

# Bremen 10

## MP Build (A01)

2010.05.14

INVENTEC			
TITLE <i>Bremen10</i>			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>

CHANGE by *Eric Lai* 13-May-2010

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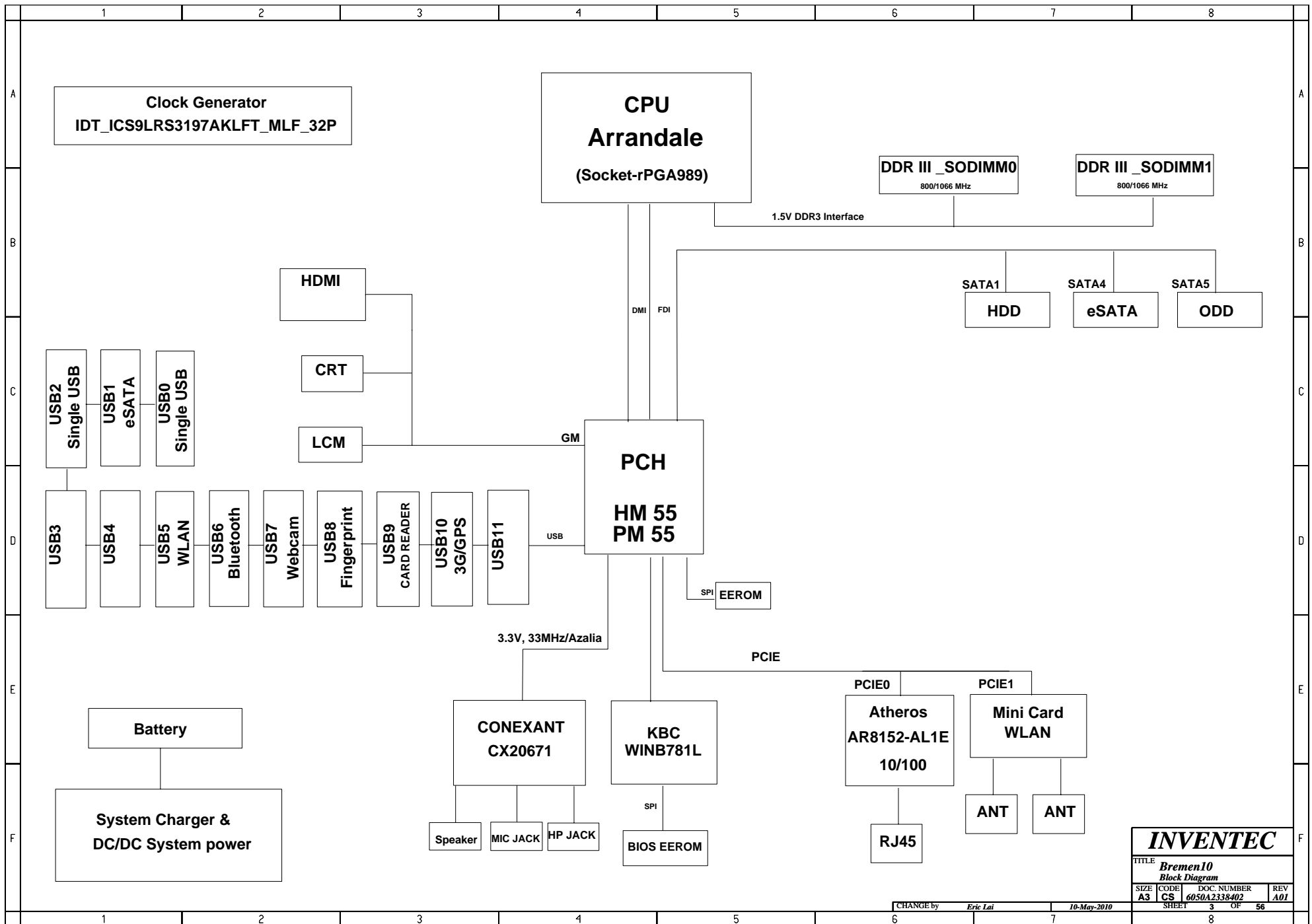
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**INVENTEC**

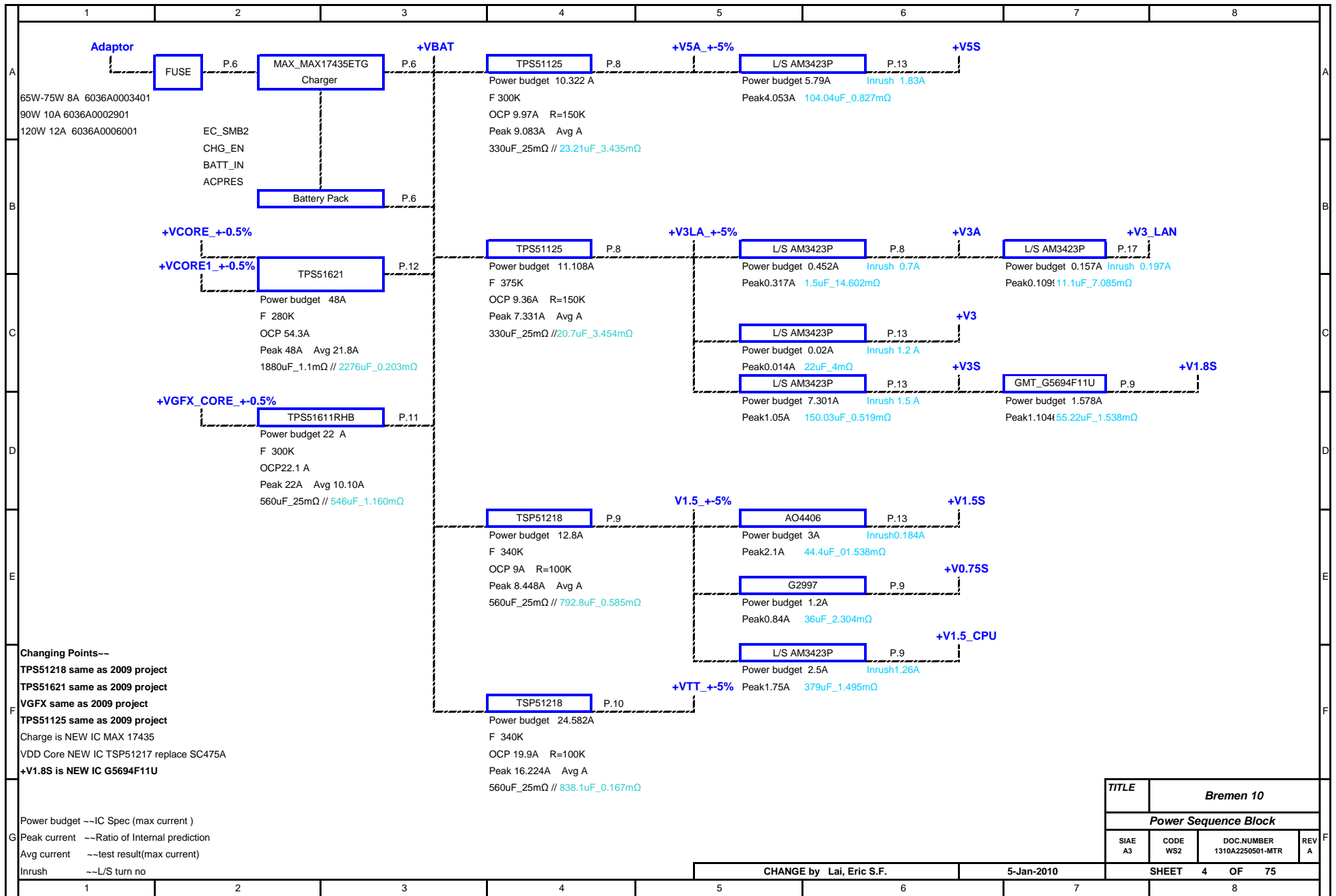
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<b>Bremen10</b>			
Index			
SIZE	CODE	DOC. NUMBER	REV
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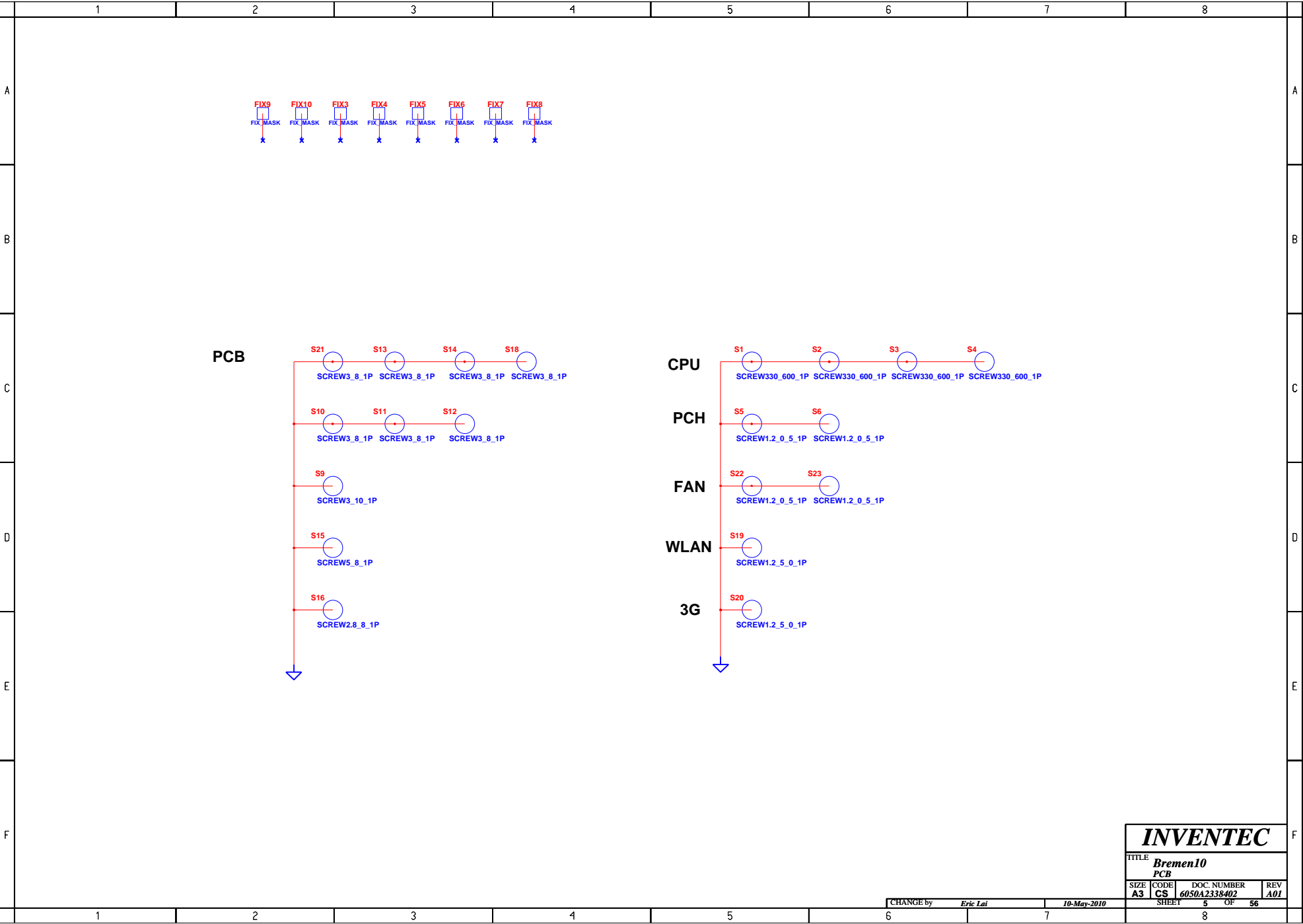
CHANGE by **Eric Lai** 10-May-2010

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INVENTEC			
TITLE <b>Bremen10</b> Block Diagram			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
CHANGE by <i>Eric Lai</i>		10-May-2010	
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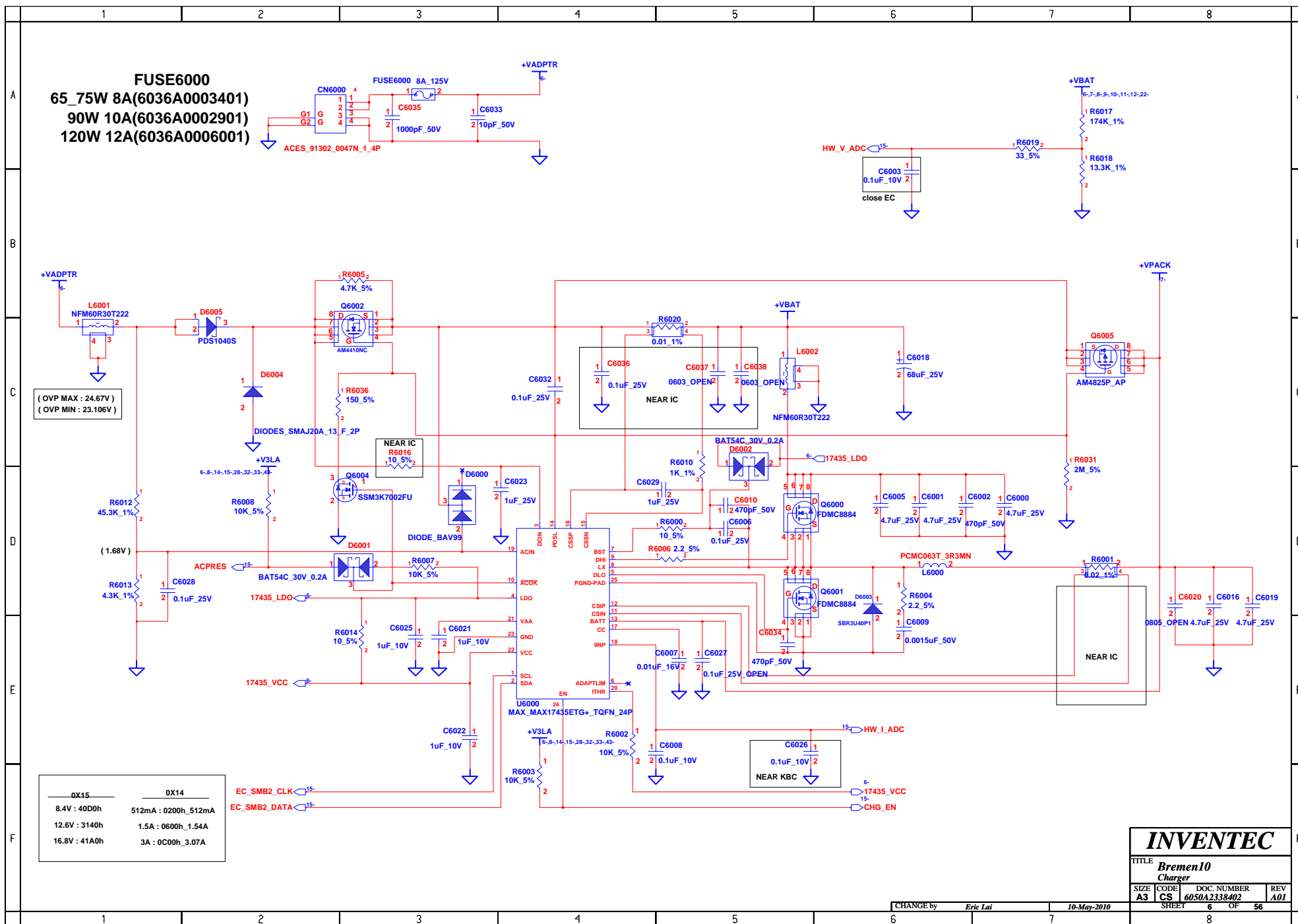


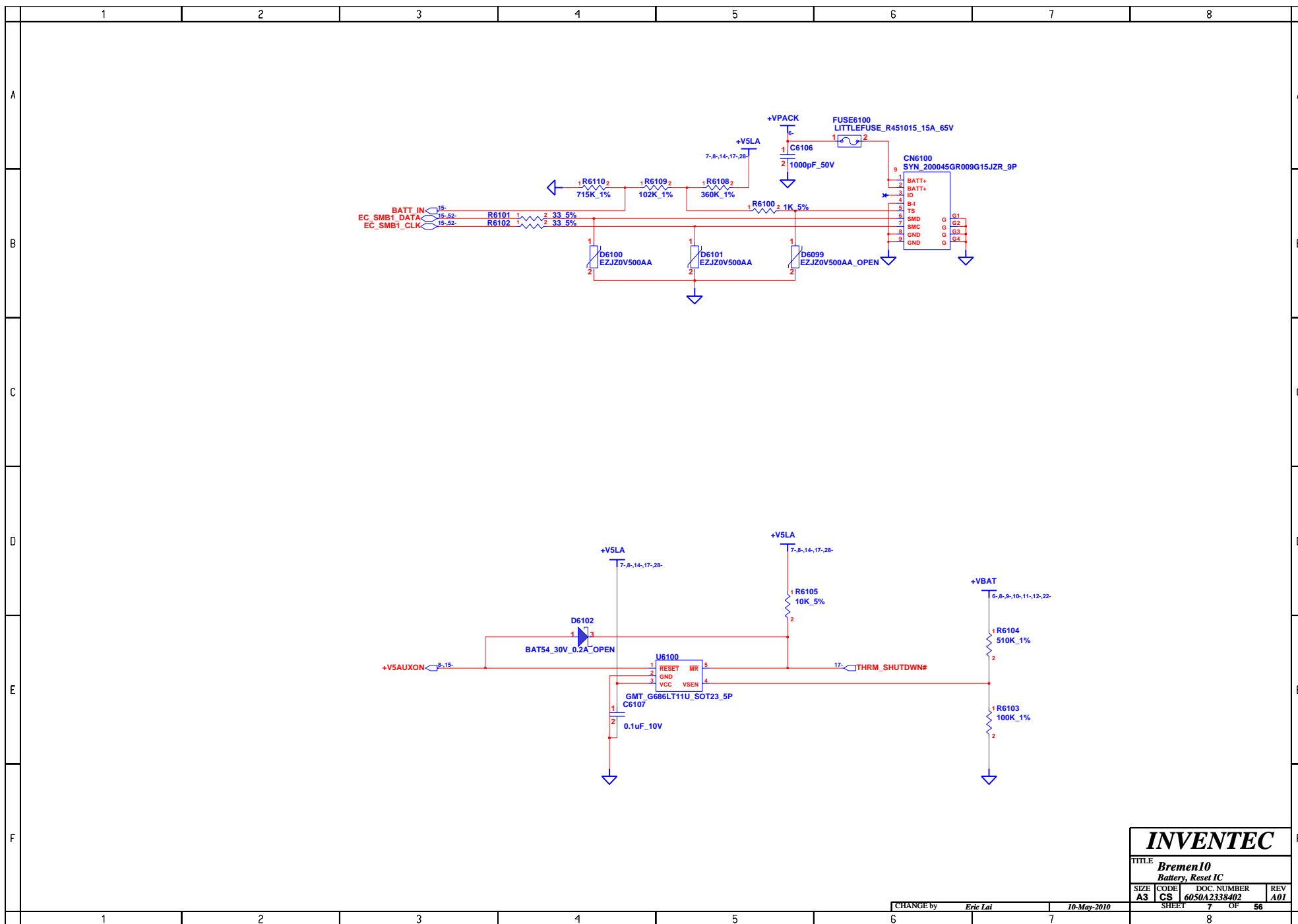
**INVENTEC**

TITLE  
**Bremen10**  
**PCB**

SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
SHEET <b>5</b>		OF <b>56</b>	

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**INVENTEC**

TITLE  
**Bremen10**  
Battery, Reset IC

SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
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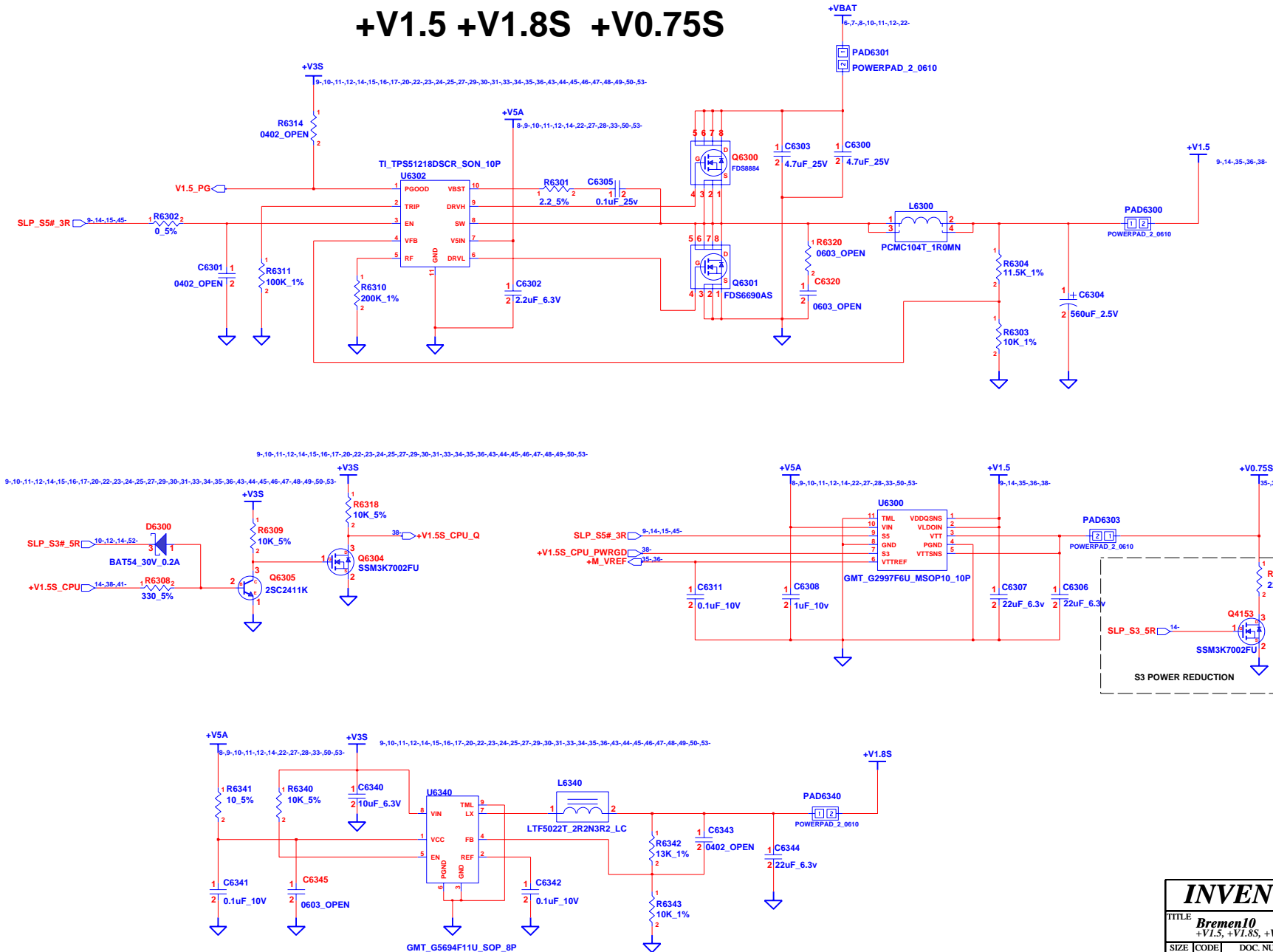
CHANGE by *Eric Lai* 10-May-2010

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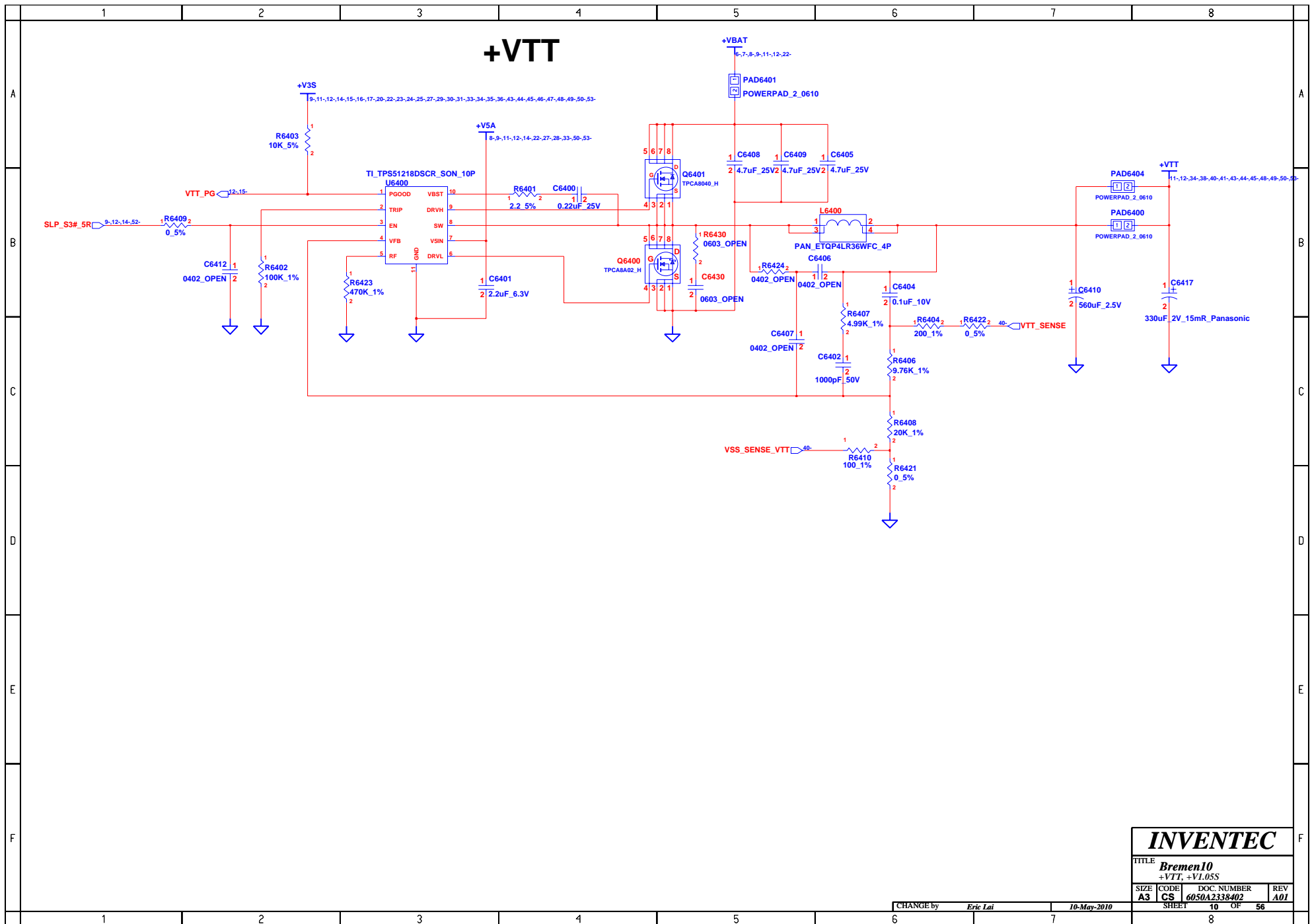


# +V1.5 +V1.8S +V0.75S



INVENTEC			
TITLE Bremen10 +V1.5, +V1.8S, +V0.75S			
SIZE A3	CODE CS	DOC. NUMBER 6050A2338402	REV A01
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	1	2	3	4	5	6	7	8	
A	<div>BLANK</div>								A
B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	

**INVENTEC**

TITLE **Bremen10**

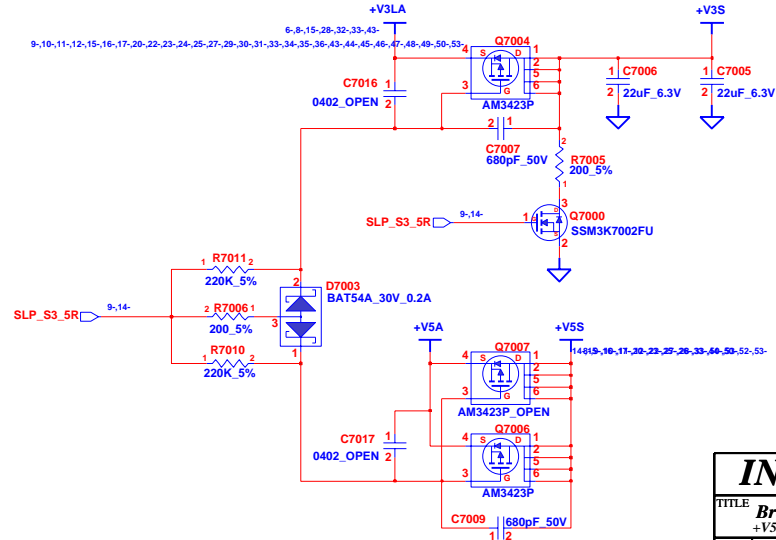
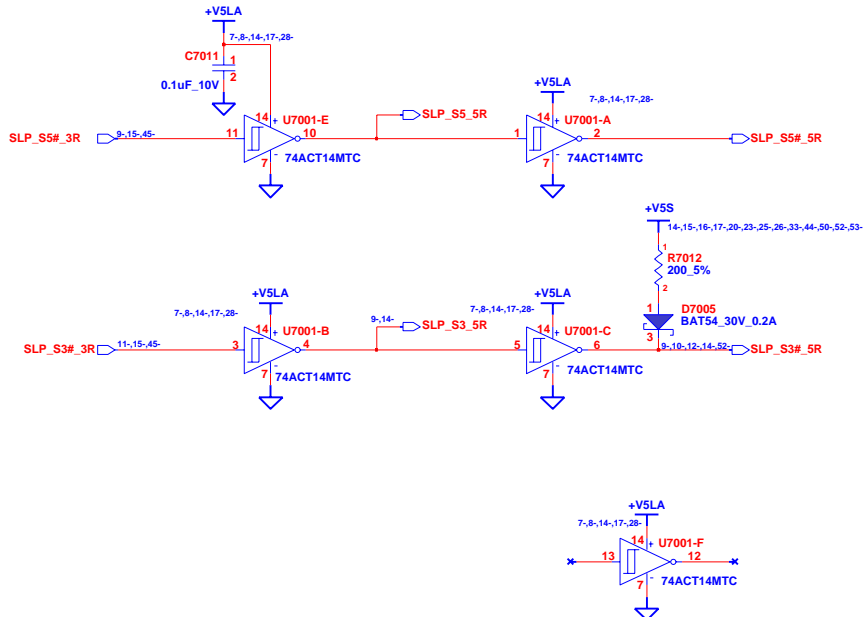
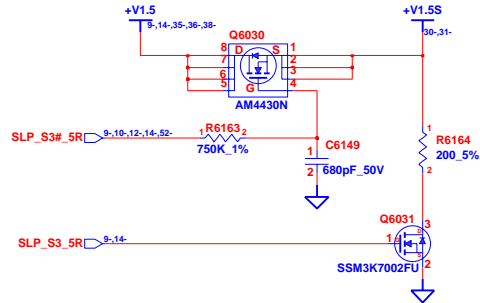
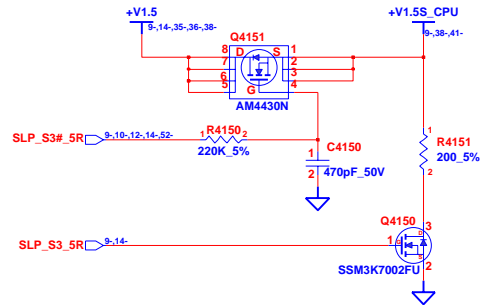
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01

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# +V5S +V3S +V1.5S +V1.5S\_CPU

## S3 POWER REDUCTION

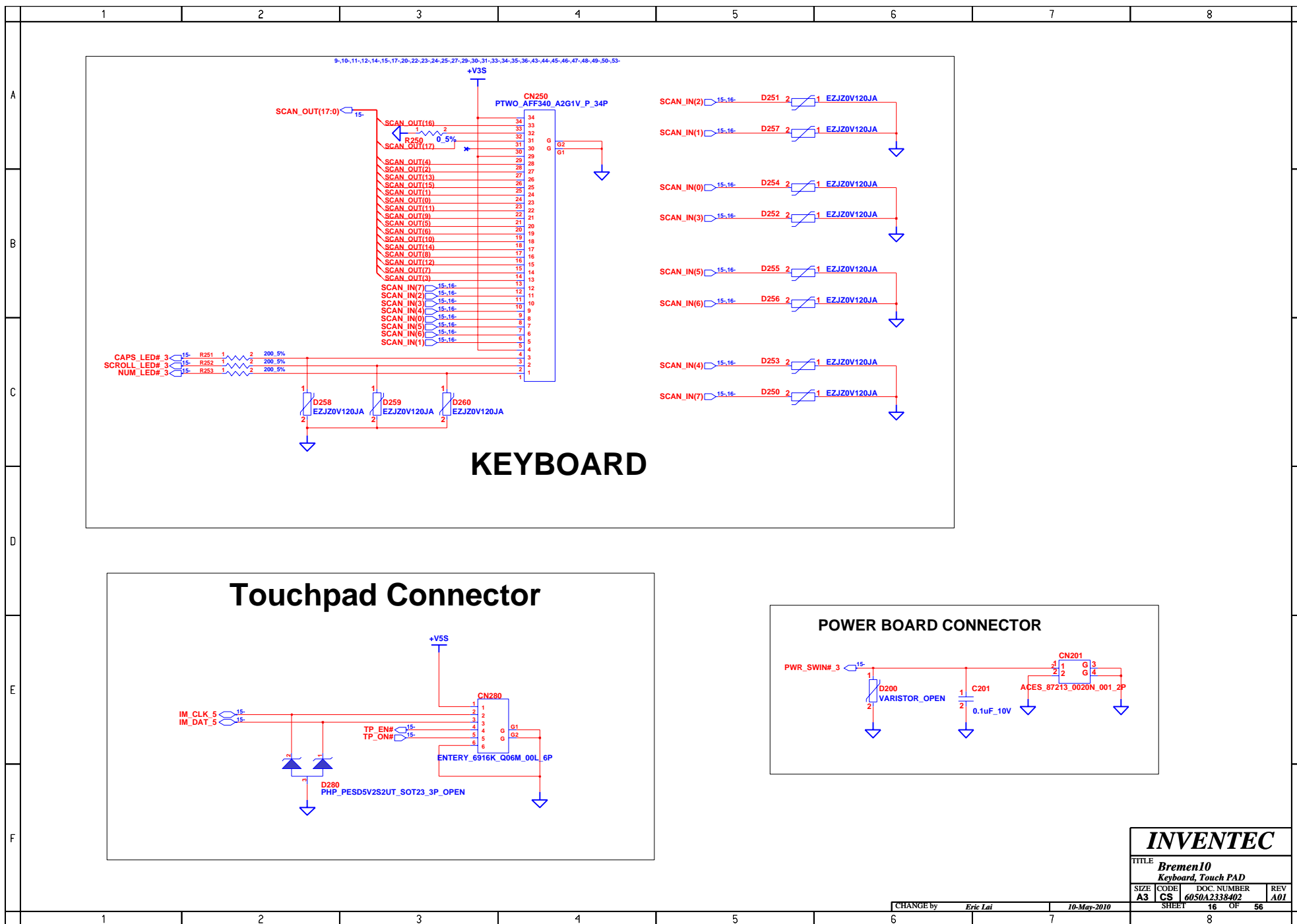


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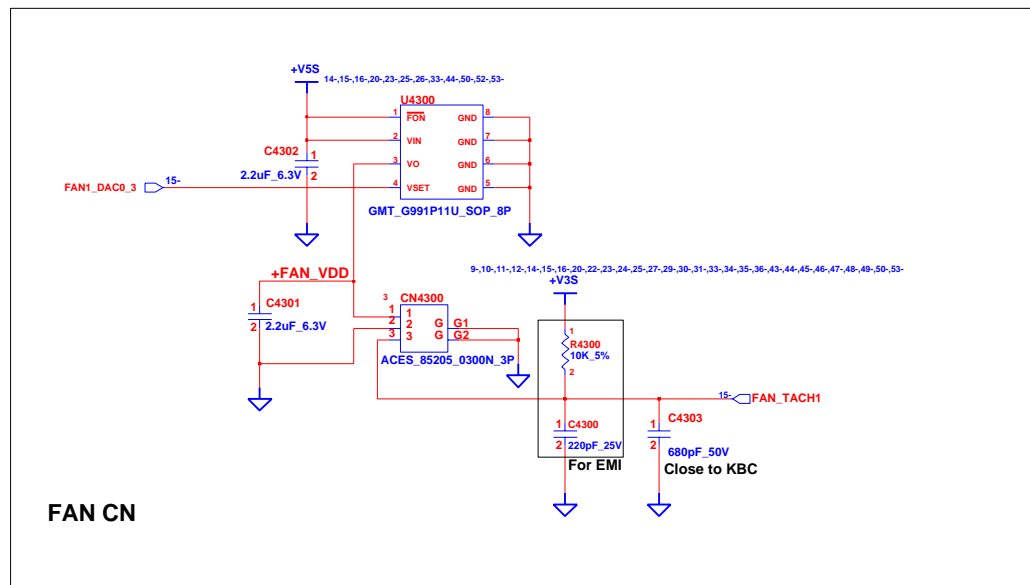
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Bremen10			
+V5S +V3S +V1.5S			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
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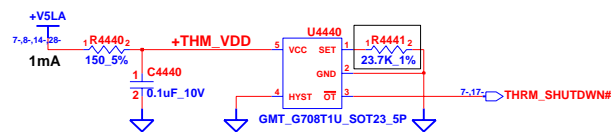






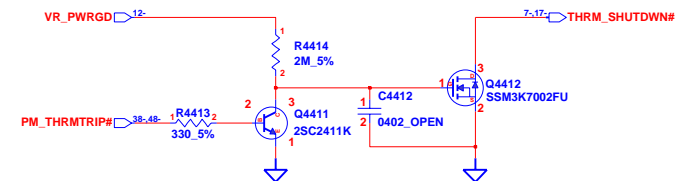


### Board Thermal Sensor

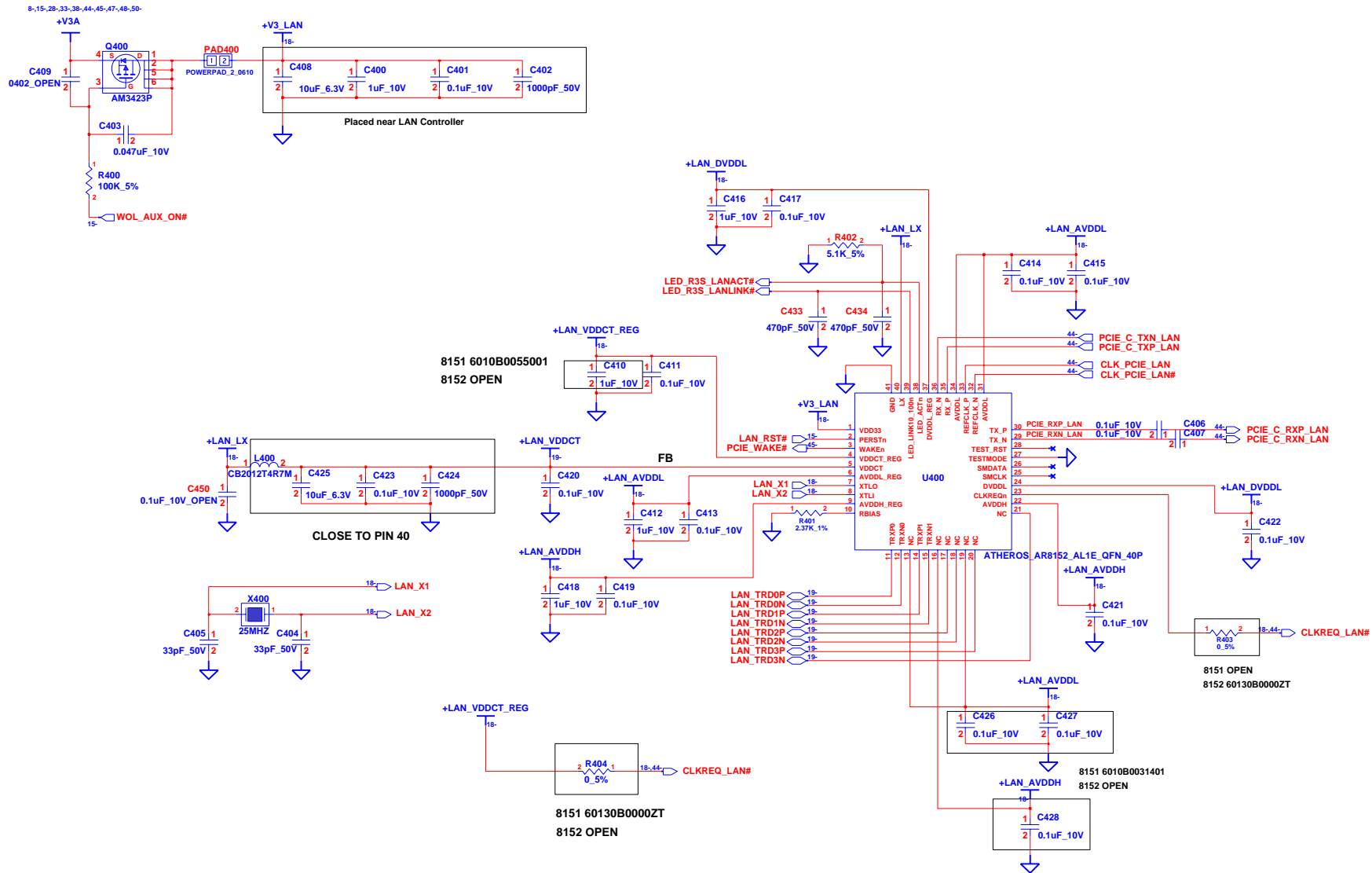


$$RSET = 0.0012 \cdot T^2 - 0.9308 \cdot T + 96.147$$

**Hysteresis is 30C**



<b>INVENTEC</b>			
TITLE <b>Bremen10</b> <i>FAN, Thermal controller</i>			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
SHEET		17	OF 56
		8	



**INVENTEC**

TITLE  
**Bremen10**  
**LAN**

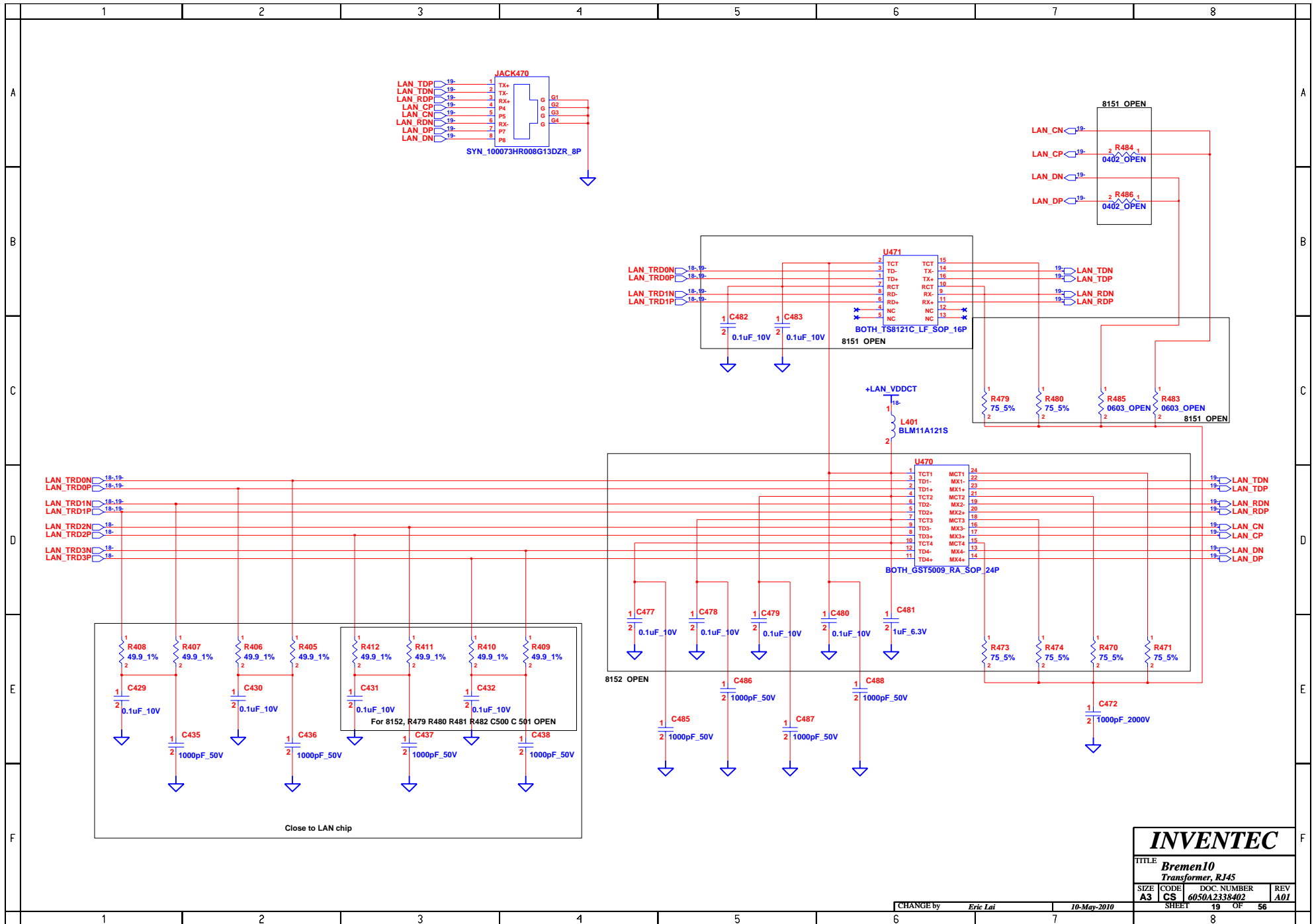
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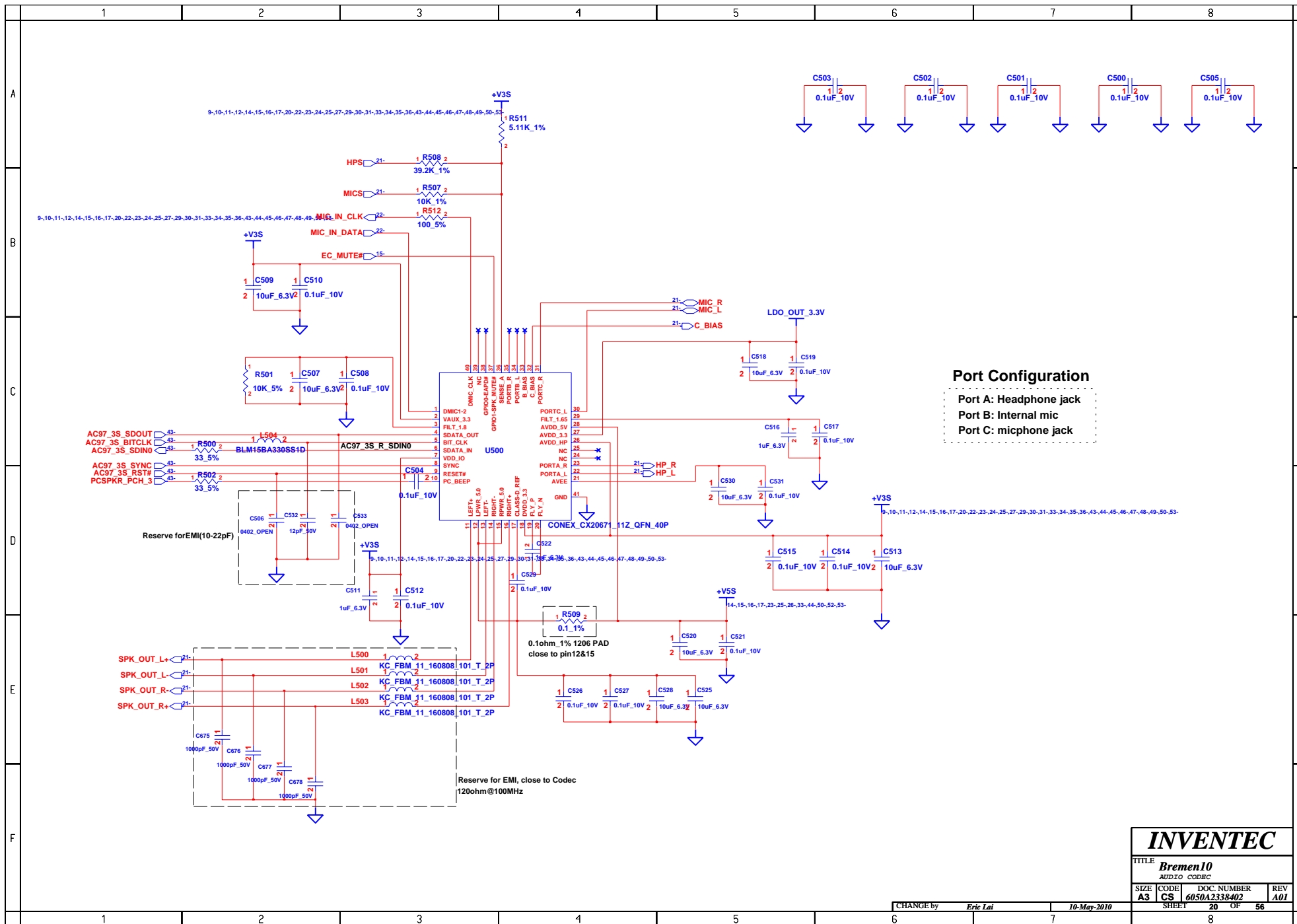
A3 CS 6050A2338402 A01

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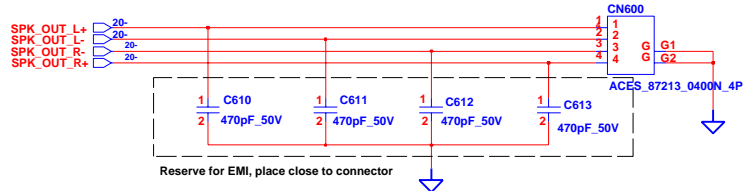
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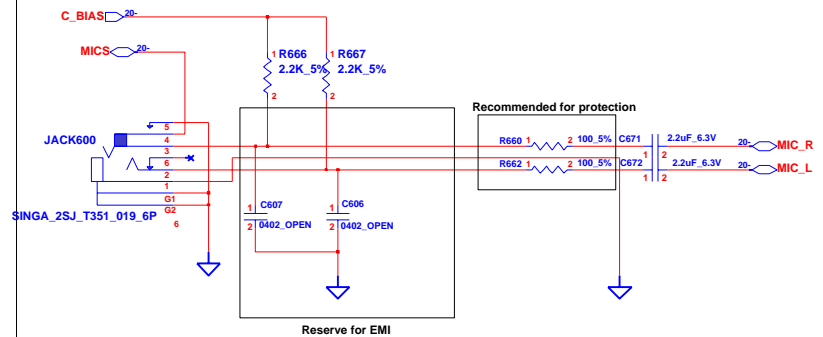


## INTERNAL SPEAKERS

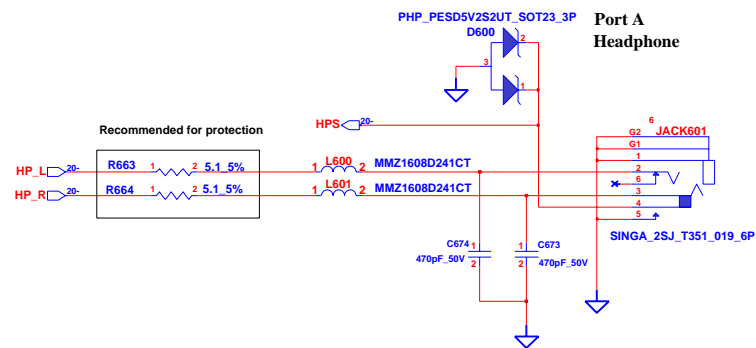


## AUDIO JACKS

### Port C External microphone



### Port A Headphone



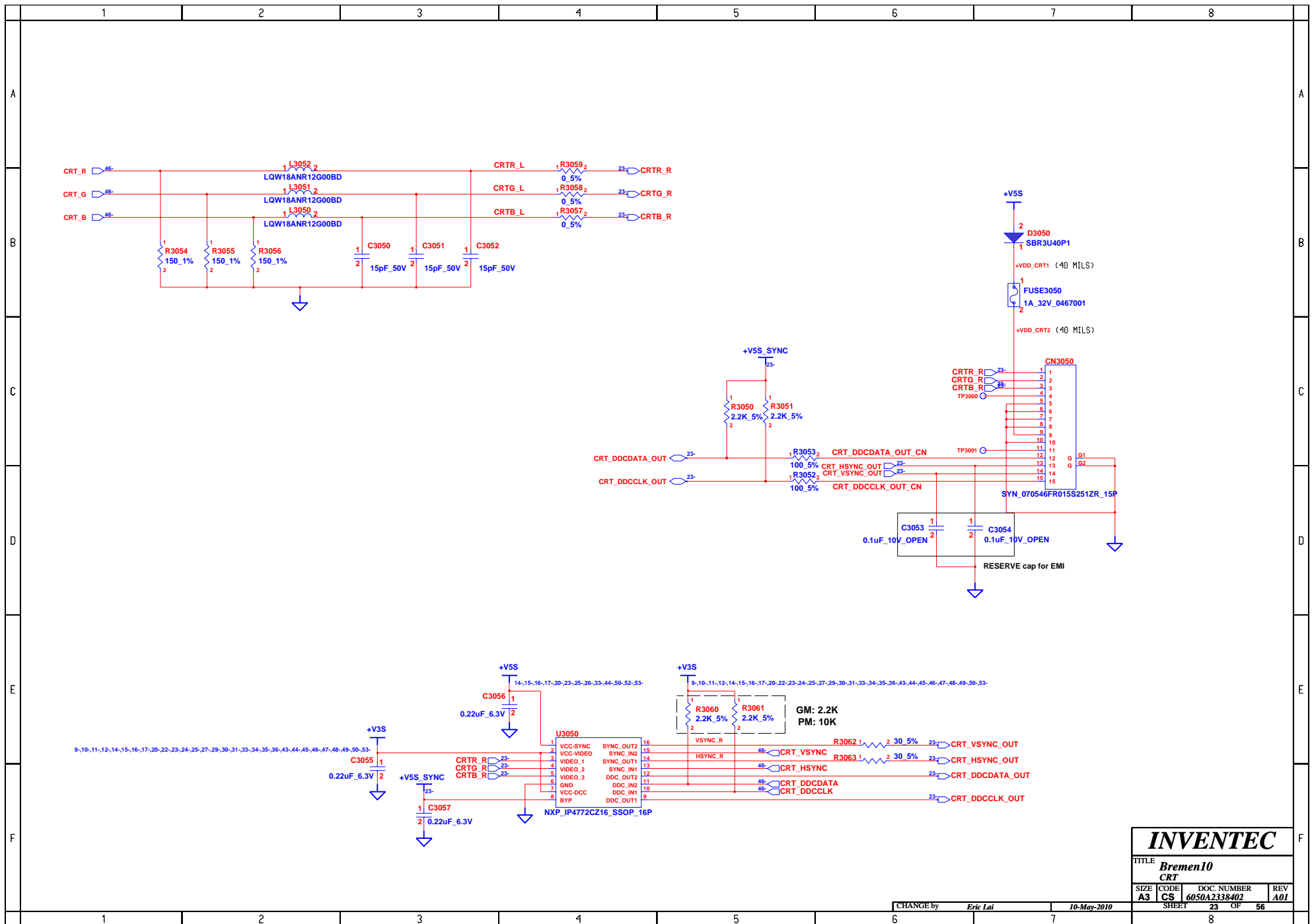
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TITLE <b>Bremen10</b> AUDIO JACK			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
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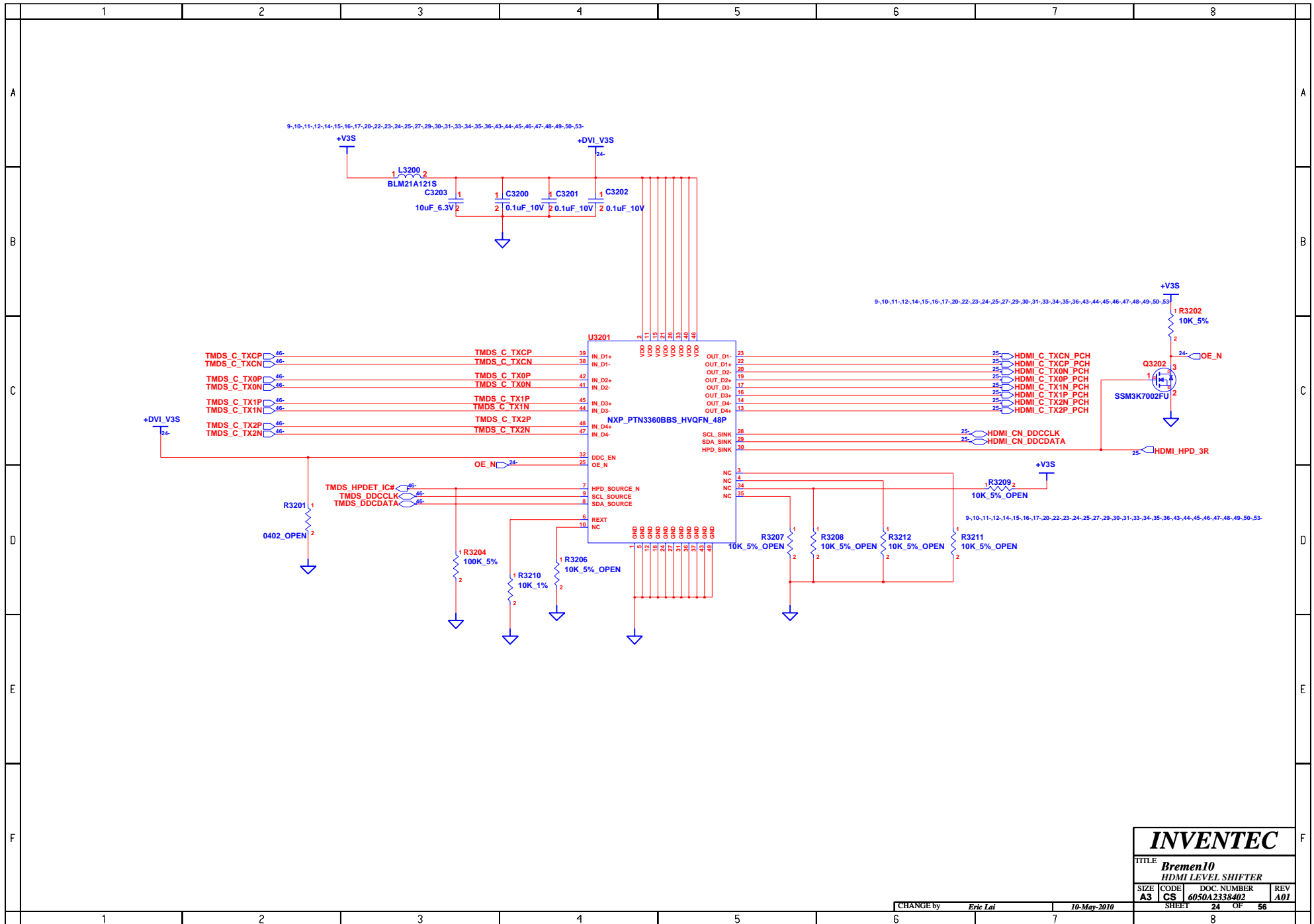




**INVENTEC**

TITLE			
Bremen10			
CRT			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
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**INVENTEC**

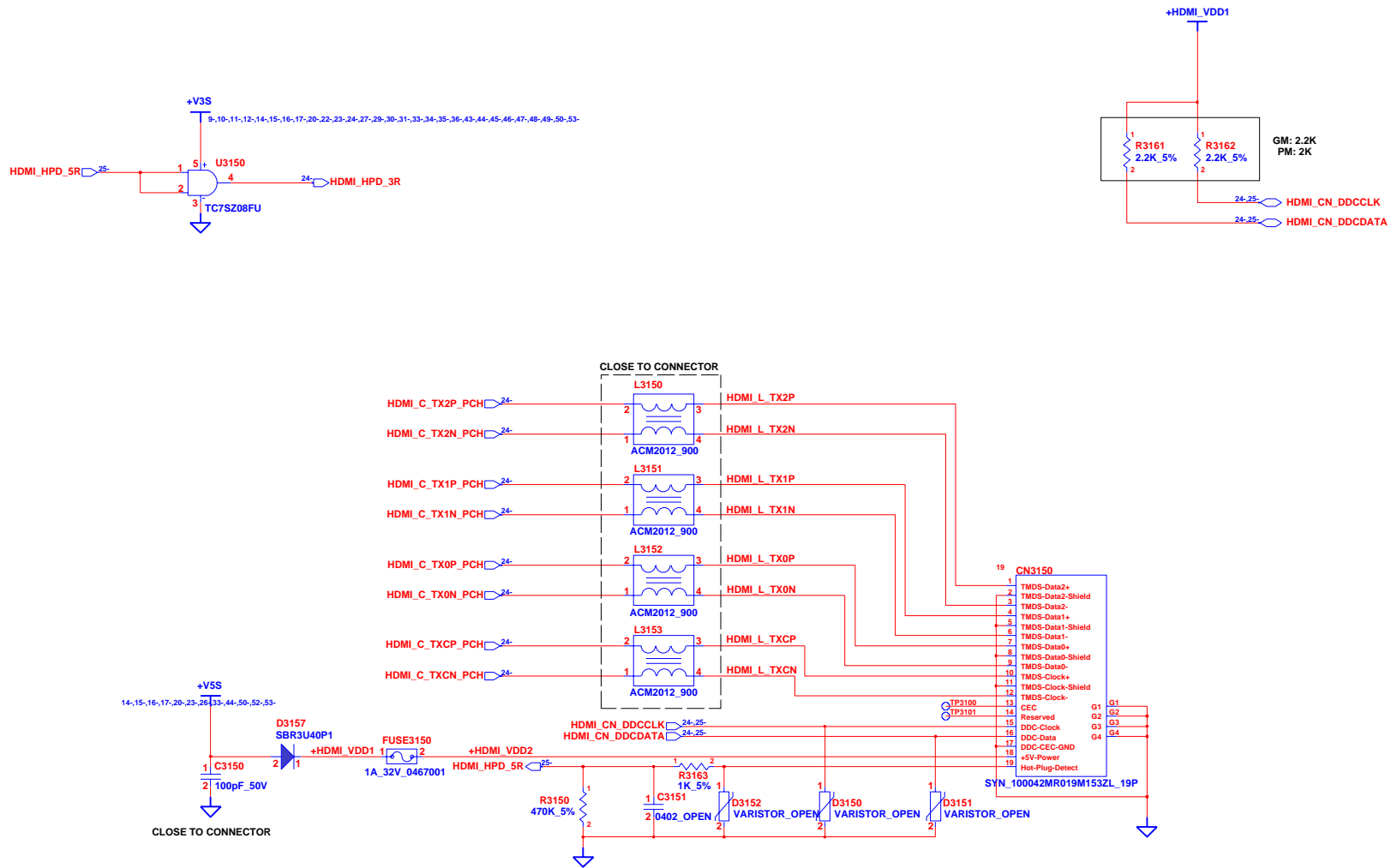
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**Bremen10**  
HDMI LEVEL SHIFTER

SIZE	CODE	DOC. NUMBER	REV
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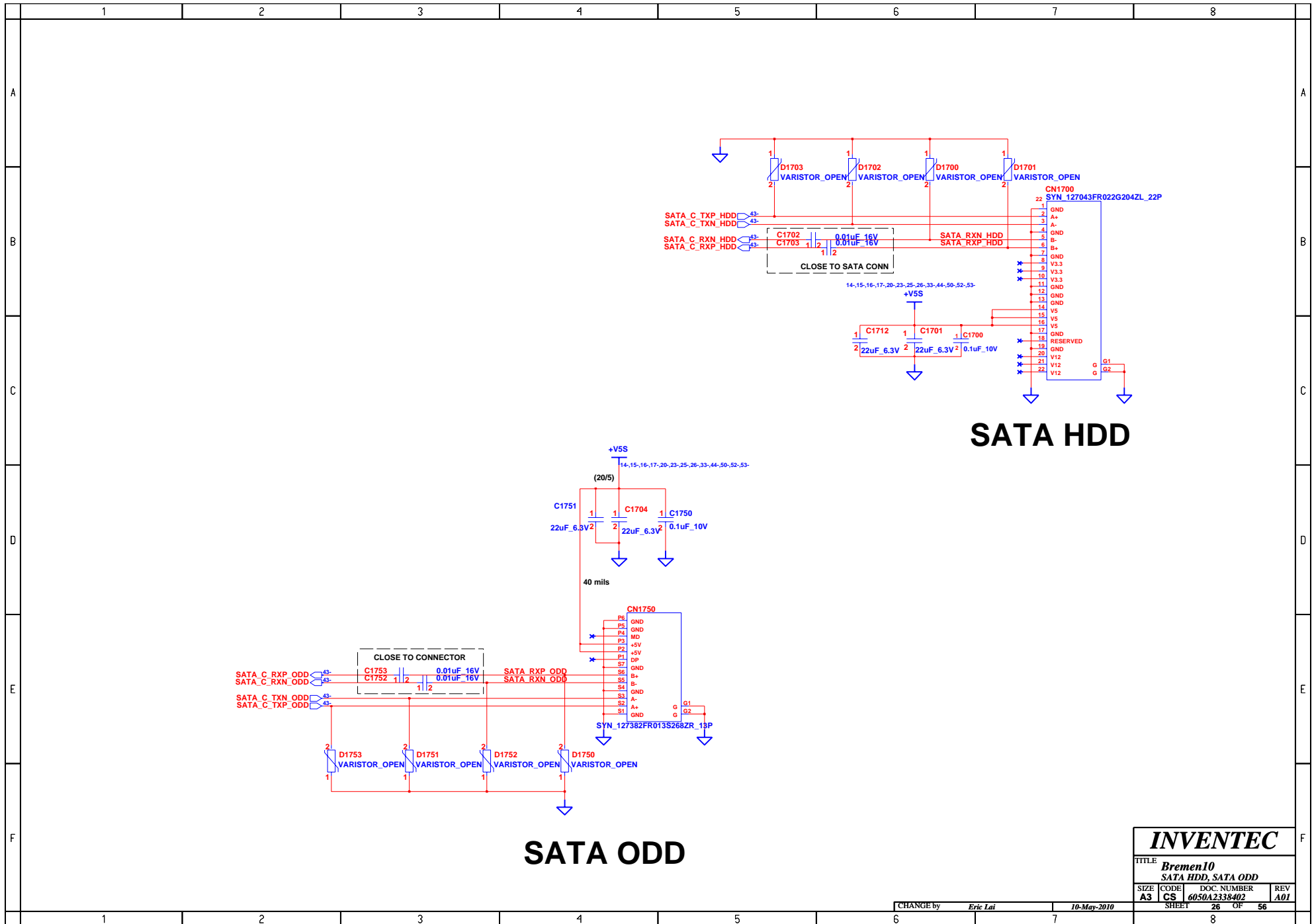
CHANGE by Eric Lai 10-May-2010

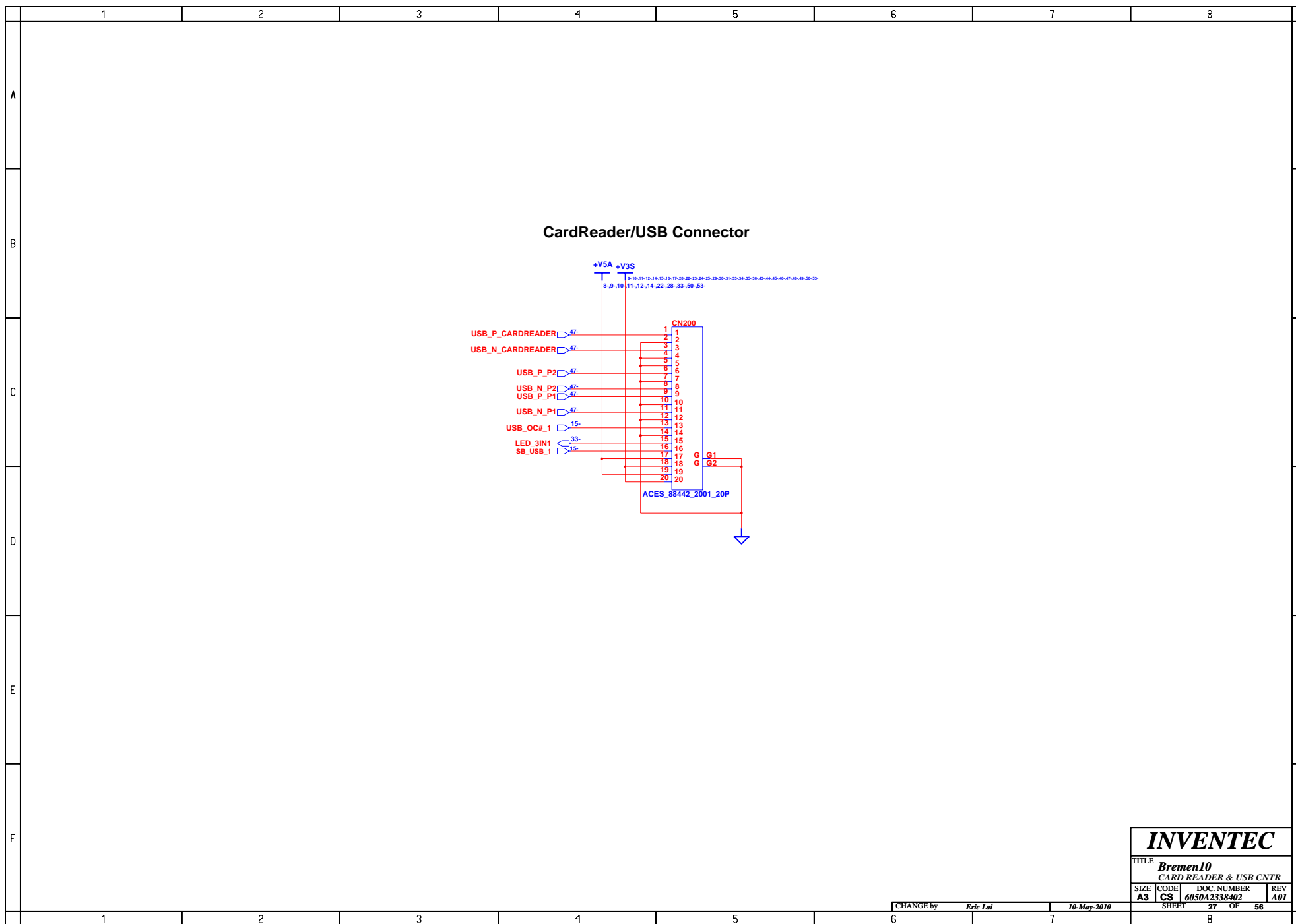
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INVENTEC			
TITLE Bremen10 HDMI			
SIZE A3	CODE CS	DOC. NUMBER 6050A2338402	REV A01
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**USB/eSATA COMBO**

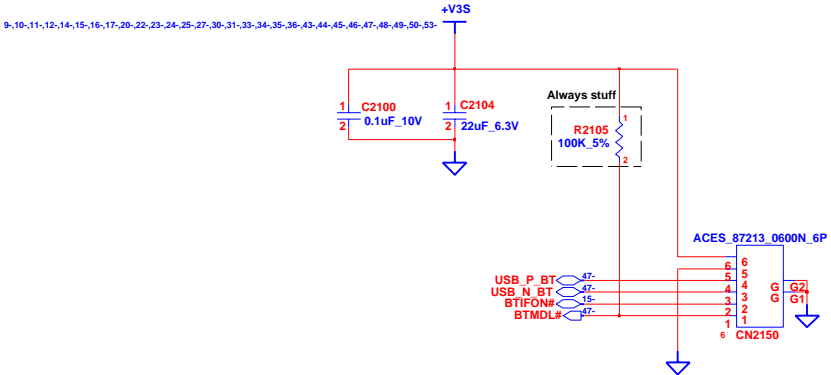
EN	D0	D1	FUNCTION
0	X	X	STANDBY
1	0	0	DEFAULT
1	1	0	CH0->5DB
1	0	1	CH1->5DB
1	1	1	CH0,1->5DB

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

**Component List:**

- U2000: USB Controller
- CN2000: USB Connector
- CN1800: eSATA Connector
- CN1800: eSATA Controller
- U2100: Microcontroller
- U7001-D: 74ACT14MTC
- U2101: TI SN74CBT3125RGYR\_QFN\_14P
- WCM\_2012\_900T: WCM\_2012\_900T
- R2000, R2001, R2002, R2003, R2004, R2005, R2006, R2007, R2008, R2009, R2010, R2011, R2012, R2013, R2014, R2100, R2101, R2102, R2103, R2104, R2105, R2106, R2107, R2108, R2109, R2110, R2111, R2112, R2113, R2114, R2115, R2116, R2117, R2118, R2119, R2120, R2121, R2122, R2123, R2124, R2125, R2126, R2127, R2128, R2129, R2130, R2131, R2132, R2133, R2134, R2135, R2136, R2137, R2138, R2139, R2140, R2141, R2142, R2143, R2144, R2145, R2146, R2147, R2148, R2149, R2150, R2151, R2152, R2153, R2154, R2155, R2156, R2157, R2158, R2159, R2160, R2161, R2162, R2163, R2164, R2165, R2166, R2167, R2168, R2169, R2170, R2171, R2172, R2173, R2174, R2175, R2176, R2177, R2178, R2179, R2180, R2181, R2182, R2183, R2184, R2185, R2186, R2187, R2188, R2189, R2190, R2191, R2192, R2193, R2194, R2195, R2196, R2197, R2198, R2199, R2200, R2201, R2202, R2203, R2204, R2205, R2206, R2207, R2208, R2209, R2210, R2211, R2212, R2213, R2214, R2215, R2216, R2217, R2218, R2219, R2220, R2221, R2222, R2223, R2224, R2225, R2226, R2227, R2228, R2229, R2230, R2231, R2232, R2233, R2234, R2235, R2236, R2237, R2238, R2239, R2240, R2241, R2242, R2243, R2244, R2245, R2246, R2247, R2248, R2249, R2250, R2251, R2252, R2253, R2254, R2255, R2256, R2257, R2258, R2259, R2260, R2261, R2262, R2263, R2264, R2265, R2266, R2267, R2268, R2269, R2270, R2271, R2272, R2273, R2274, R2275, R2276, R2277, R2278, R2279, R2280, R2281, R2282, R2283, R2284, R2285, R2286, R2287, R2288, R2289, R2290, R2291, R2292, R2293, R2294, R2295, R2296, R2297, R2298, R2299, R2300, R2301, R2302, R2303, R2304, R2305, R2306, R2307, R2308, R2309, R2310, R2311, R2312, R2313, R2314, R2315, R2316, R2317, R2318, R2319, R2320, R2321, R2322, R2323, R2324, R2325, R2326, R2327, R2328, R2329, R2330, R2331, R2332, R2333, R2334, R2335, R2336, R2337, R2338, R2339, R2340, R2341, R2342, R2343, R2344, R2345, R2346, R2347, R2348, R2349, R2350, R2351, R2352, R2353, R2354, R2355, R2356, R2357, R2358, R2359, R2360, R2361, R2362, R2363, R2364, R2365, R2366, R2367, R2368, R2369, R2370, R2371, R2372, R2373, R2374, R2375, R2376, R2377, R2378, R2379, R2380, R2381, R2382, R2383, R2384, R2385, R2386, R2387, R2388, R2389, R2390, R2391, R2392, R2393, R2394, R2395, R2396, R2397, R2398, R2399, R2400, R2401, R2402, R2403, R2404, R2405, R2406, R2407, R2408, R2409, R2410, R2411, R2412, R2413, R2414, R2415, R2416, R2417, R2418, R2419, R2420, R2421, R2422, R2423, R2424, R2425, R2426, R2427, R2428, R2429, R2430, R2431, R2432, R2433, R2434, R2435, R2436, R2437, R2438, R2439, R2440, R2441, R2442, R2443, R2444, R2445, R2446, R2447, R2448, R2449, R2450, R2451, R2452, R2453, R2454, R2455, R2456, R2457, R2458, R2459, R2460, R2461, R2462, R2463, R2464, R2465, R2466, R2467, R2468, R2469, R2470, R2471, R2472, R2473, R2474, R2475, R2476, R2477, R2478, R2479, R2480, R2481, R2482, R2483, R2484, R2485, R2486, R2487, R2488, R2489, R2490, R2491, R2492, R2493, R2494, R2495, R2496, R2497, R2498, R2499, R2500, R2501, R2502, R2503, R2504, R2505, R2506, R2507, R2508, R2509, R2510, R2511, R2512, R2513, R2514, R2515, R2516, R2517, R2518, R2519, R2520, R2521, R2522, R2523, R2524, R2525, R2526, R2527, R2528, R2529, R2530, R2531, R2532, R2533, R2534, R2535, R2536, R2537, R2538, R2539, R2540, R2541, R2542, R2543, R2544, R2545, R2546, R2547, R2548, R2549, R2550, R2551, R2552, R2553, R2554, R2555, R2556, R2557, R2558, R2559, R2560, R2561, R2562, R2563, R2564, R2565, R2566, R2567, R2568, R2569, R2570, R2571, R2572, R2573, R2574, R2575, R2576, R2577, R2578, R2579, R2580, R2581, R2582, R2583, R2584, R2585, R2586, R2587, R2588, R2589, R2590, R2591, R2592, R2593, R2594, R2595, R2596, R2597, R2598, R2599, R2600, R2

BLUEBOOTH



INVENTEC

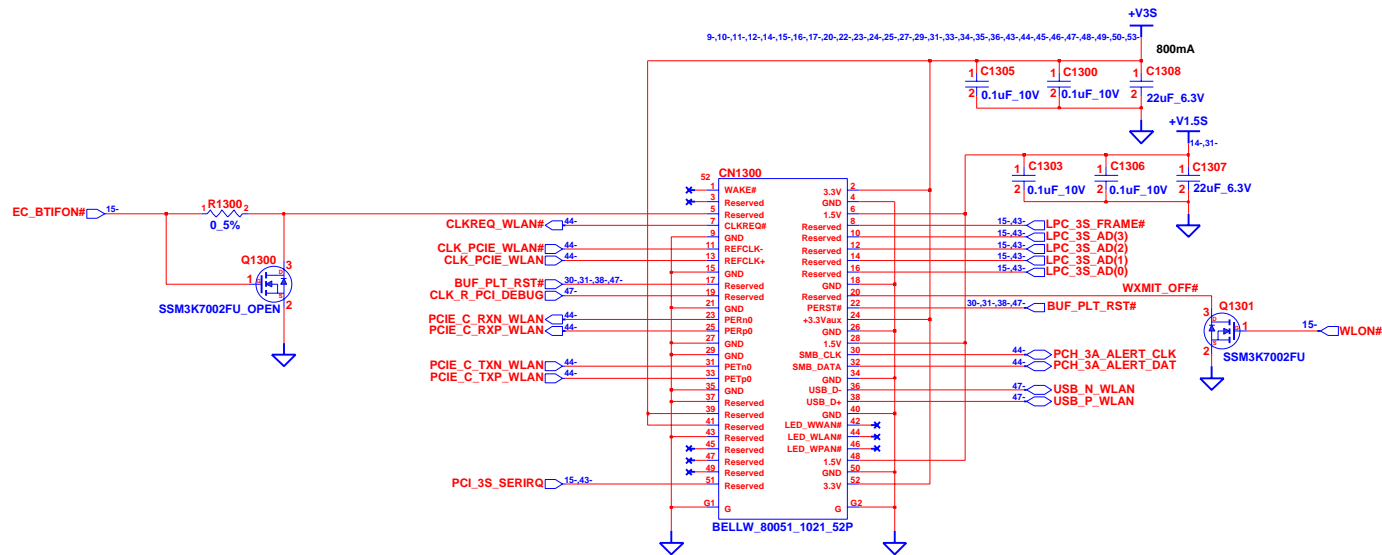
TITLE  
**Bremen10**  
**BlueTooth**

SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
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CHANGE by *Eric Lai* 10-May-2010

# Wireless & Debug card



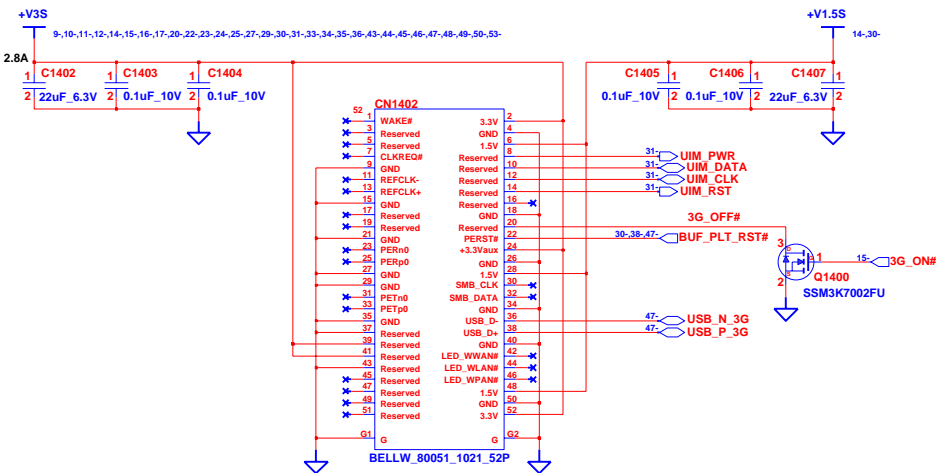
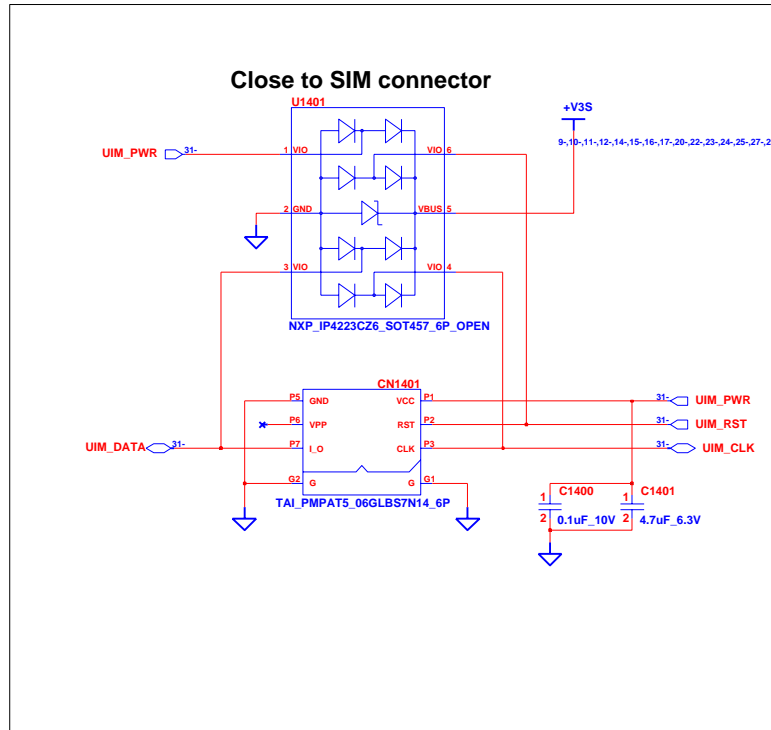
**INVENTEC**

TITLE			
Bremen10			
WLAN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
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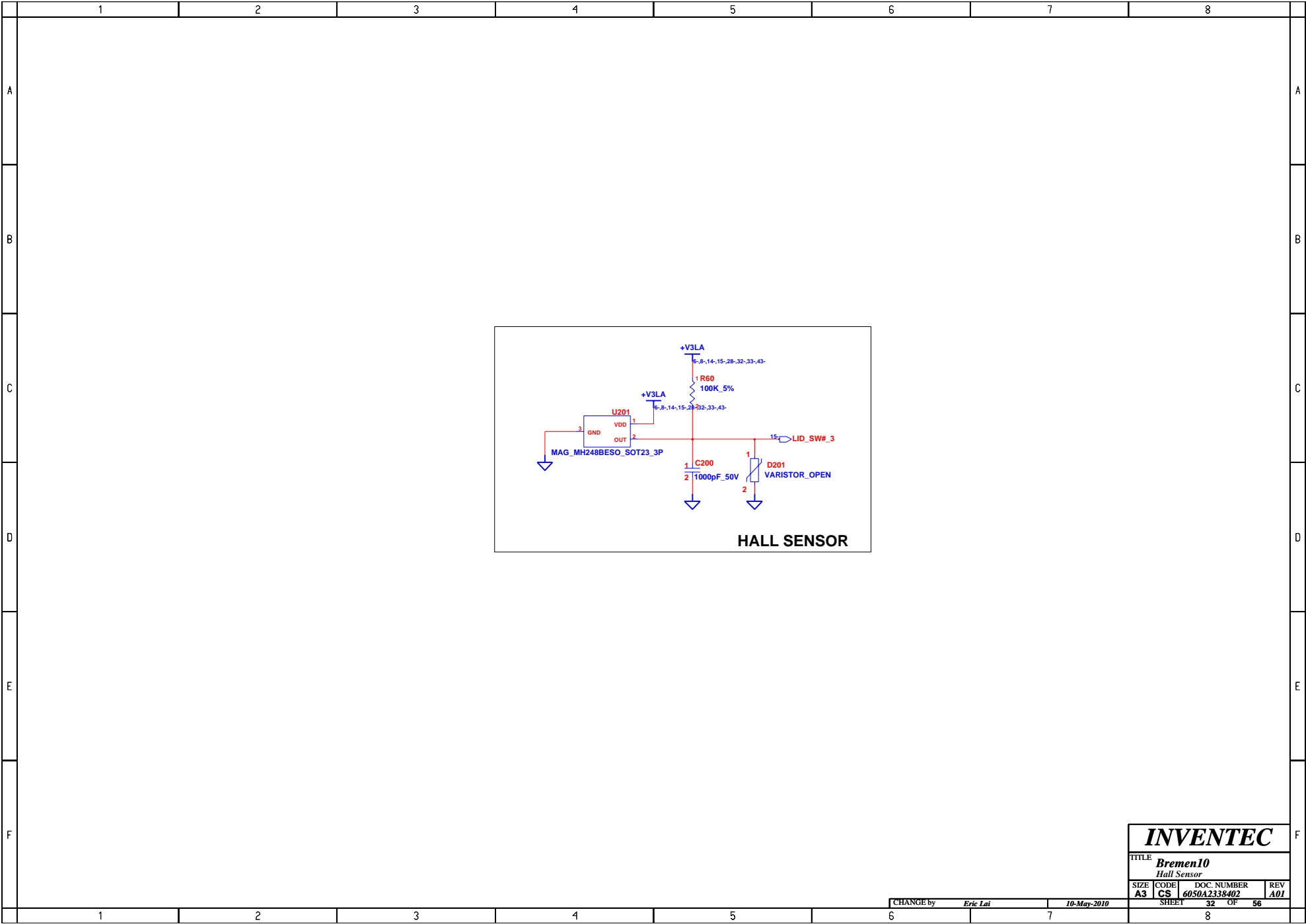
CHANGE by Eric Lai 10-May-2010

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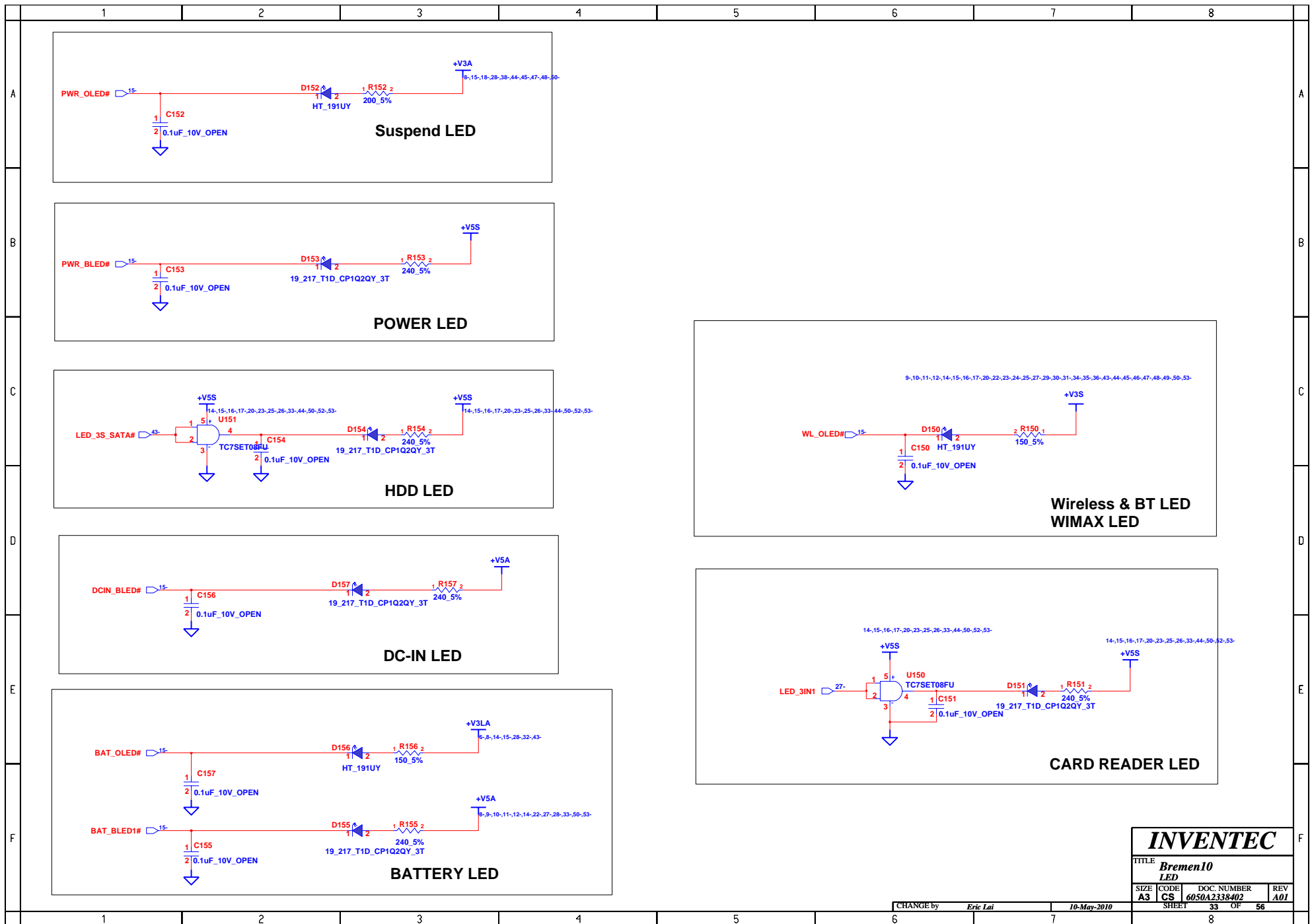
# 3G



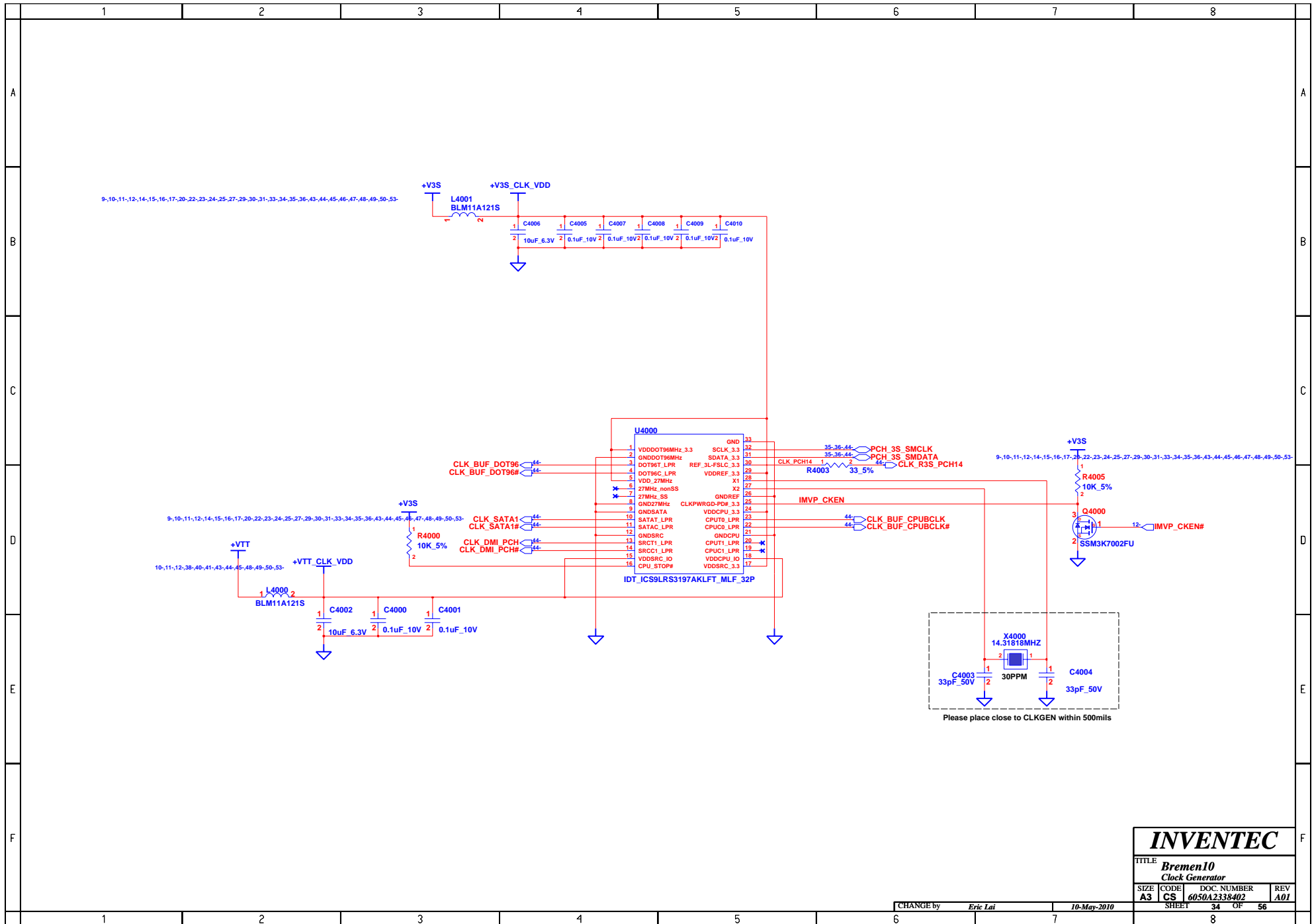
INVENTEC			
TITLE			
Bremen10			
3G			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
CHANGE by		10-May-2010	
Eric Lai			
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INVENTEC			
TITLE Bremen10 LED			
SIZE A3	CODE CS	DOC. NUMBER 6050A2338402	REV A01
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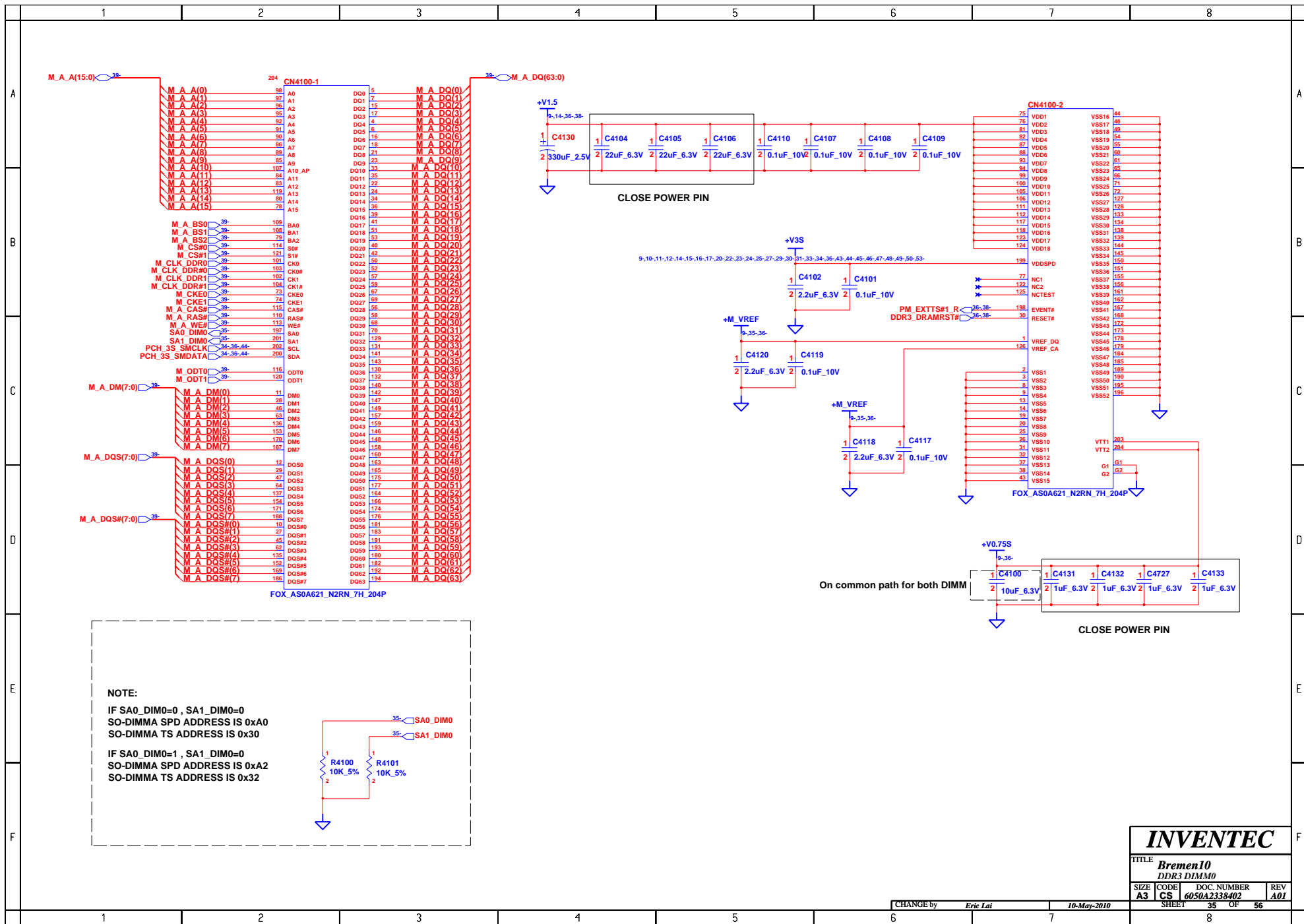


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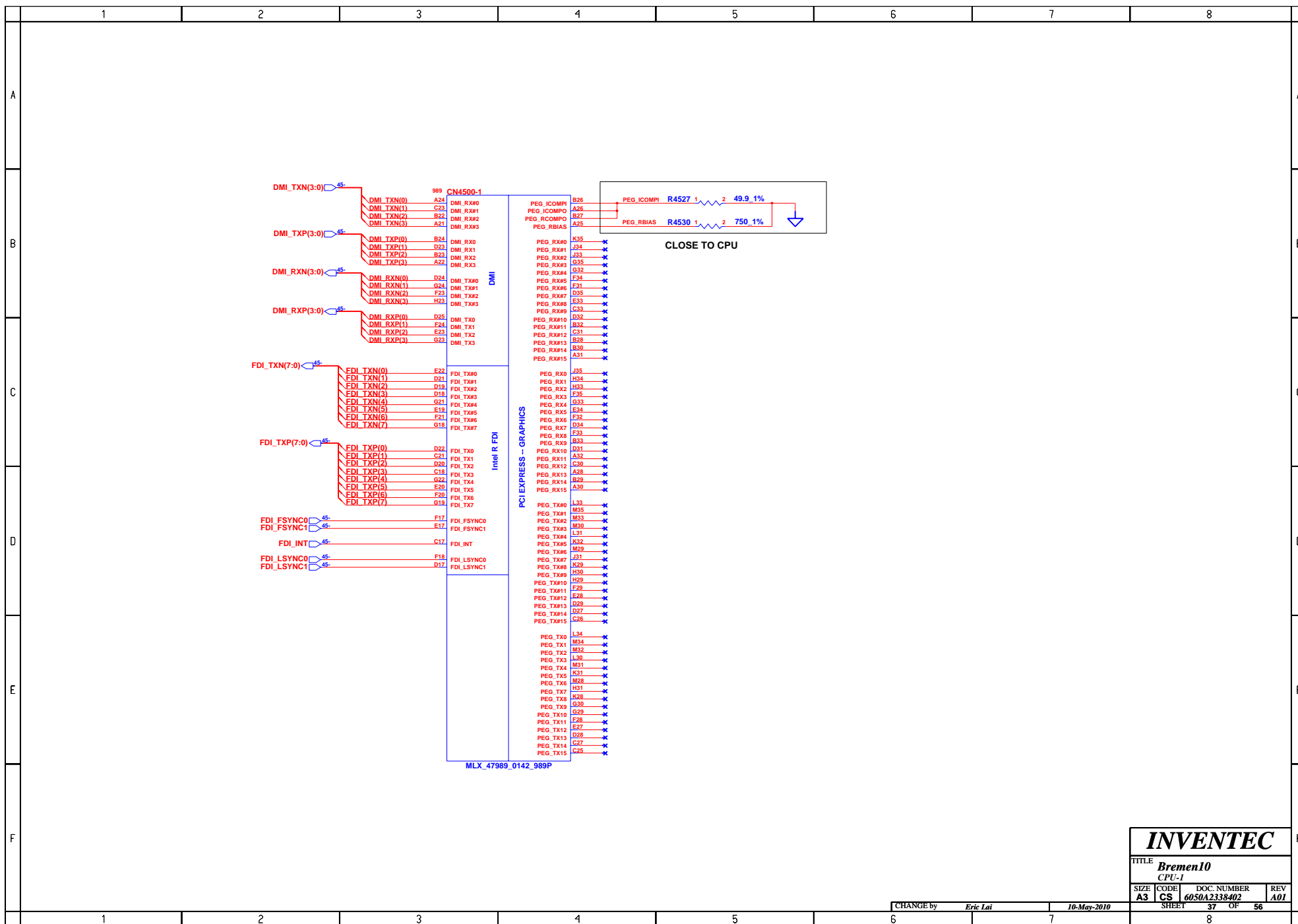
TITLE			
Bremen10			
Clock Generator			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
SHEET		34 OF	56

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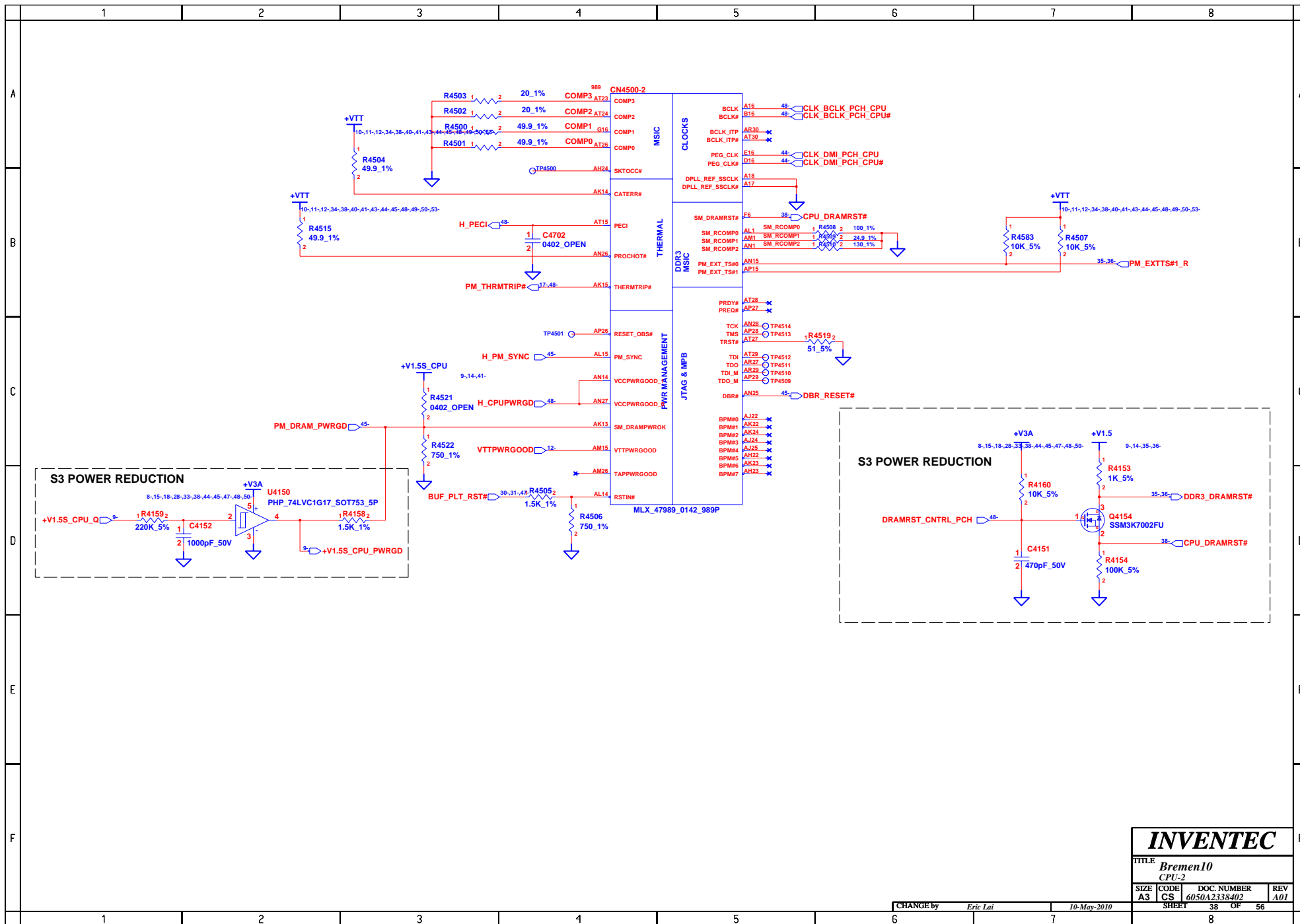
**INVENTEC**

TITLE  
**Bremen10**  
CPU-1

SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
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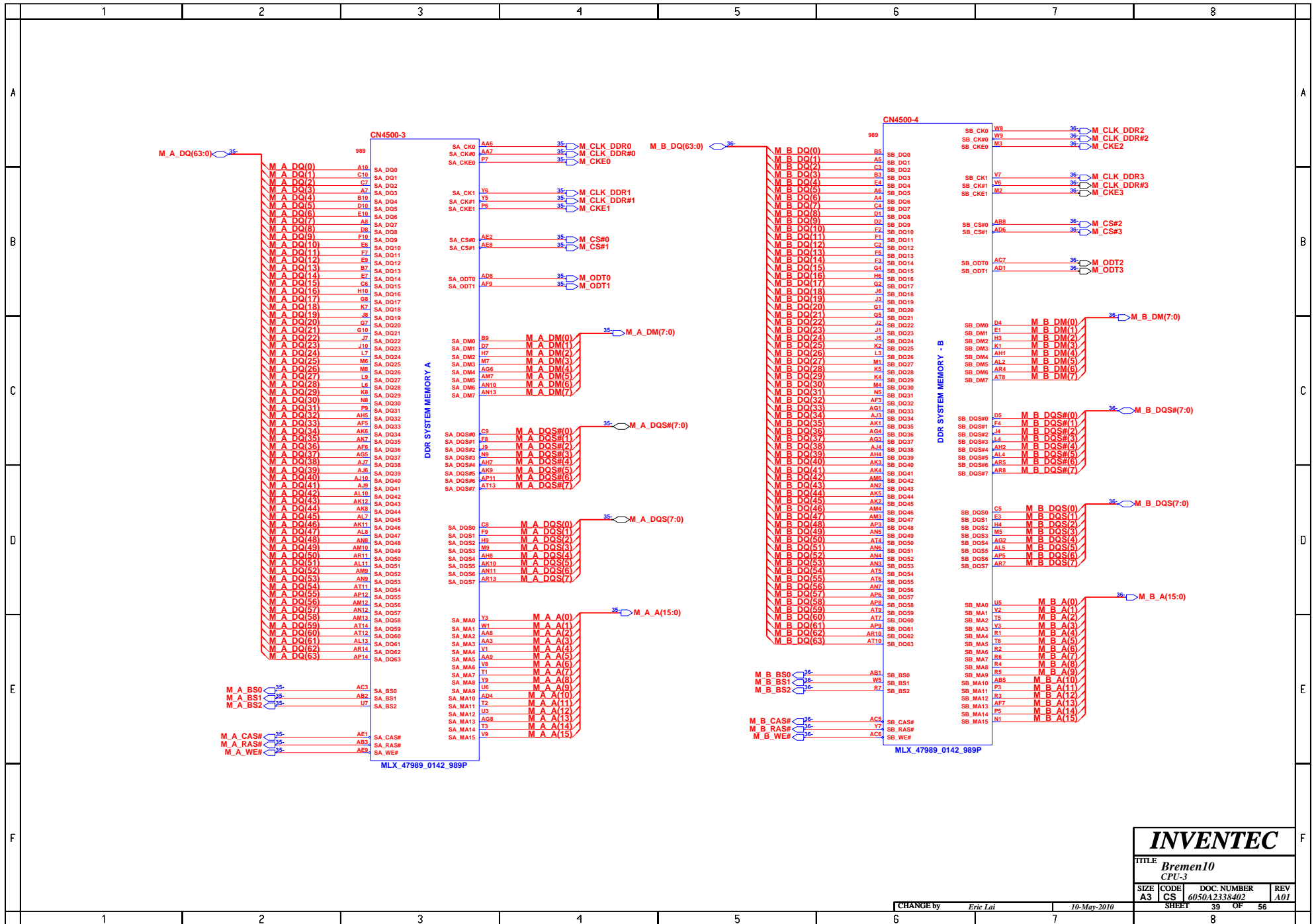


**INVENTEC**

TITLE			
Bremen10			
CPU-2			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01

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**INVENTEC**

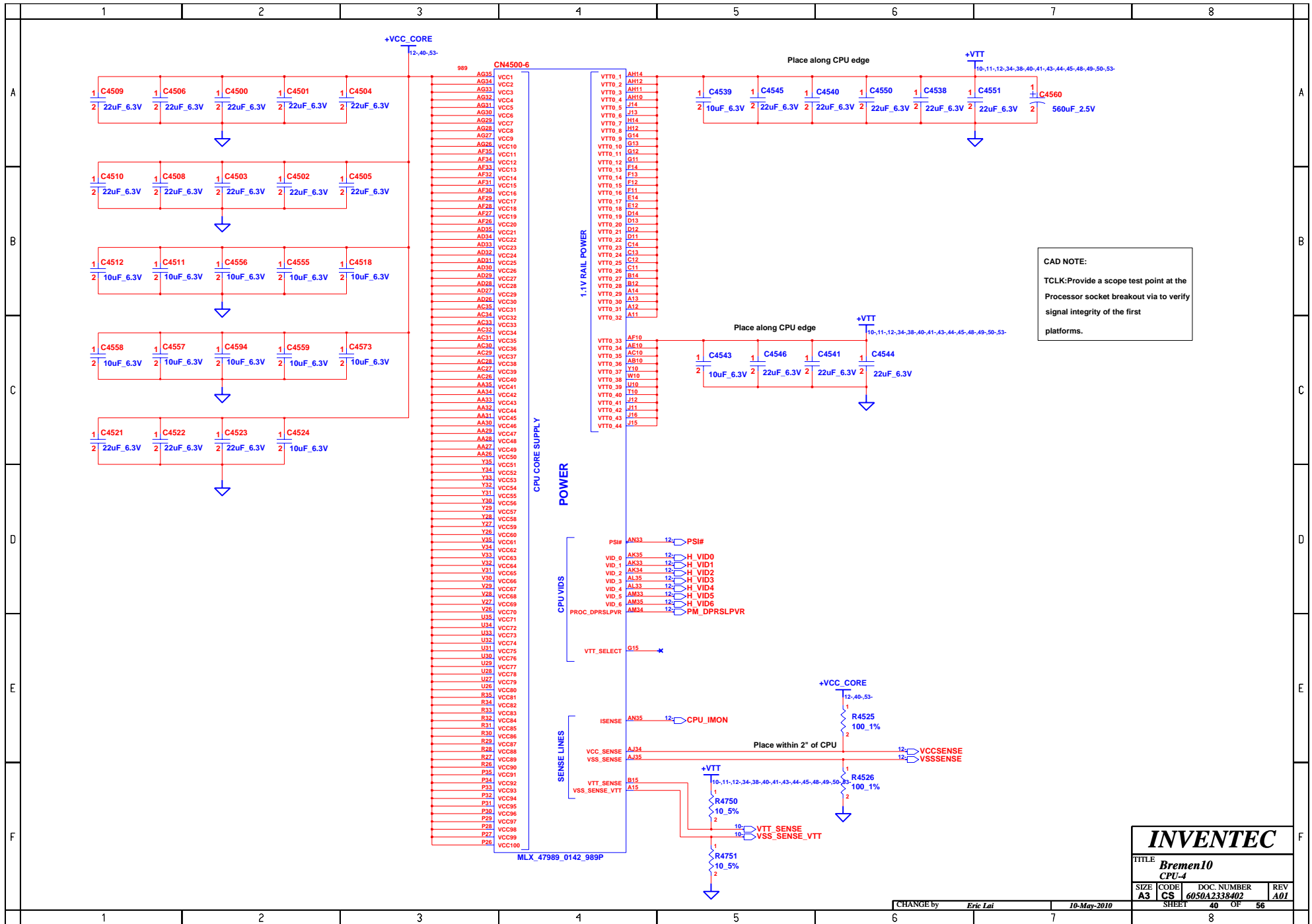
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Bremen10  
CPU-3

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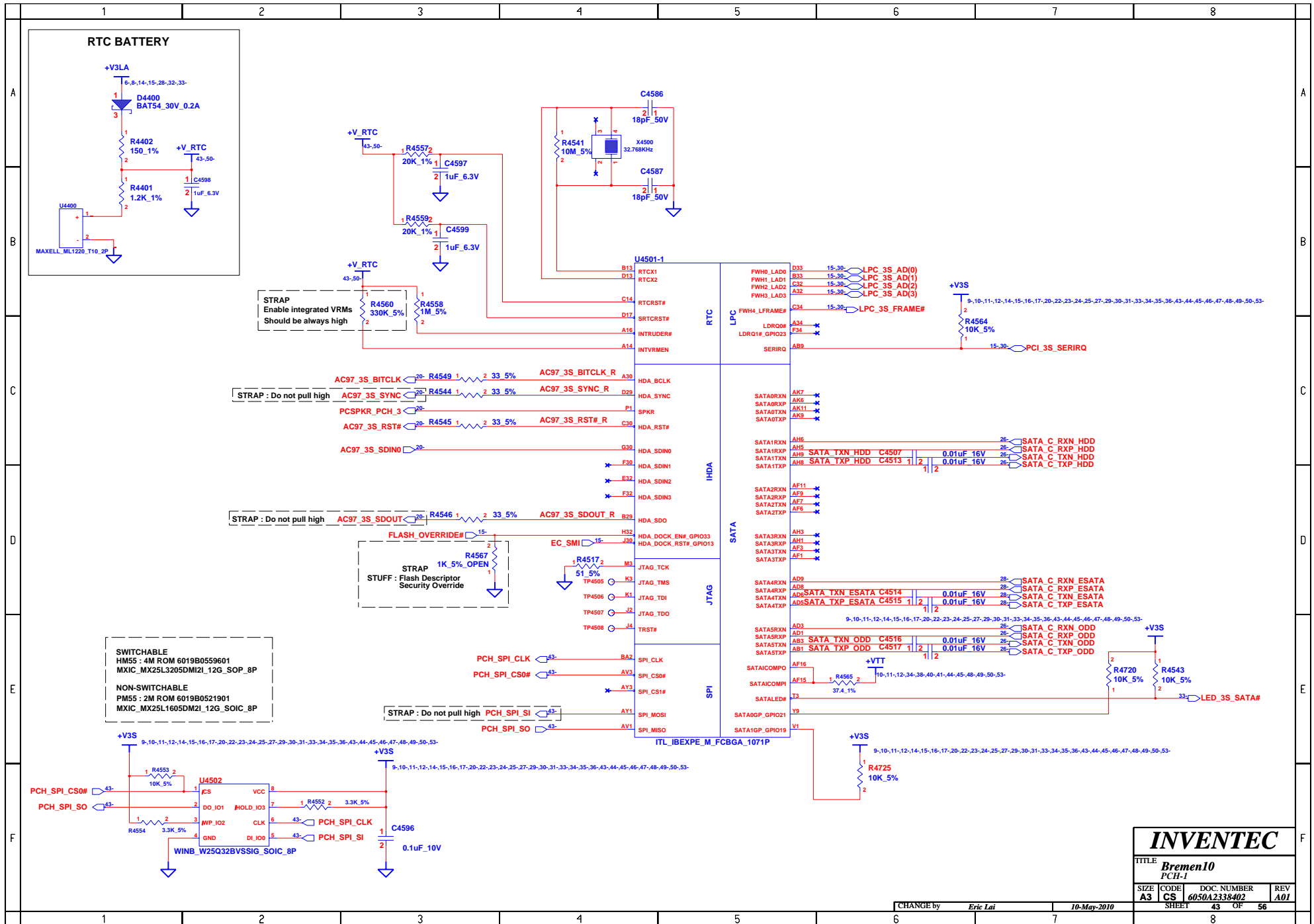
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TITLE <b>Bremen10 CPU-4</b>			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
SHEET <b>40</b>		OF <b>56</b>	







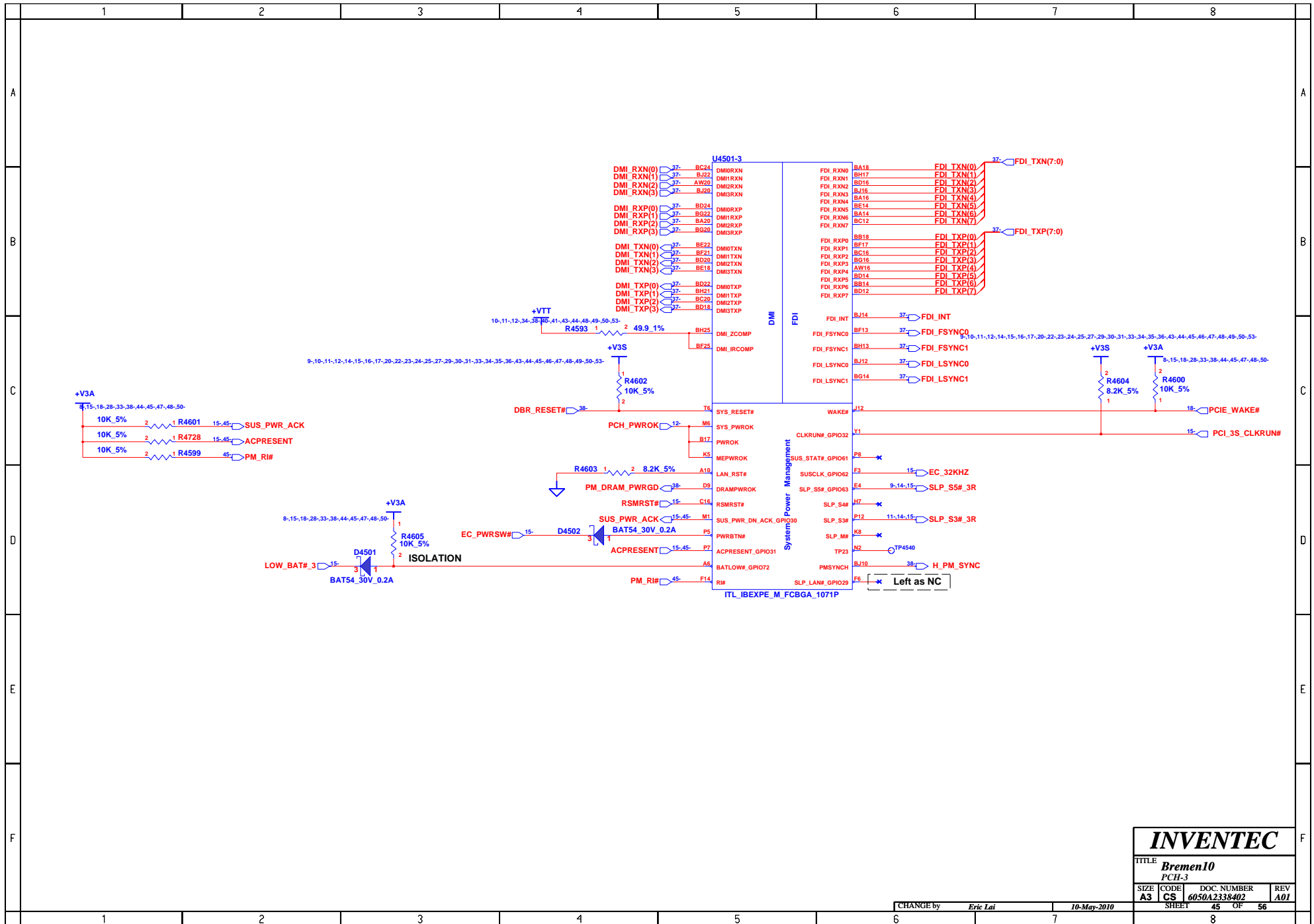


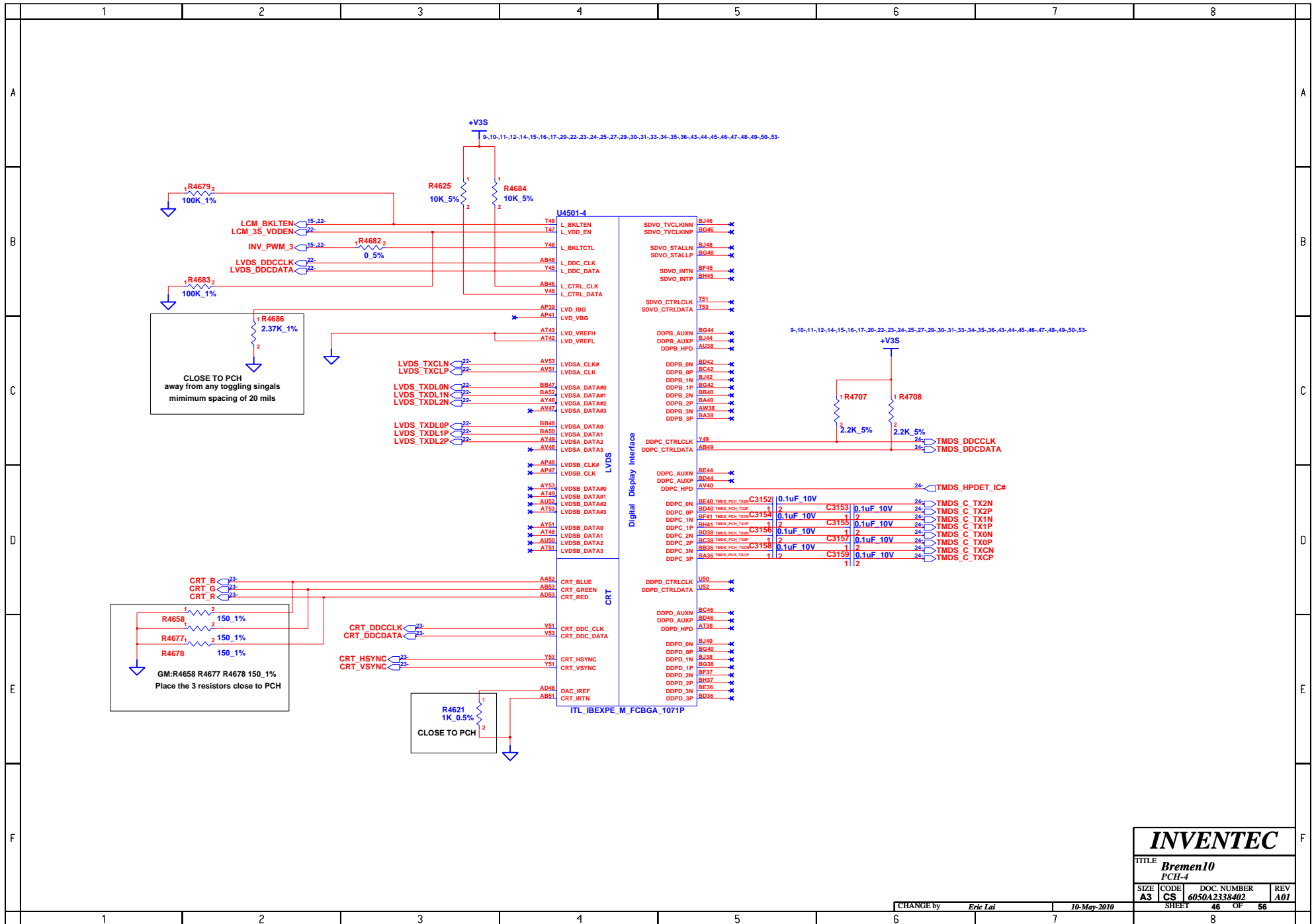
**INVENTEC**

TITLE			
Bremen10			
PCH-1			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
SHEET		43	OF 56

CHANGE by Eric Lai 10-May-2010





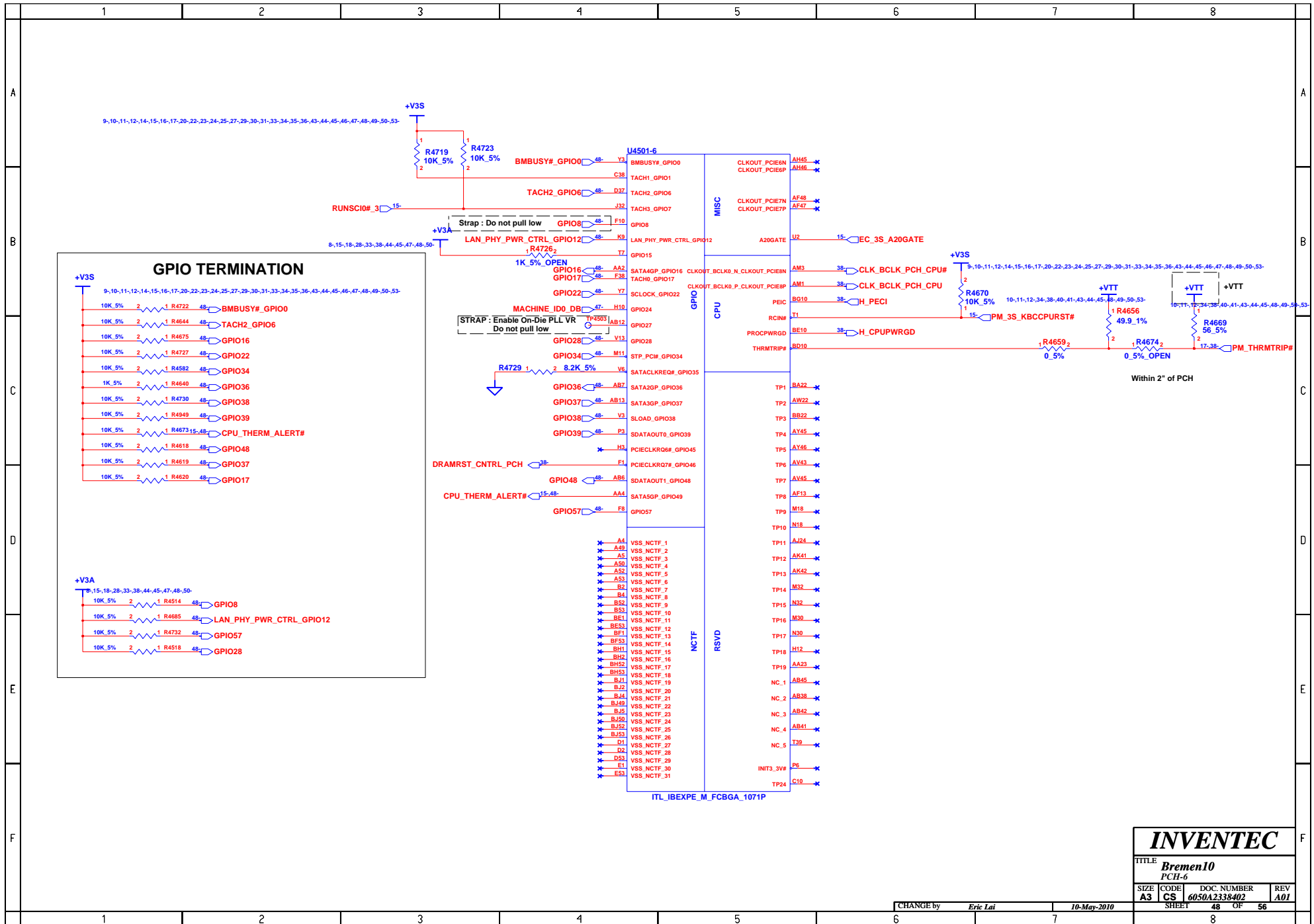


**INVENTEC**

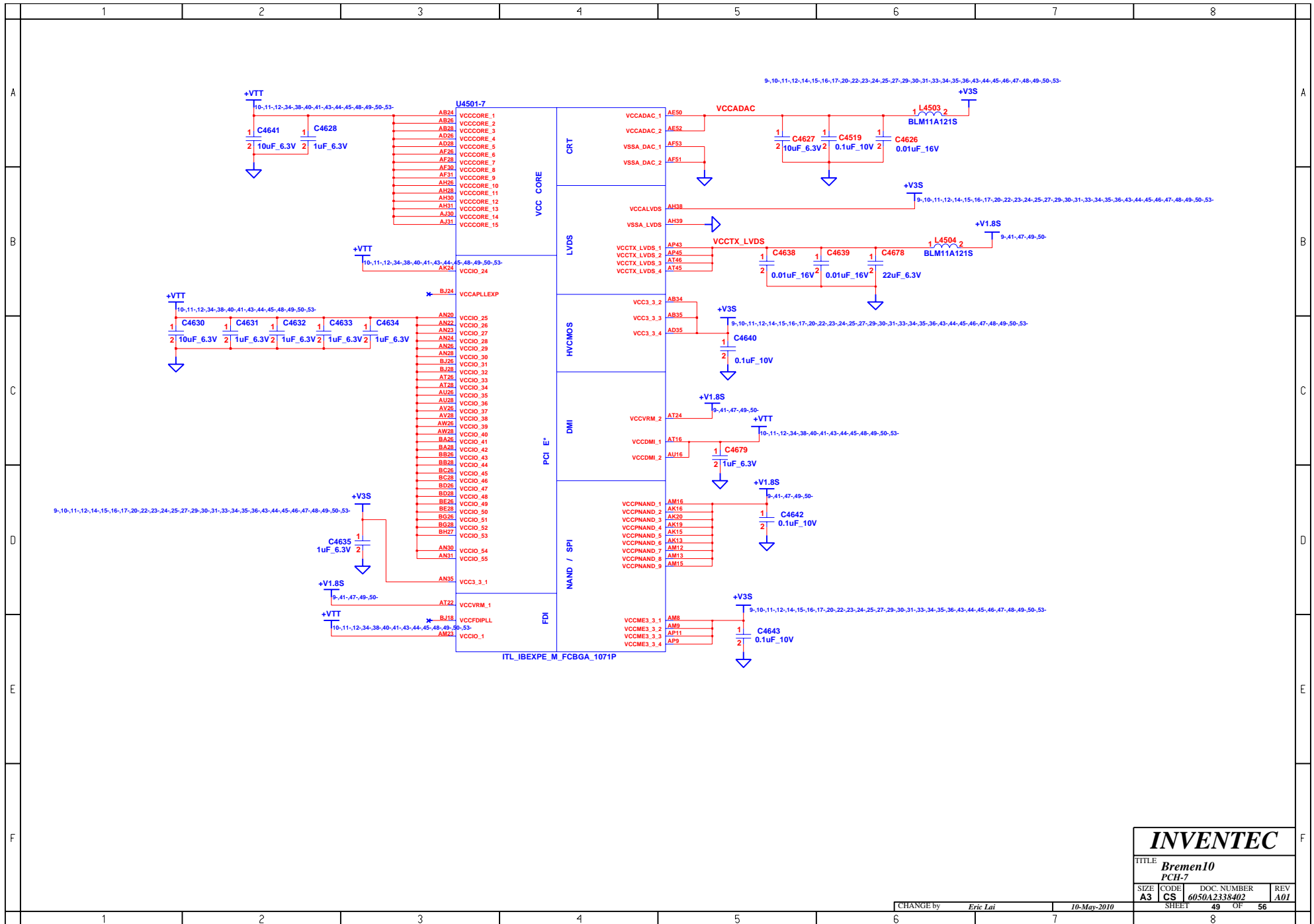
TITLE <b>Brem10</b> <b>PCH-4</b>			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>6050A2338402</b>	REV <b>A01</b>
SHEET <b>46</b>		OF <b>56</b>	

CHANGE by **Eric Lai** 10-May-2010









**INVENTEC**

TITLE			
Bremen10			
PCH-7			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01
SHEET		49	OF 56

CHANGE by Eric Lai 10-May-2010



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

U4501-9

AB16

VSS\_0

AA19 VSS\_1

AA20 VSS\_2

AA22 VSS\_3

AM19 VSS\_4

AA24 VSS\_5

AA26 VSS\_6

AA28 VSS\_7

AA30 VSS\_8

AA31 VSS\_9

AA32 VSS\_10

AB11 VSS\_11

AB15 VSS\_12

AB23 VSS\_13

AB30 VSS\_14

AB31 VSS\_15

AB32 VSS\_16

AB39 VSS\_17

AB41 VSS\_18

AB47 VSS\_19

AB5 VSS\_20

AB8 VSS\_21

AC2 VSS\_22

AC52 VSS\_23

AD11 VSS\_24

AD12 VSS\_25

AD16 VSS\_26

AD23 VSS\_27

AD30 VSS\_28

AD31 VSS\_29

AD32 VSS\_30

AD34 VSS\_31

AU22 VSS\_32

AD42 VSS\_33

AD46 VSS\_34

AD49 VSS\_35

AD7 VSS\_36

AE2 VSS\_37

AE4 VSS\_38

AF12 VSS\_39

Y13 VSS\_40

AH40 VSS\_41

AU4 VSS\_42

AF35 VSS\_43

AP13 VSS\_44

AND4 VSS\_45

AF45 VSS\_46

AF46 VSS\_47

AF49 VSS\_48

AF5 VSS\_49

AF8 VSS\_50

AG2 VSS\_51

AG52 VSS\_52

AH11 VSS\_53

AH15 VSS\_54

AH16 VSS\_55

AH24 VSS\_56

AH32 VSS\_57

AV18 VSS\_58

AH43 VSS\_59

AH7 VSS\_60

AH7 VSS\_61

AJ19 VSS\_62

AJ2 VSS\_63

AJ20 VSS\_64

AJ22 VSS\_65

AJ23 VSS\_66

AJ26 VSS\_67

AJ28 VSS\_68

AJ32 VSS\_69

AJ34 VSS\_70

AT5 VSS\_71

AJ4 VSS\_72

AK12 VSS\_73

AM1 VSS\_74

AH19 VSS\_75

AK26 VSS\_76

AK22 VSS\_77

AK23 VSS\_78

AK28 VSS\_79

VSS\_80

VSS\_81

VSS\_82

VSS\_83

VSS\_84

VSS\_85

VSS\_86

VSS\_87

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AK30

AK31

AK32

AK34

AK35

AK38

AK43

AK46

AK49

AK5

AK8

AL2

AL52

AM11

BB44

AD24

AM20

AM22

AM24

AM26

AM28

BA42

AM30

AM31

AM32

AM34

AM35

AM38

AM39

AM42

AU20

AM46

AU22

AM49

AM7

AA50

BB10

AN32

AN50

AN52

AP12

AP42

AP46

AP49

AP5

AP8

AR2

AR52

AT11

BA12

AH48

AT32

AT36

AT41

AT47

AT7

AV12

AV16

AV20

AV24

AV30

AV34

AV38

AV42

AV46

AV49

AV5

AV8

AW14

AW18

AW2

AW32

AW36

AW46

AW52

AY11

AY43

AY47

ITL\_IBEXPE\_M\_FCBGA\_1071P

U4501-10

AY72

B11

B15

B19

B20

B31

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B39

B43

B47

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B7

BG12

BB12

BB16

BB20

BB24

BB30

BB34

BB38

BB42

BB49

BB5

BC10

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BG18

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BH11

BH15

BH19

BH23

BH31

BH35

BH39

BH43

BH47

BH7

C12

C50

D51

E12

E16

E19

E24

E30

E34

E38

E42

E46

E48

E6

E8

F49

F5

G10

G14

G18

G2

G22

G32

G36

G40

G44

G52

AF30

H16

H20

H30

H34

H38

H42

VSS\_159

VSS\_160

VSS\_161

VSS\_162

VSS\_163

VSS\_164

VSS\_165

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VSS\_358

VSS\_359

VSS\_360

H49

H5

J24

K11

K49

K67

K7

L14

L2

L22

L32

L36

L40

L52

M12

M16

M20

N36

M34

M38

M42

M46

M49

M5

M8

N24

AD15

P22

P30

P32

P34

P42

P45

P47

R2

R52

T12

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T46

T49

T5

T8

U30

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V85

V86

V87

V88

V89

V9

V92

V93

V94

V95

V96

V97

V98

V99

AT12

AM6

AT13

AM5

AK45

AK39

AV14

ITL\_IBEXPE\_M\_FCBGA\_1071P

INVENTEC

TITLE

Bremen10

PCH-9

SIZE

A3

CODE

CS

DOC. NUMBER

6050A2338402

REV

A01

CHANGE by

Eric Lai

10-May-2010

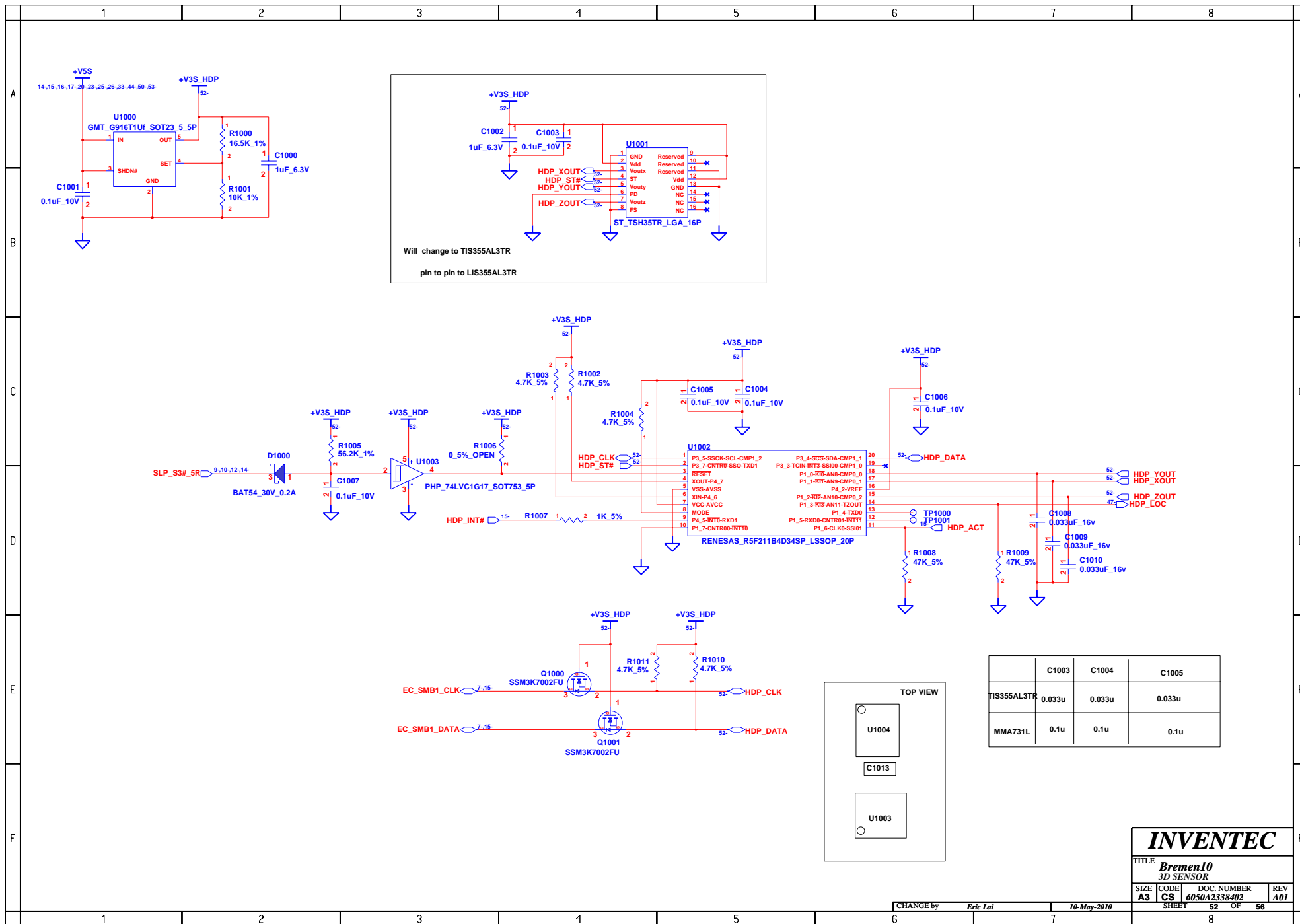
SHEET

51

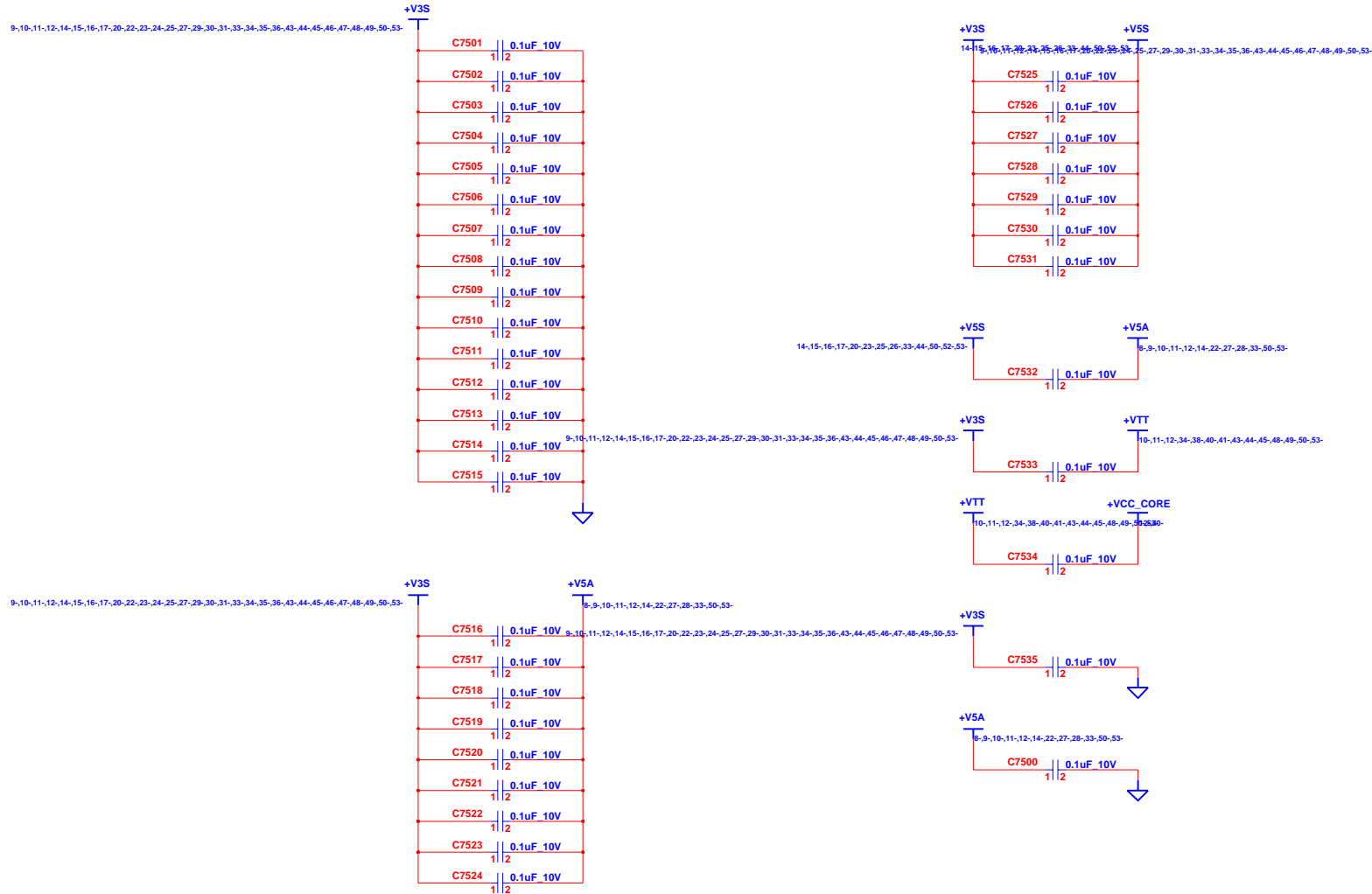
OF

56

8

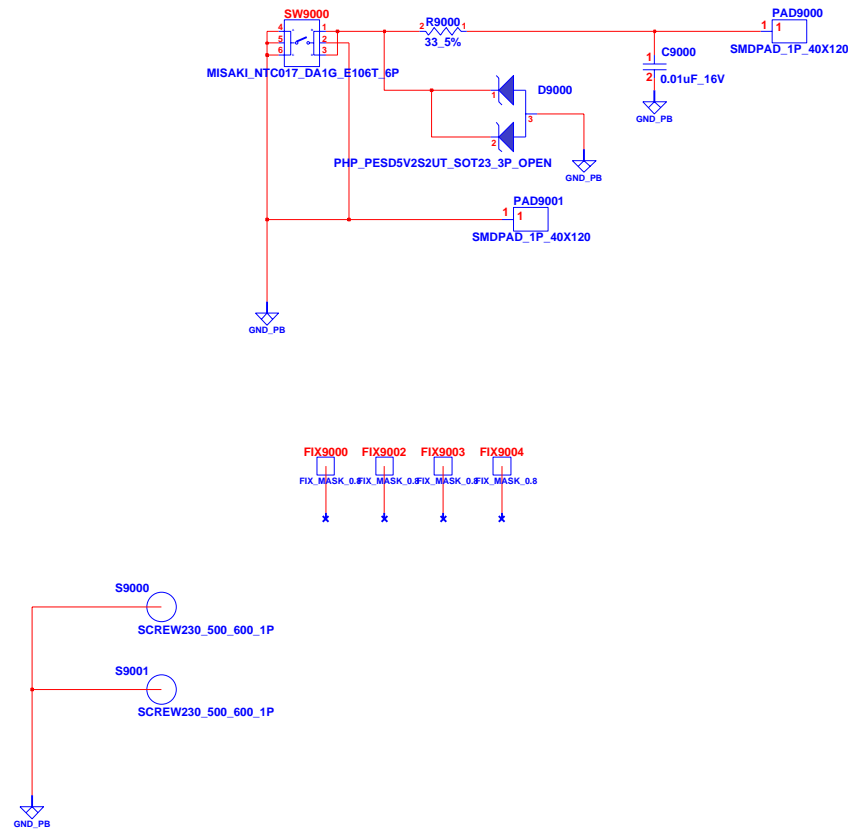


# EMI



INVENTEC			
TITLE Bremen10 EMI			
SIZE A3	CODE CS	DOC. NUMBER 6050A2338402	REV A01
CHANGE by Eric Lai		10-May-2010	
SHEET 53		OF 56	

# TOUCH PAD SWITCH BOARD



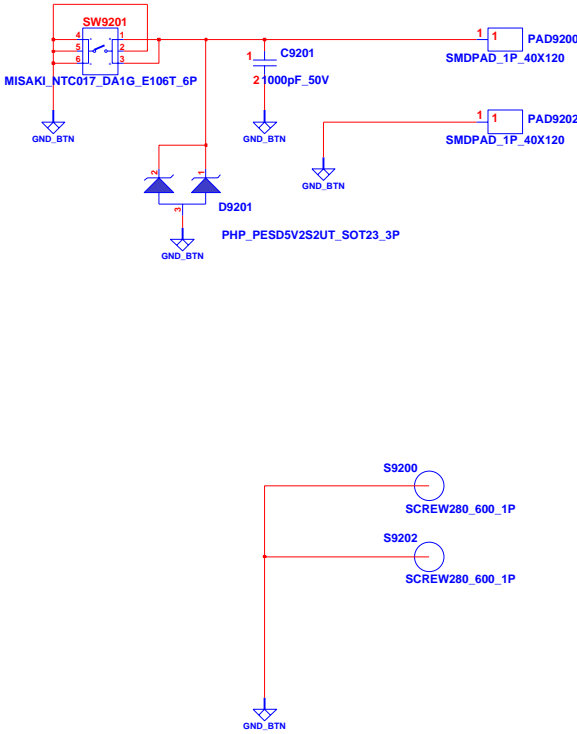
**INVENTEC**

TITLE			
<b>Bremen10</b>			
<b>TP SWITCH BOARD</b>			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01

CHANGE by *Eric Lai* 10-May-2010

SHEET 54 OF 56

POWER BOARD



INVENTEC

TITLE			
Bremen10 POWER BOARD			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	6050A2338402	A01

CHANGE by Eric Lai 10-May-2010

SHEET 55 OF 56

