

1	2	3	4	5	6	7	8
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HSF Property : **RoHS**

A

A

B

B

C

C

D

D

E

E

F

F

BM10R

WS Build

2010.12.03

DATE	CHANGE NO.	REV

DRAWER	EE	DATE	POWER	DATE	INVENTEC		
DESIGN							
CHECK							
RESPONSIBLE							
TITLE					Bremen10R COVER		
SIZE =	A3	VER :	X01	SIZE	CODE	DOC. NUMBER	REV
FILE NAME :				A3	WS	6050A2435001	X01
P/N					SHEET	1	OF 56

1	2	3	4	5	6	7	8
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TABLE OF CONTENTS

PAGE

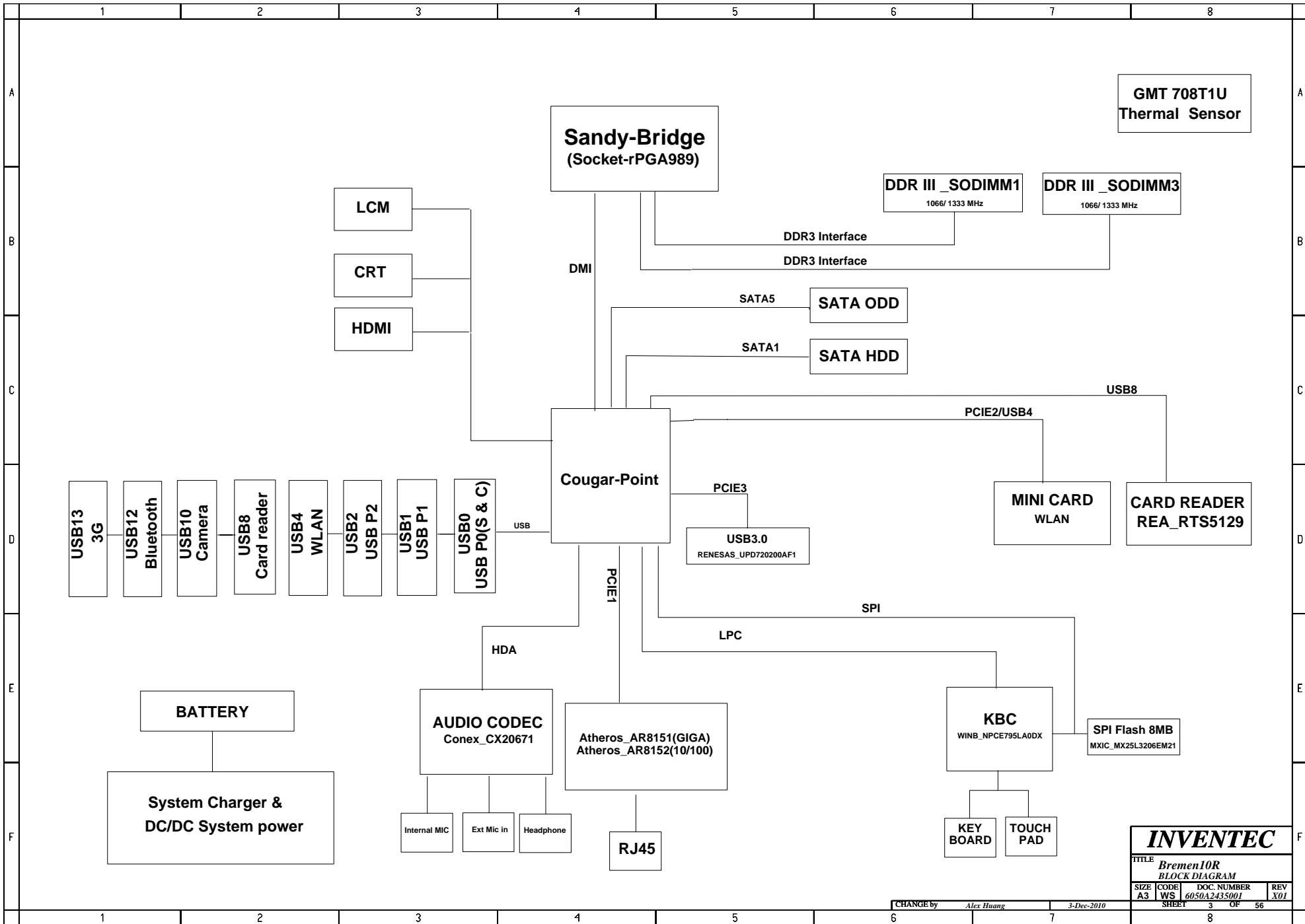
- 1. COVER PAGE
- 2. INDEX
- 3. BLOCK DIAGRAM
- 4. POWER SEQUENCE BLOCK
- 5. PCB SCREW
- 6. SYSTEM POWER
- 7. SYSTEM POWER
- 8. SYSTEM POWER
- 9. SYSTEM POWER
- 10.SYSTEM POWER
- 11.SYSTEM POWER
- 12.SYSTEM POWER
- 13.BLANK
- 14.SYSTEM POWER
- 15.EC
- 16.K/B TP/B CONN
- 17.FAN & THERMAL
- 18.LAN
- 19.RJ45 & TRANSFORMER
- 20.AUDIO CODEC
- 21.AUDIO JACK & INTERNAL SPEAKER
- 22.LCM CONN
- 23.CRT CONN
- 24.SATA HDD/ODD
- 25.USB CONN
- 26.USB3.0_1
- 27.USB3.0_2
- 28.HDMI_1

PAGE

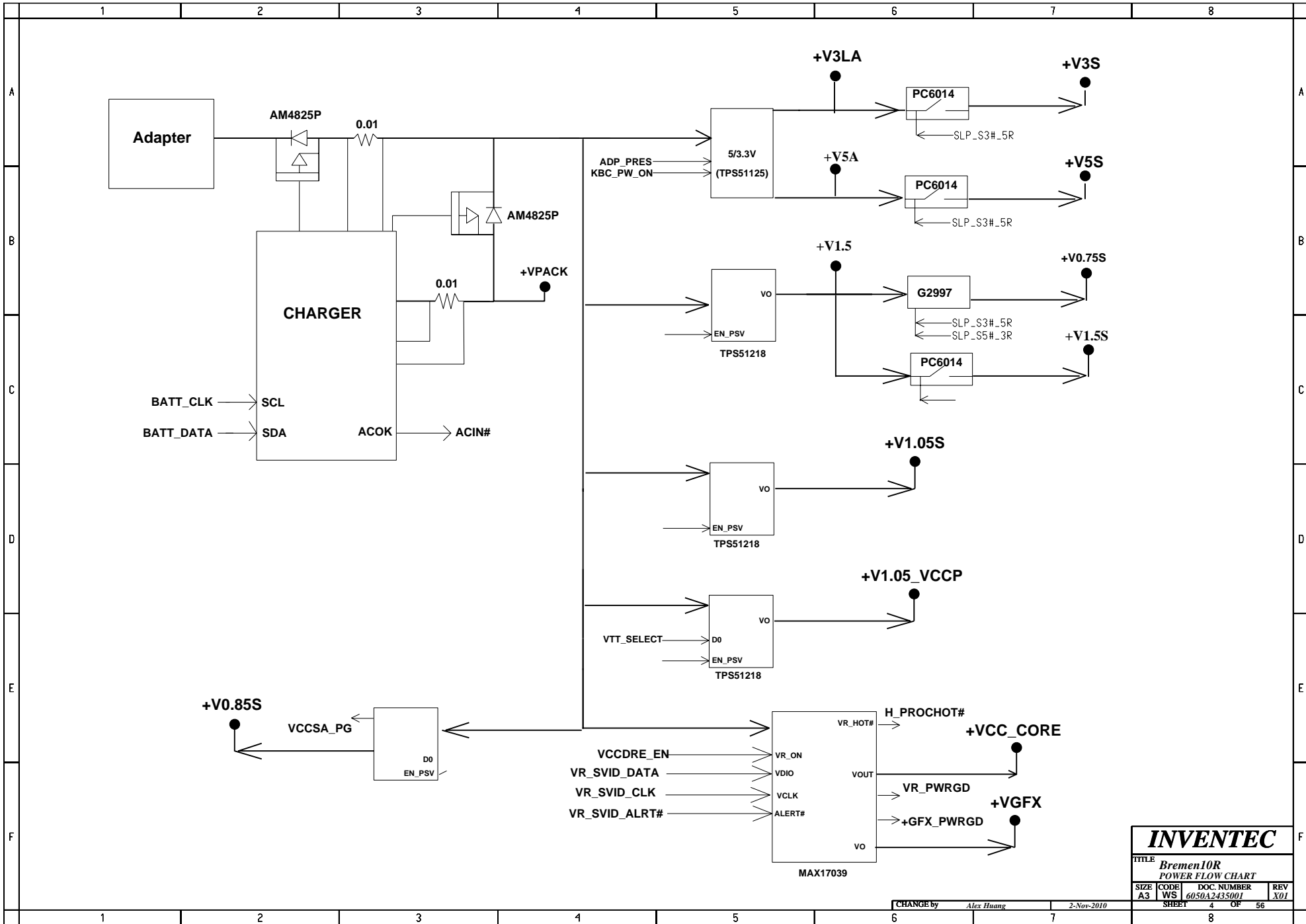
- 29.HDMI_2
- 30.WLAN/DEBUG CARD
- 31.3G CARD
- 32.HALL SENSOR
- 33.LED
- 34.BLUETOOTH CONN
- 35.DDR3 DIMM0
- 36.DDR3 DIMM1
- 37.CPU1
- 38.CPU2
- 39.CPU3
- 40.CPU4
- 41.CPU5
- 42.CPU6
- 43.PCH1
- 44.PCH2
- 45.PCH3
- 46.PCH4
- 47.PCH5
- 48.PCH6
- 49.PCH7
- 50.PCH8
- 51.PCH9
- 52.3D SENSOR
- 53.EMI
- 54.TOUCH PAD BOARD
- 55.POWER BUTTON BOARD
- 56.CARD READER & USB BOARD

INVENTEC

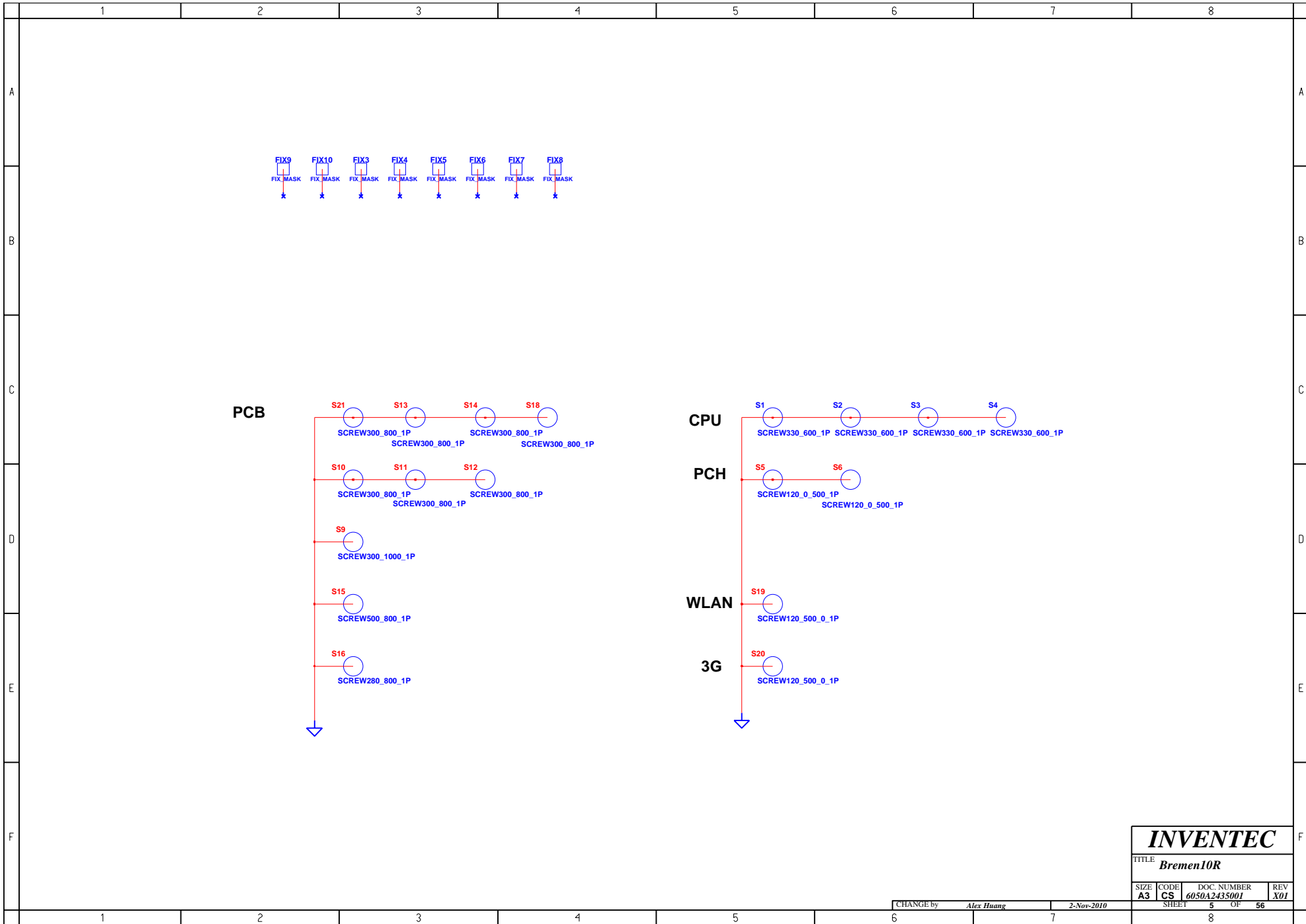
TITLE <i>Bremen10R</i>			
<i>INDEX</i>			
SIZE A3	CODE WS	DOC. NUMBER <i>6050A2435001</i>	REV X01
SHEET		2	OF 56



INVENTEC			
TITLE <i>Bremen10R</i> BLOCK DIAGRAM			
SIZE A3	CODE WS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by Alex Huang		3-Dec-2010	
SHEET		3 OF 56	

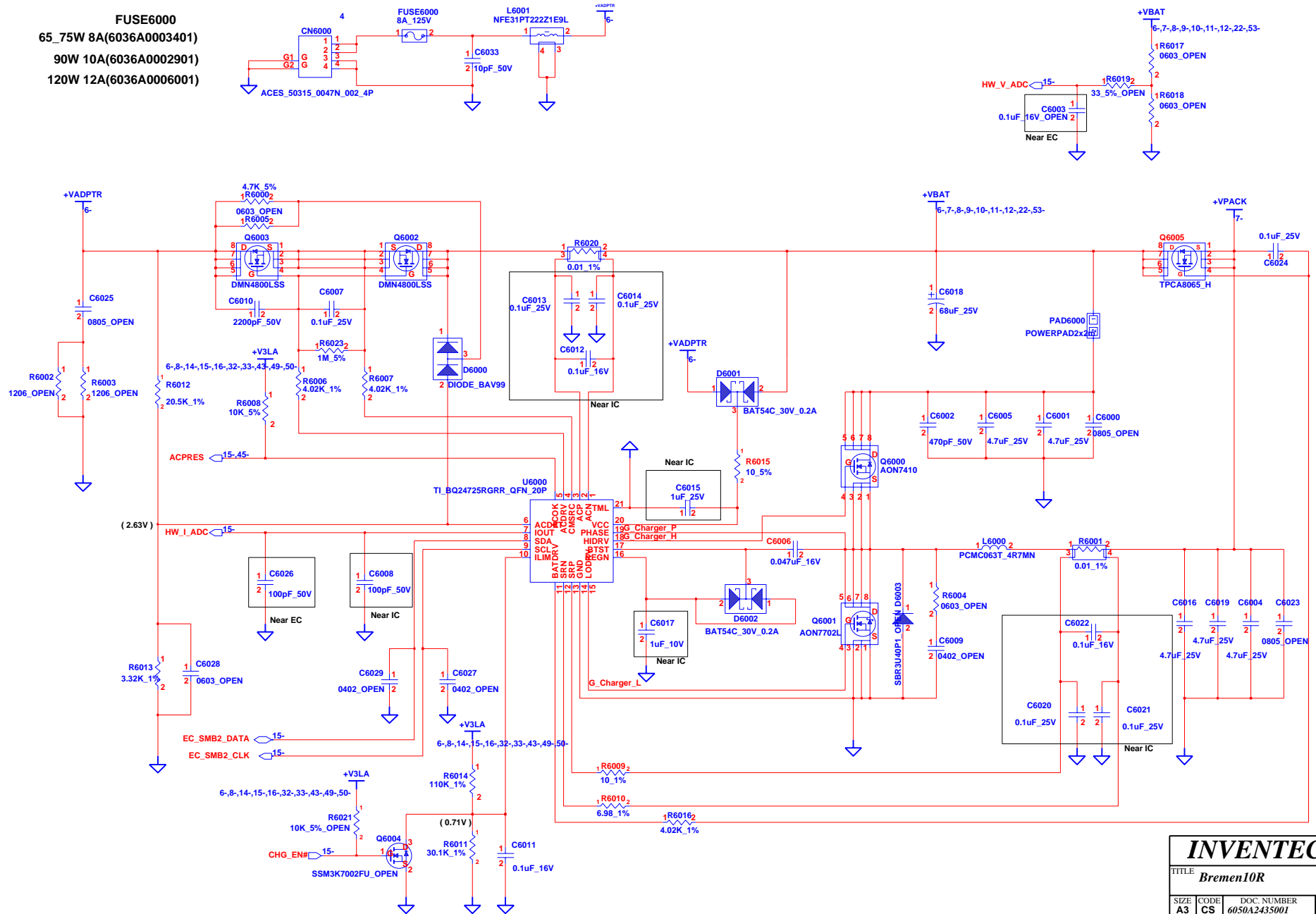


INVENTEC			
TITLE Bremen10R			
POWER FLOW CHART			
SIZE A3	CODE WS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by Alex Huang		2-Nov-2010	
SHEET 4		OF 56	

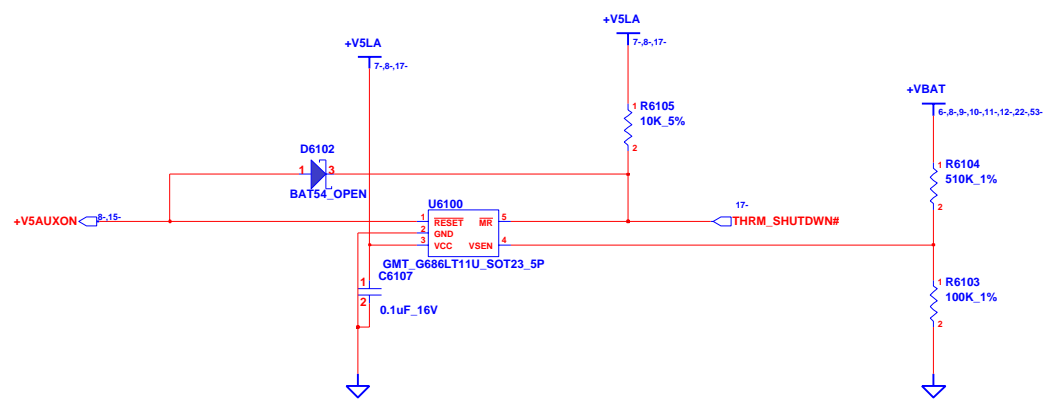
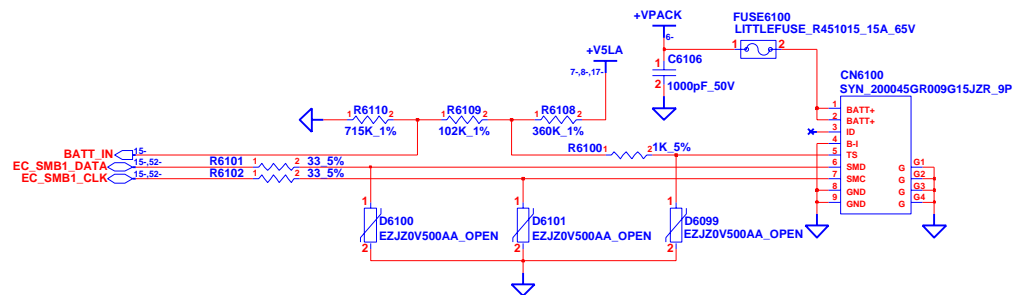


INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET		5 OF 56	
		8	

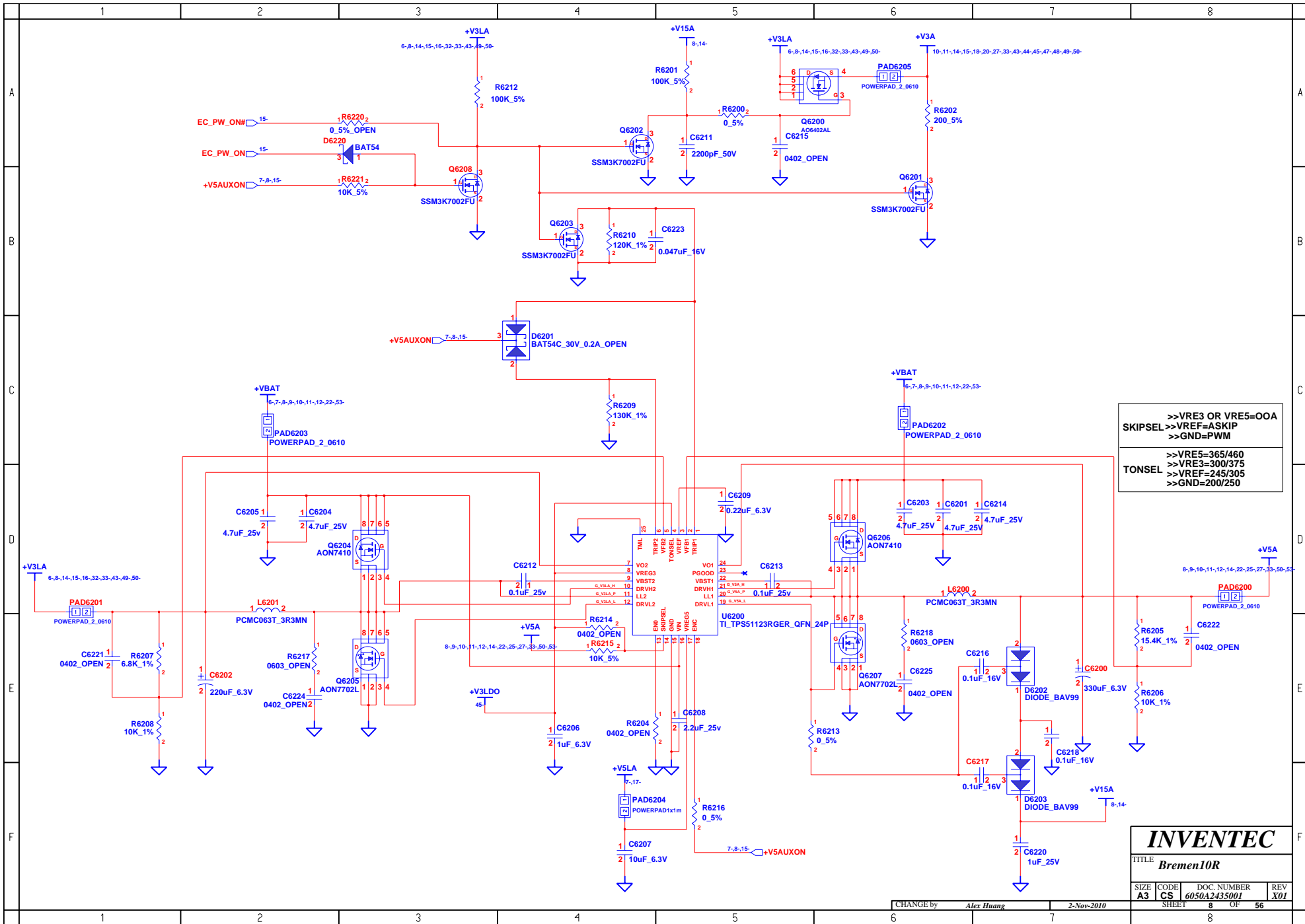
FUSE6000
65_75W 8A(6036A000340)
90W 10A(6036A000290)
120W 12A(6036A000600)



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET		6 OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 7		OF 56	



>>VRE3 OR VRE5=OOA
 SKIPSEL >>VREF=ASKIP
 >>GND=PWM

 >>VRE5=365/460
 >>VRE3=300/375
 >>VREF=245/305
 >>GND=200/250

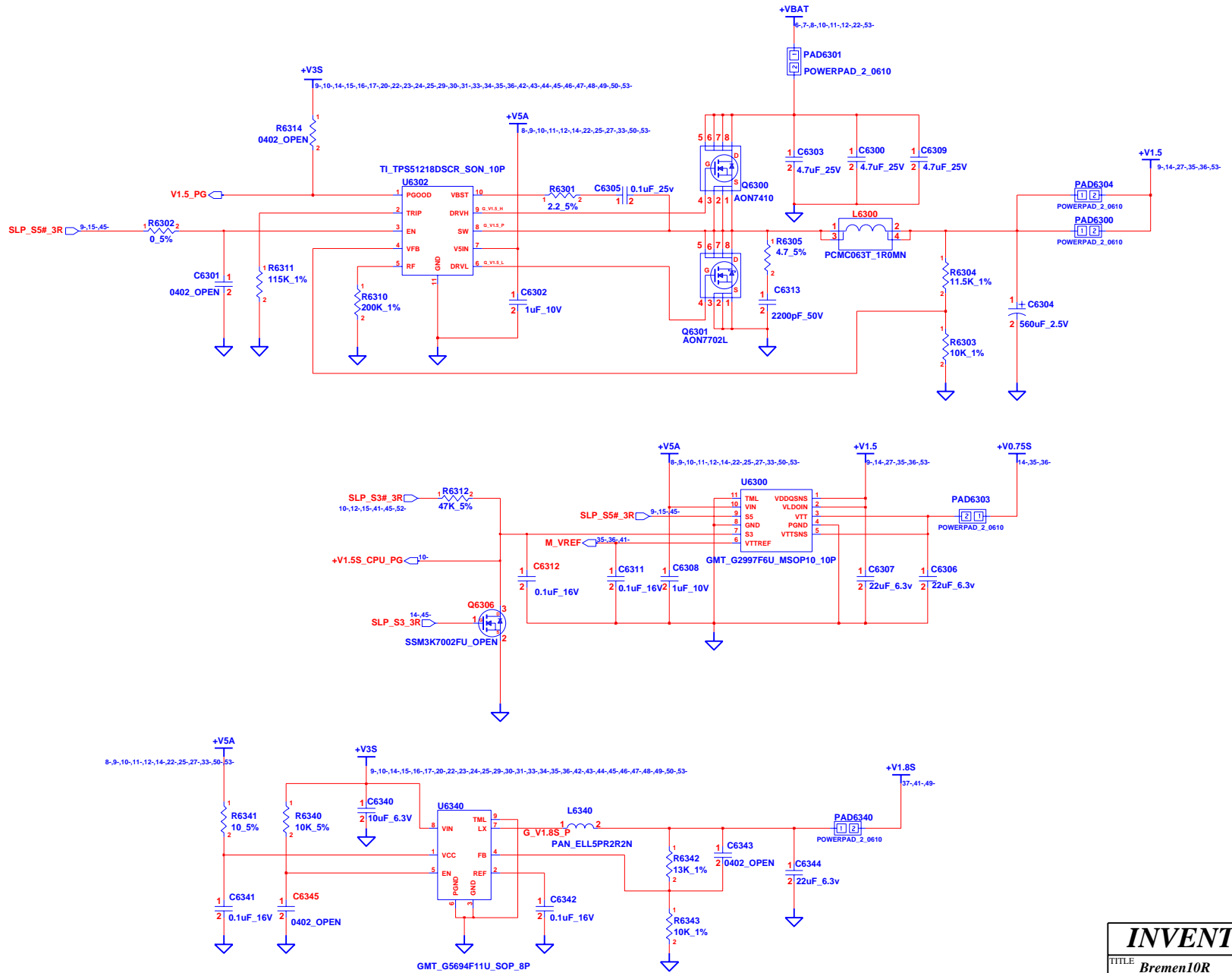
INVENTEC

TITLE
Bremen10R

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01

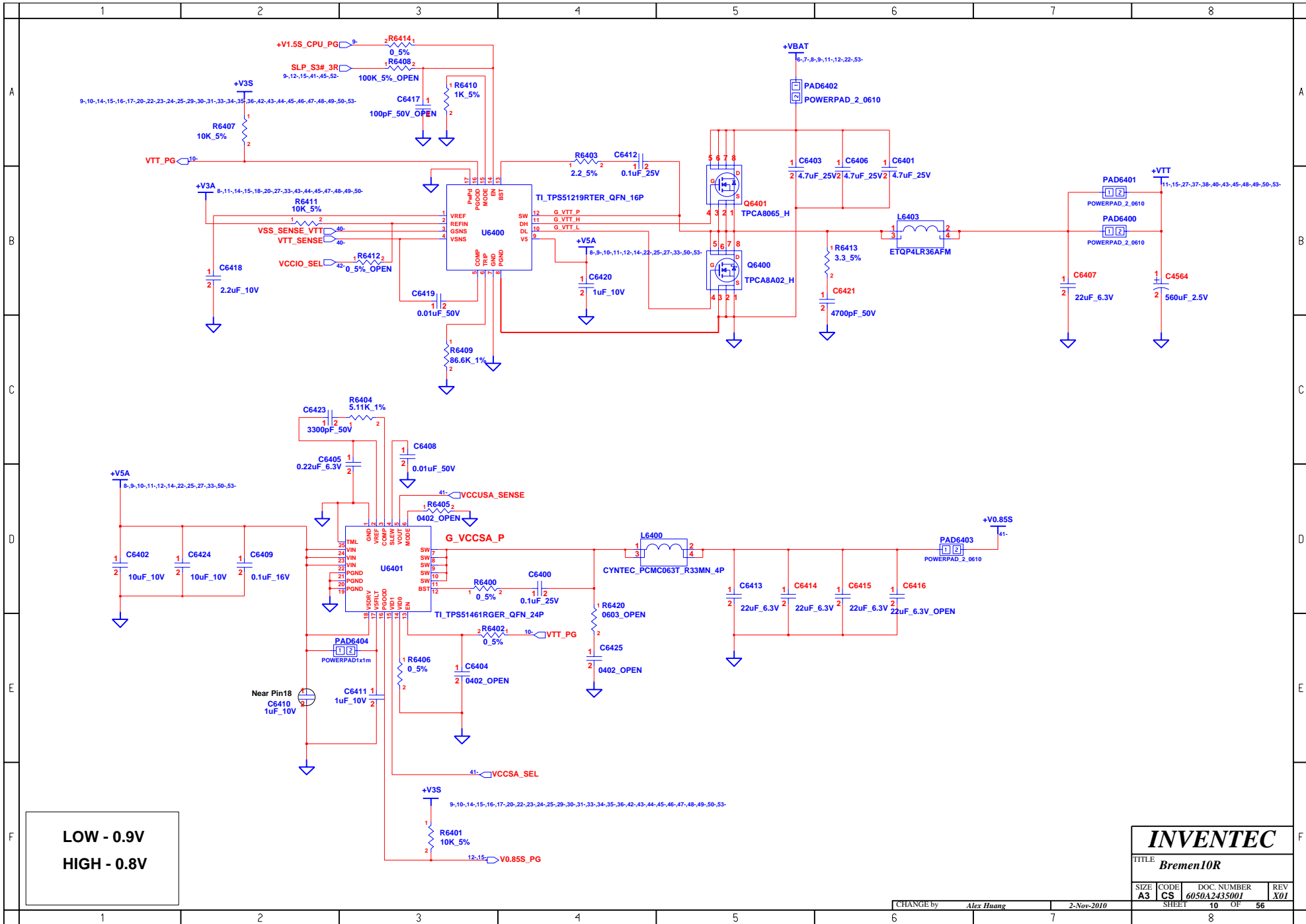
CHANGE by Alex Huang 2-Nov-2010

SHEET 8 OF 56



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
SHEET		9	OF 56

CHANGE by Alex Huang 2-Nov-2010



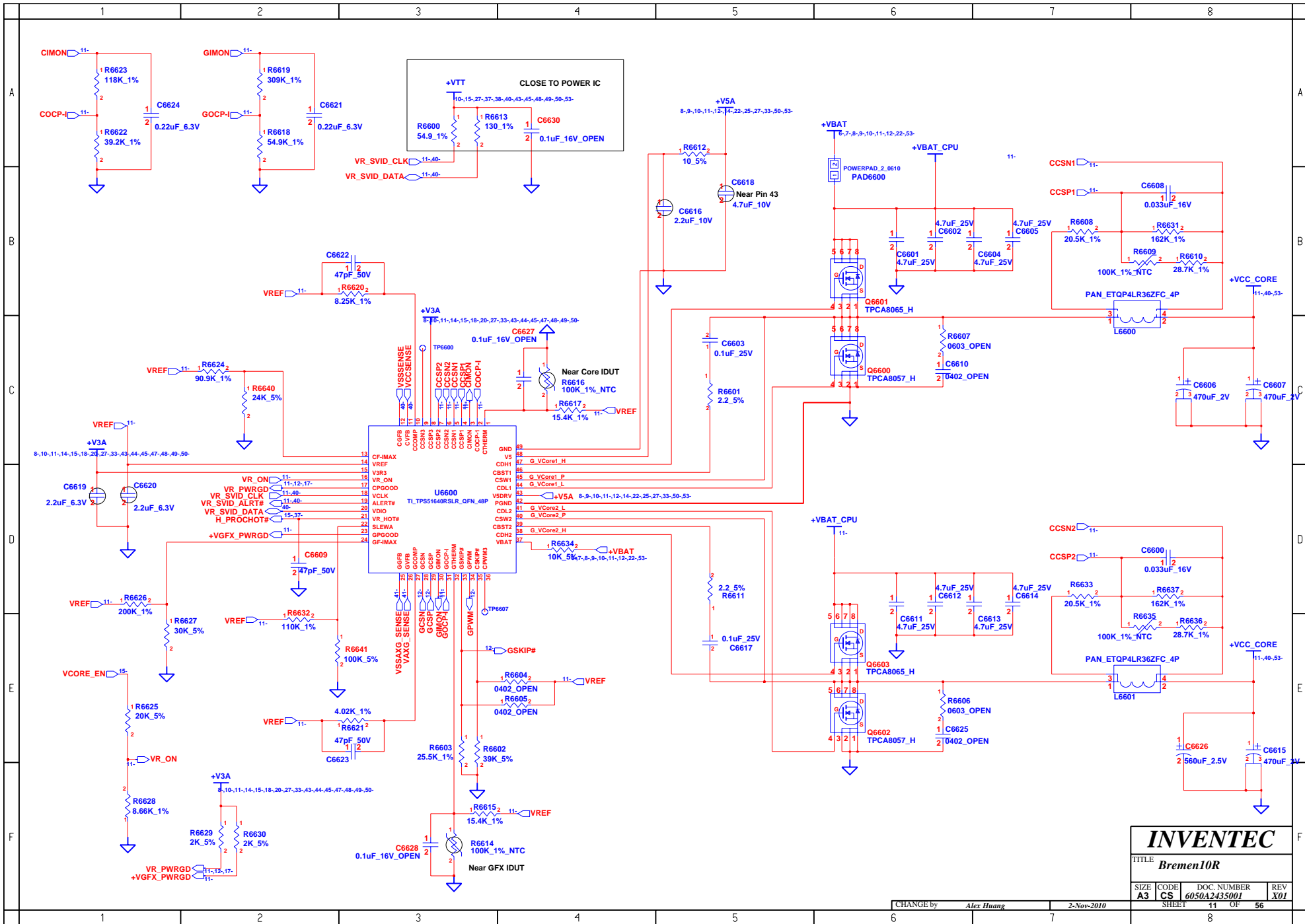
LOW - 0.9V
HIGH - 0.8V

INVENTEC

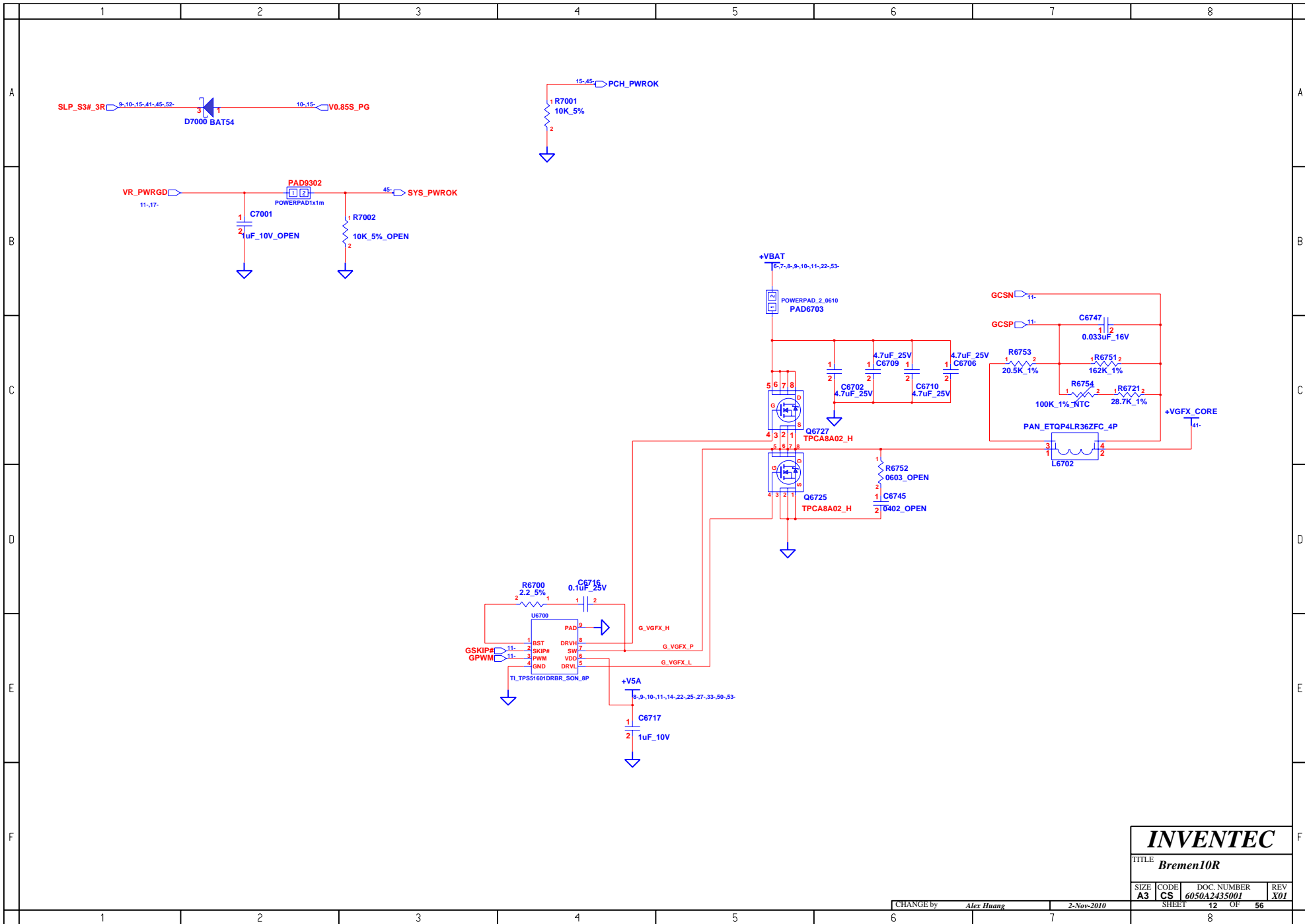
TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
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CHANGE by <i>Alex Huang</i>	2-Nov-2010	SHEET 10	OF 56
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INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 11		OF 56	

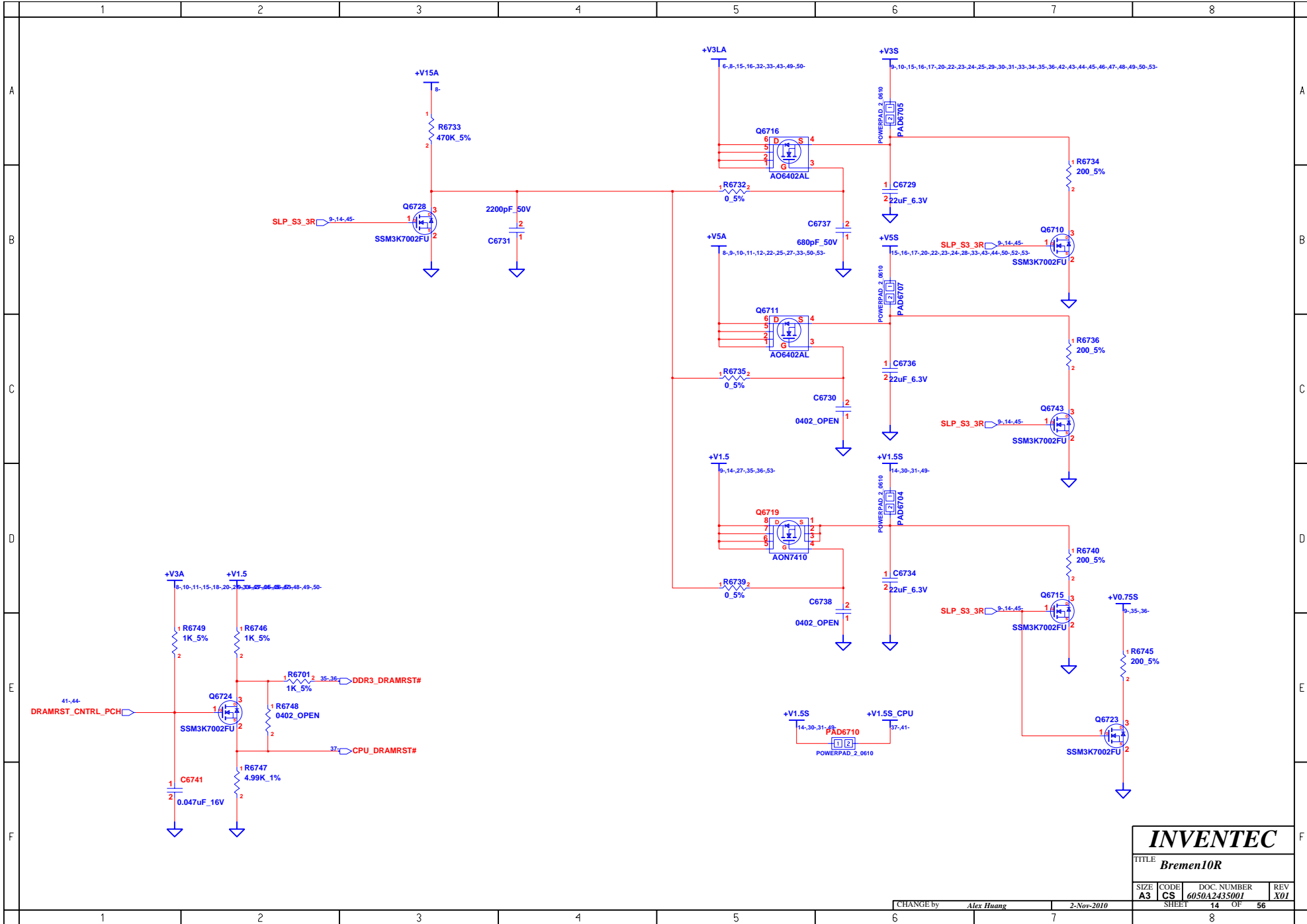


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TITLE Bremen10R			
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CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 12		OF 56	

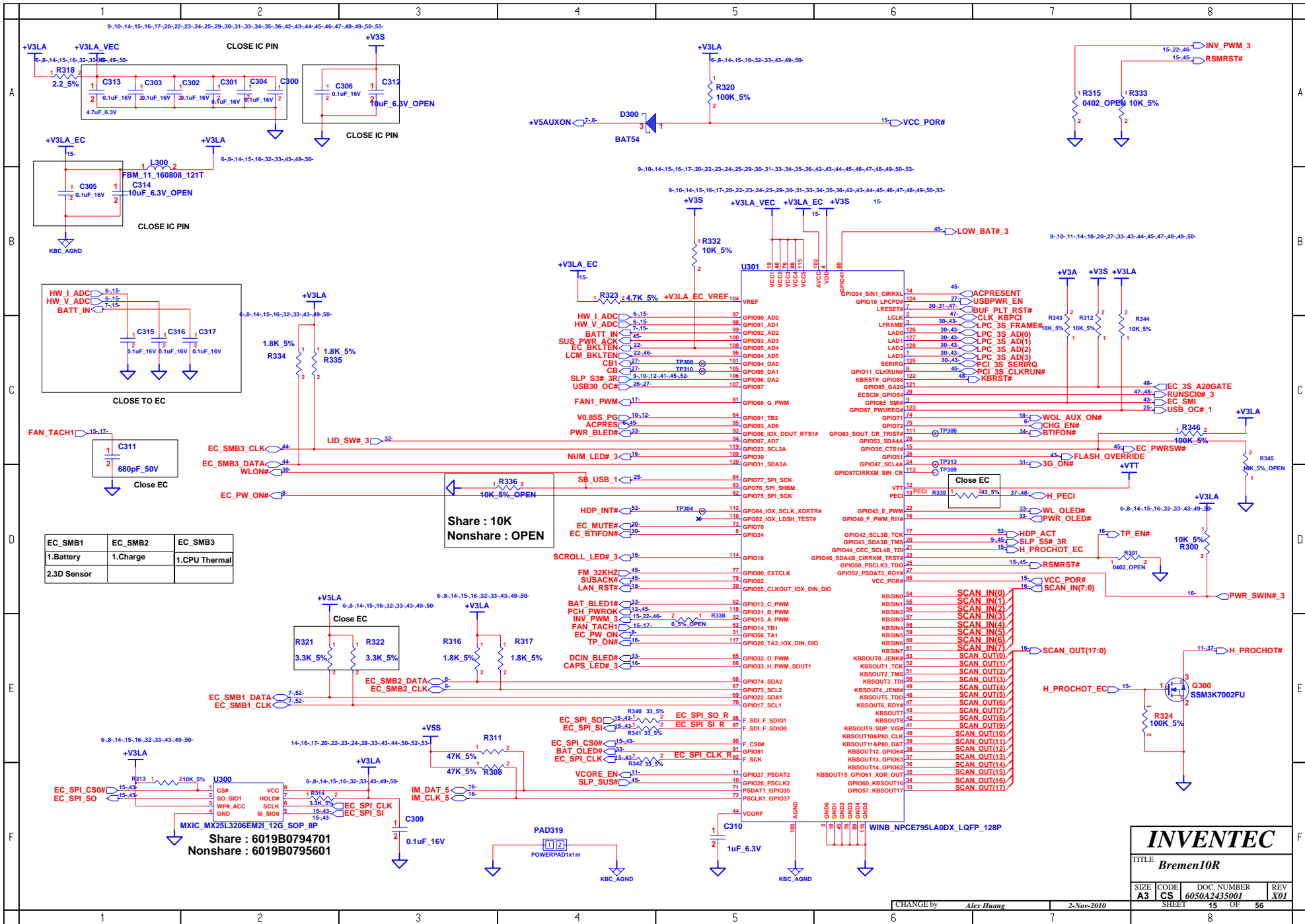
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SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		6-Nov-2010	
SHEET		13	OF 56

	1	2	3	4	5	6	7	8	
A									A
B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 14		OF 56	



INVENTEC

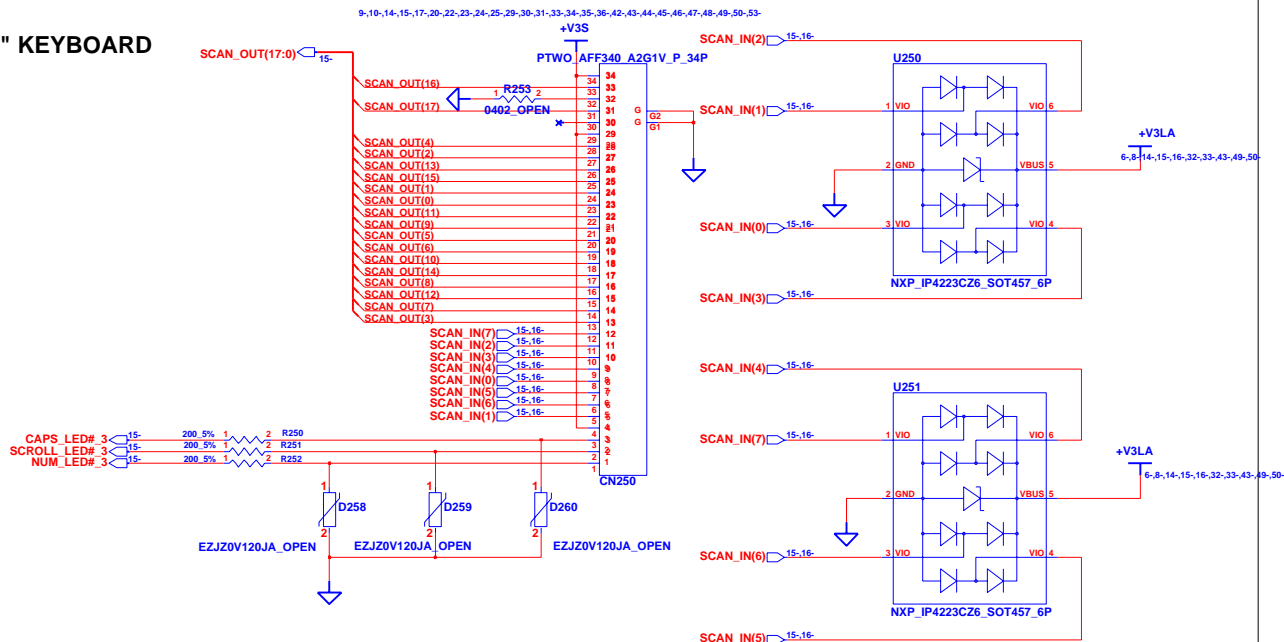
TITLE
Bremen10R

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01
SHEET	OF	15	56

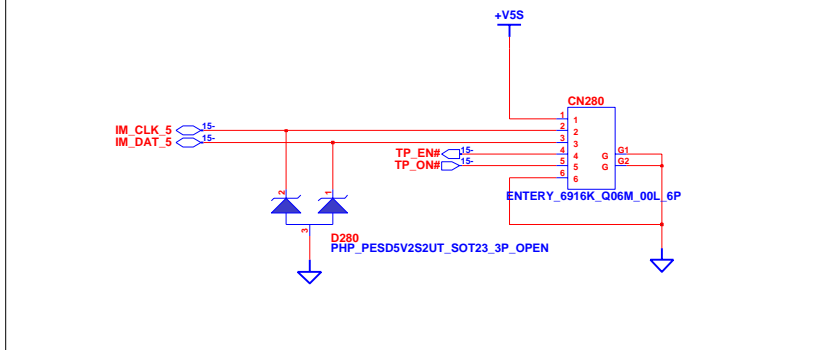
CHANGE by Alex Huang

2-Nov-2010

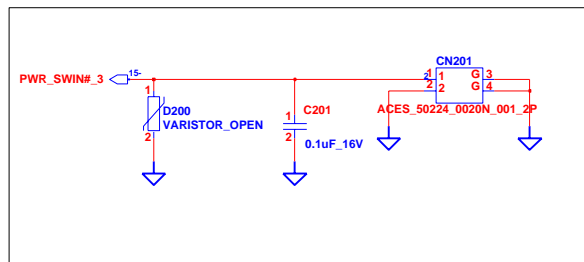
14" KEYBOARD



Touchpad Connector



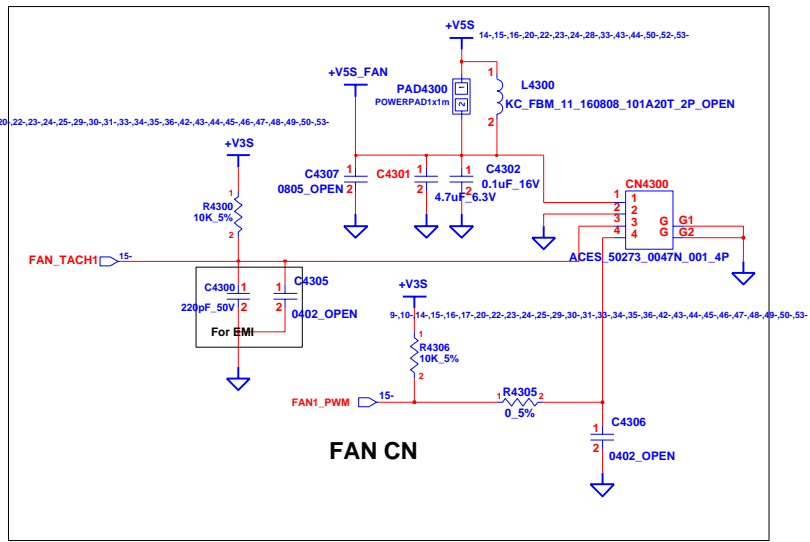
POWER BOARD CONNECTOR



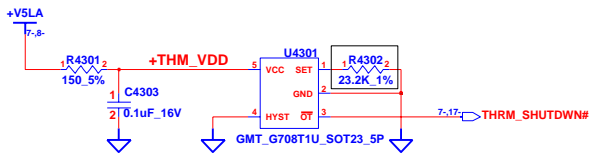
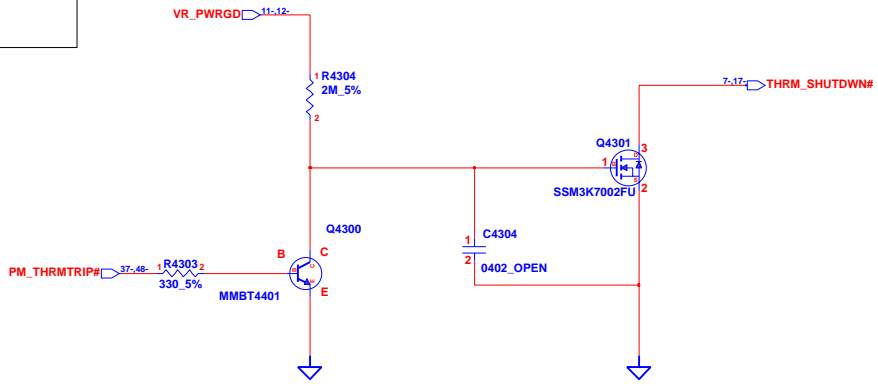
INVENTEC

TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 16		OF 56	

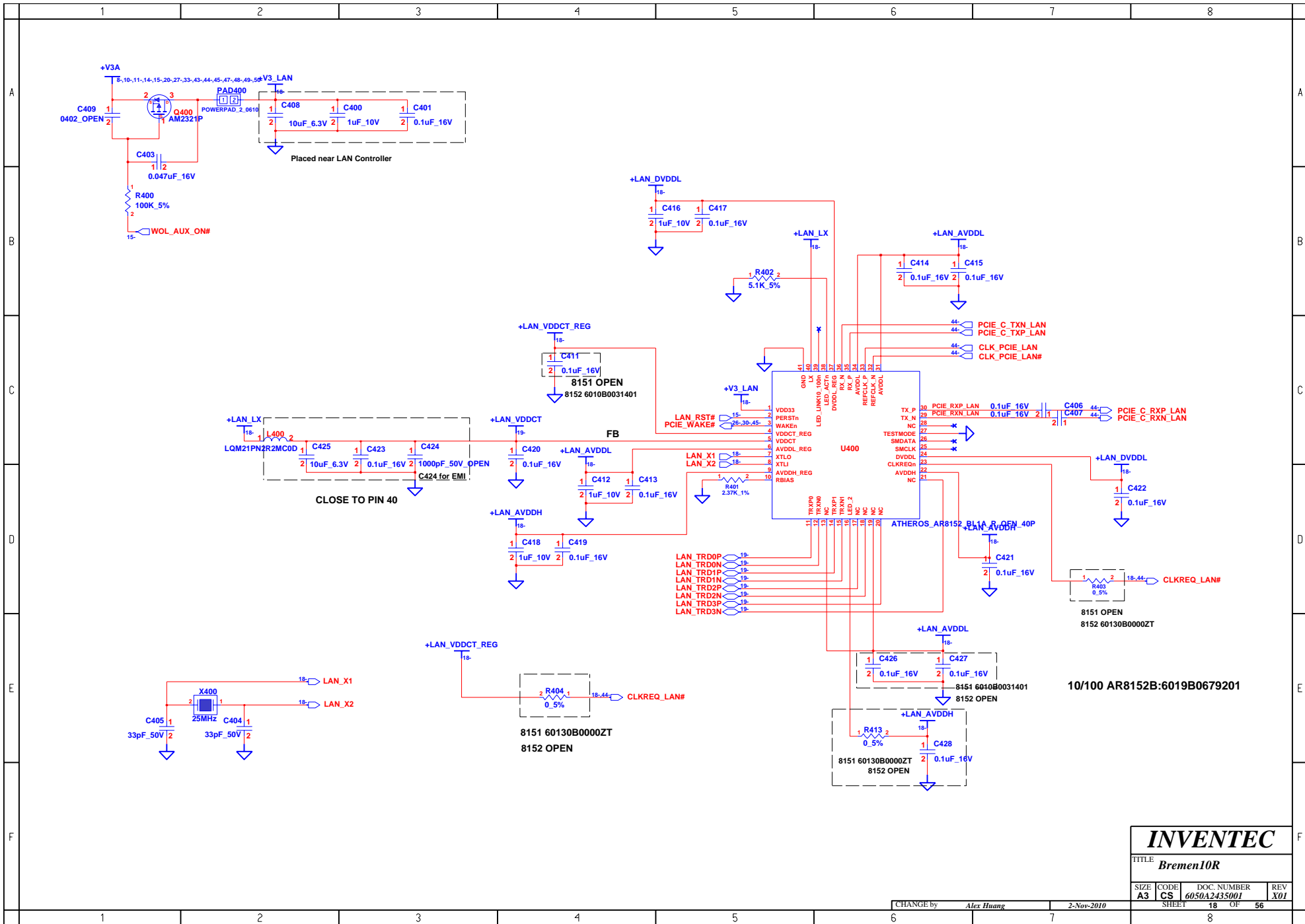


FAN CN

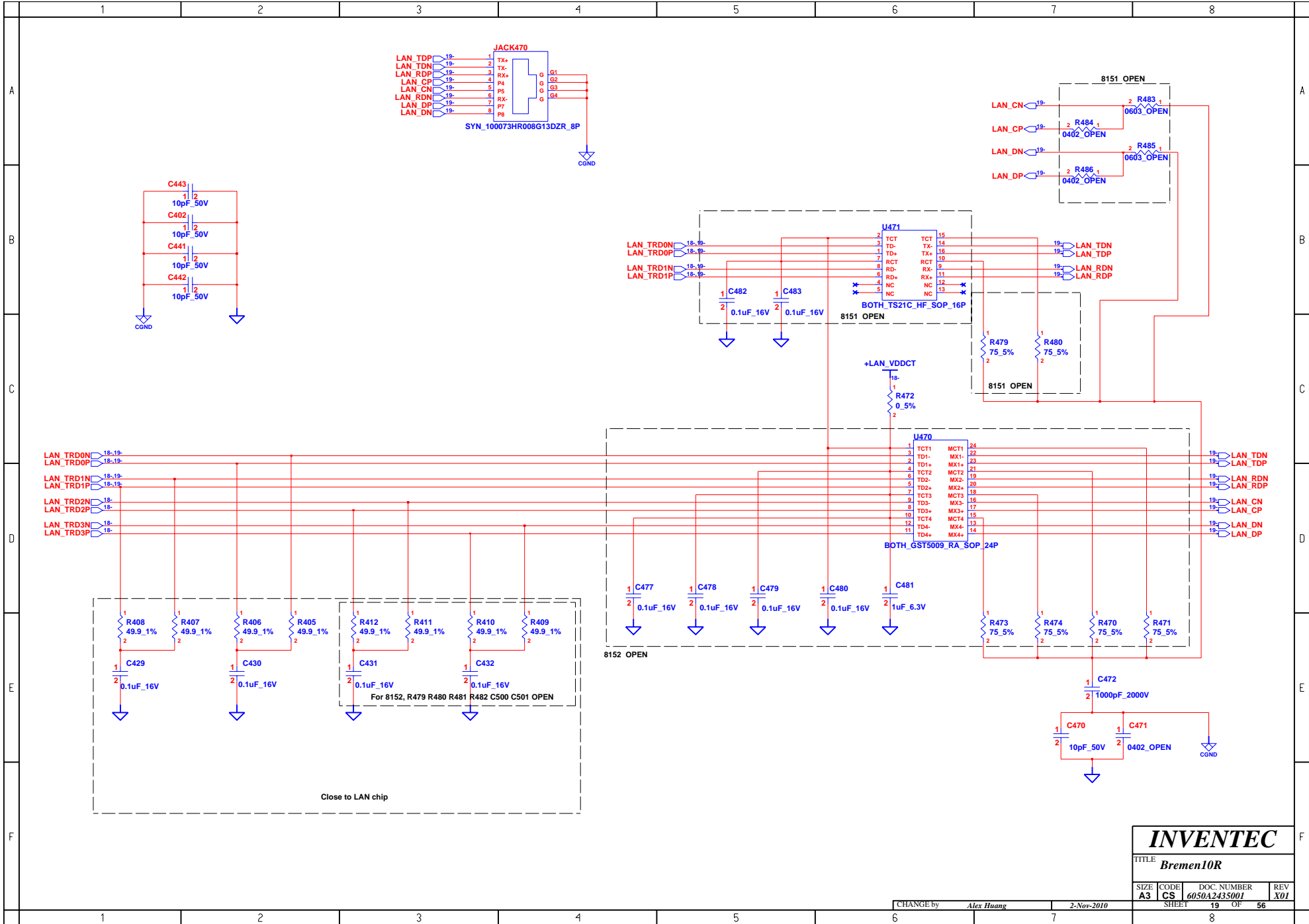


GM Thermal shutdown at 80.8°C +/-3°C from 60°C to 100°C
 PM Thermal shutdown at 86°C +/-3°C from 60°C to 100°C
 $RSET=0.0012 \cdot T - 0.9308 \cdot T + 96.147$
 Hysteresis is 30C

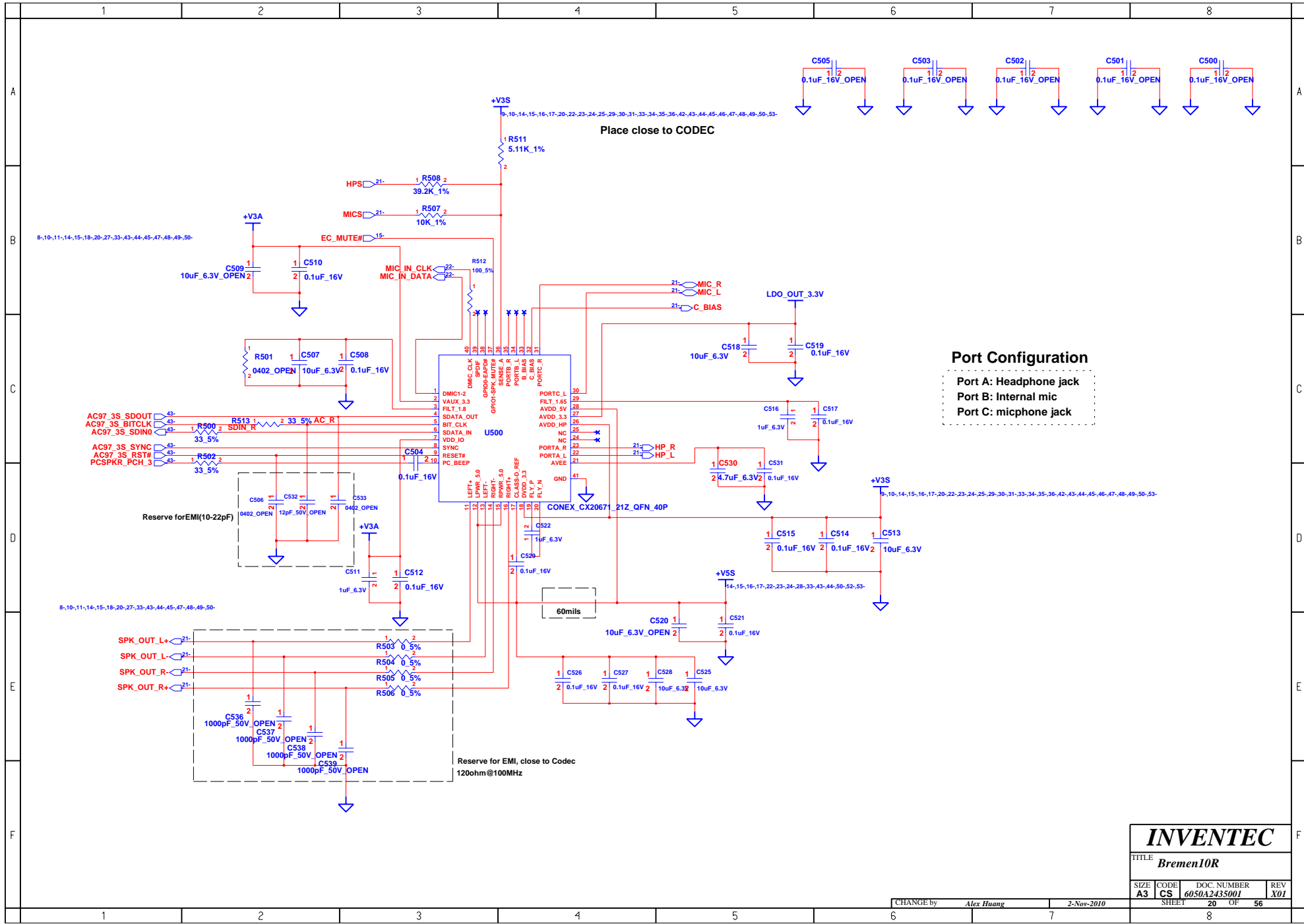
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TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 17		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 18		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET		19 OF 56	



Port Configuration

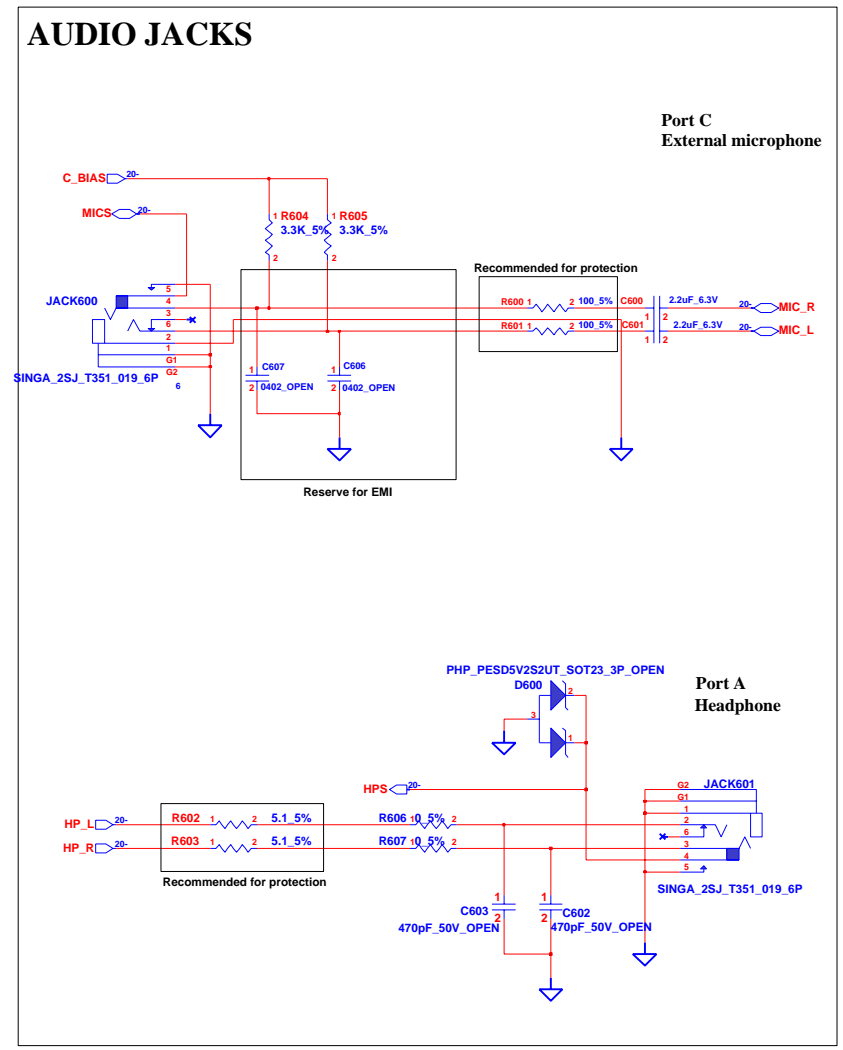
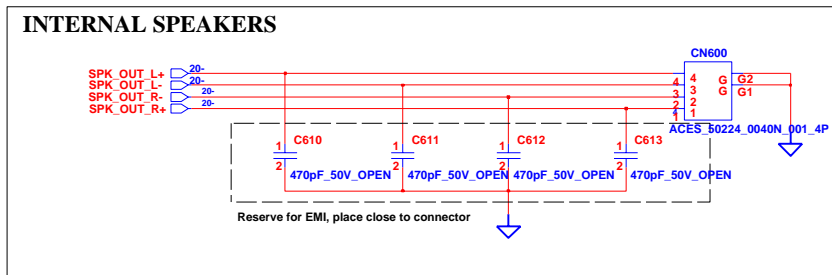
- Port A: Headphone jack
- Port B: Internal mic
- Port C: microphone jack

INVENTEC

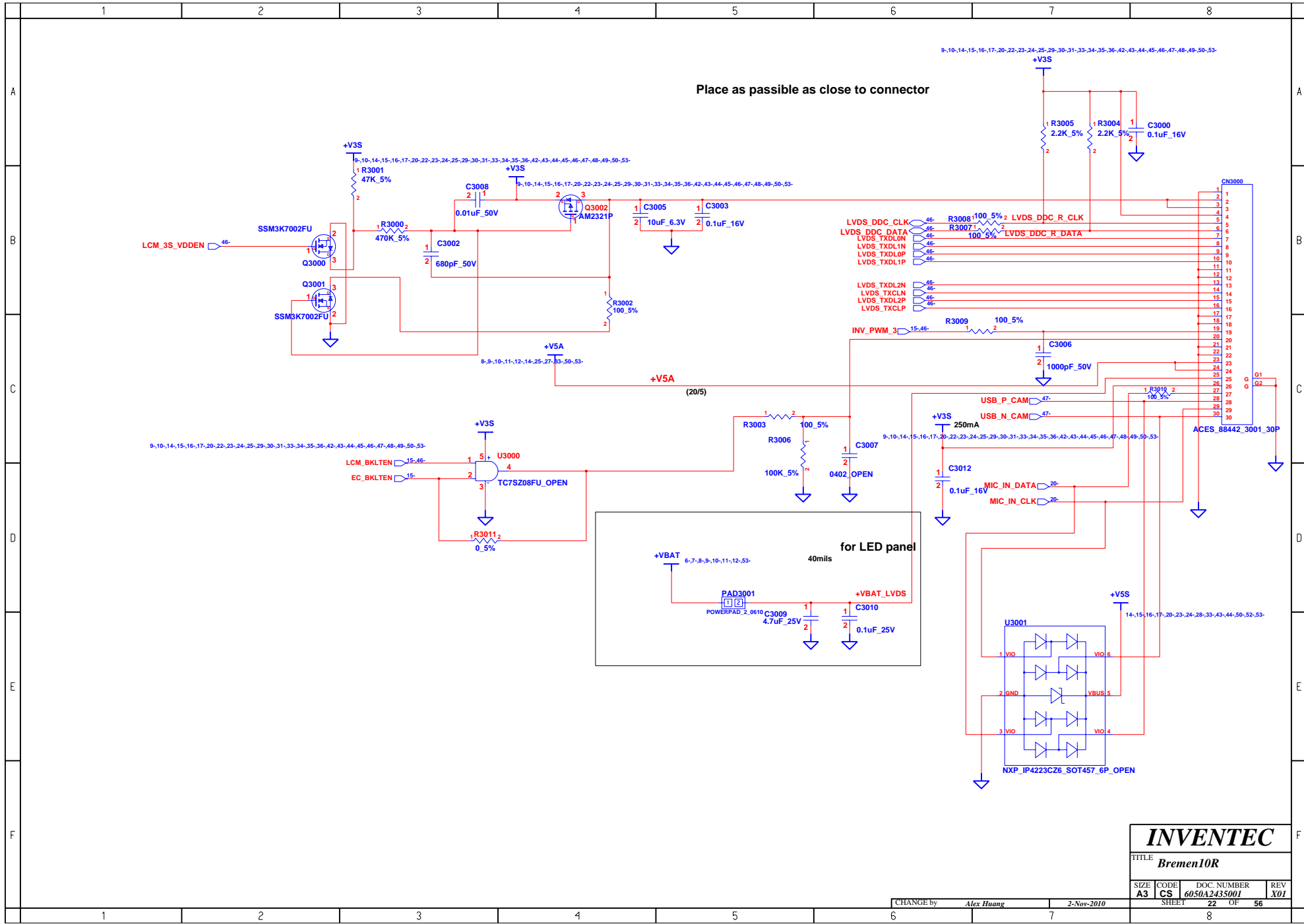
TITLE
Bremen10R

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01

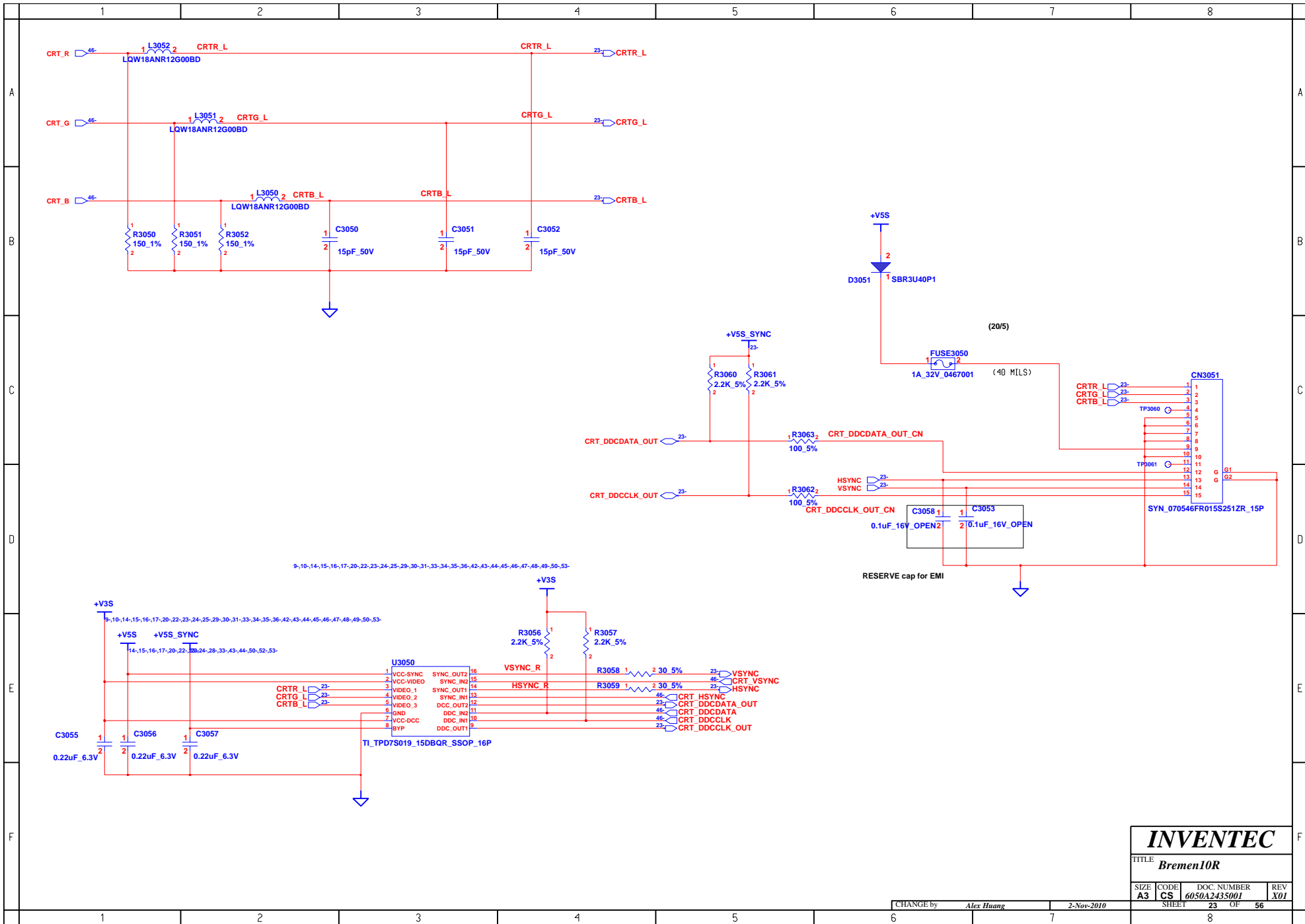
CHANGE by	DATE	SHEET	OF
Alex Huang	2-Nov-2010	20	56



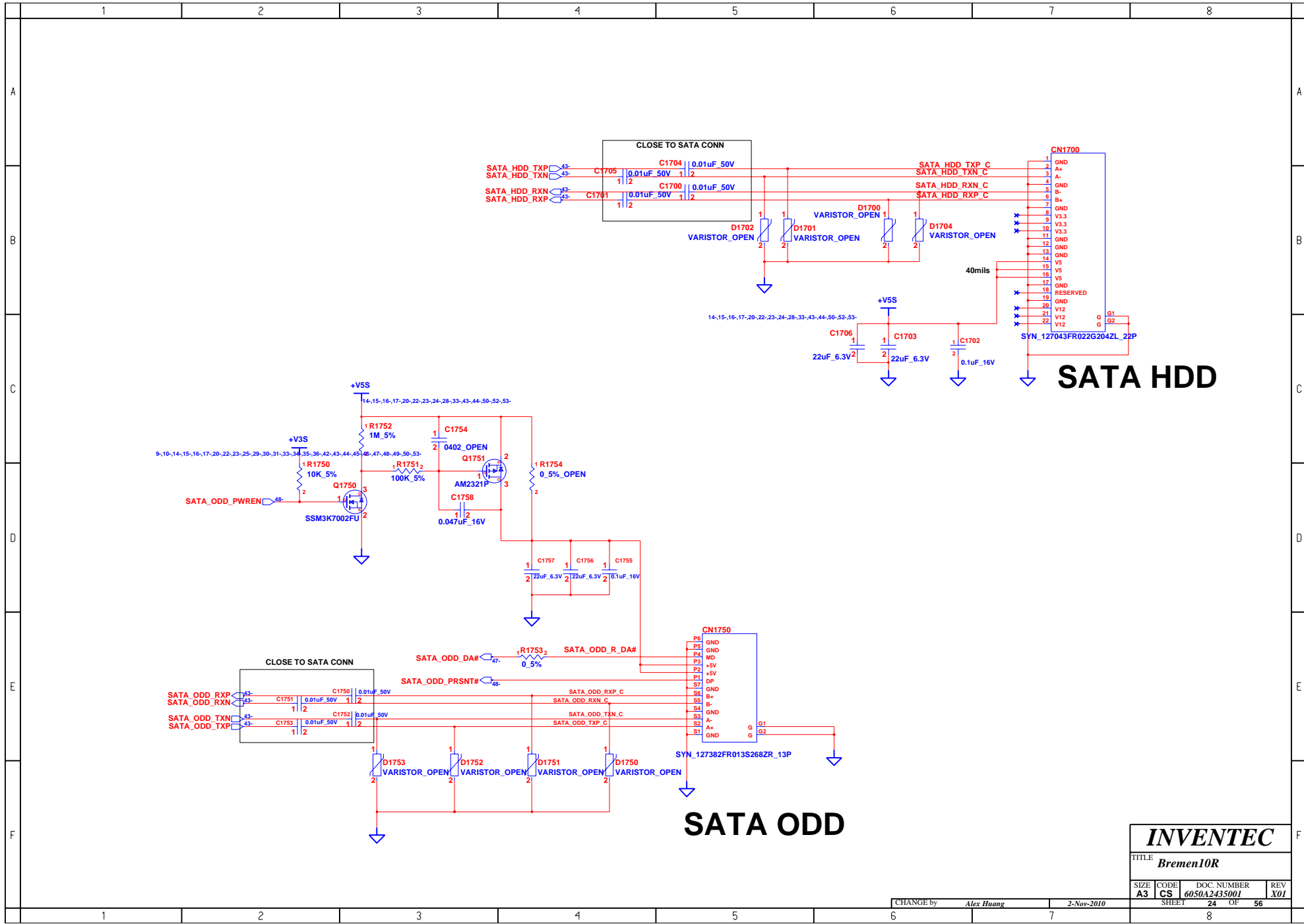
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SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 21		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 22		OF 56	



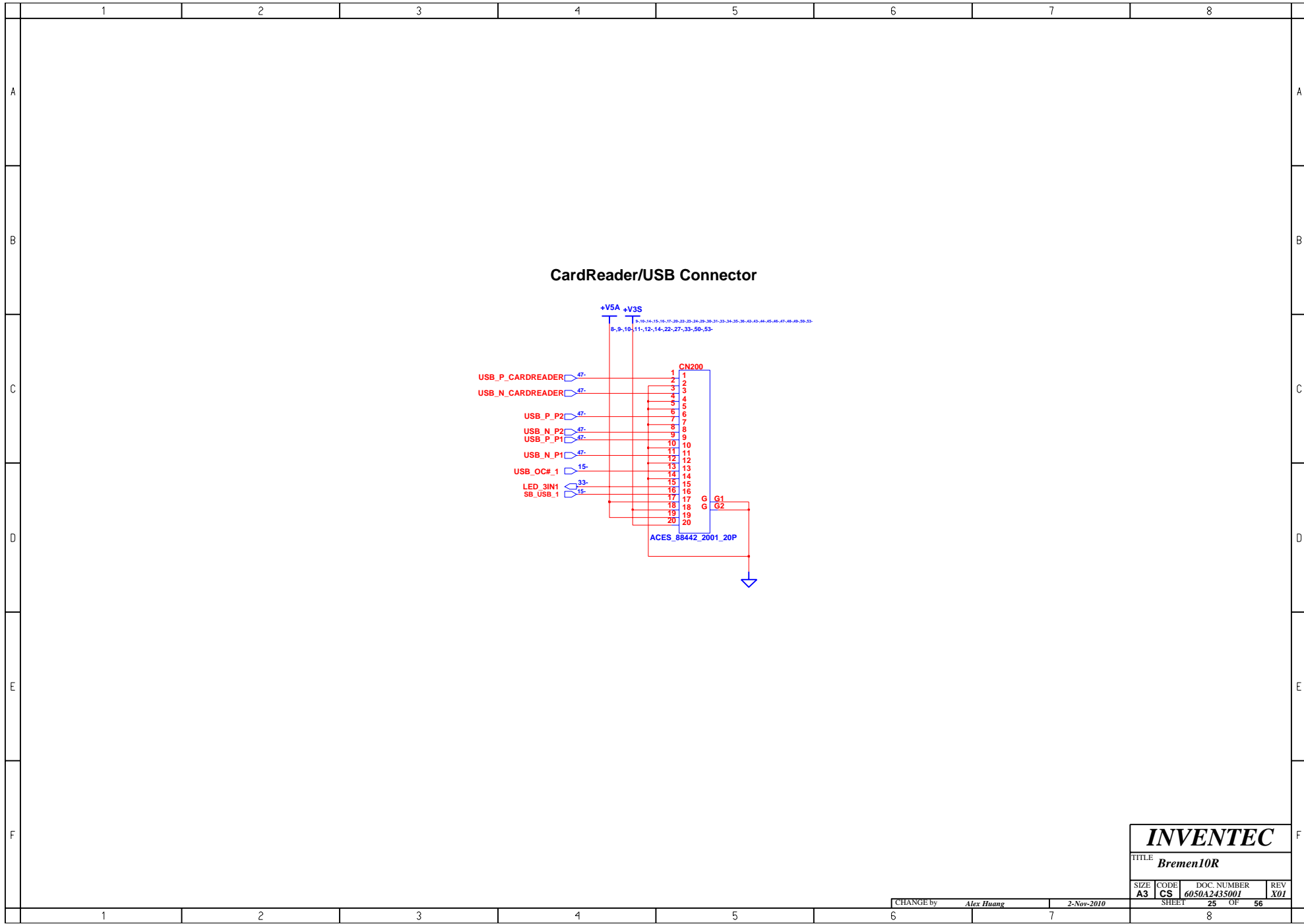
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SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 23		OF 56	



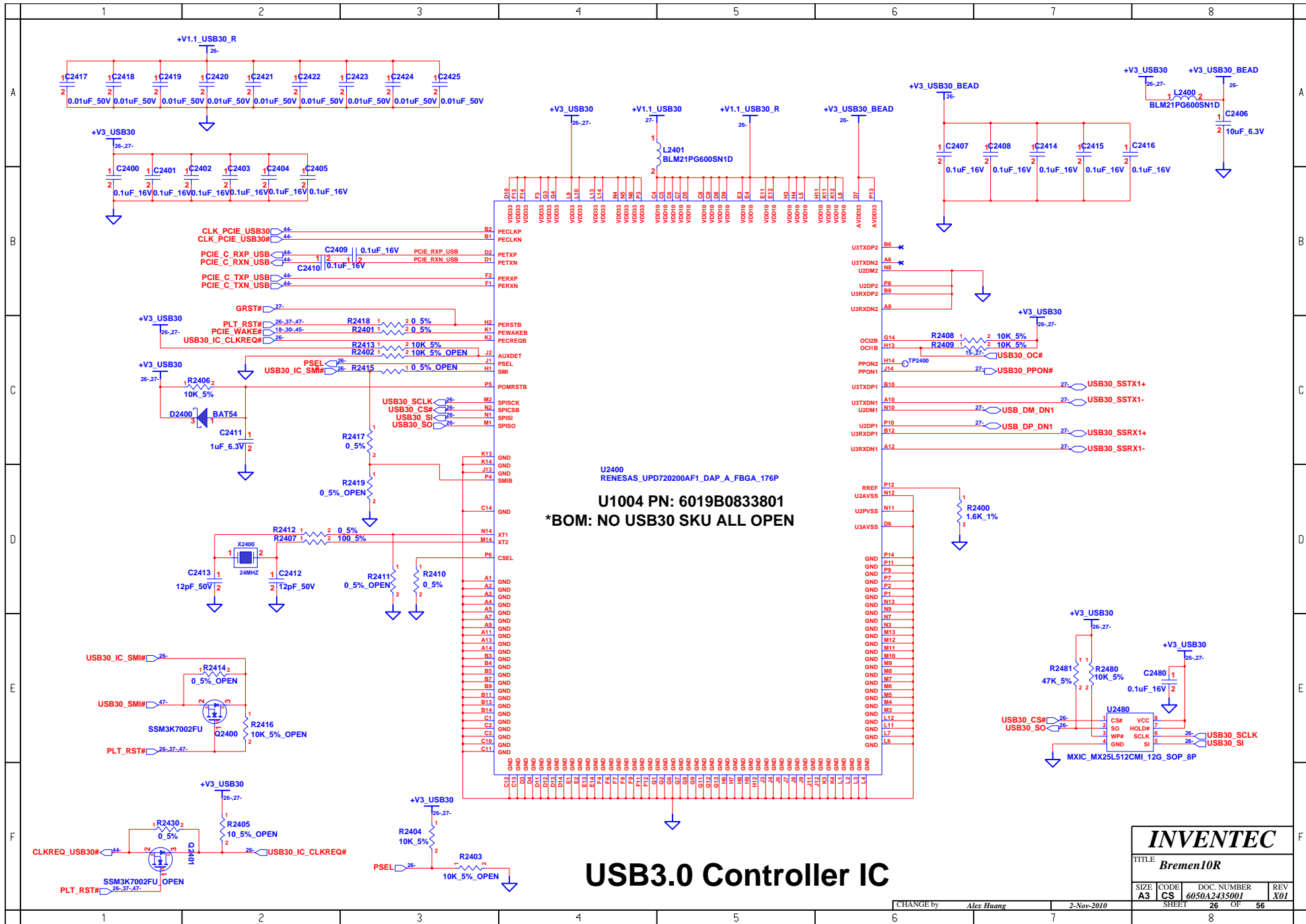
SATA HDD

SATA ODD

INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 24		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET		25	OF 56



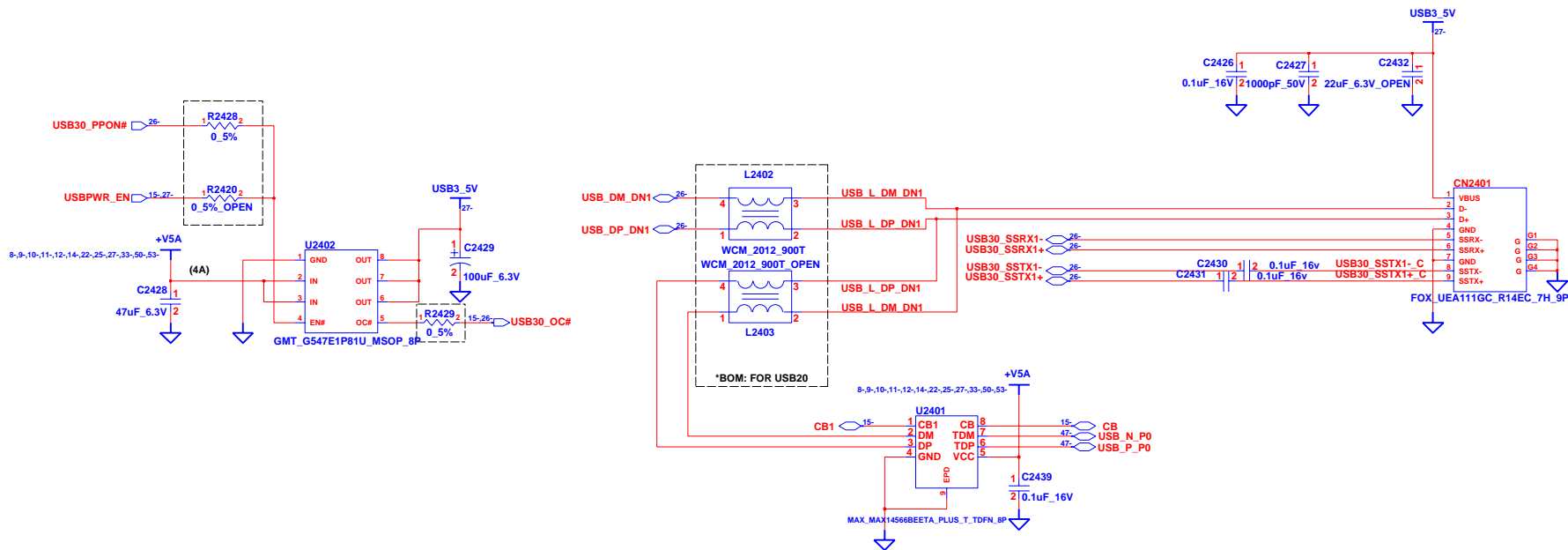
U2400
RENASAS_UPD720200AF1_DAP_A_FPGA_176P
U1004 PN: 6019B0833801
***BOM: NO USB30 SKU ALL OPEN**

USB3.0 Controller IC

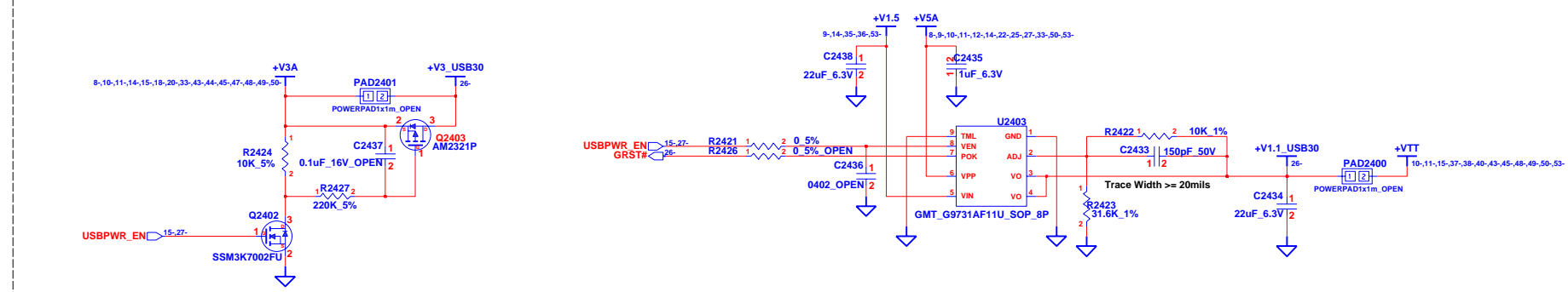
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SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 26		OF 56	

USB30: R1060, R4041, L5 MOUNT
R70, L1003 OPEN
USB20: R1060, R4041, L5 OPEN
R70, L1003 MOUNT

USB 3.0 CONNECTOR



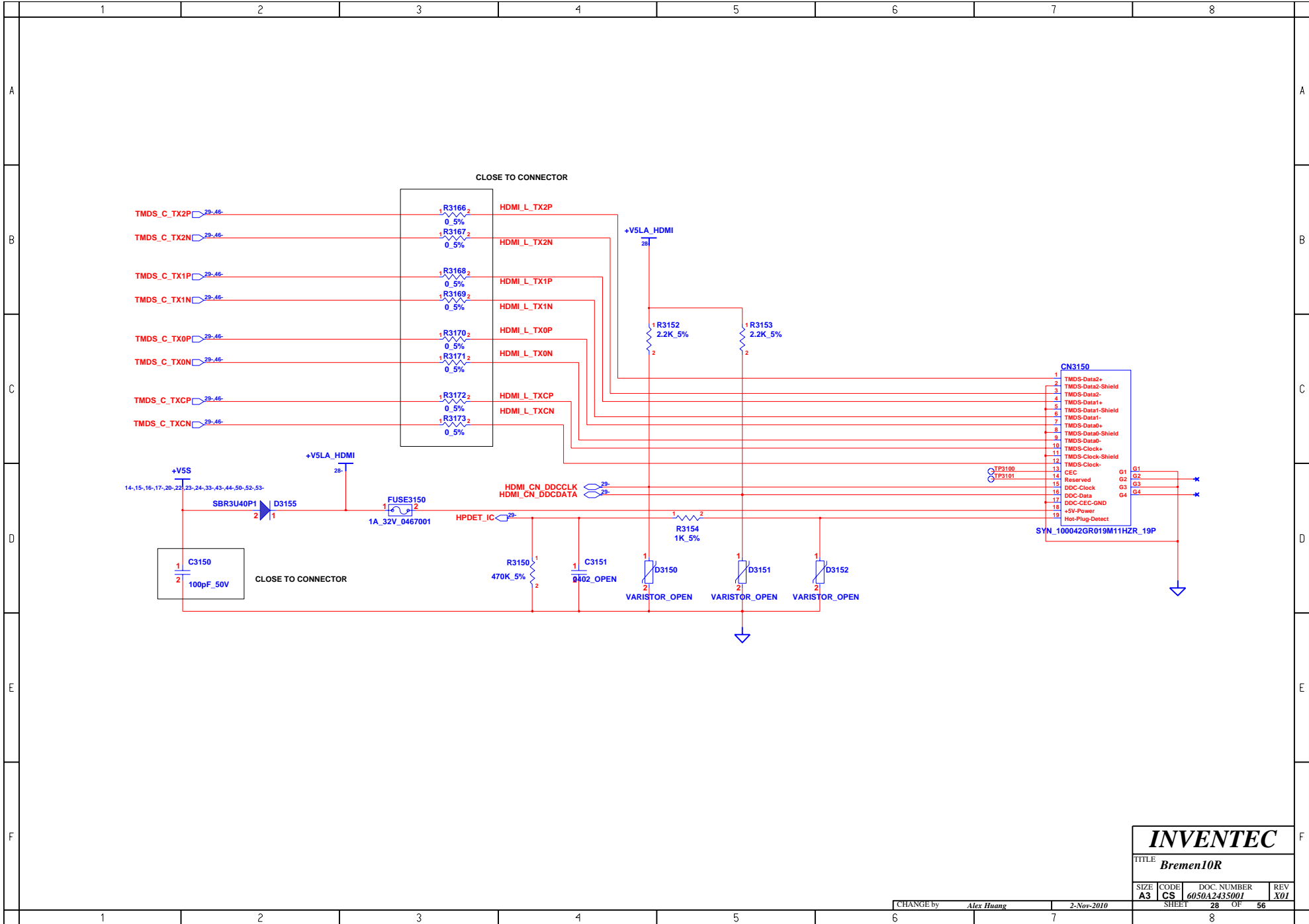
*BOM: NO USB30 SKU ALL OPEN



INVENTEC

TITLE
Bremen10R

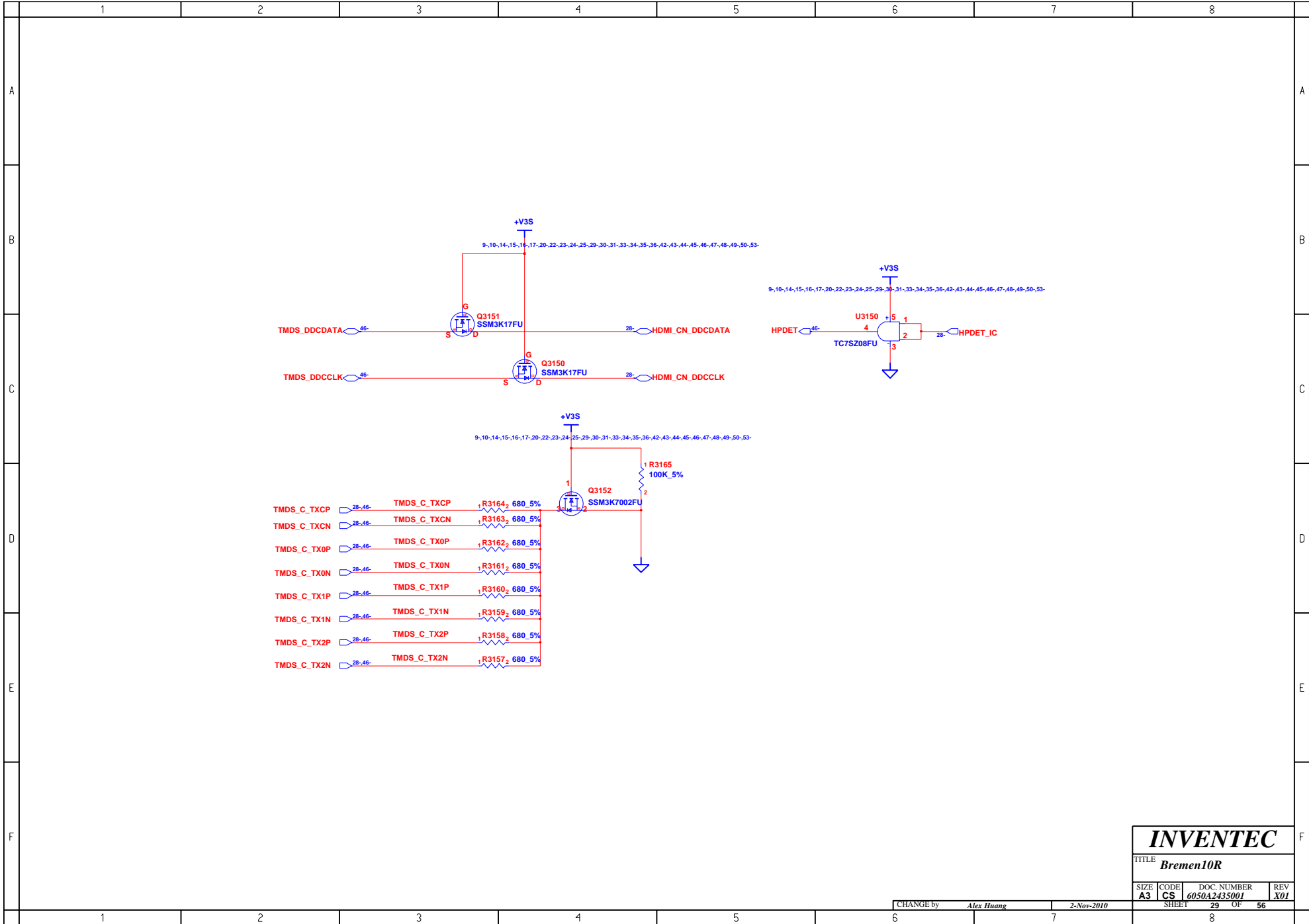
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		4-Nov-2010	
SHEET 27		OF 56	



INVENTEC

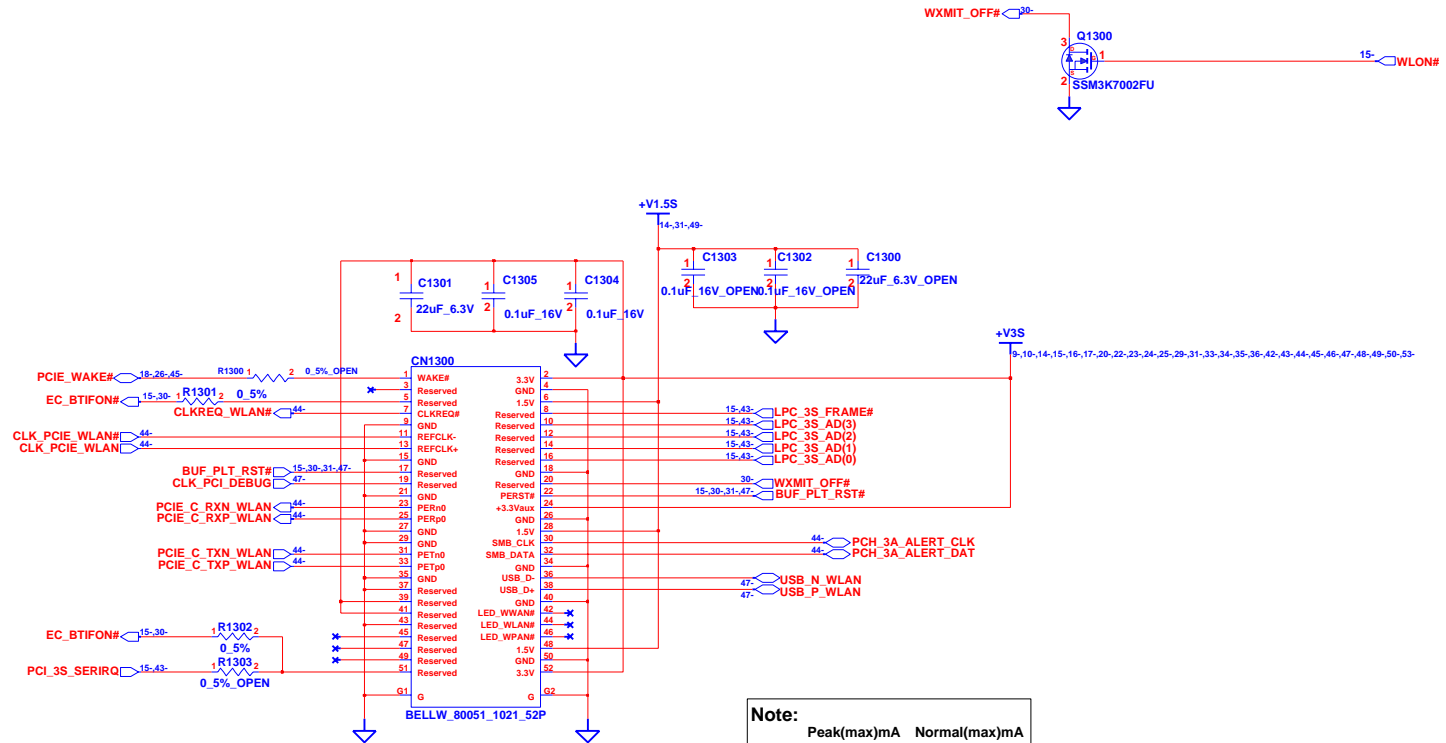
TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
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INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 29		OF 56	

Wireless & Debug card



MINI CARD 1

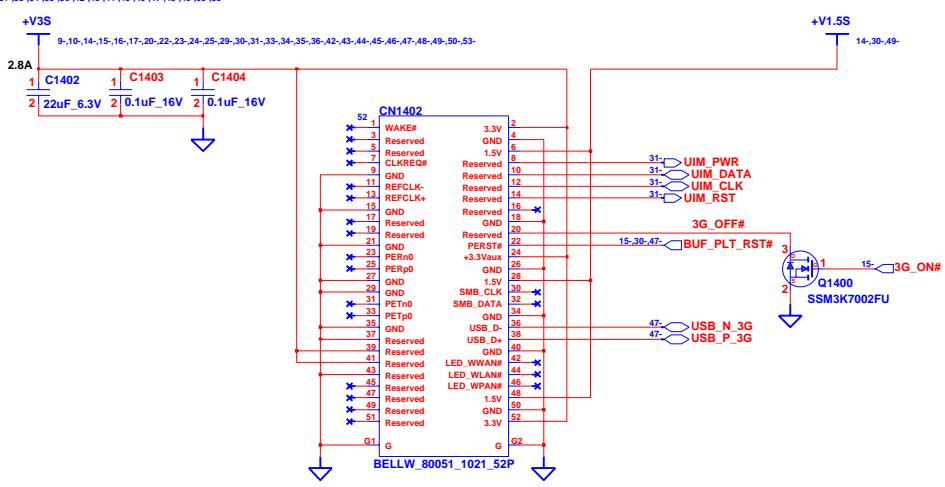
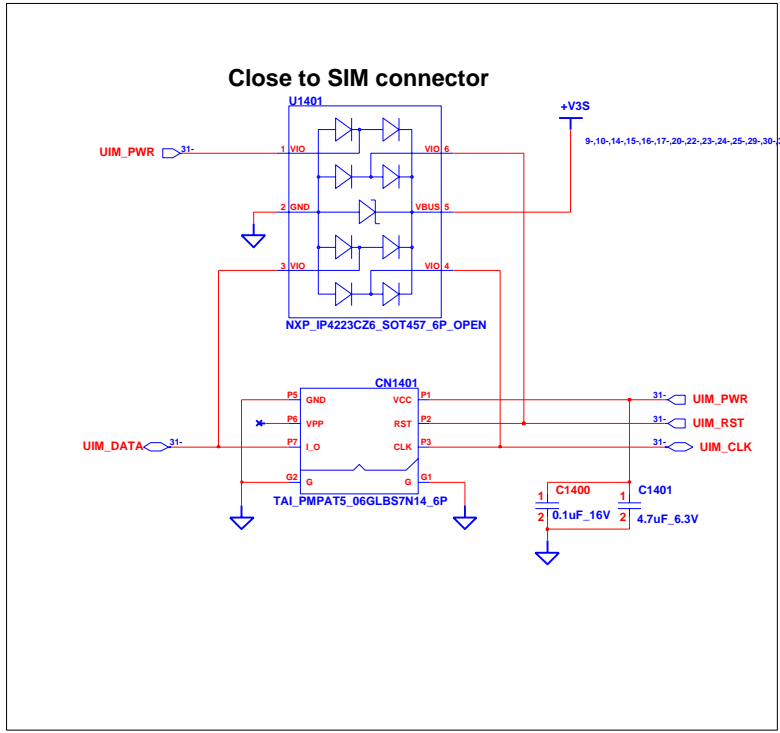
INVENTEC

TITLE
Bremen10R

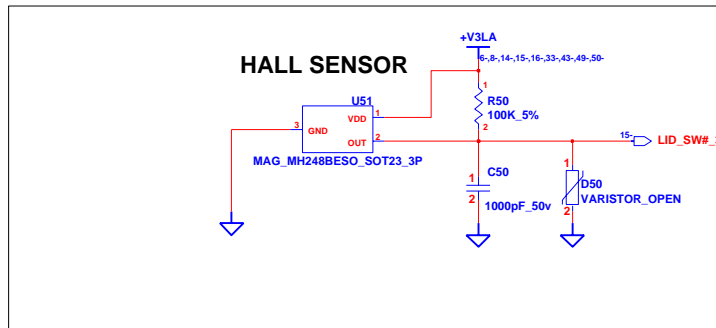
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
SHEET 30		OF 56	

CHANGE by *Alex Huang* 2-Nov-2010

3G



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 31		OF 56	

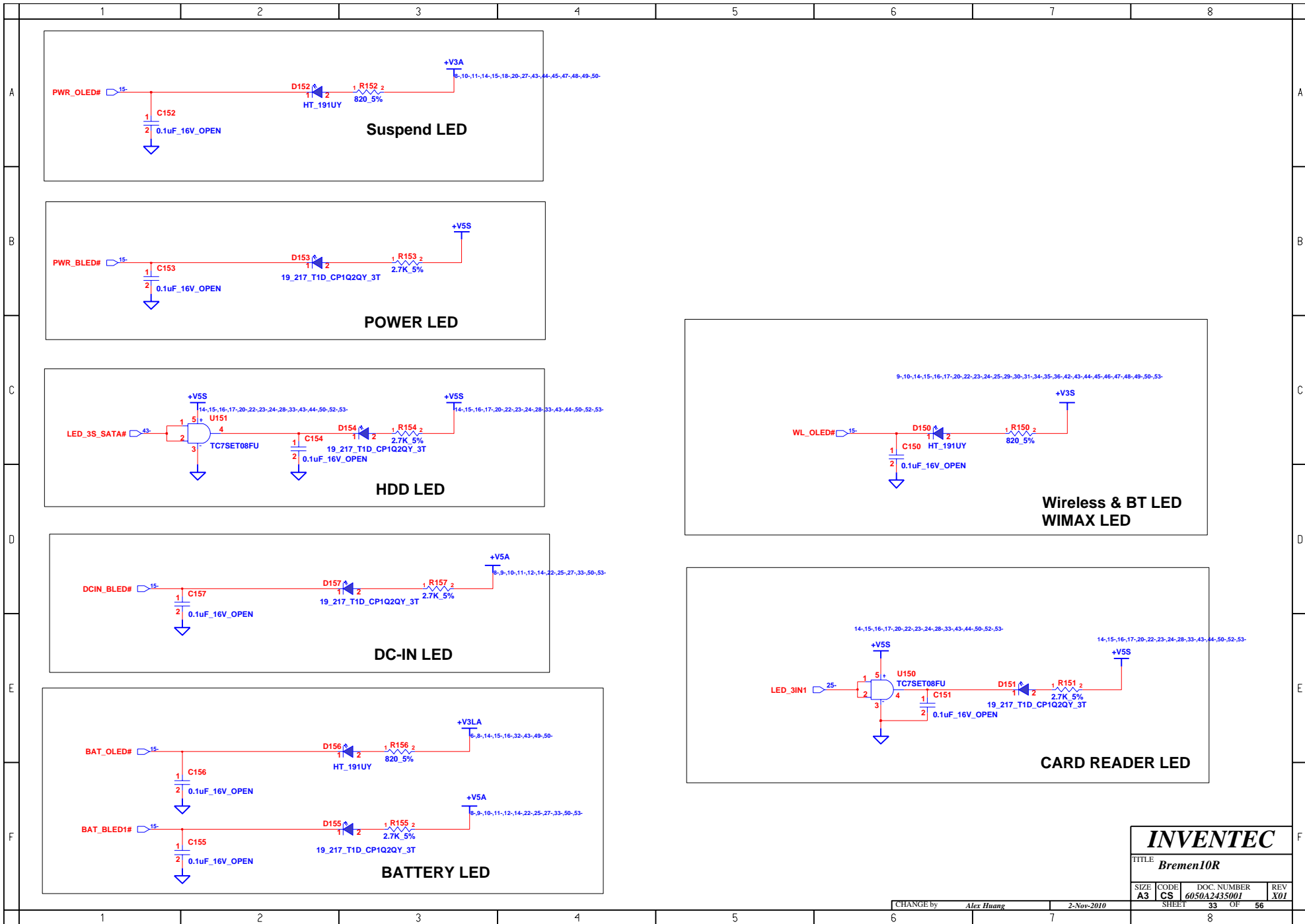


INVENTEC

TITLE
Bremen10R

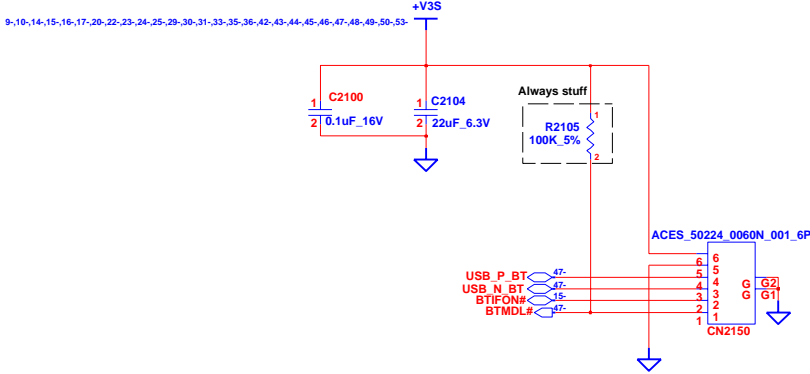
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET		32	OF 56

SHEET 32 OF 56



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 33		OF 56	

BLUEBOOTH



INVENTEC

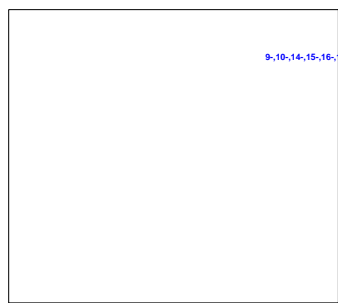
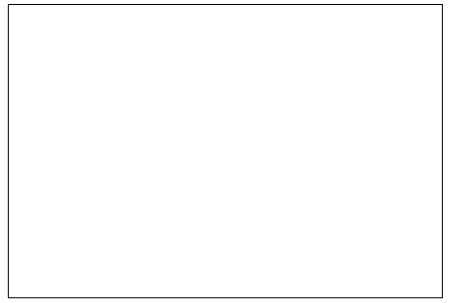
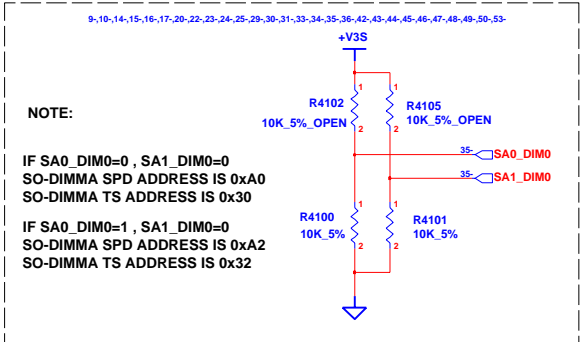
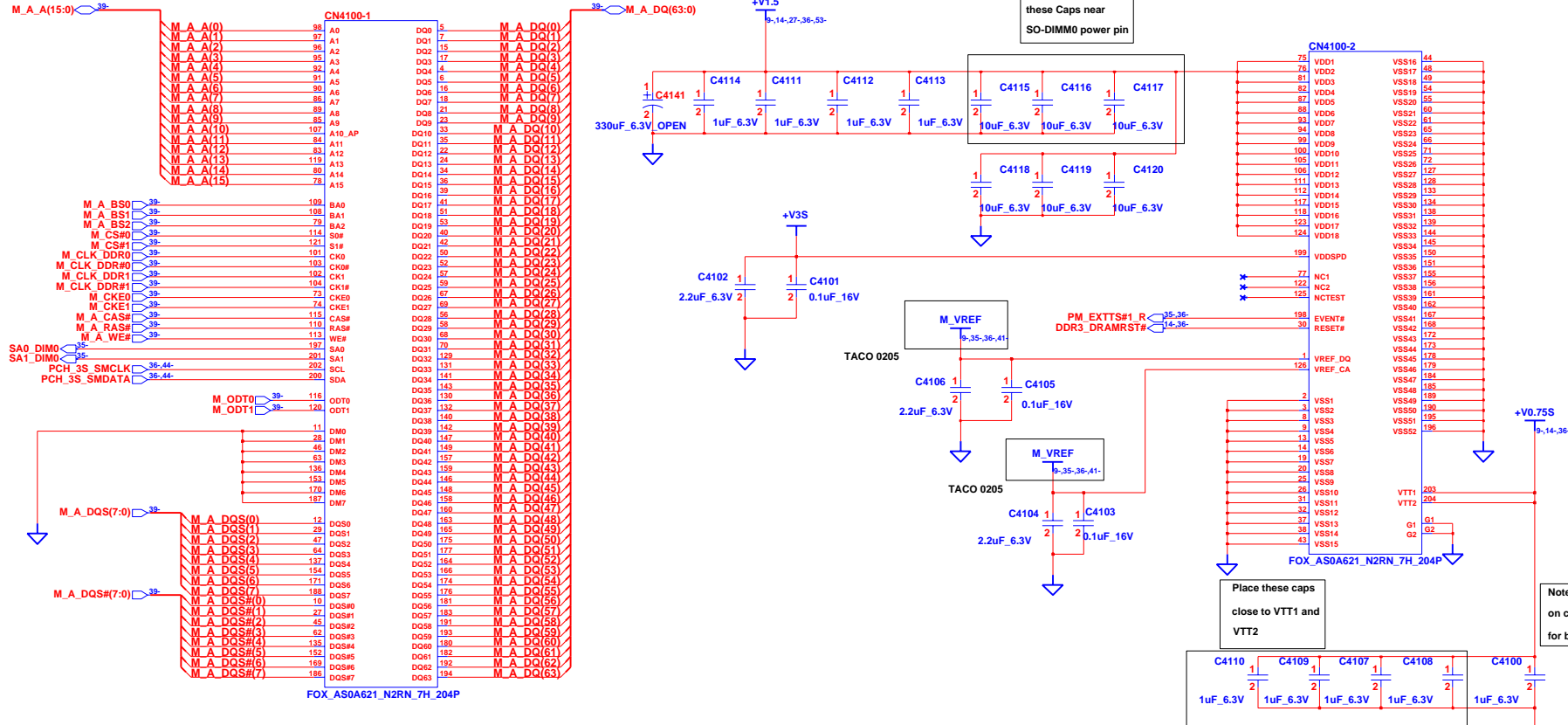
TITLE
Bremen10R
CLKGEN

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		4-Nov-2010	
SHEET		34	OF 56

CHA

9,10,14,15,16,17,20,22,23,24,25,29,30,31,33,34,35,36,42,43,44,45,46,47,48,49,50,53

Layout NOTE: Place these Caps near SO-DIMM0 power pin



Place these caps close to VTT1 and VTT2

Note: Place C4100 on common path for both DIMM's

INVENTEC

TITLE: **Bremen10R**

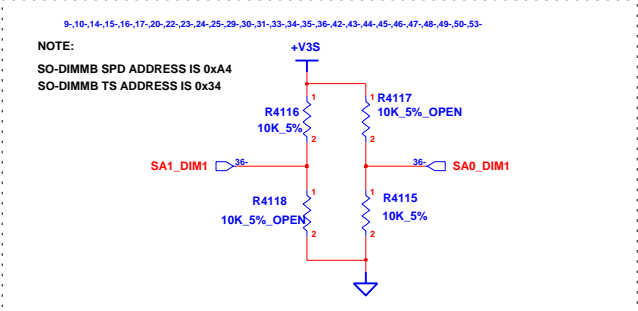
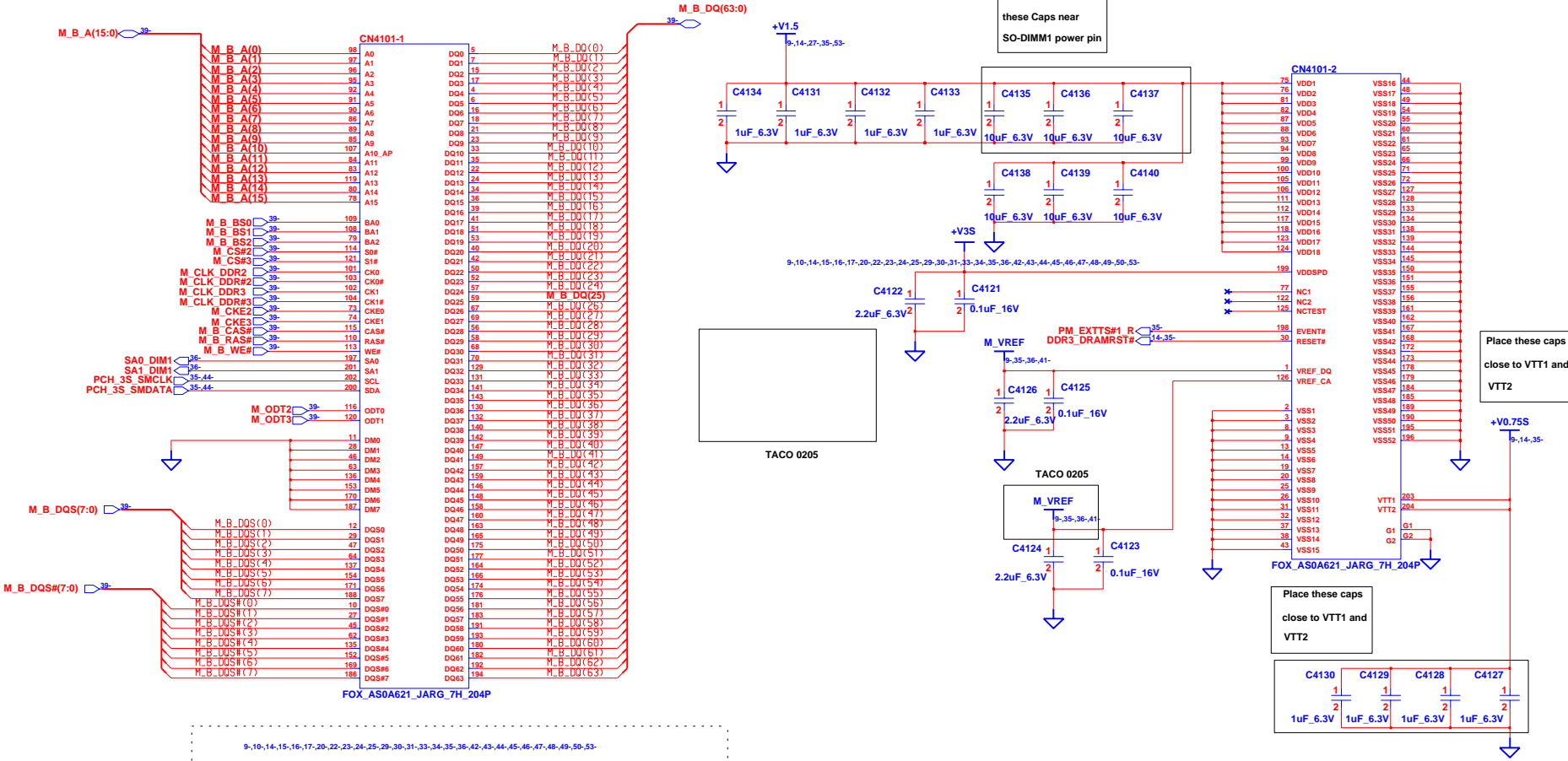
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A3	CS	6050A2435001	X01

CHANGE by Alex Huang 2-Nov-2010

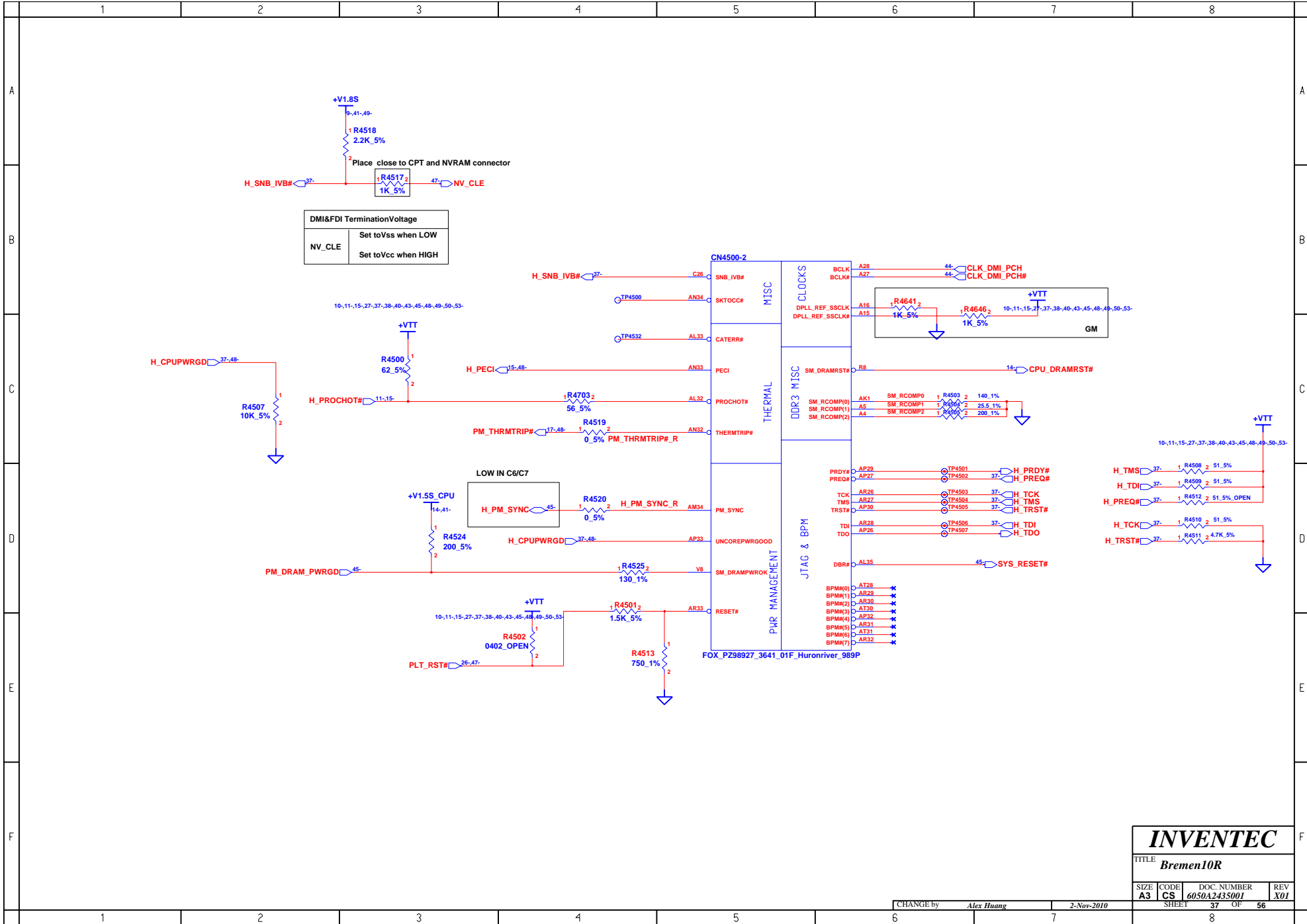
SHEET 35 OF 56

CHB

Layout Note: Place these Caps near SO-DIMM1 power pin

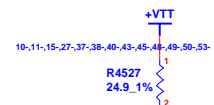
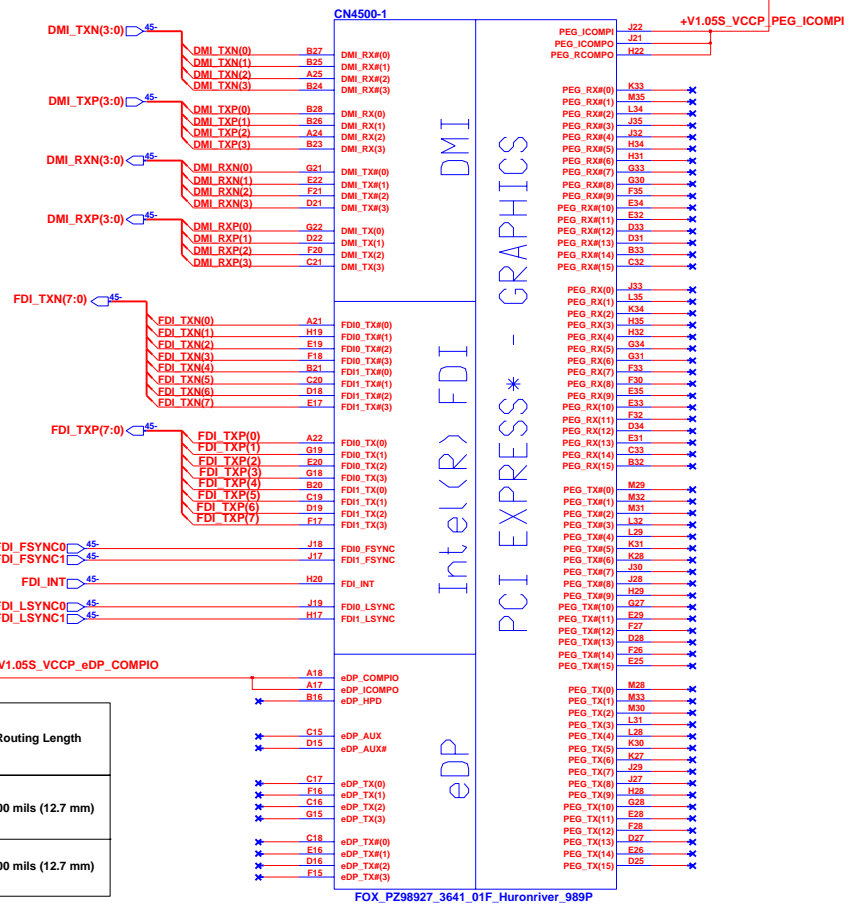
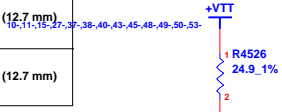


INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 36		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 37		OF 56	

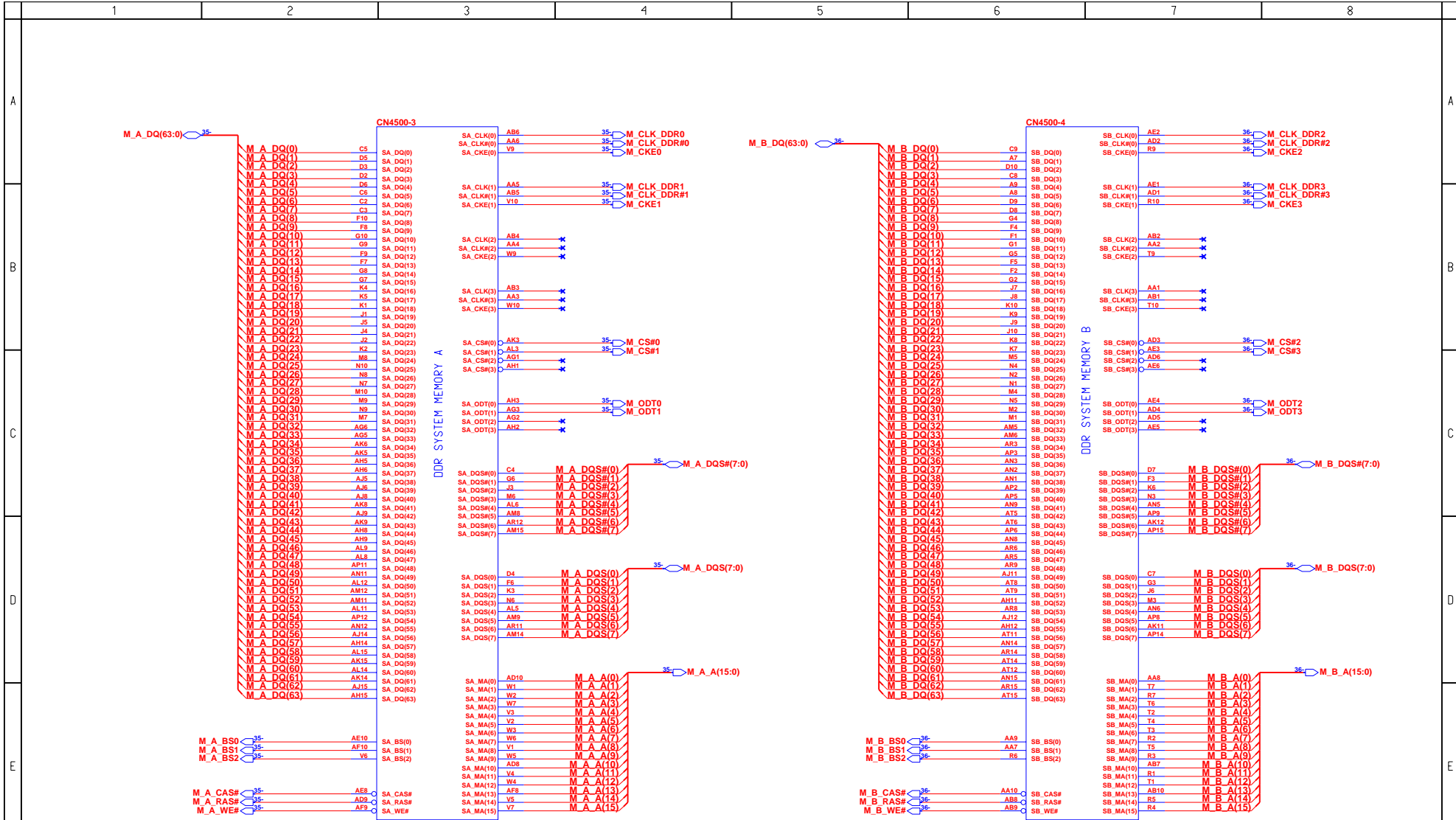
Signal	Trace Width	Trace Spacing to other Signals	Routing Length
PEG_ICOMPO	12 mils (0.305 mm)	15 mils (0.381 mm)	500 mils (12.7 mm)
PEG_ICOMPI PEG_RCOMPO	4 mils (0.102 mm)	15 mils (0.381 mm)	500 mils (12.7 mm)



Signal	Trace Width	Trace Spacing to other Signals	Routing Length
DP_ICOMPO	12 mils (0.305 mm)	15 mils (0.381 mm)	500 mils (12.7 mm)
DP_COMPIO	4 mils (0.102 mm)	15 mils (0.381 mm)	500 mils (12.7 mm)

FOX_PZ98927_3641_01F_Huronriver_989P

INVENTEC
 TITLE: Bremen10R
 SIZE: A3 CODE: CS DOC. NUMBER: 6050A2435001 REV: X01
 SHEET: 38 OF 56



FOX_PZ98927_3641_01F_Huronriver_989P

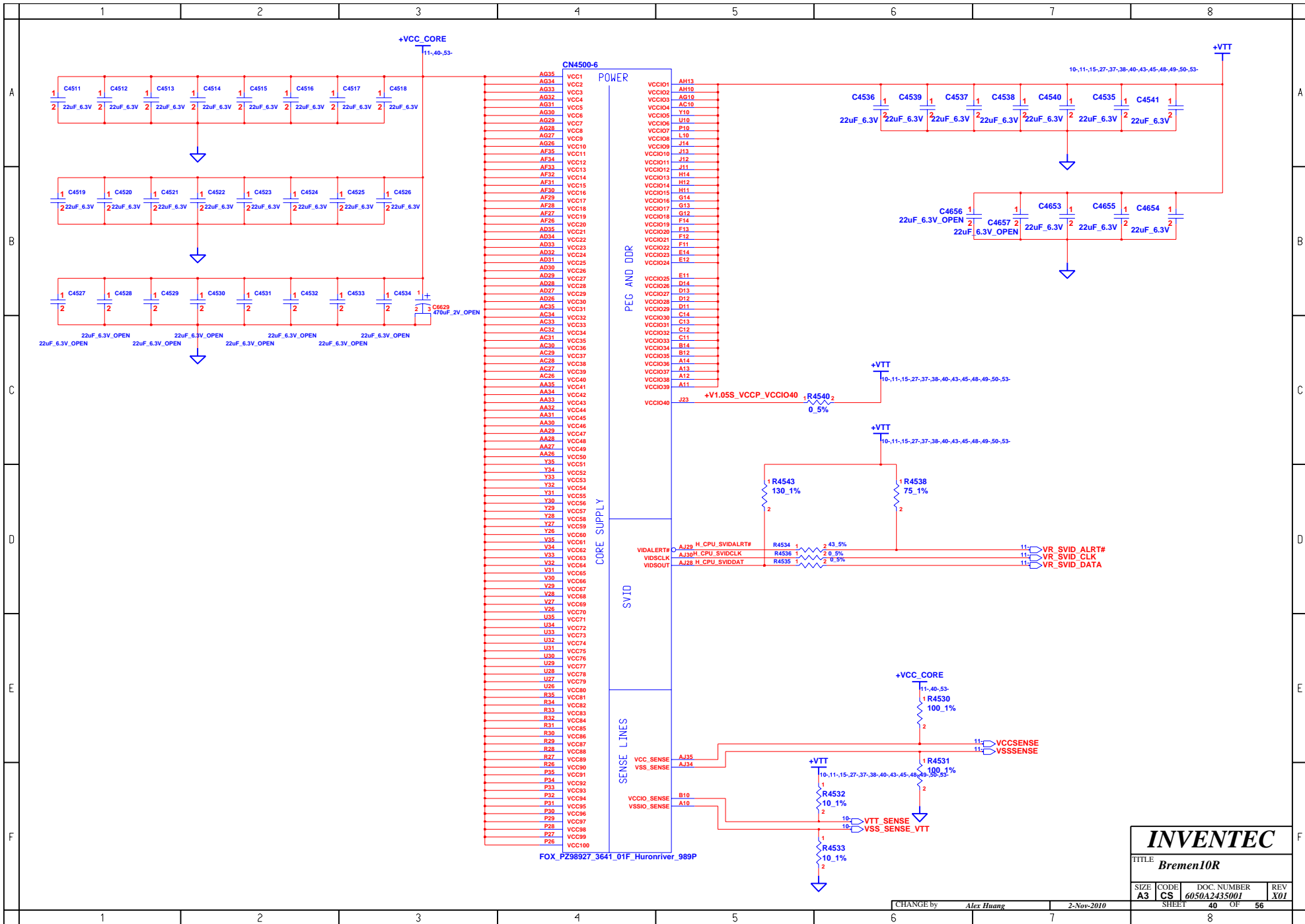
FOX_PZ98927_3641_01F_Huronriver_989P

INVENTEC

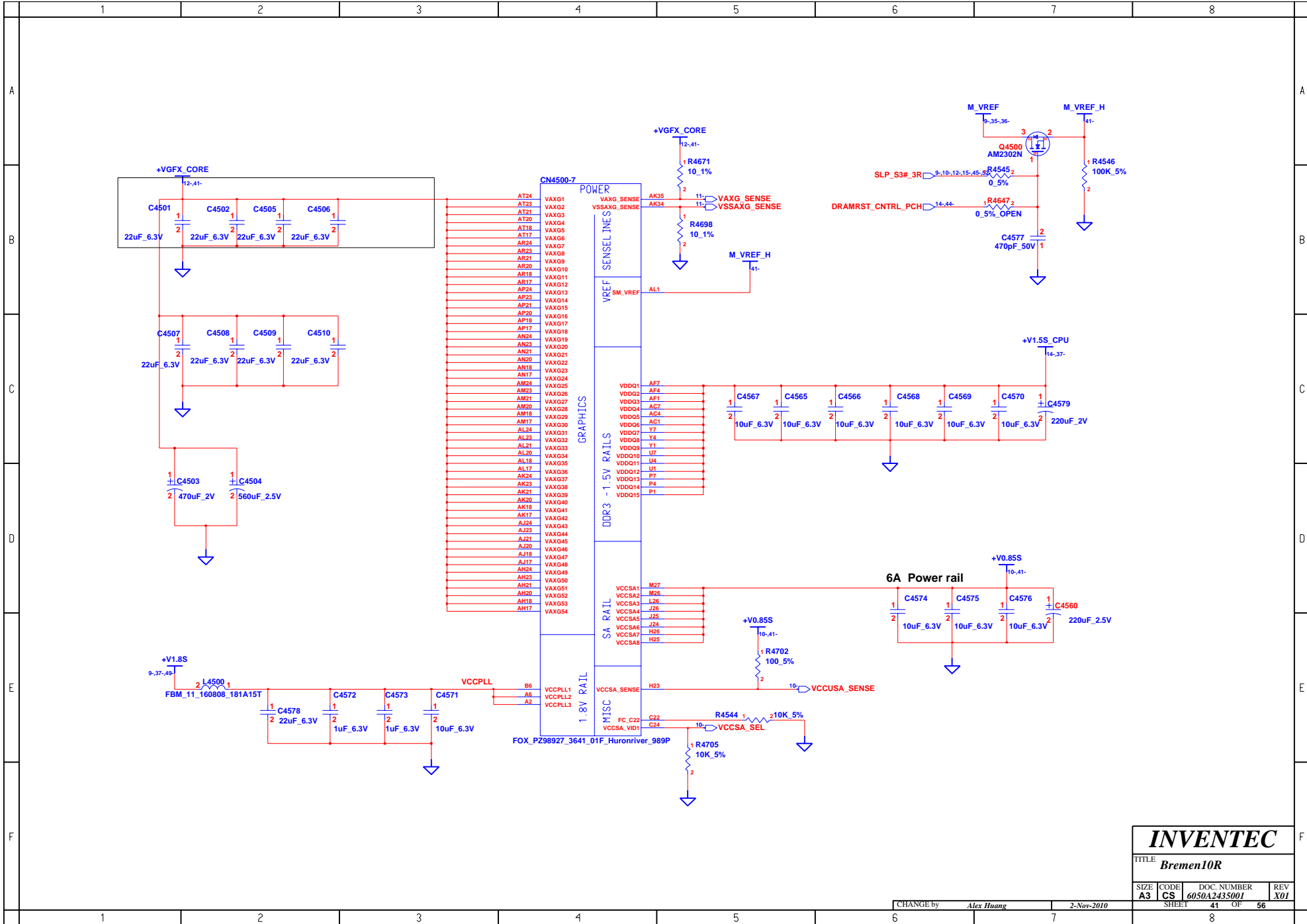
TITLE
Bremen10R

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01

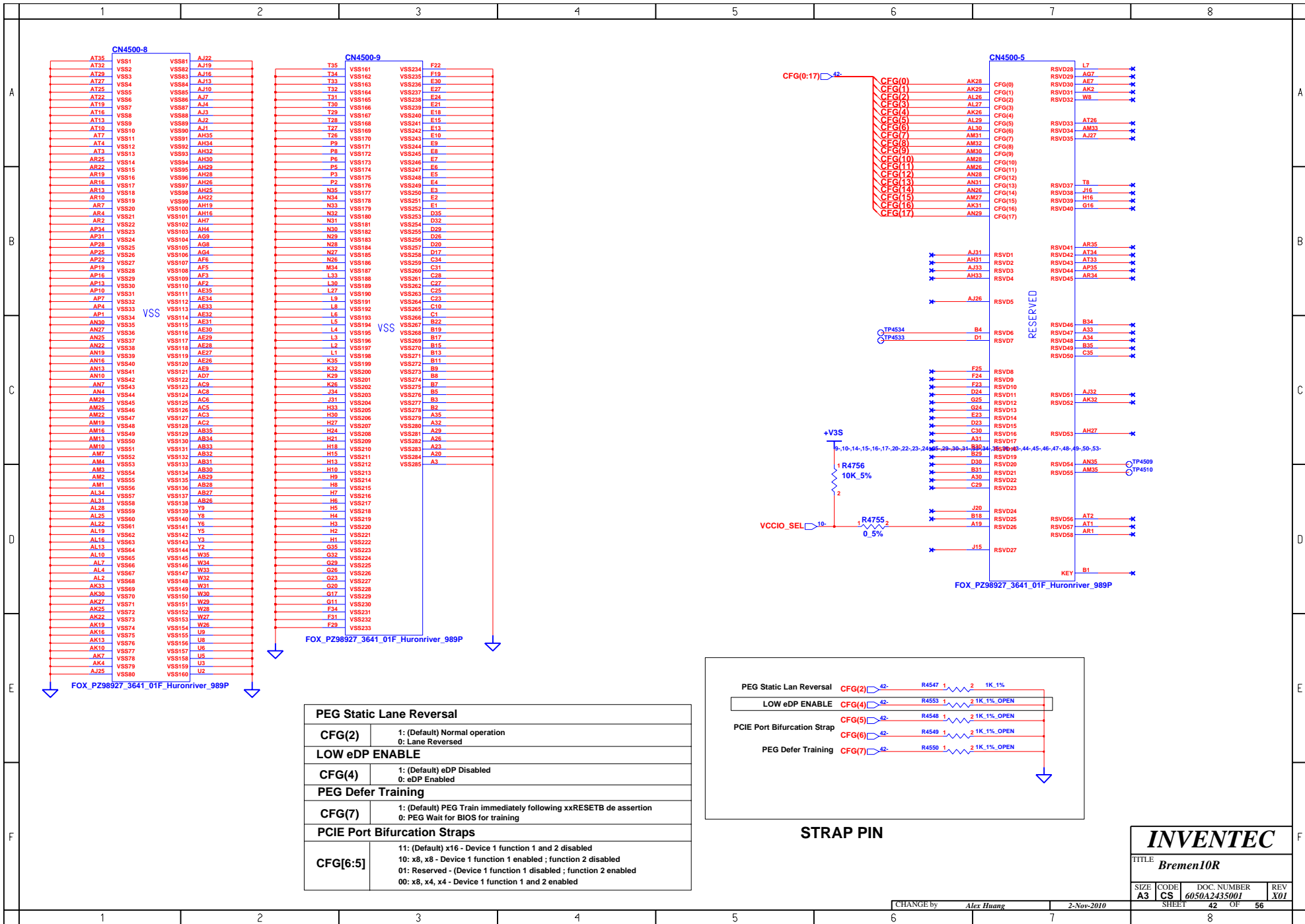
CHANGE by	Alex Huang	4-Nov-2010	SHEET 39 OF 56
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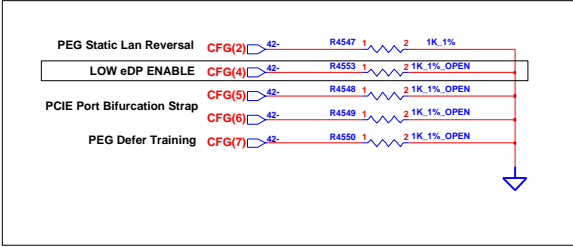
INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 40		OF 56	



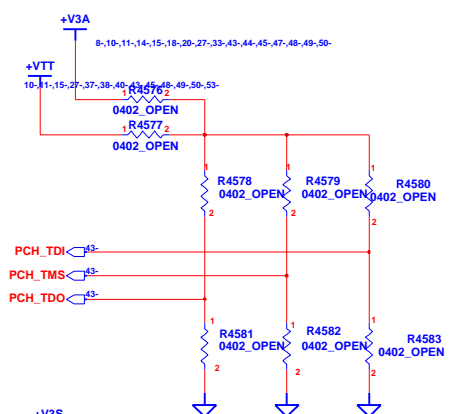
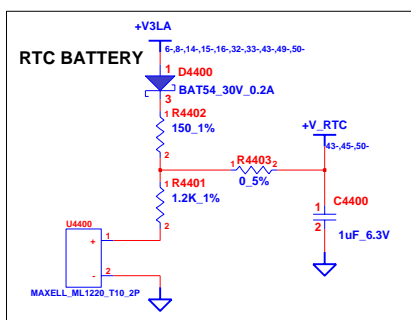
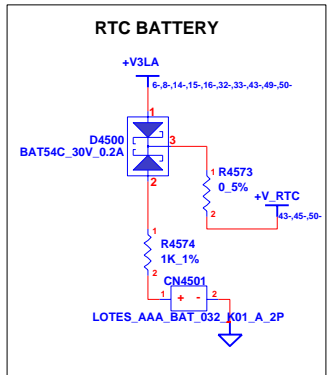
INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET		41 OF 56	



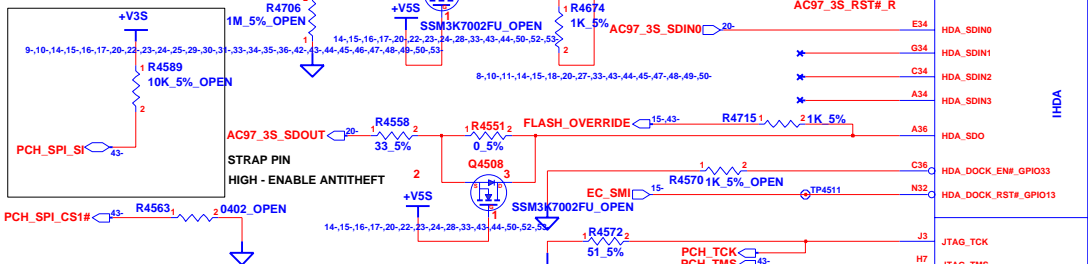
PEG Static Lane Reversal	
CFG(2)	1: (Default) Normal operation 0: Lane Reversed
LOW eDP ENABLE	
CFG(4)	1: (Default) eDP Disabled 0: eDP Enabled
PEG Defer Training	
CFG(7)	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training
PCIe Port Bifurcation Straps	
CFG[6:5]	11: (Default) x16 - Device 1 function 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8, x4, x4 - Device 1 function 1 and 2 enabled



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by Alex Huang		2-Nov-2010	
SHEET 42		OF 56	



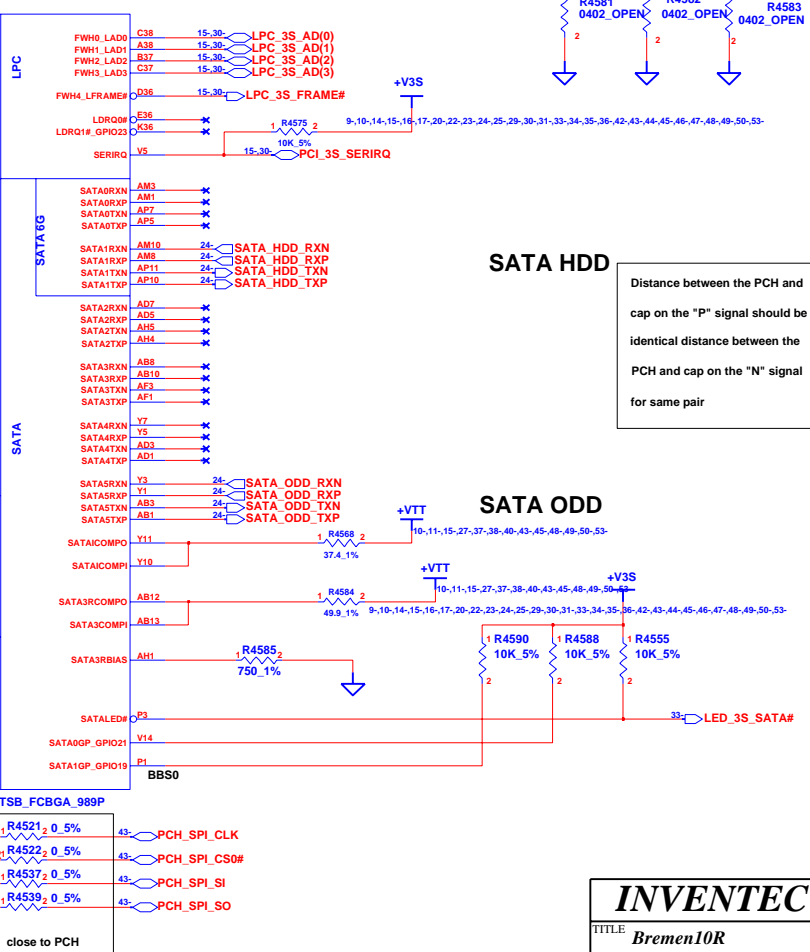
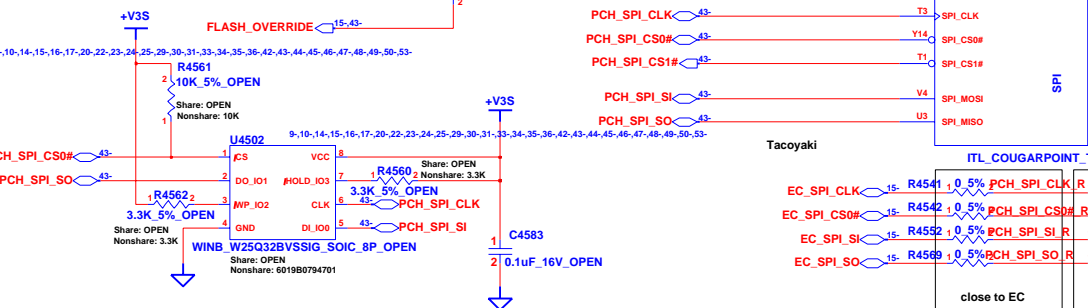
INTVIRMEN-integrated SUS
 1.05V VRM Enable
 High-Enable Internal VRs
 Low-Enable External VRs
 Strap pin: should not pull high



SATA HDD

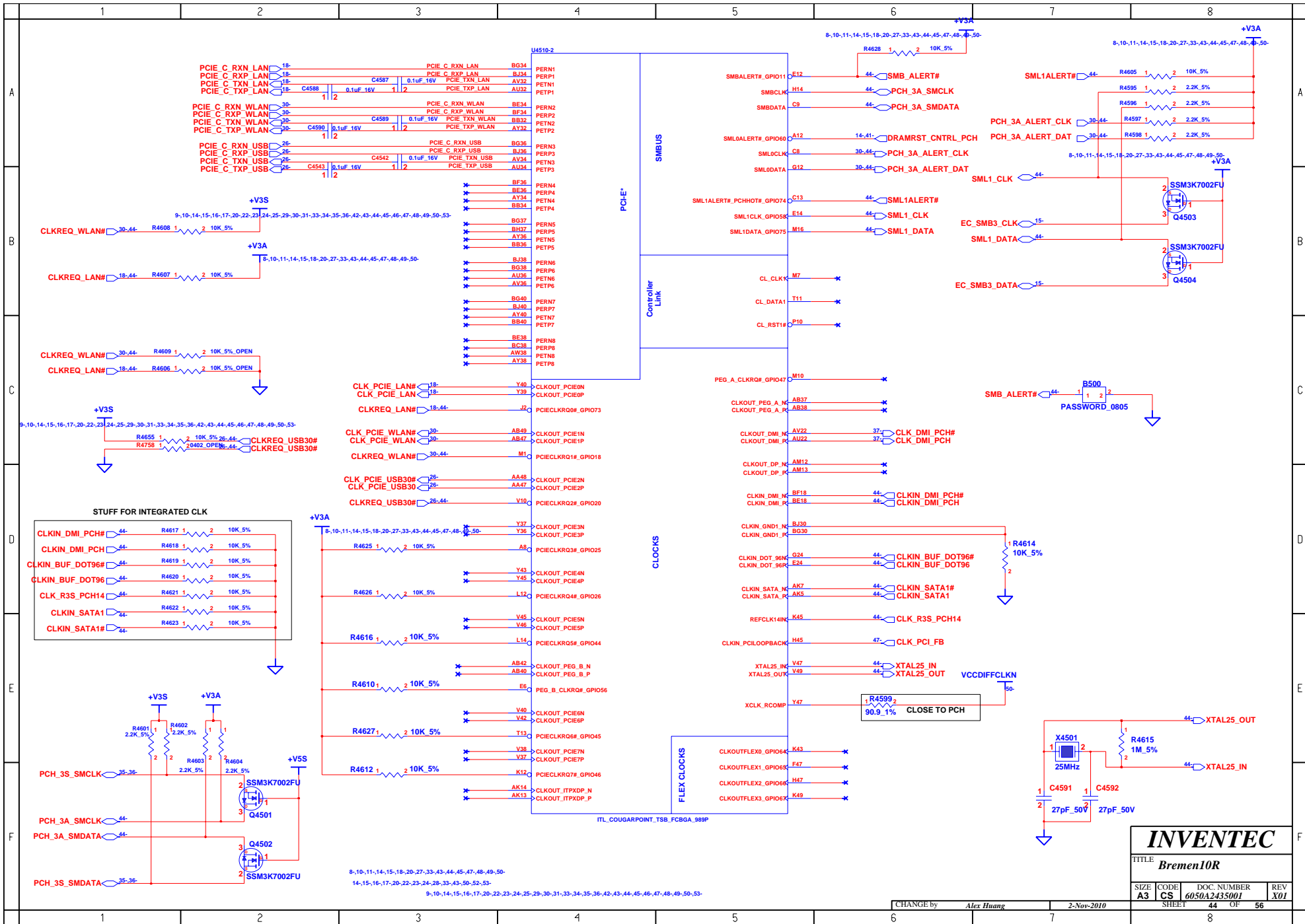
Distance between the PCH and cap on the "I" signal should be identical distance between the PCH and cap on the "N" signal for same pair

SATA ODD



close to EC close to PCH

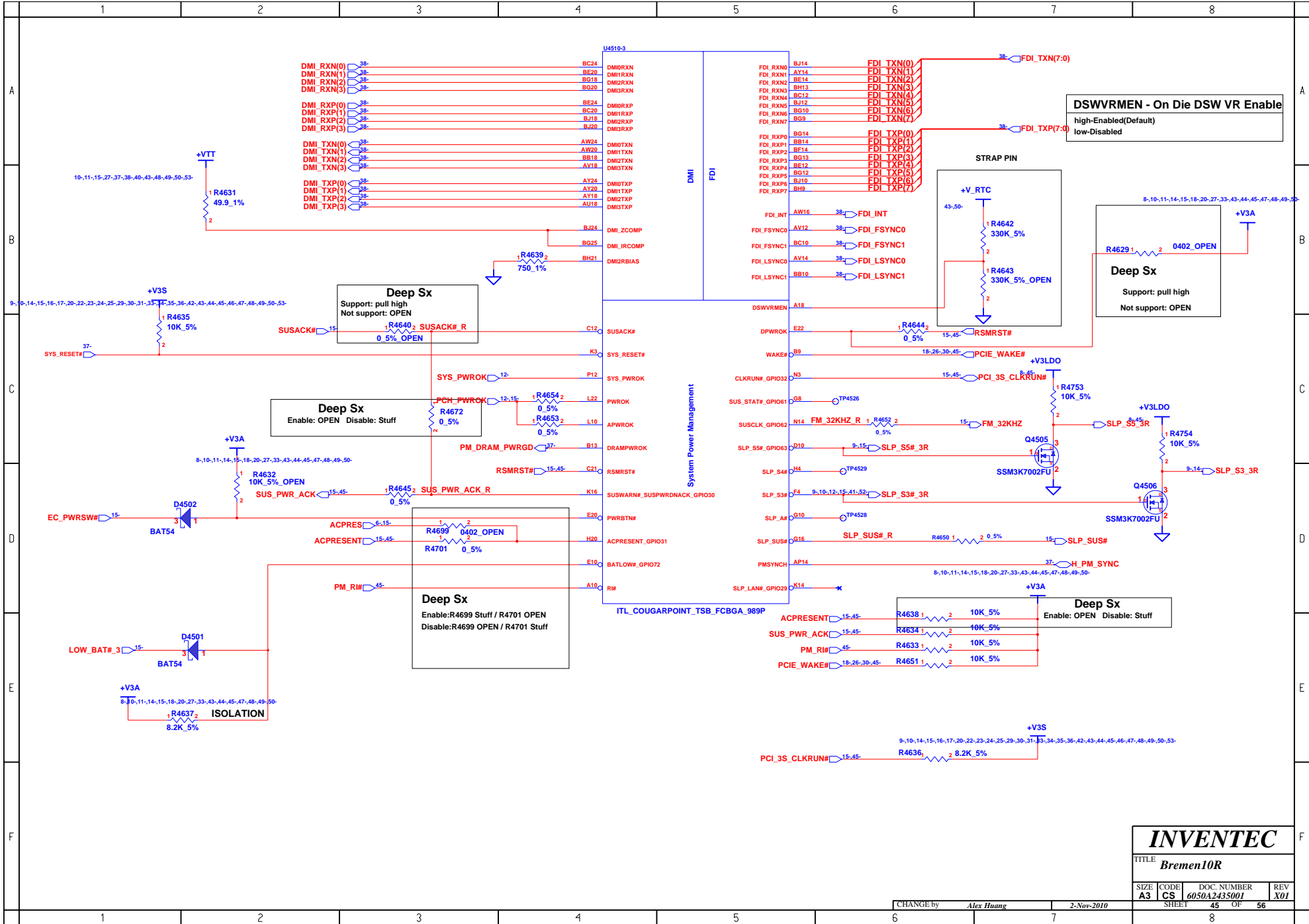
INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 43		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01
SHEET		44	OF 56

CHANGE by Alex Huang 2-Nov-2010

8-10-11-14-15-18-20-27-33-43-44-45-47-48-49-50-
14-15-16-17-20-22-23-24-28-33-43-50-52-53-
9-10-14-15-16-17-20-22-23-24-25-29-30-31-33-34-35-36-42-43-44-45-46-47-48-49-50-53-



DSWVRMEN - On Die DSW VR Enable
 high-Enabled(Default)
 low-Disabled

Deep Sx
 Support: pull high
 Not support: OPEN

Deep Sx
 Enable: OPEN Disable: Stuff

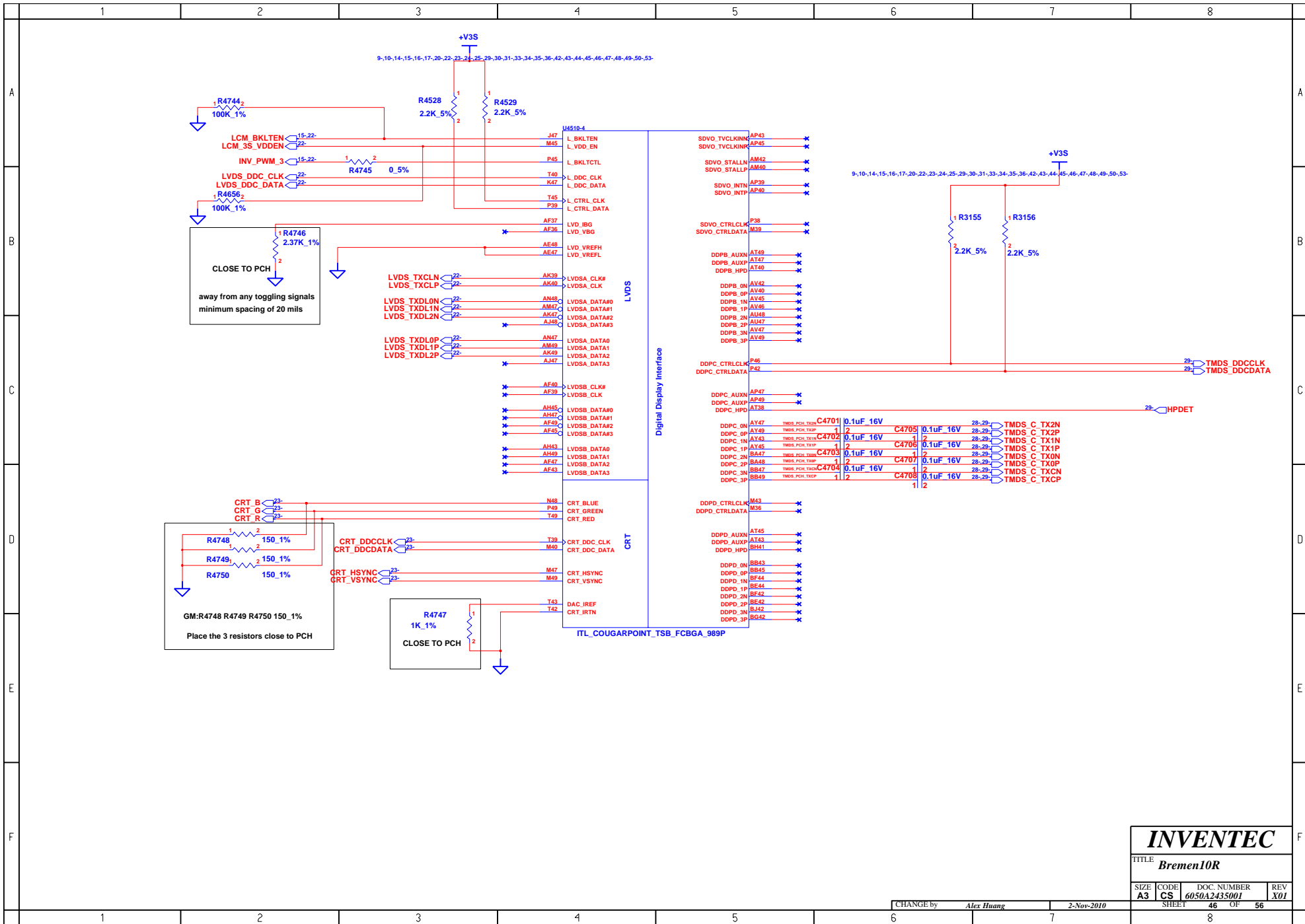
Deep Sx
 Enable:R4699 Stuff / R4701 OPEN
 Disable:R4699 OPEN / R4701 Stuff

Deep Sx
 Enable: OPEN Disable: Stuff

INVENTEC

TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
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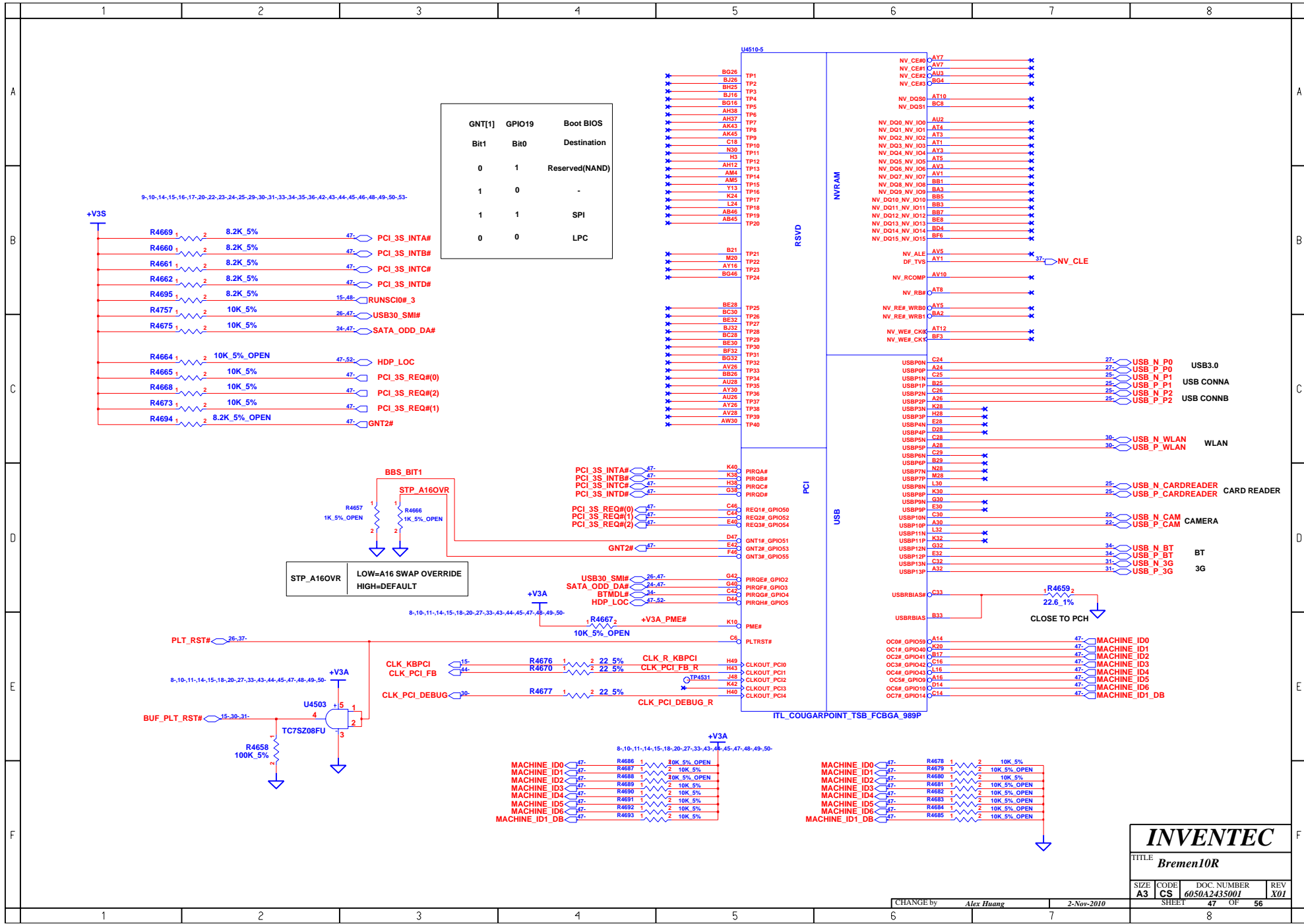
INVENTEC

TITLE
Brem10R

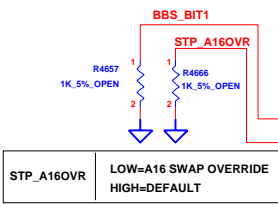
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01

CHANGE by Alex Huang 2-Nov-2010

SHEET	OF
46	56



GNT[1]	GPIO19	Boot BIOS
Bit1	Bit0	Destination
0	1	Reserved(NAND)
1	0	-
1	1	SPI
0	0	LPC

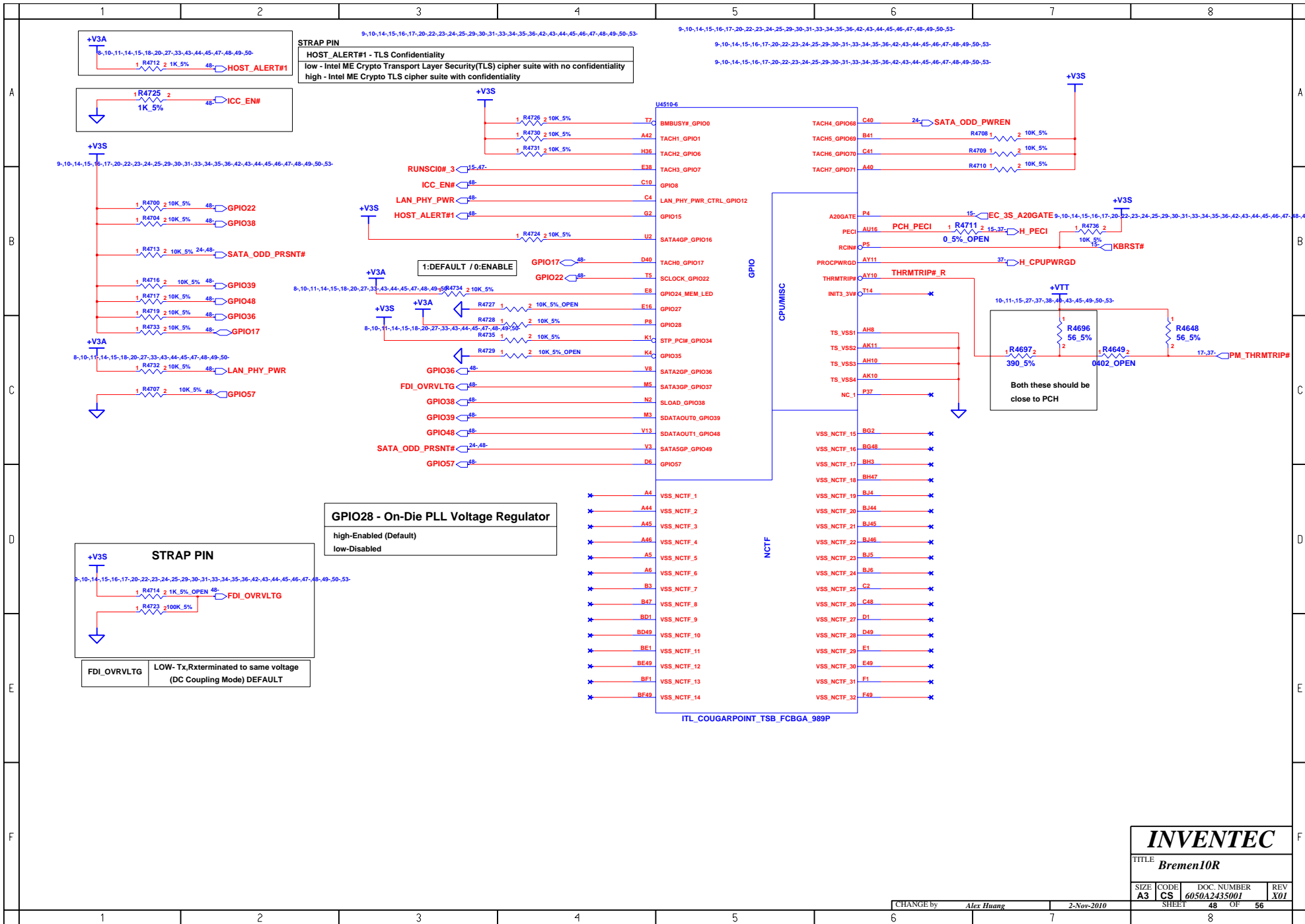


STP_A16OVR LOW=A16 SWAP OVERRIDE HIGH=DEFAULT

INVENTEC

TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 47		OF 56	

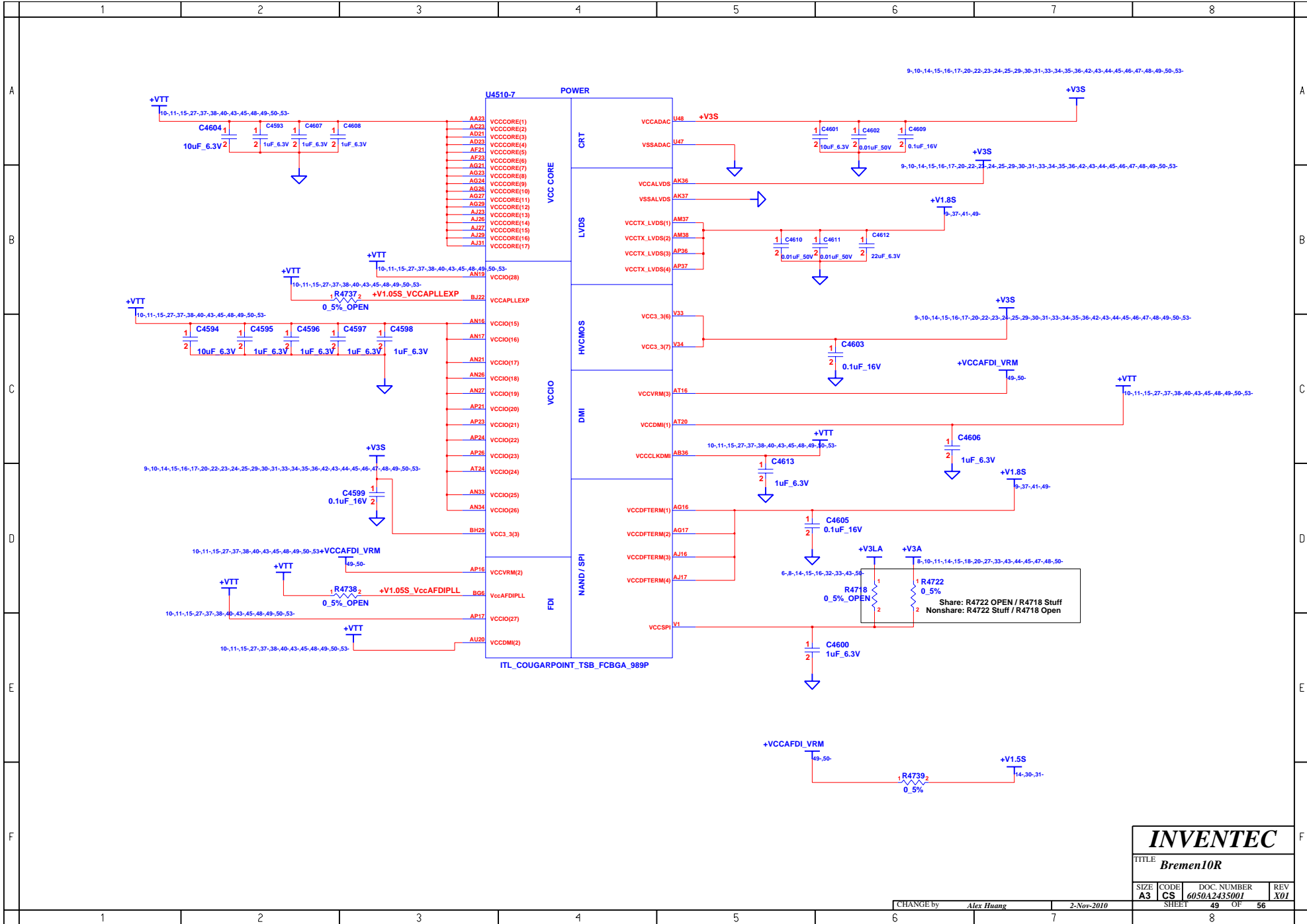


STRAP PIN
HOST_ALERT#1 - TLS Confidentiality
 low - Intel ME Crypto Transport Layer Security(TLS) cipher suite with no confidentiality
 high - Intel ME Crypto TLS cipher suite with confidentiality

GPIO28 - On-Die PLL Voltage Regulator
 high-Enabled (Default)
 low-Disabled

STRAP PIN
 FDI_OVRVLTG LOW- Tx,Rxterminated to same voltage (DC Coupling Mode) DEFAULT

INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 48		OF 56	



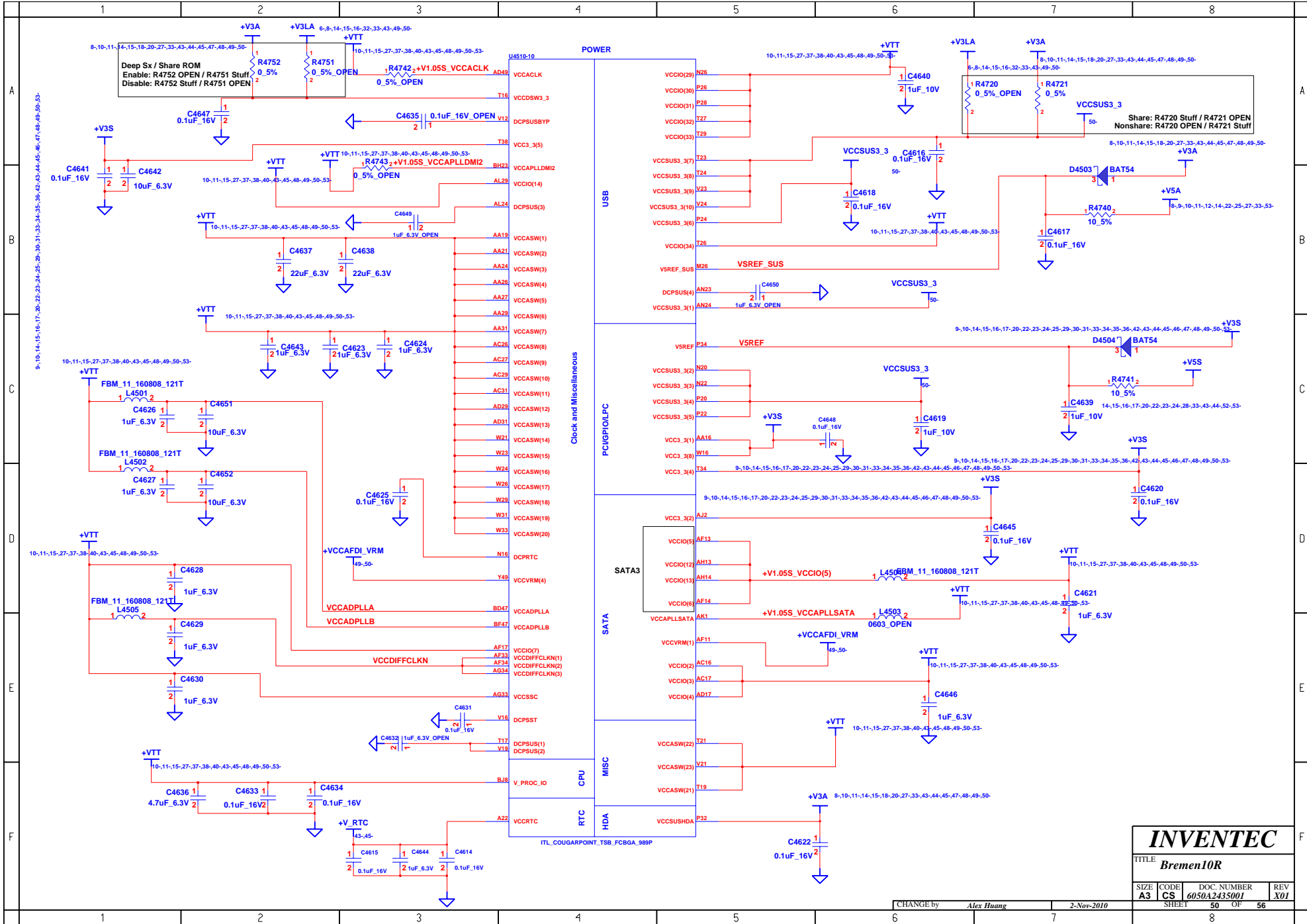
INVENTEC

TITLE
Bremen10R

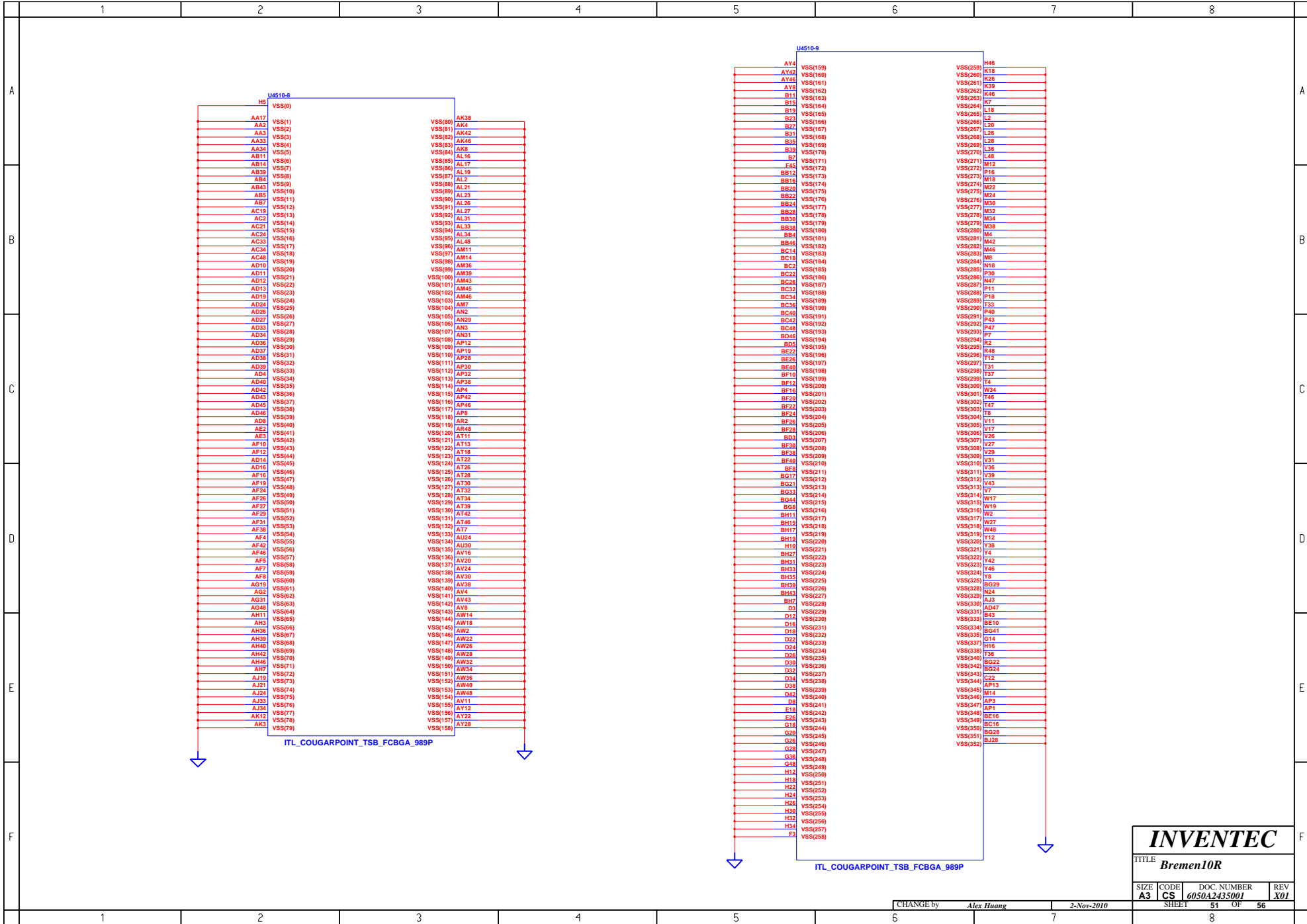
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2435001	X01

CHANGE by Alex Huang 2-Nov-2010

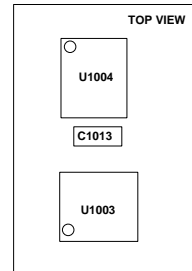
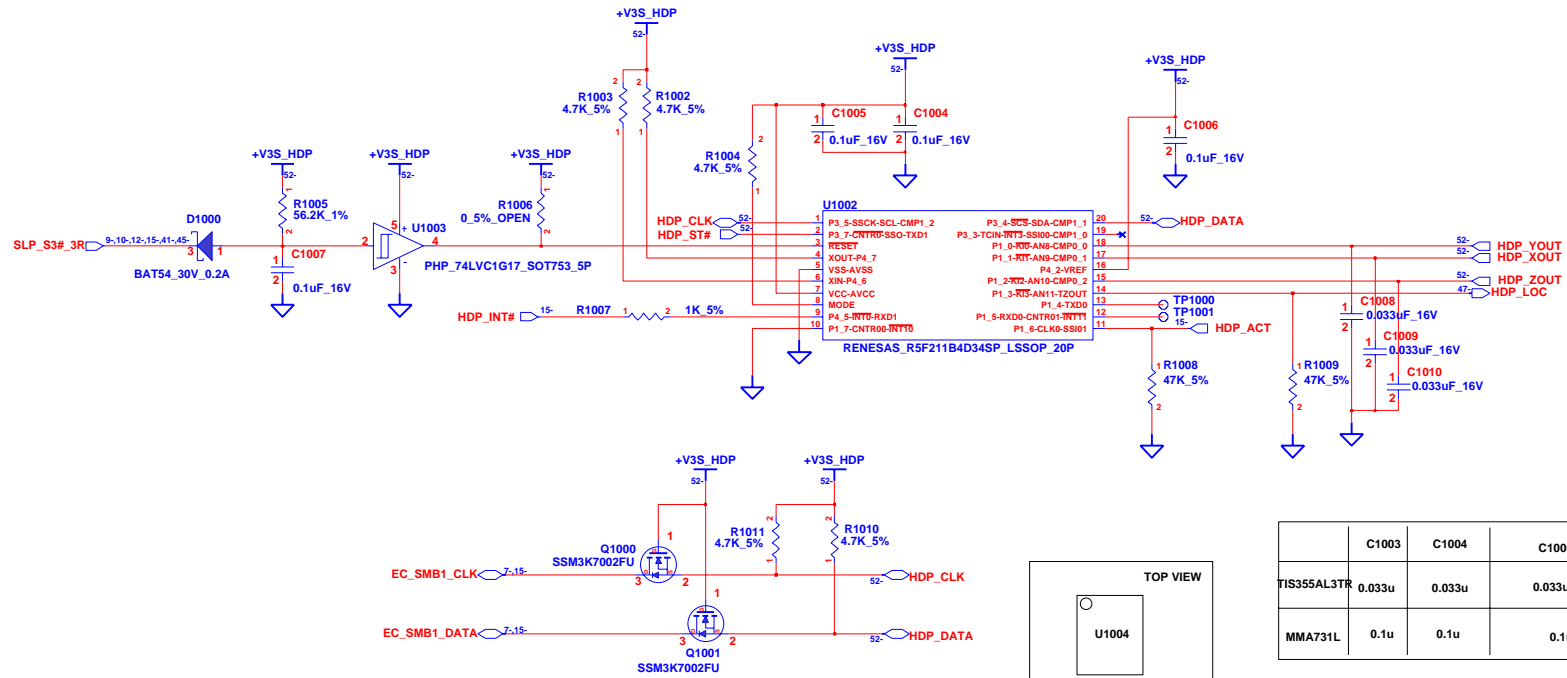
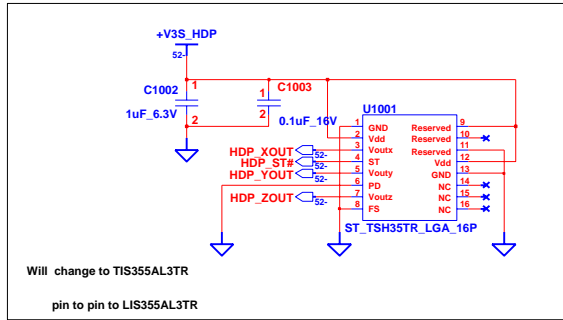
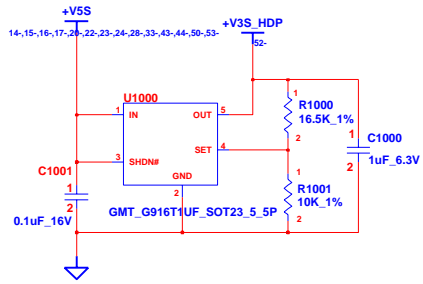
SHEET	OF
49	56



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 50		OF 56	



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 51		OF 56	



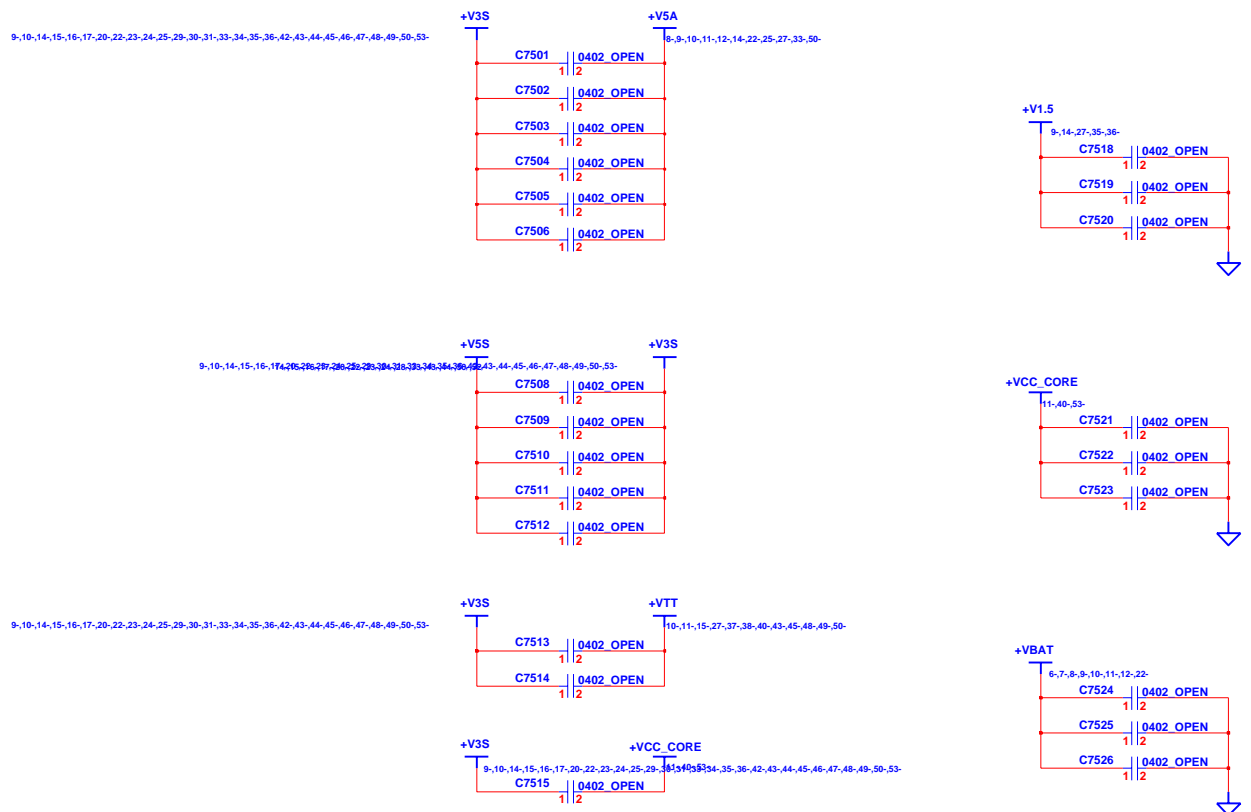
	C1003	C1004	C1005
TIS355AL3TR	0.033u	0.033u	0.033u
MMA731L	0.1u	0.1u	0.1u

INVENTEC

TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 52		OF 56	

EMI



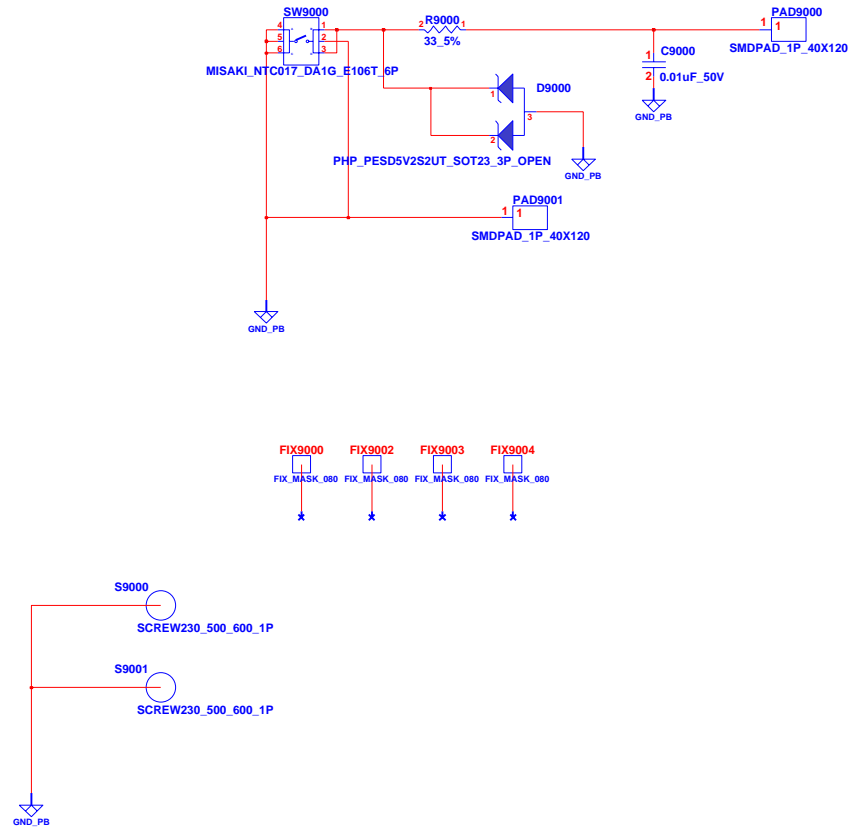
INVENTEC

TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
SHEET		53 OF	56

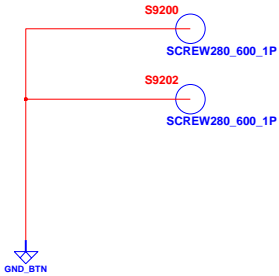
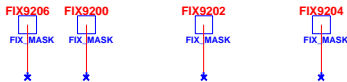
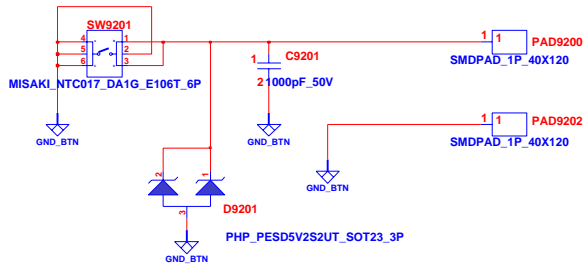
CHANGE by *Alex Huang* 6-Nov-2010

TOUCH PAD SWITCH BOARD



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		9-Nov-2010	
SHEET		54	OF 56

POWER BOARD



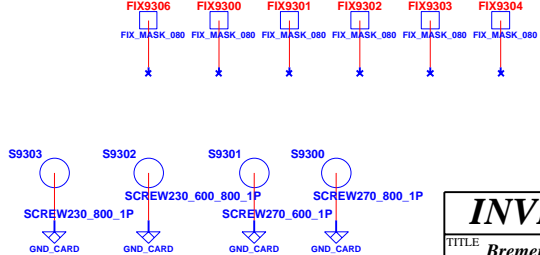
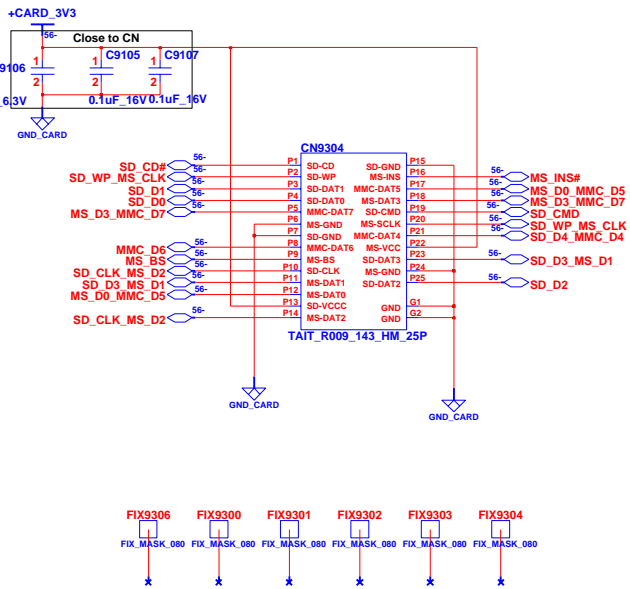
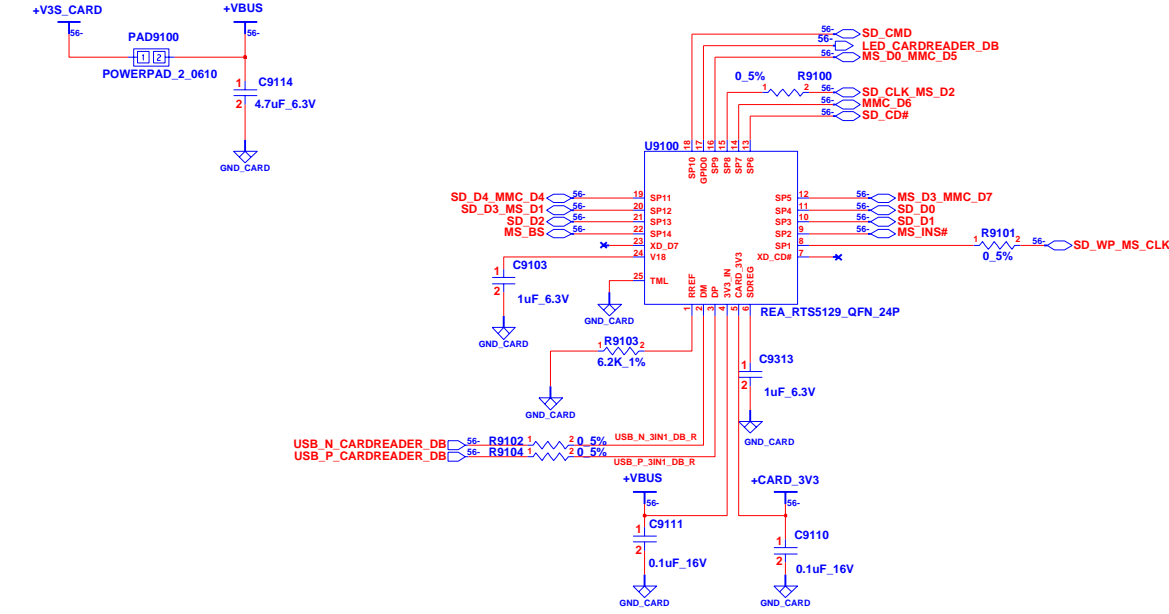
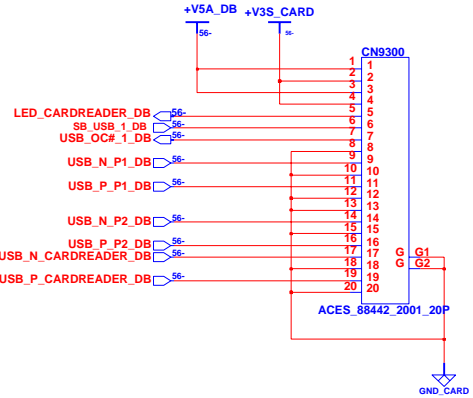
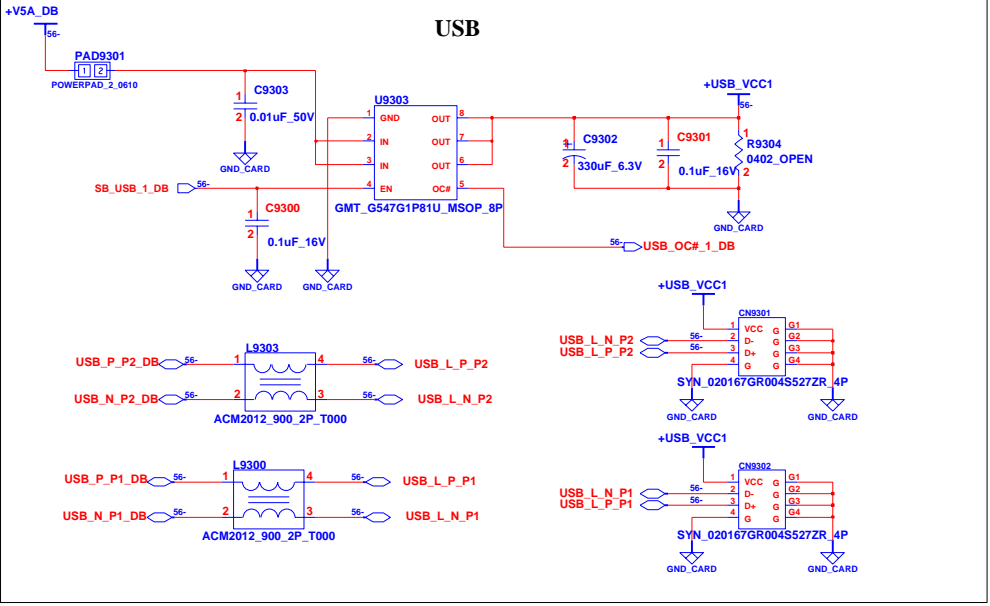
INVENTEC

TITLE
Bremen10R

SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
SHEET		55	OF 56

CHANGE by *Alex Huang* 6-Nov-2010

CARD READER/USB BOARD



INVENTEC			
TITLE Bremen10R			
SIZE A3	CODE CS	DOC. NUMBER 6050A2435001	REV X01
CHANGE by <i>Alex Huang</i>		2-Nov-2010	
SHEET 56		OF 56	