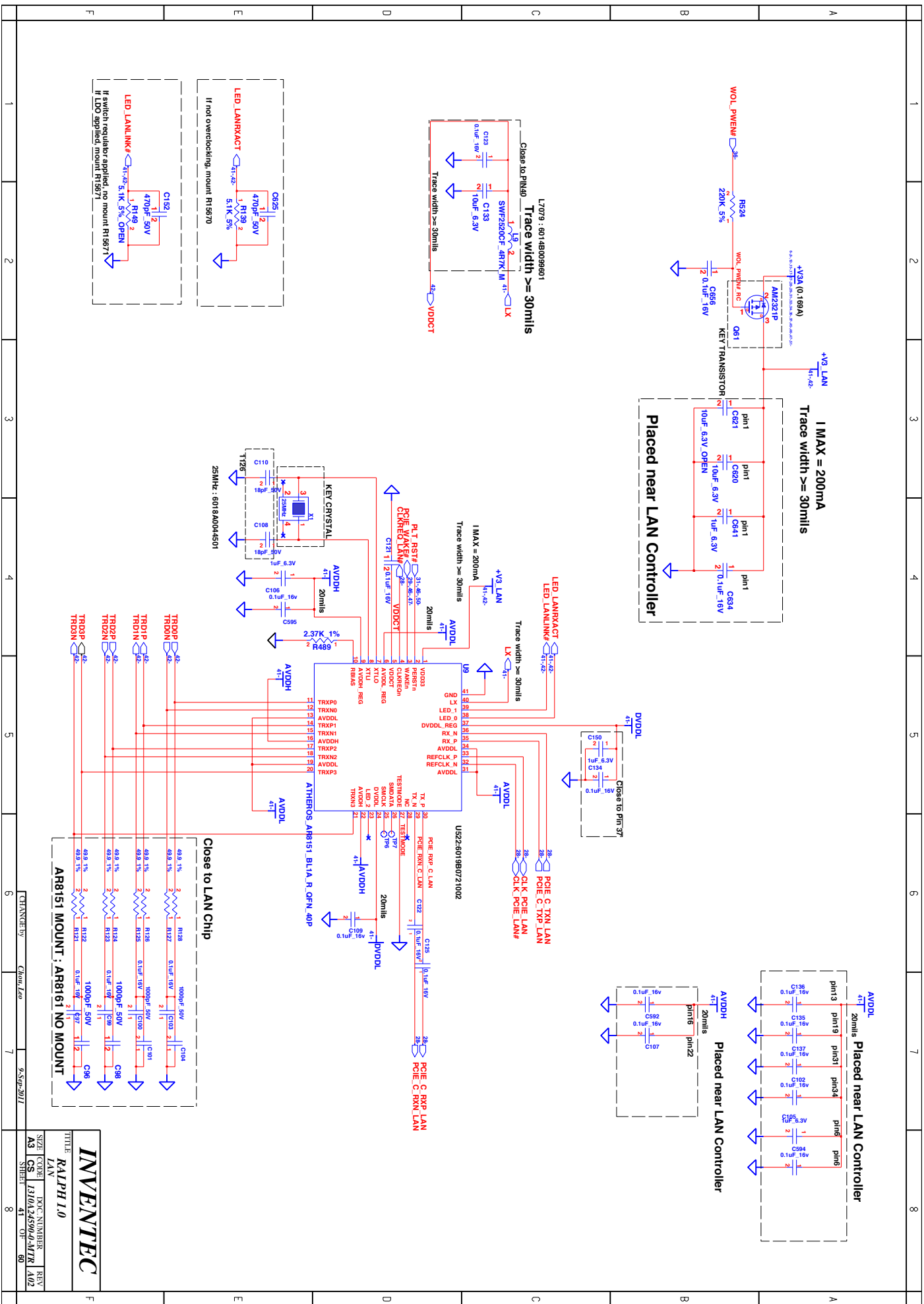
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A3	CS	I310A24590-0-MTR	A

SHEET 38 OF 60









INVENTEC  
RALPH I.0

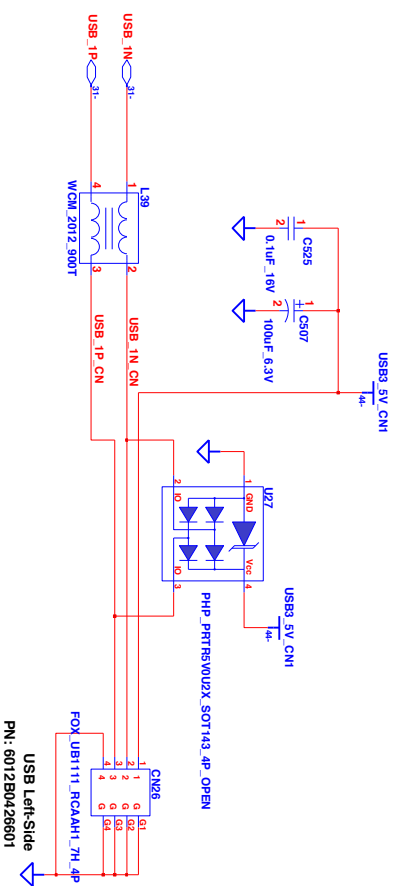
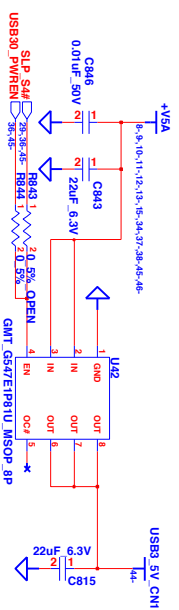
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A3 CS 1310A3500-4-MTR A02

REV  
41 07 80



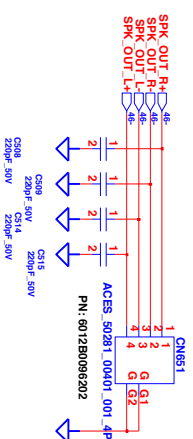
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# USB 2.0



## USB CONN01

## REAR SPEAKER

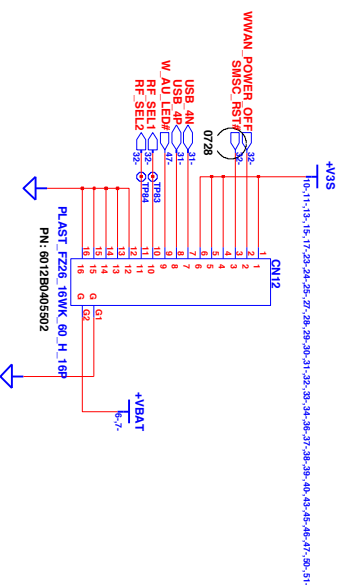


<b><i>INVENTEC</i></b>			
TITLE			
<b><i>RALPH 1.0</i></b>			
<b><i>USB 3.0</i></b>			
SIZE	CODE	DOC. NUMBER	REV
<b>A3</b>	<b>CS</b>	<b>I310A24590-0-MTR</b>	<b>A02</b>
SHEET		44	OF 60
8			

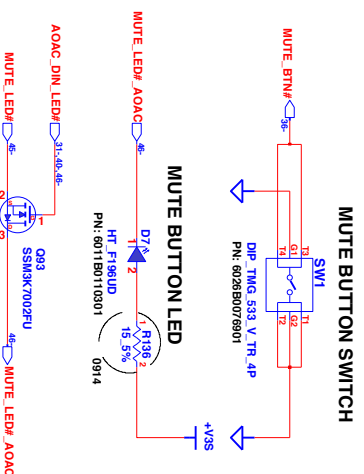
[illegible][illegible][illegible][illegible]

<b>INVENTEC</b>			
TITLE			
<b>RALPH I/O</b>			
<i>Connector-I</i>			
SIZE	CODE	DOC NUMBER	REV
<b>A3</b>	<b>CS</b>	<b>I310A24500-0-MTR</b>	<b>A02</b>
SHEET		45	OF 60

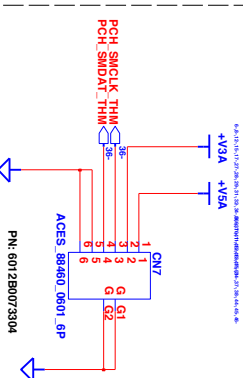
# Wireless Audio Board CN on MB



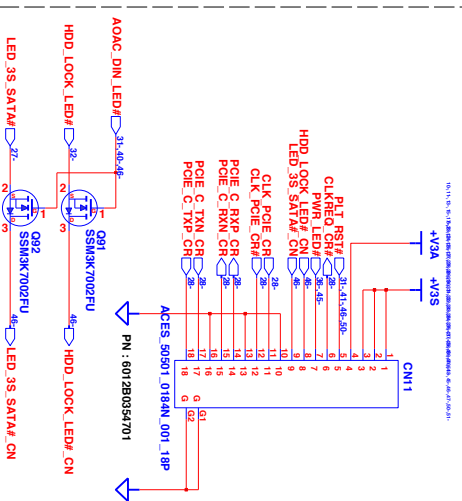
# MUTE Button



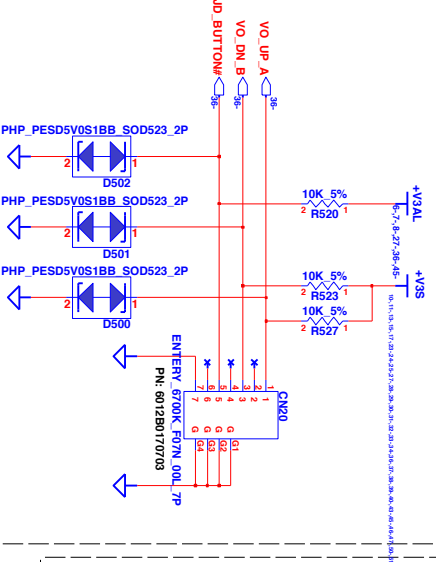
## LDPS Board CN on MB



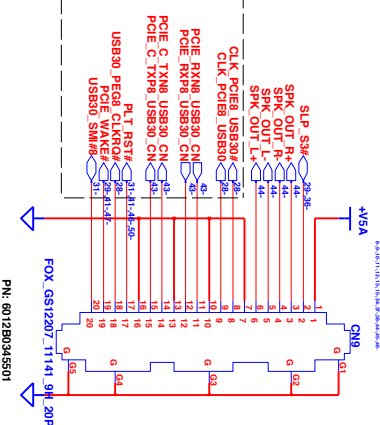
# CR Board CN on MB



**JOG DIAL CN ON MB**



# AU-USB30 CN ON MB









GPJ

[illegible]

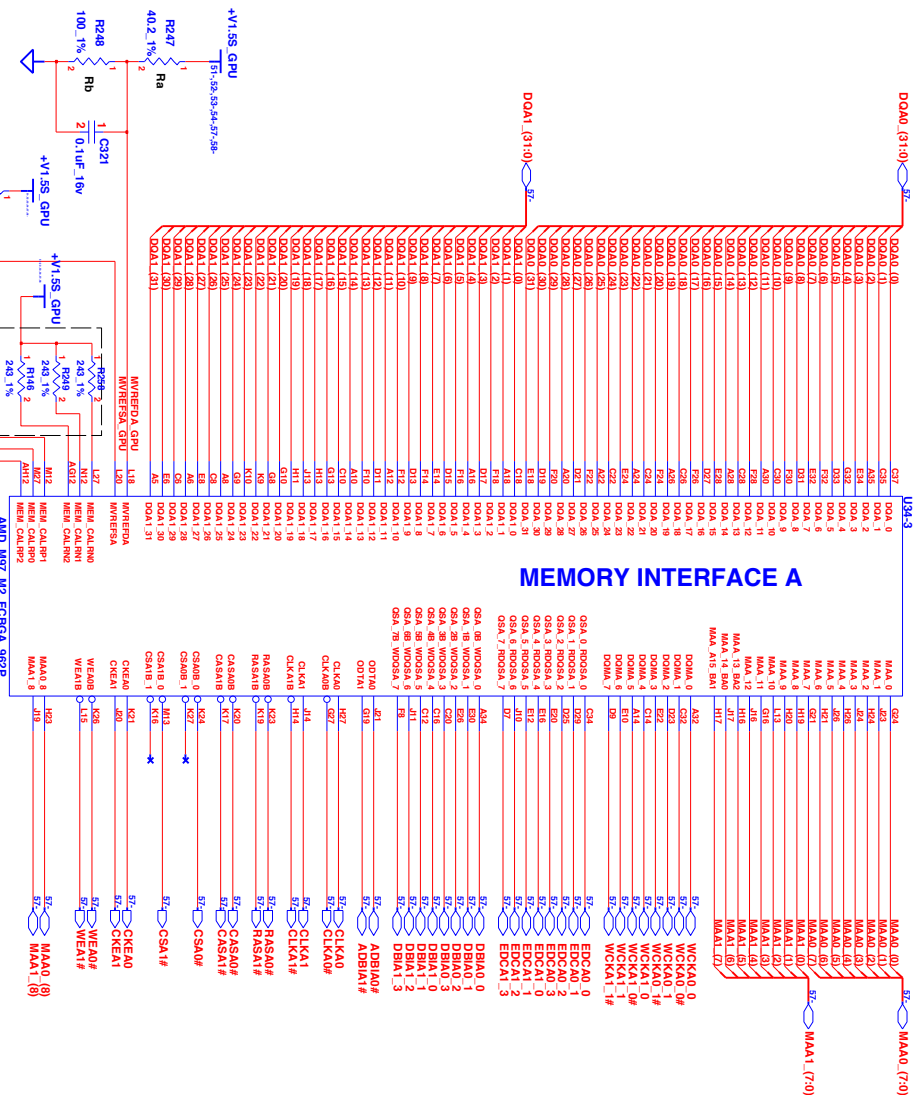




Channel A

DDR3/GDDR3Memory Stuff Option			
	GDDR5	GDDR3	DDR3
AWDDQ	1.5V	1.8V/1.5V	1.5V
Ra	40.2R	40.2R	40.2R
Rb	100R	100R	100R

FOR M97, Broadway, Madiso and Park ONLY



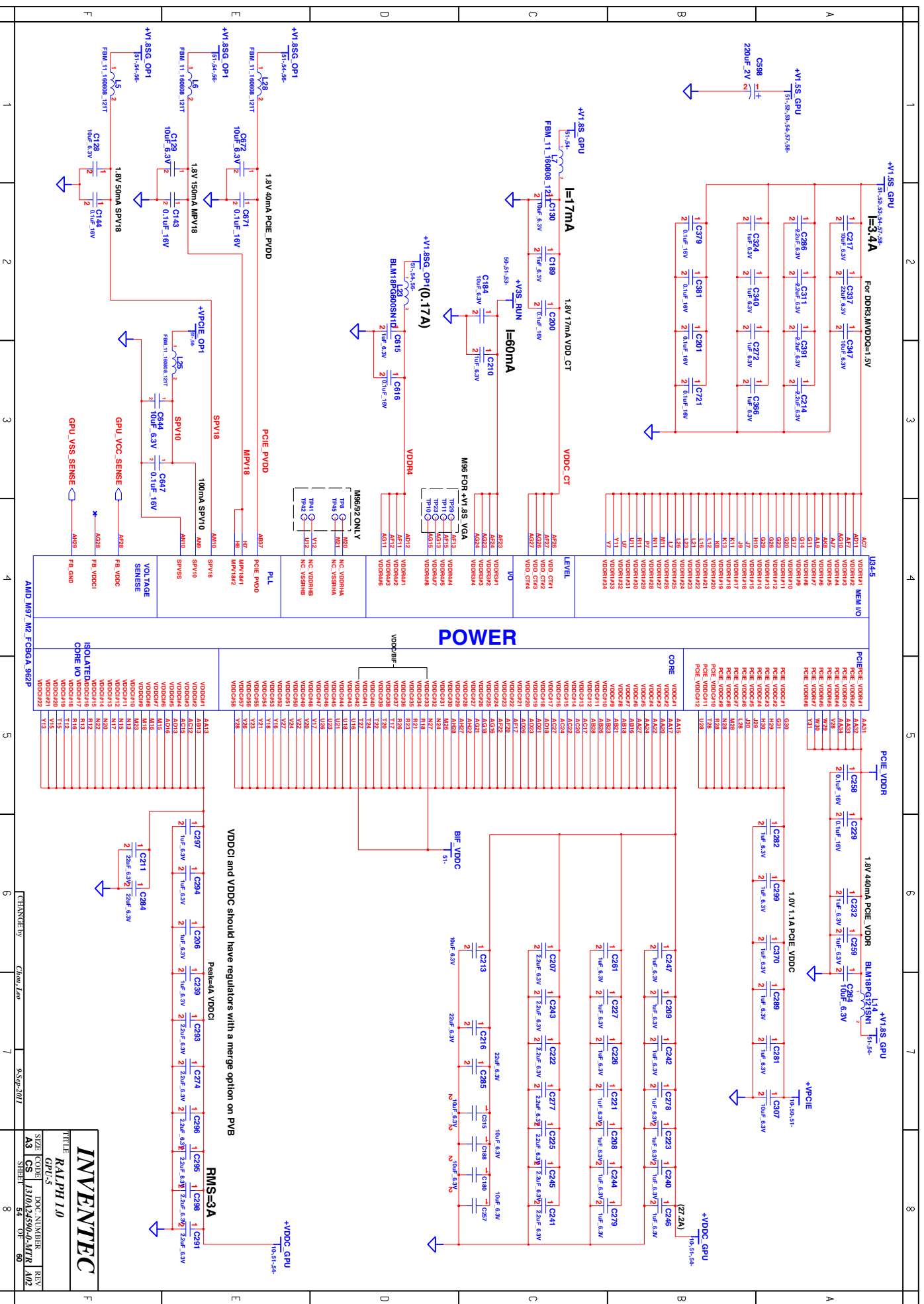
MEMORY INTERFACE A

CLINCH by Chin Lee 9-Sep-2011

INVENTEC  
RALPH 1.0  
GPU 3

SIZE CODE DOC NUMBER REV  
A3 CS 1310A2500-4-MTR A02  
START 82 01 60



***INVENTEC***

# RALPH 1.0

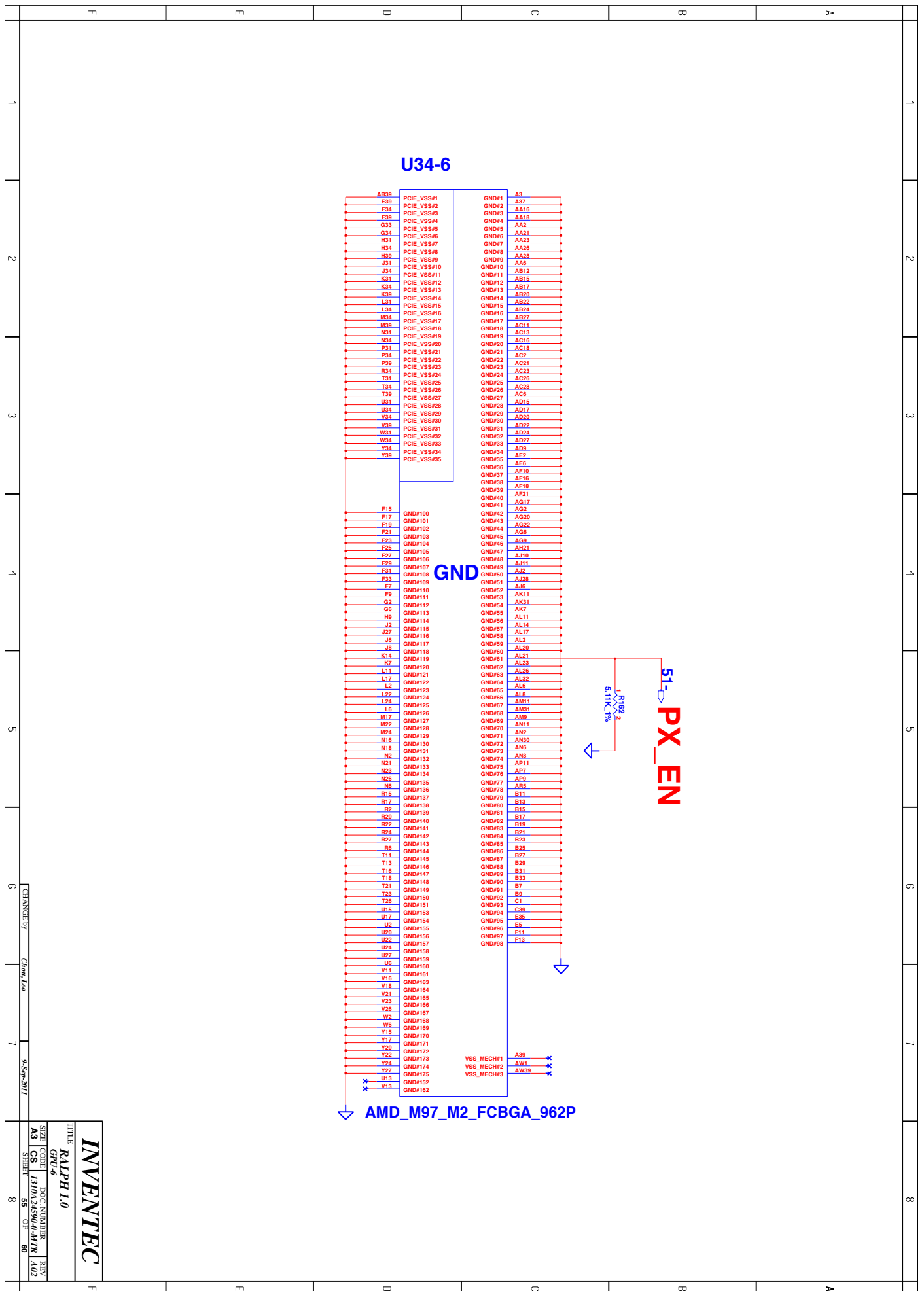
GPU-5

SIZE	CODE
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A3	CS	
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SHIBU

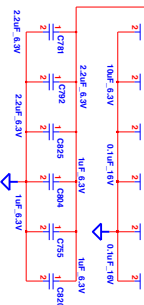
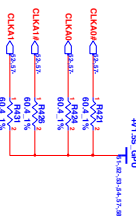
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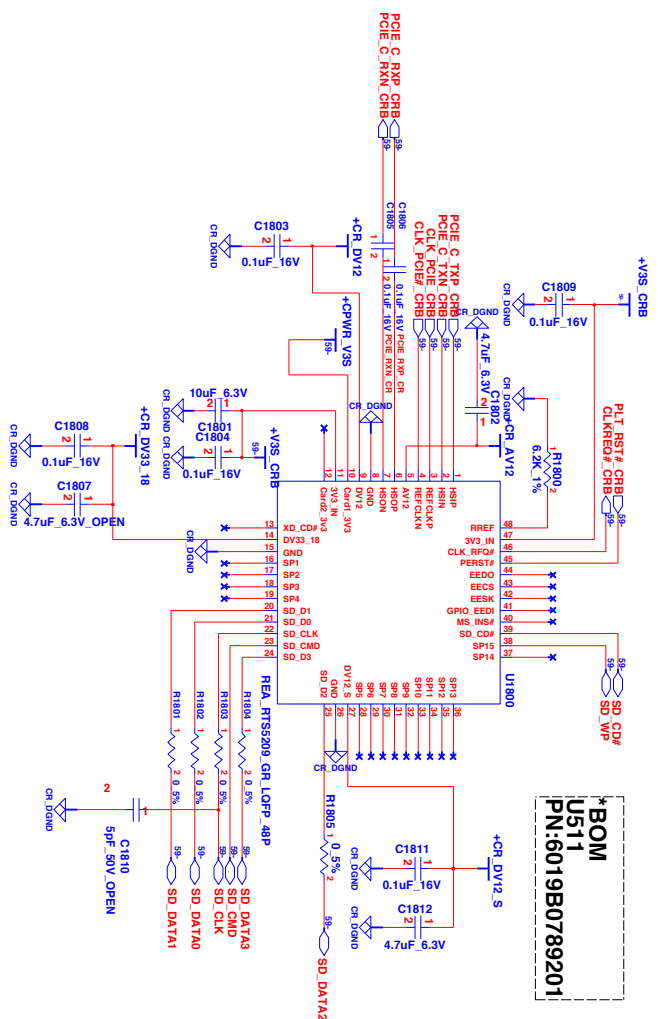


Vender	Density	Vender PN	IEC PN
Samsung	32Mx32	K4G10325FG-HC04	6019B0889201
Hynix	32Mx32	H5GQ1H24BFR-T2C	6019B0866701
Samsung	64Mx32	K4G20325FC-HC04	6019B0842201
Hynix	64Mx32	H5GQ2H24MFR-T2C	6019B0843001



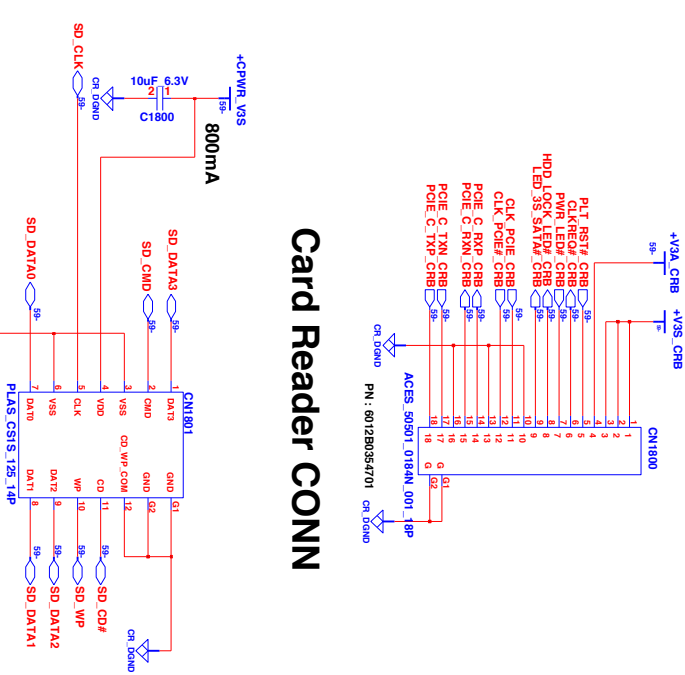


# CardReader BOARD



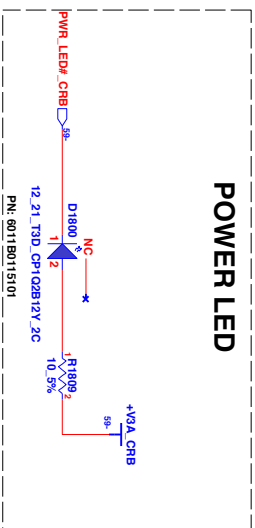
**\*BOM**  
U511  
PN:6019B0789201

## Card Reader CONN

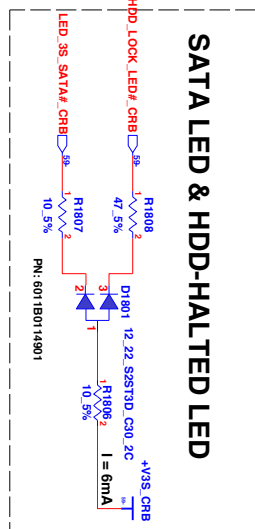


**\*BOM**  
CN1801  
PN:6026B0103603

## POWER LED



## SATA LED & HDD-HALTED LED



FX1800 PXL801 PXL802  
FX1800 PXL801 PXL802  
FX1800 PXL801 PXL802

**INVENTEC**

RALPH I.O

CARD READER

SIZE CODE 1310A2500-4-MTR A02

CHANGING BY CHAN, LEO 9-SEP-2011

8

# ODD Board

# Wireless Audio Board

# Power Button Board

SIZE	CODE	DOC. NUMBER	IN
A3	CS	I310A24590-0-MTR	A
SHEET		60	OF 60