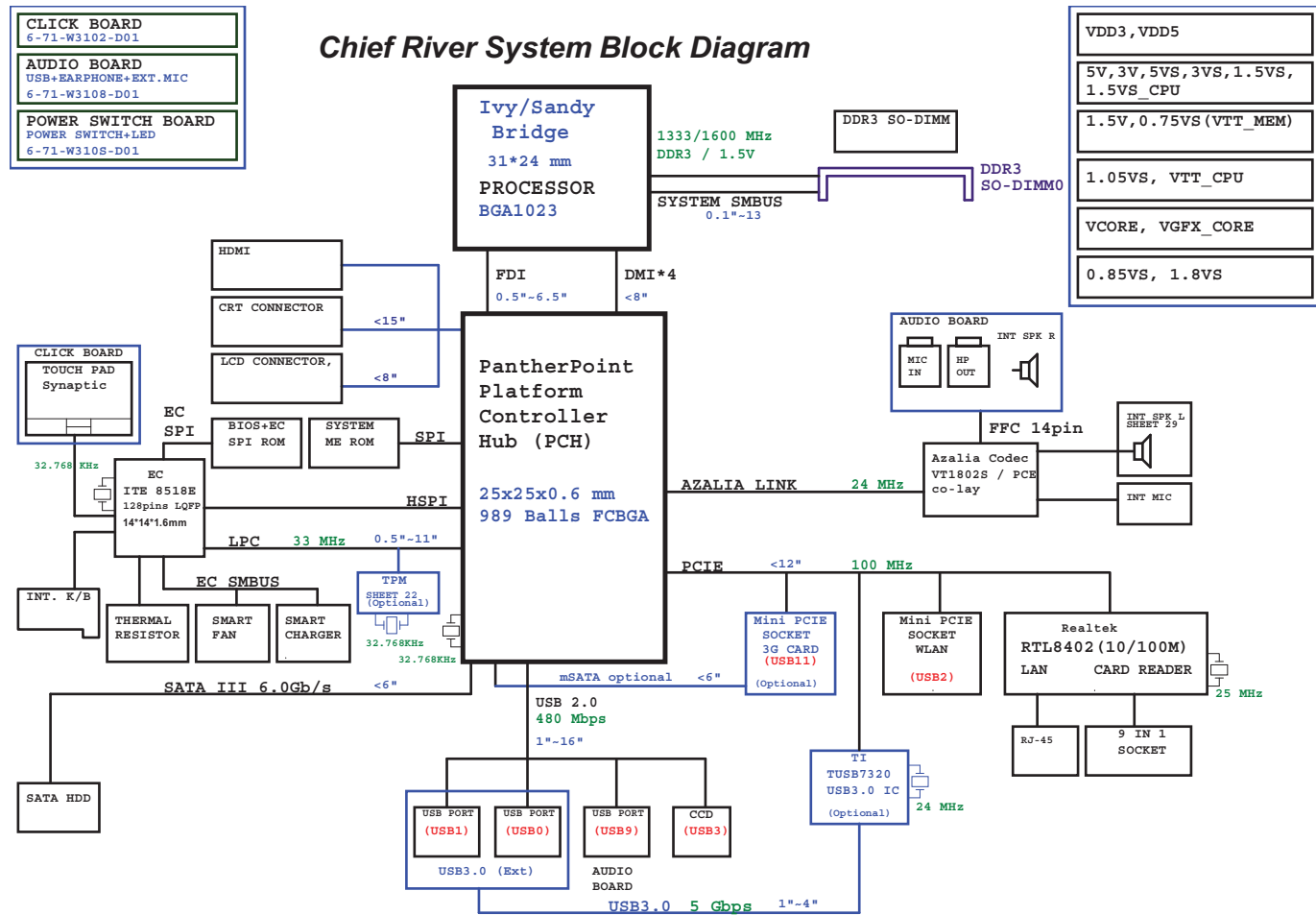


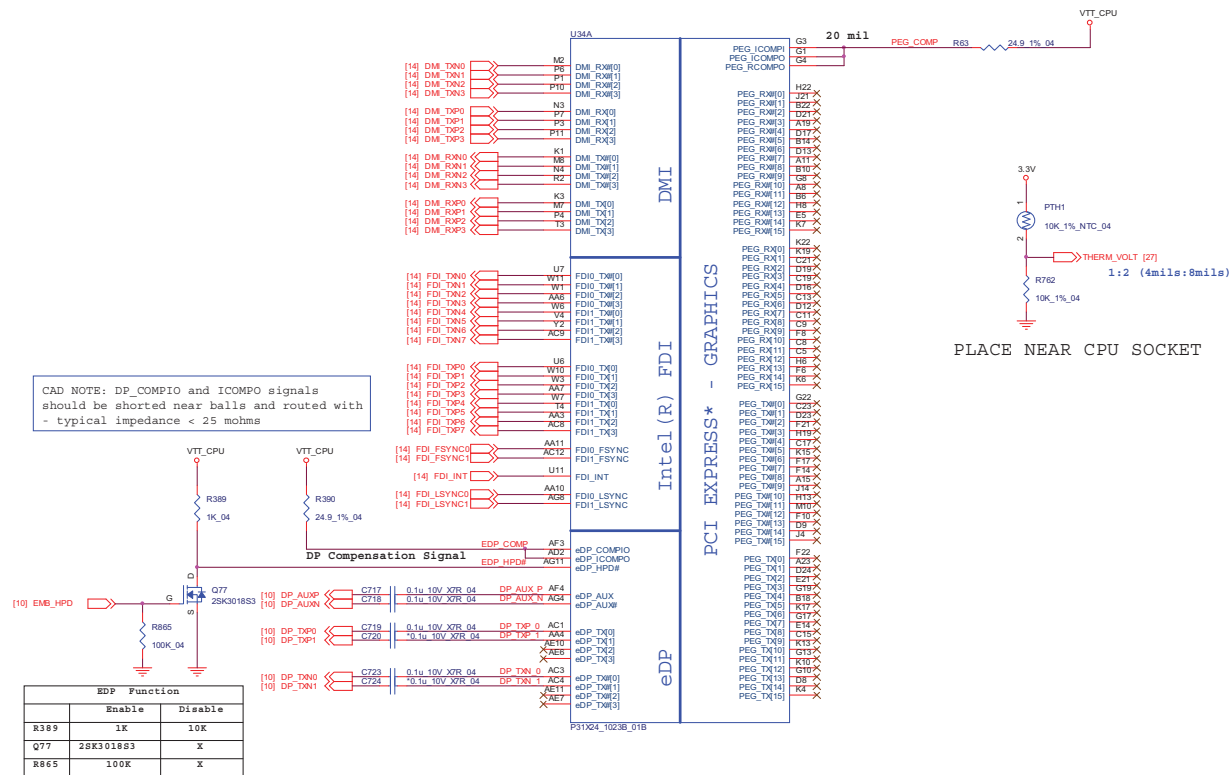
Schematic Diagrams

System Block Diagram



Processor 1/7 - DMI, FDI, PEG

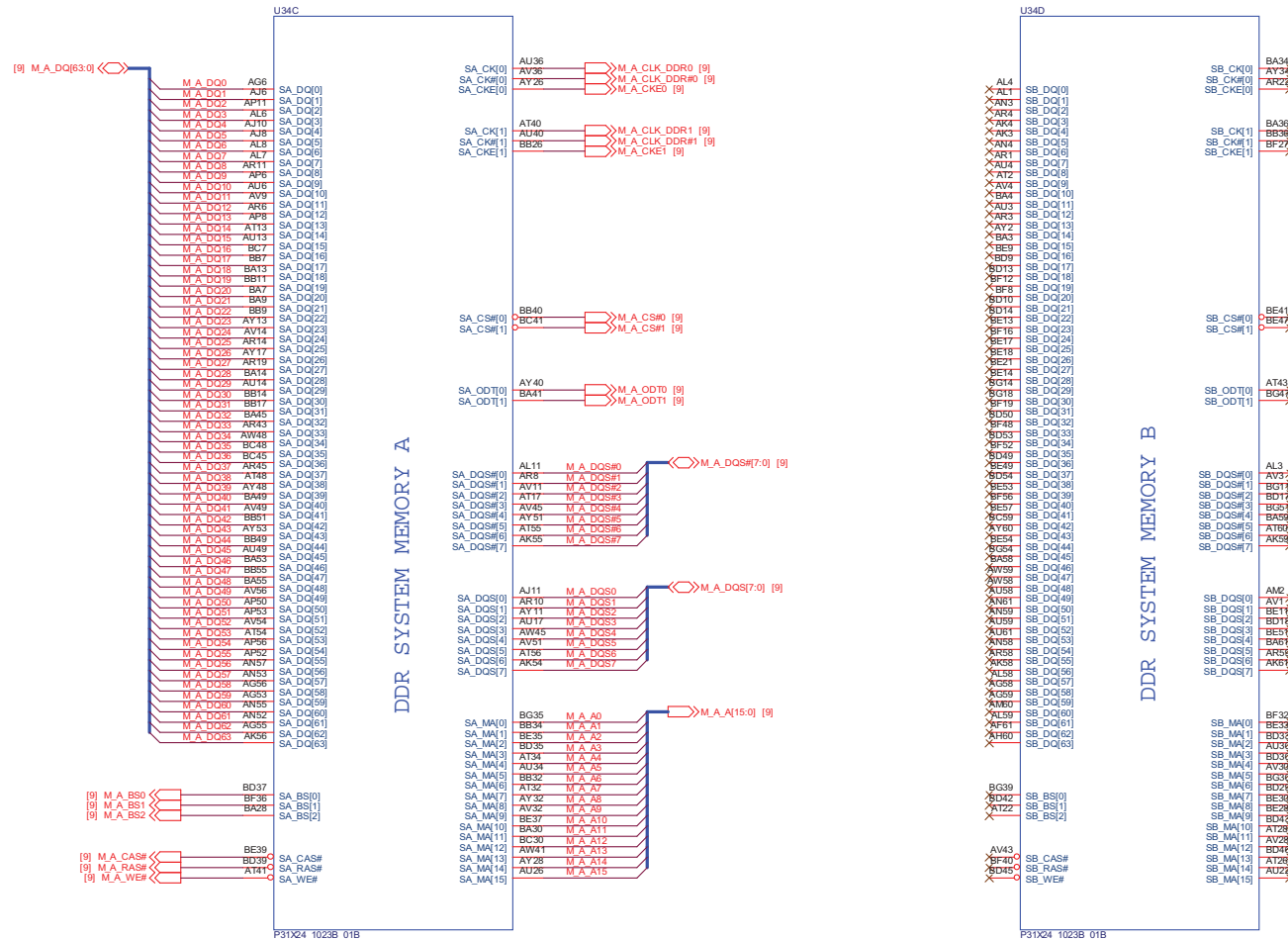
Ivy/Sandy Bridge Processor 1/7 (DMI, PEG, FDI)



[6,10,12,13,14,16,17,18,19,21,22,25,27,31,33,34,35] 3.3V
[3,5,6,17,18,19,34,35] VTT_CPU

Processor 3/7 - DDR3

Ivy/Sandy Bridge Processor 3/7 (DDR3)

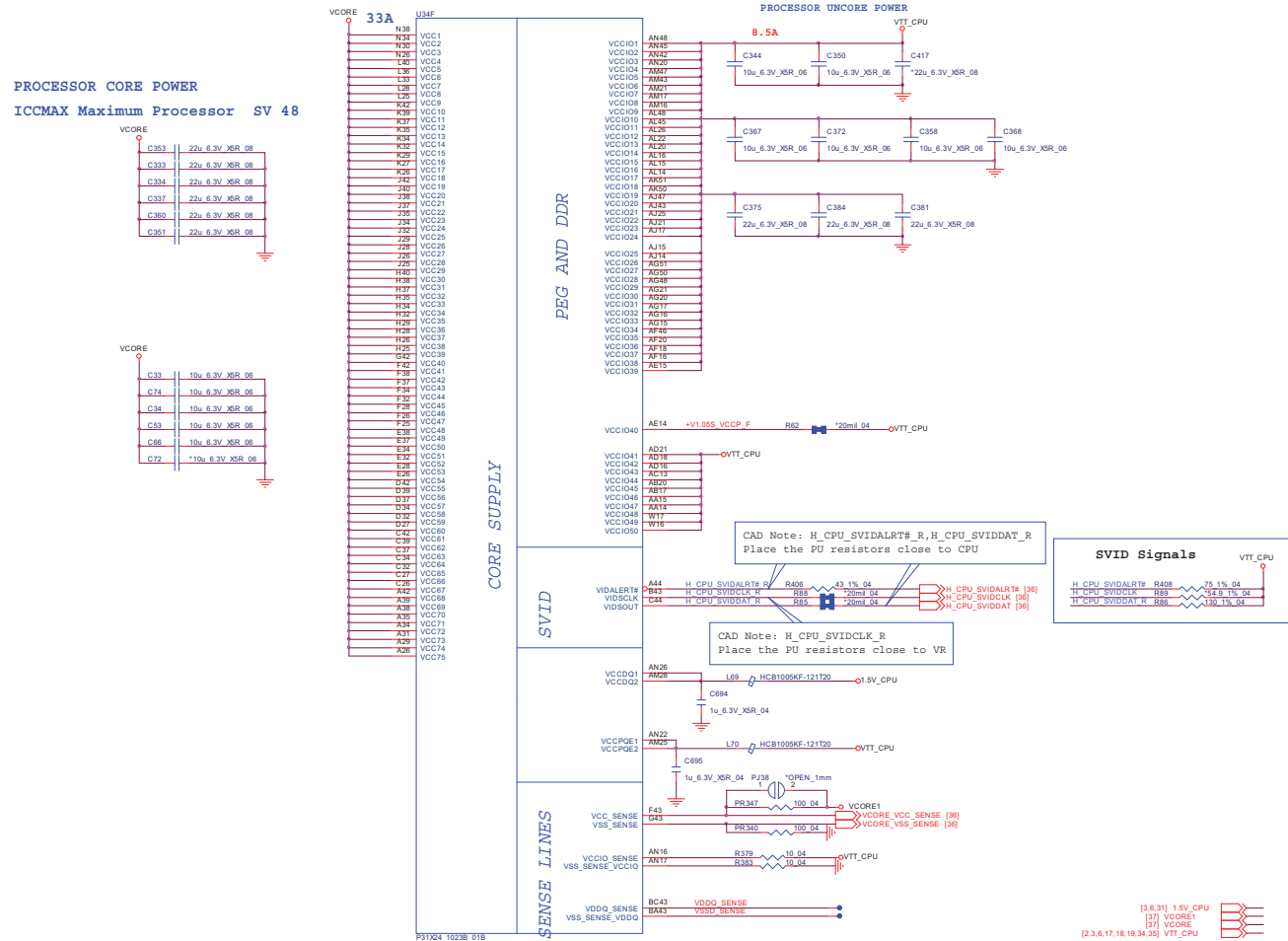


Sheet 4 of 42
Processor 3/7 -
DDR3

Schematic Diagrams

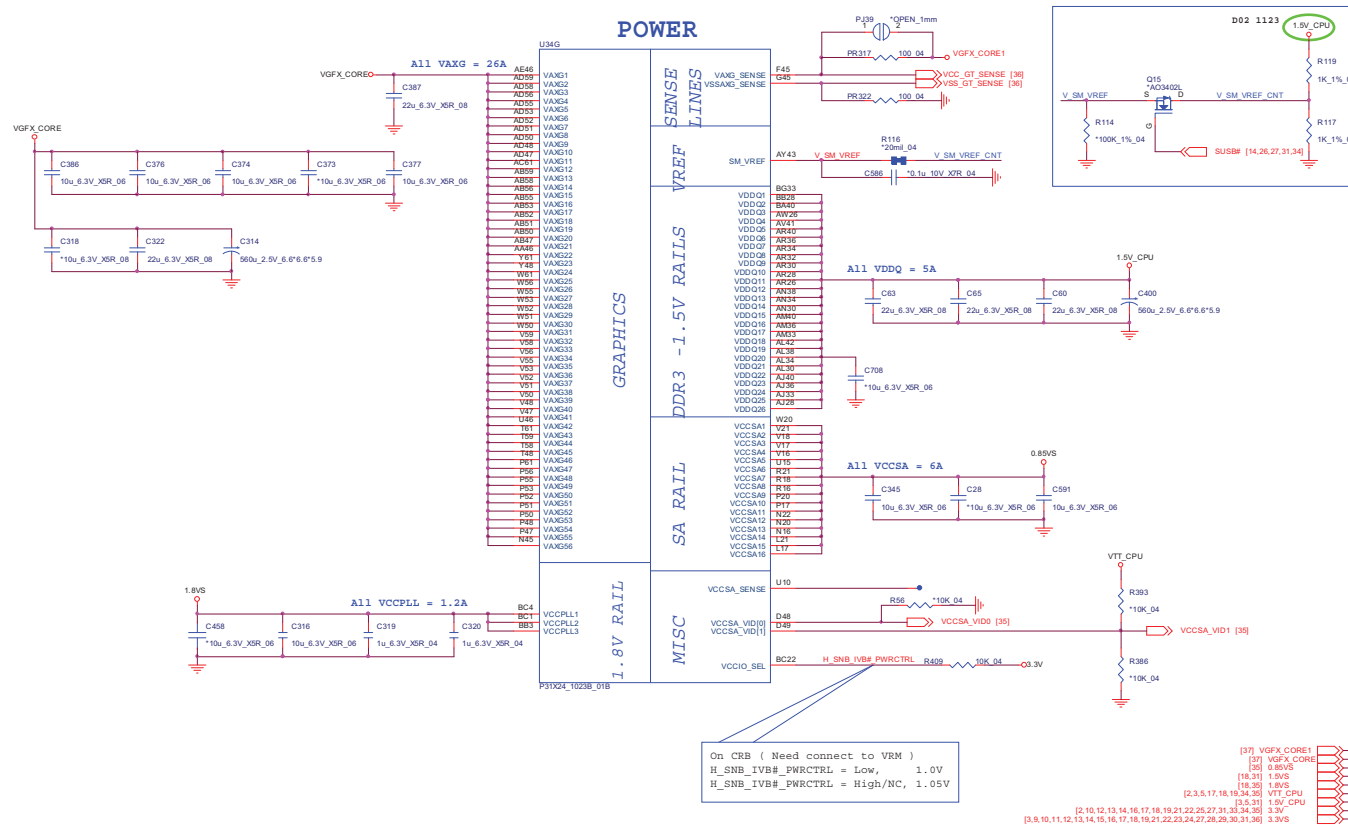
Processor 4/7 - Power

Ivy/Sandy Bridge Processor 4/7



Sheet 5 of 42
Processor 4/7 -
Power

Ivy/Sandy Bridge Processor 5/7 (GRAPHICS POWER)



Processor 7/7 - RSVD

Ivy/Sandy Bridge Processor 7/7
(RESERVED)

CFG Straps for Processor

PEBG Static Lane Reversal - CFG2 is for the 16x

CFG2

1: (Default) Normal Operation; Lane # definition matches socket pin map definition
0: Lane Reversed

CFG2

R111

1K 04

Display Port Presence Strap

CFG4

1: (Default) Disabled; No Physical Display Port attached to Embedded Display Port
0: Enabled; An external Display Port device is connected to the Embedded Display Port

CFG4

R110

1K 04

D02 1126

PCIe Port Bifurcation Straps

CFG [6 : 5]

11: (Default) x16 - Device 1 functions 1 and 2 disabled
10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled
01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

CFG5

R99

1K 04

CFG6

R92

1K 04

PEG DEFER TRAINING

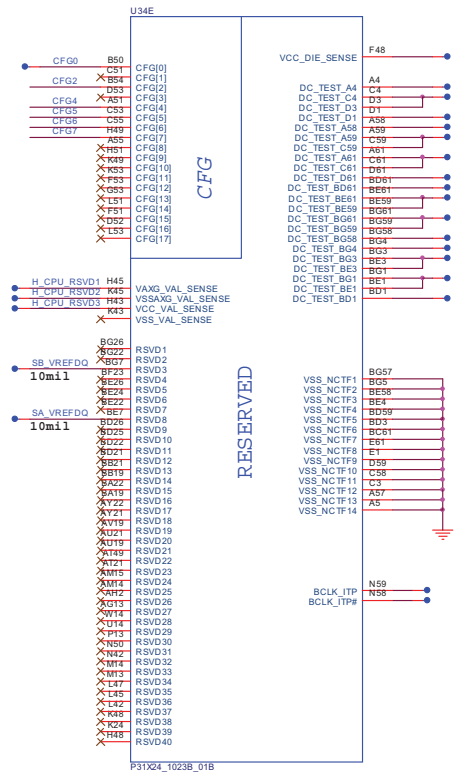
CFG7

1: (Default) PEG Train immediately following xxRESETB de assertion
0: PEG Wait for BIOS for training

CFG7

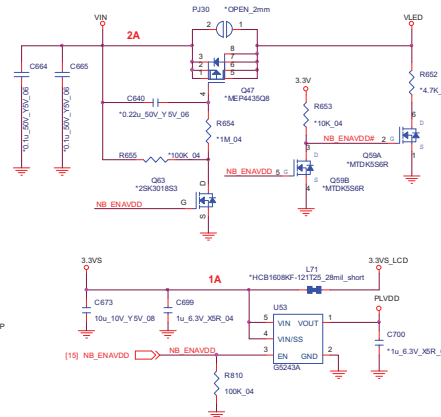
R93

1K 04



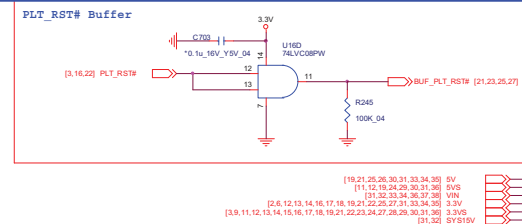
Sheet 8 of 42
Processor 7/7 -
RSVD

Sheet 10 of 42
LVDS, INVERTER

[illegible]

The schematic diagram illustrates the digital logic circuit for the 74163 counter. It features three 74163 counters (U16A, U16B, U16C) and a 74AHC1008B decoder (U13). The circuit is powered by a 3.3V supply. Key components and connections include:

- U16A (74163) and U16B (74163):** These counters are configured with their clock inputs (pin 1) connected to the 3.3V supply. Their output (pin 3) is connected to the clock input (pin 1) of U16C.
- U16C (74163):** Its output (pin 8) is connected to the clock input (pin 1) of U13.
- U13 (74AHC1008B):** This decoder is configured with its output (pin 4) connected to the clock input (pin 1) of U16A.
- Inputs:**
 - [27] BK_L_ENUSBCD and [19] BLON are connected to the clock inputs (pin 1) of U16A and U16B.
 - [27,28] LD_SWB is connected to the clock input (pin 1) of U16C.
 - [14,27,36] ALL_SYS_PWRGD and [17] SB_BLON are connected to the clock inputs (pin 1) of U16A and U16B.
- Outputs:**
 - INH_BLON is connected to the output (pin 8) of U16C.
- Resistors and Capacitors:**
 - Resistors R269, R267, R280, R281, R282, R283, R284, R285, R286, R287, R288, R289, R290, R291, R292, R293, R294, R295, R296, R297, R298, R299, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R313, R314, R315, R316, R317, R318, R319, R320, R321, R322, R323, R324, R325, R326, R327, R328, R329, R330, R331, R332, R333, R334, R335, R336, R337, R338, R339, R340, R341, R342, R343, R344, R345, R346, R347, R348, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R359, R360, R361, R362, R363, R364, R365, R366, R367, R368, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380, R381, R382, R383, R384, R385, R386, R387, R388, R389, R390, R391, R392, R393, R394, R395, R396, R397, R398, R399, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R420, R421, R422, R423, R424, R425, R426, R427, R428, R429, R430, R431, R432, R433, R434, R435, R436, R437, R438, R439, R440, R441, R442, R443, R444, R445, R446, R447, R448, R449, R450, R451, R452, R453, R454, R455, R456, R457, R458, R459, R460, R461, R462, R463, R464, R465, R466, R467, R468, R469, R470, R471, R472, R473, R474, R475, R476, R477, R478, R479, R480, R481, R482, R483, R484, R485, R486, R487, R488, R489, R490, R491, R492, R493, R494, R495, R496, R497, R498, R499, R500, R501, R502, R503, R504, R505, R506, R507, R508, R509, R510, R511, R512, R513, R514, R515, R516, R517, R518, R519, R520, R521, R522, R523, R524, R525, R526, R527, R528, R529, R530, R531, R532, R533, R534, R535, R536, R537, R538, R539, R540, R541, R542, R543, R544, R545, R546, R547, R548, R549, R550, R551, R552, R553, R554, R555, R556, R557, R558, R559, R560, R561, R562, R563, R564, R565, R566, R567, R568, R569, R570, R571, R572, R573, R574, R575, R576, R577, R578, R579, R580, R581, R582, R583, R584, R585, R586, R587, R588, R589, R590, R591, R592, R593, R594, R595, R596, R597, R598, R599, R600, R601, R602, R603, R604, R605, R606, R607, R608, R609, R610, R611, R612, R613, R614, R615, R616, R617, R618, R619, R620, R621, R622, R623, R624, R625, R626, R627, R628, R629, R630, R631, R632, R633, R634, R635, R636, R637, R638, R639, R640, R641, R642, R643, R644, R645, R646, R647, R648, R649, R650, R651, R652, R653, R654, R655, R656, R657, R658, R659, R660, R661, R662, R663, R664, R665, R666, R667, R668, R669, R670, R671, R672, R673, R674, R675, R676, R677, R678, R679, R680, R681, R682, R683, R684, R685, R686, R687, R688, R689, R690, R691, R692, R693, R694, R695, R696, R697, R698, R699, R700, R701, R702, R703, R704, R705, R706, R707, R708, R709, R710, R711, R712, R713, R714, R715, R716, R717, R718, R719, R720, R721, R722, R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738, R739, R740, R741, R742, R743, R744, R745, R746, R747, R748, R749, R750, R751, R752, R753, R754, R755, R756, R757, R758, R759, R760, R761, R762, R763, R764, R765, R766, R767, R768, R769, R770, R771, R772, R773, R774, R775, R776, R777, R778, R779, R780, R781, R782, R783, R784, R785, R786, R787, R788, R789, R790, R791, R792, R793, R794, R795, R796, R797, R798, R799, R800, R801, R802, R803, R804, R805, R806, R807, R808, R809, R810, R811, R812, R813, R814, R815, R816, R817, R818, R819, R820, R821, R822, R823, R824, R825, R826, R827, R828, R829, R830, R831, R832, R833, R834, R835, R836, R837, R838, R839, R840, R841, R842, R843, R844, R845, R846, R847, R848, R849, R850, R851, R852, R853, R854, R855, R856, R857, R858, R859, R860, R861, R862, R863, R864, R865, R866, R867, R868, R869, R870, R871, R872, R873, R874, R875, R876, R877, R878, R879, R880, R881, R882, R883, R884, R885, R886, R887, R888, R889, R890, R891, R892, R893, R894, R895, R896, R897, R898, R899, R900, R901, R902, R903, R904, R905, R906, R907, R908, R909, R910, R911, R912, R913, R914, R915, R916, R917, R918, R919, R920, R921, R922, R923, R924, R925, R926, R927, R928, R929, R930, R931, R932, R933, R934, R935, R936, R937, R938, R939, R940, R941, R942, R943, R944, R945, R946, R947, R948, R949, R950, R951, R952, R953, R954, R955, R956, R957, R958, R959, R960, R961, R962, R963, R964, R965, R966, R967, R968, R969

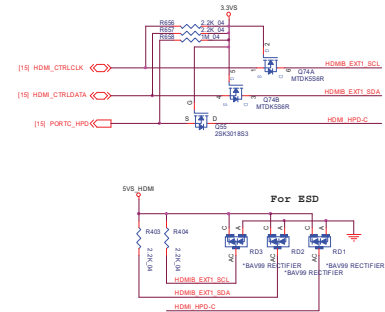
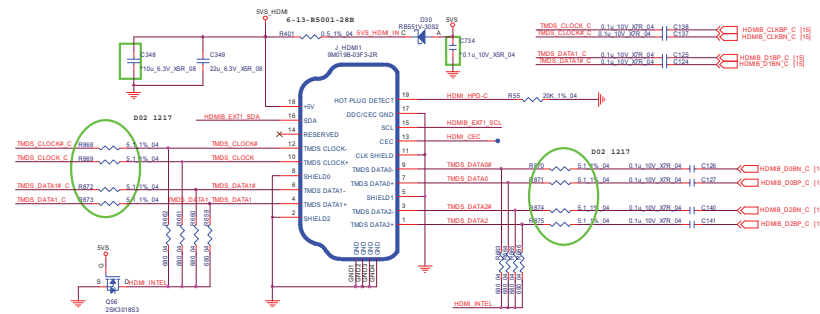


<http://adf.ly/3o8pJ>

Schematic Diagrams

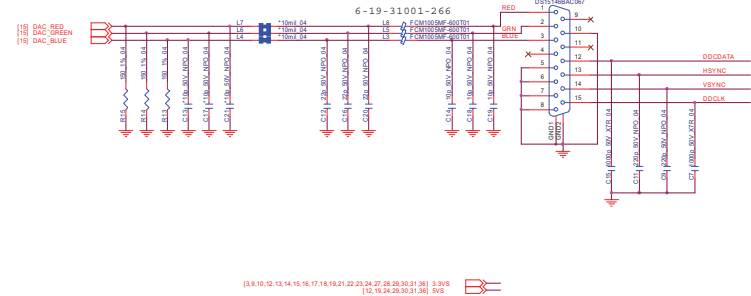
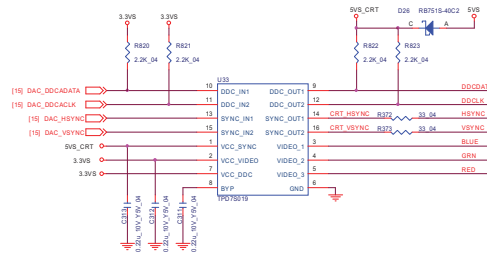
HDMI, CRT

HDMI PORT

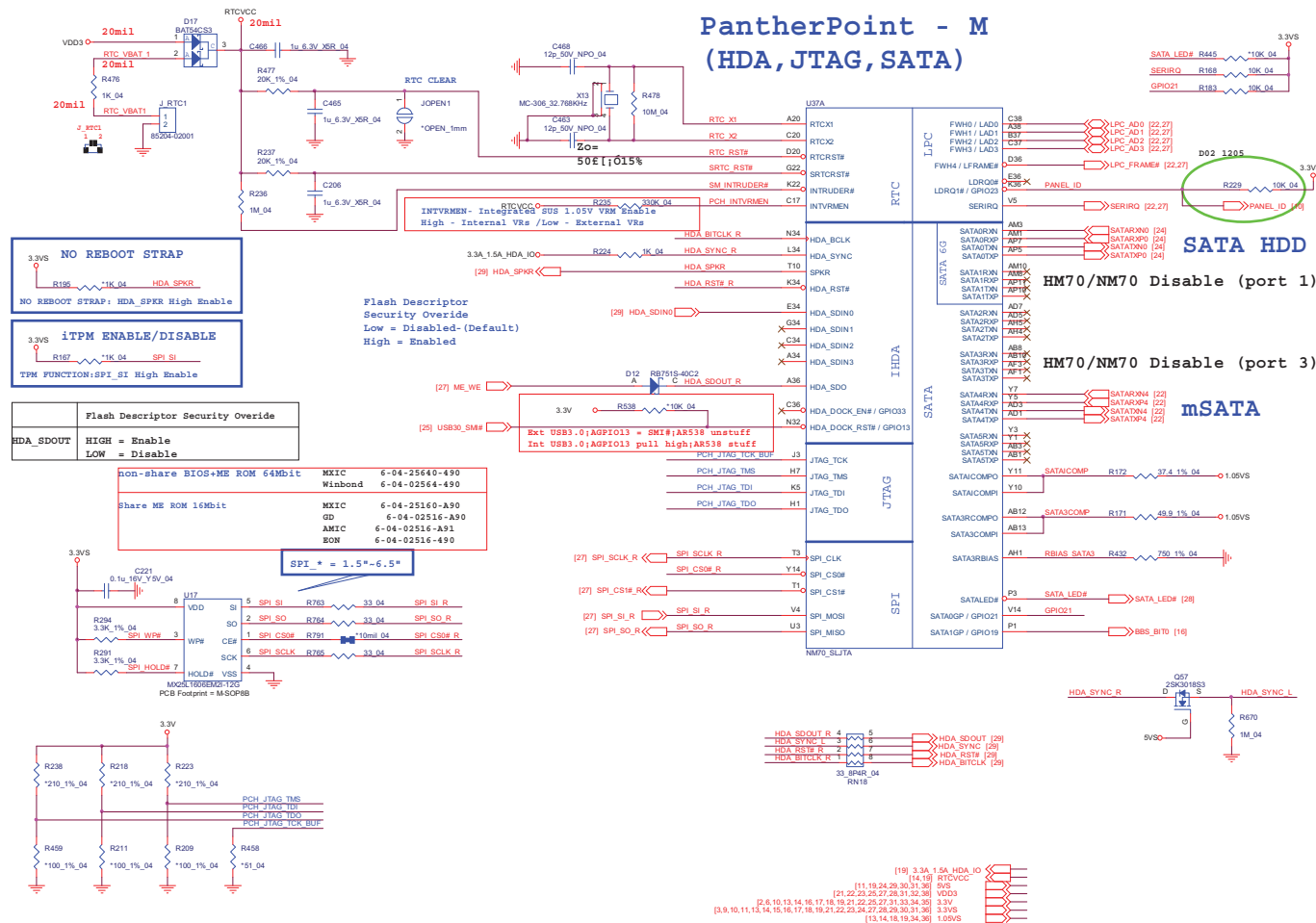


Sheet 11 of 42
HDMI, CRT

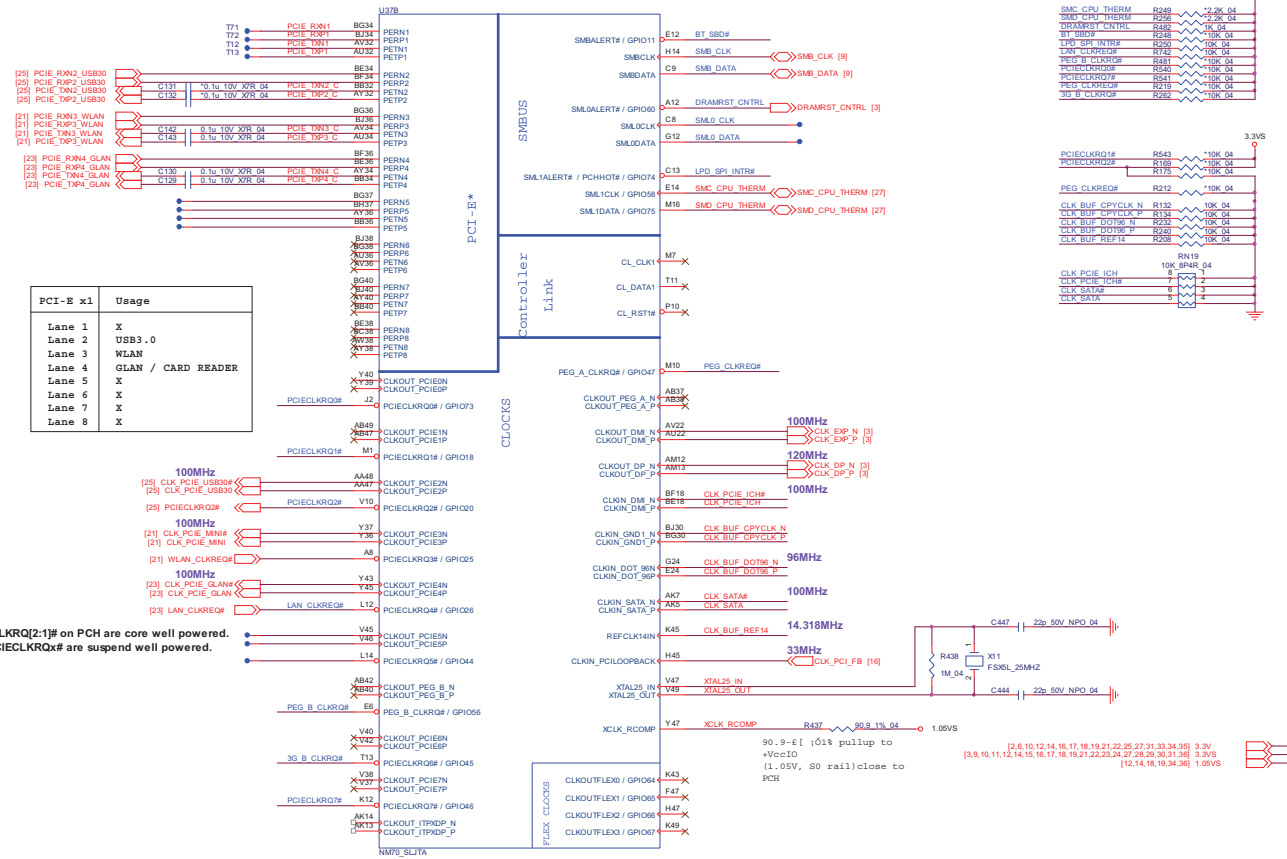
CRT PORT



PCH 1/9 - HDA, SATA



```
PantherPoint - M (PCI-E,SMBUS,CLK)
```



PantherPoint -M (DMI,FDI,GPIO)

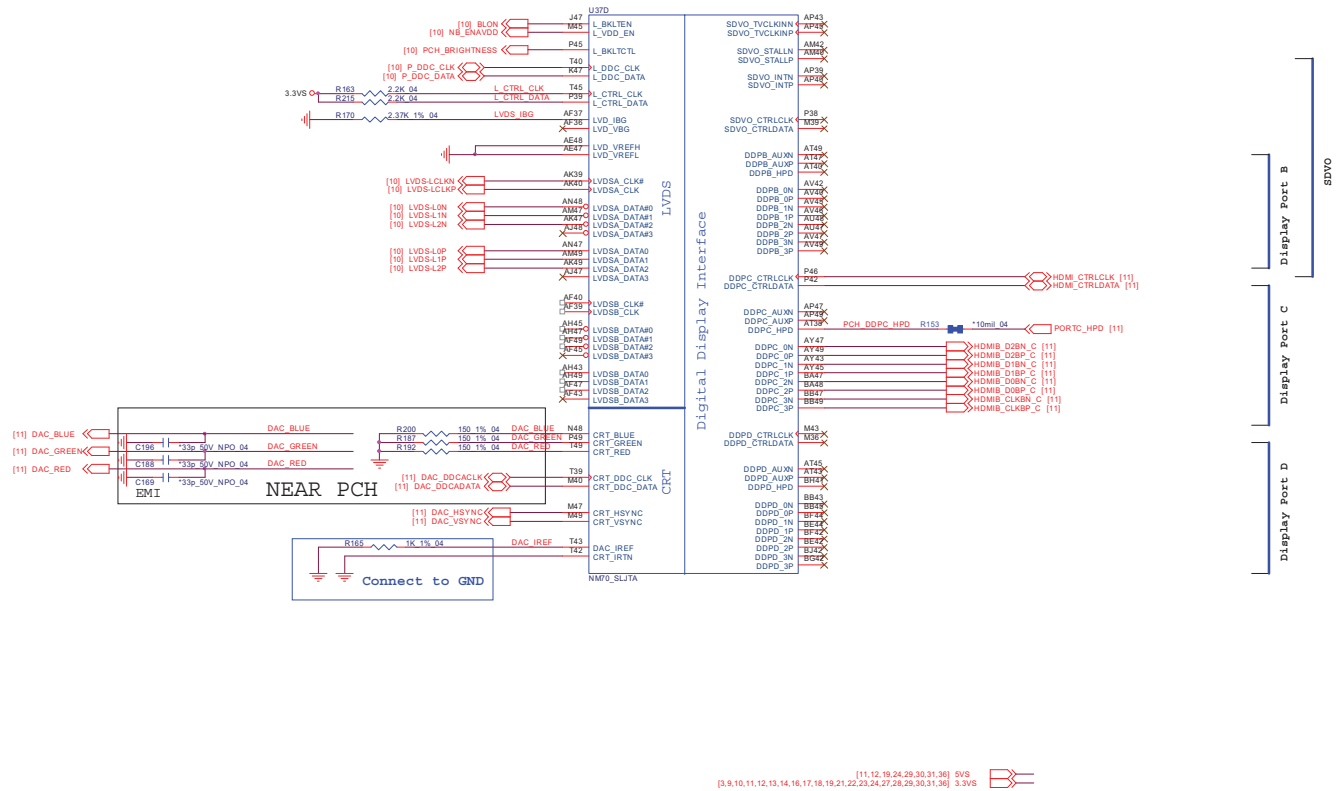


Schematic Diagrams

PCH 4/9 - LVDS, DDI, CRT

PantherPoint -M (LVDS, DDI, CRT)

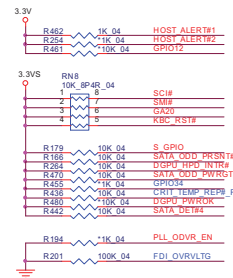
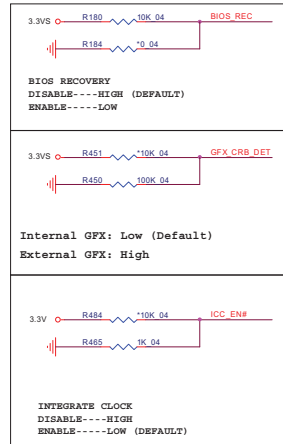
Sheet 15 of 42
PCH 4/9 - LVDS,
DDI, CRT



Schematic Diagrams

PCH 6/9 - GPIO, VSS_NCTF, RSVD

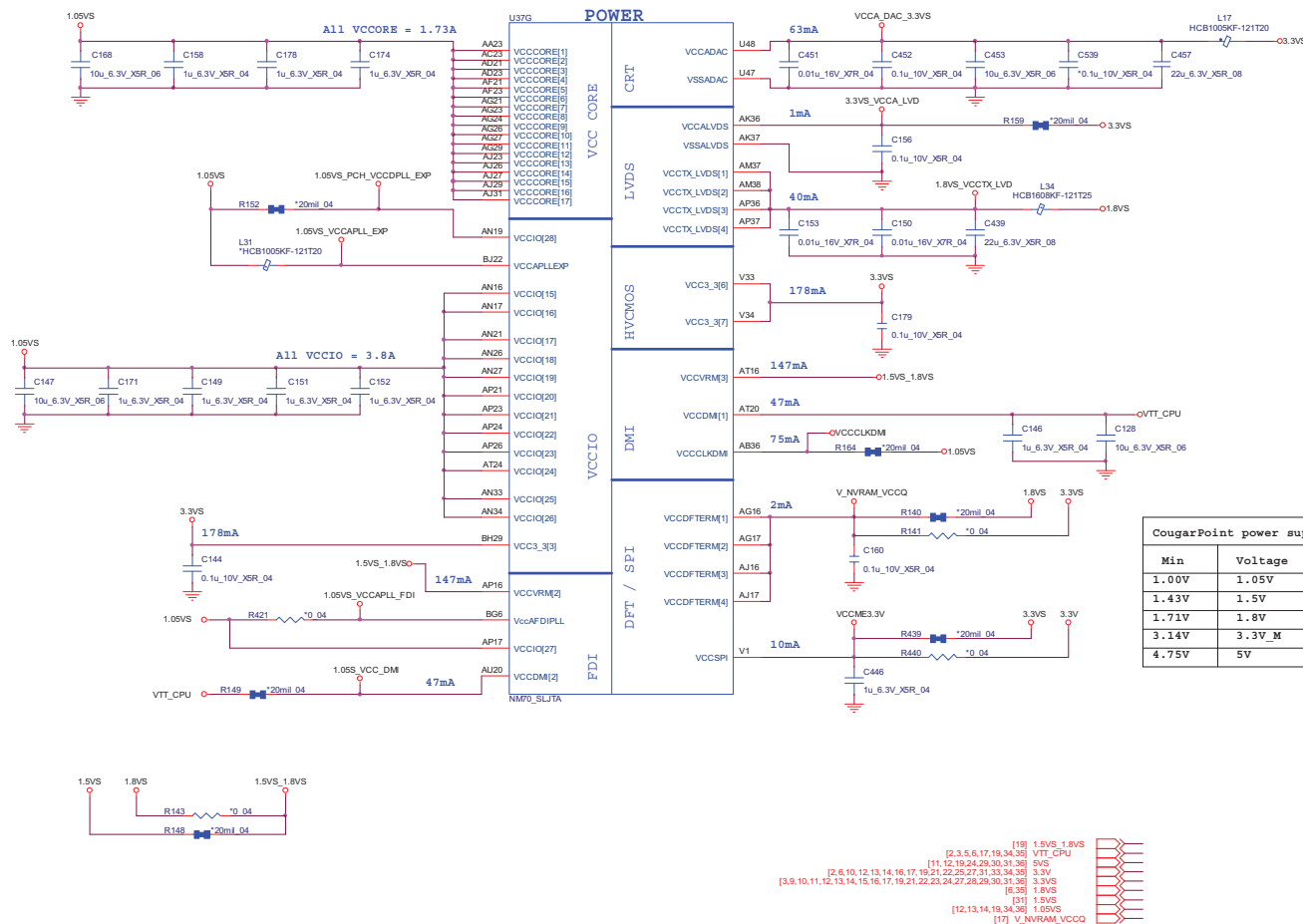
Sheet 17 of 42
PCH 6/9 - GPIO,
VSS_NCTF, RSVD



PantherPoint - M (GPIO,VSS_NCTF,RSVD)



PantherPoint -M (POWER)



Sheet 18 of 42
PCH 7/9 - PWR

B.Schematic Diagrams

CougarPoint power supply rang		
Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V_M	3.47V
4.75V	5V	5.25V

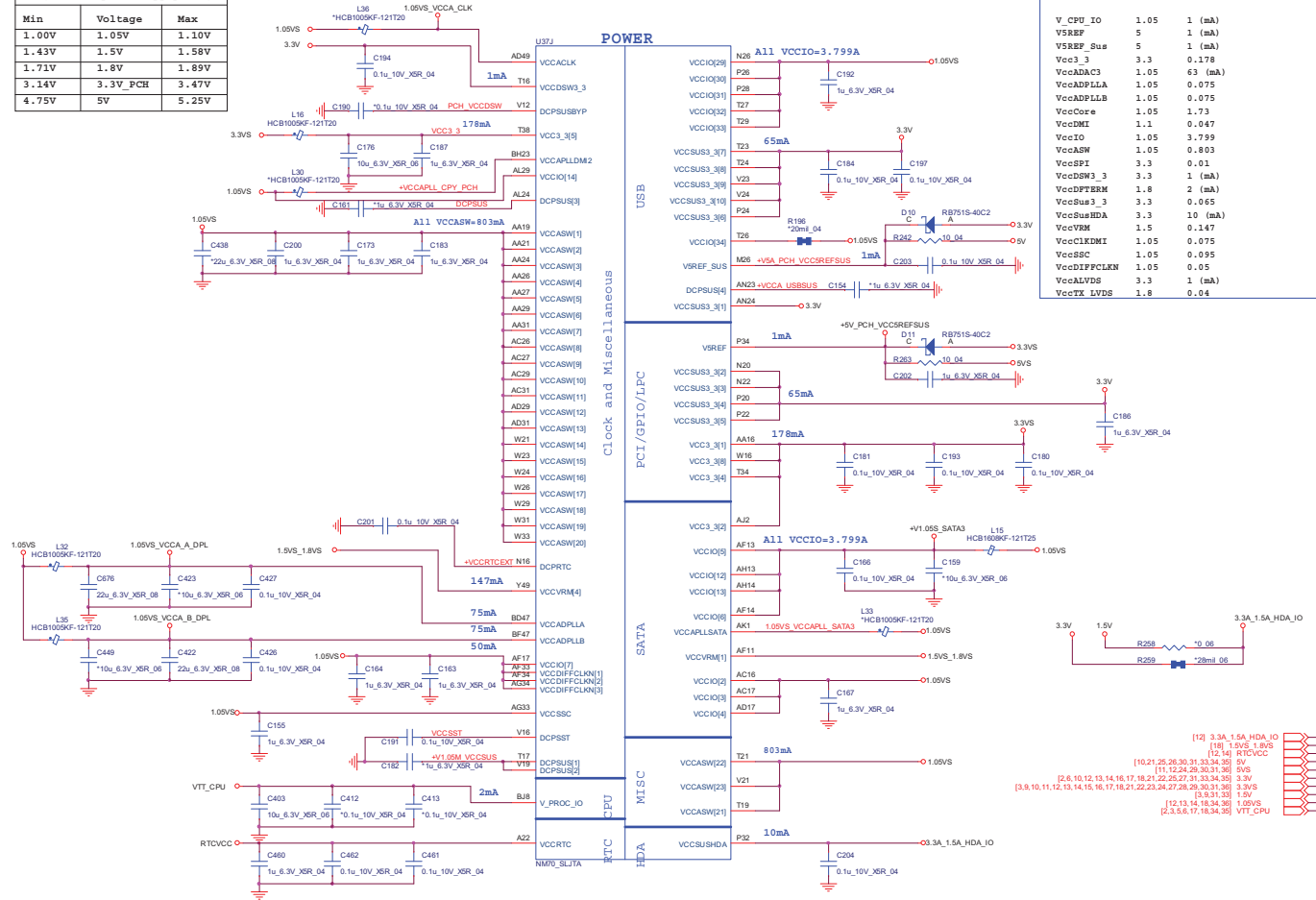
Schematic Diagrams

PCH 8/9 - POWER

CougarPoint power supply range		
Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V_PCH	3.47V
4.75V	5V	5.25V

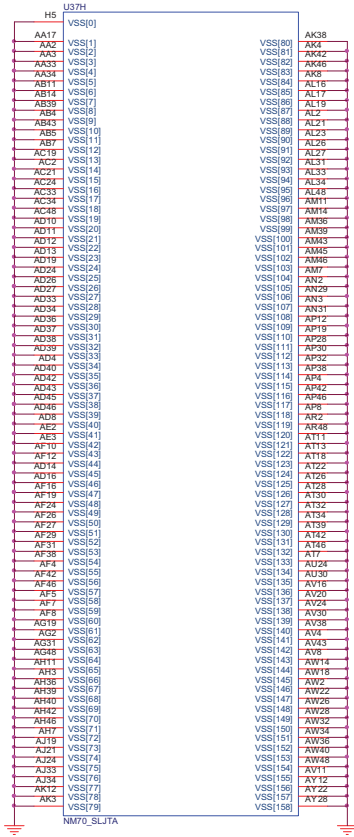
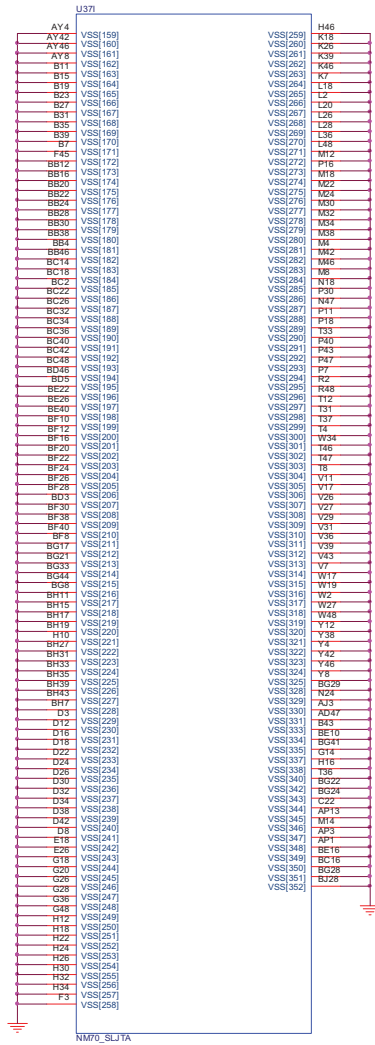
PantherPoint - M (POWER)

Voltage Rail	Voltage	80 Iocmax Current (A)
V_CPU_IO	1.05	1 (mA)
V5REF	5	1 (mA)
V5REF_Sus	5	1 (mA)
Vcc3_3	3.3	0.178
VccADAC3	1.05	63 (mA)
VccADAPLLA	1.05	0.075
VccADPLLb	1.05	0.075
VccCore	1.05	1.73
VccDMI	1.1	0.047
VccIO	1.05	3.759
VccASW	1.05	0.803
VccSPT	3.3	0.01
VccDSW3_3	3.3	1 (mA)
VccDFTERM	1.8	2 (mA)
VccSus3_3	3.3	0.065
VccSusHDA	3.3	10 (mA)
VccTSM	1.5	0.147
VccCLKEMI	1.05	0.075
VccSSC	1.05	0.095
VccDTPFLCN	1.05	0.05
VccALVDS	3.3	1 (mA)
VccTX LVDS	1.8	0.04



PCH 9/9 - GND

PantherPoint -M (GND)



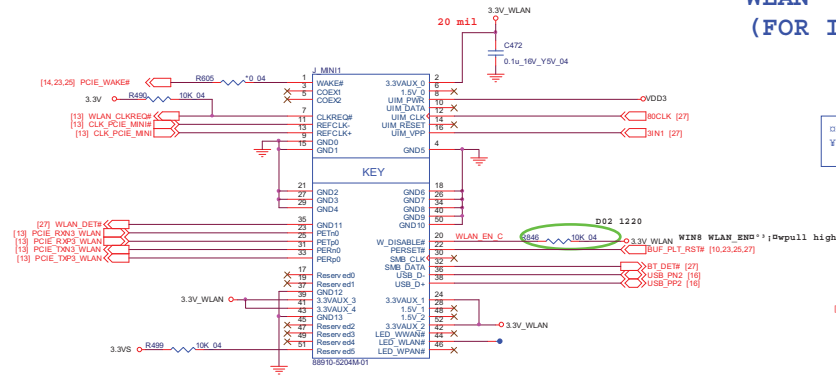
Sheet 20 of 42
PCH 9/9 - GND

B.Schematic Diagrams

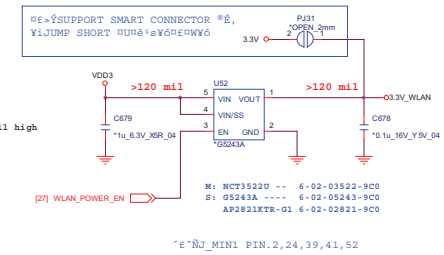
Schematic Diagrams

WLAN, CCD

MINI CARD WLAN

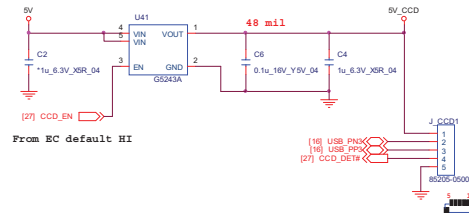


WLAN POWER (FOR INTEL SMART CONNECTOR)



Sheet 21 of 42
WLAN, CCD

CCD

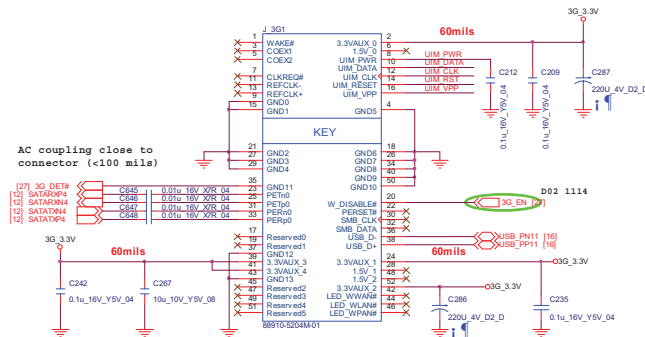


[3,9,10,11,12,13,14,15,16,17,18,19,22,23,24,27,28,29,30,31,36] 3.3V
[2,6,10,12,13,14,16,17,18,19,22,25,27,31,33,34,35] 3.3V
[10,19,25,28,30,31,33,34,35] 5V
[12,22,23,25,27,28,31,32,36] VDD3

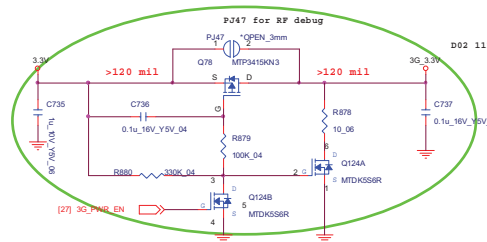


3G/mSATA, TPM

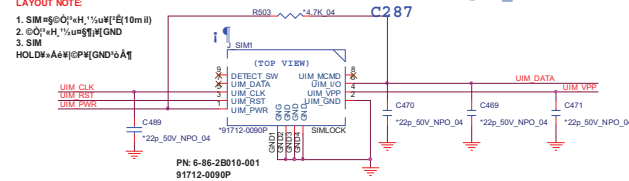
MINI CARD 3G/mSATA (Port 6)



3G POWER



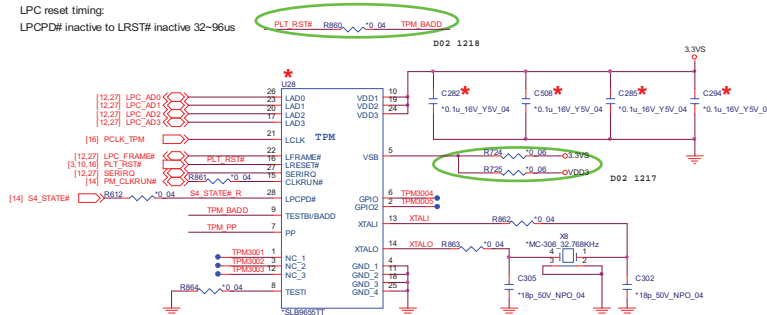
SIM CONN



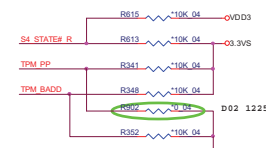
Sheet 22 of 42
3G/mSATA, TPM

TPM 9635 & 9655 co-lay w/ TPM1G

Asserted before entering S3
LPC reset timing:
LPCPD# inactive to LRST# inactive 32-96us



6-03-09635-0H3 (1.2) FW:G3.17
6-03-09655-0H1 (1.2) FW:G4.31

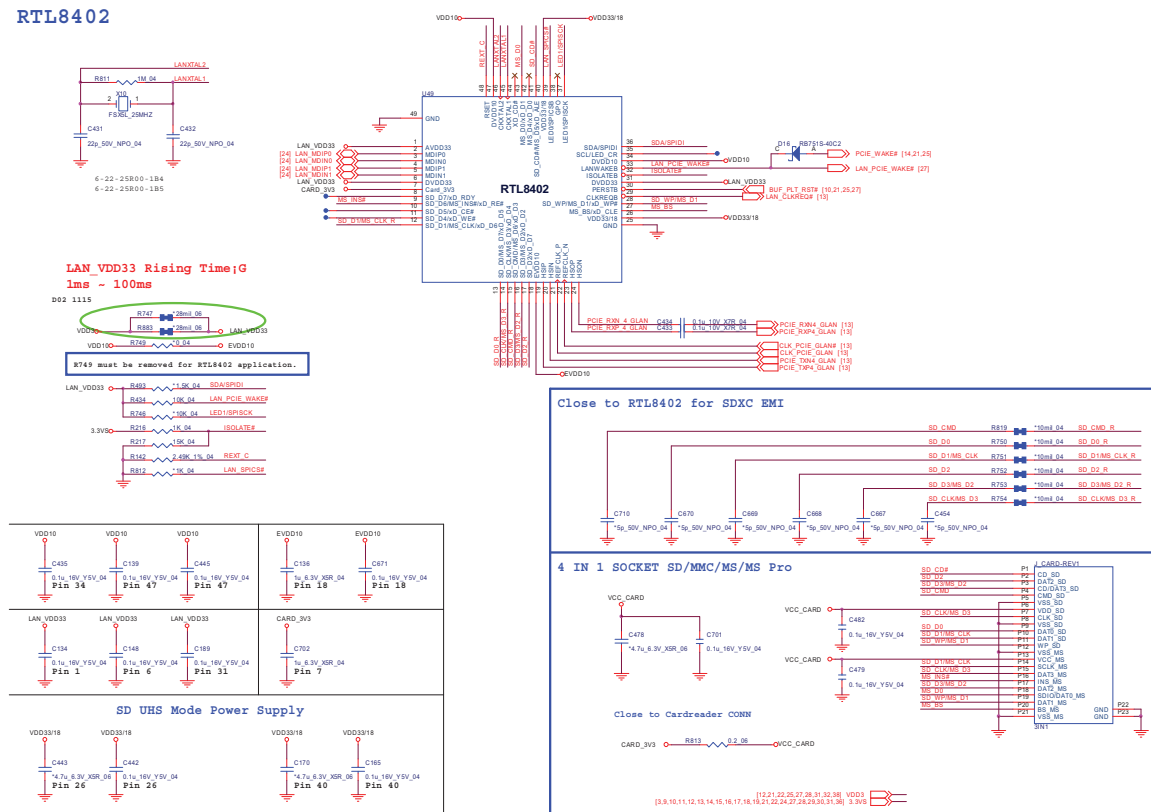


TPM_PP	H: ACCESS
SLB9635 (1.2)	L: NORMAL (Int. PD) Default
TPM_BADO	H: 4E7 4F H
TPM_BADO	L: 2E7 2F H

CLK TPM R349 ~33.04 CLK TPM C292 ~10p.50V_NPO_04

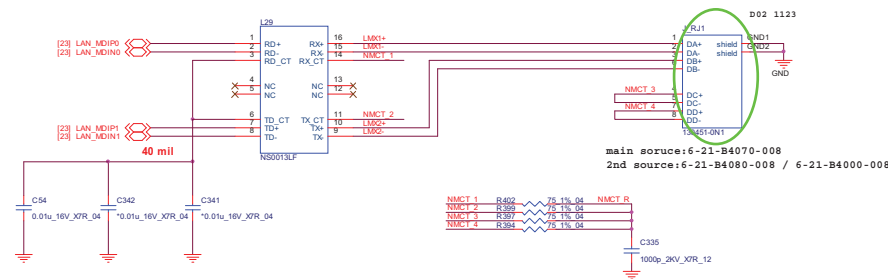
[2,6,10,12,13,14,16,17,18,19,21,25,27,31,33,34,35] 3.3V
[3,9,10,11,12,13,14,16,17,18,19,21,23,24,27,28,29,30,31,36] 3.3V

LAN RTL8402, Card Reader



Transformer, SATA HDD

10/100 LAN Transformer



Sheet 24 of 42
Transformer,
SATA HDD

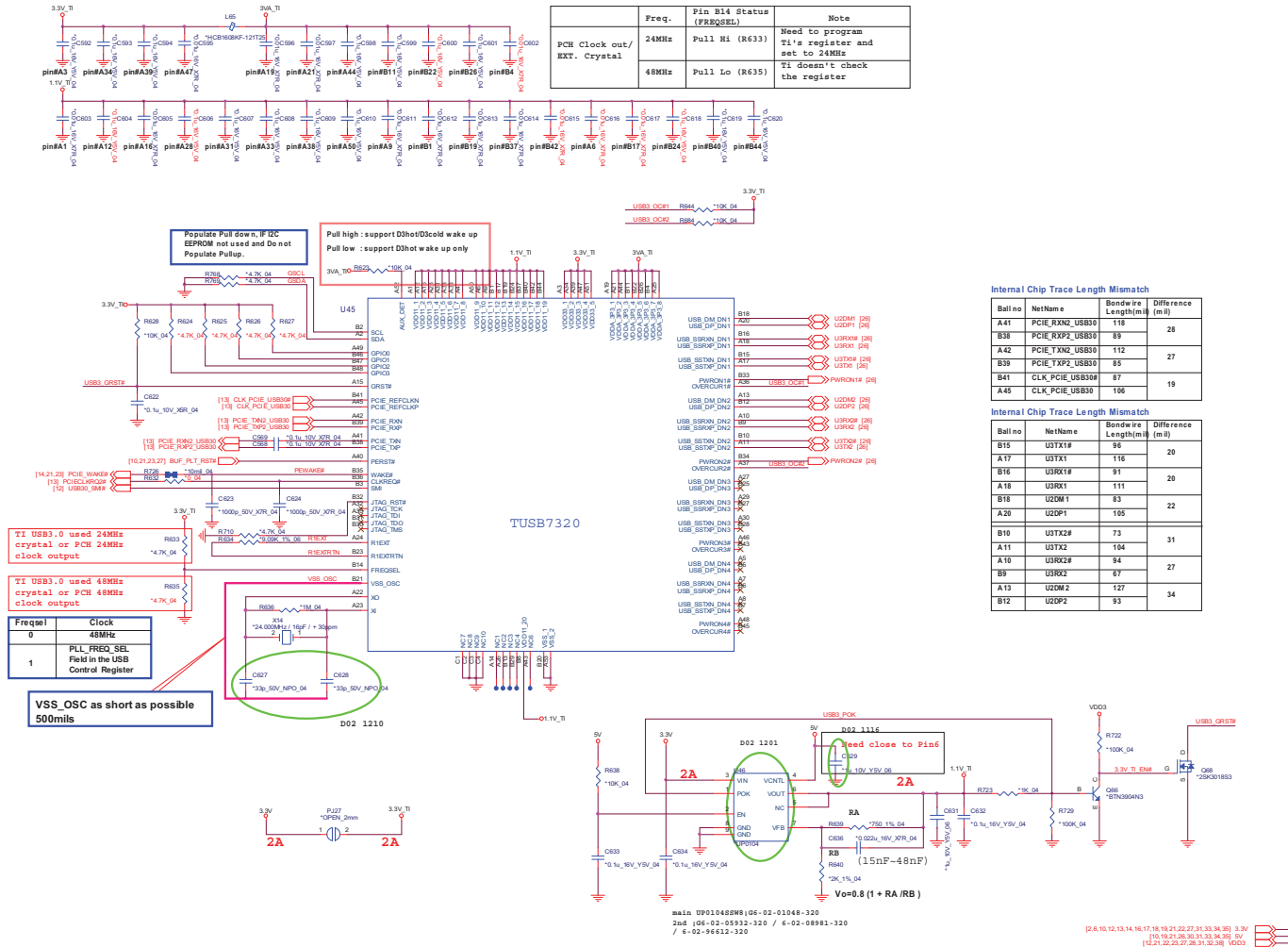
SATA HDD



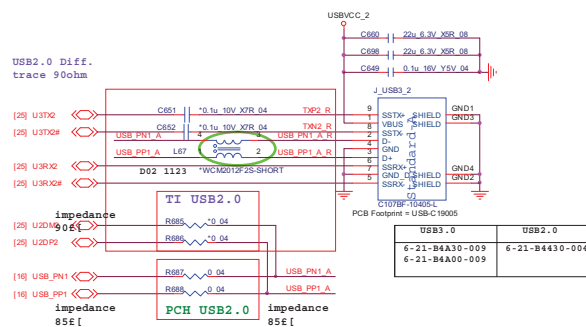
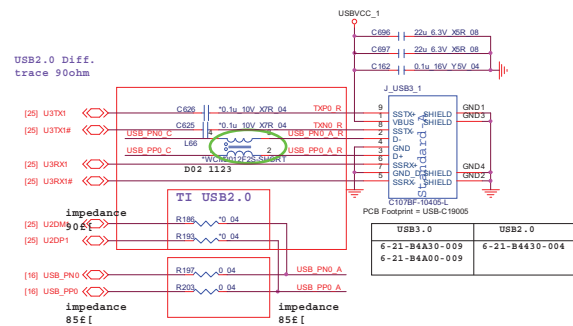
Schematic Diagrams

USB 3.0 TI TUSB7320

Sheet 25 of 42 USB 3.0 TI TUSB7320



USB 3.0/USB2.0



Sheet 26 of 42
USB Port,
USB Charger

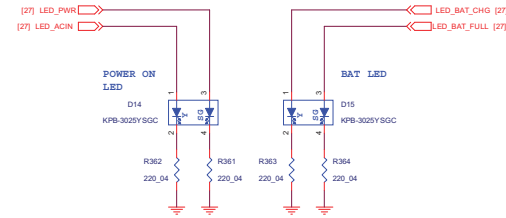
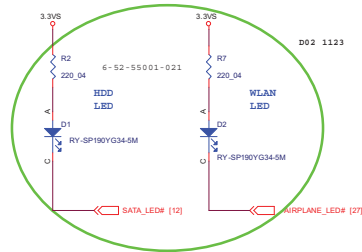
KBC-ITE IT8518

Sheet 27 of 42
KBC-ITE IT8518

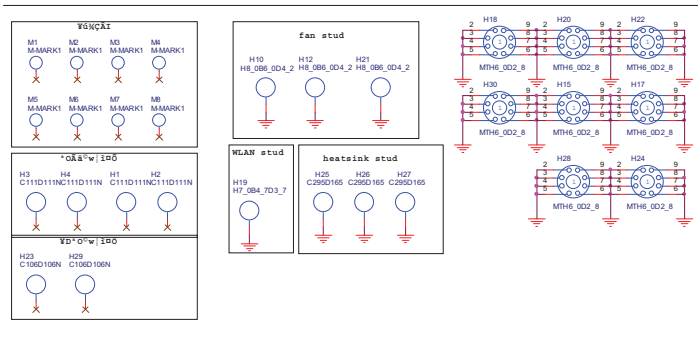
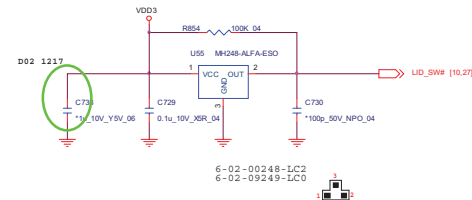


LED / LID Switch

LED



LID SWITCH IC



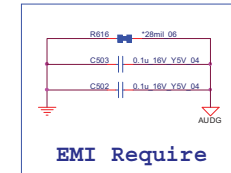
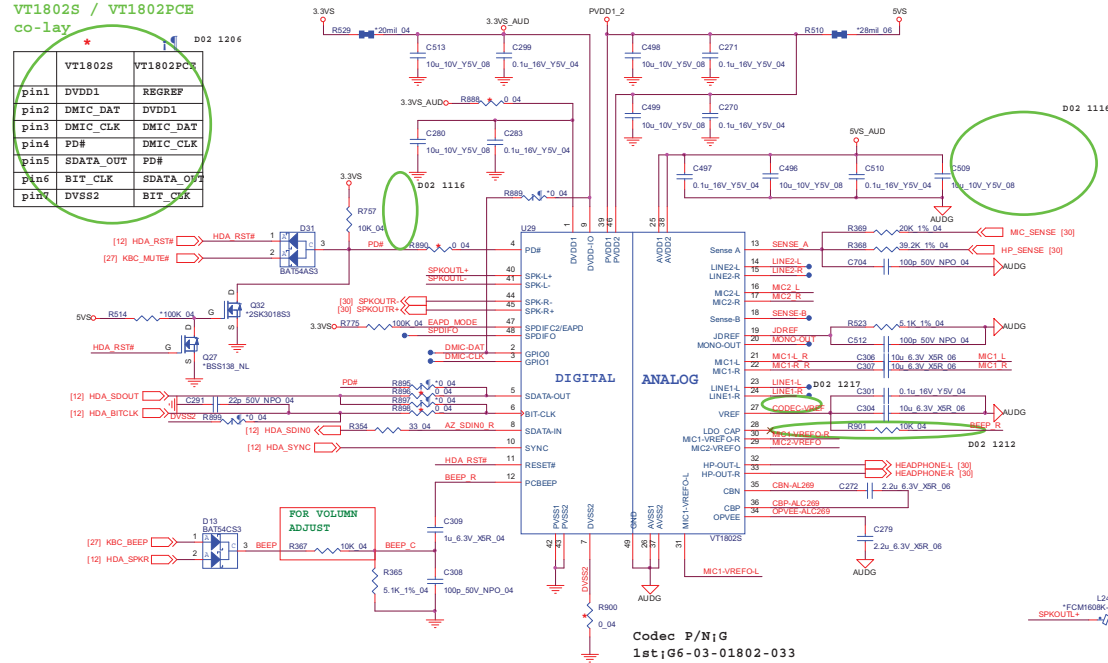
Sheet 28 of 42
LED / LID Switch

AUDIO CODEC VT1802S

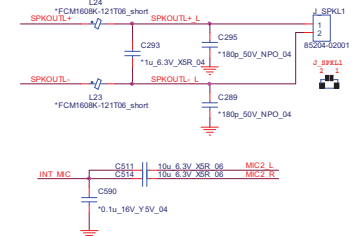
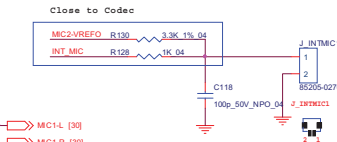
AUDIO CODEC
VT1802S / VT1802PCE
co-lay

	VT1802S	VT1802PC
pin1	DVDD1	REGREF
pin2	DMIC_DAT	DVDD1
pin3	DMIC_CLK	DMIC_DAT
pin4	PD#	DMIC_CLK
pin5	SDATA_OUT	PD#
pin6	BIT_CLK	SDATA_OUT
pin7	DVSS2	BIT_CLK

Sheet 29 of 42
AUDIO CODEC
VT1802S



Codec P/N:G
1st;G6-03-01802-033

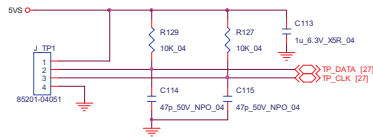


Speaker wire length less than 8000mils, It don't need LC Filter.
SPKOUTR+,R-,L+,L- Trace width
Speaker 4 ohm----> 40mils
Speaker 8 ohm----> 20mils

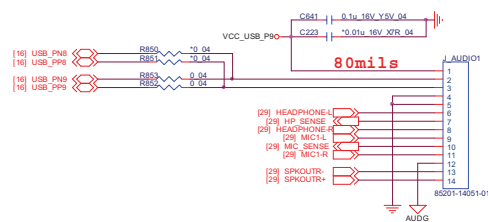
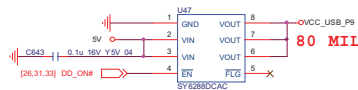


Fan, TP, Connector

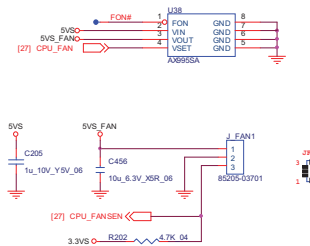
CLICK B'd CONN



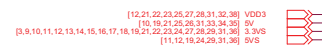
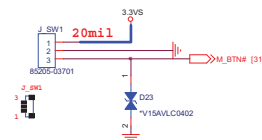
Audio B'd CONN



FAN CONTROL



POWER SWITCH B'd CONN

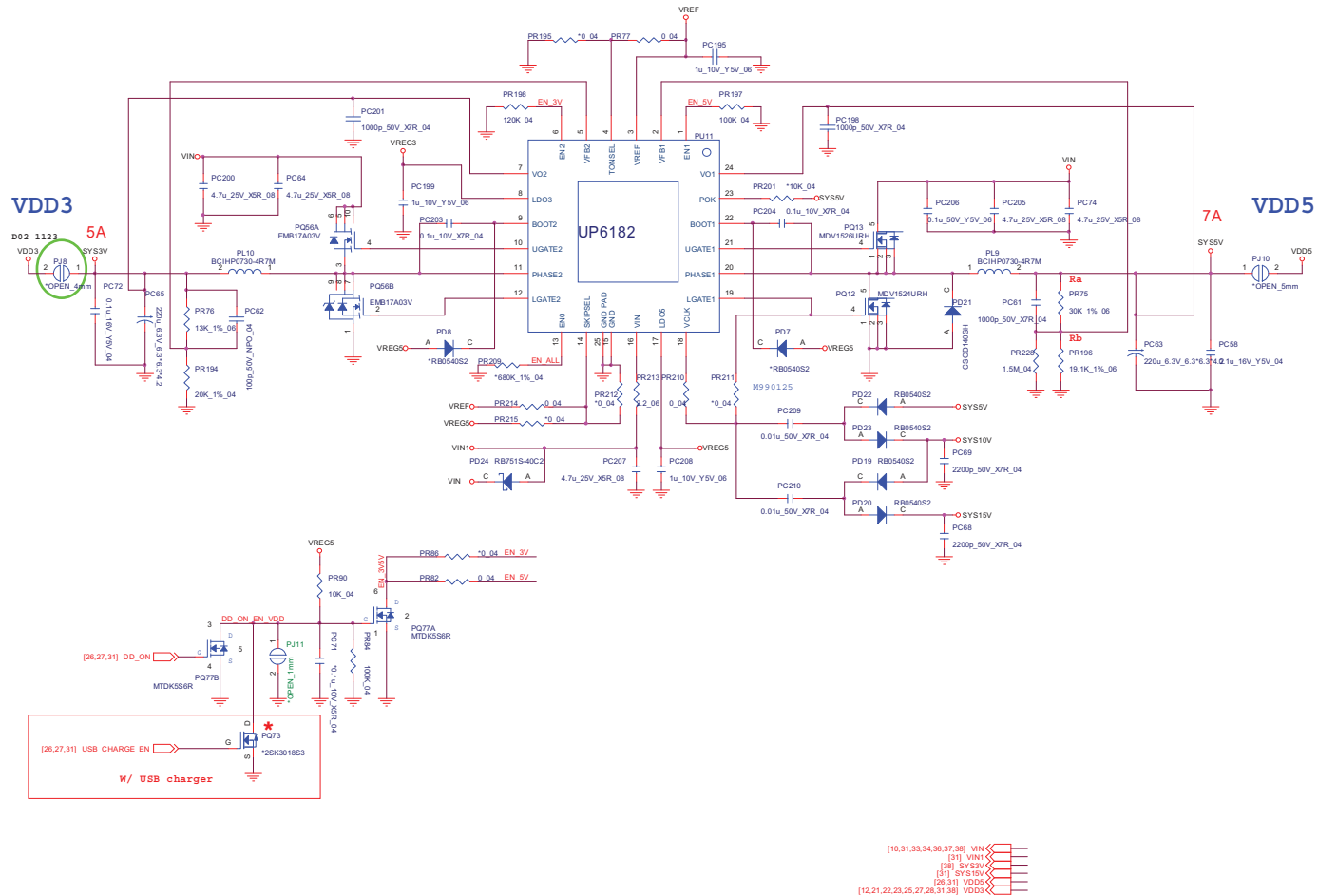


Sheet 30 of 42
Fan, TP, Connector

Power System

VDD3, VDD5

VDD3/VDD5

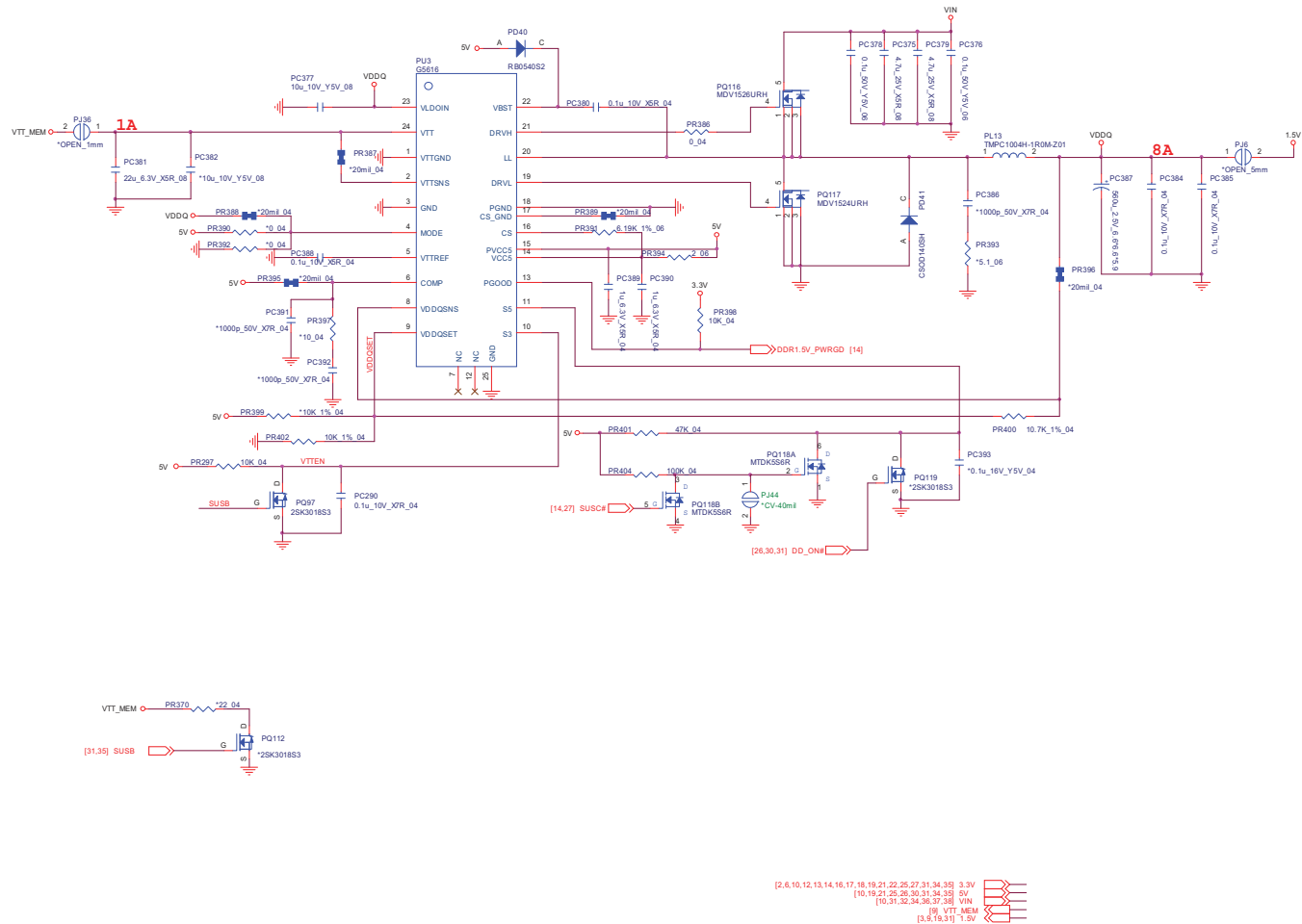


Sheet 32 of 42
VDD3, VDD5

B. Schematic Diagrams

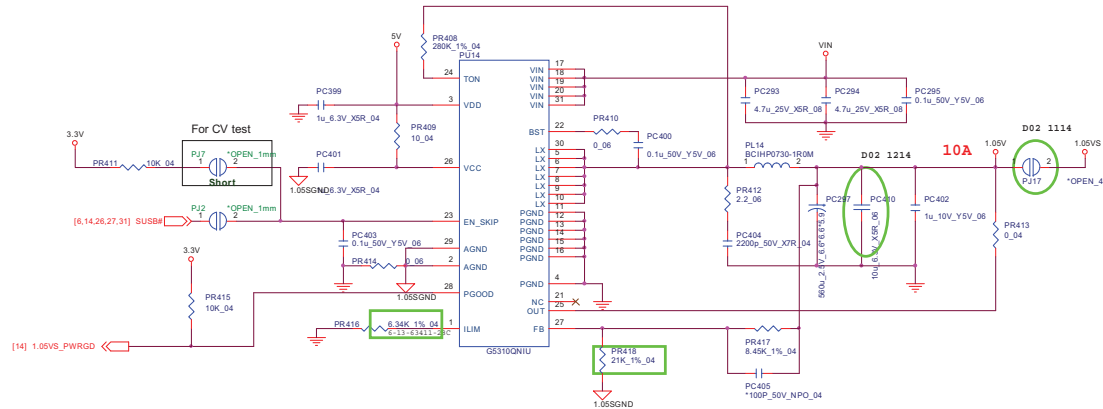
Schematic Diagrams

POWER 1.5V/0.75V



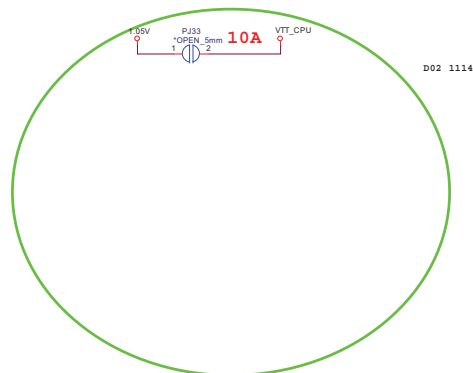
POWER 1.05VS, VTT_CPU

1.05VS



Sheet 34 of 42
POWER 1.05VS,
VTT_CPU

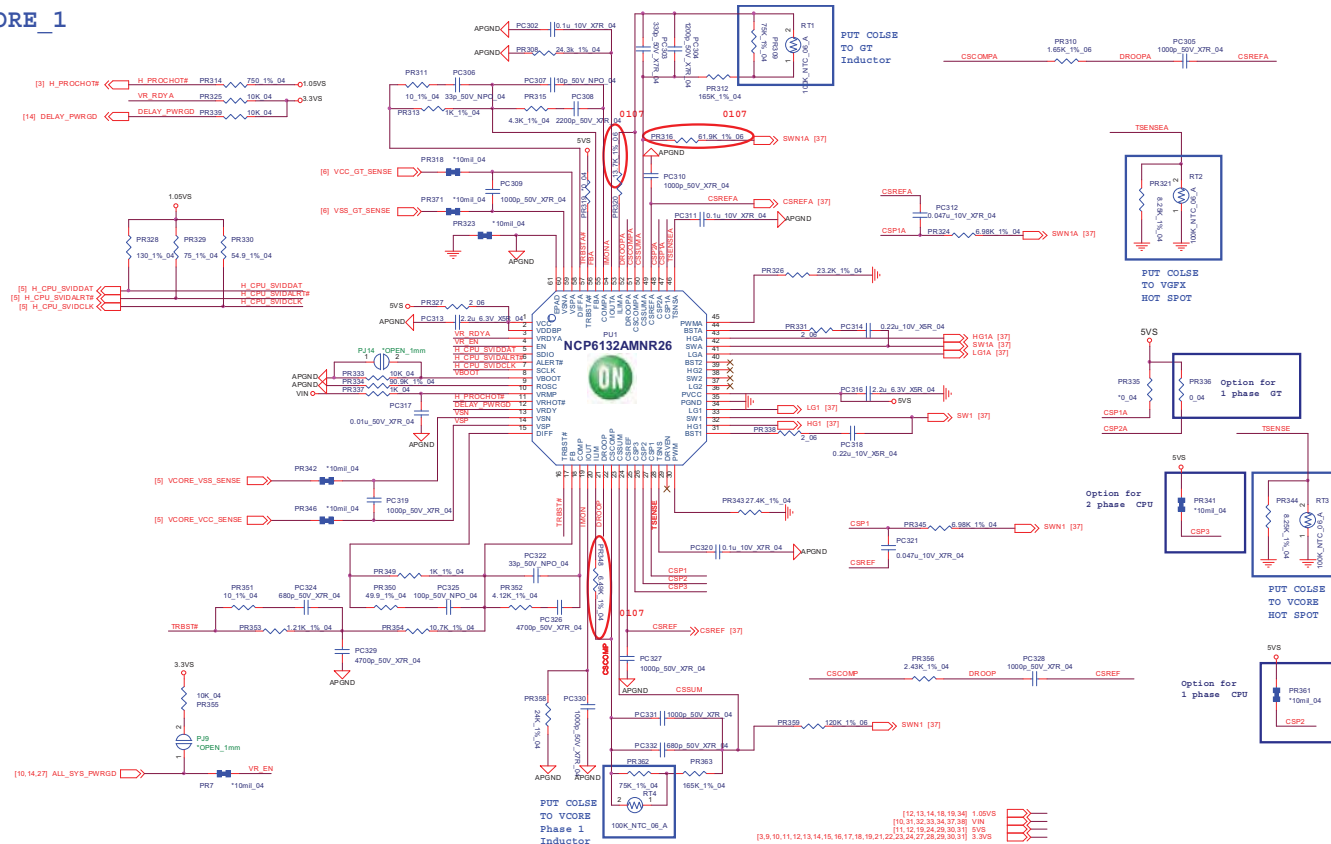
VTT_CPU



[2,3,5,6,17,18,19,35] VTT_CPU
[12,13,14,16,19,36] 1.05VS
[2,6,10,12,13,14,16,17,18,19,21,22,23,27,31,33,35] 3.3V
[10,19,21,25,26,30,31,33,35] 5V
[10,31,32,33,36,37,38] VIN
[31,32] SYS1SV

POWER VCORE1

VCORE_1

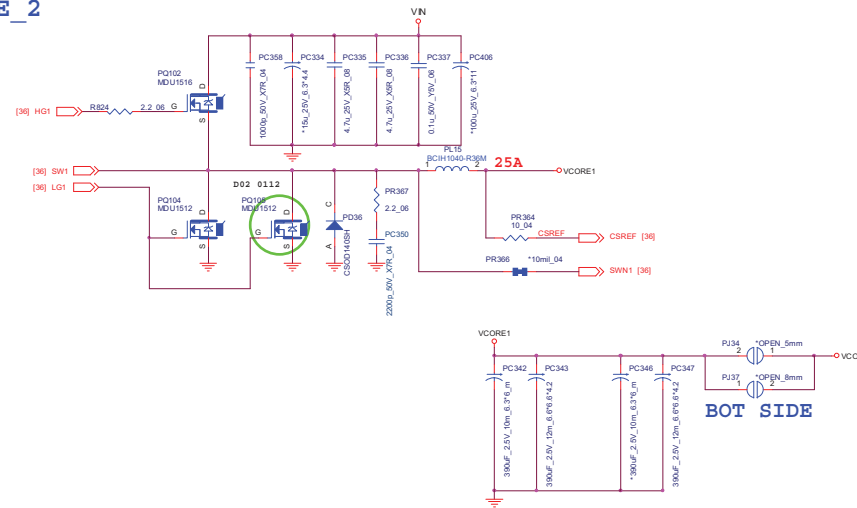


Sheet 36 of 42
POWER VCORE1

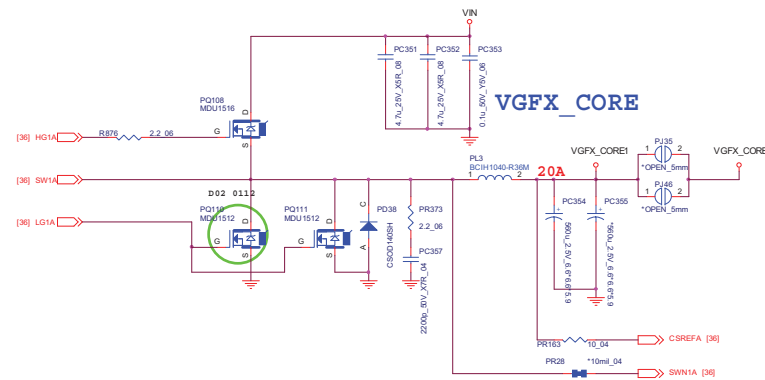
Schematic Diagrams

POWER VCORE2

VCORE_2



VGFX_CORE



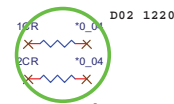
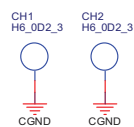
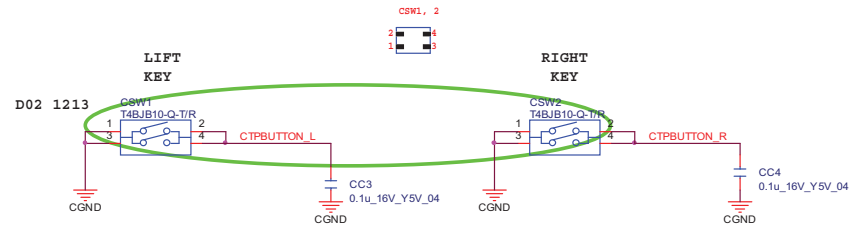
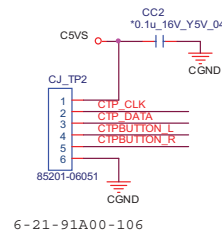
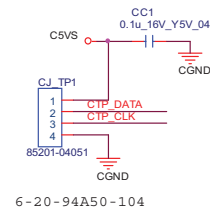
(5) V CORE1
(6) VGFX_CORE1
(8) V CORE
(9) VGFX_CORE
(10,31,32,33,34,36,38) VIN
(11,12,15,24,29,30,31,38) 5V5

Schematic Diagrams

Click Board

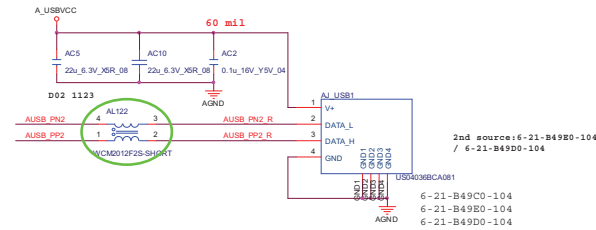
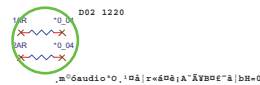
CLICK BOARD

Sheet 39 of 42
Click Board

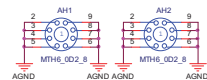
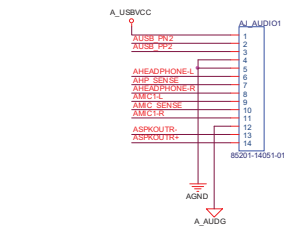


Audio Board

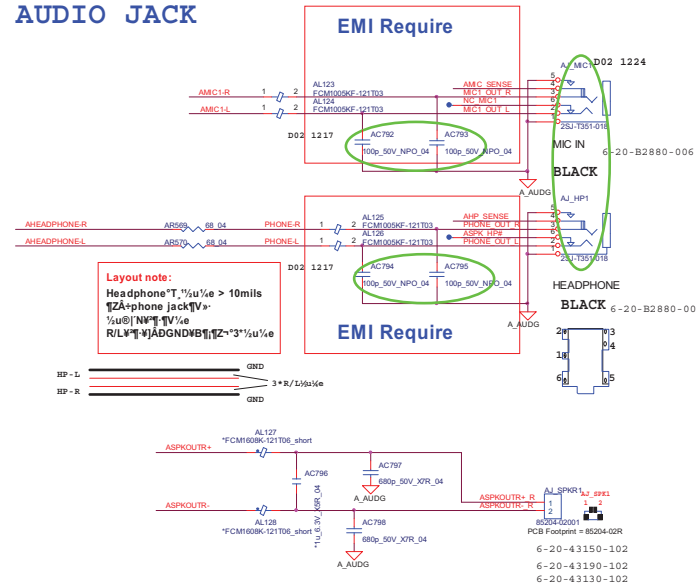
USB PORT



TO M/B



AUDIO JACK

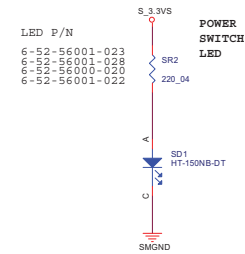
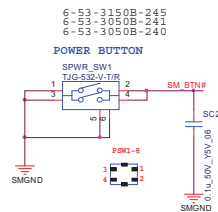
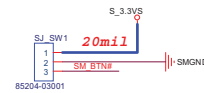


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Schematic Diagrams

Power Switch & LED Board

POWER SW & LED



Sheet 41 of 42
Power Switch &
LED Board

