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MANAUS 10AD

A02 Build

2010.03.17

INVENTEC			
TITLE <i>Manaus10AD</i>			
SIZE A3	CODE CS	DOC. NUMBER <i>1310A2357401</i>	REV X01
CHANGE by <i>Eddy, Chen</i>		17-Mar-2010	
SHEET		1	OF 43

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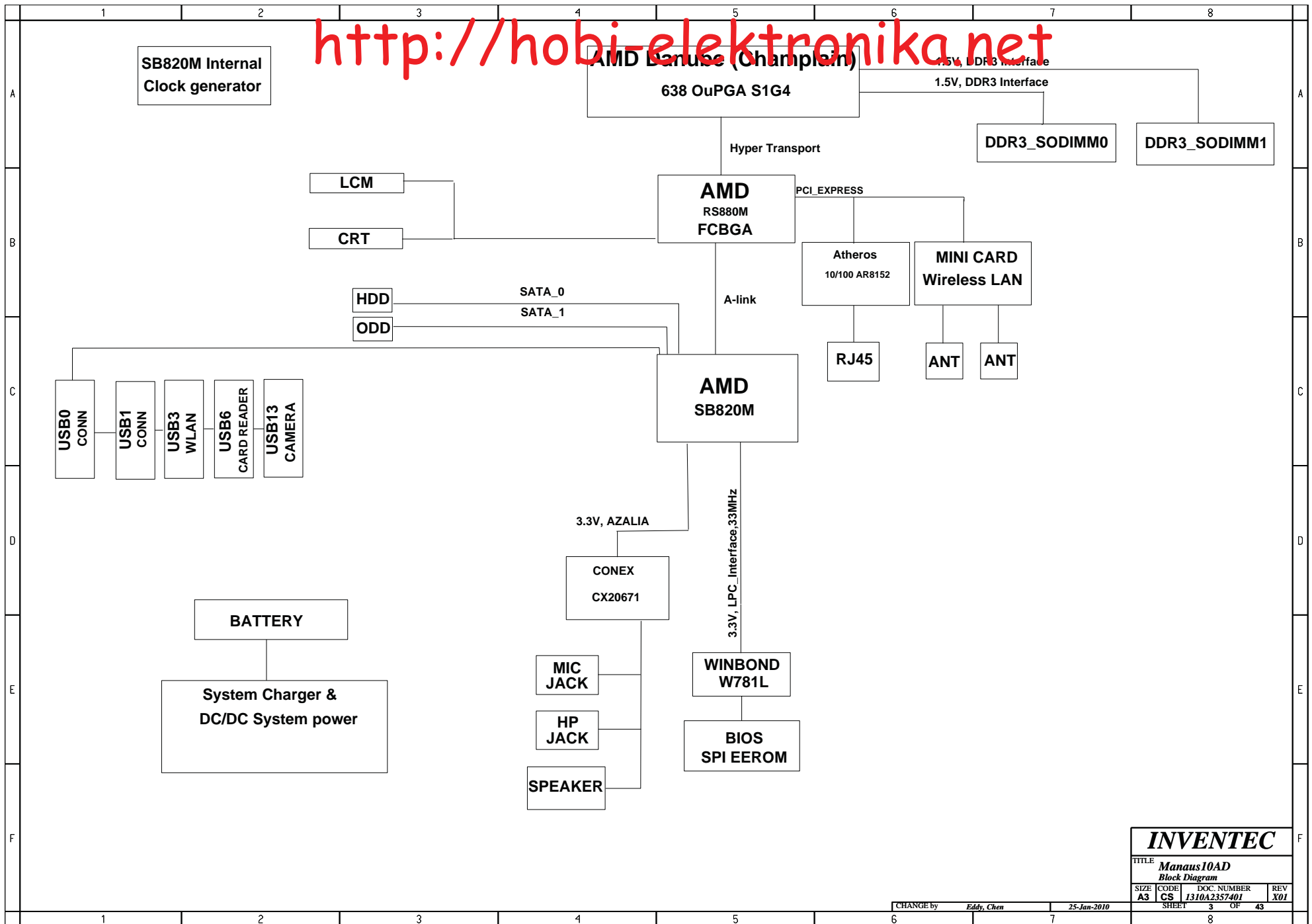
31. CPU 2
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INVENTEC

TITLE			
Manaus10AD			
Index			
SIZE	CODE	DOC. NUMBER	REV
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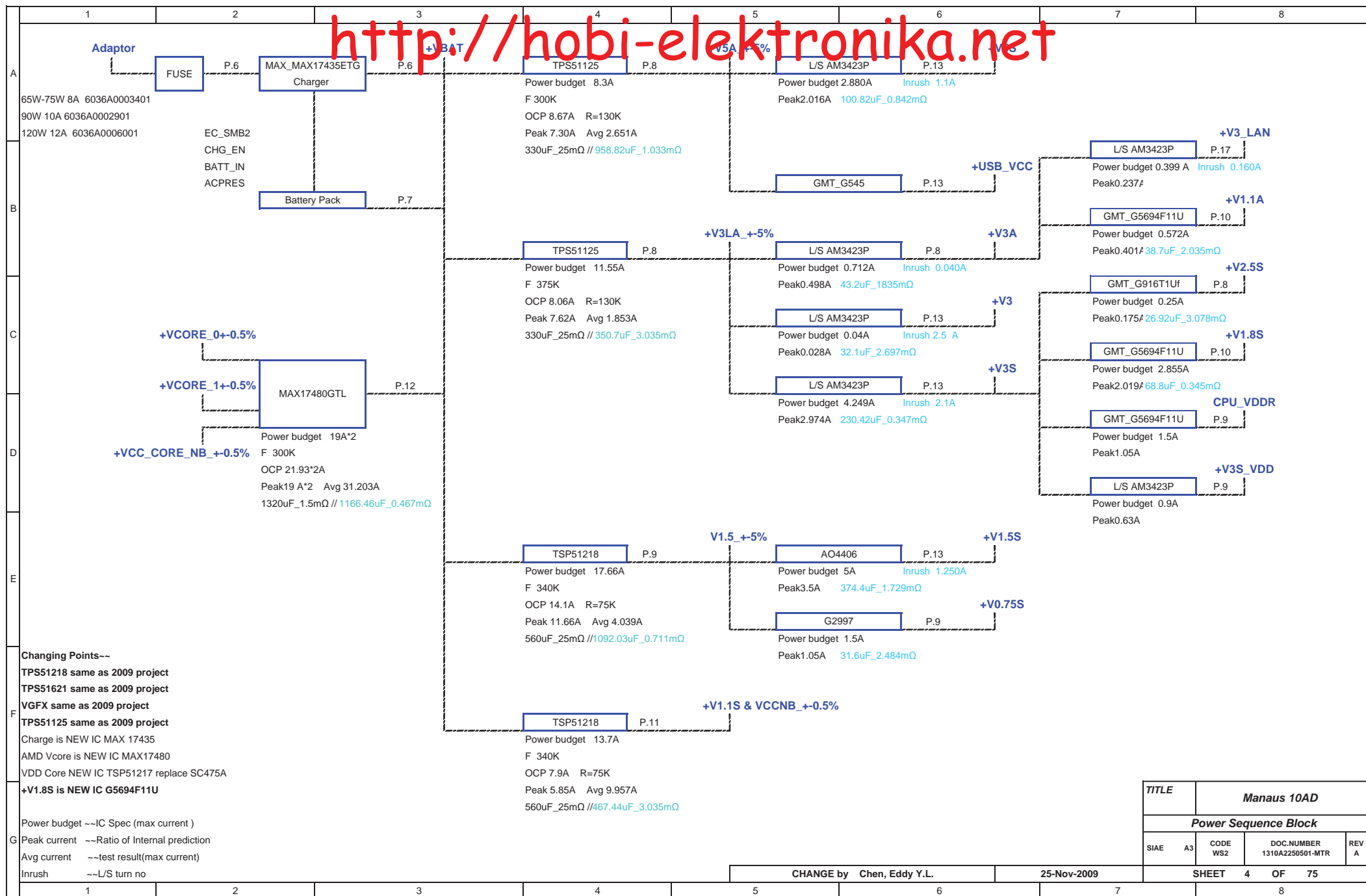
CHANGE by Eddy, Chen 25-Jan-2010

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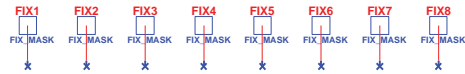


INVENTEC			
TITLE			
Manaus 10AD			
Block Diagram			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
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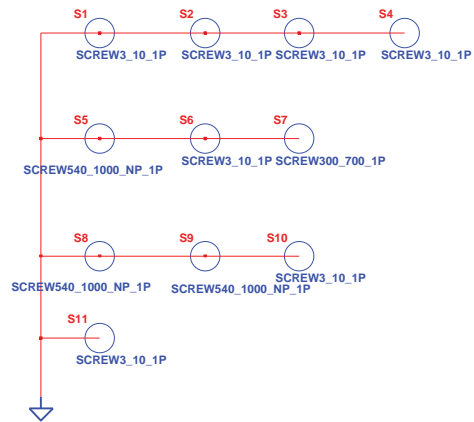
CHANGE by Eddy, Chen 25-Jan-2010



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PCB



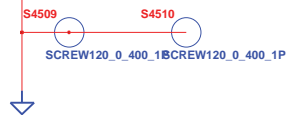
NB



CPU



SB



INVENTEC			
TITLE			
Manaus10AD			
PCB			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
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CHANGE by Eddy, Chen 11-Jan-2010

[illegible]

TITLE			
Manaus10AD Charger			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
SHEET		6	OF 43

CHANGE by	<i>Eddy, Chen</i>	<i>11-Jan-2010</i>
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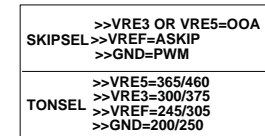
10A235/401	A01
6	OF 43

[illegible]

TITLE			
Manaus10AD <i>Battery, Reset IC</i>			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
SHEET		7 OF	43

CODE	DOC. NUMBER	REV
CS	1310A2357401	X01
SHEET	7	OF 43

+V3LA +V3A +V5A +V2.5S

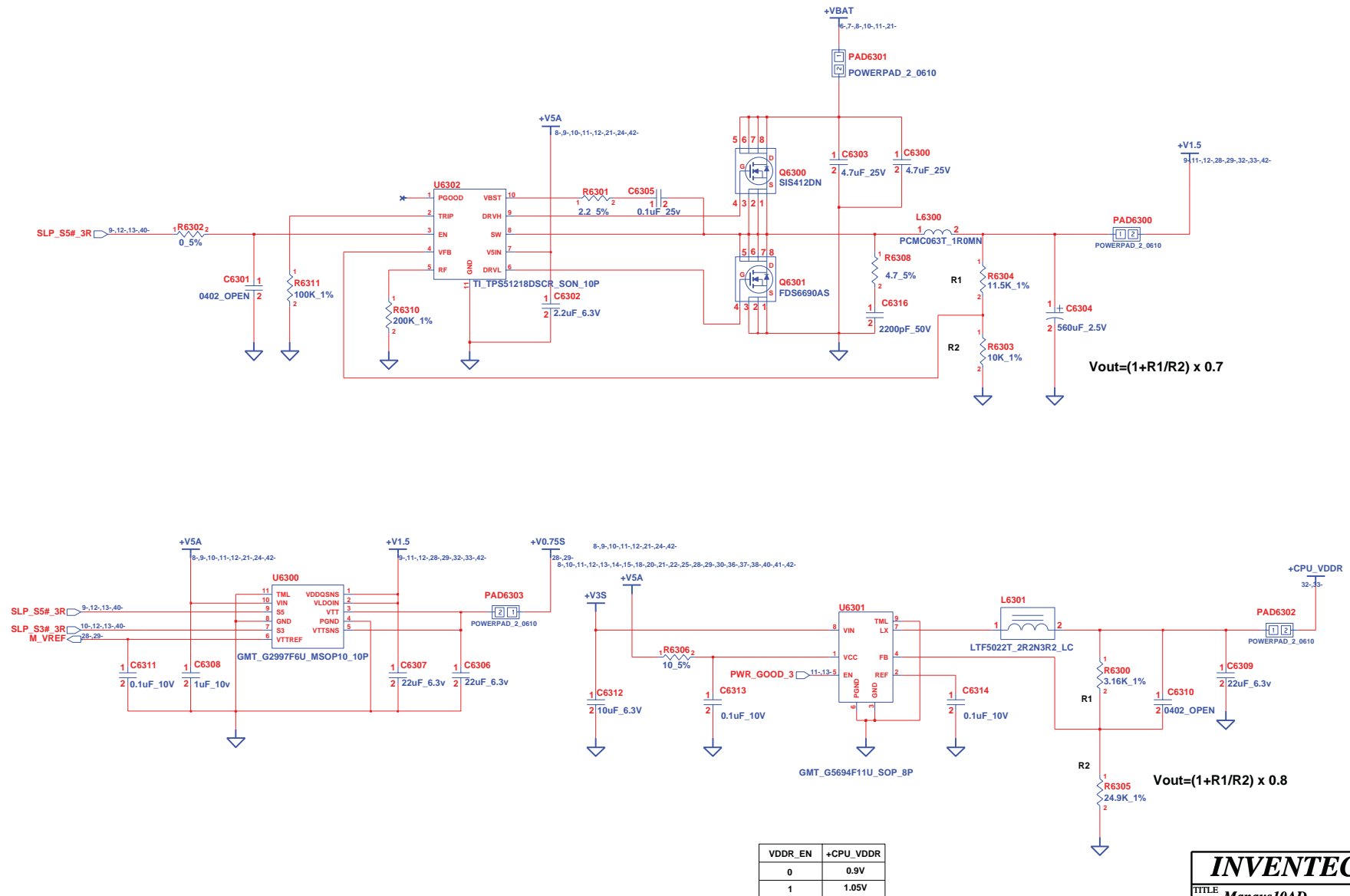


TITLE	Manaus10AD +V3LA, +V3A, +V5A, +V2.5S
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SIZE A3	CODE CS	DOC. NUMBER 1310A2357401	R X
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VDDR_EN	+CPU_VDDR
0	0.9V
1	1.05V

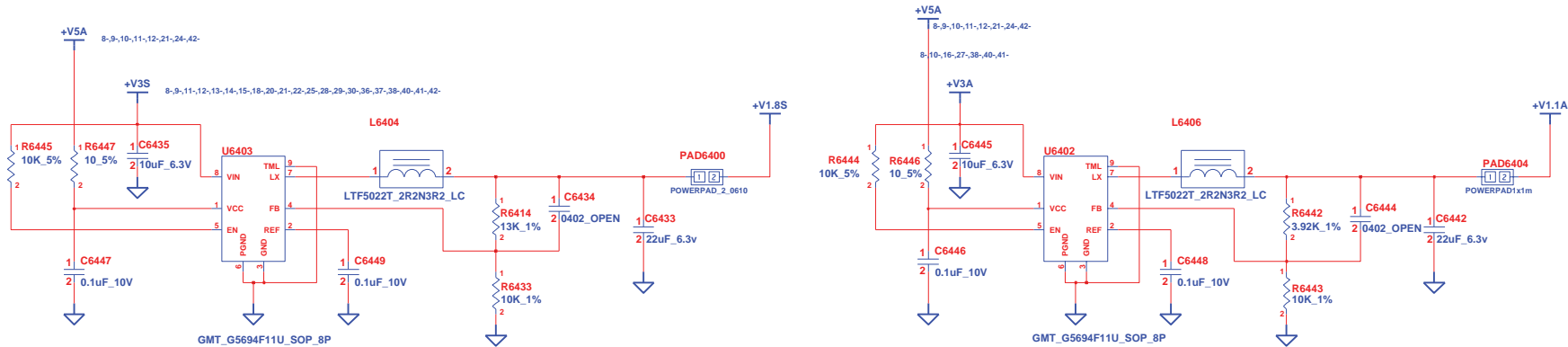
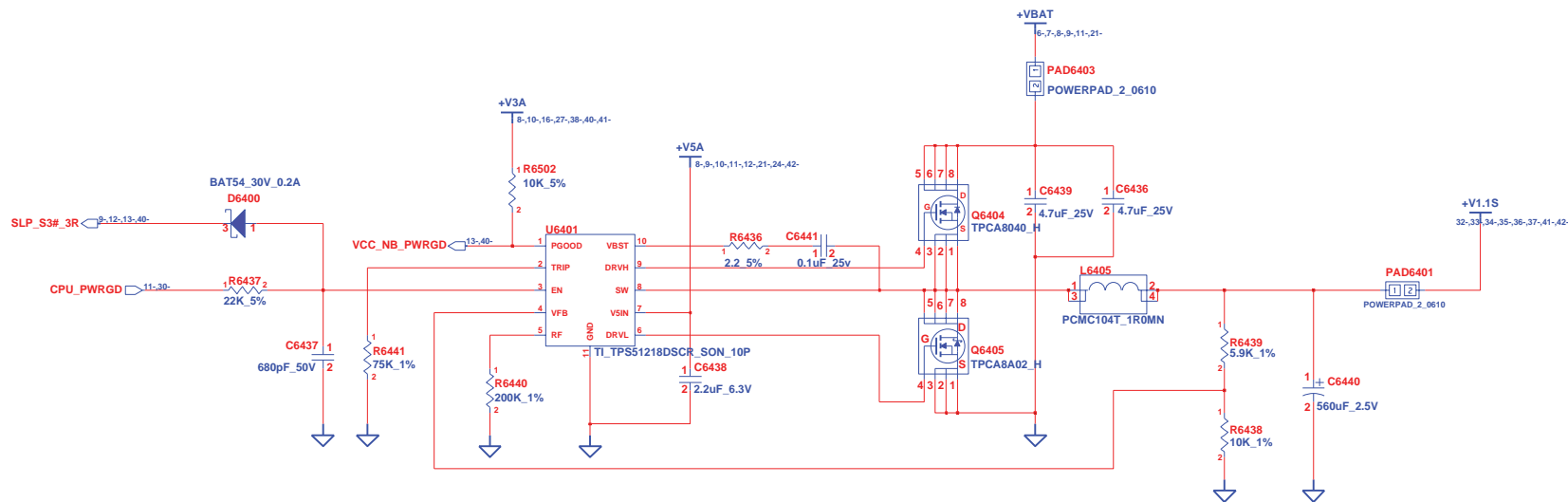
INVENTEC			
TITLE			
Mana10AD			
+CPU_VDDR, +V0.75, +V1.5			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A2357401	X01

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+V1.1A +V1.1S +V1.8S



INVENTEC

TITLE
Manaus10AD
+V1.1A, +V1.1S, +V1.8S

SIZE A3	CODE CS	DOC. NUMBER 1310A2357401	REV X01
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CHANGE by **Eddy, Chen** 11-Jan-2010

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SVC	SVD	VDD_CORE
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V

MAX_MAX17480GTL+_TQFN_40P

Typ@4A

Typ@38A

INVENTEC

TITLE: Manaus10AD

SIZE: A3

CODE: CS

DOC. NUMBER: 1310A2357401

REV: X01

CHANGE by: Eddy, Chen

11-Jun-2010

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SVC	SVD	VDD_CORE
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V

(Should routed in 5/5/5 pair and need to have 10mil clearance to other traces.)

Typ@38A

Typ@4A

INVENTEC

TITLE			
Manaus10AD +VCC_CORE, +VCC_CORE_NB			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	I310A2357401	X01

CHANGE by	<i>Eddy, Chen</i>	<i>11-Jan-2010</i>
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8

+V5S +V3S +V1.5S

 $+V3 +V5S +V3S +V1.5S$

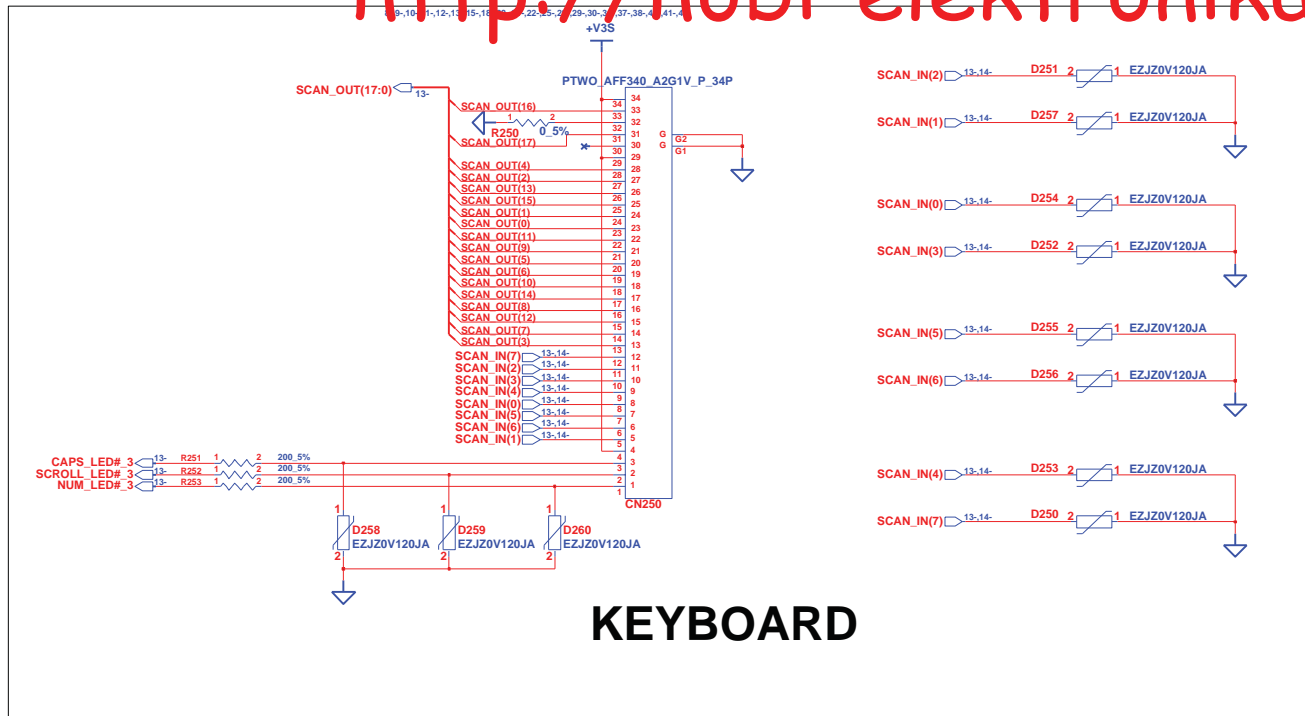
SIZE	CODE	DOC. NUMBER
A3	CS	1310A2357401

	STEEL	12	51
		9	

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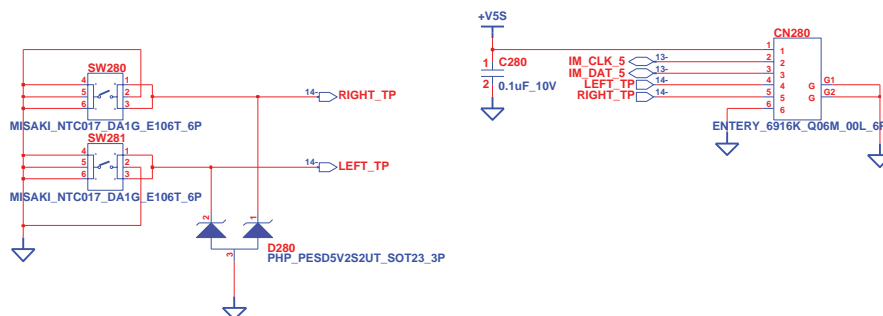
12	61	43
<hr/>		
9		

<http://hobi-elektronika.net>

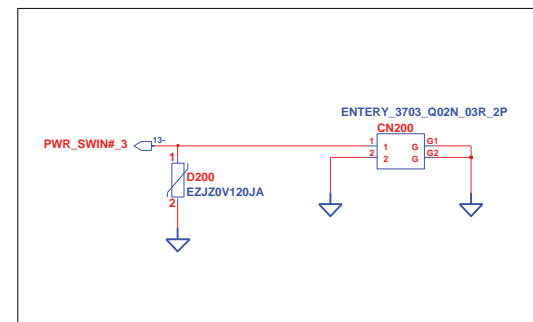


KEYBOARD

Touchpad



POWER BOARD CONNECTOR



INVENTEC

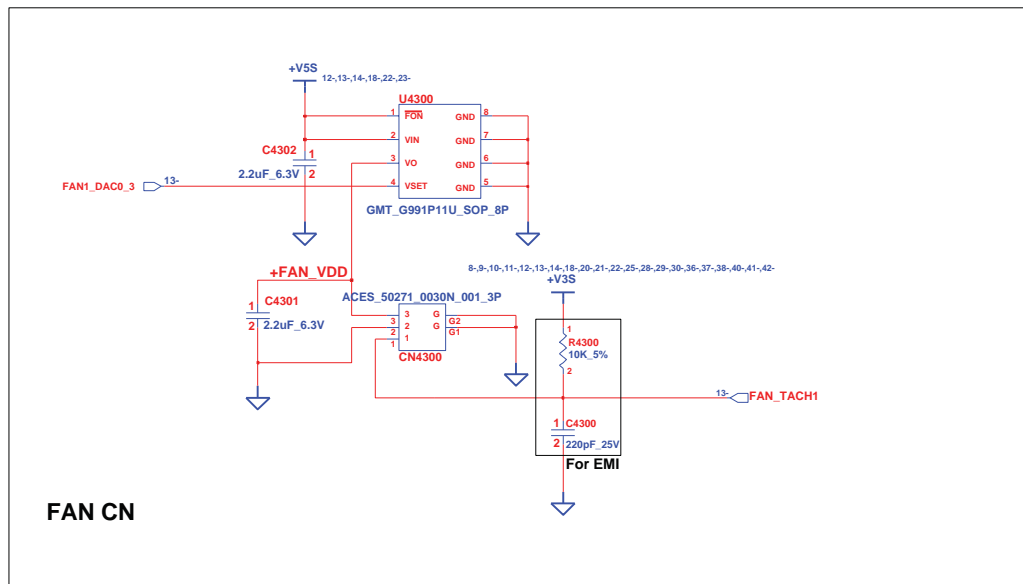
TITLE
Manaus 10AD
Keyboard, Touch PAD

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

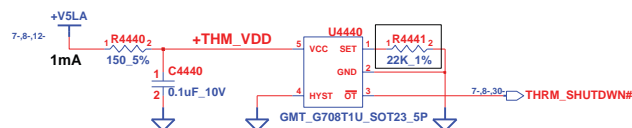
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Board Thermal Sensor



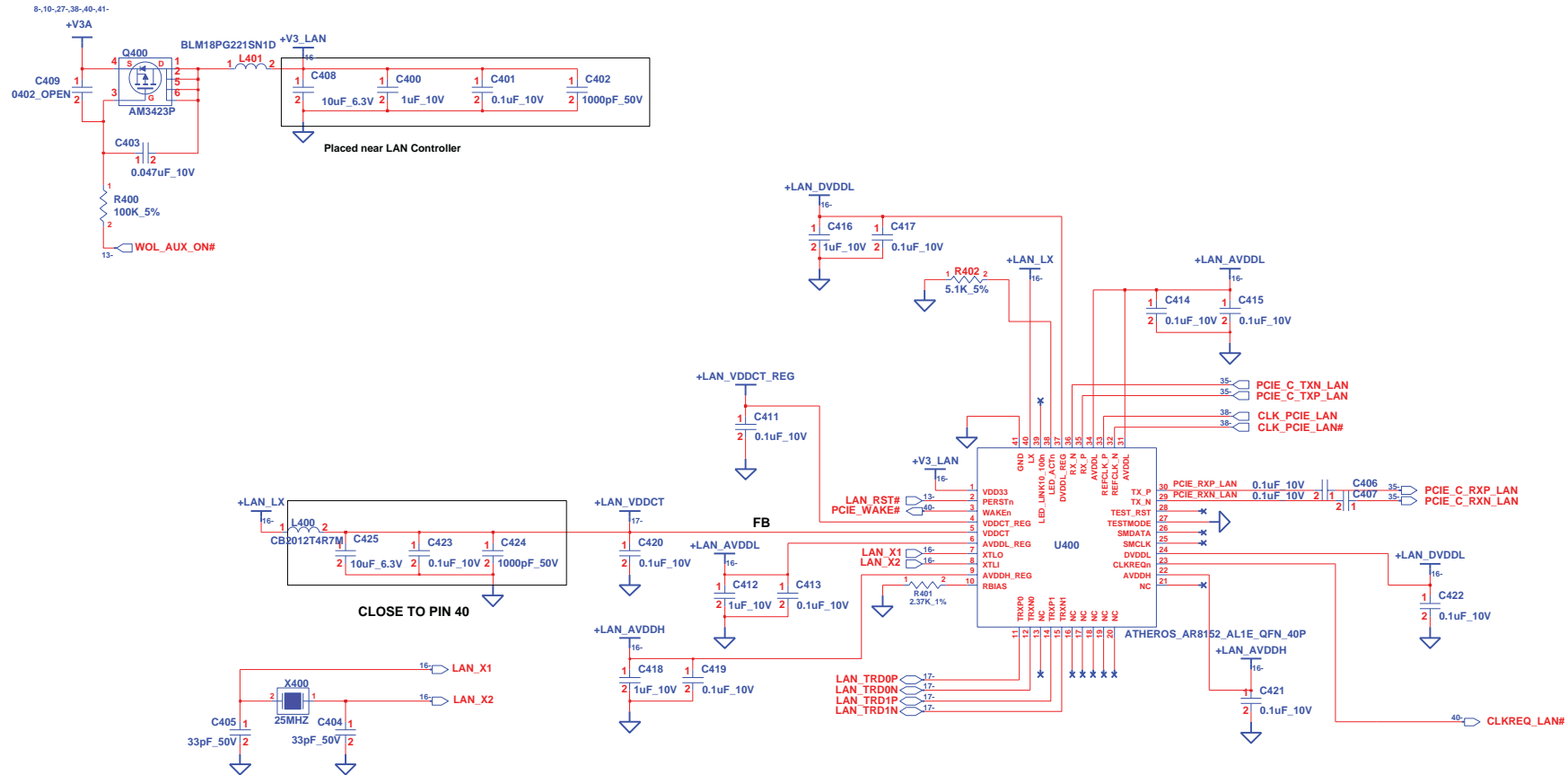
Thermal shutdown at 90 C° +/- 3 C° from 60 C° to 100 C°

$$RSET = 0.0012 * T^2 - 0.9308 * T + 96.147$$

Hysteresis is 30C

INVENTEC			
TITLE			
Manaus 10AD			
FAN, Thermal controller			
SIZE	CODE	DOC. NUMBER	REV
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Eddy, Chen			
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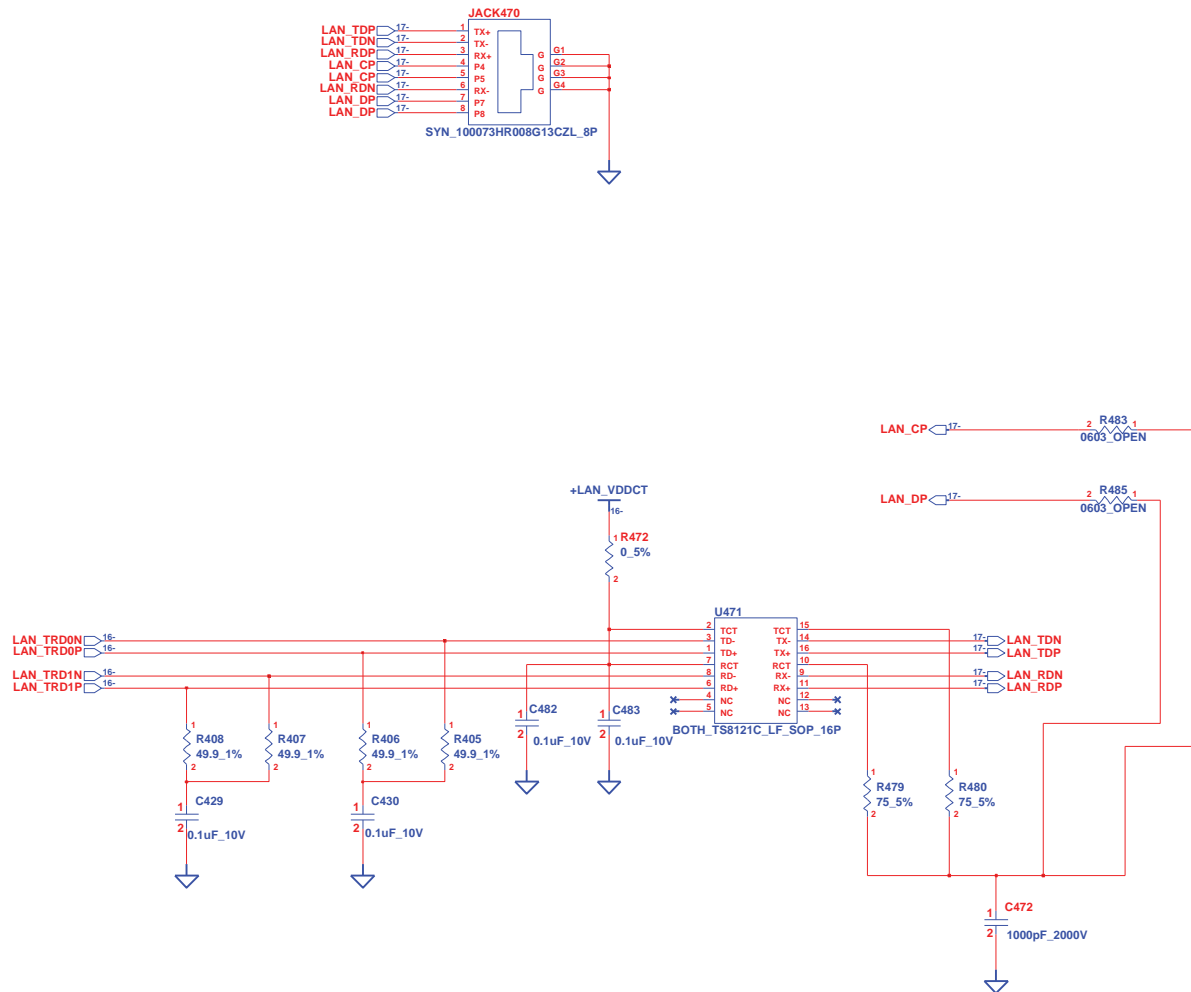
TITLE
Mana10AD
LAN

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

CHANGE by **Eddy, Chen** 11-Jan-2010

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INVENTEC

TITLE
Manaus10AD
Transformer, RJ45

SIZE A3	CODE CS	DOC. NUMBER 1310A2357401	REV X01
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Port Configuration

- Port A: Headphone jack
- Port B: Internal mic
- Port C: microphone jack

U500 Pinout:

Pin	Signal
1	DMIC1-2
2	VAUX_3.3
3	FILT_1.8
4	SDATA_OUT
5	BIT_CLK
6	SDATA_IN
7	VDDIO
8	SYNC RESET#
9	PC_BEEP
10	LEFT+
11	UPWML_5.0
12	RIGHT-
13	RPMWL_5.0
14	RIGHT+
15	DVDD_3.3
16	F.V.P
17	F.L.N
18	C_BIAS
19	PORTC_R
20	GND
21	AVEE
22	PORTA_L
23	PORTA_R
24	NC
25	AVDD_HP
26	AVDD_3.3
27	AVDD_5V
28	FILT_1.8
29	PORTC_L
30	PORTC_R
31	C_BIAS
32	E_BIAS
33	C_BIAS
34	PORTB_R
35	PORTB_L
36	SENSE_A
37	GPIO_SPK_MUTE#
38	GPIO_EA
39	NC
40	DMIC1-2

Reserve for EMI(10-22pF)

Reserve for EMI, close to Codec
120ohm@100MHz

CHANGE by Eddy, Chen **11-Jun-2010**

INVENTEC			
TITLE: Manaus10AD AZALIA CODEC			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	I310A2357401	X01
		SHEET 18 OF 43	

- Port A: Headphone jack
- Port B: Internal mic
- Port C: microphone jack

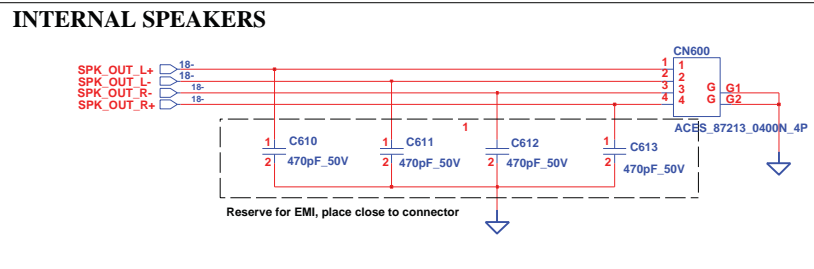
- Port A: Headphone jack
- Port B: Internal mic
- Port C: microphone jack

Reserve for EMI, close to Codec
120ohm@100MHz

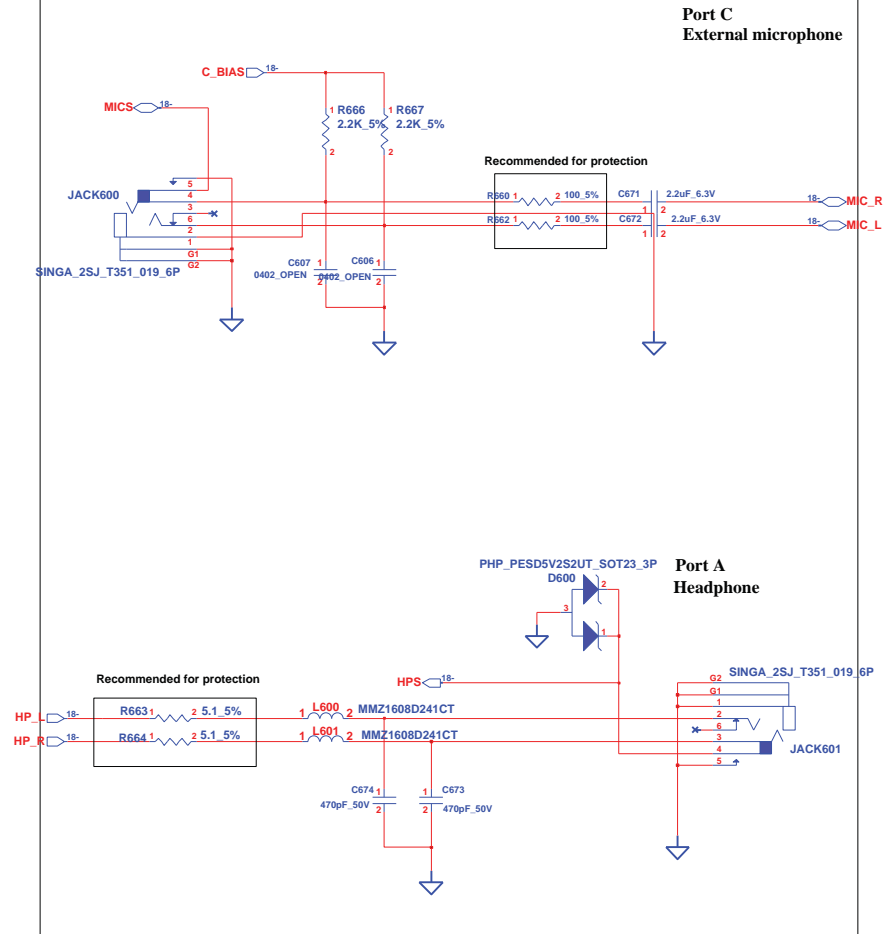
TITLE			
<i>Manaus10AD</i> <i>AZALIA CODEC</i>			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	<i>1310A2357401</i>	<i>X01</i>

CHANGE by	<i>Eddy, Chen</i>	<i>11-Jan-2010</i>
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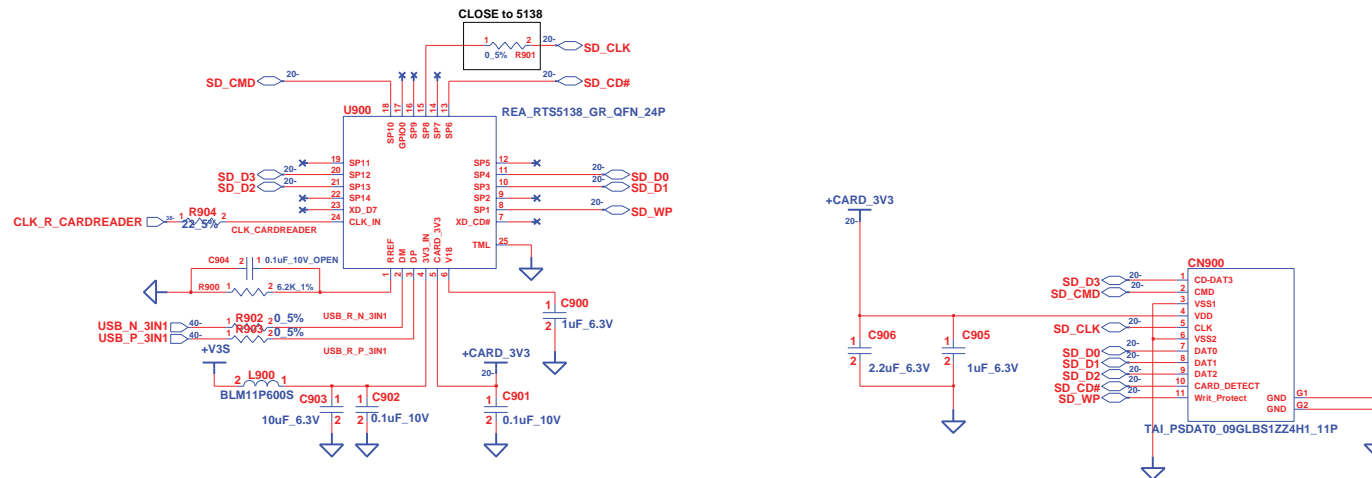
CS	1310A2357401		
SHEET	18	OF	43



AUDIO JACKS



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INVENTEC

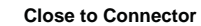
TITLE
Mana10AD
Card Reader

SIZE A3	CODE CS	DOC. NUMBER I310A2357401	REV X01
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CHANGE by **Eddy, Chen** 11-Jan-2010

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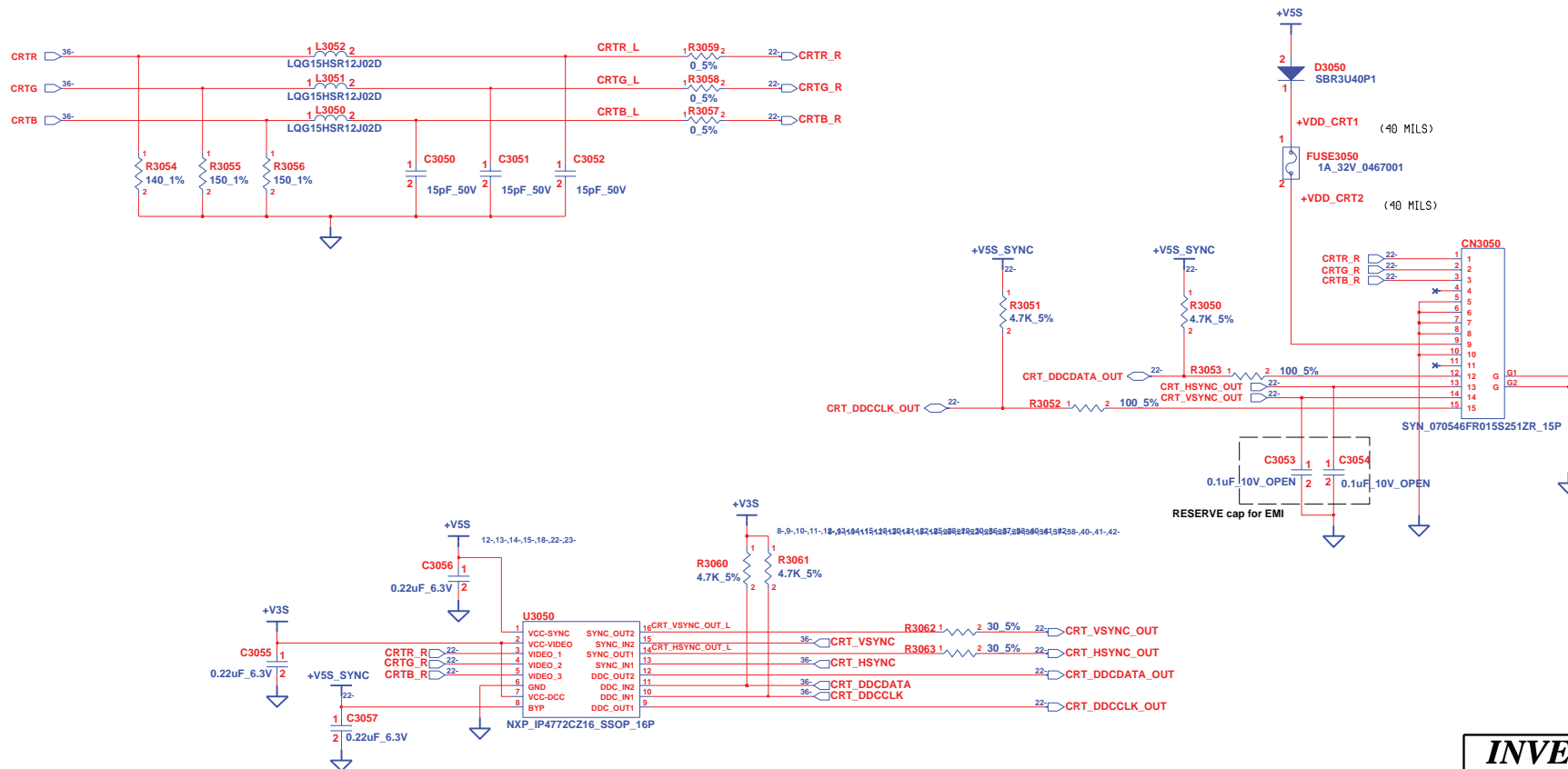
LCM DDC PU values



TITLE			
Manaus10AD LCM			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

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INVENTEC

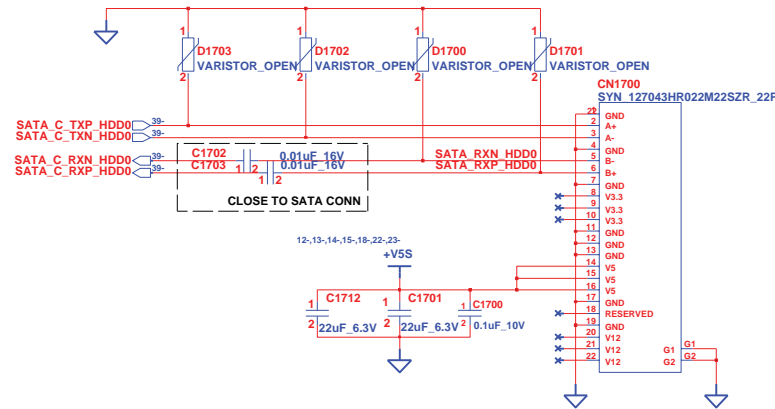
TITLE
Mana10AD
CRT

SIZE A3	CODE CS	DOC. NUMBER 1310A2357401	REV X01
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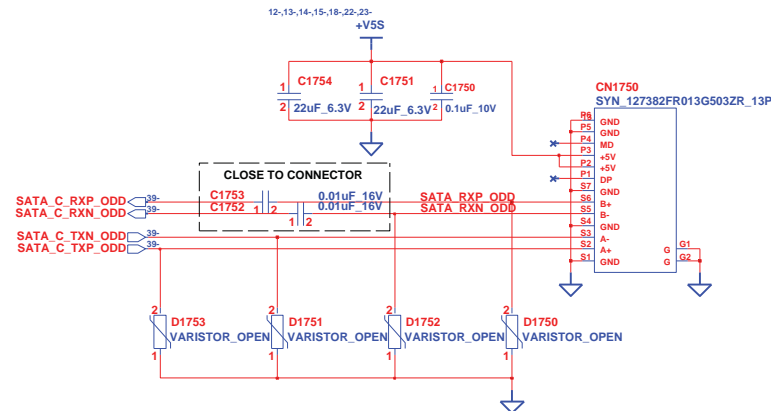
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SATA HDD0



SATA ODD

INVENTEC

TITLE			
Manaus10AD			
SATA HDD, SATA ODD			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
SHEET		23	OF 43

CHANGE by Eddy, Chen 11-Jan-2010

INVENTEC

TITLE: **Mana10AD**
e-SATA

SIZE	CODE	DOC. NUMBER	REV
A3	CS	I310A2357401	X01

CHANGE by: Eddy, Chen 11-Jan-2010

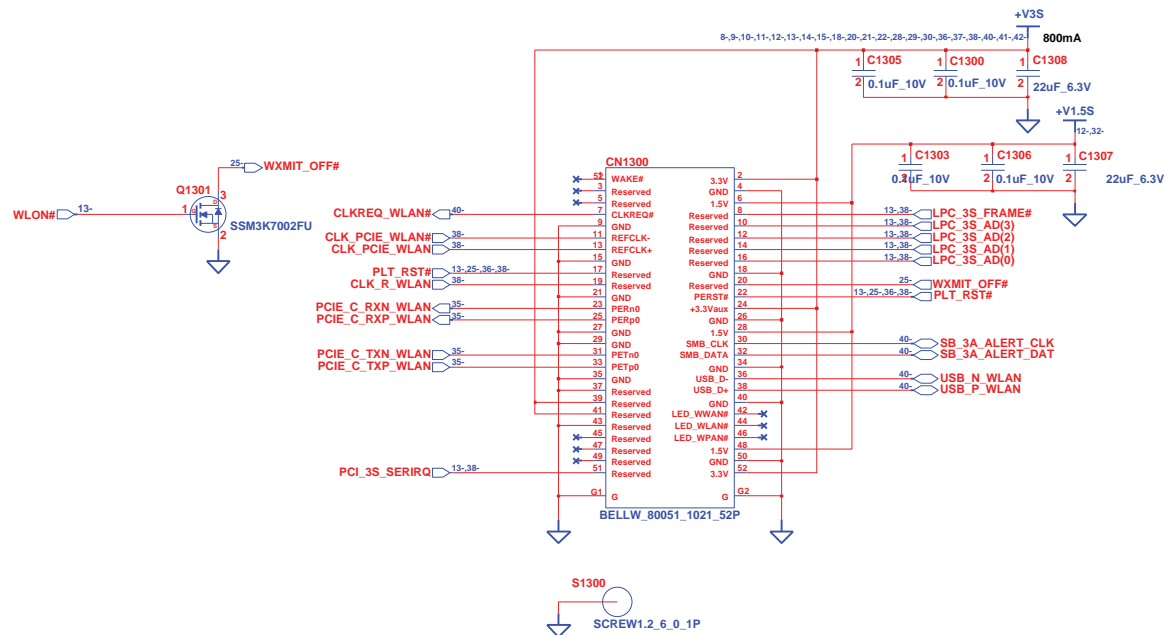
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TITLE			
Manaus10AD e-SATA			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
SHEET		24	OF 43

CODE	DOC. NUMBER	REV
CS	1310A2357401	X01
SHEET	24	OF 43

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Wireless & Debug card



INVENTEC

TITLE
Manaus10AD
WLAN

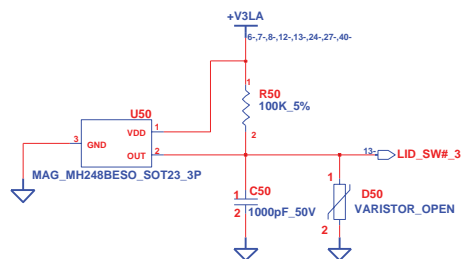
SIZE **A3** CODE **CS** DOC. NUMBER **1310A2357401** REV **X01**

CHANGE by **Eddy, Chen** 11-Jan-2010

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HALL SENSOR



INVENTEC			
TITLE			
Manaus10AD			
HALL SENSOR			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
SHEET		26	OF 43

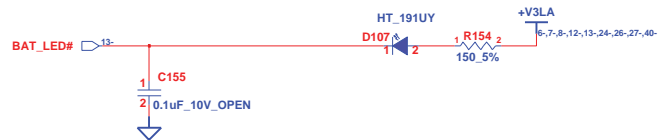
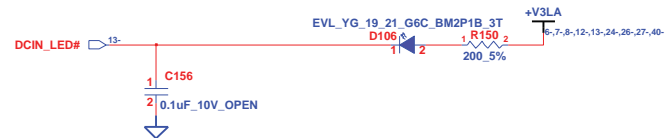
CHANGE by Eddy, Chen 11-Jan-2010

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POWER LED



BATTERY LED



INVENTEC

TITLE Manaus10AD LED			
SIZE A3	CODE CS	DOC. NUMBER I310A2357401	REV X01
SHEET		27	OF 43

CHANGE by *Eddy, Chen* 11-Jan-2010

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SO DIMM0
SLOT A

INVENTEC

TITLE: **Manaus10AD**
DDR3 DIMM0

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

CHANGE by: Eddy, Chen 11-Jan-2010 SHEET 28 OF 43

[illegible][illegible][illegible]

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SO DIMM0
SLOT A

INVENTEC

TITLE: **Manaus10AD**
DDR3 DIMM0

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

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SO DIMM0
SLOT A

INVENTEC

TITLE: **Manaus10AD**
DDR3 DIMM0

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

CHANGE by: Eddy, Chen 11-Jan-2010 SHEET 28 OF 43

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SO DIMM0
SLOT A

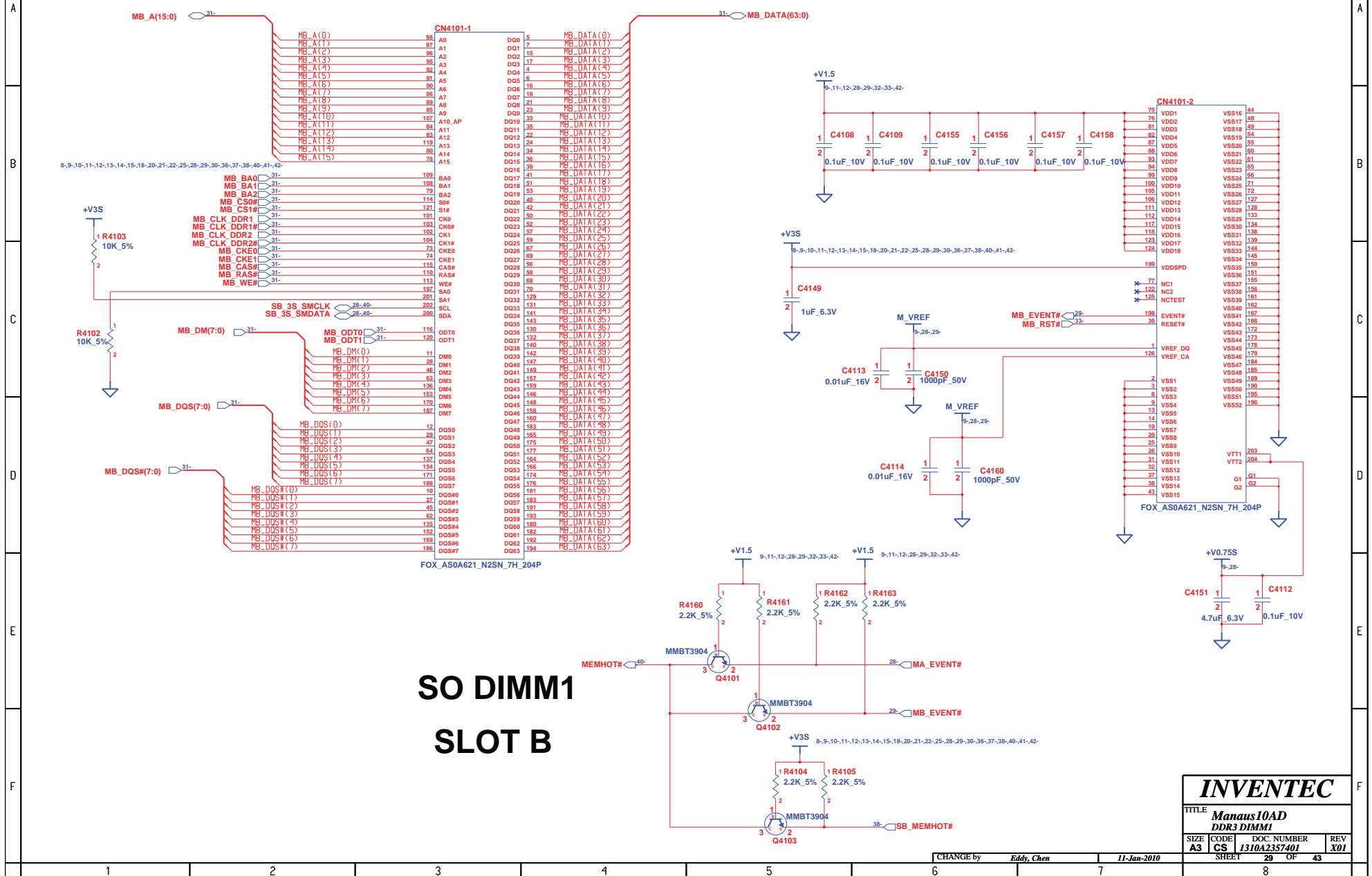
INVENTEC

TITLE: **Manaus10AD**
DDR3 DIMM0

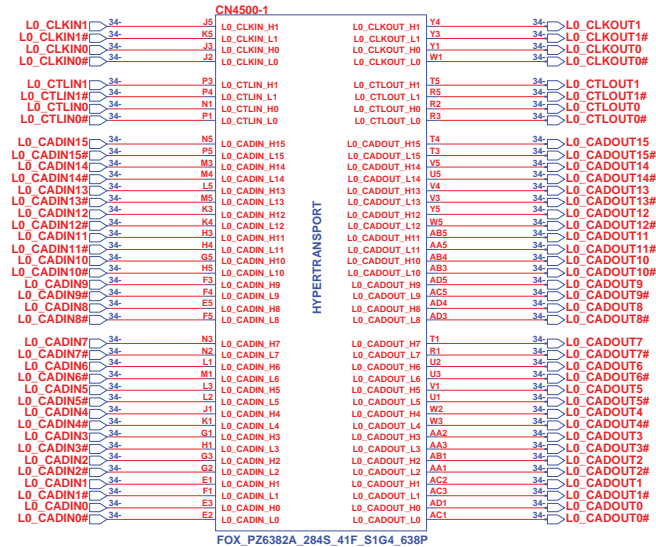
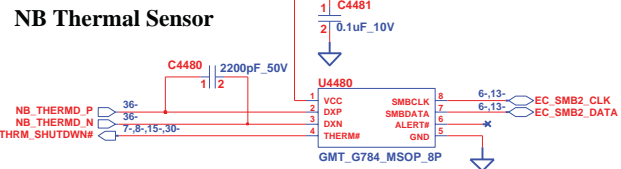
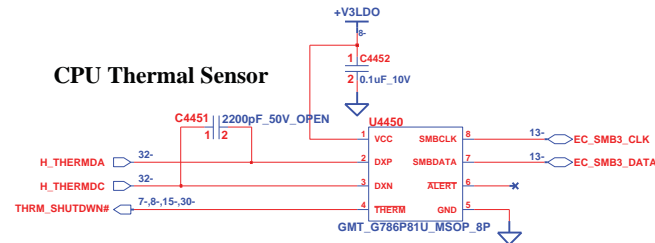
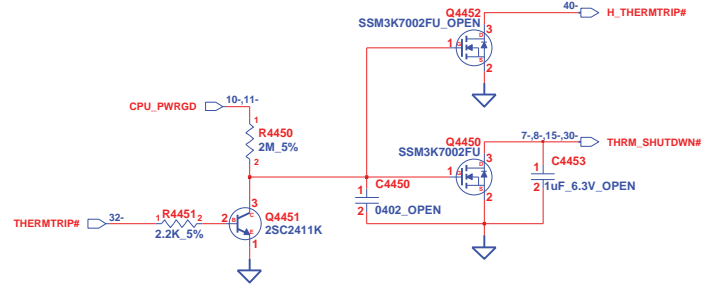
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

CHANGE by: Eddy, Chen 11-Jan-2010 SHEET 28 OF 43

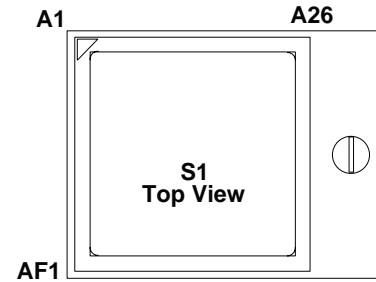
<http://hobi-elektronika.net>



<http://hobi-elektronika.net>

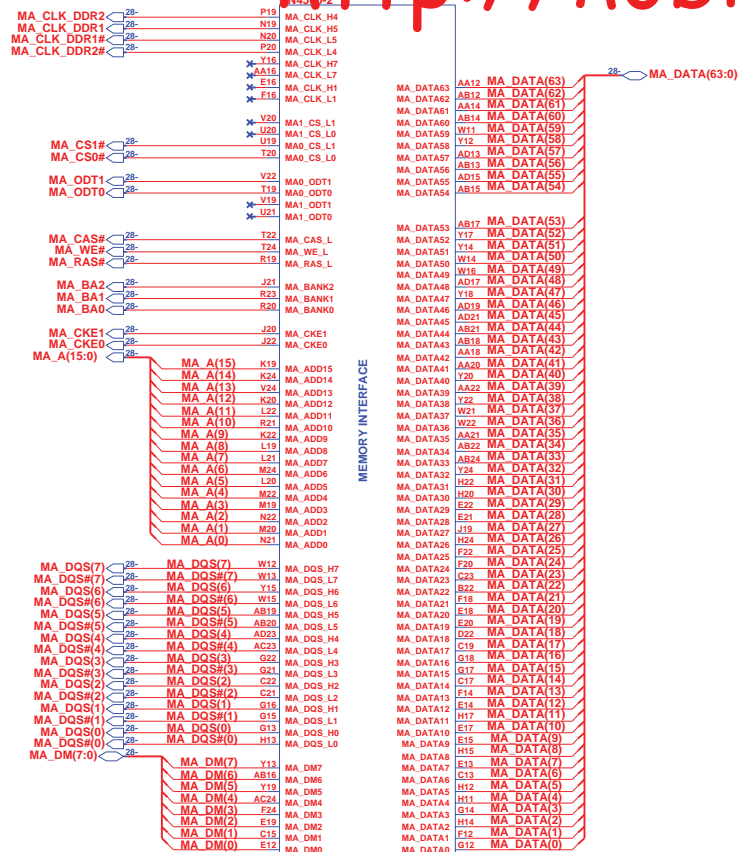


Layout: Add stitching caps if crossing plane split.



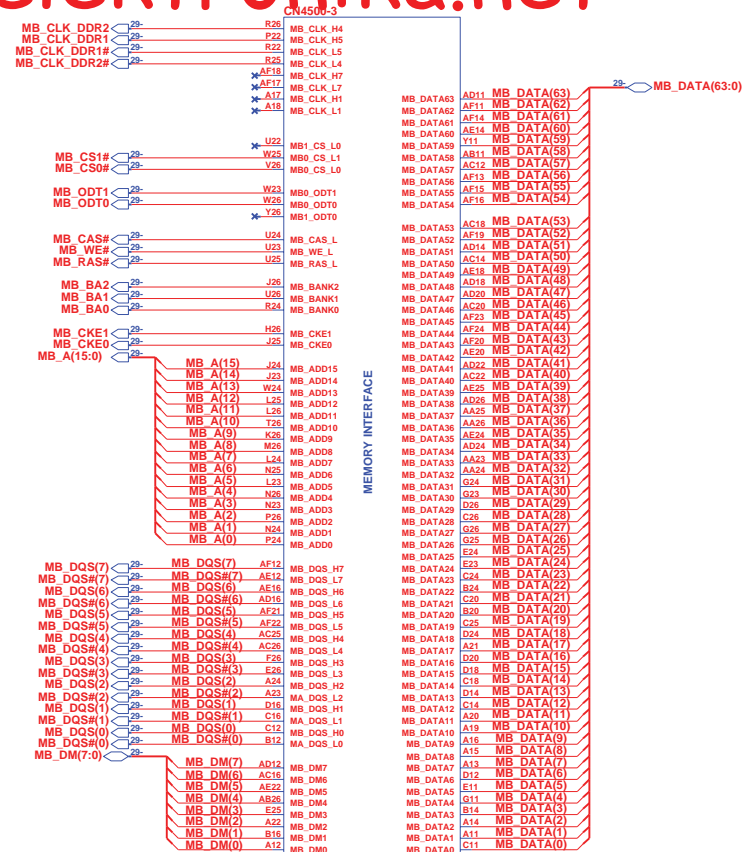
INVENTEC				
TITLE				
Manaus10AD				
CPU-1				
SIZE	CODE	DOC. NUMBER	REV	
A3	CS	1310A2357401	X01	
CHANGE by		Eddy, Chen		11-Jan-2010
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MEMORY INTERFACE

FOX_P26382A_284S_41F_S1G4_638P



MEMORY INTERFACE

FOX_P26382A_284S_41F_S1G4_638P

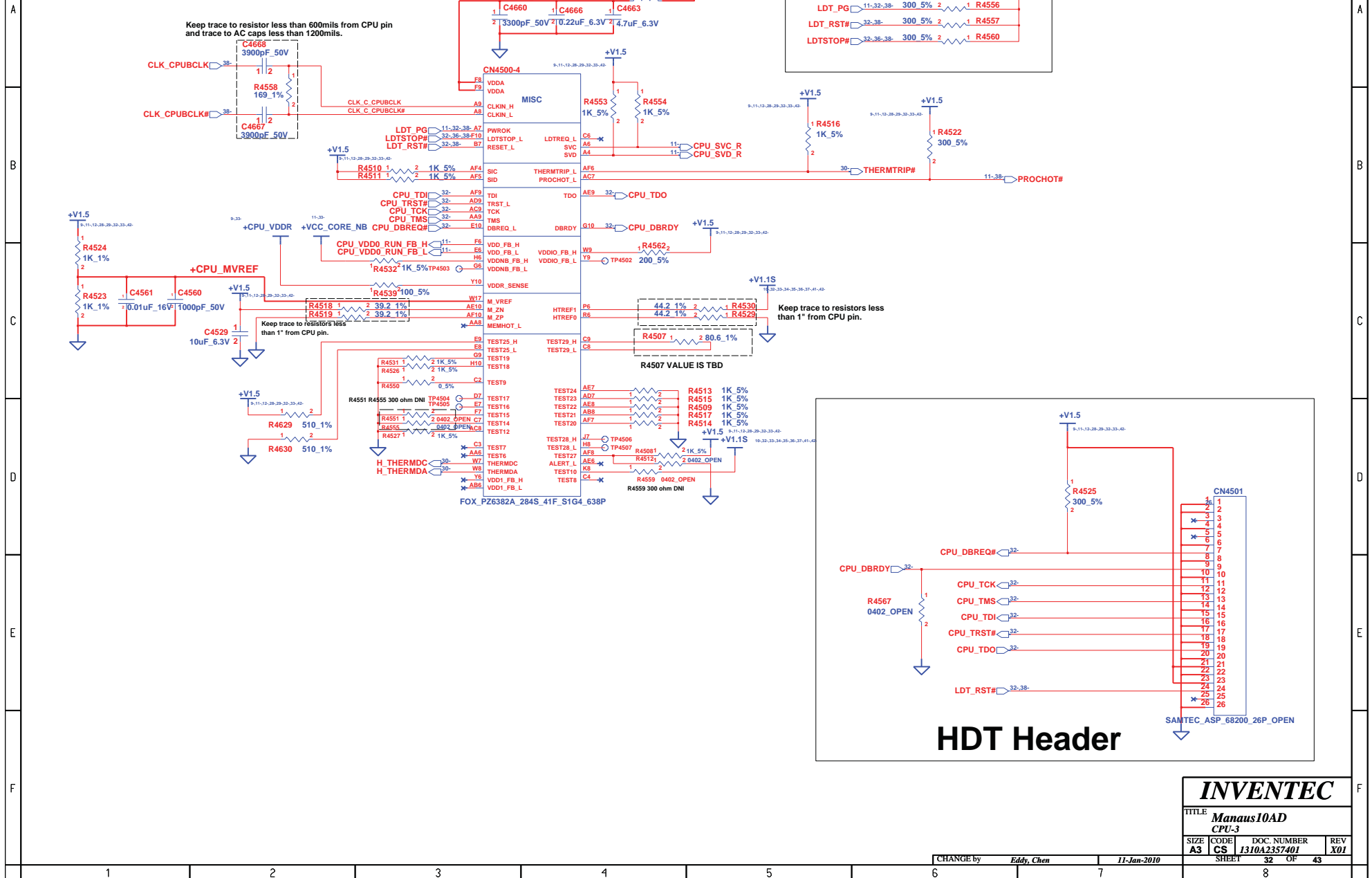
INVENTEC

TITLE
Manaus 10AD
CPU-2

SIZE A3	CODE CS	DOC. NUMBER 1310A2357401	REV X01
SHEET		31	OF 43

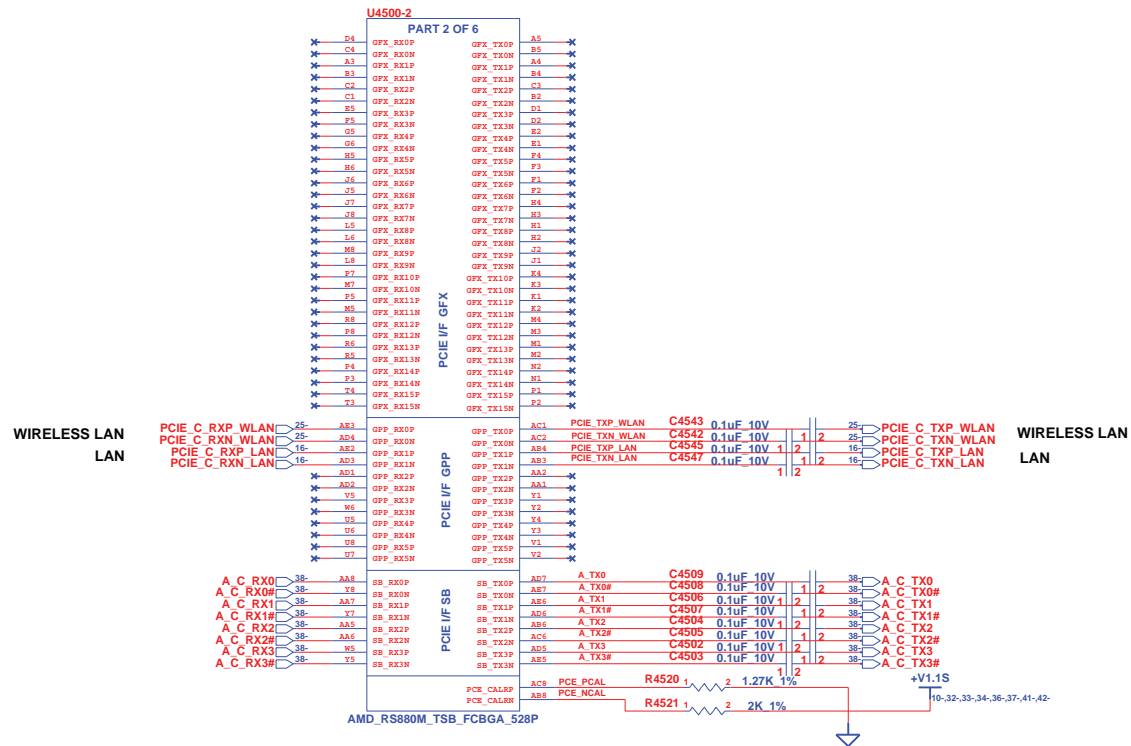
CHANGE by Eddy, Chen 11-Jan-2010

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INVENTEC

TITLE
Manaus10AD

NB-2

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01

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RX781 : OPEN

140 1% 2 1 R4528 22-36 >CRTR

150 1% 2 1 R4540 22-36 >CRTG

150 1% 2 1 R4541 22-36 >CRTB

Within 1" of NB ball

+V1.8S

10-34-36-37-41

1 R4572 2 300 5%

36-40 >NB_PWRGD

LDTSTOP#

BAT54 30V 0.2A

D4501

1 R4548 2 0402_OPEN

32-38

36 >LDTSTOP#_NB

ALDSTOP

+V1.8S

1 R4620 1K 5%

36-38 >ALDSTOP

STRAP

+V3S

3.3K 5% 2 1 R4501 22-36 >CRT_HSYNC

3.3K 5% 2 1 R4502 22-36 >CRT_VSYNC

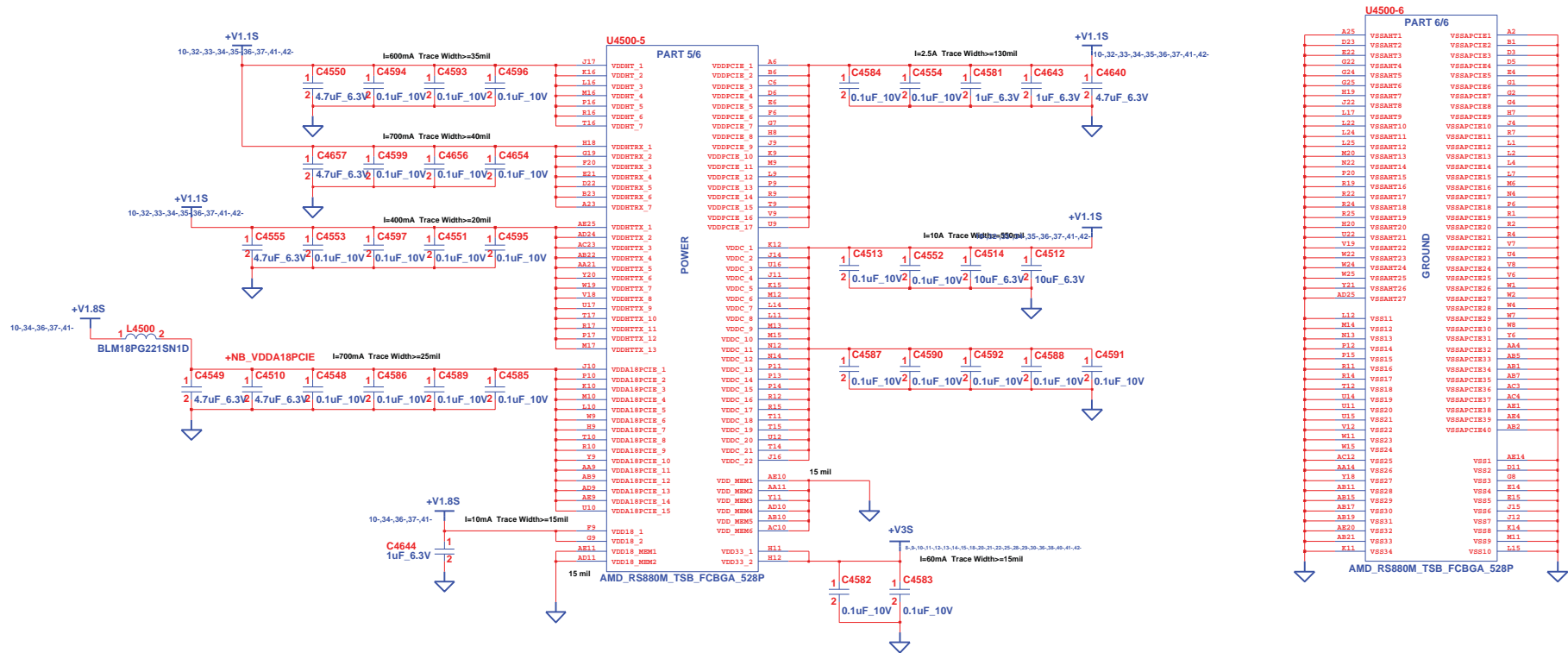
Disable Debug Bus

TITLE			
Manaus10AD NB-3			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
SHEET		36 OF	43

CHANGE by	<i>Eddy. Chen</i>	<i>11-Jan-2010</i>
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INVENTEC

TITLE
Manaus10AD

SIZE
A3

CODE
CS

DOC. NUMBER
1310A2357401

REV
X01

CHANGE by **Eddy, Chen**

11-Jan-2010

SHEET **37** OF **43**

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SATA HDD0

SATA ODD

U4501-2

SB800

Part 2 of 5

FLASH

SERIAL ATA

HW MONITOR

SPI ROM

AMD_SB820M_TSB_FCBGA_605P

SATA C TXP_HDD0

SATA C TXN_HDD0

SATA C RXN_HDD0

SATA C RXP_HDD0

SATA C TXP_ODD

SATA C TXN_ODD

SATA C RXN_ODD

SATA C RXP_ODD

SATA TXP_HDD0

SATA TXN_HDD0

SATA RXN_HDD0

SATA RXKP_HDD0

SATA TXP_ODD

SATA TXN_ODD

SATA RXN_ODD

SATA RXKP_ODD

SATA TX2P

SATA TX2N

SATA RX2P

SATA RX2N

SATA TX3P

SATA TX3N

SATA RX3P

SATA RX3N

SATA TX4P

SATA TX4N

SATA RX4P

SATA RX4N

SATA TX5P

SATA TX5N

SATA RX5P

SATA RX5N

SATA CAL

SATA CALRP

SATA CALRN

SATA_ACT#_GPIO67

SATA_X1

SATA_X2

SPI_DI_GPIO164

SPI_DO_GPIO163

SPI_CLK_GPIO162

SPI_CS1#_GPIO165

ROM_RST#_GPIO161

FC_CLK

FC_FBCLKOUT

FC_FBCLKIN

FC_OE#_GPIO145

FC_AVD#_GPIO146

FC_WE#_GPIO148

FC_CE1#_GPIO149

FC_CE2#_GPIO150

FC_INT1_GPIO144

FC_INT2_GPIO147

FC_ADQ0_GPIO128

FC_ADQ1_GPIO129

FC_ADQ2_GPIO130

FC_ADQ3_GPIO131

FC_ADQ4_GPIO132

FC_ADQ5_GPIO133

FC_ADQ6_GPIO134

FC_ADQ7_GPIO135

FC_ADQ8_GPIO136

FC_ADQ9_GPIO137

FC_ADQ10_GPIO138

FC_ADQ11_GPIO139

FC_ADQ12_GPIO140

FC_ADQ13_GPIO141

FC_ADQ14_GPIO142

FC_ADQ15_GPIO143

FANOUT0_GPIO52

FANOUT1_GPIO53

FANOUT2_GPIO54

FANIN0_GPIO56

FANIN1_GPIO57

FANIN2_GPIO58

TEMPIN0_GPIO171

TEMPIN1_GPIO172

TEMPIN2_GPIO173

TEMPIN3_TALERT#_GPIO174

TEMP_COMM

VIN0_GPIO175

VIN1_GPIO176

VIN2_GPIO177

VIN3_GPIO178

VIN4_GPIO179

VINS_GPIO180

VINS_GBE_STAT3_GPIO181

VIN7_GBE_LED3_GPIO182

NC1

NC2

G27

Y2

CAPS CLOSE TO SB

0.01uF 16V

0.01uF 16V

1 2

1 2

CAPS CLOSE TO SB

0.01uF 16V

0.01uF 16V

1 2

1 2

+SB_AVDD_SATA

4uF

R4575

1K 1%

2

Within 1" of SB

R4652

35 ohm-20 mil

AA14

931_1%

1 R4635 210K 5%

1 R4636 210K 5%

INVENTEC

TITLE **Manaus10AD**

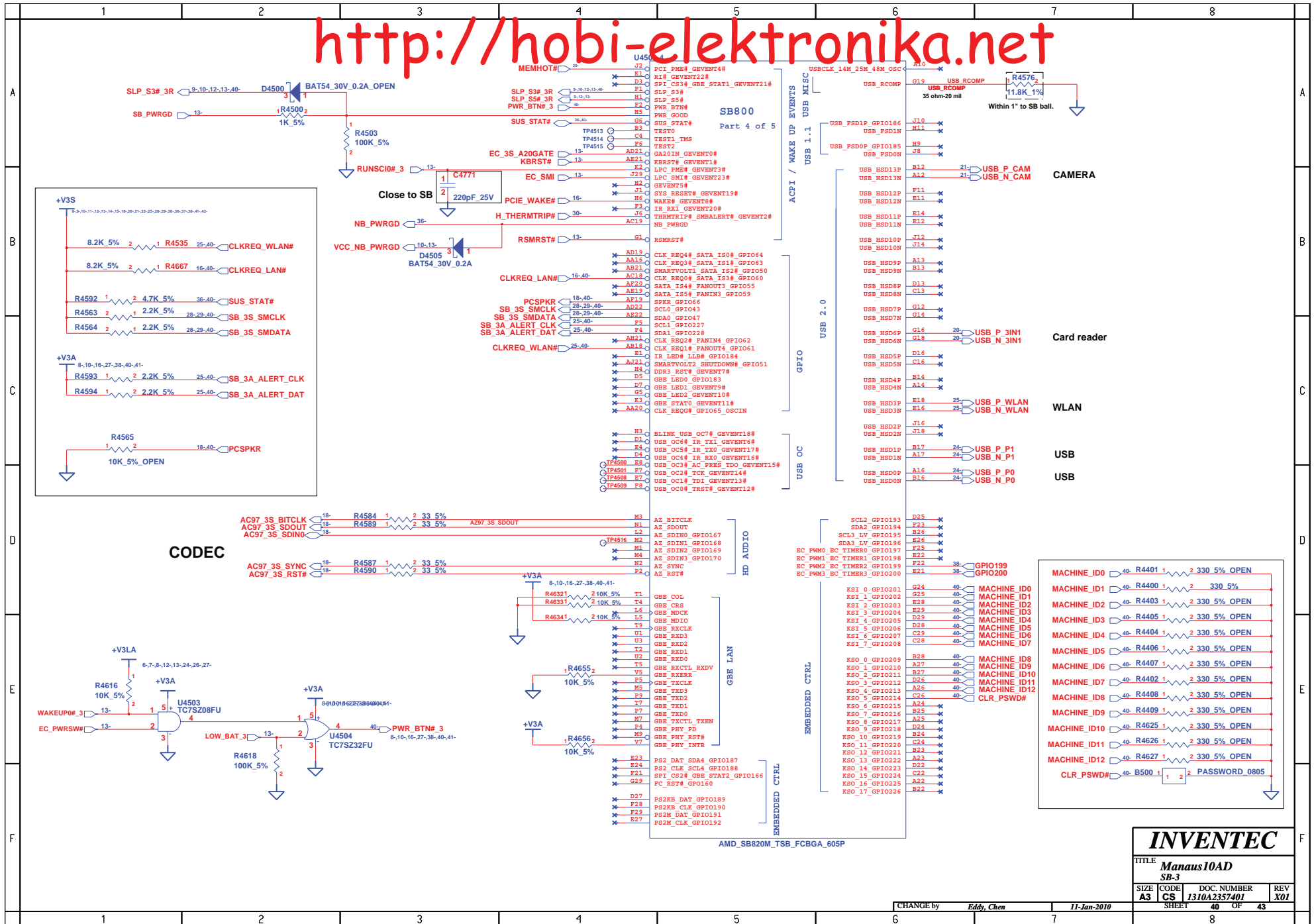
SB-2

SIZE A3	CODE CS	DOC. NUMBER I310A2357401	REV X01
SHEET 39		OF 43	

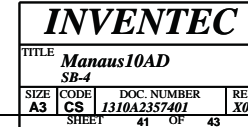
CHANGE by **Eddy, Chen**

11-Jan-2010

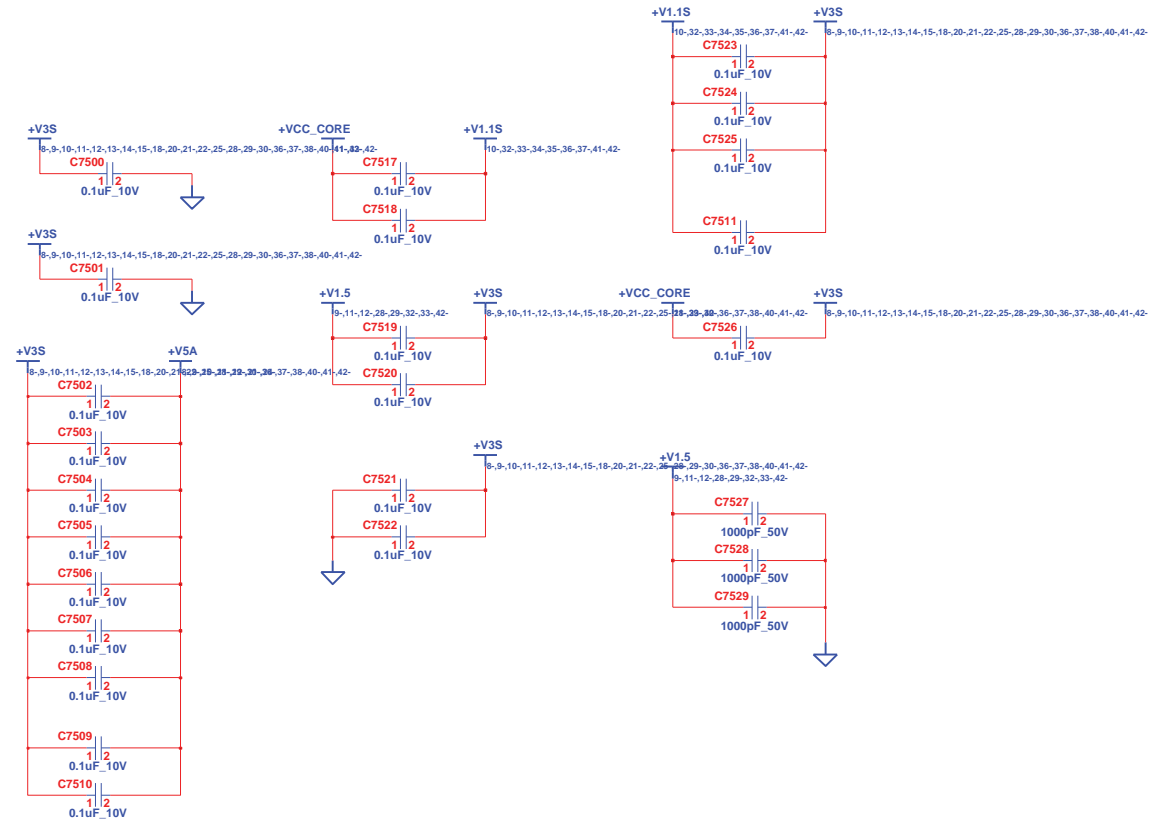
<http://hobi-elektronika.net>



PLACE ALL THE DECOUPLING CAPS ON
THIS SHEET CLOSE TO SB AS POSSIBLE



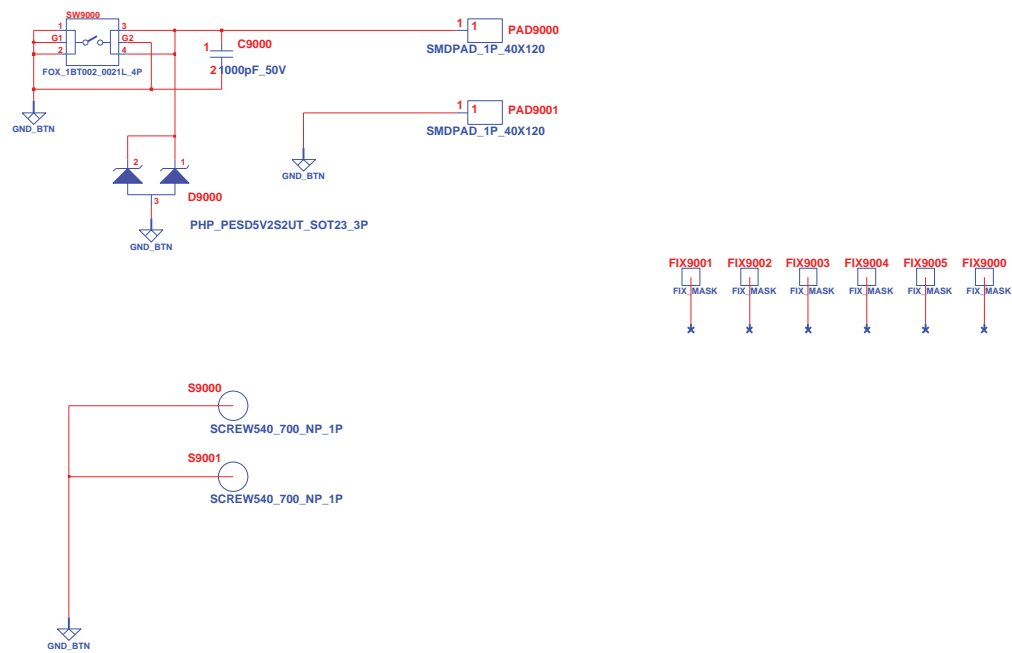
EMI



INVENTEC			
TITLE: Manaus10AD EMI			
SIZE: A3	CODE: CS	DOC. NUMBER: J310A2357401	REV: X01
CHANGE by: Eddy, Chen		11-Jan-2010	
SHEET: 42		OF: 43	

<http://hobi-elektronika.net>

POWER BUTTON



INVENTEC			
TITLE			
Manaus10AD			
Pick Button Board			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A2357401	X01
CHANGE by		16-Mar-2010	
Eddy, Chen			
SHEET		43	OF 43