

	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	

Bremen 10G

MP build(A02)

2010.04.15

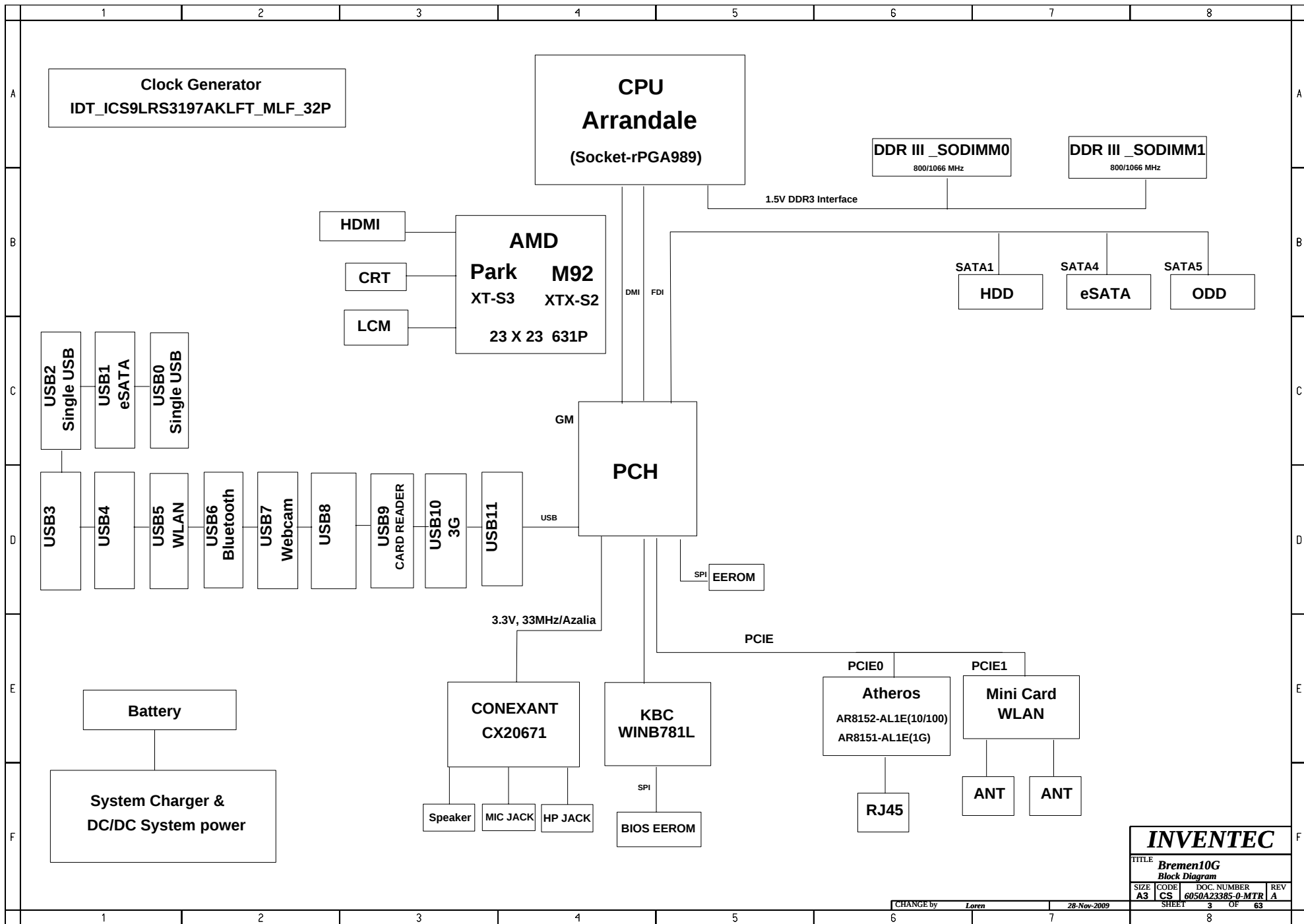
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TITLE Bremen10G			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
CHANGE by Loren		14-Apr-2010	
SHEET		1	OF 63

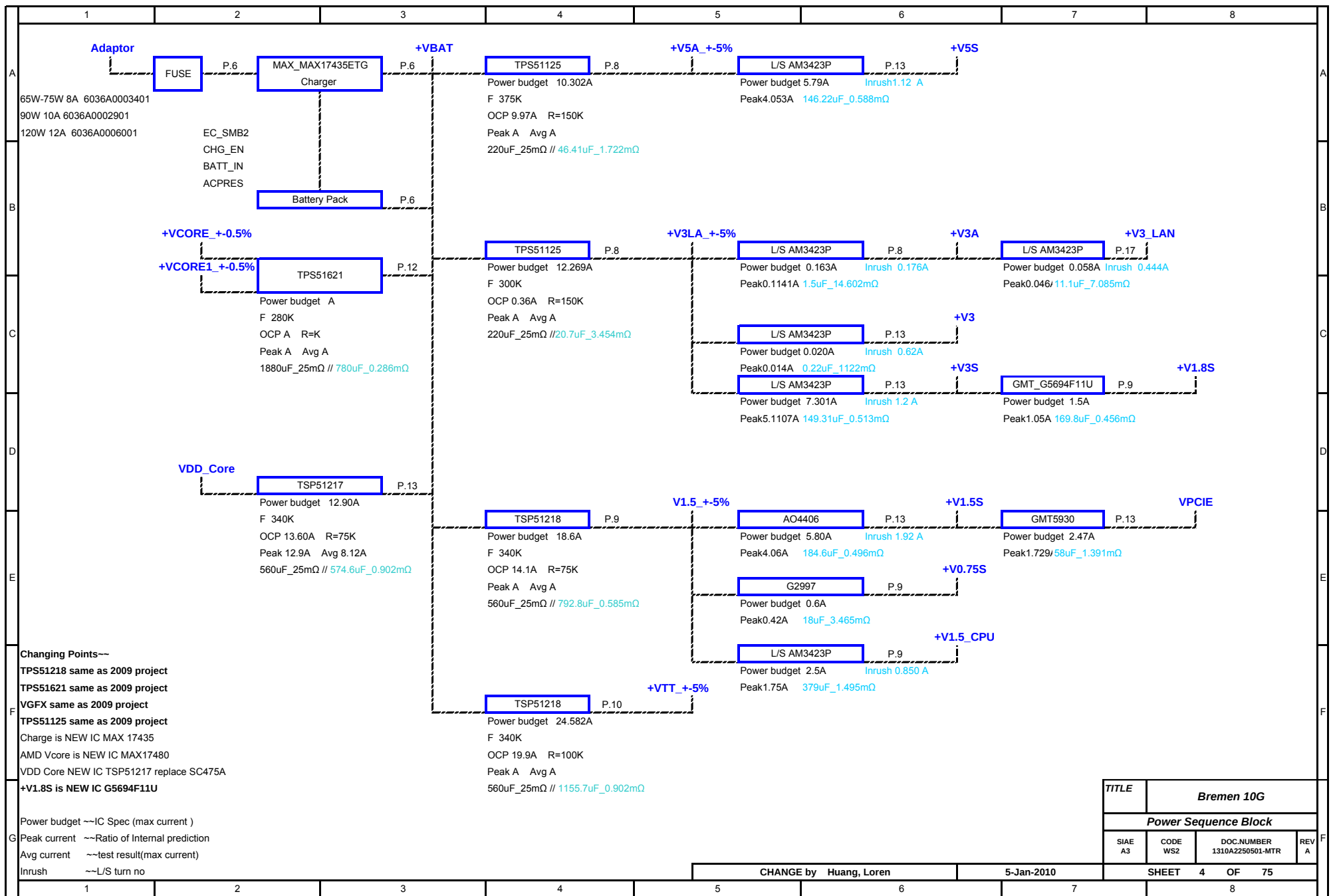
TABLE OF CONTENTS

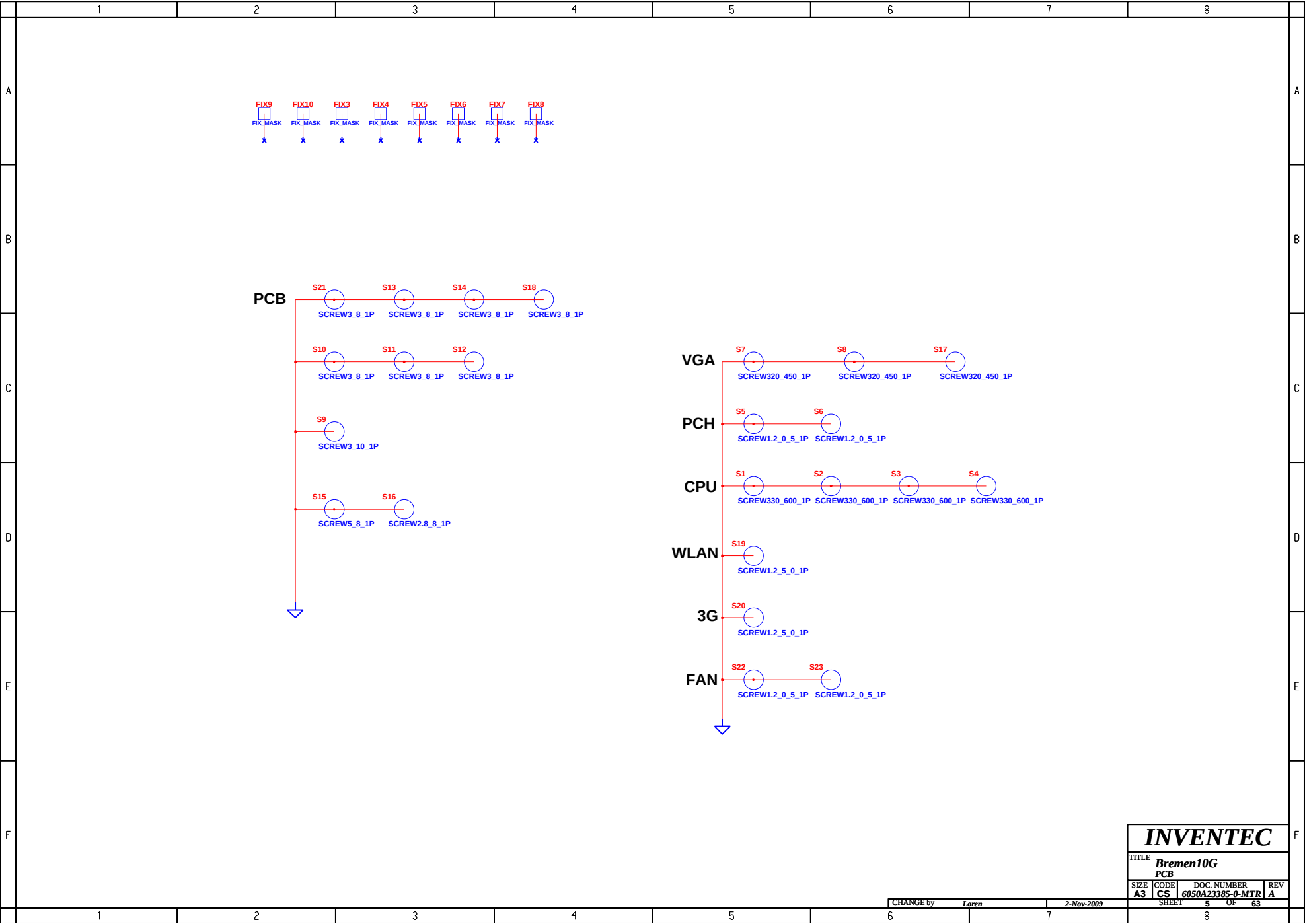
PAGE	PAGE	PAGE
1. COVER PAGE	31. HALL SENSOR	61. Touch pad switch board
2. INDEX	32. LED	62. Power board
3. BLOCK DIAGRAM	33. CLOCK GENERATOR	63. USB/Card Reader board
4. POWER SEQUENCE BLOCK	34. DDR DIMM0	
5. PCB	35. DDR DIMM1	
6. SYSTEM POWER	36. CPU 1	
7. SYSTEM POWER	37. CPU 2	
8. SYSTEM POWER	38. CPU 3	
9. SYSTEM POWER	39. CPU 4	
10. SYSTEM POWER	40. CPU 5	
11. SYSTEM POWER	41. CPU 6	
12. SYSTEM POWER	42. PCH 1	
13. SYSTEM POWER	43. PCH 2	
14. SYSTEM POWER	44. PCH 3	
15. SUPER I/O(KBC)	45. PCH 4	
16. K/B & TP/B CONN	46. PCH 5	
17. FAN & THERMAL	47. PCH 6	
18. LAN	48. PCH 7	
19. RJ45 & TRANSFORMER	49. PCH 8	
20. CODEC	50. PCH 9	
21. AUDIO JACK	51. 3D sensor	
22. LCM	52. GPU 1	
23. RGB CONN	53. GPU 2	
24. HDMI CONN	54. GPU 3	
25. SATA HDD & ODD	55. GPU 4	
26. CONNECTOR	56. GPU 5	
27. USB/eSATA CONN	57. GPU 6	
28. BLUE TOOTH	58. VRAM 1	
29. WLAN	59. VRAM 2	
30. 3G	60. EMI	

INVENTEC			
TITLE Bremen10G			
Index			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		2	OF 63

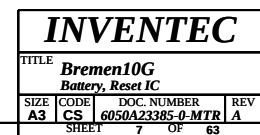
CHANGE by *Loren* 1-Dec-2009

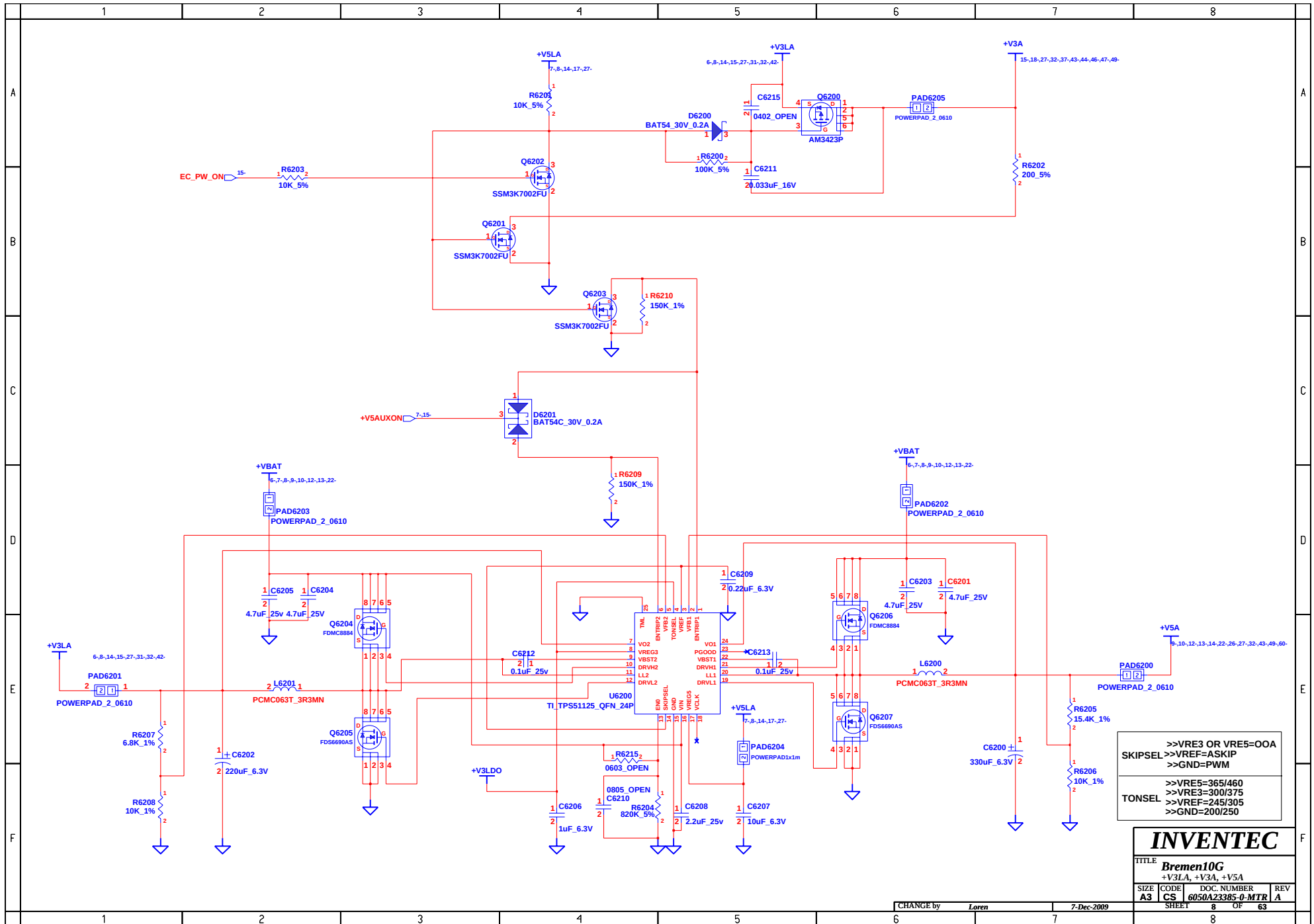




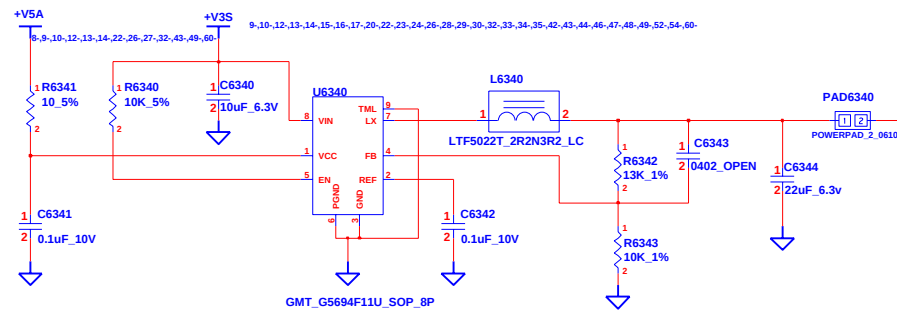
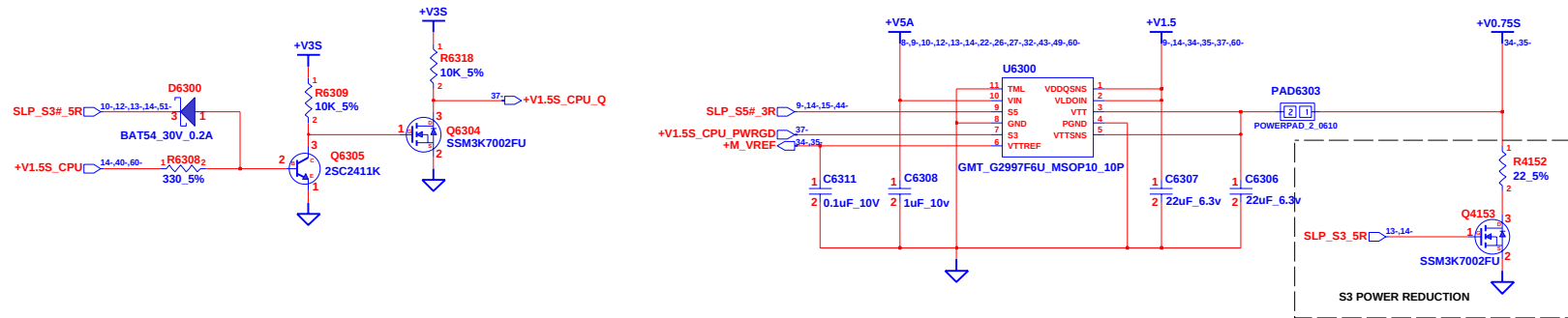
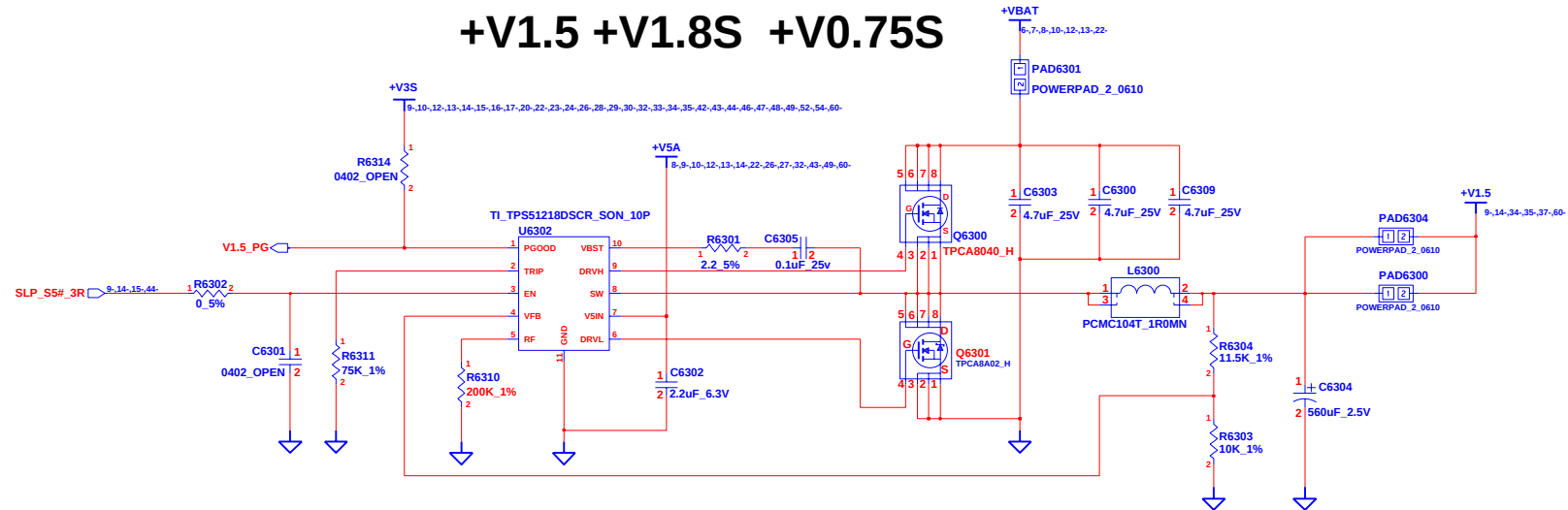


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SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
CHANGE by Loren		2-Nov-2009	
SHEET		5 OF 63	





+V1.5 +V1.8S +V0.75S



INVENTEC

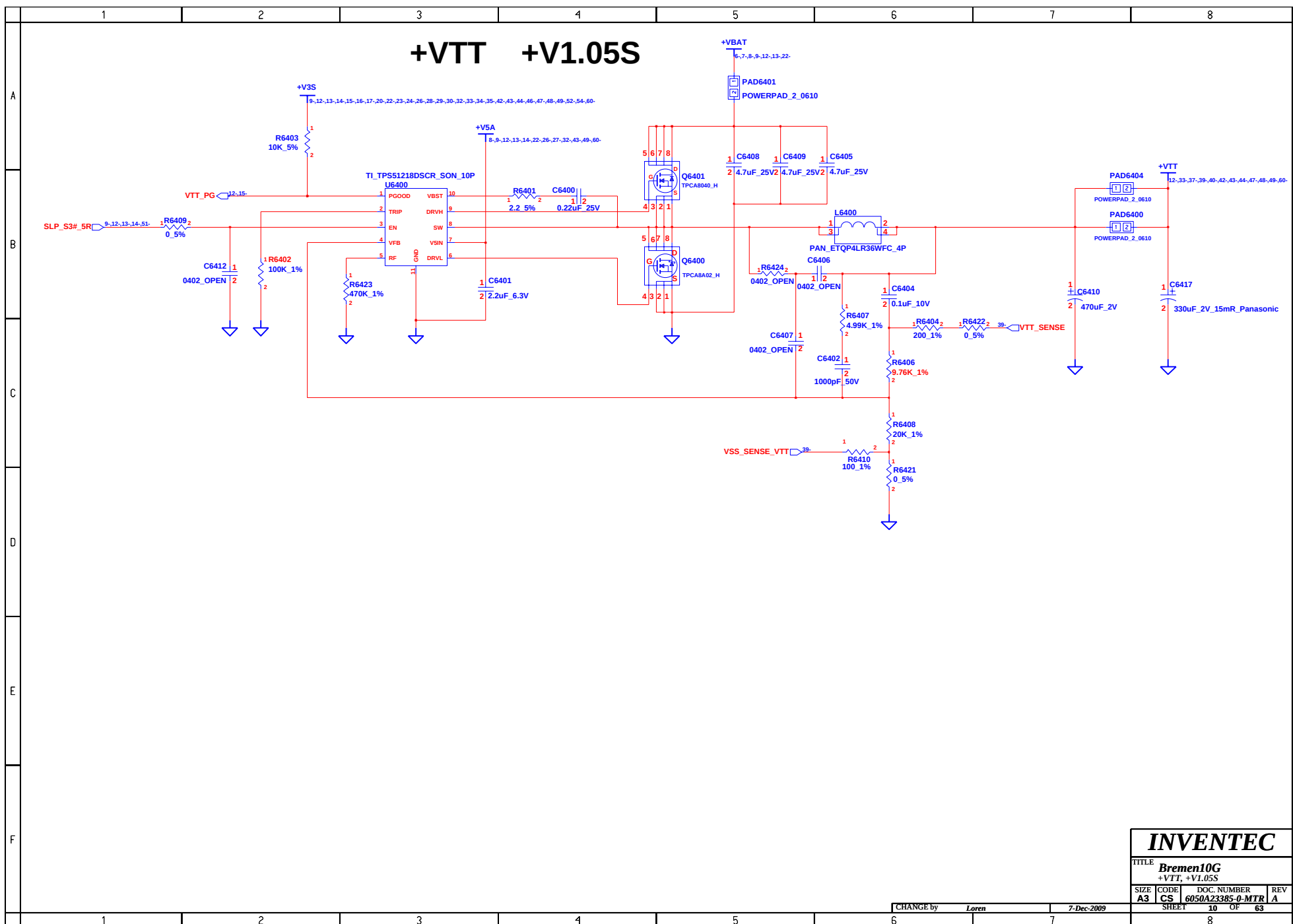
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Bremen10G
+V1.5, +V1.8S, +V0.75S

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A

CHANGE by **Loren**

7-Dec-2009

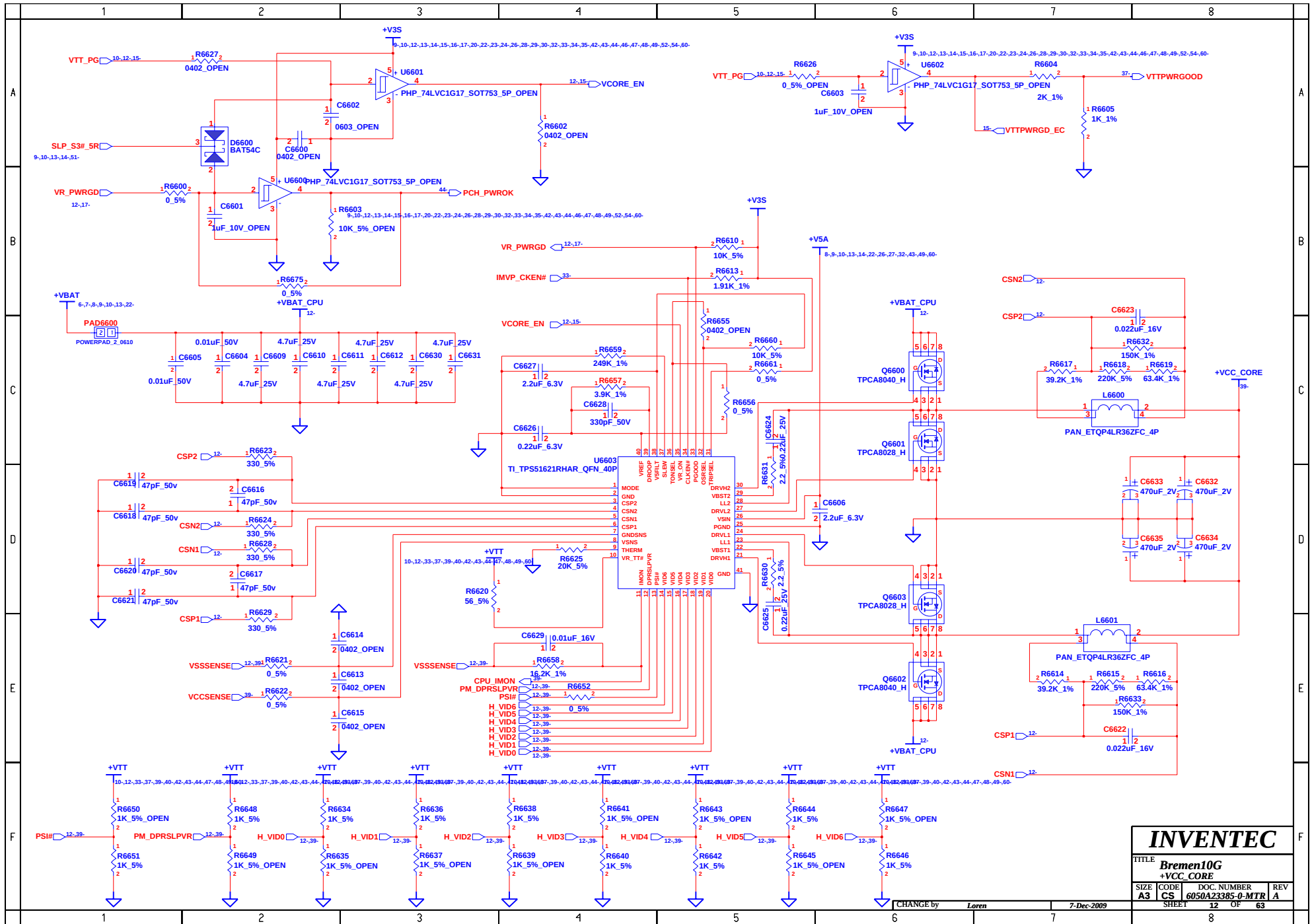
SHEET 9 OF 63

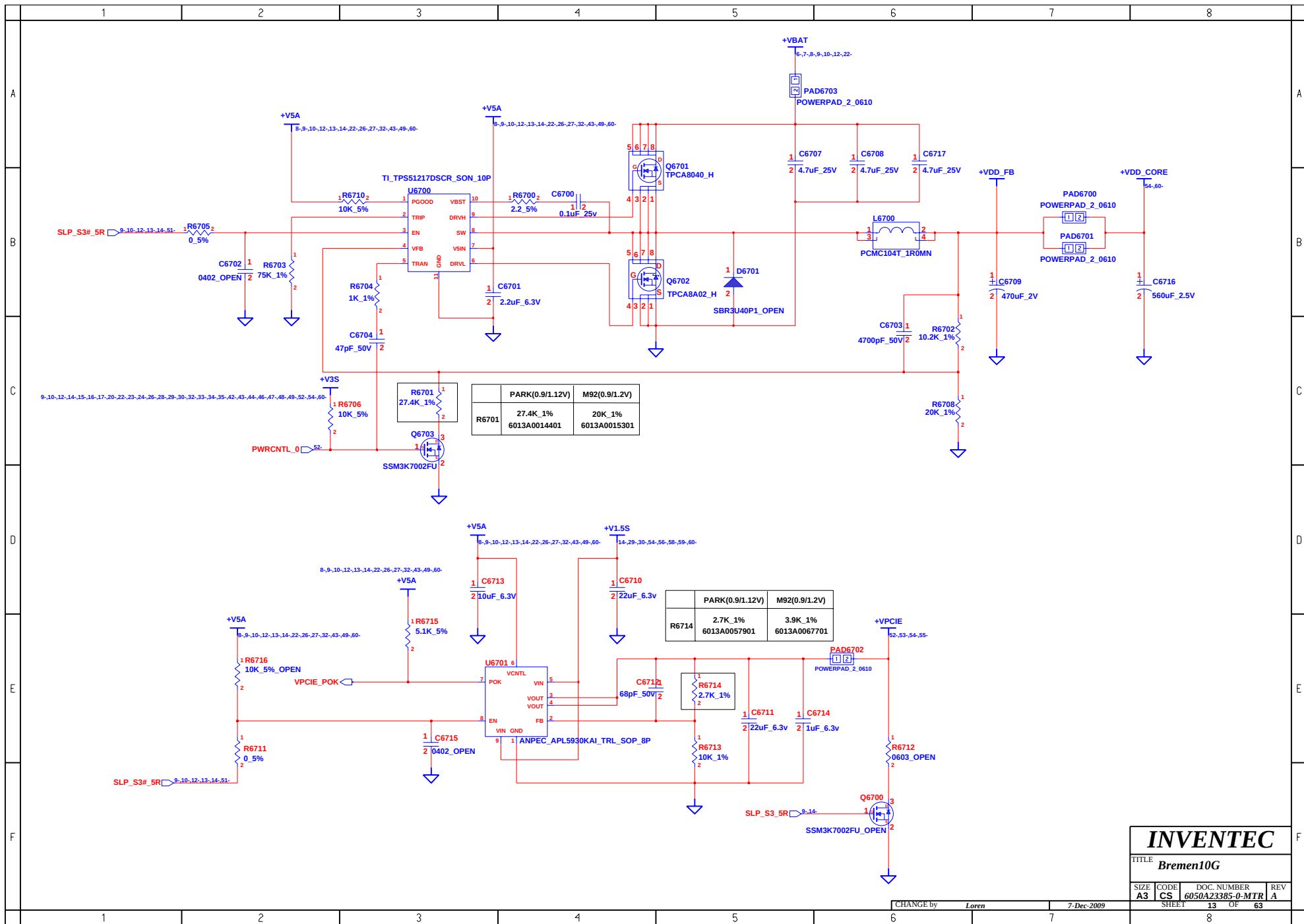


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B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	

INVENTEC			
TITLE Bremen10G +VGFX_CORE			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET		11	OF 63

CHANGE by	Loren	2-Nov-2009
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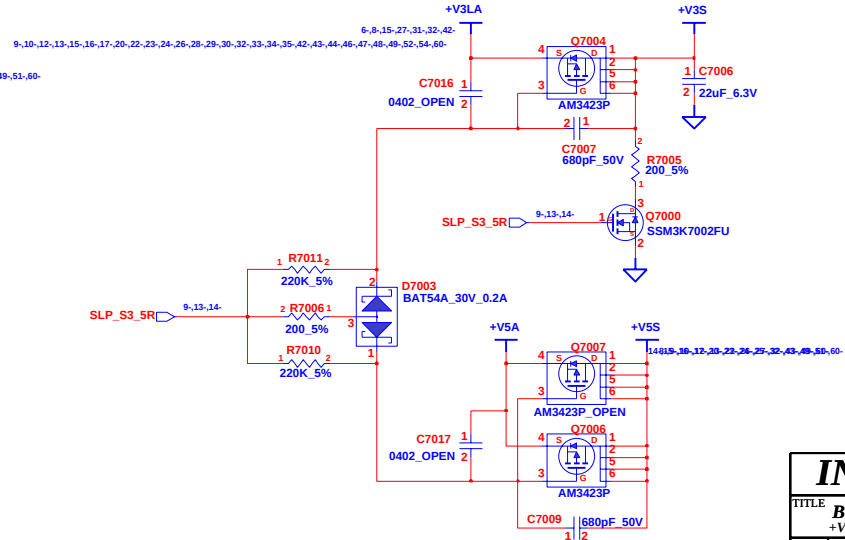
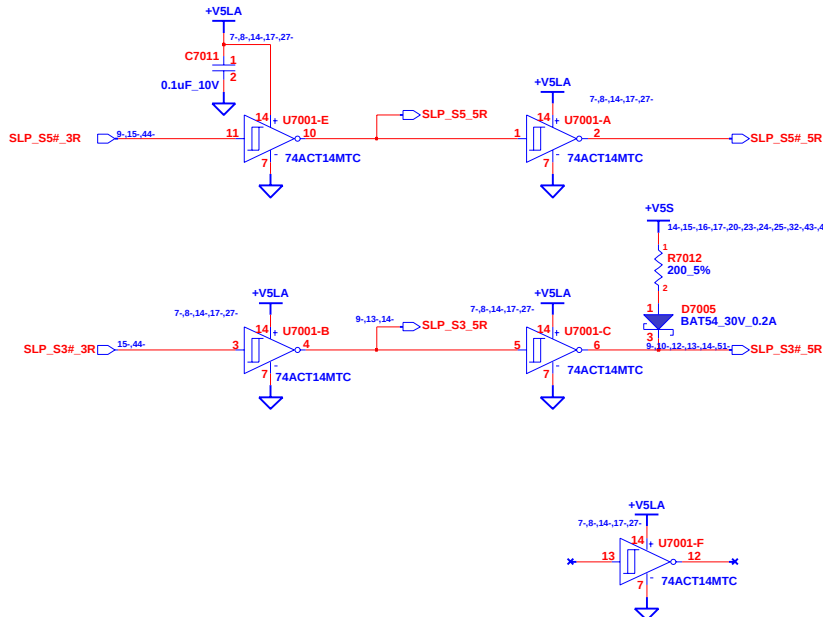
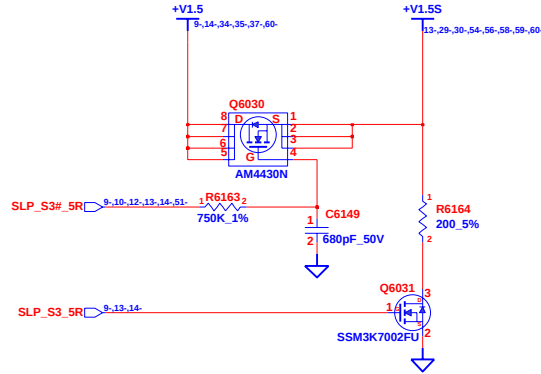
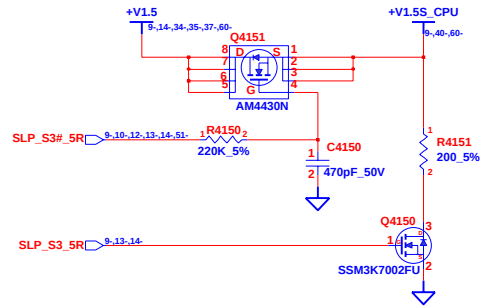
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SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR		REV A
SHEET 13		OF 63		

CHANGE by Loren

7-Dec-2009

+V5S +V3S +V1.5S +V1.5S_CPU

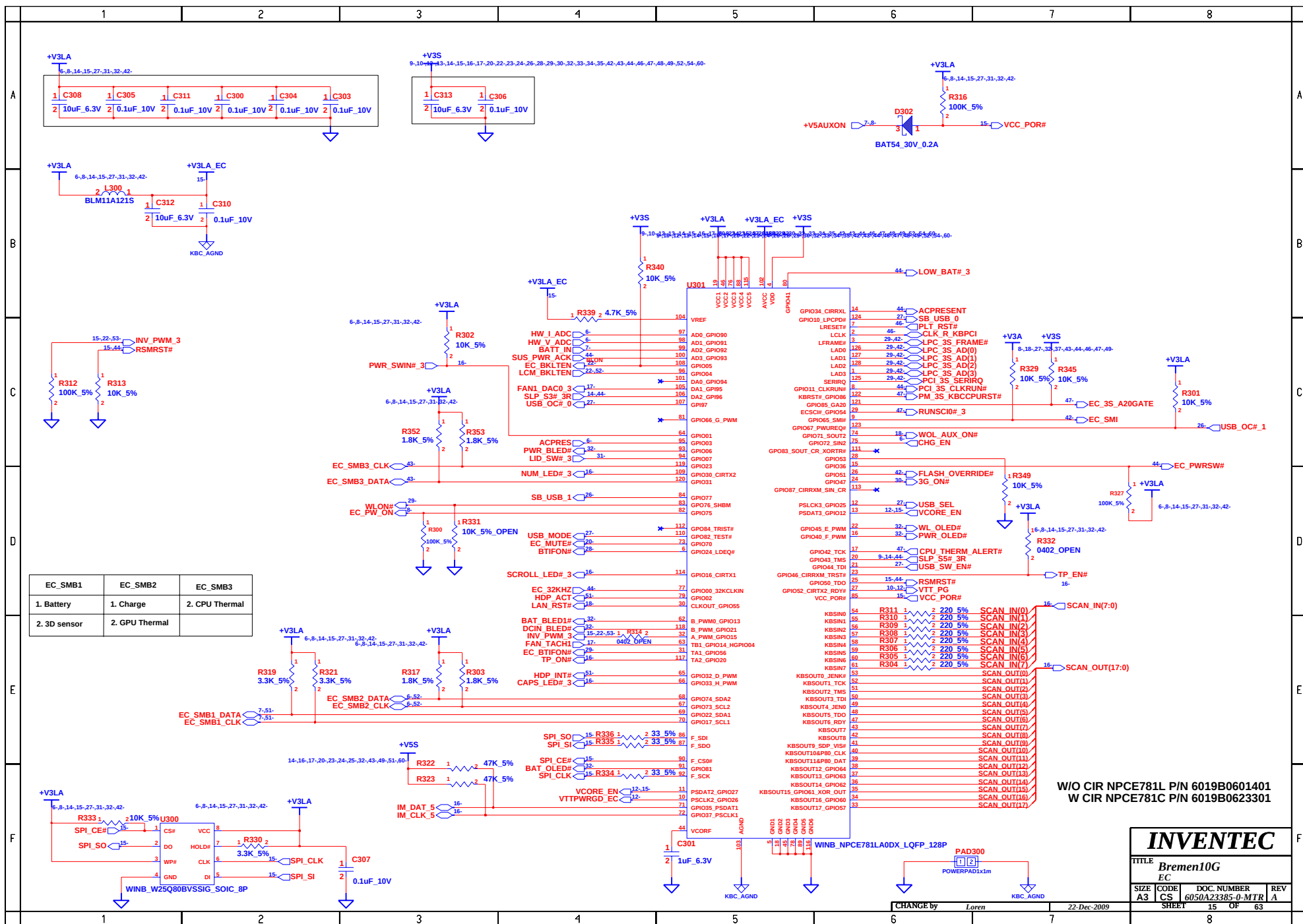
S3 POWER REDUCTION

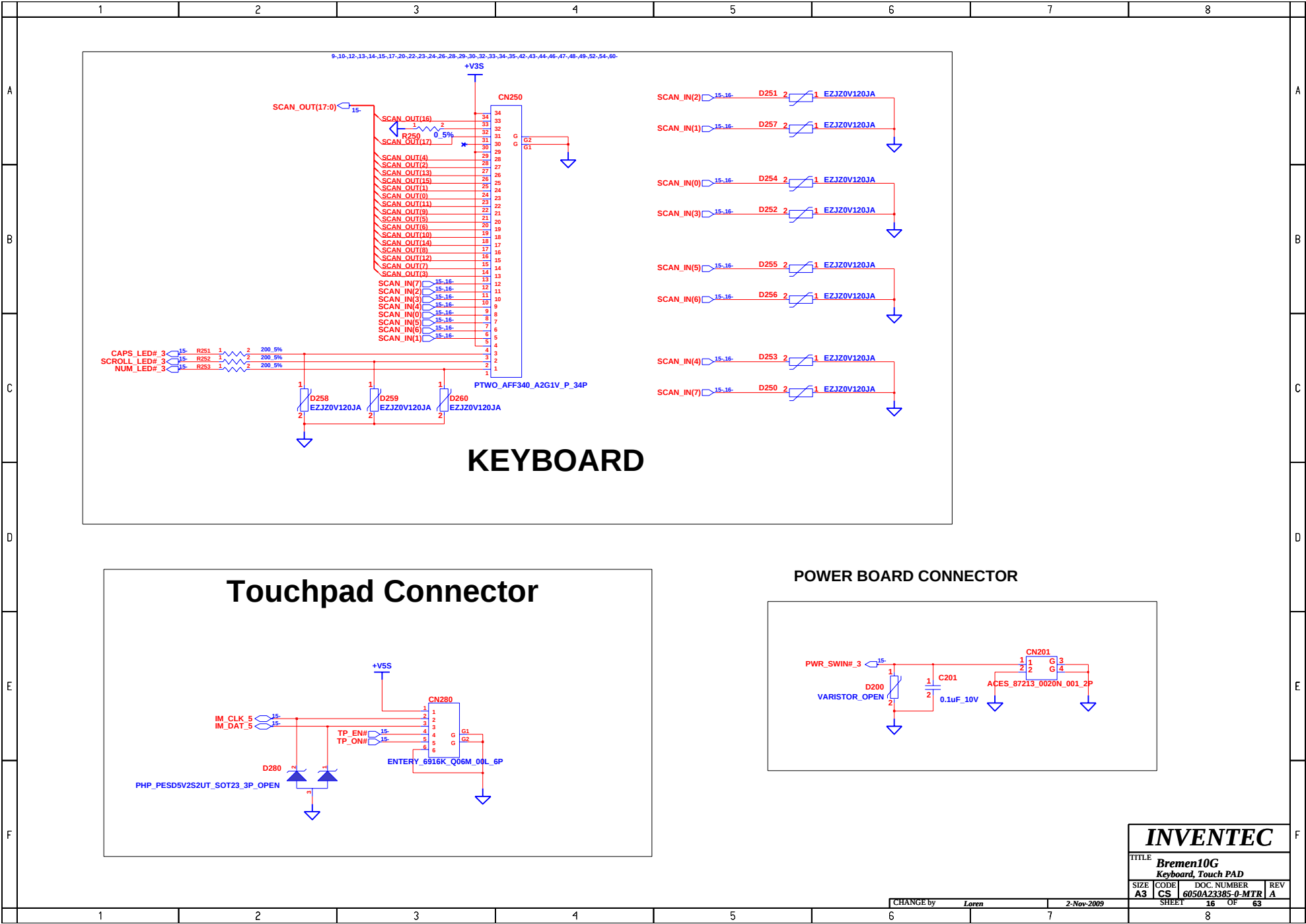


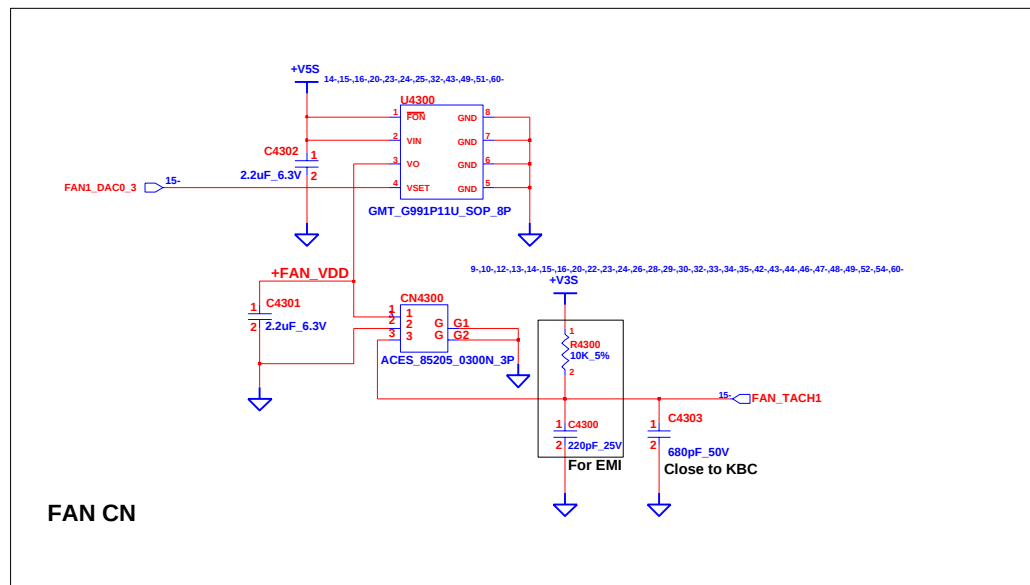
INVENTEC

TITLE			
Bremen10G			
+V5S +V3S +V1.5S			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		14 OF	63

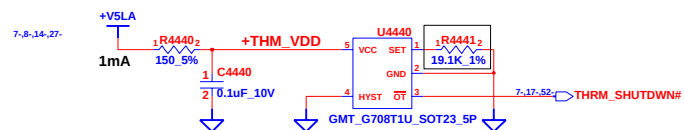
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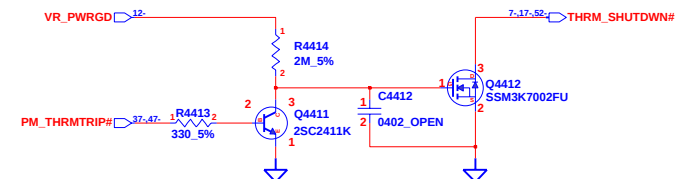


Board Thermal Sensor



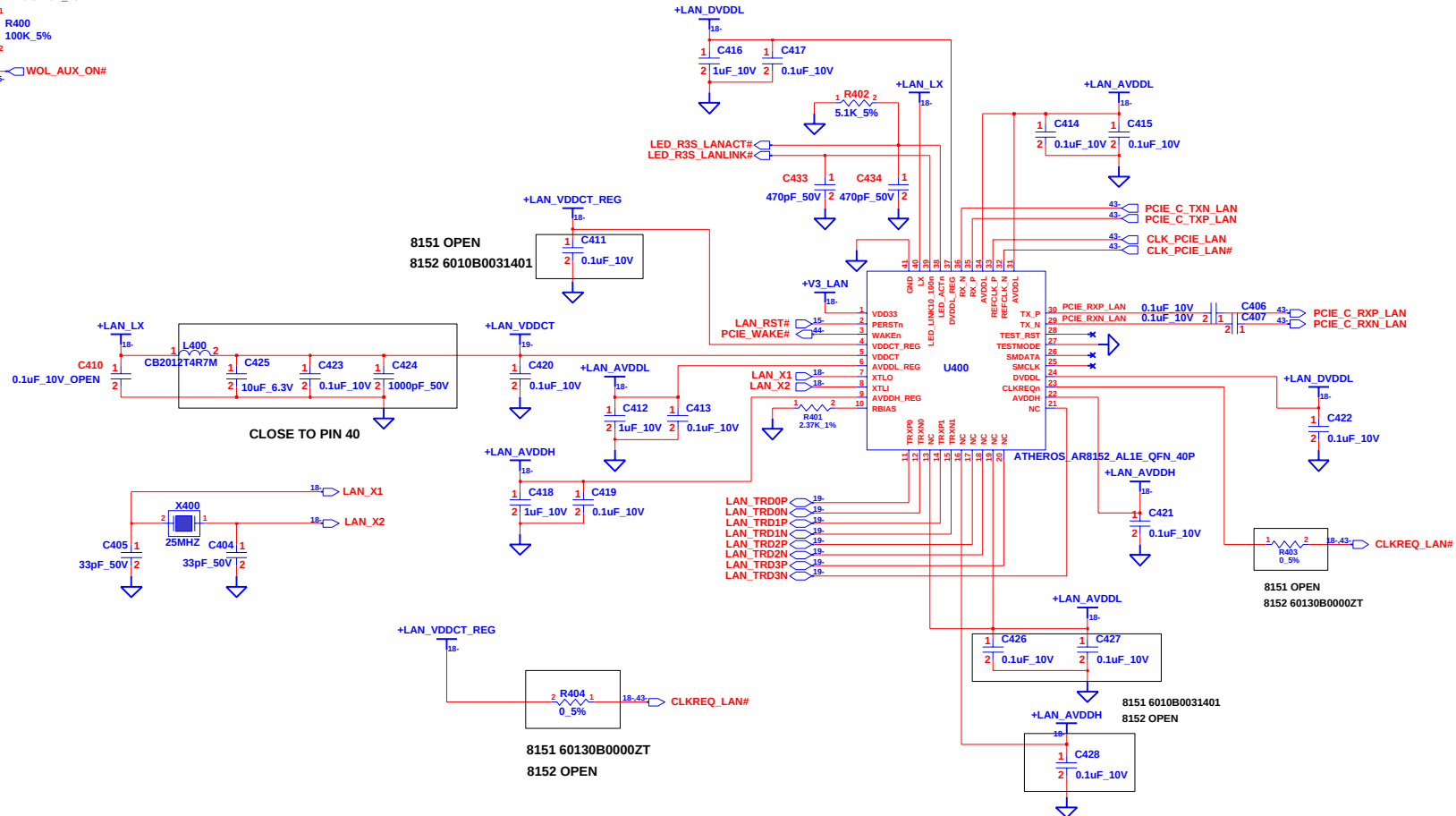
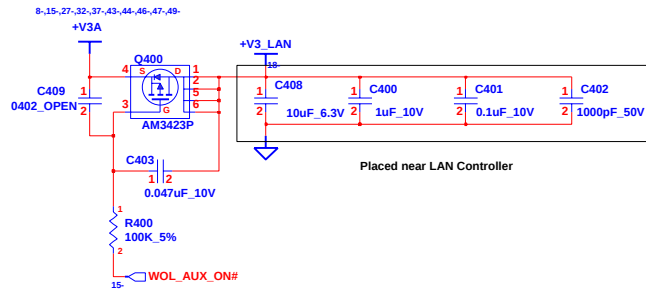
$$RSET = 0.0012 \cdot T^2 - 0.9308 \cdot T + 96.147$$

Hysteresis is 30C



INVENTEC			
TITLE Bremen10G <i>FAN, Thermal controller</i>			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET		17 OF	63

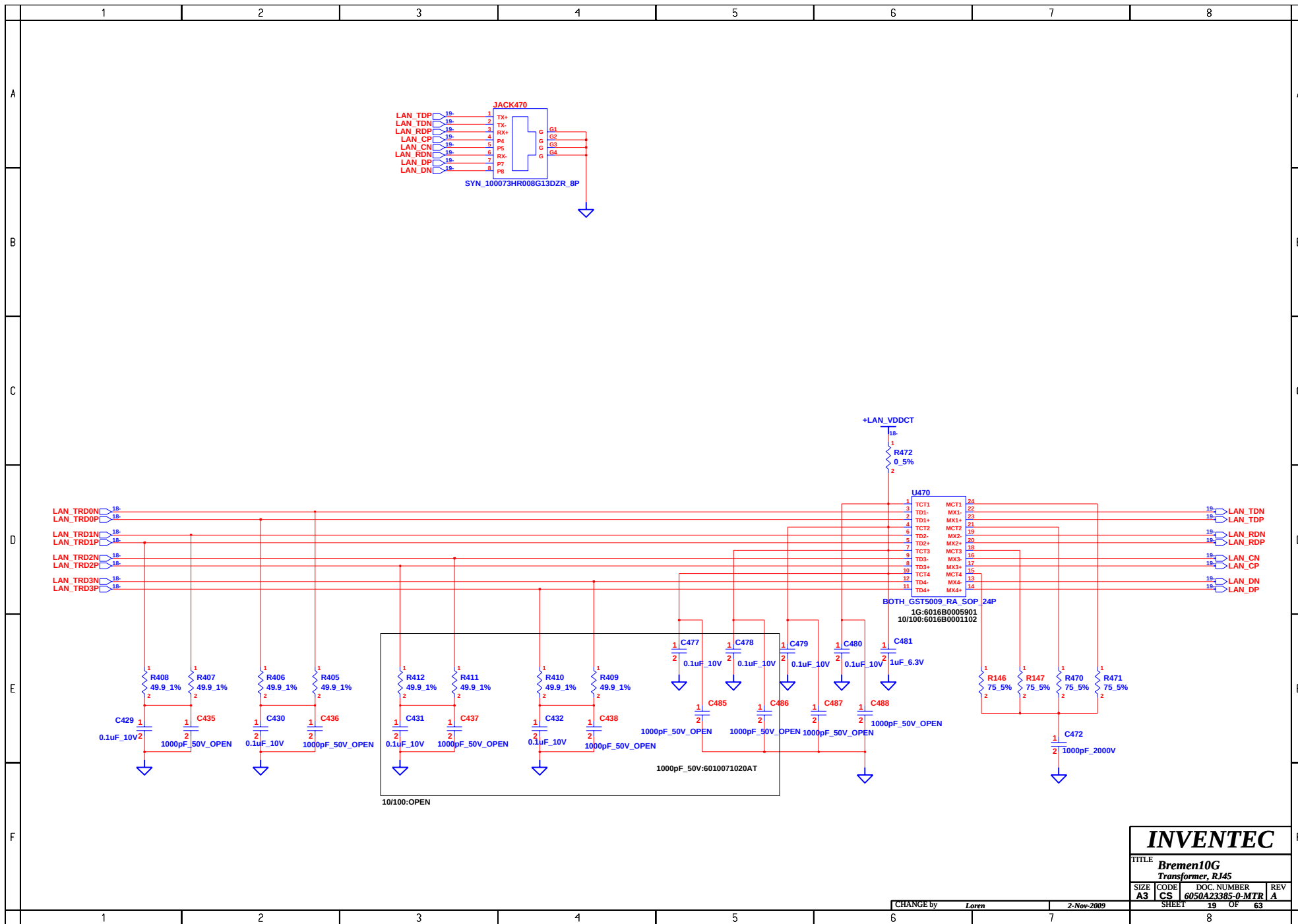
CHANGE by	<i>Loren</i>	2-Nov-2009
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INVENTEC

TITLE			
Bremen10G			
LAN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		18	OF 63

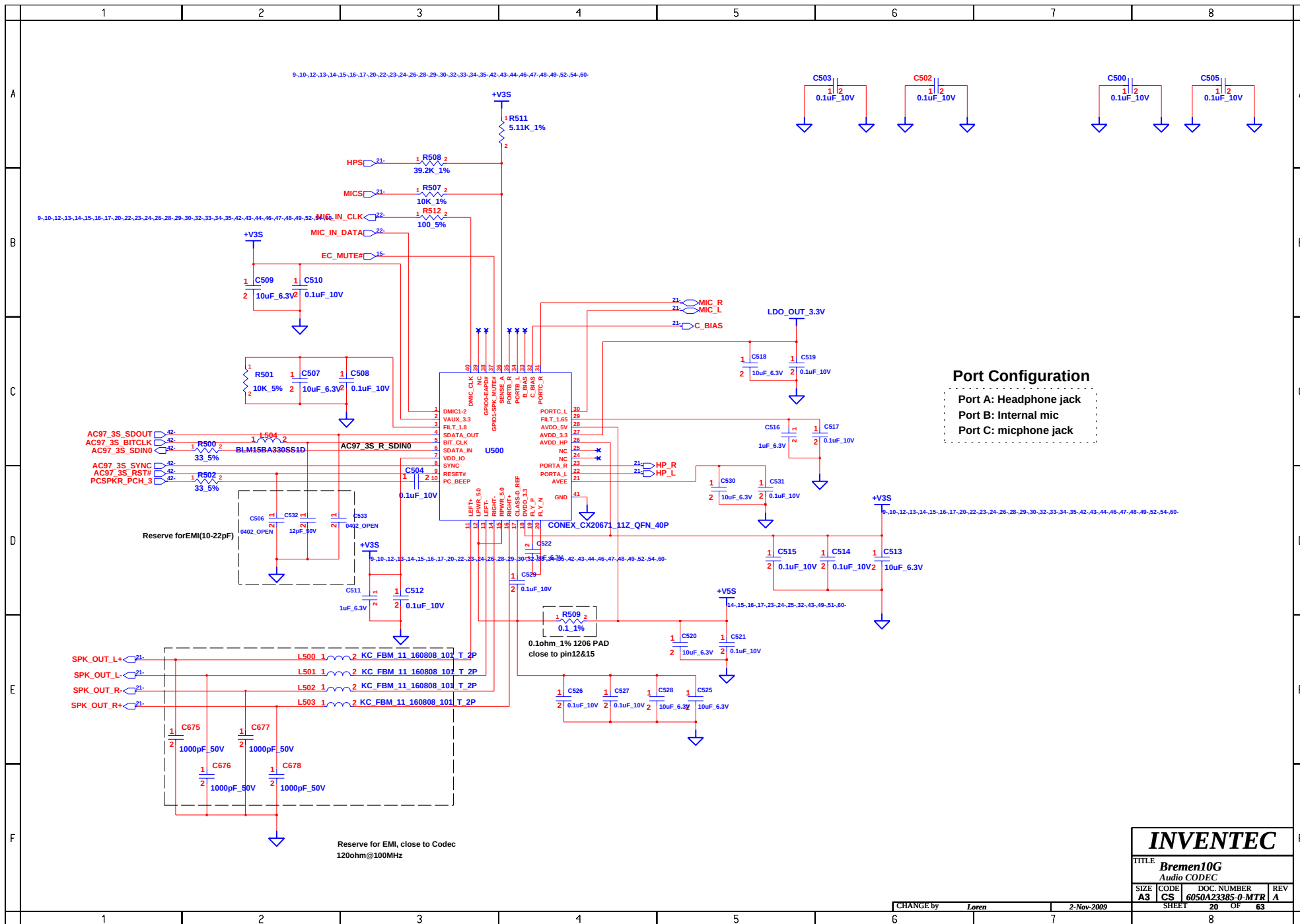
CHANGE by Loren 2-Nov-2009



INVENTEC

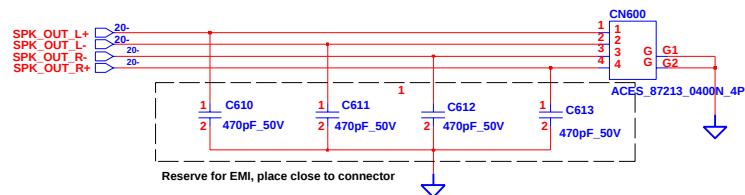
TITLE			
Bremen10G Transformer, RJ45			
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A3	CS	6050A23385-0-MTR	A
SHEET		19	OF 63

CHANGE by Loren 2-Nov-2009



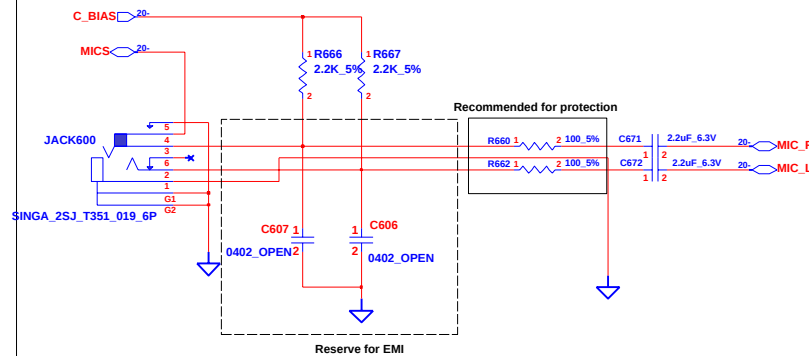
INVENTEC			
TITLE Bremen10G Audio CODEC			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
CHANGE by <i>Loren</i>		2-Nov-2009	
SHEET 20		OF 63	

INTERNAL SPEAKERS

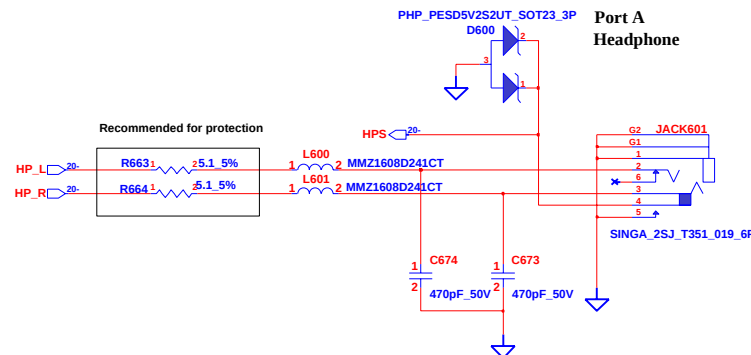


AUDIO JACKS

Port C
External microphone

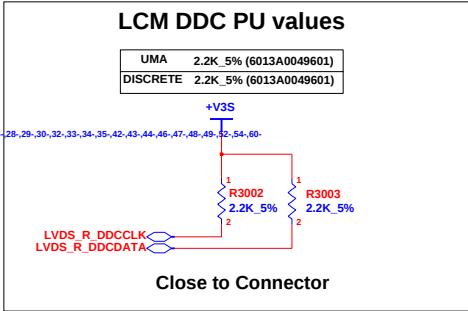


Port A
Headphone

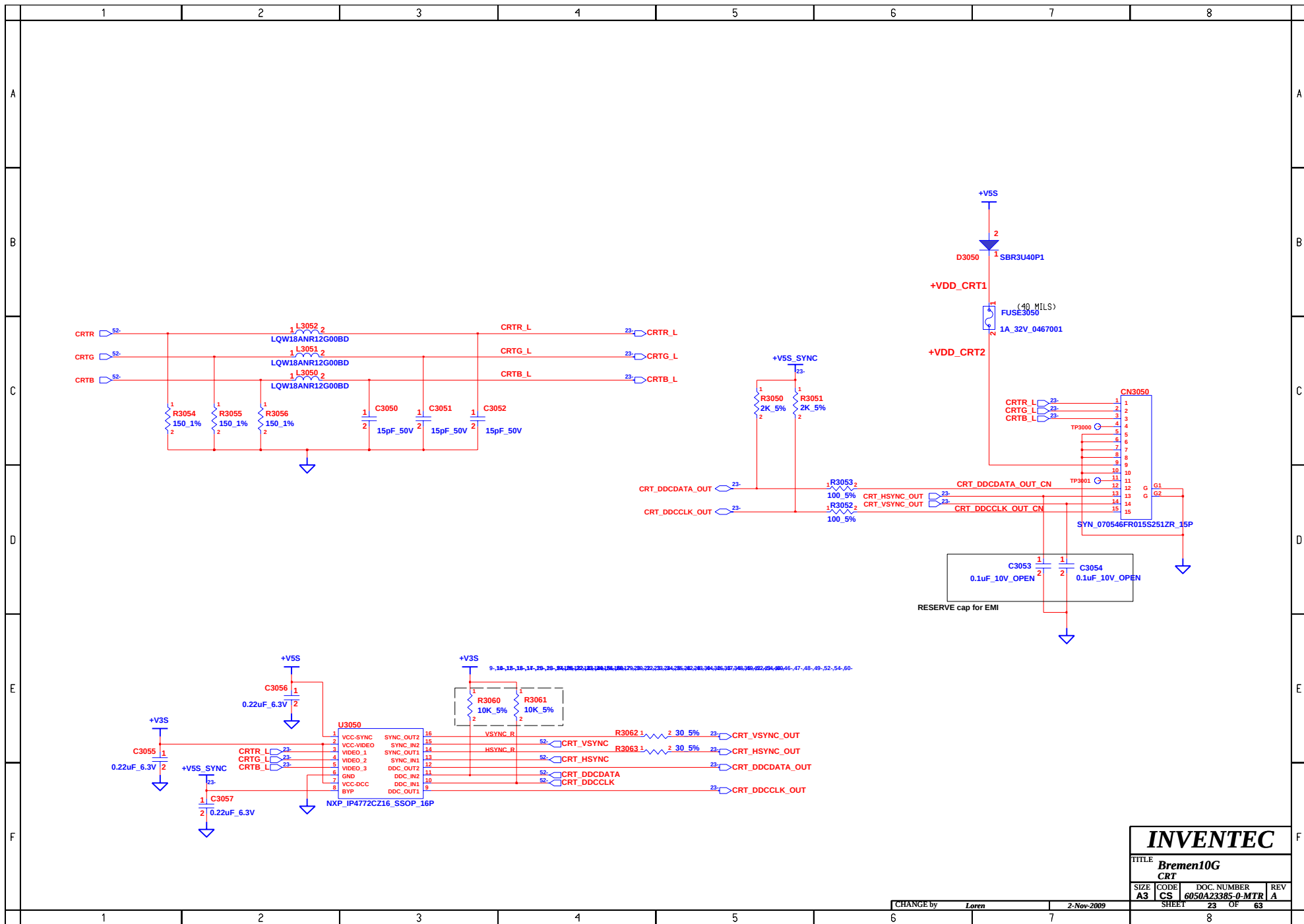


INVENTEC

TITLE Bremen10G JACK			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
CHANGE by Loren		2-Nov-2009	
SHEET 21		OF 63	



CHANGE by	<i>Loren</i>	2-Nov-2009
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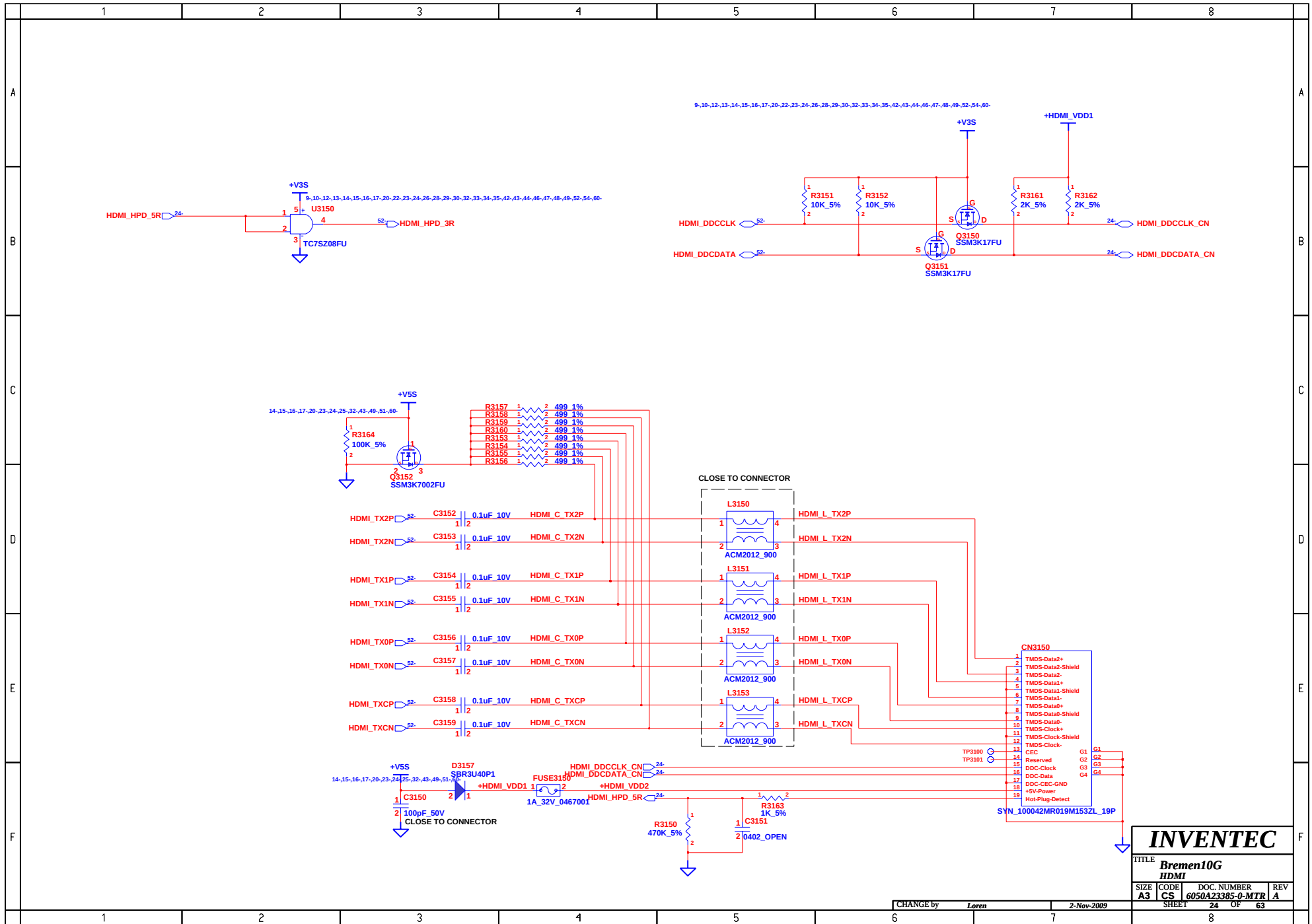
INVENTEC

TITLE
Bremen10G
CRT

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A

CHANGE by *Loren* 2-Nov-2009

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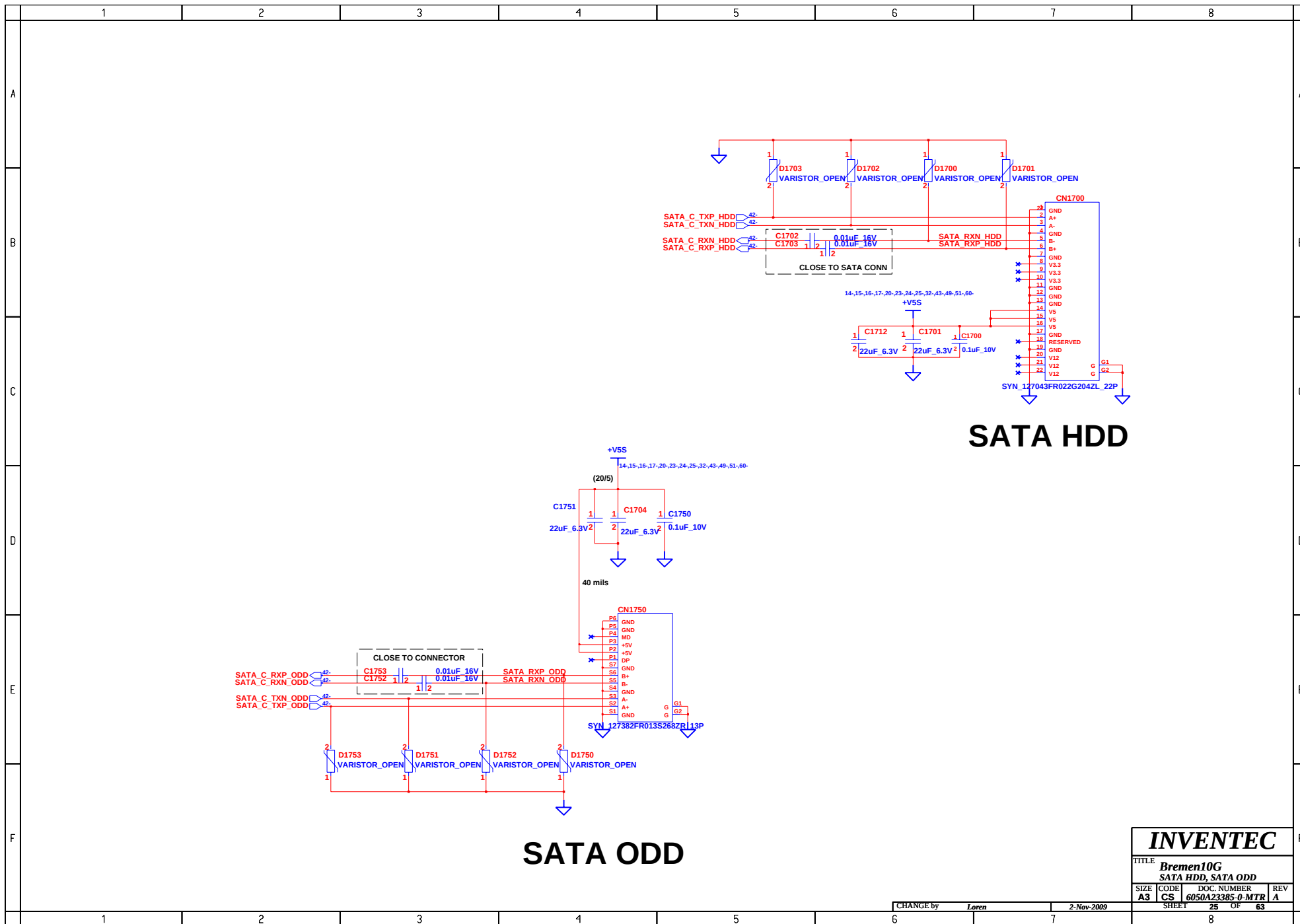
INVENTEC

TITLE
Bremen10G
HDMI

SIZE	CODE	DOC. NUMBER	REV
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CHANGE by *Loren* 2-Nov-2009

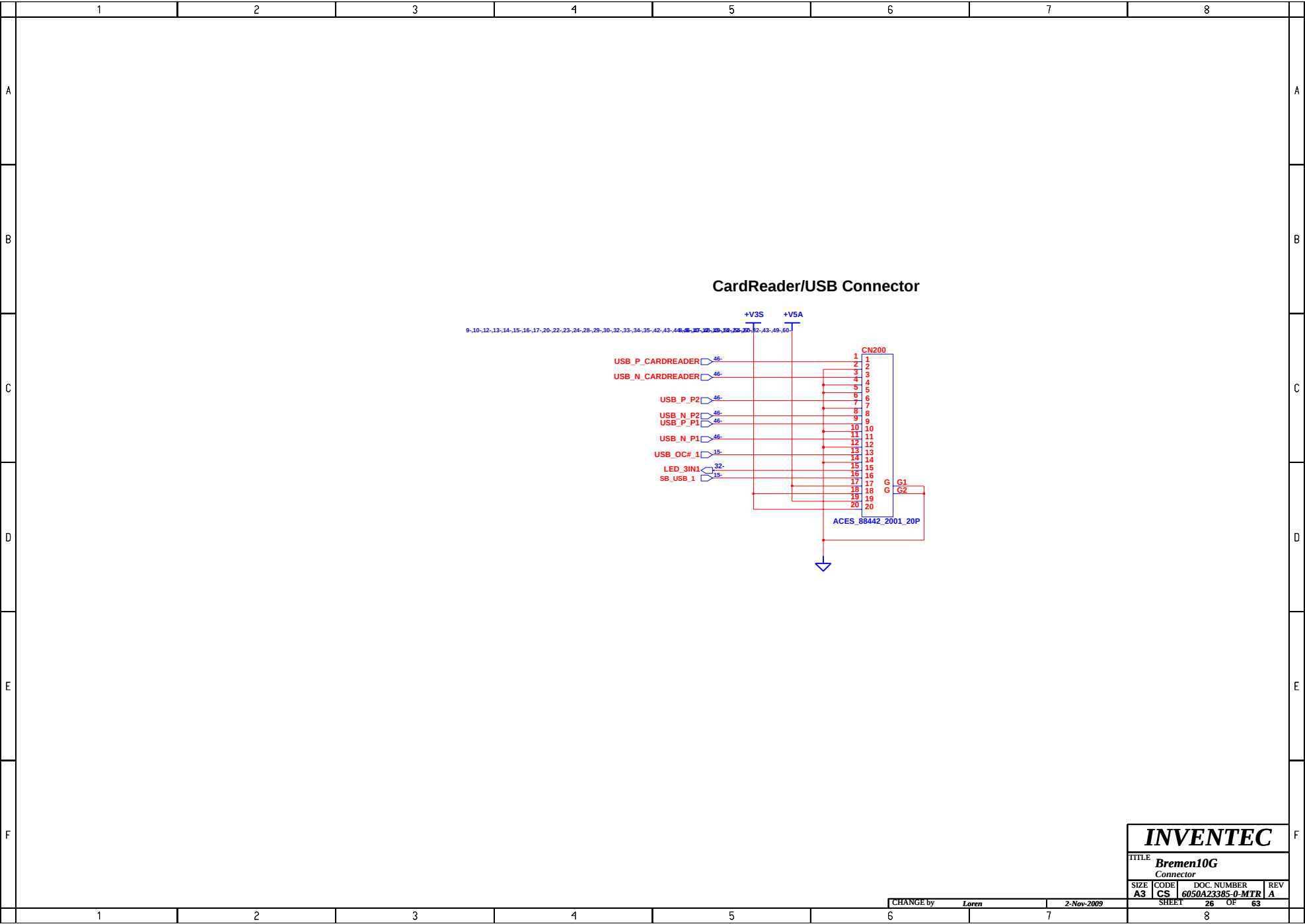
SHEET 24 OF 63



INVENTEC

TITLE Bremen10G SATA HDD, SATA ODD			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET 25		OF 63	

CHANGE by *Loren* 2-Nov-2009

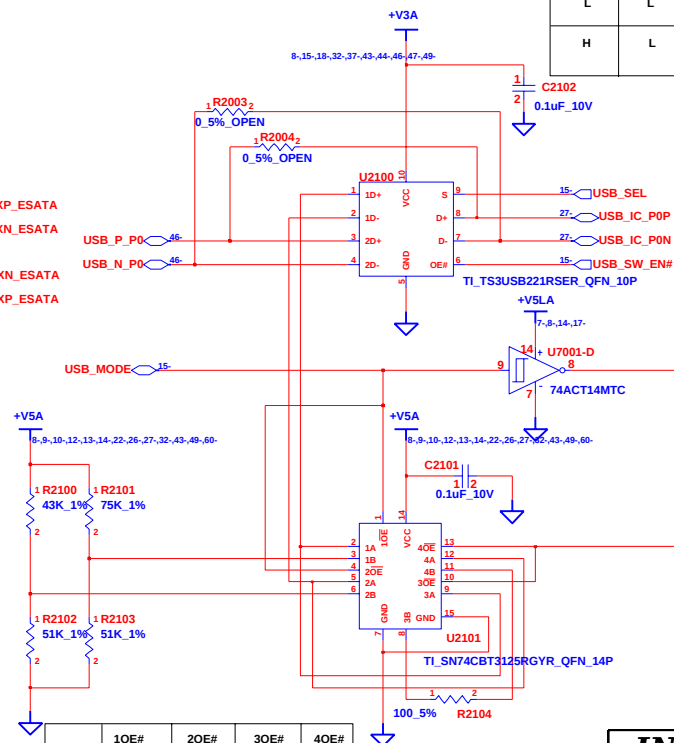
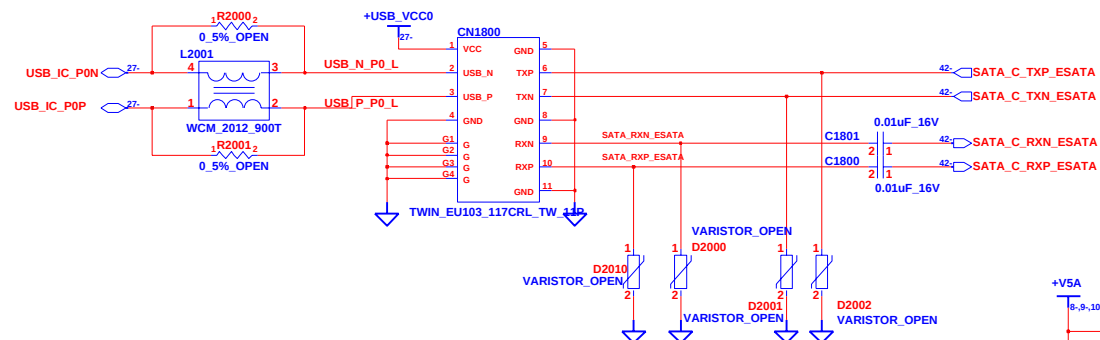
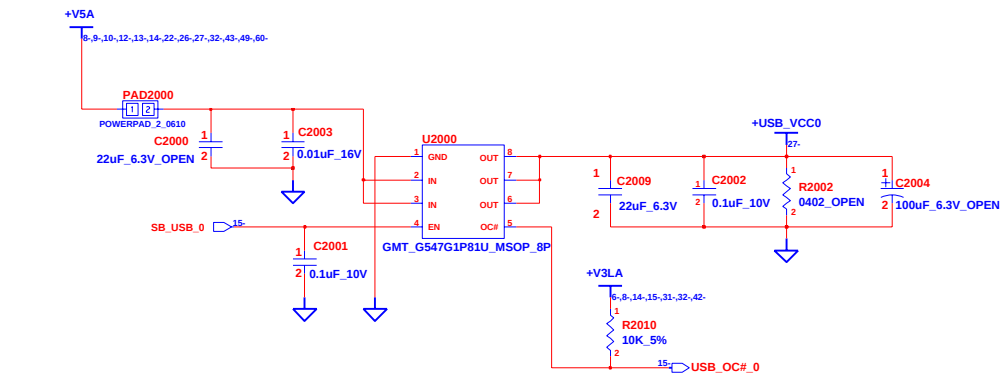


INVENTEC			
TITLE Bremen10G Connector			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET		26	OF 63

USB/eSATA COMBO

EN	D0	D1	FUNCTION
0	X	X	STANDBY
1	0	0	DEFAULT
1	1	0	CH0->5DB
1	0	1	CH1->5DB
1	1	1	CH0,1->5DB

S	OE#	Function
X	H	Disconnect
L	L	D=1D
H	L	D=2D



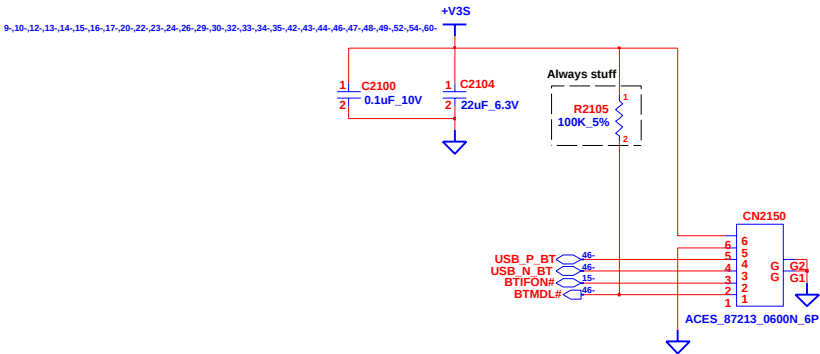
	1OE#	2OE#	3OE#	4OE#
Mode3	High	High	Low	Low
Mode4	Low	Low	High	High

INVENTEC

TITLE			
Bremen10G			
USB/eSATA combo			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		27	OF 63

CHANGE by Loren 2-Nov-2009

BLUEBOOTH



INVENTEC

TITLE
Bremen10G
BlueTooth

SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET 28		OF 63	

CHANGE by *Loren* 2-Nov-2009

Wireless & Debug card

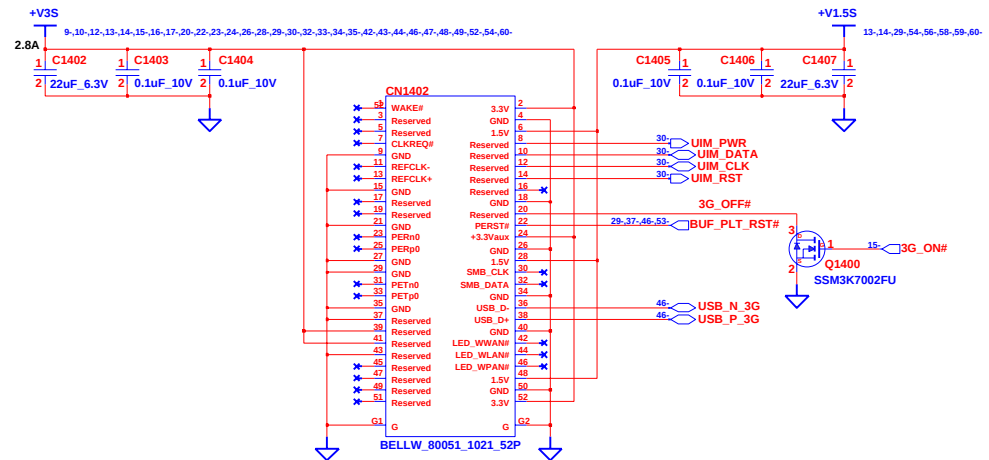
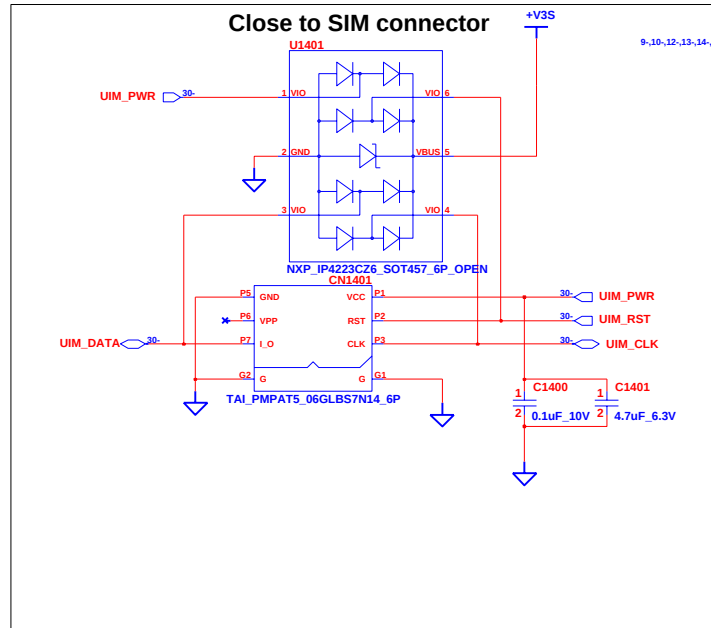
The diagram illustrates the internal circuitry of a Wireless & Debug card. It features a central CN1300 chip, which is connected to various external components and signals. On the left side, the EC_BTIFON# signal is connected to a Q1300 component, which is also connected to the SSM3K7002FU_OPEN signal. The CN1300 chip has multiple pins connected to various signals, including CLKREQ_WLAN#, CLK_PCIE_WLAN#, CLK_PCIE_WLAN#, BUF_PLT_RST#, CLK_R_PCI_DEBUG, PCIE_C_RXN_WLAN, PCIE_C_RXP_WLAN, PCIE_C_TXN_WLAN, PCIE_C_TXP_WLAN, PCI_3S_SERIRQ, WAKE#, Reserved, CLKREQ#, REFCLK+, REFCLK-, GND, Reserved, PERST#, GND, PERn0, PERp0, GND, SMB_CLK, SMB_DATA, GND, USB_D-, USB_D+, GND, LED_WWAN#, LED_WLAN#, LED_WPAN#, Reserved, GND, and 3.3V. On the right side, the +V3S, 800mA, +V1.5S, and WXMIT_OFF# signals are connected to a Q1301 component, which is also connected to the WXMIT_OFF# signal. The bottom of the diagram shows a BELLW_80051_1021_52P connector with pins G1, G, and G2.

TITLE			
Bremen10G WLAN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		29	OF 63

CHANGE by	Loren	2-Nov-2009
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8

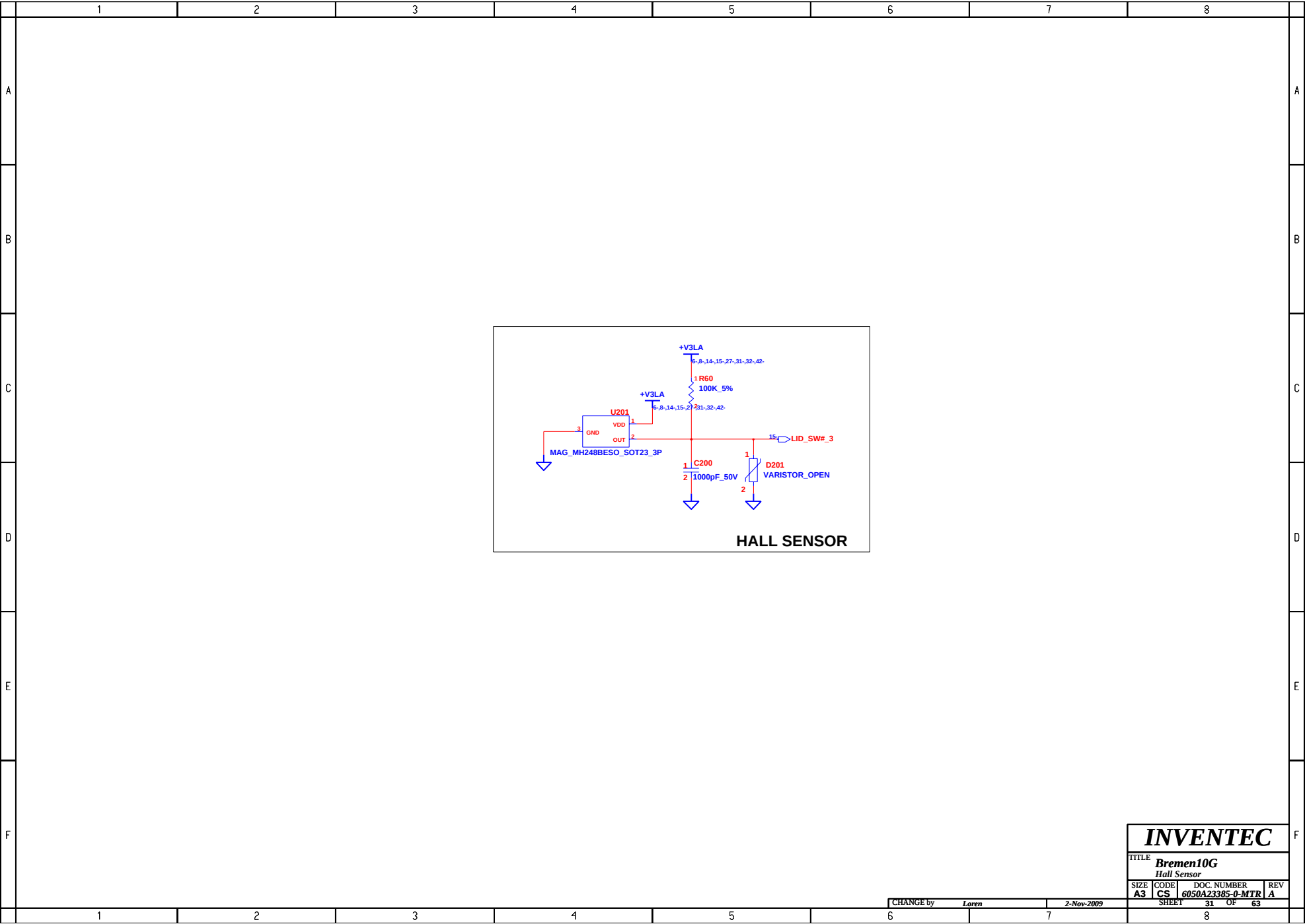
3G



INVENTEC

TITLE			
Bremen10G			
3G			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		30 OF	63

CHANGE by Loren 2-Nov-2009



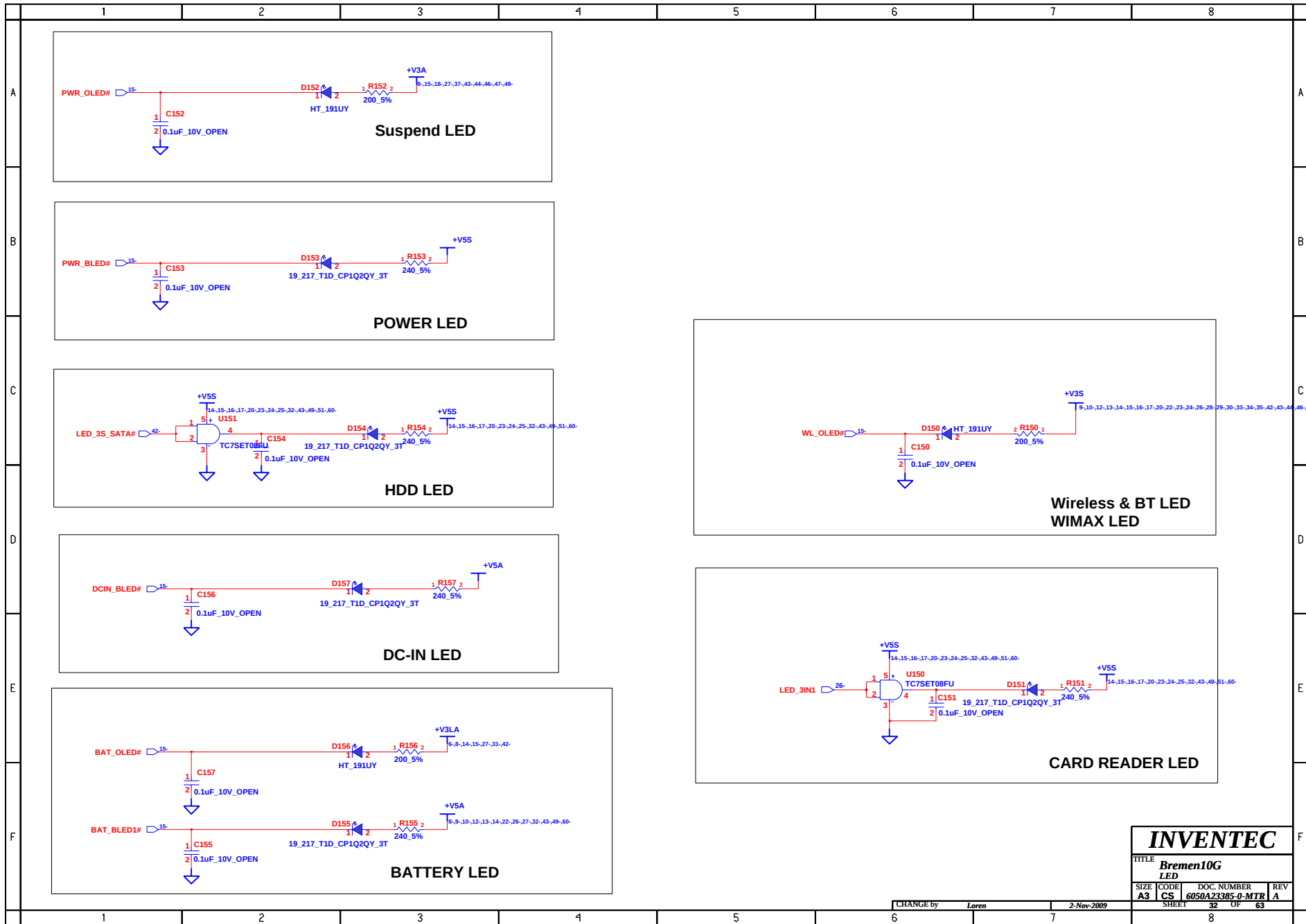
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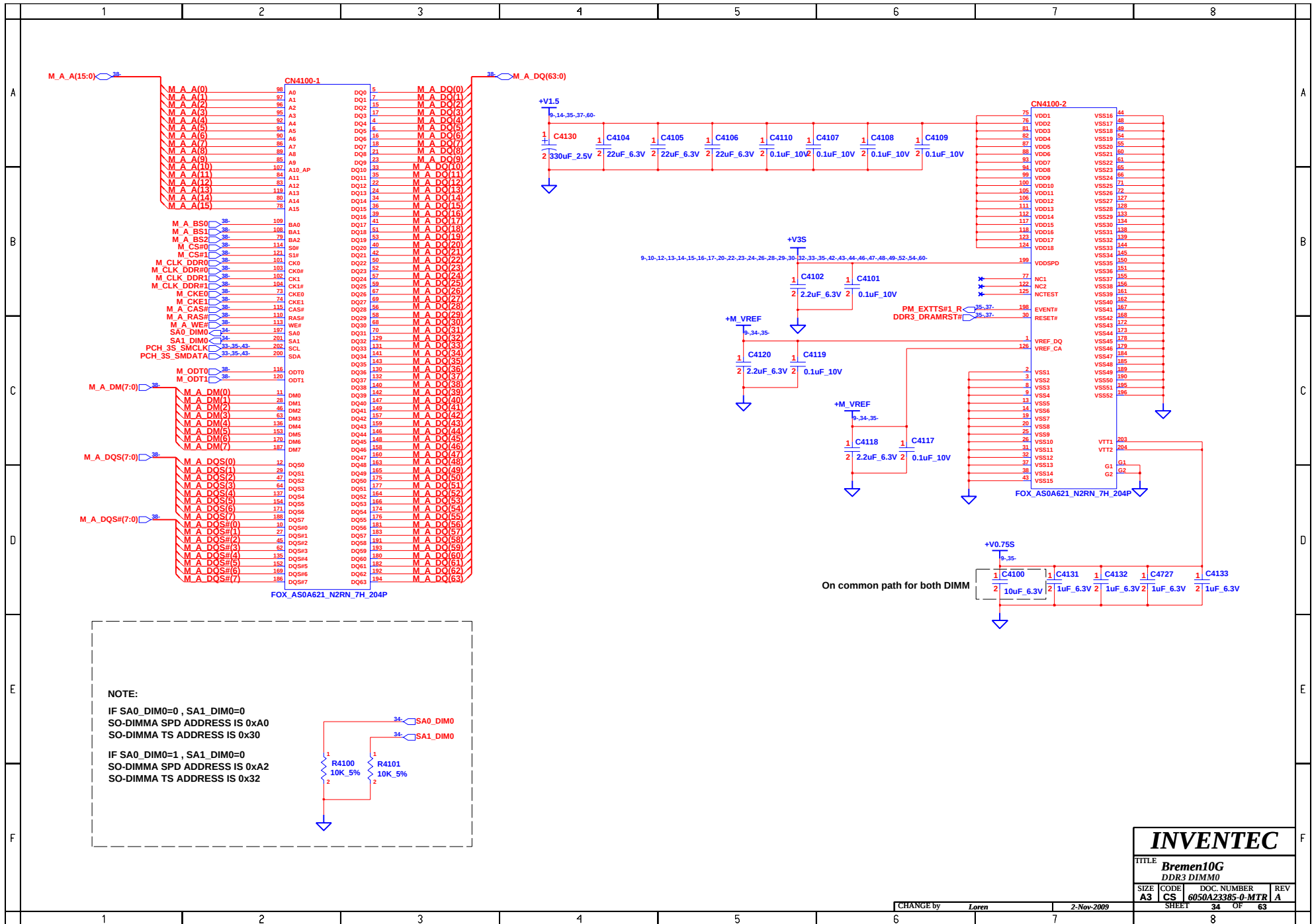
TITLE
Bremen10G
Hall Sensor

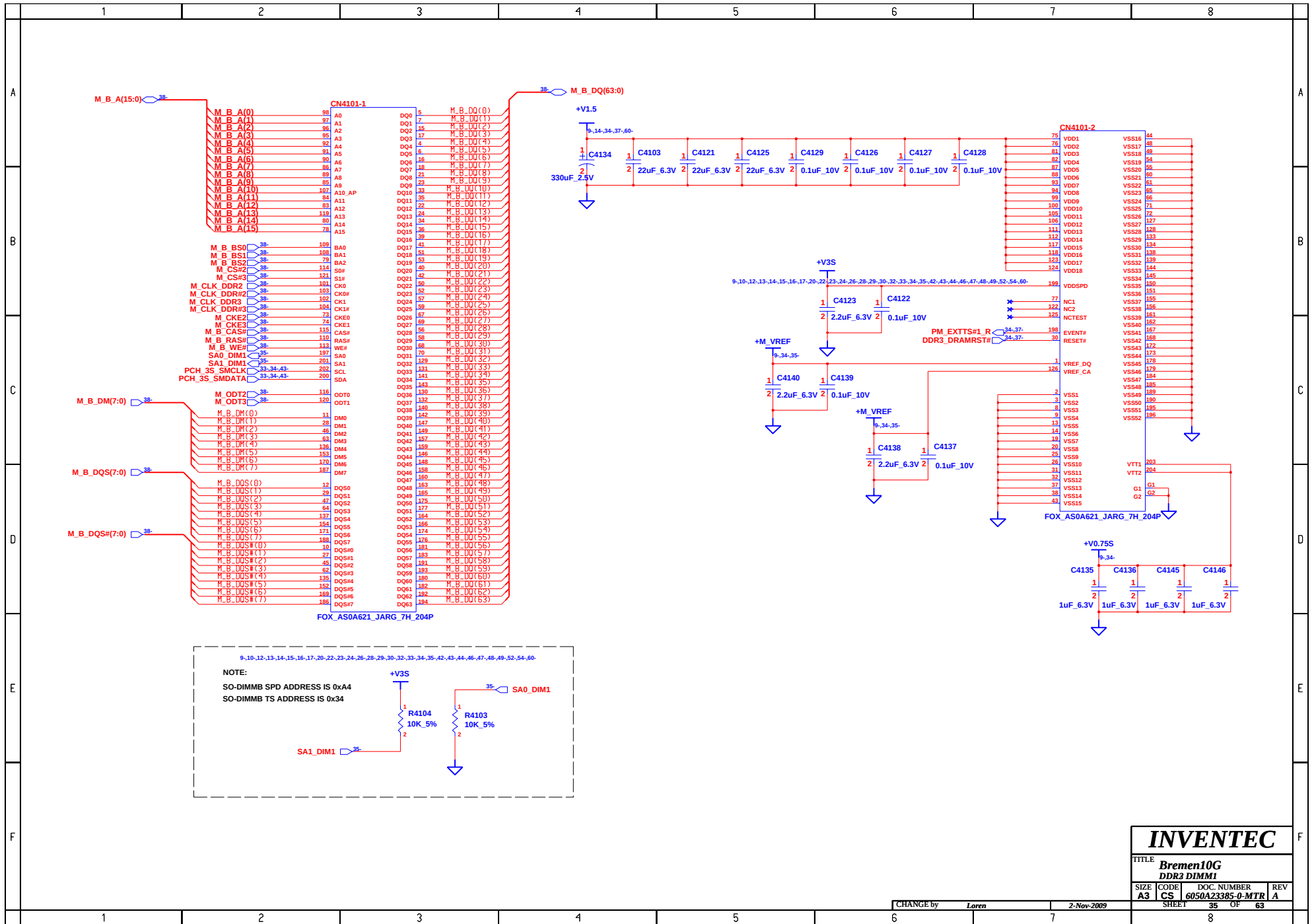
SIZE CODE DOC. NUMBER REV

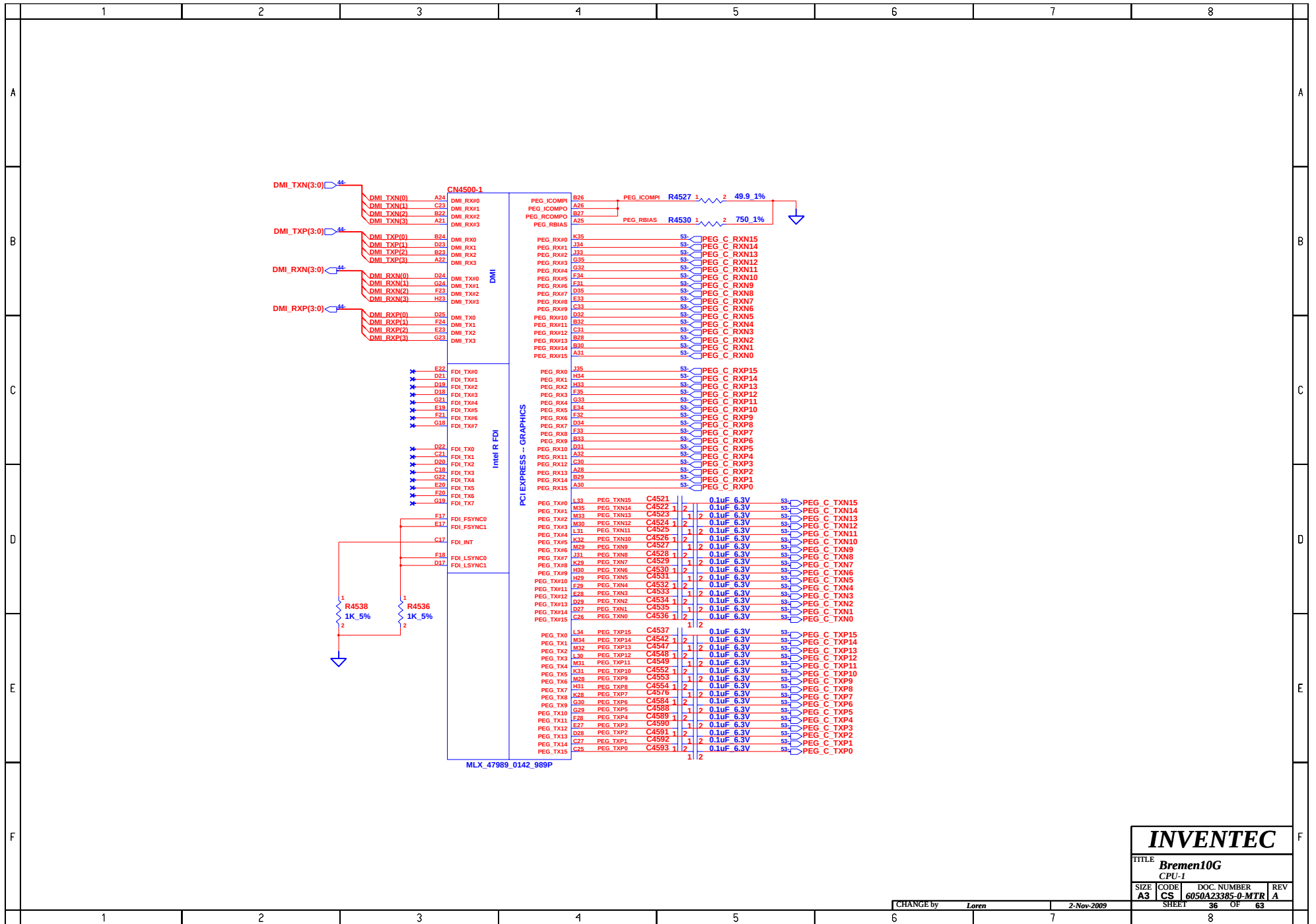
A3 CS 6050A23385-0-MTR A

SHEET 31 OF 63





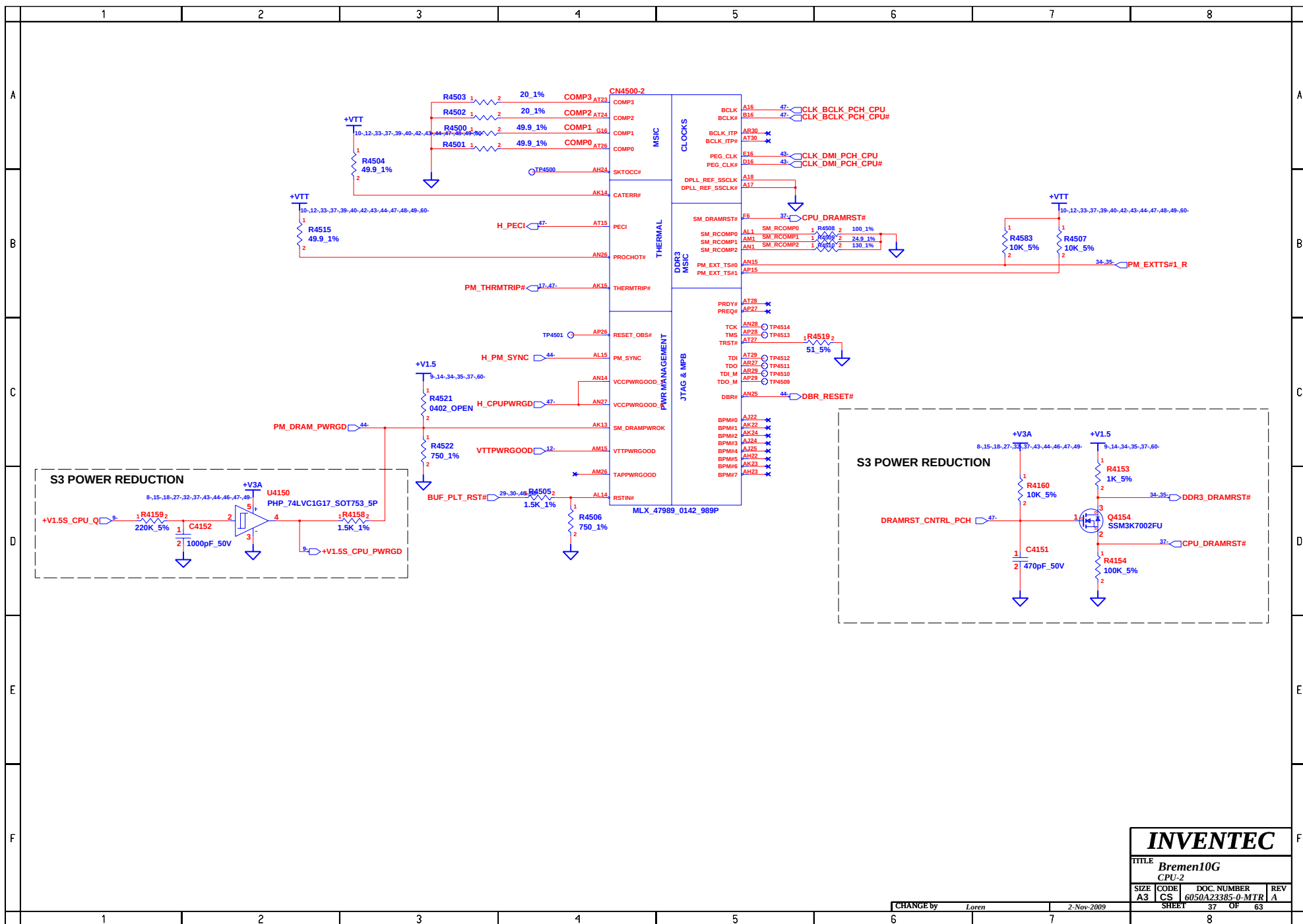


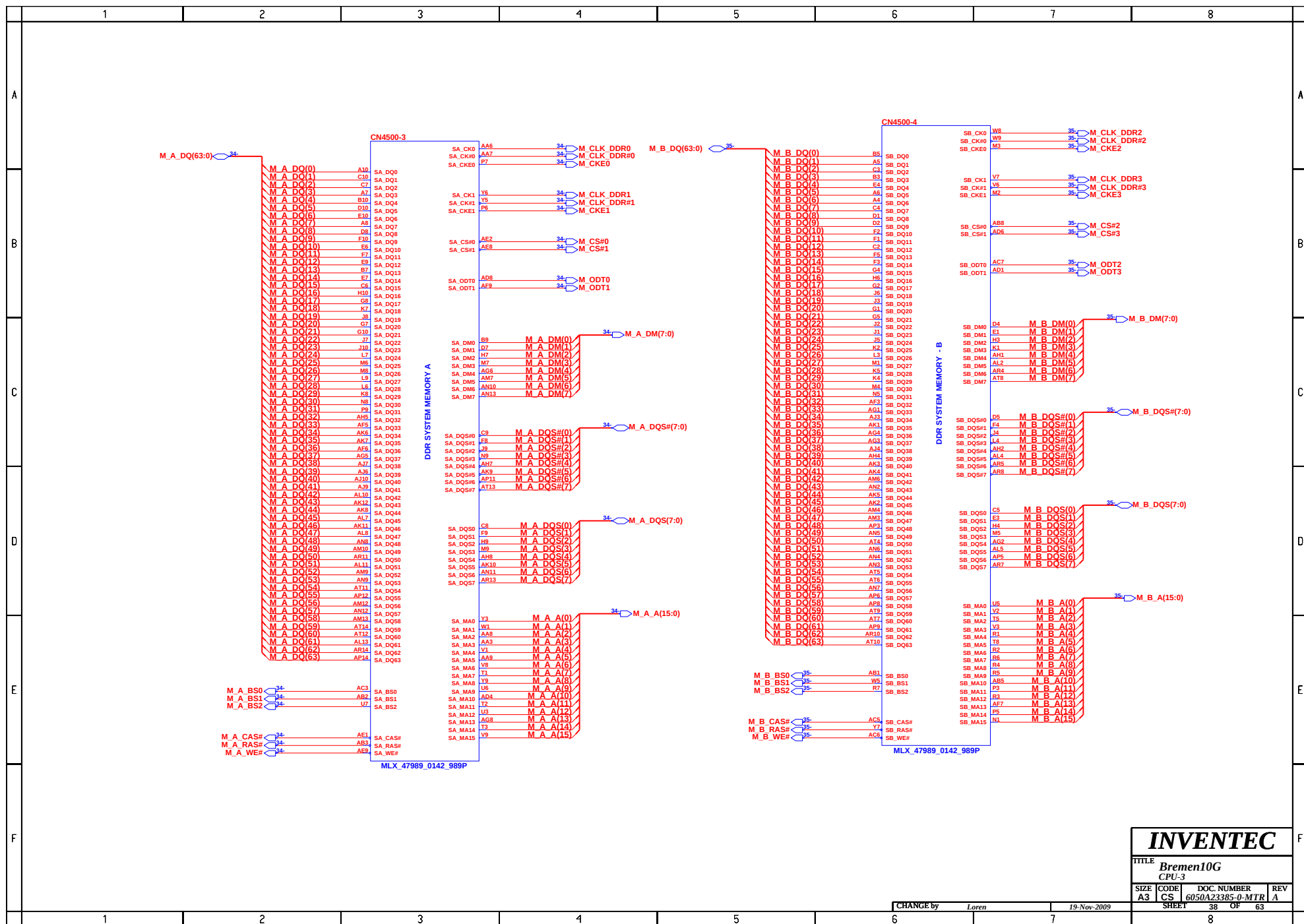


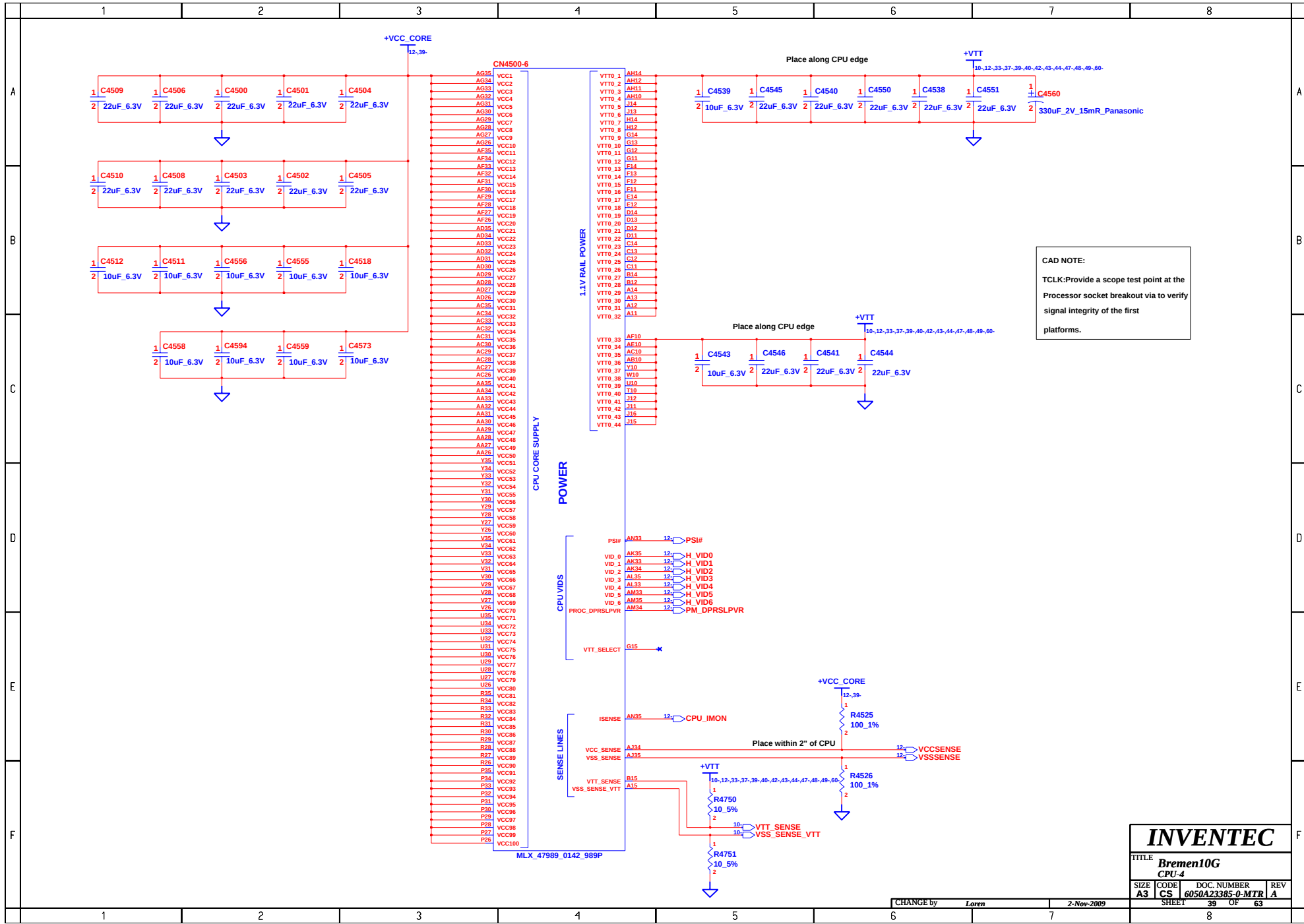
INVENTEC

TITLE			
Bremen10G			
CPU-1			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		36	OF 63

CHANGE by Loren 2-Nov-2009







CAD NOTE:
TCLK: Provide a scope test point at the Processor socket breakout via to verify signal integrity of the first platforms.

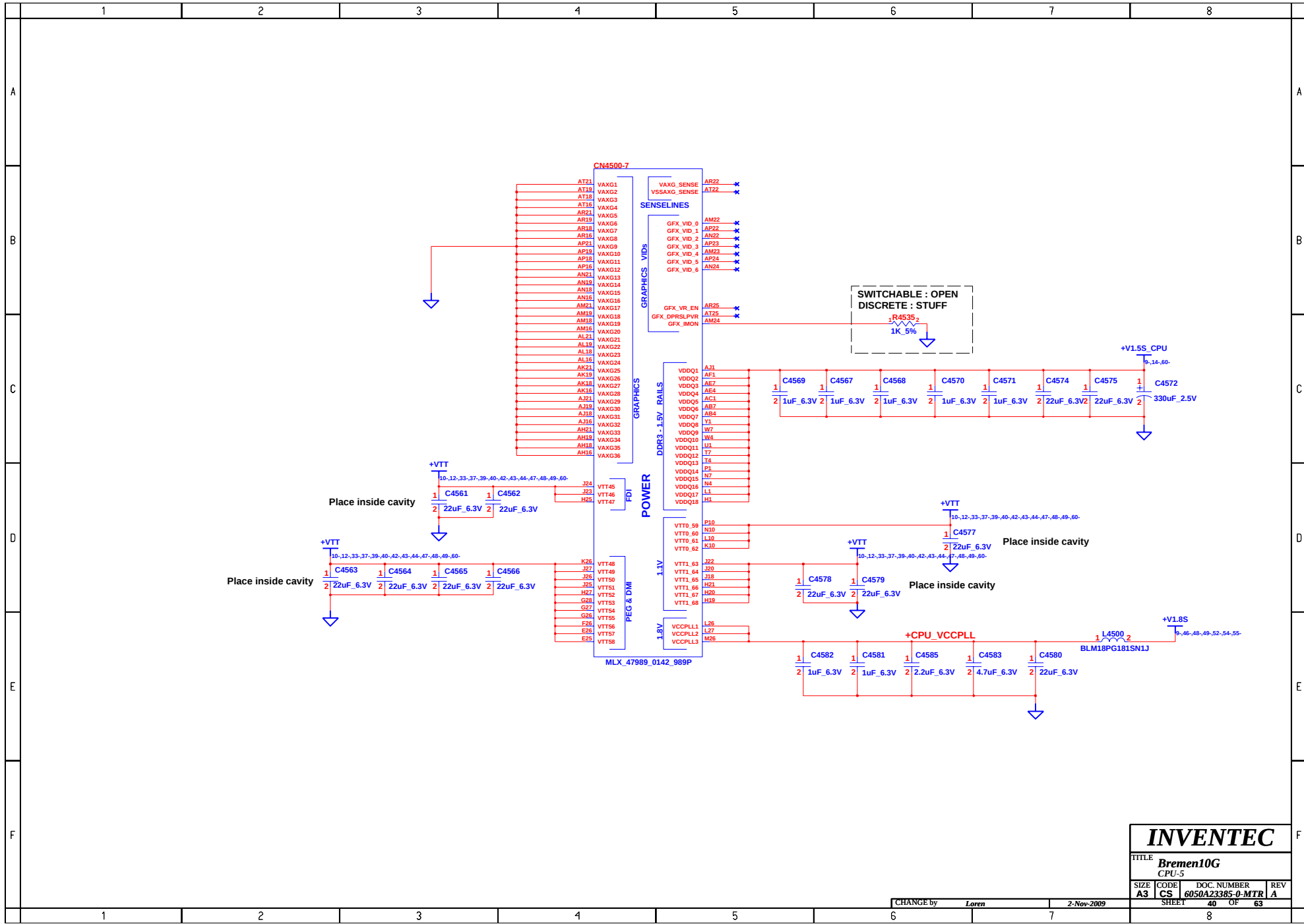
INVENTEC

TITLE
**Bremen10G
CPU-4**

SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A

CHANGE by *Loren* 2-Nov-2009

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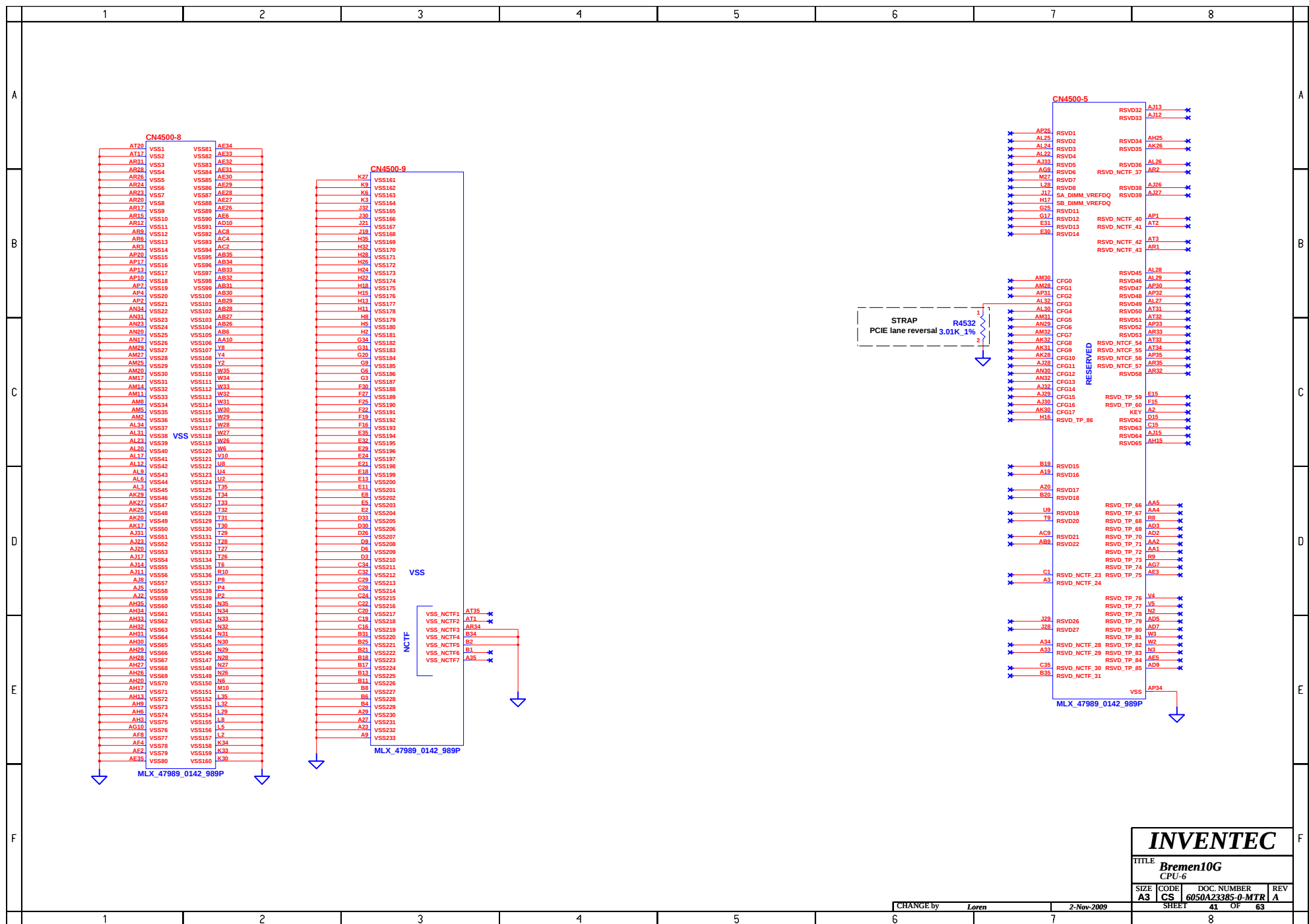
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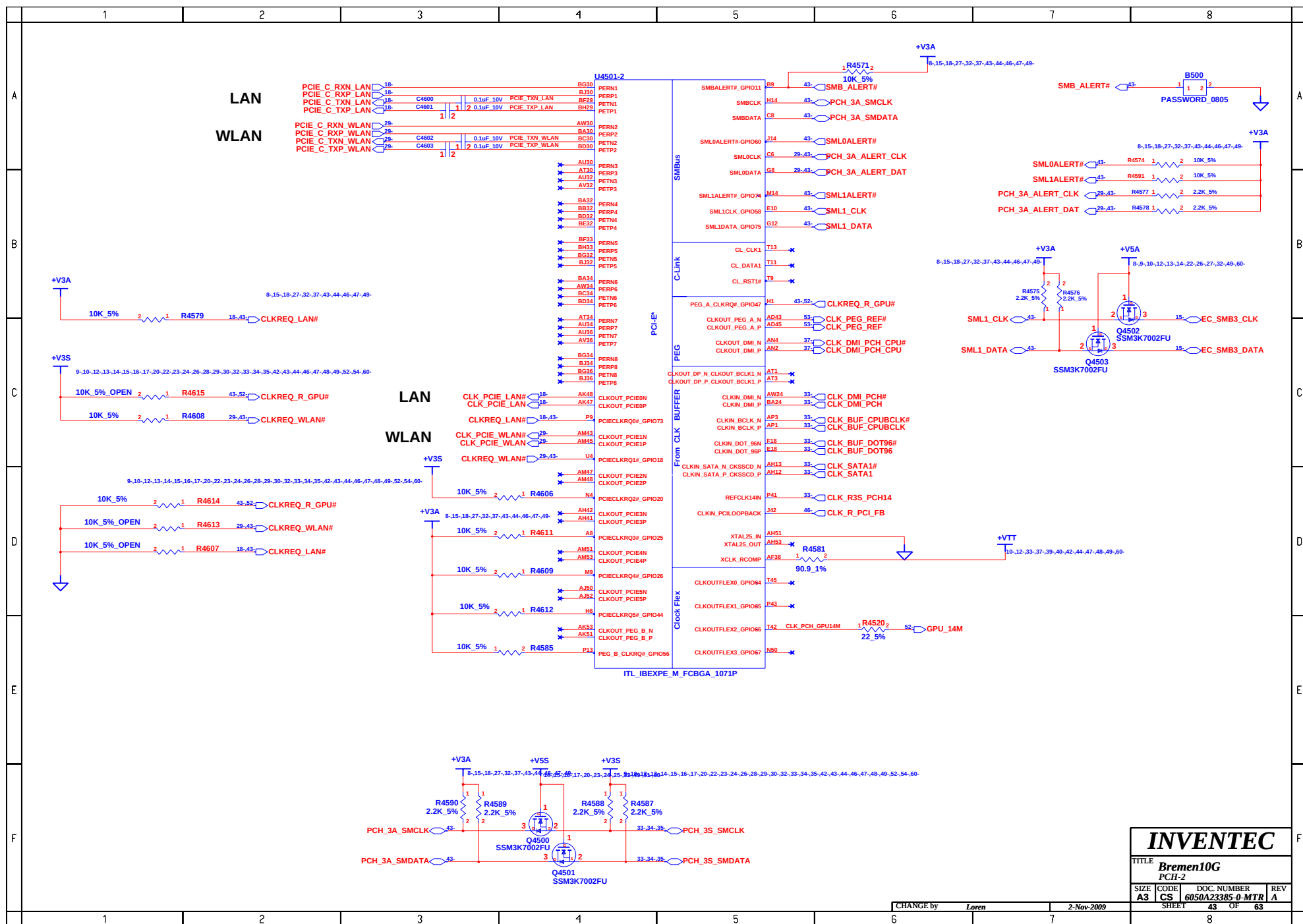
TITLE
Bremen10G
CPU-5

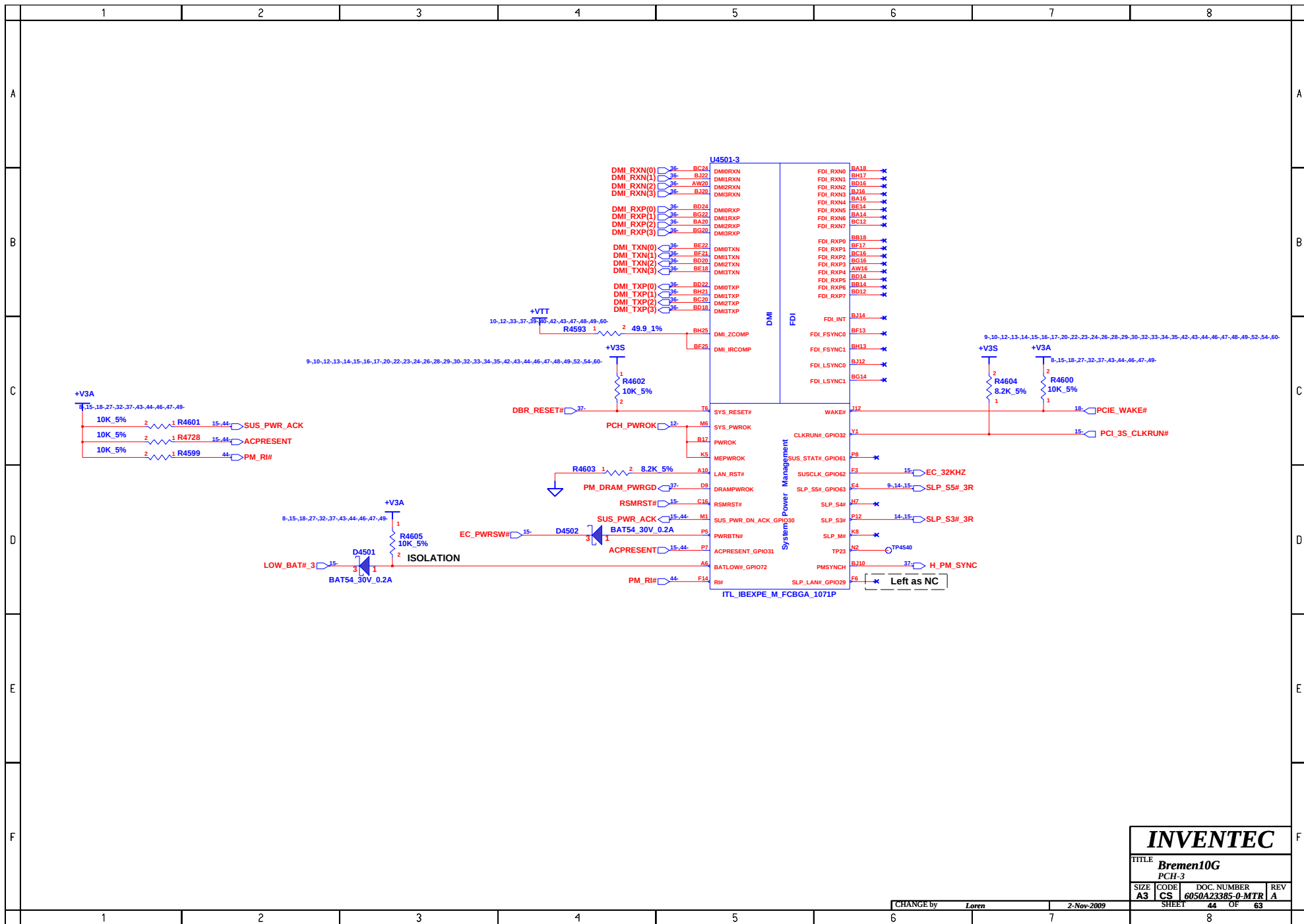
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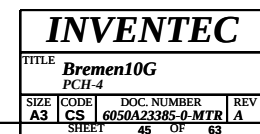
CHANGE by *Loren* 2-Nov-2009

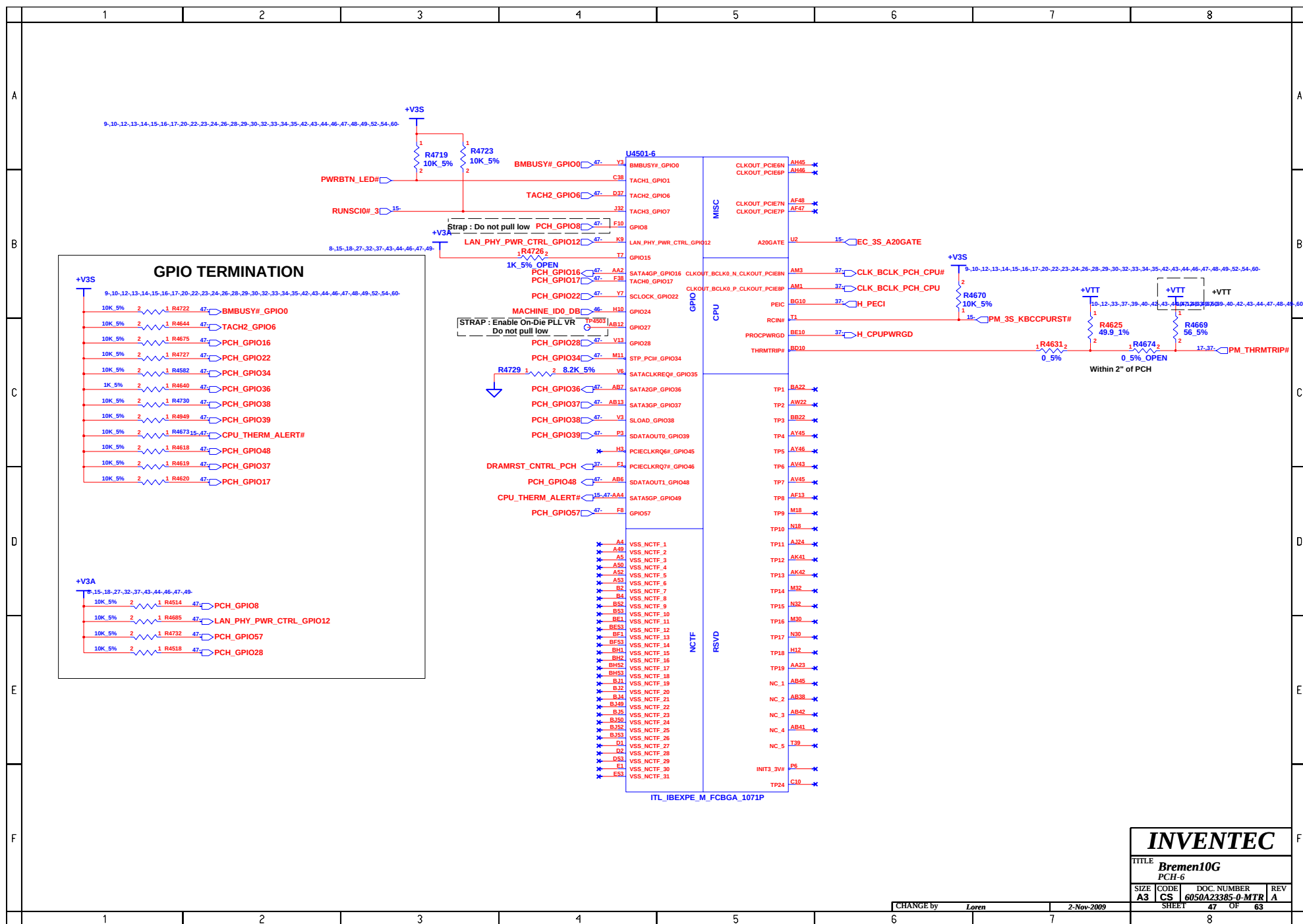
SHEET 40 OF 63

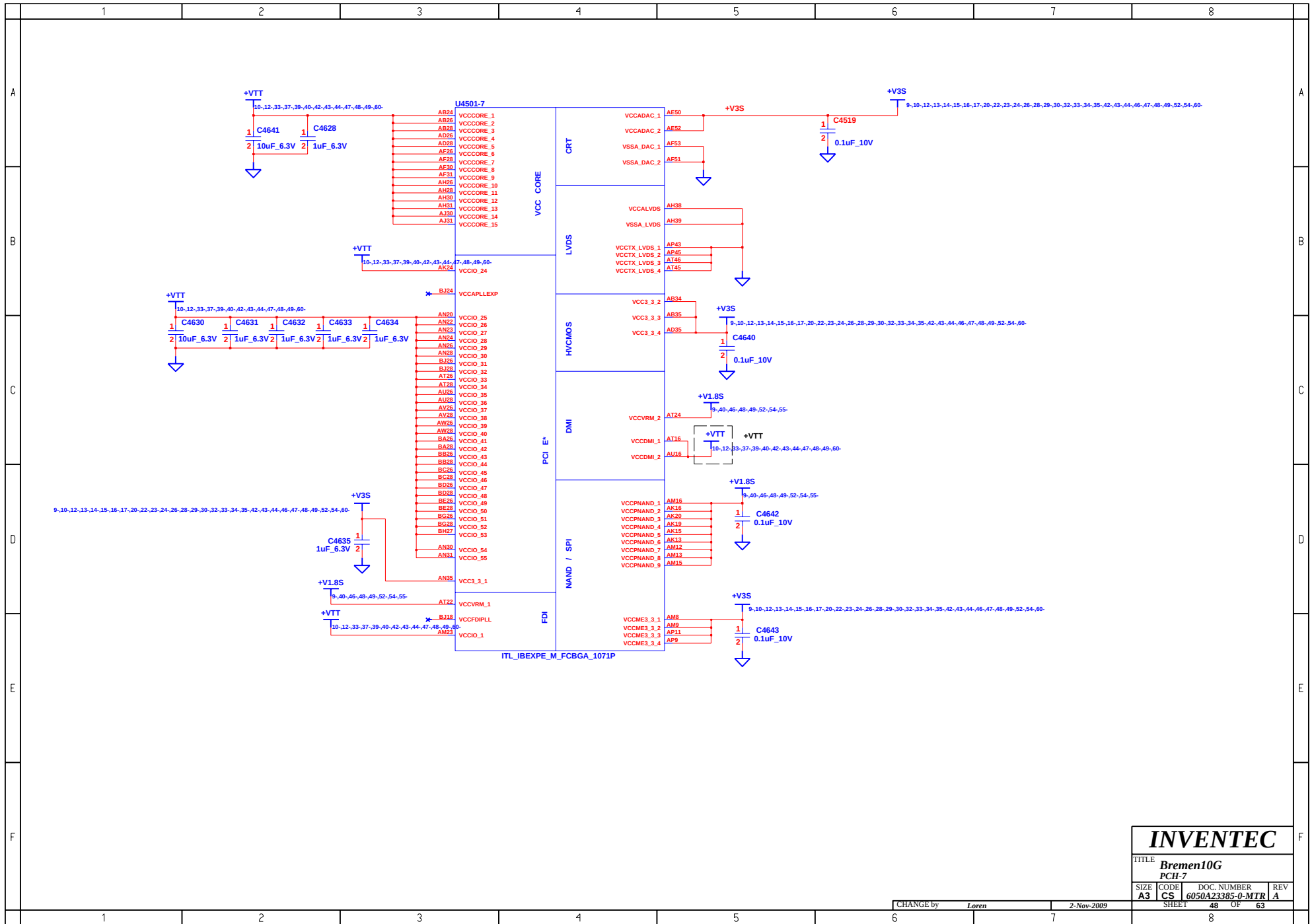






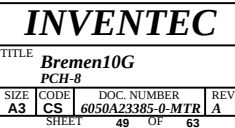




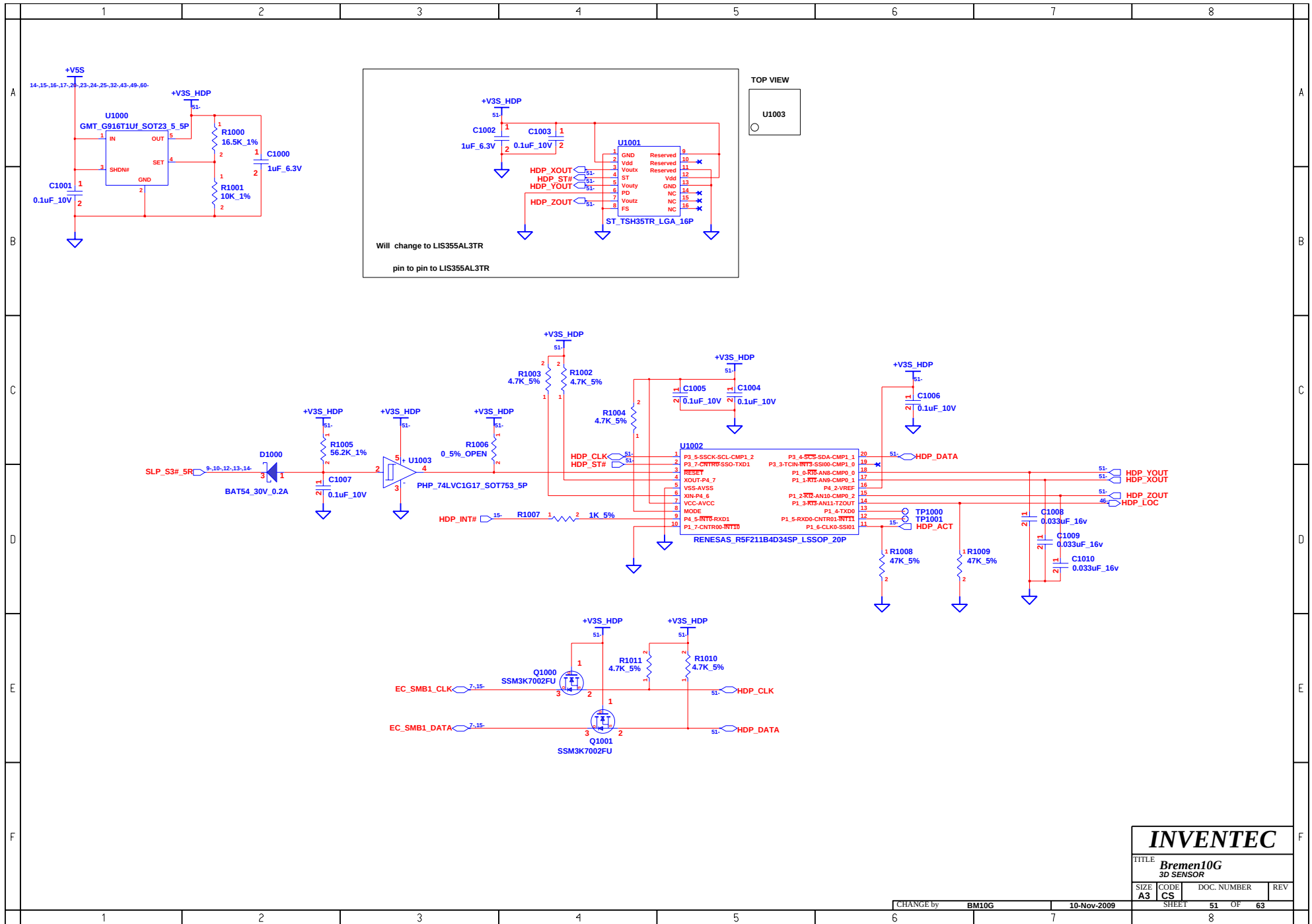


INVENTEC

TITLE			
Bremen10G			
PCH-7			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A23385-0-MTR	A
SHEET		48	OF 63



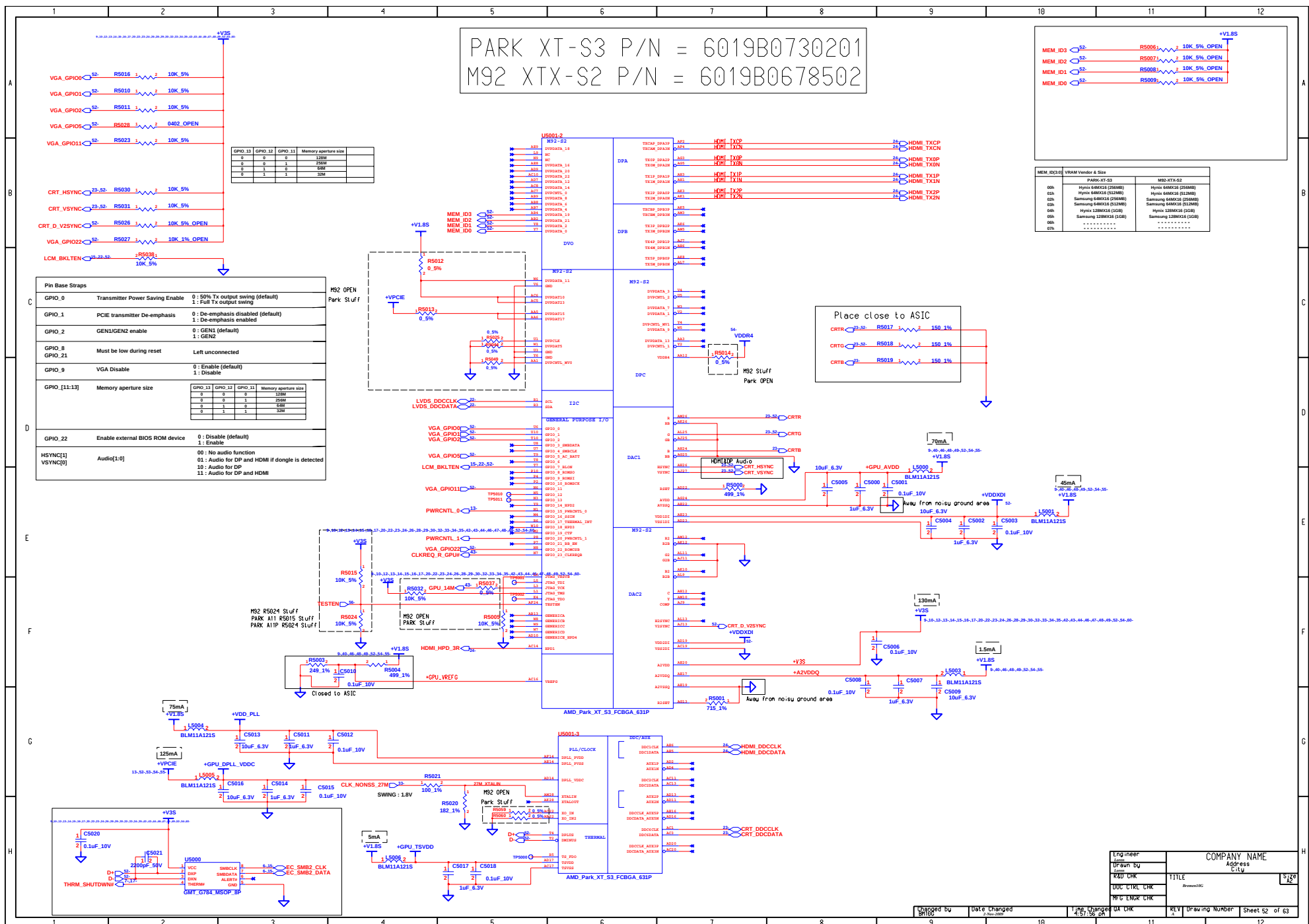
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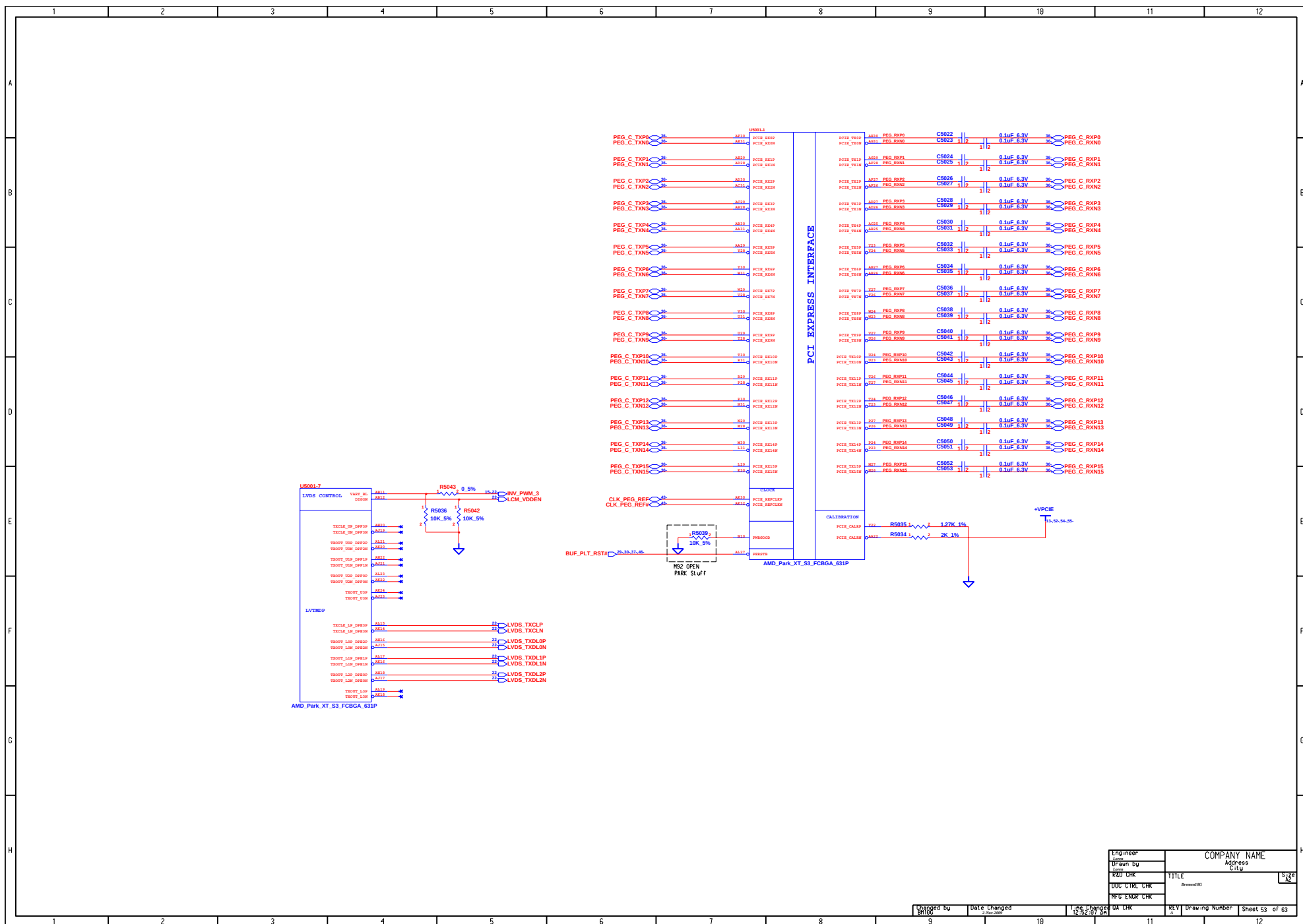


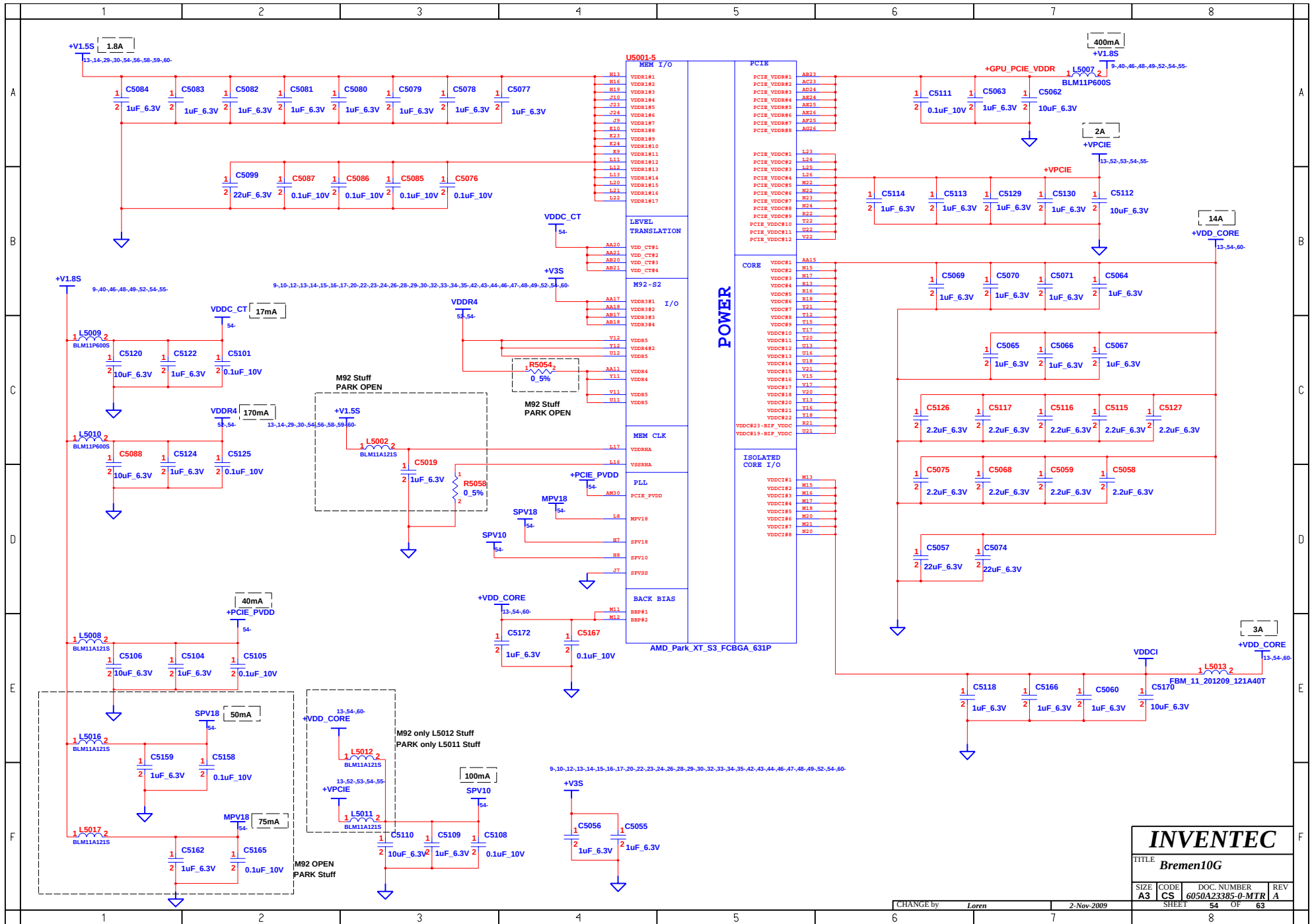
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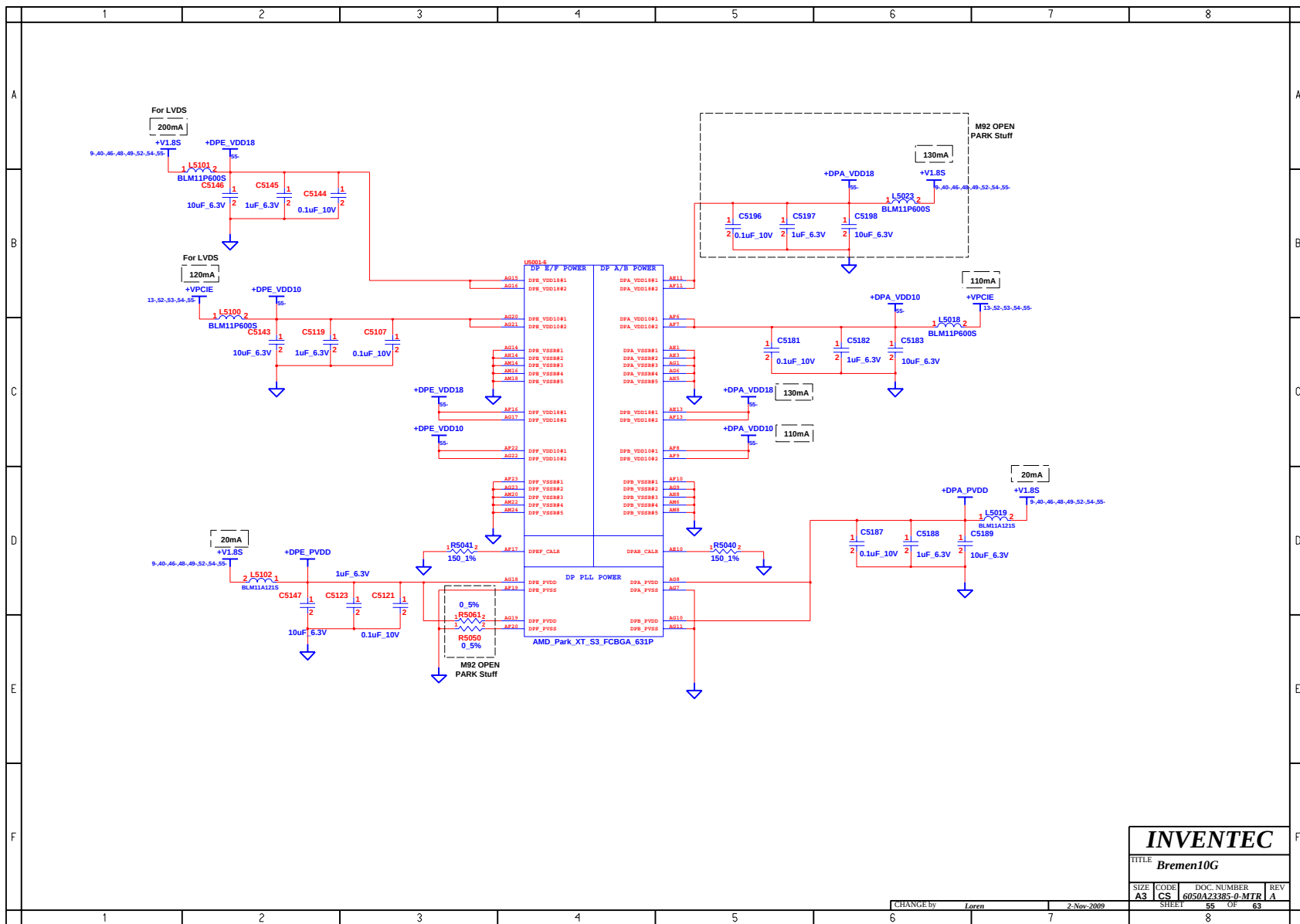
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SIZE A3	CODE CS	DOC. NUMBER	REV
SHEET		51	OF 63

CHANGE by **BM10G** 10-Nov-2009









INVENTEC

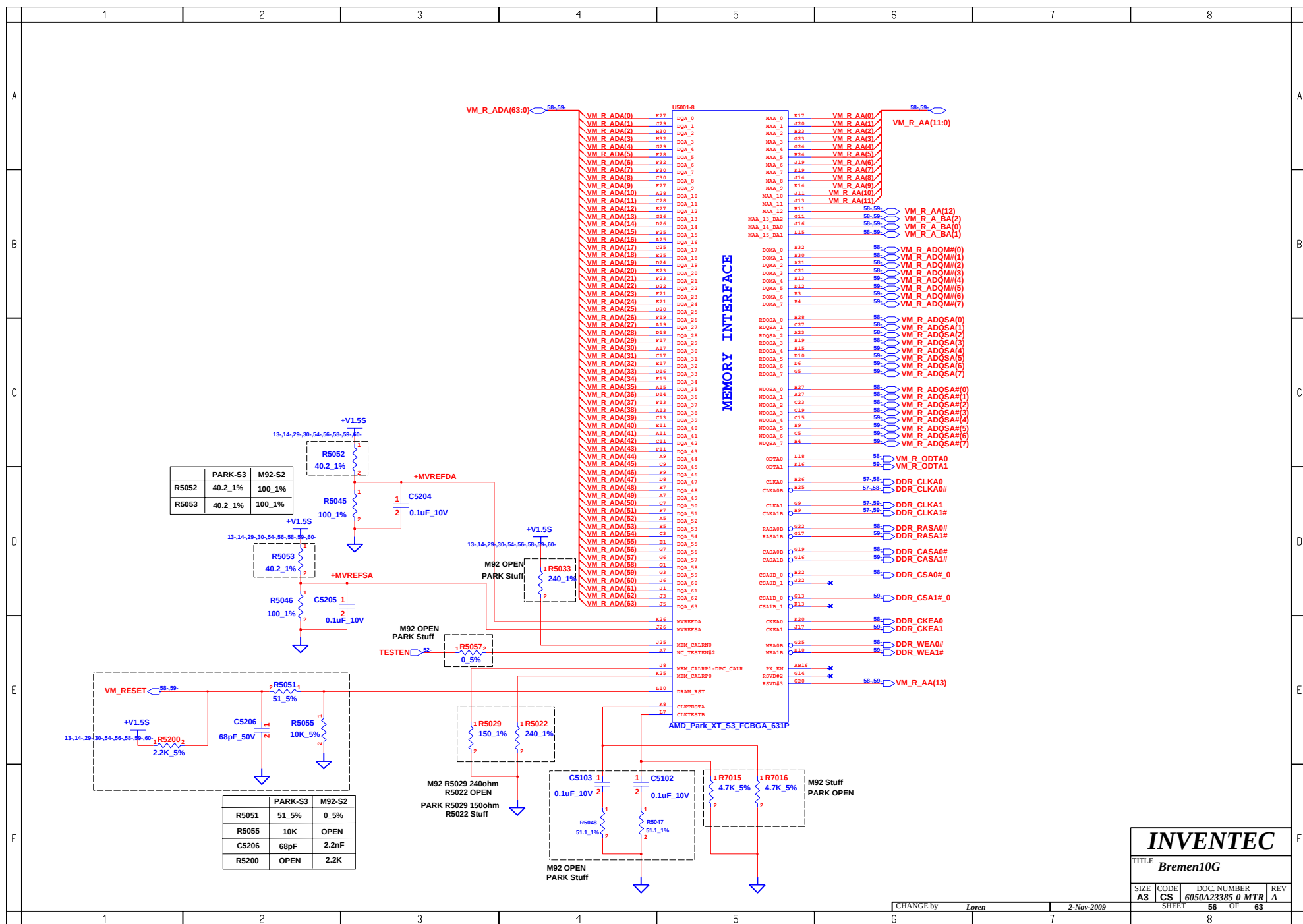
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Bremen10G

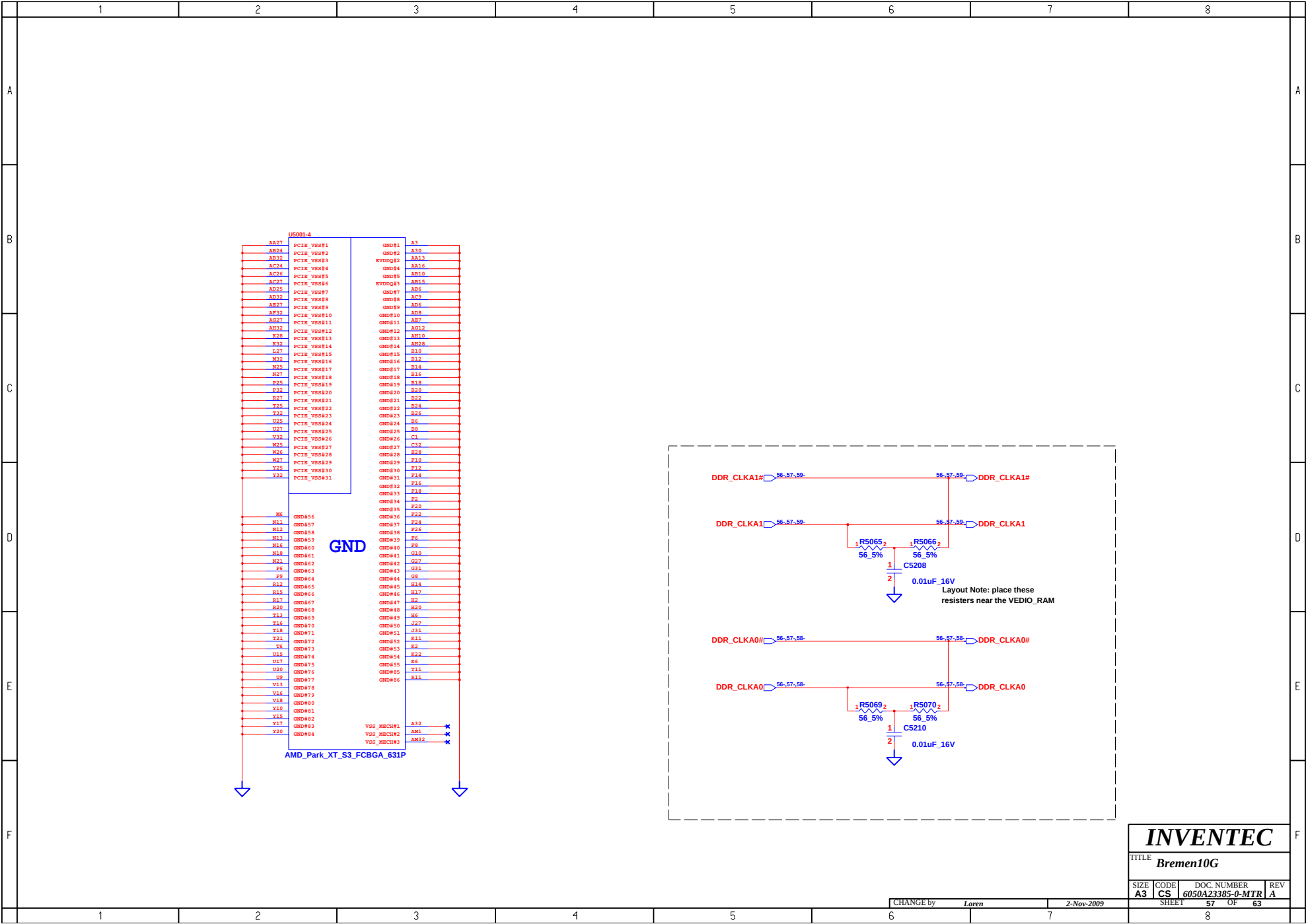
SIZE	CODE	DOC NUMBER	REV
A3	CS	6050A23385-0-MTR	A

CHANGE by: *Loren* 2-Nov-2009

SHEET 55 OF 63

8

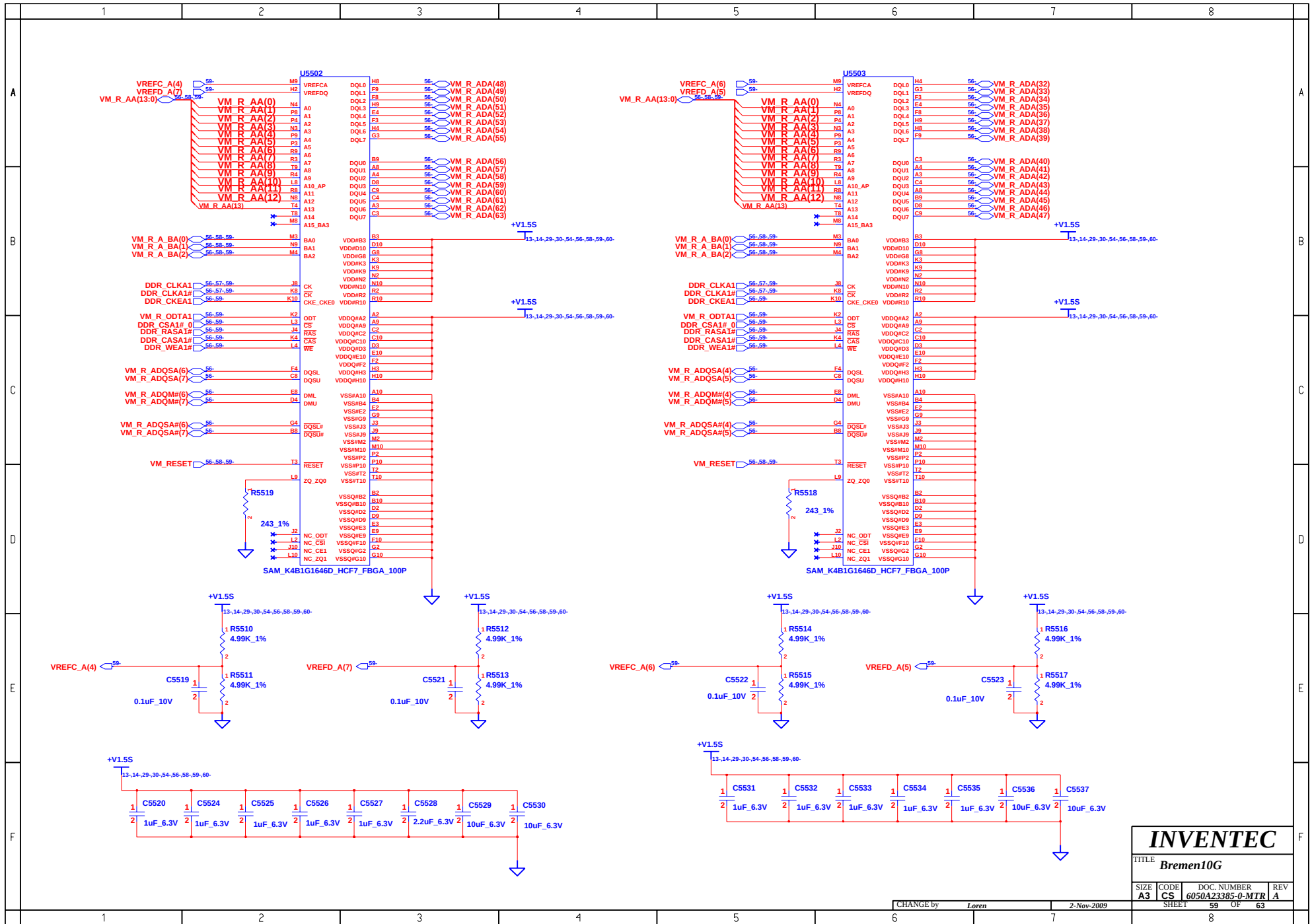




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SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET		58	OF 63

CHANGE by	<i>Loren</i>	2-Nov-2009
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INVENTEC

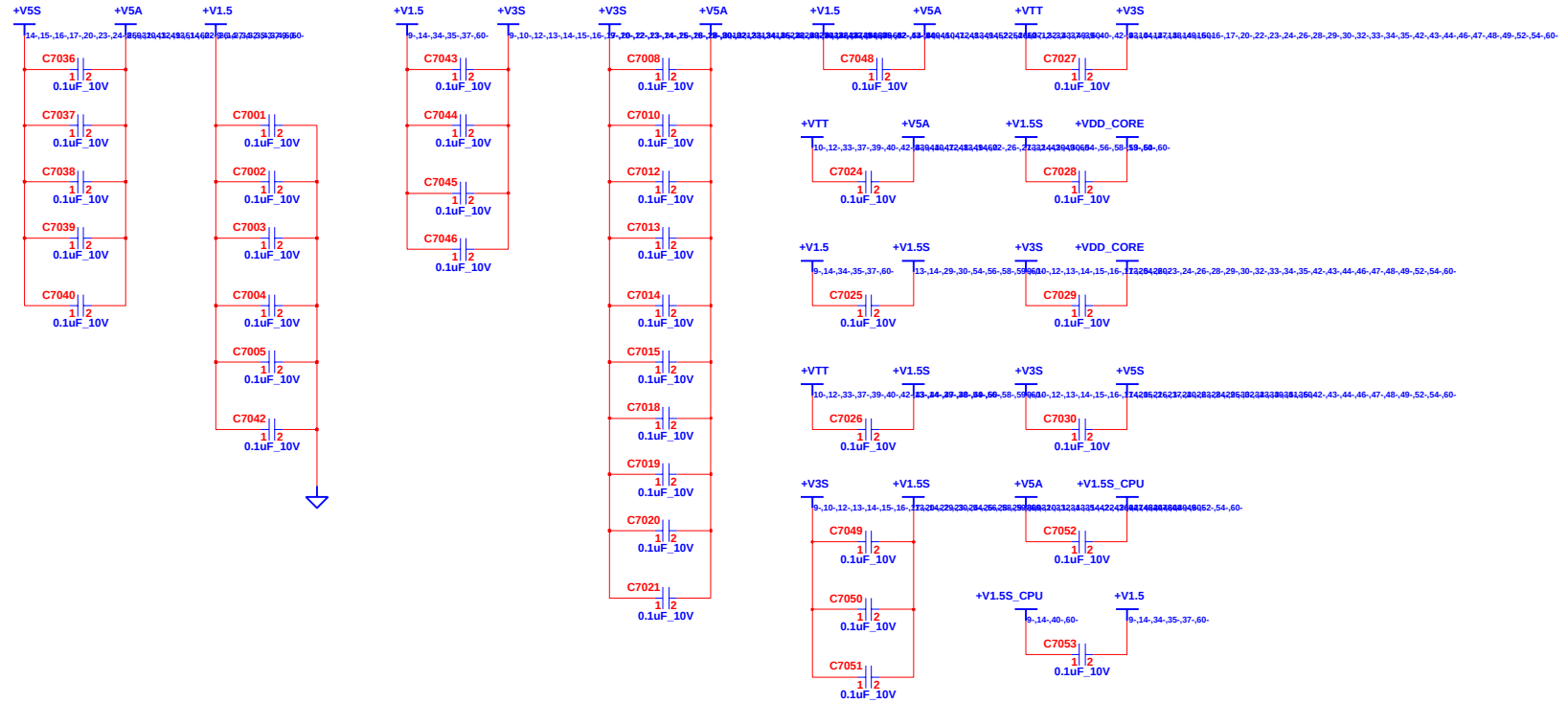
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Bremen10G

SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET 59		OF 63	

CHANGE by **Loren** 2-Nov-2009

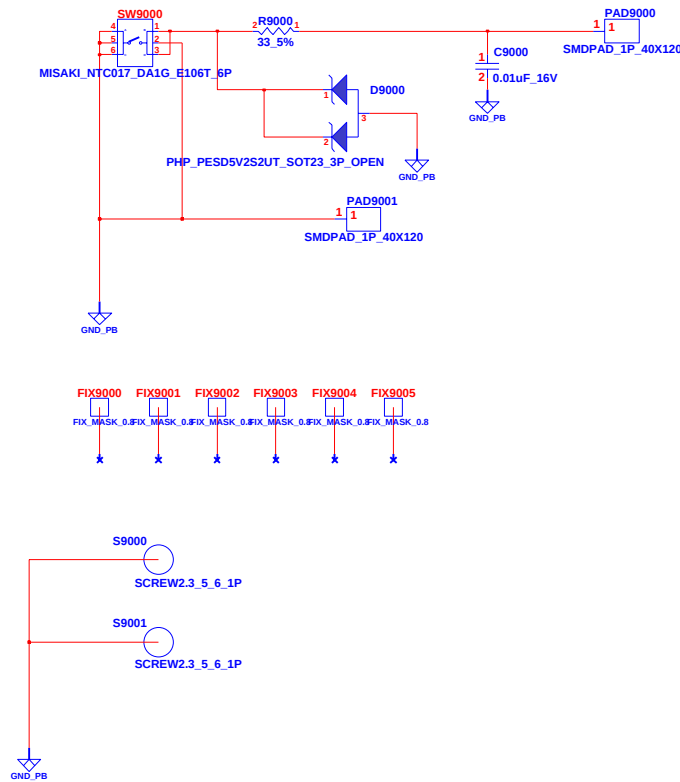
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EMI



INVENTEC			
TITLE Bremen10G EMI			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
CHANGE by Loren		14-Nov-2009	
SHEET 60		OF 63	

TOUCHPAD SWITCH BOARD

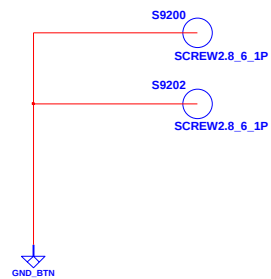
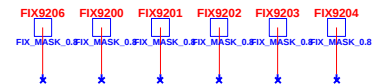
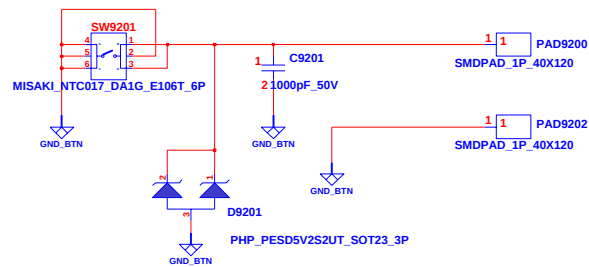


INVENTEC

TITLE Bremen10G Touch board			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
SHEET 61		OF 63	

CHANGE by *Loren* 8-Jan-2010

POWER BOARD



INVENTEC			
TITLE Bremen10G Power board			
SIZE A3	CODE CS	DOC. NUMBER 6050A23385-0-MTR	REV A
CHANGE by Loren		1-Mar-2010	
SHEET 62		OF 63	

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