

	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 20G

www.aitech1.ru
WS build(X01)

20101110

INVENTEC			
TITLE BM20G			
SIZE A3	CODE CS	DOC. NUMBER	REV X01
SHEET		1	OF 63

CHANGE by *Drawer Name* 7-Dec-2010

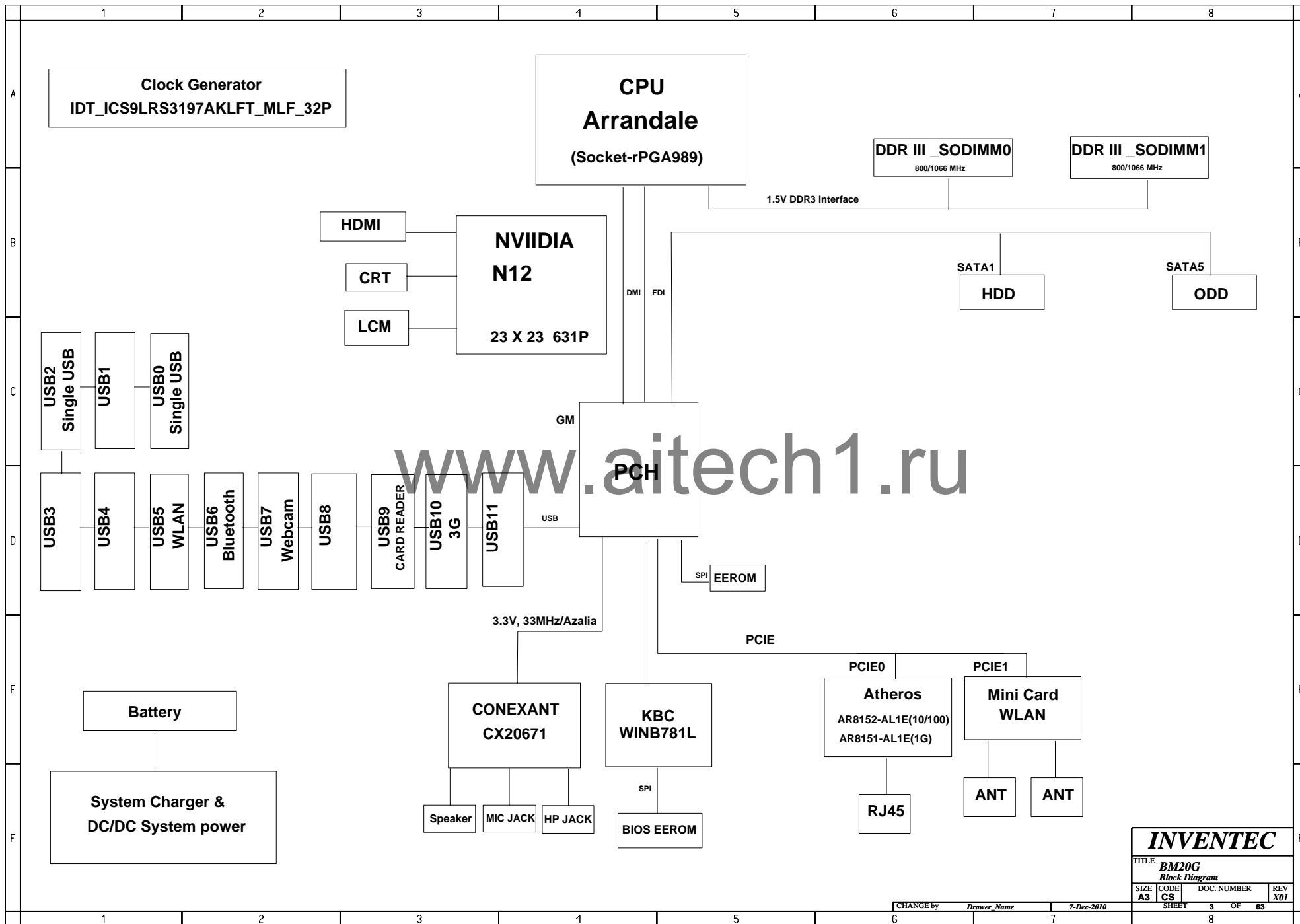
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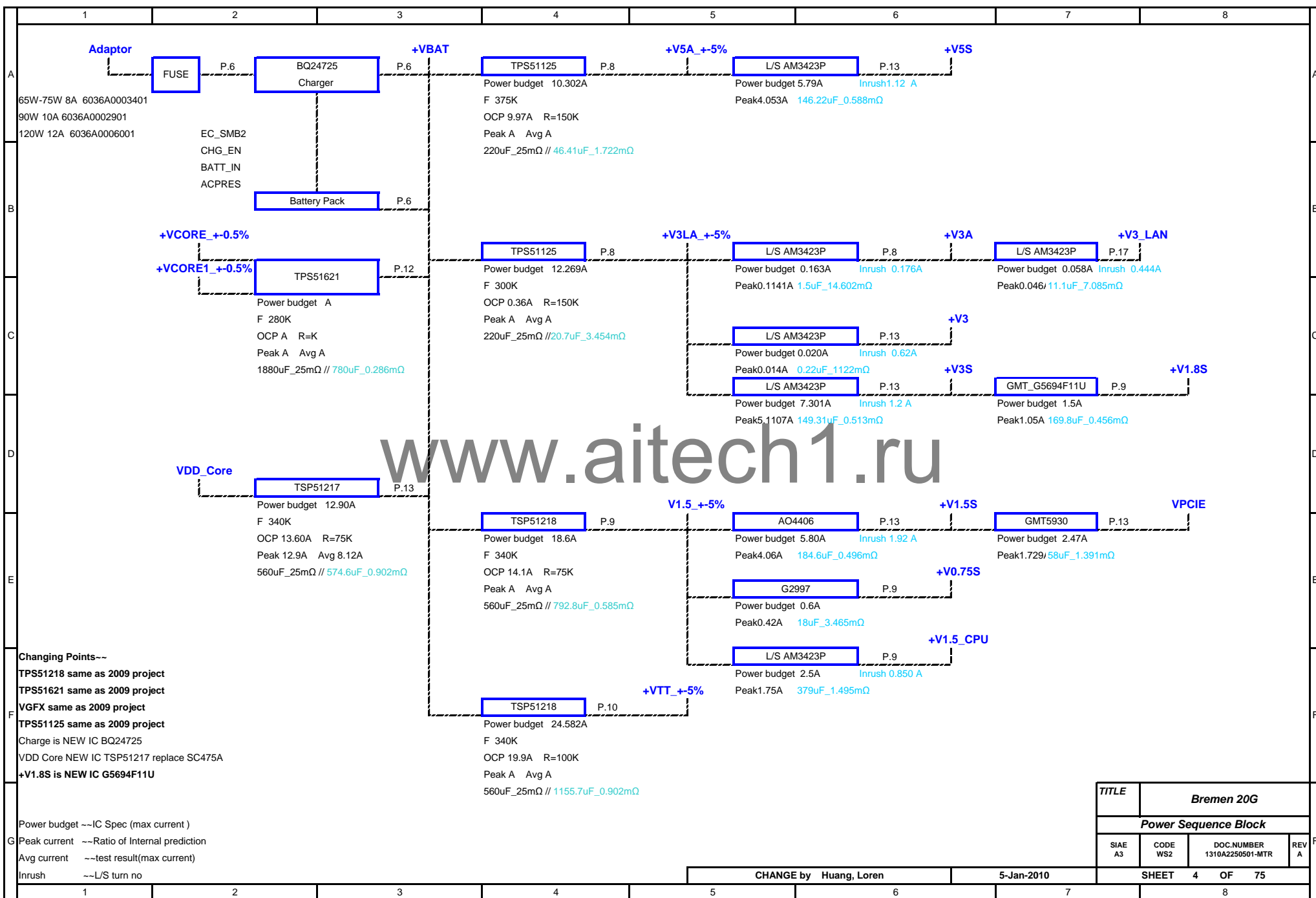
PAGE	PAGE	PAGE
1. COVER PAGE	31. HALL SENSOR	61. Touch pad switch board
2. INDEX	32. LED	62. Power board
3. BLOCK DIAGRAM	33. CLOCK GENERATOR	63. USB/Card Reader board
4. POWER SEQUENCE BLOCK	34. DDR DIMM0	
5. PCB	35. DDR DIMM1	
6. SYSTEM POWER	36. CPU 1	
7. SYSTEM POWER	37. CPU 2	
8. SYSTEM POWER	38. 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.	
27. USB CONN	57.	
28. BLUE TOOTH	58. VRAM 1	
29. WLAN	59. VRAM 2	
30. 3G	60. EMI	

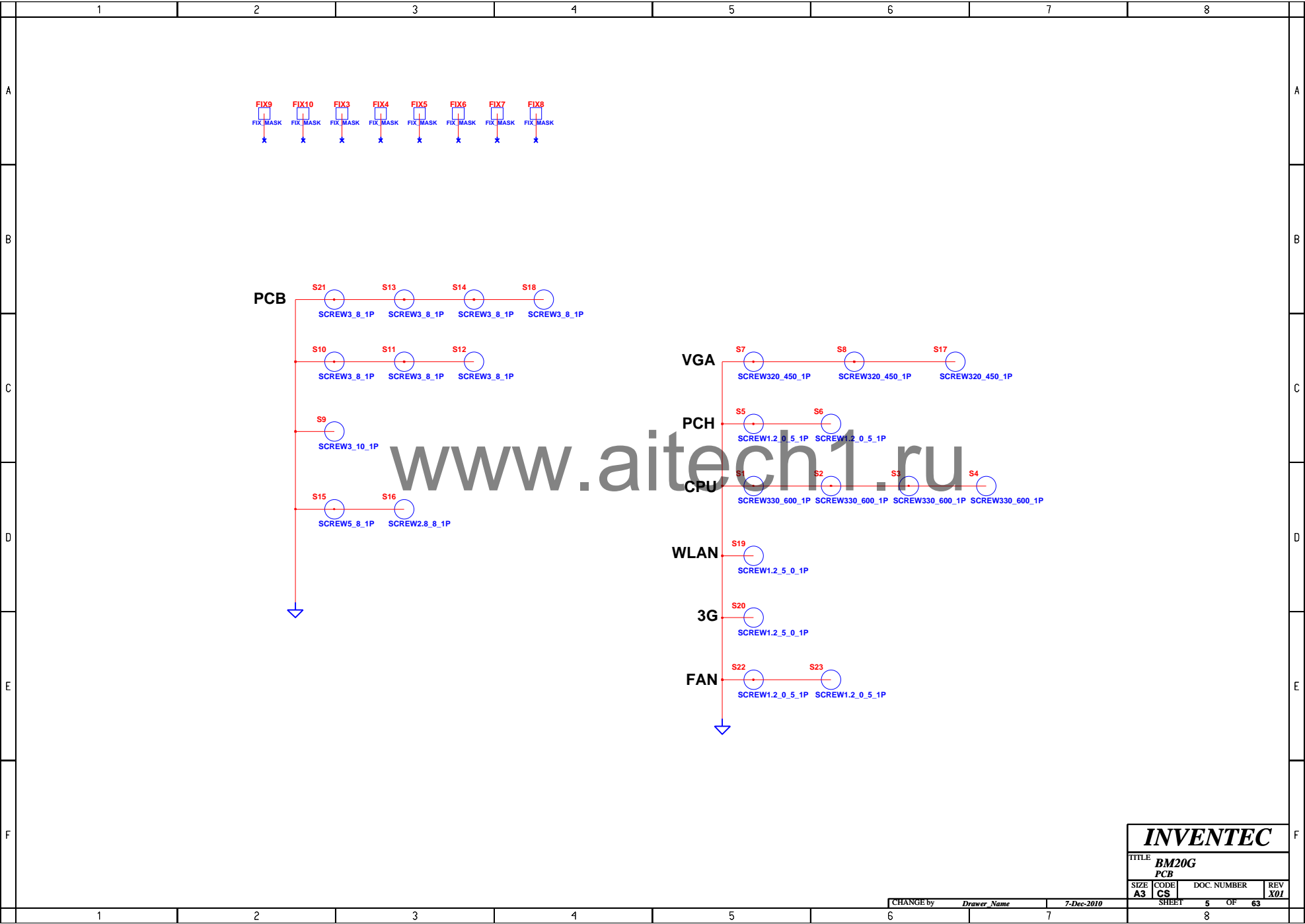
INVENTEC

TITLE BM20G			
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SIZE	CODE	DOC. NUMBER	REV
A3	CS		X01
SHEET		2 OF	63

CHANGE by *Drawer Name* 7-Dec-2010







INVENTEC

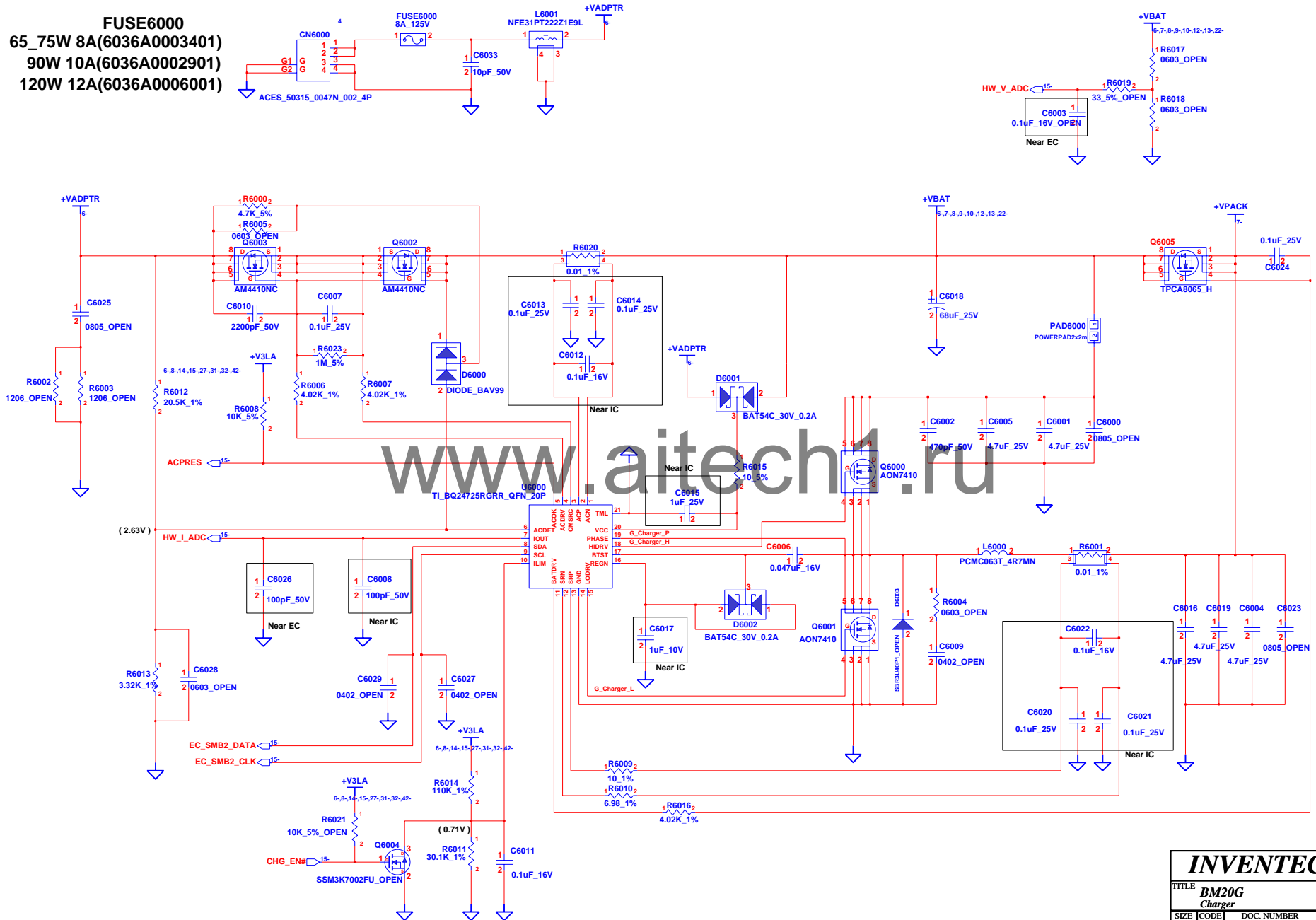
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BM20G
PCB

SIZE A3	CODE CS	DOC. NUMBER	REV X01
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SHEET 5 OF 63

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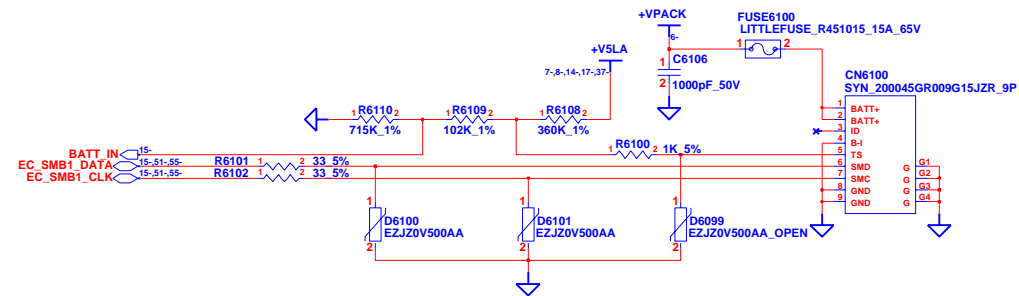
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90W 10A(6036A0002901)
120W 12A(6036A0006001)



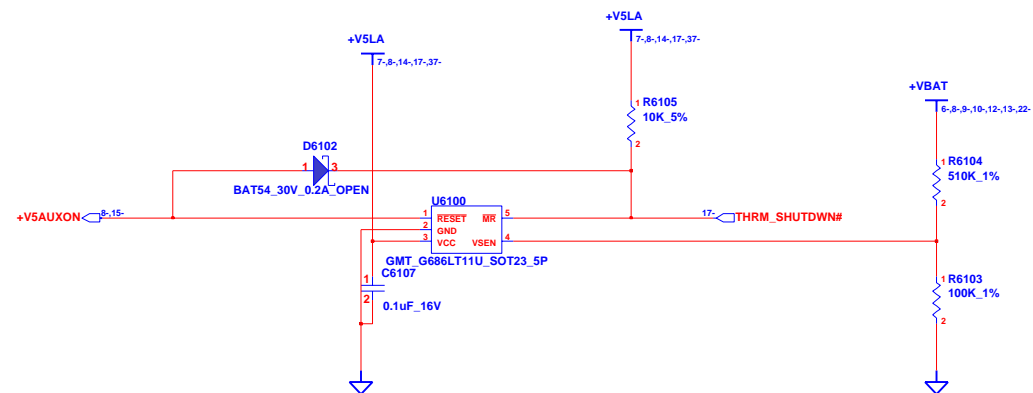
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TITLE
BM20G
Charger
 SIZE CODE DOC. NUMBER REV
A3 CS **7-Dec-2010** **X01**

CHANGE by *Drawer Name* 7-Dec-2010
 SHEET 6 OF 63



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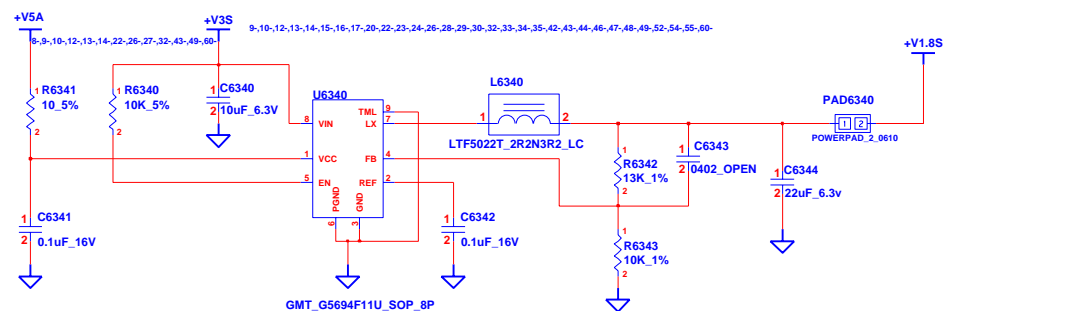
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TITLE
BM20G
Battery, Reset IC

SIZE A3 CODE CS DOC. NUMBER 7 OF 63 REV X01

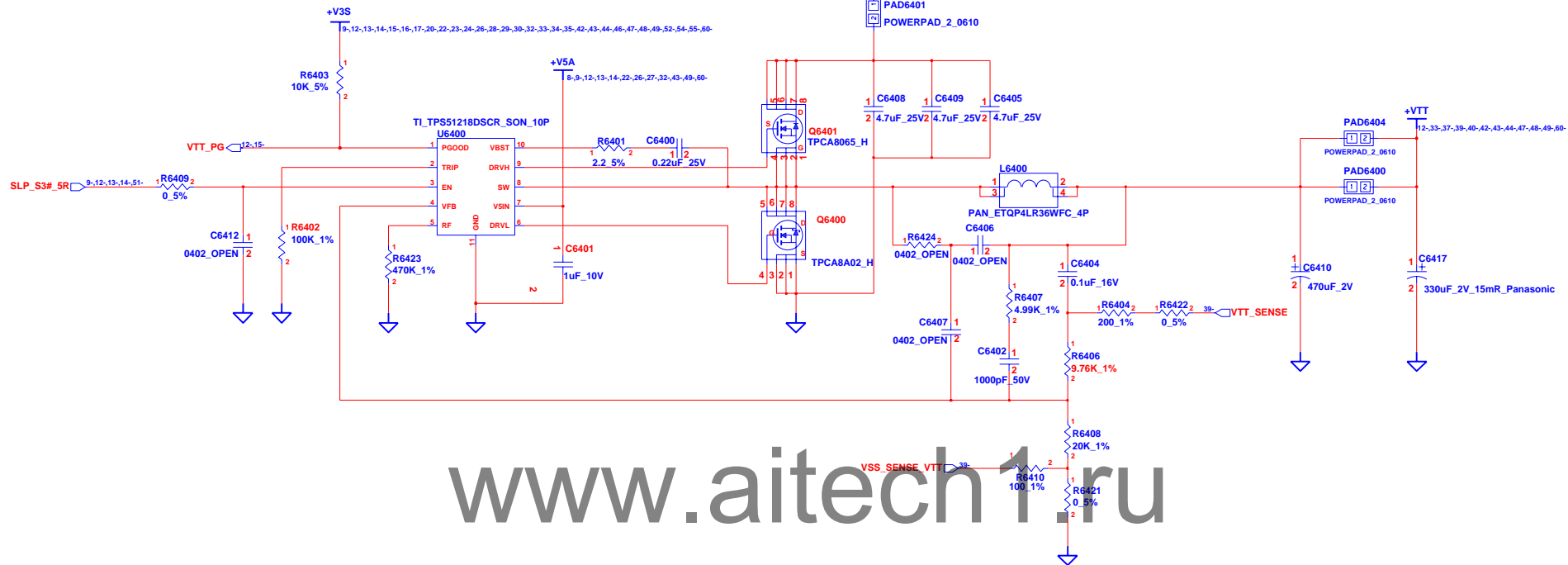
CHANGE by Drawer Name 7-Dec-2010

8



	SHEET	9	OF	63
		8		

+VTT +V1.05S



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INVENTEC

TITLE			
BM20G			
+VTT, +V1.05S			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	10 OF 63	X01

CHANGE by *Drawer Name* 7-Dec-2010

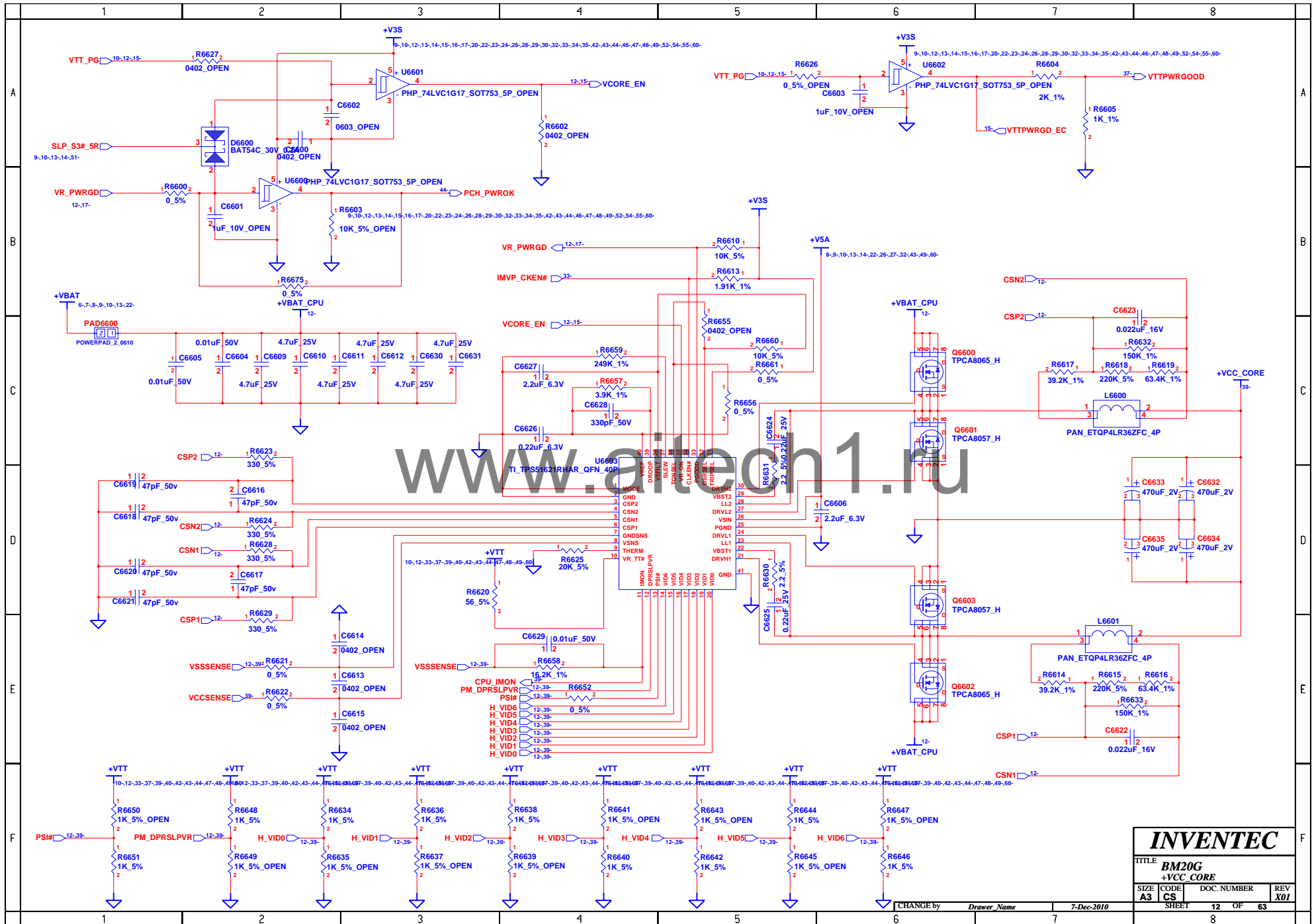
SHEET 10 OF 63

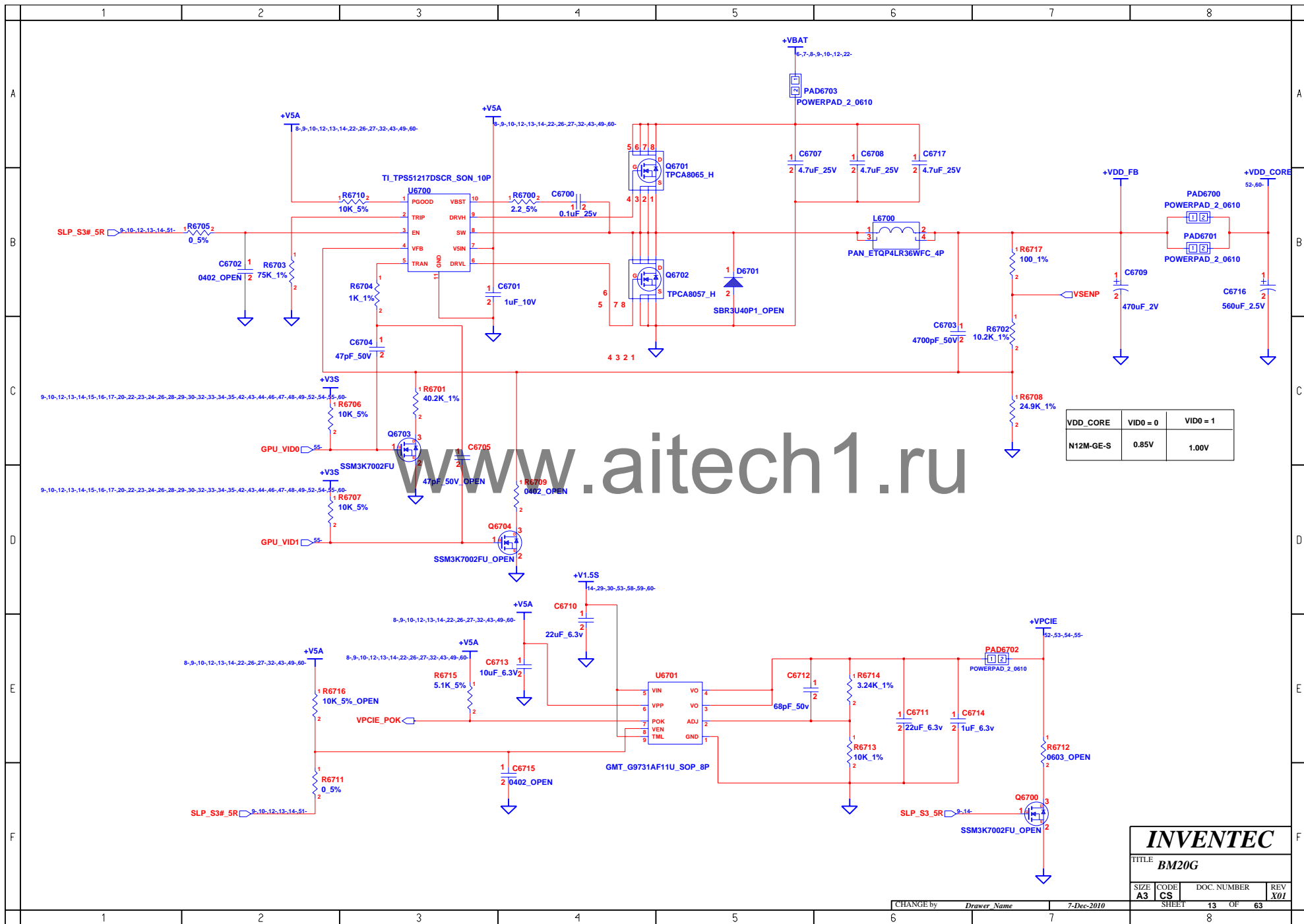
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A									A
B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	

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INVENTEC			
TITLE BM20G +VGFX_CORE			
SIZE A3	CODE CS	DOC. NUMBER	REV X01
SHEET 11		OF 63	

CHANGE by Drawer Name 7-Dec-2010





INVENTEC

TITLE
BM20G

SIZE	CODE	DOC. NUMBER	REV
A3	CS	SHEET 13 OF 63	X01

CHANGE by *Drawer Name* 7-Dec-2010

The image displays a detailed PCB layout for the BM20G device, featuring power planes for +V5S, +V3S, +V1.5S, and +V1.5S_CPU. The layout includes various electronic components such as transistors (Q4151, Q4150, Q6006, Q6004, Q7004, Q7007, Q7009, Q7010, Q7011, Q7012, Q7013, Q7014, Q7015, Q7016, Q7017, Q7018, Q7019, Q7020, Q7021, Q7022, Q7023, Q7024, Q7025, Q7026, Q7027, Q7028, Q7029, Q7030, Q7031, Q7032, Q7033, Q7034, Q7035, Q7036, Q7037, Q7038, Q7039, Q7040, Q7041, Q7042, Q7043, Q7044, Q7045, Q7046, Q7047, Q7048, Q7049, Q7050, Q7051, Q7052, Q7053, Q7054, Q7055, Q7056, Q7057, Q7058, Q7059, Q7060, Q7061, Q7062, Q7063, Q7064, Q7065, Q7066, Q7067, Q7068, Q7069, Q7070, Q7071, Q7072, Q7073, Q7074, Q7075, Q7076, Q7077, Q7078, Q7079, Q7080, Q7081, Q7082, Q7083, Q7084, Q7085, Q7086, Q7087, Q7088, Q7089, Q7090, Q7091, Q7092, Q7093, Q7094, Q7095, Q7096, Q7097, Q7098, Q7099, Q7100, Q7101, Q7102, Q7103, Q7104, Q7105, Q7106, Q7107, Q7108, Q7109, Q7110, Q7111, Q7112, Q7113, Q7114, Q7115, Q7116, Q7117, Q7118, Q7119, Q7120, Q7121, Q7122, Q7123, Q7124, Q7125, Q7126, Q7127, Q7128, Q7129, Q7130, Q7131, Q7132, Q7133, Q7134, Q7135, Q7136, Q7137, Q7138, Q7139, Q7140, Q7141, Q7142, Q7143, Q7144, Q7145, Q7146, Q7147, Q7148, Q7149, Q7150, Q7151, Q7152, Q7153, Q7154, Q7155, Q7156, Q7157, Q7158, Q7159, Q7160, Q7161, Q7162, Q7163, Q7164, Q7165, Q7166, Q7167, Q7168, Q7169, Q7170, Q7171, Q7172, Q7173, Q7174, Q7175, Q7176, Q7177, Q7178, Q7179, Q7180, Q7181, Q7182, Q7183, Q7184, Q7185, Q7186, Q7187, Q7188, Q7189, Q7190, Q7191, Q7192, Q7193, Q7194, Q7195, Q7196, Q7197, Q7198, Q7199, Q7200, Q7201, Q7202, Q7203, Q7204, Q7205, Q7206, Q7207, Q7208, Q7209, Q7210, Q7211, Q7212, Q7213, Q7214, Q7215, Q7216, Q7217, Q7218, Q7219, Q7220, Q7221, Q7222, Q7223, Q7224, Q7225, Q7226, Q7227, Q7228, Q7229, Q7230, Q7231, Q7232, Q7233, Q7234, Q7235, Q7236, Q7237, Q7238, Q7239, Q7240, Q7241, Q7242, Q7243, Q7244, Q7245, Q7246, Q7247, Q7248, Q7249, Q7250, Q7251, Q7252, Q7253, Q7254, Q7255, Q7256, Q7257, Q7258, Q7259, Q7260, Q7261, Q7262, Q7263, Q7264, Q7265, Q7266, Q7267, Q7268, Q7269, Q7270, Q7271, Q7272, Q7273, Q7274, Q7275, Q7276, Q7277, Q7278, Q7279, Q7280, Q7281, Q7282, Q7283, Q7284, Q7285, Q7286, Q7287, Q7288, Q7289, Q7290, Q7291, Q7292, Q7293, Q7294, Q7295, Q7296, Q7297, Q7298, Q7299, Q7300, Q7301, Q7302, Q7303, Q7304, Q7305, Q7306, Q7307, Q7308, Q7309, Q7310, Q7311, Q7312, Q7313, Q7314, Q7315, Q7316, Q7317, Q7318, Q7319, Q7320, Q7321, Q7322, Q7323, Q7324, Q7325, Q7326, Q7327, Q7328, Q7329, Q7330, Q7331, Q7332, Q7333, Q7334, Q7335, Q7336, Q7337, Q7338, Q7339, Q7340, Q7341, Q7342, Q7343, Q7344, Q7345, Q7346, Q7347, Q7348, Q7349, Q7350, Q7351, Q7352, Q7353, Q7354, Q7355, Q7356, Q7357, Q7358, Q7359, Q7360, Q7361, Q7362, Q7363, Q7364, Q7365, Q7366, Q7367, Q7368, Q7369, Q7370, Q7371, Q7372, Q7373, Q7374, Q7375, Q7376, Q7377, Q7378, Q7379, Q7380, Q7381, Q7382, Q7383, Q7384, Q7385, Q7386, Q7387, Q7388, Q7389, Q7390, Q7391, Q7392, Q7393, Q7394, Q7395, Q7396, Q7397, Q7398, Q7399, Q7400, Q7401, Q7402, Q7403, Q7404, Q7405, Q7406, Q7407, Q7408, Q7409, Q7410, Q7411, Q7412, Q7413, Q7414, Q7415, Q7416, Q7417, Q7418, Q7419, Q7420, Q7421, Q7422, Q7423, Q7424, Q7425, Q7426, Q7427, Q7428, Q7429, Q7430, Q7431, Q7432, Q7433, Q7434, Q7435, Q7436, Q7437, Q7438, Q7439, Q7440, Q7441, Q7442, Q7443, Q7444, Q7445, Q7446, Q7447, Q7448, Q7449, Q7450, Q7451, Q7452, Q7453, Q7454, Q7455, Q7456, Q7457, Q7458, Q7459, Q7460, Q7461, Q7462, Q7463, Q7464, Q7465, Q7466, Q7467, Q7468, Q7469, Q7470, Q7471, Q7472, Q7473, Q7474, Q7475, Q7476, Q7477, Q7478, Q7479, Q7480, Q7481, Q7482, Q7483, Q7484, Q7485, Q7486, Q7487, Q7488, Q7489, Q7490, Q7491, Q7492, Q7493, Q7494, Q7495, Q7496, Q7497, Q7498, Q7499, Q7500, Q7501, Q7502, Q7503, Q7504, Q7505, Q7506, Q7507, Q7508, Q7509, Q7510, Q7511, Q7512, Q7513, Q7514, Q7515, Q7516, Q7517, Q7518, Q7519, Q7520, Q7521, Q7522, Q7523, Q7524, Q7525, Q7526, Q7527, Q7528, Q7529, Q7530, Q7531, Q7532, Q7533, Q7534, Q7535, Q7536, Q7537, Q7538, Q7539, Q7540, Q7541, Q7542, Q7543, Q7544, Q7545, Q7546, Q7547, Q7548, Q7549, Q7550, Q7551, Q7552, Q7553, Q7554, Q7555, Q7556, Q7557, Q7558, Q7559, Q7560, Q7561, Q7562, Q7563, Q7564, Q7565, Q7566, Q7567, Q7568, Q7569, Q7570, Q7571, Q7572, Q7573, Q7574, Q7575, Q7576, Q7577, Q7578, Q7579, Q7580, Q7581, Q7582, Q7583, Q7584, Q7585, Q7586, Q7587, Q7588, Q7589, Q7590, Q7591, Q7592, Q7593, Q7594, Q7595, Q7596, Q7597, Q7598, Q7599, Q7600, Q7601, Q7602, Q7603, Q7604, Q7605, Q7606, Q7607, Q7608, Q7609, Q7610, Q7611, Q7612, Q7613, Q7614, Q7615, Q7616, Q7617, Q7618, Q7619, Q7620, Q7621, Q7622, Q7623, Q7624, Q7625, Q7626, Q7627, Q7628, Q7629, Q7630, Q7631, Q7632, Q7633, Q7634, Q7635, Q7636, Q7637, Q7638, Q7639, Q7640, Q7641, Q7642, Q7643, Q7644, Q7645, Q7646, Q7647, Q7648, Q7649, Q7650, Q7651, Q7652, Q7653, Q7654, Q7655, Q7656, Q7657, Q7658, Q7659, Q7660, Q7661, Q7662, Q7663, Q7664, Q7665, Q7666, Q7667

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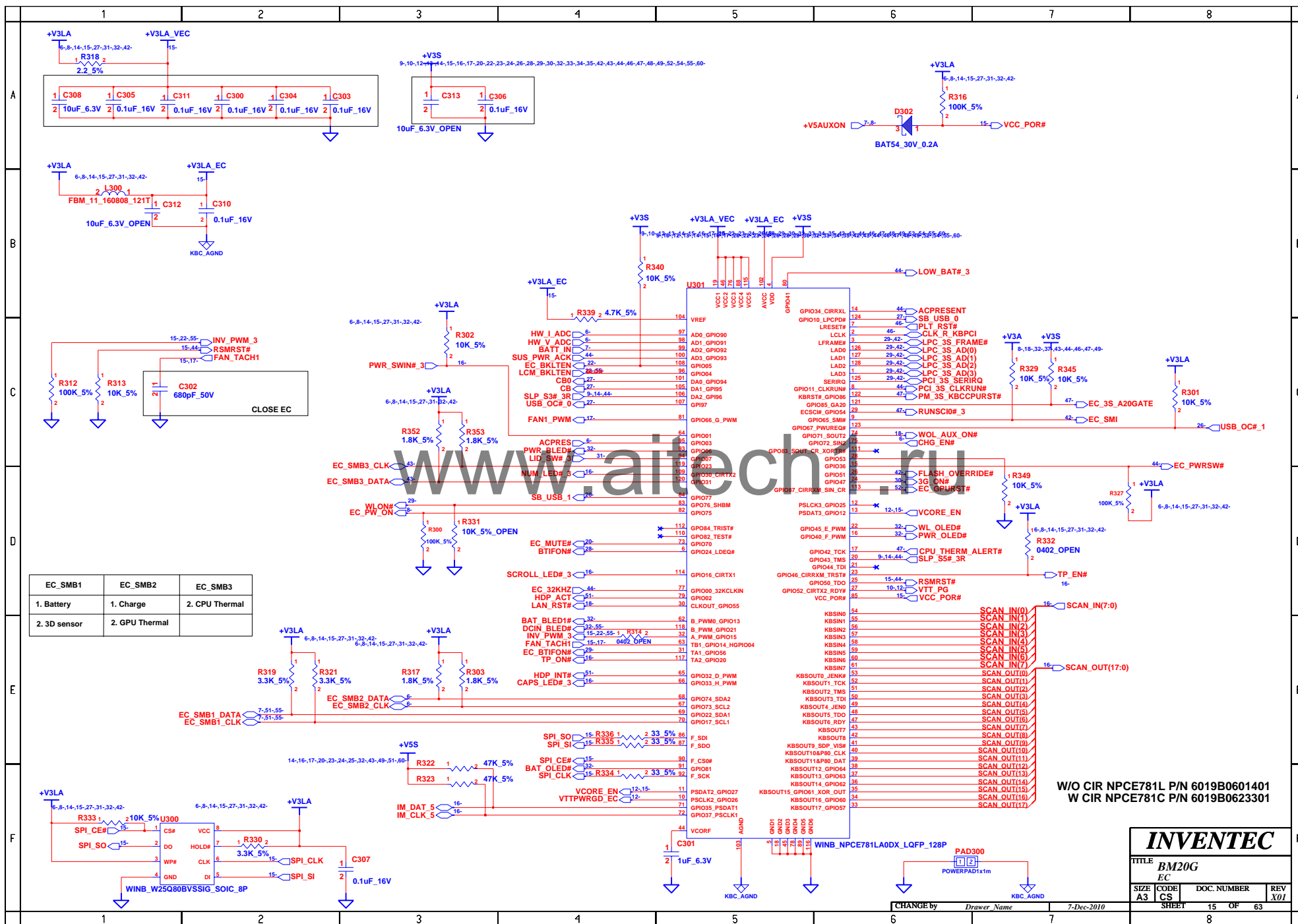
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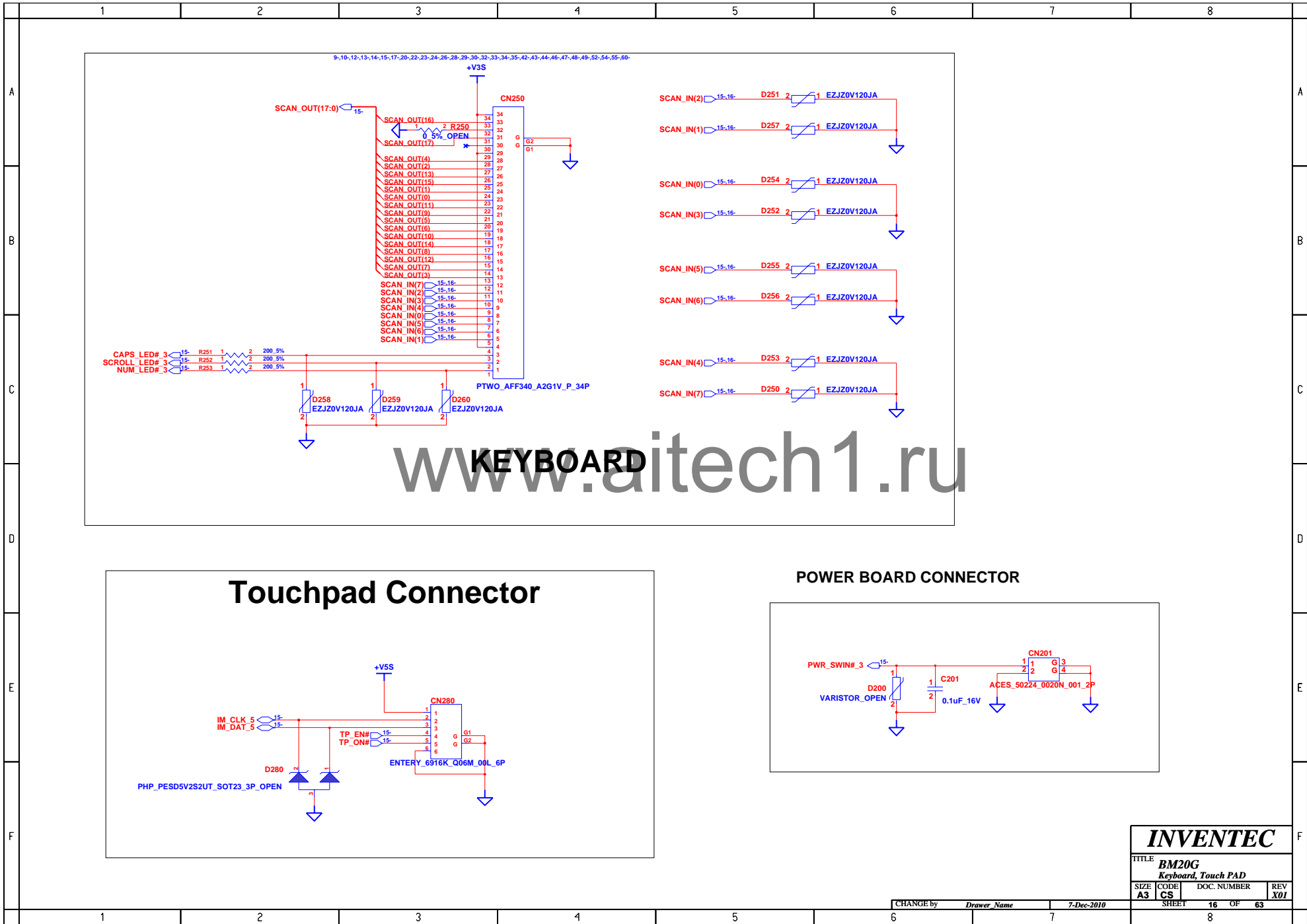
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+V5S +V3S +V1.5S

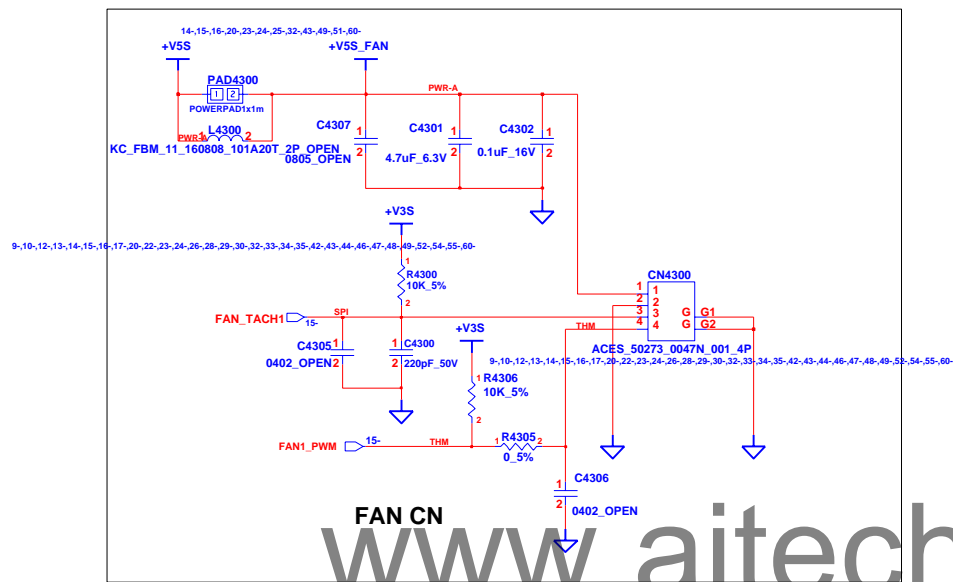
SIZE A3	CODE CS	DOC. NUMBER	REV X01
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CHANGE by	<i>Drawer Name</i>	7-Dec-2010
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CS
SHEET 14 OF 63

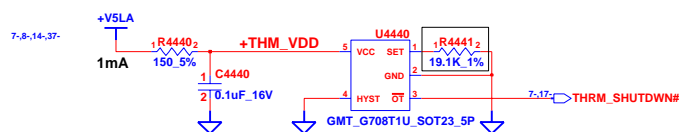






FAN CN

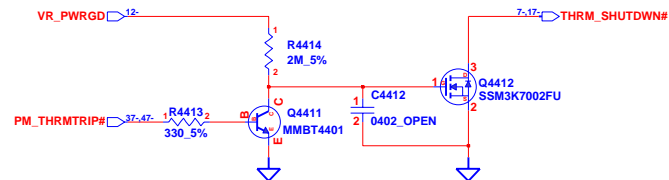
Board Thermal Sensor



Thermal shutdown at 94 C° +/- 3 C° from 60 C° to 100 C°

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

Hysteresis is 30C



INVENTEC

TITLE
BM20G
FAN, Thermal controller

SIZE CODE DOC. NUMBER REV
A3 CS 17 OF 63 **X01**

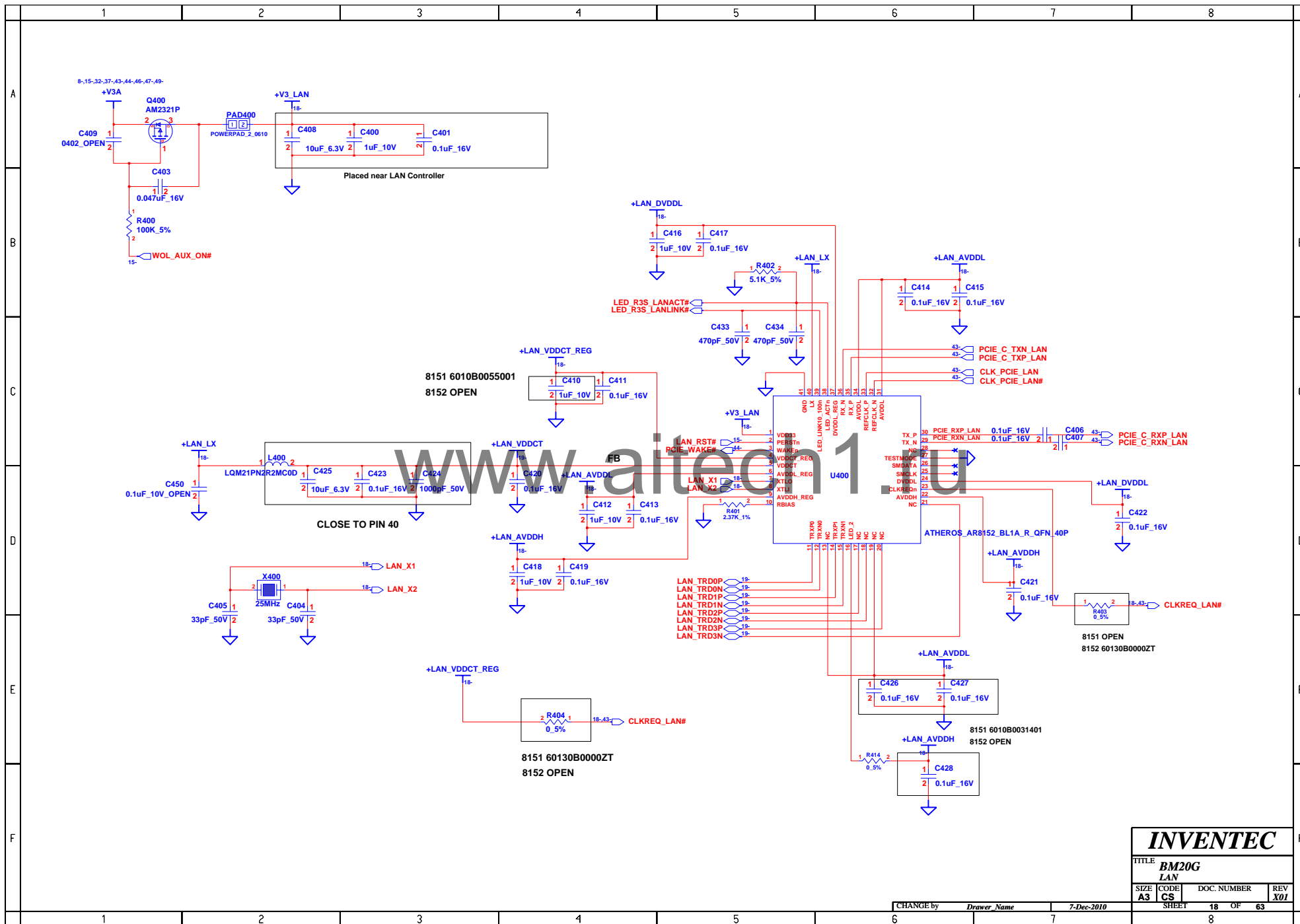
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SHEET

17

OF

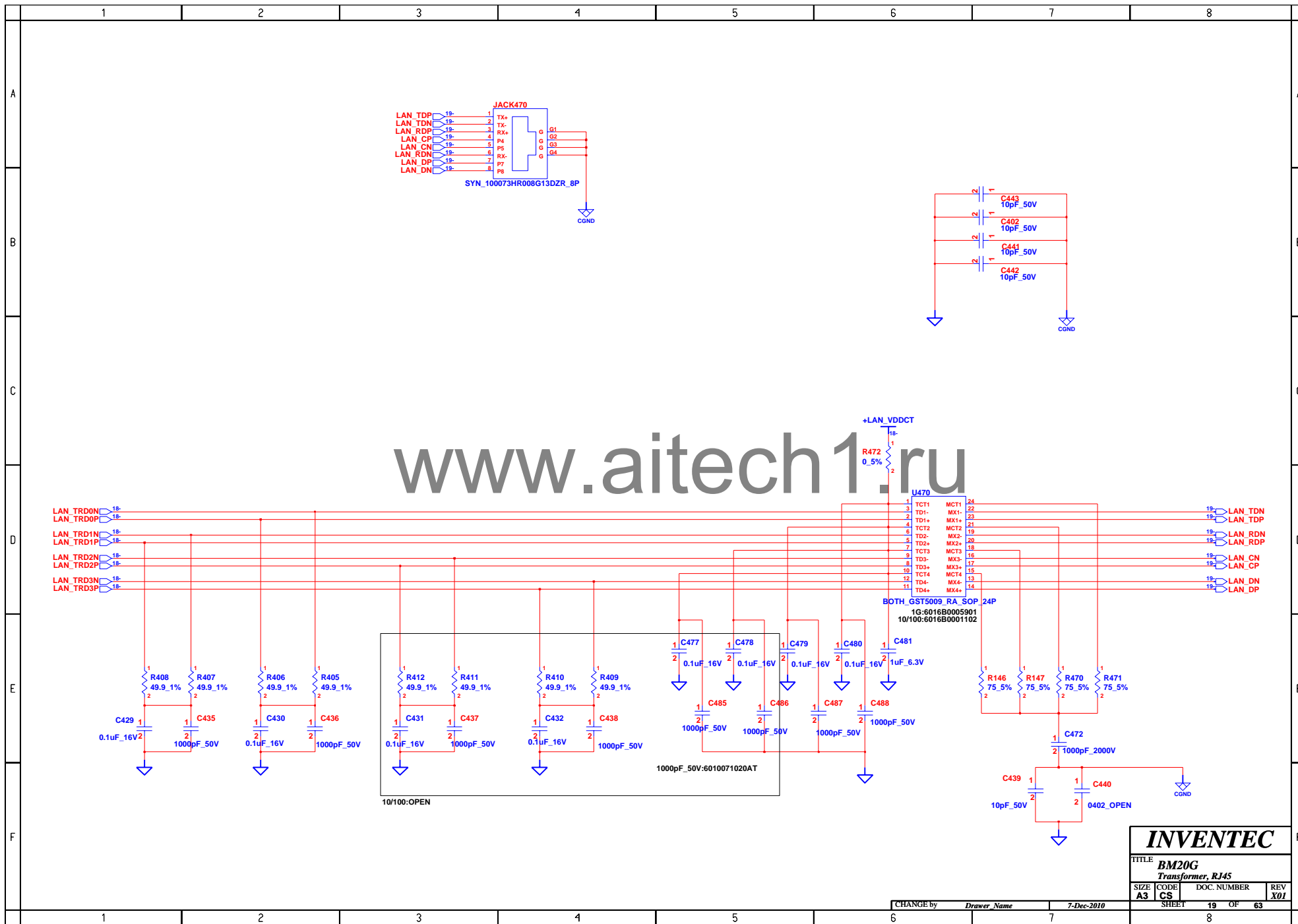
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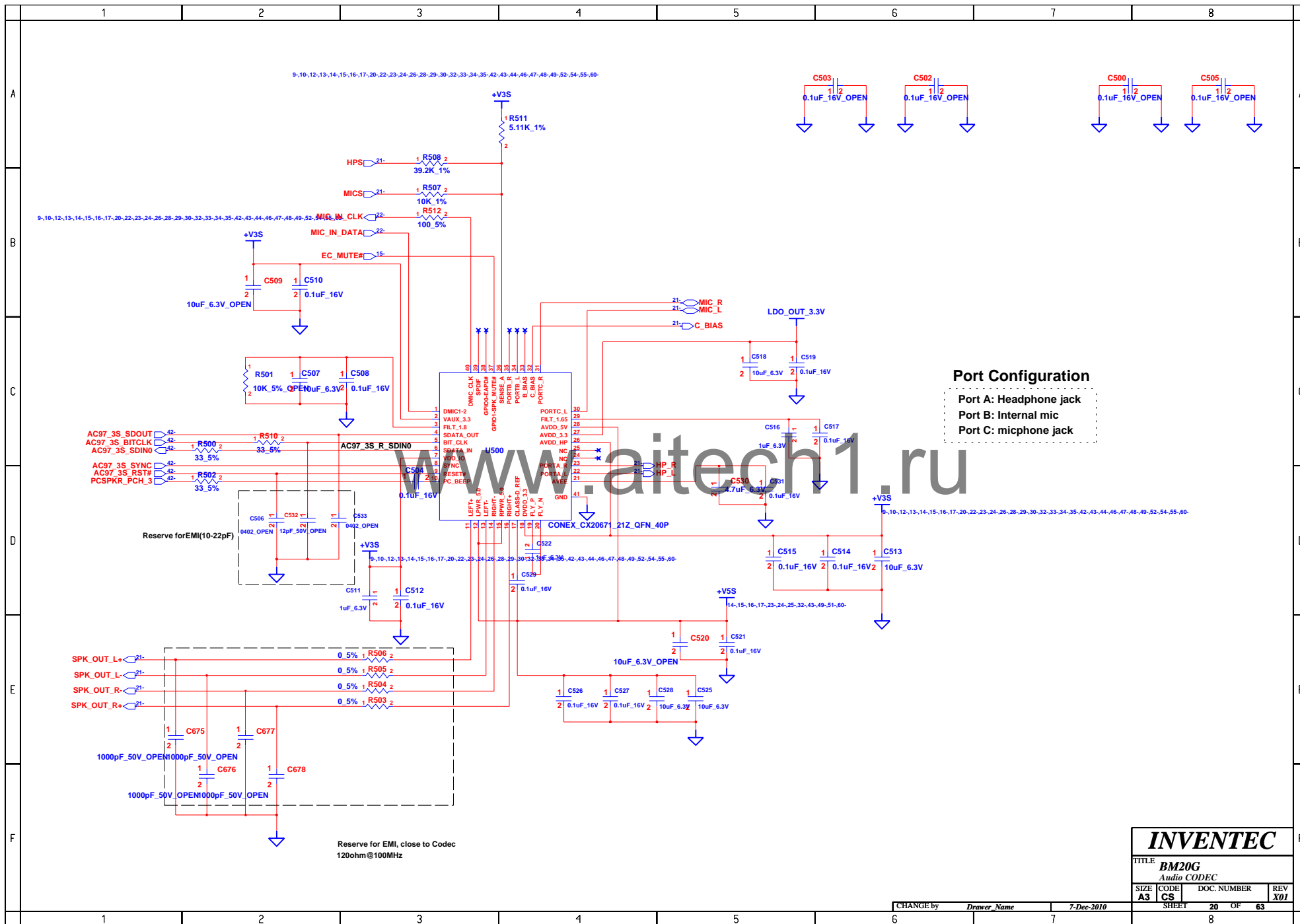


INVENTEC

TITLE			
BM20G			
LAN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS		X01

CHANGE by	Drawer Name	7-Dec-2010	SHEET	18	OF	63
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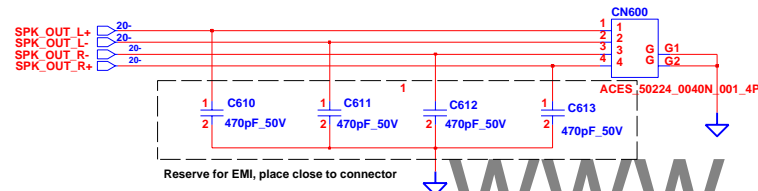
INVENTEC

TITLE			
BM20G			
Audio CODEC			
SIZE	CODE	DOC. NUMBER	REV
A3	CS		X01

CHANGE by	Drawer Name	7-Dec-2010	
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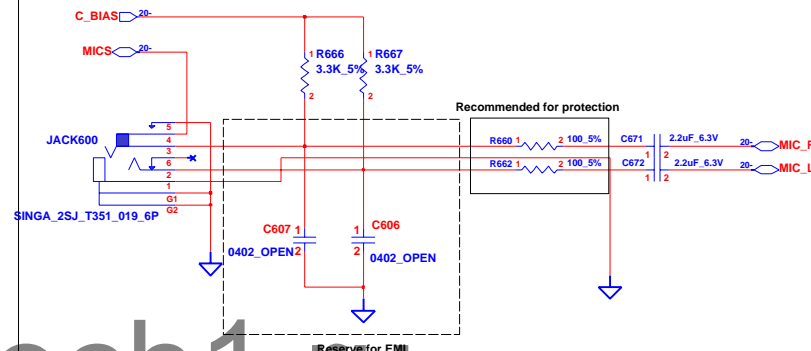
SHEET 20 OF 63

INTERNAL SPEAKERS

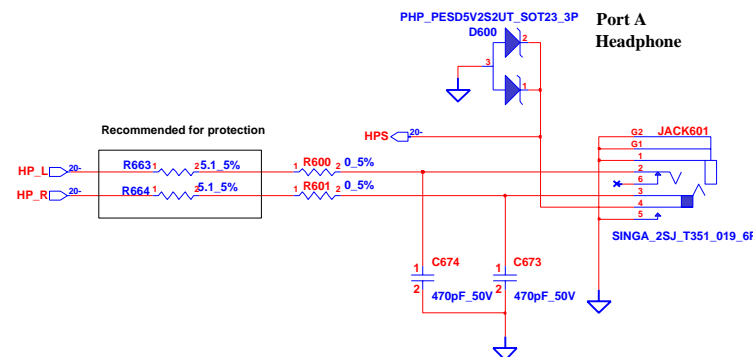


AUDIO JACKS

Port C External microphone



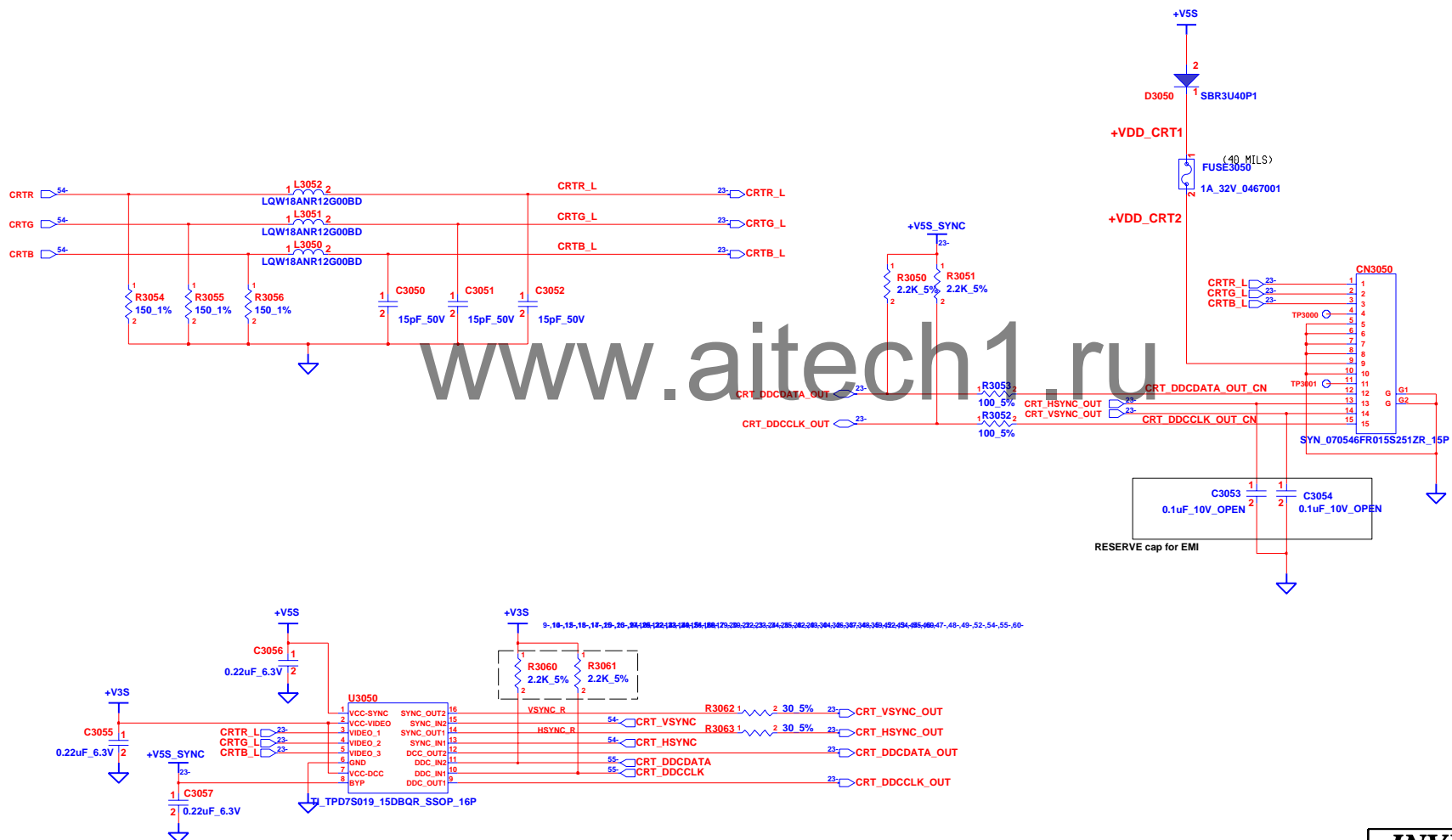
Port A Headphone



INVENTEC

TITLE			
BM20G			
JACK			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	SHEET 21 OF 63	X01

CHANGE by *Drawer Name* 7-Dec-2010



INVENTEC

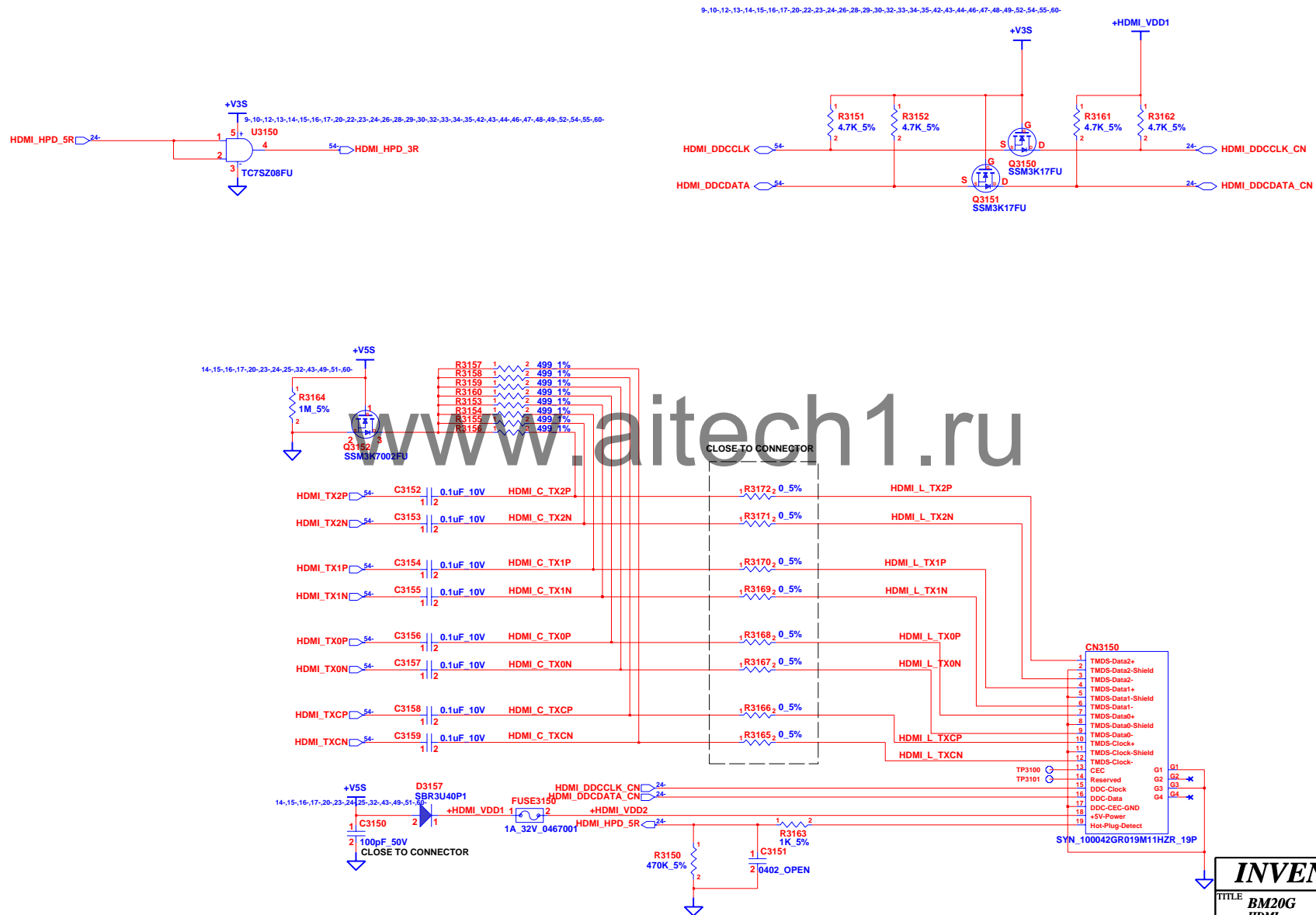
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BM20G
CRT

SIZE CODE DOC. NUMBER REV

A3 CS 7-Dec-2010 23 OF 63 X01

CHANGE by *Drawer Name* 7-Dec-2010

8



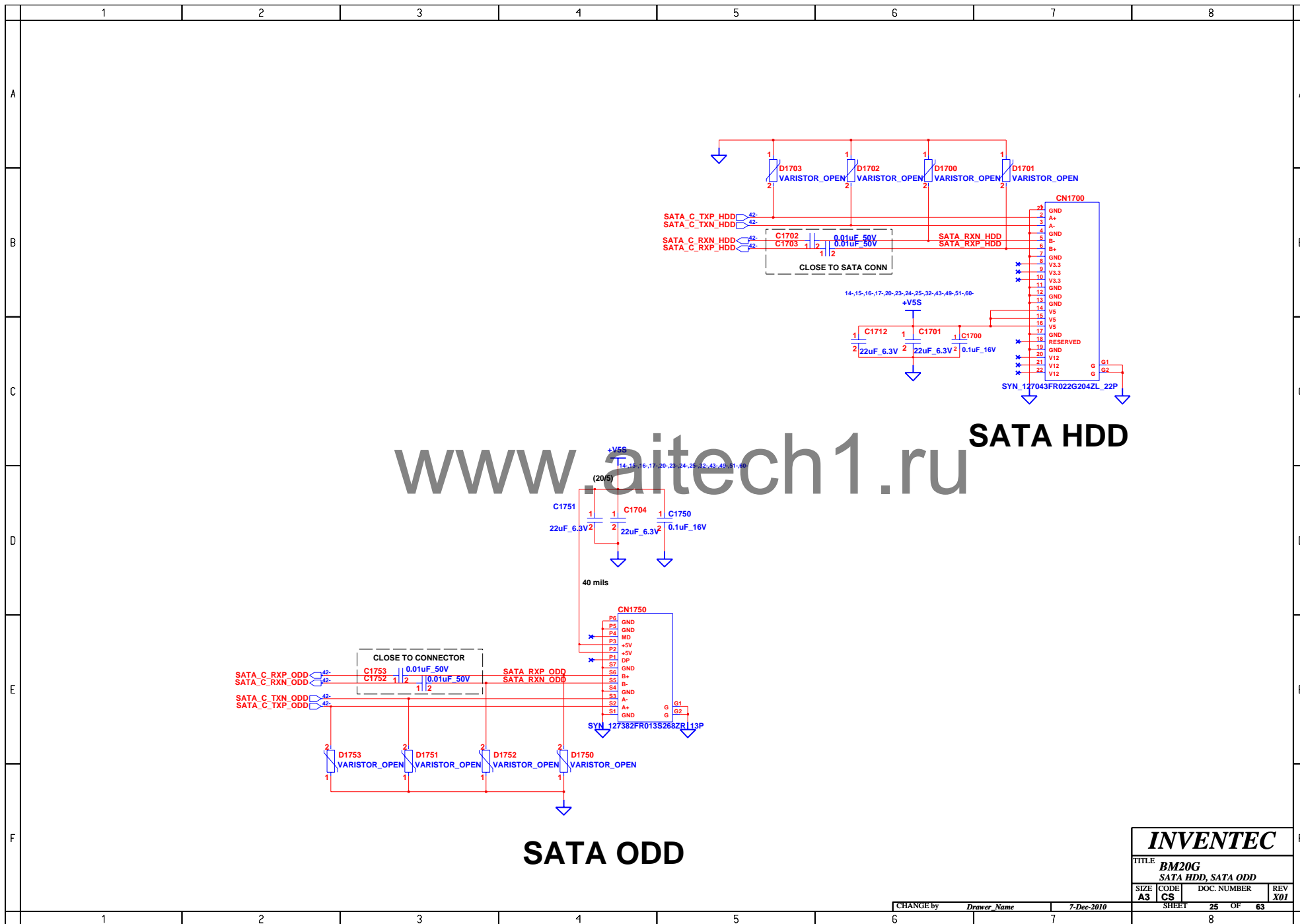
INVENTEC

TITLE
BM20G
HDMI

SIZE	CODE	DOC. NUMBER	REV
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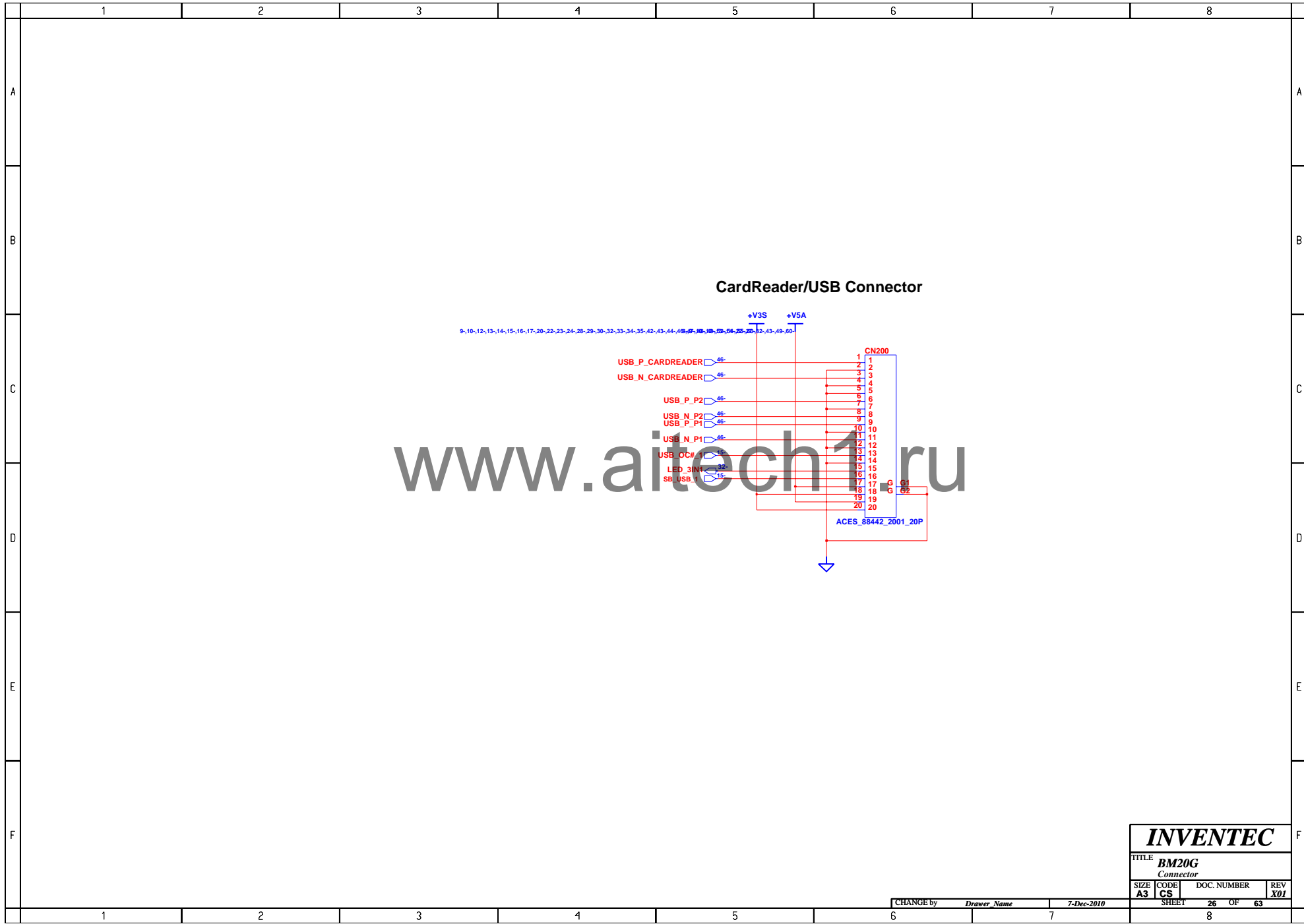
SHEET 24 OF 63



INVENTEC

TITLE			
BM20G			
SATA HDD, SATA ODD			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	SHEET 25 OF 63	X01

CHANGE by *Drawer Name* 7-Dec-2010



INVENTEC

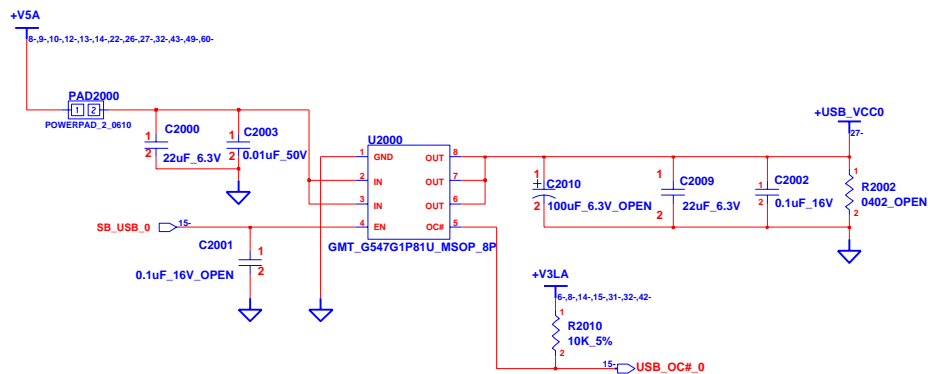
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BM20G
Connector

SIZE A3	CODE CS	DOC. NUMBER	REV X01
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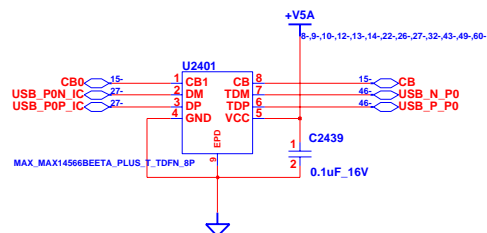
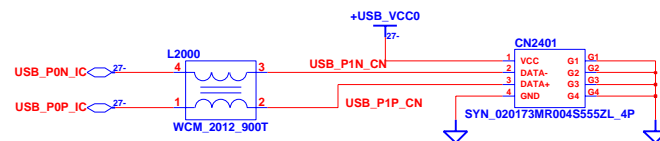
CHANGE by *Drawer Name* 7-Dec-2010

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USB / Sleep & Charge



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INVENTEC

TITLE
BM20G
USB

SIZE CODE DOC. NUMBER REV
A3 CS 27 OF 63 **X01**

CHANGE by *Drawn Name* 7-Dec-2010

SHEET

27

OF

63

BLUEBOOTH

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9-10,12,13,14,15,16,17,20,22,23,24,26,29,30,32,33,34,35,42,43,44,46,47,48,49,52,54,55,60-

+V3S

C2100 0.1uF_16V

C2104 22uF_6.3V

Always stuff

R2105 100K_5%

ACES_50224_0060N_001_6P

USB P/BT

USB N/BT

BTIFON#

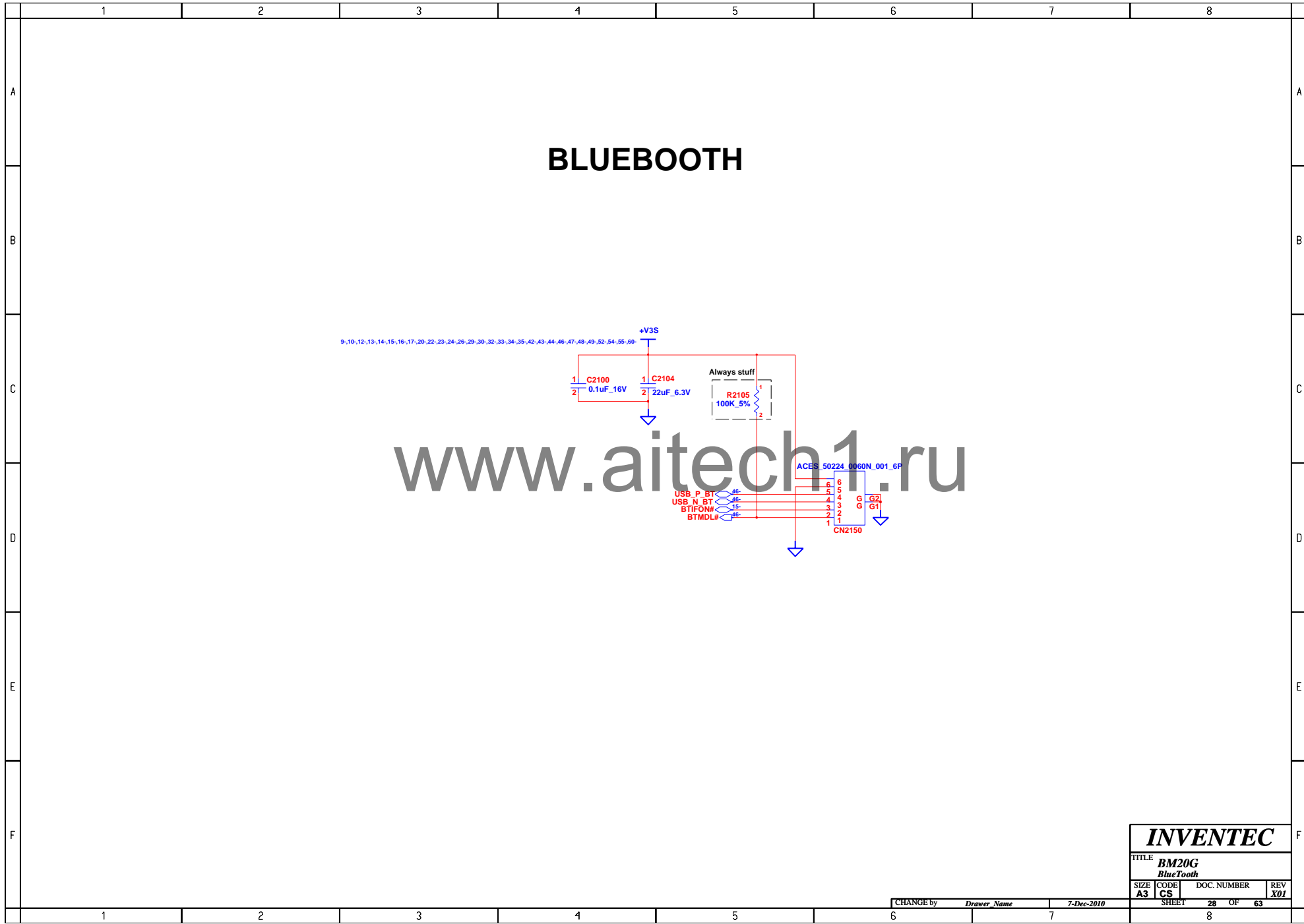
BTMDL#

CN2150

6 5 4 3 2 1

G2 G1

INVENTEC			
TITLE			
BM20G			
BlueTooth			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	7-Dec-2010	X01
SHEET		28	OF 63



BLUEBOOTH

www.aitech1.ru

9-10-12-13-14-15-16-17-20-22-23-24-26-29-30-32-33-34-35-42-43-44-46-47-48-49-52-54-55-60-

+V3S

C2100 0.1uF_16V

C2104 22uF_6.3V

Always stuff

R2105 100K_5%

ACES_50224_0060N_001_6P

USB P/BT

USB N/BT

BTIFON#

BTMDL#

CN2150

6 5 4 3 2 1

G2 G1

INVENTEC			
TITLE			
BM20G			
BlueTooth			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	28 OF 63	X01

CHANGE by Drawer Name 7-Dec-2010

SHEET 28 OF 63

BLUEBOOTH

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9-10-12-13-14-15-16-17-20-22-23-24-26-29-30-32-33-34-35-42-43-44-46-47-48-49-52-54-55-60-

+V3S

C2100 0.1uF_16V

C2104 22uF_6.3V

Always stuff

R2105 100K_5%

ACES_50224_0060N_001_6P

USB P/BT

USB N/BT

BTIFON#

BTMDL#

CN2150

6 5 4 3 2 1

G2 G1

INVENTEC			
TITLE			
BM20G			
BlueTooth			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	28 OF 63	X01

CHANGE by Drawer Name 7-Dec-2010

SHEET 28 OF 63

Wireless & Debug card

The schematic diagram illustrates the internal circuitry of a Wireless & Debug card. The central component is the CN1300 chip, which is connected to various external components and pins. The diagram is divided into several functional blocks:

- Power Management:** Includes +V3S (800mA) and +V1.5S inputs. Capacitors C1305, C1300, C1308, C1303, C1306, and C1307 are used for decoupling and filtering. A transistor Q1300 is connected to the +V1.5S line.
- Signal Processing:** The CN1300 chip is connected to various pins, 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, EC_BTIFON#, PCI_3S_SERIRQ, and WLAN#.
- Connectors:** The BELLW_80051_1021_52P connector is shown at the bottom, providing a physical interface for the card.

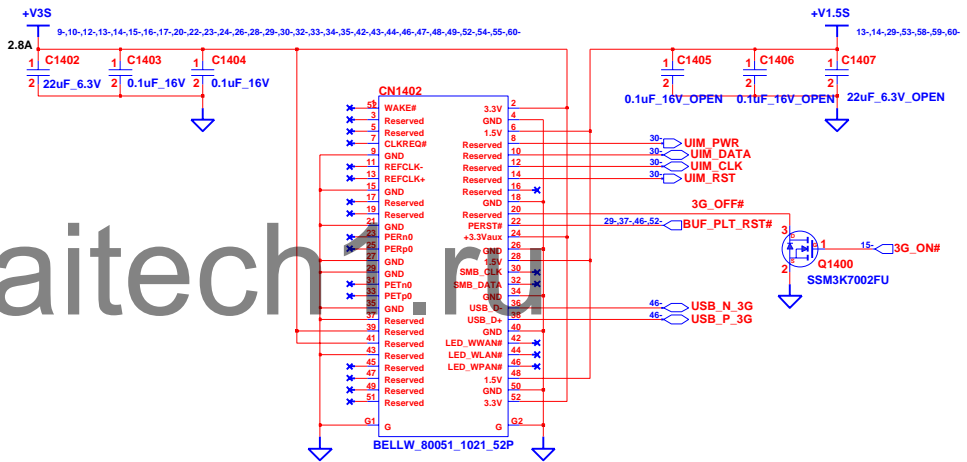
The diagram is watermarked with "www.aitech.ru".

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TITLE BM20G WLAN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS		X01
CHANGE by		Drawer Name	7-Dec-2010
SHEET 29		OF 63	

TITLE			
BM20G WLAN			
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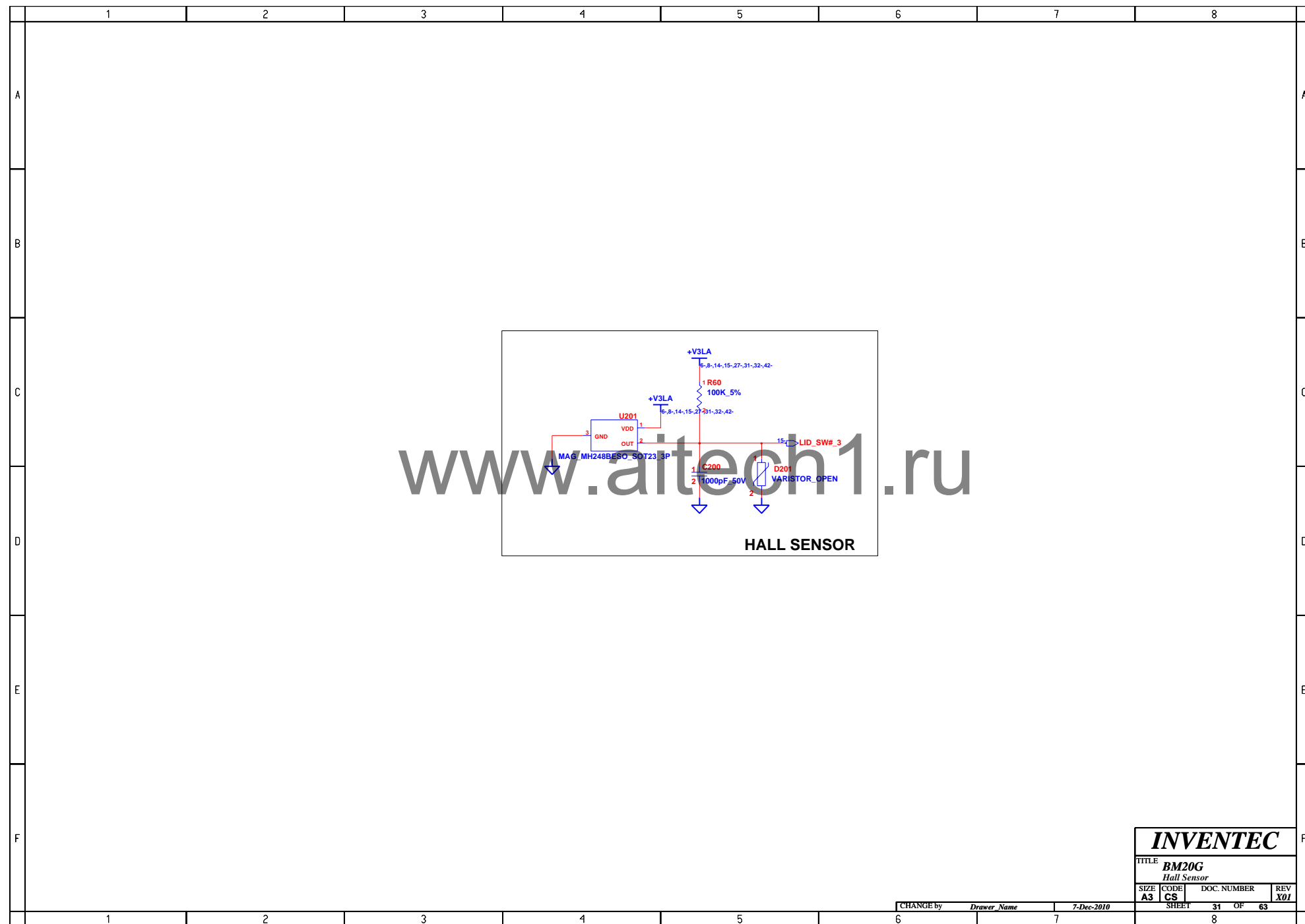
CS			X01
SHEET	29	OF	63

21 Reserved
22 GND
23 PERn0
24 PERp0
25 GND
26 GND
27 GND
28 GND
29 PETn0
30 PETp0
31 GND
32 Reserved

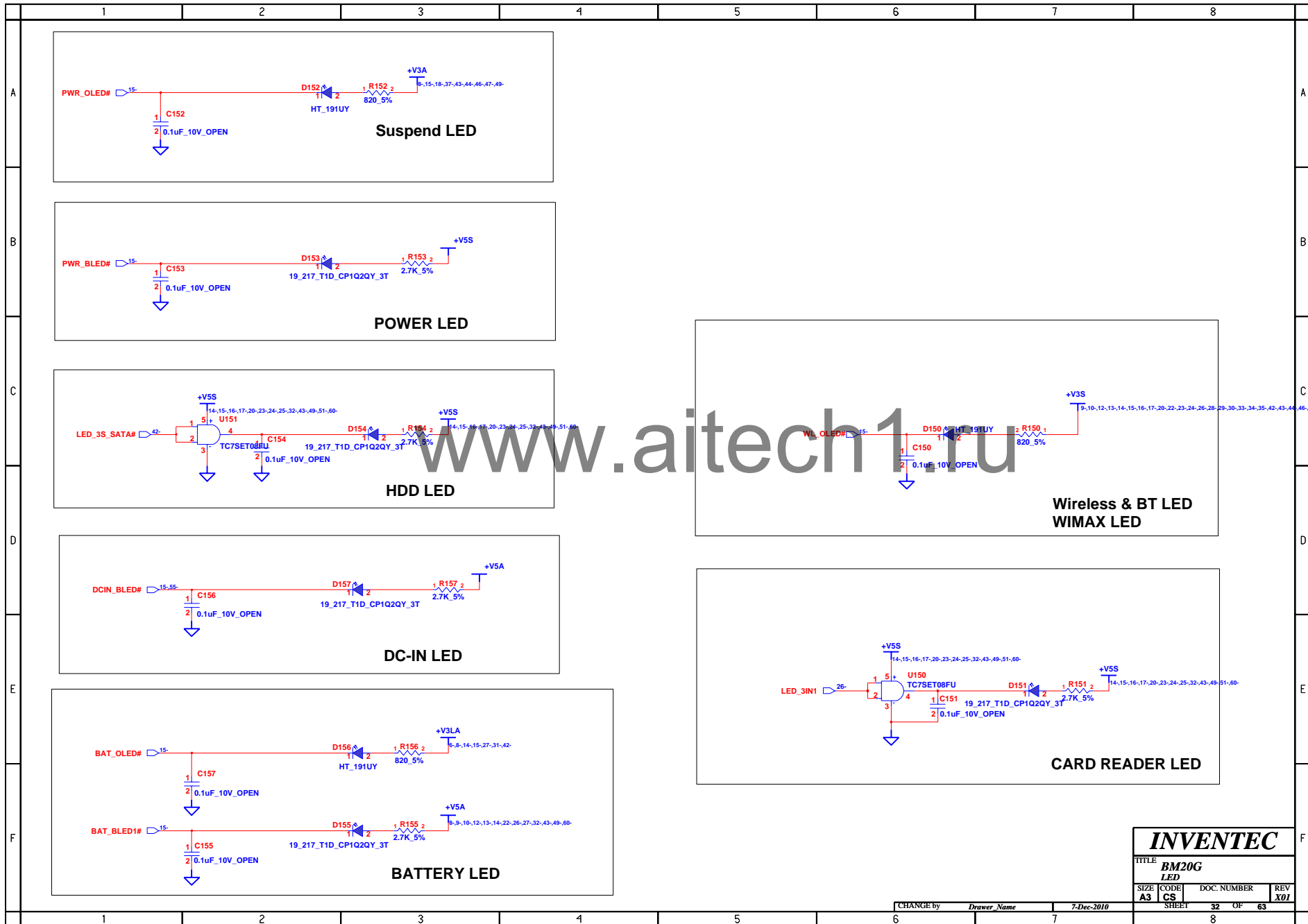


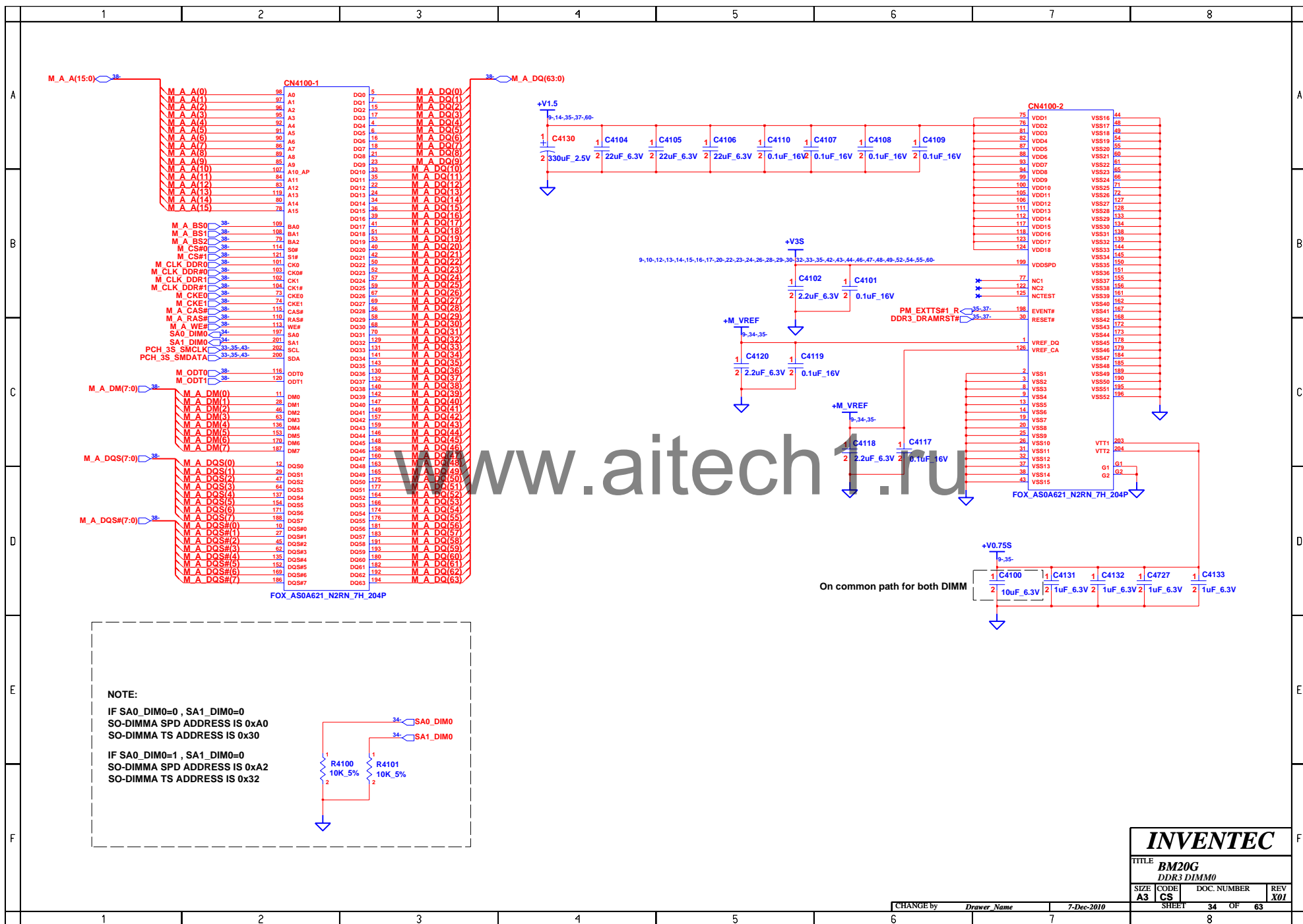
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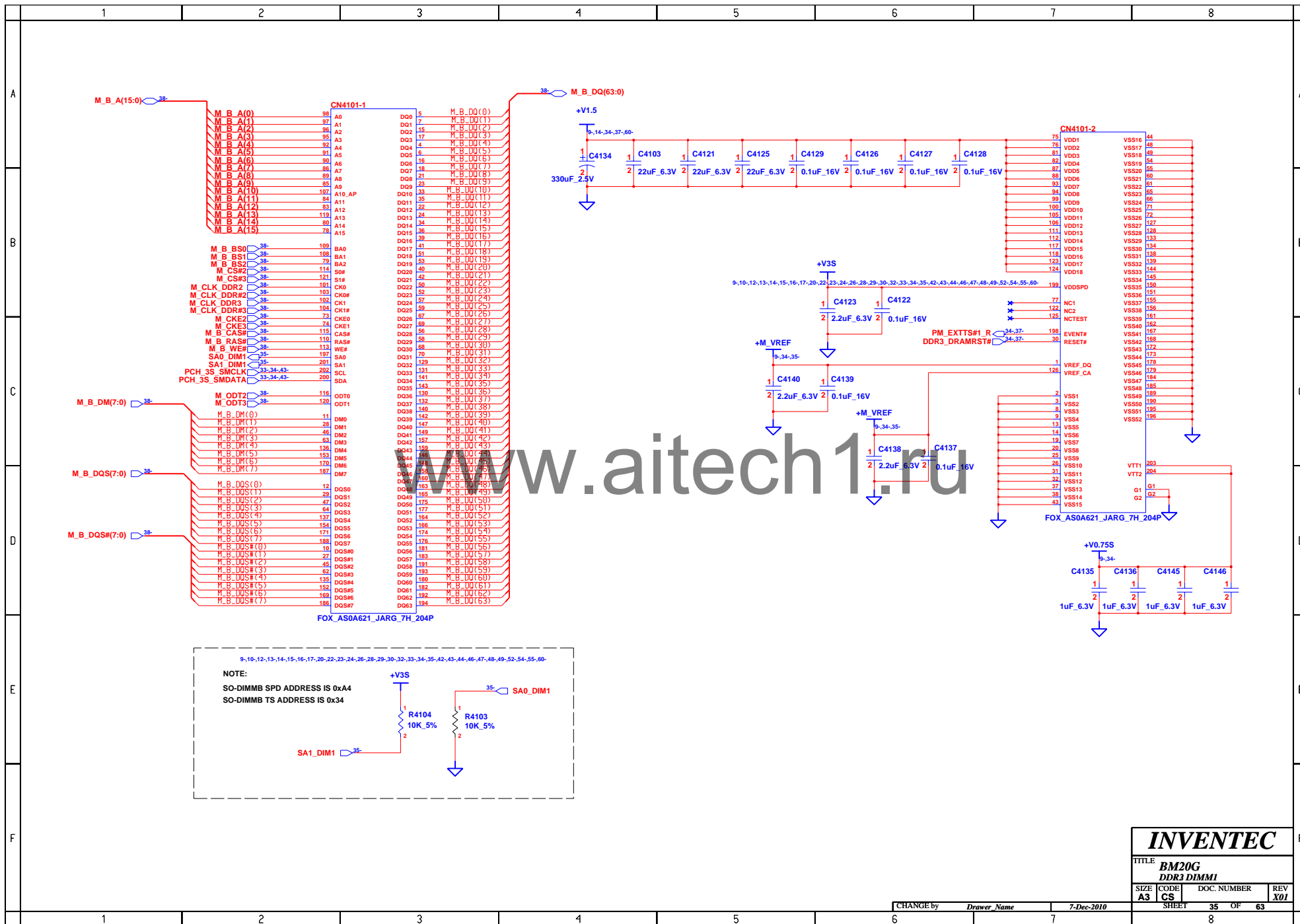
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SHEET	30	OF	63

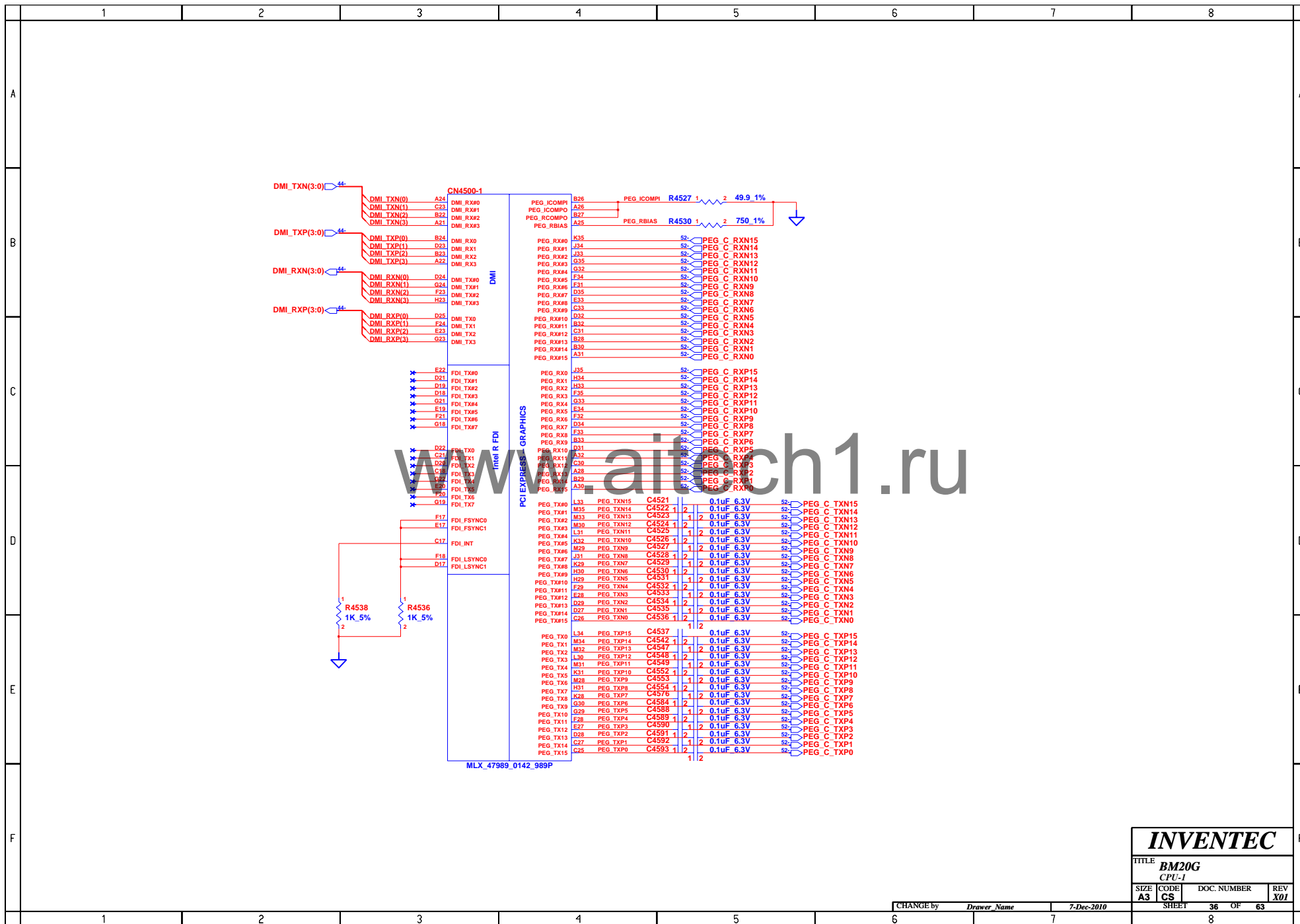


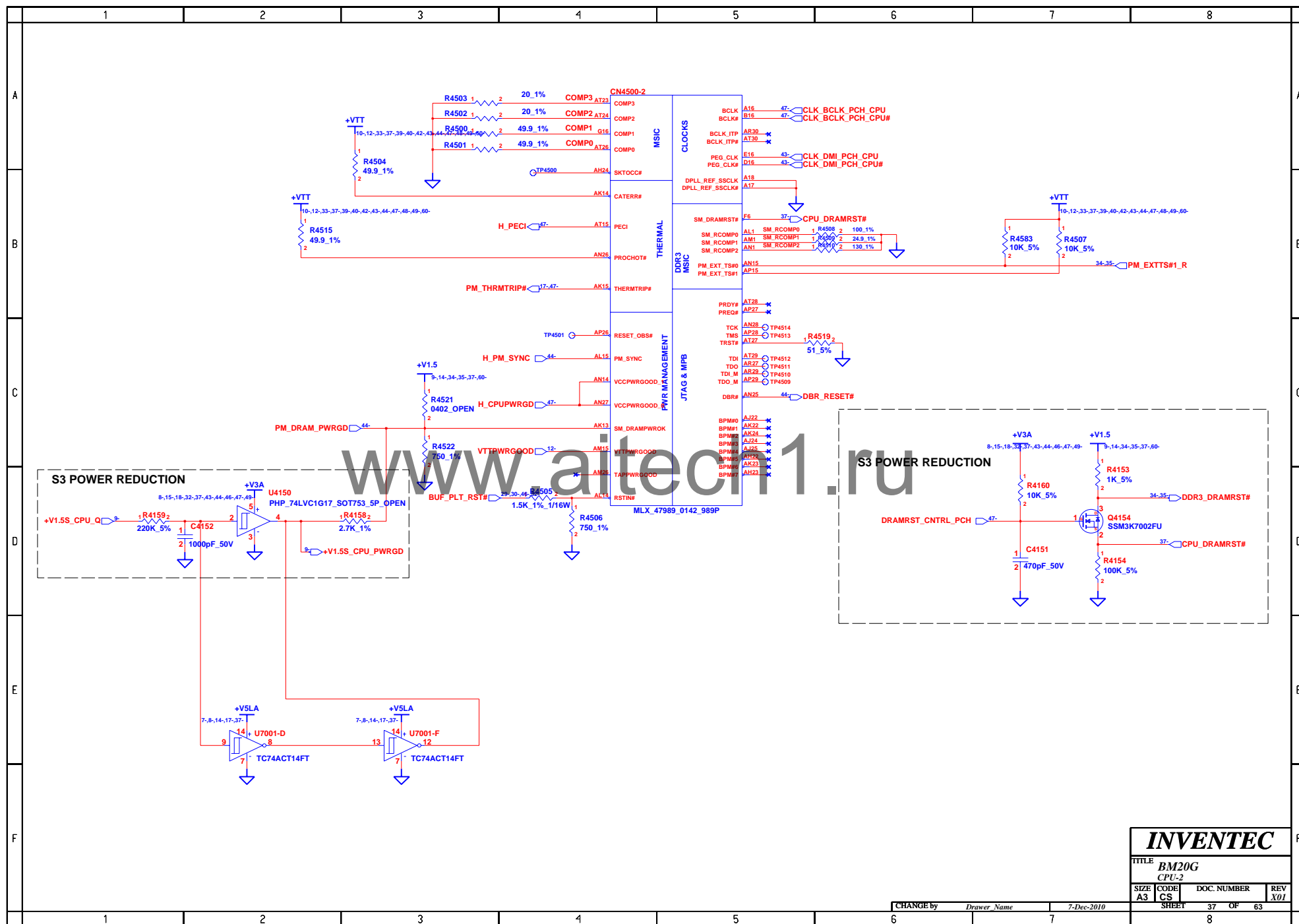
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BM20G			
Hall Sensor			
SIZE	CODE	DOC. NUMBER	REV
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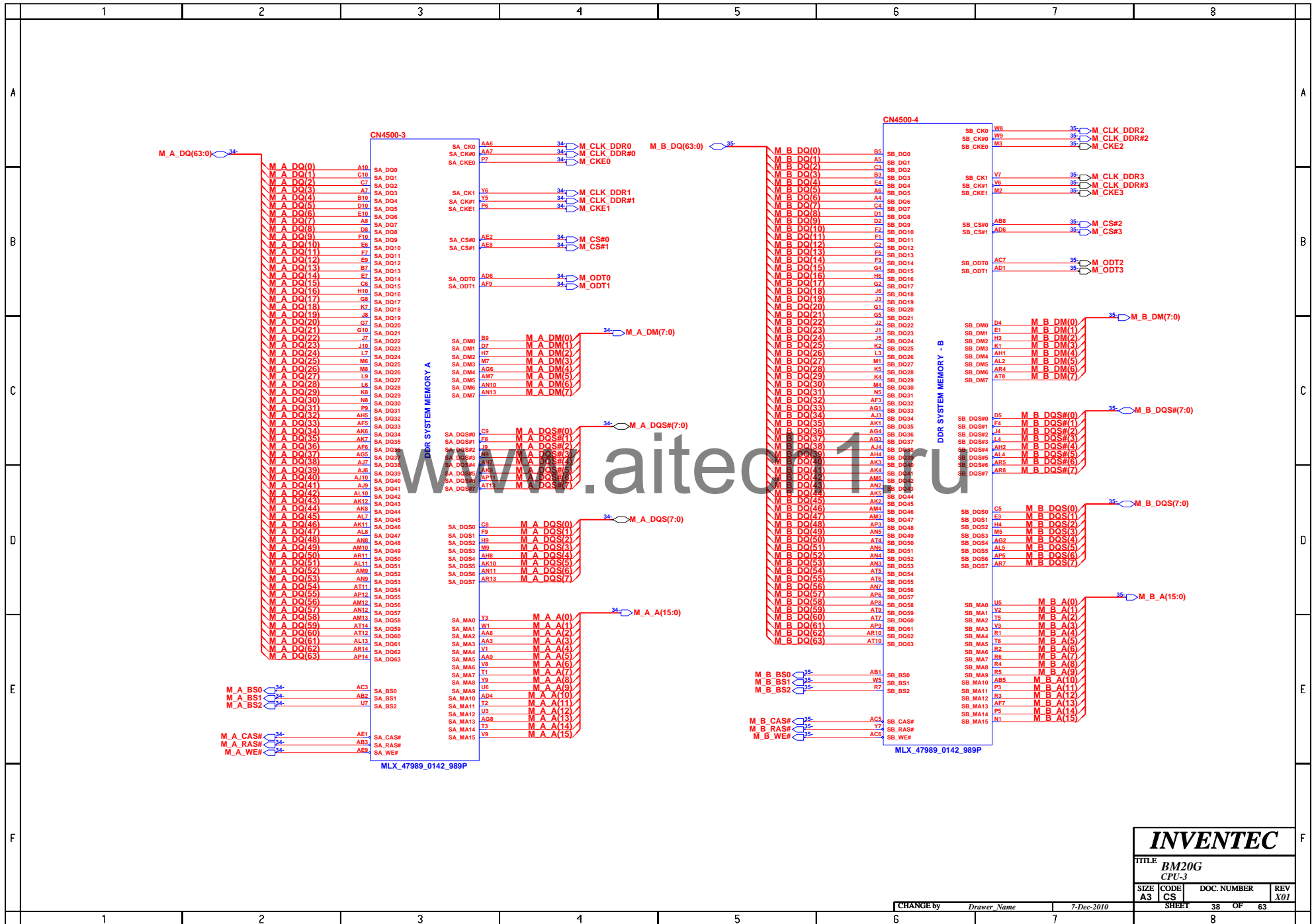












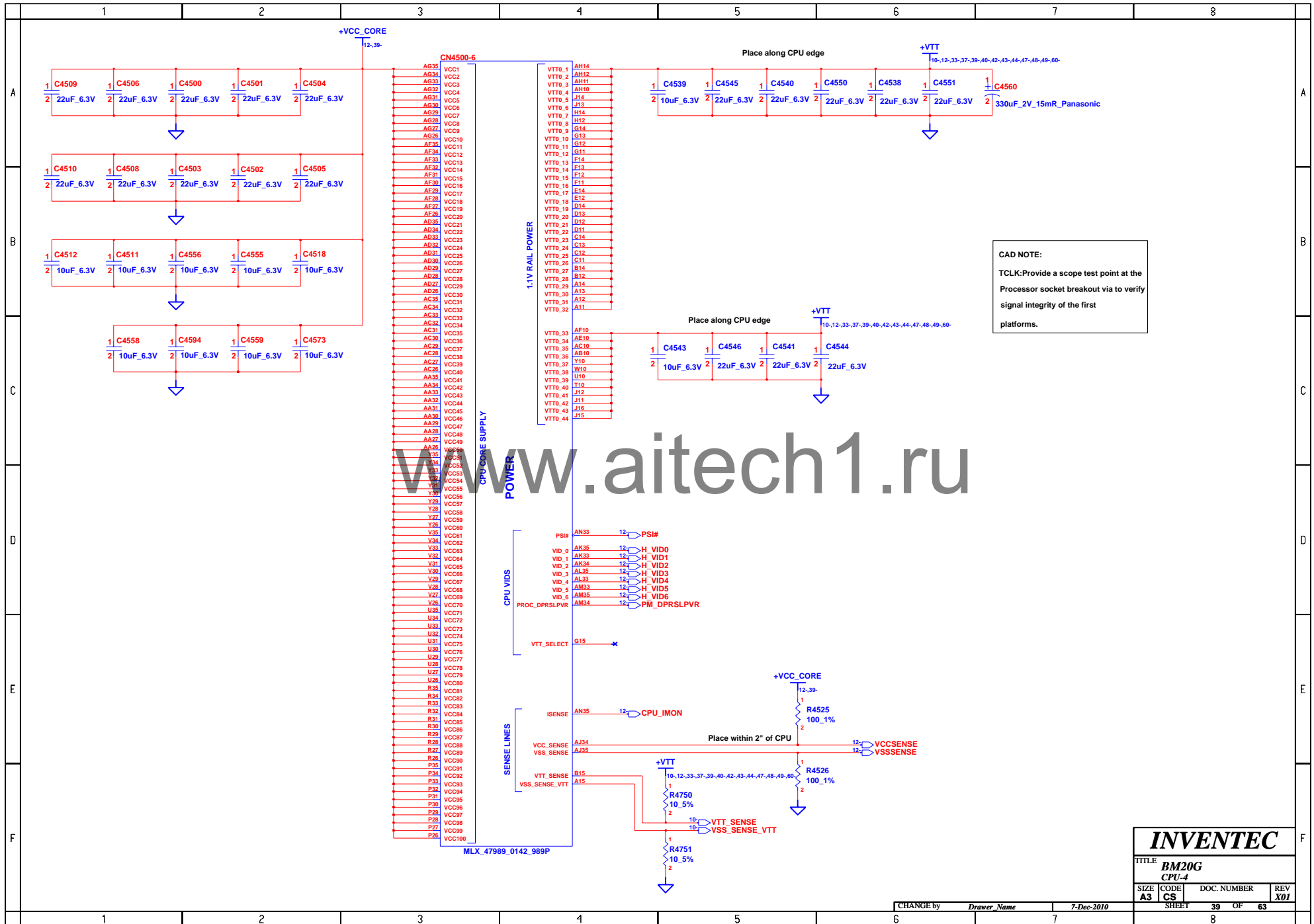
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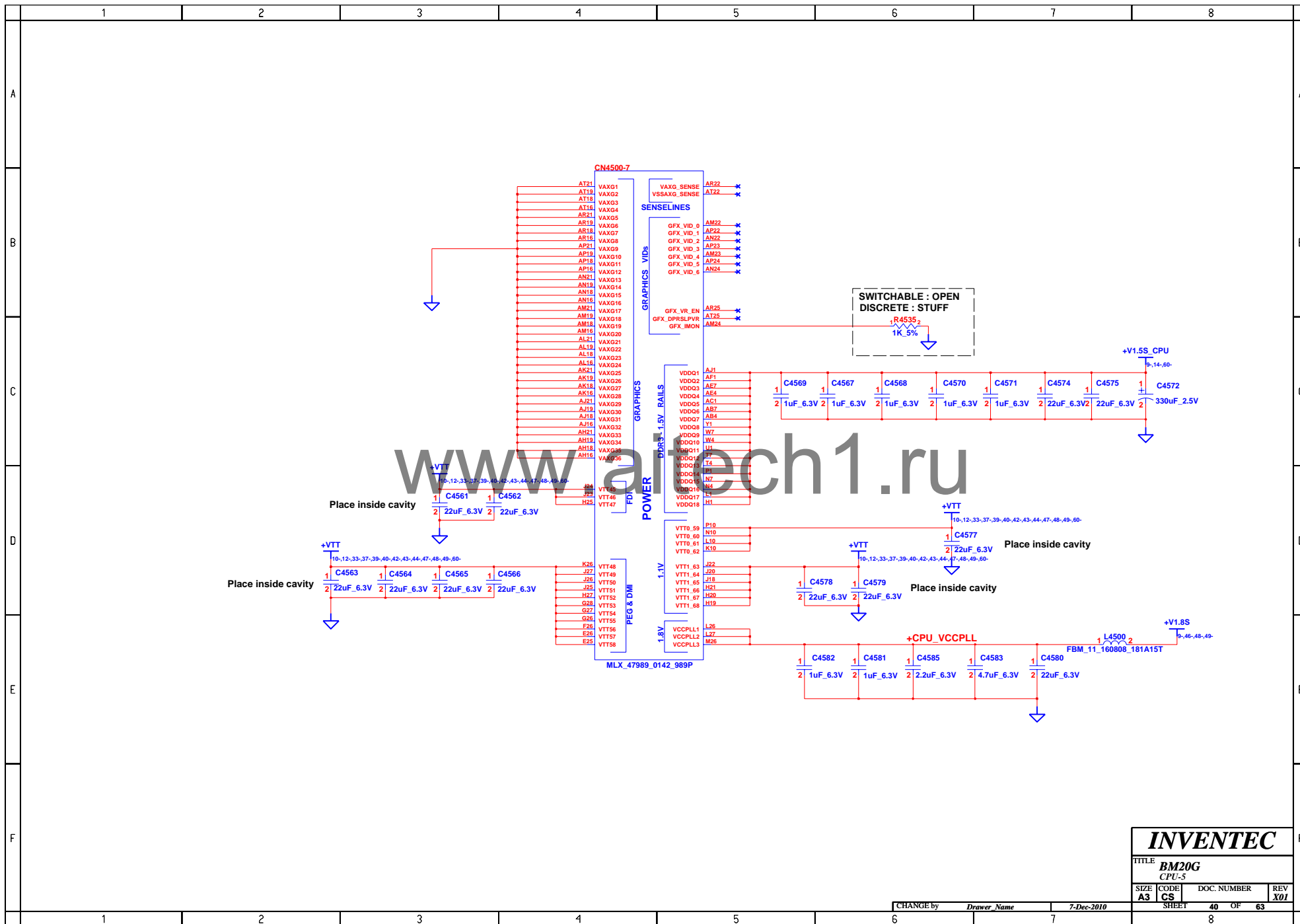
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BM20G
CPU-3

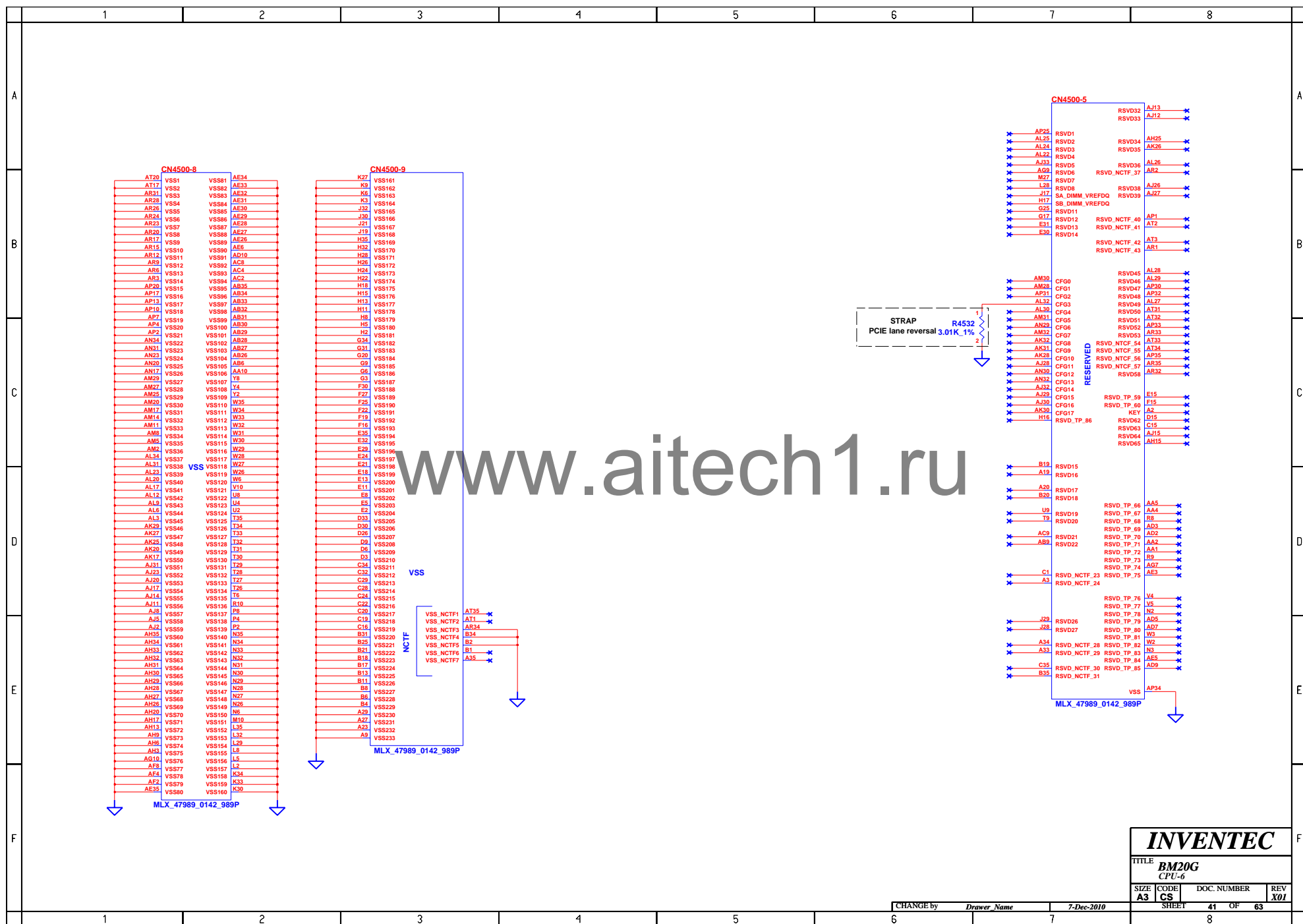
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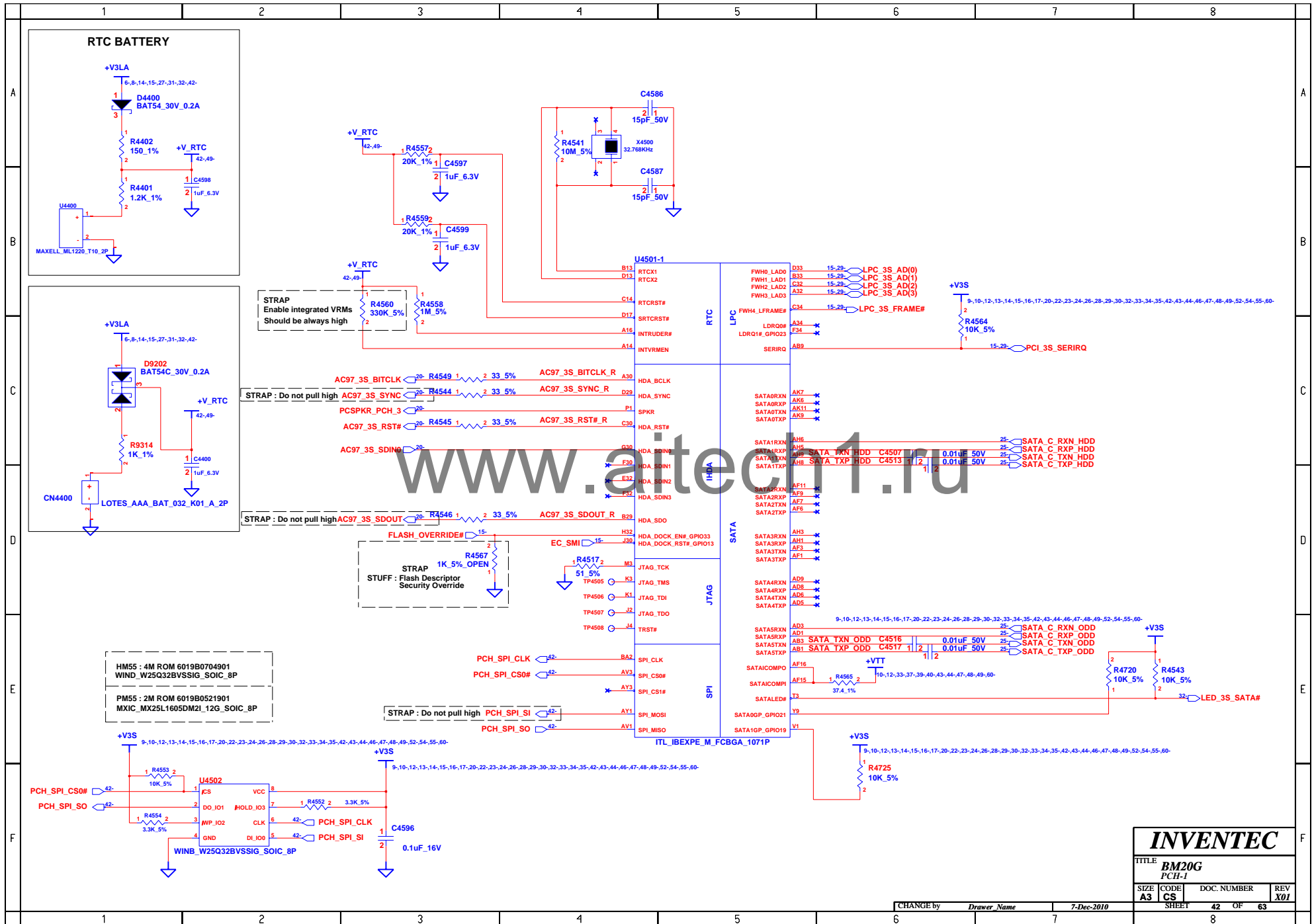
CHANGE by Drawer Name 7-Dec-2010

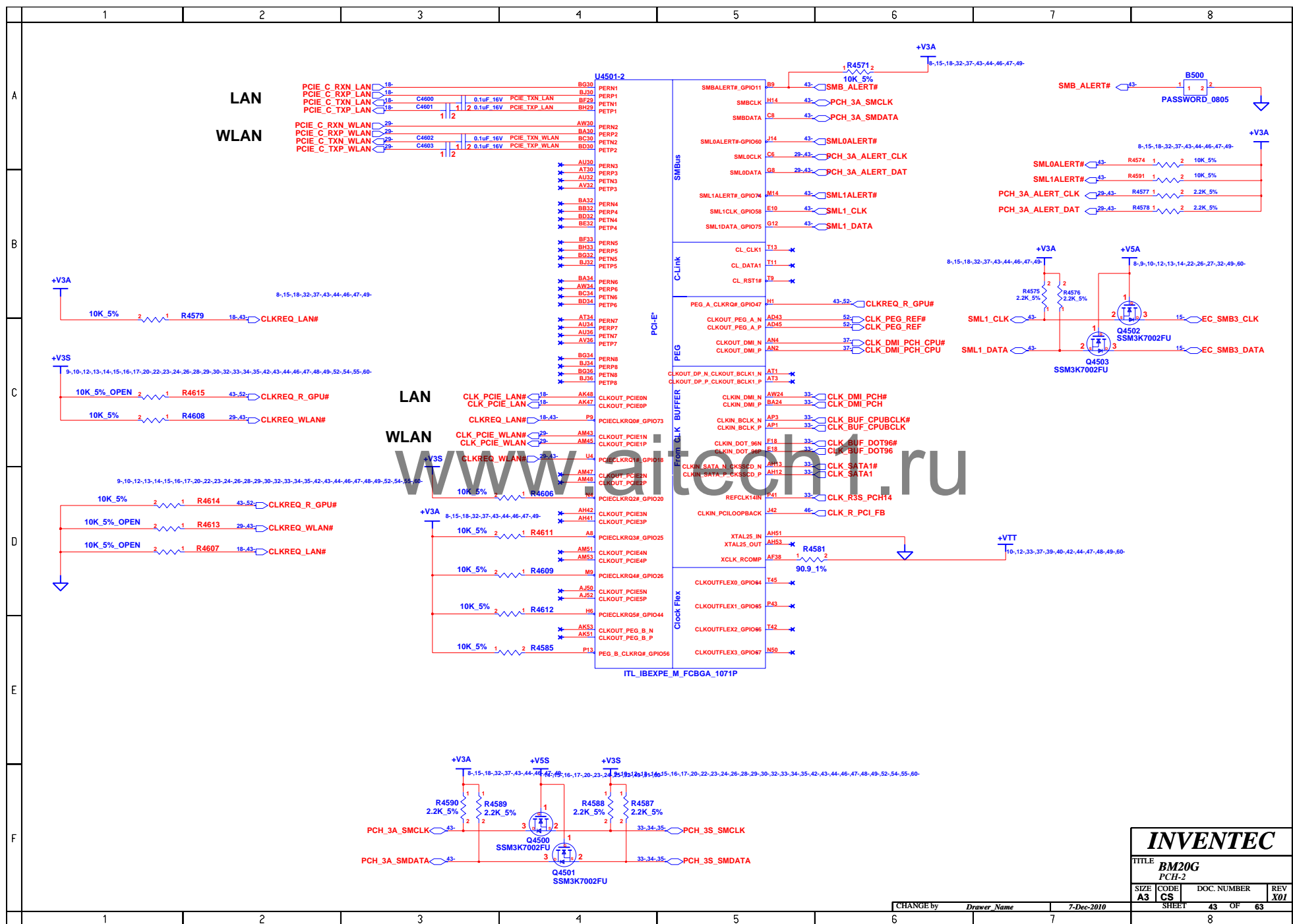
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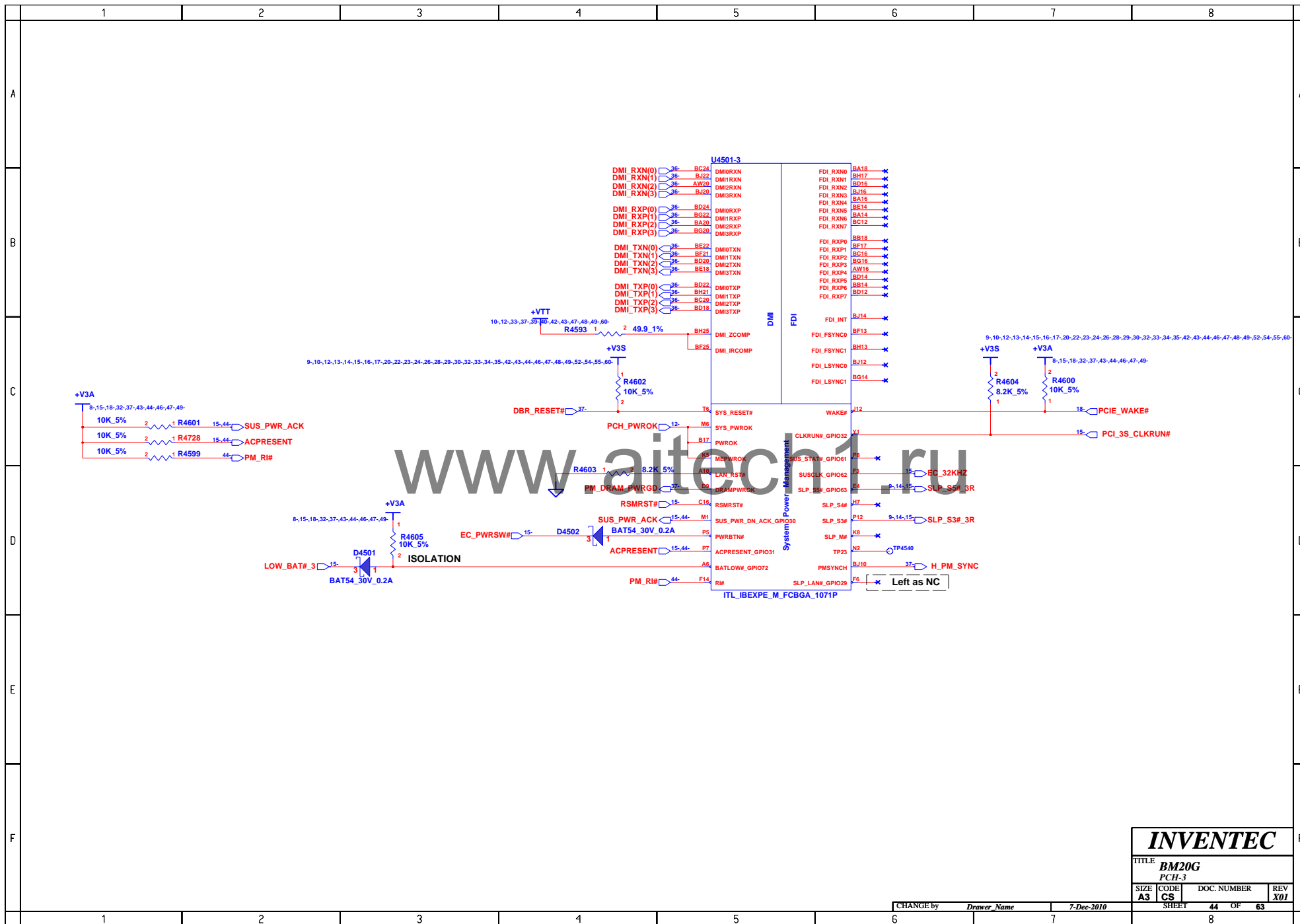


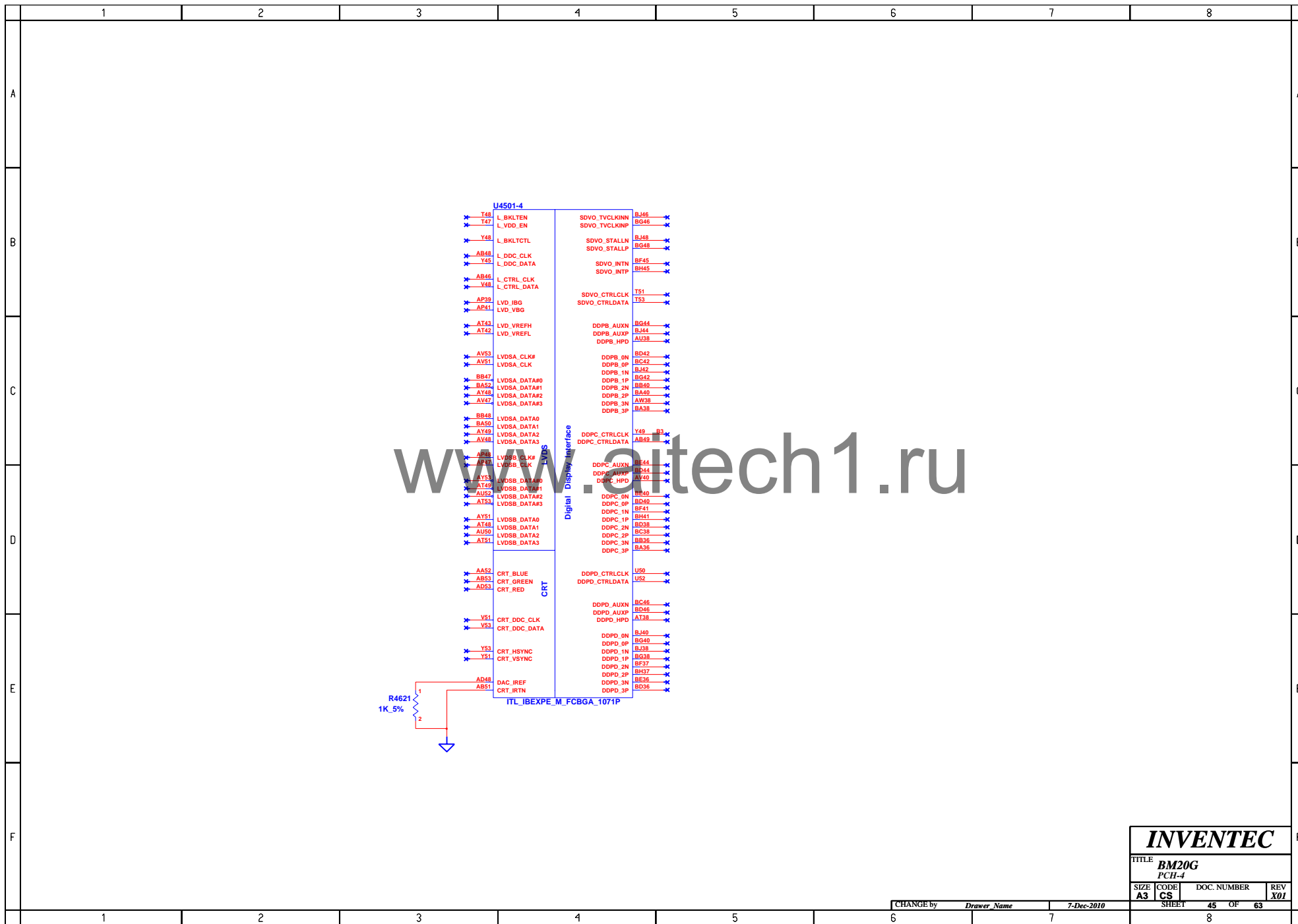


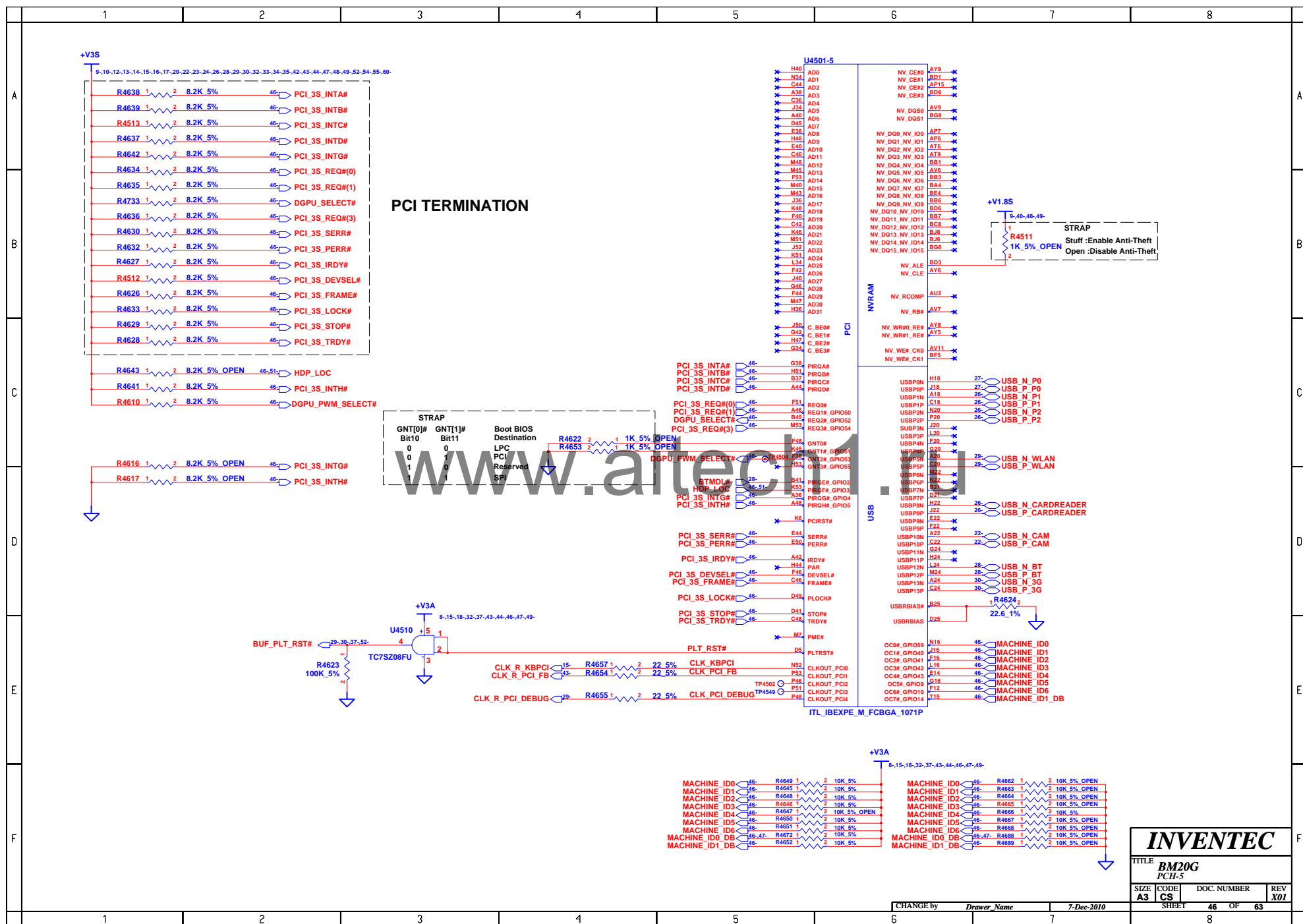


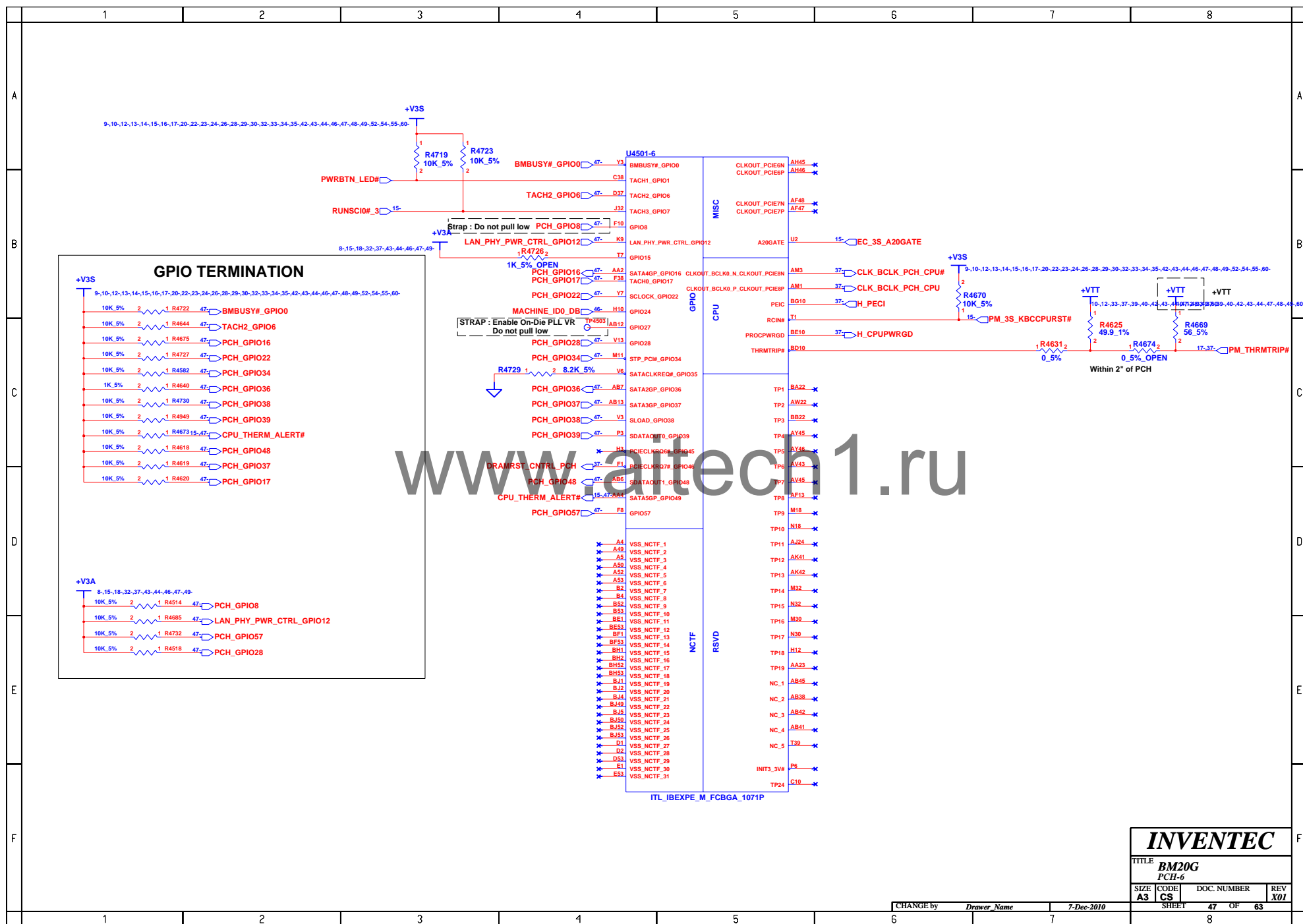


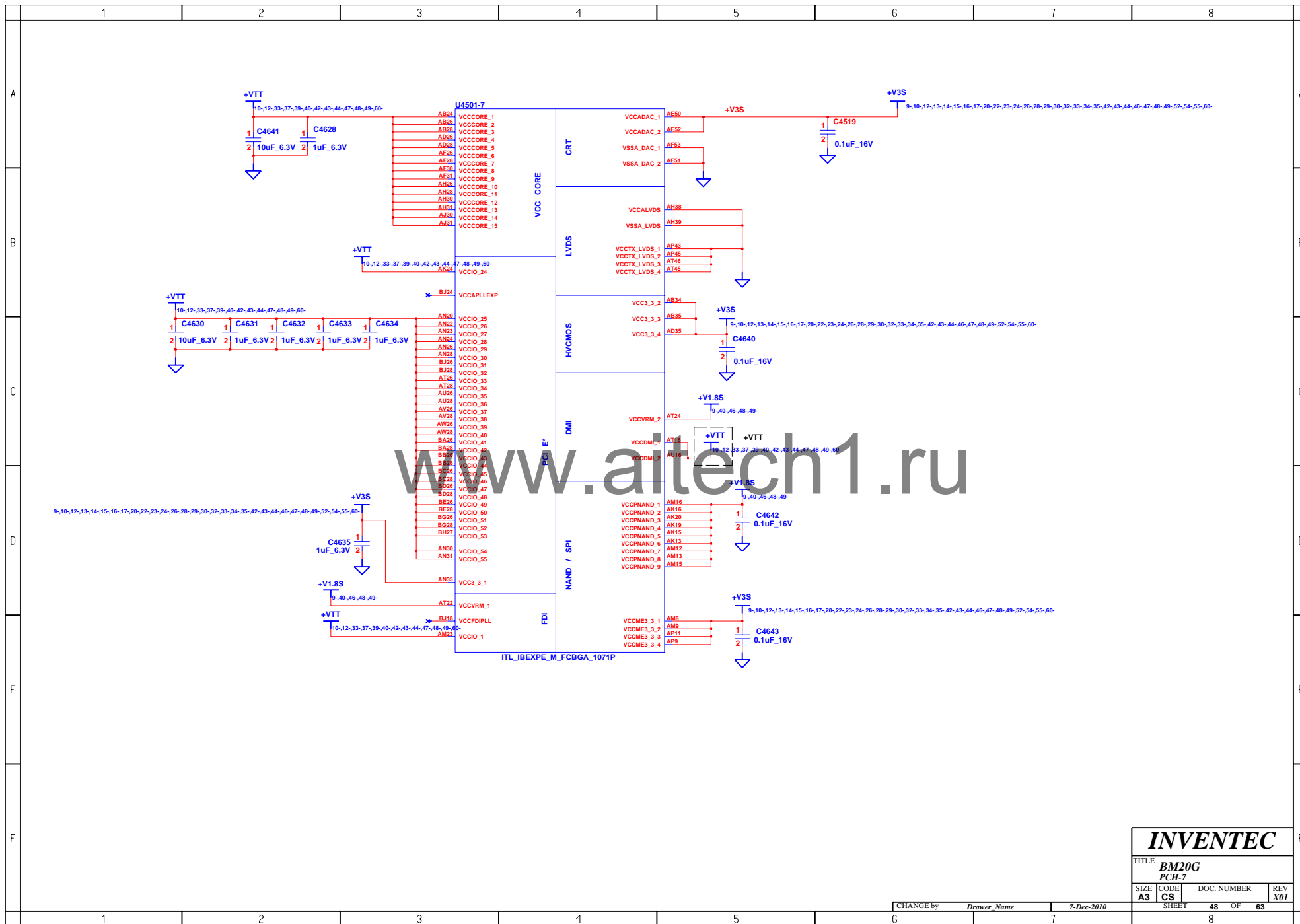












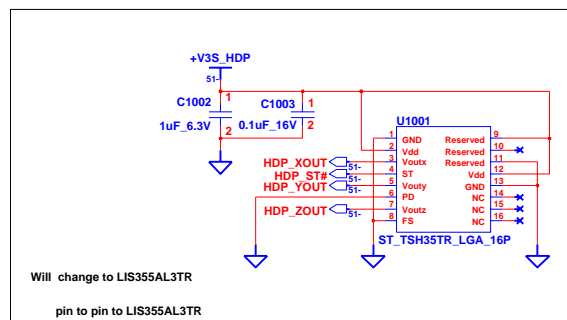
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TITLE
BM20G
PCH-7

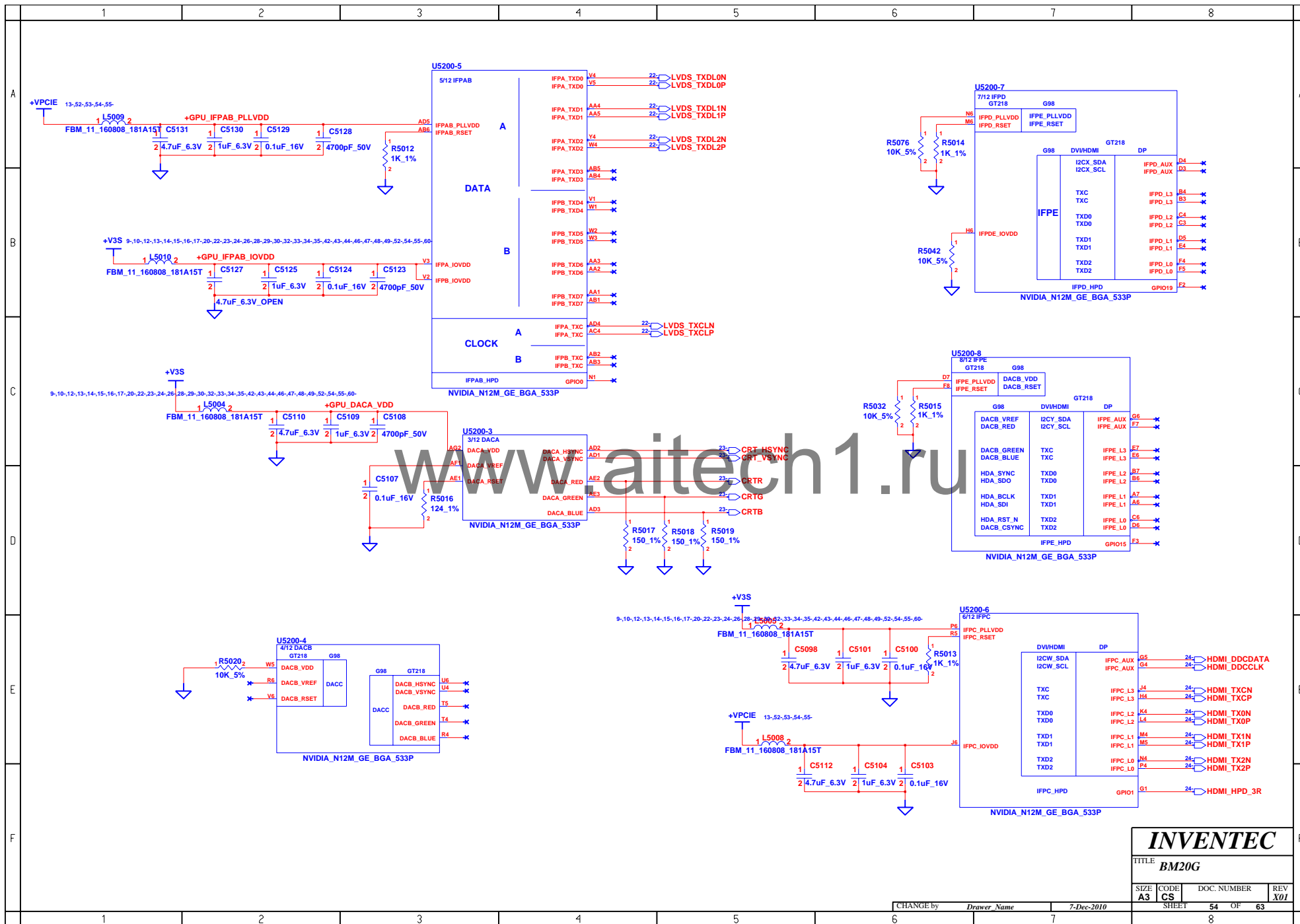
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CHANGE by *Drawer Name* 7-Dec-2010

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TITLE			
<i>BM20G</i> <i>3D SENSOR</i>			
SIZE	CODE	DOC. NUMBER	REV
A3	CS		X01



INVENTEC

TITLE
BM20G

SIZE	CODE	DOC. NUMBER	REV
A3	CS	SHEET	X01

CHANGE by *Drawer Name* 7-Dec-2010

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8

	1	2	3	4	5	6	7	8	
A	<div>BLANK</div> <div>www.aitech1.ru</div>								A
B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	

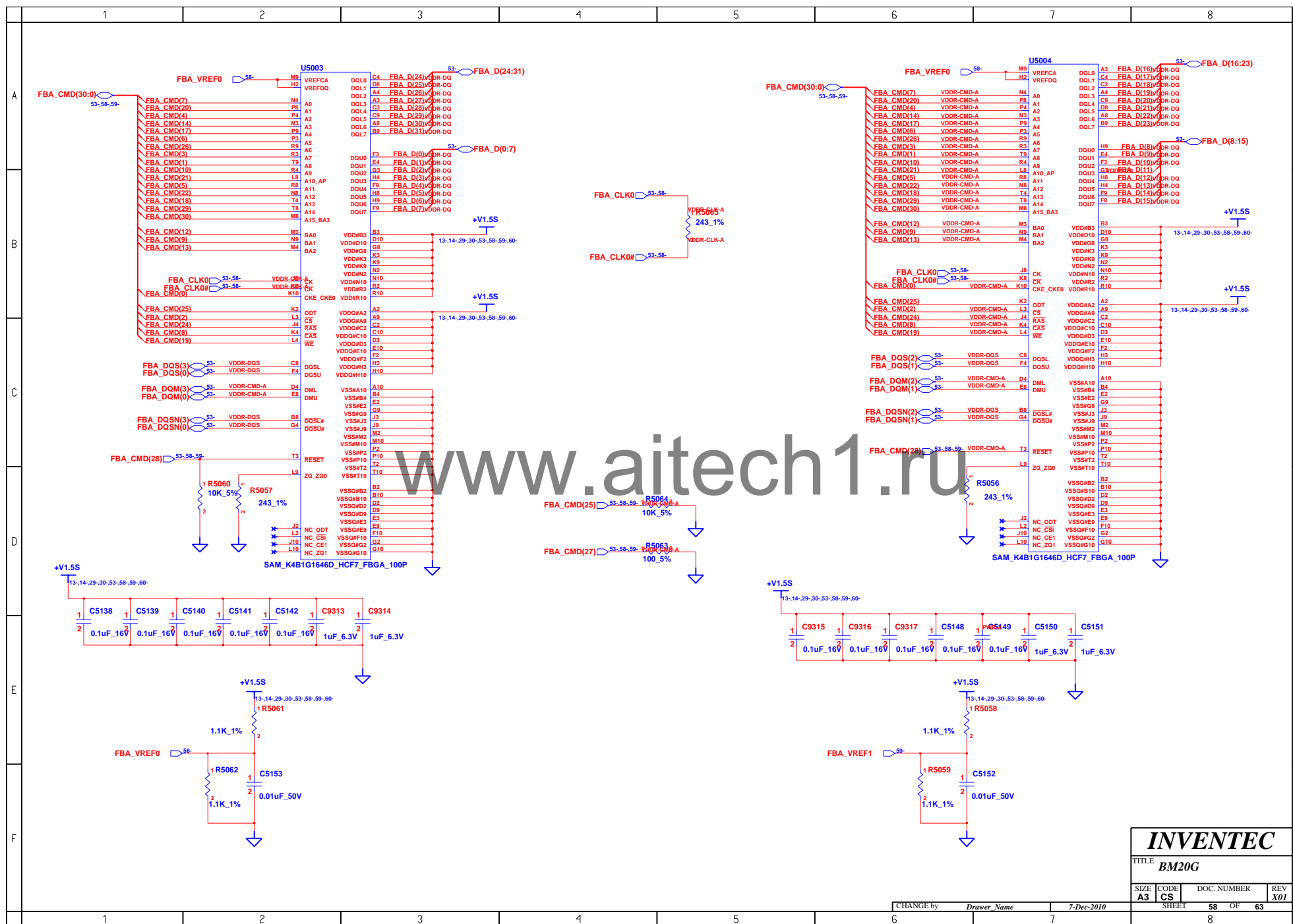
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SIZE A3	CODE CS	DOC. NUMBER	REV X01
CHANGE by Drawer Name		7-Dec-2010	
SHEET 56		OF 63	

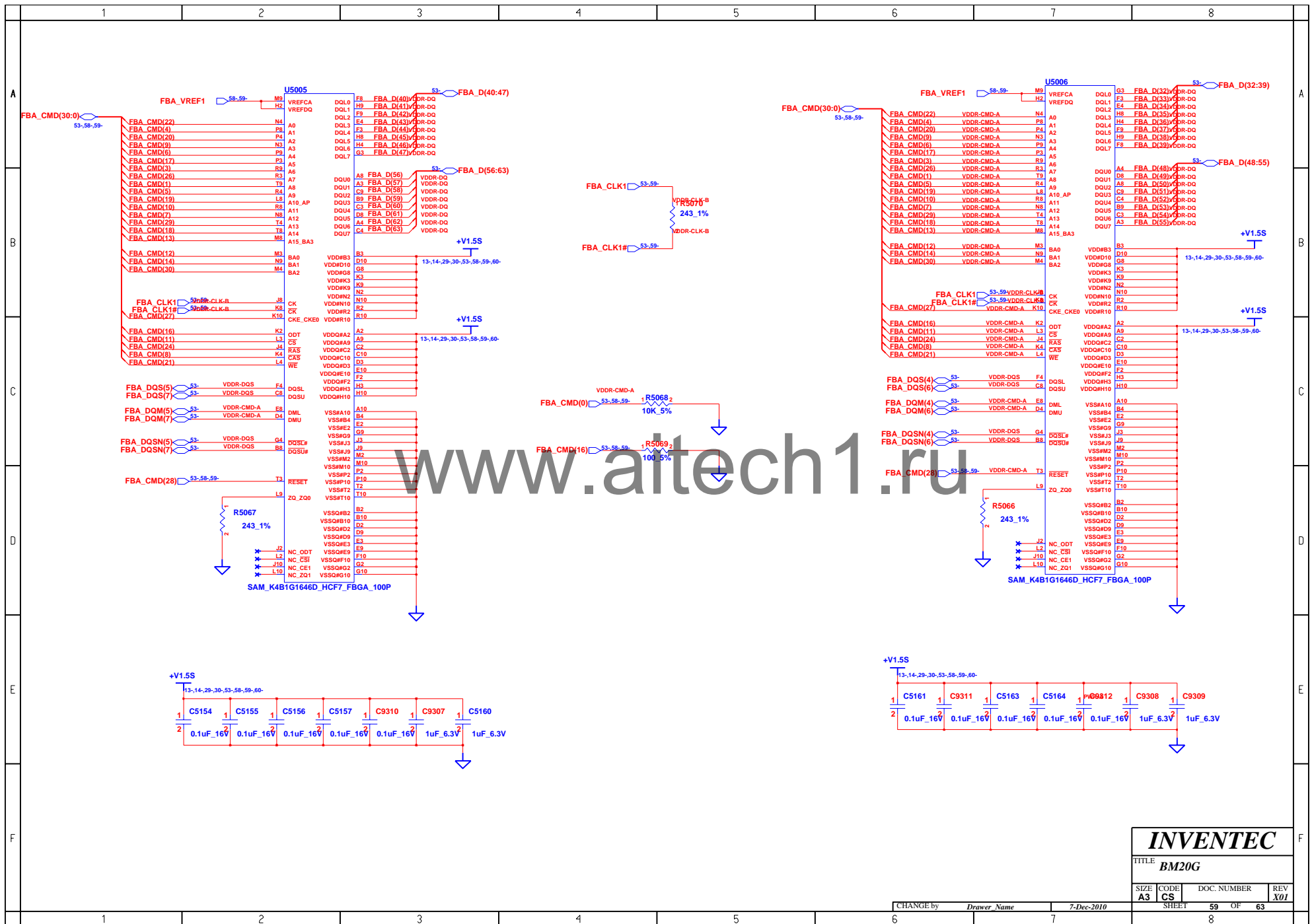
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A									A
B									B
C									C
D									D
E									E
F									F
						CHANGE by <i>Drawer Name</i>		7-Dec-2010	
						6	7	8	

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INVENTEC			
TITLE BM20G			
SIZE A3	CODE CS	DOC. NUMBER	REV X01
SHEET		57	OF 63





INVENTEC

TITLE
BM20G

SIZE	CODE	DOC. NUMBER	REV
A3	CS	59 OF 63	X01

CHANGE by *Drawer Name* 7-Dec-2010

SHEET 59 OF 63

[illegible]

INVENTEC

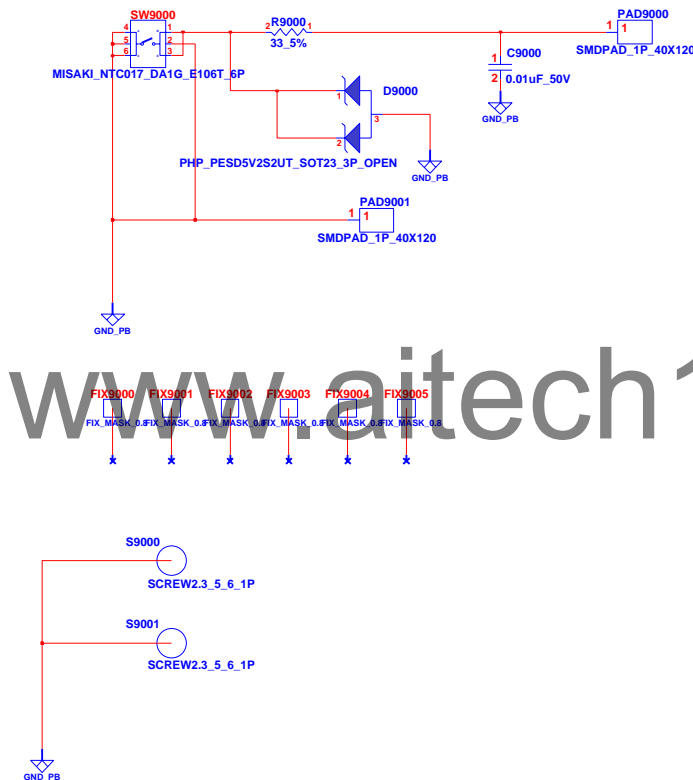
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SIZE A3	CODE CS	DOC. NUMBER	REV <i>X01</i>
SHEET 60 OF 63			

CHANGE by	<i>Drawer Name</i>	7-Dec-2010
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8

TOUCHPAD SWITCH BOARD



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INVENTEC

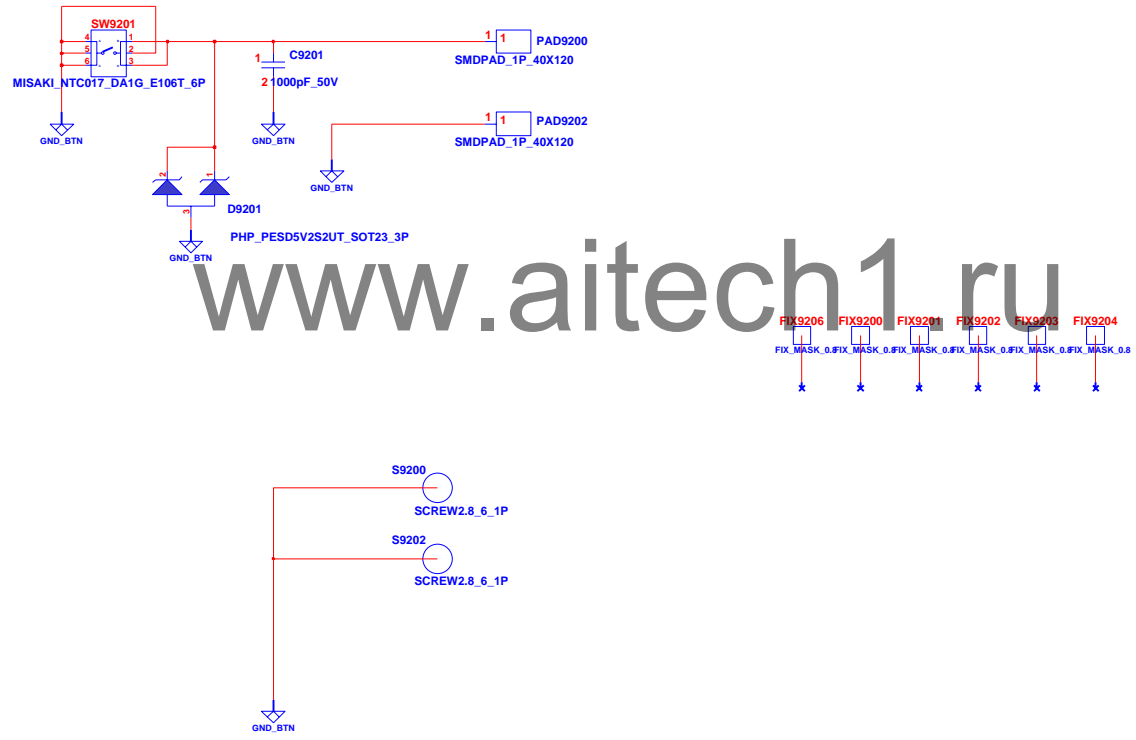
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BM20G
Touch board

SIZE A3	CODE CS	DOC. NUMBER	REV X01
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CHANGE by *Drawer Name* 7-Dec-2010

SHEET 61 OF 63

POWER BOARD



INVENTEC

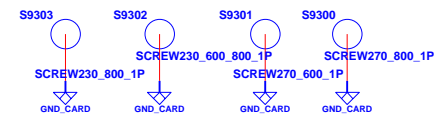
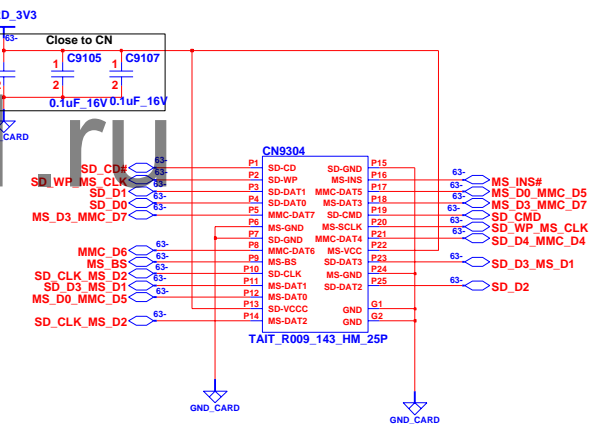
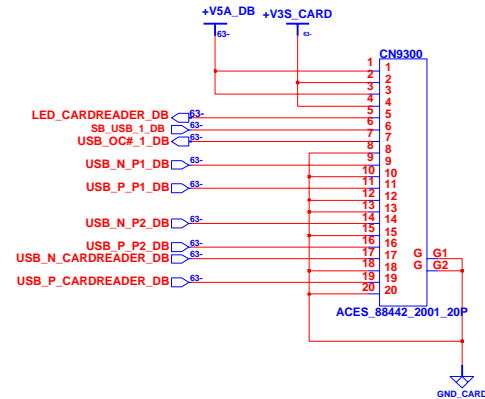
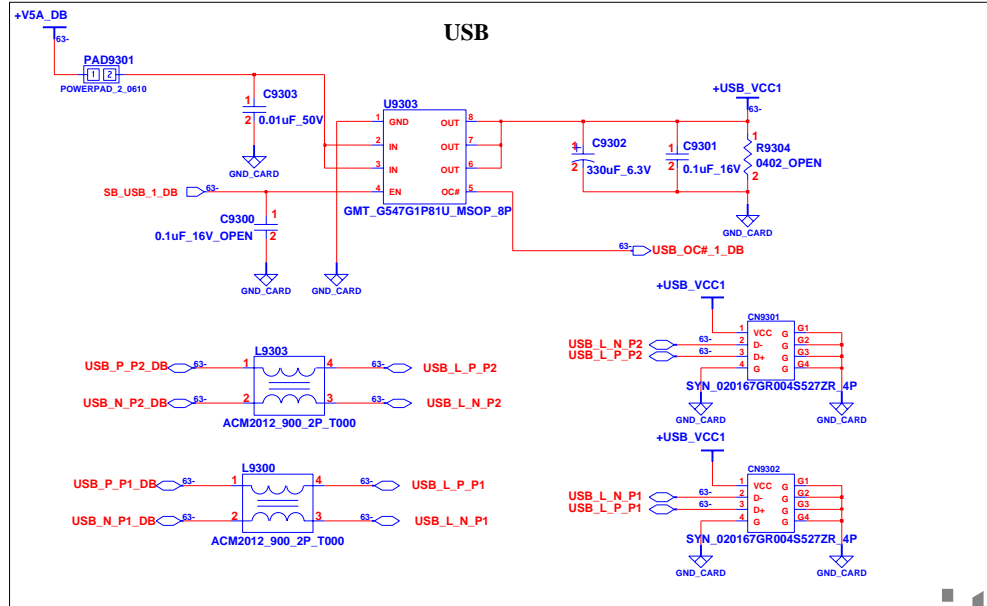
TITLE
BM20G
Power board

SIZE A3	CODE CS	DOC. NUMBER	REV X01
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CHANGE by *Drawer Name* 7-Dec-2010

SHEET 62 OF 63

CARD READER/USB BOARD



INVENTEC

TITLE
BM20G
USB/Card Reader board

SIZE CODE CS DOC. NUMBER REV X01

CHANGE by Drawer Name 7-Dec-2010

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