

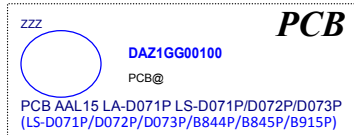
COMPAL CONFIDENTIAL

MODEL NAME : AAL15
PCB NO : DA800140000
BOM P/N :
GPIO MAP:

SKL-U+MEC1404 VC board

2015-07-09

REV : 1.0 (A00)



@ : Nopop Component

i3SKL2.3GR1@/i5SKL2.3GR1@/i7SKL2.5GR1@/SKL1.6G23R1@:CPU R1
i3SKL2.3GR3@/i5SKL2.3GR3@/i7SKL2.5GR3@/SKL1.6G23R3@:CPU R3

UMA@/DIS@ : UMA & DIS Type

DSX@/N_DSX@: DSX Mode

EMI@/ESD@/HDMI@EMI@/RF@ : EMI, ESD and RF Component

@EMI@/@ESD@/@RF@ : EMI, ESD and RF Nopop Component

CMC@ : XDP Component

CONN@ : Connector Component

100@/1000@/LAN_SW@ : LAN type

3234@/3246@ : CODEC type

CRT@/HDMI@ : CRT/HDMI

TP_WAKE@/NOTP_WAKE@ : TouchPad wake

ODD@/NOZPODD@/ZPODD@ : ODD and Zero Power

EXOR1@/MESOR1@ : GPU R1

EXOR3@/MESOR3@ : GPU R3

EXO@/MESO@ : GPU relative component

2G_H@/2G_S@/2G_M@/4G_H@/4G_S@/4G_M@ : VRAM type

V_4G@ : 4G VRAM Support component

Layout Dell logo



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REV: X00
PWB: 9HTP8

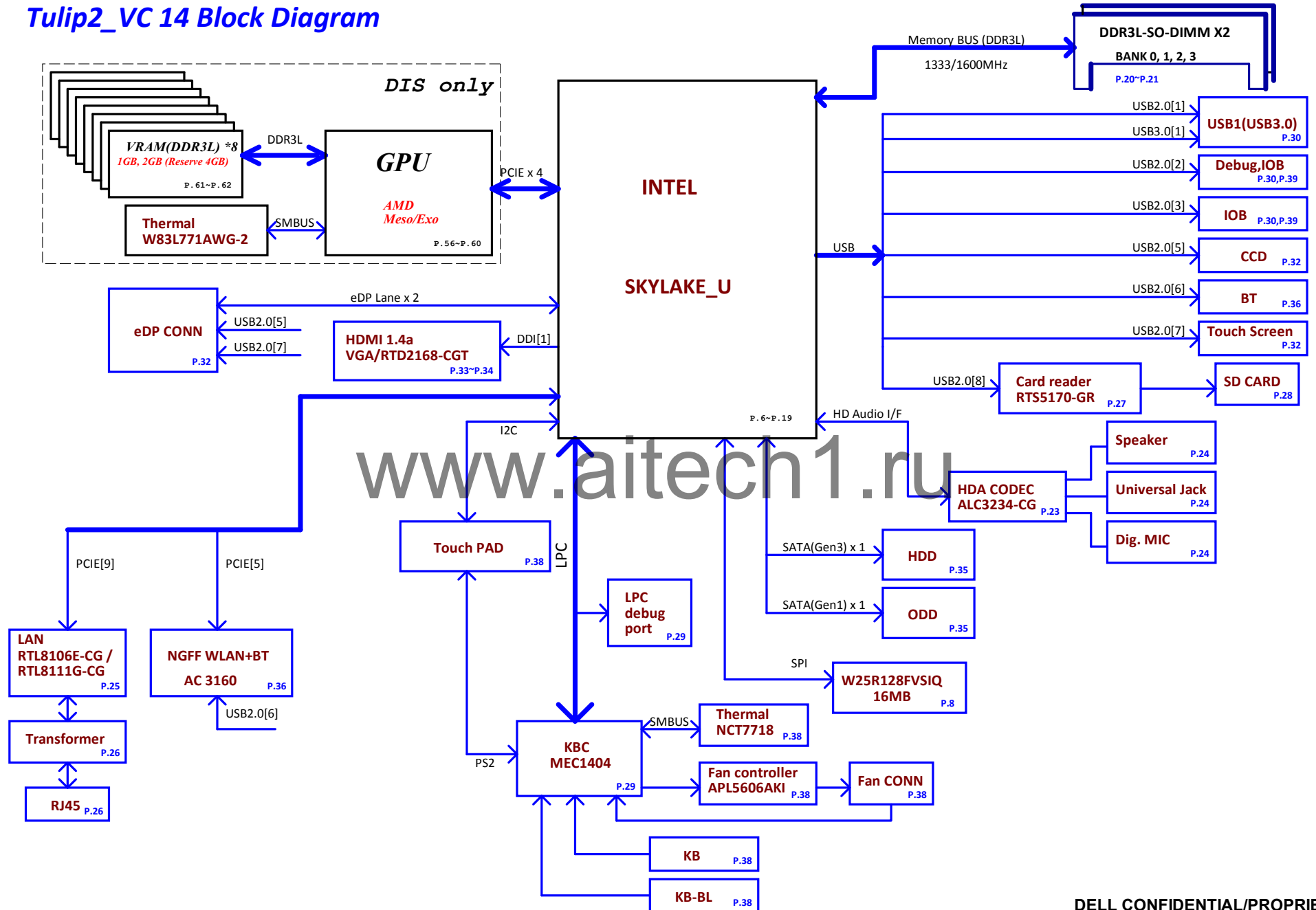
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Title			
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Size	Document Number		Rev
	LA-D071P		1.0(A00)
Date:	Thursday, July 09, 2015	Sheet 1 of 64	

Tulip2_VC 14 Block Diagram



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Block diagram		
LA-D071P	Rev 1.0/000	
Date: Thursday, July 09, 2015	Sheet 2 of 64	

POWER STATES							
State \ Signal	SLP S3#	SLP S4#	SLP S5#	ALWAYS PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM) / M3	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M3	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M3	LOW	LOW	LOW	ON	OFF	OFF	OFF

PM TABLE

State \ power plane	+1.0V_PRIM +RTC_CELL +1.8V_EDRAM +1.8V_PRIM +5VALWP +3VALWP +5VALW +3VALW +1.0V_MPHYGT +1.0V_PRIM_CORE +3.3V_ALW_DSW	+3VALW_PCH +1.0V_VCCST	+1.35V_MEM +1.0V_VCCSTG +VCC_CORE +VCC_GT +1.0VS_VCCIO +VCC_SA +VCC_EDRAM +VCC_EOPIO
S0	ON	ON	ON
S3	ON	ON	OFF
S5 S4/AC	ON	OFF	OFF
S5 S4/AC doesn't exist	OFF	OFF	OFF

Board ID & Model ID table

Item	Pull-down	Pull-up	Voltage	Board ID/Model ID
1	100	10.0	3.000	Pre-EVT
2	100	13.7	2.902	EVT
3	100	17.8	2.801	DVT1
4	100	22.1	2.703	DVT2
5	100	27.0	2.598	
6	100	32.4	2.492	
7	100	37.4	2.402	
8	100	49.9	2.201	
9	100	57.6	2.094	
10	100	64.9	2.001	
11	100	73.2	1.905	
12	100	82.5	1.808	
13	100	93.1	1.709	
14	100	107.0	1.594	
15	100	120.0	1.500	
16	100	137.0	1.392	
17	100	154.0	1.299	
18	100	200.0	1.100	
19	100	232.0	0.994	

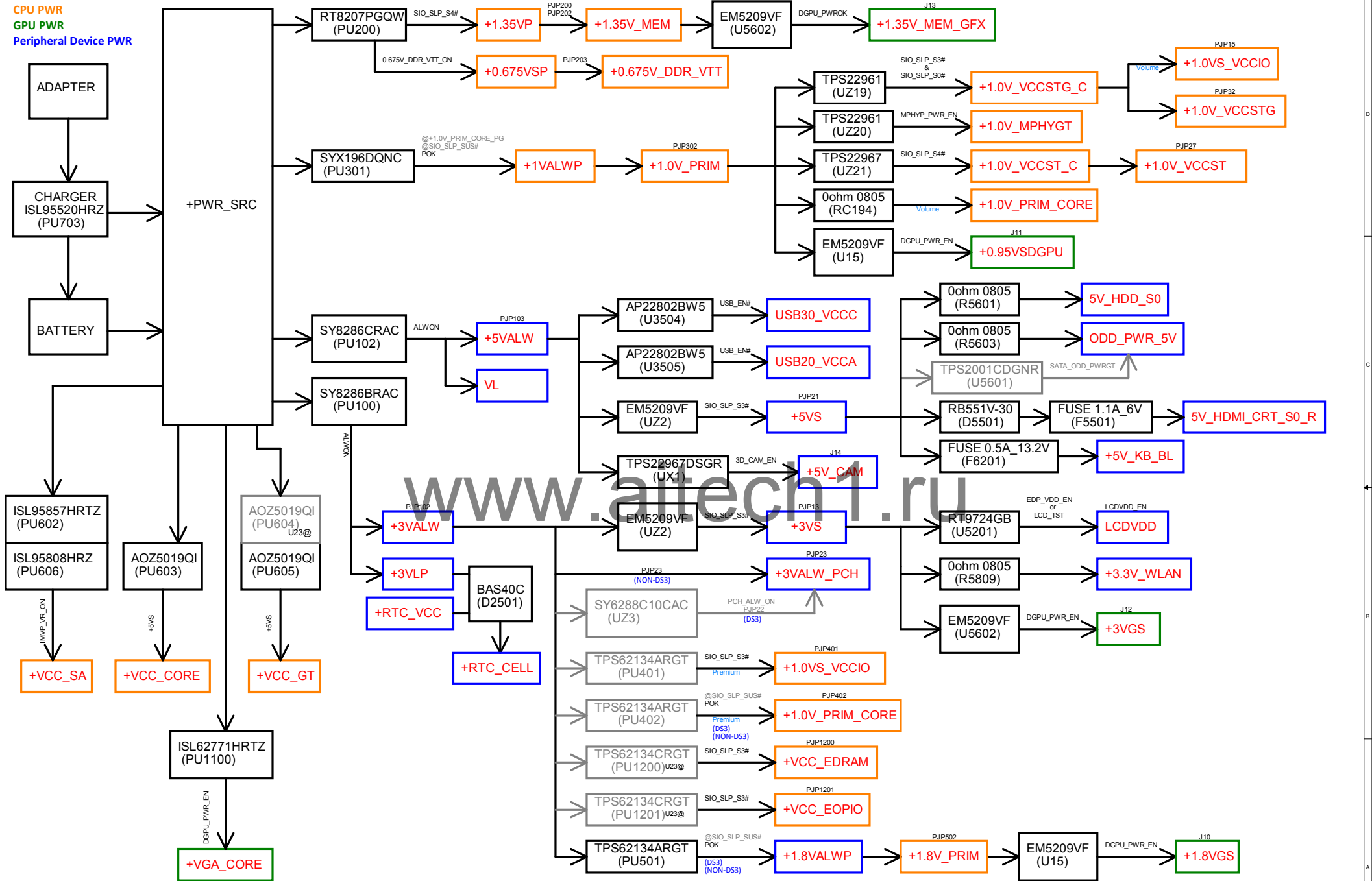
USB3.0	SSIC	PCI-E	SATA	DESTINATION
USB3.0-1				USB3.0 Port1
USB3.0-2	SSIC-1			N/A
USB3.0-3	SSIC-2			N/A
USB3.0-4				N/A
USB3.0-5	PCI-E-1			GPU
USB3.0-6	PCI-E-2			GPU
	PCI-E-3			GPU
	PCI-E-4			GPU
	PCI-E-5			WLAN
	PCI-E-6			LAN/GLAN
	PCI-E-7	SATA-0		SATA HDD
	PCI-E-8	SATA-1		SATA ODD
	PCI-E-9			N/A
	PCI-E-10			N/A
	PCI-E-11	SATA-1*		N/A
	PCI-E-12	SATA-2		N/A

USB PORT#	DESTINATION
1	USB3.0 Port1
2	IO/DB
3	IO/DB
4	N/A
5	CCD
6	Card Reader
7	Touch Screen
8	BT
9	N/A
10	N/A

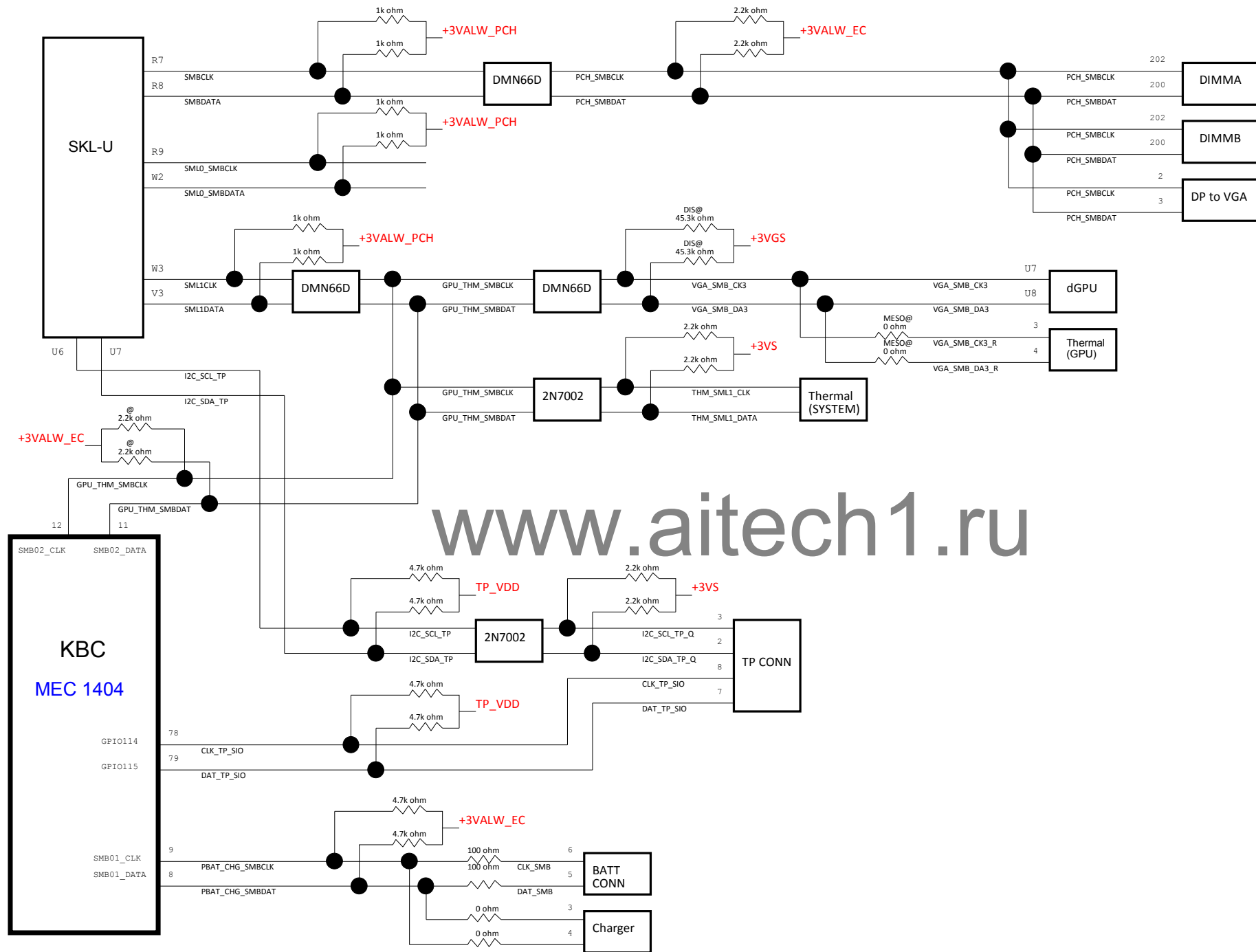
COMPRESSED
IMAGE
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CPU PWR
GPU PWR
Peripheral Device PWR



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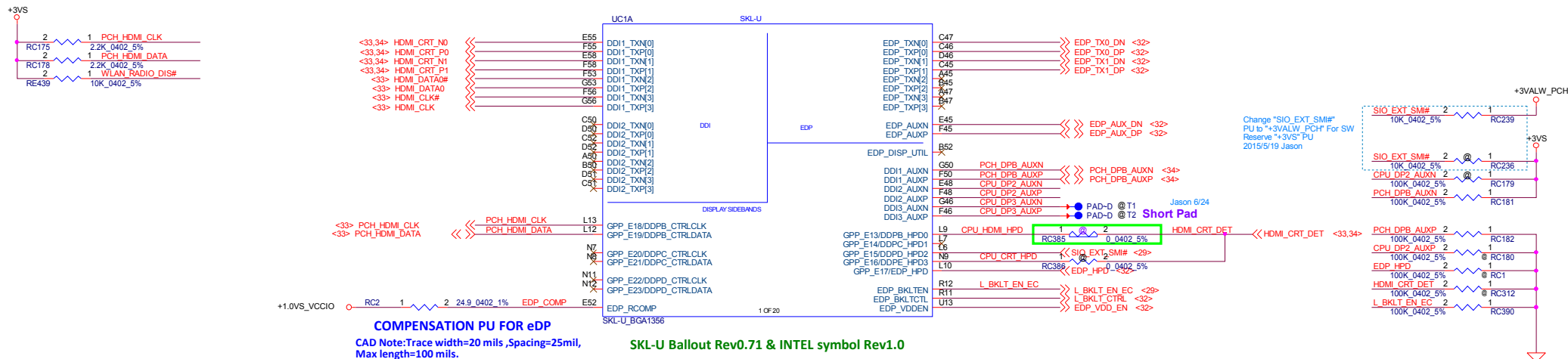
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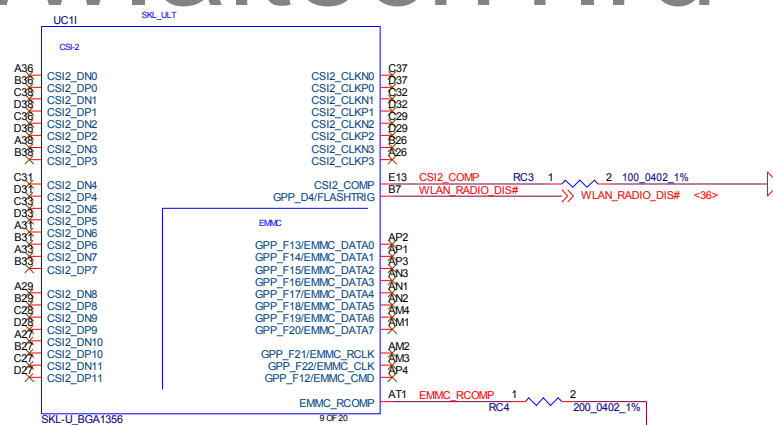


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Size	Document Number	LA-D071P		1.0(400)
Date:	Thursday, July 08, 2015	Sheet	5	of 64

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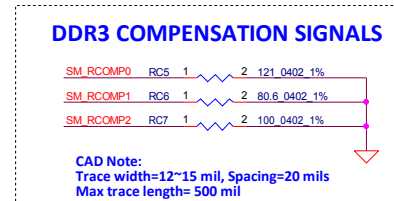
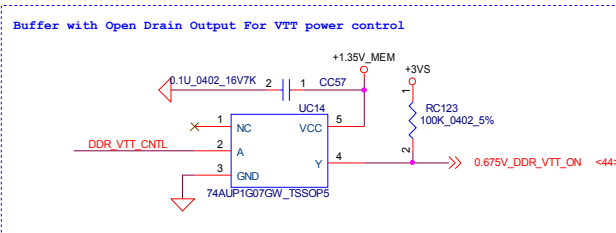
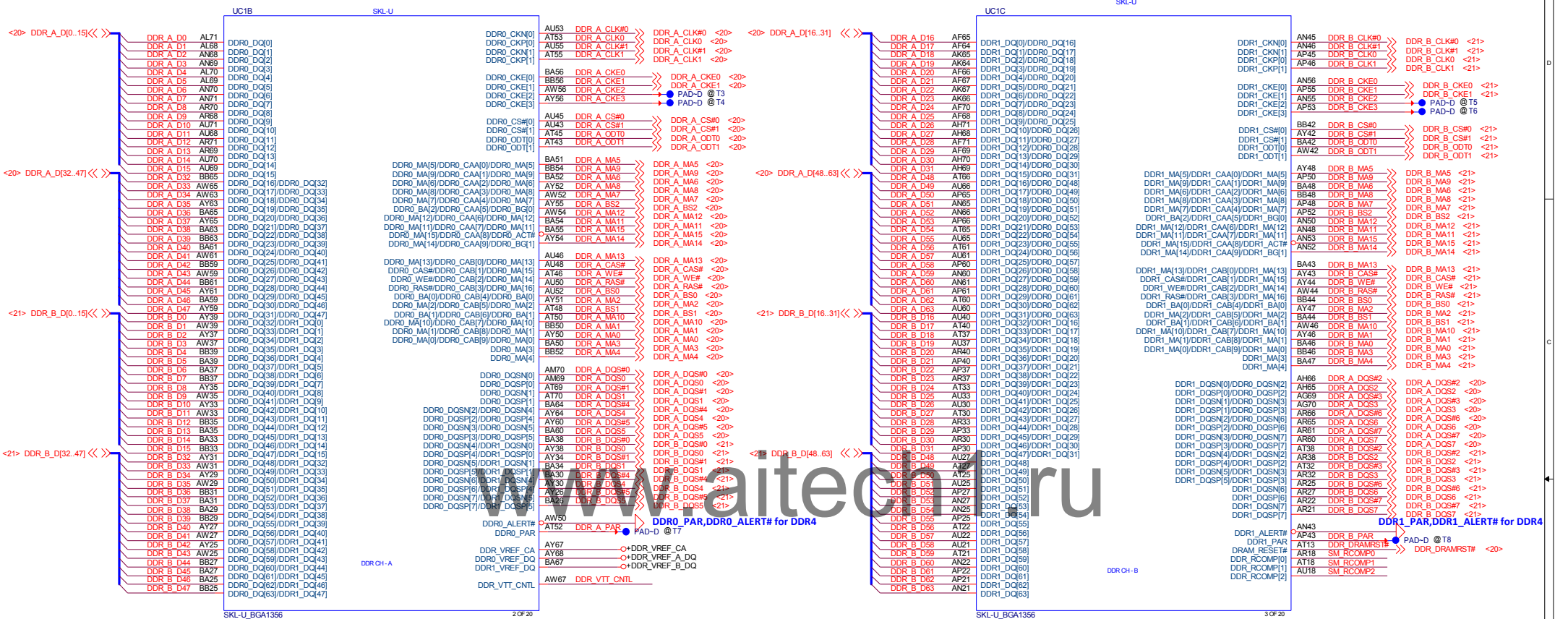
CPU (1/14)

LA-D071P

Thursday, July 09, 2015 Sheet 6 of 64

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DDR3L, Ballout for side by side(Non-Interleave)



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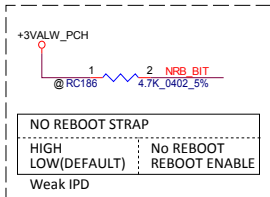
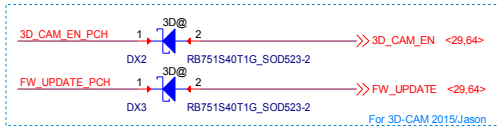
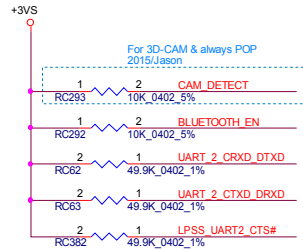
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CPU (2/14)

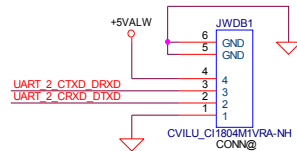
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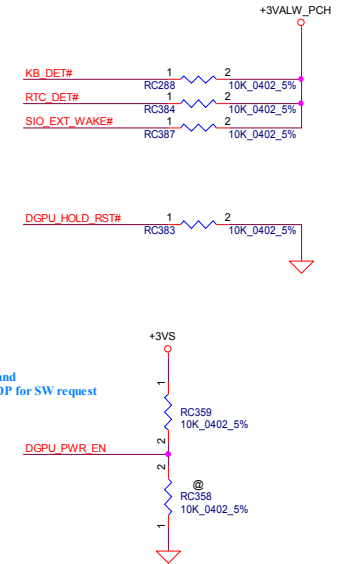
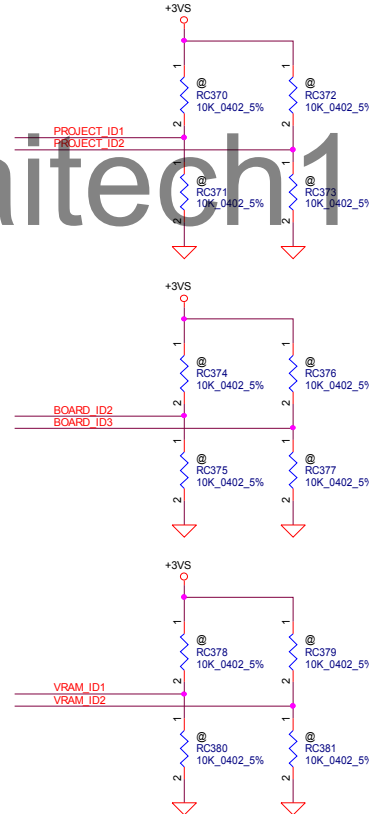


Win7 Debug solution

Option 2 : For Open Chassis Platforms



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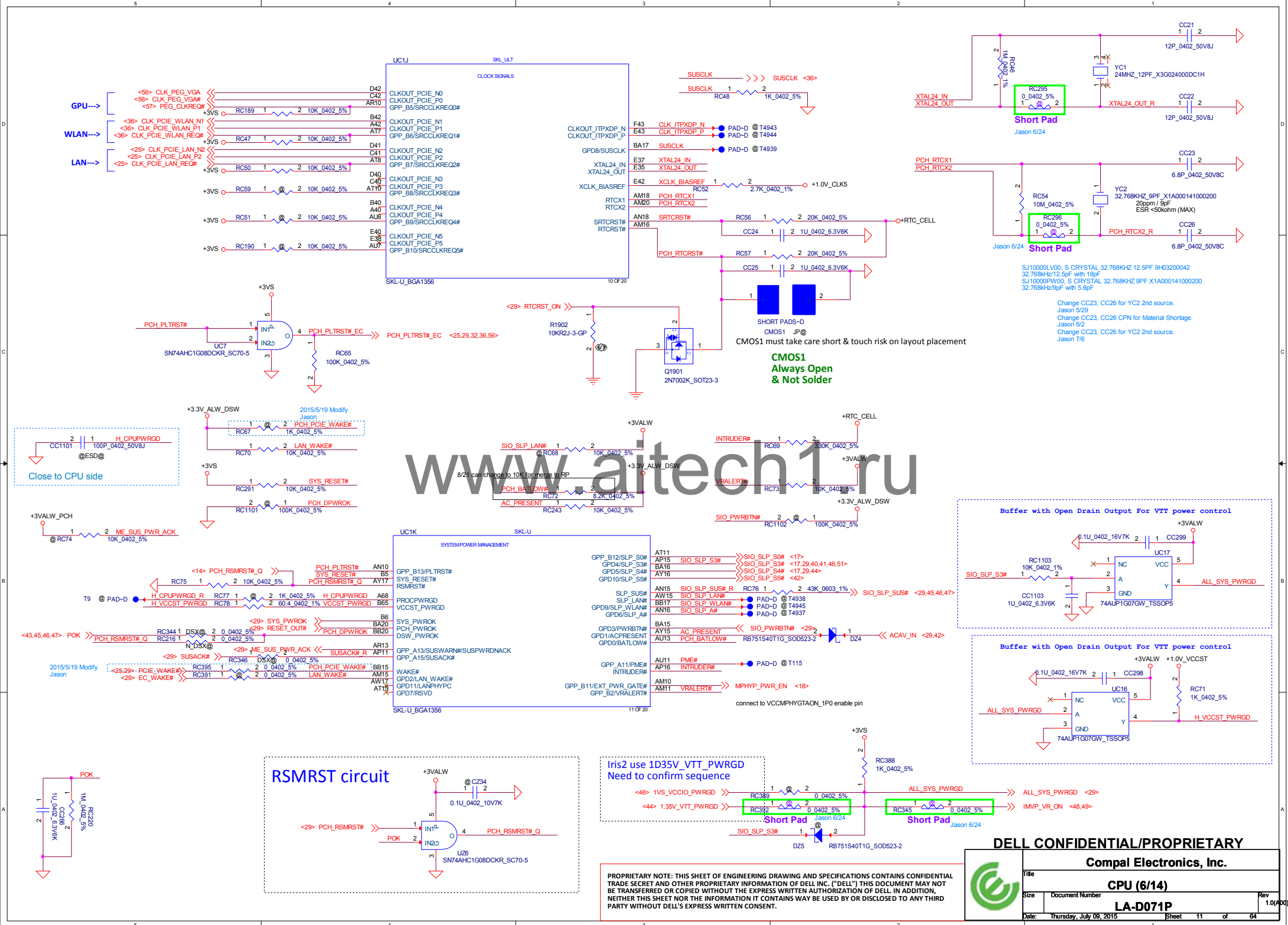
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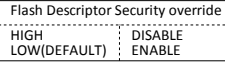
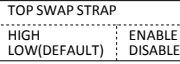
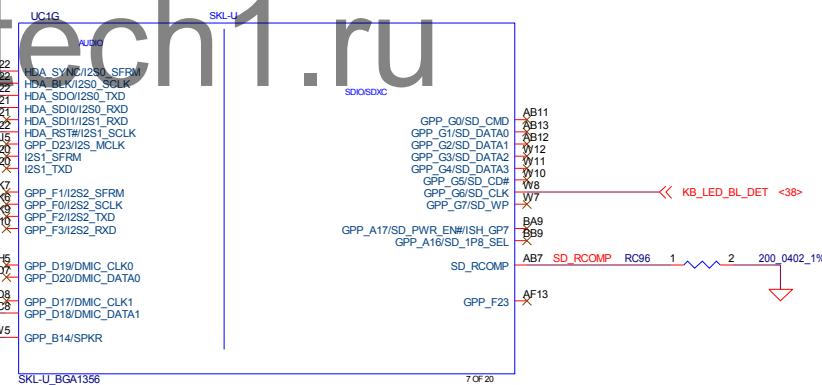
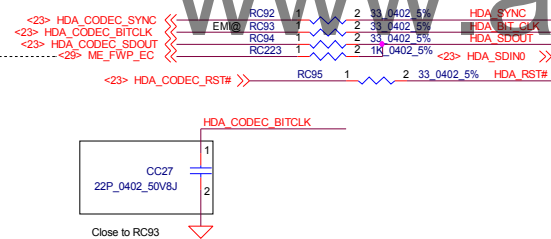
CPU (4/14)

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Thursday, July 08, 2015 Sheet 9 of 64

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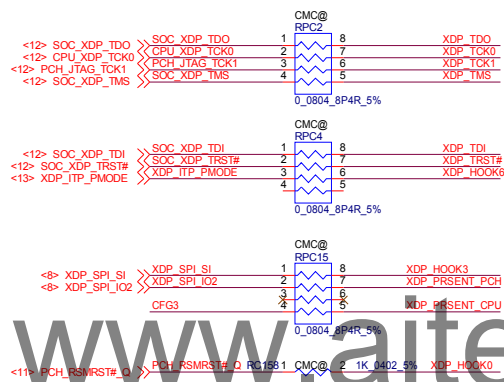
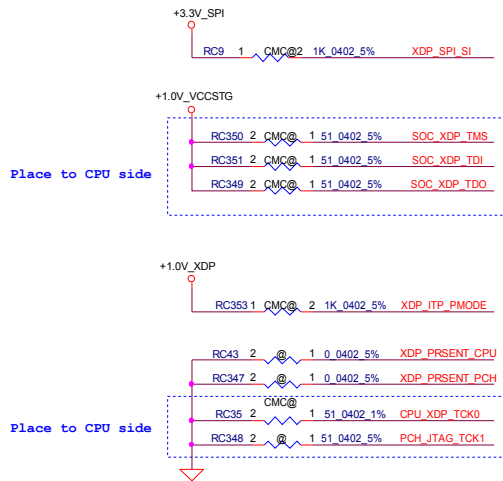


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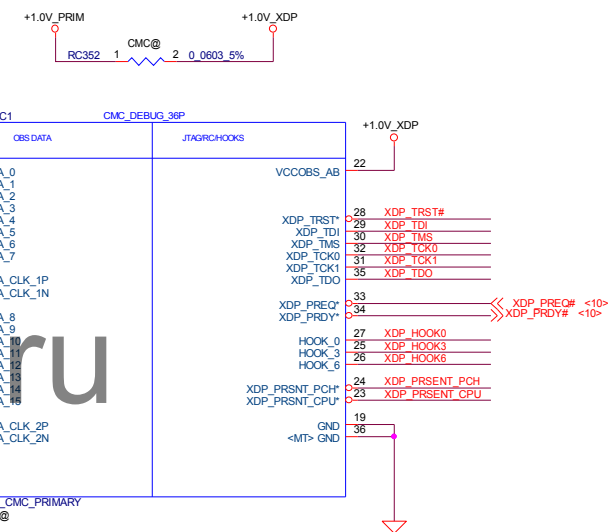


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Size	Document Number	Rev
	LA-D071P	1.0(A00)
Date:	Thursday, July 09, 2015	Sheet 12 of 64



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CPU (9/14)

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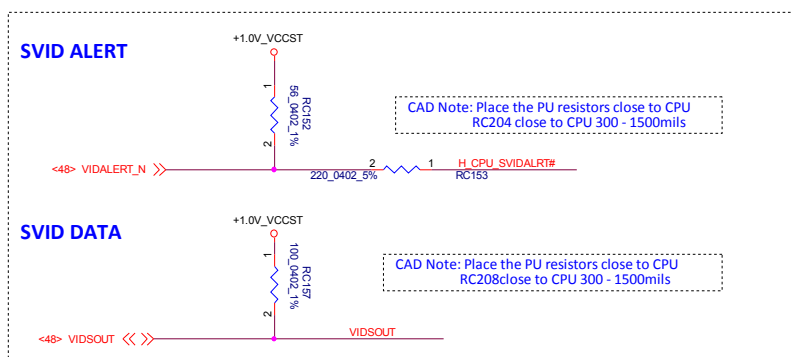
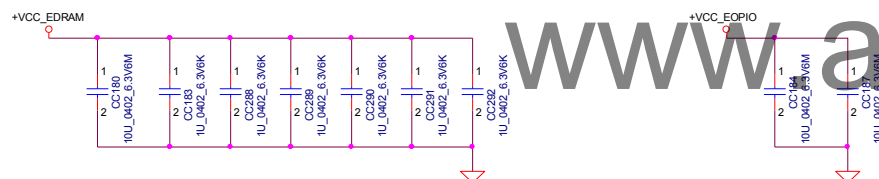
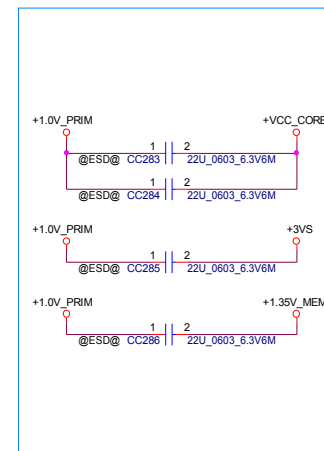



Title		Rev	
Size	Document Number	14	64
Date:	Thursday, July 08, 2015	Sheet	of

1.0(400)

+VCC_CORE +VCC_CORE

Component placement order:
Package edge > 0402 caps > 0805 caps > Bulk caps > Power source



		Compal Electronics, Inc.	
		CPU (10/14)	
Title			
Size	Document Number		Rev 1.0
Date: Thursday, July 09, 2015	LA-D071P		
	Sheet	15	of 64

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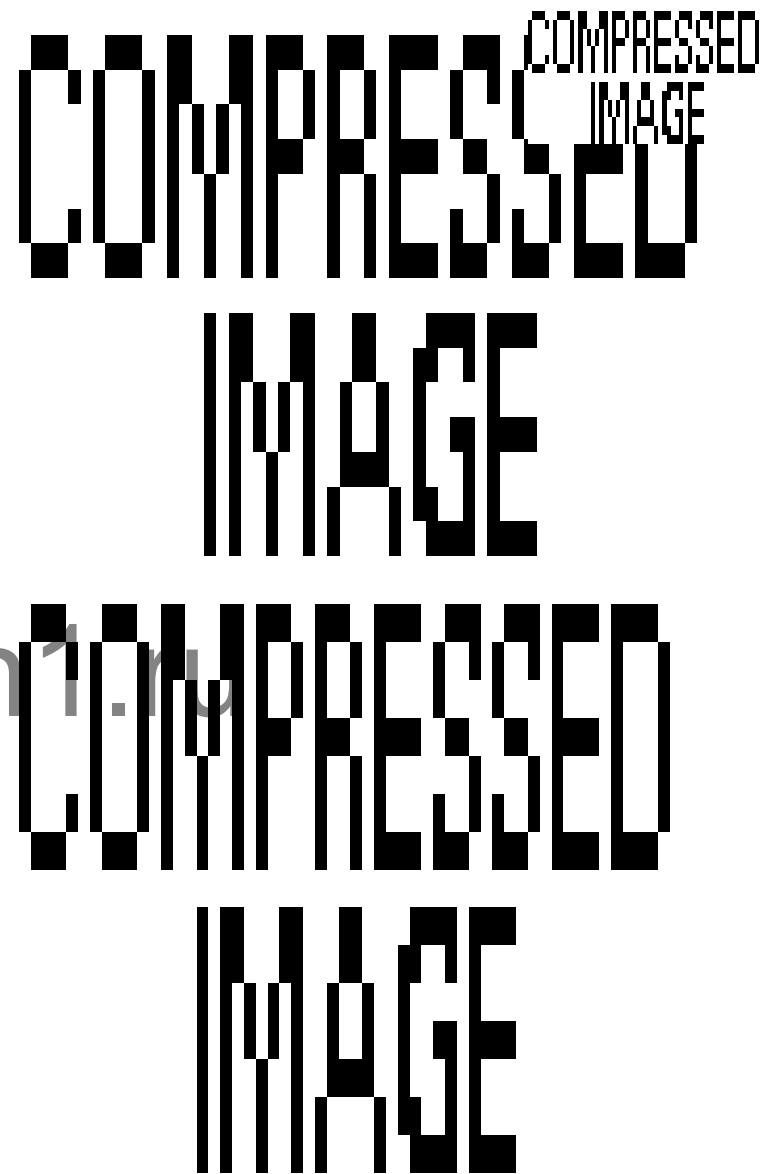
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③ RC340
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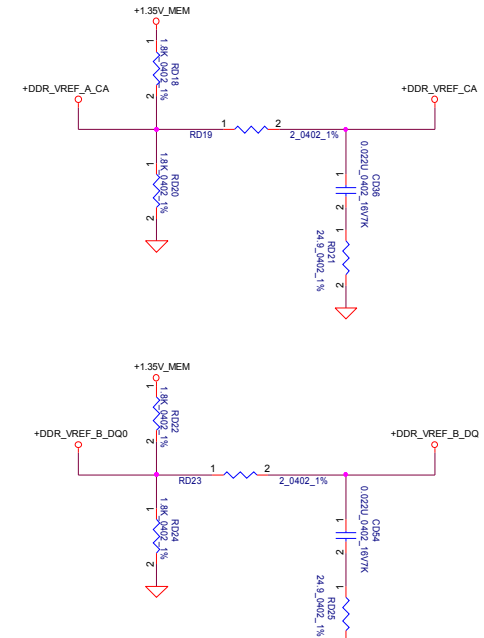
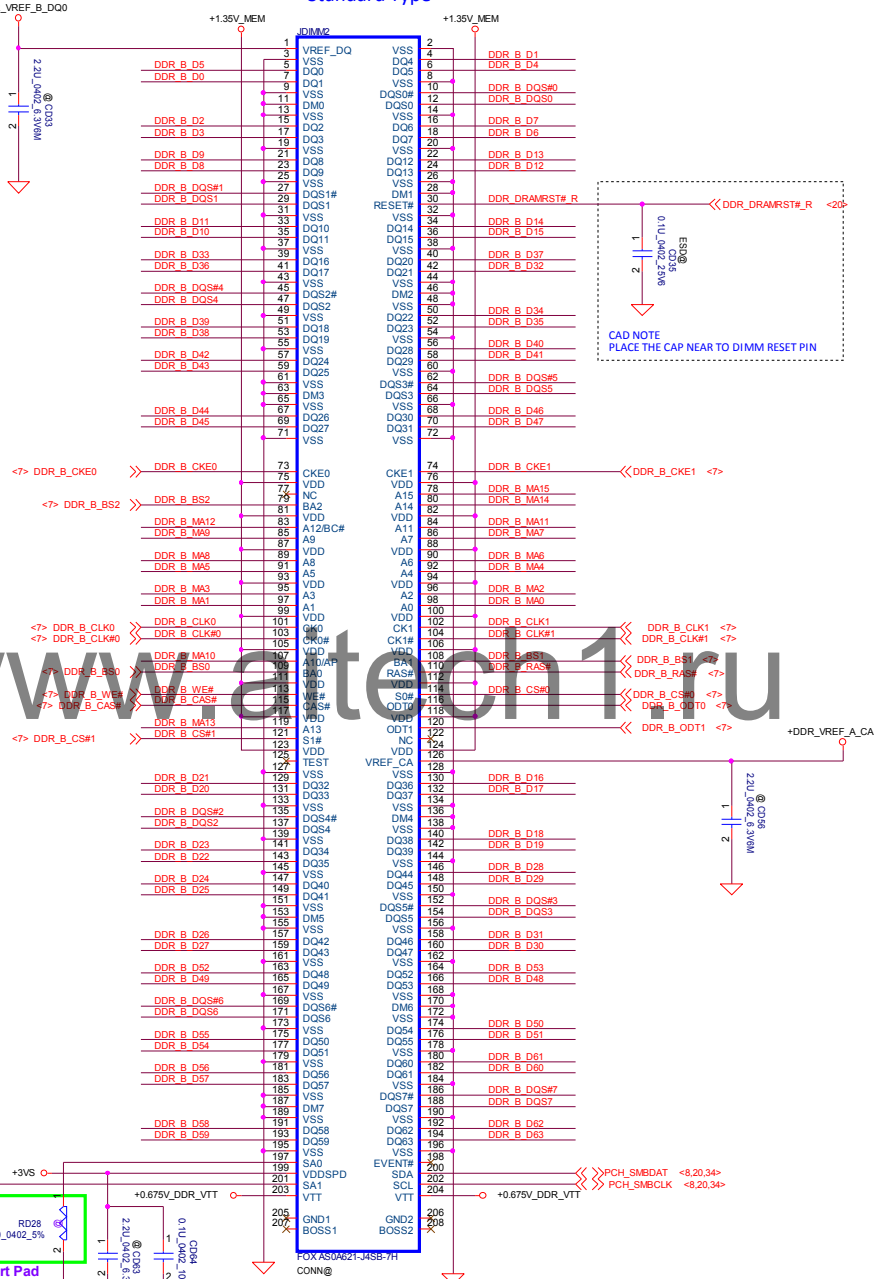
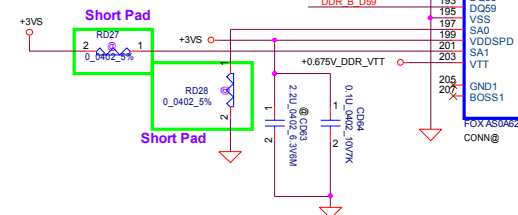


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Size	Document Number	Rev	
	LA-D071P	1.0(A00)	
Date:	Thursday, July 09, 2015	Sheet	16 of 64

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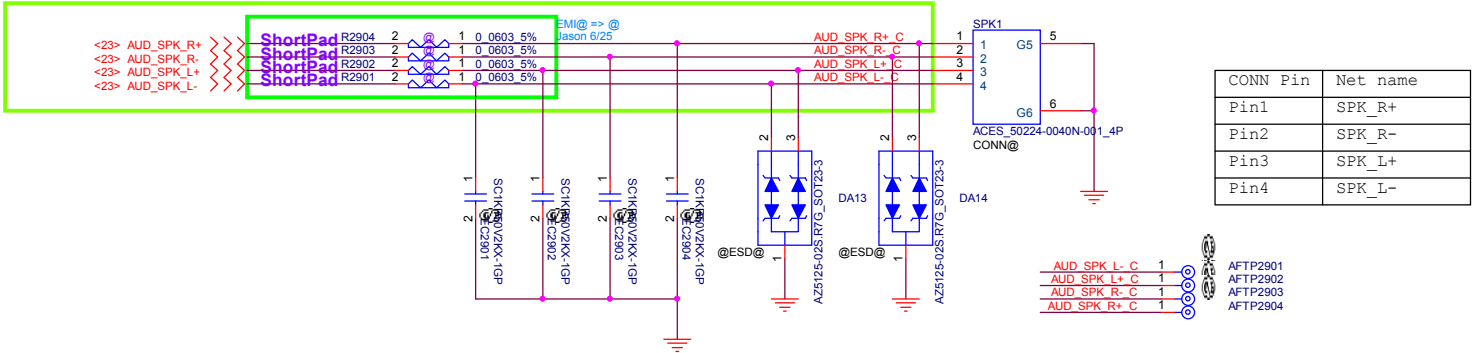
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Main Func = Audio

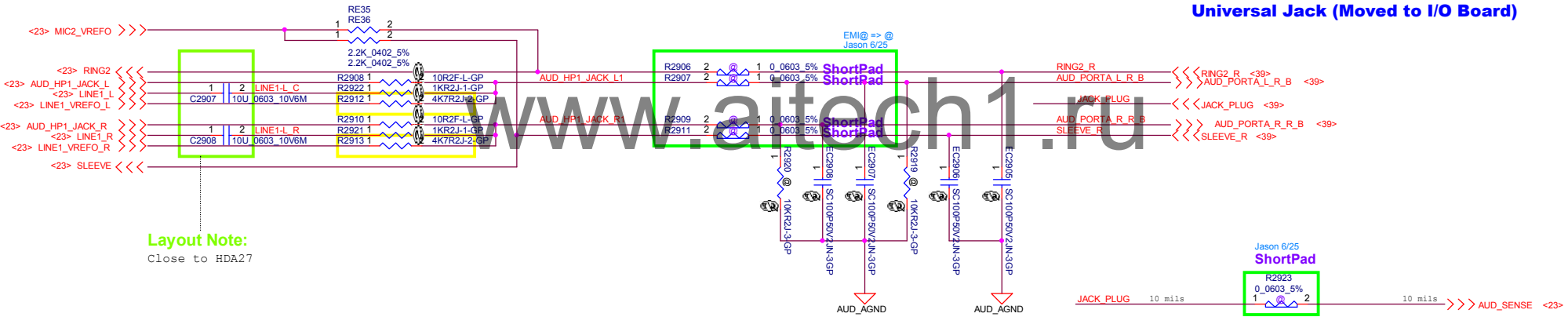
Layout Note:

Speaker trace width >40mil @ 2W4ohm speaker power

Speaker

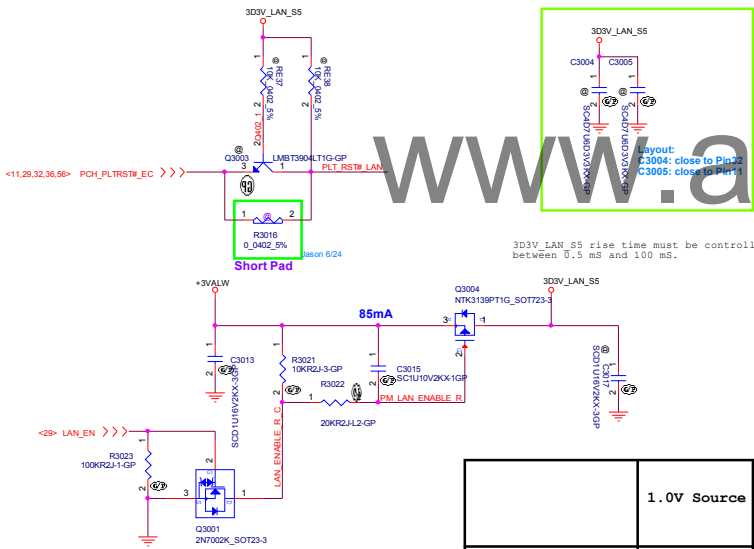
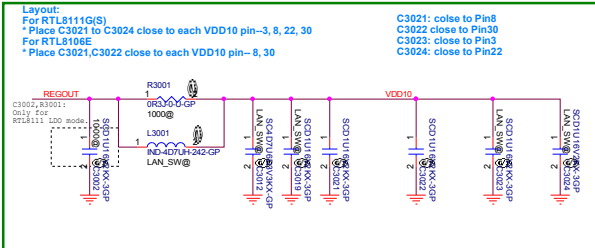


Universal Jack (Moved to I/O Board)



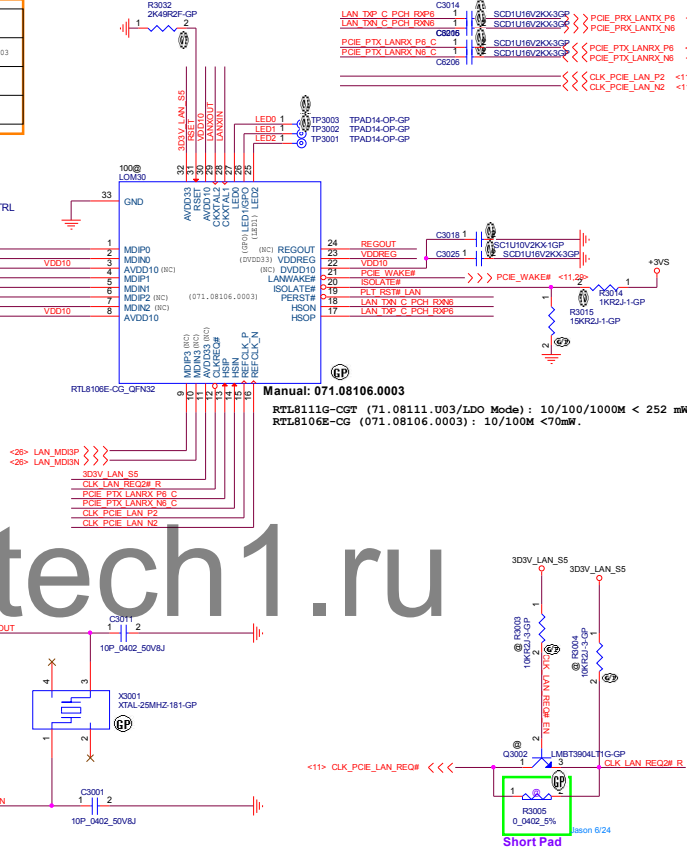
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				LA-D071P	Rev 1.0(A00)
				Date:	Thursday, July 09, 2015
				Sheet	24 of 64

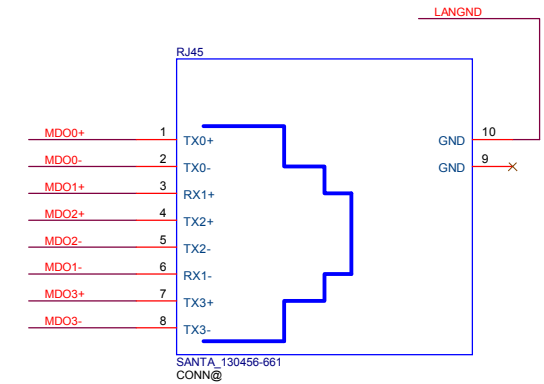
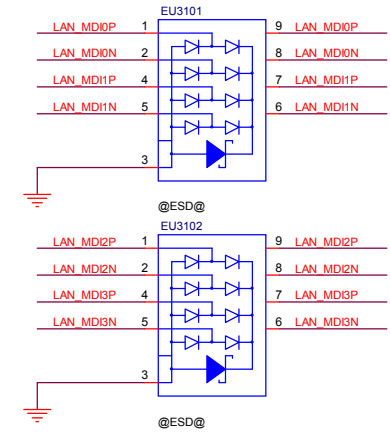
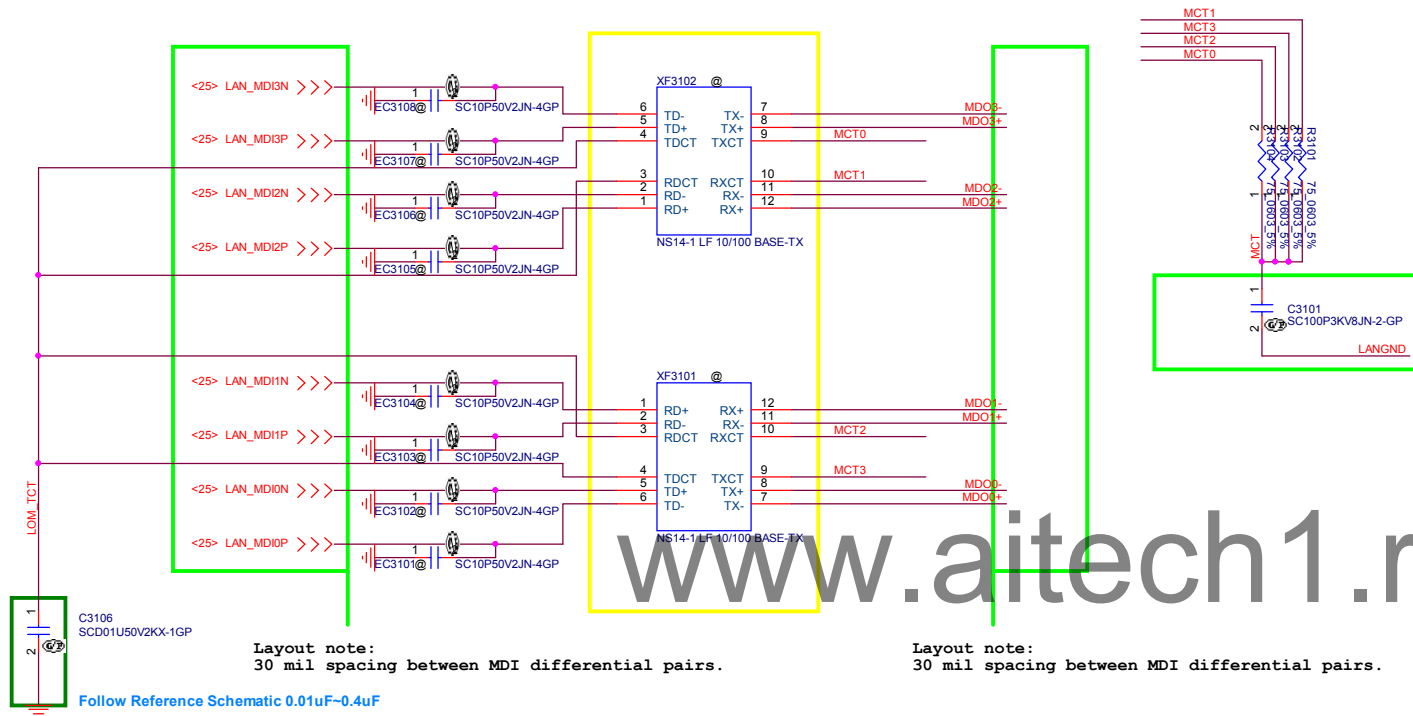


LAN CHIP (10/100/1000M & 10/100M co-lay)


RTL8111GUS-CG	RTL8111G-CGT	RTL8106EUS-CG	RTL8106E-CGT
71.08111.W03	71.08111.U03	71.08106.O03	071.08106.0003
SWR mode	LDO mode	SWR mode	LDO mode
10/100/1000M	10/100/1000M	10/100M	10/100M

[illegible]

LAN TransFormer (10/100/1000M & 10/100M co-lay)




XF3102

 SP050007K00

1000@

S X'FORM_ NS14-1 LF 10100 BASE-TX

XF3101

 SP050007K00

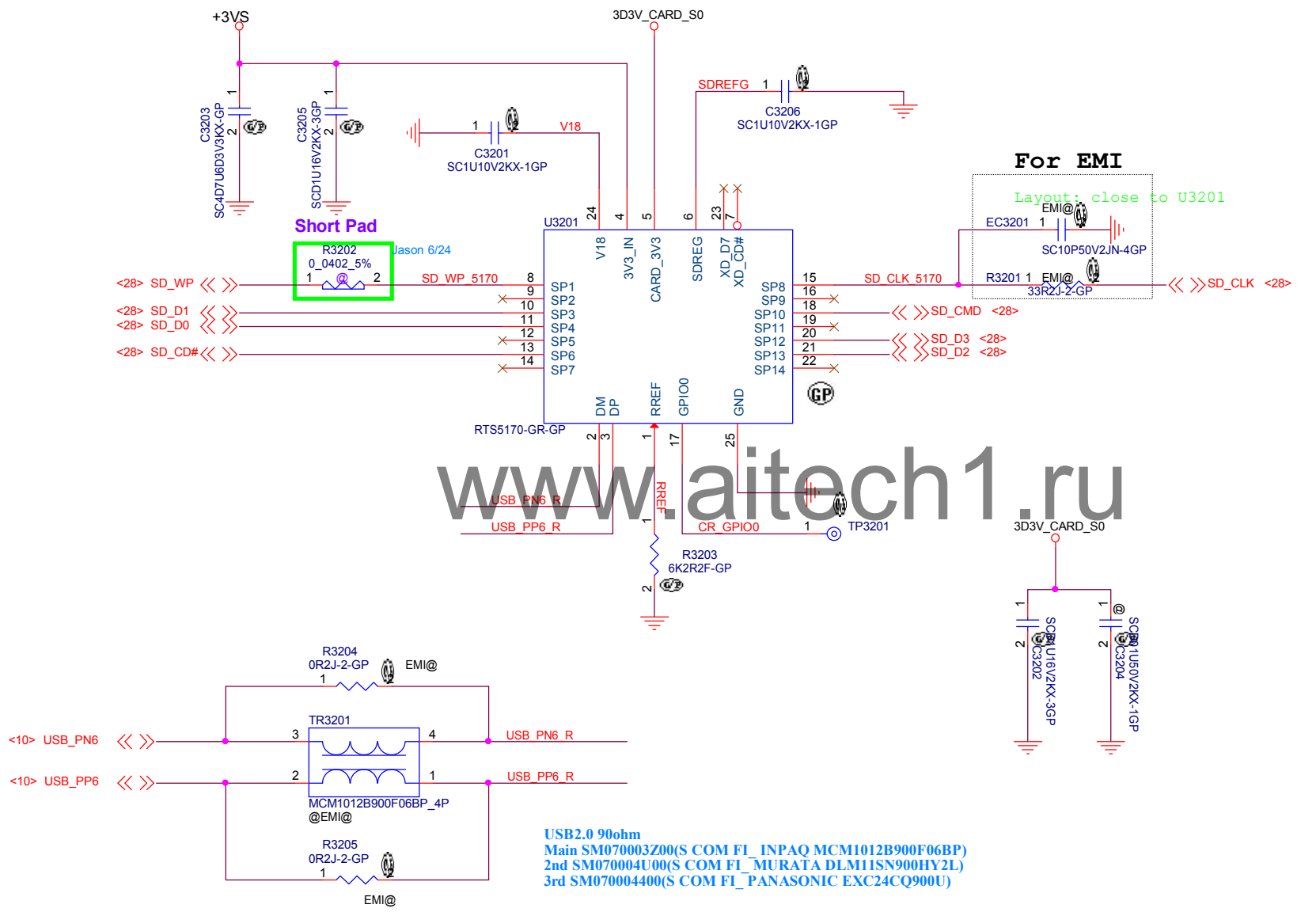
S X'FORM_ NS14-1 LF 10100 BASE-TX

Main:
SP050007K00, S X'FORM_ HD-081-A LAN
2nd:
SP050008L00, S X'FORM_ NS681677 LAN
Jason 2015/04/27

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				LA-D071P		
Date: Thursday, July 09, 2015				Sheet	26	of 64

Main Func = Card Reader

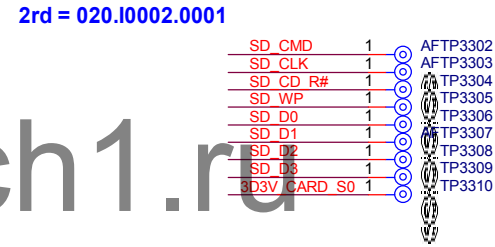
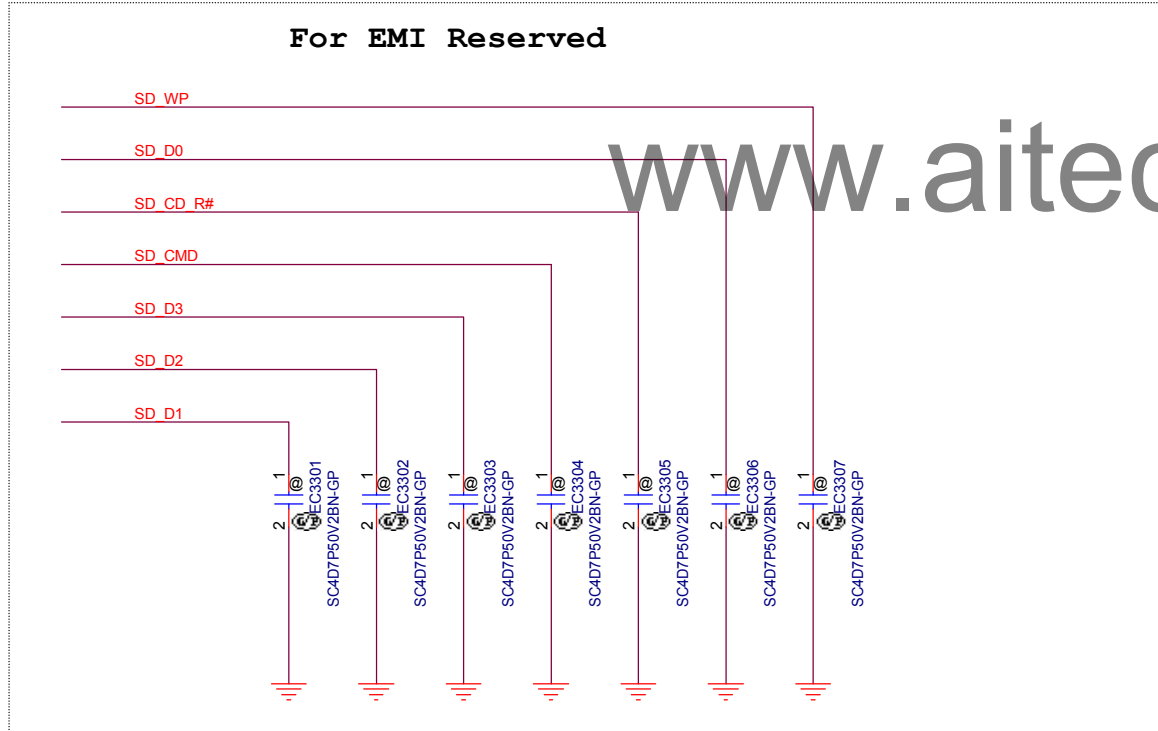
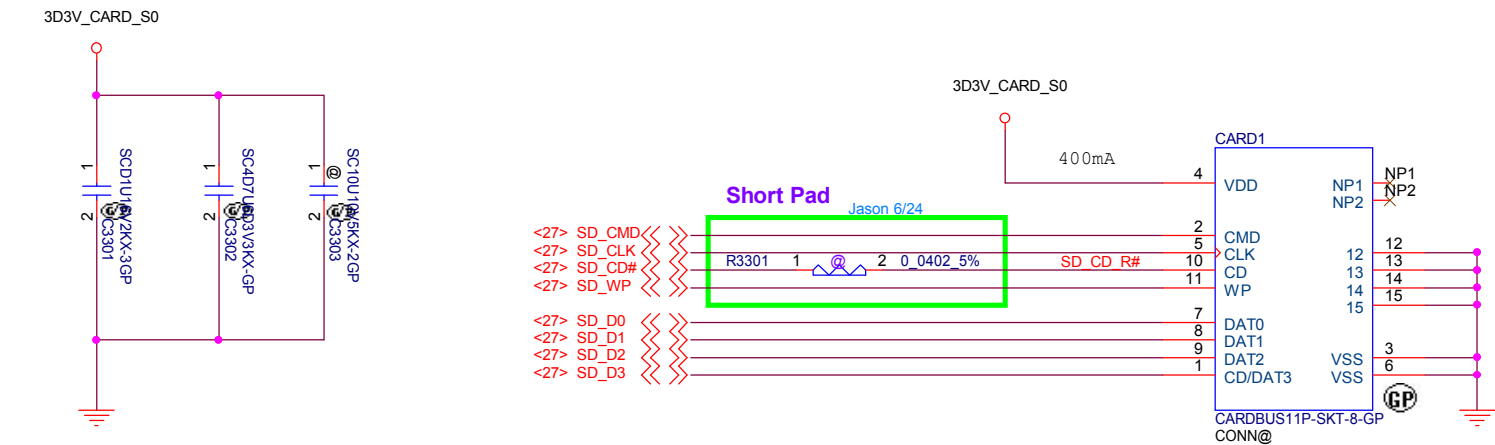
The maximum range of the PMOS output current in RTS5170 (Card Reader IC) is 400mA



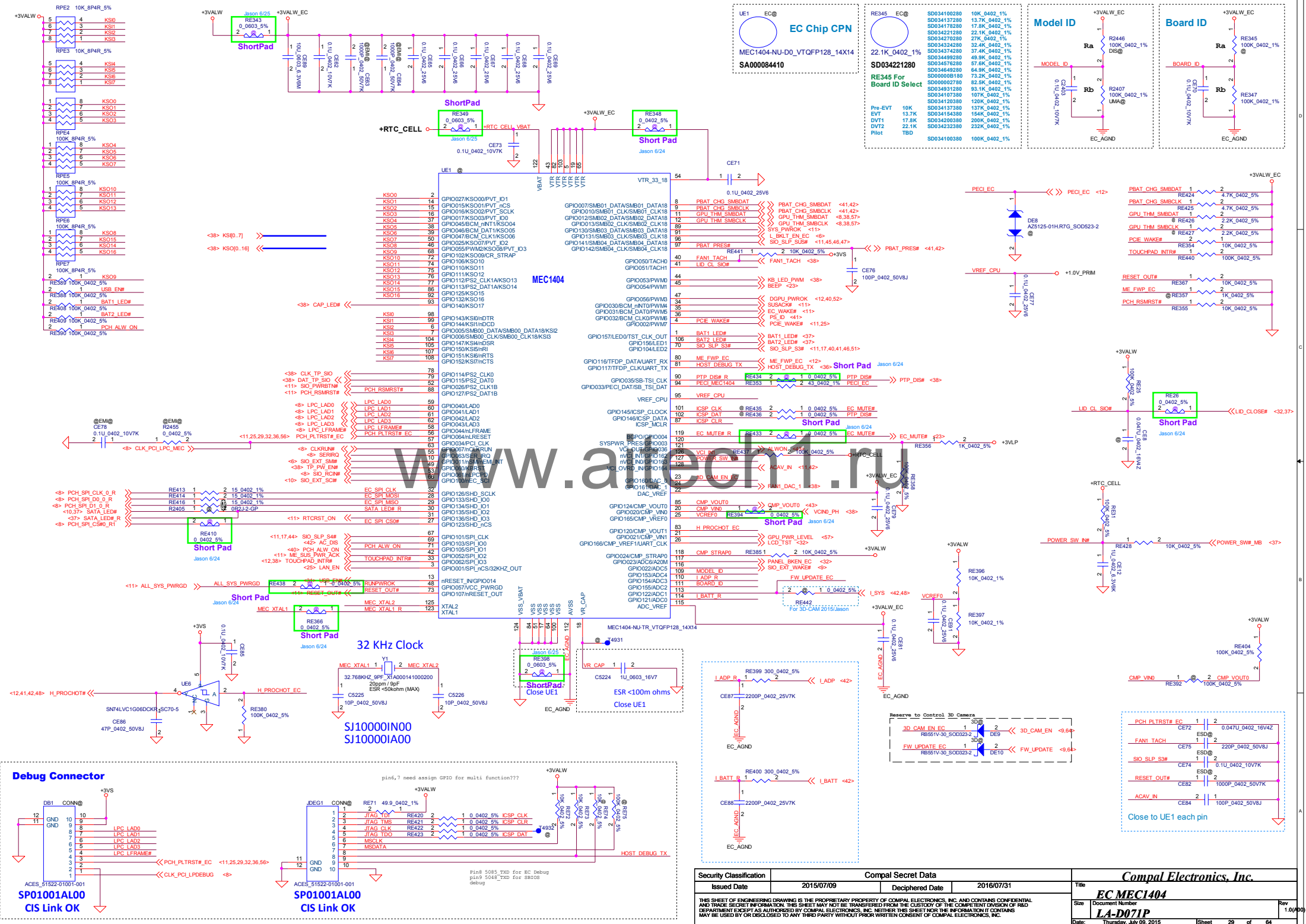
USB2.0 90ohm
Main SM070003Z00(S COM FL_INPAQ MCM1012B900F06BP)
2nd SM070004U00(S COM FL_MURATA DLM11SN900HY2L)
3rd SM070004400(S COM FL_PANASONIC EXC24CQ900U)

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				Size	Document Number
				LA-D071P	
Date: Thursday, July 09, 2015		Sheet 27 of 64		Rev 1.0(A00)	

Main Func = Card Reader



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				Size	Document Number
				LA-D071P	
				Date:	Thursday, July 09, 2015
				Sheet	28 of 64
				Rev	1.0(A00)

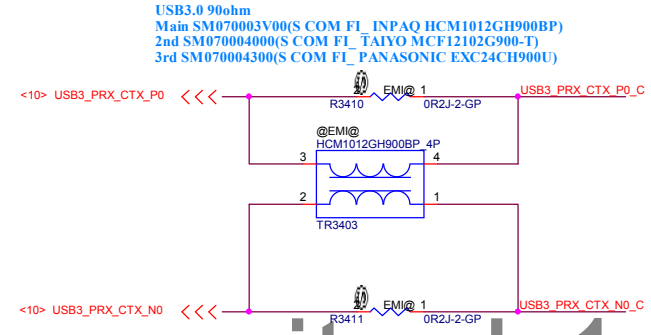
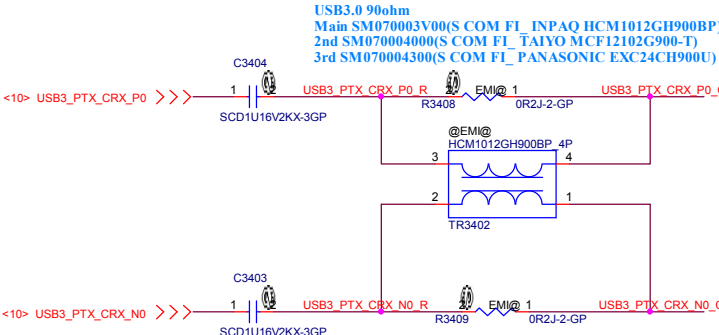
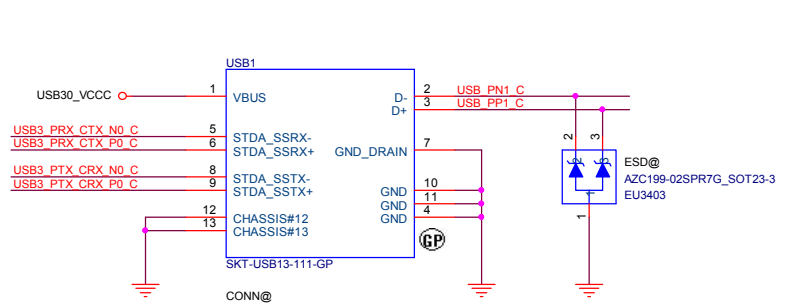
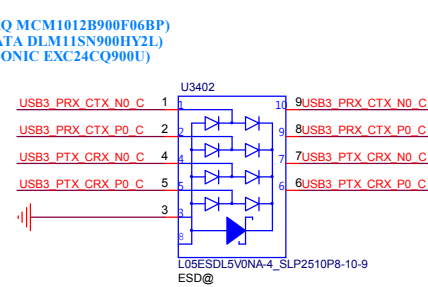
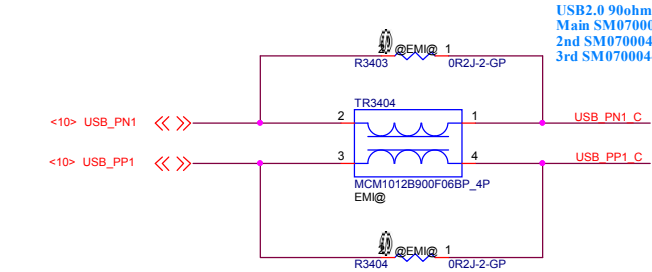


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Date: Thursday, July 08, 2015		Sheet 29 of 64			

Main Func = USB3.0 Port1

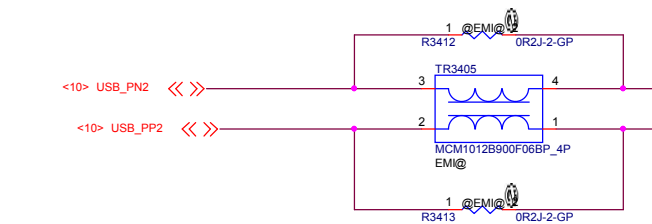
USB2.0 Port2 and USB2.0 Port3 are on IOBD

USB3.0 Port1



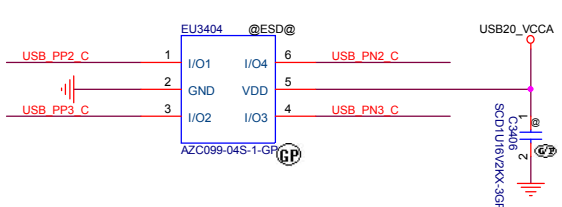
www.aitech1.ru

USB2 (USB2.0) CMC

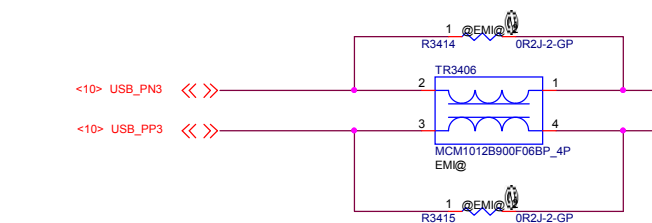


USB2.0 90ohm
Main SM070003Z00(S COM FL_INPAQ MCM1012B900F06BP)
2nd SM070004U00(S COM FL_MURATA DLM11SN900HY2L)
3rd SM070004400(S COM FL_PANASONIC EXC24CQ900U)

USB ESD Diode



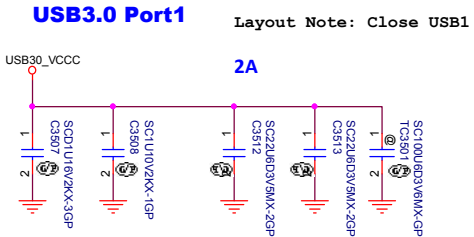
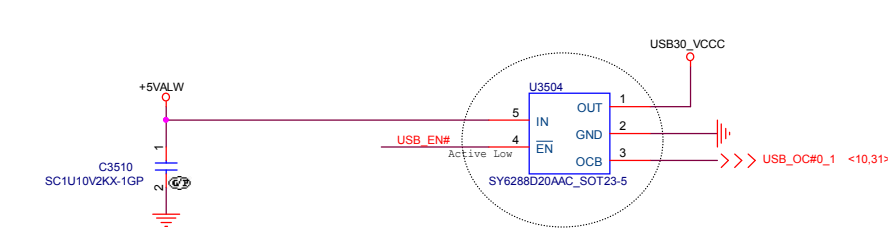
USB3 (USB2.0) CMC



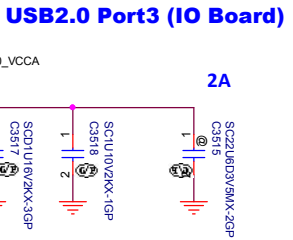
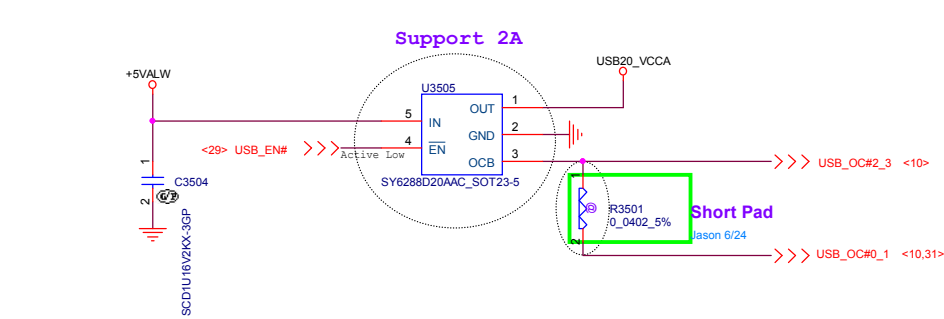
USB2.0 90ohm
Main SM070003Z00(S COM FL_INPAQ MCM1012B900F06BP)
2nd SM070004U00(S COM FL_MURATA DLM11SN900HY2L)
3rd SM070004400(S COM FL_PANASONIC EXC24CQ900U)

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Size	Document Number	Rev		Date	
	LA-D071P	1.0(A00)		Thursday, July 09, 2015	
Sheet		30	of	64	

Main Func = USB3.0 Port1



Main Func = USB2.0 Port3

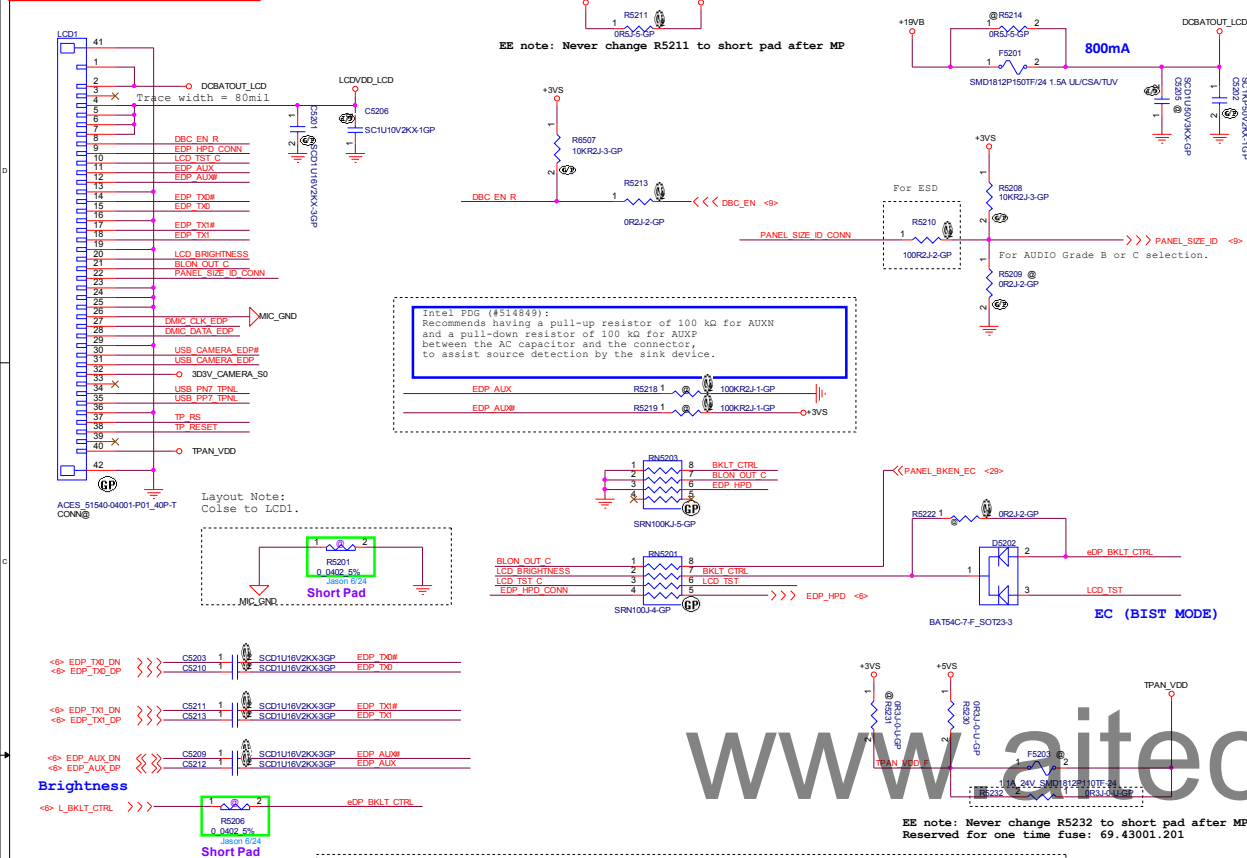


Main Func =

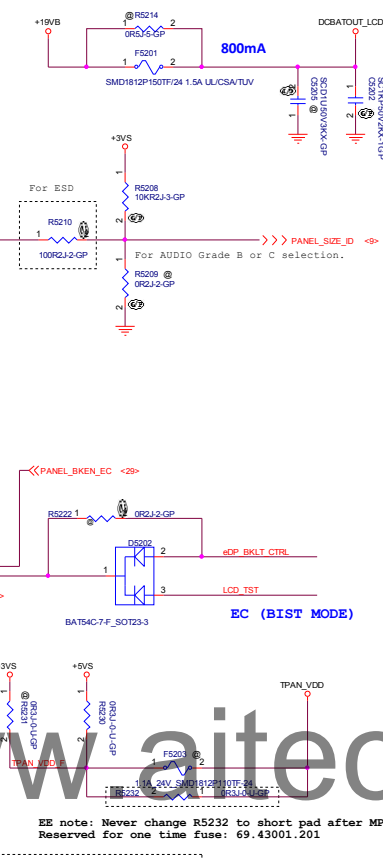
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				Sheet	31 of 64
				Rev	1.0(A00)

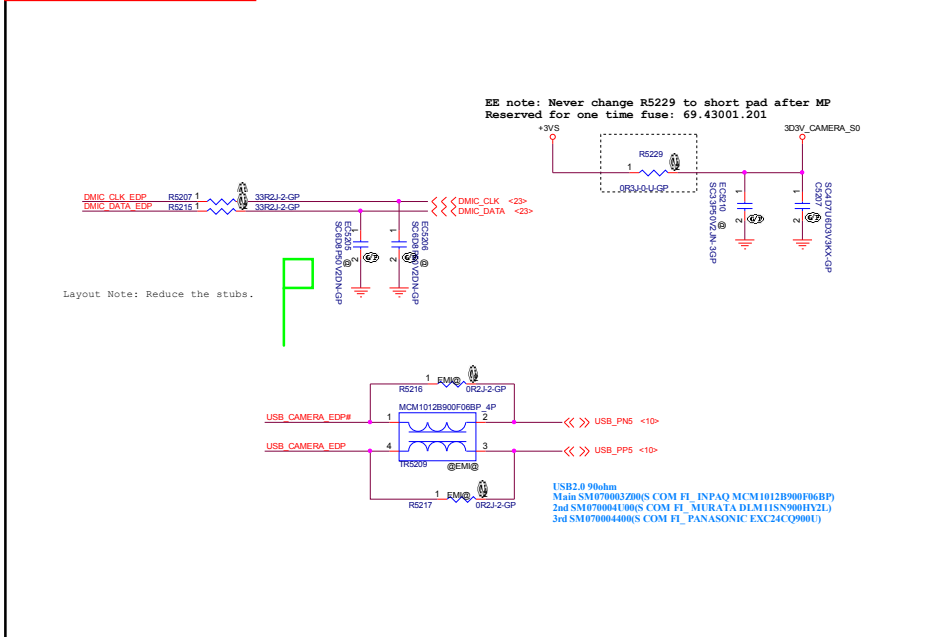
Main Func = LCD



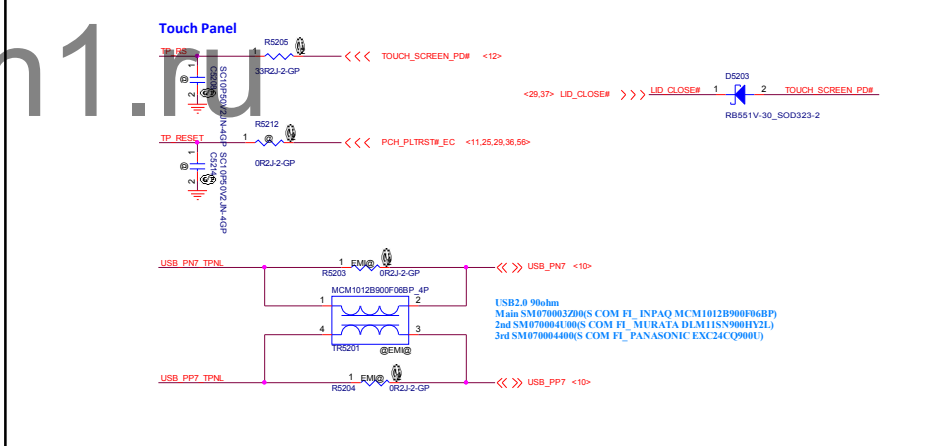
INVERTER POWER



Main Func = CAM

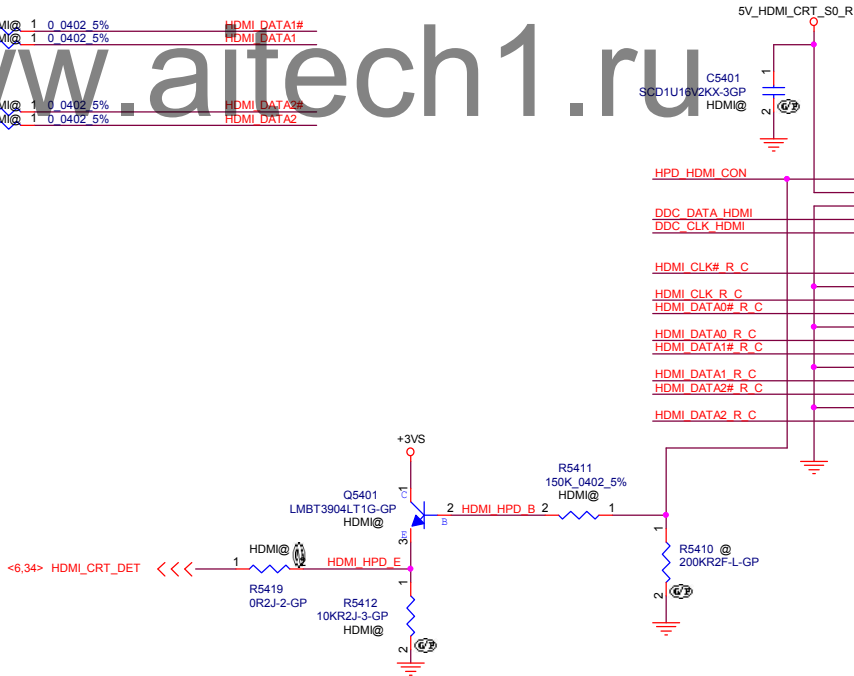
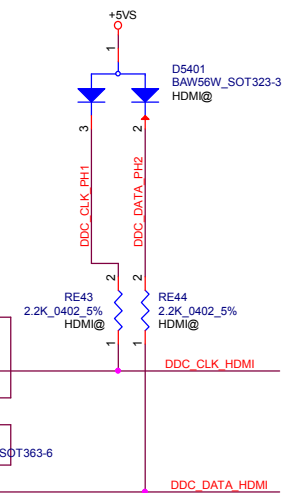
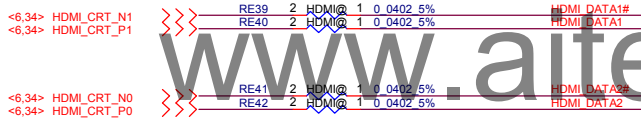
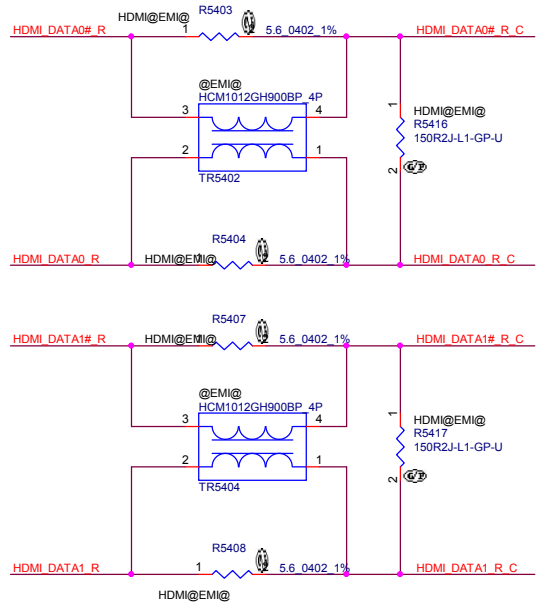
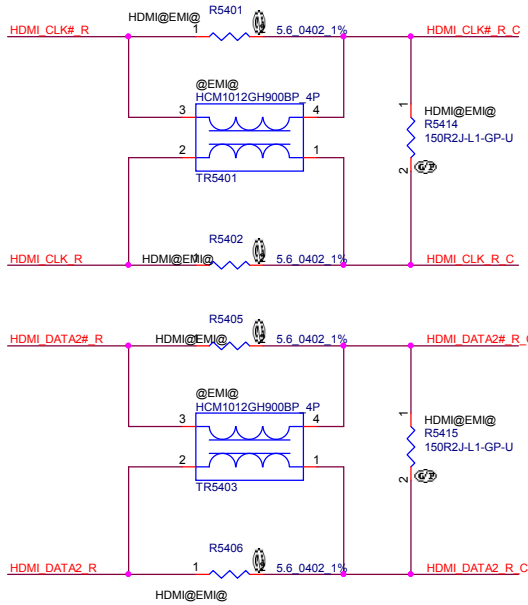
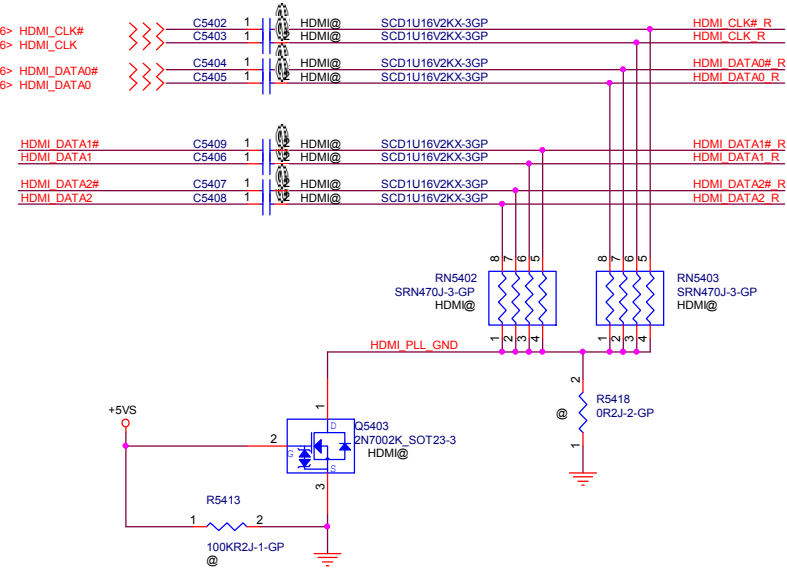


Main Func = TS

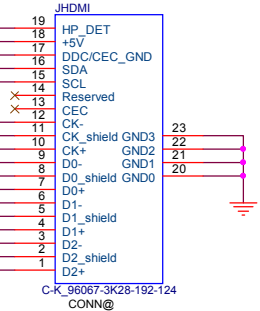


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Main Func = HDMI



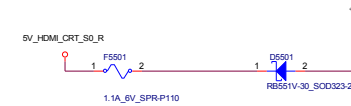
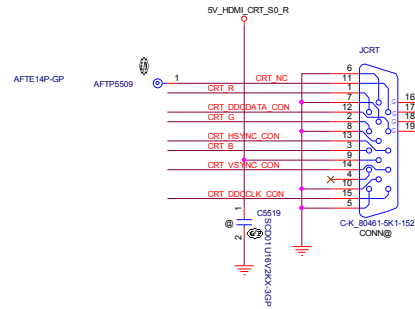
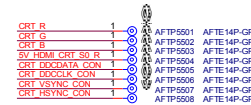
HDMI CONN



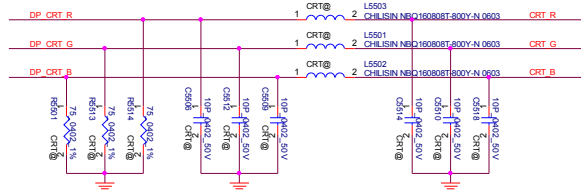
2nd = 84.2N702.E3F
3rd = 75.00601.07C
4th = 84.DMN66.03F

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								Rev			
								1.0(A00)			
								Date:			
								Thursday, July 09, 2015			
								Sheet			
								33 of 64			

- 1- EEPROM with a size of 16K-Byte
- 2- EEPROM device should be 2-byte addressing device
- 3- Slave address should configure as 0xA8

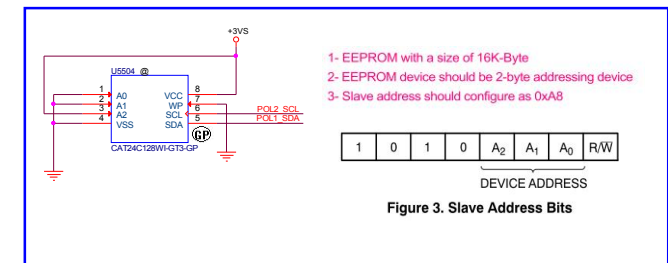
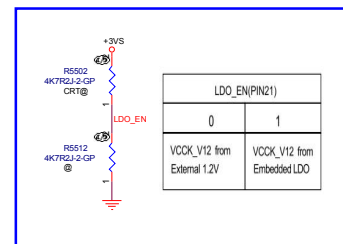
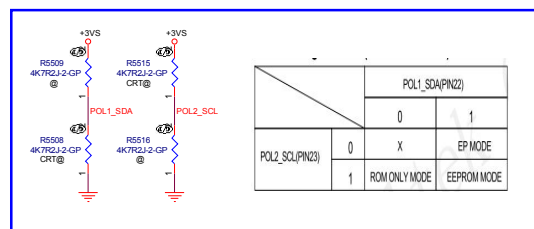
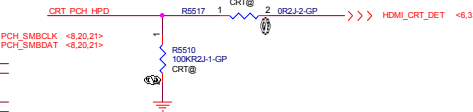
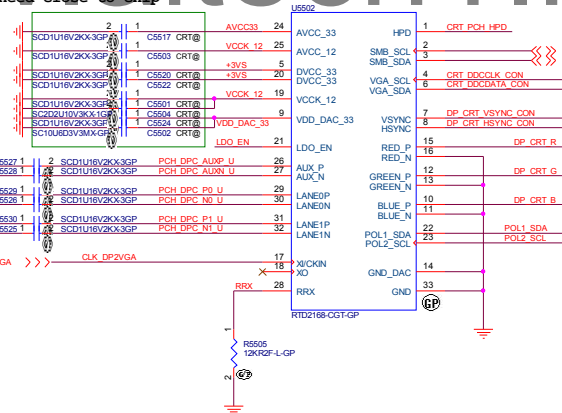
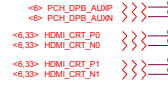
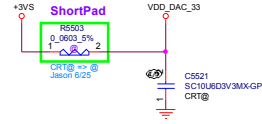
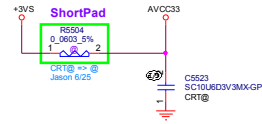


**CRT RGB
CRT H/VSYNC
CRT SMBUS**



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Layout note:
All cap need close to chip

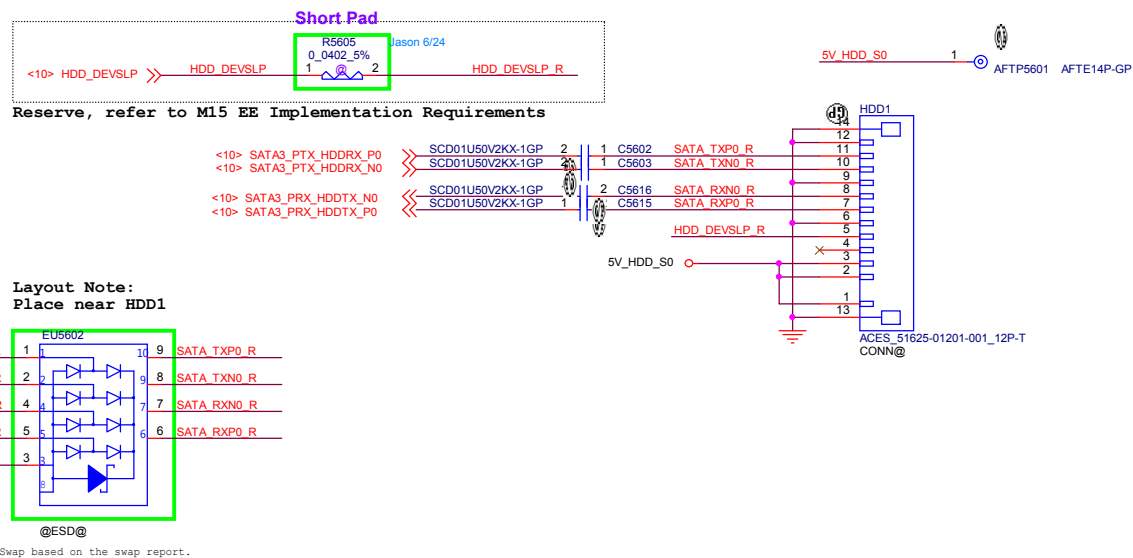
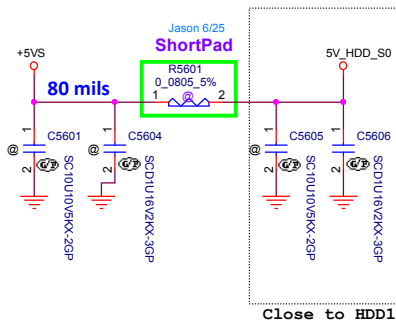


- 1- EEPROM with a size of 16K-Byte
- 2- EEPROM device should be 2-byte addressing device
- 3- Slave address should configure as 0xA8



Figure 3. Slave Address Bits

SATA HDD Connector

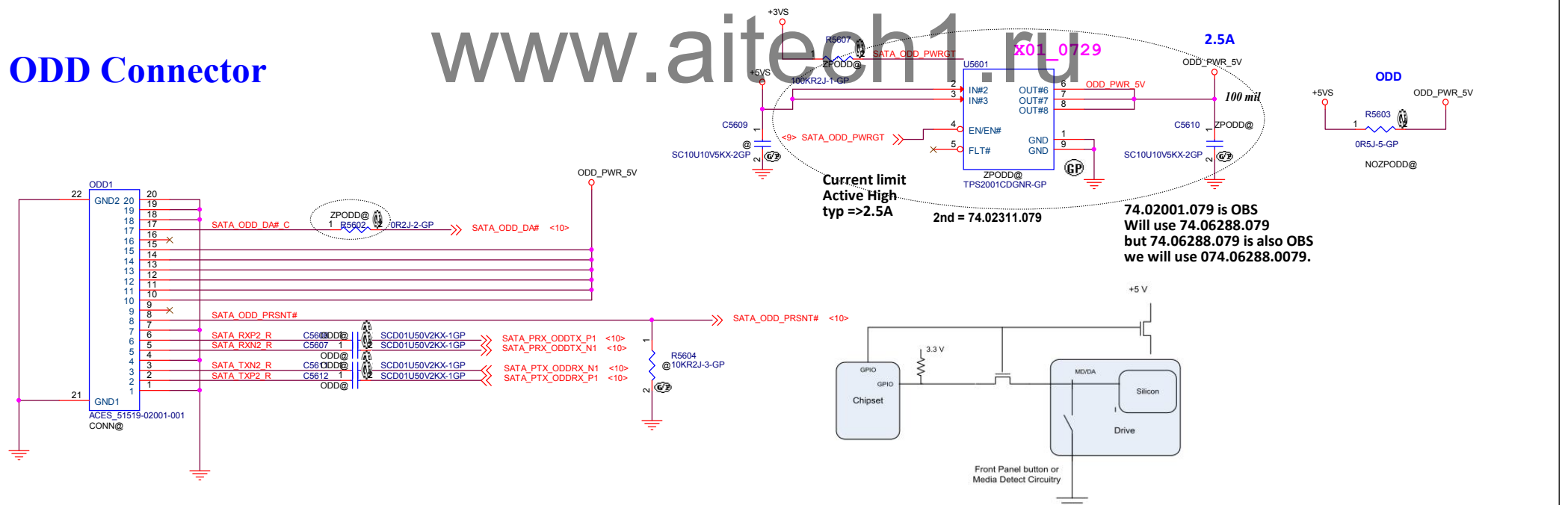


CONN		FFC
GND	S1	1
A+	S2	2
A-	S3	3
GND	S4	4
B-	S5	5
B+	S6	6
GND	S7	7
GND	P1	
GND	P2	
GND	P3	
5V	P4	10
5V	P5	11
5V	P6	12
GND	P7	
GND	P8	

Main Func = ODD

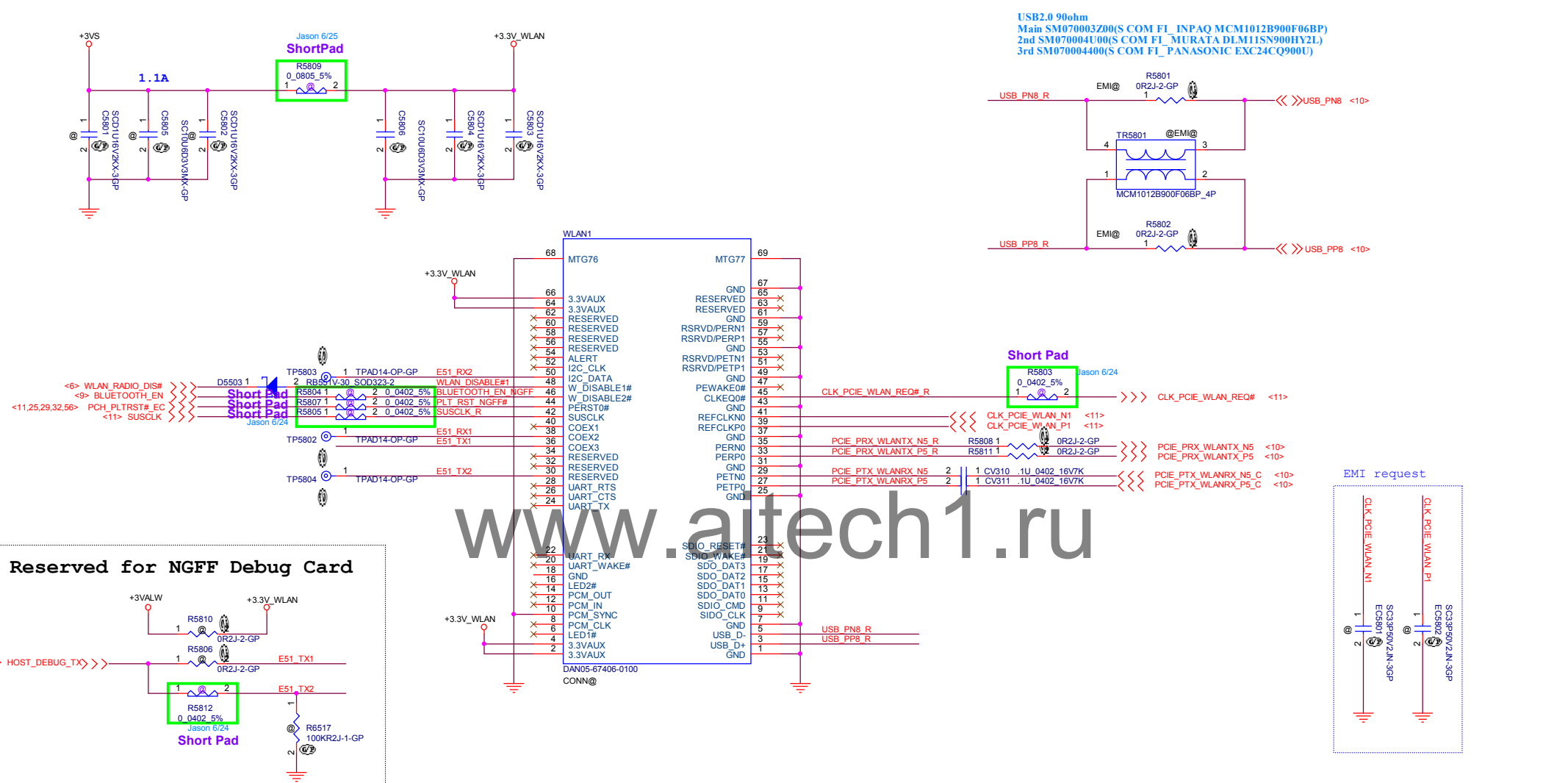
ODD Connector

SATA Zero Power ODD



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				Size	Document Number	Rev
				LA-D071P		
				Date:	Thursday, July 09 2015	Sheet 35 of 64

Main Func = WLAN

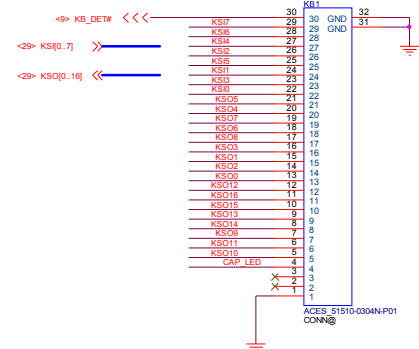


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Support: Intel Dual Band Wireless-AC 3160

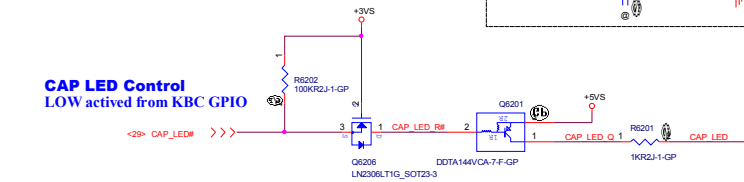
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Issued Date		Deciphered Date		Title	
2015/07/09		2016/07/31		NGFF WLAN CONN	
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		Document Number		1.0(4/0)	
		LA-D071P			
Date:		Thursday, July 09, 2015		Sheet 36 of 64	

Main Func = KB



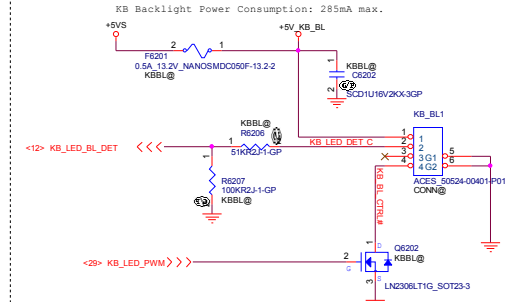
CAP LED Control

LOW actived from KI

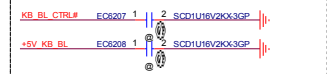


Keyboard Backlight (Reserved)

KB Backlight Power Consumption: 285mA max.

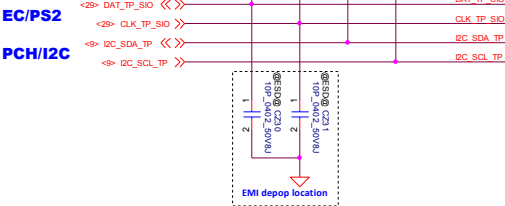


For EMI Reserved



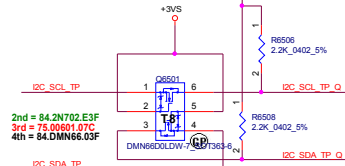
Main Func = TPAI

Check leakage
Jason 2015/03/08



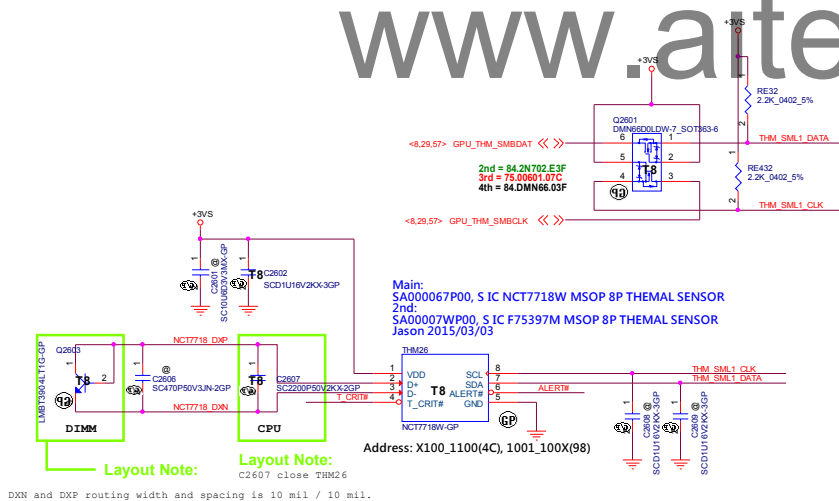
2015/5/19 Modify
Jason

TP_VDD Check leakage
Change to PU TP_VDD (DVT)
Jason 2015/03/06



Main Func = Thermal

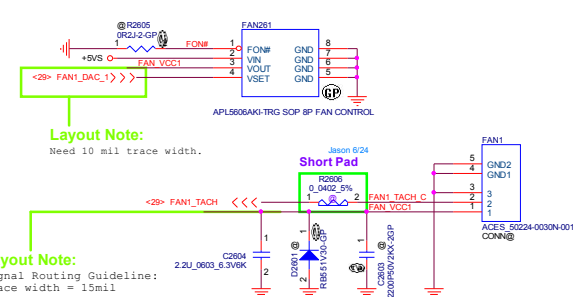
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TEMPERATURE (°C)		T_CRIT#				
		2KΩ	7.5KΩ	10.5KΩ	14KΩ	18.7KΩ
ALERT#	2KΩ	77	87	97	107	117
	7.5KΩ	79	89	99	109	119
	10.5KΩ	81	91	101	111	121
	14KΩ	83	93	103	113	123
	18.7KΩ	85	95	105	115	125

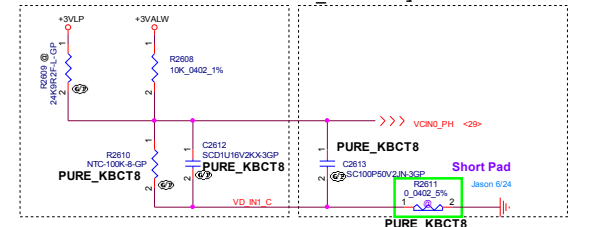


Fan controller1



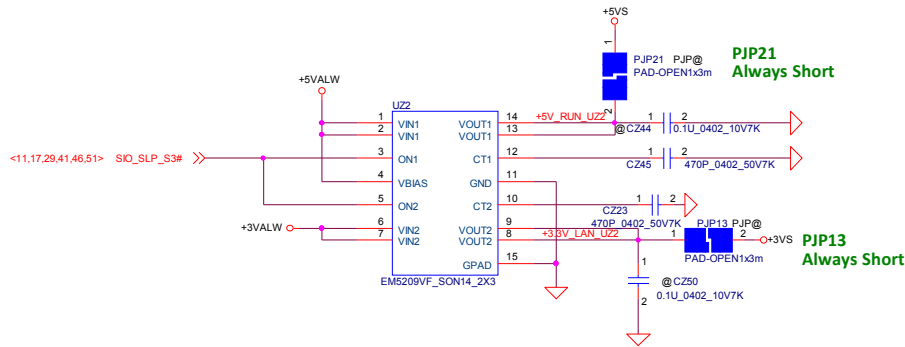
Close to Thermal sensor

Close to KBC
VD IN1 for system thermal sensor

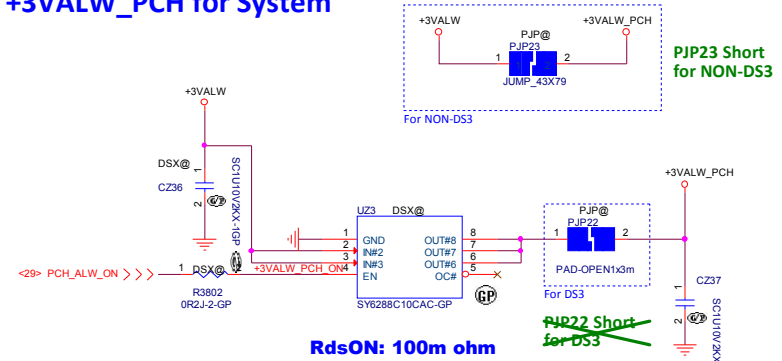


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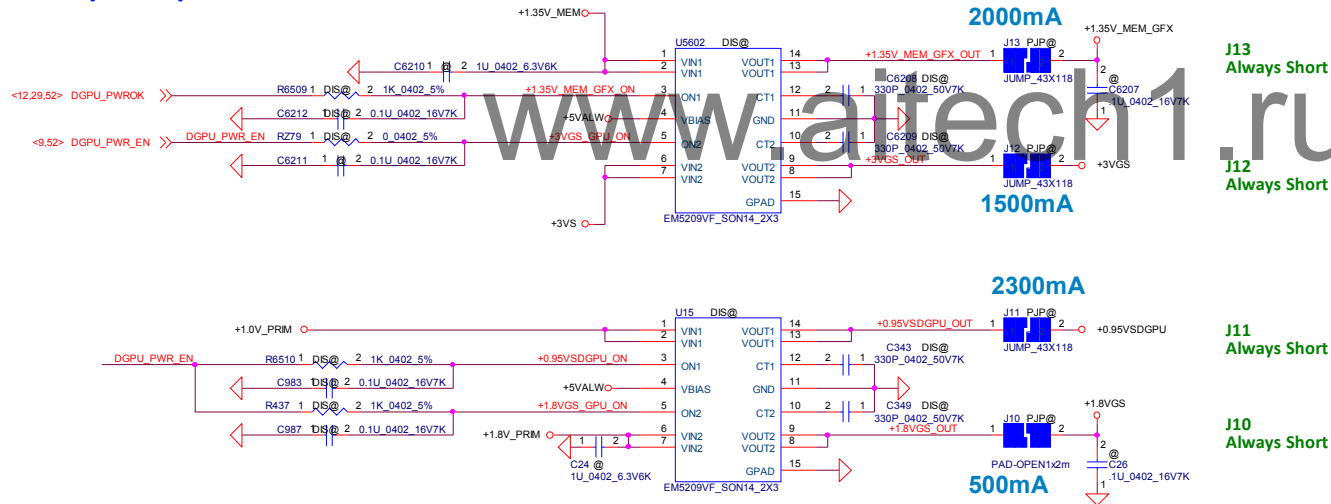
+5V_RUN/+3.3V_RUN for System



+3VALW_PCH for System



+3V/+0.95V/+1.8V/+1.35V for GPU



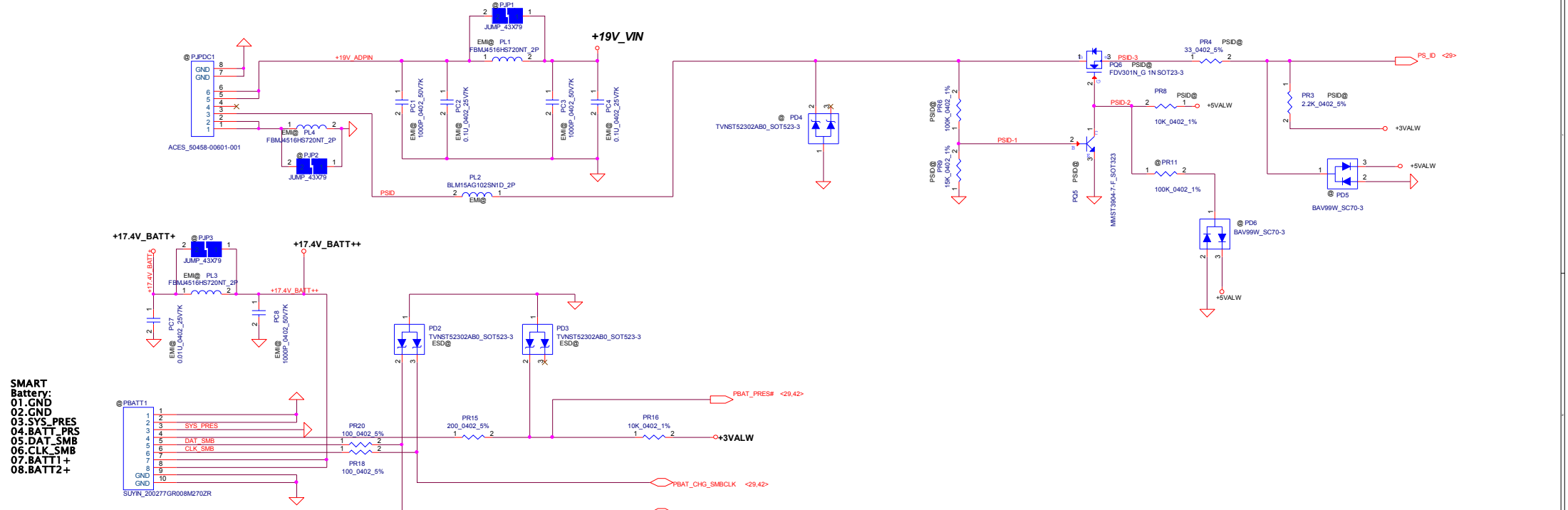
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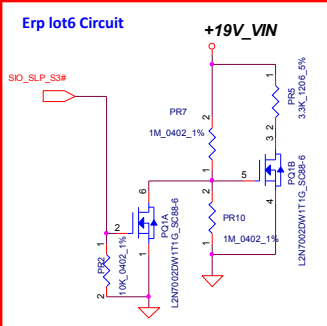
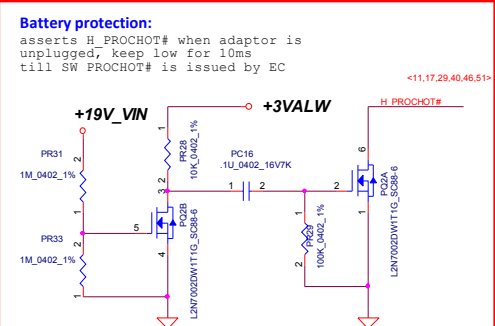
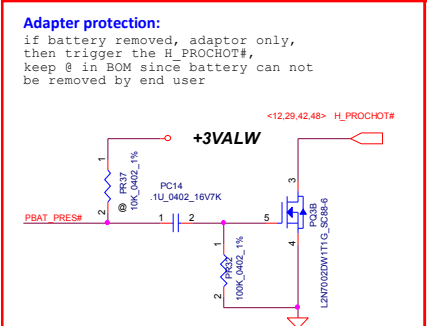


Title			
Power control			
Size	Document Number	Rev	
	LA-D071P	1.0(400)	
Date:	Thursday, July 08, 2015	Sheet	40 of 64



SMART
Battery:
01.GND
02.GND
03.SYS_PRES
04.BATT_PRS
05.DAT_SMB
06.CLK_SMB
07.BATT1+
08.BATT2+

Other component (37.1)



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Date: Thursday, July 09, 2015				Sheet 41 of 64	

Iada=0~3.33A (65W)

Iada=0~2.30A (45W)

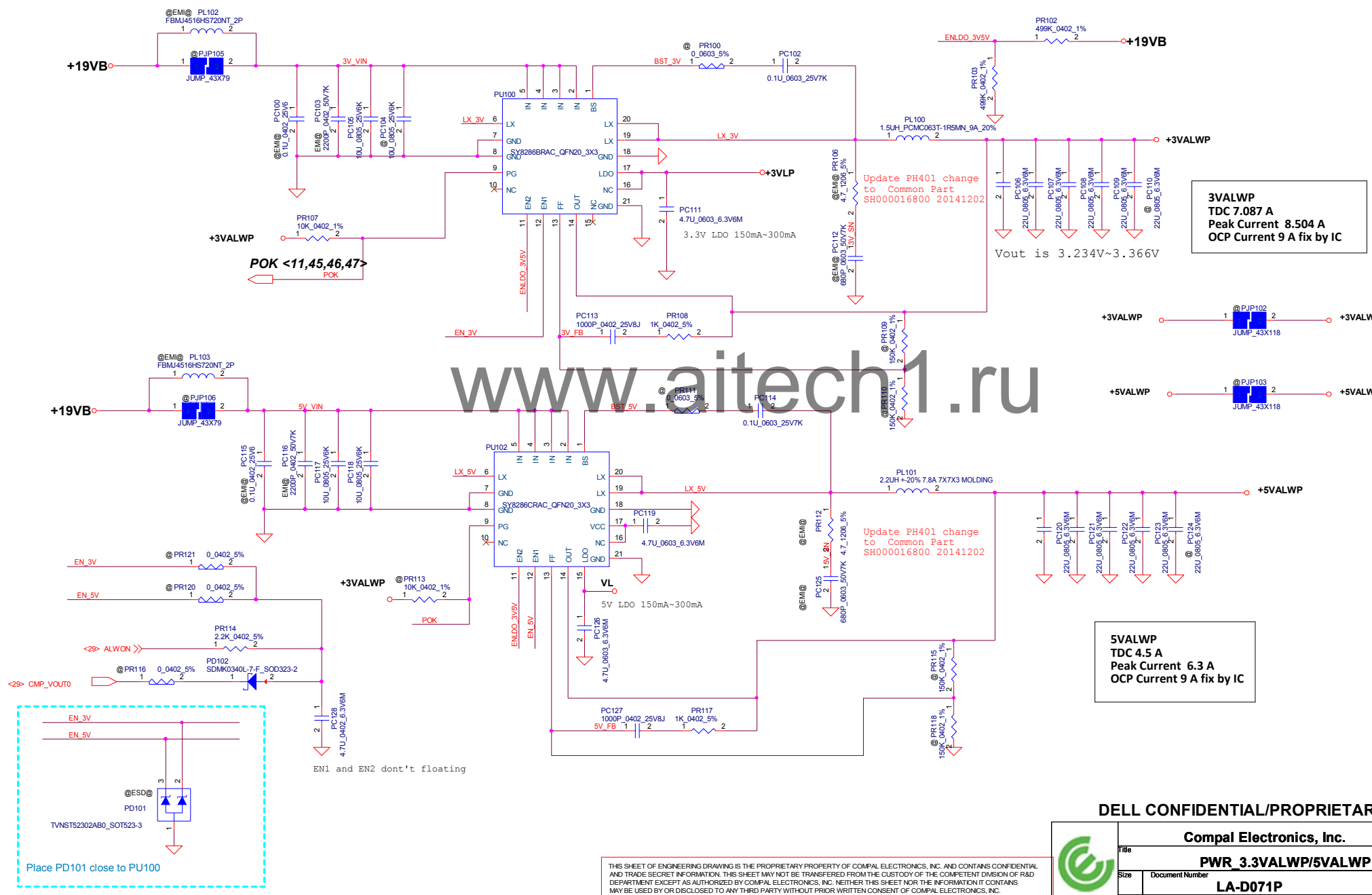
ADP_I = 32*Iadapter*Rsense

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4S1P: CV = 17.7V CC: 1.6A

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Title		Compal Electronics, Inc.	
PWR CHARGER		Rev	
Date		Thursday, July 09, 2015	
Sheet		42 of 64	

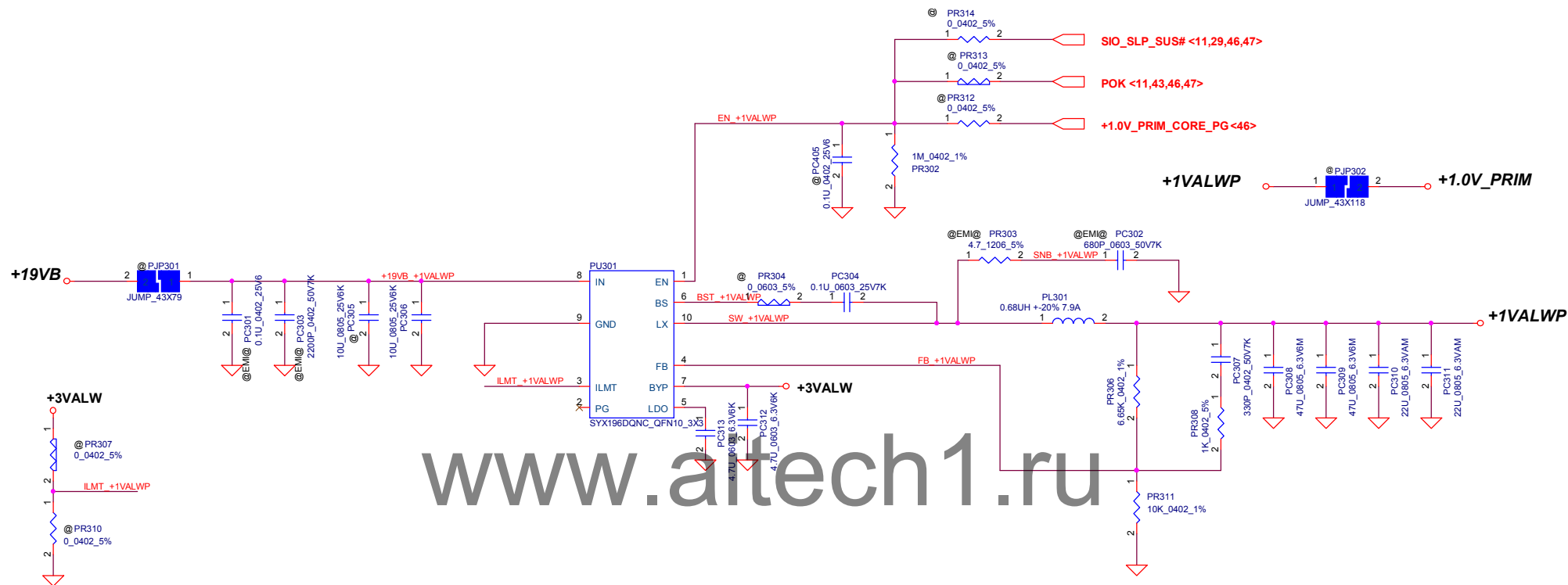


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PWR_3.3VALWP/5VALWP

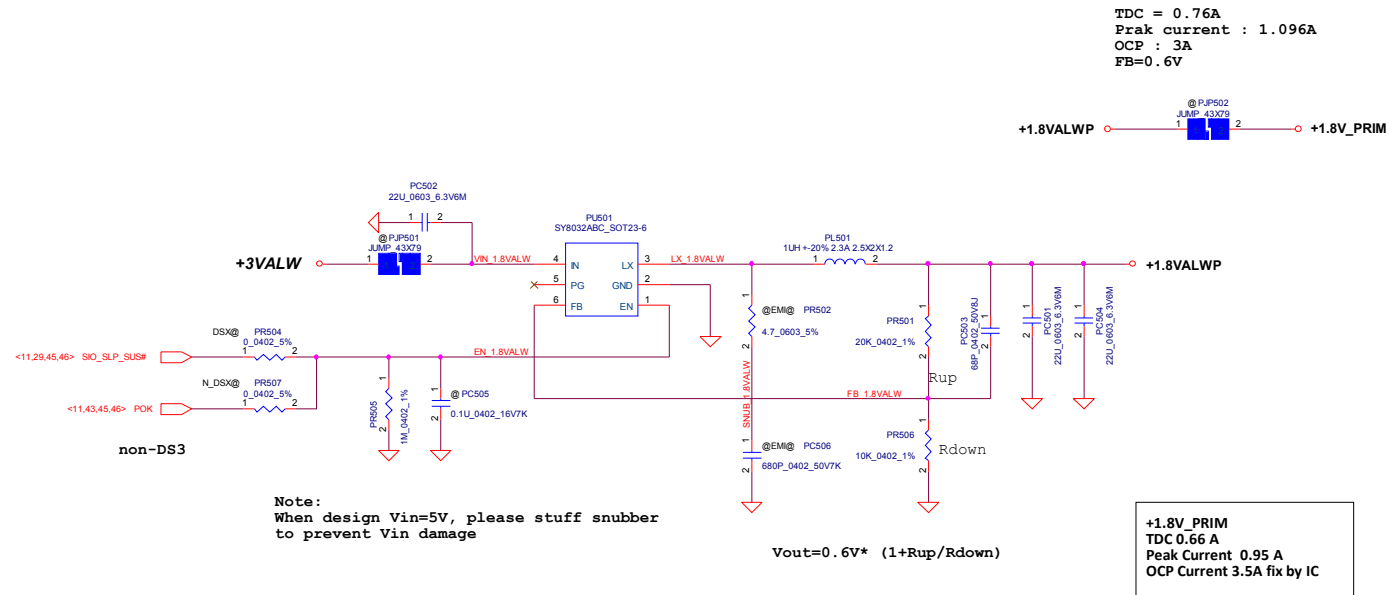
LA-D071P



+1.0V_PRIM
TDC 2.63 A
Peak Current 3.748 A
OCP Current 6.0 A Fix by IC
TYP MAX
Choke DCR 11.0mohm , 12.0mohm

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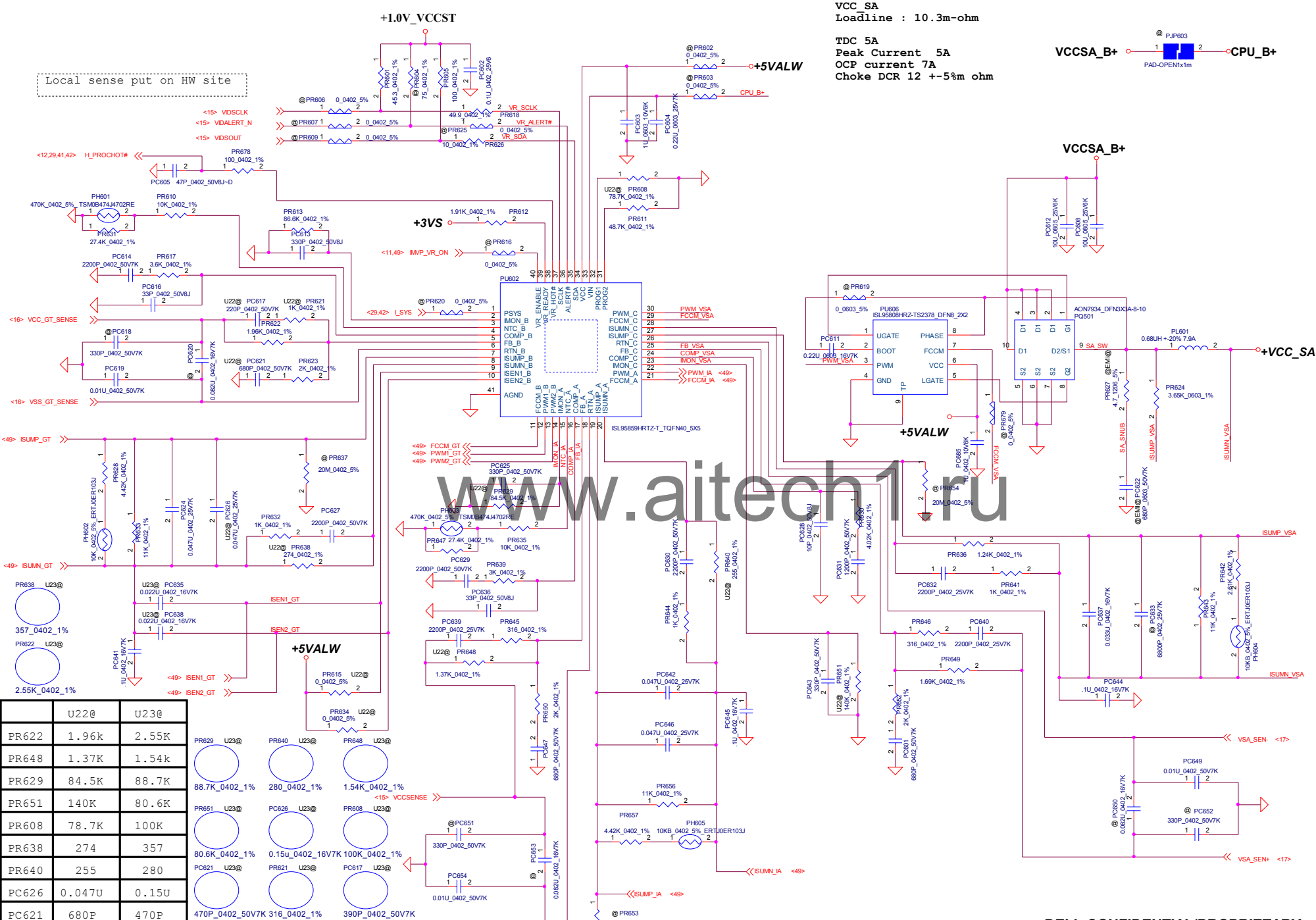
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				Sheet	45 of 64
				Rev	1.0(400)



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Size	C	Document Number		Rev 1.0(00)
Date:	Thursday, July 09, 2016	Sheet	47 of 64	



	U22@	U23@
PR622	1.96k	2.55K
PR648	1.37K	1.54k
PR629	84.5K	88.7K
PR651	140K	80.6K
PR608	78.7K	100K
PR638	274	357
PR640	255	280
PC626	0.047U	0.15U
PC621	680P	470P
PR621	1K	316
PC617	220P	390P
PC614	2200P	6800P

PR629	U23@	PR640	U23@	PR648	U23@

Local sense put on HW site

VCC_SA
Loadline : 10.3m-ohm

TDC 5A
Peak Current 5A
OCP current 7A
Choke DCR 12 +-5% m ohm



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								PWR_VCC_SA	
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Size		Document Number						Rev	
								1.0/0	
Date:		Thursday, July 09, 2015				Sheet		48 of 64	

```
VCC GT
U22- 15W
Loadline : 3.1m-ohm
U23e - 15W
Loadline : 2m-ohm
```

U22-15W
TDC 18A
Peak Current 31A
OCP current 37A
Choke DCR 0.66 +-7% ohm



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				Date:	Thursday, July 09, 2015
				Sheet	49 of 64

[illegible]

The diagram illustrates a 16-bit parallel adder using 74181 ALU chips. It shows two 74181 chips, PC1221 and PC1223, connected in a cascaded fashion. The carry-in of the first chip is connected to +VCC_GT. The carry-out of the first chip is connected to the carry-in of the second chip. The outputs of the second chip are connected to the carry-in of the third chip, and so on, up to the 16th bit. The diagram is labeled 'Figure 16-16' and 'Figure 16-17'.

The schematic diagram illustrates the power supply section of the PCB layout. It features a +VCC_SA input line that branches into two main paths. The first path consists of a series of capacitors (PC1153, PC1147, PC1148, PC1146, PC1150, PC1151, PC1152) connected to ground. The second path consists of a parallel network of capacitors (U23@, PC1057, PC1058, PC1059, PC1060, PC1139, PC1140, PC1141, PC1142, PC1143, PC1144, PC1145, PC1146) connected to ground. The capacitors are labeled with their values (e.g., 1u, 22u, 100u) and the PCB footprint (e.g., 0201_L, 0603, 0805).

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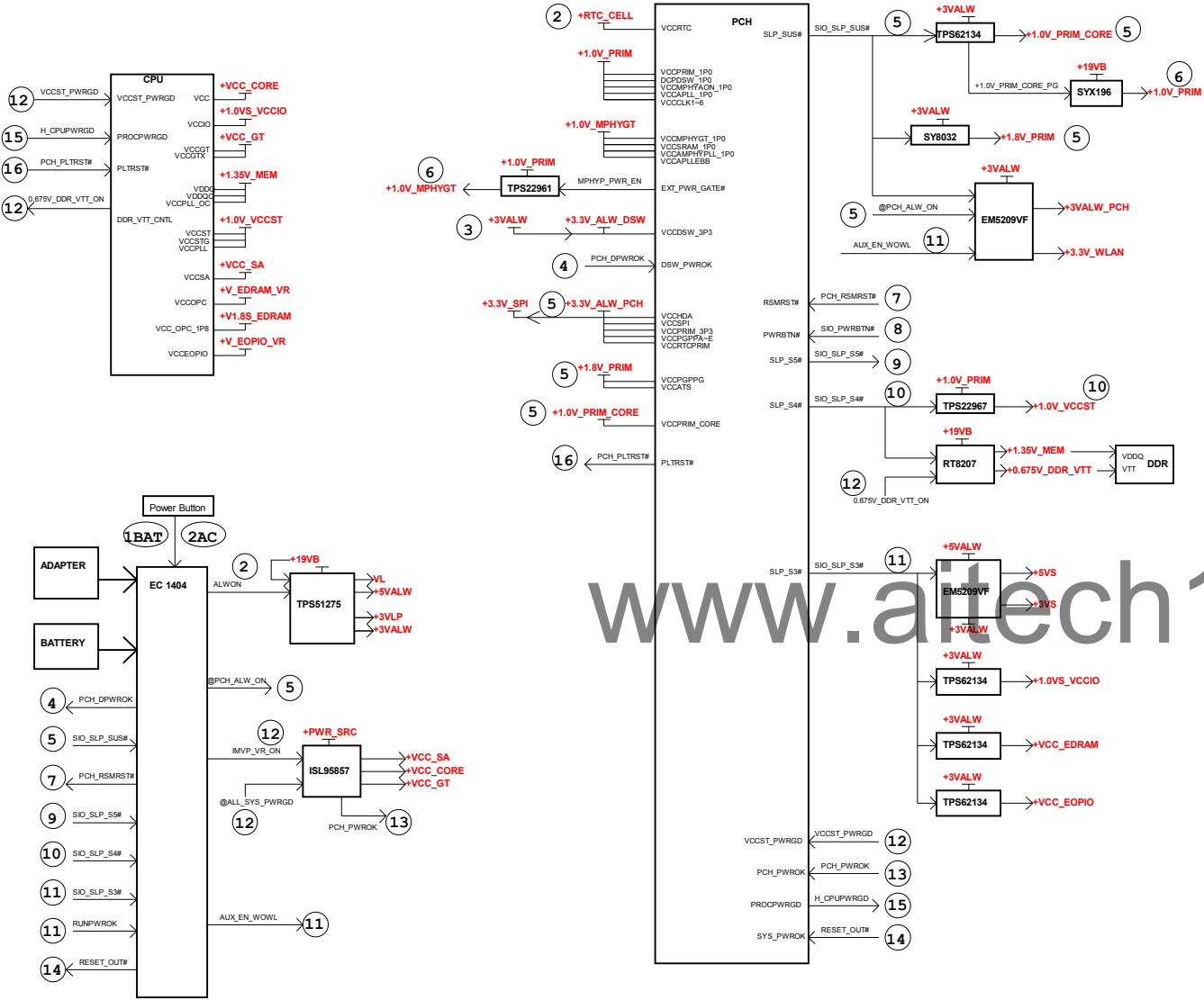
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Issued Date	2015/07/09	Deciphered Date	2016/07/31	Title		
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				Size	Document Number	Rev
						1.0(A00)
Date: Thursday, July 09, 2015				Sheet	50 of 64	

Version Change List (P. I. R, List)

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.		
1	NA	HW or PWR	NA	COMPAL	NA	NA	NA		
2				COMPAL					
3				COMPAL					
4				COMPAL					
5				COMPAL					
6				COMPAL					
7				COMPAL					
8				COMPAL					
9				COMPAL					
10				COMPAL					
11				COMPAL	www.aitech1.ru		0.2 (X01)		
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Security Classification				Compal Secret Data					
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Size		Document Number					Rev 1.0(A00)		
Date: Thursday, July 09, 2015				Sheet 53 of 64					

Item	Page #	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	NW	20141124	CONFAL	Power sequence		1. Add RC344 for PCIE_WDRSN asserted. Add UC13, RC343, RC342, RC419 for DMV_WB_WB	0.1 (0/00)
2	NW	20141124	CONFAL	Debug conn		1. Delete JA91, J911	0.1 (0/00)
3	NW	20141125	CONFAL	Correct RDP conn and GPIO check		1. Change WDRSN to GPIO021 reserve 2. Add RC430, RC337, RC338 for GPIO pull-up 3. Delete RC207, RC290, UC12, RC244	0.1 (0/00)
4	NW	20141126	CONFAL	Circuit double		1. Delete P32, P33 for double circuit	0.1 (0/00)
5	NW	20141128	CONFAL	GPIO modify		1. Add RC340 for WDRSN_WB 2. Delete RC312, RC174, RC247, RC503, RC504, RC26, RC357, Q2505, R2504 3. Add D64, Q4204, U4502	0.1 (0/00)
6	NW	20141203	CONFAL	GPIO modify		1. Add RC437 2. Delete D64	0.1 (0/00)
7	NW	20141204	CONFAL	Follow W16 RE Implementation guide modify		1. Add RC437, RC438, RC439, RC440, RC441, RC442, RC443, Q2415, RC412, RC413, RC414, RC415, RC416, RC417, RC418, RC419, RC420, RC421, RC422, RC423, RC424, RC425, RC426, RC427, RC428, RC429, RC430, RC431, RC432, RC433, RC434, RC435, RC436, RC437, RC438, RC439, RC440, RC441, RC442, RC443, RC444, RC445, RC446, RC447, RC448, RC449, RC450, RC451, RC452, RC453, RC454, RC455, RC456, RC457, RC458, RC459, RC460, RC461, RC462, RC463, RC464, RC465, RC466, RC467, RC468, RC469, RC470, RC471, RC472, RC473, RC474, RC475, RC476, RC477, RC478, RC479, RC480, RC481, RC482, RC483, RC484, RC485, RC486, RC487, RC488, RC489, RC490, RC491, RC492, RC493, RC494, RC495, RC496, RC497, RC498, RC499, RC500, RC501, RC502, RC503, RC504, RC505, RC506, RC507, RC508, RC509, RC510, RC511, RC512, RC513, RC514, RC515, RC516, RC517, RC518, RC519, RC520, RC521, RC522, RC523, RC524, RC525, RC526, RC527, RC528, RC529, RC530, RC531, RC532, RC533, RC534, RC535, RC536, RC537, RC538, RC539, RC540, RC541, RC542, RC543, RC544, RC545, RC546, RC547, RC548, RC549, RC550, RC551, RC552, RC553, RC554, RC555, RC556, RC557, RC558, RC559, RC560, RC561, RC562, RC563, RC564, RC565, RC566, RC567, RC568, RC569, RC570, RC571, RC572, RC573, RC574, RC575, RC576, RC577, RC578, RC579, RC580, RC581, RC582, RC583, RC584, RC585, RC586, RC587, RC588, RC589, RC590, RC591, RC592, RC593, RC594, RC595, RC596, RC597, RC598, RC599, RC600, RC601, RC602, RC603, RC604, RC605, RC606, RC607, RC608, RC609, RC610, RC611, RC612, RC613, RC614, RC615, RC616, RC617, RC618, RC619, RC620, RC621, RC622, RC623, RC624, RC625, RC626, RC627, RC628, RC629, RC630, RC631, RC632, RC633, RC634, RC635, RC636, RC637, RC638, RC639, RC640, RC641, RC642, RC643, RC644, RC645, RC646, RC647, RC648, RC649, RC650, RC651, RC652, RC653, RC654, RC655, RC656, RC657, RC658, RC659, RC660, RC661, RC662, RC663, RC664, RC665, RC666, RC667, RC668, RC669, RC670, RC671, RC672, RC673, RC674, RC675, RC676, RC677, RC678, RC679, RC680, RC681, RC682, RC683, RC684, RC685, RC686, RC687, RC688, RC689, RC690, RC691, RC692, RC693, RC694, RC695, RC696, RC697, RC698, RC699, RC700, RC701, RC702, RC703, RC704, RC705, RC706, RC707, RC708, RC709, RC710, RC711, RC712, RC713, RC714, RC715, RC716, RC717, RC718, RC719, RC720, RC721, RC722, RC723, RC724, RC725, RC726, RC727, RC728, RC729, RC730, RC731, RC732, RC733, RC734, RC735, RC736, RC737, RC738, RC739, RC740, RC741, RC742, RC743, RC744, RC745, RC746, RC747, RC748, RC749, RC750, RC751, RC752, RC753, RC754, RC755, RC756, RC757, RC758, RC759, RC760, RC761, RC762, RC763, RC764, RC765, RC766, RC767, RC768, RC769, RC770, RC771, RC772, RC773, RC774, RC775, RC776, RC777, RC778, RC779, RC780, RC781, RC782, RC783, RC784, RC785, RC786, RC787, RC788, RC789, RC790, RC791, RC792, RC793, RC794, RC795, RC796, RC797, RC798, RC799, RC800, RC801, RC802, RC803, RC804, RC805, RC806, RC807, RC808, RC809, RC810, RC811, RC812, RC813, RC814, RC815, RC816, RC817, RC818, RC819, RC820, RC821, RC822, RC823, RC824, RC825, RC826, RC827, RC828, RC829, RC830, RC831, RC832, RC833, RC834, RC835, RC836, RC837, RC838, RC839, RC840, RC841, RC842, RC843, RC844, RC845, RC846, RC847, RC848, RC849, RC850, RC851, RC852, RC853, RC854, RC855, RC856, RC857, RC858, RC859, RC860, RC861, RC862, RC863, RC864, RC865, RC866, RC867, RC868, RC869, RC870, RC871, RC872, RC873, RC874, RC875, RC876, RC877, RC878, RC879, RC880, RC881, RC882, RC883, RC884, RC885, RC886, RC887, RC888, RC889, RC890, RC891, RC892, RC893, RC894, RC895, RC896, RC897, RC898, RC899, RC900, RC901, RC902, RC903, RC904, RC905, RC906, RC907, RC908, RC909, RC910, RC911, RC912, RC913, RC914, RC915, RC916, RC917, RC918, RC919, RC920, RC921, RC922, RC923, RC924, RC925, RC926, RC927, RC928, RC929, RC930, RC931, RC932, RC933, RC934, RC935, RC936, RC937, RC938, RC939, RC940, RC941, RC942, RC943, RC944, RC945, RC946, RC947, RC948, RC949, RC950, RC951, RC952, RC953, RC954, RC955, RC956, RC957, RC958, RC959, RC960, RC961, RC962, RC963, RC964, RC965, RC966, RC967, RC968, RC969, RC970, RC971, RC972, RC973, RC974, RC975, RC976, RC977, RC978, RC979, RC980, RC981, RC982, RC983, RC984, RC985, RC986, RC987, RC988, RC989, RC990, RC991, RC992, RC993, RC994, RC995, RC996, RC997, RC998, RC999, RC1000, RC1001, RC1002, RC1003, RC1004, RC1005, RC1006, RC1007, RC1008, RC1009, RC1010, RC1011, RC1012, RC1013, RC1014, RC1015, RC1016, RC1017, RC1018, RC1019, RC1020, RC1021, RC1022, RC1023, RC1024, RC1025, RC1026, RC1027, RC1028, RC1029, RC1030, RC1031, RC1032, RC1033, RC1034, RC1035, RC1036, RC1037, RC1038, RC1039, RC1040, RC1041, RC1042, RC1043, RC1044, RC1045, RC1046, RC1047, RC1048, RC1049, RC1050, RC1051, RC1052, RC1053, RC1054, RC1055, RC1056, RC1057, RC1058, RC1	

Timing Diagram for S5 to S0 mode

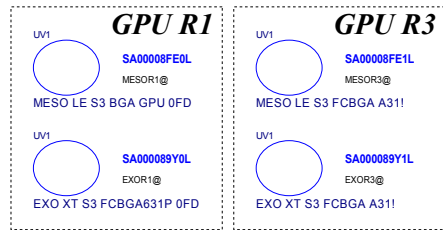


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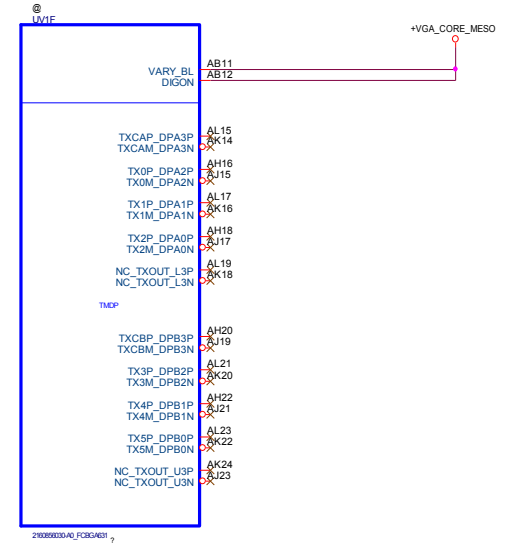
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Power Sequence	
Doc#	LA-0071P
Rev	1.0
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Page	1 of 1

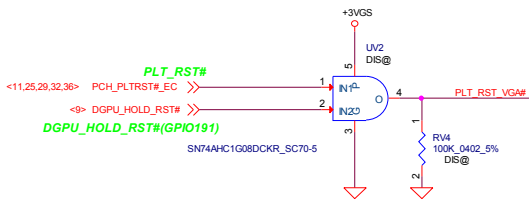
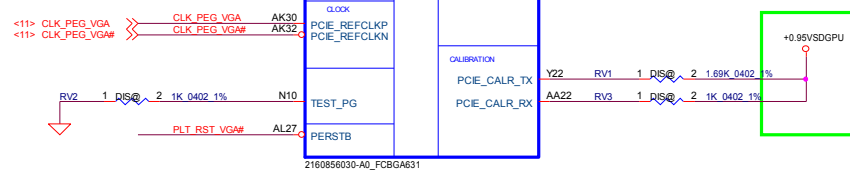


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No Use GPU Display Port output



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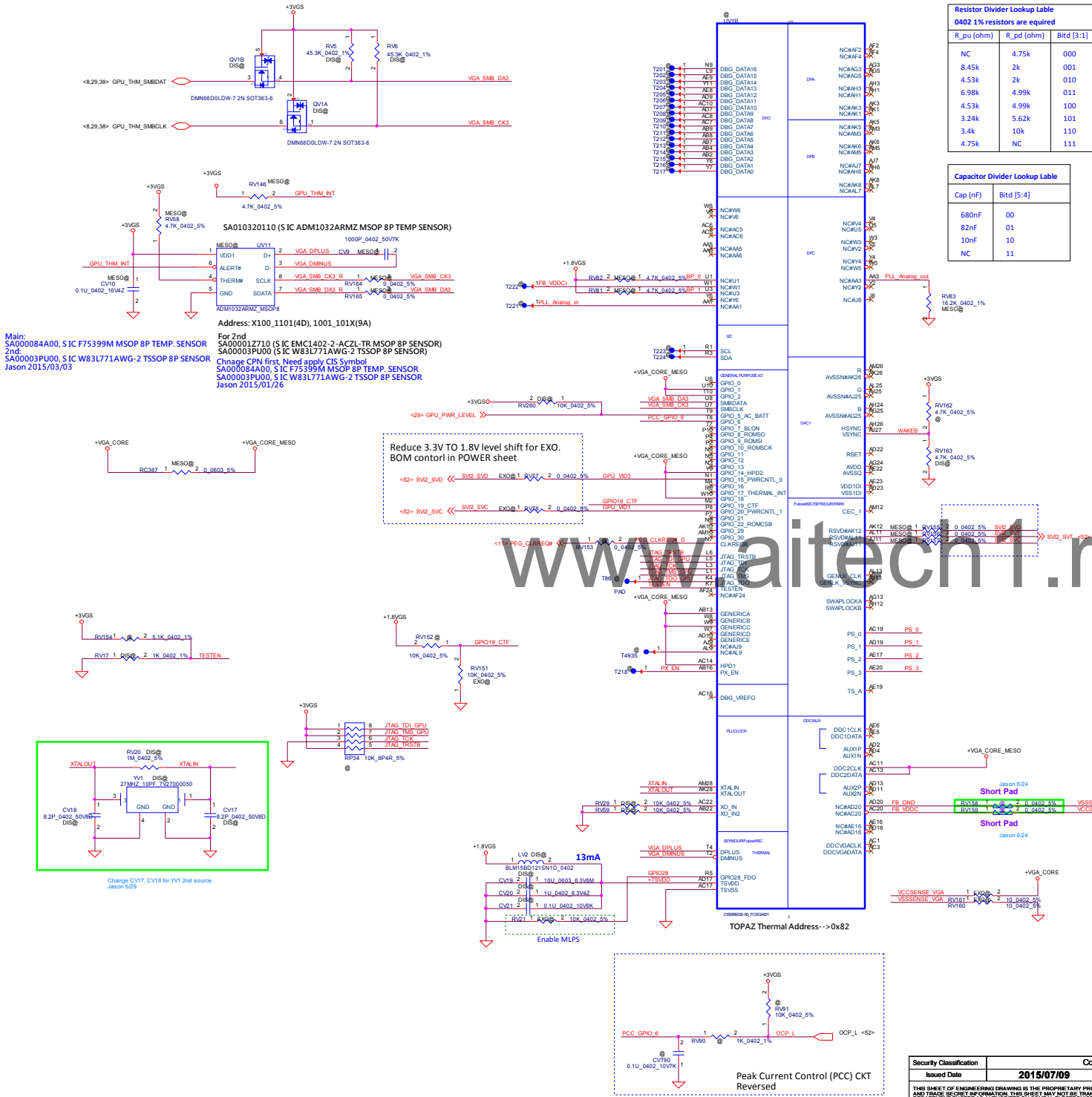
For EXO/MESO PCIe Gen3/Gen2 option



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				Date: Thursday, July 09, 2015	Sheet 56 of 64

Main:
SA000084A00, S IC F75399M MSOP 8P TEMP. SENSOR
2nd:
SA00003PU00, S IC W83L771AWG-2 TSSOP 8P SENSOR
Jason 2015/03/03

For 2nd
SA000012710 (S IC EMC1402-2 ACCL-TR MSOP 8P SENSOR)
SA00003PU00 (S IC W83L771AWG-2 TSSOP 8P SENSOR)
Chnage CPN first. Need apply CIS Symbol
SA000084A00, S IC F75399M MSOP 8P TEMP. SENSOR
SA00003PU00, S IC W83L771AWG-2 TSSOP 8P SENSOR
Jason 2015/01/26

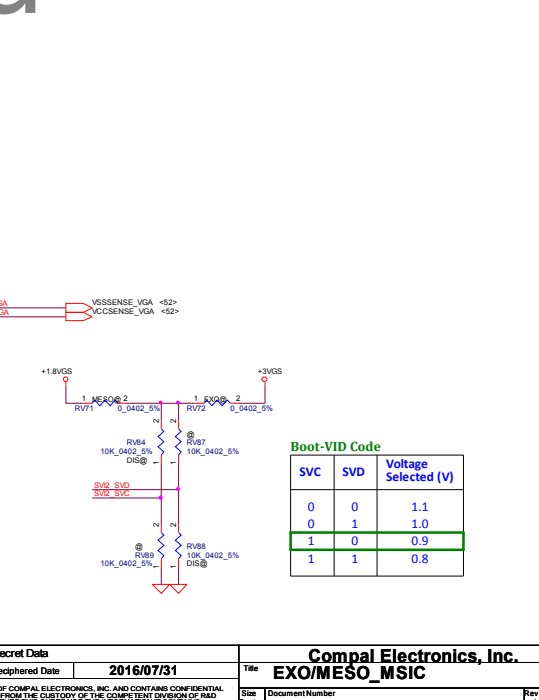
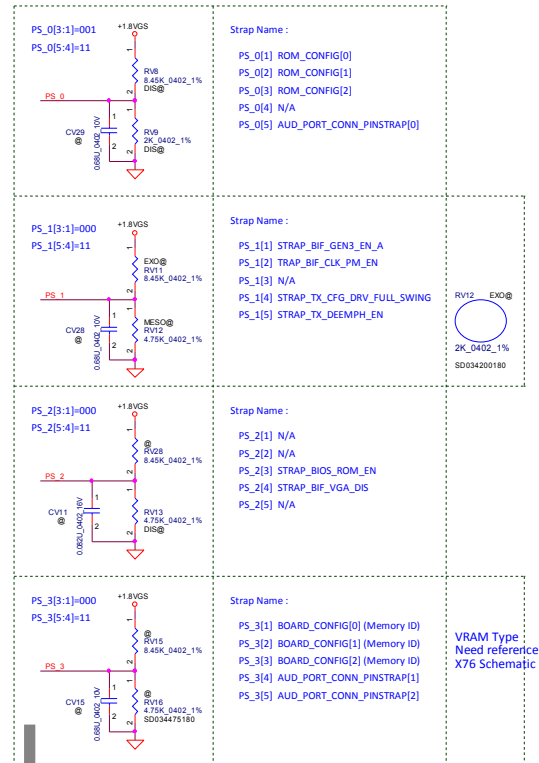


Resistor Divider Lookup Table
0402 1% resistors are equired

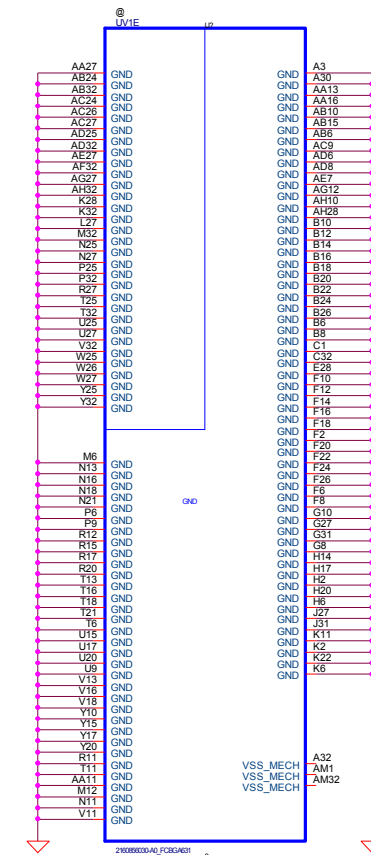
R_pu (ohm)	R_pd (ohm)	Bitd [3:1]
NC	4.75k	000
8.45k	2k	001
4.53k	2k	010
6.98k	4.99k	011
4.53k	4.99k	100
3.24k	5.62k	101
3.4k	10k	110
4.75k	NC	111

Capacitor Divider Lookup Table

Cap (nF)	Bitd [5:4]
680nF	00
82nF	01
10nF	10
NC	11



JP9 DEFAULT SHORT

[illegible]

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				Custom	LA-D071P	1.0/0
				Date:	Thursday, July 09, 2015	Sheet

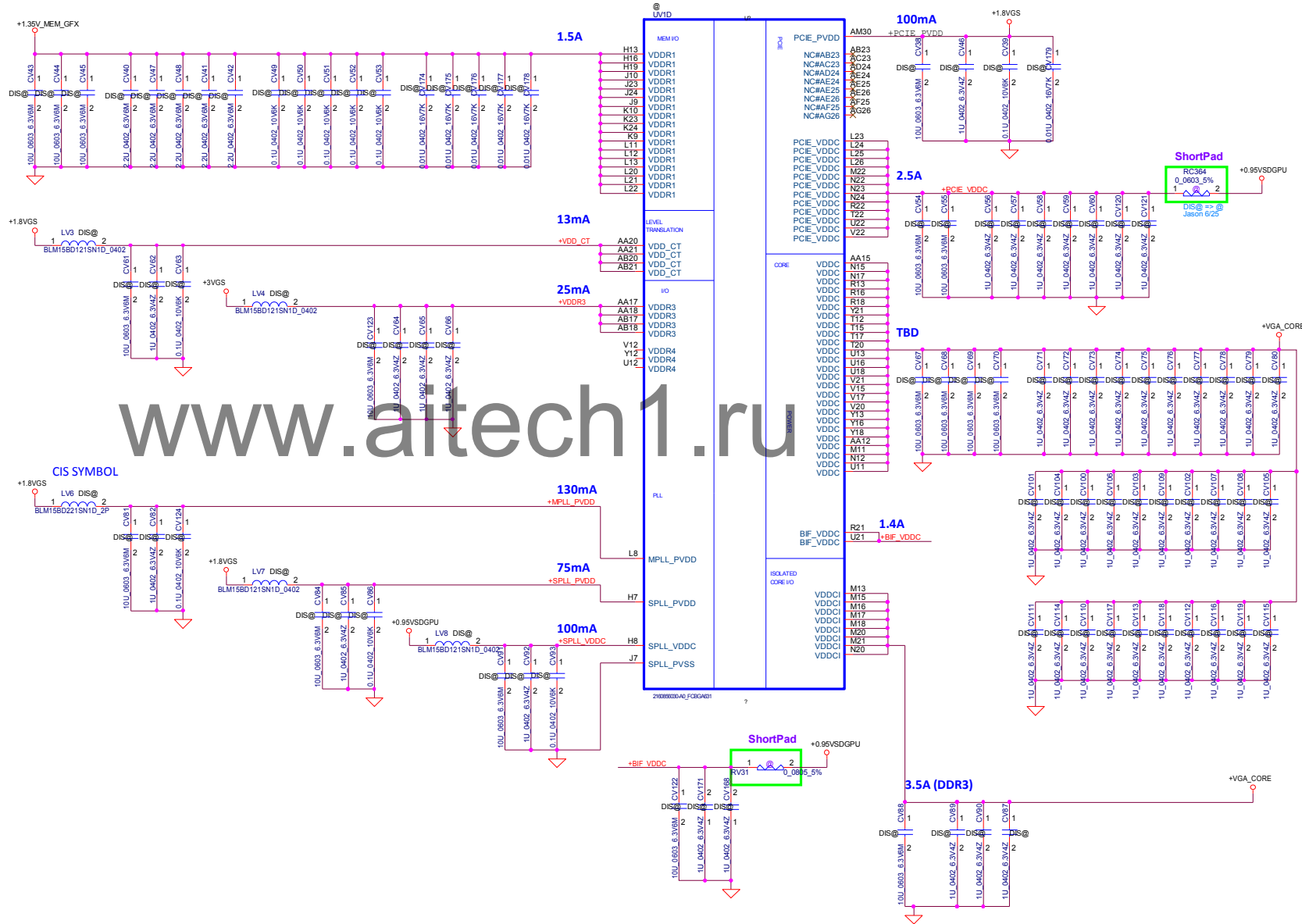
+VGA_CORE	10uF	1uF	0.1uF
VDDC	TBD	5 (1@)	10 (2@)
VDDCI	3.5A	1	3

+0.95VSDGPU	10uF	1uF	0.1uF
PCIE_VDDC	2.5A	2 (1@)	5 (1@)
BIF_VDDC	1.4A	0	1
SPLL_VDDC	100mA	1	1

+1.35V_MEM GFX	10uF	2.2uF	0.1uF	0.01uF
VDDR1 1.5A	3	5	5	5

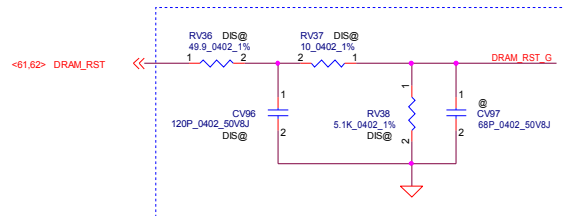
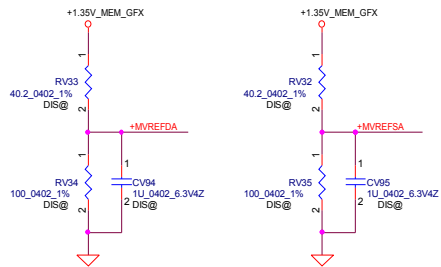
+1.8VGS		10uF	1uF	0.1uF
PCIE_PVDD	100mA	1	1	1
MPLL_PVDD	130mA	1	1	1
SPLL_PVDD	75mA	1	1	1
VDDR4	(300mA)	0	0	0
VDD_CT	13mA	1	1	1
+TSVDD	13mA	1	1	1
+DP_VDDR		0	0	0
+DP_VDDC		0	0	0

+3VGS		10uF	1uF	0.1uF
VDDR3	25mA	0	2 (1@)	1

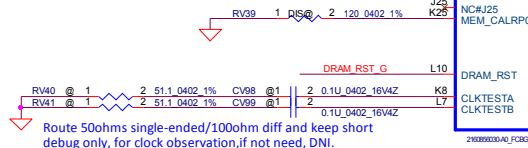


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Sheet 59 of 64					LA-D071P

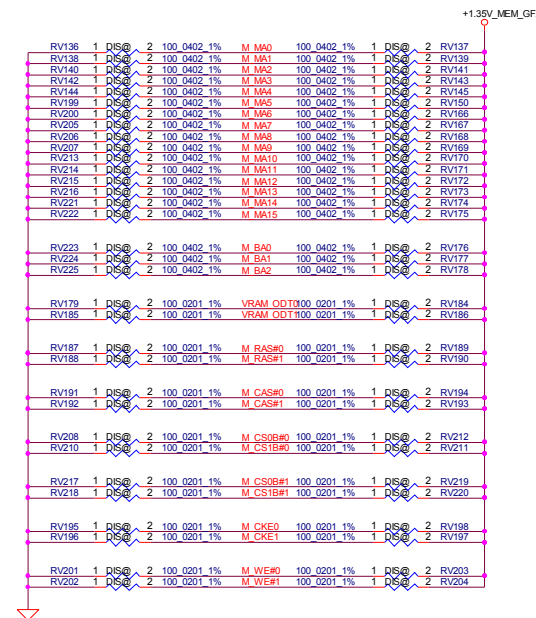
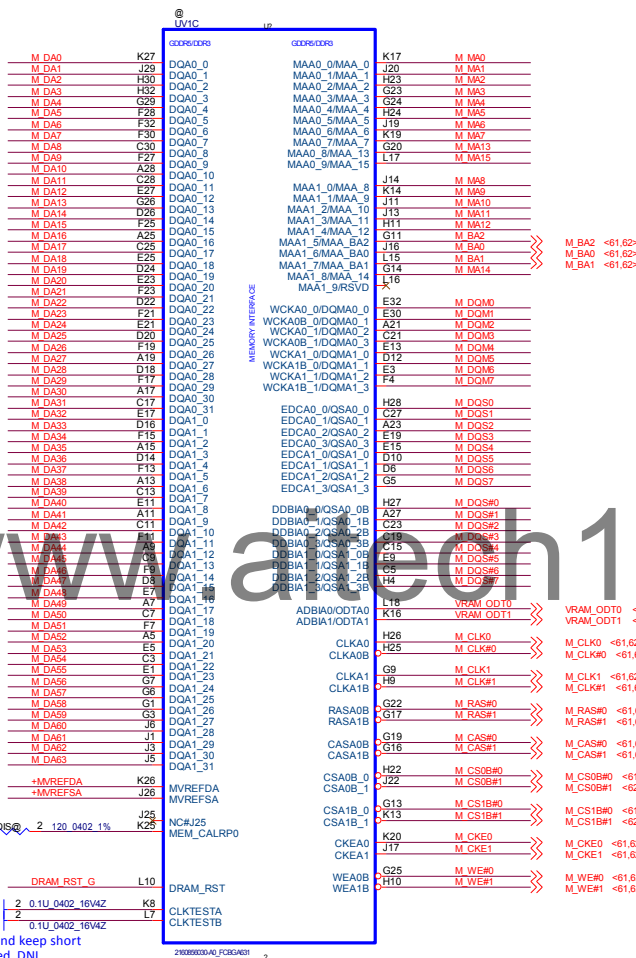
<61.62> M_DA[63..0] <<> M_DA[63..0]
<61.62> M_MA[15..0] <<> M_MA[15..0]
<61.62> M_DQM[7..0] <<> M_DQM[7..0]
<61.62> M_DQS[7..0] <<> M_DQS[7..0]
<61.62> M_DQSM[7..0] <<> M_DQSM[7..0]



Place close to GPU (within 25mm)
and place component close to each other

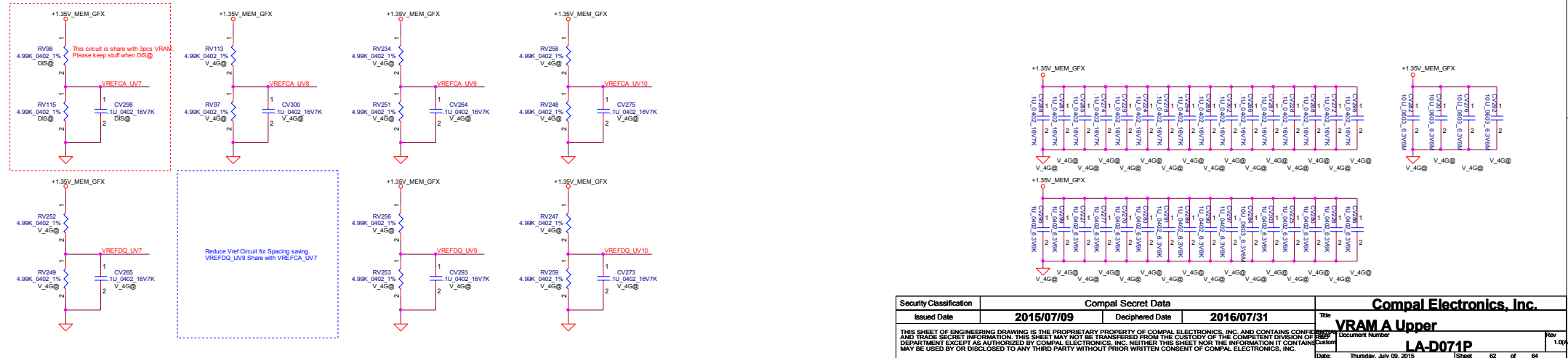
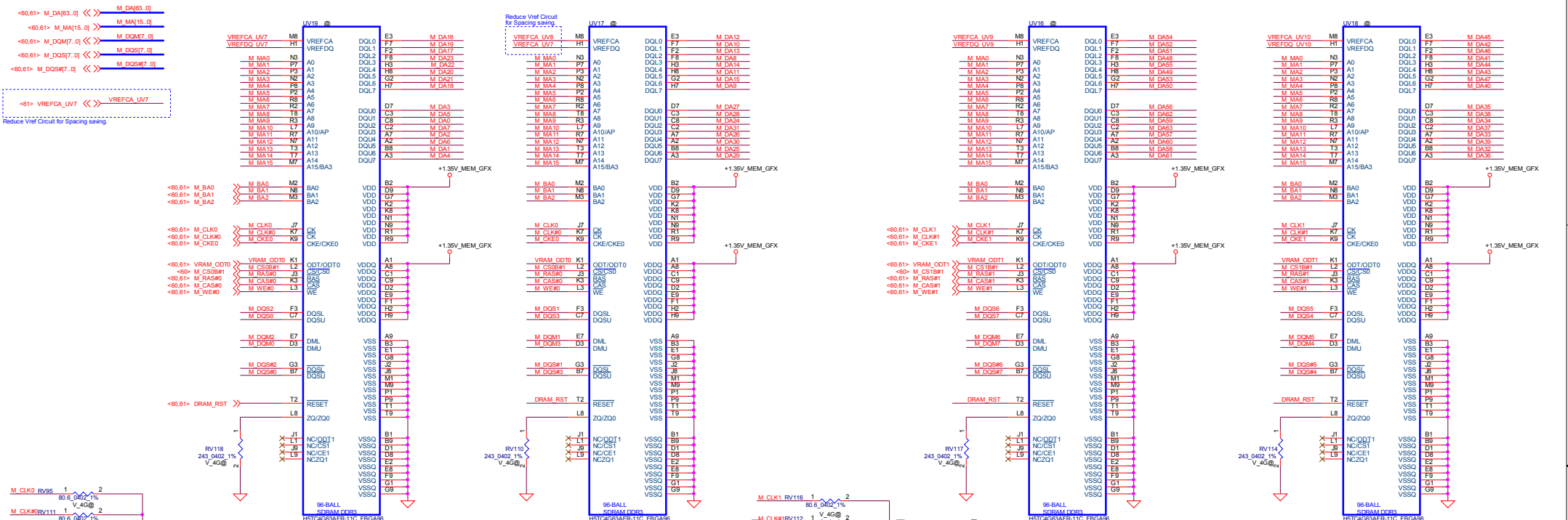


Route 50ohms single-ended/100ohm diff and keep short
debug only, for clock observation, if not need, DNI.



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Date: Thursday, July 09, 2015					Sheet 61 of 64



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Date				Thursday, July 09, 2015	Sheet 62 of 64

Power-Up/Down Sequence

1. All the ASIC supplies must reach their respective nominal voltages within 20 ms of the start of the ramp-up sequence, though a shorter ramp-up duration is preferred. The maximum slew rate on all rails is 50 mV/ μ s.
2. It is recommended that the 3.3-V rail ramp up first.
3. It is recommended that the 0.95-V rail reach at least 90% of its nominal value no later than 2 ms from the start of VDDC ramping up.
4. The power rails that are shared with other components on the system should be gated for the dGPU so that when the dGPU is powered down (for example AMD PowerXpress? idle state), all the power rails are removed from the dGPU. The gate circuits must meet the slew rate requirement (such as ? 50 mV/ μ s).
5. VDDC and VDD_CT should not ramp up simultaneously. For example, VDDC should reach 90% before VDD_CT starts to ramp up (or vice versa).
6. For power down, reversing the ramp-up sequence is recommended.

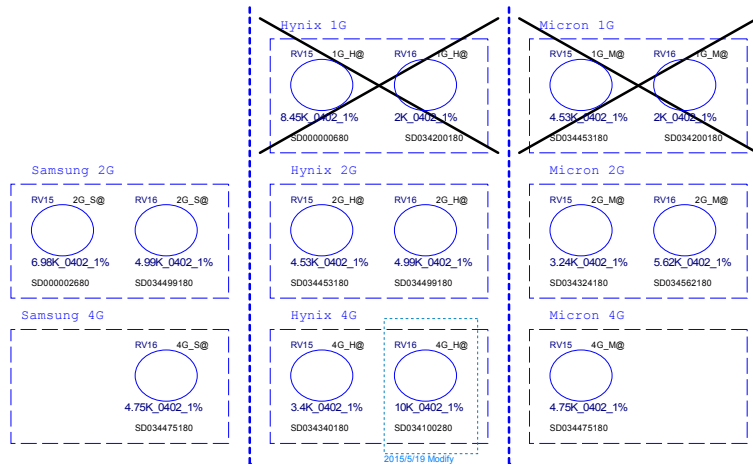
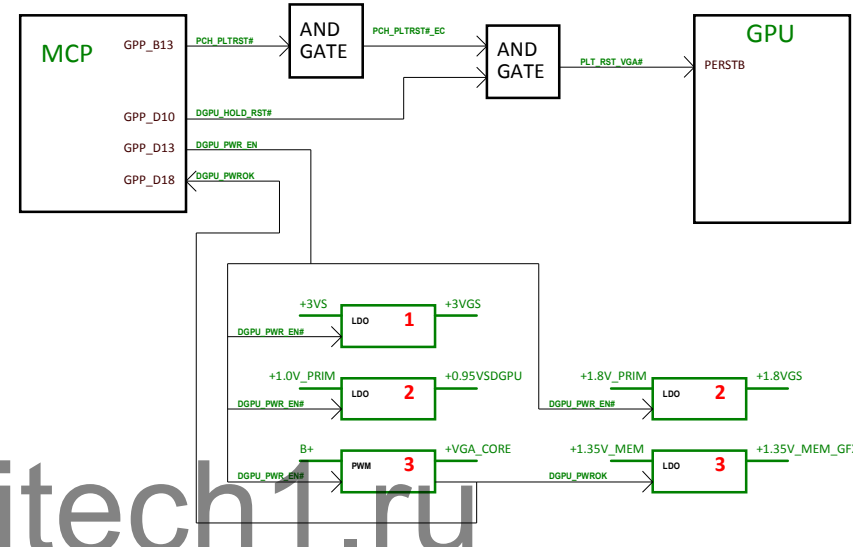
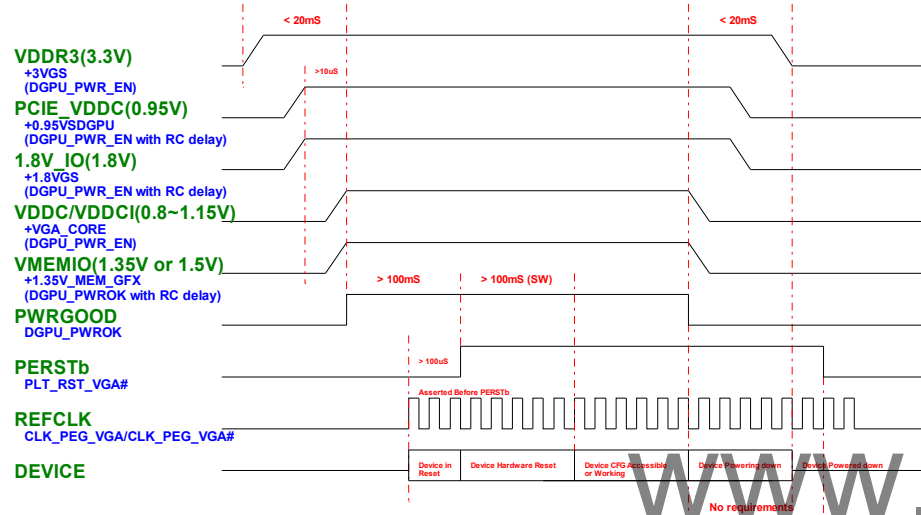
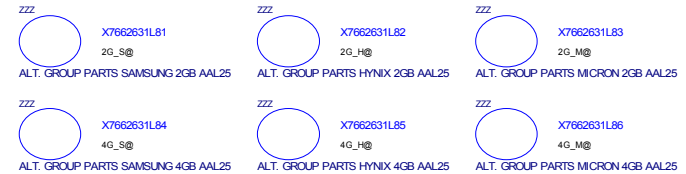


Table 3–21 Resistor Divider Lookup T

R _{pu} (Ω)	R _{pd} (Ω)	Bits [3:1]
NC	4750	000
8450	2000	001
4530	2000	010
6980	4990	011
4530	4990	100
3240	5620	101
3400	10000	110
4750	NC	111

Note: 0402 1% resistors are required.



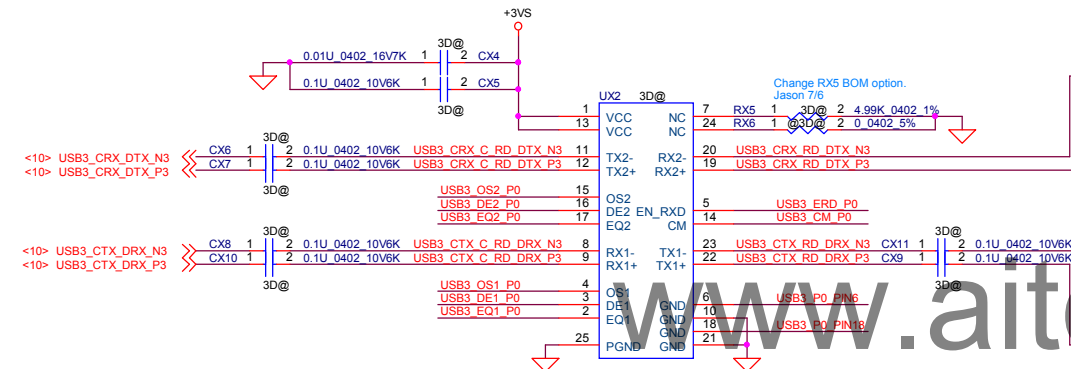
For AMD EXO-XT VRAM Only

Memory ID	P/N	Vendor	Configuration	Size
000	SA000076P2L	SAMSUNG	256MX16 K4W4G1646E-BC1A FBGA 96P	4GB
110	SA00008DN0L	HYNIX	256MX16 H5TC4G63CFR-N0C FBGA 96P	4GB
111	SA000077K0L	Micron	256M16 MT41J256M16HA-093G:E FBGA	4GB
011	SA000076P2L	SAMSUNG	256MX16 K4W4G1646E-BC1A FBGA 96P	2GB
100	SA00008DN0L	HYNIX	256MX16 H5TC4G63CFR-N0C FBGA 96P	2GB
101	SA000077K0L	Micron	256M16 MT41J256M16HA-093G:E FBGA	2GB

For AMD MESO-LE VRAM Only

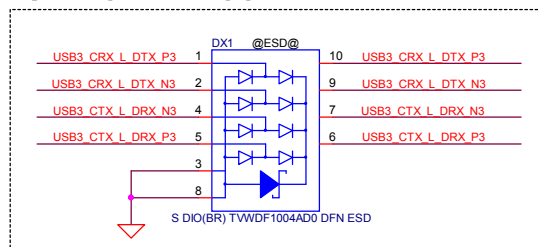
Memory ID	P/N	Vendor	Configuration	Size
011	SA000076P2L	SAMSUNG	256MX16 K4W4G1646E-BC1A FBGA 96P	2GB
100	SA00008DN0L	HYNIX	256MX16 H5TC4G63CFR-N0C FBGA 96P	2GB
101	SA000077K0L	Micron	256M16 MT41J256M16HA-093G:E FBGA	2GB

Vendor	PS8713B	TI	Spec	schematic netname	3Vs	GND
1	VDD	VCC	Same			
2	B_EQ0	EQ1	LL: 9.5dB (default) LH: 13dB HL: 4.5dB HH: 7.7dB	USB3_EQ1_P0	RI23	@ RI32
3	DE0	DE1	LL: 3.5dB (default) LH: no DE HL: 2.7dB HH: 5dB	USB3_DE1_P0	RI26	@ RI35
4	EQ1	OS1	LL: 9.5dB LH: 13dB HL: 4.5dB HH: 7.7dB	USB3_OS1_P0	RI22	@ RI40
5	PD#	EN_RXD	it can be left open	USB3_ERD_P0	RI44	@ RI48
6	B_DE1	GND	LL: 3.5dB (default) LH: no DE HL: 2.7dB HH: 5dB	USB3_P0_PIN6	RI53	@ RI49
7	REXT	NC	4.99K			RI56 4.99K
8	B_Iun	RX1-	Same			
9	B_Iup	RX1+	Same			
10	GND	GND	Same			
11	A_OUTa	TX2-	Same			
12	A_OUTp	TX2+	Same			
13	VDD	VCC	Same			
14	TST/NC	CM	4.7K ohm resistor for performance adjustment	USB3_CM_P0	RI42	@ RI46
15	A_EQ1	OS2	LL: 9.5dB (default) LH: 13dB HL: 2.7dB HH: 5dB	USB3_OS2_P0	RI19	@ RI87
16	A_DE0	DE2	LL: 3.5dB (default) LH: no DE HL: 2.7dB HH: 5dB	USB3_DE2_P0	RI20	@ RI31
17	A_EQ0	EQ2	LL: 9.5dB (default) LH: 13dB HL: 2.7dB HH: 5dB	USB3_EQ2_P0	RI21	@ RI36
18	A_DE1	GND	LL: 3.5dB (default) LH: no DE HL: 2.7dB HH: 5dB	USB3_P0_PIN18	RI52	@ RI50
19	A_Iup	RX2+	Same			
20	A_Iun	RX2-	Same			
21	GND	GND	Same			
22	B_OUTp	TX1+	Same			
23	B_OUTa	TX1-	Same			
24	I2C_EN	NC	this pin can be NC or connected to GND	NC		RI57

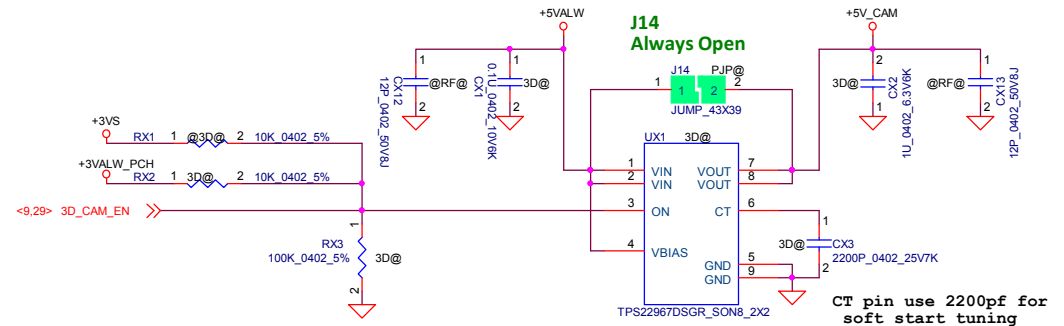


PS8713BTQFN24GTR2-A0_TQFN24_4x4
USB3.0 90ohm
 Main SA00005OR20 (S IC PS8713BTQFN24GTR2-A1 TQFN USB3.0) PARADE
 2nd SA00008M500 (S IC SN65LVPE12RGER VQFN 24P USB3 REDRI) TI
 Change Main source CPN to
 SA00005OR30 (S IC PS8713BTQFN24GTR2-A2 USB3.0 REPEATE) PARADE
 Because Vendor Ver. change. Jason 2015/5/29

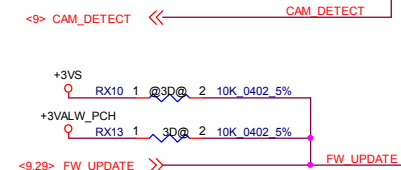
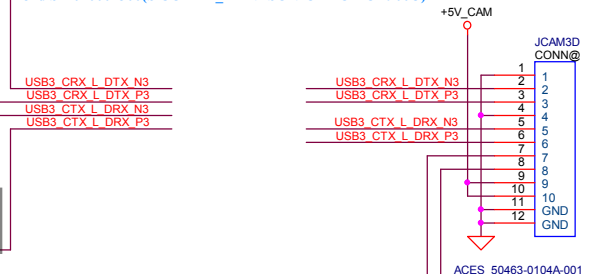
Layout request to swap pin !



+5VALW TO +5V_3DCAM



USB3.0 90ohm (Used 2nd Symbol & Footprint)
 Main SM070003V00(S COM FL_INPAQ HCM1012GH900BP)
 2nd SM070004000(S COM FL_TAIYO MCF12102G900-T)
 3rd SM070004300(S COM FL_PANASONIC EXC24CH900U)



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								Size			
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								Date			
								Thursday, July 09, 2015			
								Sheet			
								64 of 64			

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