

NDU00/NDU10

Streamline-S 11.6"

Streamline-M 13.3"

LA-6031P REV 1.0 Schematic

Intel Arrandale SFF/IBEX PEAK

2010-04-12 Rev 1.0

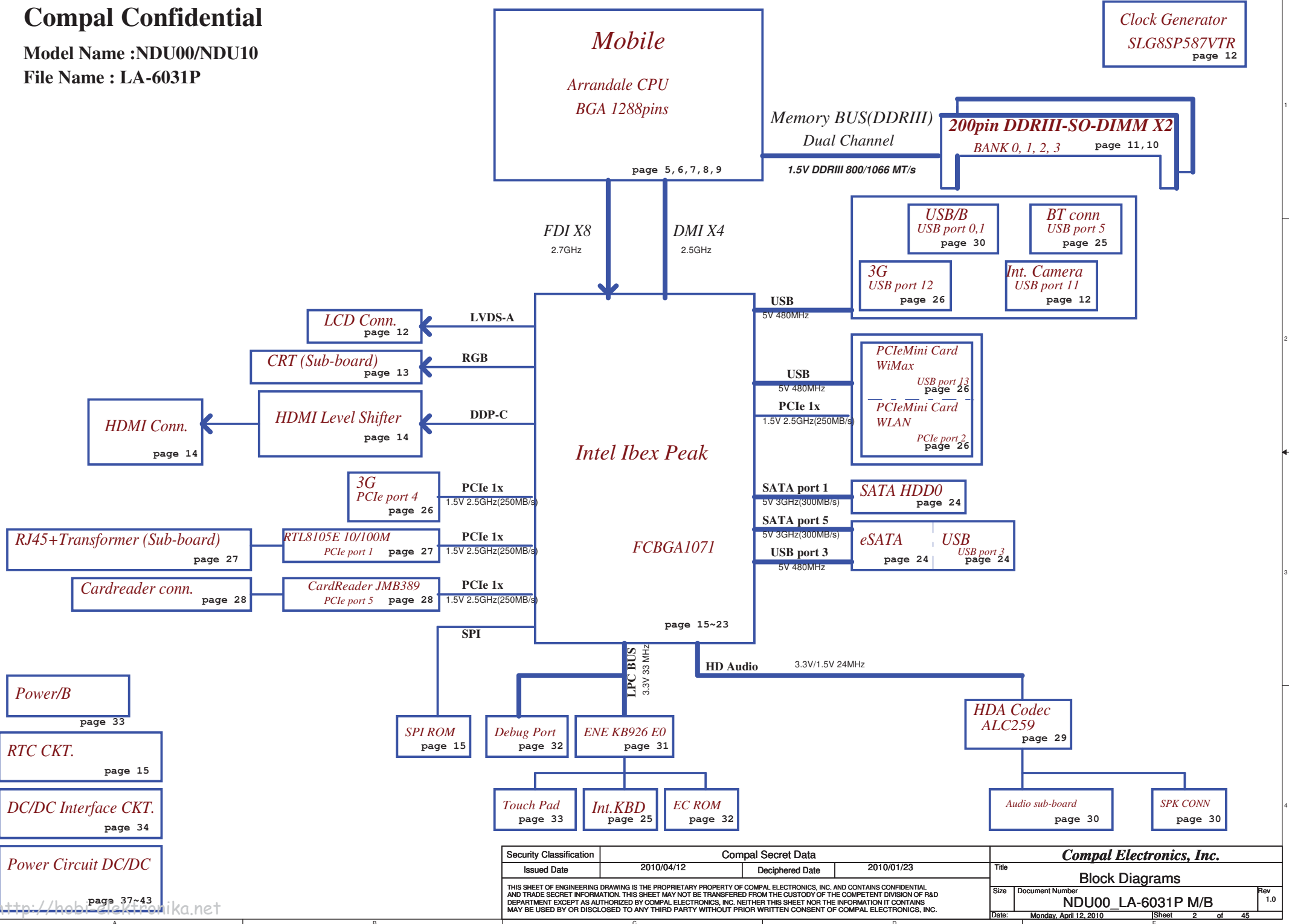
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Issued Date	2010/04/12	Deciphered Date	2010/01/23	Title	
				Cover Page	
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				Date: Monday, April 12, 2010	Rev 1.0
				Sheet 1	of 45

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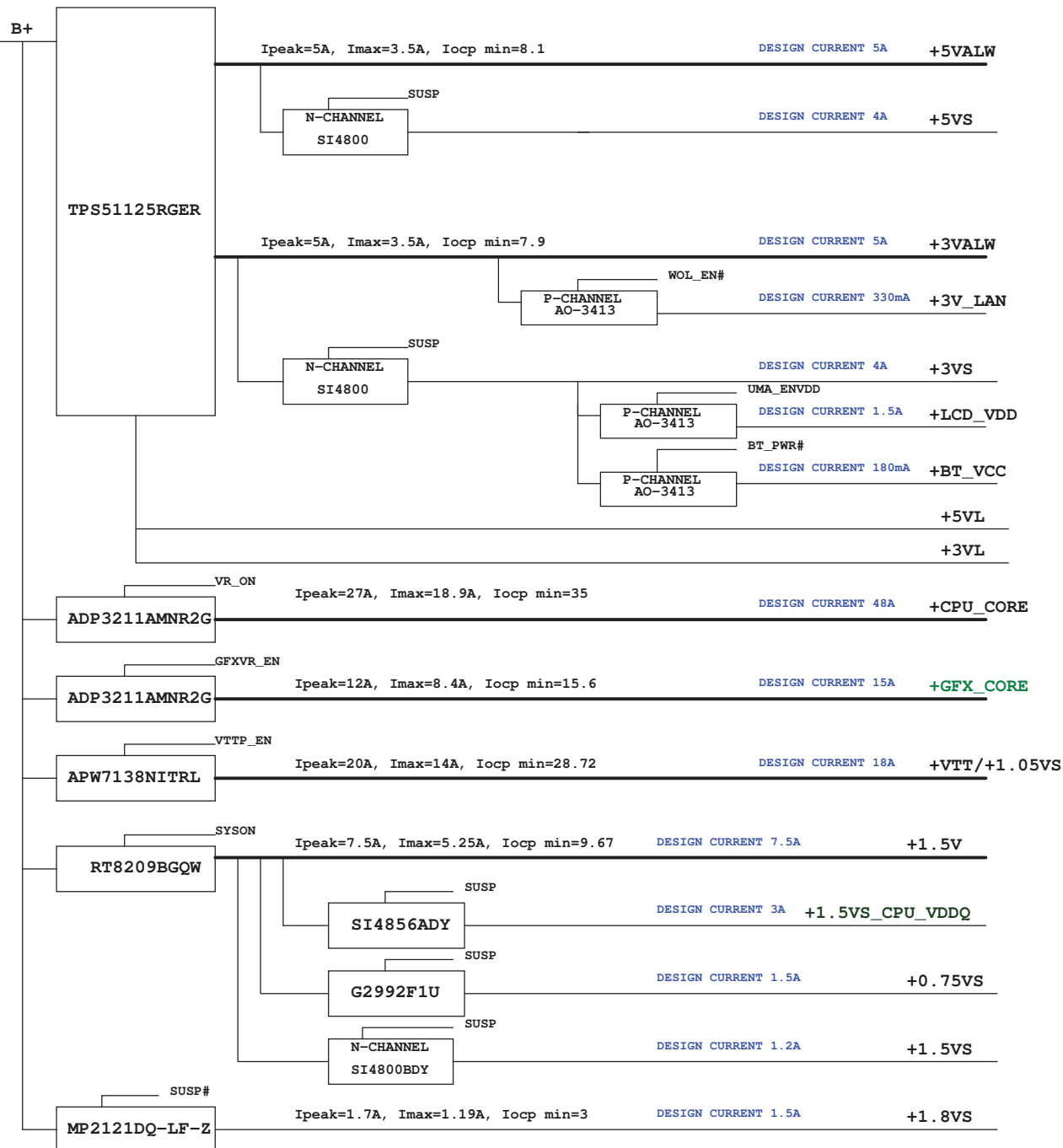
Model Name :NDU00/NDU10

File Name : LA-6031P

Clock Generator
SLG8SP587VTR
page 12



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Size		Document Number		Rev	
		NDU00_LA-6031P M/B		1.0	
Date		Monday, April 12, 2010		Sheet 2 of 45	



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					NDU00_LA-6031P M/B
				Date:	Monday, April 12, 2010
				Sheet	3 of 45
				Rev	1.0

Voltage Rails (O MEANS ON X MEANS OFF)

power plane State	+RTCVCC	+B +5VL +3VL	+5VALW +3VALW	+1.5V	+5VS +3VS +1.5VS +GFX_CORE +CPU_CORE +VTT +0.75VS +1.8VS +1.5VS_CPU_VDDQ
S0	O	O	O	O	O
S1	O	O	O	O	O
S3	O	O	O	O	X
S5 S4/AC	O	O	O	X	X
S5 S4/ Battery only	O	O	X	X	X
S5 S4/AC & Battery don't exist	O	X	X	X	X

BTO Option Table

Function	Bluetooth	HDMI	3G	Mini Card	Mini Card	Gensor	
explain	Bluetooth	HDMI	3G	WIRELESS	WIMAX	main	2nd
						R5F211B4D31SP	R5F211B4D34SP
BTO	BT@	IHDMI@	3G@	WLAN@	WIMAX@	GSENSOR@ 1STGSENSOR@ 1ST@	GSENSOR@ 2NDGSENSOR@ 2ND@

STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#
Full ON		HIGH	HIGH	HIGH
S1 (Power On Suspend)		HIGH	HIGH	HIGH
S3 (Suspend to RAM)		LOW	HIGH	HIGH
S4 (Suspend to Disk)		LOW	LOW	HIGH
S5 (Soft OFF)		LOW	LOW	LOW
G3		LOW	LOW	LOW

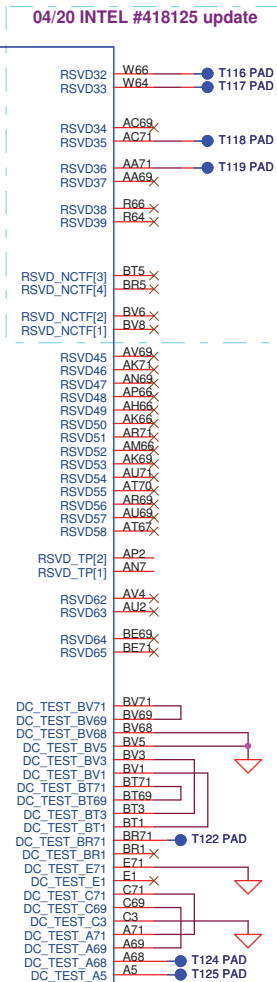
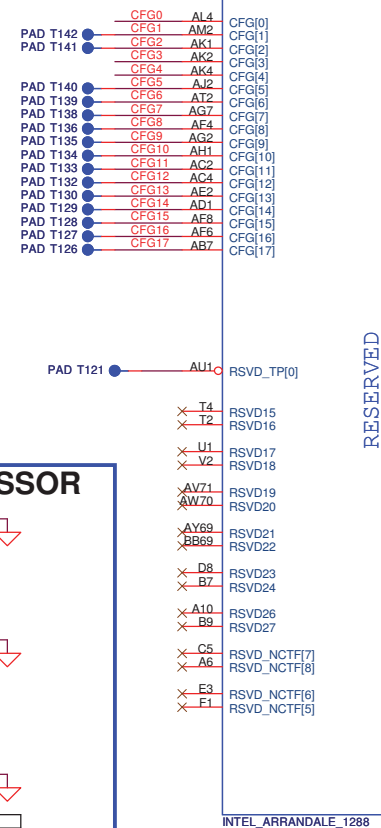
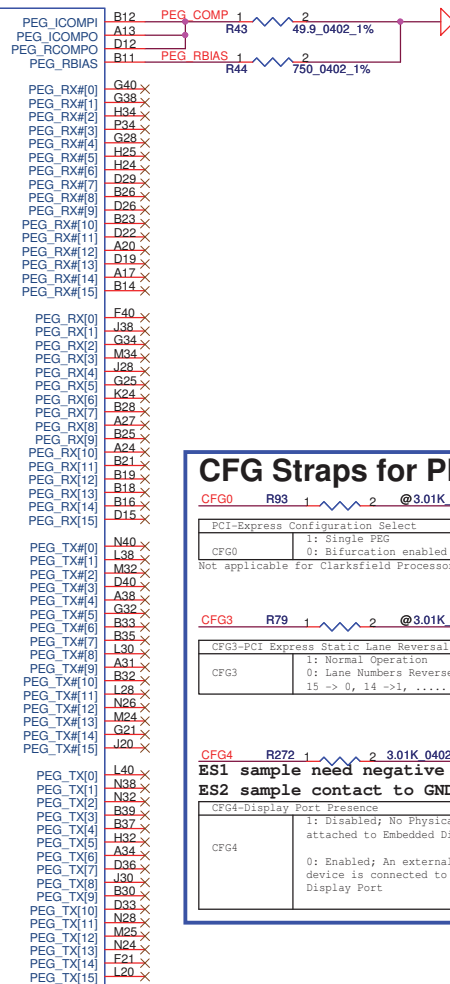
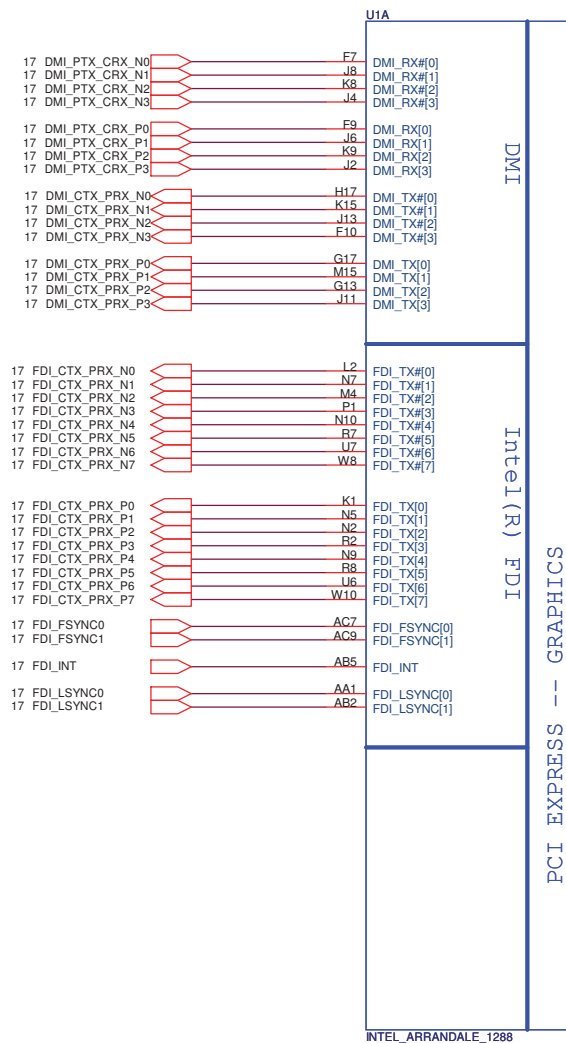
EC SM Bus1 address EC SM Bus2 address

Power	Device	Address	Power	Device	Address
+3VL	EC KB926 D3		+3VS	EC KB926 D3	
+3VL	Smart Battery	0001 011x b	+3VS	Gensor	
			+3VS	PCH	0100 110x b

PCH SM Bus address

Power	Device	Address
+3VALW	PCH	
+3VS	Clock Generator	1101 001x b
+3VS	DDR DIMM0	1001 000x b
+3VS	DDR DIMM1	1001 010x b
+3VS	WLAN/Wimax/3G	

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				Size Custom	Document Number NDU00_LA-6031P M/B Date: Monday, April 12, 2010
				Rev 1.0	Sheet 4 of 45



CFG Straps for PROCESSOR

CFG0 R93 1 2 @3.01K 0402 1%

PCI-Express Configuration Select	
CFG0	1: Single PEG 0: Bifurcation enabled

Not applicable for Clarksfield Processor

CFG3 R79 1 2 @3.01K 0402 1%

CFG3-PCI Express Static Lane Reversal	
CFG3	1: Normal Operation 0: Lane Numbers Reversed 15 -> 0, 14 -> 1,

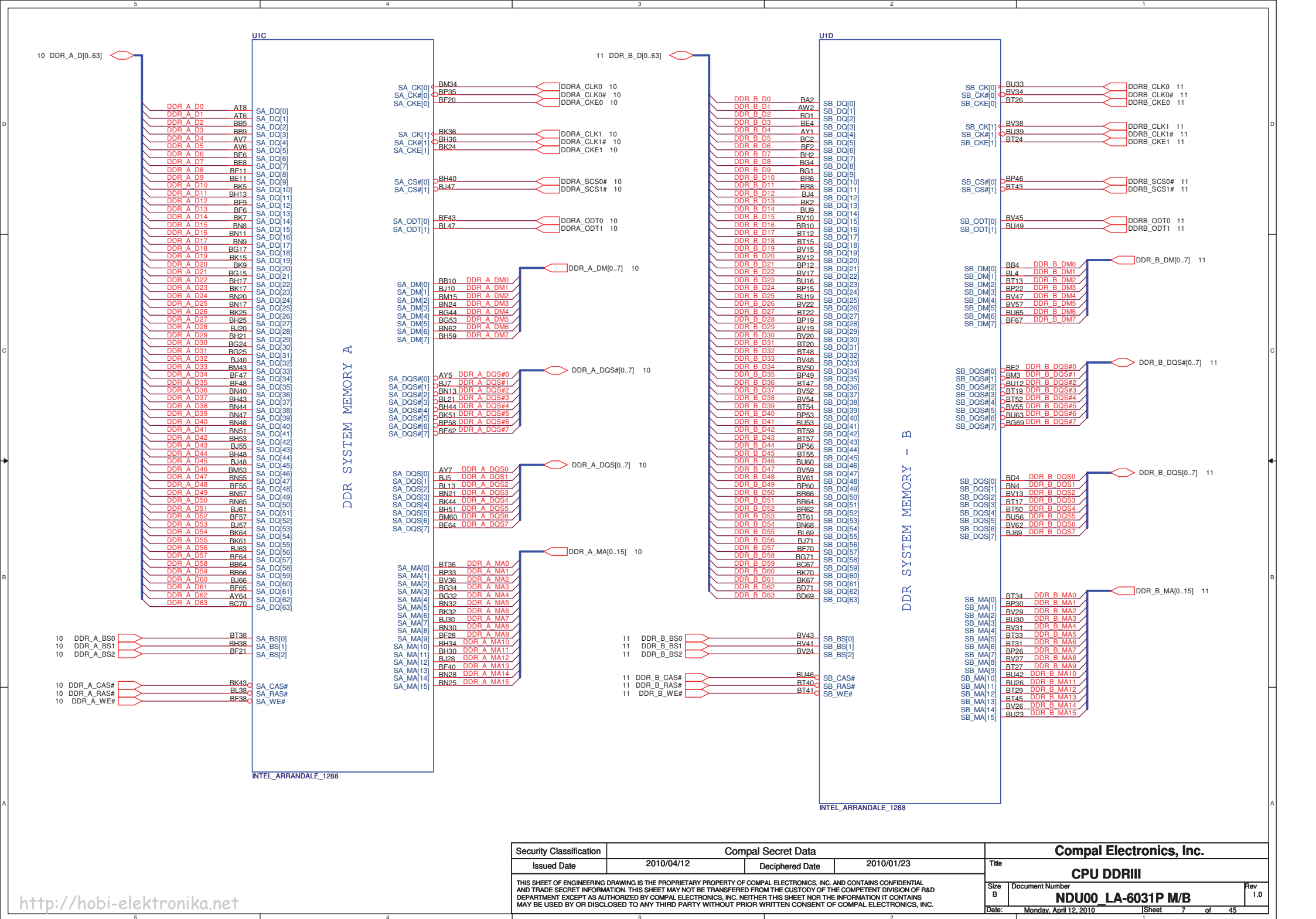
CFG4 R272 1 2 3.01K 0402 1%

ES1 sample need negative voltage

ES2 sample contact to GND

CFG4-Display Port Presence	
CFG4	1: Disabled; No Physical Display Port attached to Embedded Display Port
	0: Enabled; An external Display Port device is connected to the Embedded Display Port

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				NDU00 LA-6031P M/B		
				Date:	Monday, April 12, 2010	Sheet 6 of 45





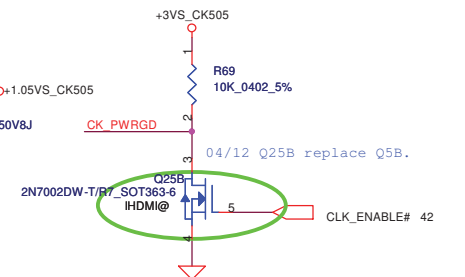
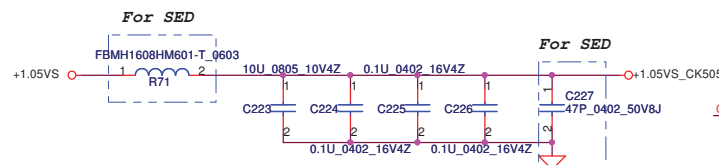
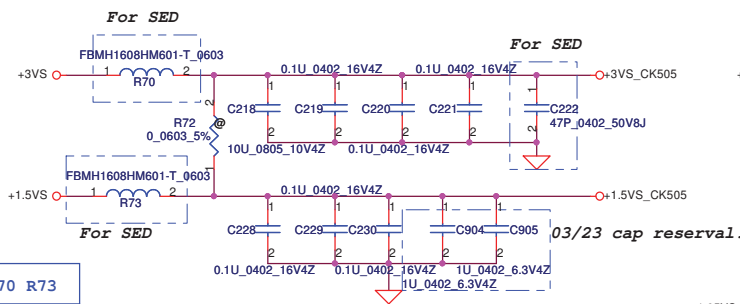
U11		AY24
BU62	VSS90	AY23
BU58	VSS91	AY21
BU55	VSS92	AY19
BU51	VSS93	AY17
BU48	VSS94	AY15
BU44	VSS95	AY14
BU37	VSS96	AY12
BU32	VSS97	AY8
BU25	VSS98	AY4
BU21	VSS99	AW67
BU18	VSS100	AW59
BU14	VSS101	AW55
BU11	VSS102	AW51
BU7	VSS103	AW48
BP42	VSS104	AW44
BN6	VSS105	AW40
BM70	VSS106	AW37
BM51	VSS107	AW33
BM44	VSS108	AW24
BM2	VSS109	AW19
BM17	VSS110	AW12
BL57	VSS111	AW7
BL52	VSS112	AH15
BL48	VSS113	AH12
BL42	VSS114	AH10
BL28	VSS115	AH9
BL20	VSS116	AH8
BK63	VSS117	AH7
BK60	VSS118	AH6
BK53	VSS119	AH5
BK34	VSS120	AH4
BK10	VSS121	AH3
BJ64	VSS122	AH2
BJ21	VSS123	AH1
BJ8	VSS124	AG64
BH70	VSS125	AG62
BH67	VSS126	AG61
BH54	VSS127	AG59
BH45	VSS128	AG57
BH42	VSS129	AG55
BH34	VSS130	AG54
BH20	VSS131	AG53
BH15	VSS132	AG52
BG51	VSS133	AG51
BG36	VSS134	AG50
BG2	VSS135	AG49
BF30	VSS136	AG48
BF13	VSS137	AG47
BF8	VSS138	AG46
BE70	VSS139	AG45
BE65	VSS140	AG44
BE1	VSS141	AG43
BD57	VSS142	AG42
BD53	VSS143	AG41
BD40	VSS144	AG40
BD42	VSS145	AG39
BD29	VSS146	AG38
BD14	VSS147	AG37
BD71	VSS148	AG36
BD62	VSS149	AG35
BD57	VSS150	AG34
BD53	VSS151	AG33
BD40	VSS152	AG32
BD42	VSS153	AG31
BD29	VSS154	AG30
BD14	VSS155	AG29
BD71	VSS156	AG28
BD62	VSS157	AG27
BD57	VSS158	AG26
BD53	VSS159	AG25
BD40	VSS160	AG24
BD42	VSS161	AG23
BD29	VSS162	AG22
BD14	VSS163	AG21
BD71	VSS164	AG20
BD62	VSS165	AG19
BD57	VSS166	AG18
BD53	VSS167	AG17
BD40	VSS168	AG16
BD42	VSS169	AG15
BD29	VSS170	AG14
BD14	VSS171	AG13
BD71	VSS172	AG12
BD62	VSS173	AG11
BD57	VSS174	AG10
BD53	VSS175	AG9
BD40	VSS176	AG8
BD42	VSS177	AG7
BD29	VSS178	AG6
BD14	VSS179	AG5
BD71	VSS180	AG4
BD62	VSS181	AG3
BD57	VSS182	AG2
BD53	VSS183	AG1
BD40	VSS184	AG0
BD42	VSS185	AG-1
BD29	VSS186	AG-2
BD14	VSS187	AG-3
BD71	VSS188	AG-4
BD62	VSS189	AG-5
BD57	VSS190	AG-6
BD53	VSS191	AG-7
BD40	VSS192	AG-8
BD42	VSS193	AG-9
BD29	VSS194	AG-10
BD14	VSS195	AG-11
BD71	VSS196	AG-12
BD62	VSS197	AG-13
BD57	VSS198	AG-14
BD53	VSS199	AG-15
BD40	VSS200	AG-16
BD42	VSS201	AG-17
BD29	VSS202	AG-18
BD14	VSS203	AG-19
BD71	VSS204	AG-20
BD62	VSS205	AG-21
BD57	VSS206	AG-22
BD53	VSS207	AG-23
BD40	VSS208	AG-24
BD42	VSS209	AG-25
BD29	VSS210	AG-26
BD14	VSS211	AG-27
BD71	VSS212	AG-28
BD62	VSS213	AG-29
BD57	VSS214	AG-30
BD53	VSS215	AG-31
BD40	VSS216	AG-32
BD42	VSS217	AG-33
BD29	VSS218	AG-34
BD14	VSS219	AG-35
BD71	VSS220	AG-36

U1J		
AH53	VSS202	VSS404
AH51	VSS203	VSS405
AH48	VSS204	VSS406
AH44	VSS205	VSS407
AH40	VSS206	VSS408
AH37	VSS207	VSS409
AH33	VSS208	VSS410
AH29	VSS209	VSS411
AH26	VSS210	VSS412
AH23	VSS211	VSS413
AH20	VSS212	VSS414
AH17	VSS213	VSS415
AH14	VSS214	VSS416
AH11	VSS215	VSS417
AH8	VSS216	VSS418
AH5	VSS217	VSS419
AH2	VSS218	VSS420
AG64	VSS219	VSS421
AG61	VSS220	VSS422
AG58	VSS221	VSS423
AG55	VSS222	VSS424
AG52	VSS223	VSS425
AG49	VSS224	VSS426
AG46	VSS225	VSS427
AG43	VSS226	VSS428
AG40	VSS227	VSS429
AG37	VSS228	VSS430
AG34	VSS229	VSS431
AG31	VSS230	VSS432
AG28	VSS231	VSS433
AG25	VSS232	VSS434
AG22	VSS233	VSS435
AG19	VSS234	VSS436
AG16	VSS235	VSS437
AG13	VSS236	VSS438
AG10	VSS237	VSS439
AG7	VSS238	VSS440
AG4	VSS239	VSS441
AG1	VSS240	VSS442
AG-2	VSS241	VSS443
AG-5	VSS242	VSS444
AG-8	VSS243	VSS445
AG-11	VSS244	VSS446
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AG-20	VSS247	VSS449
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AG-32	VSS251	VSS453
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AG-53	VSS258	VSS460
AG-56	VSS259	VSS461
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AG-62	VSS261	VSS463
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AG-221	VSS314	VSS516
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AG-557	VSS426	VSS628
AG-560	VSS427	VSS629
AG-563	VSS428	VSS630
AG-566	VSS429	VSS631
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AG-737	VSS486	VSS688
AG-740	VSS487	VSS689
AG-743	VSS488	VSS690
AG-746	VSS489	VSS691
AG-749	VSS490	VSS692
AG-752	VSS491	VSS693
AG-755	VSS492	VSS694
AG-758	VSS493	VSS695
AG-761	VSS494	VSS696
AG-764	VSS495	VSS697
AG-767	VSS496	VSS698
AG-770	VSS497	VSS699
AG-773	VSS498	VSS700
AG-776	VSS499	VSS701
AG-779	VSS500	VSS702
AG-782	VSS501	VSS703
AG-785	VSS502	VSS704
AG-788	VSS503	VSS705
AG-791	VSS504	VSS706
AG-794	VSS505	VSS707
AG-797	VSS506	VSS708
AG-800	VSS507	VSS709
AG-803	VSS508	VSS710
AG-806	VSS509	VSS711
AG-809	VSS510	VSS712
AG-812	VSS511	VSS713
AG-815	VSS512	VSS714
AG-818	VSS513	VSS715
AG-821	VSS514	VSS716
AG-824	VSS515	VSS717
AG-827	VSS516	VSS718
AG-830	VSS517	VSS719
AG-833	VSS518	VSS720
AG-836	VSS519	VSS721
AG-839	VSS520	VSS722
AG-842	VSS521	VSS723
AG-845	VSS522	VSS724
AG-848	VSS523	VSS725
AG-851	VSS524	VSS726
AG-854	VSS525	VSS727
AG-857	VSS526	VSS728
AG-860	VSS527	VSS729
AG-863	VSS528	VSS730
AG-866	VSS529	VSS731
AG-869	VSS530	VSS732
AG-872	VSS531	VSS733
AG-875	VSS532	VSS734
AG-878	VSS533	VSS735
AG-881	VSS534	VSS736
AG-884	VSS535	VSS737
AG-887	VSS536	VSS738
AG-890	VSS537	VSS739
AG-893	VSS538	VSS740
AG-896	VSS539	VSS741
AG-899	VSS540	VSS742
AG-902	VSS541	VSS743
AG-905	VSS542	VSS744
AG-908	VSS543	VSS745
AG-911	VSS544	VSS746
AG-914	VSS545	VSS747
AG-917	VSS546	VSS748
AG-920	VSS547	VSS749
AG-923	VSS548	VSS750
AG-926	VSS549	VSS751
AG-929	VSS550	VSS752
AG-932	VSS551	VSS753
AG-935	VSS552	VSS754
AG-938	VSS553	VSS755
AG-941	VSS554	VSS756
AG-944	VSS555	VSS757
AG-947	VSS556	VSS758
AG-950	VSS557	VSS759
AG-953	VSS558	VSS760
AG-956	VSS559	VSS761
AG-959	VSS560	VSS762
AG-962	VSS561	VSS763
AG-965	VSS562	VSS764
AG-968	VSS563	VSS765
AG-971	VSS564	VSS766
AG-974	VSS565	VSS767
AG-977	VSS566	VSS768
AG-980	VSS567	VSS769
AG-983	VSS568	VSS770
AG-986	VSS569	VSS771
AG-989	VSS570	VSS772
AG-992	VSS571	VSS773
AG-995	VSS572	VSS774
AG-998	VSS573	VSS775
AG-1001	VSS574	VSS776
AG-1004	VSS575	VSS777
AG-1007	VSS576	VSS778
AG-1010	VSS577	VSS779
AG-1013	VSS578	VSS780
AG-1016	VSS579	VSS781
AG-1019	VSS580	VSS782
AG-1022	VSS581	VSS783
AG-1025	VSS582	VSS784
AG-1028	VSS583	VSS785
AG-1031	VSS584	VSS786
AG-1034	VSS585	VSS787
AG-1037	VSS586	VSS788
AG-1040	VSS587	VSS789
AG-1043	VSS588	VSS790
AG-1046	VSS589	VSS791
AG-1049	VSS590	VSS792
AG-1052	VSS591	



Clock Generator

Clock gen	R72	R70 R73
RTM	no-mount	mount
IDT		



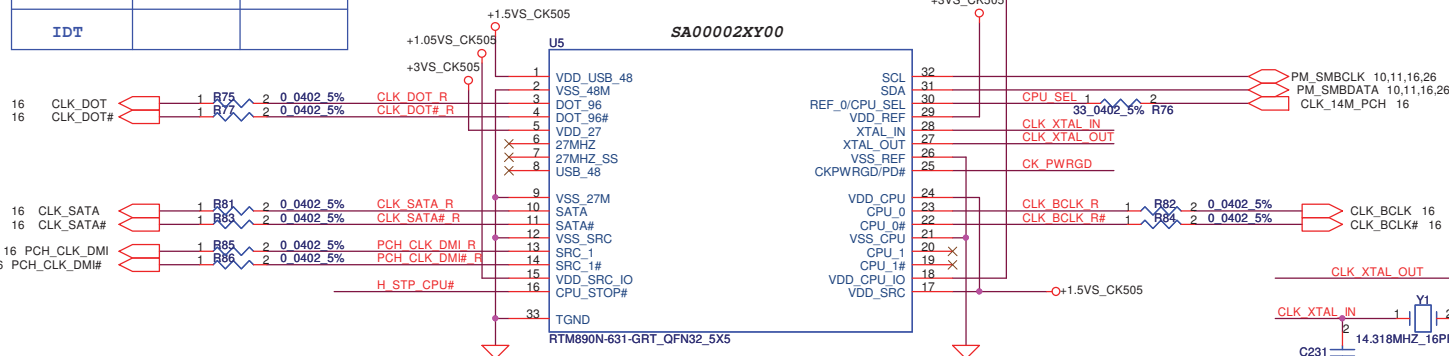
Silego Have Internal Pull-Up

H_STP_CPU# 10K_0402_5% 2 1 R74

IDT Have Internal Pull-Down

10K_0402_5% 2 1 R78

CPU_SEL	CPU_0/0#	CPU_1/1#
0 (Default)	133MHz	133MHz
1	100MHz	100MHz



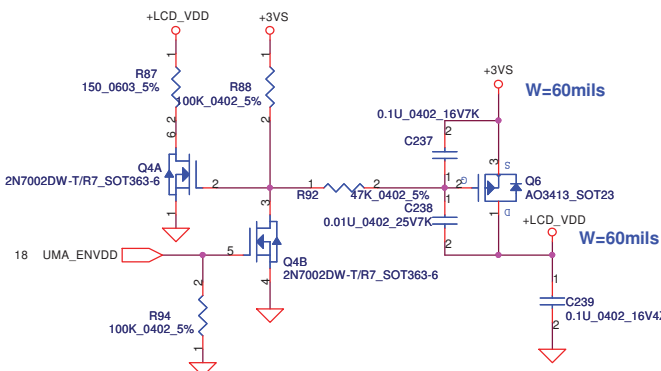
CLK_14M_PCH

33P_0402_50V8K

Routing the trace at least 10mil

For SED

LCD/PANEL BD. Conn.



CRT CONNECTOR

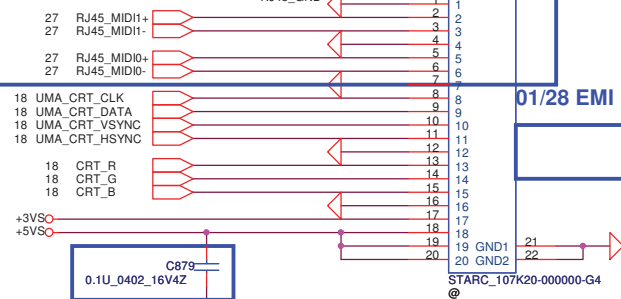
12/14 Fine tune pin define JP1 Pin1 Pin2 Pin8-->GND

12/21 pin 2,3 to RJ45_GND

12/22 Fine tune JP4 pin define

02/08 update connector footprint.

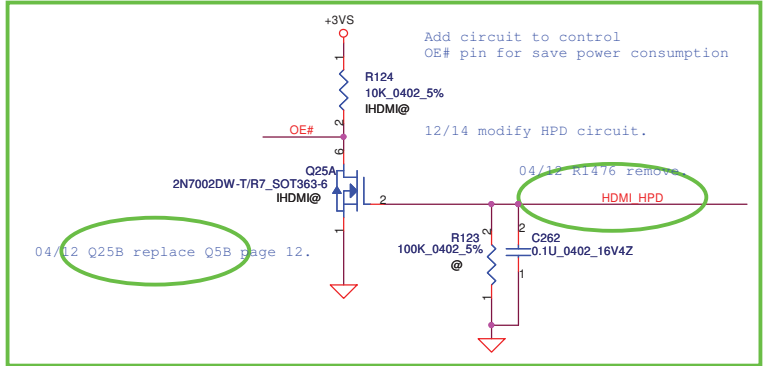
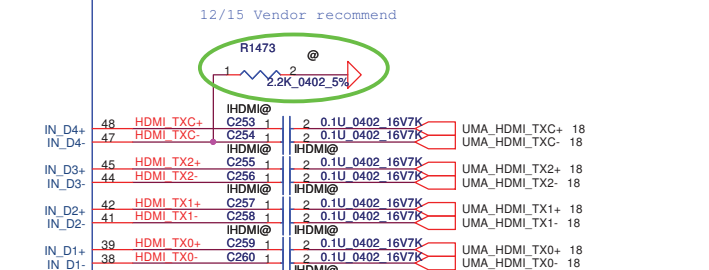
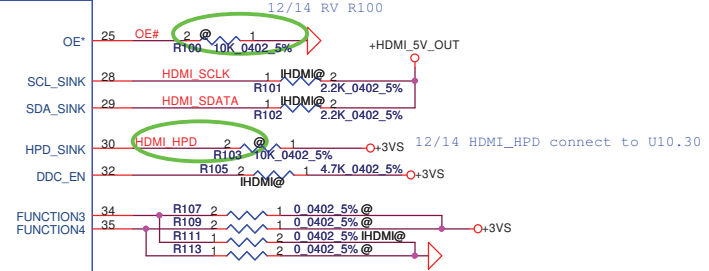
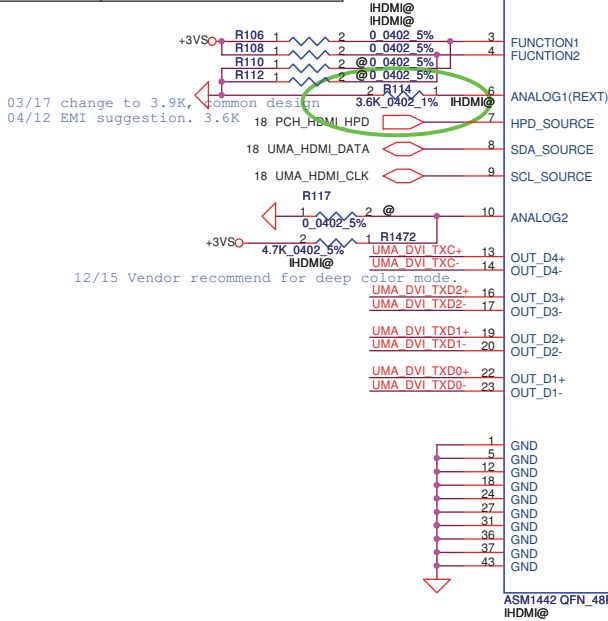
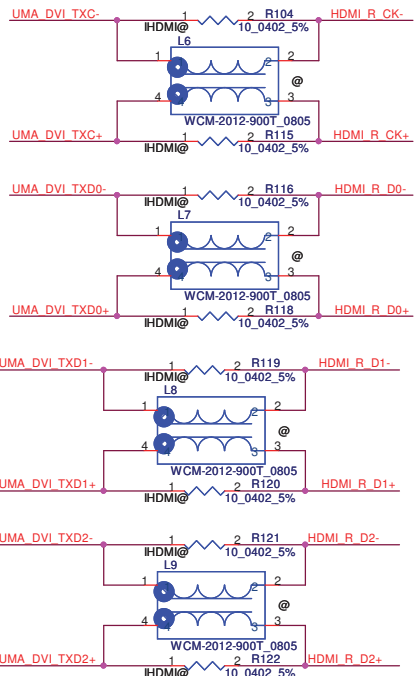
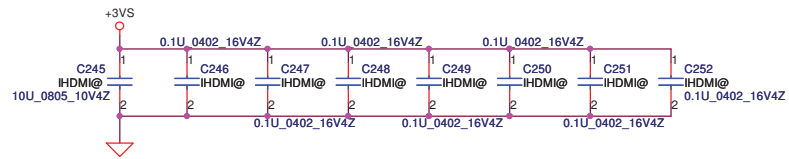
12/21 transformer on board.



12/17 EMI request.

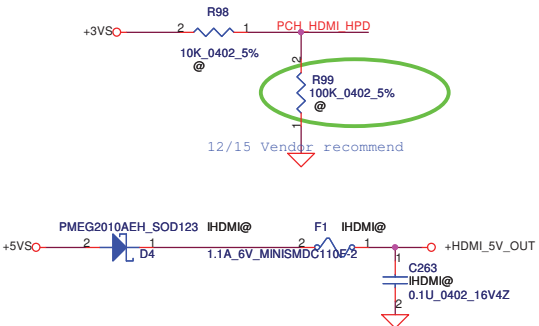
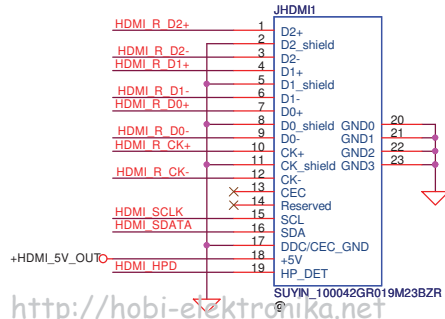
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Issued Date	2010/04/12	Deciphered Date	2010/01/23	Title	
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				Date:	Monday, April 12, 2010
				Sheet	13 of 45
				Rev	1.0

ANALOG2	Function2	Function1	Swing	Pre-Amp	Slew-rate	Note
Low	Low	Low	450	0	0	
Low	Low	High	420	0	-3dB	Shortest trace
Low	High	Low	450	0	-3dB	Shortest trace
Low	High	High	460	0	-4dB	Streamline PVT2 setting
High	Low	Low	340	0	0	
High	Low	High	400	2dB	0	Longest Trace
High	High	Low	400	2dB	0	Longest Trace
High	High	High	420	0	0	

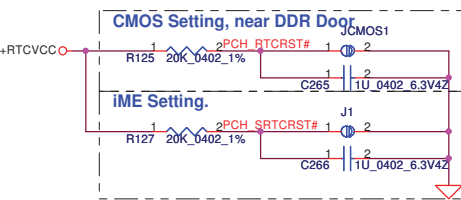


HDMI Connector

<01/27 update HDMI Connector >



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Issued Date		2010/04/12		Deciphered Date		2010/01/23			
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				HDMI Connector					
				Size		Document Number		Rev	
						NDU00 LA-6031P M/B		1.0	
Date:		Monday, April 12, 2010		Sheet		14 of 45			



Integrated SUS 1.05V VRM Enable

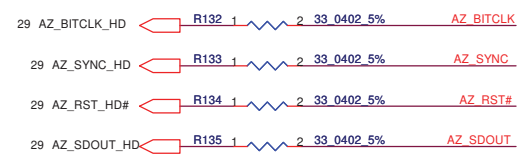
PCH_INTVRMEN	High - Enable Internal VRs (must be always pulled high)
--------------	---

HDA_SYNC
This signal has a weak internal pull down.
H=>On Die PLL is supplied by 1.5V
L=>On Die PLL is supplied by 1.8V

HDA_SDO
This signal has a weak internal pull down.
This signal can't PU

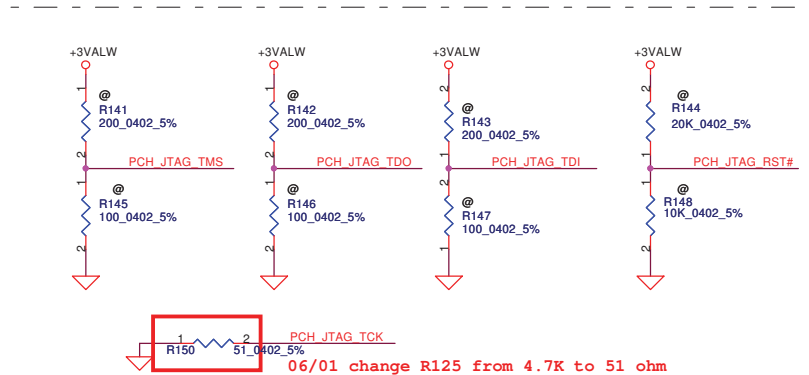
Flash Descriptor Security Override

HDA_DOCK_EN#	Low = Enabled High = Disabled *
--------------	------------------------------------



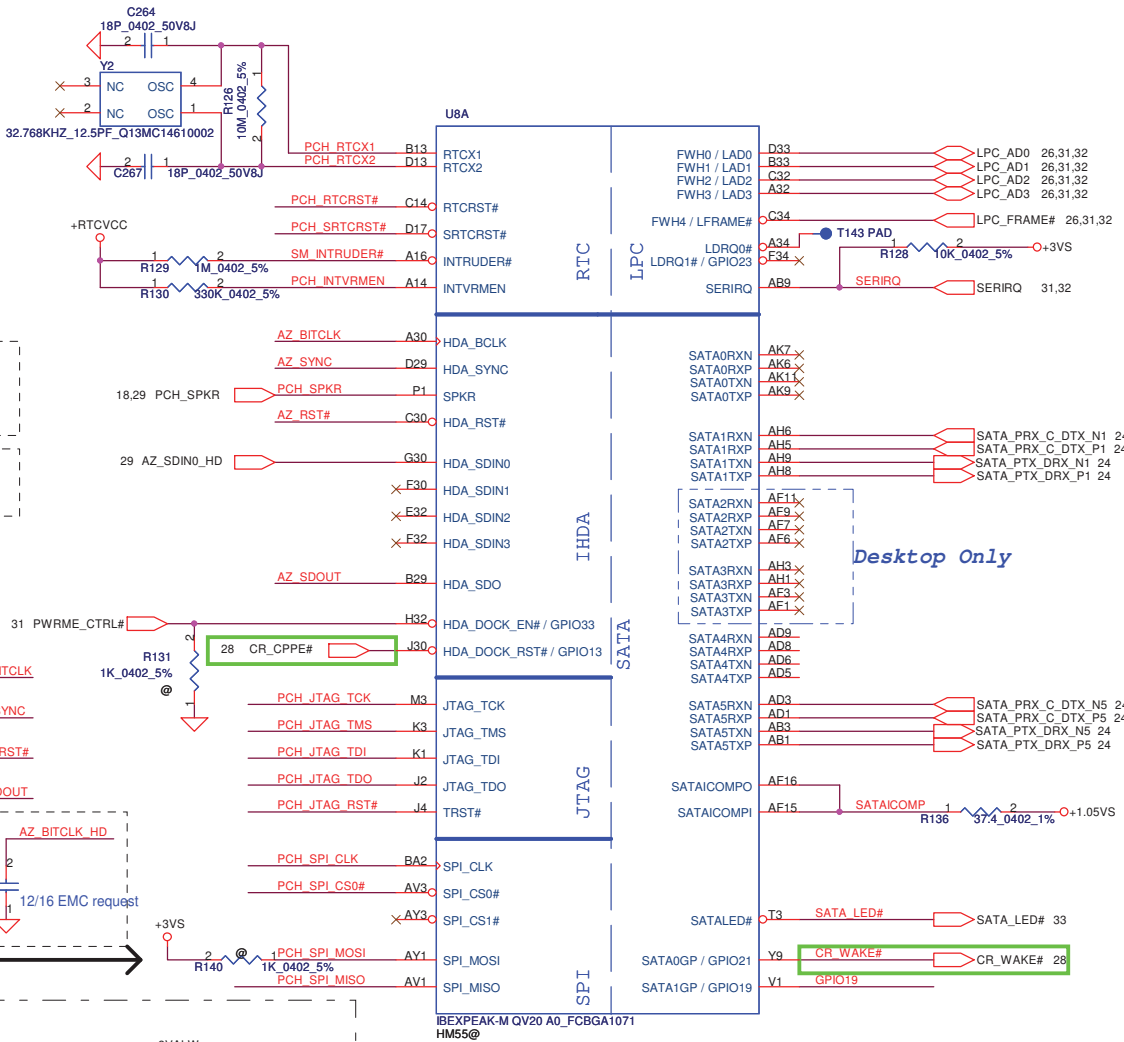
ITPM Enabled Internal: Pull down 20k

SPI_MOSI	High = Enabled Low = Disabled (Default)
----------	--



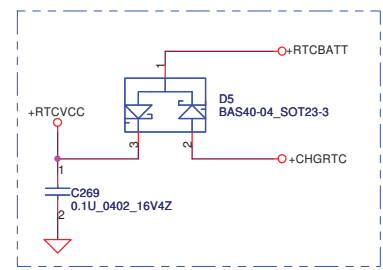
06/01 change R125 from 4.7K to 51 ohm

PCH Pin	RefDes	PCH JTAG Enable		PCH JTAG Disable (Default)	
		ES1	ES2	ES1	ES2
PCH_JTAG_TDO	R358	No Install	200ohm	No Install	No Install
PCH_JTAG_TMS	R355	No Install	100ohm	No Install	No Install
PCH_JTAG_TDI	R354	100ohm	100ohm	No Install	No Install
PCH_JTAG_TDO	R356	200ohm	200ohm	20kohm	No Install
PCH_JTAG_TDI	R537	100ohm	100ohm	10kohm	No Install
PCH_JTAG_TCK	R156	51ohm	51ohm	51ohm	51ohm
PCH_JTAG_RST#	R643	20kohm	20kohm	No Install	No Install
PCH_JTAG_RST#	R643	20kohm	20kohm	No Install	No Install

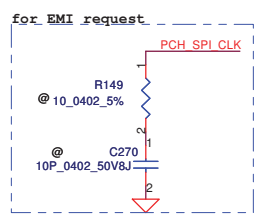
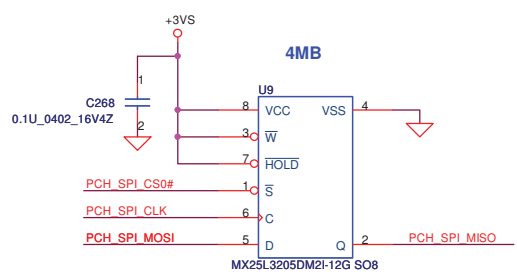


1ST HDD

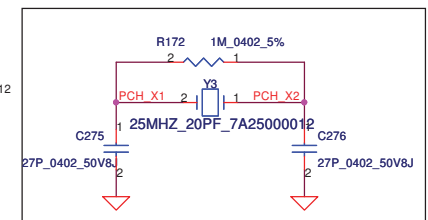
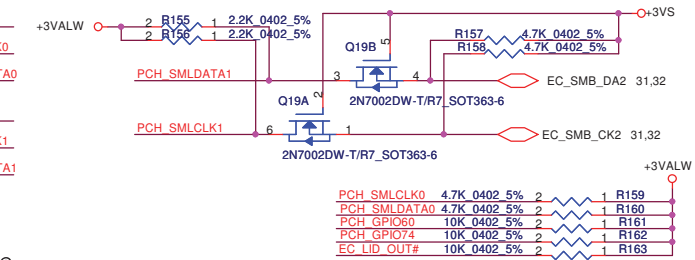
eSATA



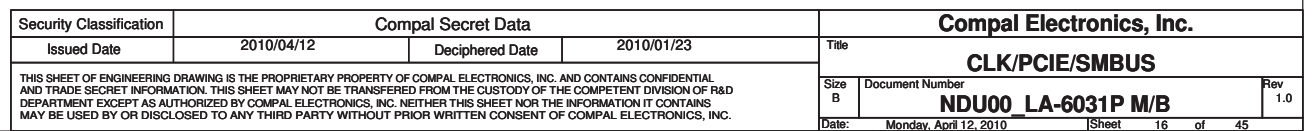
2/8 change back to original.(Lion Wang)
del D86 and R1494.
2/1 Add R1494 D86 (EMI)

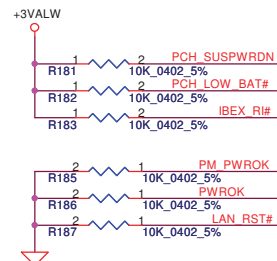


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								PCH-SPI/SATA/LPC/RTC/HDA			
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								B	NDU00_LA-6031P M/B	1.0	
								Date:	Monday, April 12, 2010	Sheet	15 of 45

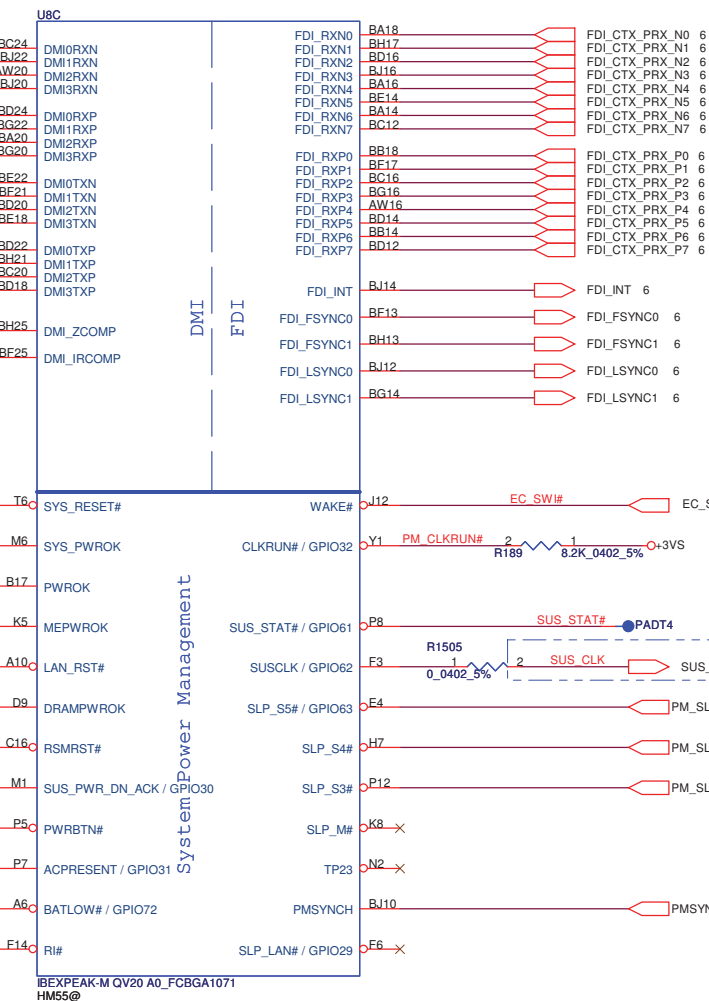
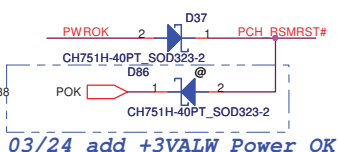
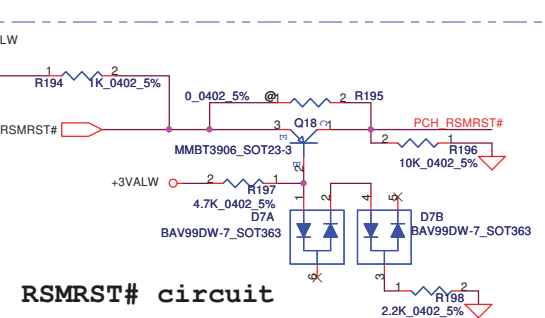
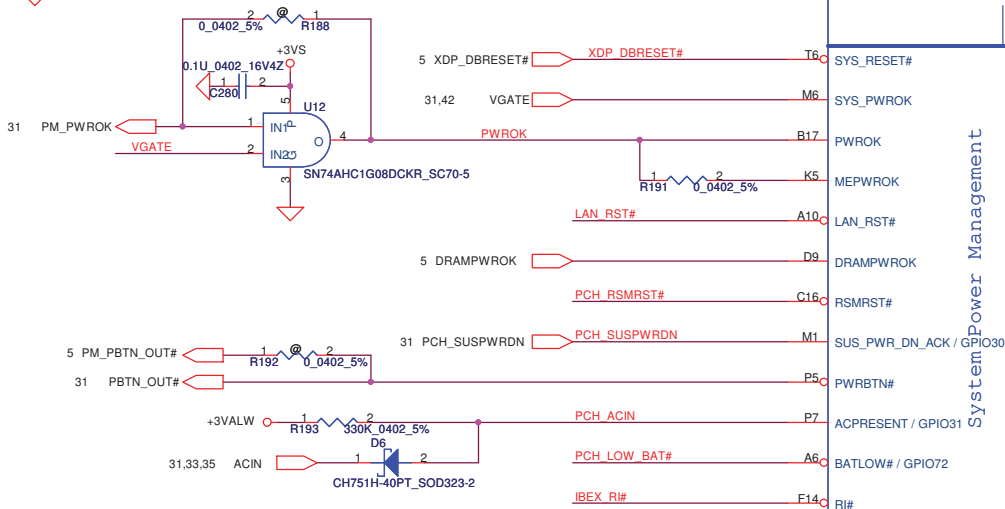


 C277 @ 0_0402_5% Note: Stuff 0 ohm if 25MHz crystal un-stuff





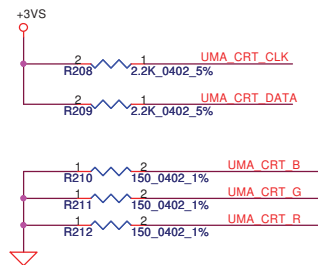
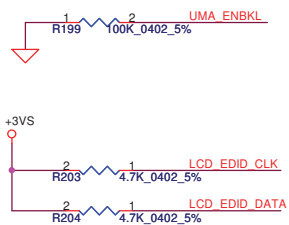
+1.05VS
R184 49.9_0402_1%
Close to PCH



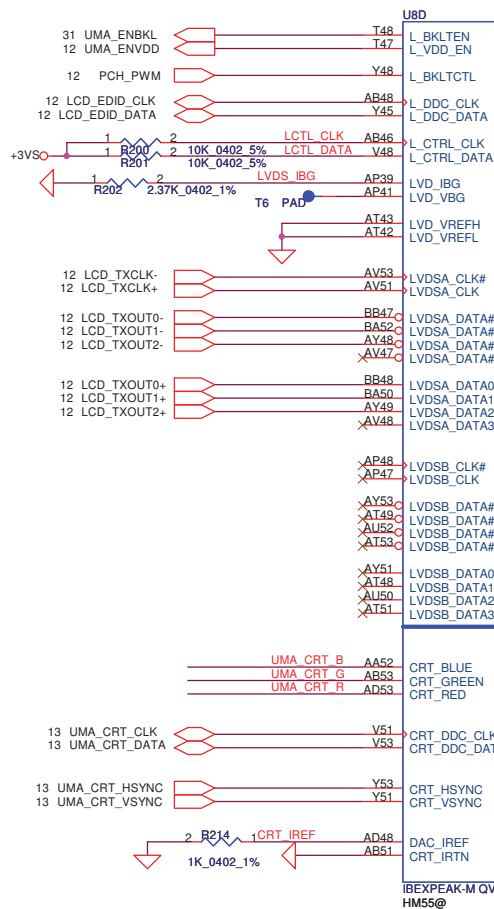
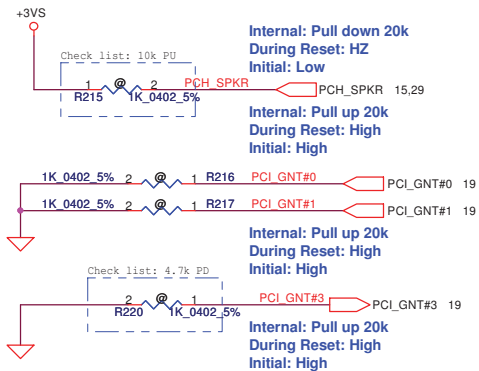
03/10 for EC Y4 crystal.
03/22 damping for EMI.

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Issued Date				2010/04/12		Deciphered Date		2010/01/23		Title	
										PCH-DMI/FDI/PWM	
										NDU00_LA-6031P M/B	
										Rev 1.0	
										Date: Monday, April 12, 2010	
										Sheet 17 of 45	

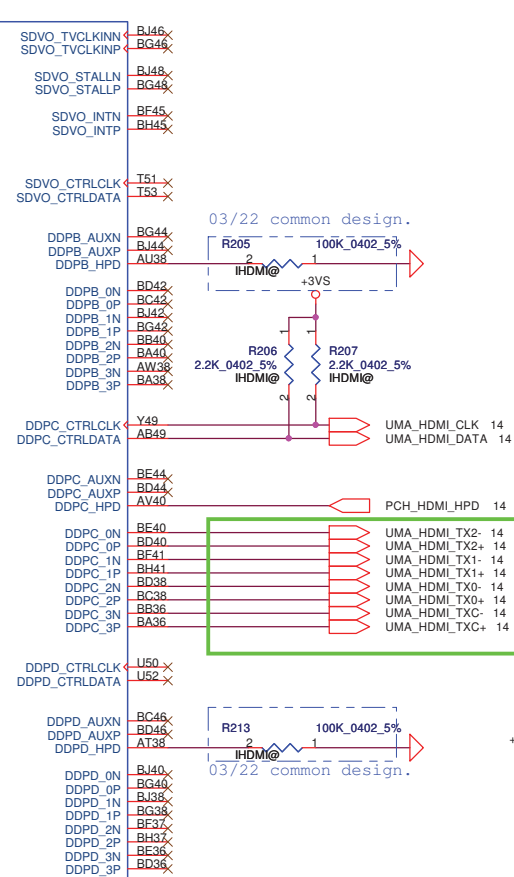
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PCH Strap Pin



Digital Display Interface



03/22 common design.

03/22 common design.

HDMI

Danbury Technology Enabled	
NV_ALE	High = Enabled Low = Disabled (Default)

Internal: Pull down 20k
During Reset: Low
Initial: Low

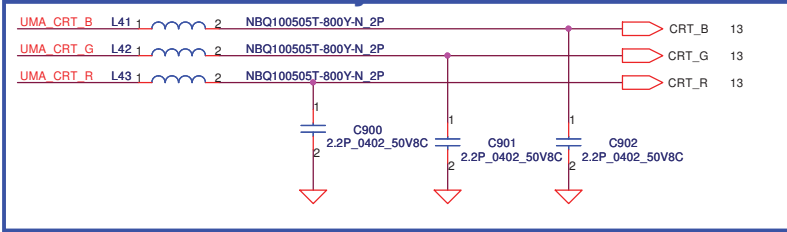
DMI Termination Voltage	
NV_CLE	Low= Set to Vss (Default) High= Set to Vcc

NO REBOOT Strap	
PCH_SPKR	Low= Disable High= Enable

Boot BIOS Strap		
PCI_GNT#1	PCI_GNT#0	Boot BIOS Location
0	0	LPC (Default)
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

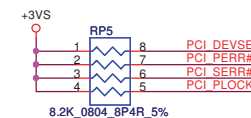
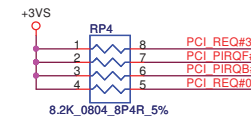
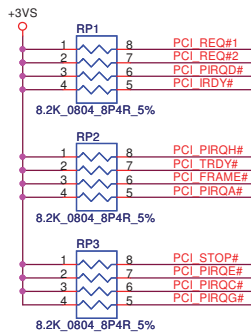
A16 Swap Override Strap	
PCI_GNT#3	Low= A16 swap override Enable High= A16 swap override Disable

modify....



2/2 Add L41 L42 L43 C900 C901 C902 for EMI request

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Size	Custom	Document Number	NDU00_LA-6031P M/B	Rev	1.0
Date:	Monday, April 12, 2010	Sheet	18	of	45



GNT2#: Not pull low, internal pull up 20K

32 CLK_CLK_DDR
31 CLK_PCI_EC
16 CLK_PCI_LOOP

5,26,27,28,31,32 PLT_RST#

PCI_PIRQA# G38
PCI_PIRQB# H51
PCI_PIRQC# B37
PCI_PIRQD# A44
PCI_REQ#0 F51
PCI_REQ#1 A46
PCI_REQ#2 B45
PCI_REQ#3 M53

PCI_PIRQE# B41
PCI_PIRQF# K53
PCI_PIRQC# A36
PCI_PIRQH# A48

PCI_SERR# E44
PCI_PERR# E50

PCI_IRDY# A42
PCI_DEVSEL# H44
PCI_FRAME# C46
PCI_PLOCK# D49

PCI_STOP# D41
PCI_TRDY# C48

PME# M7

PLTRST# D5

CLKOUT_PCIO N52
CLKOUT_PCIO P53
CLKOUT_PCIO P51
CLKOUT_PCIO P48

U8E
AD0 H40
AD1 N34
AD2 C44
AD3 A38
AD4 J34
AD5 A40
AD6 D45
AD7 E36
AD8 H48
AD9 E40
AD10 C40
AD11 M48
AD12 M45
AD13 F53
AD14 M40
AD15 M42
AD16 J36
AD17 K46
AD18 F40
AD19 C42
AD20 K46
AD21 M51
AD22 J52
AD23 K51
AD24 L34
AD25 F42
AD26 F42
AD27 J40
AD28 G46
AD29 F44
AD30 M47
AD31 H36

C/BE0# J50
C/BE1# G42
C/BE2# H47
C/BE3# G34

PIROA# G38
PIROB# H51
PIROC# B37
PIROD# A44

REQ0# F51
REQ1# / GPIO50 A46
REQ2# / GPIO52 B45
REQ3# / GPIO54 M53

GNT0# F48
GNT1# / GPIO51 K45
GNT2# / GPIO53 E36
GNT3# / GPIO55 H53

PIRQE# B41
PIRQF# K53
PIRQC# A36
PIRQH# A48

PCIRST# K6
SERR# E44
PERR# E50

IRDY# A42
PAIR H44
DEVSEL# F46
FRAME# C46

PLOCK# D49
STOP# D41
TRDY# C48

PME# M7

PLTRST# D5

CLKOUT_PCIO N52
CLKOUT_PCIO P53
CLKOUT_PCIO P51
CLKOUT_PCIO P48

IBEXPEAK-M QV20 A0_FCBGA1071
HM55@

PCI

NVRAM

USB

NV_CE#0 AY9
NV_CE#1 BD1
NV_CE#2 AP15
NV_CE#3 BD8
NV_DQS0 AV9
NV_DQS1 BG8
NV_DQ0 / NV_IO0 AP7
NV_DQ1 / NV_IO1 AP6
NV_DQ2 / NV_IO2 AT9
NV_DQ3 / NV_IO3 BB1
NV_DQ4 / NV_IO4 AV6
NV_DQ5 / NV_IO5 BB3
NV_DQ6 / NV_IO6 BA4
NV_DQ7 / NV_IO7 BE4
NV_DQ8 / NV_IO8 BE6
NV_DQ9 / NV_IO9 BD6
NV_DQ10 / NV_IO10 BB7
NV_DQ11 / NV_IO11 BC8
NV_DQ12 / NV_IO12 BJ8
NV_DQ13 / NV_IO13 BJ6
NV_DQ14 / NV_IO14 BG6
NV_DQ15 / NV_IO15

NV_ALE BD3
NV_CLE AY6

NV_RCOMP AU2
NV_RB# AV7

NV_WR#0_RE# AV8
NV_WR#1_RE# AY5

NV_WE#_CK0 AV11
NV_WE#_CK1 BF5

USBP0N H18
USBP0P J18
USBP1N A18
USBP1P C18
USBP2N N20
USBP2P P20
USBP3N J20
USBP3P L20
USBP4N F20
USBP4P G20
USBP5N C20
USBP5P M22
USBP6N N22
USBP6P B21
USBP7N G24
USBP7P H22
USBP8N J22
USBP8P E22
USBP9N F22
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USBP10N C22
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USBP13N C24
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AY9
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BD8
AV9
BG8
AP7
AP6
AT9
BB1
AV6
BB3
BA4
BE4
BE6
BD6
BB7
BC8
BJ8
BJ6
BG6

NV_ALE 18
NV_CLE 18

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NV_WE#_CK0 18
NV_WE#_CK1 18

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NV_CLE 18

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NV_ALE 18
NV_CLE 18

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NV_WE#_CK1 18

NV_ALE 18
NV_CLE 18

USB-RIGHT1
USB-RIGHT2

eSATA-USB

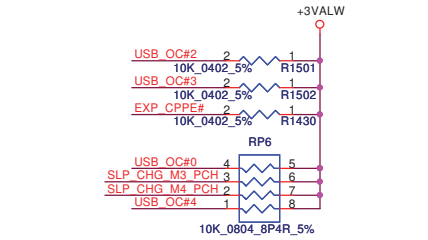
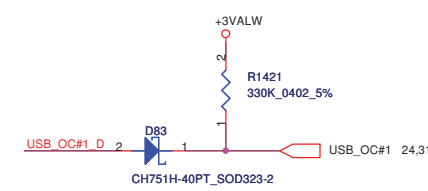
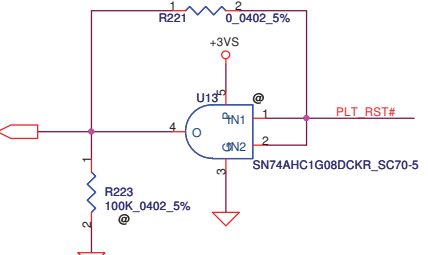
BT

8 pins SIM card
Int. Camera
3G
WiMax(WLAN)

Within 500 mils

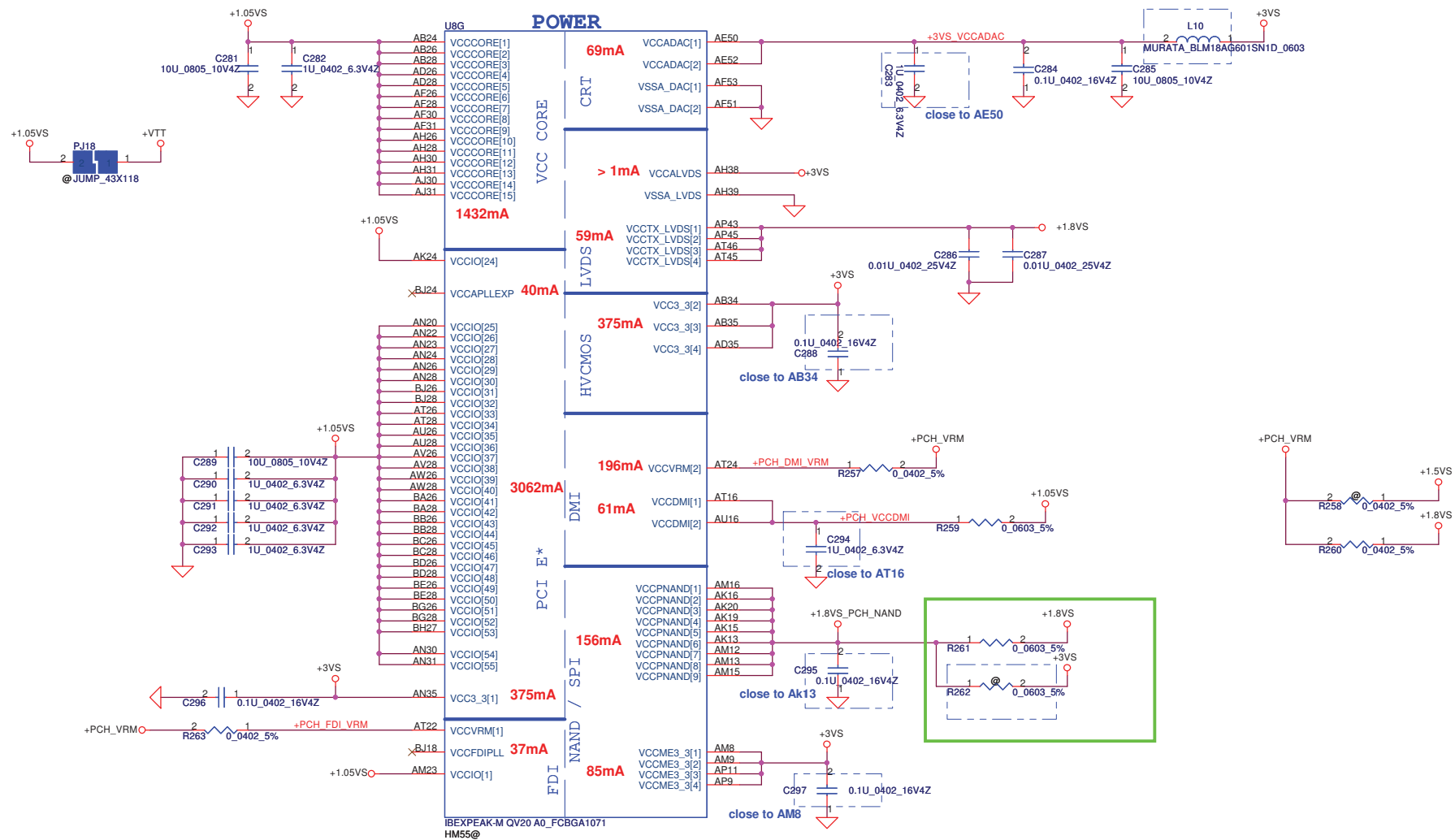
03/23 common design.

12/21 reserved
0120 reserved for both.



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/04/12	Deciphered Date	2010/01/23	Title	
				PCH USB/PCI/NAND	
				Size B	Document Number
				NDU00_LA-6031P M/B	
				Date:	Monday, April 12, 2010
				Sheet	19 of 45
				Rev	1.0

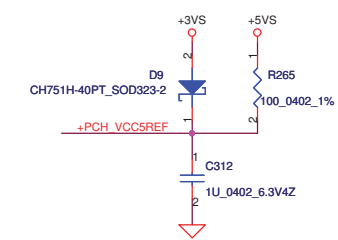
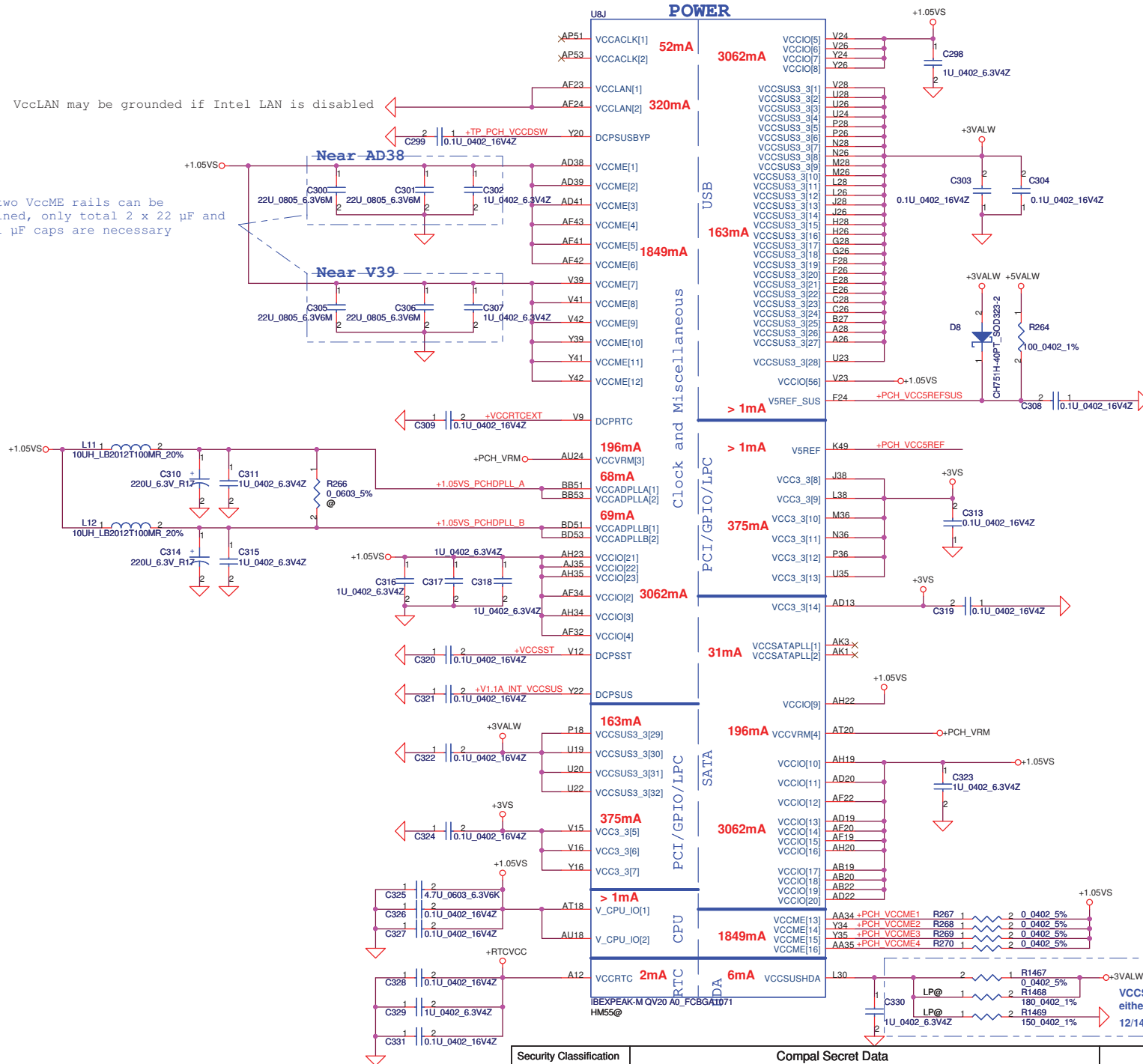
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Issued Date	2010/04/12	Deciphered Date	2010/01/23	Title	
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Size B	Document Number	NDU00_LA-6031P M/B		Rev	1.0
Date:	Monday, April 12, 2010	Sheet	21	of	45

VccLAN may be grounded if Intel LAN is disabled

If two VccME rails can be combined, only total 2 x 22 μ F and 2 x 1 μ F caps are necessary



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Issued Date				2010/04/12				Deciphered Date			
2010/04/12				2010/01/23				Title			
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								Document Number			
								NDU00_LA-6031P M/B			
								Date			
								Monday, April 12, 2010			
								Sheet			
								22			
								of			
								45			

UBI			
AY7	VSS[159]	VSS[259]	H49
B11	VSS[160]	VSS[260]	H5
B15	VSS[161]	VSS[261]	J24
B19	VSS[162]	VSS[262]	K11
B23	VSS[163]	VSS[263]	K43
B31	VSS[164]	VSS[264]	K47
B35	VSS[165]	VSS[265]	K7
B39	VSS[166]	VSS[266]	L14
B43	VSS[167]	VSS[267]	L18
B47	VSS[168]	VSS[268]	L2
B7	VSS[169]	VSS[269]	L22
BG12	VSS[170]	VSS[270]	L32
BB12	VSS[171]	VSS[271]	L36
BB16	VSS[172]	VSS[272]	L40
BB20	VSS[173]	VSS[273]	L52
BB24	VSS[174]	VSS[274]	M12
BB30	VSS[175]	VSS[275]	M16
BB34	VSS[176]	VSS[276]	M20
BB38	VSS[177]	VSS[277]	M38
BB42	VSS[178]	VSS[278]	M34
BB49	VSS[179]	VSS[279]	M38
BB5	VSS[180]	VSS[280]	M42
BC10	VSS[181]	VSS[281]	M46
BC14	VSS[182]	VSS[282]	M49
BC18	VSS[183]	VSS[283]	M5
BC2	VSS[184]	VSS[284]	M8
BC22	VSS[185]	VSS[285]	N24
BC32	VSS[186]	VSS[286]	P11
BC36	VSS[187]	VSS[287]	AD15
BC40	VSS[188]	VSS[288]	P22
BC44	VSS[189]	VSS[289]	P30
BC52	VSS[190]	VSS[290]	P32
BH9	VSS[191]	VSS[291]	P34
BD48	VSS[192]	VSS[292]	P42
BD49	VSS[193]	VSS[293]	P45
BD5	VSS[194]	VSS[294]	P47
BE12	VSS[195]	VSS[295]	R2
BE16	VSS[196]	VSS[296]	R52
BE20	VSS[197]	VSS[297]	T12
BE24	VSS[198]	VSS[298]	T41
BE30	VSS[199]	VSS[299]	T46
BE34	VSS[200]	VSS[300]	T49
BE38	VSS[201]	VSS[301]	T5
BE42	VSS[202]	VSS[302]	T8
BE46	VSS[203]	VSS[303]	U30
BE48	VSS[204]	VSS[304]	U31
BE50	VSS[205]	VSS[305]	U32
BE6	VSS[206]	VSS[306]	U34
BE8	VSS[207]	VSS[307]	P38
BF3	VSS[208]	VSS[308]	V11
BF49	VSS[209]	VSS[309]	P16
BF51	VSS[210]	VSS[310]	V19
BG18	VSS[211]	VSS[311]	V20
BG24	VSS[212]	VSS[312]	V22
BG4	VSS[213]	VSS[313]	V30
BG50	VSS[214]	VSS[314]	V31
BH11	VSS[215]	VSS[315]	V32
BH15	VSS[216]	VSS[316]	V34
BH19	VSS[217]	VSS[317]	V35
BH23	VSS[218]	VSS[318]	V38
BH31	VSS[219]	VSS[319]	V43
BH35	VSS[220]	VSS[320]	V45
BH39	VSS[221]	VSS[321]	V46
BH43	VSS[222]	VSS[322]	V47
BH47	VSS[223]	VSS[323]	V49
BH7	VSS[224]	VSS[324]	V5
C12	VSS[225]	VSS[325]	V7
C50	VSS[226]	VSS[326]	V8
D51	VSS[227]	VSS[327]	W2
E12	VSS[228]	VSS[328]	W52
E16	VSS[229]	VSS[329]	Y11
E20	VSS[230]	VSS[330]	Y12
E24	VSS[231]	VSS[331]	Y15
E30	VSS[232]	VSS[332]	Y19
E34	VSS[233]	VSS[333]	Y23
E38	VSS[234]	VSS[334]	Y28
E42	VSS[235]	VSS[335]	Y30
E46	VSS[236]	VSS[336]	Y31
E48	VSS[237]	VSS[337]	Y32
E6	VSS[238]	VSS[338]	Y38
E8	VSS[239]	VSS[339]	Y43
F49	VSS[240]	VSS[340]	Y46
F5	VSS[241]	VSS[341]	P49
G10	VSS[242]	VSS[342]	Y5
G14	VSS[243]	VSS[343]	Y6
G18	VSS[244]	VSS[344]	Y8
G2	VSS[245]	VSS[345]	P24
G22	VSS[246]	VSS[346]	T43
G32	VSS[247]	VSS[347]	AD51
G36	VSS[248]	VSS[348]	AT8
G40	VSS[249]	VSS[349]	AD47
G44	VSS[250]	VSS[350]	Y47
G52	VSS[251]	VSS[351]	AT12
AF39	VSS[252]	VSS[352]	AM6
H16	VSS[253]	VSS[353]	AT13
H20	VSS[254]	VSS[354]	AM5
H30	VSS[255]	VSS[355]	AK45
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H42	VSS[258]	VSS[358]	

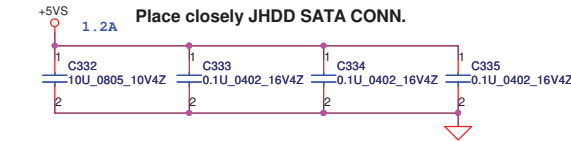
IBEXPEAK-M QV20 A0_FCBGA1071
HM55@

UBH			
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AA20	VSS[2]	VSS[81]	AK31
AA22	VSS[3]	VSS[82]	AK32
AM19	VSS[4]	VSS[83]	AK34
AA24	VSS[5]	VSS[84]	AK35
AA26	VSS[6]	VSS[85]	AK38
AA28	VSS[7]	VSS[86]	AK43
AA30	VSS[8]	VSS[87]	AK46
AA31	VSS[9]	VSS[88]	AK49
AA32	VSS[10]	VSS[89]	AK5
AB11	VSS[11]	VSS[90]	AK8
AB15	VSS[12]	VSS[91]	AL2
AB23	VSS[13]	VSS[92]	AL52
AB30	VSS[14]	VSS[93]	AM11
AB31	VSS[15]	VSS[94]	BB44
AB32	VSS[16]	VSS[95]	AD24
AB39	VSS[17]	VSS[96]	AM20
AB43	VSS[18]	VSS[97]	AM22
AB47	VSS[19]	VSS[98]	AM24
AB5	VSS[20]	VSS[99]	AM26
AB5	VSS[21]	VSS[100]	AM28
AC2	VSS[22]	VSS[101]	BA42
AC52	VSS[23]	VSS[102]	AM30
AD11	VSS[24]	VSS[103]	AM31
AD12	VSS[25]	VSS[104]	AM32
AD16	VSS[26]	VSS[105]	AM34
AD23	VSS[27]	VSS[106]	AM35
AD30	VSS[28]	VSS[107]	AM38
AD31	VSS[29]	VSS[108]	AM39
AD32	VSS[30]	VSS[109]	AM42
AD34	VSS[31]	VSS[110]	AL20
AU22	VSS[32]	VSS[111]	AM46
AD42	VSS[33]	VSS[112]	AV22
AD46	VSS[34]	VSS[113]	AM49
AD49	VSS[35]	VSS[114]	AM7
AD7	VSS[36]	VSS[115]	AA50
AE2	VSS[37]	VSS[116]	BB10
AE4	VSS[38]	VSS[117]	AN32
AF12	VSS[39]	VSS[118]	AN50
Y13	VSS[40]	VSS[119]	AN52
AH49	VSS[41]	VSS[120]	AP12
AU4	VSS[42]	VSS[121]	AP42
AF35	VSS[43]	VSS[122]	AP46
AP13	VSS[44]	VSS[123]	AP49
AN34	VSS[45]	VSS[124]	AP5
AF45	VSS[46]	VSS[125]	AP8
AF46	VSS[47]	VSS[126]	AP2
AF49	VSS[48]	VSS[127]	AP52
AF5	VSS[49]	VSS[128]	AT11
AF8	VSS[50]	VSS[129]	BA12
AG2	VSS[51]	VSS[130]	AH48
AG52	VSS[52]	VSS[131]	AT32
AH11	VSS[53]	VSS[132]	AT36
AH15	VSS[54]	VSS[133]	AT41
AH16	VSS[55]	VSS[134]	AT47
AH24	VSS[56]	VSS[135]	AT7
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AH47	VSS[60]	VSS[139]	AV24
AH7	VSS[61]	VSS[140]	AV30
AJ19	VSS[62]	VSS[141]	AV34
AJ2	VSS[63]	VSS[142]	AV38
AJ20	VSS[64]	VSS[143]	AV42
AJ22	VSS[65]	VSS[144]	AV46
AJ23	VSS[66]	VSS[145]	AV49
AJ26	VSS[67]	VSS[146]	AV5
AJ28	VSS[68]	VSS[147]	AV8
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AJ34	VSS[70]	VSS[149]	AW18
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AK26	VSS[76]	VSS[155]	AW52
AK22	VSS[77]	VSS[156]	AY11
AK23	VSS[78]	VSS[157]	AY43
AK28	VSS[79]	VSS[158]	AY47

IBEXPEAK-M QV20 A0_FCBGA1071
HM55@

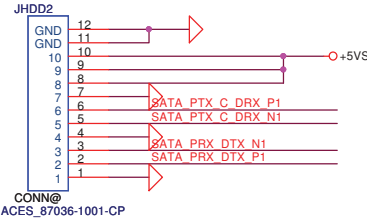
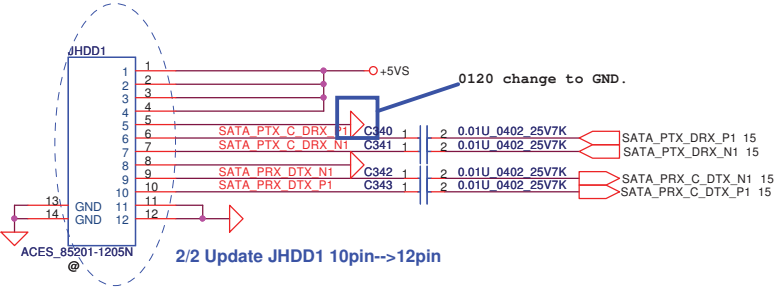
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/04/12	Deciphered Date	2010/01/23	Title	PCH-GND
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				Custom	Rev
				Date:	Monday, April 12, 2010
				Sheet	23 of 45
				NDU00_LA-6031P M/B	

SATA HDD Conn.



1/28 Add JHDD2

JHDD2 Layout symbol reverse JHDD1, reverse the pin define



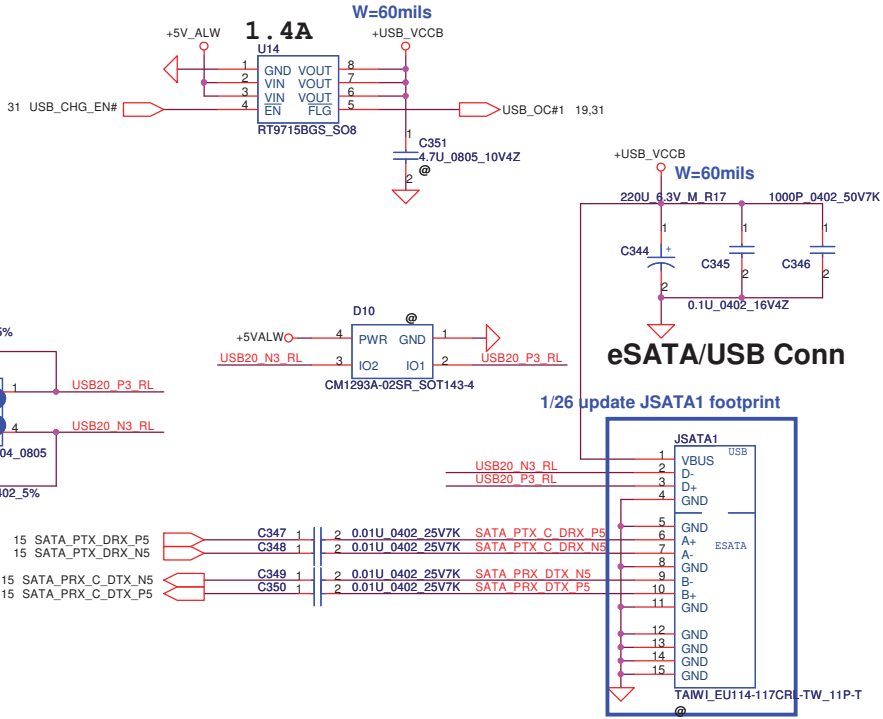
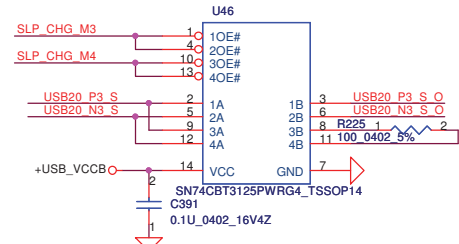
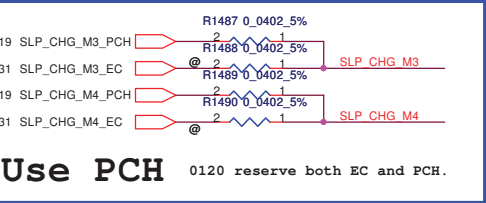
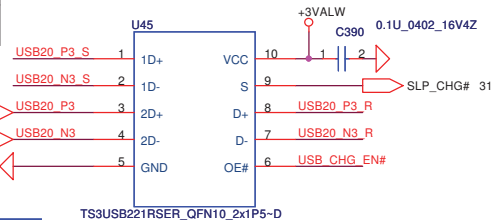
Add wire connector for H/W SATA verify

eSATA/USB Combo

	SLP_CHG_M3	SLP_CHG_M4
Mode 3	HIGH	LOW
Mode 4	LOW	HIGH

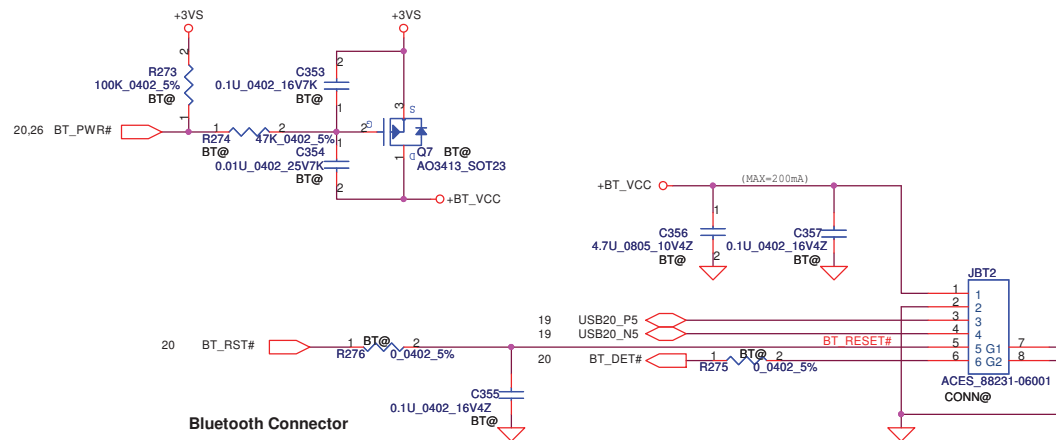
SLP_CHG	FUNCTION
LOW	D=1D
HIGH	D=2D

19 USB20_P3
19 USB20_N3

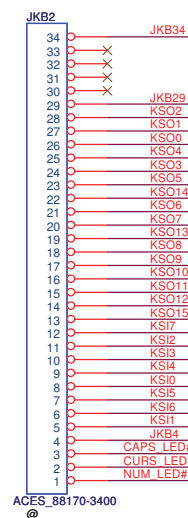


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Size		Document Number	
NDU00_LA-6031P M/B		Rev 1.0	
Date		Monday, April 12, 2010	
Sheet		24 of 45	

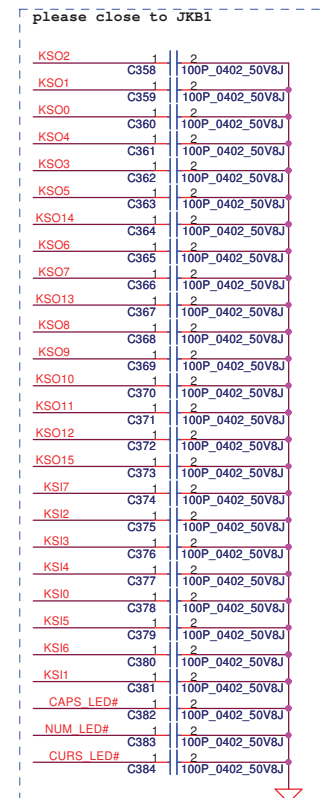
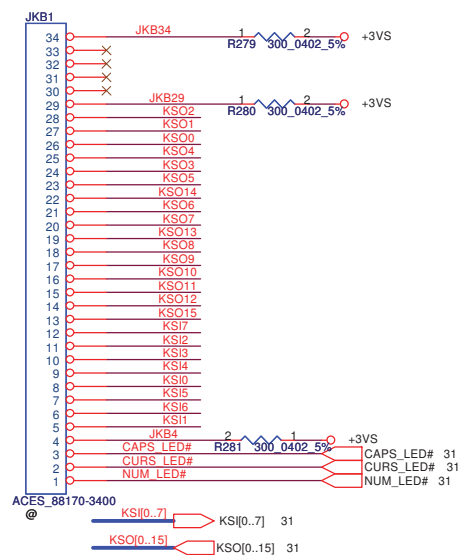
BlueTooth Interface



KEYBOARD CONN. for 11.6"

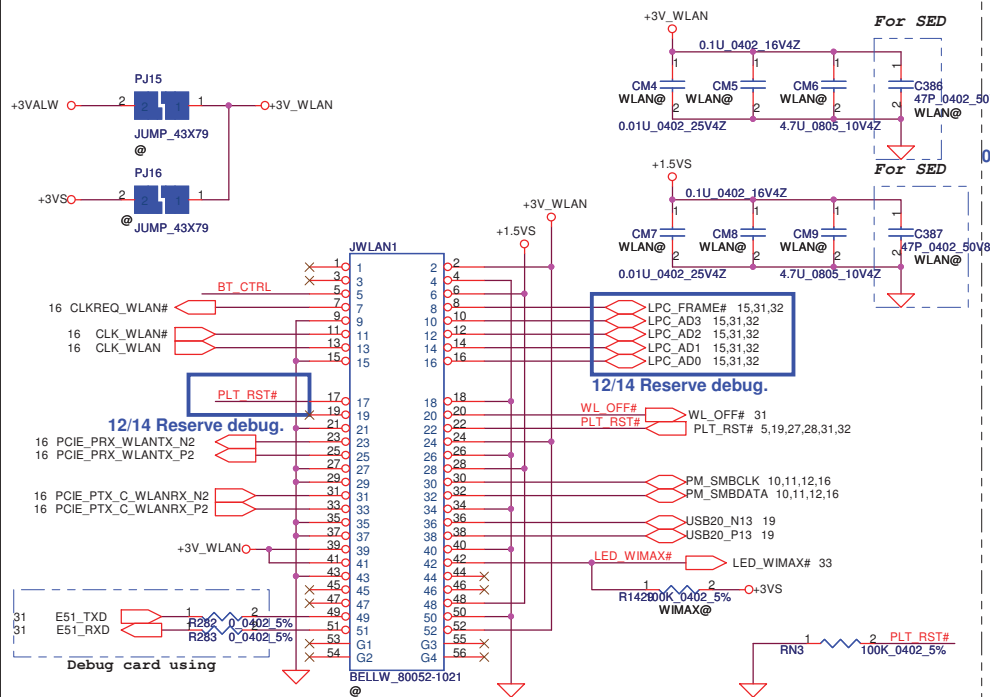


KEYBOARD CONN. for 13.3"

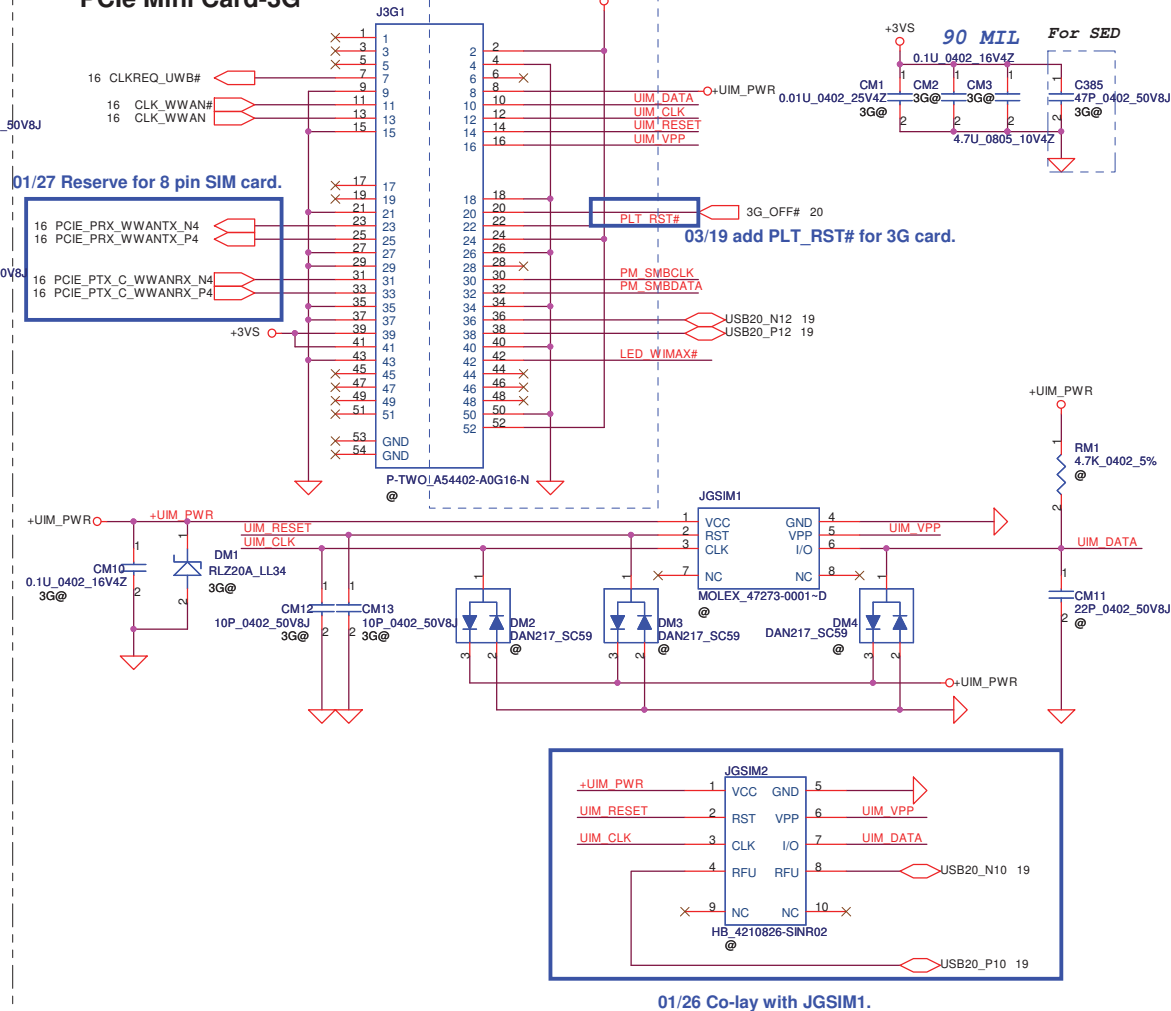


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Size		Document Number		Rev	
		NDU00_LA-6031P M/B		1.0	
Date:		Monday, April 12, 2010		Sheet 25 of 45	

PCIe Mini Card-WLAN/WiMax

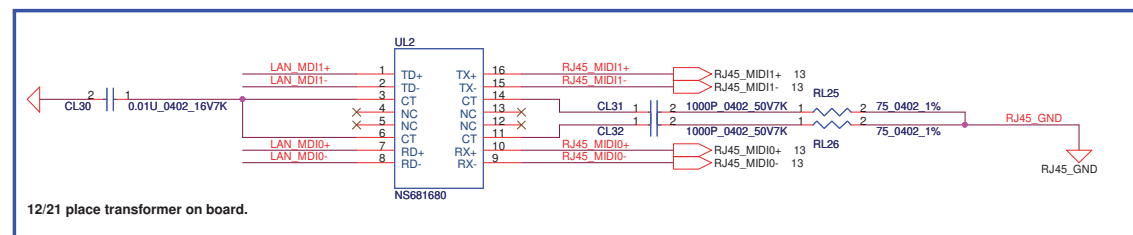
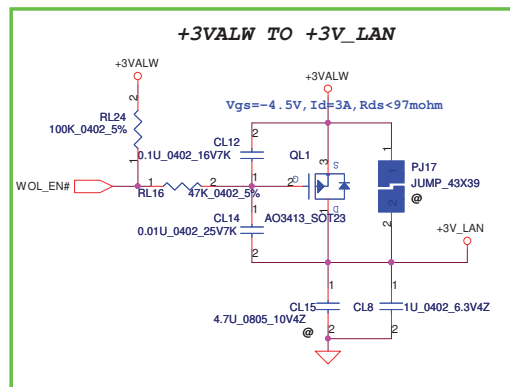
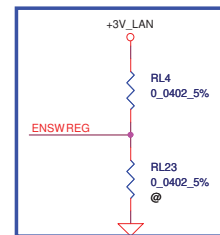
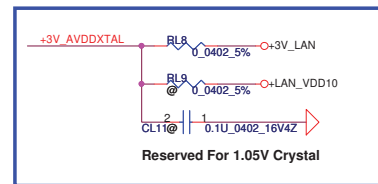
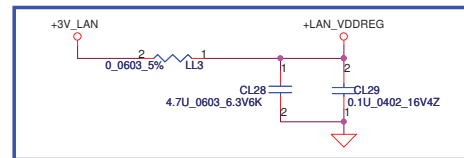
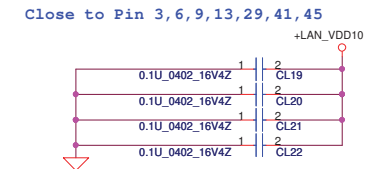
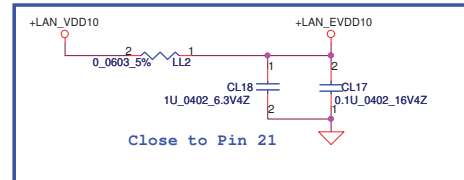
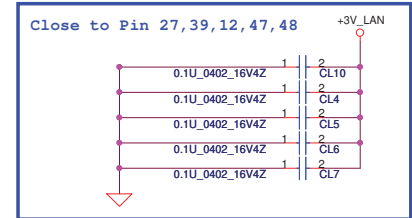
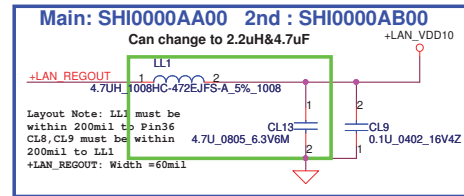
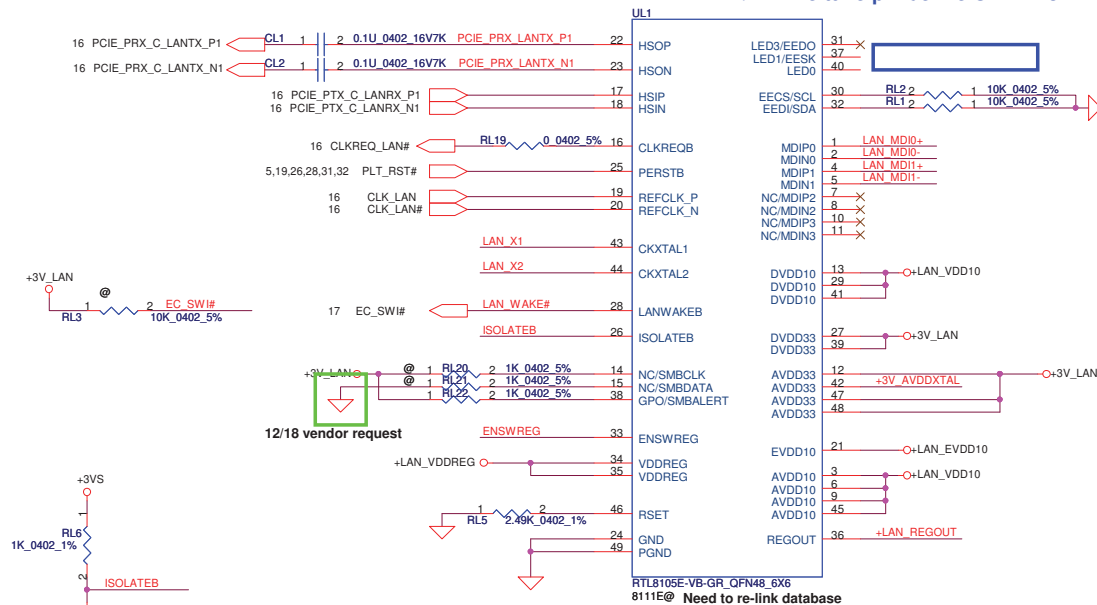


PCIe Mini Card-3G



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Size	Document Number	NDU00_LA-6031P M/B		Rev 1.0
Date:	Monday, April 12, 2010	Sheet	26 of 45	

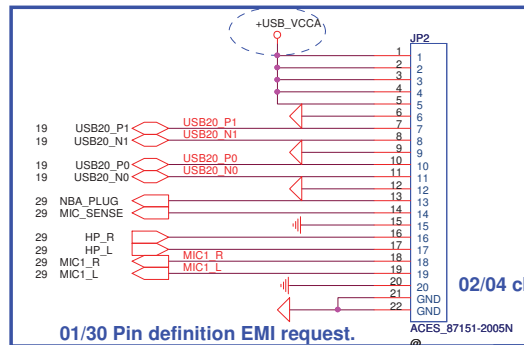
12/14 Fine tune pin define UL1 Pin37 Pin40 -->Dummy



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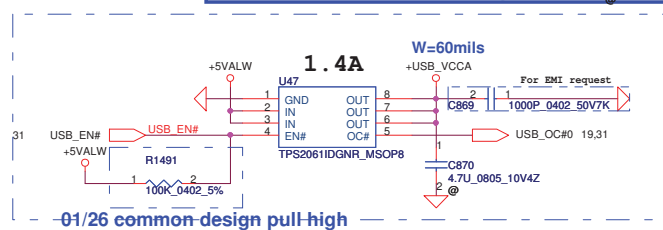
USB+Audio FFC conn Pin=20pin, pitch=0.5

01/30 New JP2 Layout symbol reverse old conn, reverse the pin define

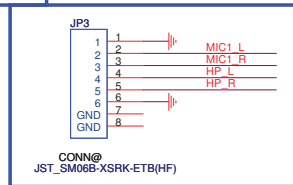


02/04 change back to 20 pins.

01/30 Pin definition EMI request.

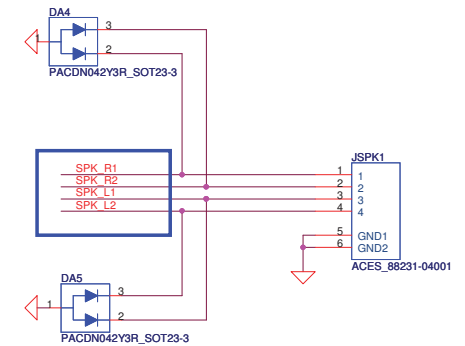
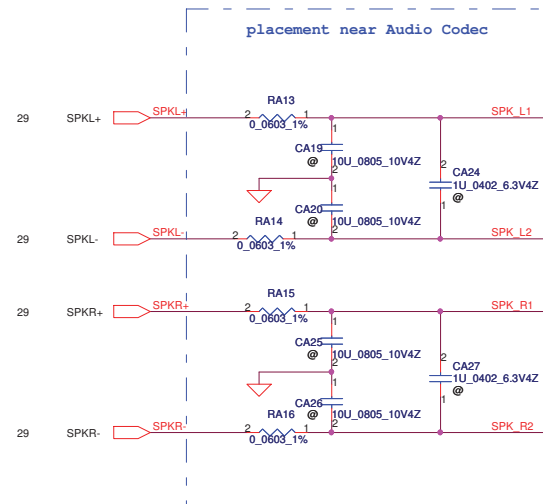


-01/26 common-design pull-high



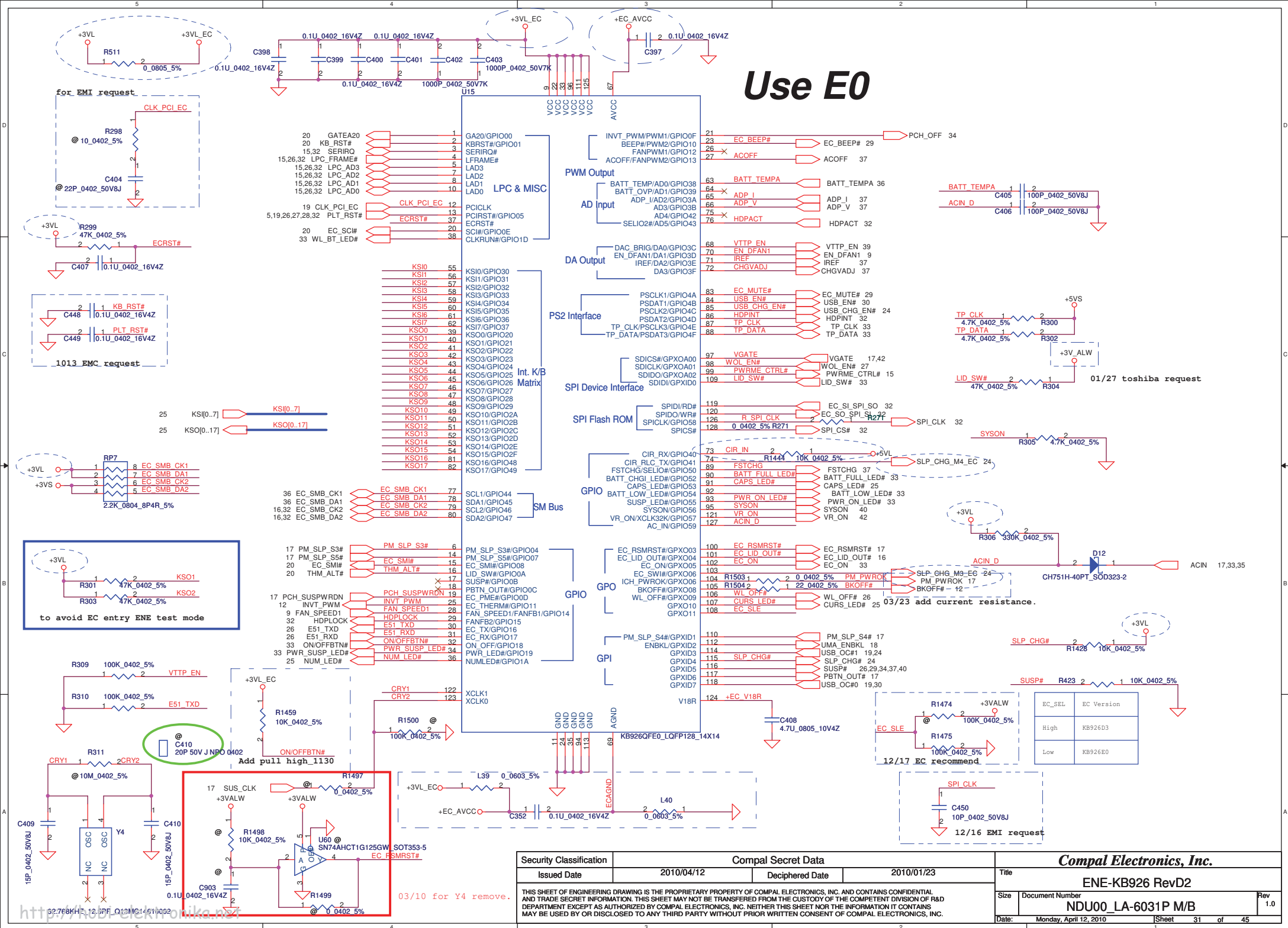
12/19 Reserved JP6 for audio test

Speaker Connector

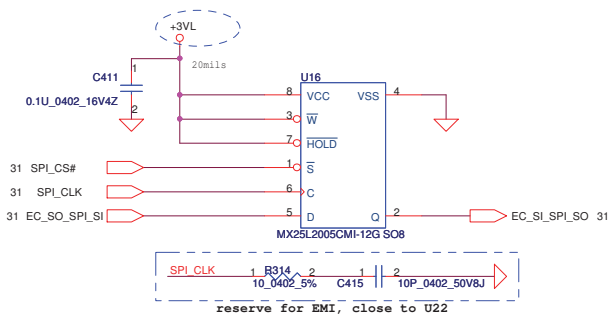


12/16 Fine tune SPK_L1,SPK_L2,SPK_R1 and SPK_R2 for SPK

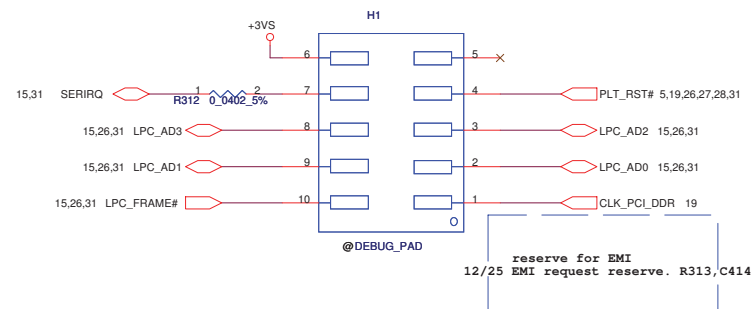
Security Classification	Compal Secret Data			Title	
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				Custom	1.0
				Date	Monday, April 12, 2010
				Sheet	30 of 45



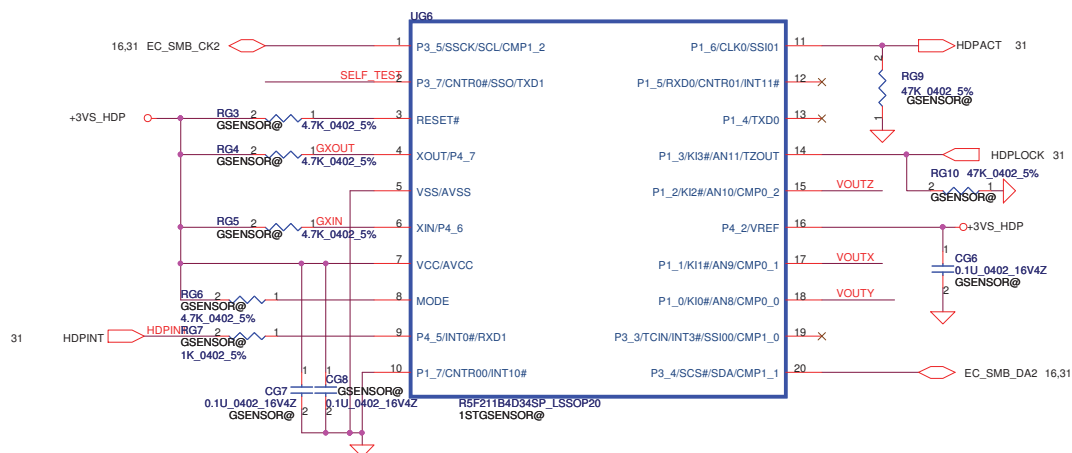
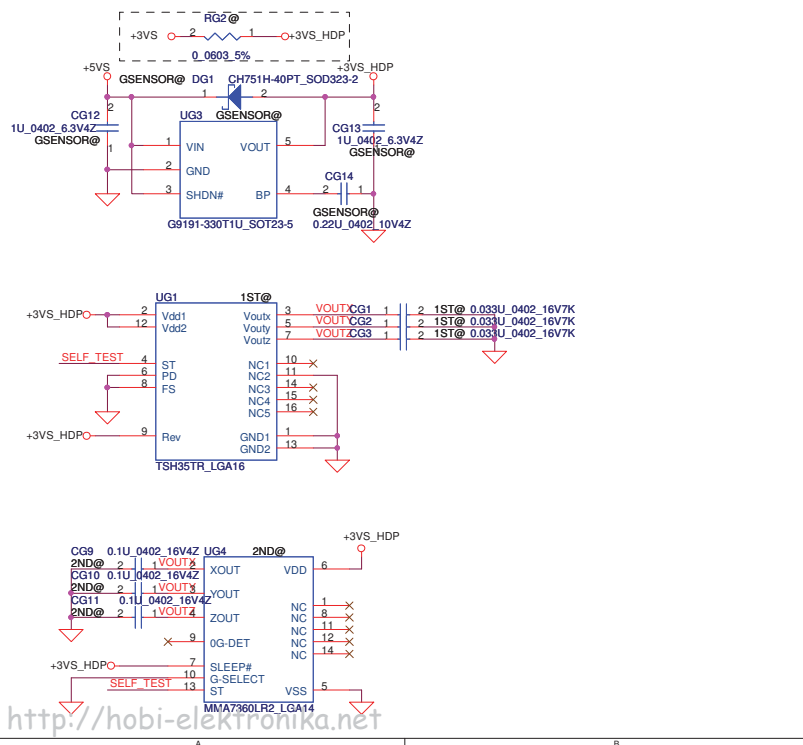
Socket : SP07000F500 & SP07000H900



Please place the PAD under DDR DIMM.

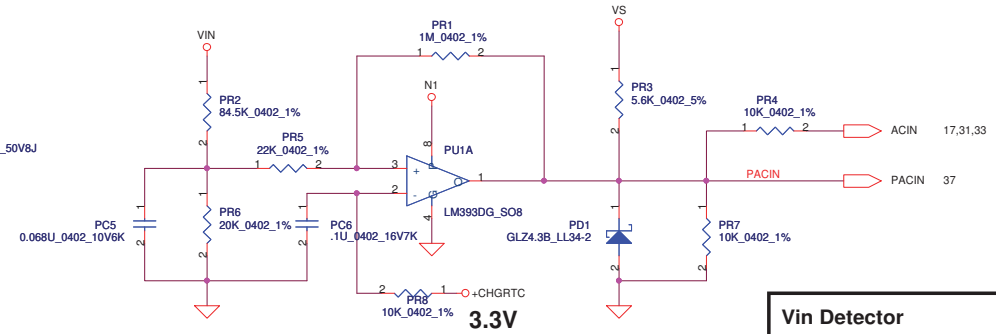
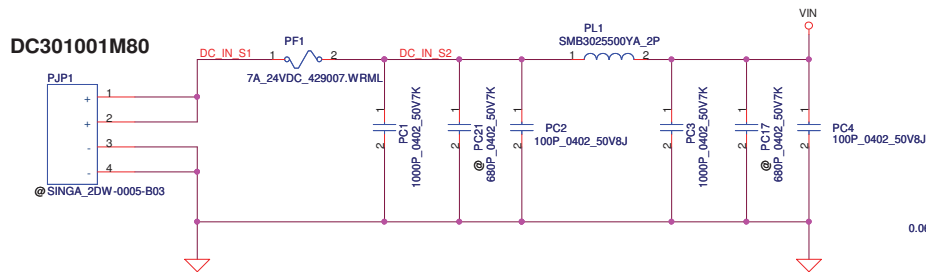


G-Sensor



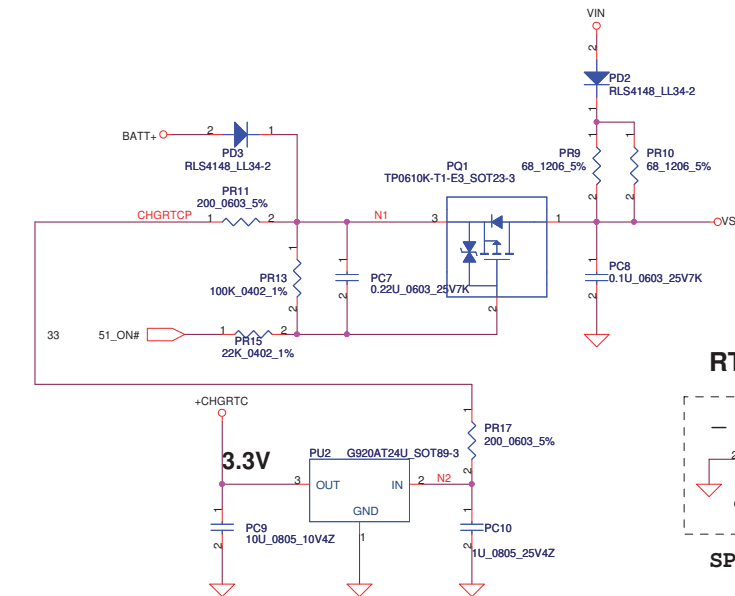
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				Document Number	NDU00 LA-6031P M/B
				Date:	Monday, April 12, 2010
				Sheet	32 of 45

DC301001M80

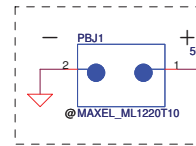


Vin Detector

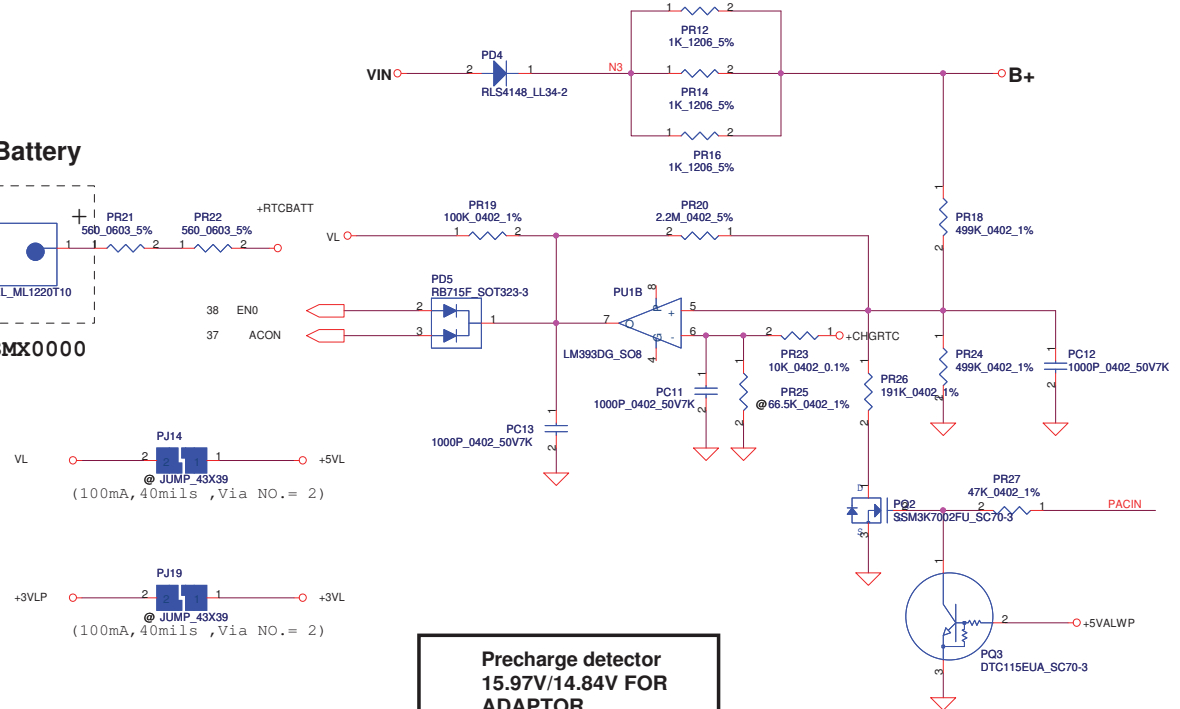
High 18.384 17.901 17.430
Low 17.728 17.257 16.976



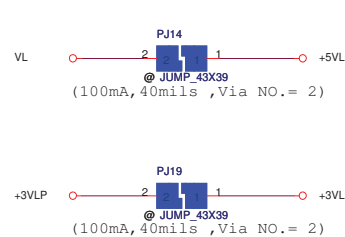
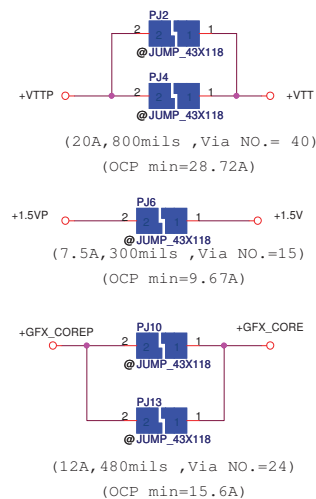
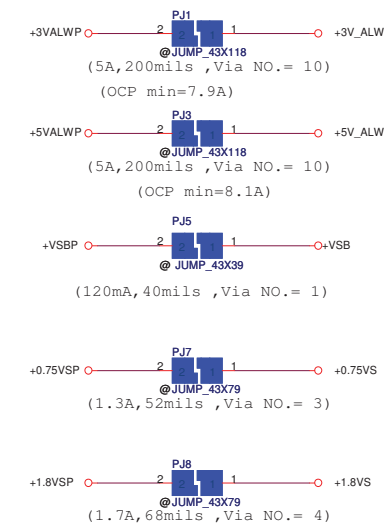
RTC Battery



SP093MX0000



Precharge detector 15.97V/14.84V FOR ADAPTOR



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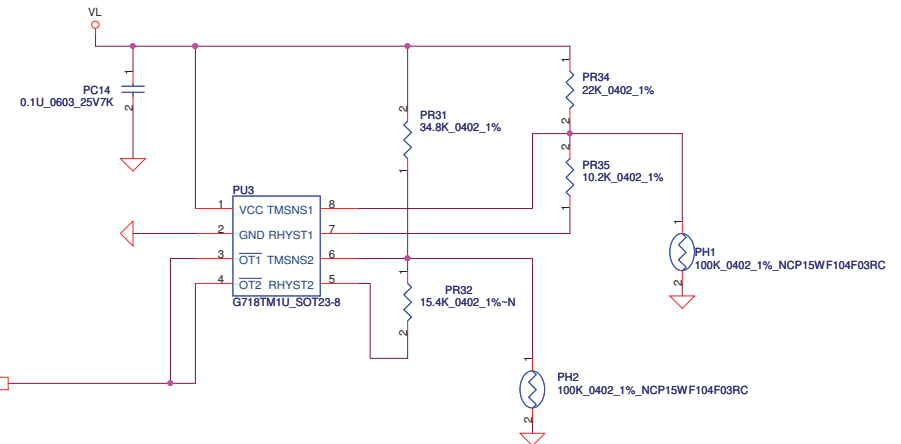
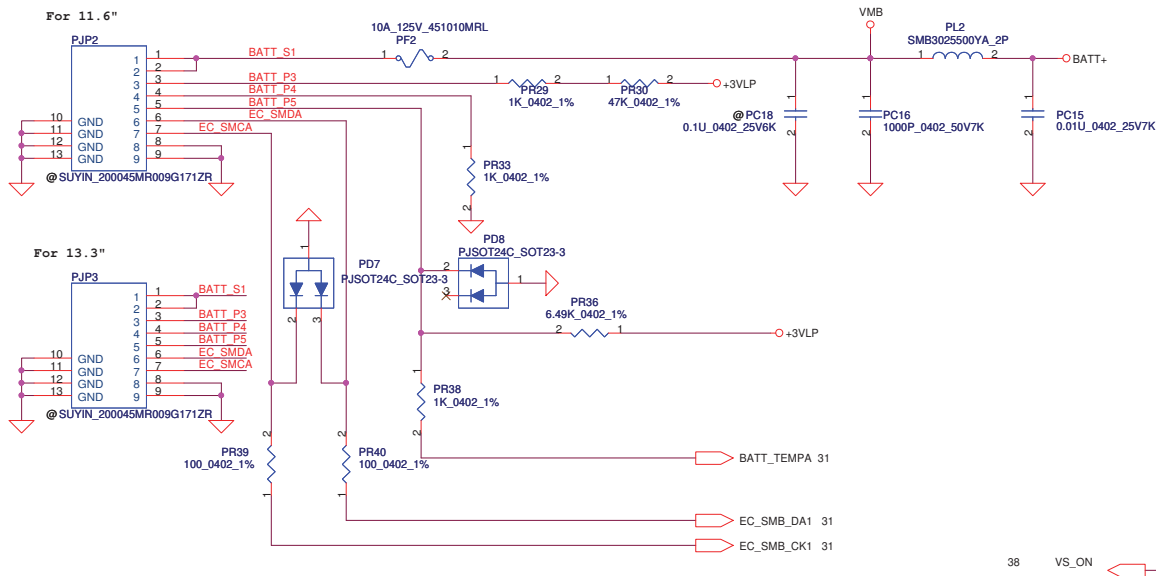
Compal Electronics, Inc.			
Title			
DCIN / DETECTOR			
Size	Document Number	Rev	
	LA-6031P	1.0	
Date:	Monday, April 12, 2010	Sheet	35 of 45

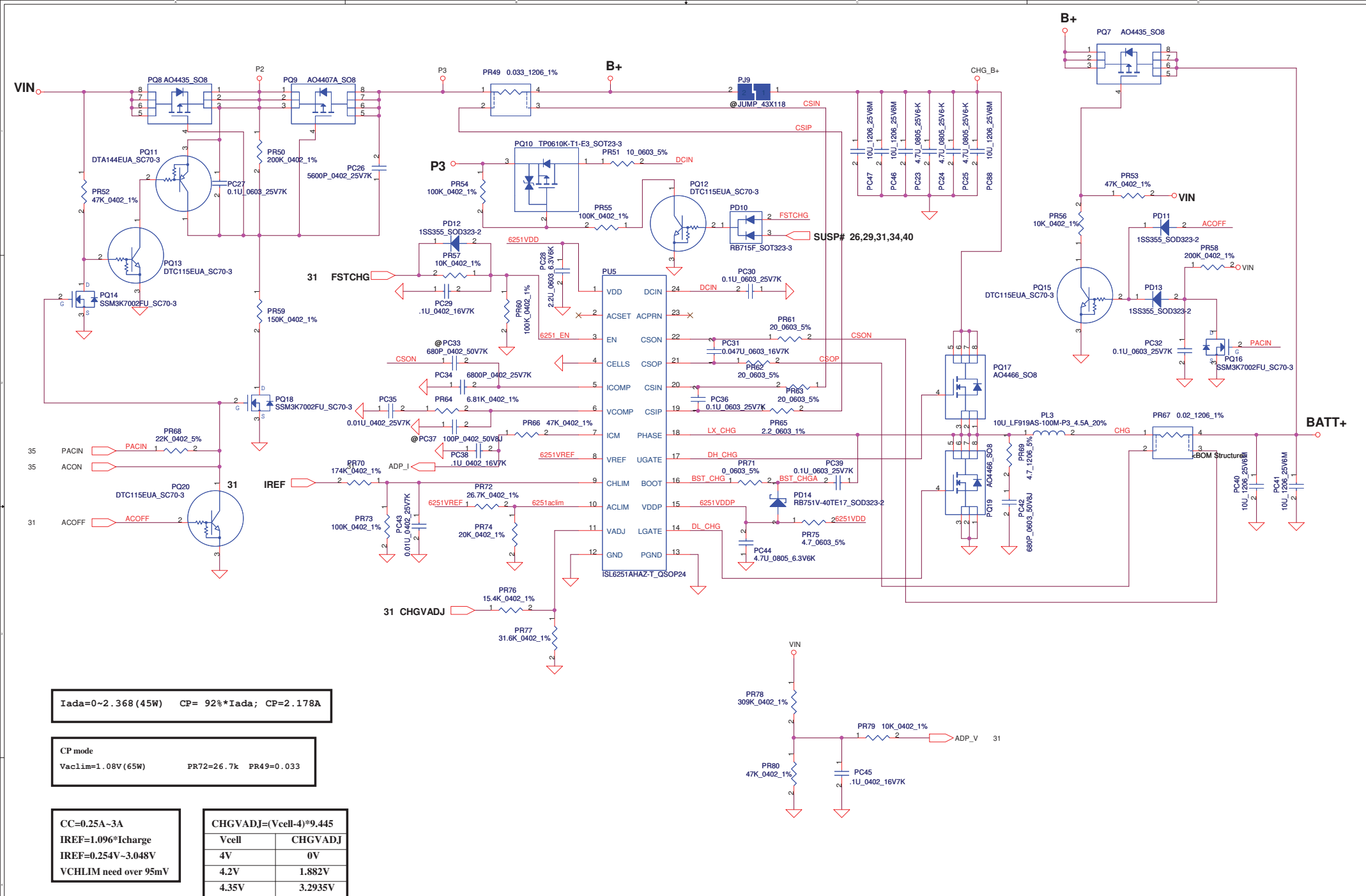
PH1 under CPU botten side :

CPU thermal protection at 92 degree C
Recovery at 56 degree C

PH2 near main battery CONN:

BAT.thermal protection at 78 degree C
Recovery at 42 degree C

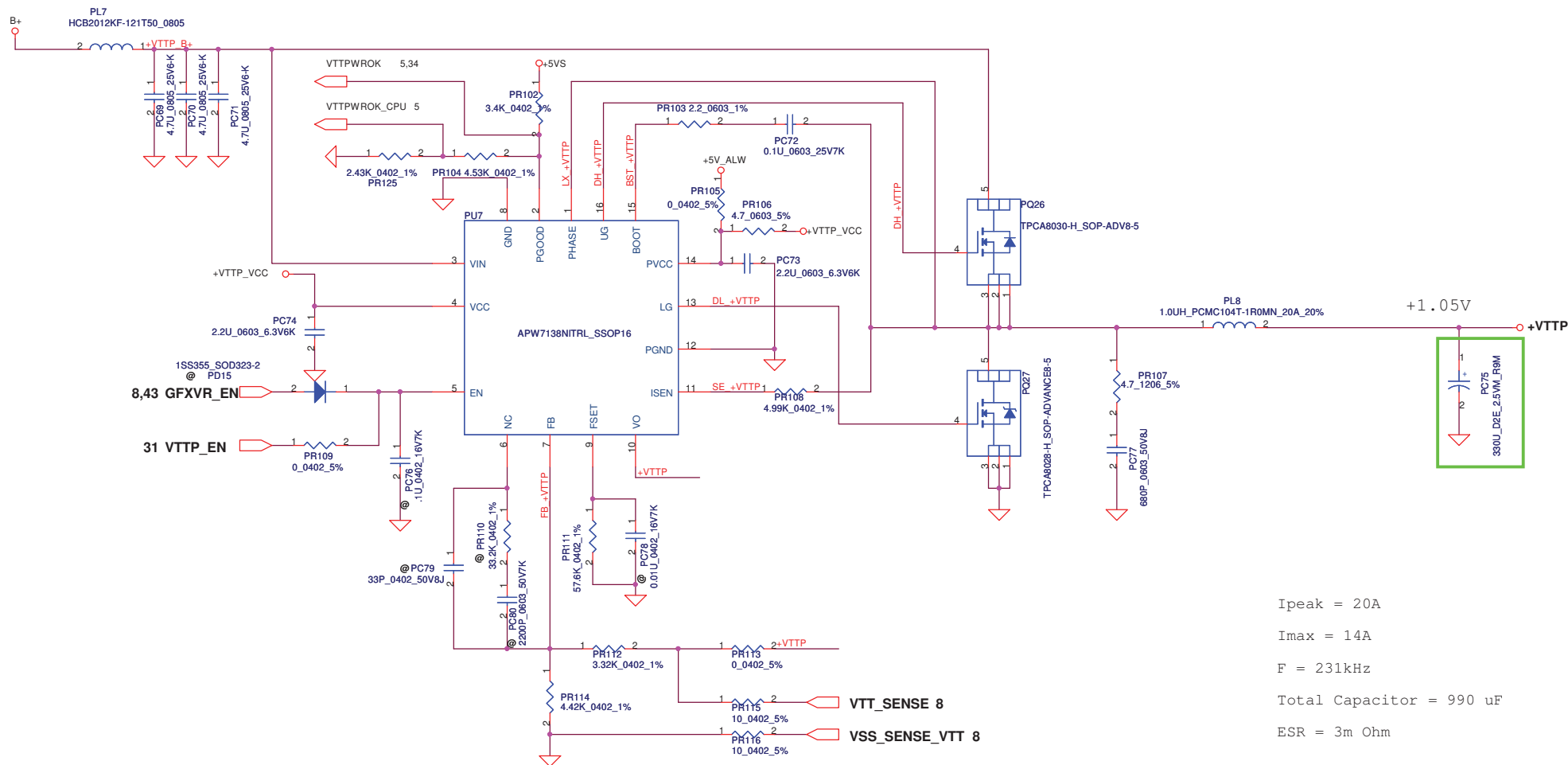




Ipeak = 5A
 Imax = 3.5A
 F = 305kHz
 Total Capacitor = 150 uF
 ESR = 18m Ohm

Ipeak = 5A
 Imax = 3.5A
 F = 245kHz
 Total Capacitor = 150 uF
 ESR = 18m Ohm

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Size	Document Number	Rev		LA-6032P	
Date:	Monday, April 12, 2010	Sheet	38	of	45



I_{peak} = 20A

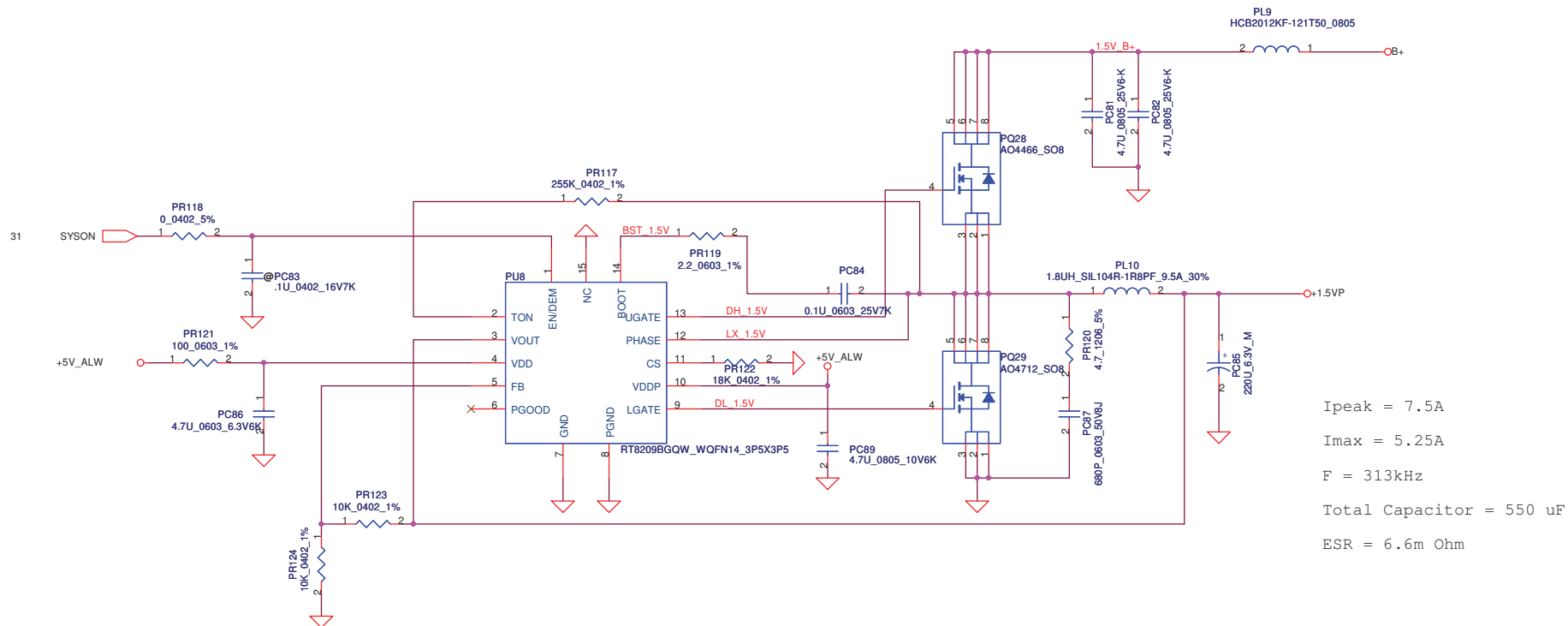
I_{max} = 14A

F = 231kHz

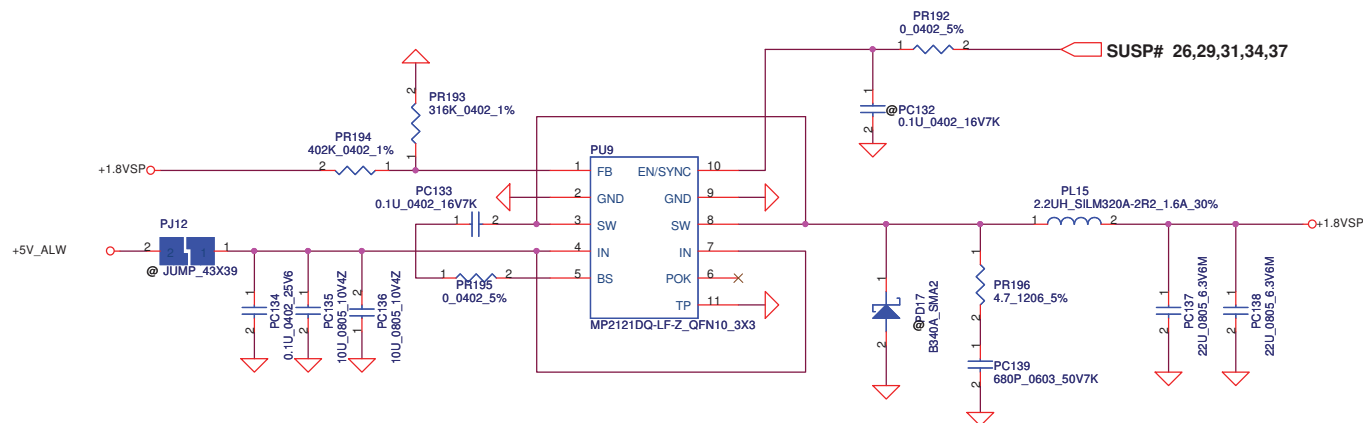
Total Capacitor = 990 uF

ESR = 3m Ohm

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Size	Document Number	NDU00_LA-6031P M/B			Rev
Date:	Monday, April 12, 2010	Sheet	39	of	45

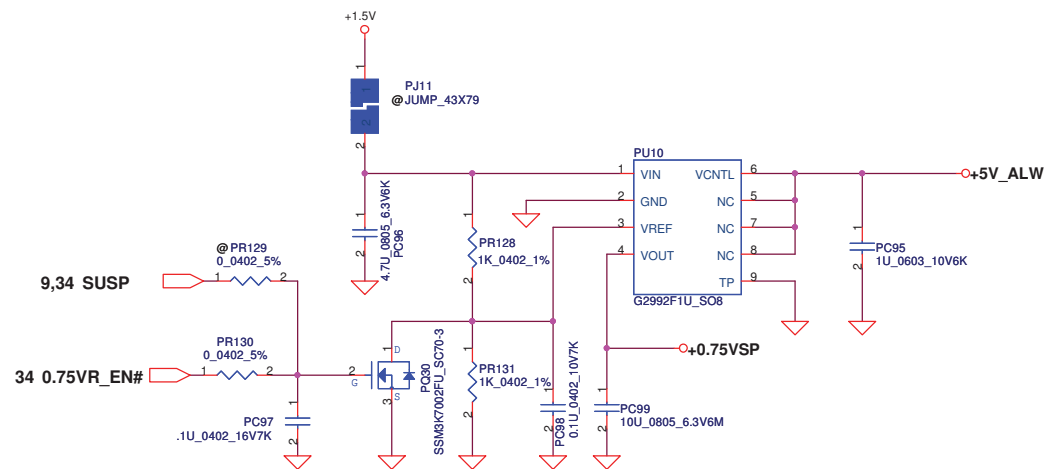


Ipeak = 7.5A
 Imax = 5.25A
 F = 313kHz
 Total Capacitor = 550 uF
 ESR = 6.6m Ohm



Ipeak = 1.7A
 Imax = 5.25A
 F = 1.5MHz
 Total Capacitor = 44 uF
 ESR = 2.5m Ohm

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Size	Custom	Document Number	NDU00_LA-6031P M/B	Rev	1.0
Date:	Monday, April 12, 2010	Sheet	40	of	45



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				Date:	Monday, April 12, 2010
				Sheet	41 of 45
				Rev	1.0

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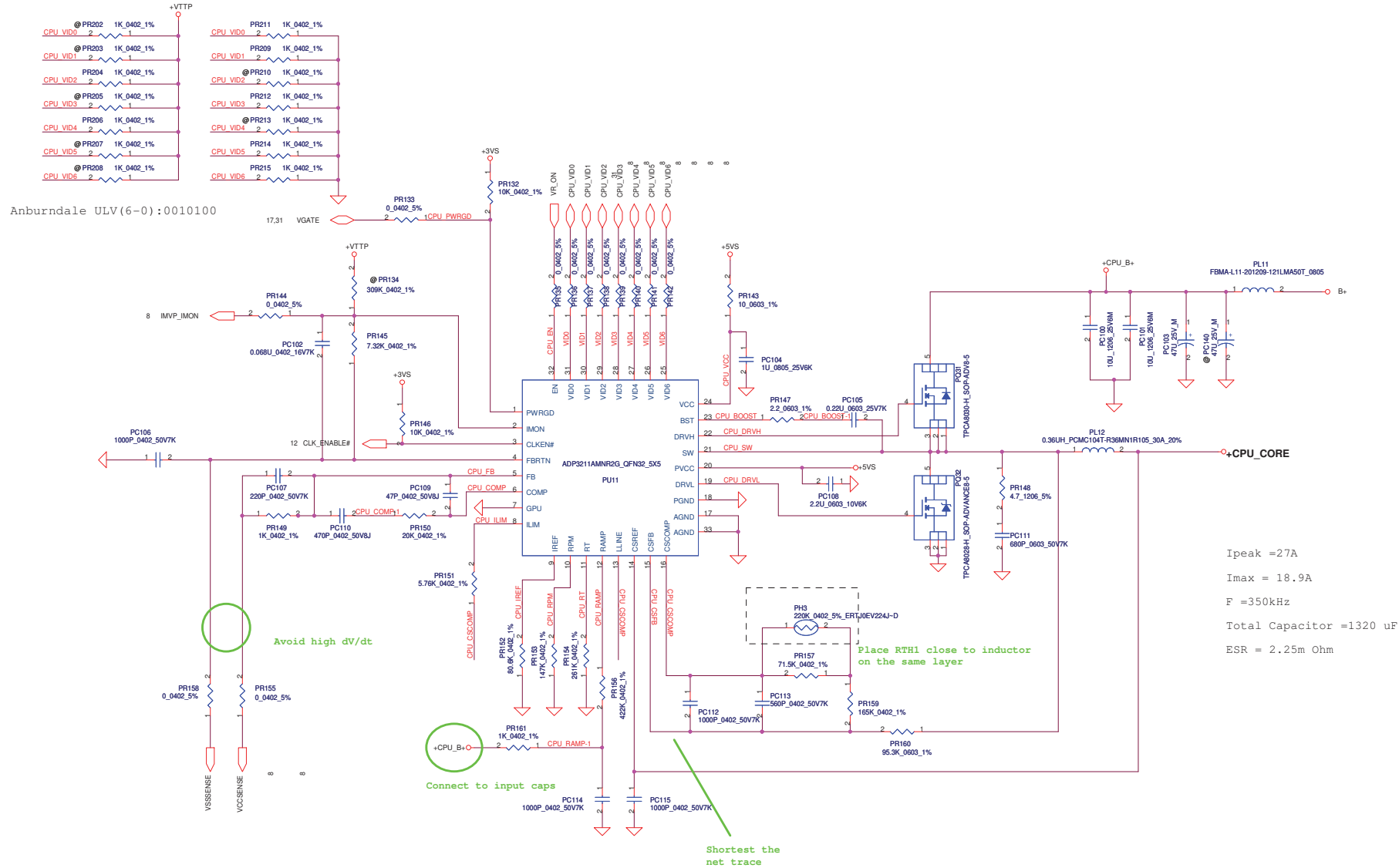
0.75VSP

NDU00 LA-6031P M/B

Monday, April 12, 2010

Sheet 41 of 45

Rev 1.0



Ipeak = 27A
Imax = 18.9A
F = 350kHz
Total Capacitor = 1320 uF
ESR = 2.25m Ohm

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
2009/11/9 (EVT)	P38	+5VALWP/+3VALWP	PC54,PC55,PC65,PC66 change SE076104KM8 to SE076104K80	change to A51 material
2009/11/9 (EVT)	P39	+VTTP	Resever PD15	Design change
2009/11/9 (EVT)	P41	+0.75VSP	Change PQ30 to SB000009610	Design change
2009/11/9 (EVT)	P42	CPU_CORE	Change PU11 change to ADP3211	Design change
2009/11/9 (EVT)	P42	CPU_CORE	Change PH3 &PH4	change to A51 material
2009/11/9 (EVT)	P37	CHARGE	Change PR49 change to 33m	Design change
2009/11/9 (EVT)	P38	+5VALWP/+3VALWP	PR90 & PR91 change to 121K	Design change
2009/12/1 (DVT)	P39	+CPU-CORE	Add PR202-PR215 pull-up & pull-down	Design change
2009/12/17 (DVT)	P36	Battery	Change PR31,PR32,PR34,PR35	Design change
2009/12/17 (DVT)	P37	CHARGE	Change PC23,PC24,PC25,PC81,PC82 1206 to 0805	Design change
2009/12/22 (DVT)	P42	CPU_CORE	Change PR147 0 ohm change to 2.2 ohm	EMI commond
2009/12/22 (DVT)	P43	GFX	Change PR176 0 ohm change to 2.2 ohm	EMI commond
2009/12/22 (DVT)	P39	+VTTP	ADD material PR125 & PR104 & PR102 and add net VTTPWORK_CPU	Design change
2010/01/25 (PVT)	P36	Battery	Add PD7,PD8	EMI require
2010/01/27 (PVT)	P37	CHARGE	Add 10u x3 PC46,PC47,PC88	EMC require
2010/02/04 (PVT)	P41	+0.75VSP	Resever PR129 Add PR130 and PC97	Design change
2009/02/04 (PVT)	P38	+5VALWP/+3VALWP	Change PQ38	Design change
2010/02/04 (PVT)	P42	CPU_CORE	Change PR160 to 95.3K and PR145 to 7.32K	Design change
2010/02/08 (PVT-2)	P36	Battery	Change PR21&PR22 and +CHGRIC	Design change

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					NDU00_LA-6031P M/B Date: Monday, April 12, 2010
				Sheet	44 of 45
				Rev	1.0

Item	Fixed Issue (Reason for change)	PAGE	Modify List	Date	Phase
1	Intel S3 power saving	05	Install Q1, R1484, C878, R8, R40 and Remove R2, R42	12/25	DVT
2	HDMI Detection function	14	modify HDMI_HPD circuit (Remove U7)	12/25	DVT
3	Sleep charge control method change	19 & 31	SLP_CHG_M3_R & SLP_CHG_M4_R change from PCH to Pin103 & 74 of EC	12/25	DVT
4	Implement Low power HDA	22	Reserve R1468 & R1469 for 1.5VALW (Low Power HDA)	12/25	DVT
5	Debug usage	26	Reserve LPC bus at WLAN soft	12/14	DVT
6	LAN circuit change for Vendore request	27	RL21 contact to GND	12/18	DVT
7	Avoid power leakage & reduce double pull up	27	Remove RL3	12/25	DVT
8	Transformer change	27	Move Transformer from Sub-board to M/B	12/21	DVT
9	Prevent Card Reader IC damage when insert dummy card	28	Add F2	12/24	DVT
10	Audio PD# issue (Could not work)	29	Add RA29 pull up	12/19	DVT
11	Avoid Audio noise	29	reserve and unistall CA70, CA68, CA69, UA2, RA30, CA67	12/22	DVT
12	Enhance Right side USB ability	30	modify JP2 pin assignment and reserve JP3 pad for test	12/19	DVT
13	Sleep charge control method change	31	add pin 21 of EC for control ALW power MOS	12/21	DVT
14	Sleep charge control method change	34	add two ALW power transfer circuits (3V_ALW to 3VALW & 5V_ALW to 5VALW)	12/21	DVT
15	system idle hang up issue	8	CPU_PSI# Pull down 1k ohm & H_DPRS LPVR pull up 1k ohm to VIT	12/19	DVT
16	Sleep charge control method change	24	change U14 power from 5VALW to 5V_ALW	12/21	DVT
17					
18	EC_SW# pull up twice R190	27	RL3 reserved.	01/20	PVT
19	Audio LDO reserved for AVDD.	29	UA2 pin 5 for +AVDD	01/20	PVT
20	For S3 power saving.	05	Reserve R2 and change R1484 to 0 ohm.	01/20	PVT
21	For 3G LED flash when resume from S3.	33	Reserve Q21 and Q22 circuit. Add R338 and R336.	01/20	PVT
22	Don't need discharge circuit.	34	Modify Q26 and Q27 circuit.	01/20	PVT
23	Reserve for PCH and EC both.	19,24,31	Add R1487,R1488,R1489 and R1490.	01/20	PVT
24	Change JHDD1 pin 4 to GND.	24		01/20	PVT
25	Add BT power control circuit.	26	Add D85 and Q27.	01/20	PVT
26	change cardreader connector.	28	ME request	01/26	PVT
27	change LED always power	33	3G LED flash issue.	01/26	PVT
28	change TP connector.	33	ME request	01/26	PVT
29	JGSIM2 connector.	26		01/26	PVT
30	add R1491 in USB_EN#	30		01/26	PVT
31	Lid switch change to +3V_ALW	31,33	Toshiba request.	01/26	PVT
32	add USB port 9 and PCIe port 4 for 8 pin SIM card.	16,19,26		01/27	PVT
33	add R1494 and D84 near D5 and add L1C near U8	15,18	EMI request	02/03	PVT
34	change MIC1_R and MIC1_L pull high	29	MIC issue.	02/03	PVT
35	JLVDS1 pin24 change to NC	12	Common design.	03/04	PVT2
36	CRT trace modify.	18	wrong trace.	03/04	PVT2
37	D5 layout close to PCH(U8)		layout change	03/04	PVT2
38	Change Q2 to JMicon card reader.	28		03/22	PVT2
39	USB OC# change	19	Common design.	03/22	PVT2
40	Add R1505.	17	EMI request	03/22	PVT2

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				NDU99_AA-6831P M/B	
				Date	Monday, April 12, 2016
				Sheet	45 of 45