

MAINZ 10

ES Build (AX1)

2009.08.26

INVENTEC			
TITLE MAINZ10G			
SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXX	REV A

CHANGE by CHRIS HUA 26-Aug-2009

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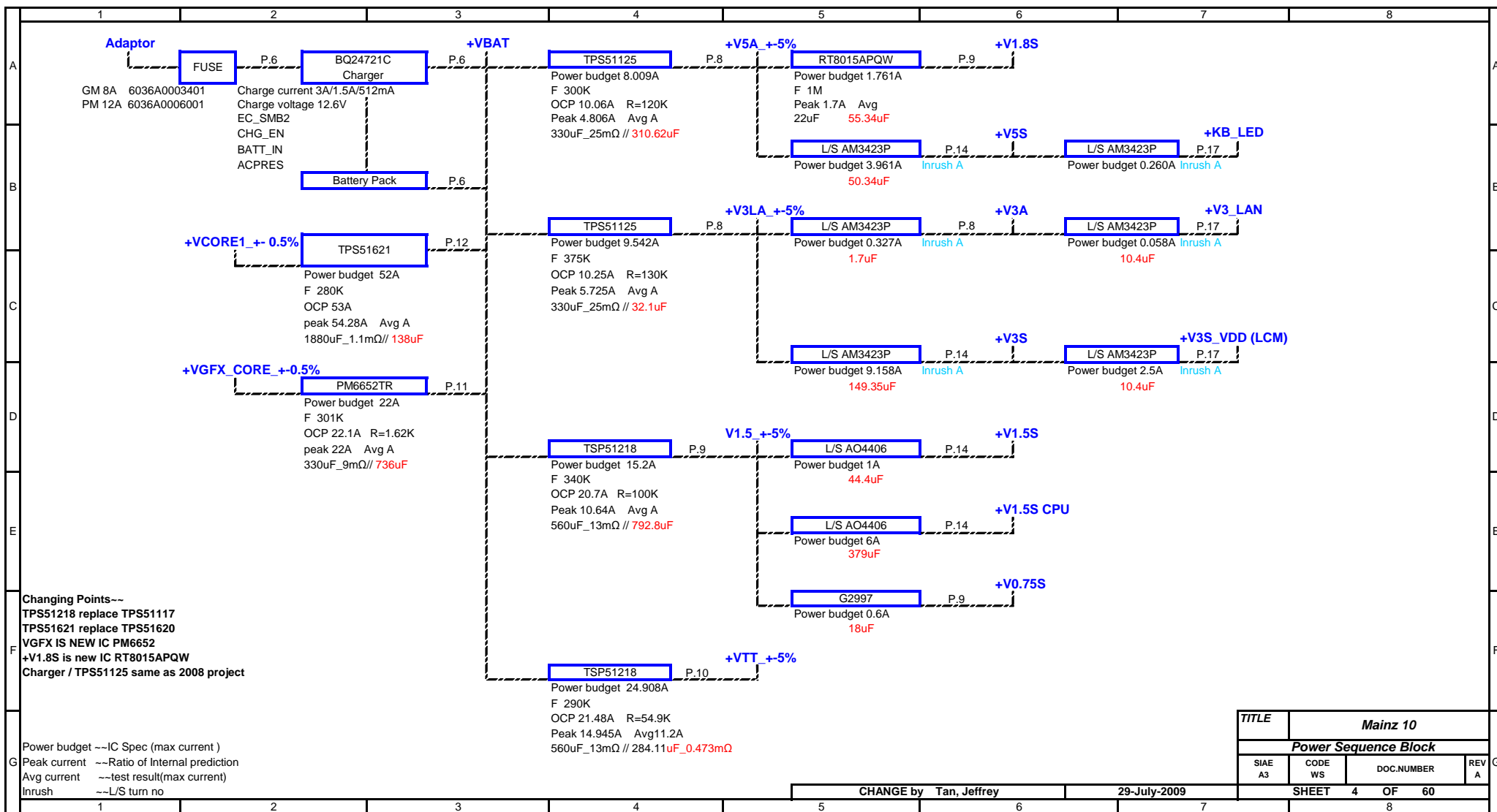
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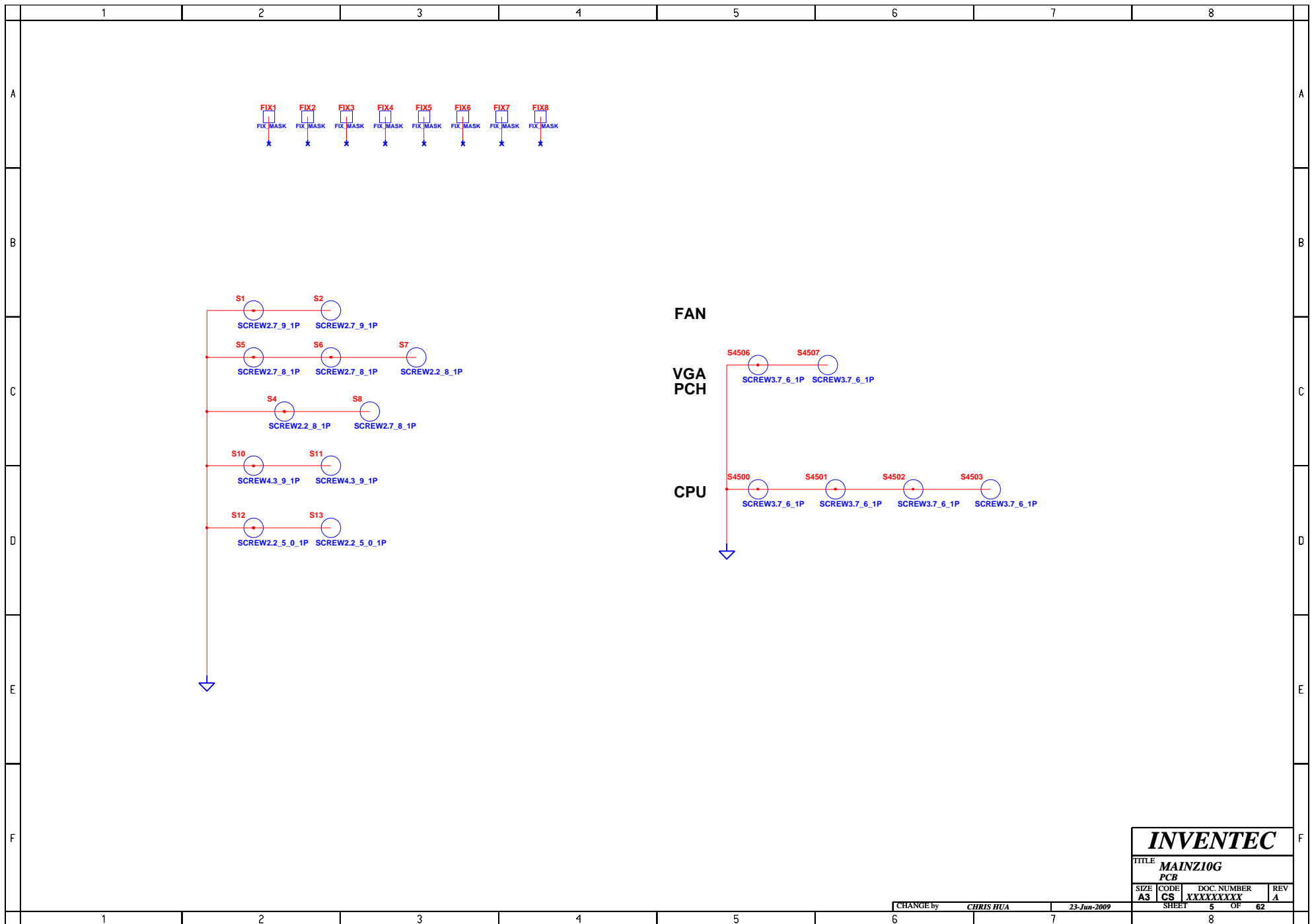
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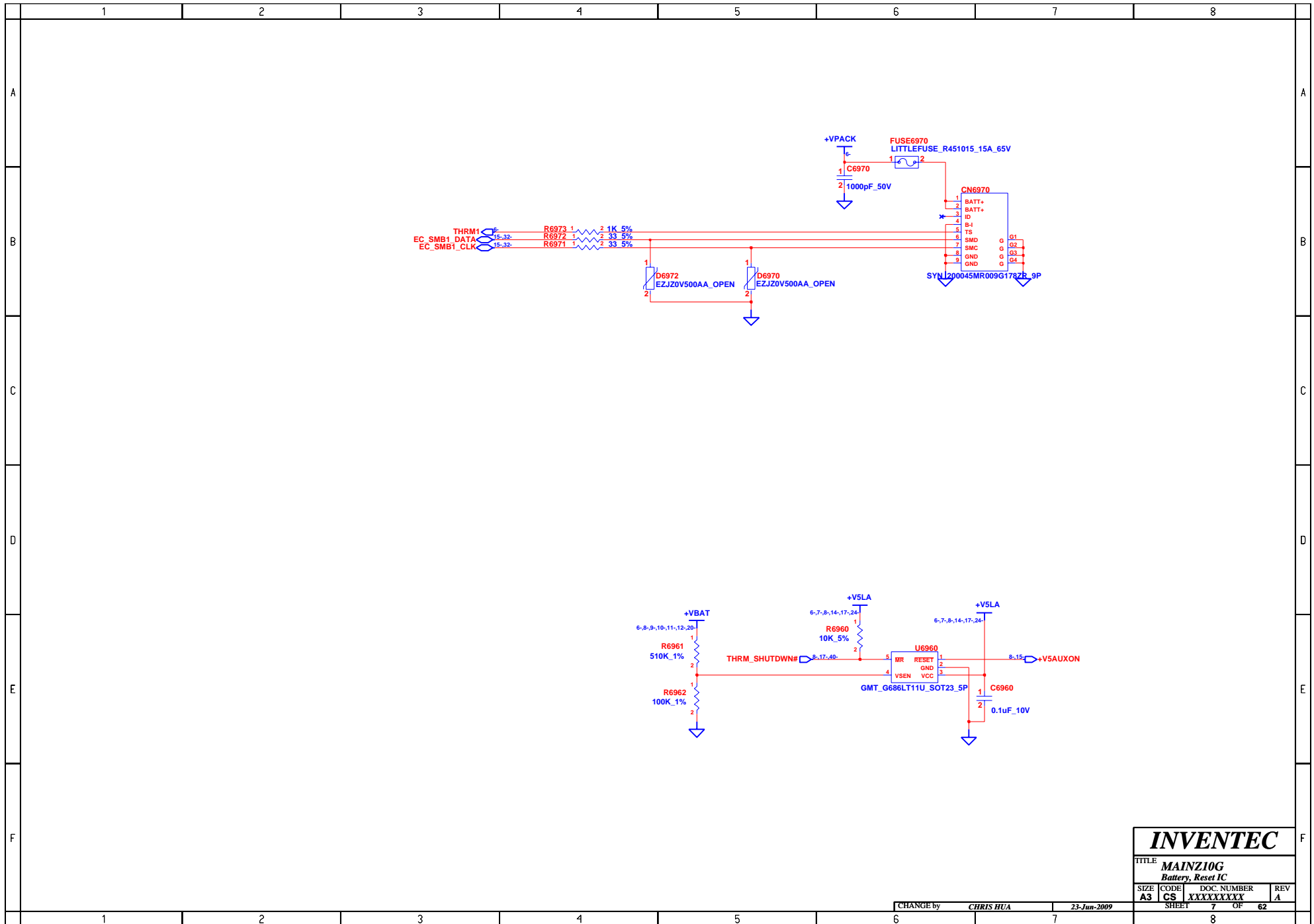
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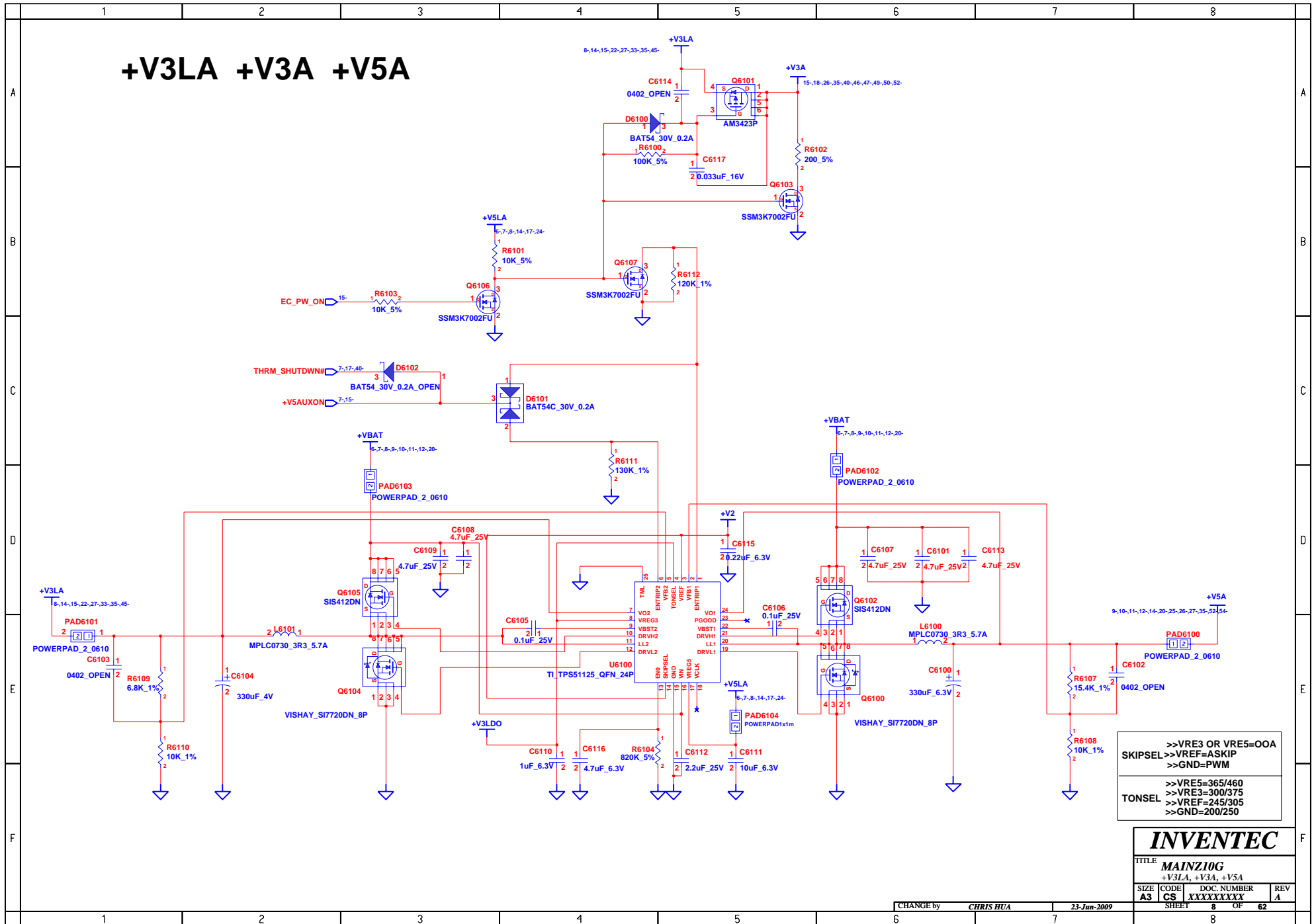
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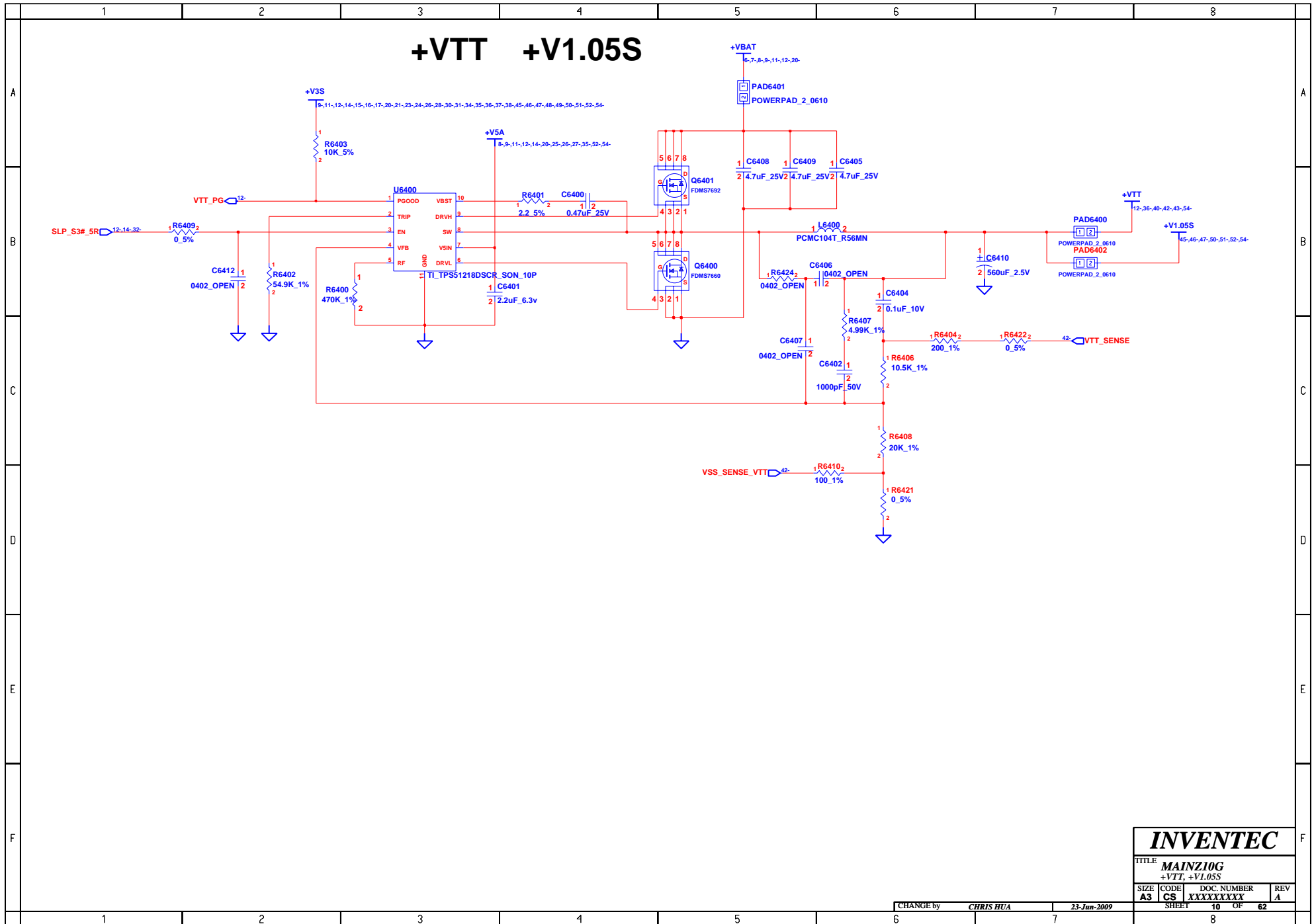
CHANGE by **CHRIS HUA** 27-Aug-2009

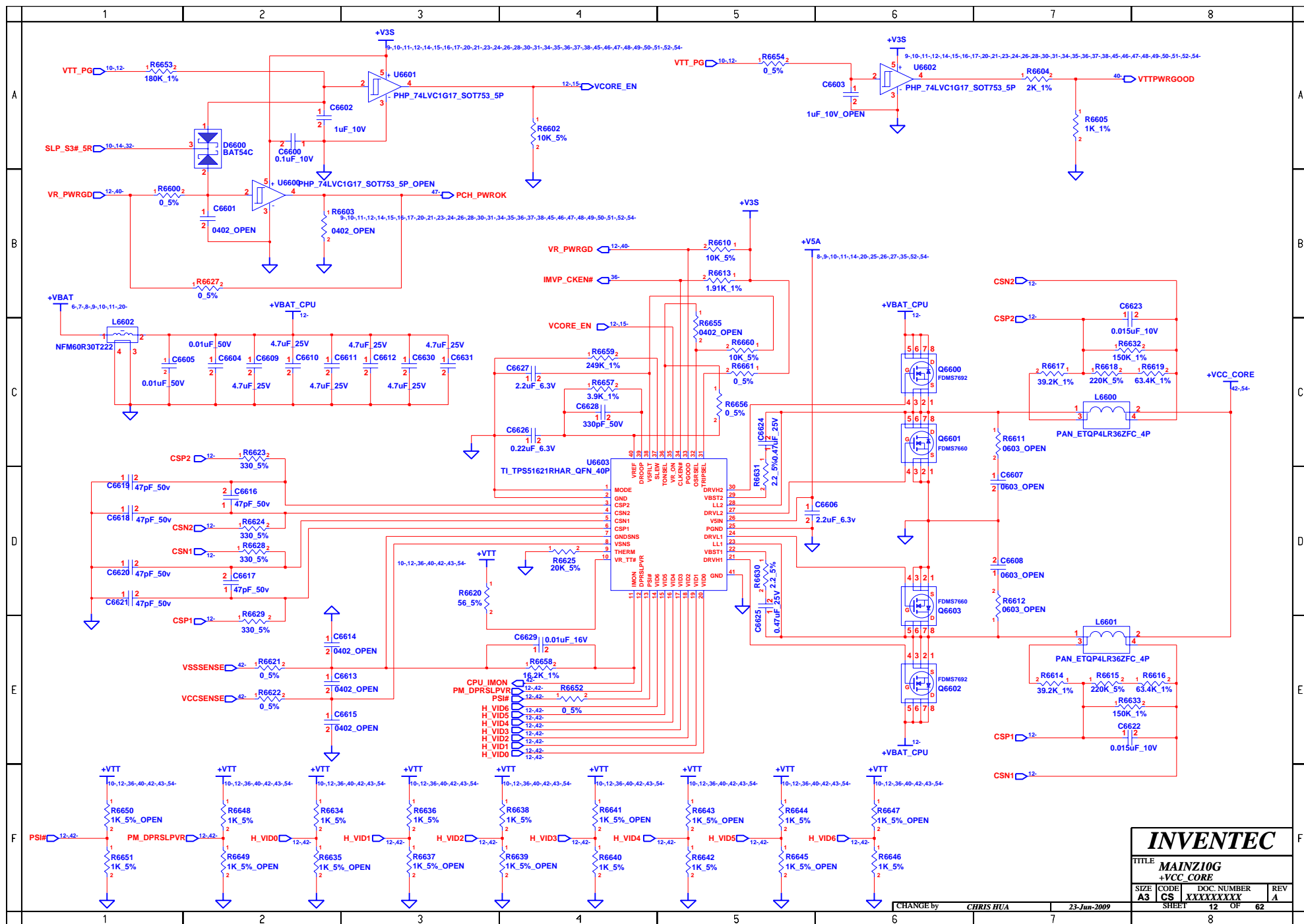












	1	2	3	4	5	6	7	8	
A									A
B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	

BLANK

INVENTEC			
TITLE MAINZ10G			
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CHANGE by CHRIS HUA		3-Jul-2009	
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+V5S +V3S +V1.5S

The schematic diagram illustrates the power management circuitry for the MAINZ10G IC, which includes several voltage regulators and control logic blocks.

Top Left: +V1.5 and +V1.5S_CPU Regulators

- +V1.5:** A linear regulator using the Q4151 (AM4430N) MOSFET. The input is connected to the 8, 14, 37, 38, 40, 54 pins. The output is connected to the 10, 12, 14, 32 pins. The feedback network consists of R4150 (220K, 5%) and C4150 (470pF, 50V).
- +V1.5S_CPU:** A linear regulator using the Q4150 (SSM3K7002FU) MOSFET. The input is connected to the 9, 43, 54 pins. The output is connected to the 9, 14 pins. The feedback network consists of R4151 (200, 5%) and C4150 (470pF, 50V).

Top Right: +V1.5 and +V1.5S Regulators

- +V1.5:** A linear regulator using the Q6030 (AM4430N) MOSFET. The input is connected to the 8, 14, 37, 38, 40, 54 pins. The output is connected to the 10, 12, 14, 32 pins. The feedback network consists of R6163 (220K, 5%) and C6149 (680pF, 50V).
- +V1.5S:** A linear regulator using the Q6031 (SSM3K7002FU) MOSFET. The input is connected to the 30, 31 pins. The output is connected to the 9, 14 pins. The feedback network consists of R6164 (200, 5%) and C6149 (680pF, 50V).

Bottom Left: +VSLA and +VSS Regulators

- +VSLA:** A linear regulator using the U7001-E (74ACT14MTC) inverter. The input is connected to the 6, 7, 8, 14, 17, 24 pins. The output is connected to the 11 pins. The feedback network consists of C7011 (0.1uF, 10V).
- +VSS:** A linear regulator using the U7001-A (74ACT14MTC) inverter. The input is connected to the 6, 7, 8, 14, 17, 24 pins. The output is connected to the 11 pins. The feedback network consists of C7011 (0.1uF, 10V).
- +VSLA:** A linear regulator using the U7001-B (74ACT14MTC) inverter. The input is connected to the 6, 7, 8, 14, 17, 24 pins. The output is connected to the 11 pins. The feedback network consists of C7011 (0.1uF, 10V).
- +VSS:** A linear regulator using the U7001-C (74ACT14MTC) inverter. The input is connected to the 6, 7, 8, 14, 17, 24 pins. The output is connected to the 11 pins. The feedback network consists of C7011 (0.1uF, 10V).

Bottom Right: +V3LA and +V3S Regulators

- +V3LA:** A linear regulator using the Q7004 (AM3423P) MOSFET. The input is connected to the 8, 15, 22, 27, 33, 35, 45 pins. The output is connected to the 10, 11, 12, 15, 16, 17, 20, 21, 23, 24, 26, 28, 30, 31, 34, 35, 36, 37, 38, 45, 46, 47, 48, 49, 50, 51, 52, 54 pins. The feedback network consists of C7016 (0.042, OPEN) and C7006 (22uF, 6.3V).
- +V3S:** A linear regulator using the Q7000 (SSM3K7002FU) MOSFET. The input is connected to the 9, 14 pins. The output is connected to the 10, 11, 12, 15, 16, 17, 20, 21, 23, 24, 26, 28, 30, 31, 34, 35, 36, 37, 38, 45, 46, 47, 48, 49, 50, 51, 52, 54 pins. The feedback network consists of C7007 (680pF, 50V) and R7005 (200, 5%).

Bottom Center: USB and Keyboard LED Control

- For USB switch:** A circuit using the U7001-D (74ACT14MTC) inverter. The input is connected to the 15, 26 pins. The output is connected to the 8, 26 pins.
- For Keyboard LED:** A circuit using the U7001-F (74ACT14MTC) inverter. The input is connected to the 15, 16 pins. The output is connected to the 12, 16 pins.

Bottom Right: +V5A and +VSS Regulators

- +V5A:** A linear regulator using the Q7007 (AM3423P) MOSFET. The input is connected to the 8, 15, 22, 27, 33, 35, 45 pins. The output is connected to the 10, 11, 12, 15, 16, 17, 20, 21, 23, 24, 26, 28, 30, 31, 34, 35, 36, 37, 38, 45, 46, 47, 48, 49, 50, 51, 52, 54 pins. The feedback network consists of C7017 (0.042, OPEN) and C7006 (22uF, 6.3V).
- +VSS:** A linear regulator using the Q7006 (AM3423P) MOSFET. The input is connected to the 8, 15, 22, 27, 33, 35, 45 pins. The output is connected to the 10, 11, 12, 15, 16, 17, 20, 21, 23, 24, 26, 28, 30, 31, 34, 35, 36, 37, 38, 45, 46, 47, 48, 49, 50, 51, 52, 54 pins. The feedback network consists of C7009 (680pF, 50V) and R7005 (200, 5%).

Legend:

- Q4151, Q4150, Q6030, Q6031, Q7004, Q7000, Q7007, Q7006: MOSFETs
- U7001-E, U7001-A, U7001-B, U7001-C, U7001-D, U7001-F: 74ACT14MTC inverters
- R4150, R4151, R6163, R6164, R7011, R7010, R7006, R7005: Resistors
- C4150, C6149, C7011, C7006, C7007, C7009: Capacitors
- D7003: BAT54A, 30V, 0.2A diode

INVENTEC

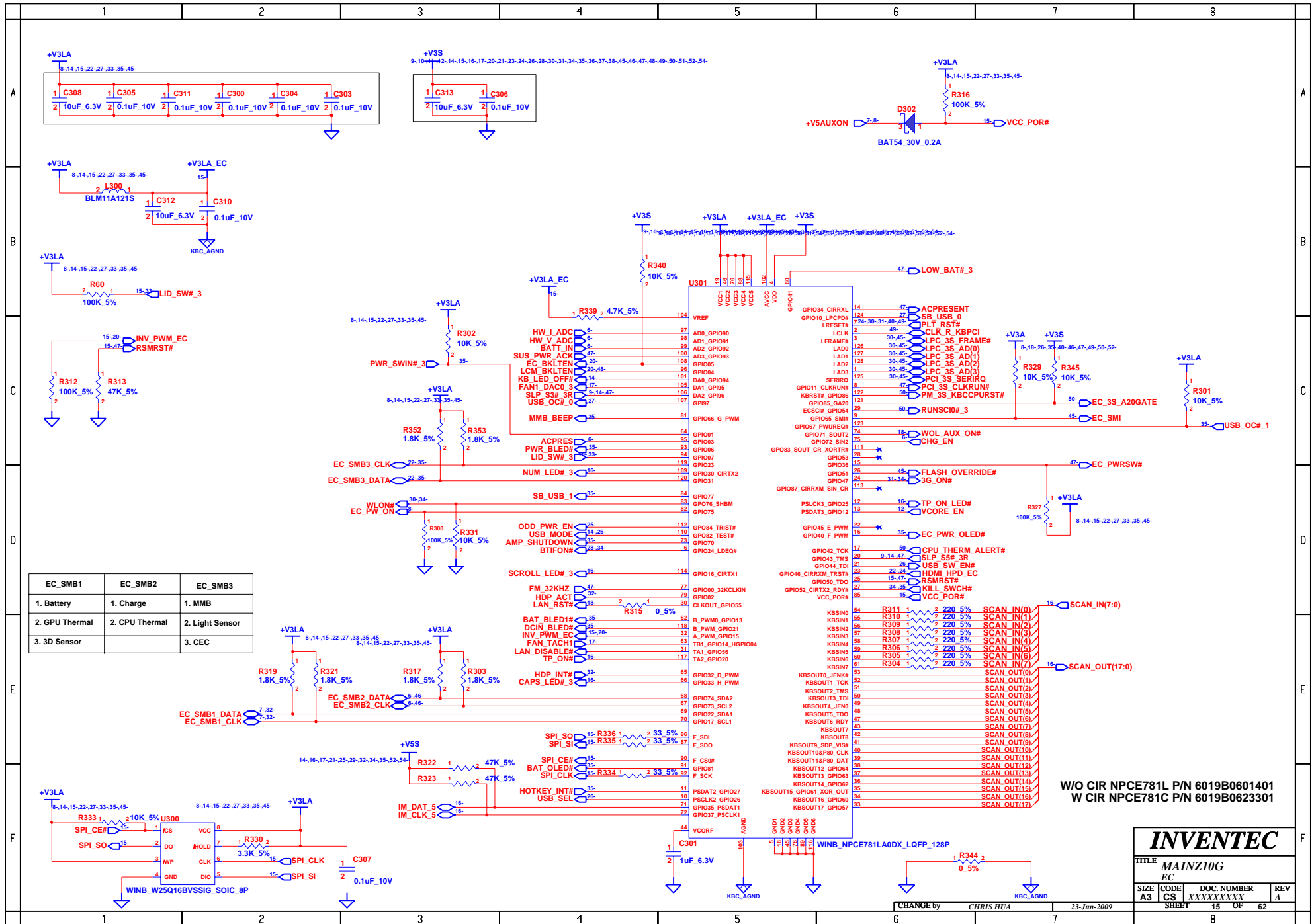
TITLE MAINZ10G
+V5S +V3S +V1.5S

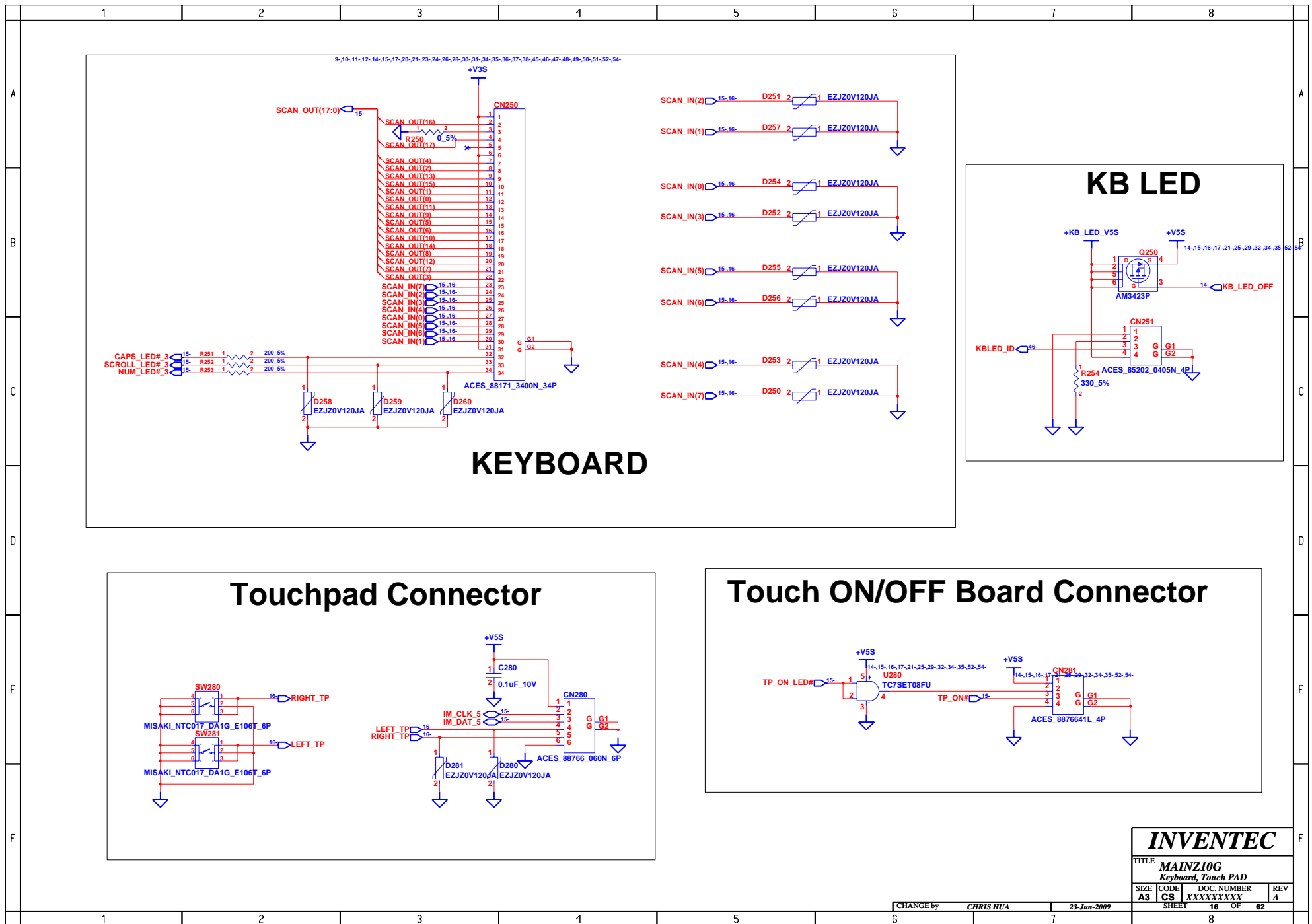
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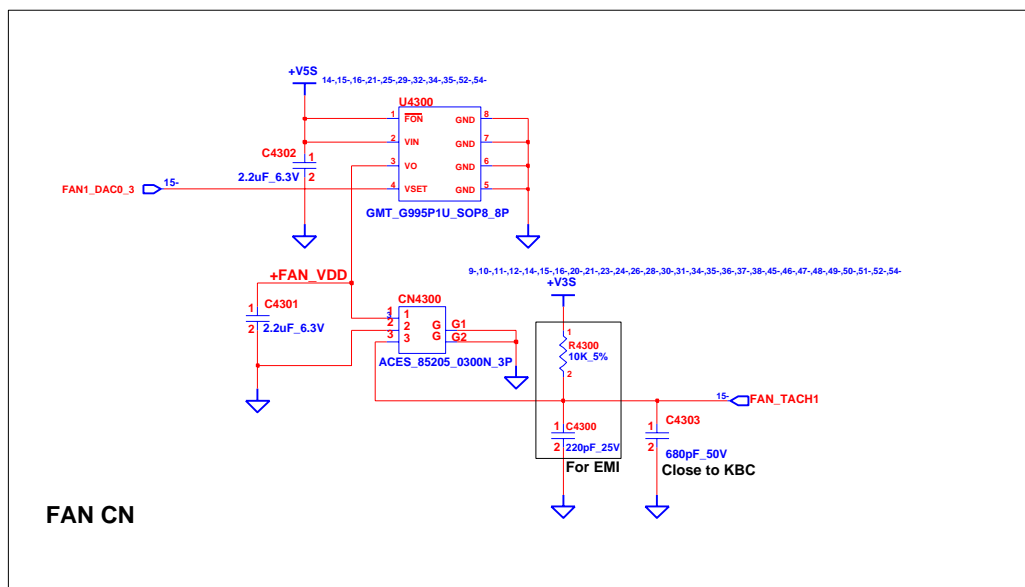
CHANGE by CHRIS HUA 23-Jun-2009

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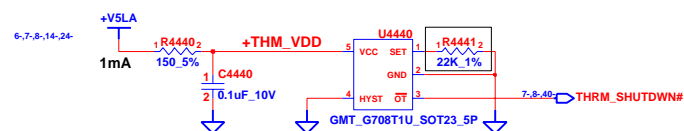
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Board Thermal Sensor

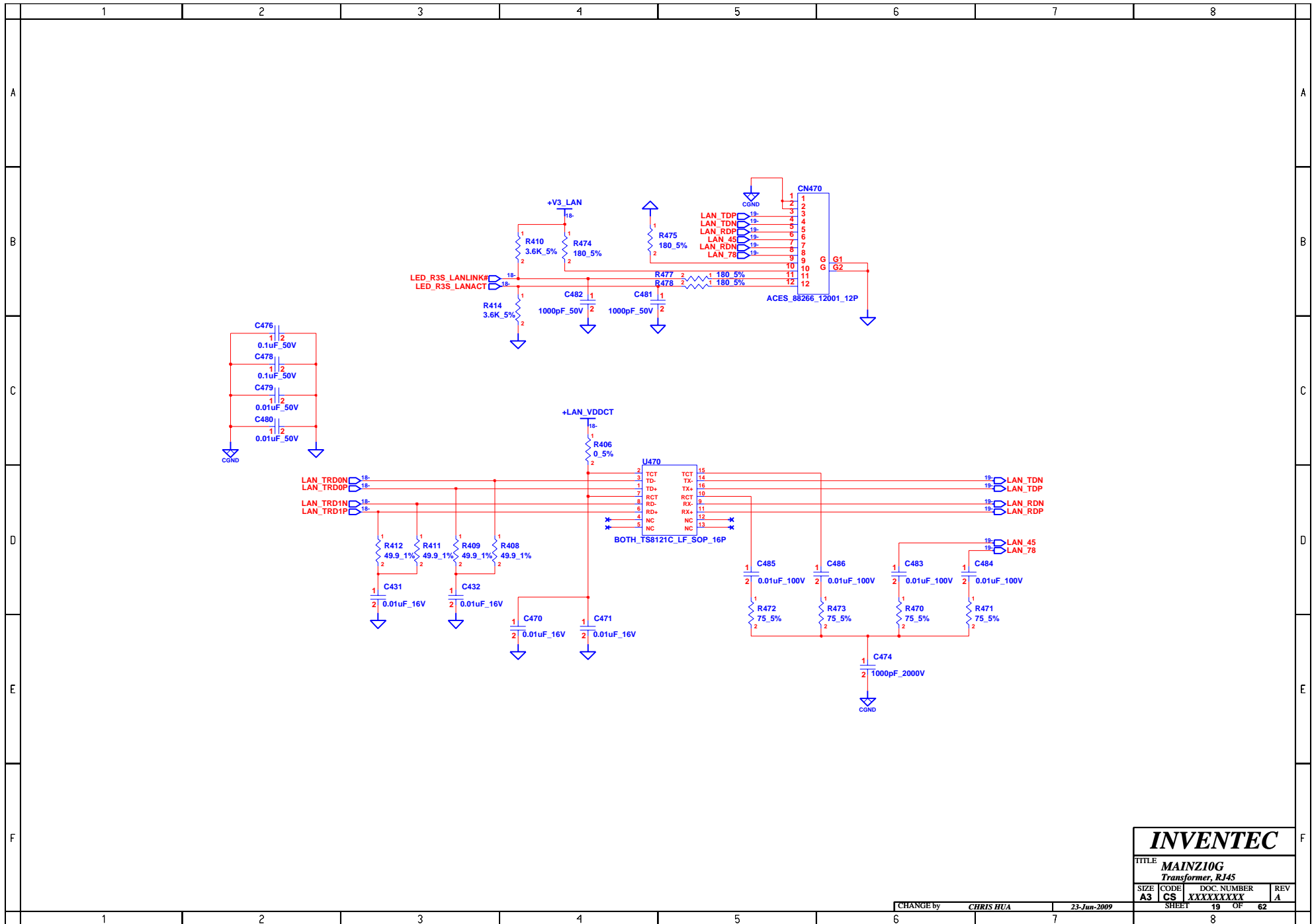


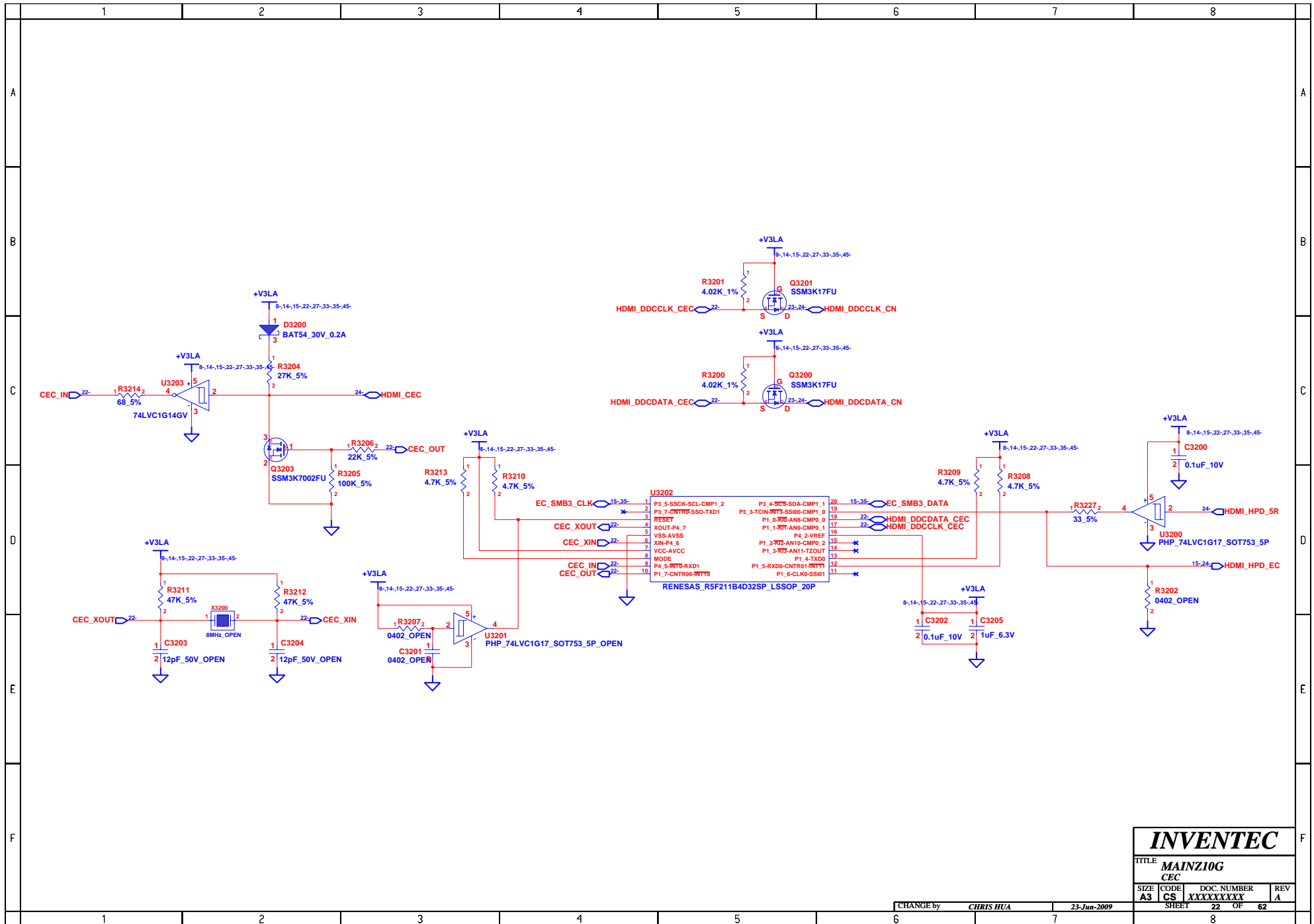
Thermal shutdown at 90 C° +/- 3 C° from 60 C° to 100 C°

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

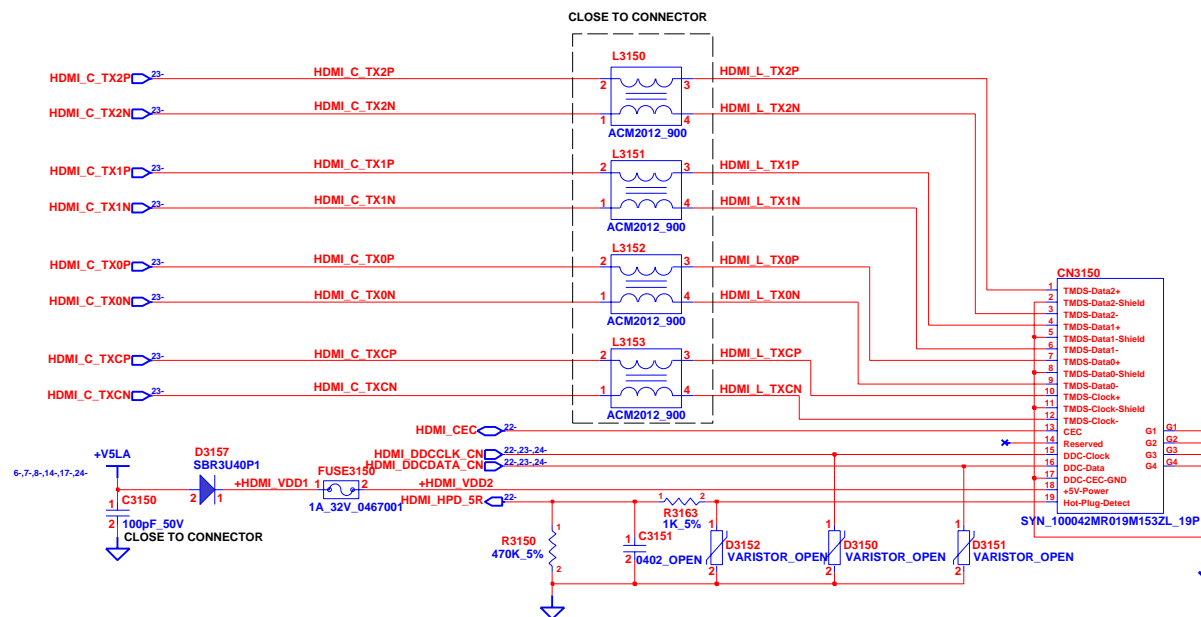
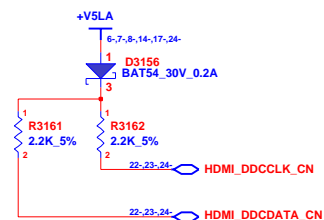
Hysteresis is 30C

INVENTEC			
TITLE: MAINZ10G			
FAN, Thermal controller			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	XXXXXXXXX	A
CHANGE by		CHRIS HUA	23-Jun-2009
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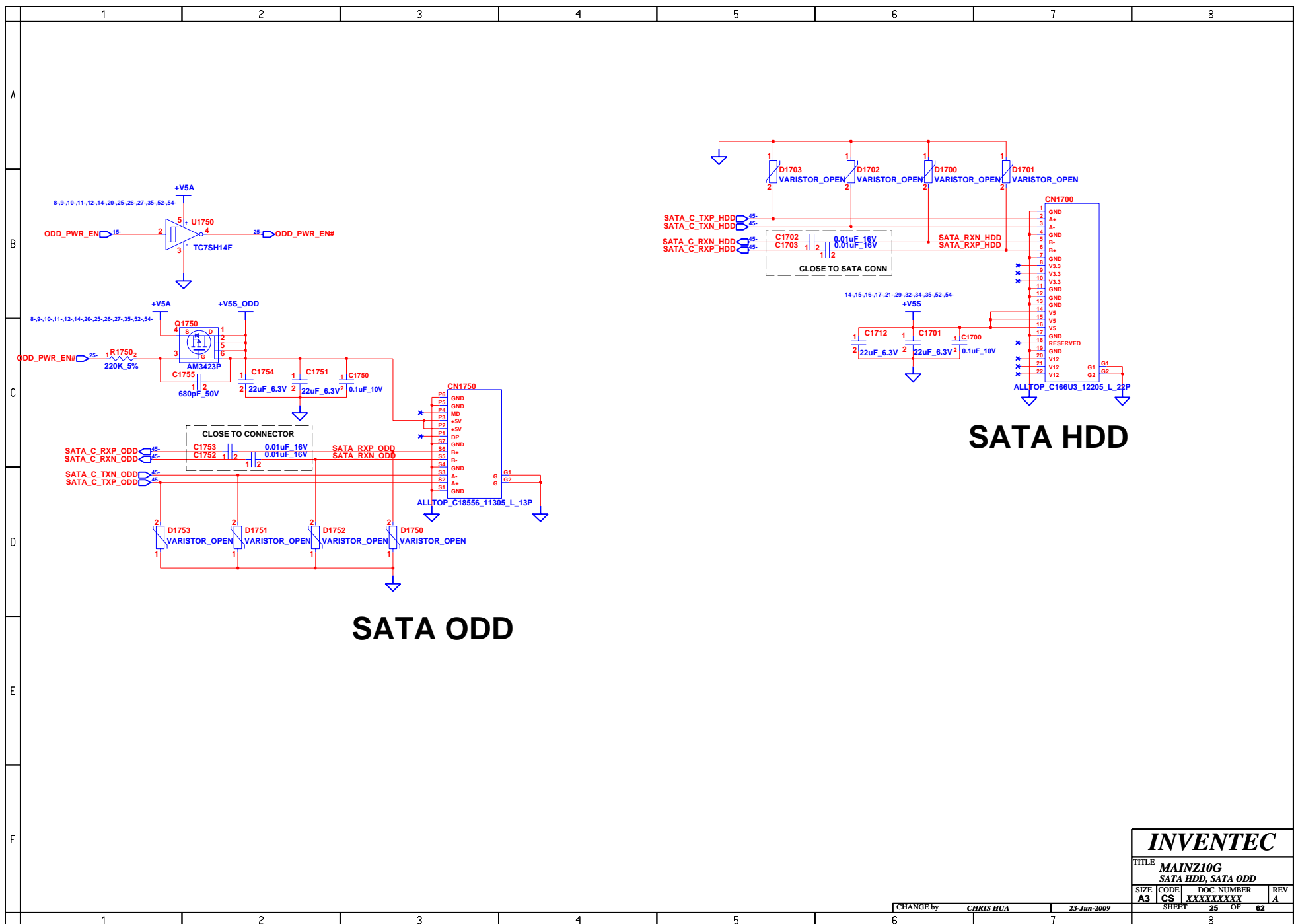




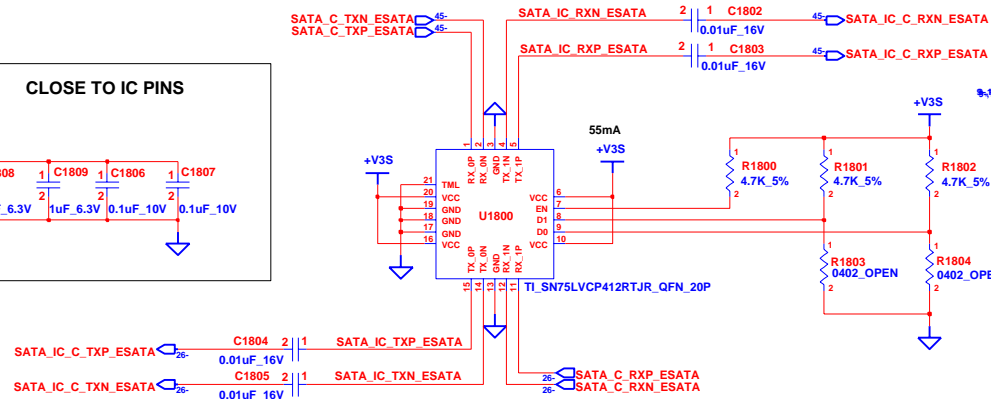
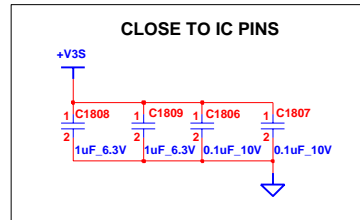
DISCRETE	4.7K
	60130B4720



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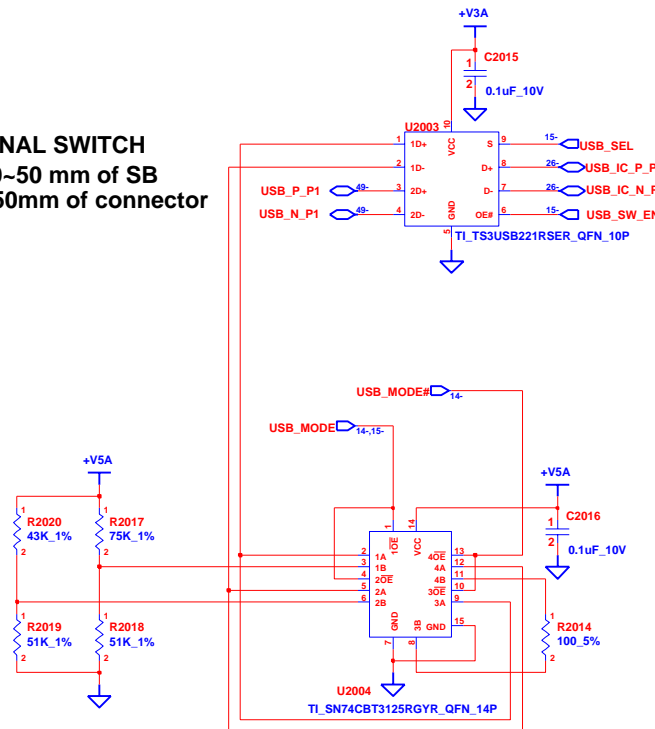


E-SATA

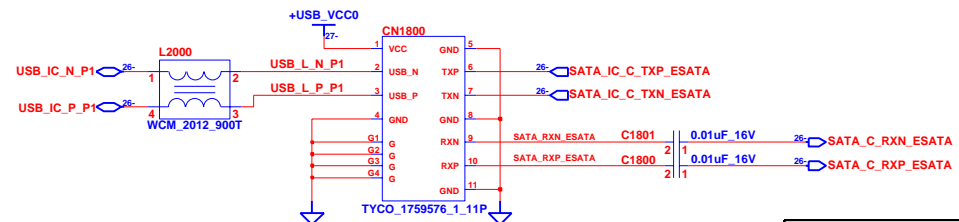


EN	D0	D1	FUNCTION
0	X	X	STANDBY
1	0	0	DEFAULT
1	1	0	CH0->5DB
1	0	1	CH1->5DB
1	1	1	CH0,1->5DB

USB SIGNAL SWITCH
Within 40~50 mm of SB
Within 150mm of connector



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



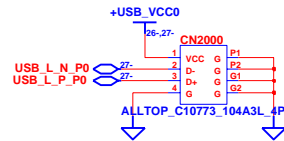
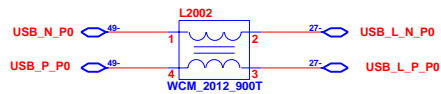
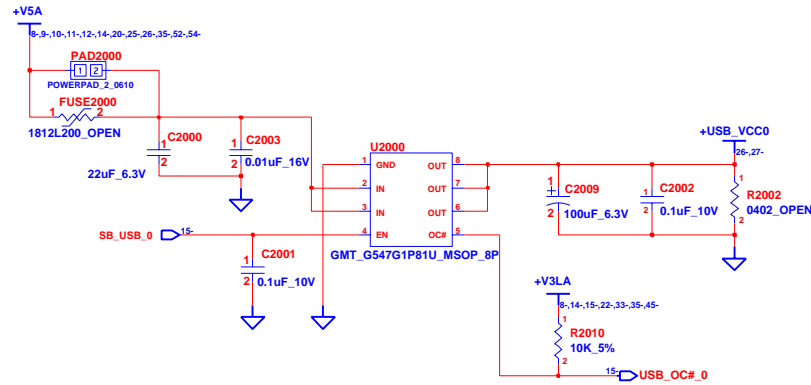
INVENTEC

TITLE MAINZ10G e-SATA			
SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXXX	REV A

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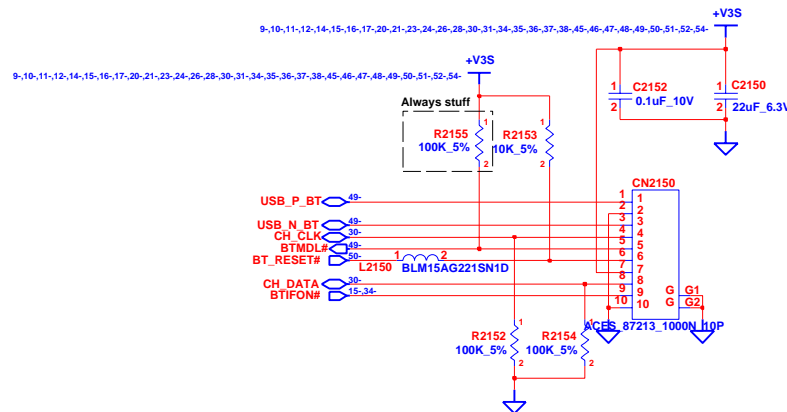
USB



INVENTEC			
TITLE MAINZ10G			
USB			
SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXX	REV A
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BLUEBOOTH

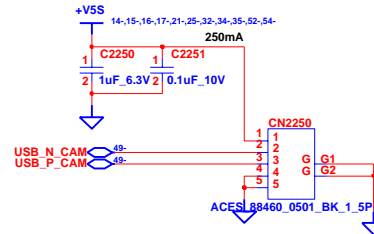


INVENTEC			
TITLE MAINZ10G BlueTooth			
SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXX	REV A
CHANGE by CHRIS HUA		23-Jun-2009	
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WEBCAM

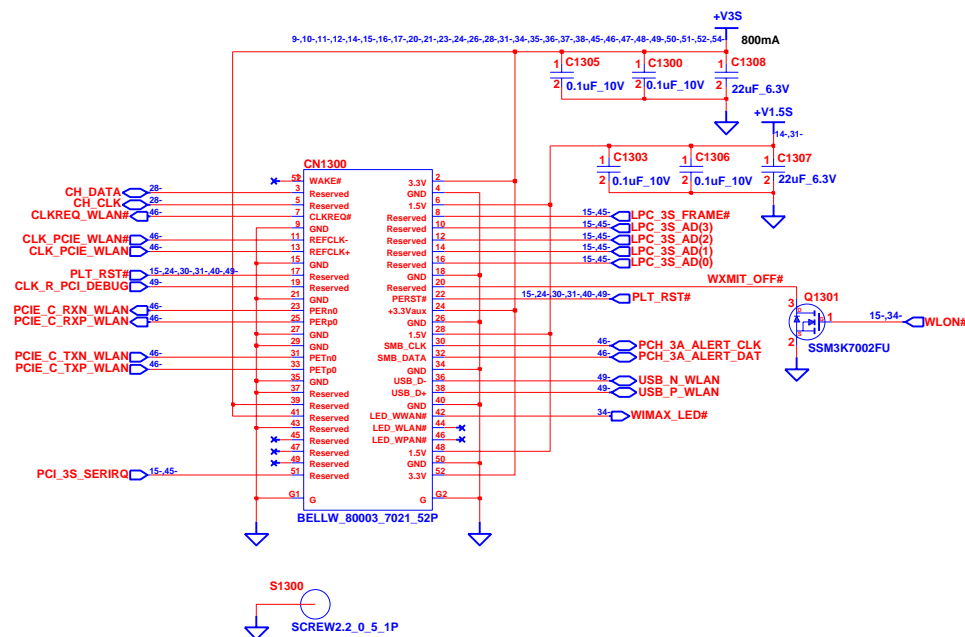
The schematic diagram illustrates the electrical connections for a webcam. It features a power supply section with a +VSS source and a 250mA current source. Two capacitors, C2250 (1uF_6.3V) and C2251 (0.1uF_10V), are connected in parallel. The output of the capacitors is connected to a USB connector (CN2250) which has pins 1, 2, 3, 4, and 5. The USB connector is also connected to a USB cable (USB_N_CAM and USB_F_CAM). The USB cable is connected to a camera module (ACES_88460_0501_BK_1_5P). The camera module has pins 1, 2, 3, 4, and 5, and is connected to a ground symbol.

INVENTEC			
TITLE MAINZ10G Camera			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	XXXXXXXXXX	A
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INVENTEC			
TITLE MAINZ10G <i>Camera</i>			
SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXXX	REV A
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Wireless & Debug card

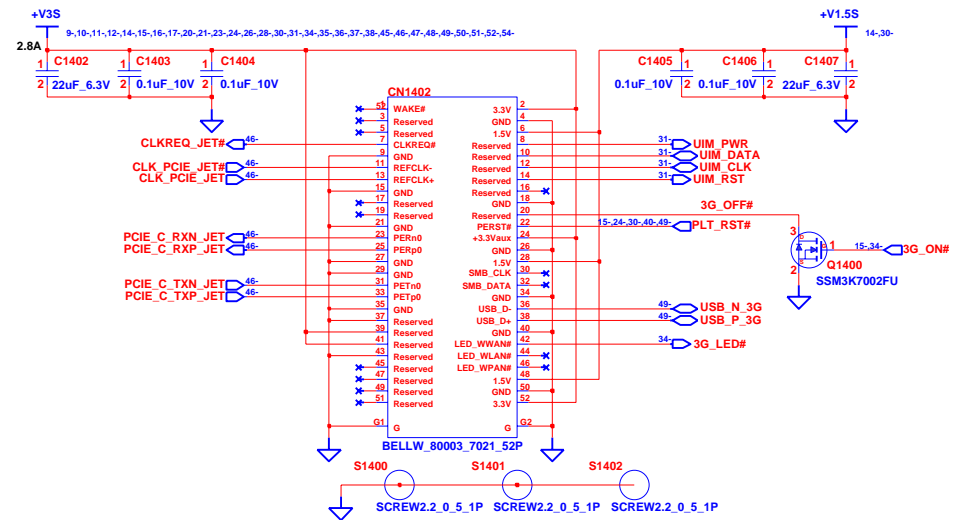
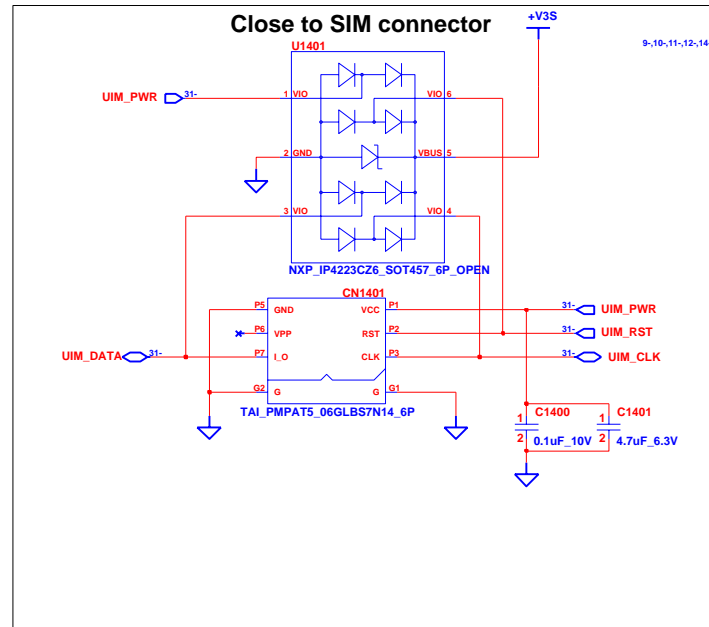


INVENTEC

TITLE			
MAINZ10G			
WLAN			
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SHEET		30	OF 62

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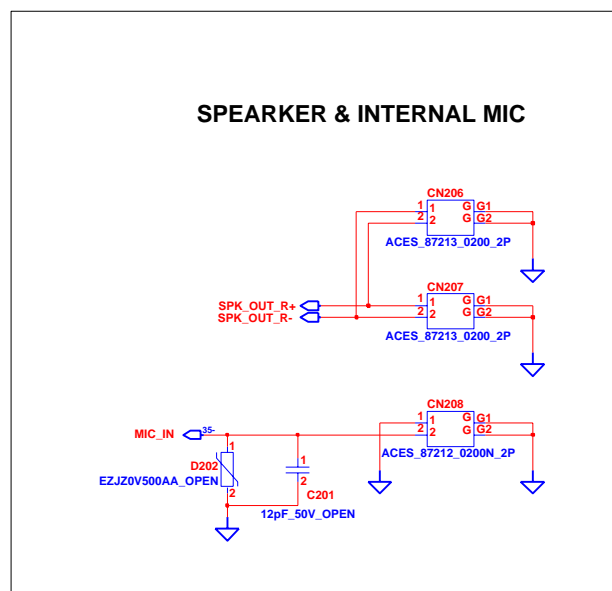
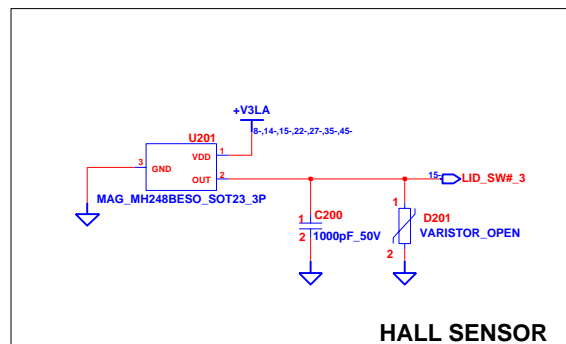
3G

**INVENTEC**

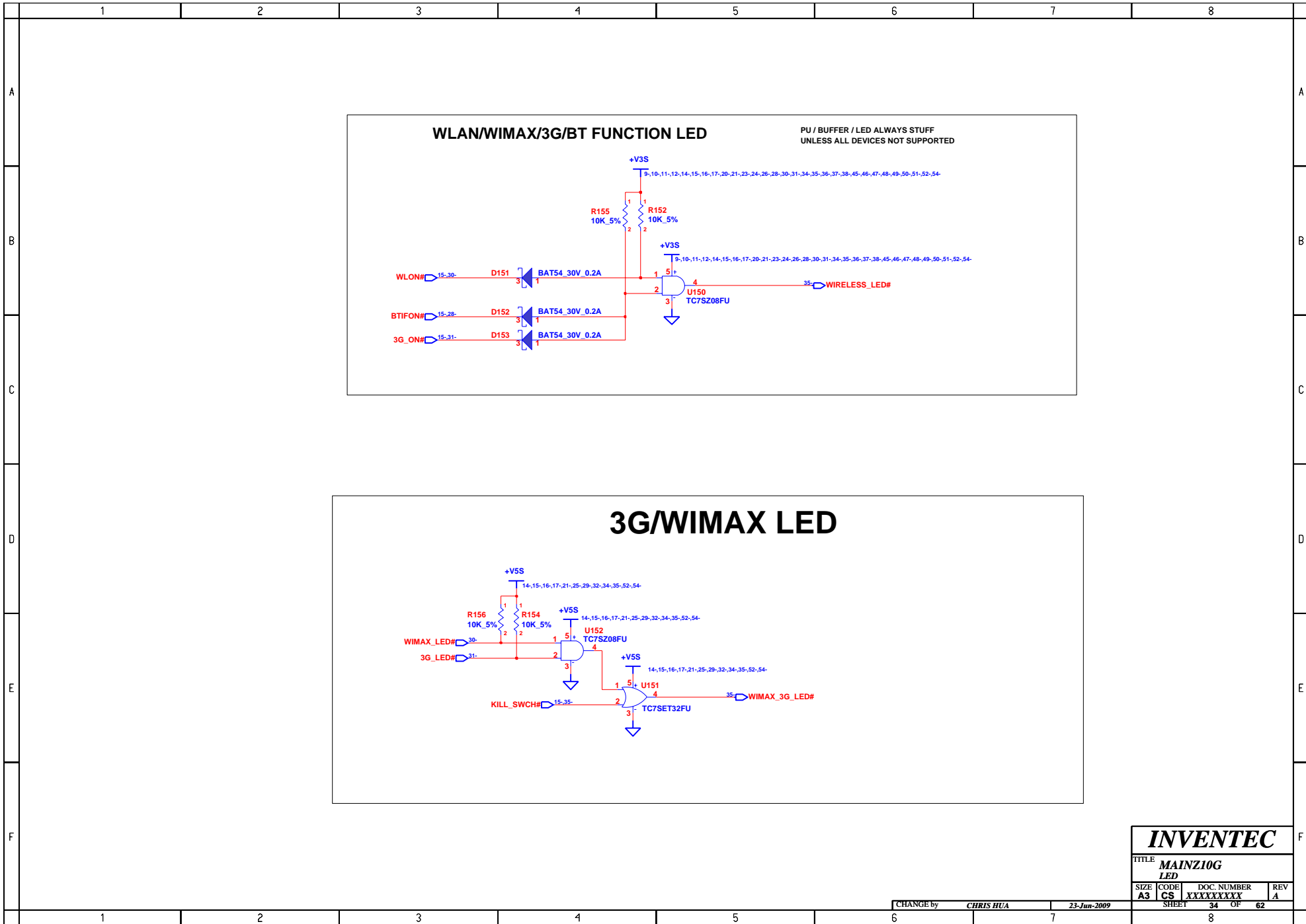
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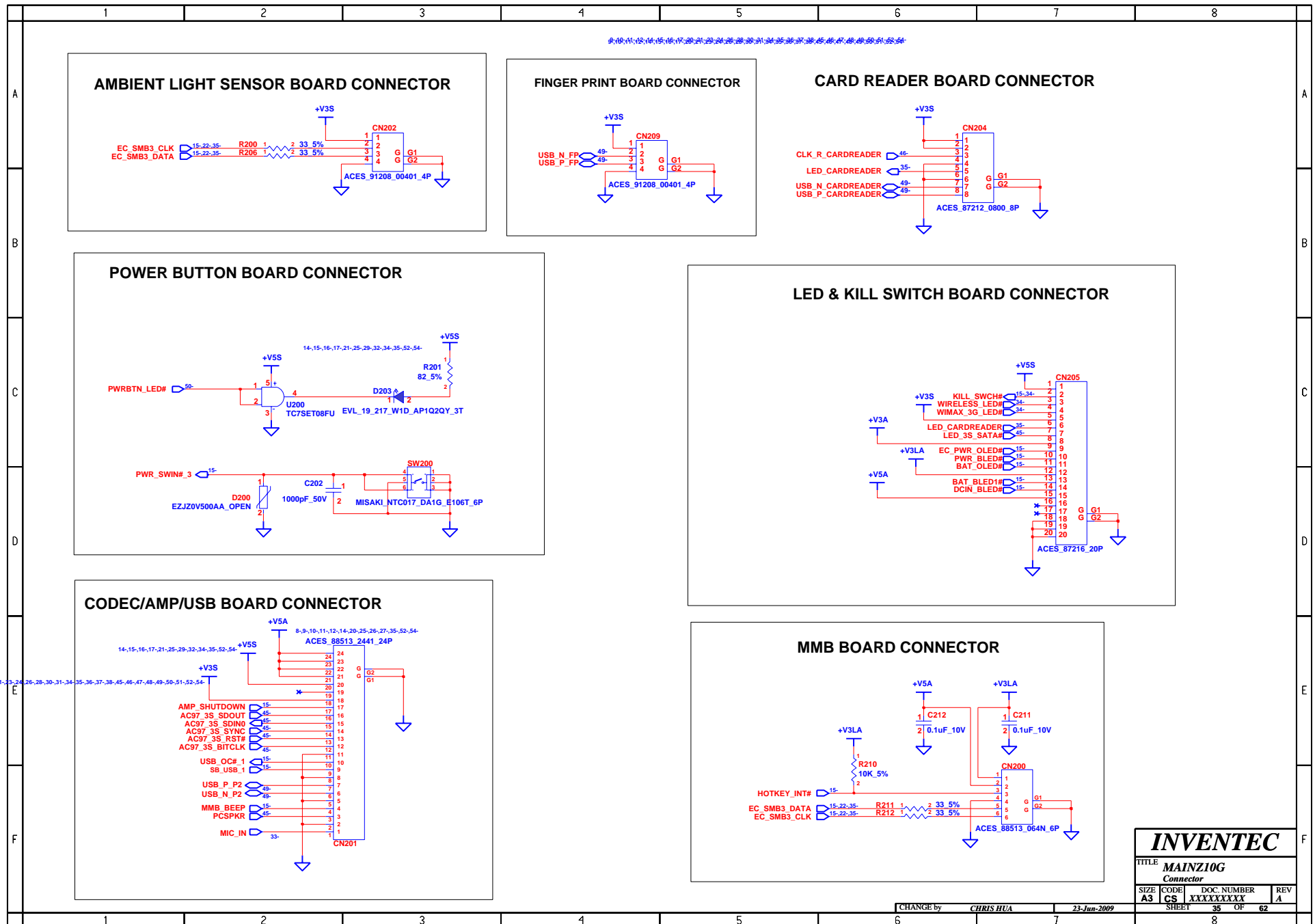
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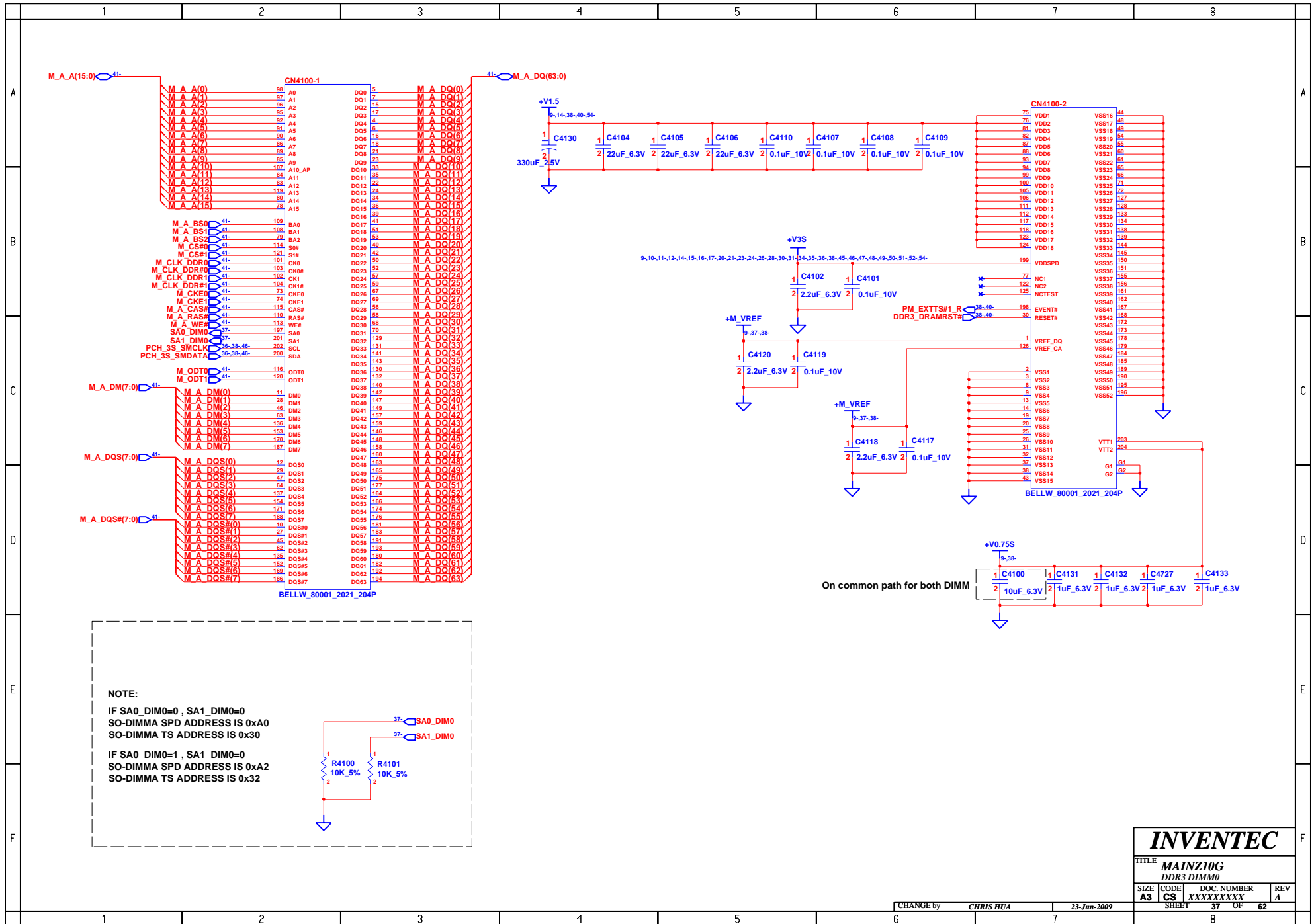
CHANGE by	CHRIS HUA	23-Jun-2009
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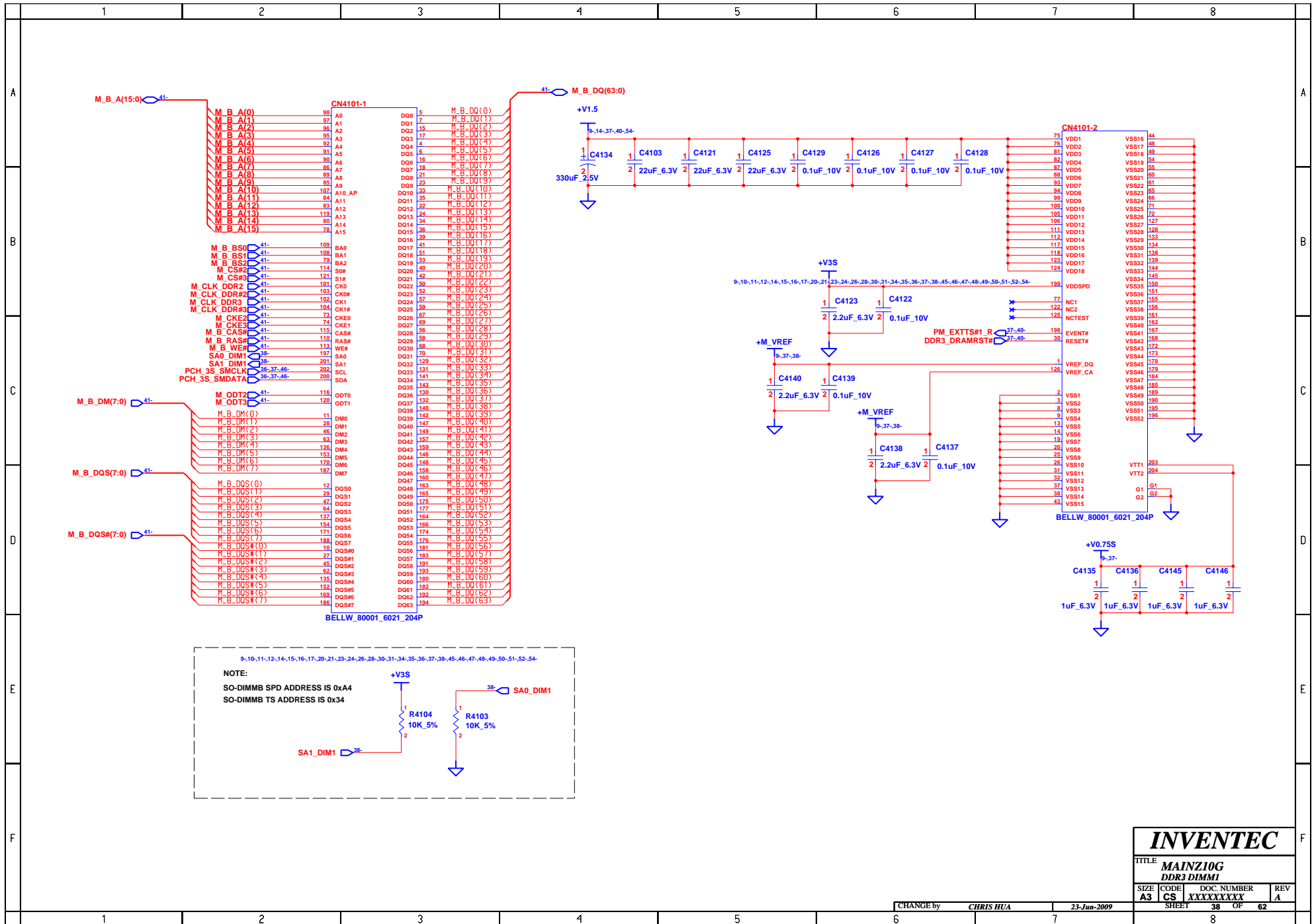


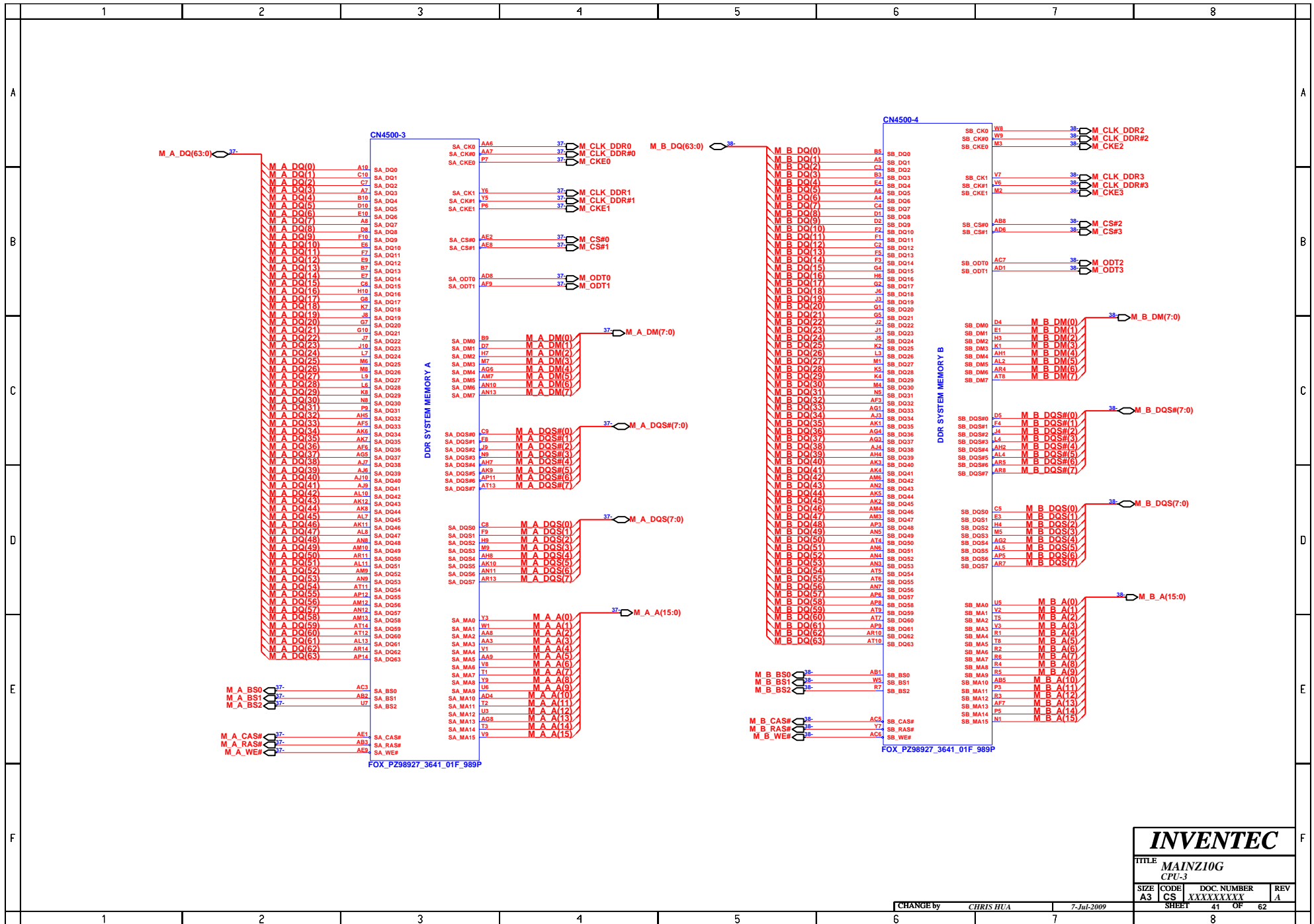
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SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXXX	REV A
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SHEET		33 OF	62

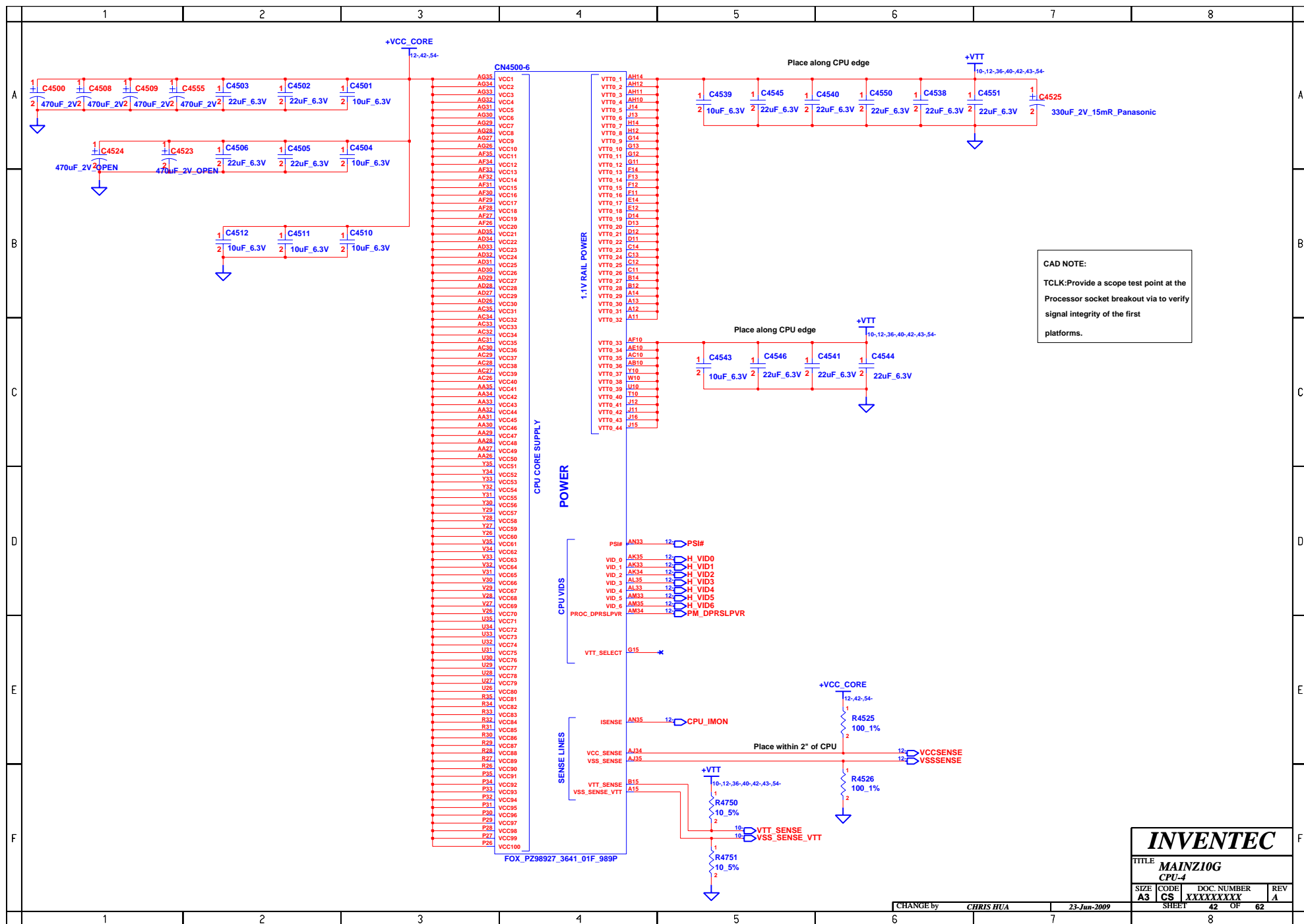


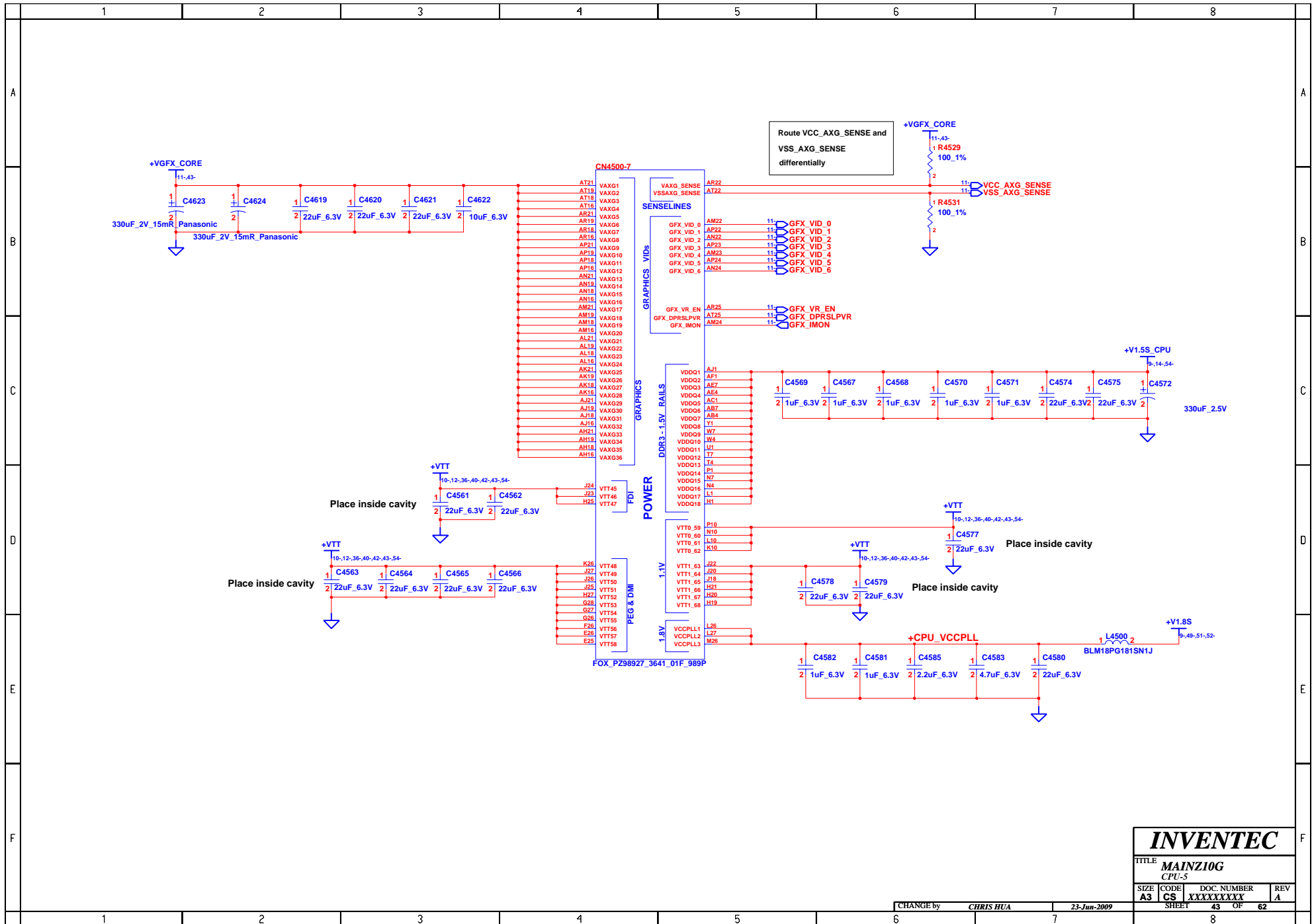


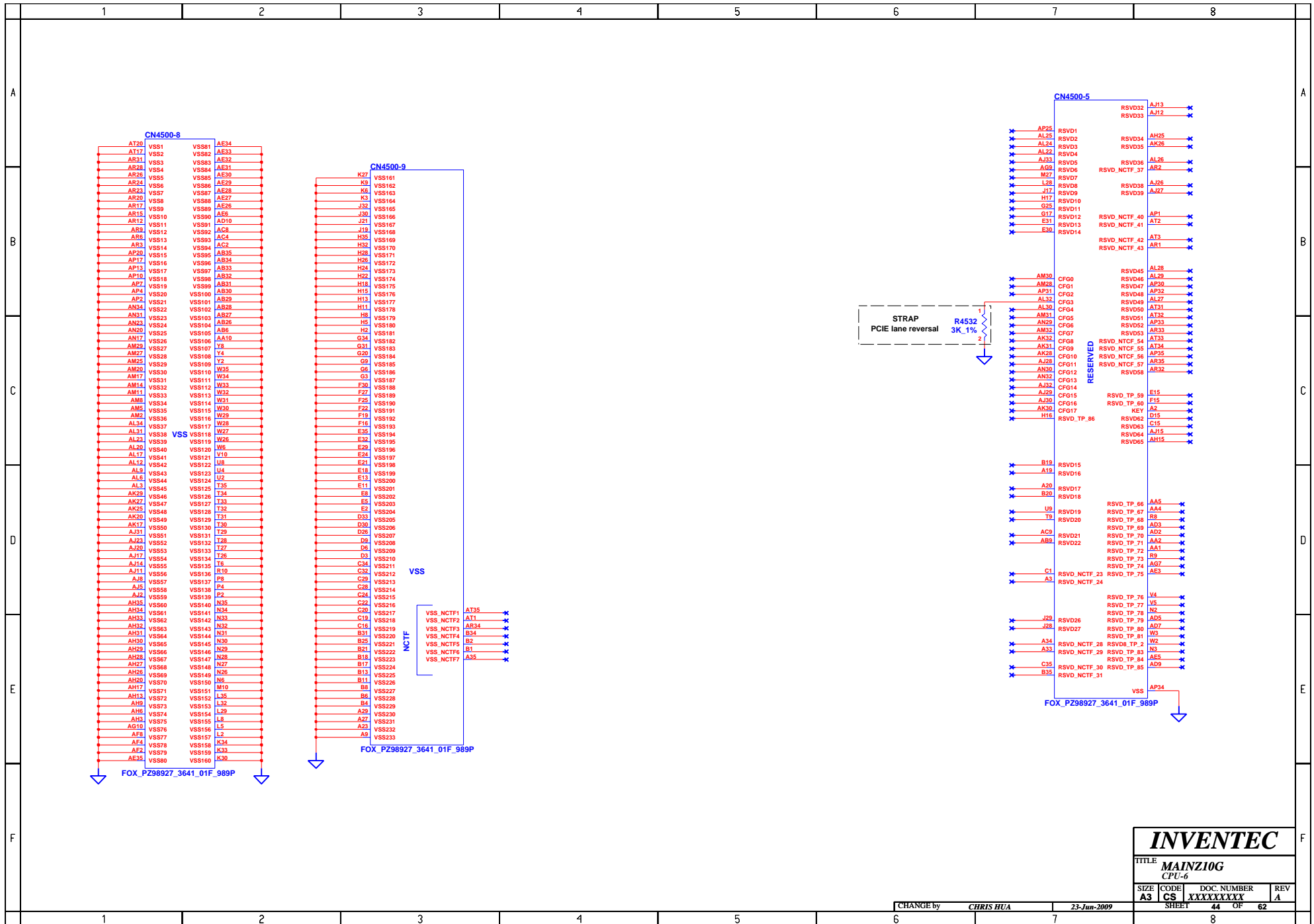


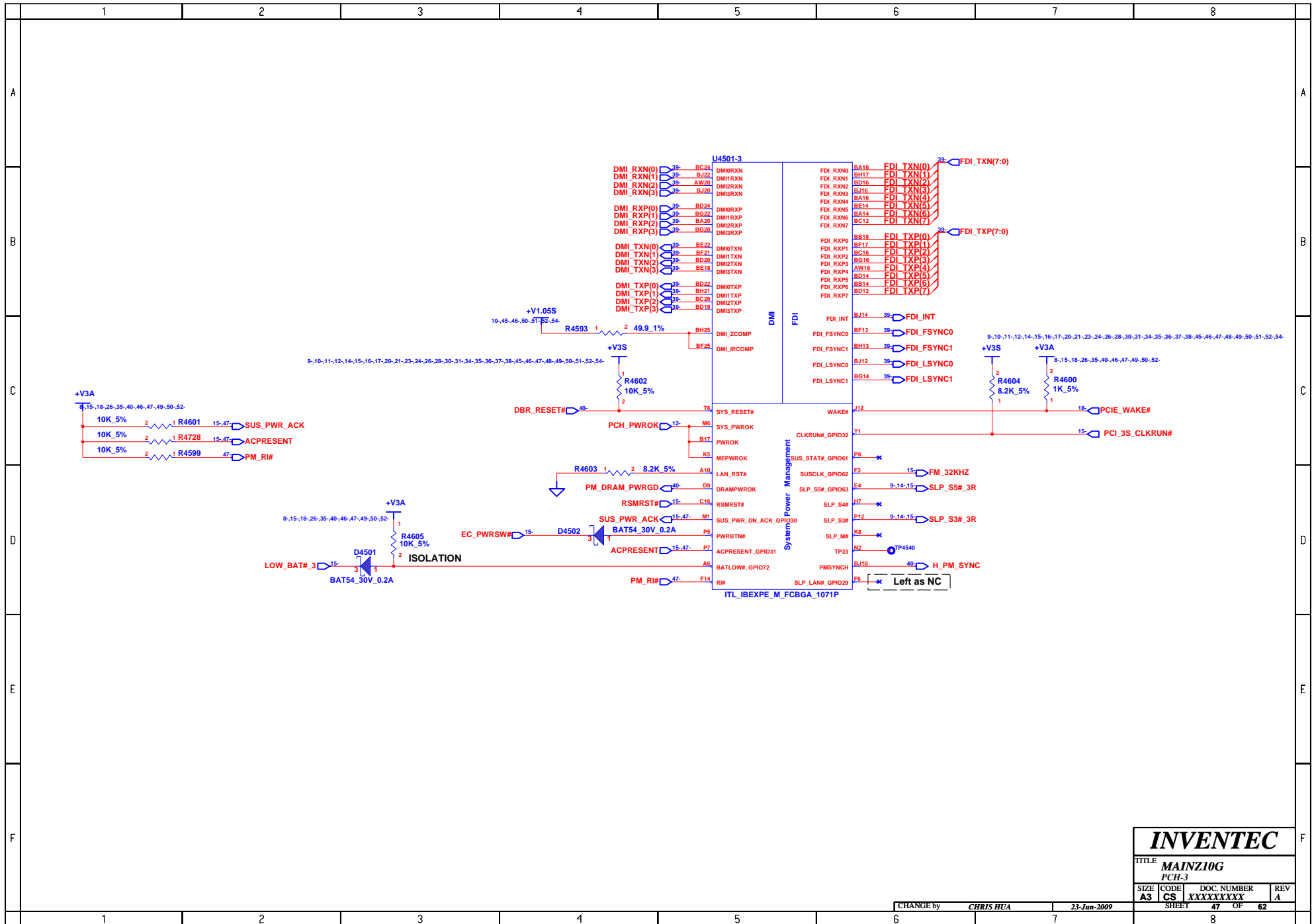


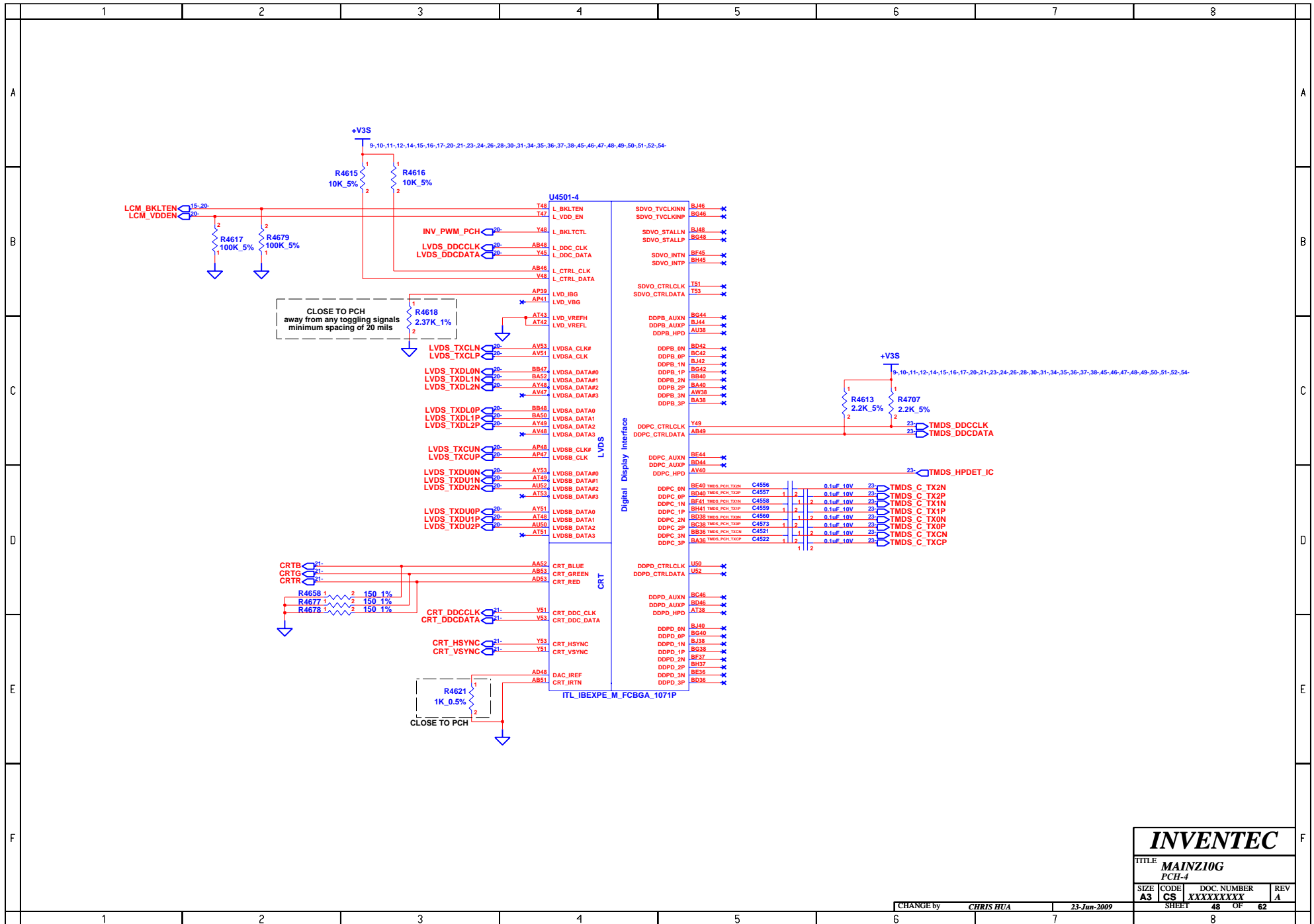


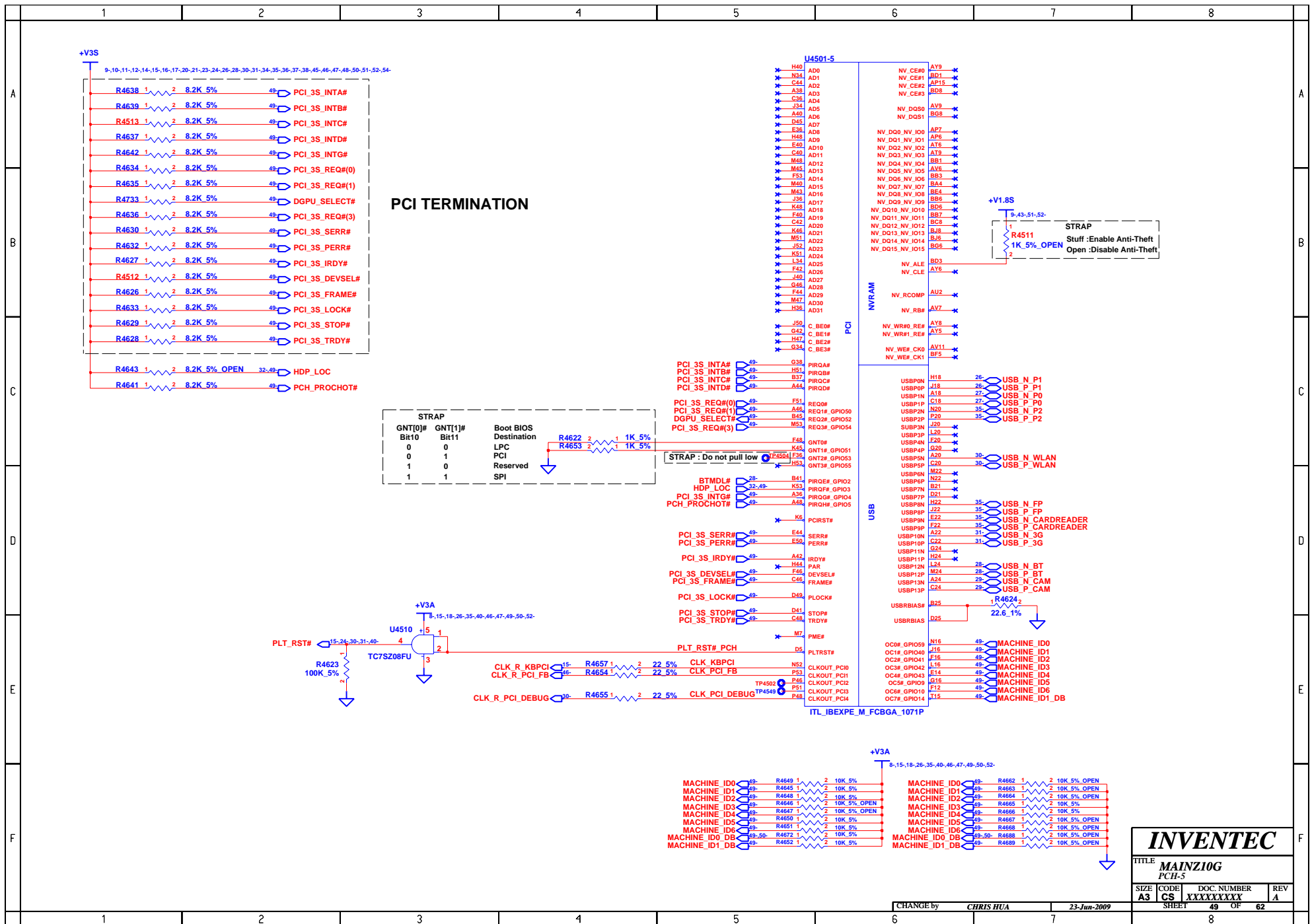


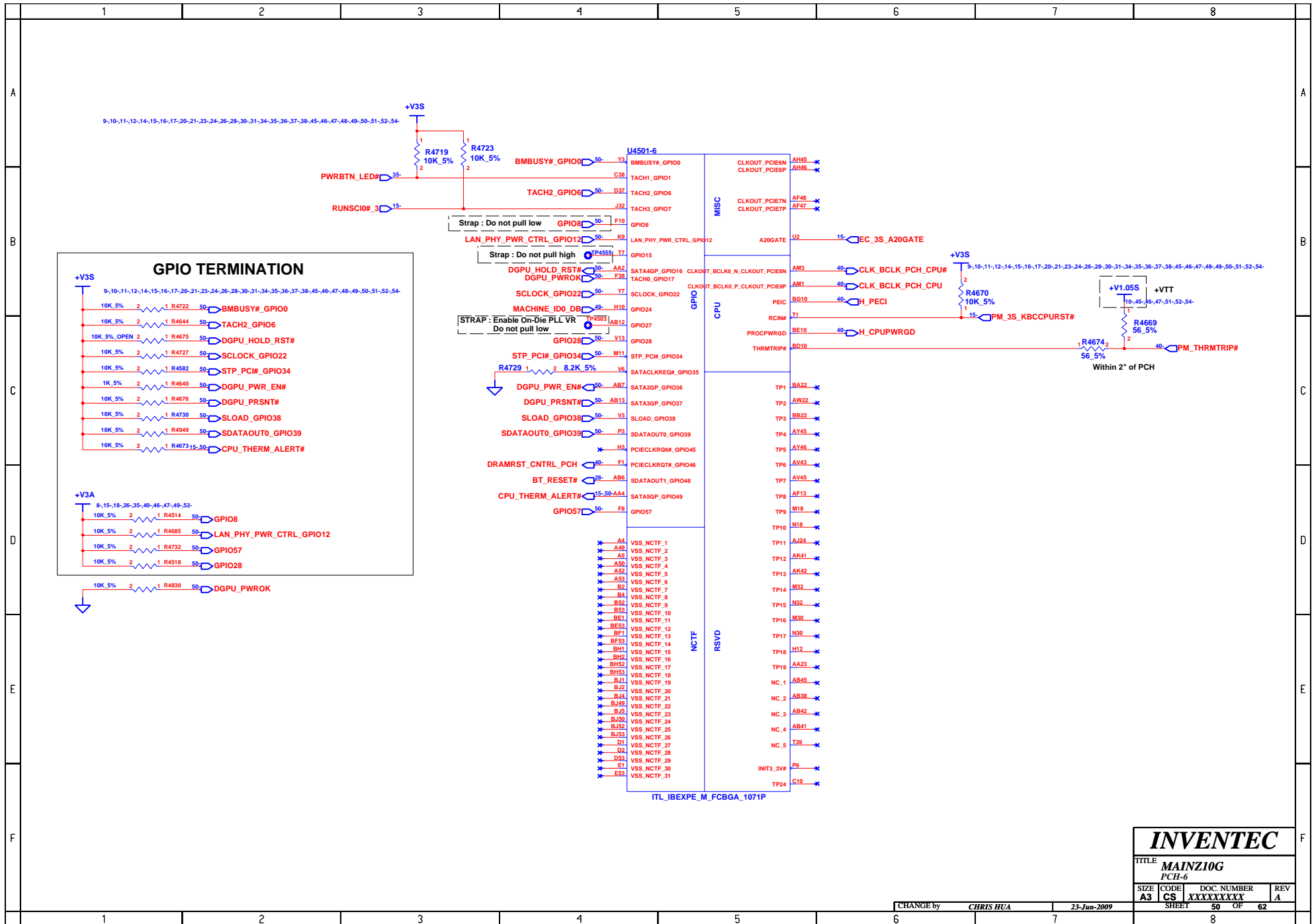


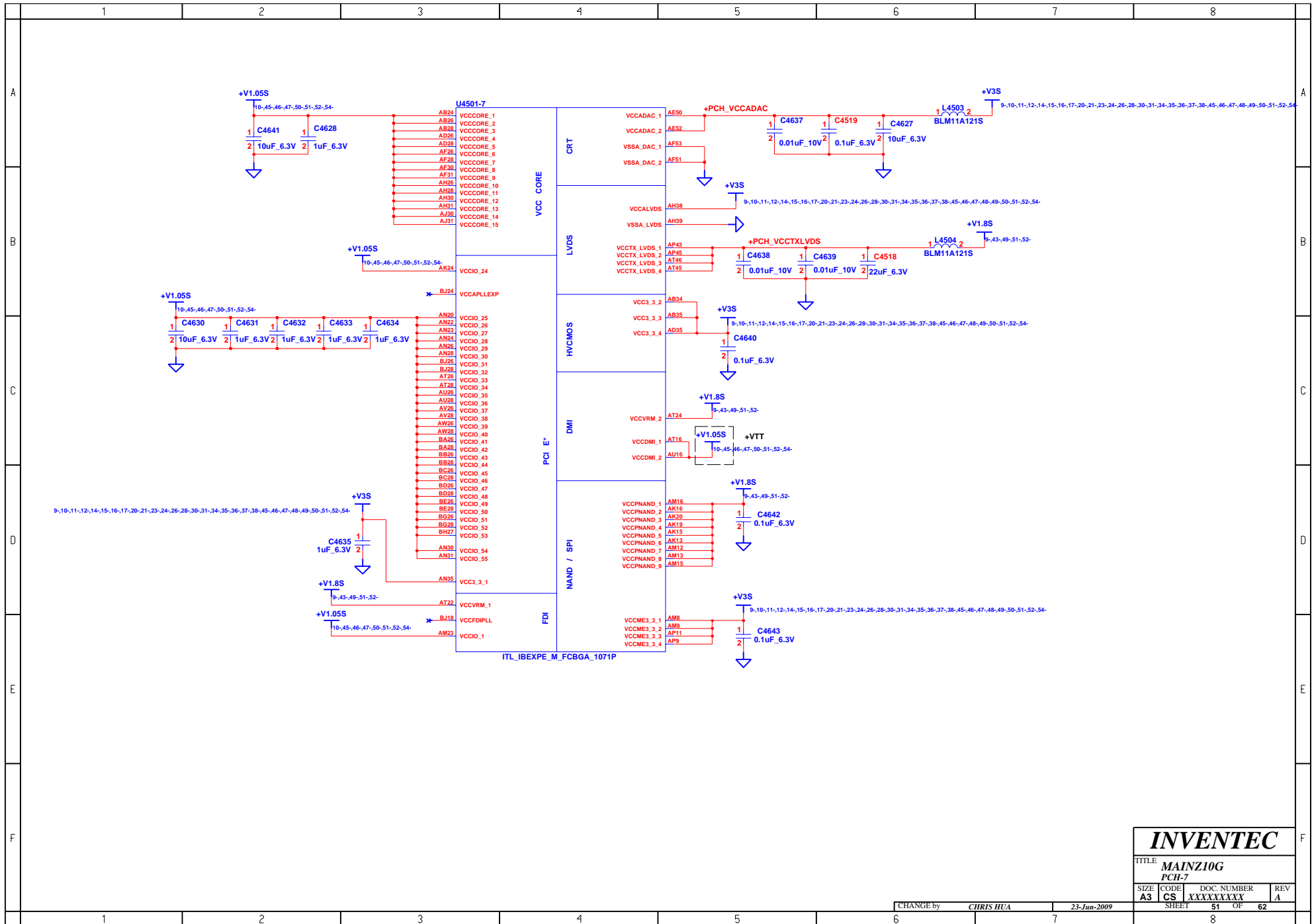


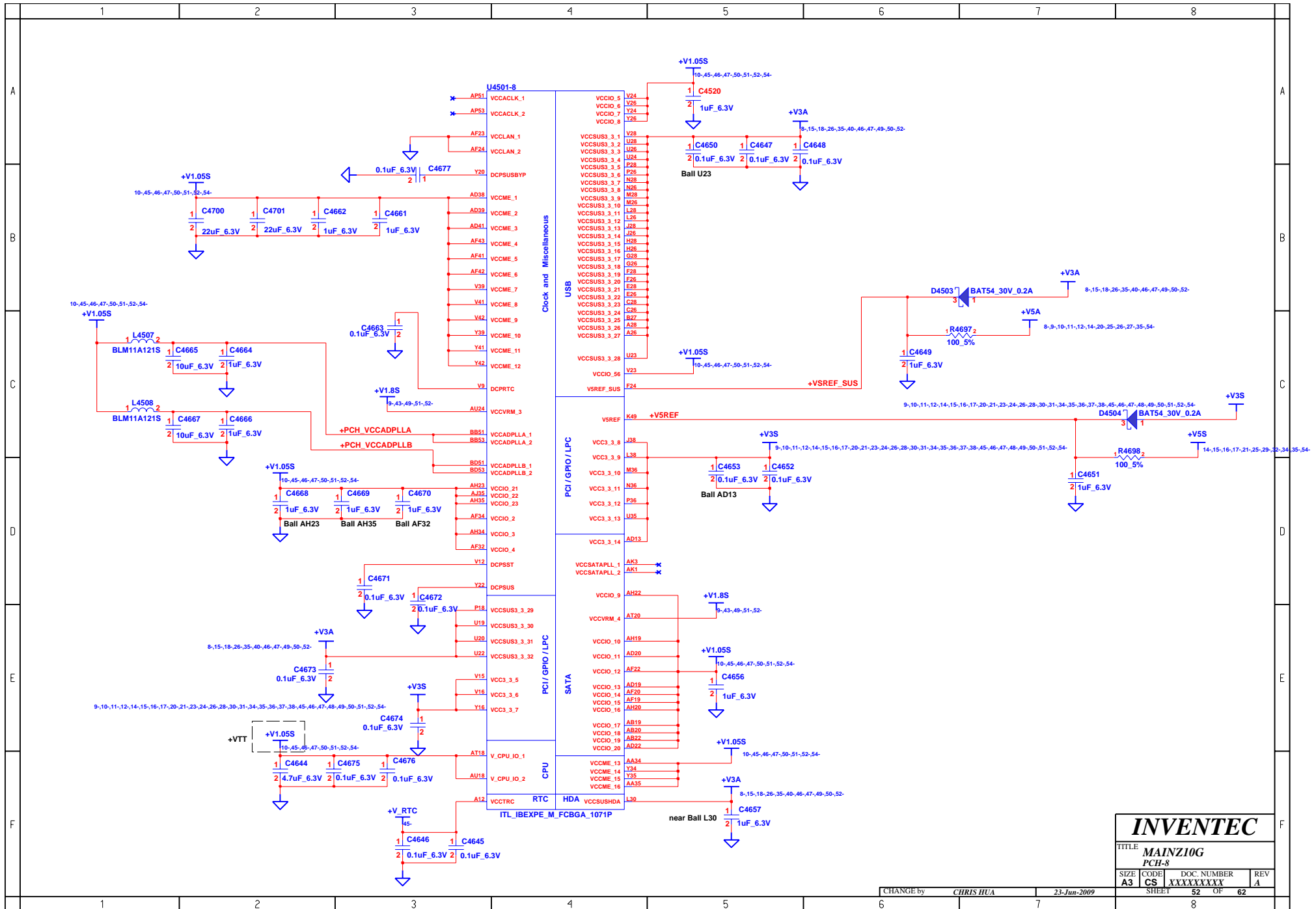




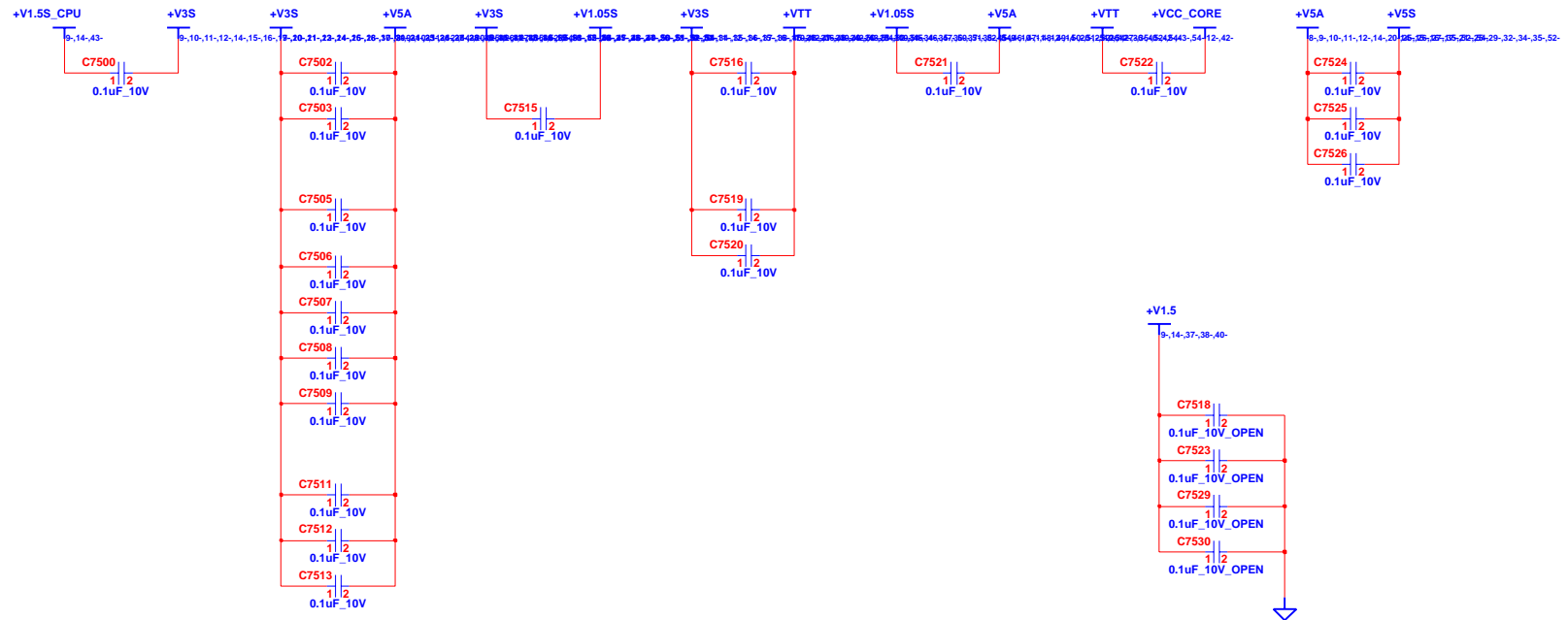






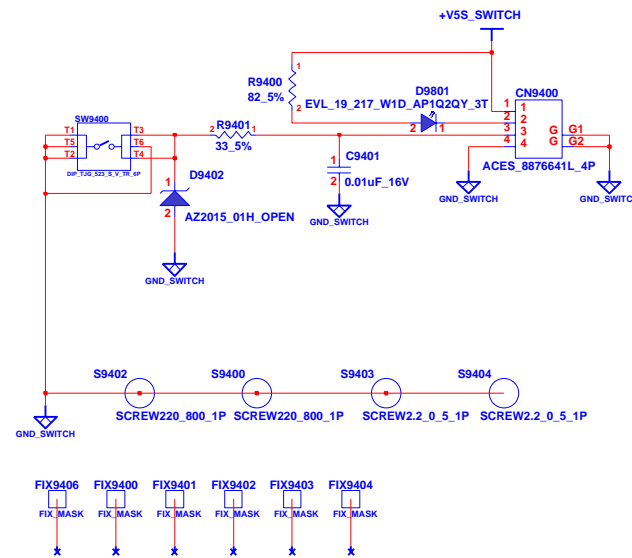


EMI



INVENTEC			
TITLE MAINZ10G			
EMI			
SIZE A3	CODE CS	DOC. NUMBER XXXXXXXXX	REV A
CHANGE by CHRIS HUA		23-Jun-2009	
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TOUCHPAD ON/OFF BOARD

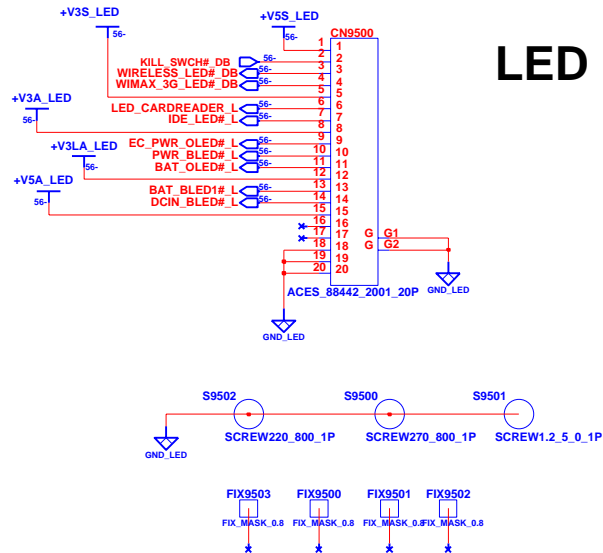


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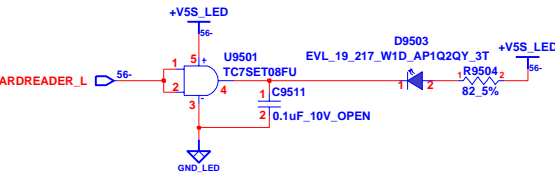
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SIZE: A3	CODE: CS	DOC. NUMBER: 6050A23072-0-MTR	REV: A
SHEET: 55		OF: 62	

CHANGE by: **CHRIS HUA** 20-Aug-2009

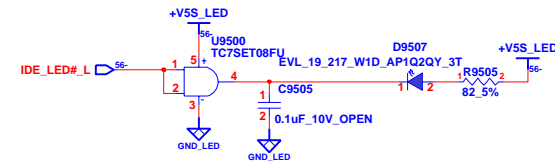
LED & KILL SWITCH BOARD



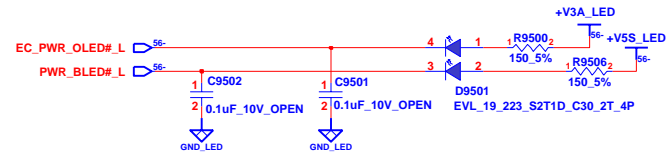
CARDREADER LED



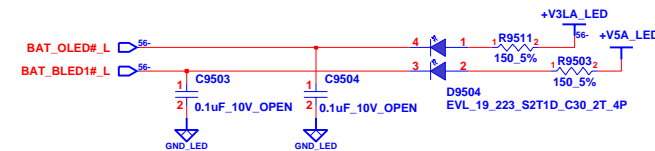
HDD LED



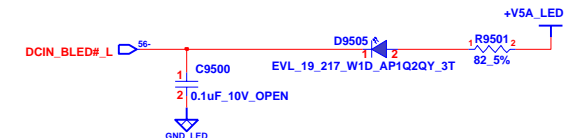
POWER LED



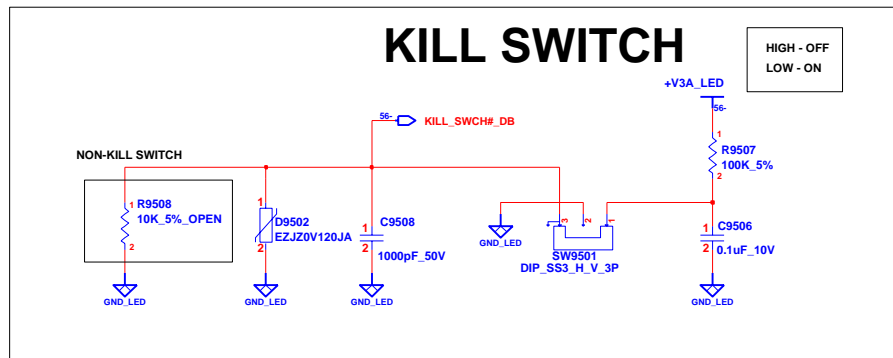
BATTERY LED



DC LED



KILL SWITCH



INVENTEC

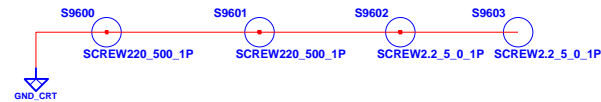
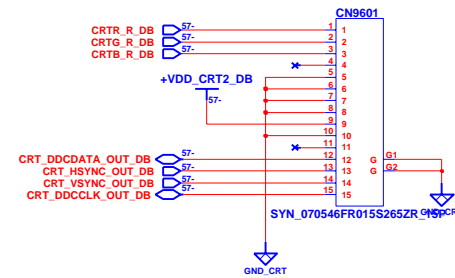
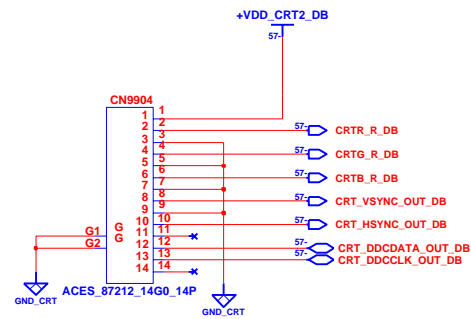
TITLE: MAINZ10-6050A2307301-MB-AX1-27
LED & Kill Switch

SIZE: A3 CODE: CS DOC. NUMBER: REV: 1

CHANGE by: MAINZ10 18-Aug-2009

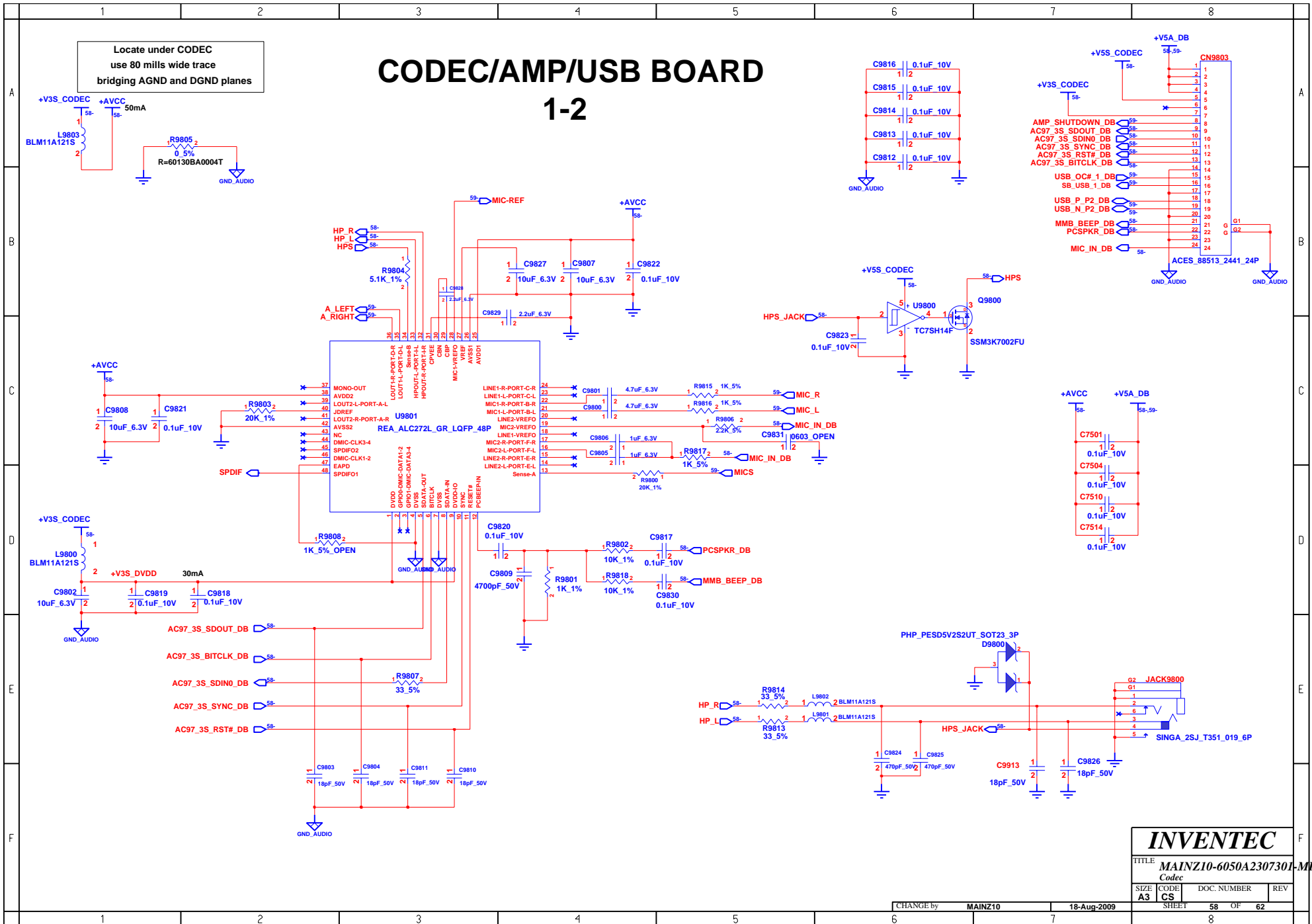
SHEET: 56 OF 62

CRT BOARD



INVENTEC			
TITLE MAINZ10-6050A2307301-MB-AX1-27			
CRT BOARD			
SIZE A3	CODE CS	DOC. NUMBER	REV
CHANGE by MAINZ10		24-Aug-2009	SHEET 57 OF 62

CODEC/AMP/USB BOARD 1-2



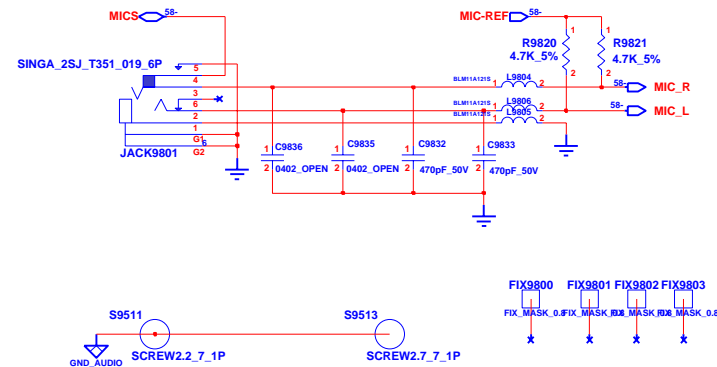
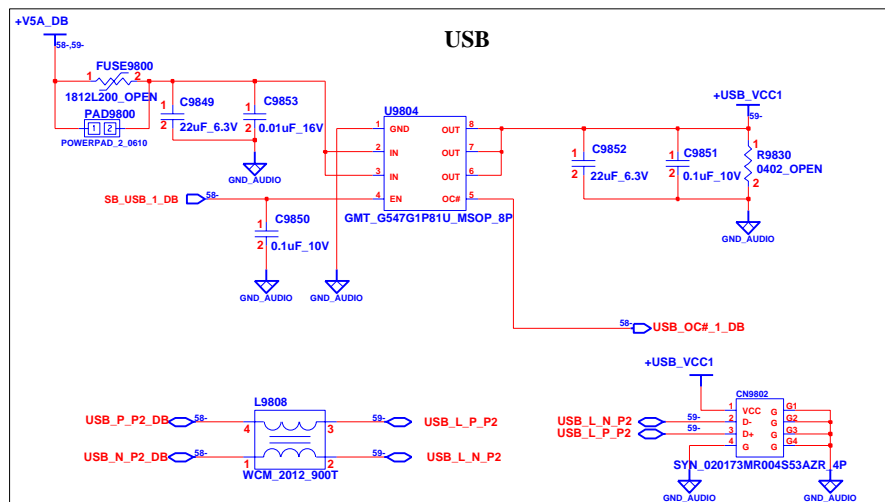
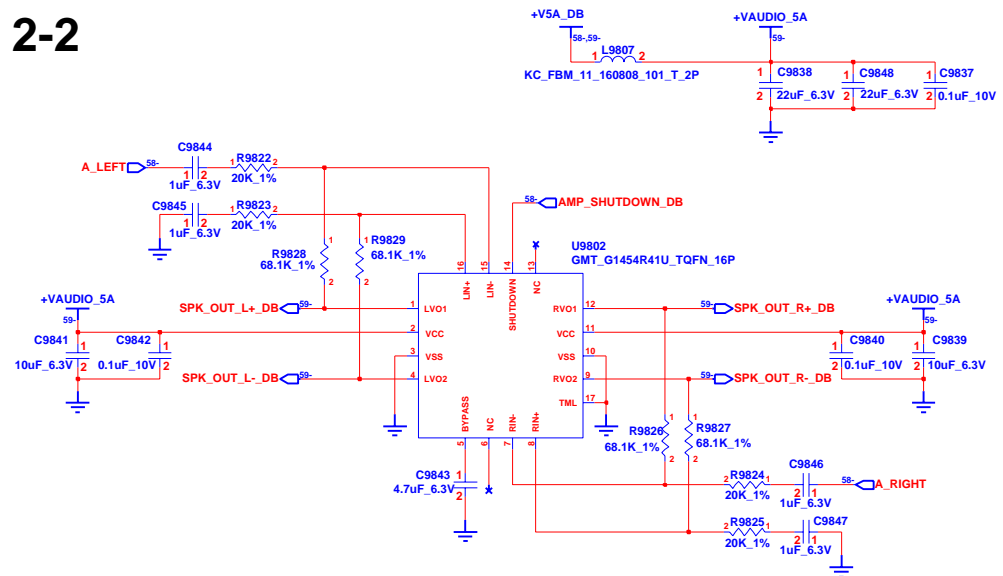
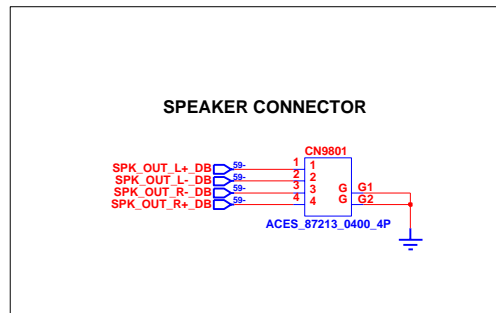
INVENTEC

TITLE: MAINZ10-6050A2307301-MB-AX1-27

SIZE: A3 CODE: CS DOC. NUMBER: REV: 58 OF 62

CHANGE by: MAINZ10 18-Aug-2009

2-2



INVENTEC

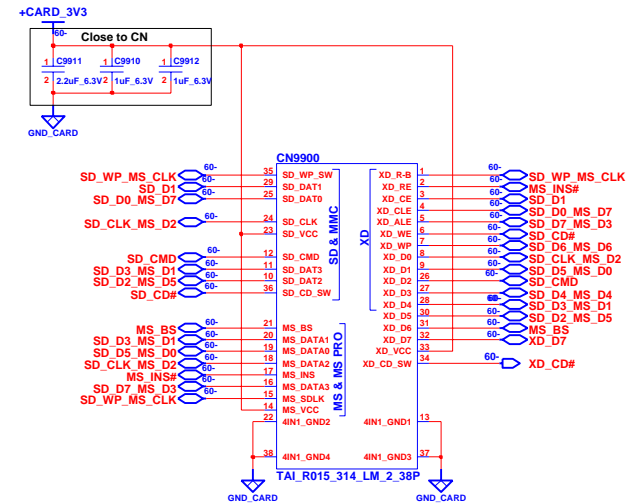
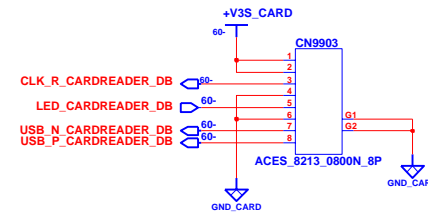
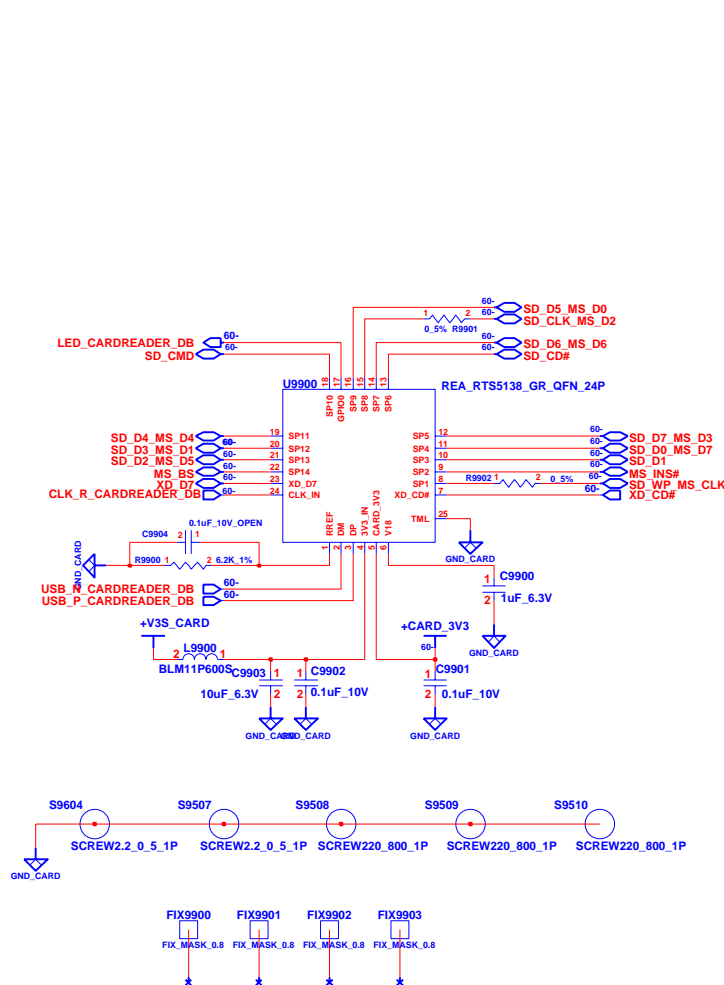
TITLE	MAINZ10-6050A2307301-MB-AX1-27
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SIZE A3	CODE CS	DOC. NUMBER	REV
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SHEET 59 OF 62

CHANGE by	MAINZ10	18-Aug-2009
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CARD READER BOARD



INVENTEC			
TITLE: MAINZ10-6050A2307301-MB-AX1-27			
Card Reader			
SIZE	CODE	DOC. NUMBER	REV
A3	CS		
CHANGE by		MAINZ10	18-Aug-2009
SHEET		60	OF 62
		8	

[illegible]

