

Compal Confidential

QLA01 LA7811P Schematics Document

Intel Sandy Bridge Processor with DDRIII + Cougar Point

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AIO M/B

2011-06-02

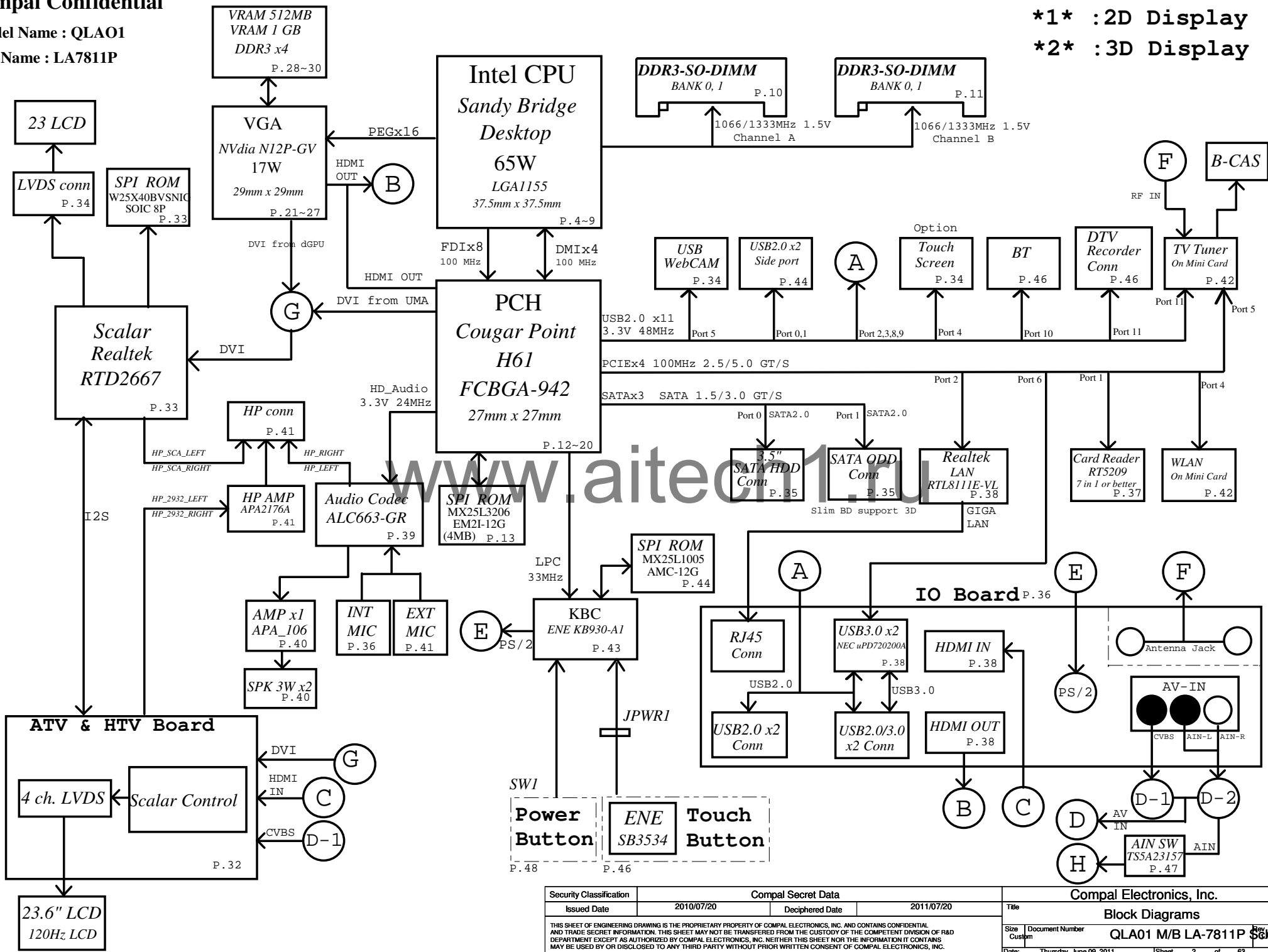
REV: 0.1

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Issued Date	2010/07/20	Deciphered Date	2011/07/20	Title	Cover Page
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				Rev 1.A	Sheet 1 of 63

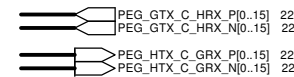
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Model Name : QLA01
File Name : LA7811P

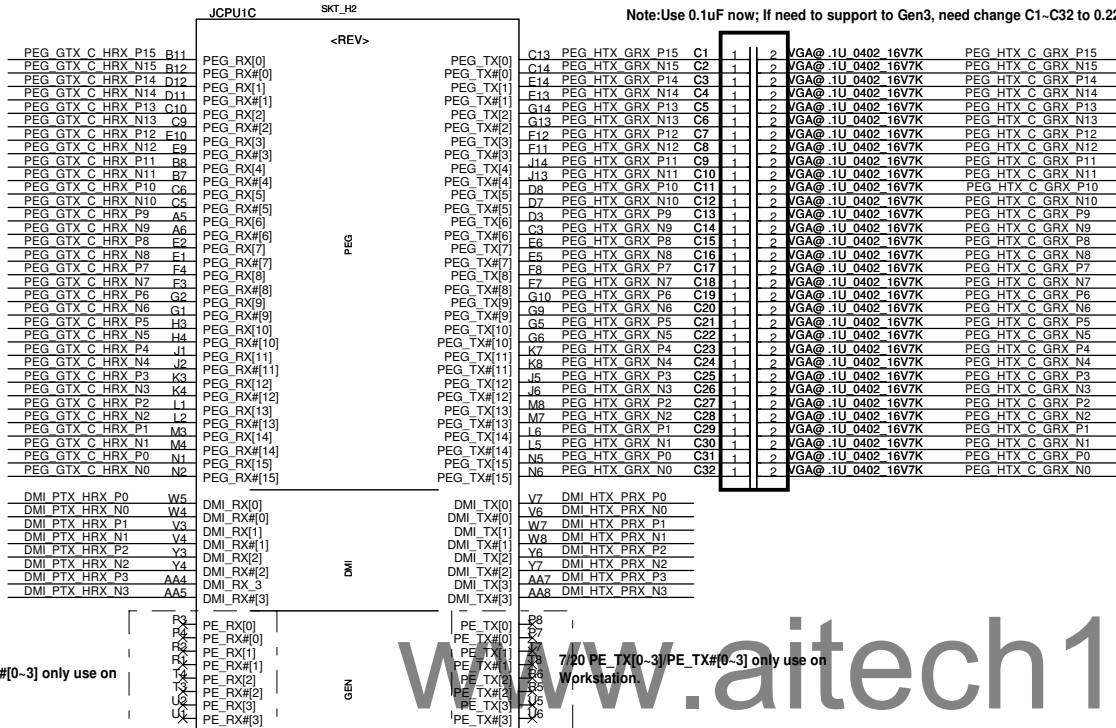
1 :2D Display
2 :3D Display



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Note: Use 0.1uF now; If need to support to Gen3, need change C1-C32 to 0.22uF.



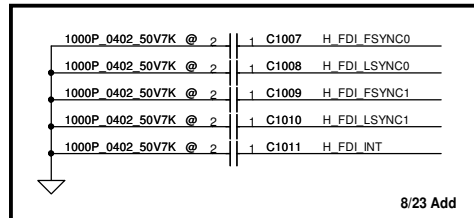
7/20 PE_RX[0-3]/PE_RX#[0-3] only use on Workstation.

7/20 PE_TX[0-3]/PE_TX#[0-3] only use on Workstation.

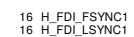
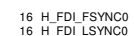
PEG_ICOMPI and RCOMPO signals should be shorted and routed

with - max length = 500 mils - Width/Space= (4 mils/15mils)
PEG_ICOMPO signals should be routed with - max length = 500 mils

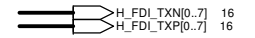
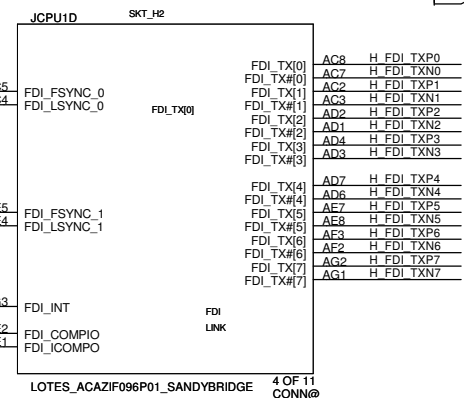
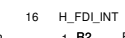
- Width/Space (12 mils/15mils)



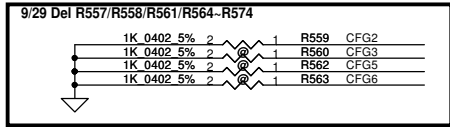
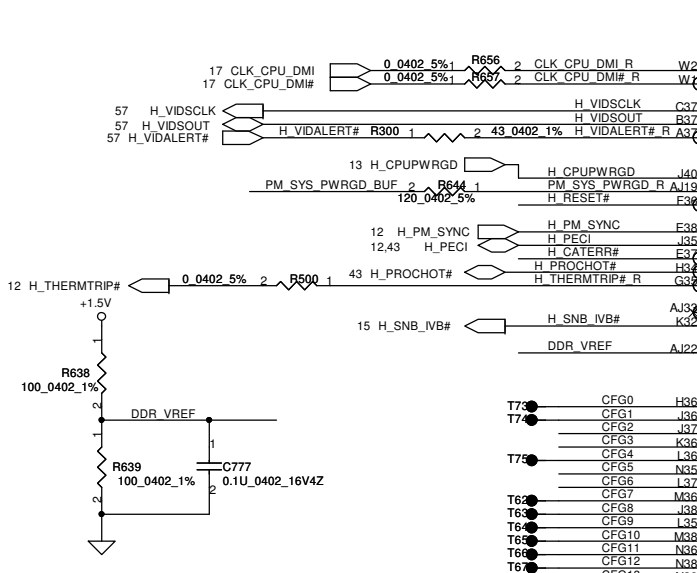
8/23 Add



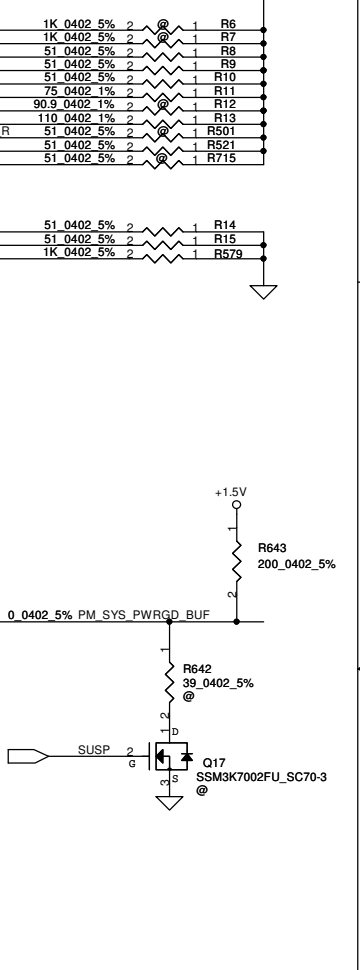
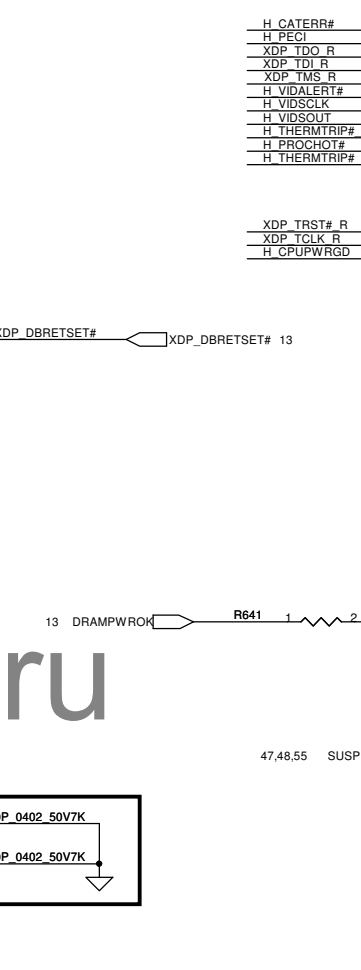
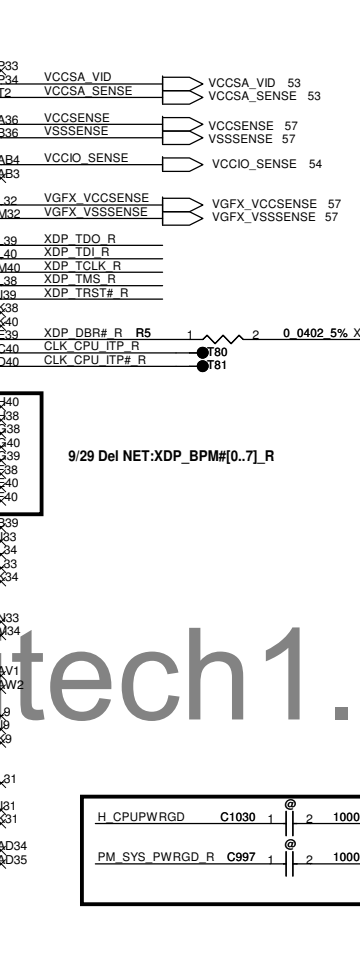
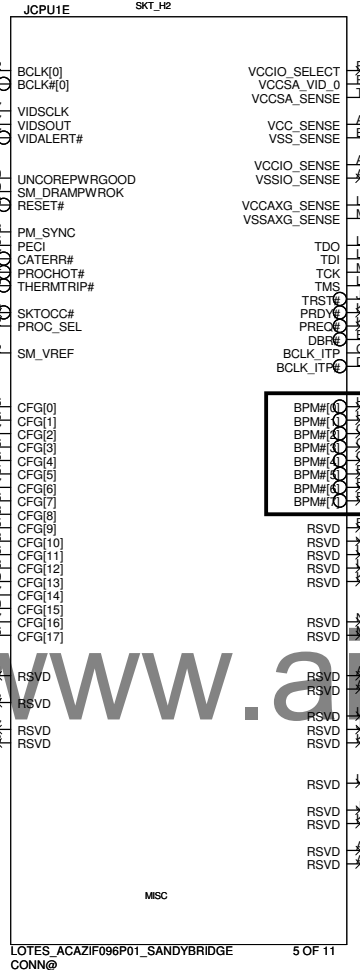
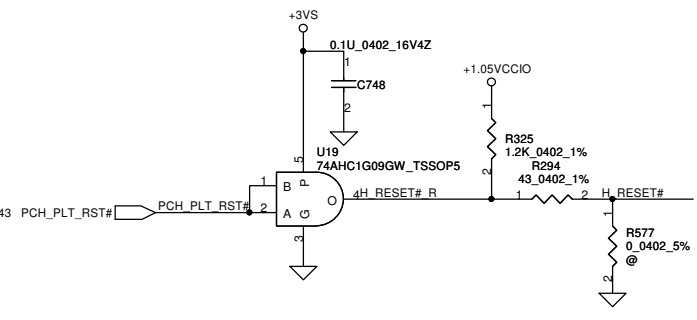
+1.05VCCIO



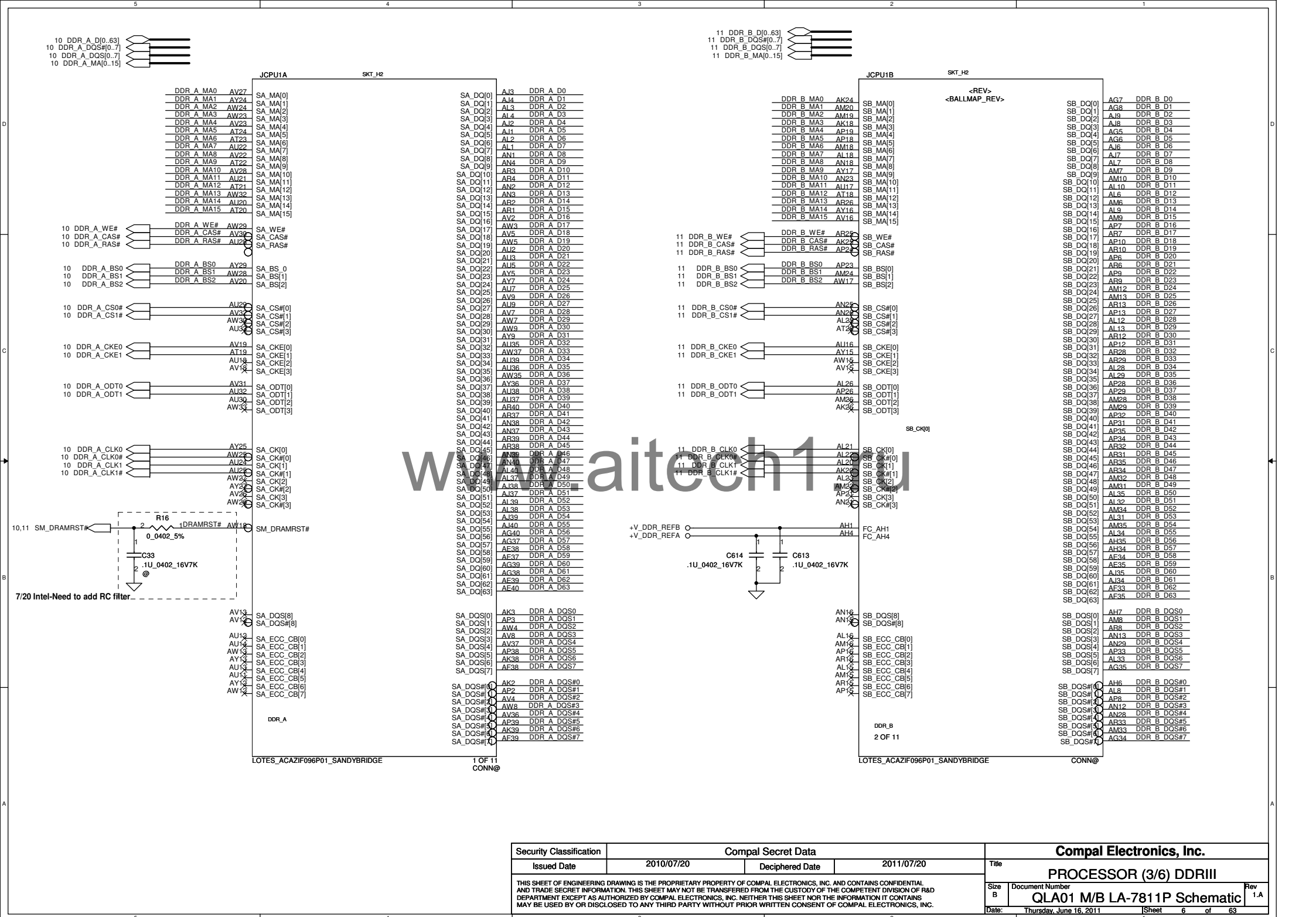
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						Size	Document Number			Rev	
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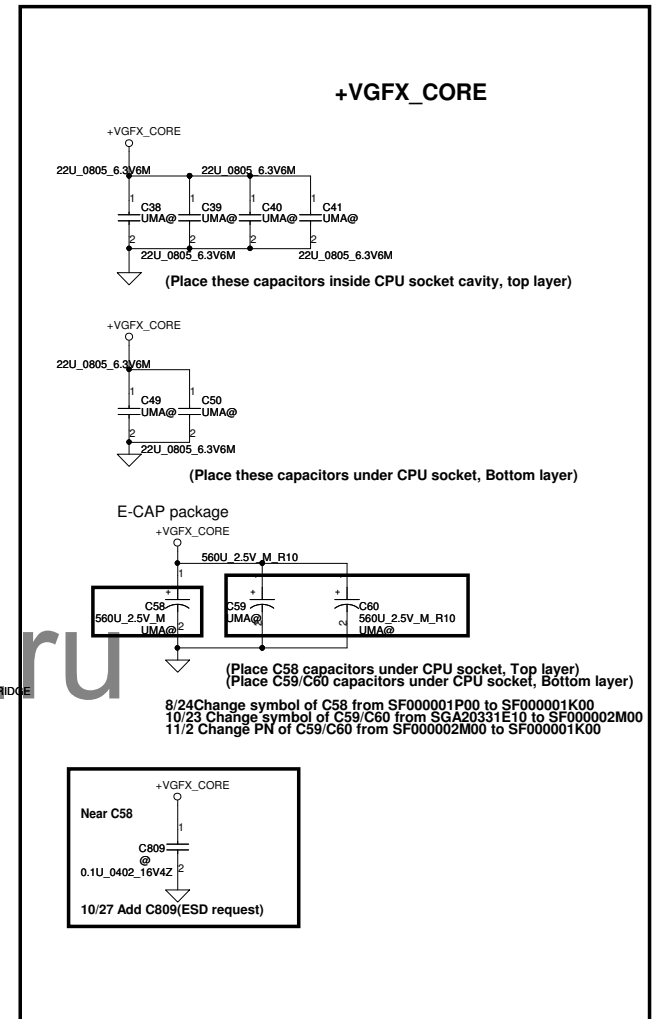
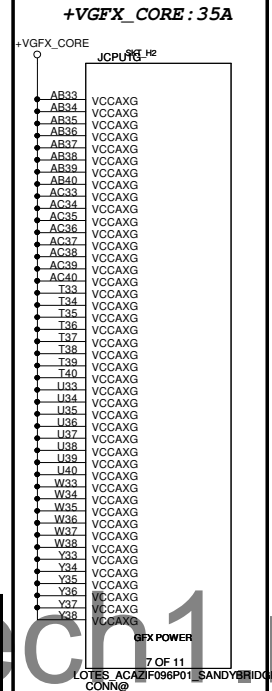
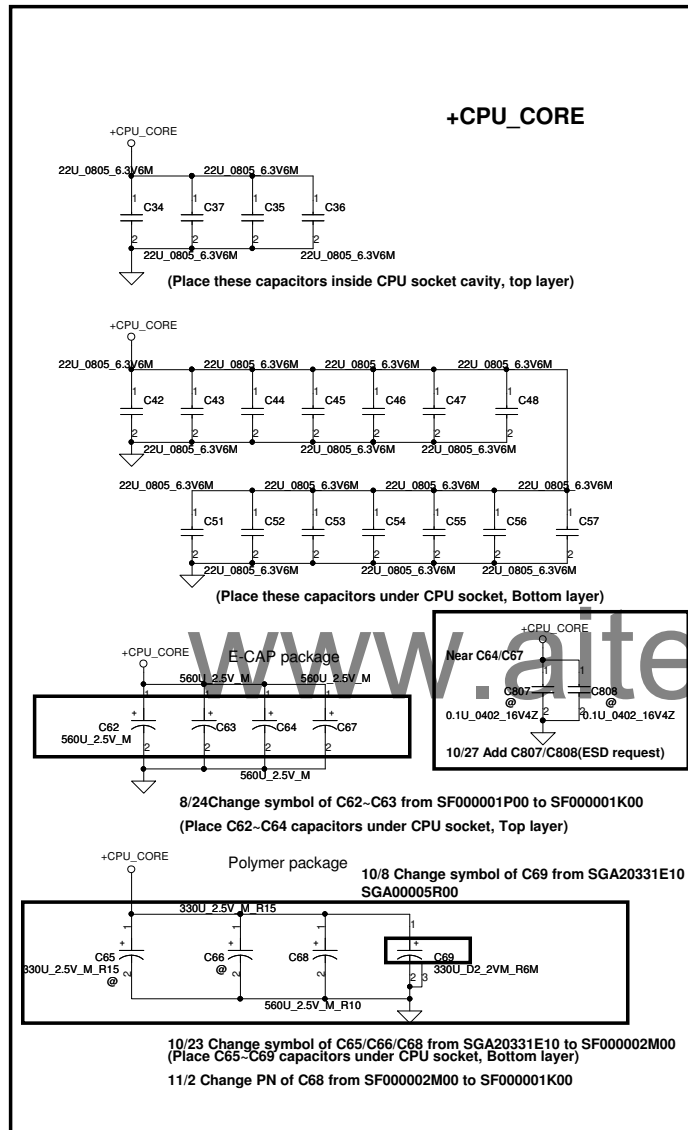
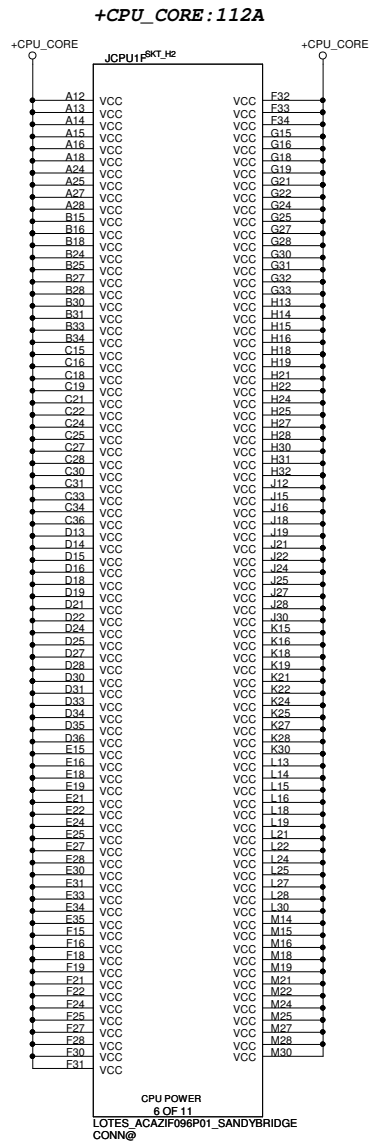


PEG Static x16 Lane Numbering Reversal.	
CFG2	1: Normal Operation ★ 0: Lane numbers Reversed
PEG Static x4 Lane Numbering Reversal.	
CFG3	★ 1: Normal Operation 0: Lane numbers Reversed
PCIe Port Bifurcation Straps	
CFG[6:5]	★ 11: 1x16 PCI Express (Default) 10: 2x8 PCI Express 01: Reserved 00: 1 x 8, 2 x 4 : PCI Express

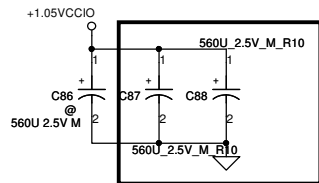
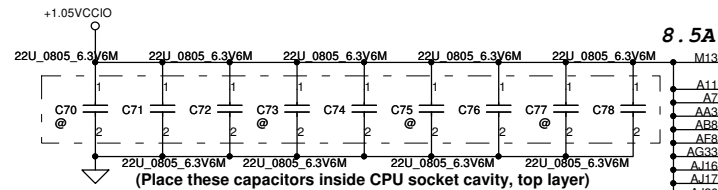


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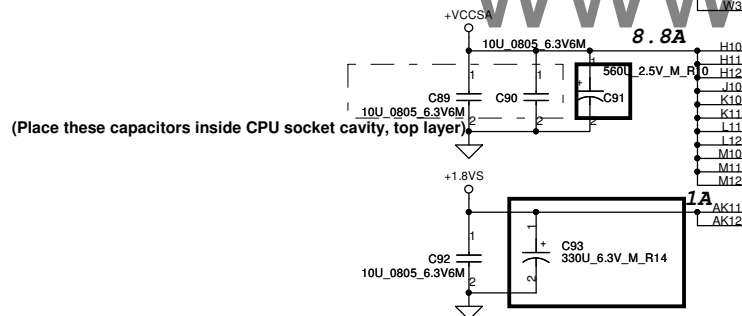


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Size		Document Number		Rev	
Custom		QLA01 M/B LA-7811P Schematic		1A	
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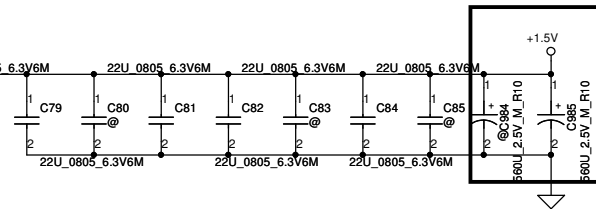
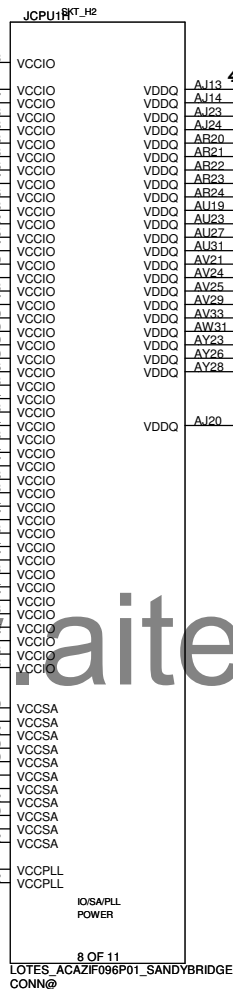


11/2 Change PN of C87/C88 from SF000001P00 to SF000001K00

11/4 Change PN of C91 from SF000001P00 to SF000001K00

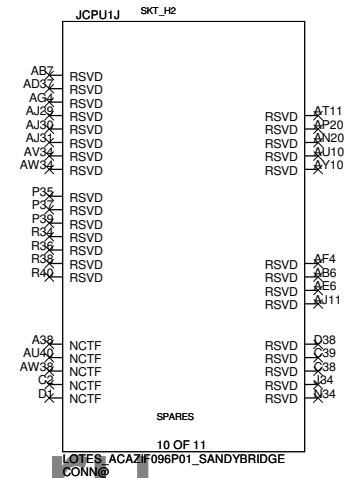
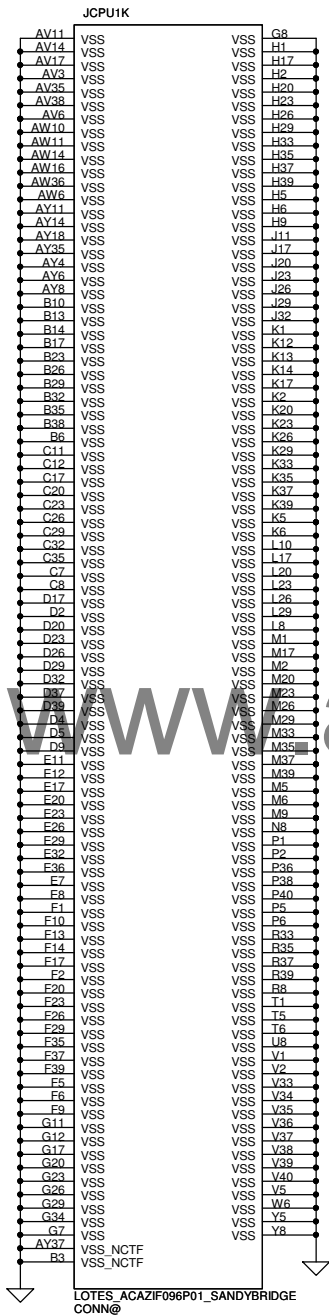
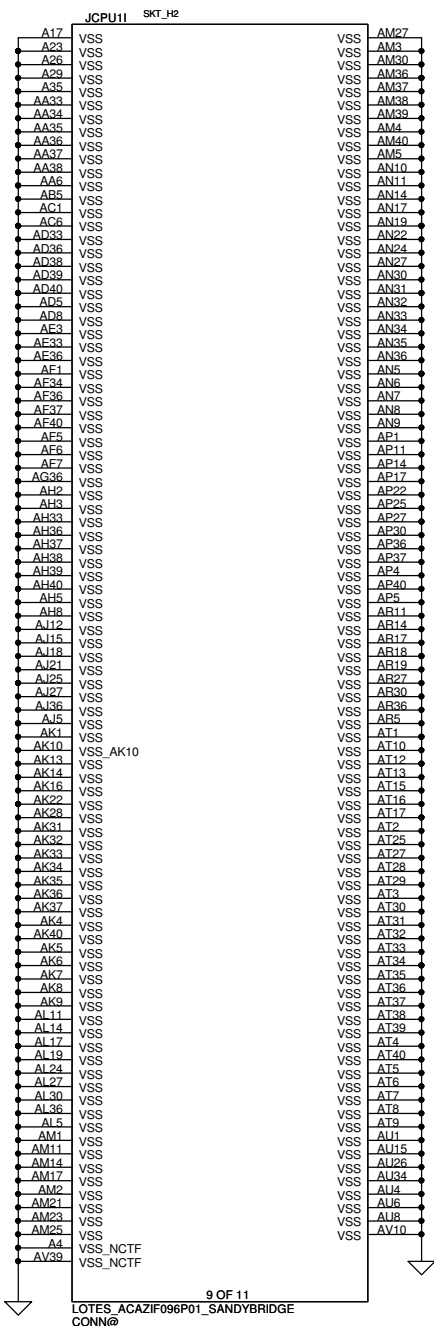


10/23 Change symbol of C93 from SGA00000Y80 to SF000002N00
11/4 Change PN of C93 from SF000002N00 to SF000001G00



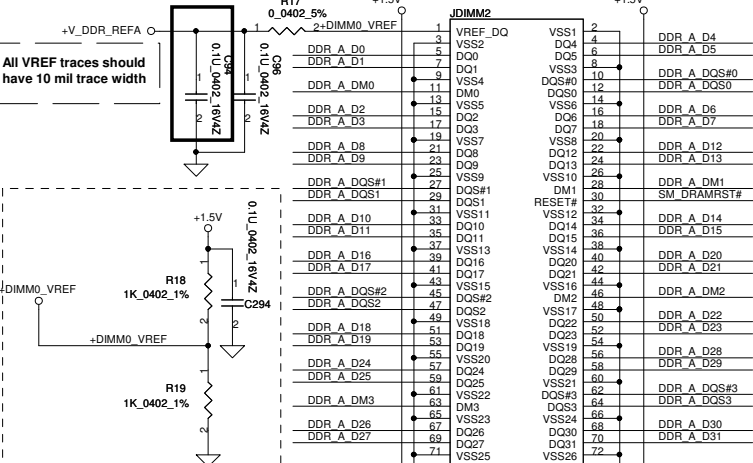
11/2 Change PN of C984/C985 from SF000002000 to SF000001K00

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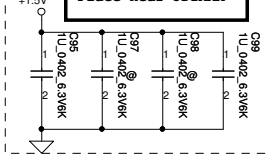


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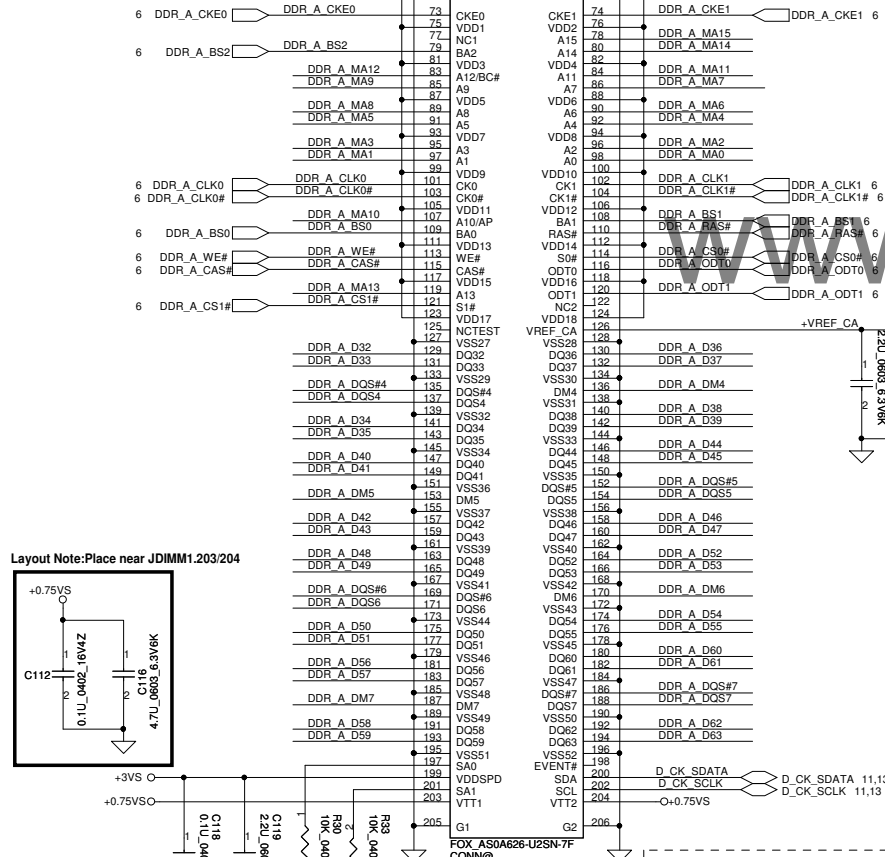
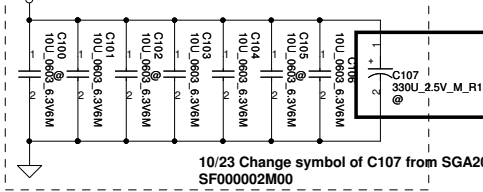
Layout Note: Place C94 on Bottom Layer at DIMM close to CPU



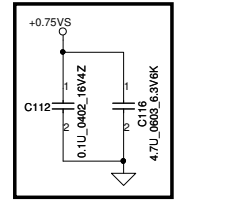
Layout Note: Place near JDIMMA



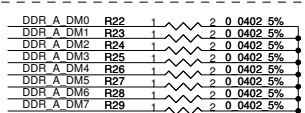
Layout Note: Place near JDIMMA



Layout Note: Place near JDIMM1.203/204



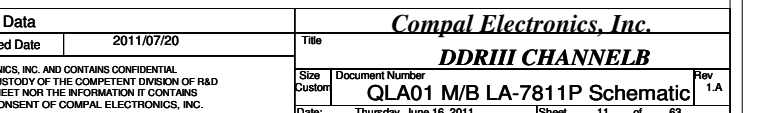
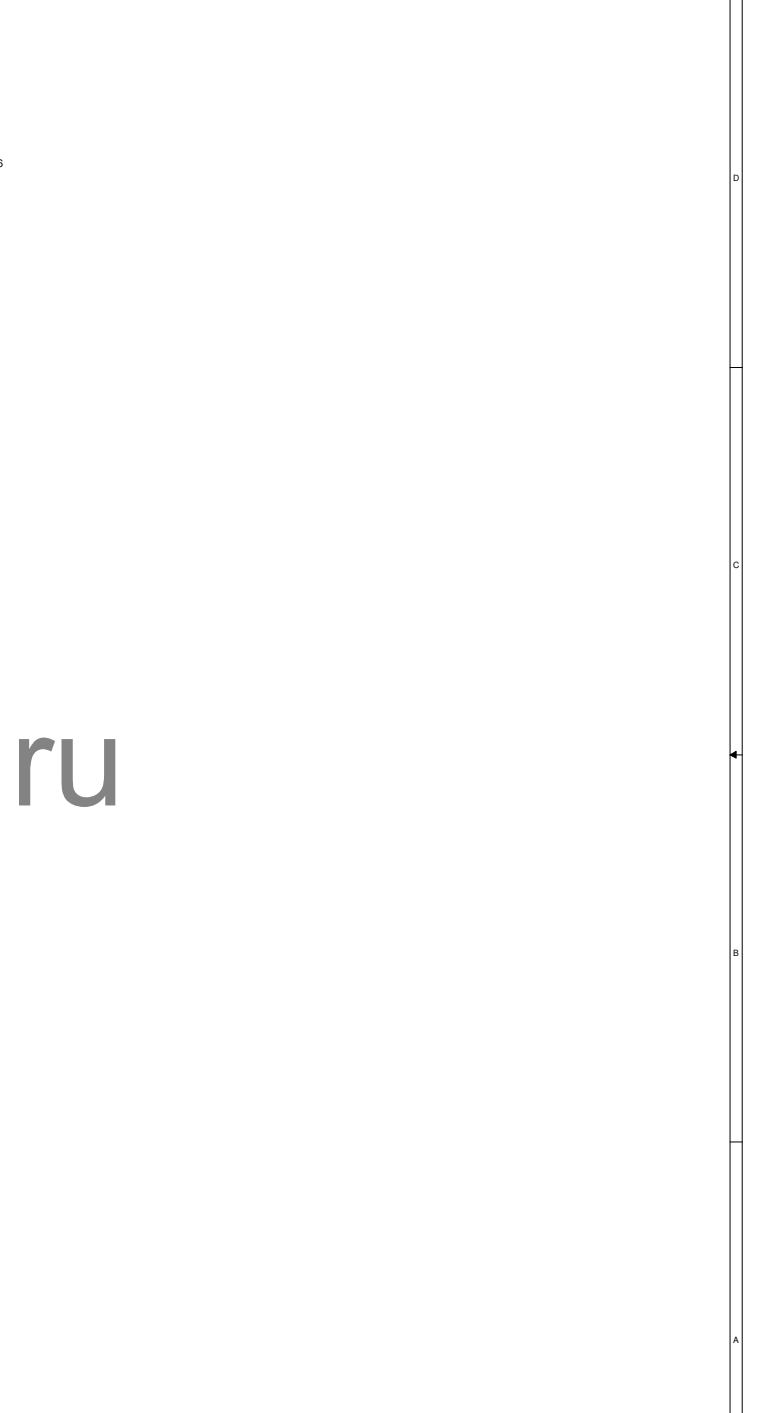
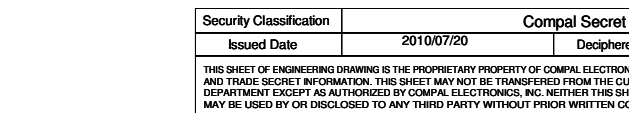
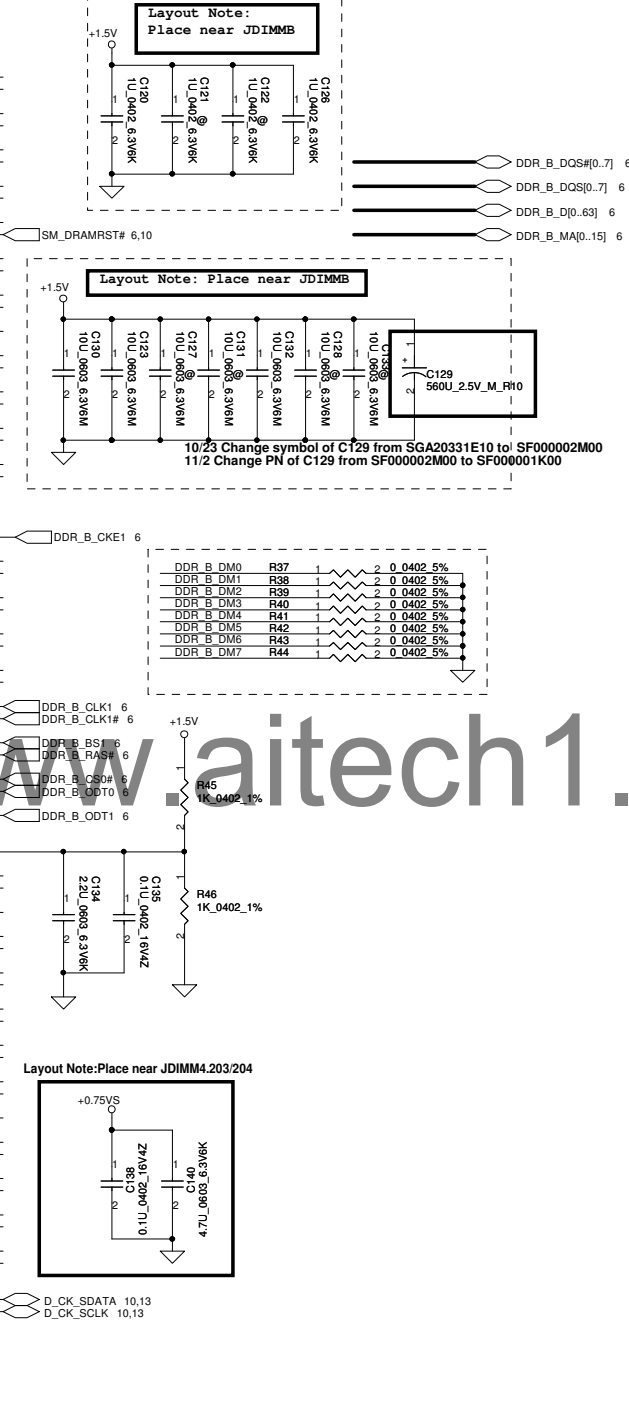
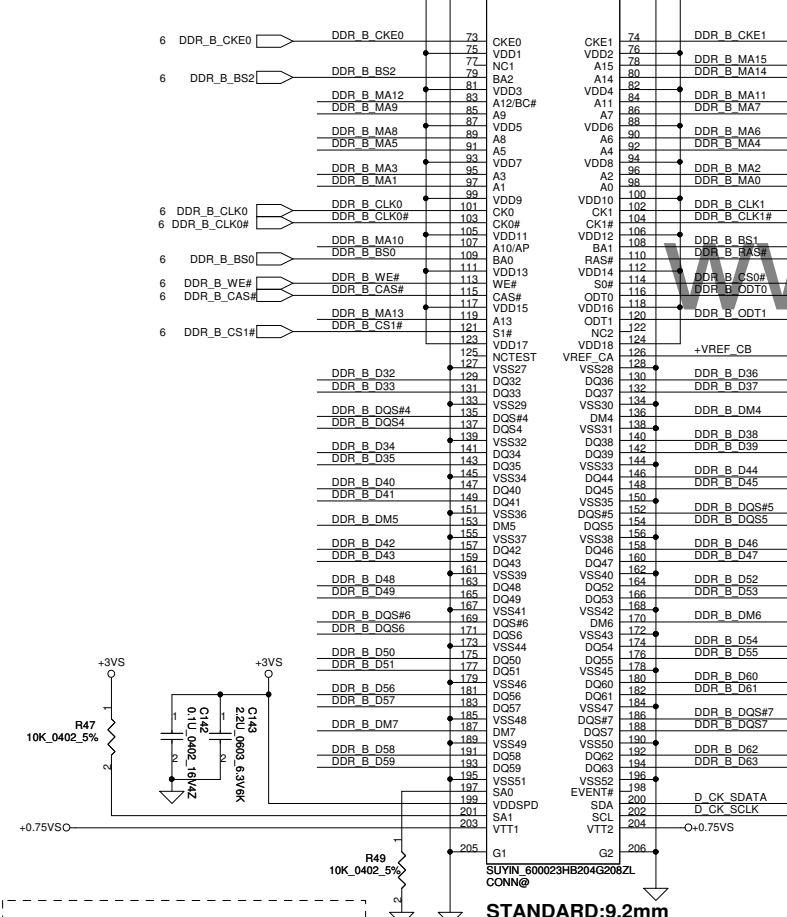
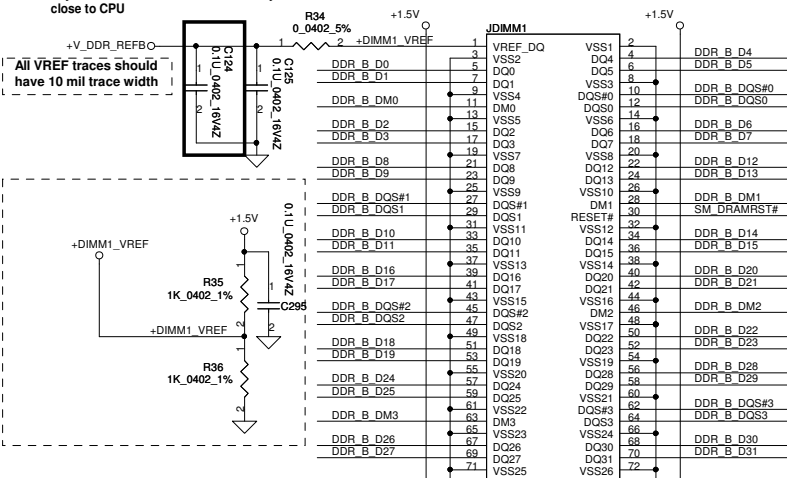
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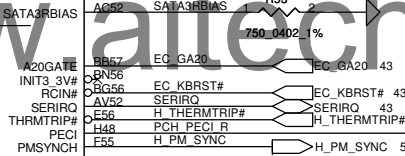
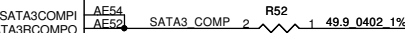
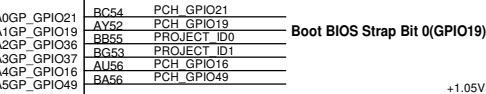
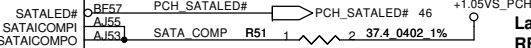
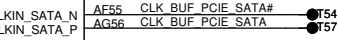
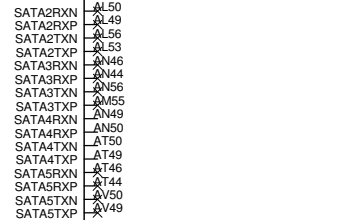
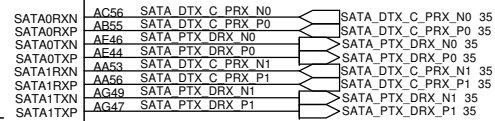
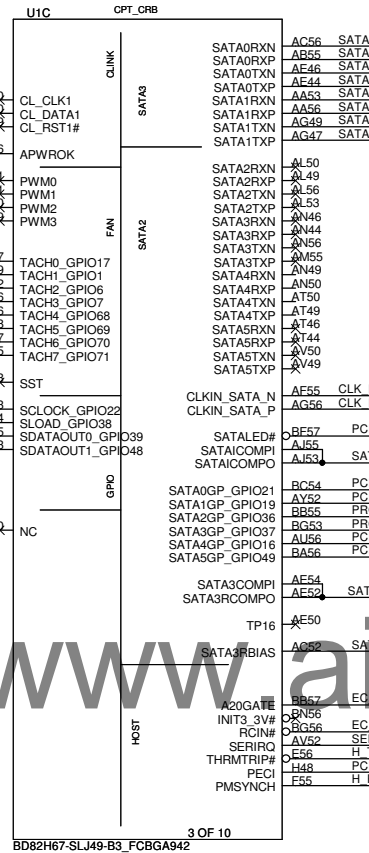
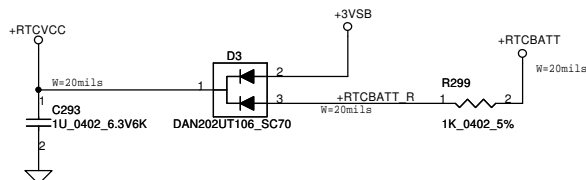
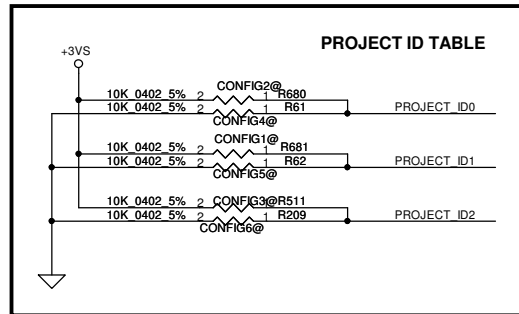
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Layout Note:Place C124 on Bottom Layer at DIMM close to CPU



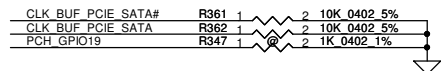
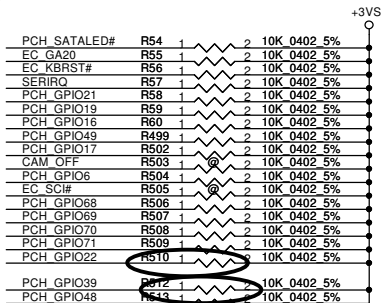
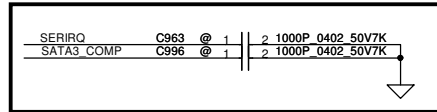
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SATA for HDD

SATA for ODD

Layout Note:SATA_COMP WITH LENGTH NO MORE THAN 500 MILS TO RESISTOR.



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Size	Custom	Document Number	QLA01 M/B LA-7811P Schematic	Rev	1.A
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39 HDA_BITCLK_AUDIO  R69 1 2 HDA_BITCLK_PCH 33_0402_5%

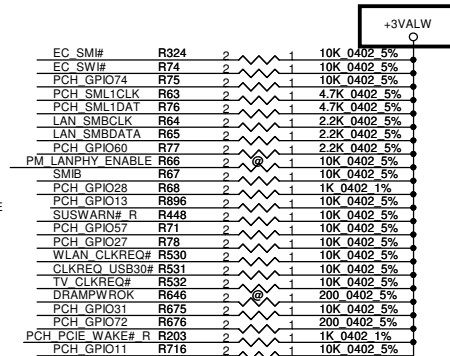
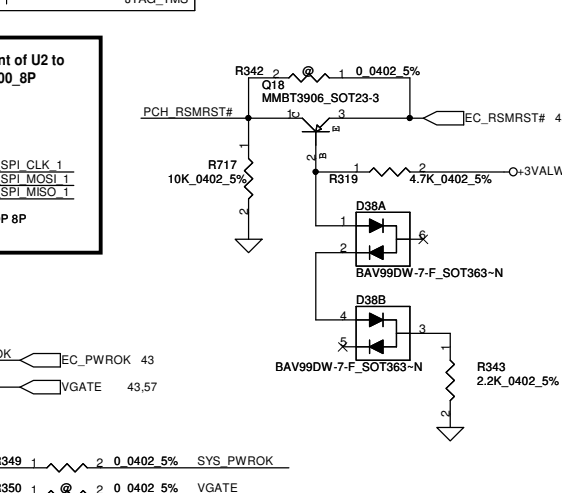
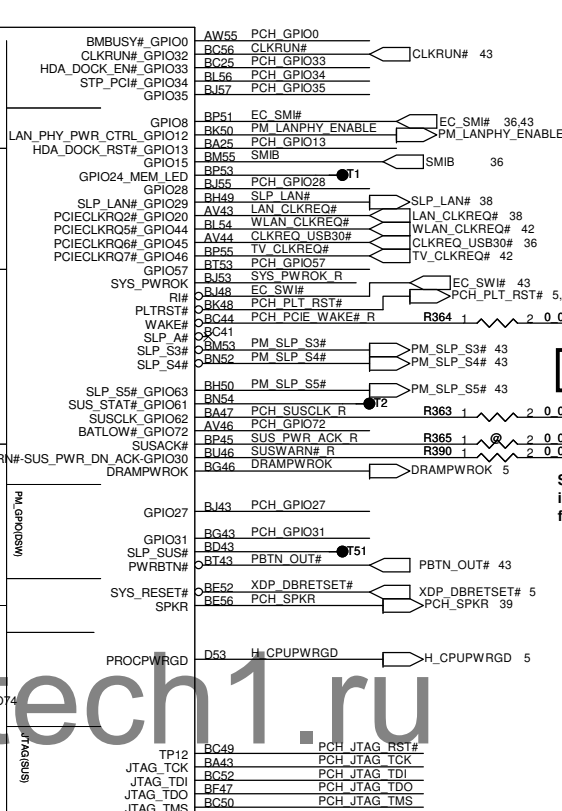
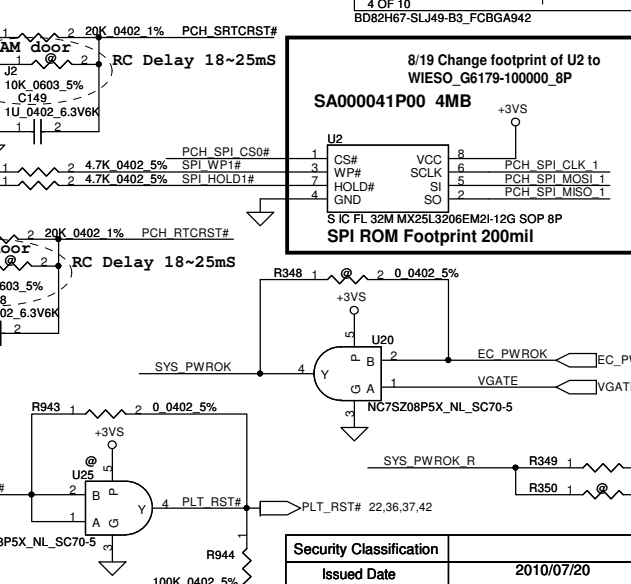
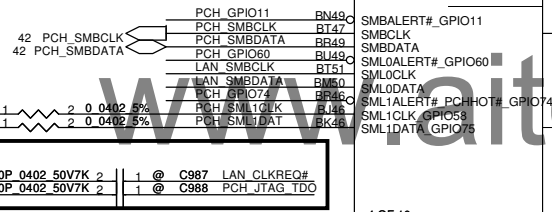
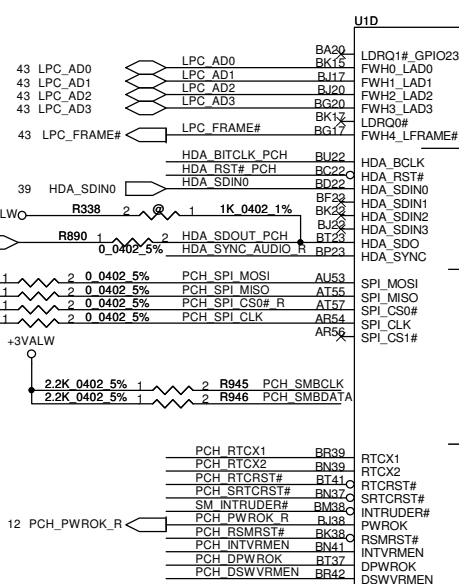
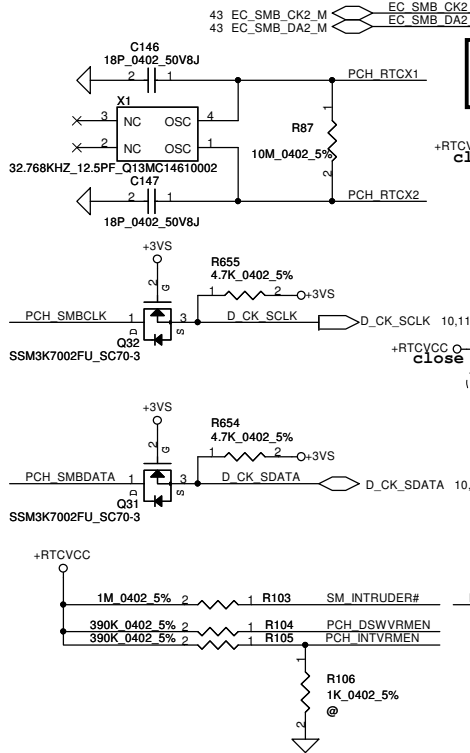
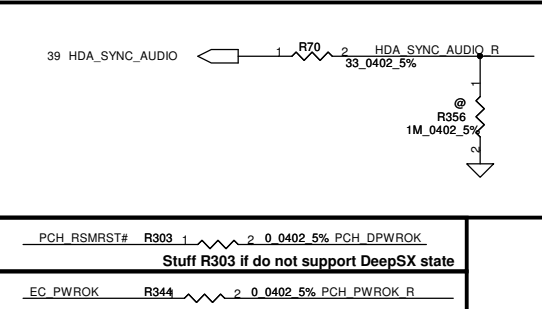
39 HDA_RST#_AUDIO  R72 1 2 HDA_RST#_PCH 33_0402_5%

39 HDA_SDOUT_AUDIO  R73 1 2 HDA_SDOUT_PCH 33_0402_5%

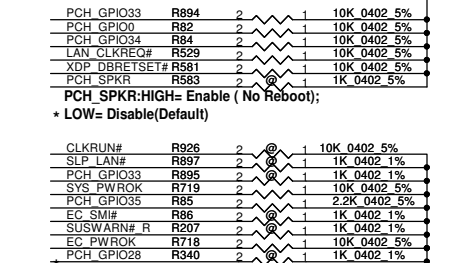
ME debug mode,
this signal has a weak internal pull down

★Low = Disable (default)
High = Enable (flash descriptor security override)

*Need to pull high for Huron River platform

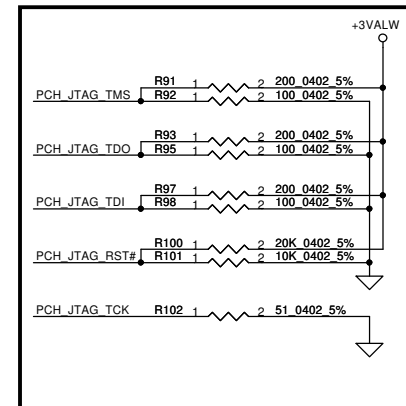


Stuff R391 if EC don't want to involve in the handshake mechanism for the DeepSX state entry and exit



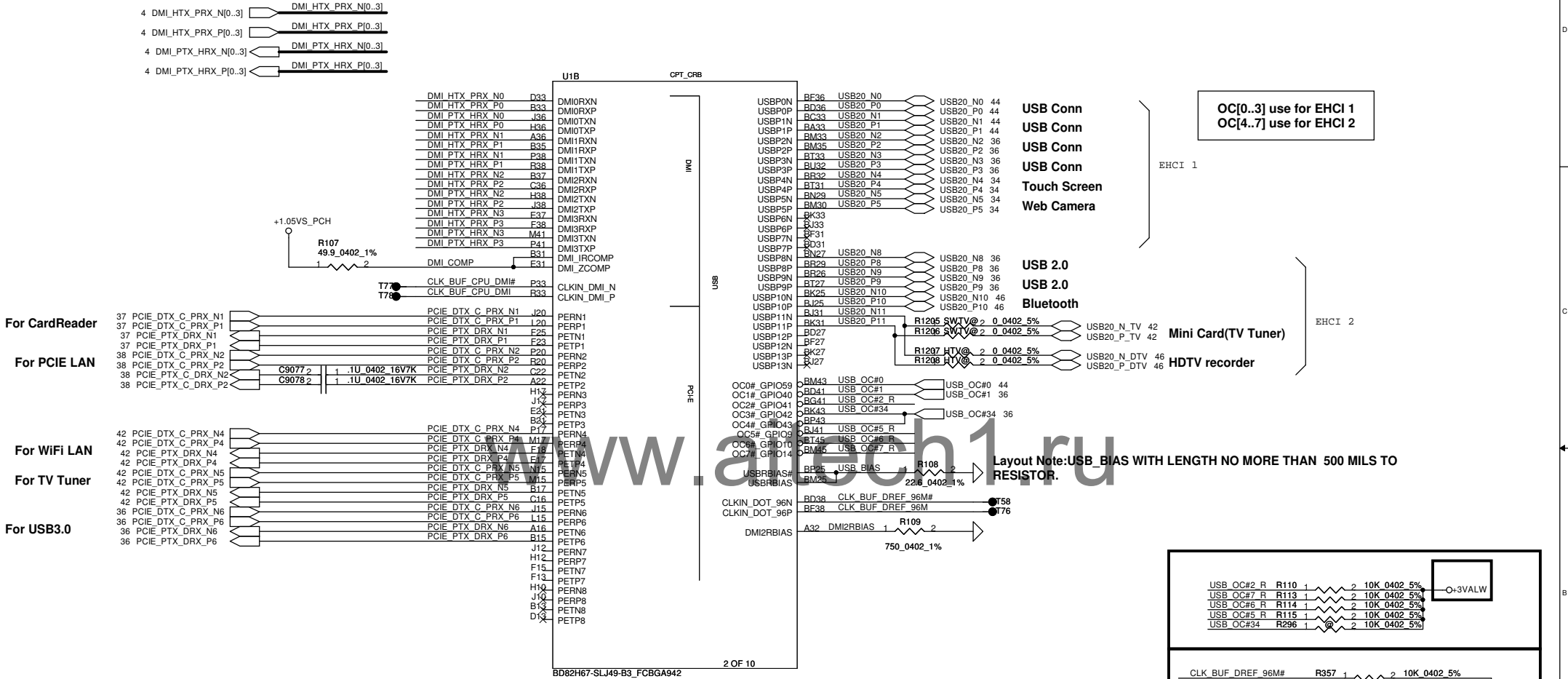
On-Die PLL Voltage Regulator
H: Enable
L: Disable

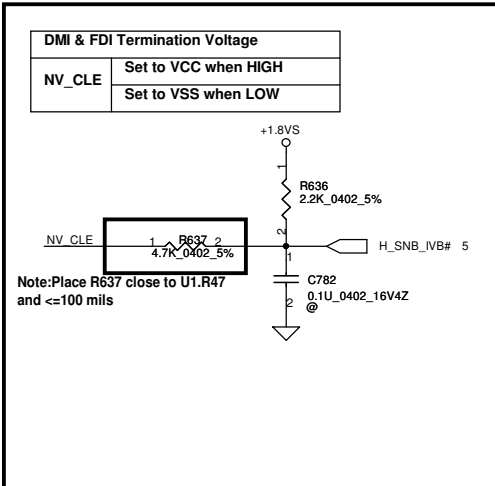
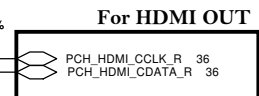
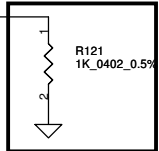
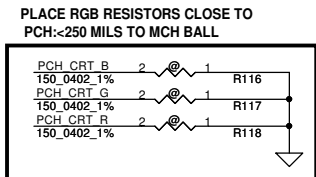
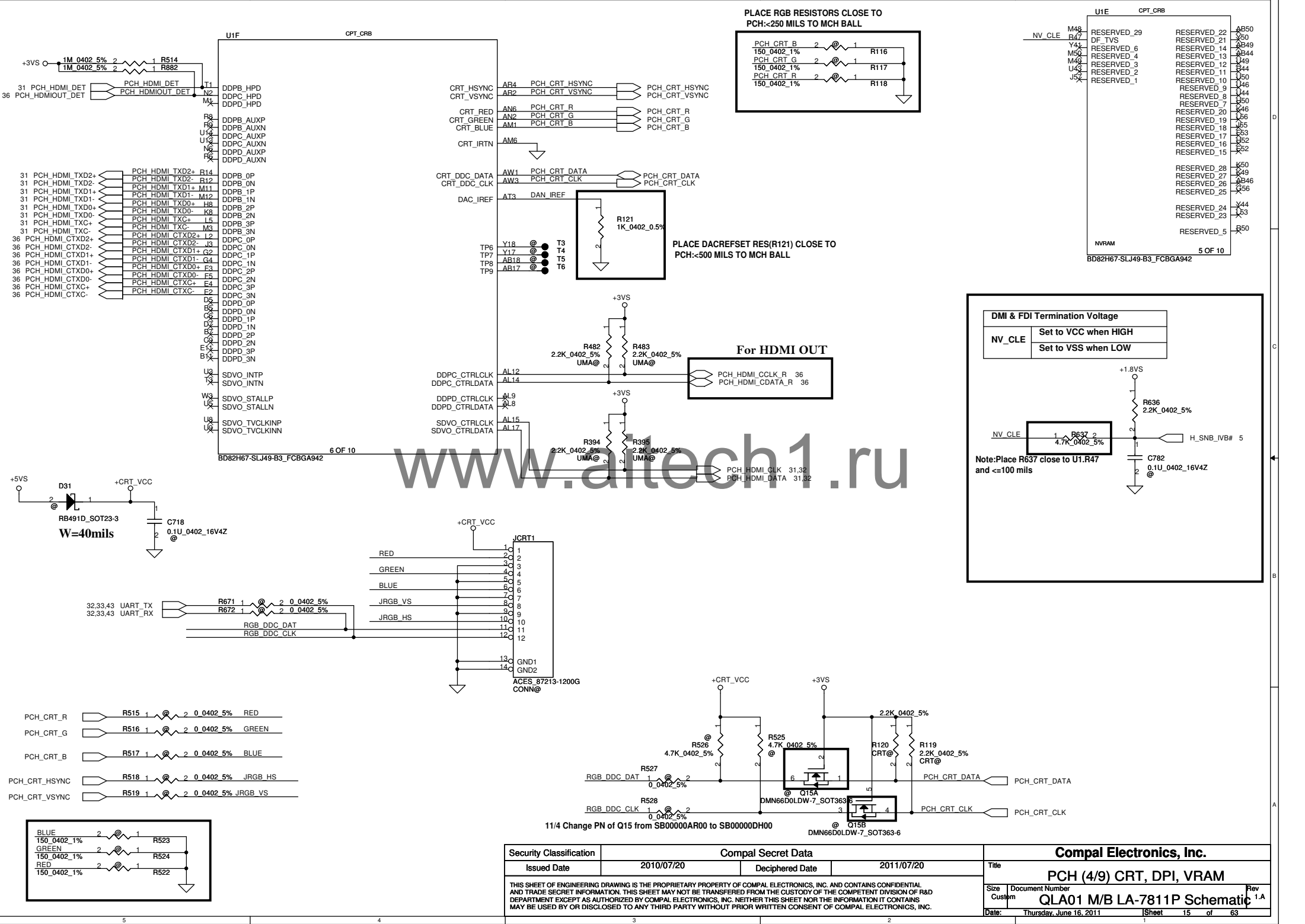
8/13 Add C676 close to U1(EMI request)



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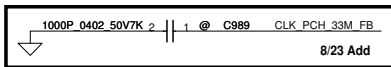
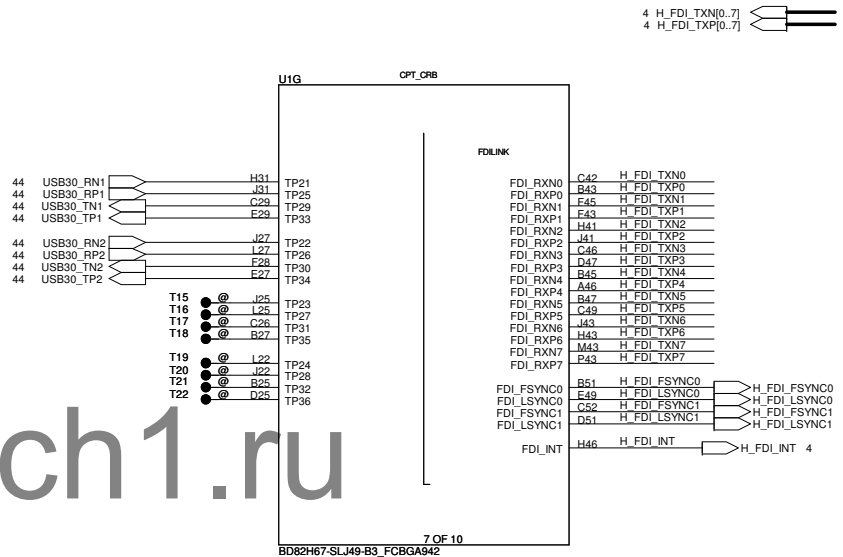
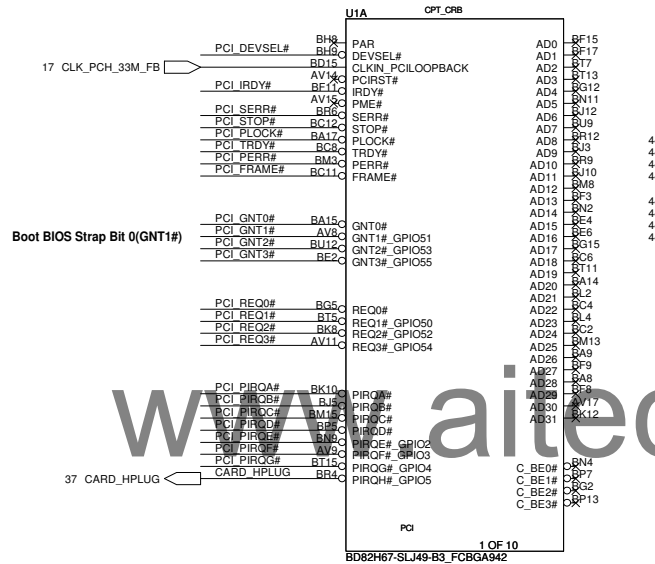
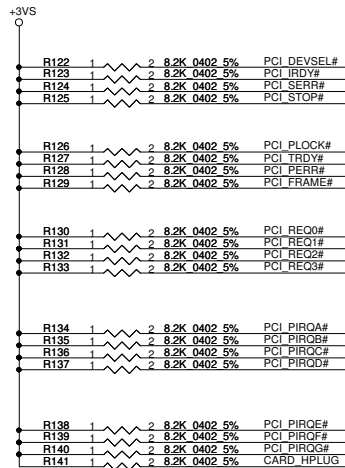
Compal Electronics, Inc.				
Title		PCH (2/9) LPC, HDA, SMBUS		
Size	Document Number	Rev		Rev
Custom	QLA001 M/B LA-7811P Schematic	1.0		1.0
Date:	Thursdays June 16, 2011	Sheet	13	of 63



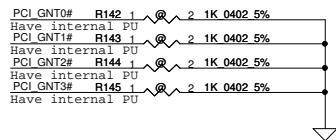


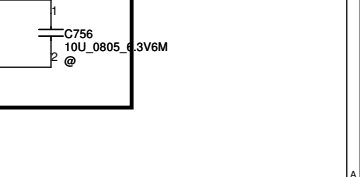
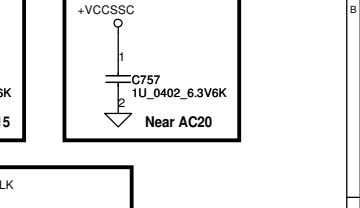
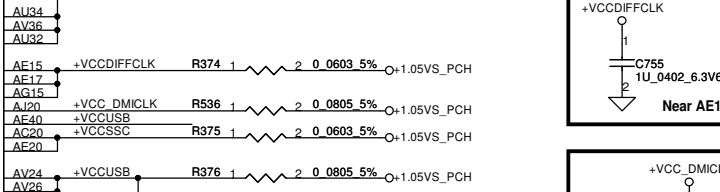
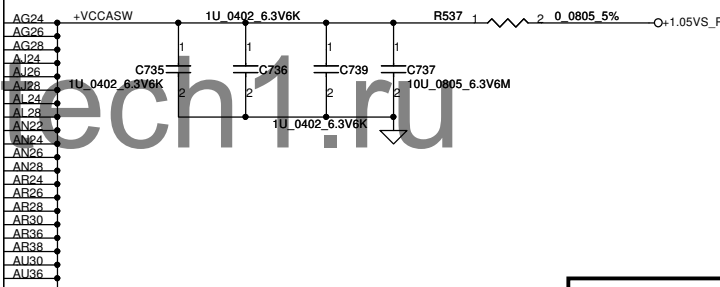
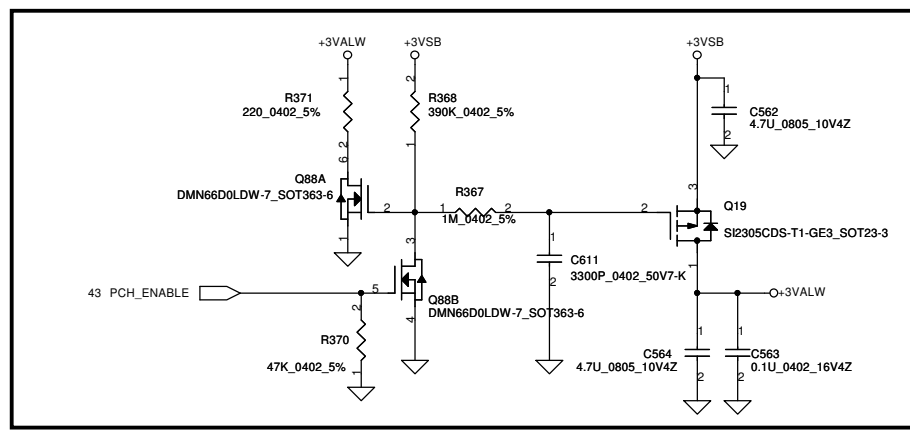
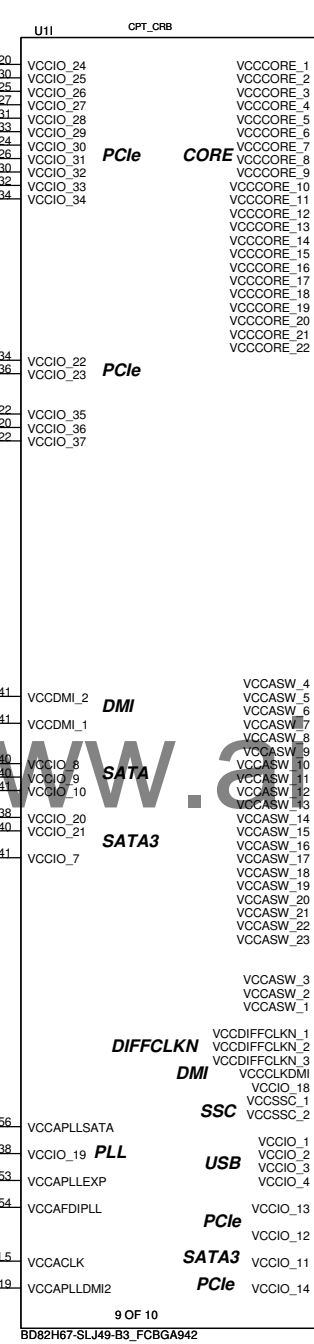
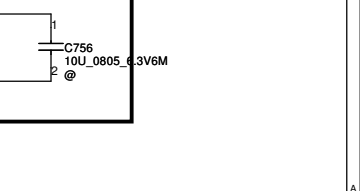
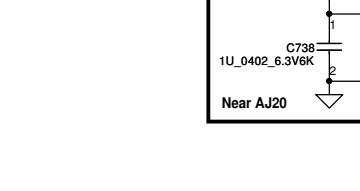
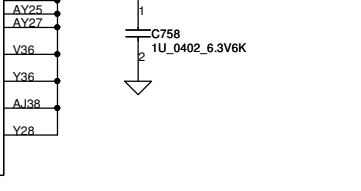
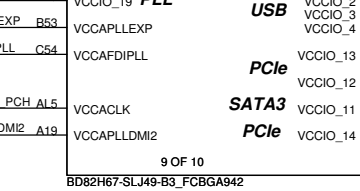
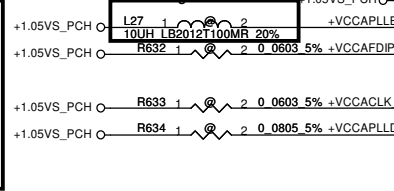
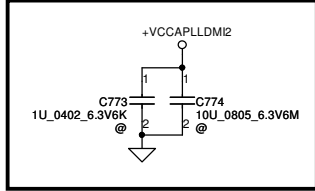
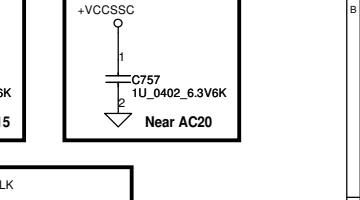
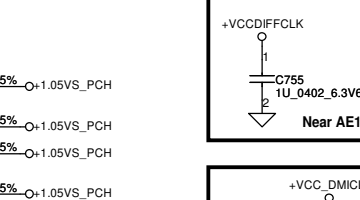
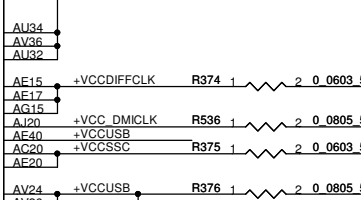
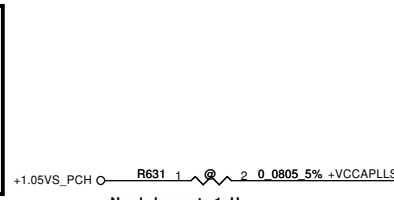
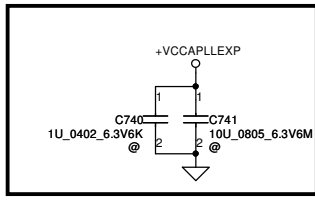
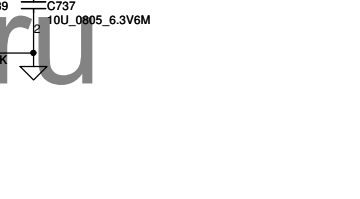
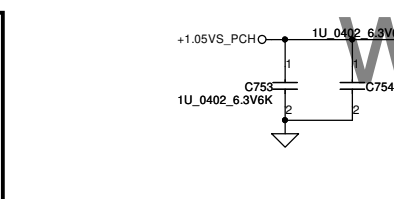
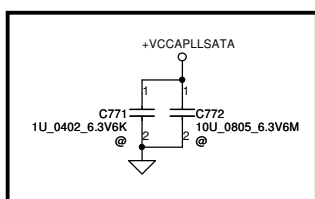
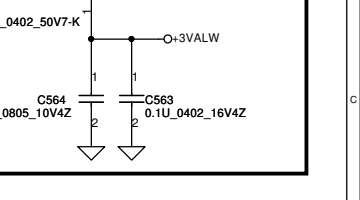
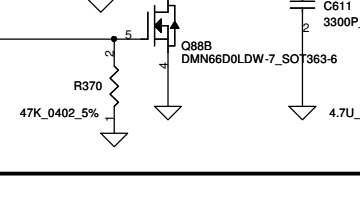
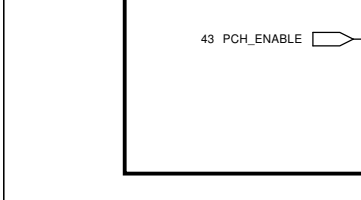
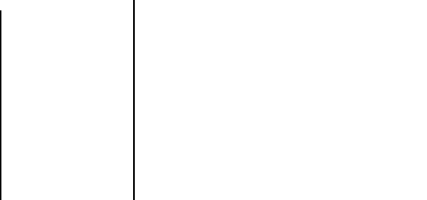
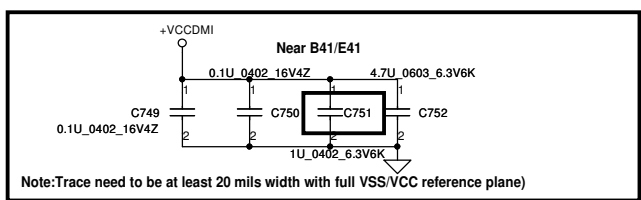
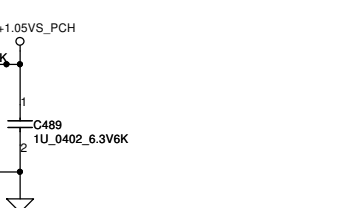
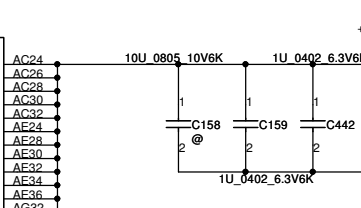
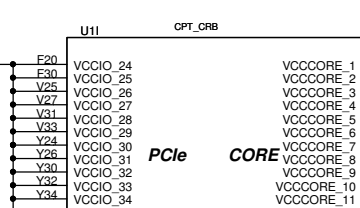
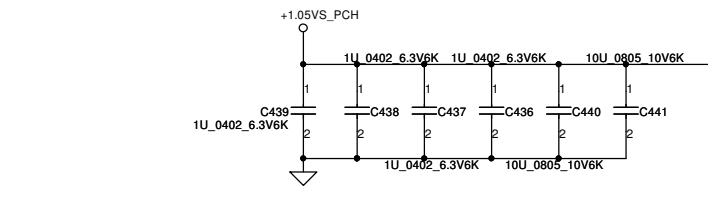
Note: Place R637 close to U1.R47
and <=100 mils

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Size	Custom	Document Number	QLA01 M/B LA-7811P Schematic	Rev	1.A
Date	Thursday, June 16, 2011	Sheet	15	of	63

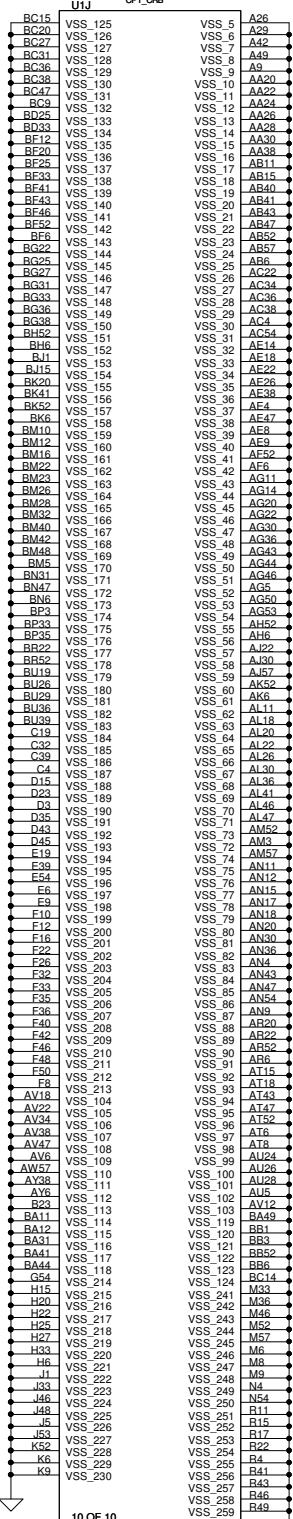


Boot BIOS Strap		
PCH_GNT1#	PCH_GPIO19	Boot BIOS Location
0	0	LPC
0	1	Reserved
1	0	PCI
1	1	SPI *





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Size	Custom	Document Number	QLA01 M/B LA-7811P Schematic	Rev	1.A
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								Size		Document Number		Rev	
								Custom		QLA01 M/B LA-7811P Schematic		1.A	
								Date:		Thursday, June 16, 2011		Sheet 20 of 63	

For GB2-128 & GB2b-128 colayout....

Part 4 of 7

AM11 IFPA_TXC
AM12 IFPA_TXC_N
AM6 IFPA_TXD0
AM10 IFPA_TXD0_N
AM9 IFPA_TXD1
AK10 IFPA_TXD2
AL10 IFPA_TXD2_N
AK11 IFPA_TXD3
AL11 IFPA_TXD3_N
AP13 IFPB_TXC
AN13 IFPB_TXC_N
AN8 IFPB_TXD4
AP8 IFPB_TXD5
AN10 IFPB_TXD5_N
AS11 IFPB_TXD6
AR10 IFPB_TXD6_N
AN11 IFPB_TXD7
AP11 IFPB_TXD7_N

NC.0
NC.1
NC.2
NC.3
NC.4
NC.5
NC.6
NC.7
NC.8
NC.9
NC.10
NC.11
NC.12
NC.13
NC.14
NC.15
NC.16
NC.17
NC.18
NC.19
NC.20
NC.21
NC.22
NC.23
NC.24
NC.25
NC.26
NC.27
NC.28
NC.29

NC

LVDS/TMDS

VDD_SENSE_0
VDD_SENSE_1
VDD_SENSE_2
GND_SENSE_0
GND_SENSE_1
GND_SENSE_2

TEST

TESTMODE
JTAG_TCK
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_TRST_N

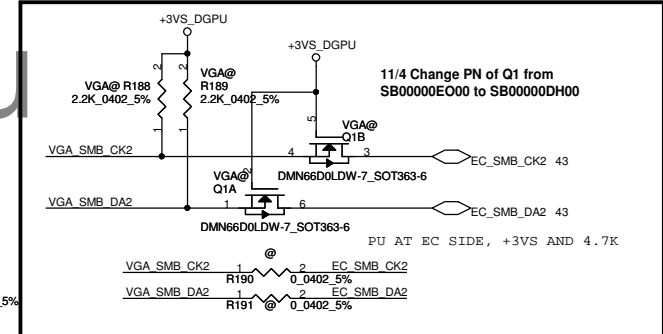
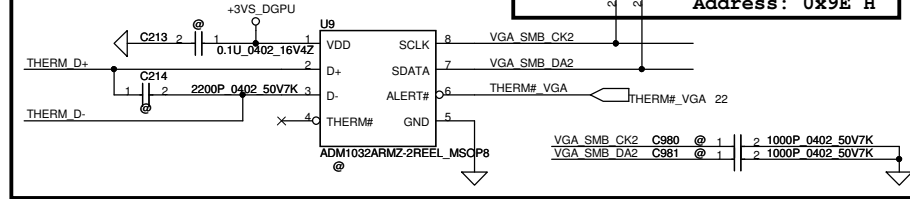
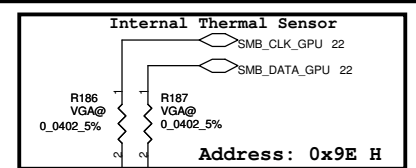
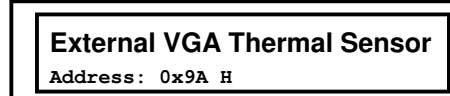
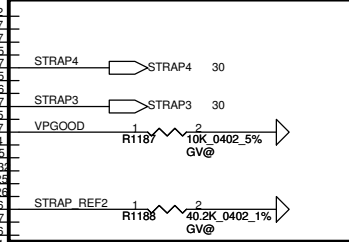
SERIAL

ROM_CS_N
ROM_SI
ROM_SO
ROM_SCLK

GENERAL

NC/SPDIF_NC
MULTI_STRAP_REF0_GND
MULTI_STRAP_REF1_GND
THERM_DP
THERM_DN

N12P-GV1-A1_BGA973 VGA@

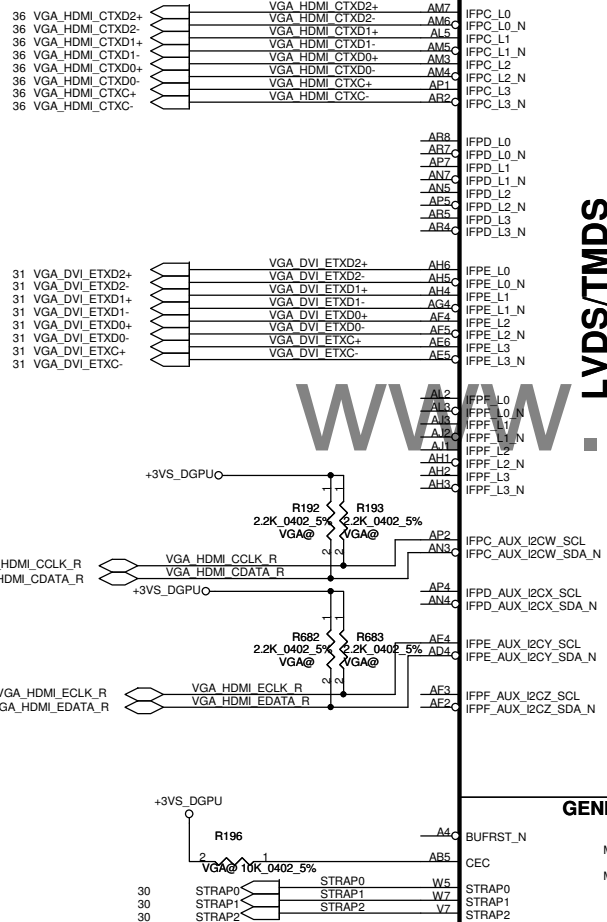


To HDMI-out

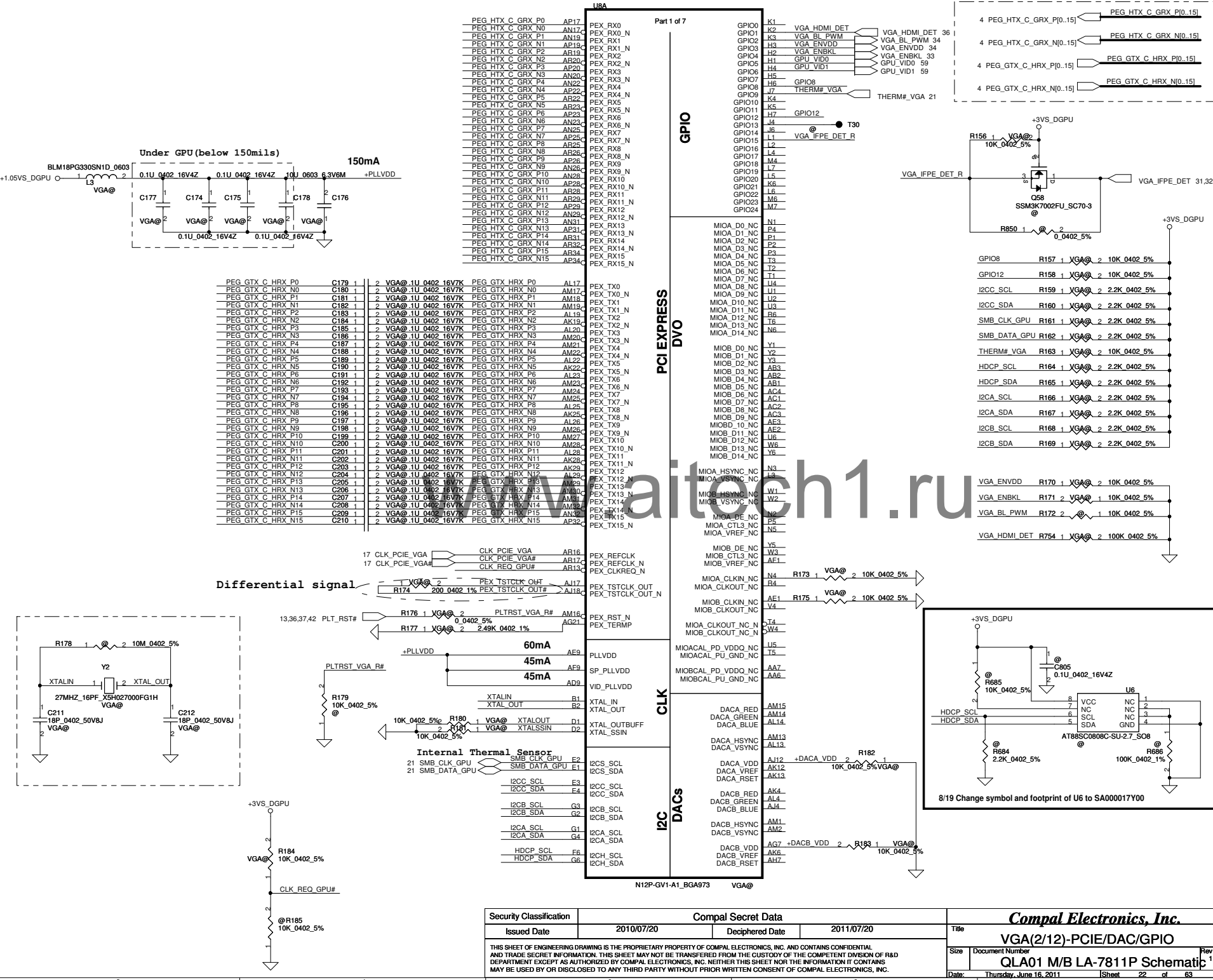
To 2D/3D Vision

HDMI-OUT

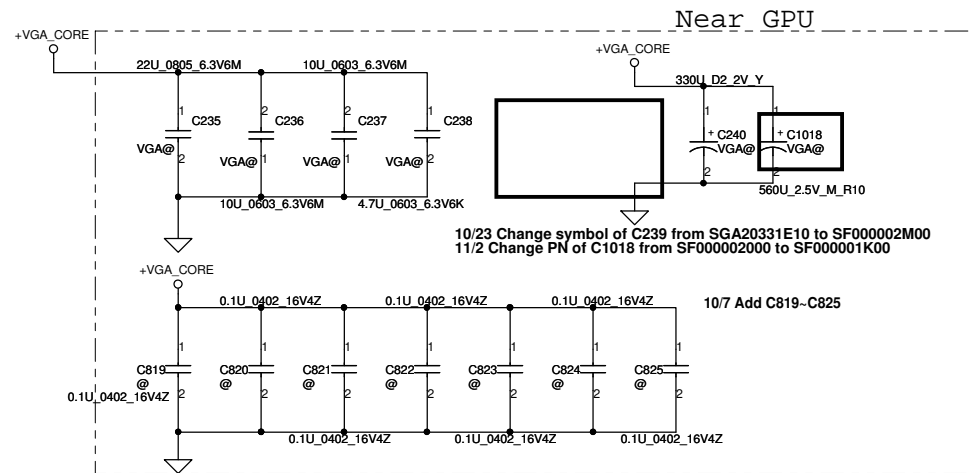
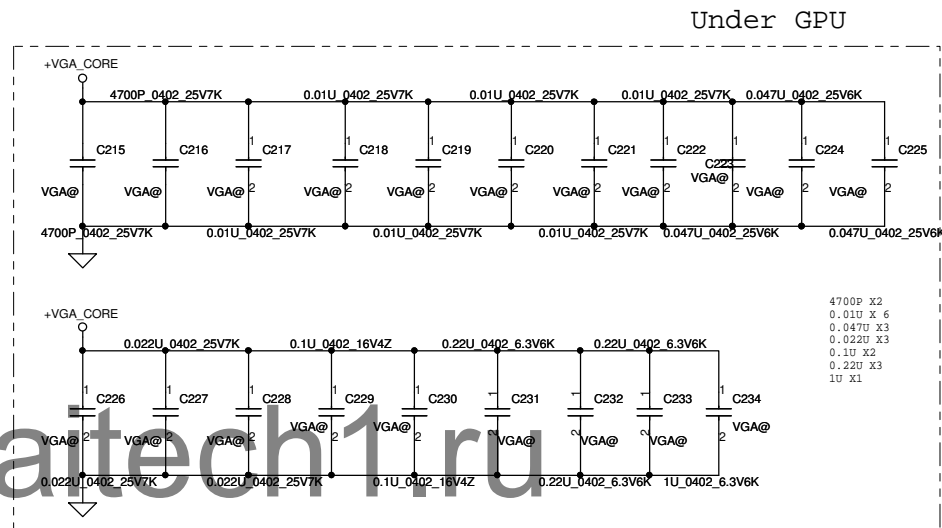
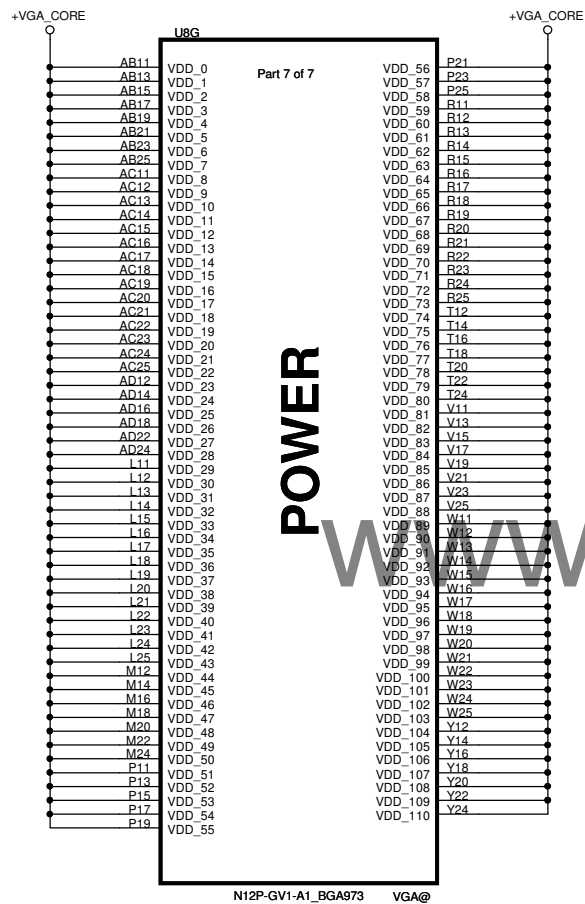
Scalar



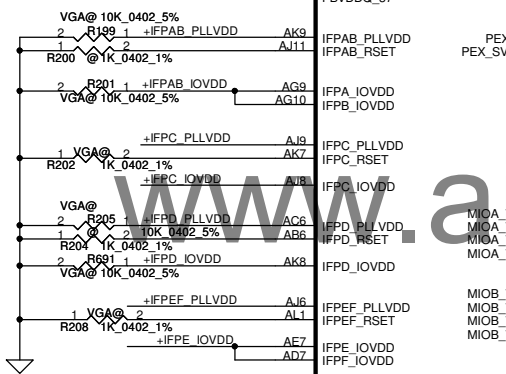
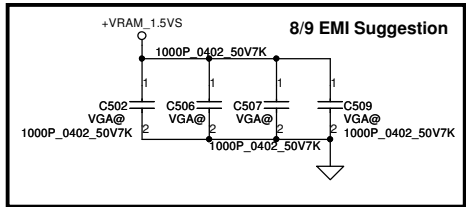
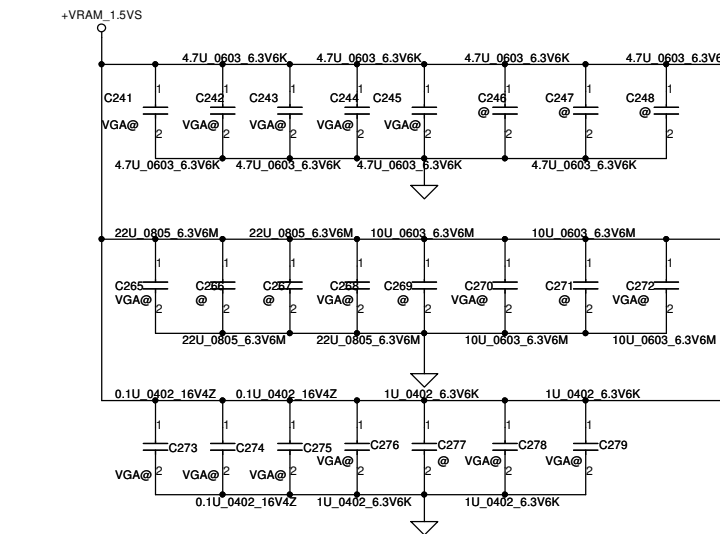
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Size		Document Number		Rev	
Date		Thursday, June 16, 2011		1. A	
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Sheet		21		of	



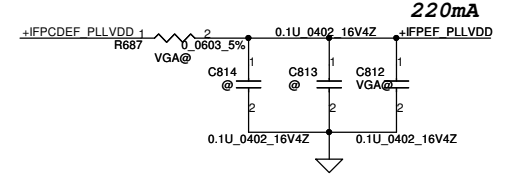
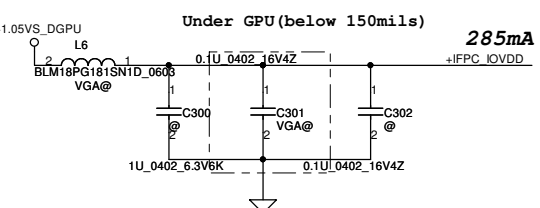
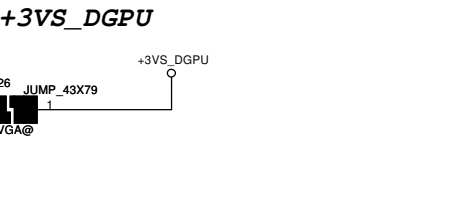
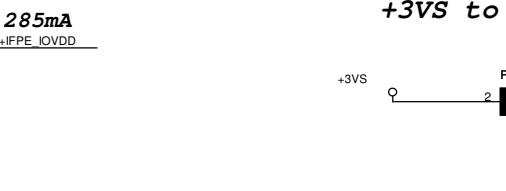
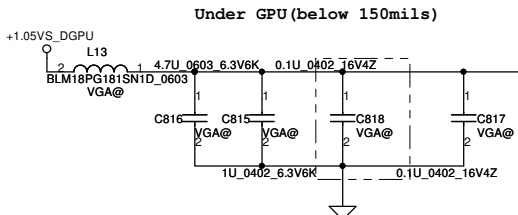
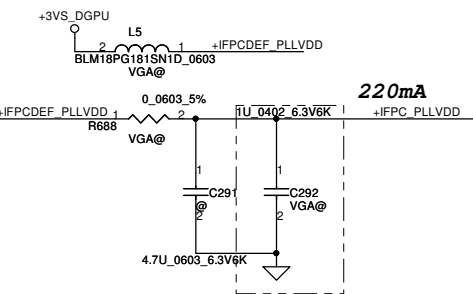
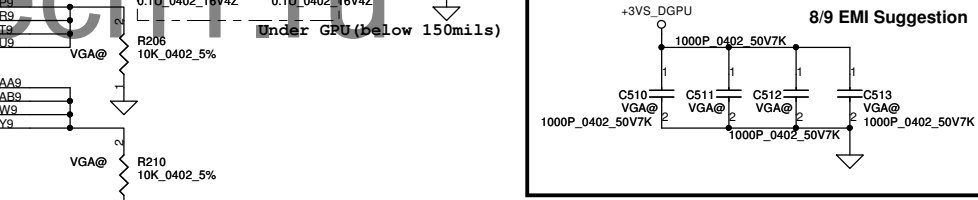
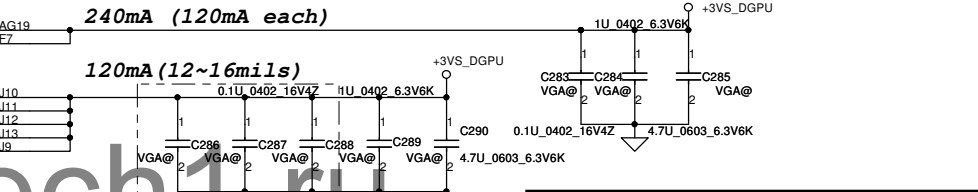
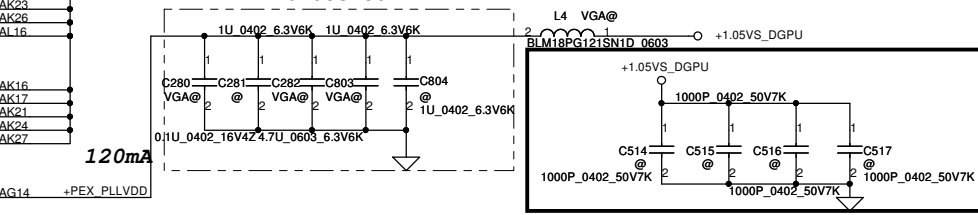
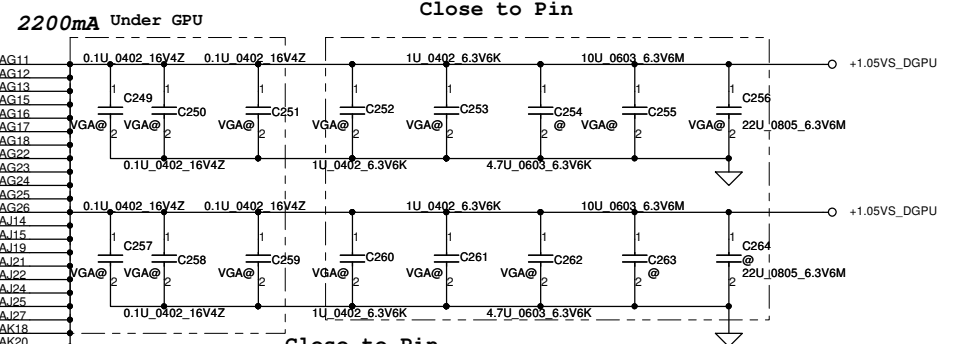
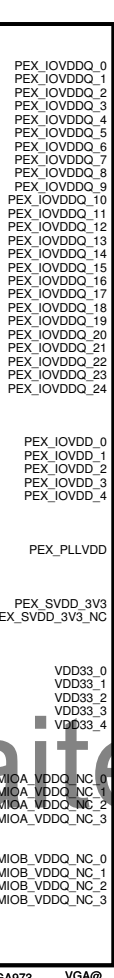
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				1A	1A
				Date	Thursday, June 16, 2011
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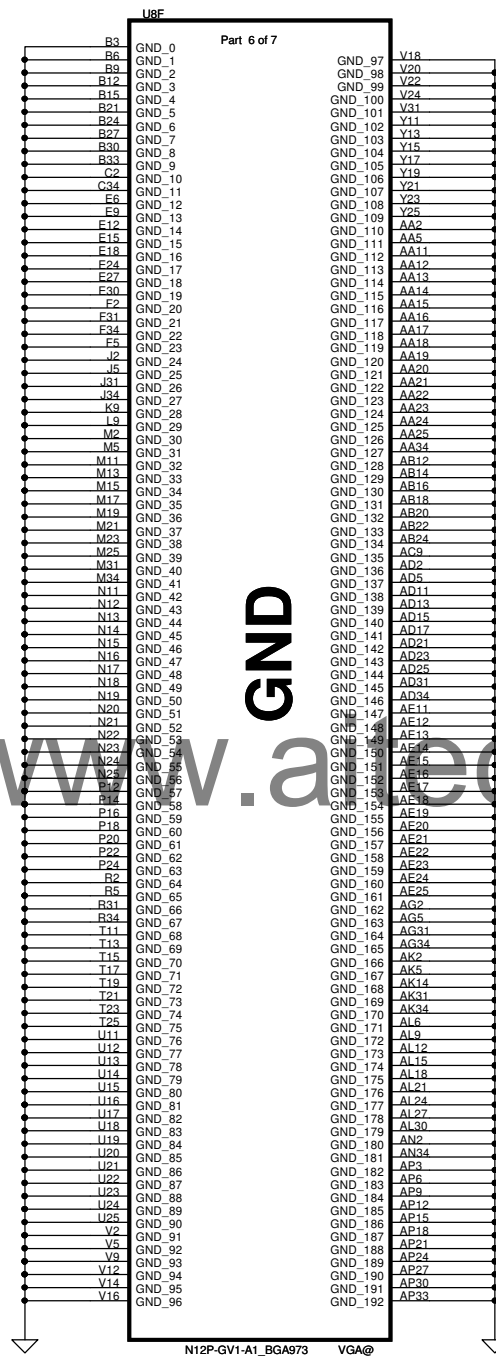
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				Size	Document Number
				Rev	
				Date: Thursday, June 09, 2011	
				Sheet 23 of 63	



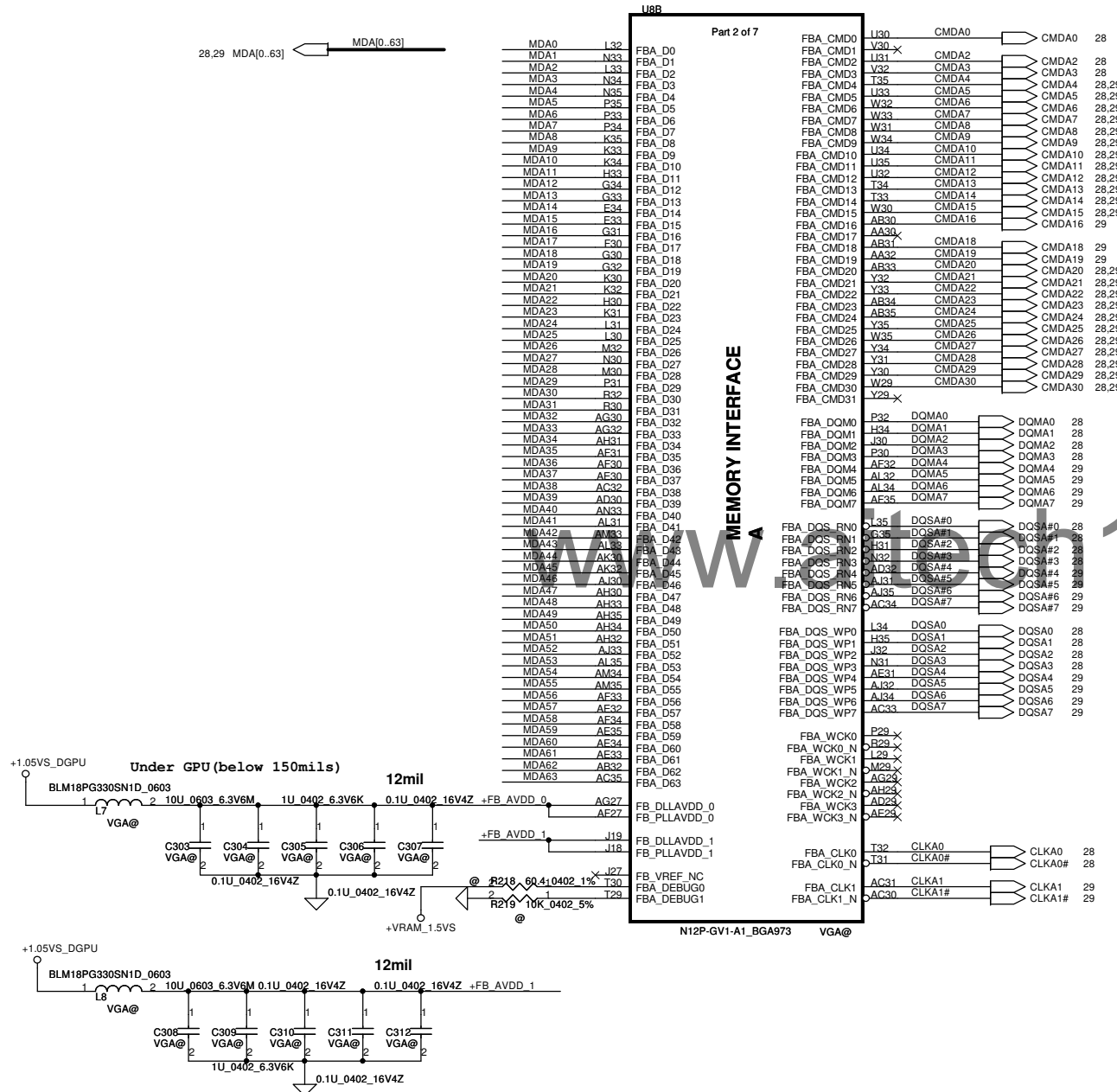
POWER



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				Rev	
				Date	
				Thursday, June 09, 2011	
				Sheet 24 of 63	

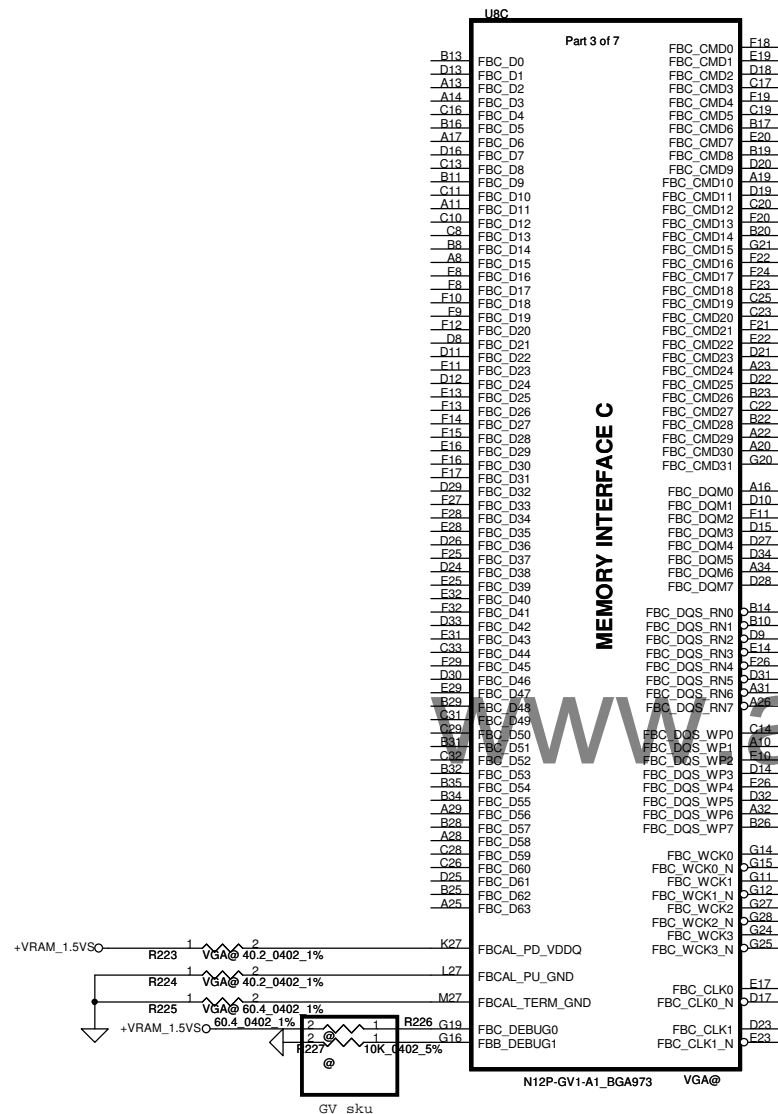


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				QLA01 M/B LA-7811P Schematic			1A
				Date:	Thursday, June 09, 2011	Sheet	25 of 63



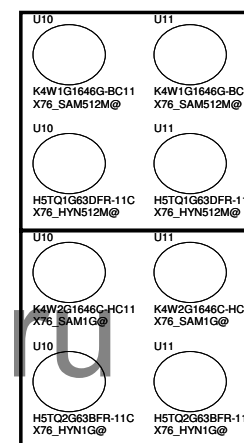
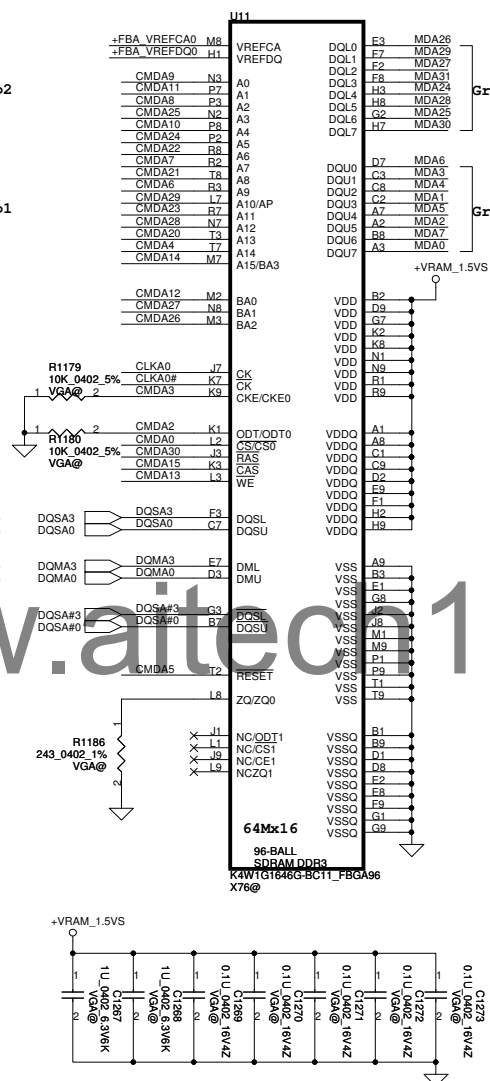
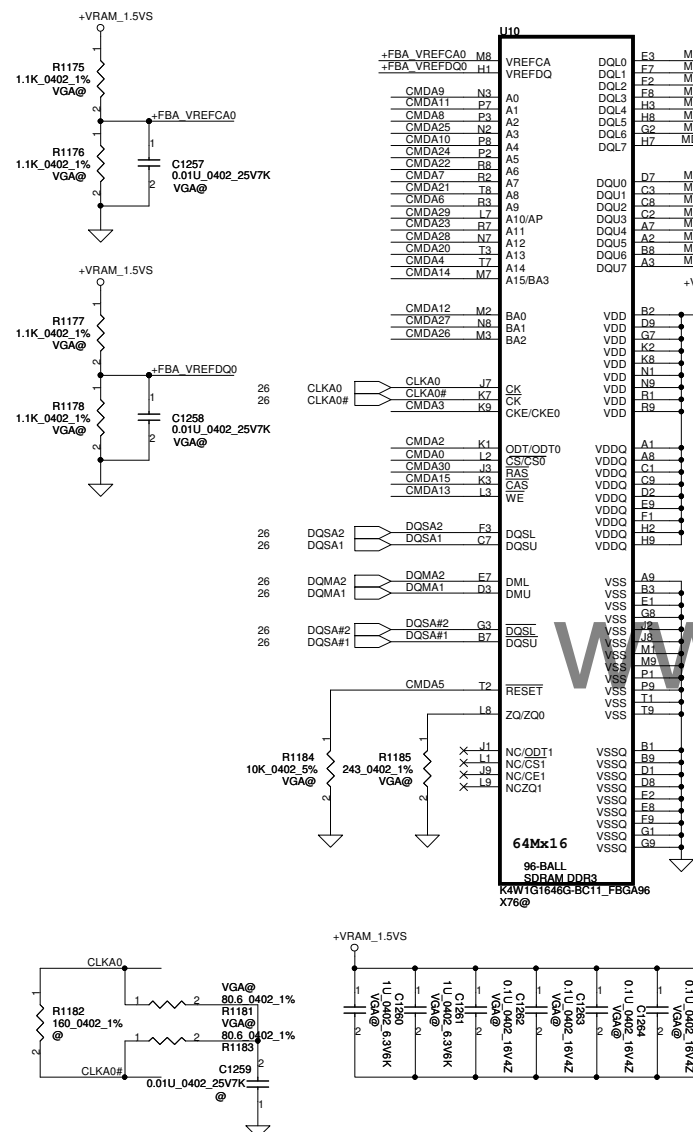
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Issued Date		2010/07/20		Title	
		Deciphered Date		VGA(6/12)-MEM Interface A	
		2011/07/20		Size	
				Document Number	
				QLA01 M/B LA-7811P Schematic	
				Date	
				Thursday, June 16, 2011	
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				Rev	
				1.A	

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				Date:	Thursday, June 09, 2011
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				QLA01 M/B LA-7811P Schematic	

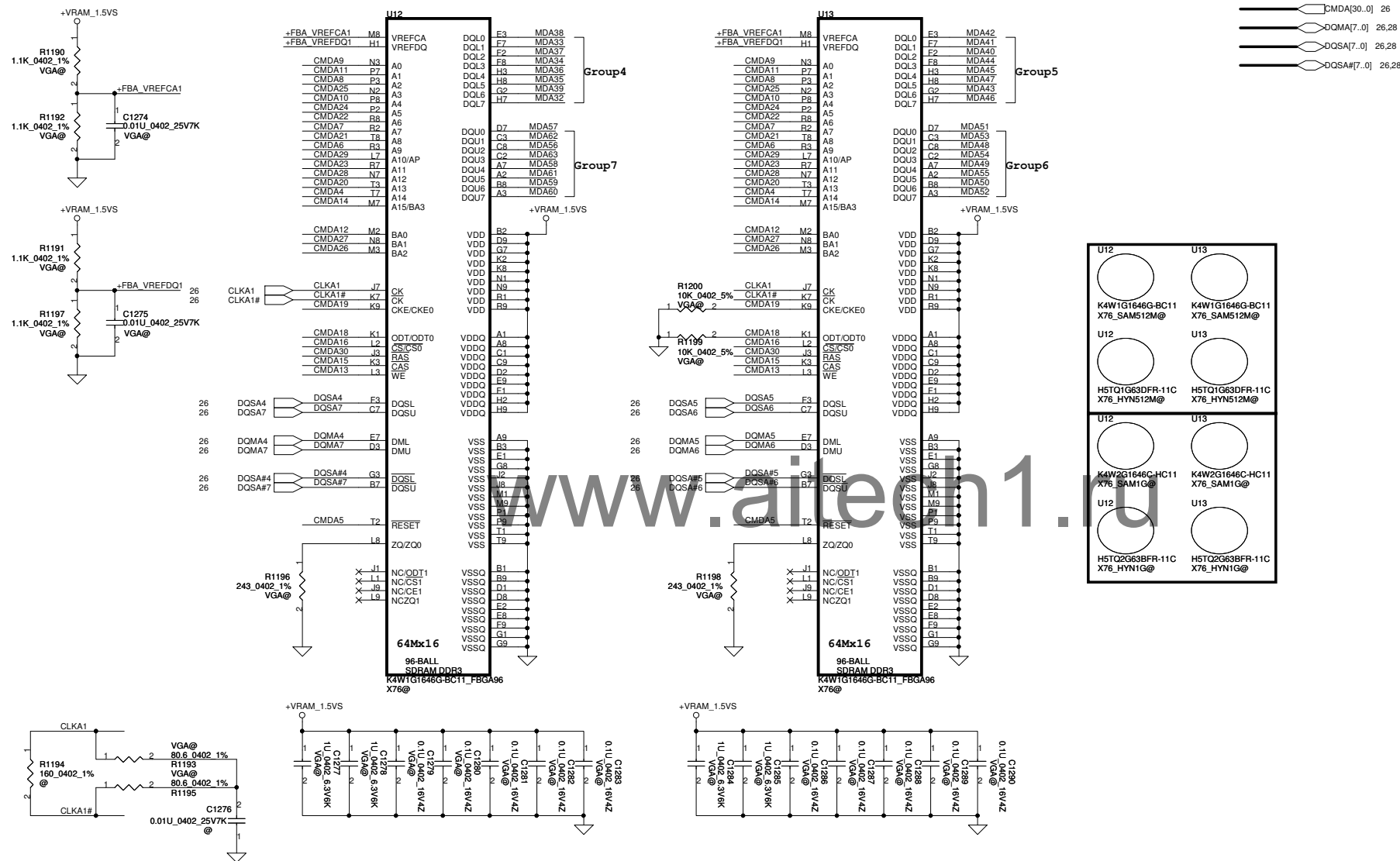
Memory Partition A - Lower 32 bits



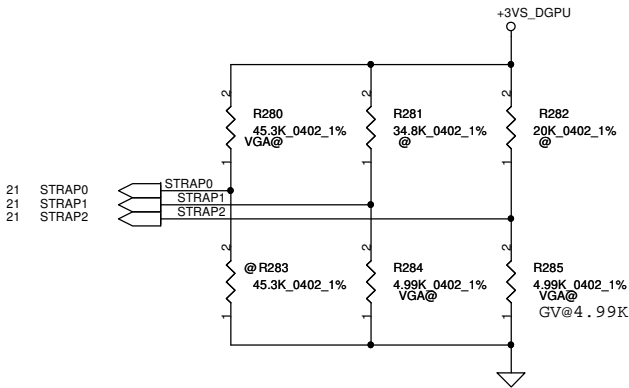
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	CMDA[30..0]	26
	DQMA[7..0]	26,29
	DQSA[7..0]	26,29
	DQSA#[7..0]	26,29

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				Size	Document Number	Rev
				Custm	QLA01 M/B LA-7811P Schematic	1.0
Date:	Thursday, June 16, 2011	Sheet	28	of 63		

Memory Partition A - Upper 32 bits

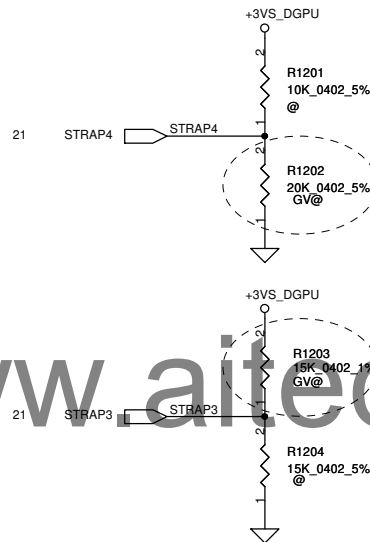
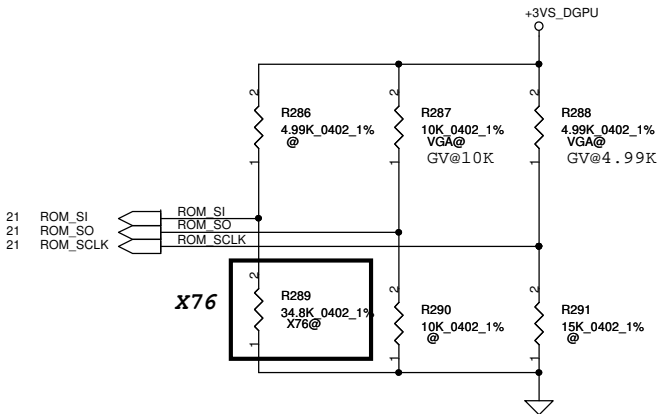


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				Custid	QLA01 M/B LA-7811P Schematic
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Resistor Values	Pull-up to +3VGS	Pull-down to Gnd
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

Physical Strapping pin	Power Rail	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SO	GS	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
	GV	FB[1]	FB[0]		
ROM_SCLK	GS	+3VGS	PCI_DEVID[4]	SUB_VENDOR	PEX_PLL_EN_TERM
	GV				
ROM_SI	+3VGS	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP0	+3VGS	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	+3VGS	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP2	+3VGS	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP3	+3VGS	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4	+3VGS	RESERVED	RESERVED	PCIE_MAX_SPEED	DP_PLL_VDD33V



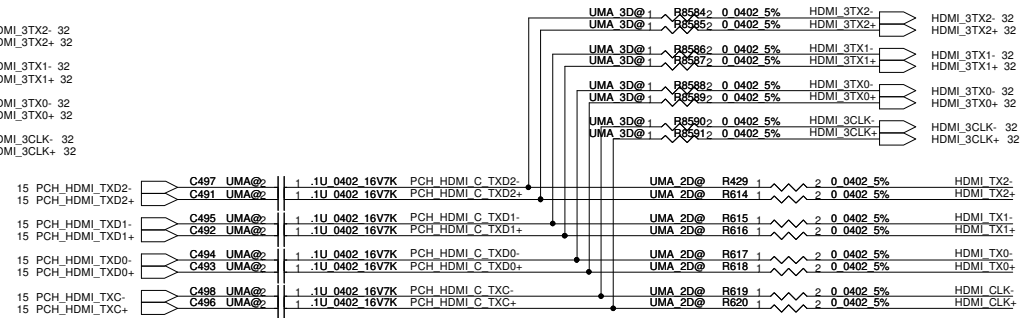
R289	R289	R289	R289
15K_0402_1% X76_SAM512M@	24.9K_0402_1% X76_HYN512M@	34.8K_0402_1% X76_SAM1G@	45.3K_0402_1% X76_HYN1G@

GPU	Frenq.	Memory Size	Memory Config	strap0	strap1	strap2	strap3	strap4	ROM_SI	ROM_SO	ROM_SCLK
			K4W1G1646G-BC11 SA00004GS00	1111	0000	0000	1010	0011	0010	1001	1000
N12P-GV	900 MHz	64M* 16* 4 512MB		R1221 PU 45K	R1235 PD 5K	R1226 PD 5K	R1642 PU 15K	R1644 PD 20K	R289 PD 15K	R1228 PU 10K	R1229 PU 5K
N12P-GV	900 MHz	64M* 16* 4 512MB	H5TQ1G63DFR-11C SA000041S20	1111	0000	0000	1010	0011	0100	1001	1000
N12P-GV	900 MHz	128M* 16* 4 1GB	K4W2G1646C-HC11 SA000047Q00	R1221 PU 45K	R1235 PD 5K	R1226 PD 5K	R1642 PU 15K	R1644 PD 20K	R289 PD 25K	R1228 PU 10K	R1229 PU 5K
N12P-GV	900 MHz	128M* 16* 4 1GB	H5TQ2G63BFR-11C SA00003YO30	1111	0000	0000	1010	0011	0110	1001	1000
N12P-GV	900 MHz	128M* 16* 4 1GB		R1221 PU 45K	R1235 PD 5K	R1226 PD 5K	R1642 PU 15K	R1644 PD 20K	R289 PD 35K	R1228 PU 10K	R1229 PU 5K

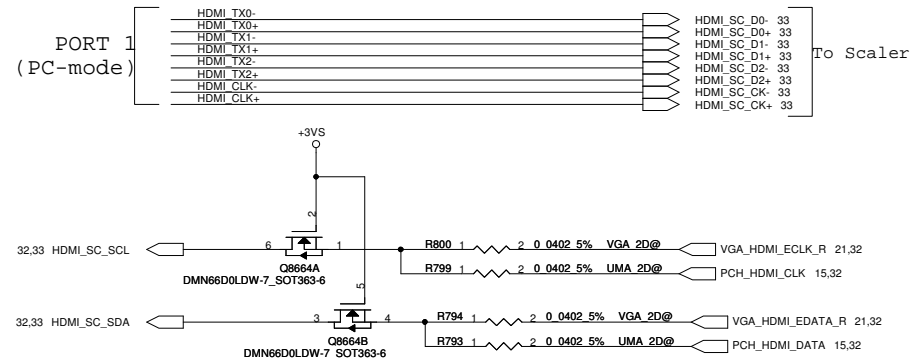
SUB_VENDOR		XCLK_417	
0	No VBIOS ROM (Default)	0	277MHz (Default)
1	BIOS ROM is present	1	Reserved
FB_0_BAR_SIZE		User [3:0]	
0	256MB (Default)	1111	EDID is used 1920x1080
1	Reserved	1000-1100	Customer defined
3GIO_PADCFG[3:0]		PEX_PLL_EN_TERM	
0000	RESERVED	0	Disable (Default)
0110	Notebook Default	1	Enable
SLOT_CLOCK_CFG			
0	GPU and MCH don't share a common reference clock		
1	GPU and MCH share a common reference clock (Default)		
SMBUS_ALT_ADDR		VGA_DEVICE	
0	0x9E (Default)	0	3D Device
1	0x9C (Multi-GPU usage)	1	VGA Device (Default)
PCIE_MAX_SPEED		DP_PLL_VDD33V	
1	Default	0	Default
GPU	Package	DeviceID	PCI_DEVID[5..0]
N12P-GS	GB2-128	0x0DF4	(..1111 0100)
N12P-GV-B	GB2b-128	0x1050	(..0101 0000)

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				Custom	QLA01 M/B LA-7811P Schematic	1.A
				Date:	Thursday, June 16, 2011	Sheet 30 of 63

0804 Vendor suggest close to Cap.

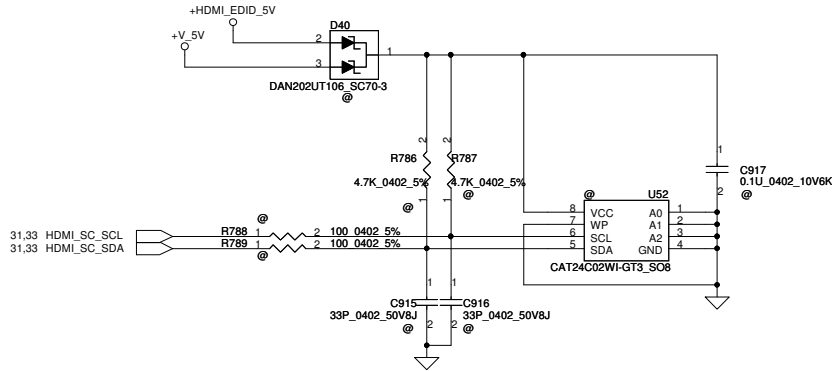


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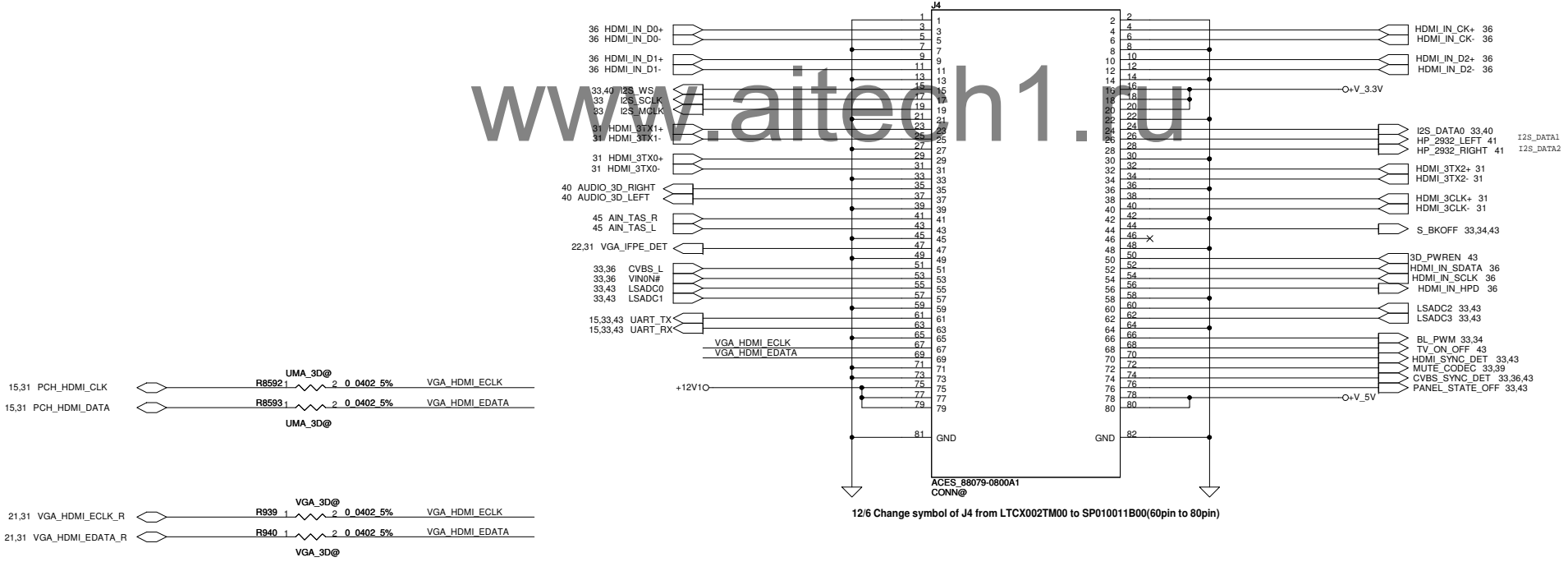
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				Size	Document Number
				Custpm	QLA01 M/B LA-7811P Schematic <div>Rev 1.1A</div>
Date:	Thursday, June 16, 2011	Sheet	31	of	63

0810 Vendor suggest to reserve for EDID debug



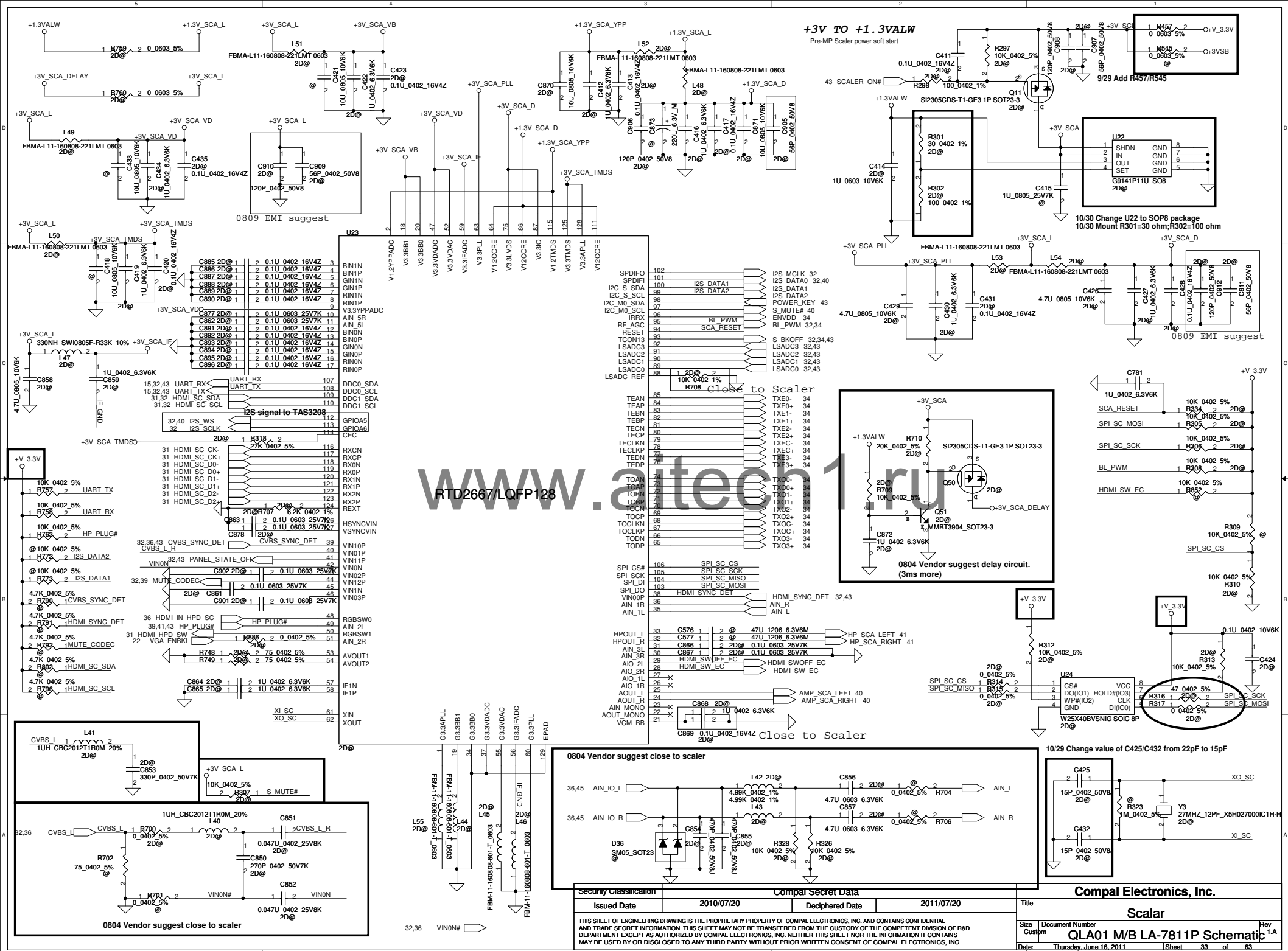
12/11 3D Scaler Pin define update

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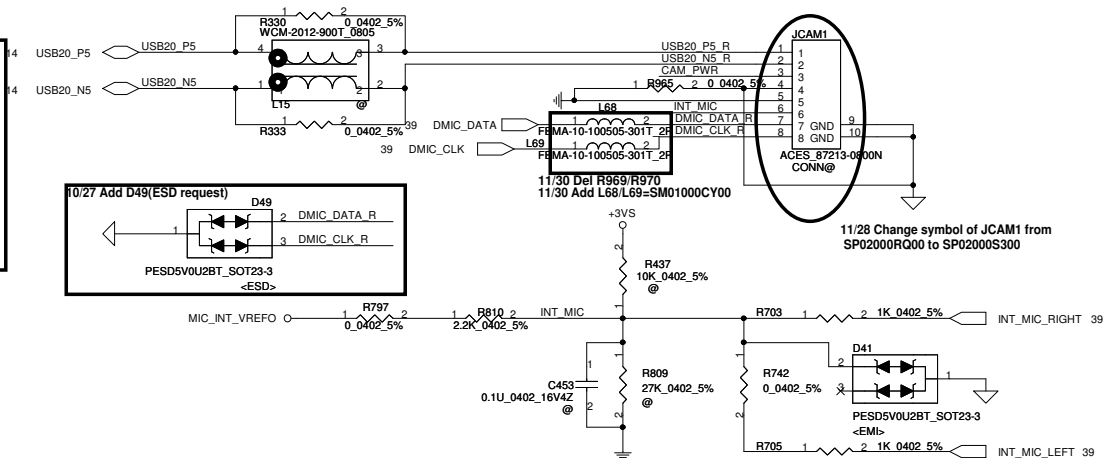
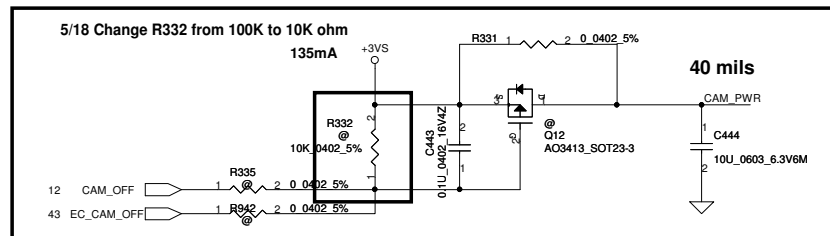
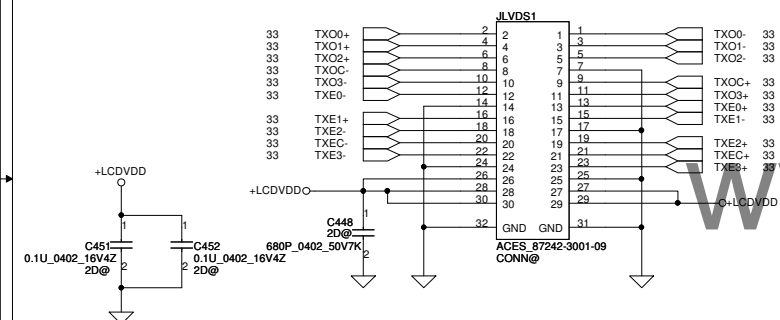


12/6 Change symbol of J4 from LTCX002TM00 to SP010011B00(60pin to 80pin)

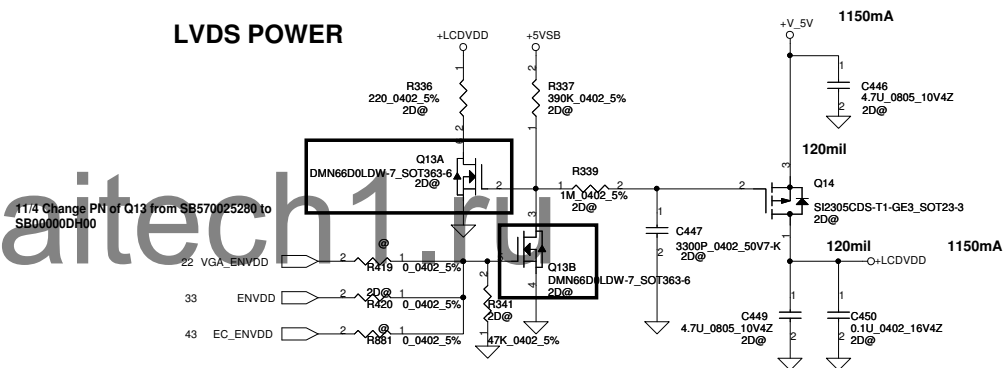
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Size	Custom	Document Number	Rev	Date	
		QLA01 M/B LA-7811P Schematic	1.A	Thursday, June 16, 2011	
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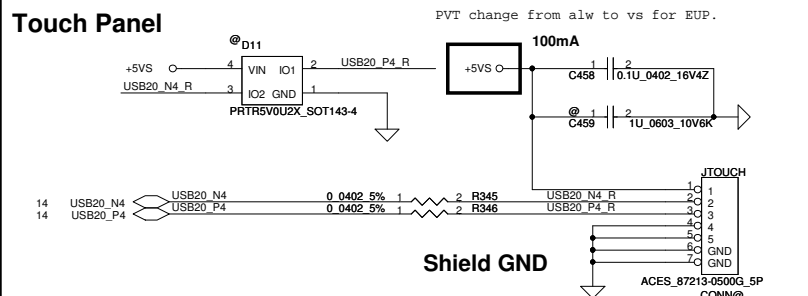
WebCam+Digital Mic

**LVDS CONN**

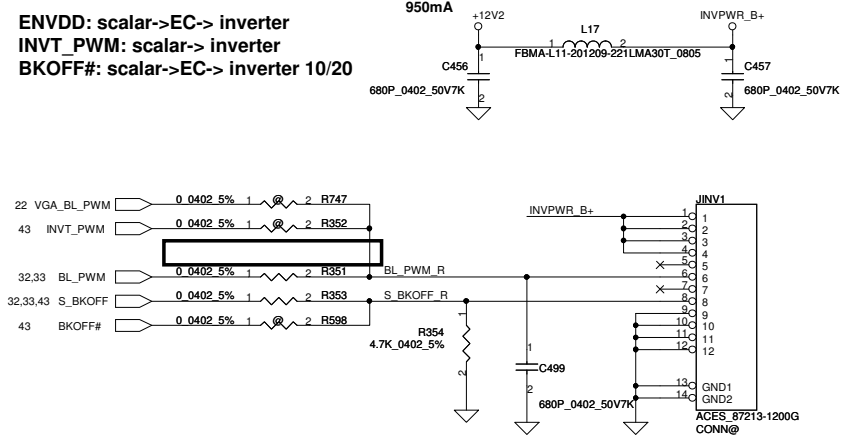
LVDS POWER



Touch Panel

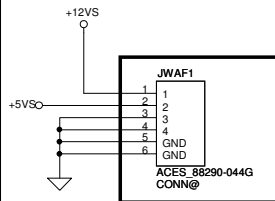
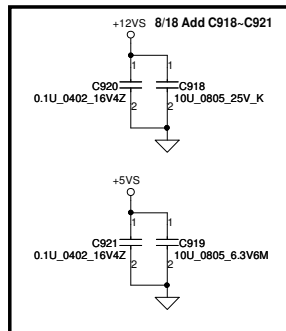


INVERTER



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				Custmr	
				Date:	Thursday, June 16, 2011

HDD POWER Conn

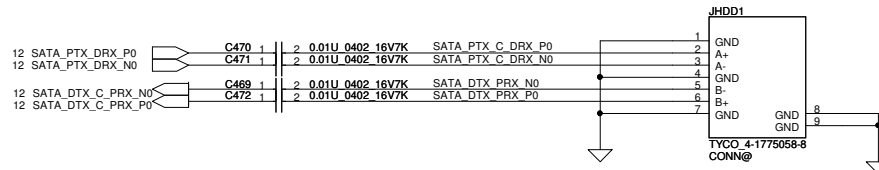


12/6 Change footprint of JWAF1 from SP02000AO00 to SP02000EB00

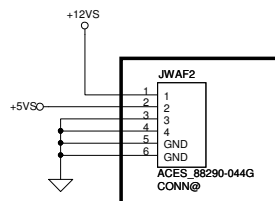
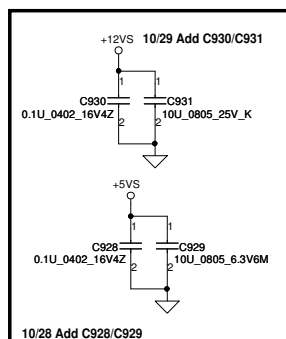
Layout Note: Place C918/C919/C920/C921 close to JWAFER1

HDD

SATA HDD Conn.



ODD POWER Conn



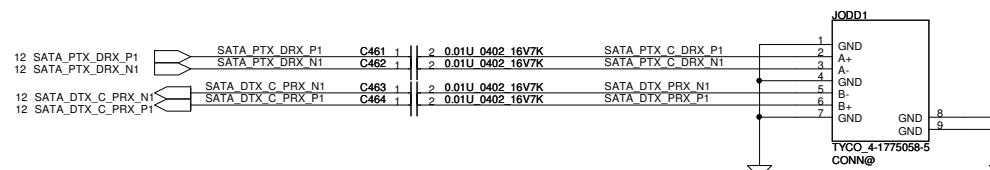
12/6 Change footprint of JWAF1 from SP02000AO00 to SP02000EB00

10/28 Add C928/C929

Layout Note: Place C928/C929 close to JWAFER2

ODD

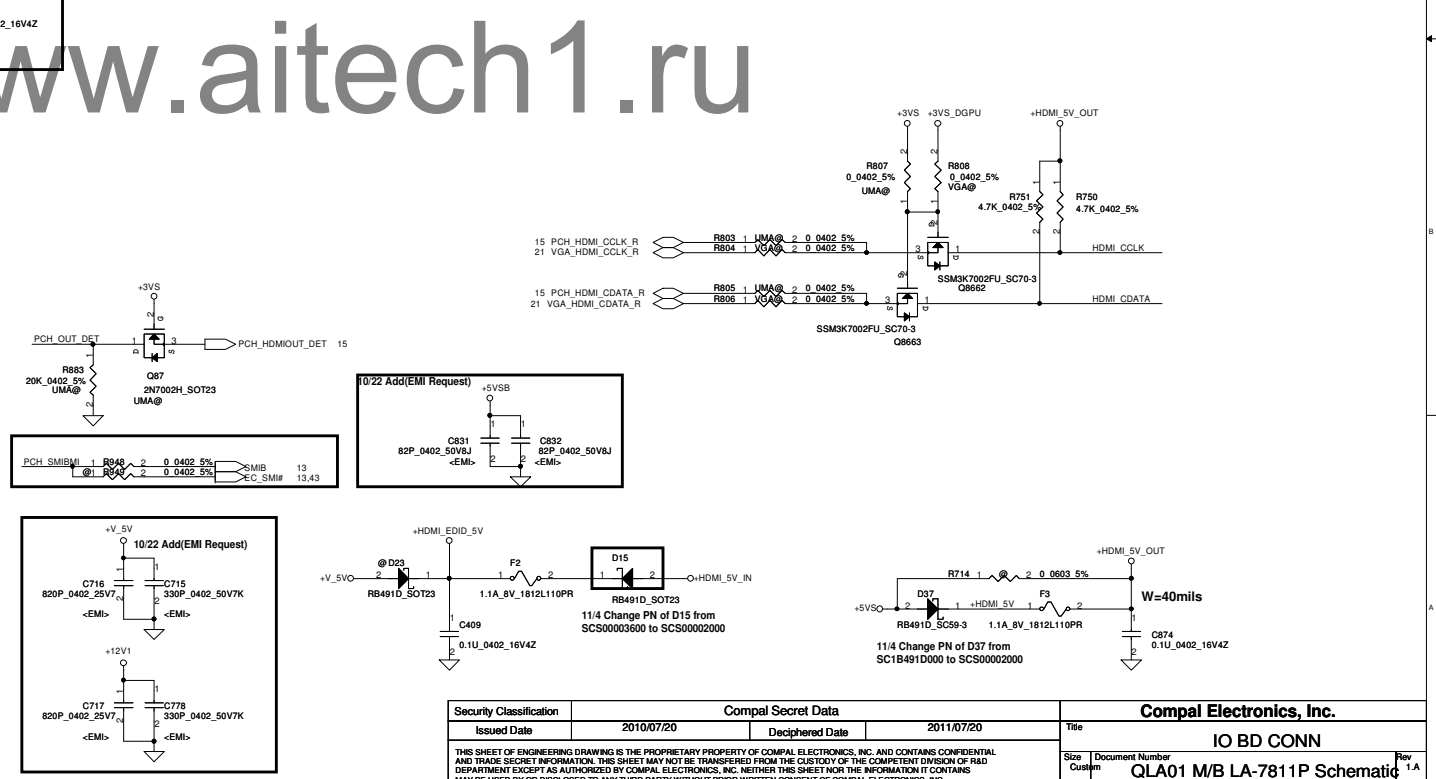
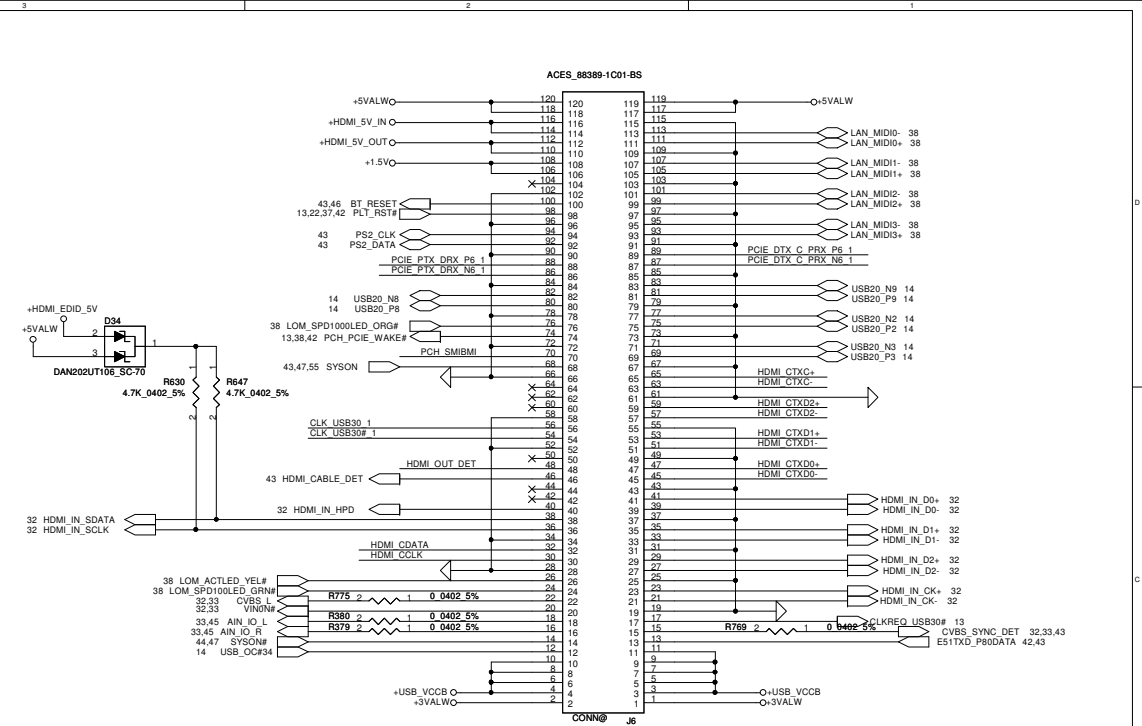
SATA ODD Conn.



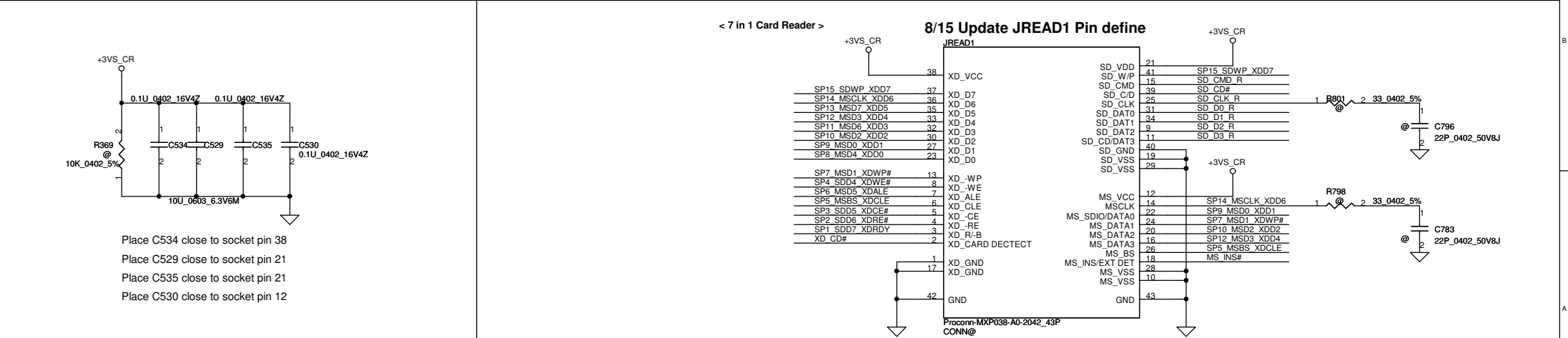
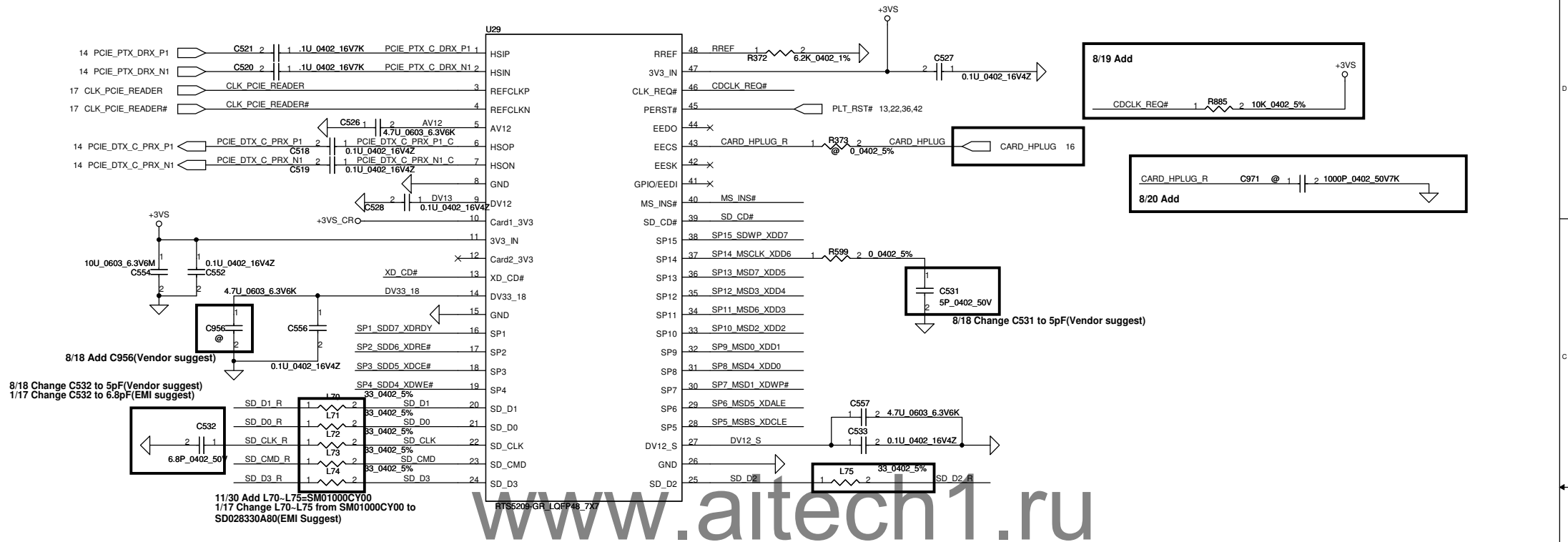
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SSD

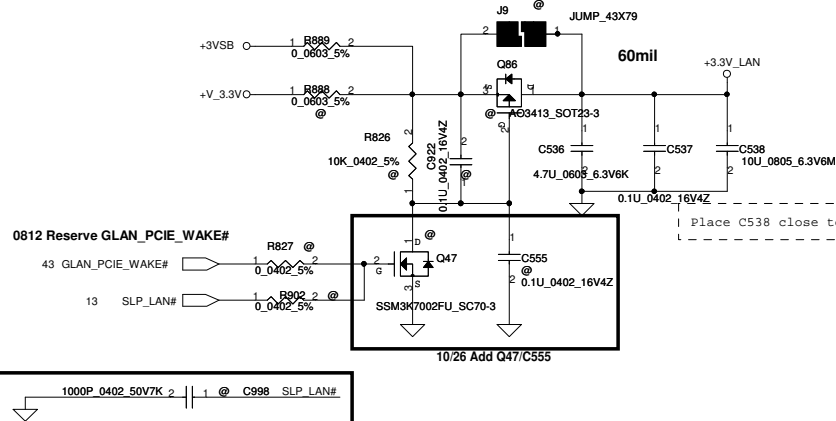
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Issued Date	2010/07/20	Deciphered Date	2011/07/20	Title	HDD & ODD & SSD Connector
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				Date:	Thursday, June 16, 2011
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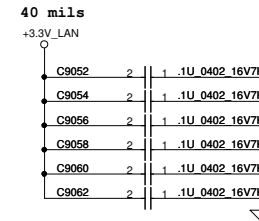
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				Custom	QLA01 M/B LA-7811P Schematic	1.A	
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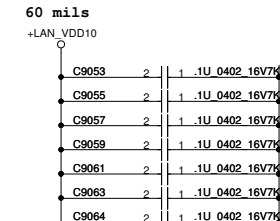
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Size	Document Number	Rev		1.A
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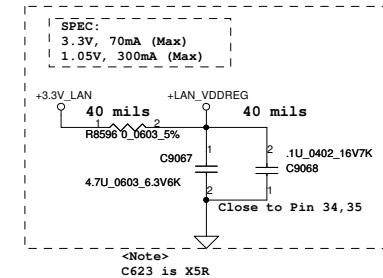
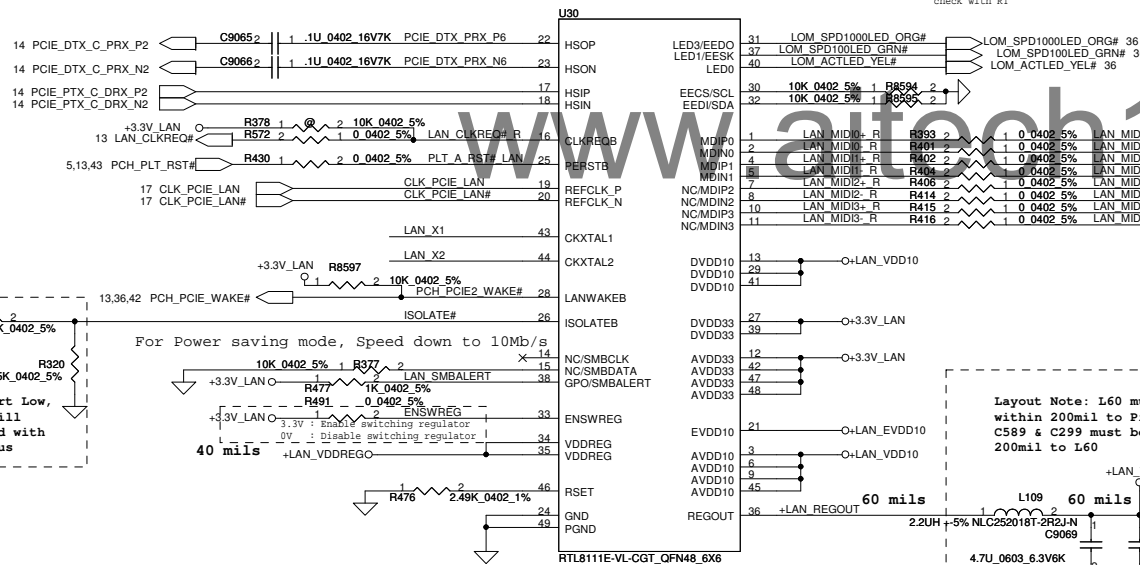
Power (Decoupling Cap.)



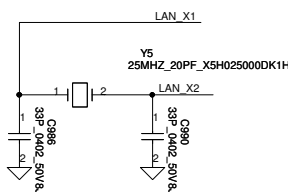
C625, C610, C617, C626, C621, C604 close to Pin 12,27,39,42,47,48, respectively



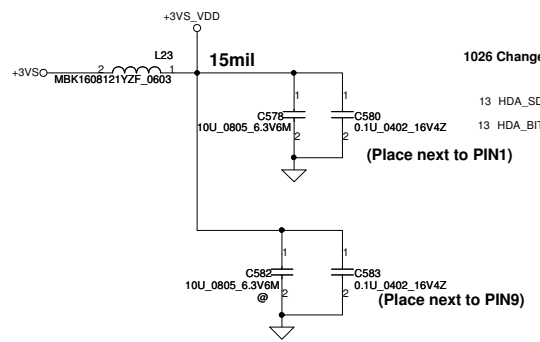
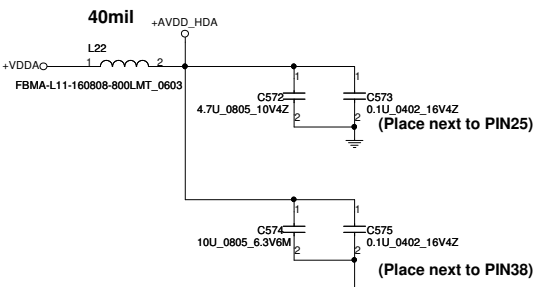
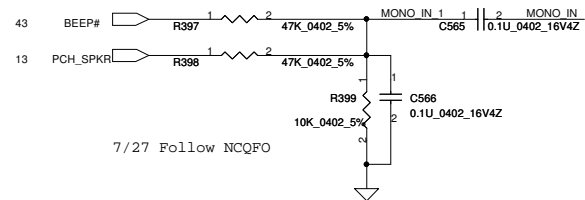
C615, C614, C622, C620, C616, C611, C624 close to pin 3,6,9,13,29,41,45, respectively



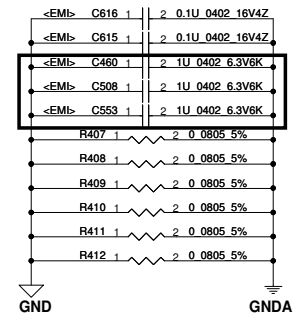
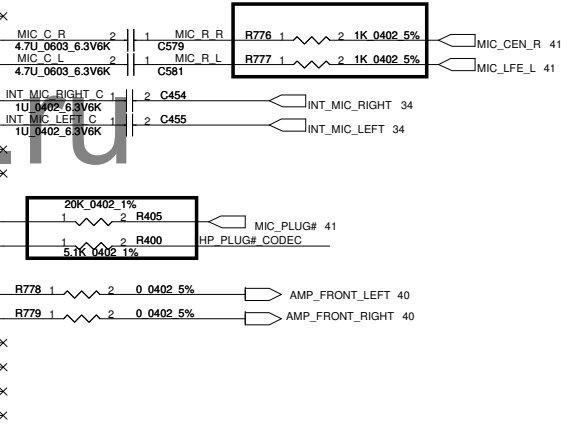
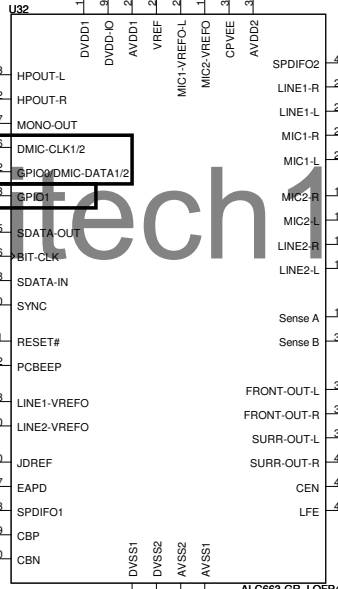
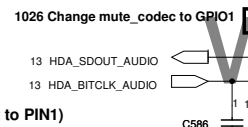
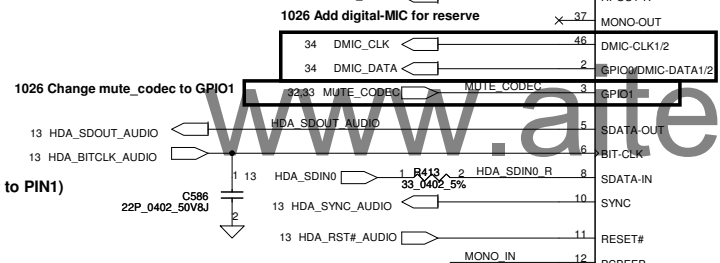
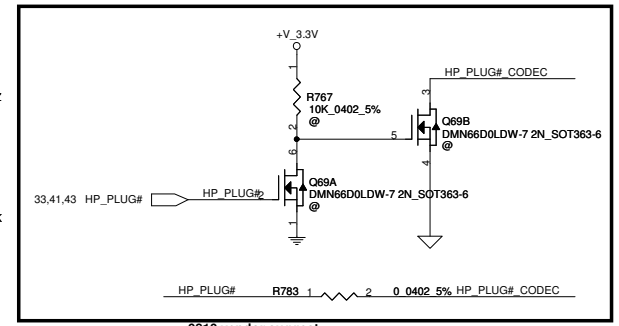
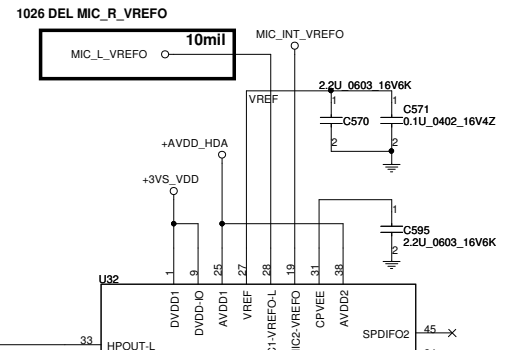
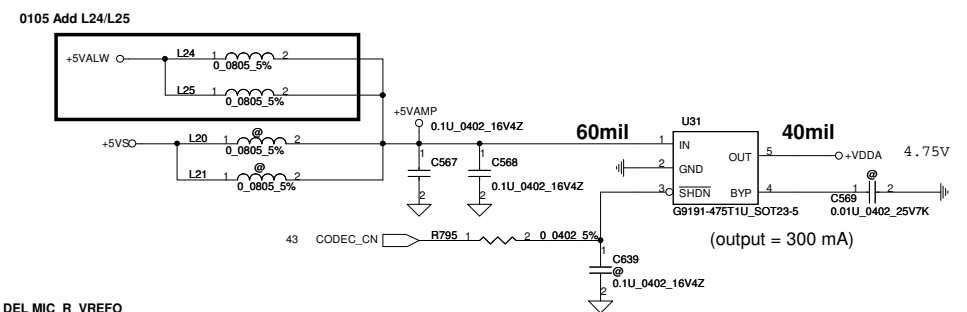
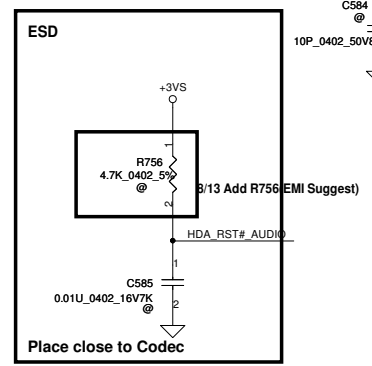
Crystal



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Size	Document Number	Rev		Date	
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Sense Pin	Impedance	Codec Signals
SENSE A	20K	PORT1 (PIN 21, 22)
SENSE B	5.1K	PORT-2 (PIN 32, 33)

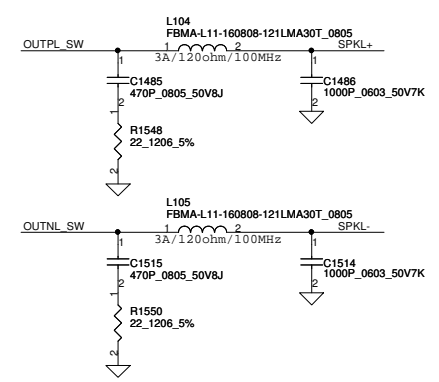
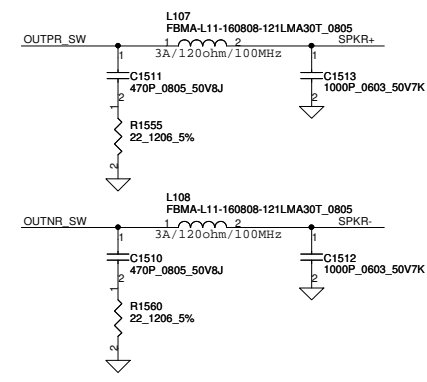
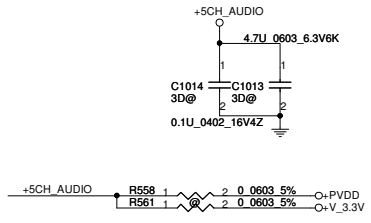
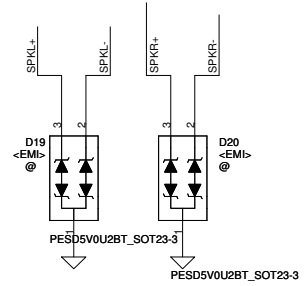
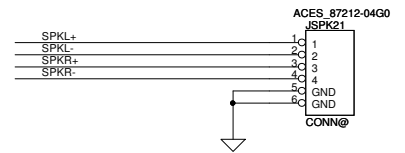
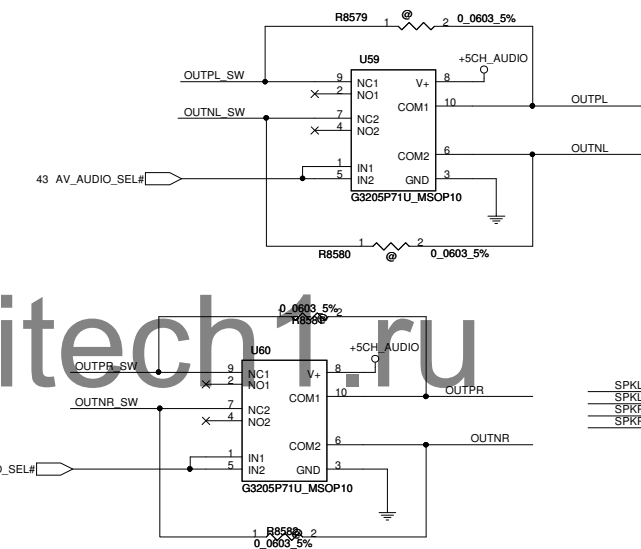
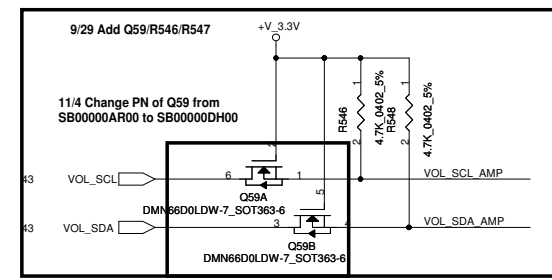
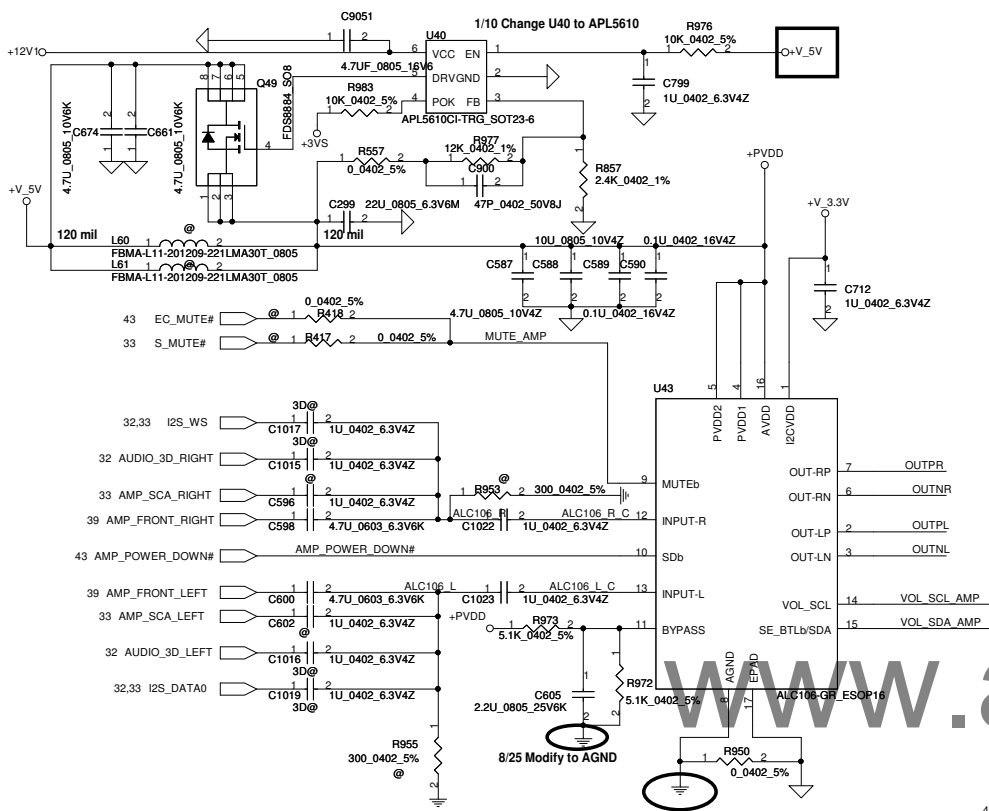


1026 Change U32 from SA00004BR00 to SA00003G300

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				Date:	Thursday, June 16, 2011
				Sheet	39 of 63

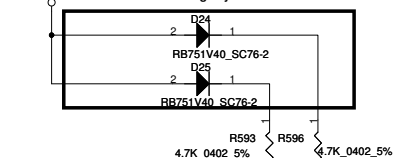
Compal Electronics, Inc.
HD Audio Codec ALC663

QLA01 M/B LA-7811P Schematic

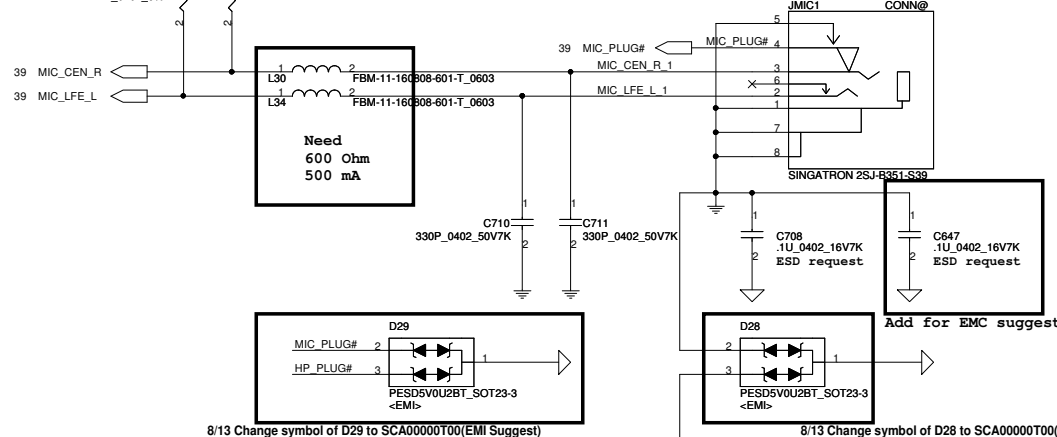


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				Custom	Rev
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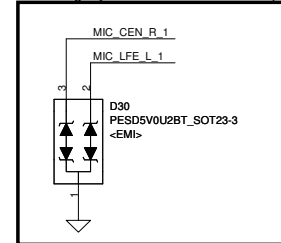
1026 Add Diode for MIC L VREF0
12/10 Change symbol of D24/D25 from SC1H751H010 to SCS00002G00



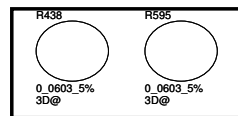
EXT MIC IN



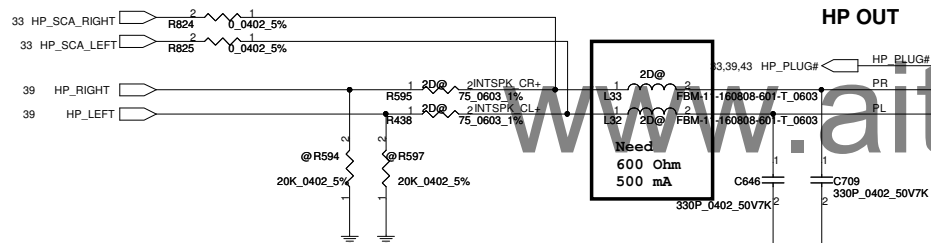
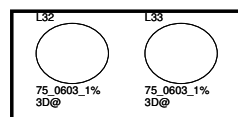
8/13 Change symbol of D30 to SCA00000T00(EMI Suggest)



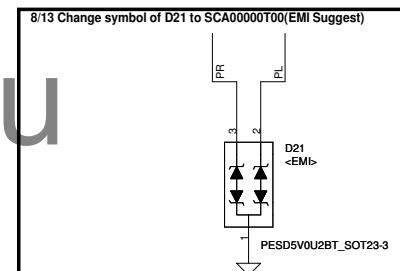
2/18 Add



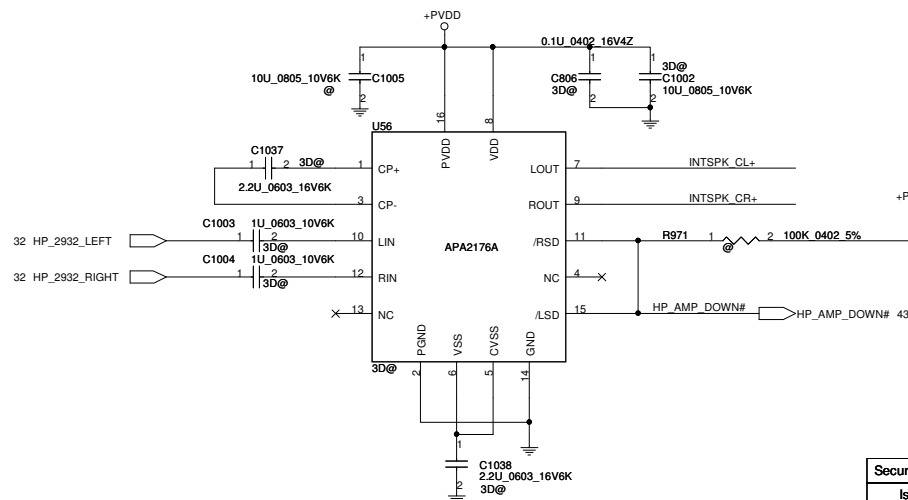
2/24 Add



HP OUT



10/22 Change U56 from SA00001ZW00 to SA00004IS00

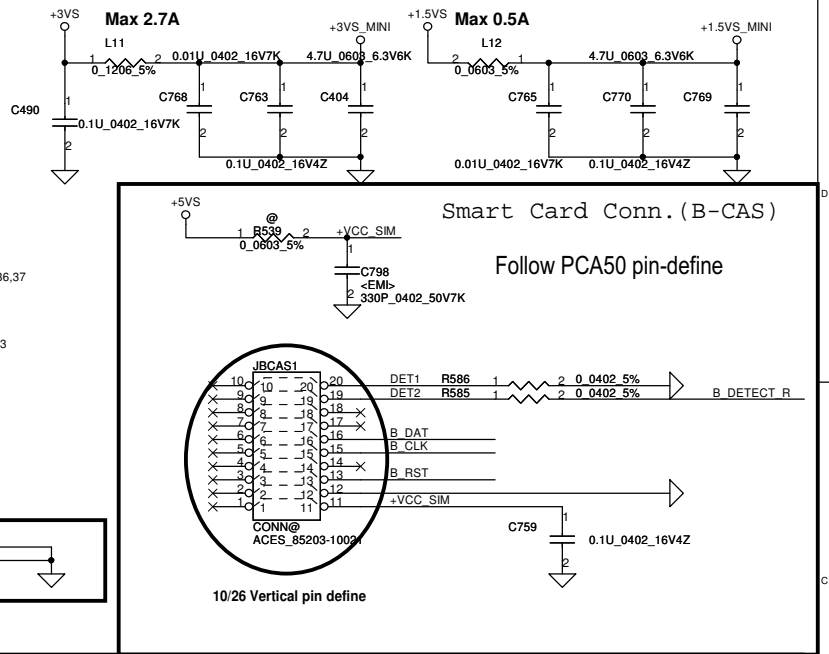
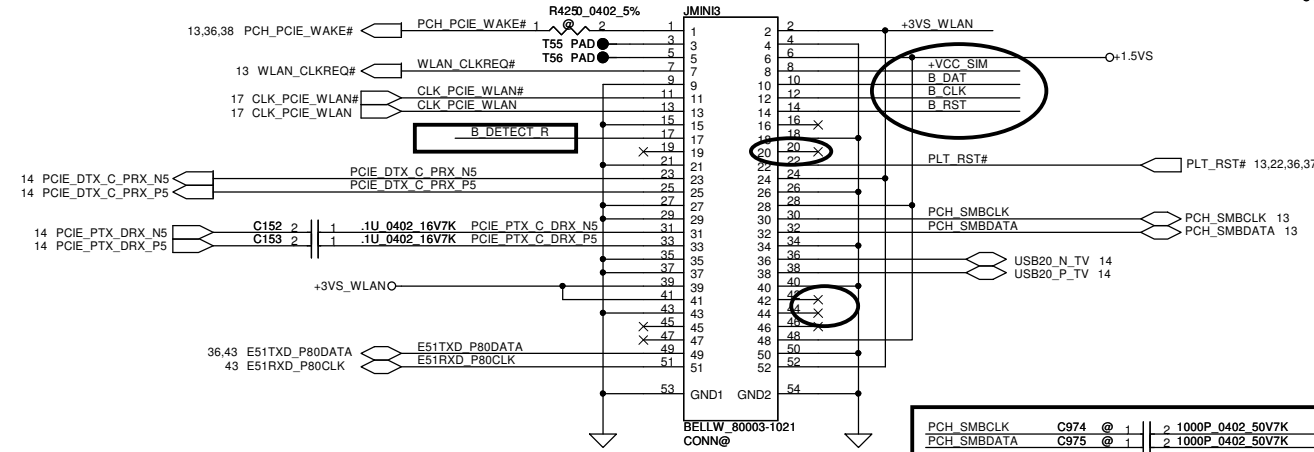


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Size	Custom	Document Number	Rev	Date	
		QLA01 M/B LA-7811P Schematic	1.A	Thursday, June 16, 2011	
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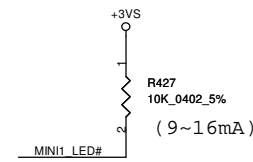
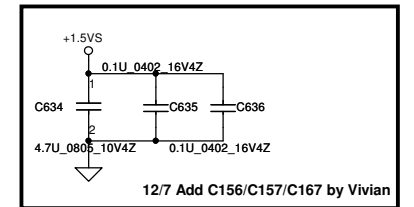
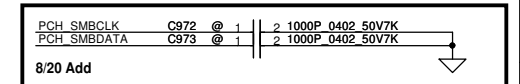
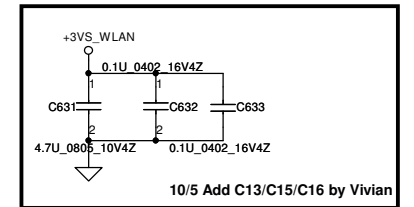
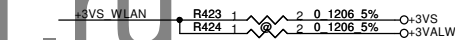
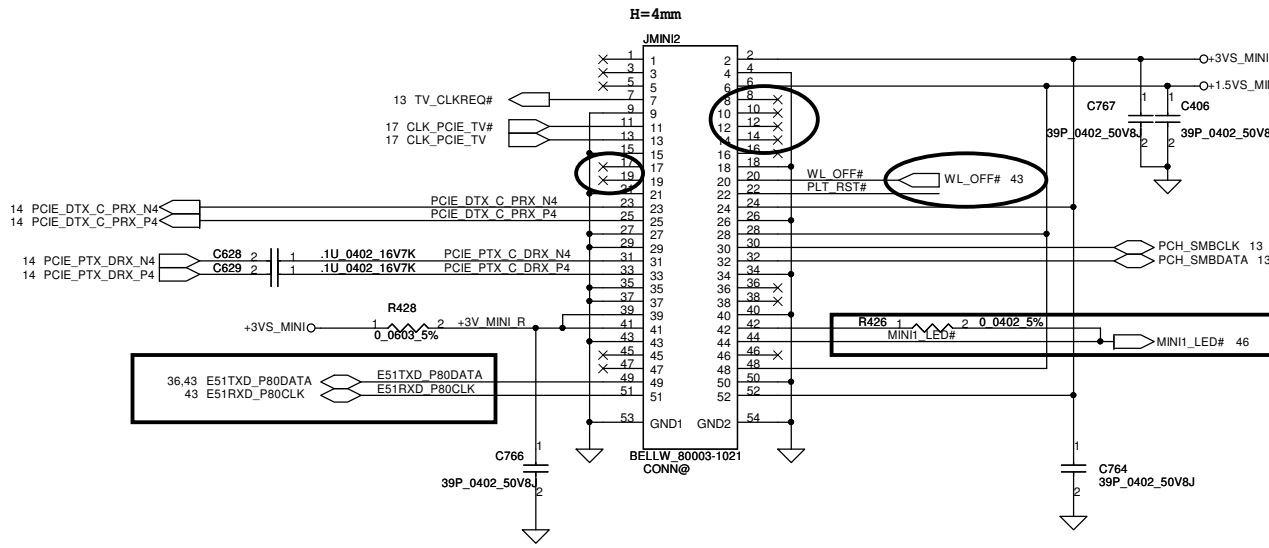
MINI (TV)

Mini Card Slot 1---TV tuner Current: 3.3 : 2750mA, 1.5: 500mA

H=9mm

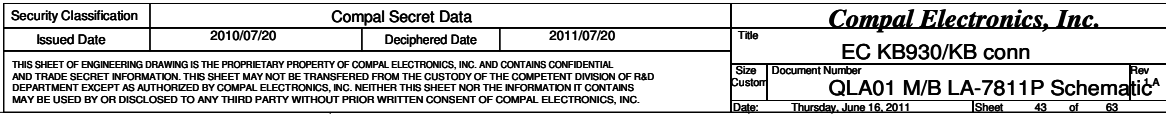


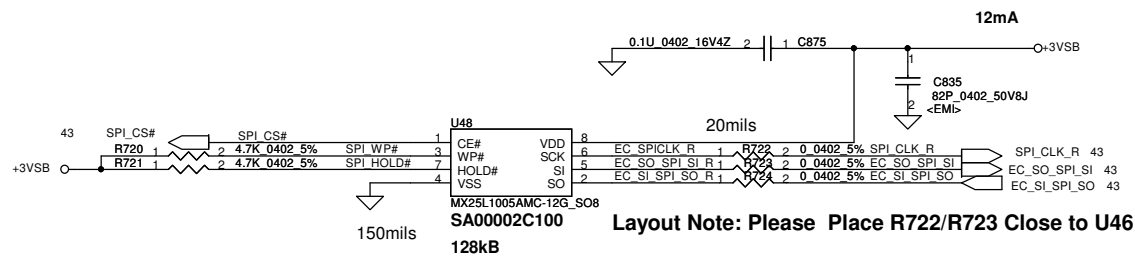
WLAN



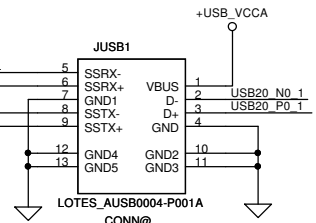
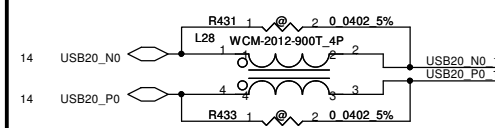
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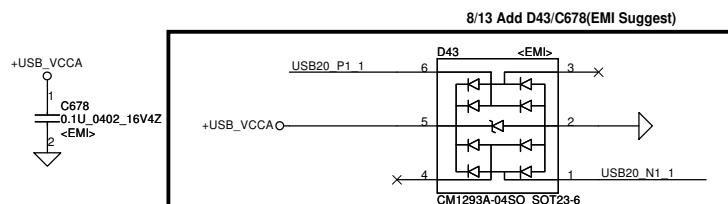
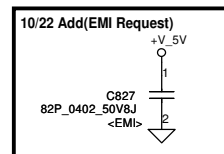
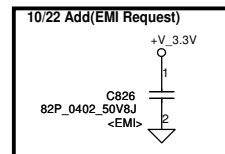
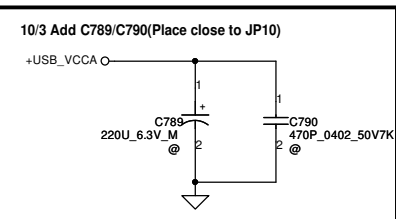
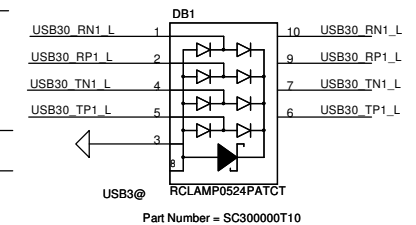
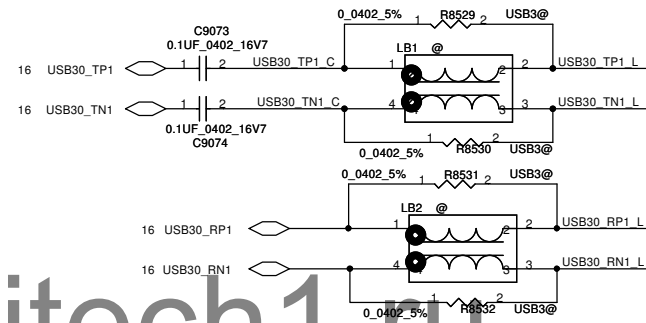
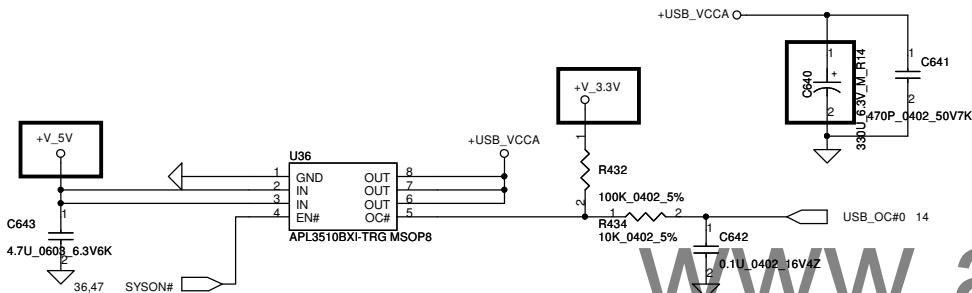




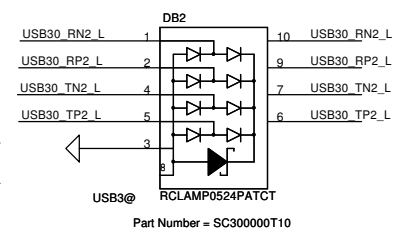
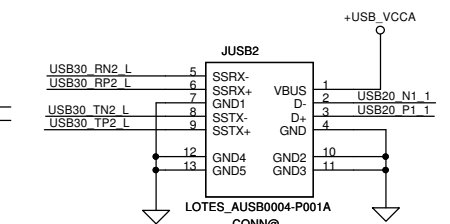
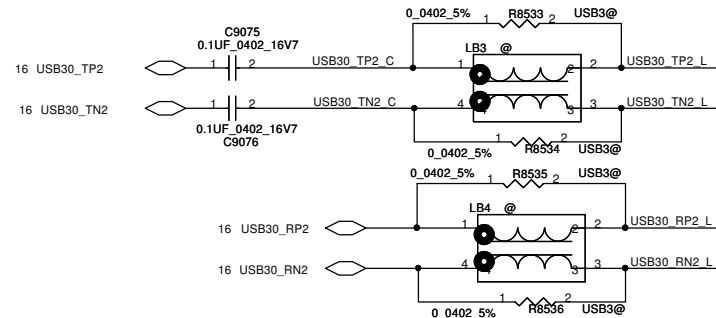
10/25 Change symbol and footprint of D42 from SC300000100 to SC300000000(ESD request)



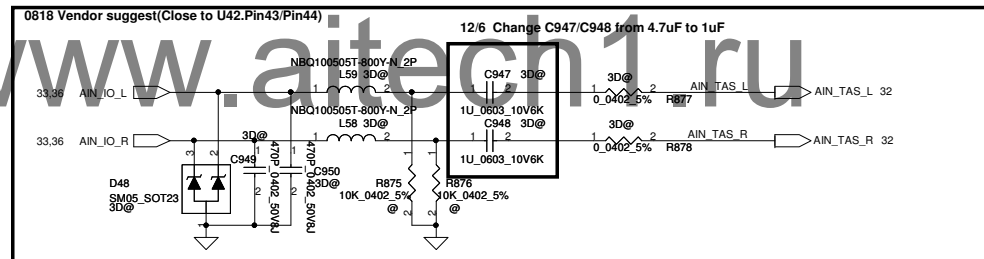
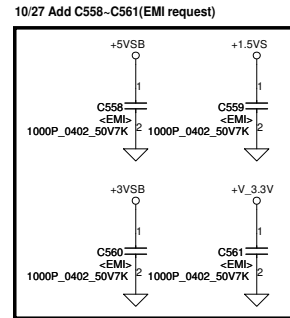
11/2 Change PN of C640 from SF000002Y00 to SF000001G00



10/25 Change symbol and footprint of D43 from SC300000100 to SC300000000(ESD request)



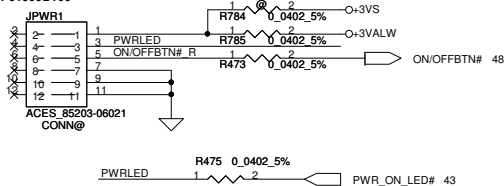
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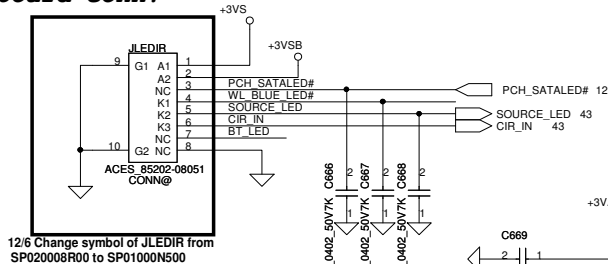
De-Emphasis Control		
DEMT1 (pin 17)	DEMT0 (pin 16)	AUDIO INTERFACE
LOW	LOW	OFF *
LOW	HIGH	48 kHz
HIGH	LOW	44.1 kHz
HIGH	HIGH	32 kHz

Power switch board

12/6 Change symbol of JPWR1 from SP02000U100 to SP01000B100

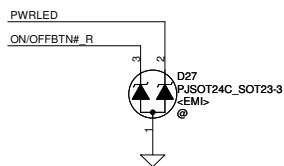


LED board conn.



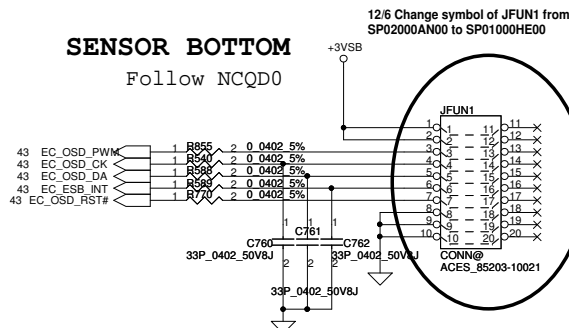
12/6 Change symbol of JLED1R from SP02000B100 to SP01000N500

8/13 Change symbol of D27 to SCA00000E00(EMI Suggest)

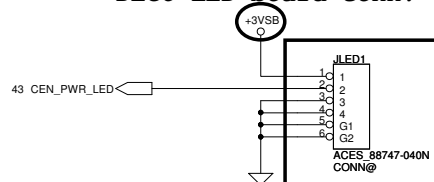


SENSOR BOTTOM

Follow NCQD0

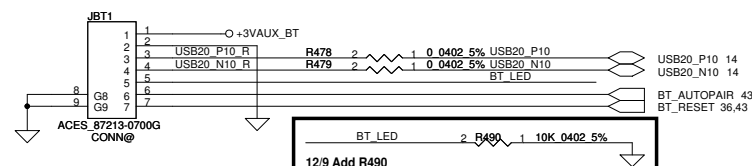


DECO LED board conn.



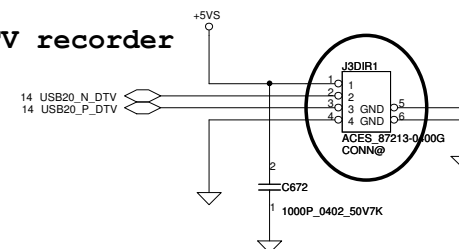
12/6 Change symbol of JLED1 from SP02000PO00 to SP010028400(3pin to 4 pin)

10/26 Change symbol and footprint of JBT1 from SP02000FR00 to SP02000F000

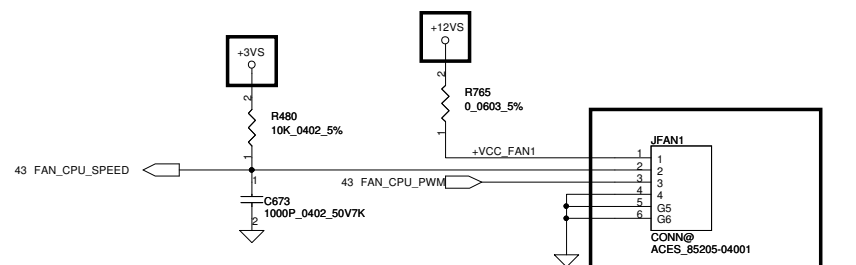


DTV recorder

10/3 Change symbol of J3DIR1 from SP02000B000 to SP02000GC00(置立式 to R/A)

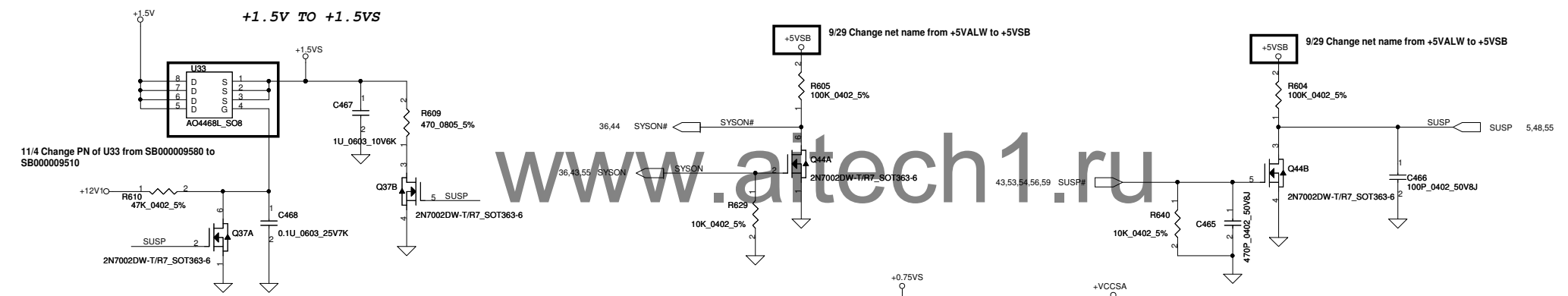
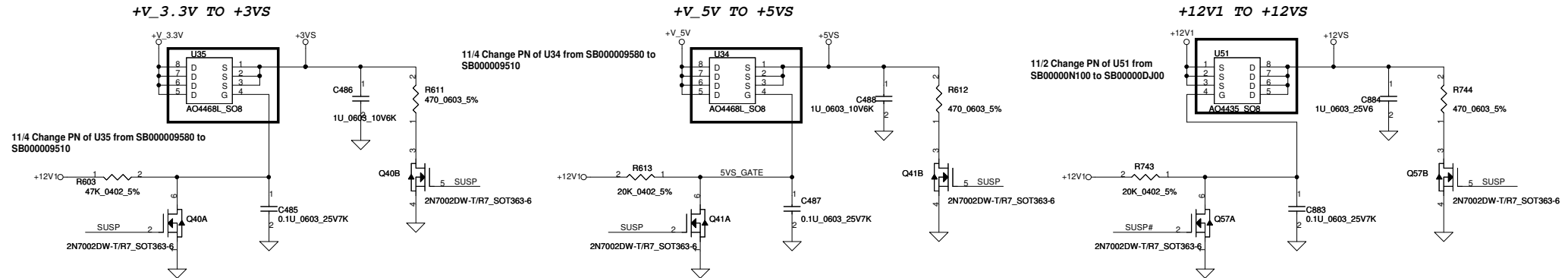


Fan Control circuit

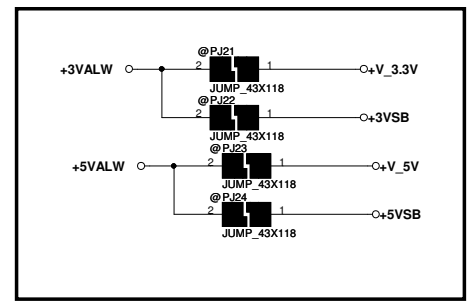
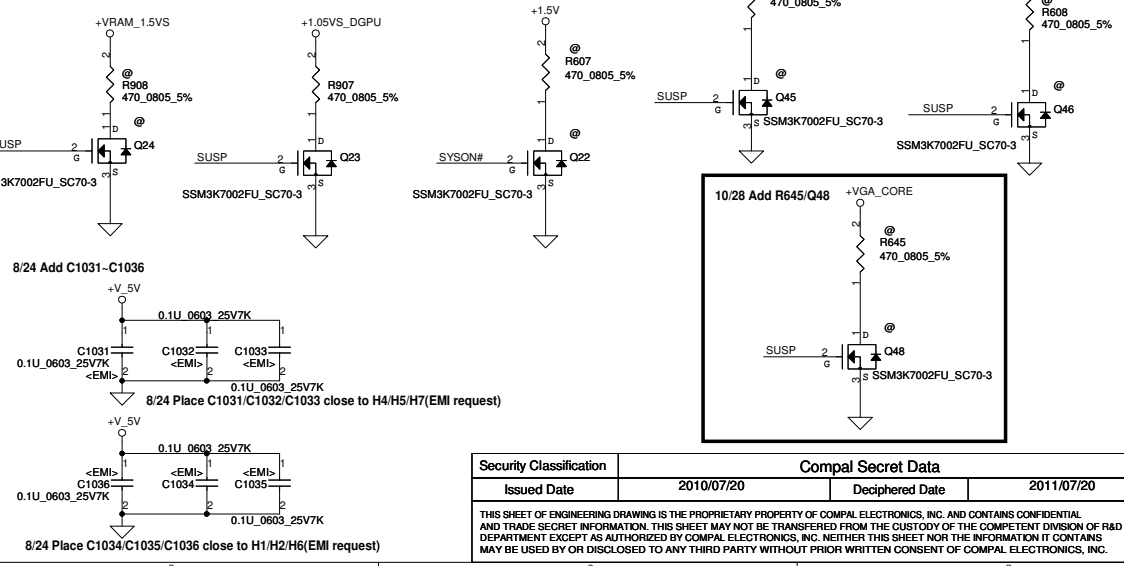
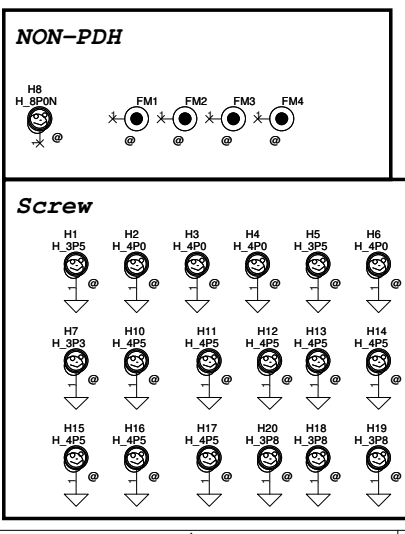


11/29 Change symbol and footprint of JFAN1 from SP02000U900 to SP02000X00

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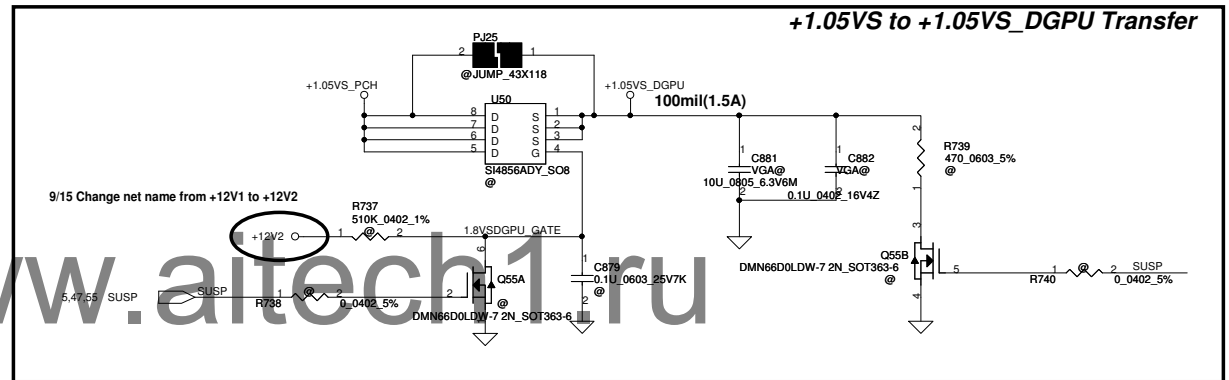
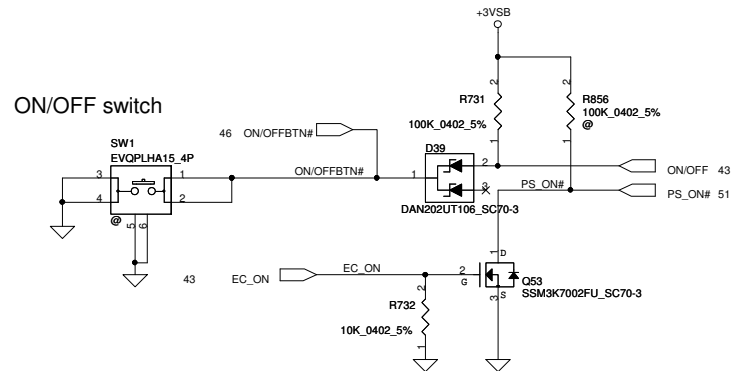


Discharge circuit

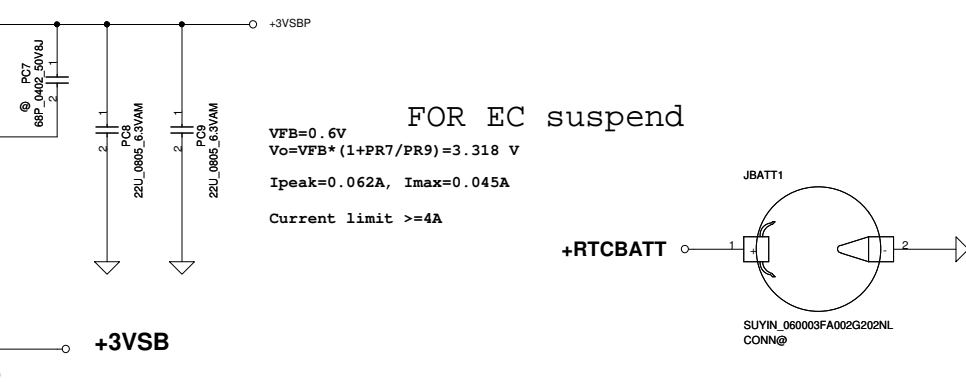
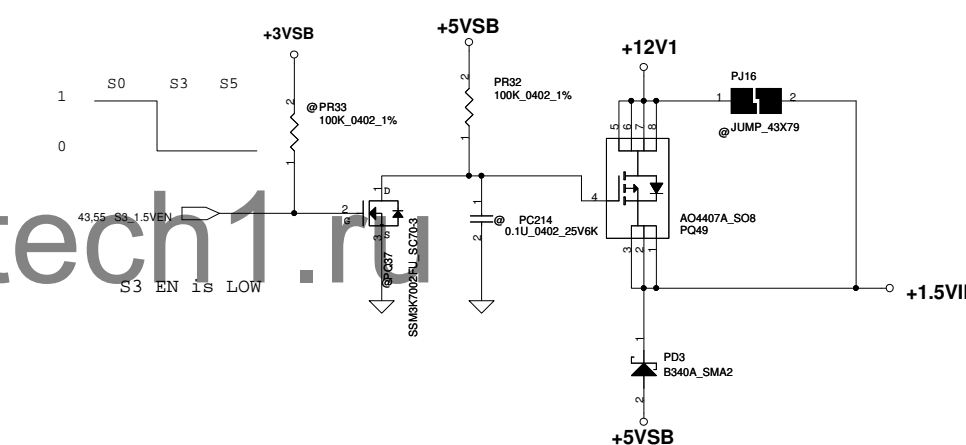
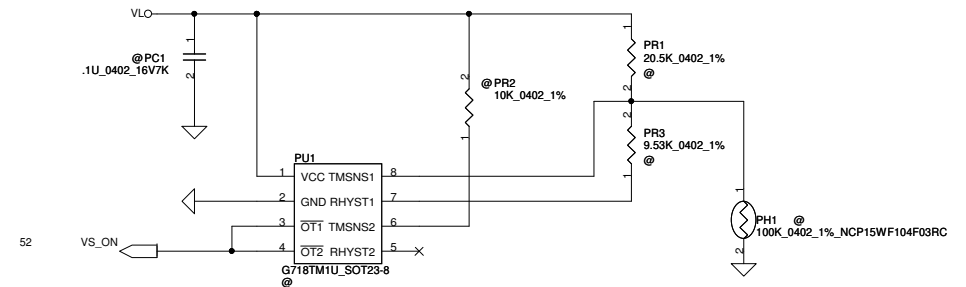
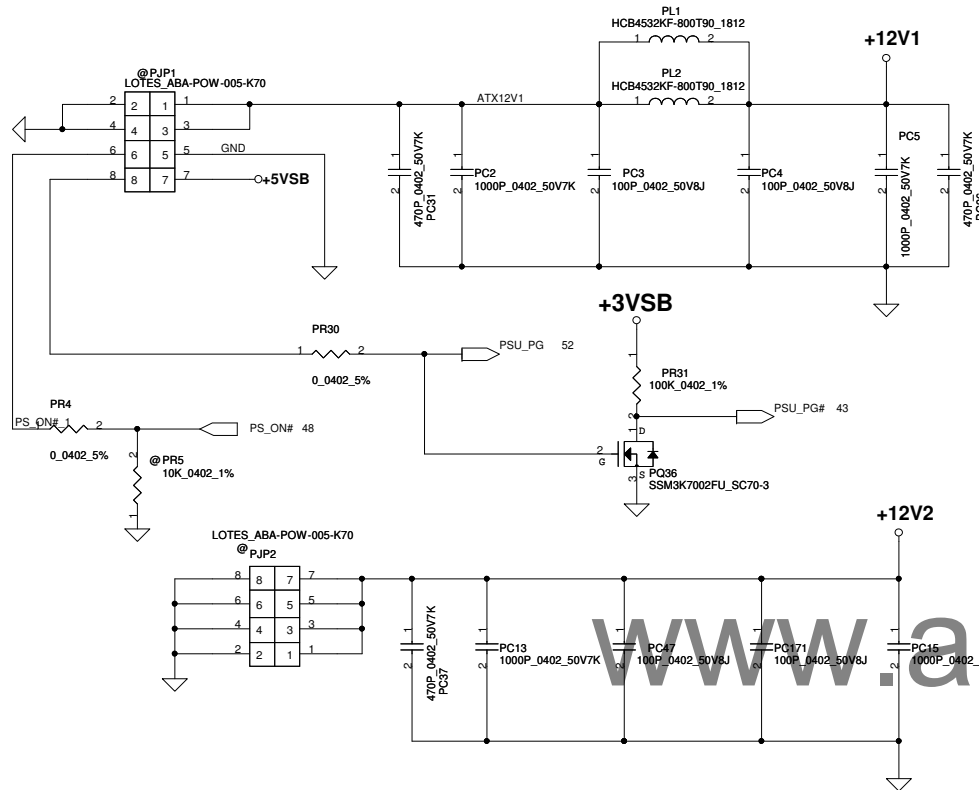


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2010/07/20				2011/07/20				DC Interface/Screw			
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Power Button

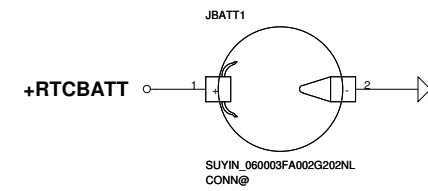


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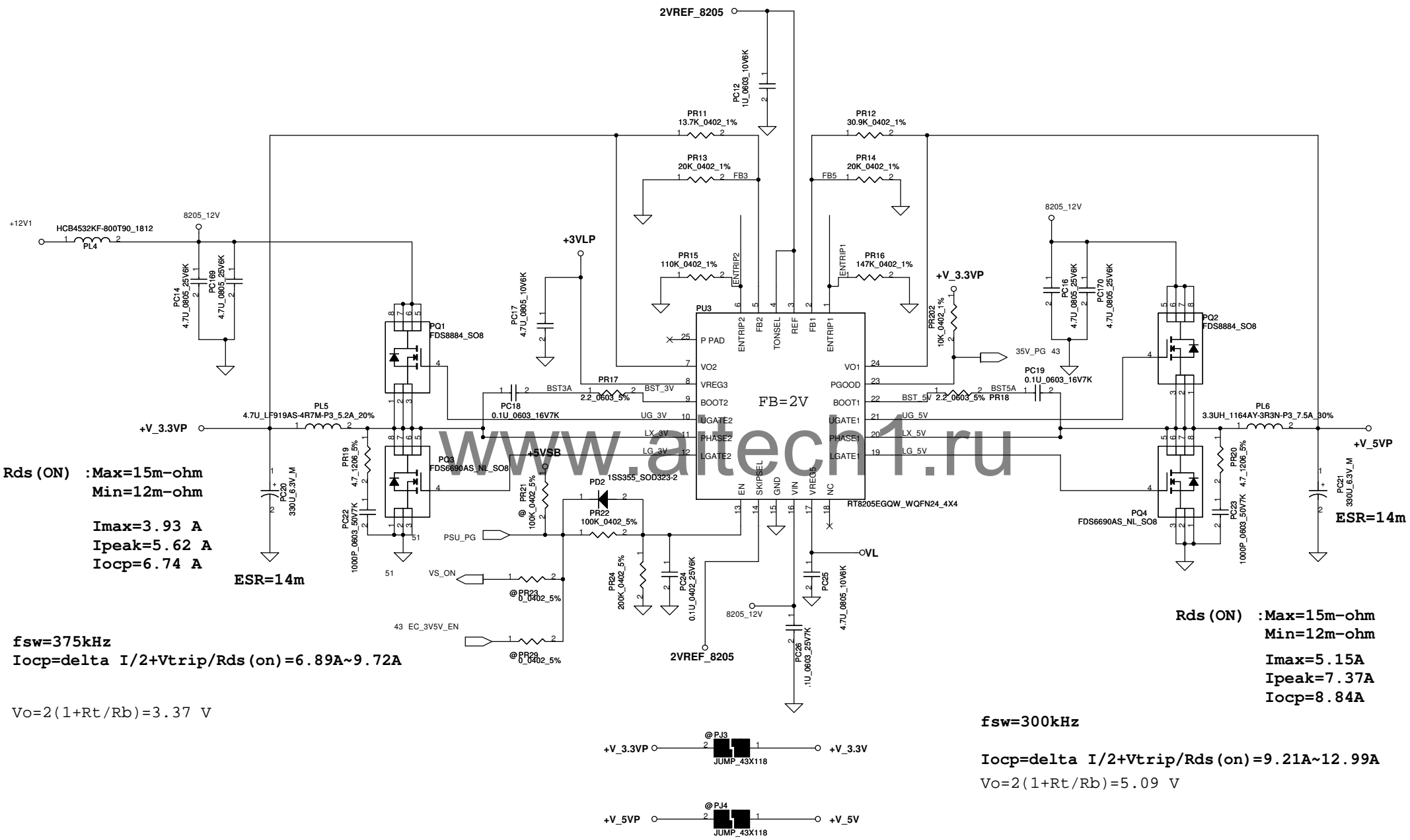


PH1 under CPU bottom side :
CPU thermal protection at 92 degree C
Recovery at 57 degree C

FOR EC suspend
 $V_{FB}=0.6V$
 $V_o=V_{FB} \cdot (1+PR7/PR9)=3.318V$
 $I_{peak}=0.062A, I_{max}=0.045A$
Current limit $\geq 4A$



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Rds (ON) :Max=15m-ohm
Min=12m-ohm

I_{max}=3.93 A
I_{peak}=5.62 A
I_{ocp}=6.74 A

ESR=14m

f_{sw}=375kHz
I_{ocp}=delta I/2+V_{trip}/Rds (on)=6.89A~9.72A

$$V_o = 2(1 + R_t/R_b) = 3.37 \text{ V}$$

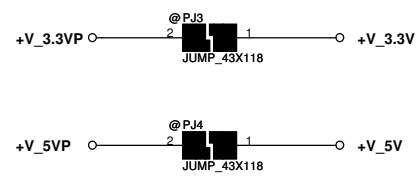
Rds (ON) :Max=15m-ohm
Min=12m-ohm

I_{max}=5.15A
I_{peak}=7.37A
I_{ocp}=8.84A

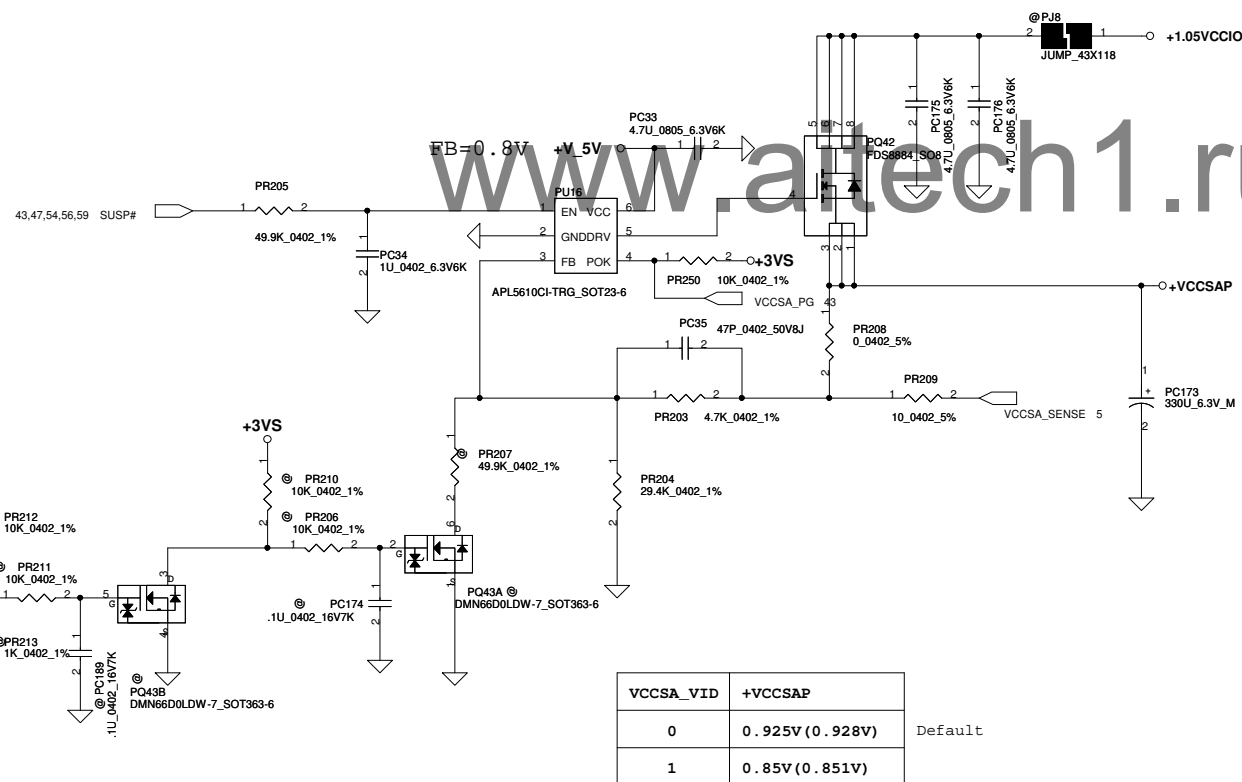
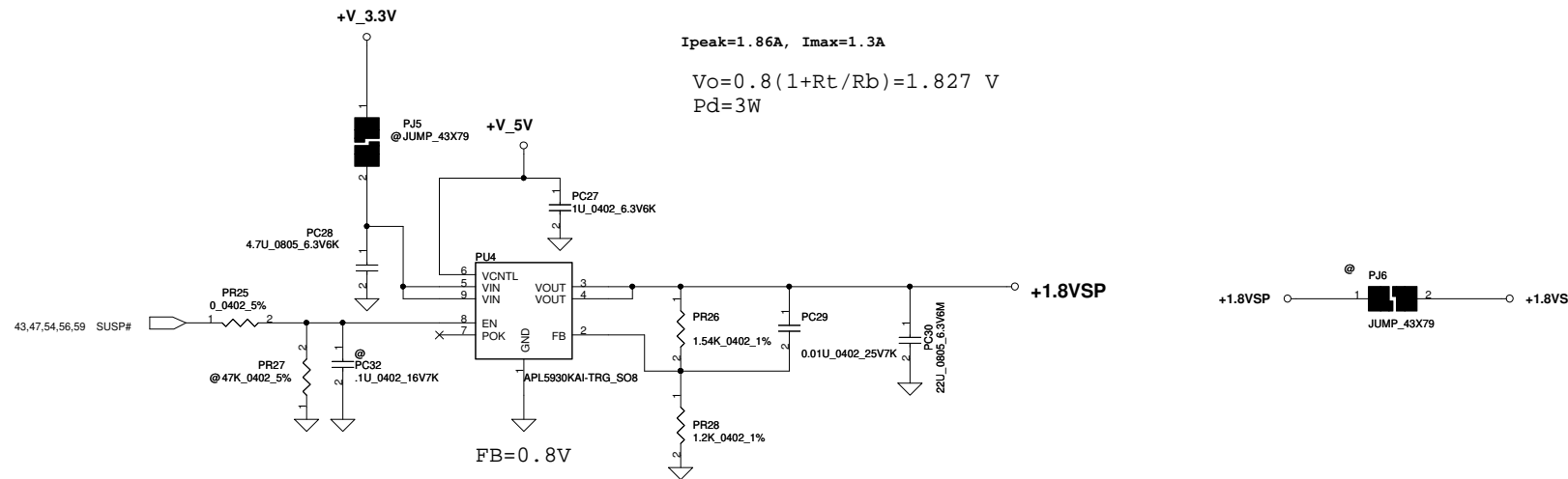
ESR=14m

f_{sw}=300kHz

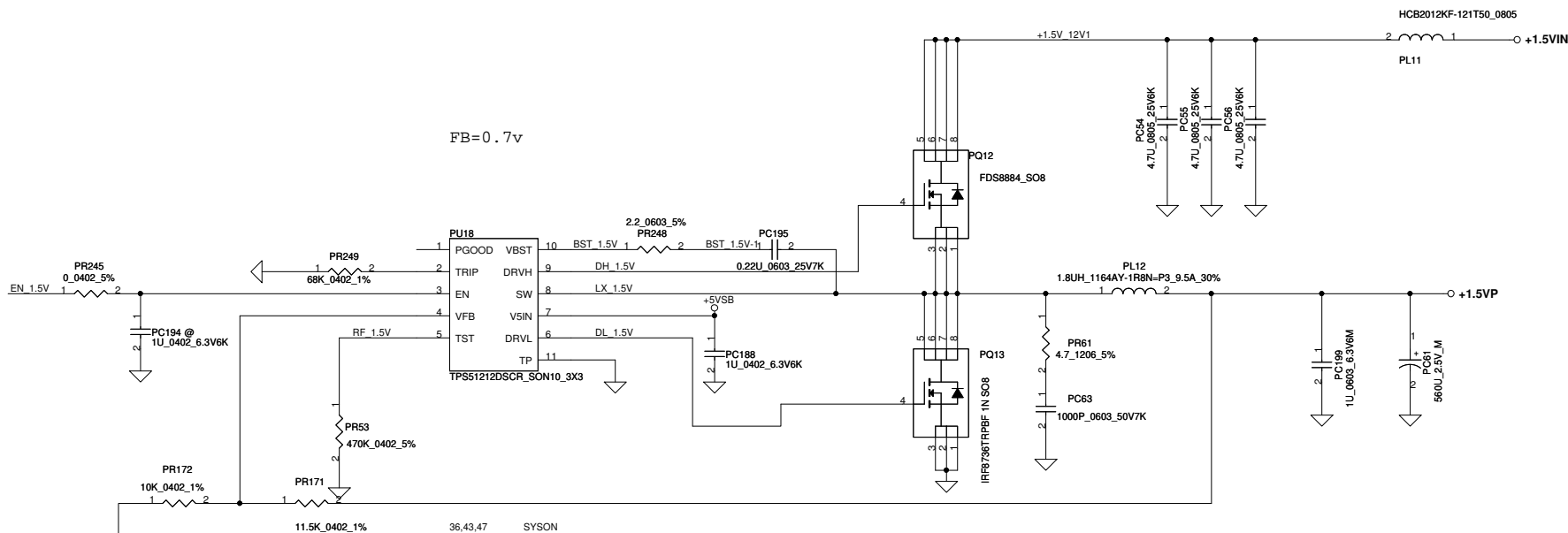
I_{ocp}=delta I/2+V_{trip}/Rds (on)=9.21A~12.99A
V_o=2(1+R_t/R_b)=5.09 V



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VCCSA_VID	+VCCSAP	
0	0.925V (0.928V)	Default
1	0.85V (0.851V)	



F_B=0.7v

+3VSB

I_{max}=0.28A
I_{peak}=0.4A
P_d=1.25w

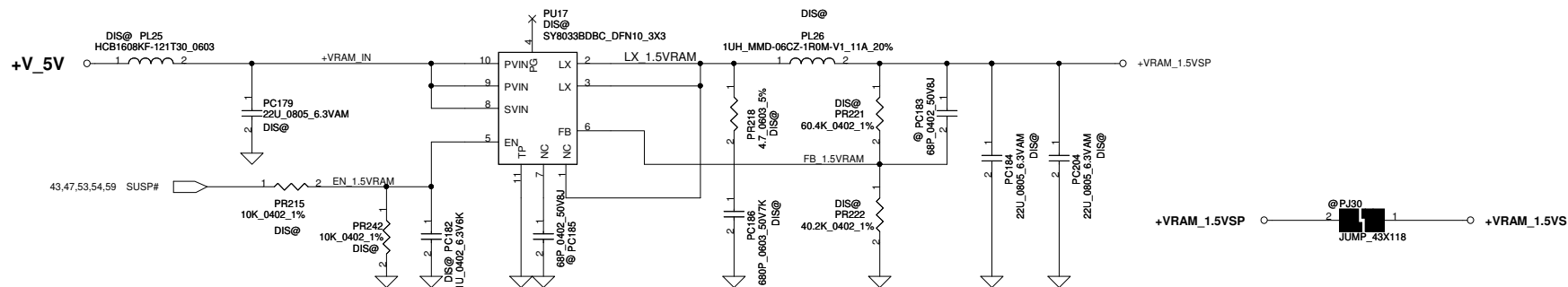
V_{trip} range ==> 0.2V ~ 3V

I_{peak}=10.24A I_{max}=7.168A
 I_{oep} >=1.2*I_{peak}=12.3A

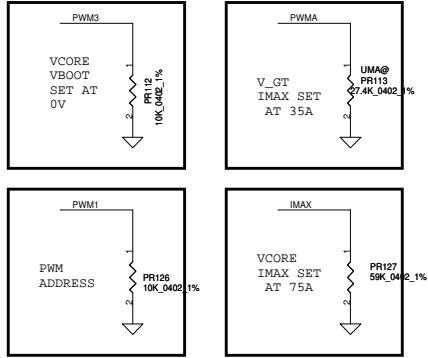
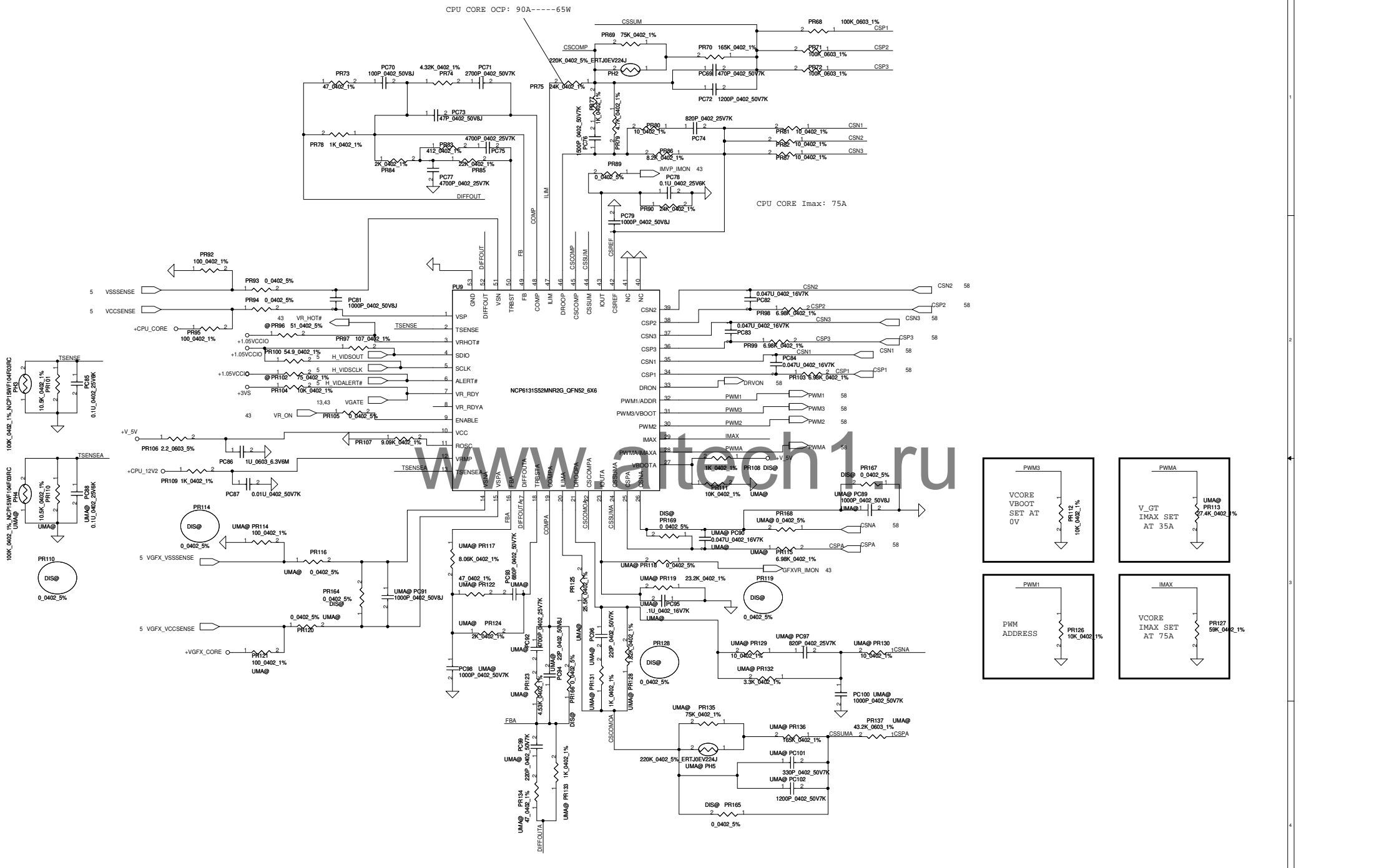
<V_o=1.5V> V_{F_B}=0.7V
 V_o=V_{F_B}*(1+R_{top}/R_{down})=1.505V
 F_{sw}=290 KHz
 C_{out} ESR=15m ohm R_{ds(on)}(max)=6.8m ohm, R_{ds(on)}(typ)=5.5 mohm

Delta I=((19-1.5)*(1.5/19))/(1.8u*290 K)=?? A
 =>1/2Delta I=??A
 V_{trip}=I_{trip}*R_{trip}, I_{oep}=V_{trip}/(8*R_{ds(on)})
 I_{oep}max=((95.3K*11uA)/(8*0.0055))+1.3233A=??A
 I_{oep}min=((95.3K*9uA)/(8*0.0068))+1.3233A=??A
 I_{oep}=12.5A~18.2A

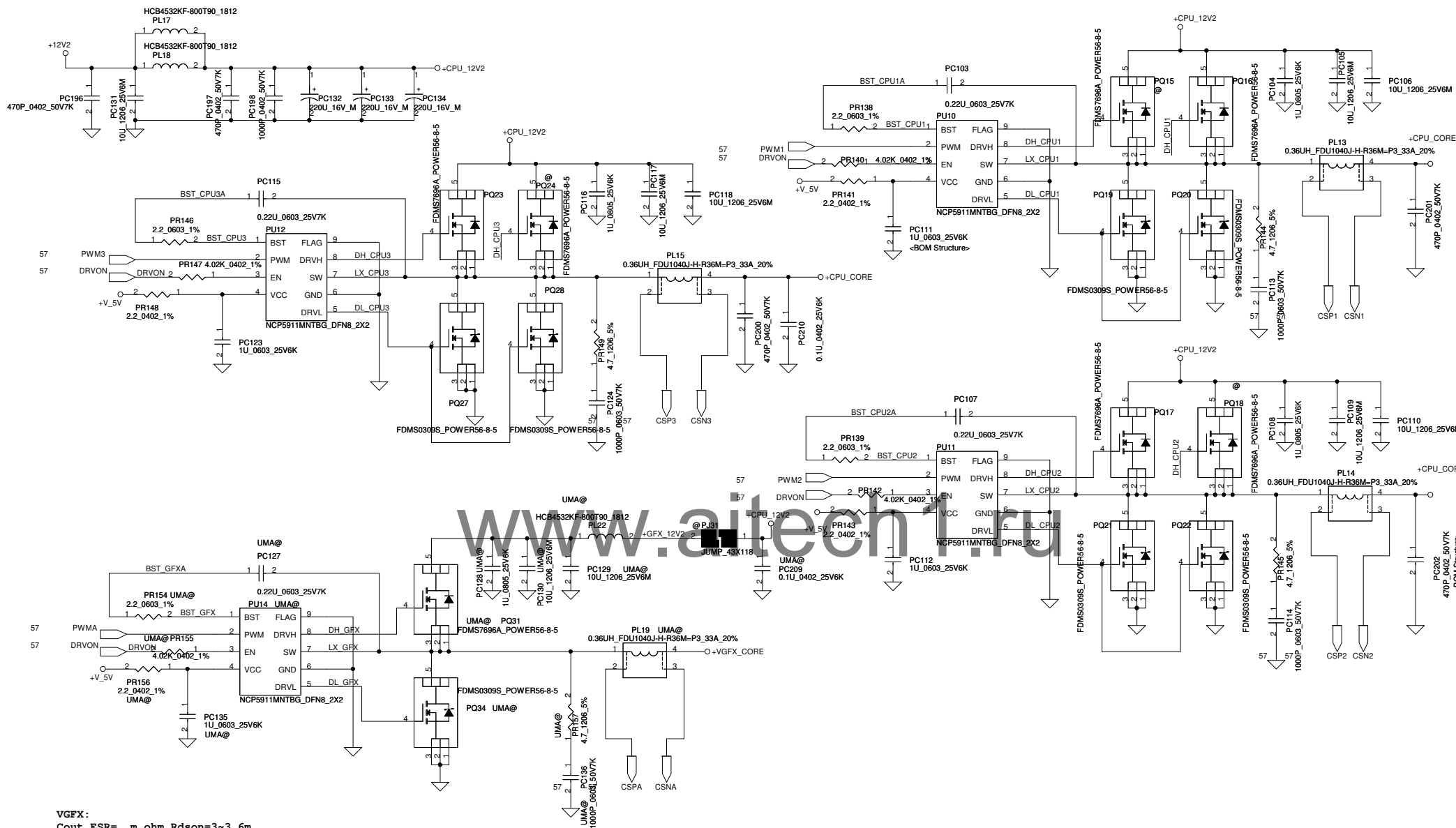
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VGFX:
 Cout=220*18+ 390u 10m*4+560u 10m*3 +330u 9m*3 +560u 15m*2
 Rdson=3~3.6m
 Ipeak=35 A, Imax=25 A
 Delta I=7A

OCF= 40 A

CPU_CORE:
 Cout=220*18+ 390u 10m*4+560u 10m*3 +330u 9m*3 +560u 15m*2
 Rdson=3~3.6m
 Ipeak= A, Imax=85 A
 F=338k hz
 Delta I=

OCF= 135 A

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