

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

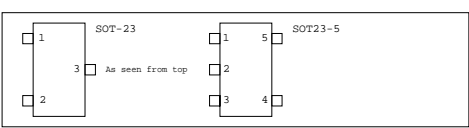
Voltage Rails

POWER PLANE	VOLTAGE	ACTIVE IN	DESCRIPTION
PWR_SRC	19V	S0,(S3-S5)	
+5VALW	5V	S0,(S3-S5)	
+5VRUN	5V	S0	
+5VSUS	5V	S0	
+3VALW	3.3V	S0,(S3-S5)	
+3VSUS	3.3V	S0,(S3-S5)	LAN
+3VRUN	3.3V	S0	
+1_5VDIMM	1.5V	S0,S3	DDRIII core
+1_5VRUN	1.5V	S0	
VTT	1.05V	S0	PCH
+0_75VRUN	0.75V	S0	DDRIII command & control pull up.
+VCC_CORE	1.05V-1.1V	S0	CPU core rail
+VCC_GFXCORE	1.1V	S0	Graphics core rail ( Dual Core only )

Net Naming Conventions

<b>Suffix</b>
# = Active Low Signal
<b>Prefix</b>
H = Host
M = DDR Memory
TP = Test Point (does not connect anywhere else)

PCB Footprints




AC Mode

Power States	SLP_S3#	SLP_S4#	SLP_S5#	SLP_LAN#	+V*ALWAYS	+V*SUS	+V*RUN	CLK
S0 (Full on)	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM)	LOW	HIGH	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S5 (Soft Off)	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF

Battery Mode

Power States	SLP_S3#	SLP_S4#	SLP_S5#	SLP_LAN#	+V*ALWAYS	+V*SUS	+V*RUN	CLK
S0 (Full on)	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM)	LOW	HIGH	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	HIGH	ON	OFF	OFF	OFF
S5 (Soft Off)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF

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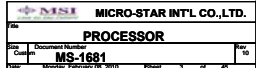
Title			PLATFORM		
Size	Custom	Document Number	MS-1681		
Date	Monday, December 14, 2009		Sheet	2	of 45
				Rev	10

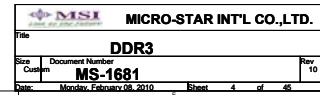
The schematic diagram illustrates the I/O controller circuit. Two specific sections are highlighted with red boxes and numbered 5 and 6.

**Section 5:** This section shows a voltage divider circuit. It includes a 1.5V input, a 10k resistor (R324), and a 10k resistor (R325) connected to ground. The output of the divider is connected to a buffer circuit. The buffer circuit consists of a 10k resistor (R327), a 10k resistor (R328), and a 10k resistor (R329) connected to ground. The output of the buffer is connected to a 1.5V input.

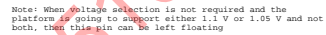
**Section 6:** This section shows a voltage divider circuit. It includes a 1.5V input, a 10k resistor (R316), and a 10k resistor (R317) connected to ground. The output of the divider is connected to a buffer circuit. The buffer circuit consists of a 10k resistor (R318), a 10k resistor (R319), and a 10k resistor (R320) connected to ground. The output of the buffer is connected to a 1.5V input.

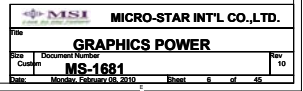
The diagram also shows other components like capacitors (C395, C396, C397, C398, C399, C400, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415, C416, C417, C418, C419, C420, C421, C422, C423, C424, C425, C426, C427, C428, C429, C430, C431, C432, C433, C434, C435, C436, C437, C438, C439, C440, C441, C442, C443, C444, C445, C446, C447, C448, C449, C450, C451, C452, C453, C454, C455, C456, C457, C458, C459, C460, C461, C462, C463, C464, C465, C466, C467, C468, C469, C470, C471, C472, C473, C474, C475, C476, C477, C478, C479, C480, C481, C482, C483, C484, C485, C486, C487, C488, C489, C490, C491, C492, C493, C494, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C794, C795, C796, C797, C798, C799, C800, C801, C802, C803, C804, C805, C806, C807, C808, C809, C810, C811, C812, C813, C814, C815, C816, C817, C818, C819, C820, C821, C822, C823, C824, C825, C826, C827, C828, C829, C830, C831, C832, C833, C834, C835, C836, C837, C838, C839, C840, C841, C842, C843, C844, C845, C846, C847, C848, C849, C850, C851, C852, C853, C854, C855, C856, C857, C858, C859, C860, C861, C862, C863, C864, C865, C866, C867, C868, C869, C870, C871, C872, C873, C874, C875, C876, C877, C878, C879, C880, C881, C882, C883, C884, C885, C886, C887, C888, C889, C890, C891, C892, C893, C894, C895, C896, C897, C898, C899, C900, C901, C902, C903, C904, C905, C906, C907, C908, C909, C910, C911, C912, C913, C914, C915, C916, C917, C918, C919, C920, C921, C922, C923, C924, C925, C926, C927, C928, C929, C930, C931, C932, C933, C934, C935, C936, C937, C938, C939, C940, C941, C942, C943, C944, C945, C946, C947, C948, C949, C950, C951, C952, C953, C954, C955, C956, C957, C958, C959, C960, C961, C962, C963, C964, C965, C966, C967, C968, C969, C970, C971, C972, C973, C974, C975, C976, C977, C978, C979, C980, C981, C982, C983, C984, C985, C986, C987, C988, C989, C990, C991, C992, C993, C994, C995, C996, C997, C998, C999, C1000, C1001, C1002, C1003, C1004, C1005, C1006, C1007, C1008, C1009, C1010, C1011, C1012, C1013, C1014, C1015, C1016, C1017, C1018, C1019, C1020, C1021, C1022, C1023, C1024, C1025, C1026, C1027, C1028, C1029, C1030, C1031, C1032, C1033, C1034, C1035, C1036, C1037, C1038, C1039, C1040, C1041, C1042, C1043, C1044, C1045, C1046, C1047, C1048, C1049, C1050, C1051, C1052, C1053, C1054, C1055, C1056, C1057, C1058, C1059, C1060, C1061, C1062, C1063, C1064, C1065, C1066, C1067, C1068, C1069, C1070, C1071, C1072, C1073, C1074, C1075, C1076, C1077, C1078, C1079, C1080, C1081, C1082, C1083, C1084, C1085, C1086, C1087, C1088, C1089, C1090, C1091, C1092, C1093, C1094, C1095, C1096, C1097, C1098, C1099, C1100, C1101, C1102, C1103, C1104, C1105, C1106, C1107, C1108, C1109, C1110, C1111, C1112, C1113, C1114, C1115, C1



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MSI CONFIDENTIAL 60013789 周小強 RD(C)20170516007 FOR RMA維修(劉松林) ONLY

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IC:AUB\_CFD\_rPGA,R0P9

NCTF

PROCESSOR GND

MS-1681

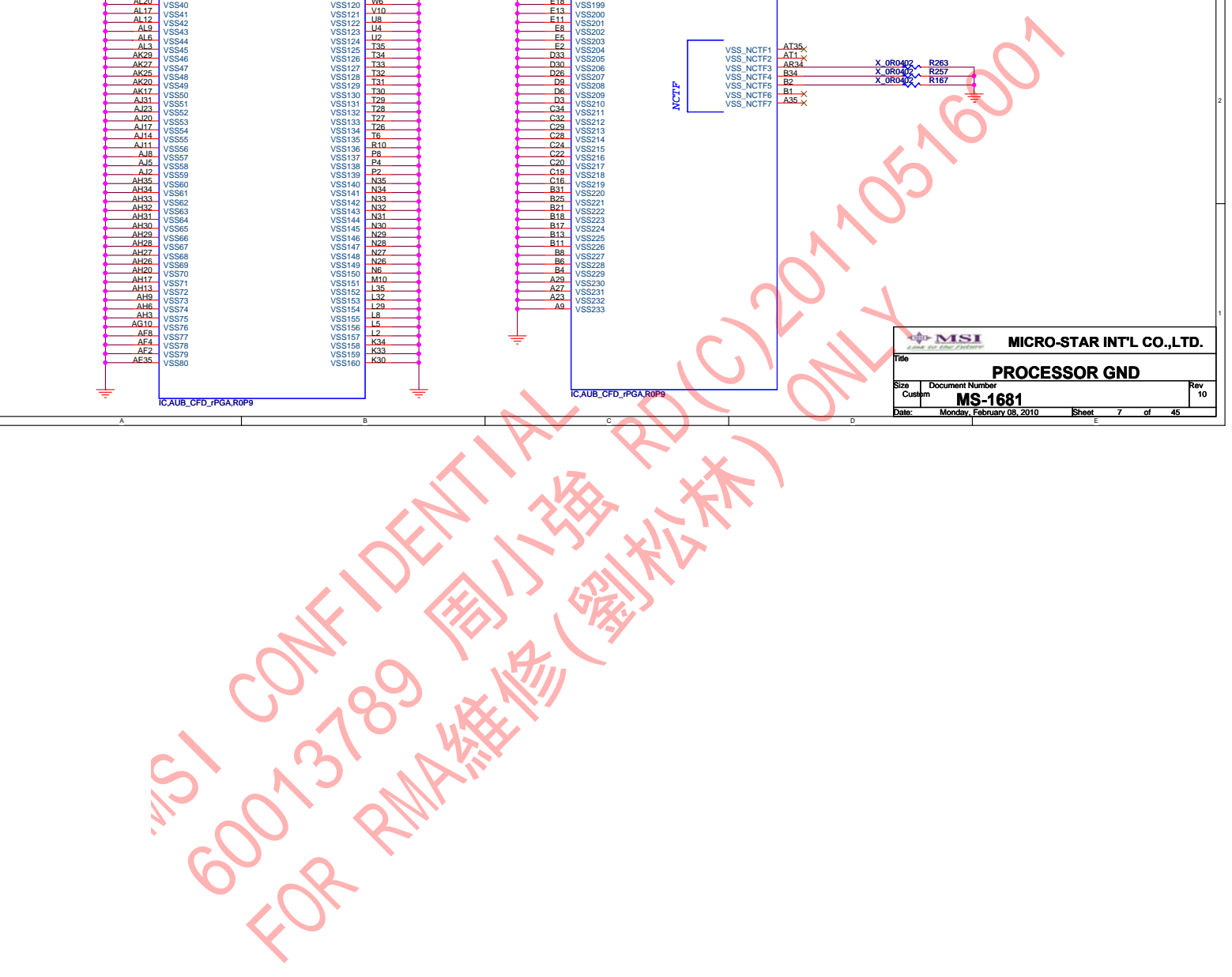
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Date: Monday, February 08, 2010

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Rev 10



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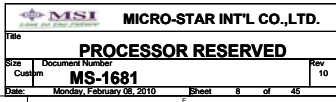
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Monday, February 08, 2010

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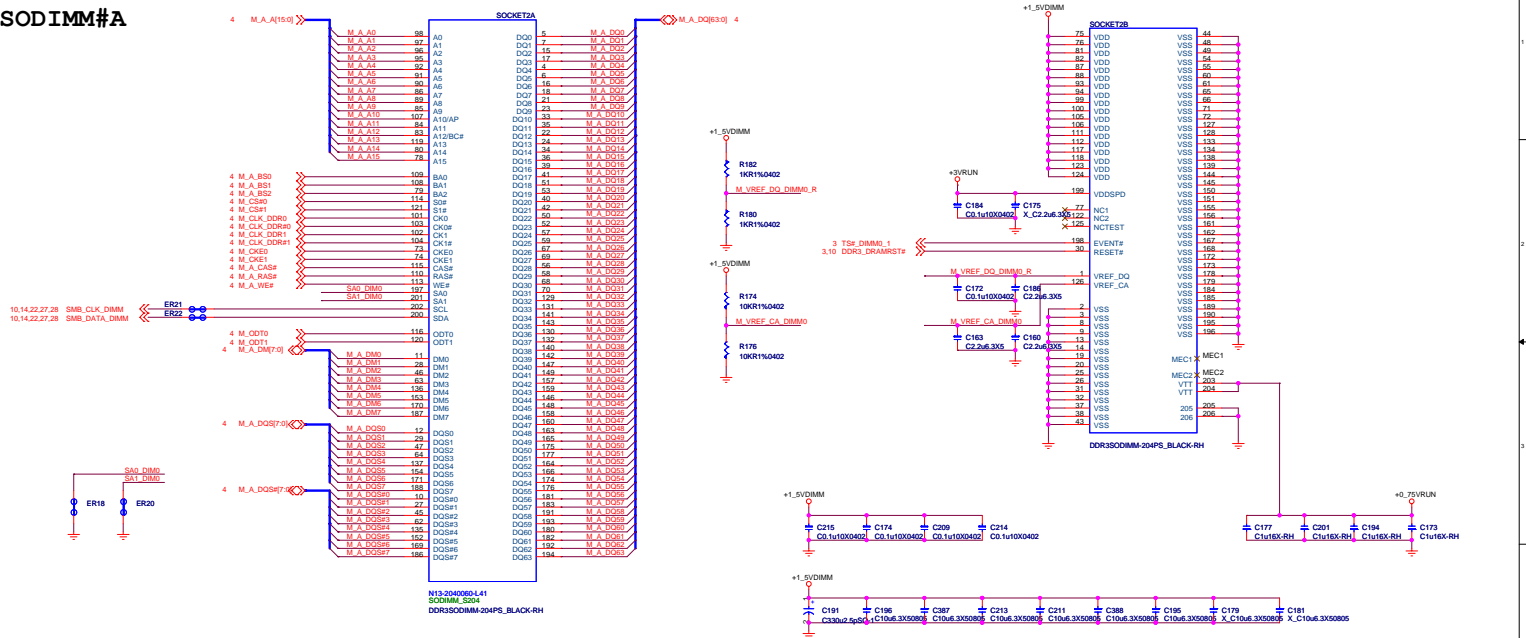
Rev 10

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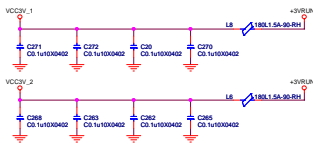


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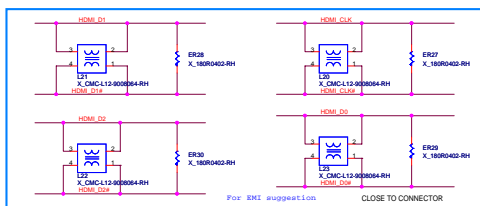
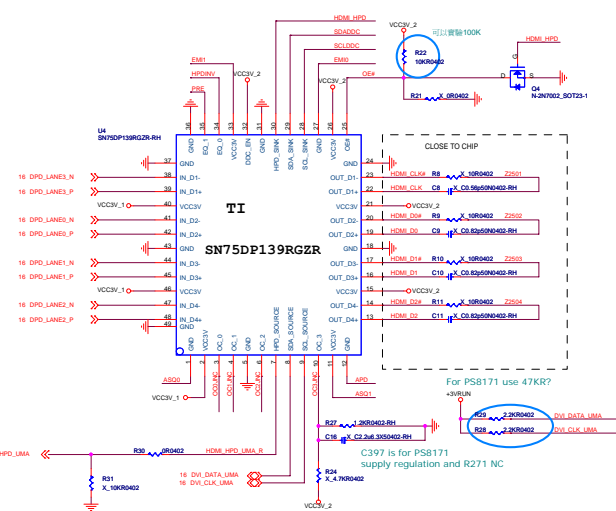
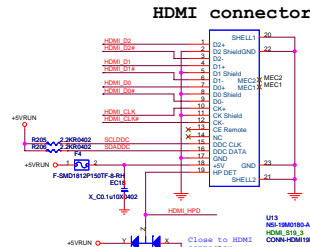




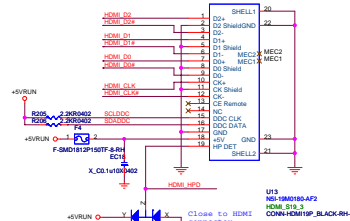
# HDMI Switch



	HP_DET	OE#
UNPLUG	0	1 (HIGH Z)
PLUG	1	0 (ACTIVE)

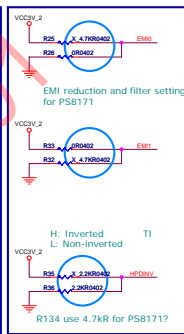
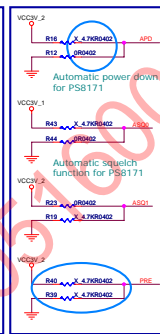
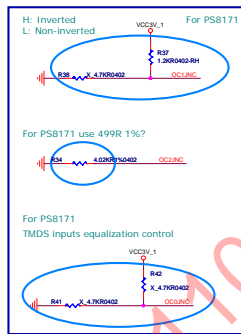


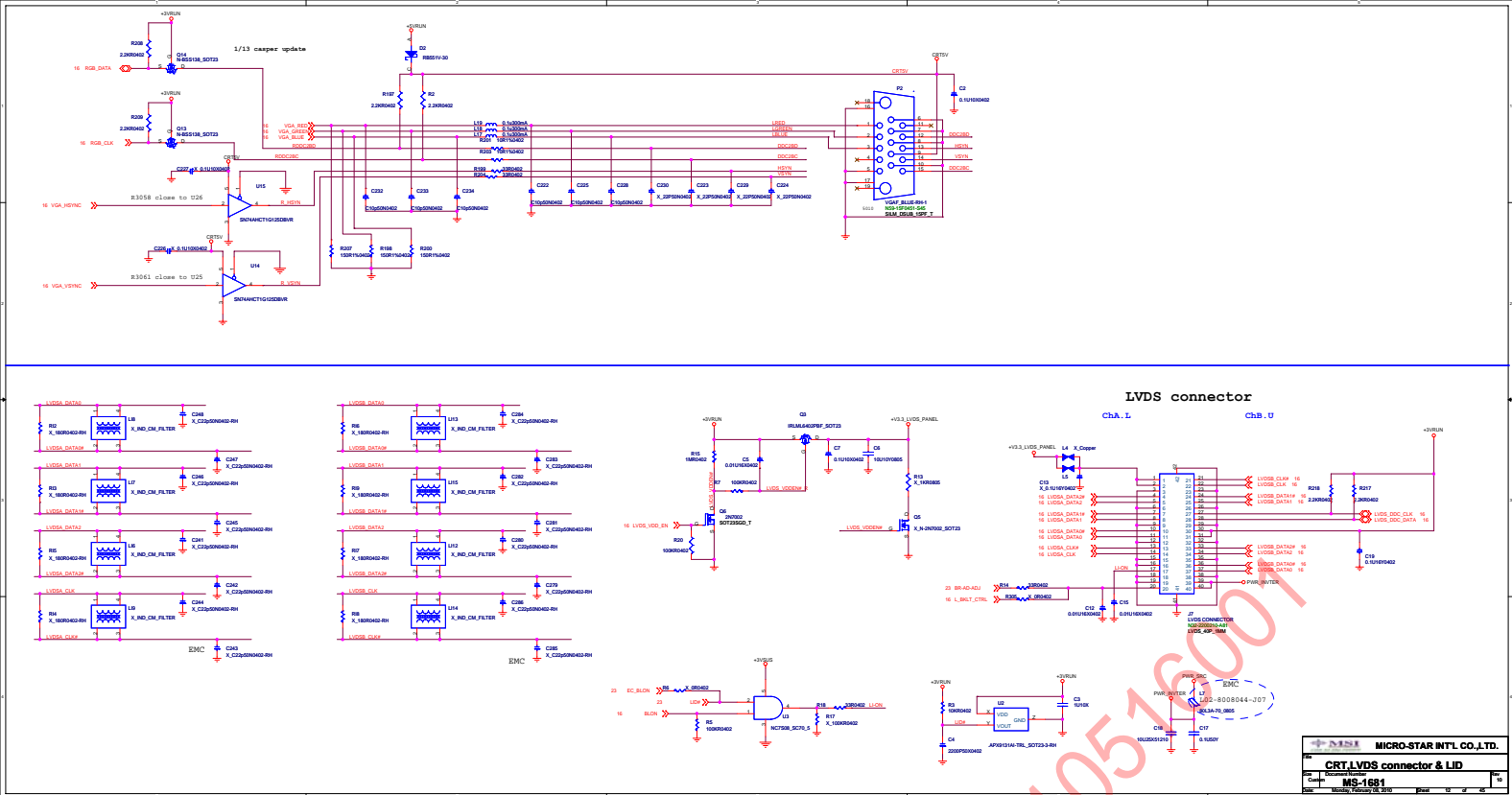
## HDMI connector



SN75DP139	PS8171		Pin no.
Floating	TMS0 inputs equalization control (Internal pull-down=500KΩ) PEQ = LOW: Mid level EQ (Default) PEQ = HIGH: High level EQ PEQ = MID: Low level EQ		Pin 3
High	Internal pull-down=500KΩ PIO = LOW: HPD = HPD_SINK @ 3.3V CMOS output PIO = High: HPD = HPD_SINK (inverted HPD) @ 8.9V		Pin 4
GND	[AS01,AS00] = HL: No automatic squelch (Internal pull-down=500KΩ) LL: Automatic squelch enable, Level = 120mVpp, default timer LH: Automatic squelch enable, Level = 150mVpp, default timer MH: Automatic squelch enable, Level = 80mVpp, default timer ML: Automatic squelch enable, Level = 120mVpp, extended timer MM: Automatic squelch enable, Level = 150mVpp, extended timer LM: Automatic squelch enable, Level = 80mVpp, extended timer HM: Reserved MM: Reserved		Pin 1 Pin 11
4.65K to GND	499K to GND		Pin 6
GND	Automatic power down management (Internal pull-up=500KΩ) APD = LOW: Automatic power down disable APD = HIGH: Automatic power down enable APD = MID: Reserved		Pin 12
1.2K to GND	2.2K to GND		Pin 10
GND	EMI reduction and filter setting. EMI1: Internal pull-up=500KΩ, EMI0: Internal pull-down=500KΩ [EMI1,EMI0] = HL: No EMI reduction EMI0 = HIGH: Reduced risefall time MID: Reduced risefall time, 2nd EMI1 = LOW: EMI filter setting 1 MID: Reserved		Pin 27 Pin 33
Note2	DDC Active Buffer enable and setting (Internal pull-down=500KΩ) DDCBUF = LOW: No DDC active buffer, passive DDC level shifting DDCBUF = HIGH: Active DDC buffer enable, setting 1 DDCBUF = MID: Active DDC buffer enable, setting 2		Pin 34
Floating	TMS0 output driver pre-emphasis level setting (Internal pull-down=500KΩ) PRE = LOW: No pre-emphasis PRE = HIGH: Low level pre-emphasis is added PRE = MID: High level pre-emphasis is added		Pin 35

Note2: High is HPD logic inverted, Low is HPD logic non-inverted





SIC8\_SST\_S2A

ct to Vcc3\_3 with 8.2-kΩ weak pull-up resistor  
floating, no pull-down required.

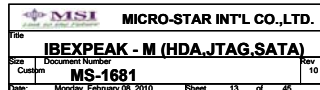
LAB1

G51-LA01676-A09

X_100R1%0402_R291	PCH_JTAG_TMS
X_100R1%0402_R290	PCH_JTAG_TDI
X_100R1%0402_R271	PCH_JTAG_TDO
X_100R1%0402_R288	PCH_JTAG_RST#

2009/03/17 修改 for PCH( ES2)

2009/02/08 修改 for PCH( ES2)



PCB layout for the CLKOUT\_Flex block, showing connections to various pins and components. The layout includes a table for pin connections and a schematic for the CLKOUT\_Flex block.

Pin	Signal	Component
ER24	CLK_PCH_SRC2_N	AM47
ER23	CLK_PCH_SRC2_P	AM48
ER23	CLK_NEWCARD_OE#_R	NK
ER5	CLK_PCH_SRC3_N	AM47
ER4	CLK_PCH_SRC3_P	AM48
10KR0402	PCIE_CLK_REQ3#	AB
ER40	CLK_PCH_SRC4_N	AM51
ER41	CLK_PCH_SRC4_P	AM53
10KR0402	PCIE_CLK_REQ4#	M3
ER43	CLK_PCH_SRC1_N	AJ50
ER42	CLK_PCH_SRC1_P	AJ52
ER9	CLK_GLAN_OE#_R	H5
TPJNC40	TP_CLKOUT_PEG_B_N	AK53
TPJNC41	TP_CLKOUT_PEG_B_P	AK53
R306	X_10KR0402	P13

CLKOUT\_Flex

CLKOUT\_PCH2N / GPIO20

CLKOUT\_PCH2P / GPIO20

CLKOUT\_PCH3N / GPIO25

CLKOUT\_PCH3P / GPIO25

CLKOUT\_PCH4N / GPIO26

CLKOUT\_PCH4P / GPIO26

CLKOUT\_PCH5N / GPIO44

CLKOUT\_PCH5P / GPIO44

CLKOUT\_PCH6N / GPIO56

CLKOUT\_PCH6P / GPIO56

CLKOUT\_PCH7N / GPIO56

CLKOUT\_PCH7P / GPIO56

CLKOUT\_PCH8N / GPIO56

CLKOUT\_PCH8P / GPIO56

CLKOUT\_PCH9N / GPIO56

CLKOUT\_PCH9P / GPIO56

CLKOUT\_PCH10N / GPIO56

CLKOUT\_PCH10P / GPIO56

CLKOUT\_PCH11N / GPIO56

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CLKOUT\_PCH75P / GPIO56

CLKOUT\_PCH76N / GPIO56

CLKOUT\_PCH76P / GPIO56

CLKOUT\_PCH77N / GPIO56

CLKOUT\_PCH77P / GPIO56

CLKOUT\_PCH78N / GPIO56

CLKOUT\_PCH78P / GPIO56

CLKOUT\_PCH79N / GPIO56

CLKOUT\_PCH79P / GPIO56

CLKOUT\_PCH80N / GPIO56

CLKOUT\_PCH80P / GPIO56

CLKOUT\_PCH81N / GPIO56

CLKOUT\_PCH81P / GPIO56

CLKOUT\_PCH82N / GPIO56

CLKOUT\_PCH82P / GPIO56

CLKOUT\_PCH83N / GPIO56

CLKOUT\_PCH83P / GPIO56

CLKOUT\_PCH84N / GPIO56

CLKOUT\_PCH84P / GPIO56

CLKOUT\_PCH85N / GPIO56

CLKOUT\_PCH85P / GPIO56

CLKOUT\_PCH86N / GPIO56

CLKOUT\_PCH86P / GPIO56

CLKOUT\_PCH87N / GPIO56

CLKOUT\_PCH87P / GPIO56

CLKOUT\_PCH88N / GPIO56

CLKOUT\_PCH88P / GPIO56

CLKOUT\_PCH89N / GPIO56

CLKOUT\_PCH89P / GPIO56

CLKOUT\_PCH90N / GPIO56

CLKOUT\_PCH90P / GPIO56

CLKOUT\_PCH91N / GPIO56

CLKOUT\_PCH91P / GPIO56

CLKOUT\_PCH92N / GPIO56

CLKOUT\_PCH92P / GPIO56

CLKOUT\_PCH93N / GPIO56

CLKOUT\_PCH93P / GPIO56

CLKOUT\_PCH94N / GPIO56

CLKOUT\_PCH94P / GPIO56

CLKOUT\_PCH95N / GPIO56

CLKOUT\_PCH95P / GPIO56

CLKOUT\_PCH96N / GPIO56

CLKOUT\_PCH96P / GPIO56

CLKOUT\_PCH97N / GPIO56

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CLKOUT\_PCH98N / GPIO56

CLKOUT\_PCH98P / GPIO56

CLKOUT\_PCH99N / GPIO56

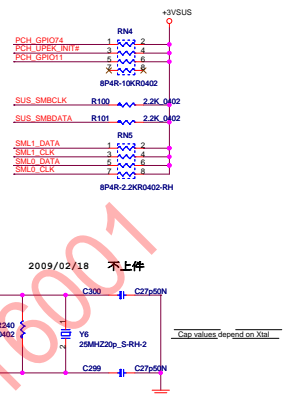
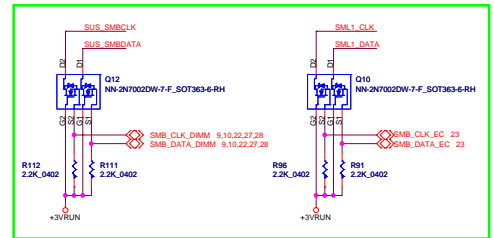
CLKOUT\_PCH99P / GPIO56

CLKOUT\_PCH100N / GPIO56

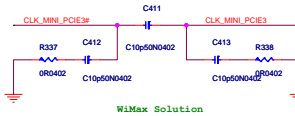
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CLKOUT\_PCH101N / GPIO56

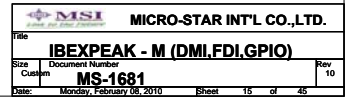
CLKOUT\_PCH101P / GPIO56</



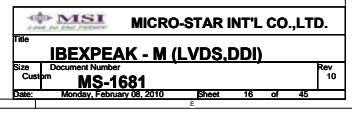
PCIECLKRQ1# / GPIO18 PCIECLKRQ1# / GPIO20	RUN Well
PCIECLKRQ0# and PCIECLKRQ3# ~ PCIECLKRQ7# PEG_A_CLKRQ# PEG_B_CLKRQ#	SUS Well



 <b>MICRO-STAR INT'L CO.,LTD.</b>	
Title <b>IBEXPEAK - M (PCI-E,SMBUS,CLK)</b>	
Size <b>Custom</b>	Document Number <b>MS-1681</b>
Date: <b>Monday, February 08, 2010</b>	Sheet <b>14</b> of <b>45</b>



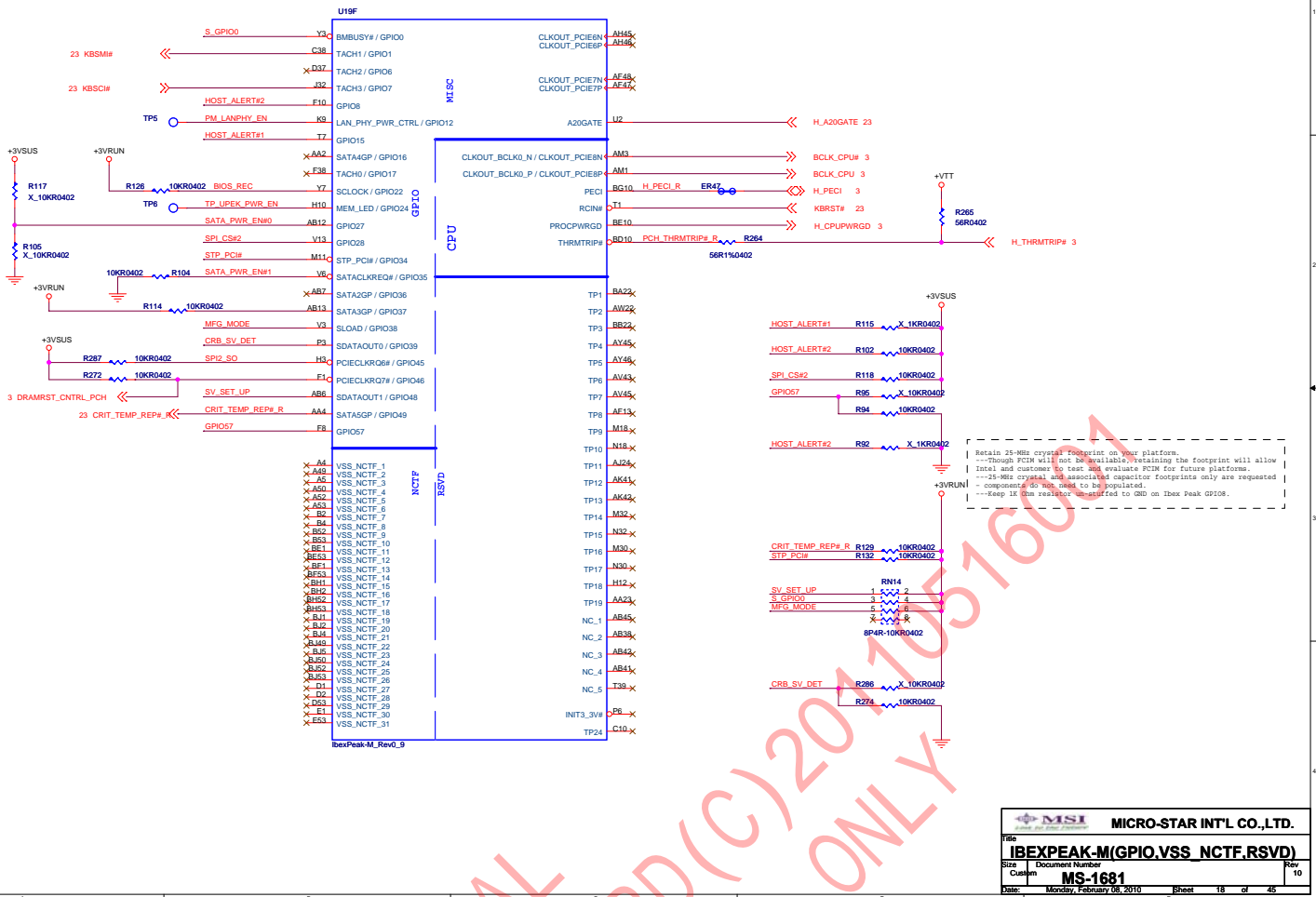
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# IBEXPEAK - M (GPIO,VSS\_NCTF,RSVD)



MICRO-STAR INT'L CO.,LTD.			
File	IBEXPEAK-M(GPIO,VSS_NCTF,RSVD)		
Size	Document Number	Rev	
Customer	MS-1681	10	
Date	Monday, February 08, 2010	Sheet	18 of 46

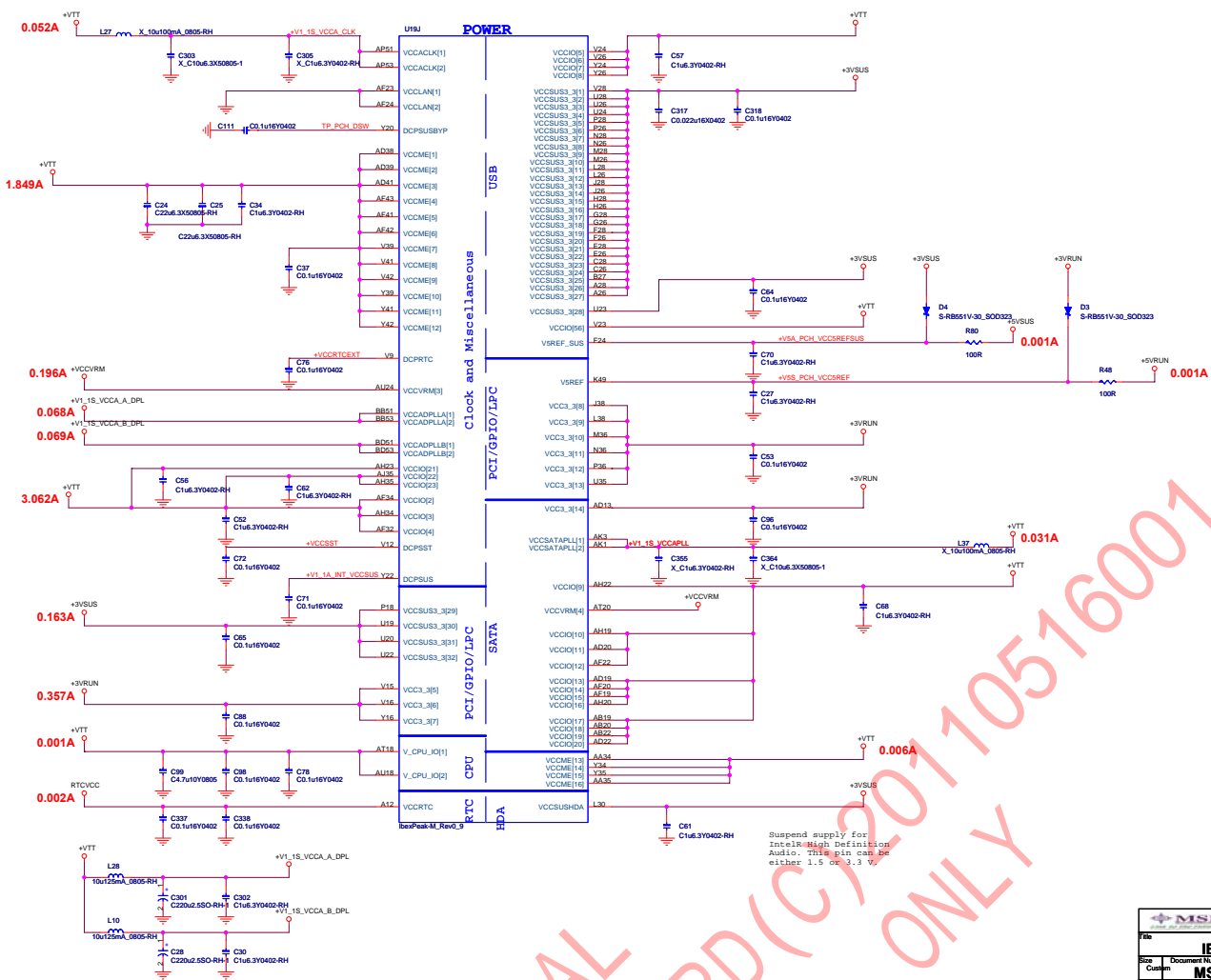
up to GP1021, therefore GP1021 should be left as no connect. The diagram shows implementation details on how to enable and disable VccVRM.



 <b>MSI</b> <small>Make us the Partner</small>		<b>MICRO-STAR INT'L CO.,LTD.</b>	
<b>Title</b> <b>IBEXPEAK - M (POWER)</b>			
<b>Size</b> Custom	<b>Document Number</b> <b>MS-1681</b>		<b>Rev</b> 10
<b>Date</b> Monday, February 08, 2010	<b>Sheet</b> 19 <b>of</b> 45		

VccI<sub>AN</sub> may be grounded if Intel IAN is disabled.

# IBEXPEAK - M (POWER)



MICRO-STAR INT'L CO.,LTD.			
File	IBEXPEAK - M (POWER)		
Size	Document Number	MS-1681	
Created	Monday, February 08, 2010	Sheet	20 of 45

## IBEXPEAK - M (GND)

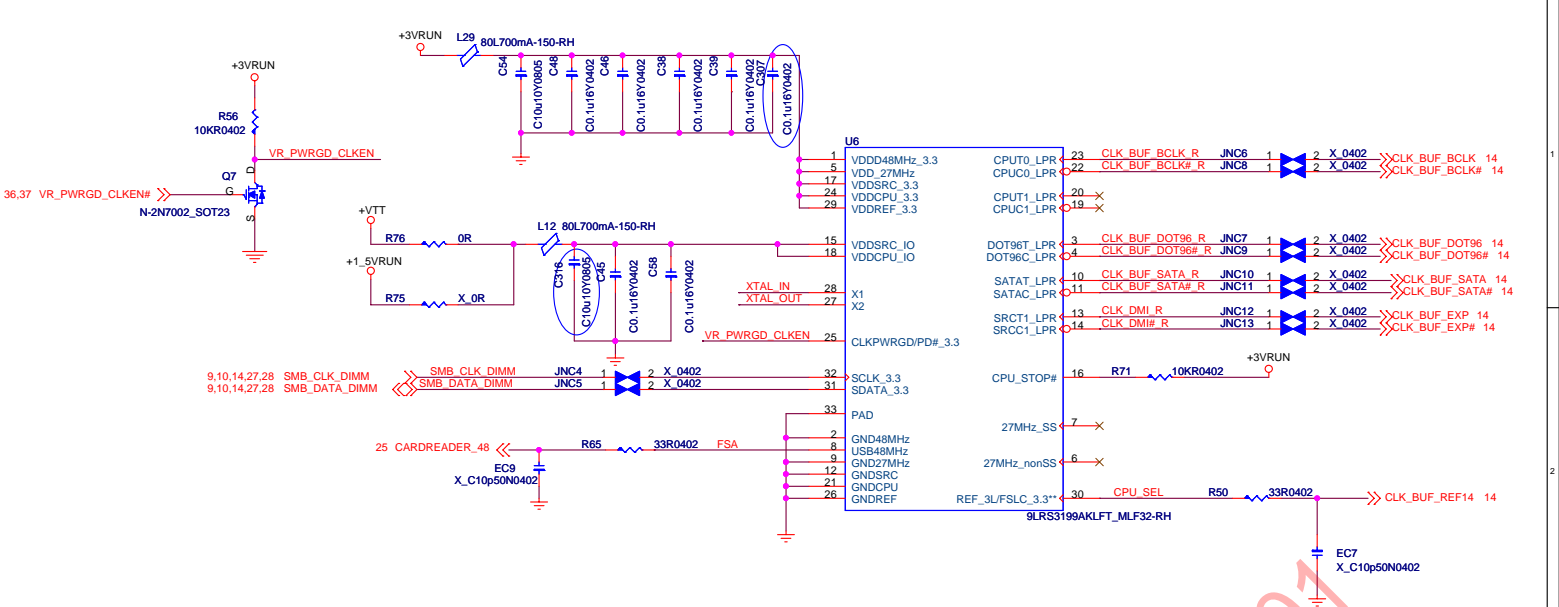
U19H			
AB16	VSS[0]		
AA19	VSS[1]	VSS[80]	AK30
AA20	VSS[2]	VSS[81]	AK31
AA22	VSS[3]	VSS[82]	AK32
AA18	VSS[4]	VSS[83]	AK34
AA24	VSS[5]	VSS[84]	AK35
AA26	VSS[6]	VSS[85]	AK36
AA28	VSS[7]	VSS[86]	AK38
AA30	VSS[8]	VSS[87]	AK46
AA31	VSS[9]	VSS[88]	AK47
AA32	VSS[10]	VSS[89]	AK5
AB11	VSS[11]	VSS[90]	AK8
AB15	VSS[12]	VSS[91]	AL2
AB23	VSS[13]	VSS[92]	AL52
AB24	VSS[14]	VSS[93]	AM11
AB32	VSS[15]	VSS[94]	BM44
AB38	VSS[16]	VSS[95]	AD24
AB43	VSS[17]	VSS[96]	AM20
AB45	VSS[18]	VSS[97]	AM22
AB47	VSS[19]	VSS[98]	AM24
AB5	VSS[20]	VSS[99]	AM28
AC2	VSS[21]	VSS[100]	AM29
AC24	VSS[22]	VSS[101]	BA42
AD11	VSS[23]	VSS[102]	AM30
AD12	VSS[24]	VSS[103]	AM31
AD16	VSS[25]	VSS[104]	AM32
AD20	VSS[26]	VSS[105]	AM34
AD23	VSS[27]	VSS[106]	AM35
AD31	VSS[28]	VSS[107]	AM36
AD32	VSS[29]	VSS[108]	AM39
AD34	VSS[30]	VSS[109]	AM42
AU22	VSS[31]	VSS[110]	AM40
AD42	VSS[32]	VSS[111]	AM46
AD46	VSS[33]	VSS[112]	AV22
AD48	VSS[34]	VSS[113]	AM49
AD7	VSS[35]	VSS[114]	AM7
AE4	VSS[36]	VSS[115]	AA50
AE42	VSS[37]	VSS[116]	BB10
AE43	VSS[38]	VSS[117]	AN50
AE45	VSS[39]	VSS[118]	AN50
AE46	VSS[40]	VSS[119]	AP12
AE47	VSS[41]	VSS[120]	AP12
AE48	VSS[42]	VSS[121]	AP42
AE49	VSS[43]	VSS[122]	AP46
AE5	VSS[44]	VSS[123]	AP49
AE54	VSS[45]	VSS[124]	AP5
AE56	VSS[46]	VSS[125]	AP8
AE57	VSS[47]	VSS[126]	AT11
AE58	VSS[48]	VSS[127]	AR52
AE59	VSS[49]	VSS[128]	AT11
AE62	VSS[50]	VSS[129]	BA12
AG2	VSS[51]	VSS[130]	AH46
AG24	VSS[52]	VSS[131]	AT14
AH15	VSS[53]	VSS[132]	AT36
AH16	VSS[54]	VSS[133]	AT47
AH24	VSS[55]	VSS[134]	AT7
AH26	VSS[56]	VSS[135]	AT7
AH27	VSS[57]	VSS[136]	AV12
AV16	VSS[58]	VSS[137]	AV16
AH45	VSS[59]	VSS[138]	AV20
AH47	VSS[60]	VSS[139]	AV24
AJ2	VSS[61]	VSS[140]	AV30
AJ24	VSS[62]	VSS[141]	AV34
AJ26	VSS[63]	VSS[142]	AV36
AJ28	VSS[64]	VSS[143]	AV42
AJ29	VSS[65]	VSS[144]	AV46
AJ32	VSS[66]	VSS[145]	AV52
AJ36	VSS[67]	VSS[146]	AV5
AJ38	VSS[68]	VSS[147]	AW14
AJ39	VSS[69]	VSS[148]	AW16
AJ42	VSS[70]	VSS[149]	AW2
AJ43	VSS[71]	VSS[150]	BE9
AJ44	VSS[72]	VSS[151]	AW32
AK12	VSS[73]	VSS[152]	AW40
AK15	VSS[74]	VSS[153]	AW36
AK26	VSS[75]	VSS[154]	AW52
AK27	VSS[76]	VSS[155]	AX11
AK28	VSS[77]	VSS[156]	AX43
AK29	VSS[78]	VSS[157]	AX43
AK30	VSS[79]	VSS[158]	AX47

IbexPeak-M\_Rev0.9

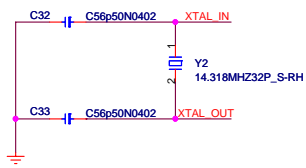
U19I			
AY7	VSS[159]	VSS[299]	H49
B11	VSS[160]	VSS[300]	H5
B15	VSS[161]	VSS[301]	K1
B19	VSS[162]	VSS[302]	K11
B23	VSS[163]	VSS[303]	K43
B31	VSS[164]	VSS[304]	K47
B35	VSS[165]	VSS[305]	K7
B39	VSS[166]	VSS[306]	L14
B43	VSS[167]	VSS[307]	L18
B47	VSS[168]	VSS[308]	L2
B7	VSS[169]	VSS[309]	L22
BG12	VSS[170]	VSS[310]	L32
BB12	VSS[171]	VSS[311]	L36
BB16	VSS[172]	VSS[312]	L40
BB20	VSS[173]	VSS[313]	L42
BB24	VSS[174]	VSS[314]	M12
BB28	VSS[175]	VSS[315]	M16
BB34	VSS[176]	VSS[316]	M20
BB38	VSS[177]	VSS[317]	N36
BB42	VSS[178]	VSS[318]	M34
BB46	VSS[179]	VSS[319]	M38
BC10	VSS[180]	VSS[320]	M42
BC14	VSS[181]	VSS[321]	M46
BC18	VSS[182]	VSS[322]	M49
BC22	VSS[183]	VSS[323]	M5
BC26	VSS[184]	VSS[324]	M5
BC30	VSS[185]	VSS[325]	N54
BC34	VSS[186]	VSS[326]	P11
BC38	VSS[187]	VSS[327]	P22
BC42	VSS[188]	VSS[328]	P26
BC46	VSS[189]	VSS[329]	P32
BC50	VSS[190]	VSS[330]	P36
BD46	VSS[191]	VSS[331]	P44
BD48	VSS[192]	VSS[332]	P46
BD50	VSS[193]	VSS[333]	P47
BE12	VSS[194]	VSS[334]	P2
BE16	VSS[195]	VSS[335]	P26
BE20	VSS[196]	VSS[336]	T12
BE24	VSS[197]	VSS[337]	T41
BE28	VSS[198]	VSS[338]	T46
BE32	VSS[199]	VSS[339]	T49
BE34	VSS[200]	VSS[340]	T5
BE38	VSS[201]	VSS[341]	T8
BE42	VSS[202]	VSS[342]	U30
BE46	VSS[203]	VSS[343]	U31
BE48	VSS[204]	VSS[344]	U32
BE50	VSS[205]	VSS[345]	U34
BE6	VSS[206]	VSS[346]	U34
BE8	VSS[207]	VSS[347]	P38
BE9	VSS[208]	VSS[348]	V11
BE9	VSS[209]	VSS[349]	P16
BE9	VSS[210]	VSS[350]	V19
BG18	VSS[211]	VSS[351]	V20
BG24	VSS[212]	VSS[352]	V22
BG4	VSS[213]	VSS[353]	V30
BG50	VSS[214]	VSS[354]	V31
BH11	VSS[215]	VSS[355]	V32
BH15	VSS[216]	VSS[356]	V34
BH19	VSS[217]	VSS[357]	V35
BH23	VSS[218]	VSS[358]	V38
BH31	VSS[219]	VSS[359]	V43
BH35	VSS[220]	VSS[360]	V45
BH39	VSS[221]	VSS[361]	V46
BH43	VSS[222]	VSS[362]	V47
BH47	VSS[223]	VSS[363]	V49
BH7	VSS[224]	VSS[364]	V5
C12	VSS[225]	VSS[365]	V7
C50	VSS[226]	VSS[366]	V8
D51	VSS[227]	VSS[367]	W2
E12	VSS[228]	VSS[368]	W52
E16	VSS[229]	VSS[369]	Y11
E20	VSS[230]	VSS[370]	Y12
E24	VSS[231]	VSS[371]	Y15
E30	VSS[232]	VSS[372]	Y19
E34	VSS[233]	VSS[373]	Y23
E38	VSS[234]	VSS[374]	Y28
E42	VSS[235]	VSS[375]	Y30
E46	VSS[236]	VSS[376]	Y34
E48	VSS[237]	VSS[377]	Y32
E6	VSS[238]	VSS[378]	Y38
E8	VSS[239]	VSS[379]	Y43
F8	VSS[240]	VSS[380]	Y46
G10	VSS[241]	VSS[381]	P49
G14	VSS[242]	VSS[382]	V41
G16	VSS[243]	VSS[383]	V4
G18	VSS[244]	VSS[384]	P24
G2	VSS[245]	VSS[385]	T43
G22	VSS[246]	VSS[386]	AD51
G32	VSS[247]	VSS[387]	AT8
G38	VSS[248]	VSS[388]	ADH7
G40	VSS[249]	VSS[389]	AT7
G44	VSS[250]	VSS[390]	AT12
G52	VSS[251]	VSS[391]	AM6
AF39	VSS[252]	VSS[392]	AT13
H16	VSS[253]	VSS[393]	AM5
H20	VSS[254]	VSS[394]	AK45
H30	VSS[255]	VSS[395]	AK32
H34	VSS[256]	VSS[396]	AK32
H36	VSS[257]	VSS[397]	AK32
H42	VSS[258]	VSS[398]	AK32

IbexPeak-M\_Rev0.9

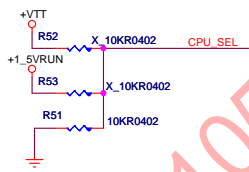
MSI MICRO-STAR INT'L CO.,LTD.		
File IBEXPEAK - M (GND)		
Size	Document Number	Rev
Custom	MS-1681	10
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Capacity select  
If LC=20pf C708/C709=33pf  
If LC=32pf C708/C709=56pf




For CPU frequency select (133MHz)



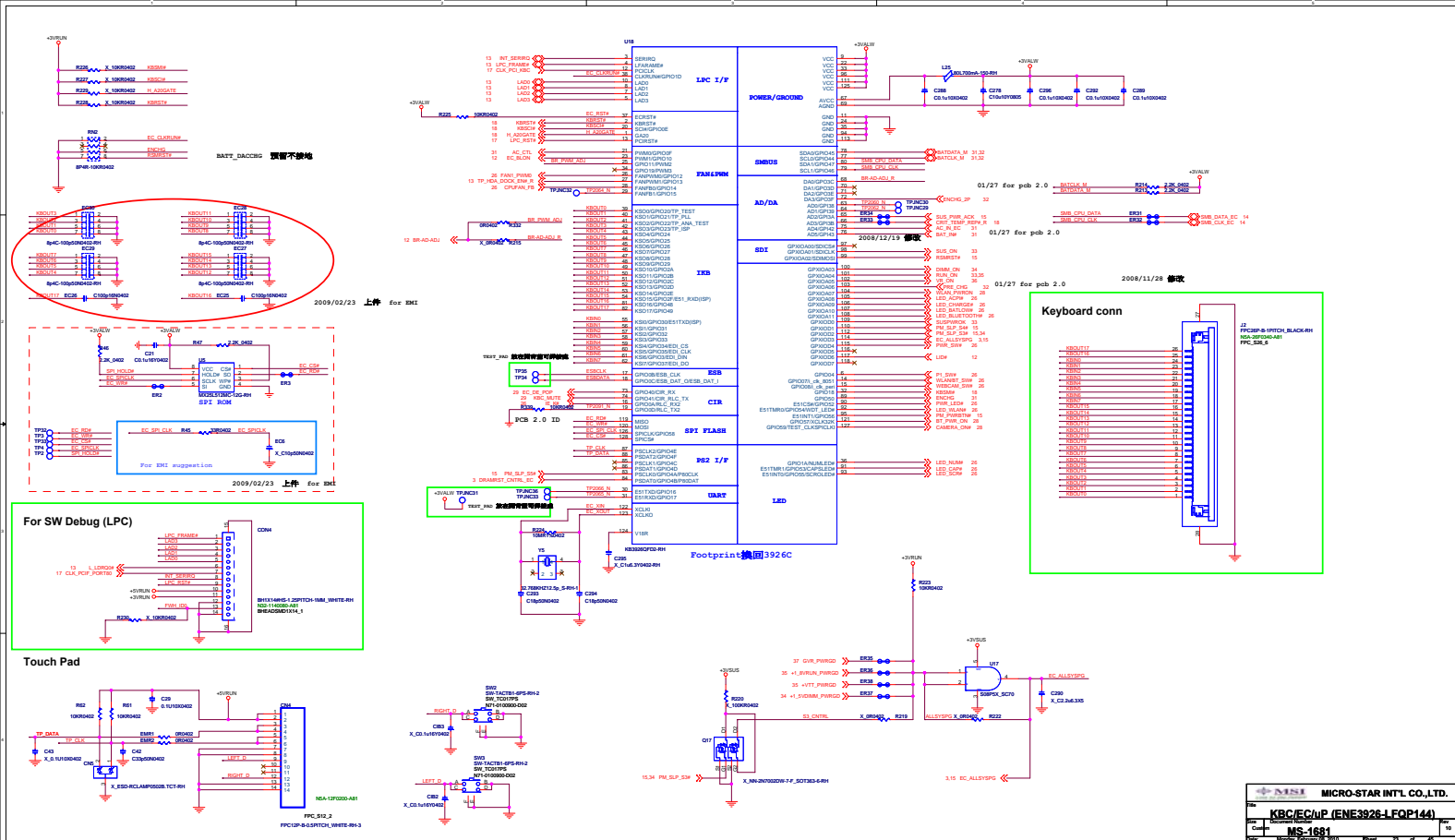
CPU_SEL	CP00	CP01
0 (Default)	133MHz	133MHz
1 (1.05-1.5V)	100MHz	100MHz

Co-Lay Note:

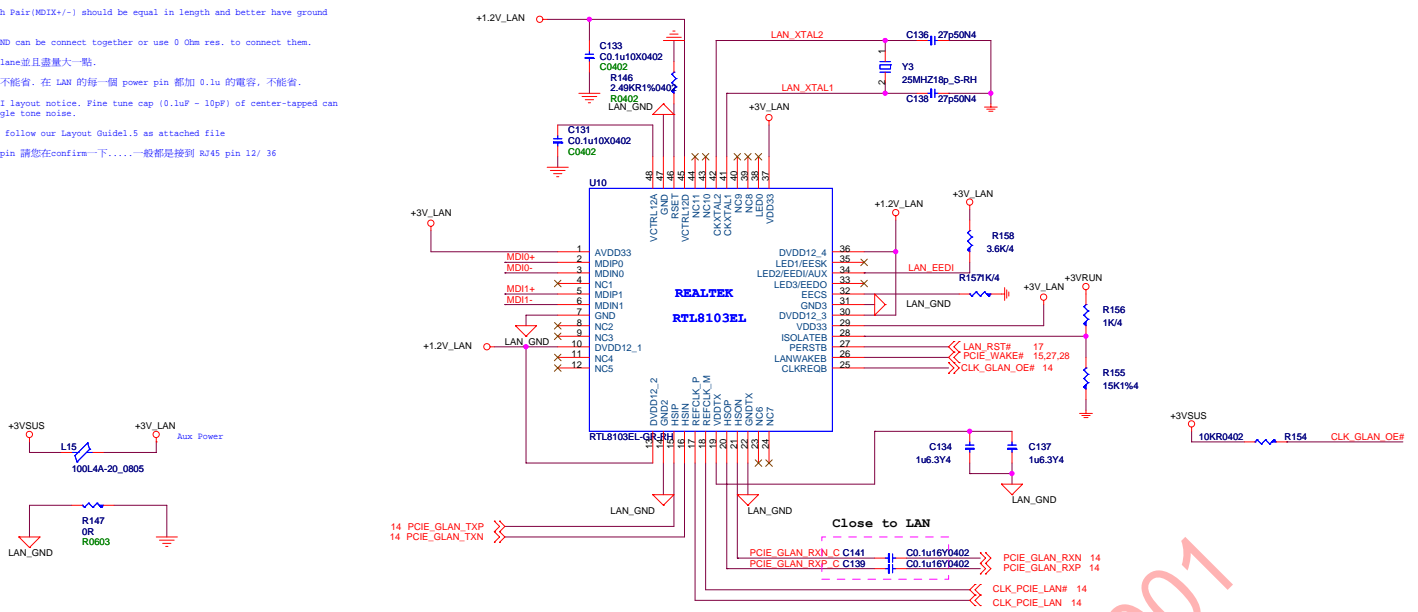
For IDT IC91RS3199  
R598,R599,R600=10Kohm  
  
For Sillego SLG8SP587  
R598,R599,R600=4.7Kohm

**MICRO-STAR INT'L CO.,LTD.**

Title		<b>Clock Generator (ICS91RS3199)</b>		Rev 10
Size	Document Number	MS-1681		
Date:	Monday, February 08, 2010	Sheet	22	of 45

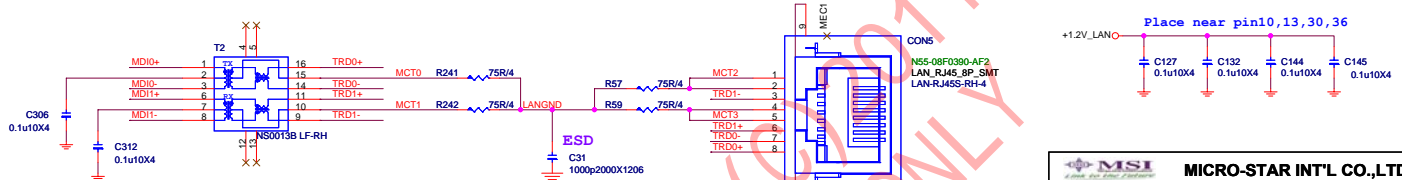
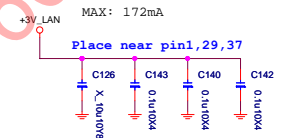


1. Pin 46 : RSET res. should be close to LAN chip. Don't have power trace or high frequency trace beside it.
2. The trace of each Pair(MDIX+/-) should be equal in length and better have ground under.
3. Both E0ND and GND can be connect together or use 0 Ohm res. to connect them.
4. 1.2V請留 power plane並且盡量大一點.
5. 1.2V Bypass 電容不能省. 在 LAN 的每一個 power pin 都加 0.1u 的電容, 不能省.
6. 請參考RTL8111C BOM layout notice. Fine tune cap (0.1uF ~ 10pF) of center-tapped can improve SAG for single tone noises.
7. Please refer and follow our Layout Guidel.5 as attached file
8. RJ45 的部份,對機pin 請您在confirm一下-----一般都是接到 RJ45 pin 12 / 36



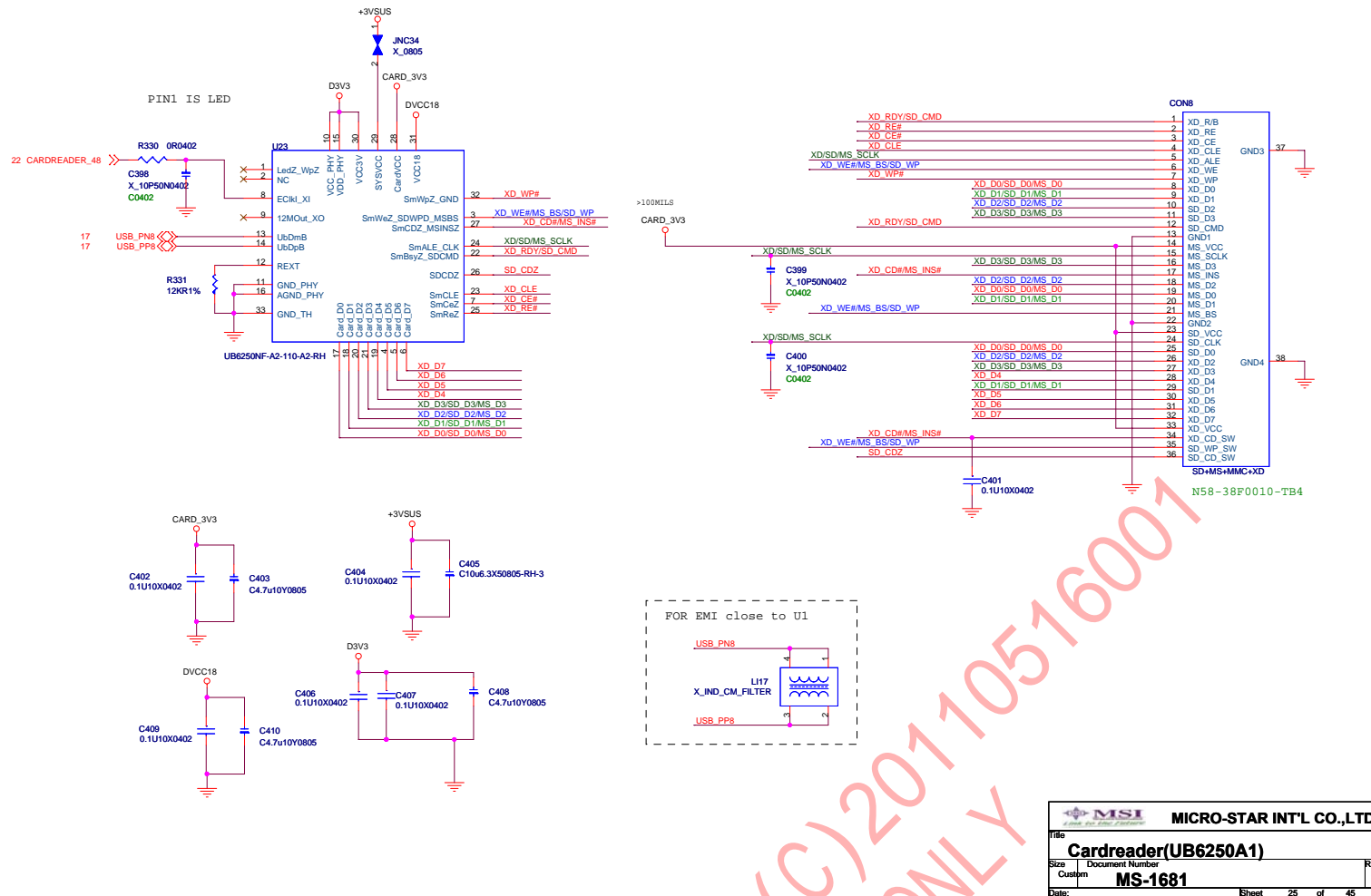
POWER Comparison

	3.3V	mW
10 M Idle/TxRx	87/172	287/568
100 M Idle/TxRx	112/165	370/545
ALDES	60	198
D3 cold with link10M /without link	32/18	106/59.4

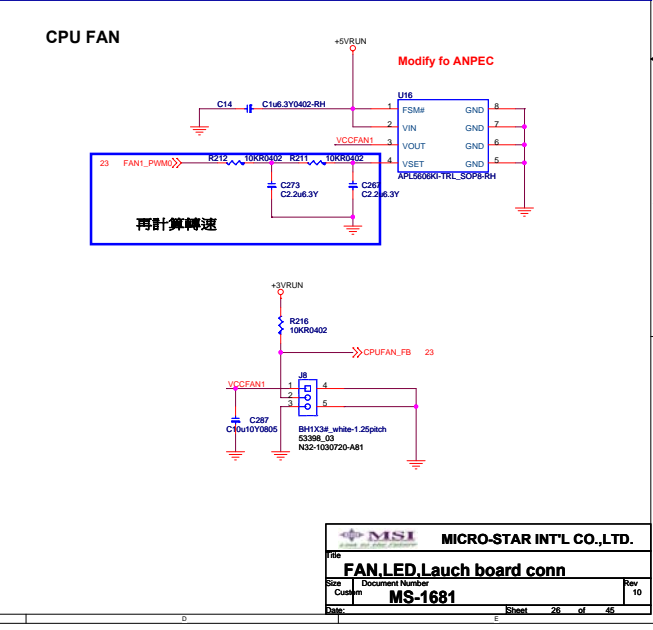
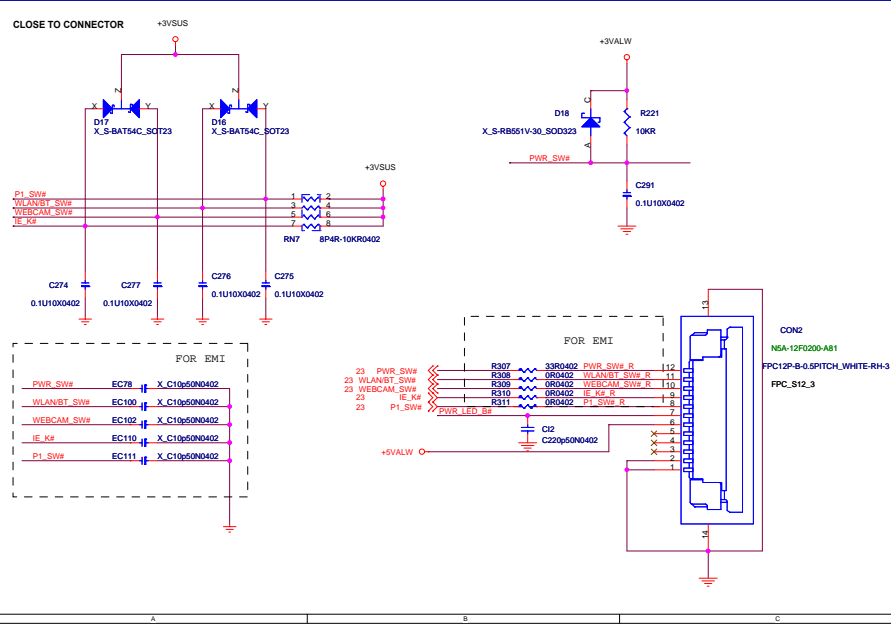
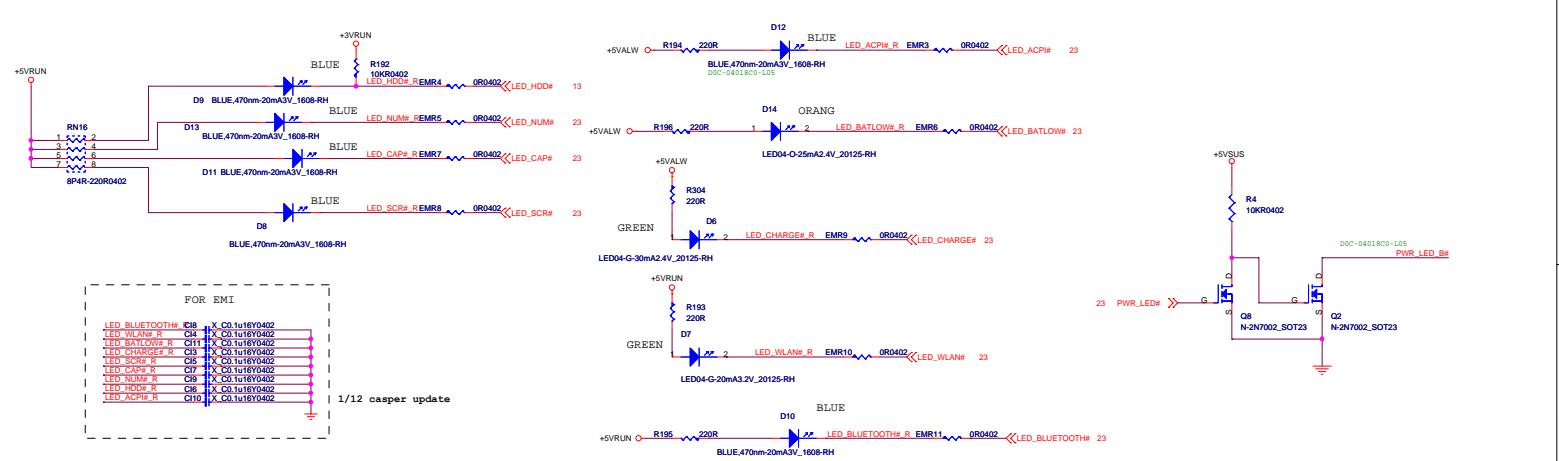


MSI MICRO-STAR INT'L CO.,LTD.	
File: PCIE LAN (RTL8103EL)	
Size: Custom	Document Number: MS-1681
Date:	Sheet 24 of 45



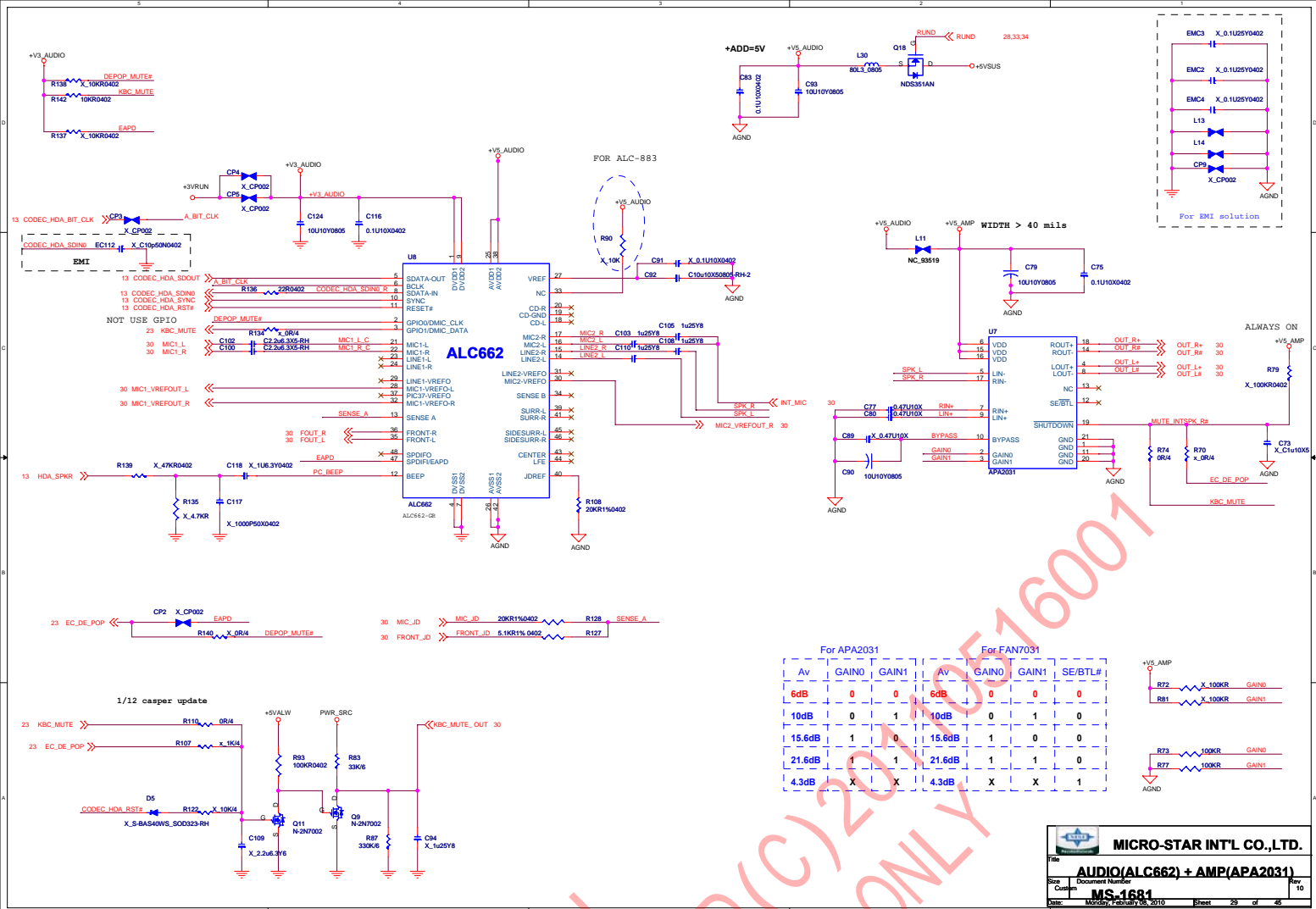


MSI		MICRO-STAR INT'L CO.,LTD.	
Title		Cardreader(UB6250A1)	
Size	Document Number	Rev	
Custom	MS-1681	10	
Date:		Sheet	25 of 45

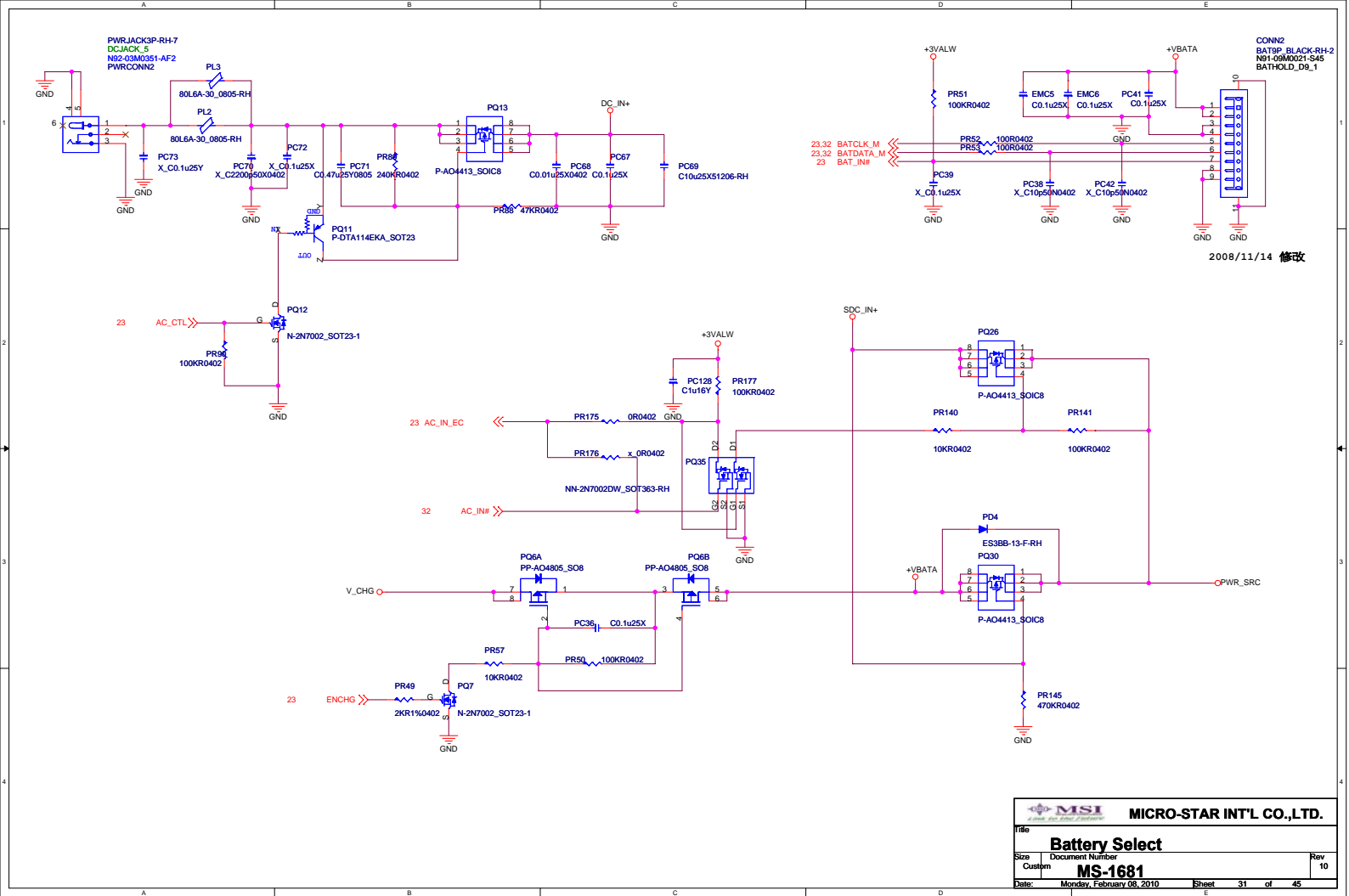












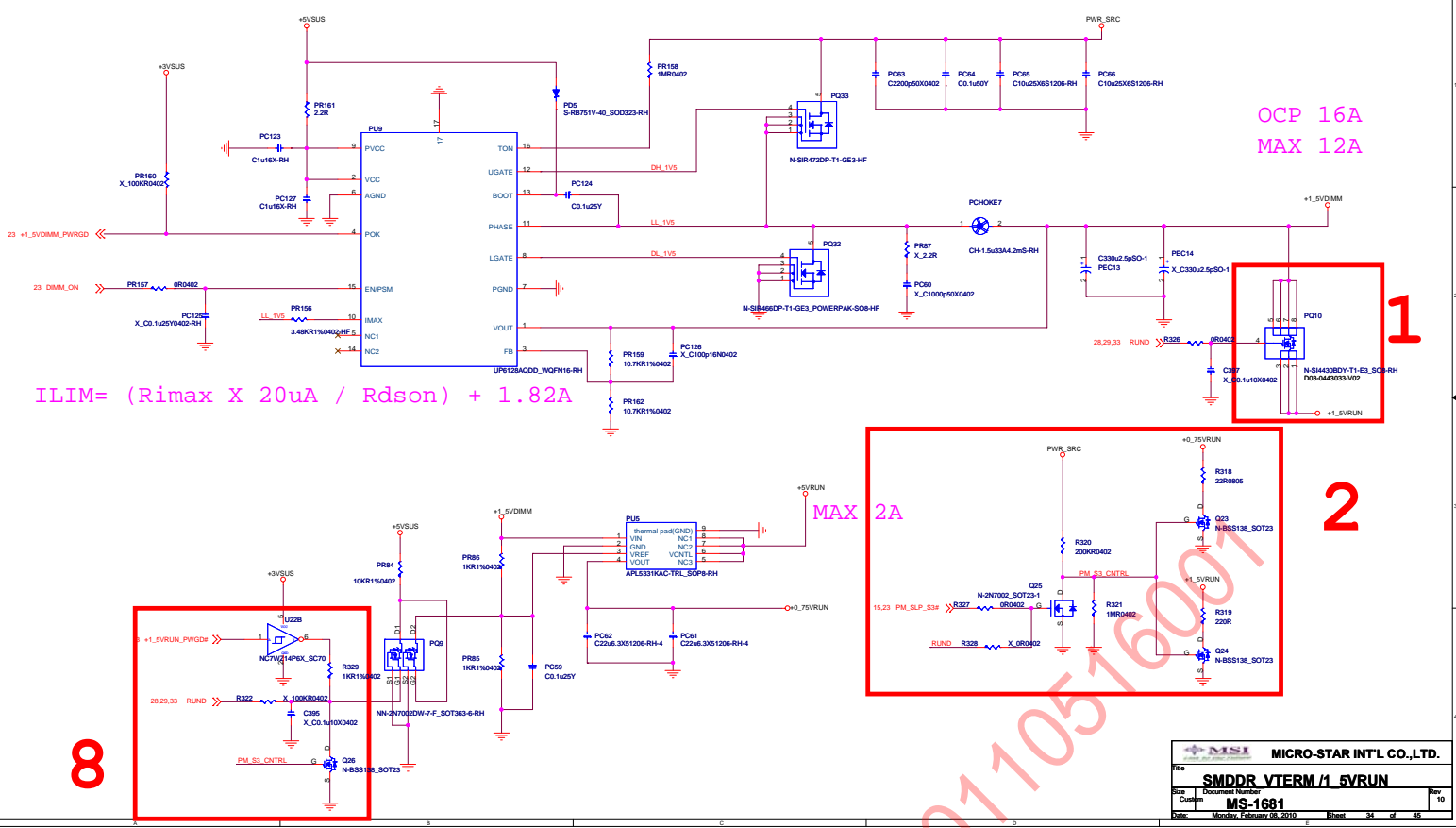




Current limit at 6A for +3.3VSUS

Current limit at 7A for +5VSUS

MICRO-STAR INT'L CO.,LTD.			
Part	System power		
Doc	Document Number		Rev
MS-1681			10
Date	Monday, February 08, 2010	Sheet	33 of 45




$$I_{LIM} = (R_{imax} \times 20\mu A / R_{dson}) + 1.82A$$

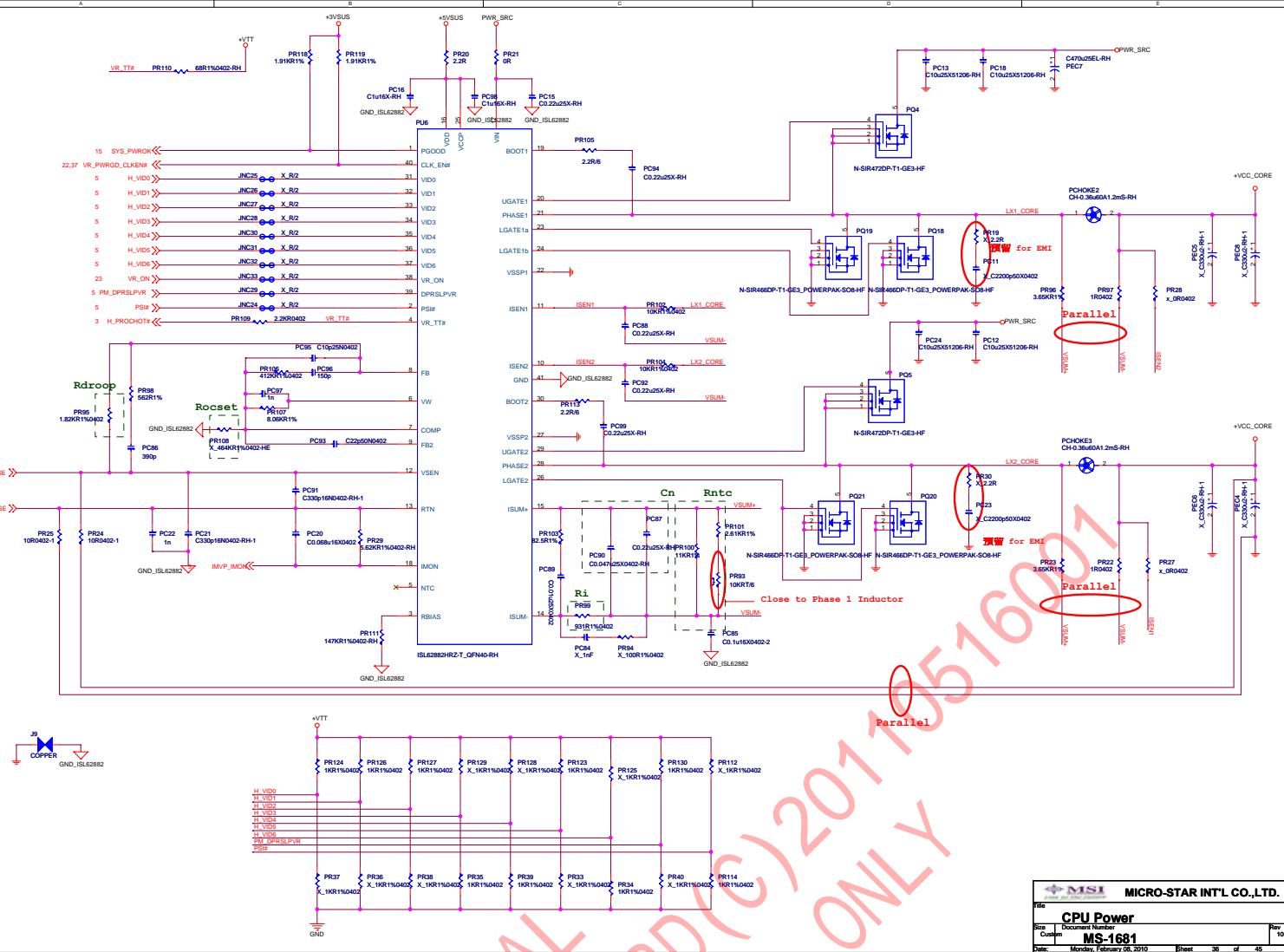
8

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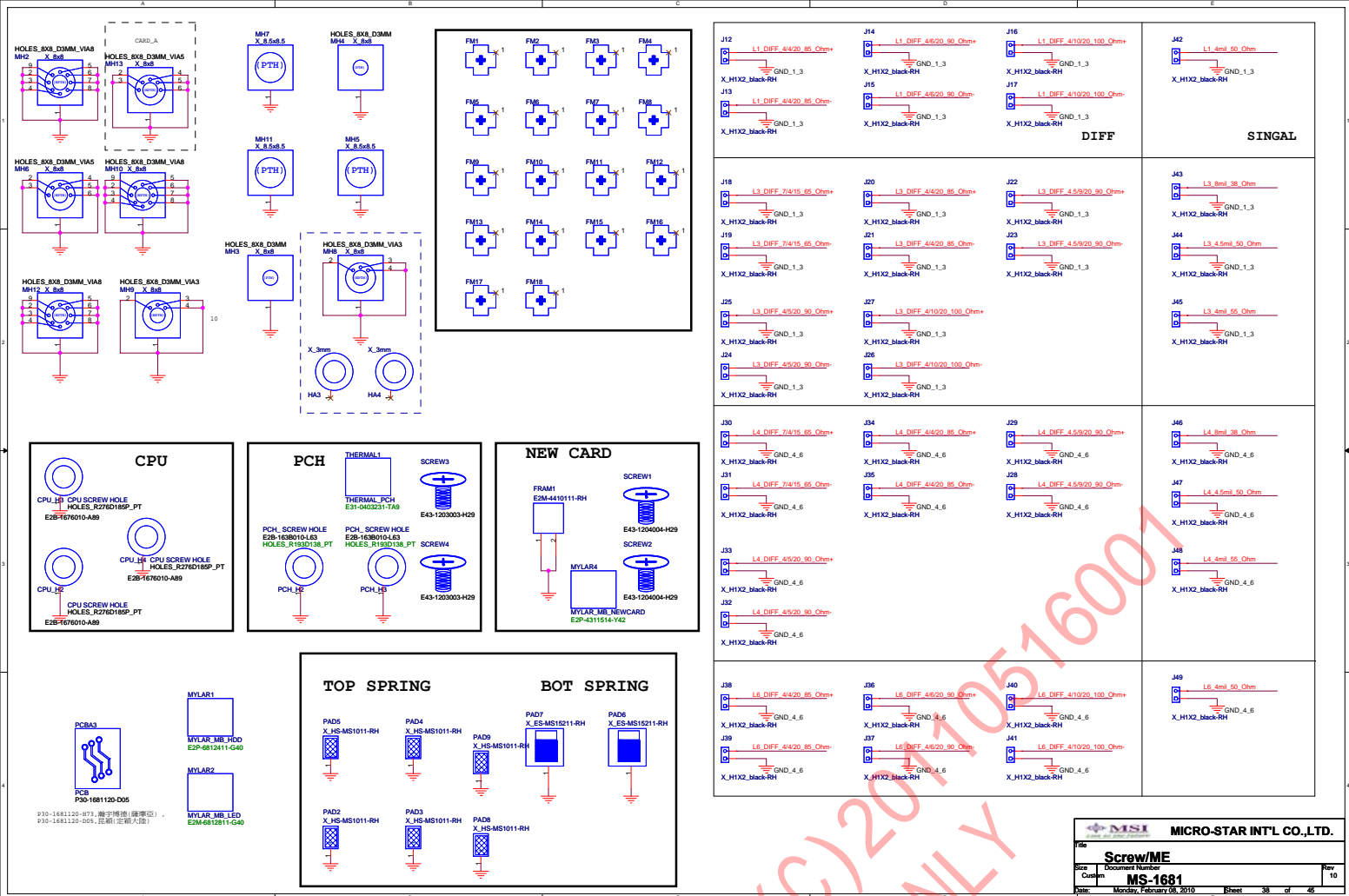
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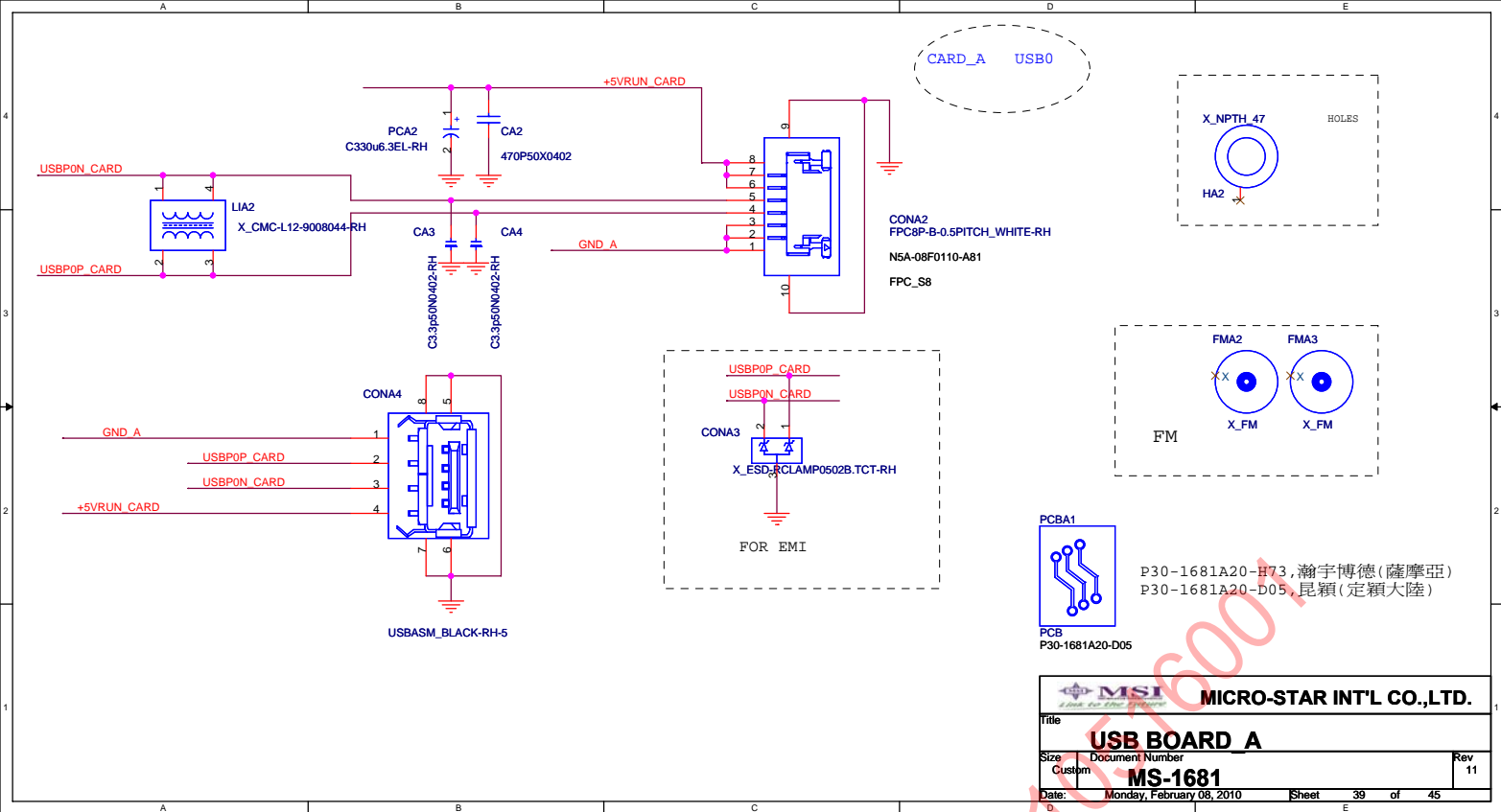
 <b>MSI</b> <small>Micro-Star International Co., Ltd.</small>		<b>MICRO-STAR INT'L CO.,LTD.</b>	
File		<b>SMDDR VTERM /1 5VRUN</b>	
Size	Document Number	Rev	
Custom	<b>MS-1681</b>	10	
Date:	Monday, February 08, 2010	Sheet	34 of 66





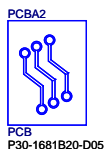
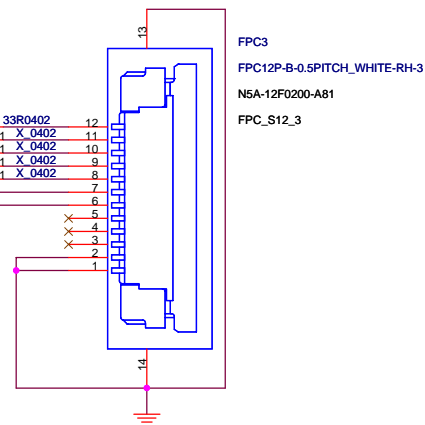







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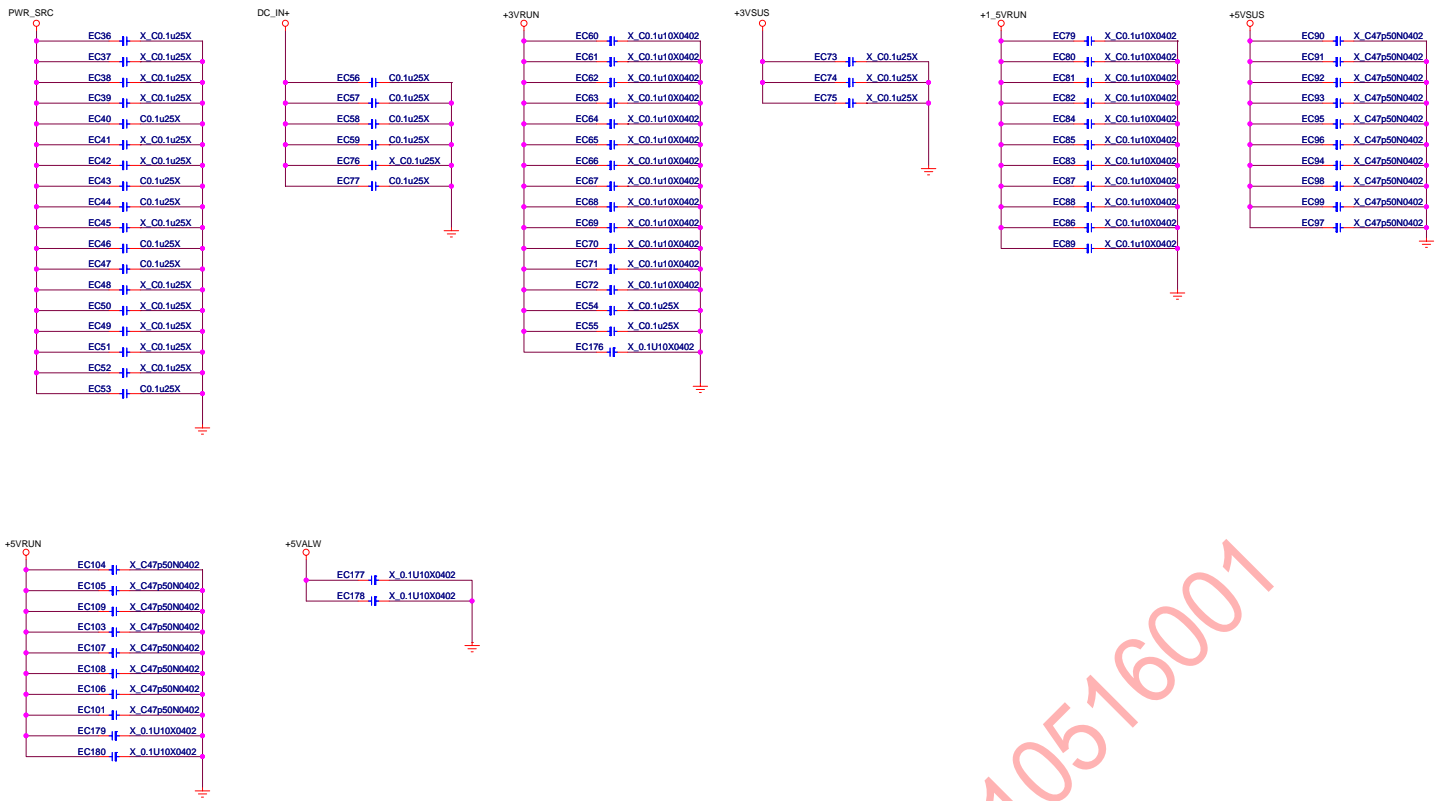
MSI MICRO-STAR INT'L CO.,LTD.			
Title <b>USB BOARD A</b>			
Size	Document Number	Rev	
Cuspm	<b>MS-1681</b>	11	
Date:	Monday, February 08, 2010	Sheet	39 of 45



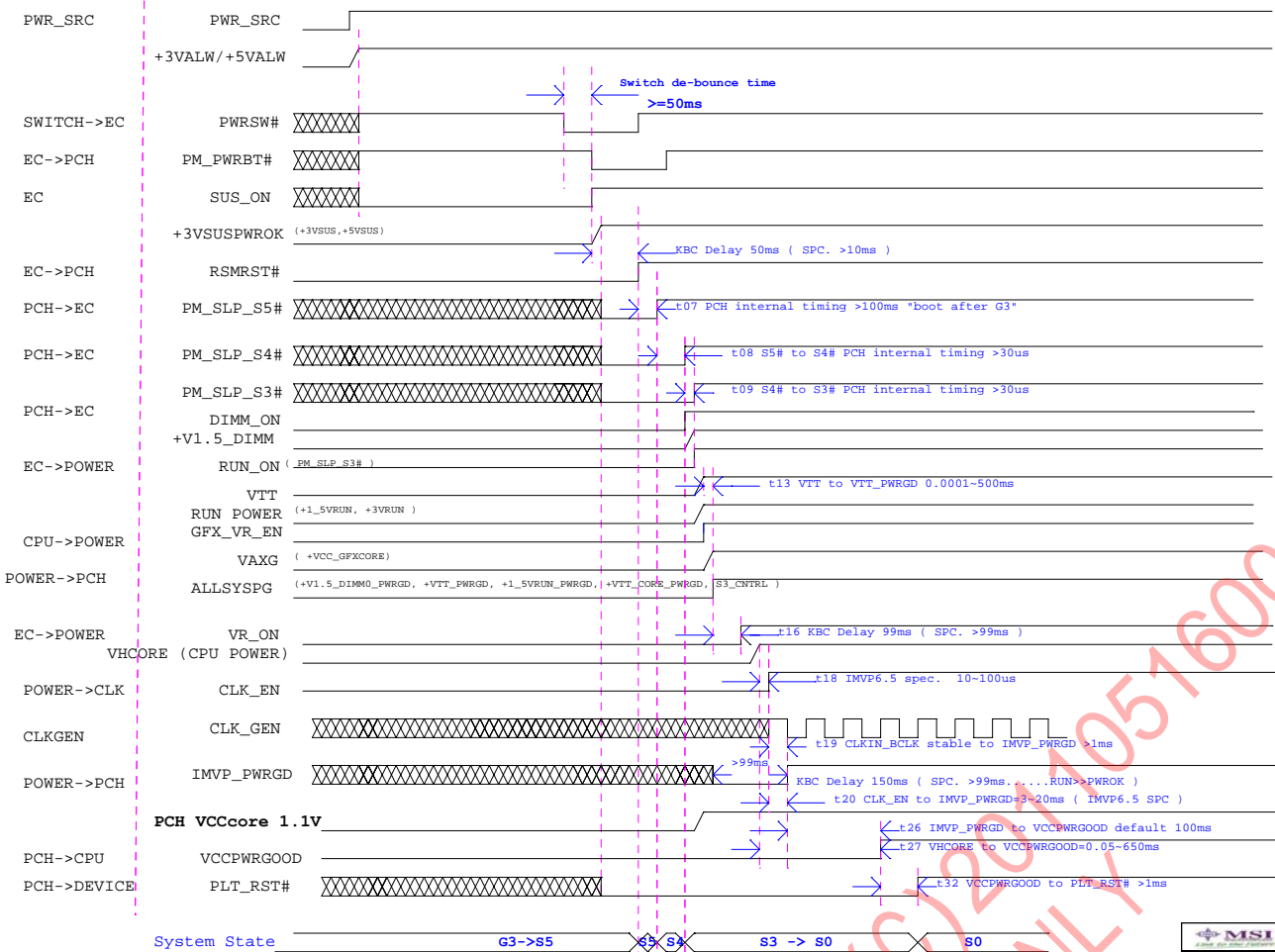
P30-1681B20-H73, 瀚宇博德(薩摩亞)  
P30-1681B20-D05, 昆穎(定穎大陸)

 <b>MICRO-STAR INT'L CO.,LTD.</b>	
<b>Title</b> <b>Lauch Board B</b>	
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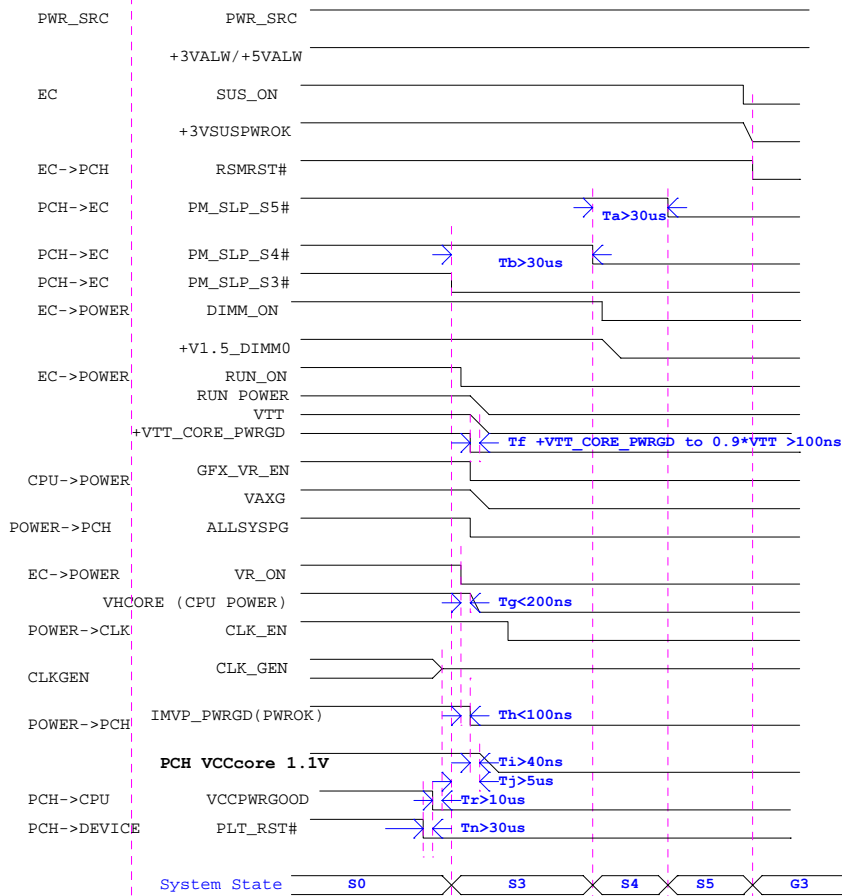


# Calpella System Power on Sequence DC mode



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# Power down Sequence DC mode S0 to G3



PWR\_SRC

BAT : 3S2P = 9V  
3S3P = 9V

VCC\_CORE(2 Core) = 38A  
VCC\_CORE(4 Core) = 51A  
+VTT(1.05V) = 18A  
+VCC\_GFXCORE = 14A  
+1\_05VRUN = 7A  
+1\_5VDIMM = 13.661A  
+0\_75VRUN = 2A  
+1.5VRUN = 1.661A  
+3.3VALW = 0.02A  
+3.3VSUS = 8.9846A  
+1\_8VRUN = 1.75A  
+1.5VSUS = 0.3A  
+3.3VRUN = 6.5046A  
+5VSUS = 10.253A  
+5VRUN = 9.702A

2.46A/3.67A

VCC\_CORE 38A/51A

MAX17082GTL

RT8204PQW

+VTT 18A

MAX17028GTJ

+VCC\_GFXCORE 14A

RT8204PQW

+1\_05VRUN 7A

1.59A

RT8204PQW

+1\_5VDIMM 13.661A

APL531KAC

+0\_75VRUN 2A

N-AO4468

+1.5VRUN 1.661A

6.31A

RT8205AGQW

+3.3VALW 0.02A

+3.3VSUS 8.9846A

+5VSUS 10.253A

+3.3VRUN 6.5046A

+5VRUN 9.702A

+5VALW

+1\_8VRUN 1.75A

+1.5VSUS 0.3A

+3.3VRUN 6.5046A

+5VRUN 9.702A

+5VRUN (2A)

+5VRUN (500mA)

+5VRUN (0.25A)

+5VRUN (4A)

+5VRUN (0.02A)

+3VALW (0.02A)

+3VRUN (0.6A)

+3VRUN (1.8A)

+3VRUN (0.65A)

+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

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+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

+3VRUN (1.5A)

CPU Auburndale/Clarkfield(989)		
	2 Core	4 Core
VCC_CORE	0.97V (38A)	1.08V (51A)
VCC_GFXCORE	1.43V (14A)	
VTT	1.1V (18A)	1.1V (18A)
+1.5V	1.5V (1A)	1.5V (1A)
+1.8V	1.8V (1.5A)	1.8V (1.5A)

PCH (IBEXPEAK)	
+1.8VRUN (250mA)	
+1.05VRUN (7A)	
+3VRUN (819mA)	
+5VRUN (4mA)	
+1.5VRUN (11mA)	
+1.5VSUS (300mA)	

DDR 3	
+1_5VDIMM (10A)	
+0_75VRUN (2A)	

MXM 3.0	
+3VRUN (1A)	
+5VRUN (2.5A)	
PWR_SRC 19V (2A)	

Mini PCI-E*2	
+3VRUN (2A)	

Card reader	
+3VRUN (250mA)	

ALC888-VC2	
AVDD1 +5VRUN (68mA)	
DVDD +3VRUN (35.6mA)	
+5VSUS	
Audio AMP	
VDD +5VRUN (380mA)	

Subwoofer	
+5VRUN (460mA)	

LAN Intel 82577	
+3VSUS (668mA)	
+3VSUS (12mA)	

MDC card	
+3VSUS (1.5A)	
+1.5VRUN (0.65A)	

NEW CARD	
+3VSUS (1.5A)	
+1.5VRUN (0.65A)	

Power MAP	
MS-1681	

2008/11/13 修改

Change Note :

0A-->0B


- 1.P19 stuff R113 & C85 for intel document about Braidwood
- 2.P23 add one PWM Pin for co-lay LED panel by EC
- 3.P25 Change CardReader to ENE
- 4.P26 Change "LED\_HDD#" PU +5VRUN to +3VRUN
- 5.P26 Fan conn footprint change back to "53398\_03"
- 6.P28 Add Wireless & Bluetooth combo(MS-3870)
- 7.P32 Change PR171 to 48.7K & PR172 to 1R0603
- 8.P33 Change PU2 from "UP6182AQAG" to "TPS51125" & PR18 to 30K
- 9.P34 Change PU9 from "UP6111AQDD" to "UP6128A" & PR156 to 3.48K & PR159 to 10.7K & PQ10 to "D03-0443033-V02"
- 10.P35 Change PU8 from "UP6111AQDD" to "UP6128A" & PR149 to 4.22K & remove C394
- 11.P36 Change PR95 to 1.82K & PR29 to 9.31K & PC90 to 47nf & PR99 to 931R & no stuff PC84 , PR94 , PEC4 , PEC5 , PEC6 , PEC8

0B-->10

- 1.P13 add net "TP\_HDA\_DOCK\_EN#\_R" for flash protect control.
- 2.P14 add wimax ac adepter schematic.
- 3.P23 add ENE GPIO13 for flash protect control.
- 4.P25 no stuff C399 & C400 for cardreader detect issu.
- 5.P26 change R307 from 0R to 33R for EMI.
- 6.P31 add 2 cap in +VBATA for EMI.
- 7.P34 change R329 from 0R to 1K for current limit.
- 8.P37 no stuff +VCC\_GFXCPE PQ23 no cost down.
- 9.P40 change JNCB2 to RB3 , and 33R for EMI.
- 10.P40 change CB2 from 0.1u to 300p for EMI.
- 11.P13 No stuff for MP ver PCH by R289 , R271 , R298 , R291 , R297 , R290.

10-->11

- 1.P37 add "PC1" & modify "PR12" & "PC104" for power shut down issue.

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