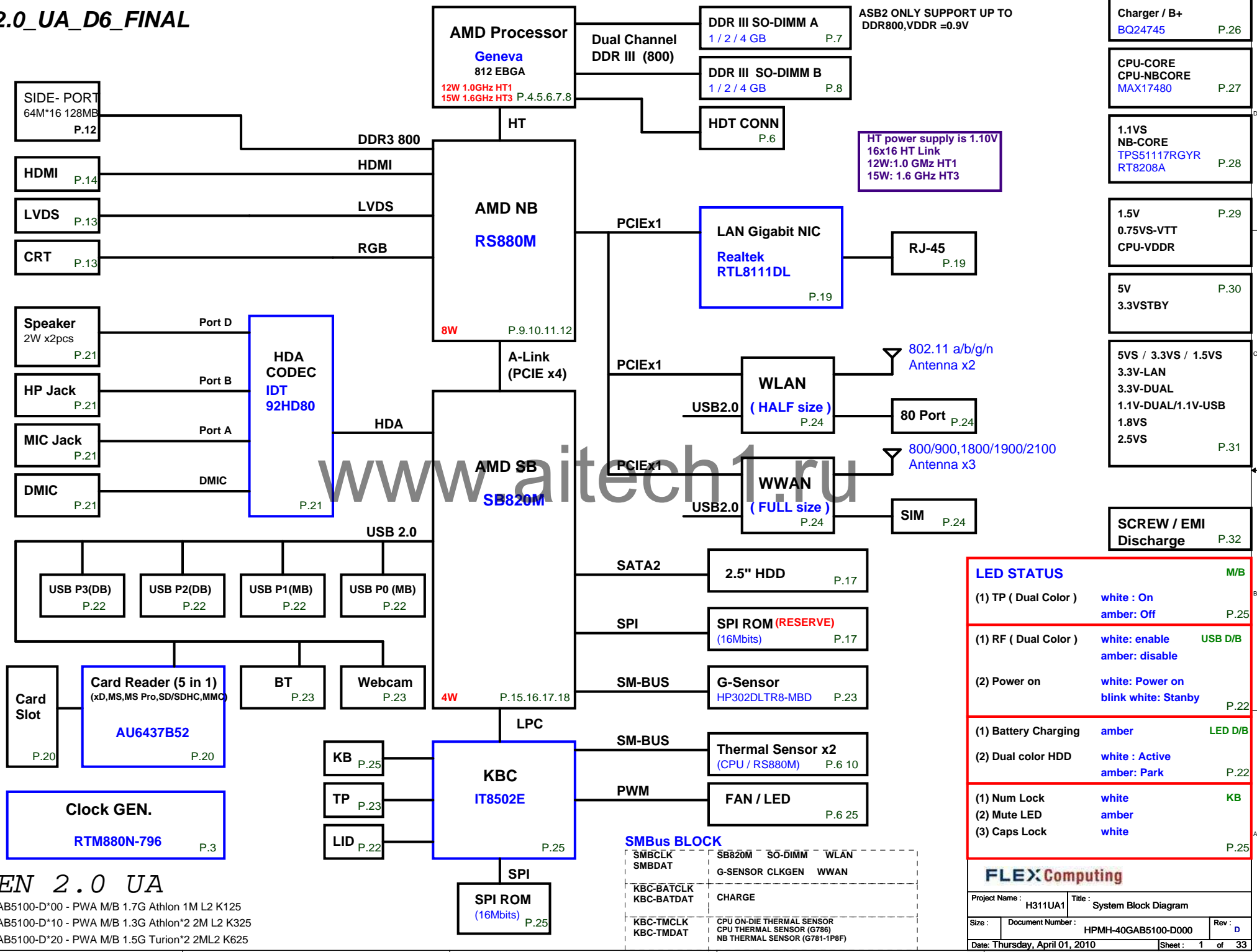


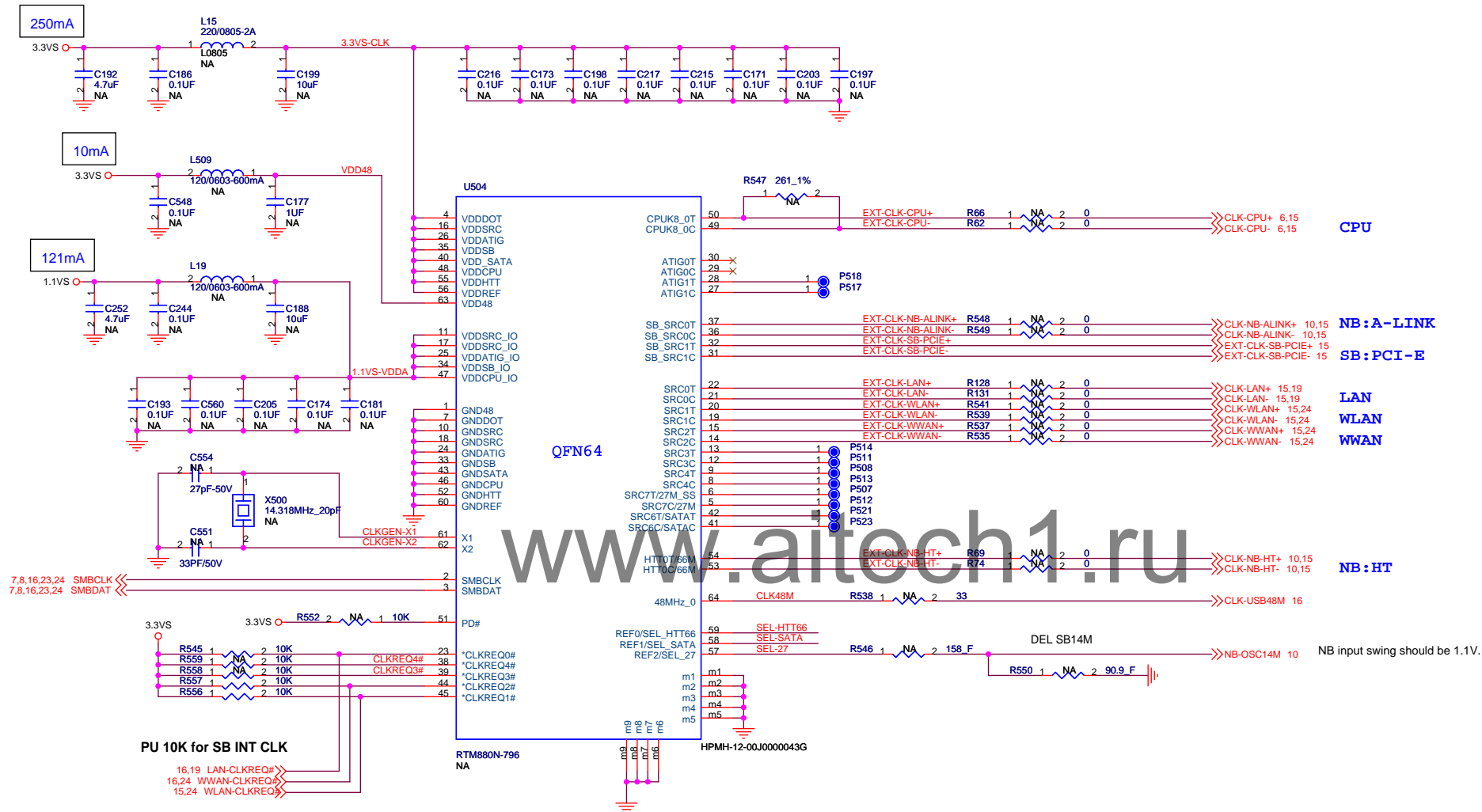
Arwen2.0_UA_D6_FINAL



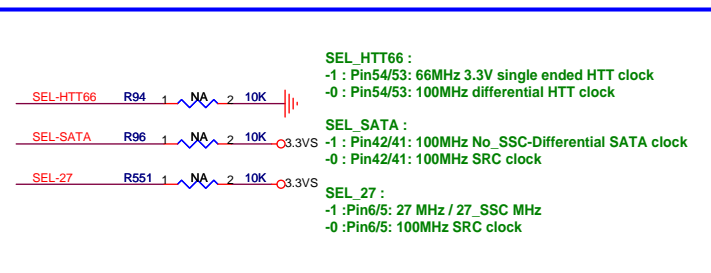
ARWEN 2.0 UA

HPMH-40GAB5100-D*00 - PWA M/B 1.7G Athlon 1M L2 K125
HPMH-40GAB5100-D*10 - PWA M/B 1.3G Athlon*2 2M L2 K325
HPMH-40GAB5100-D*20 - PWA M/B 1.5G Turion*2 2ML2 K625

CLOCK GENERATOR



CLKREQ#	DEVICE
CLKREQ0#	LAN
CLKREQ1#	WLAN
CLKREQ2#	WWAN
CLKREQ3#	NA
CLKREQ4#	NA



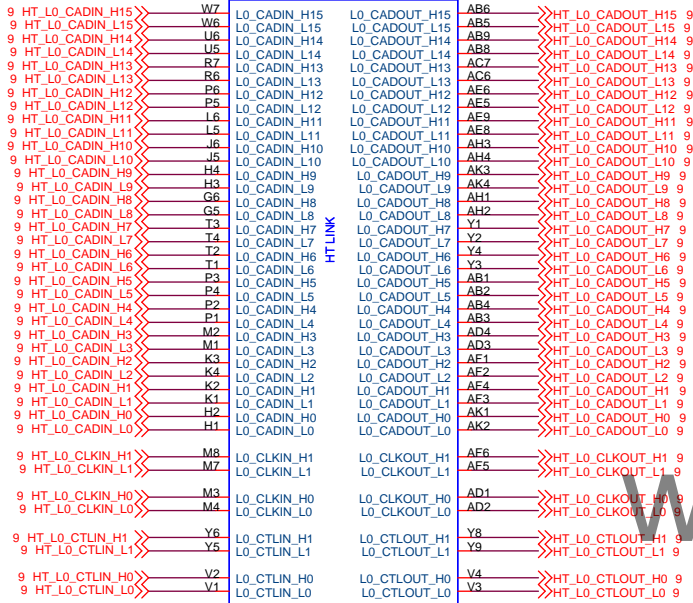
FLEX Computing

Project Name :	H311UA1	Title :	CLOCK GENERATOR
Size :	Custom	Document Number :	HPMH-40GAB5100-D000
Date :	Thursday, April 01, 2010	Rev :	D
Sheet :	3	of	33

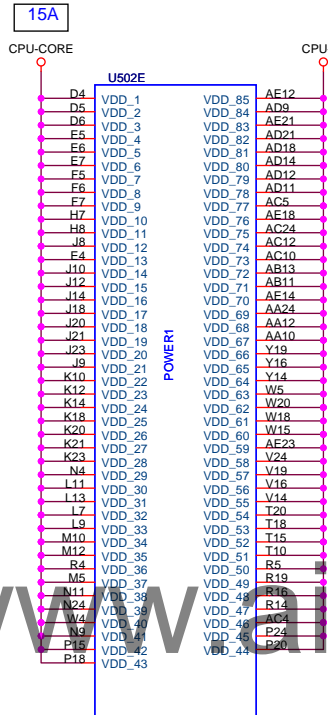
CPU HT/PWR/GND

VLDT Trace at Itast 200 mils wide

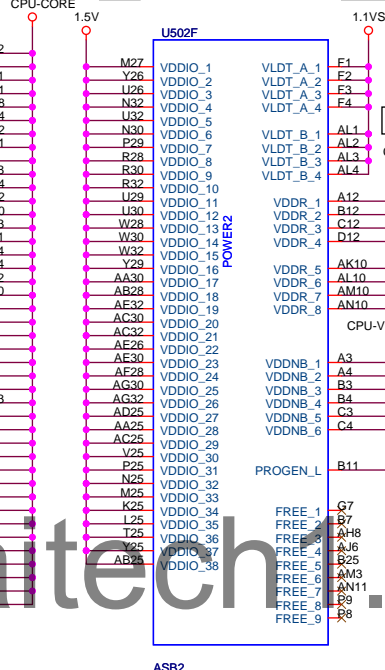
Vicm(DC)=600 mV



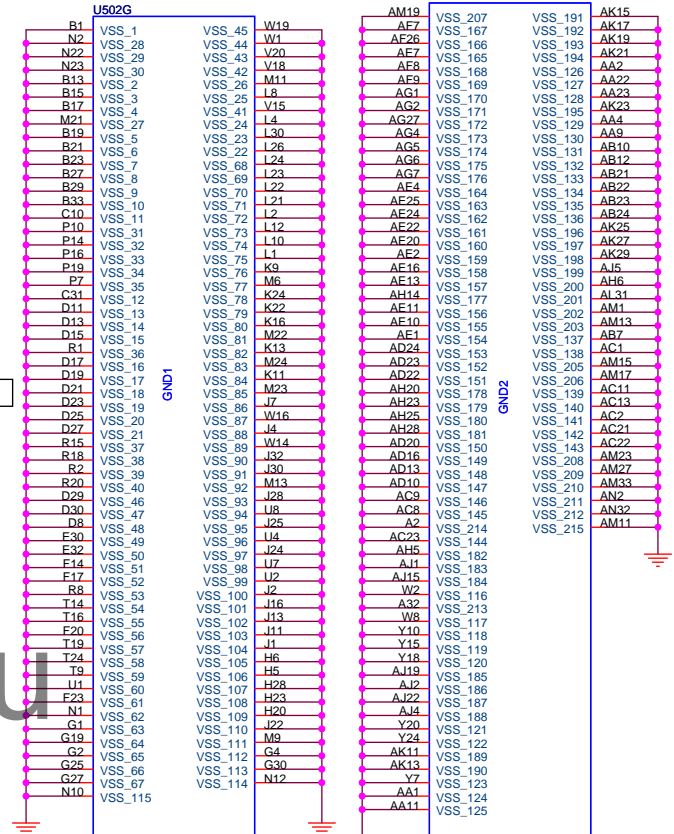
ASB2
BGA812-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W



ASB2
BGA812-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W

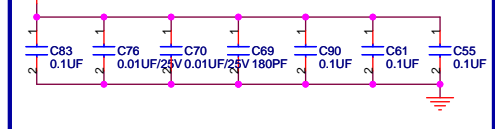
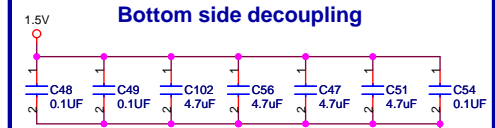
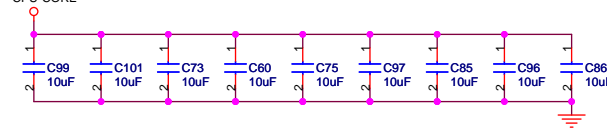
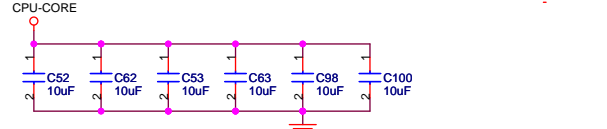
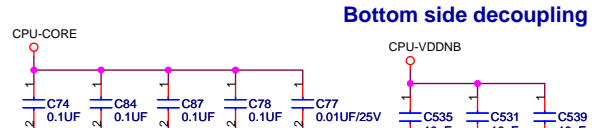
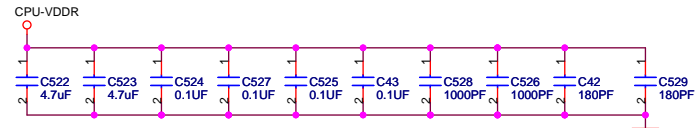
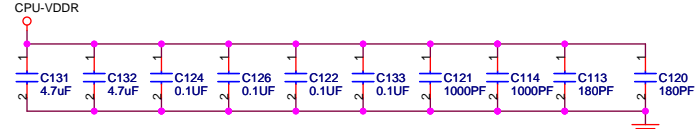
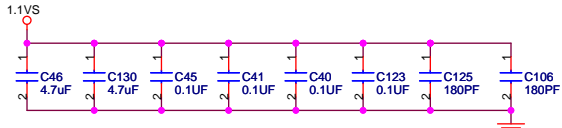


ASB2
BGA812-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W



ASB2
BGA812-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W

ASB2
BGA812-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W



FLEX Computing

Project Name :	H311UA1	Title :	CPU HT/PWR/GND
Size :	Document Number :	HPMH-40GAB5100-D000	Rev : D
Date :	Thursday, April 01, 2010	Sheet :	4 of 33

CPU MEMORY A/B

U502B

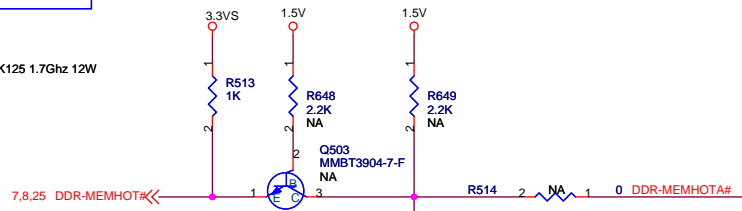
U502C

DDR III: CHANNEL A

DDR III: CHANNEL B

AS92
BGAB12-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W

ASB2
BGAB12-27X27
HPMJ-598822-001
IC, uP, Athlon II Neo SC K125 1.7Ghz 12W



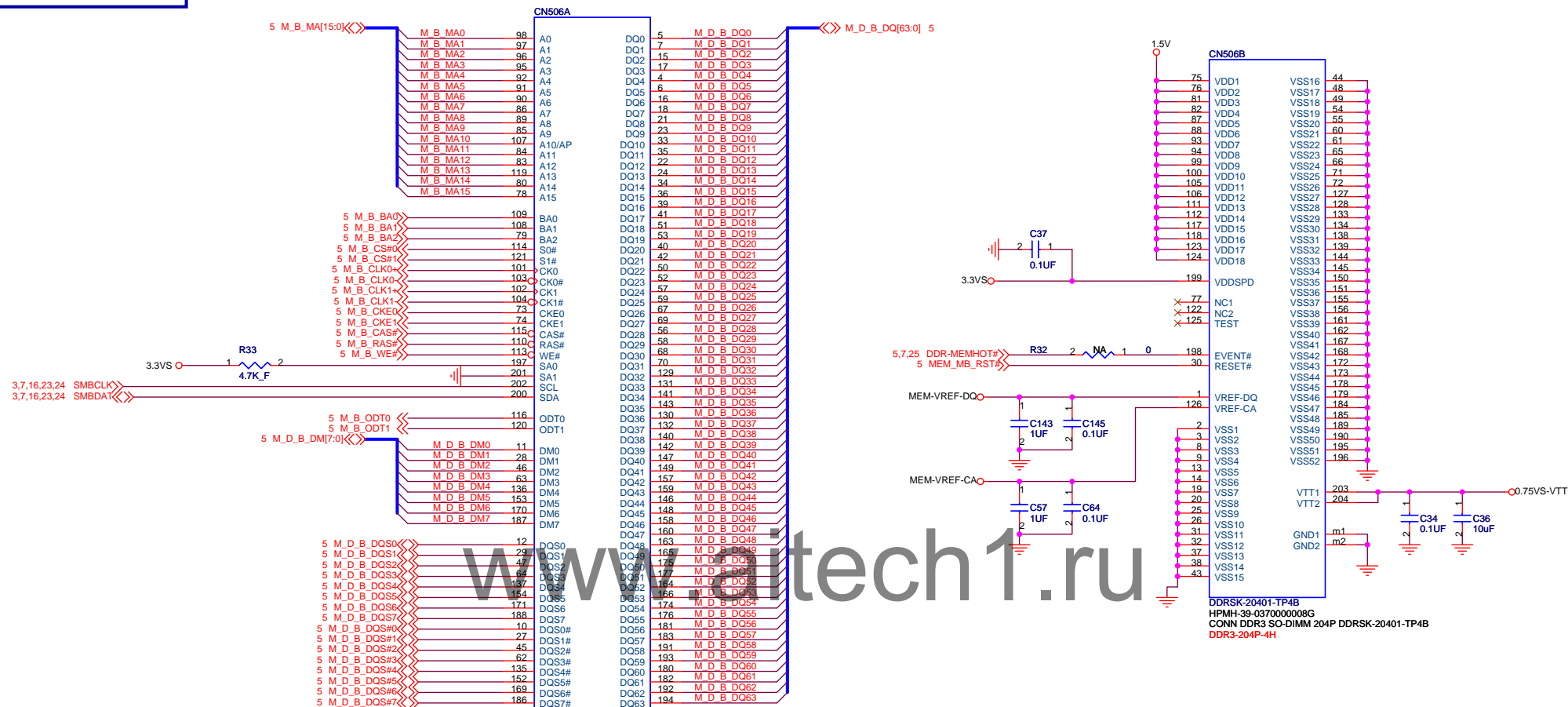
EC (PWM1/GPA1)
DIMMA
DIMMB

CPU Memory A/B

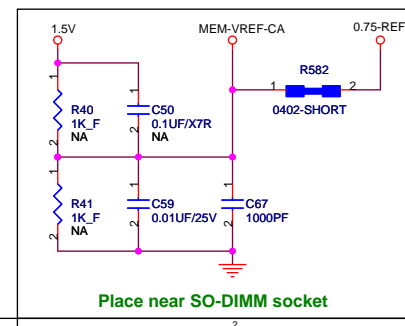
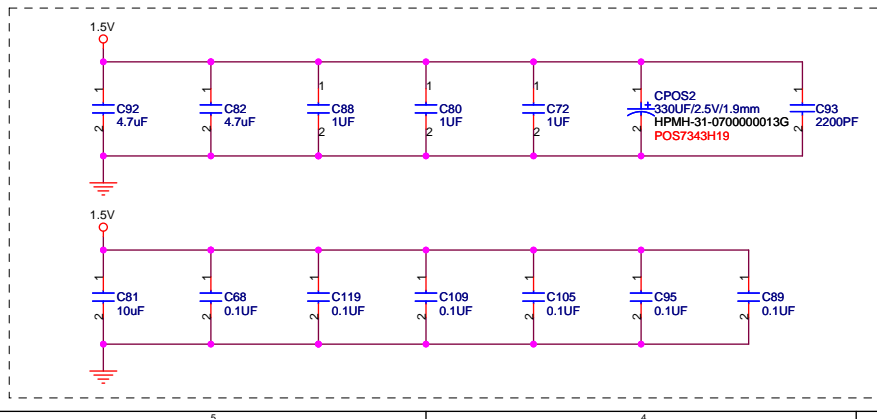
FLEX Computing

Project Name : H311UA1		Title : CPU Memory Interface	
Size :	Document Number :	HPMH-40GAB5100-D000	
Date: Thursday, April 01, 2010		Rev : D	Sheet: 5 of 33

Memory Channel B



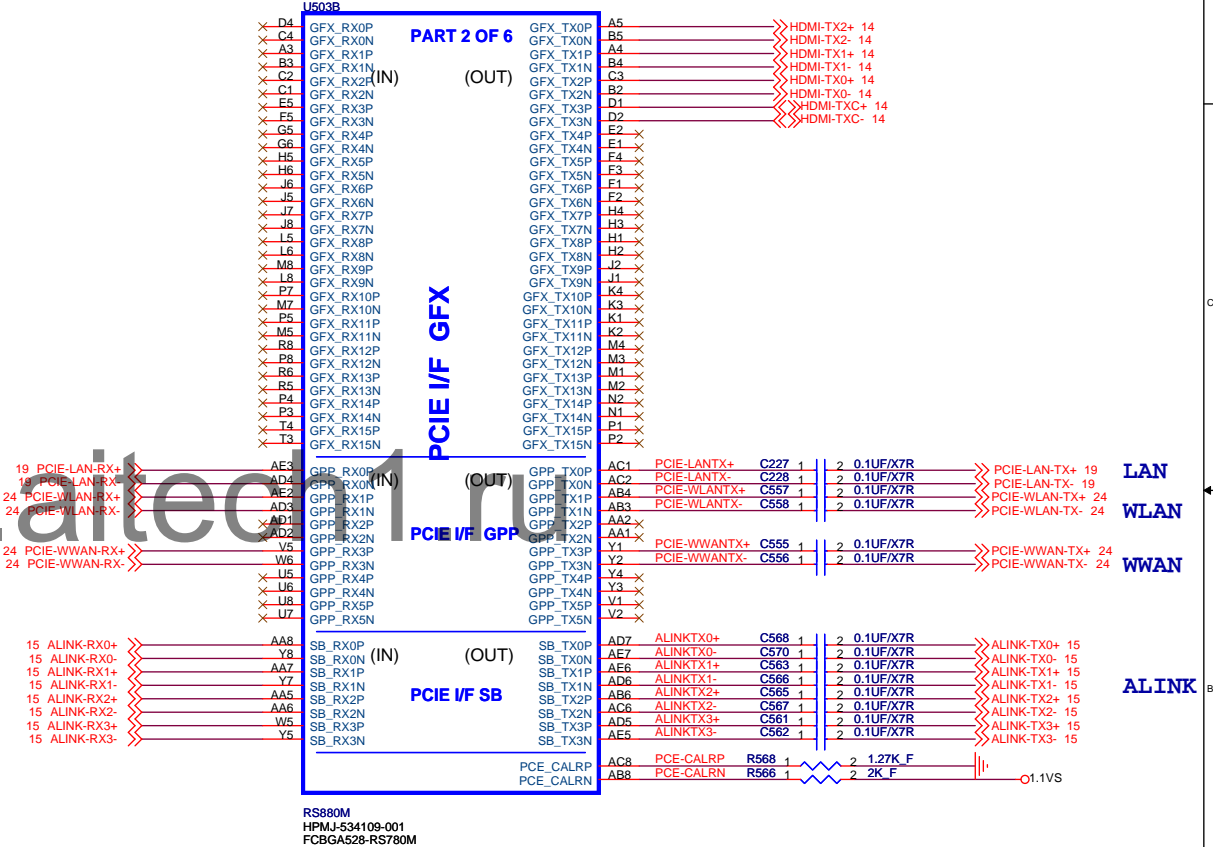
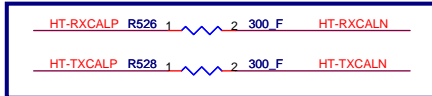
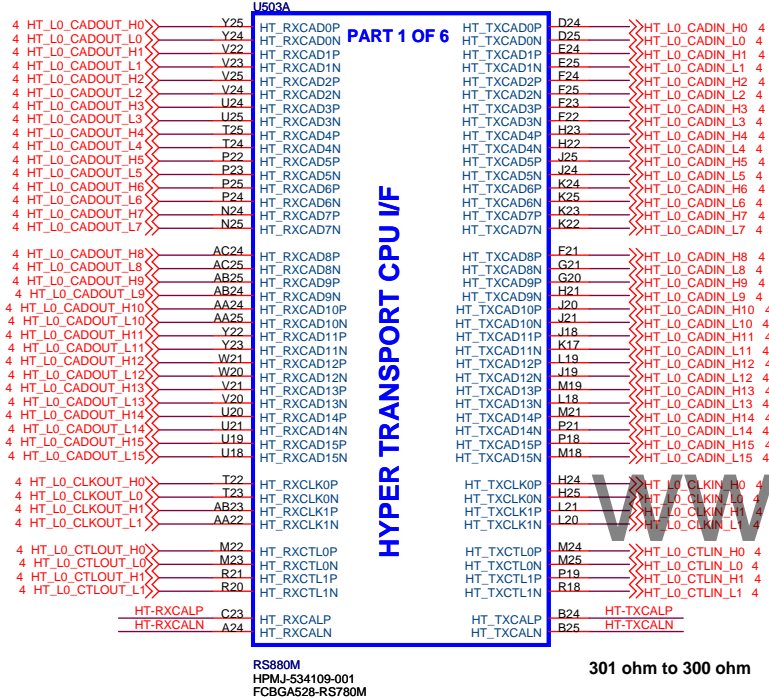
Layout :
Place these Caps near So-DimMA



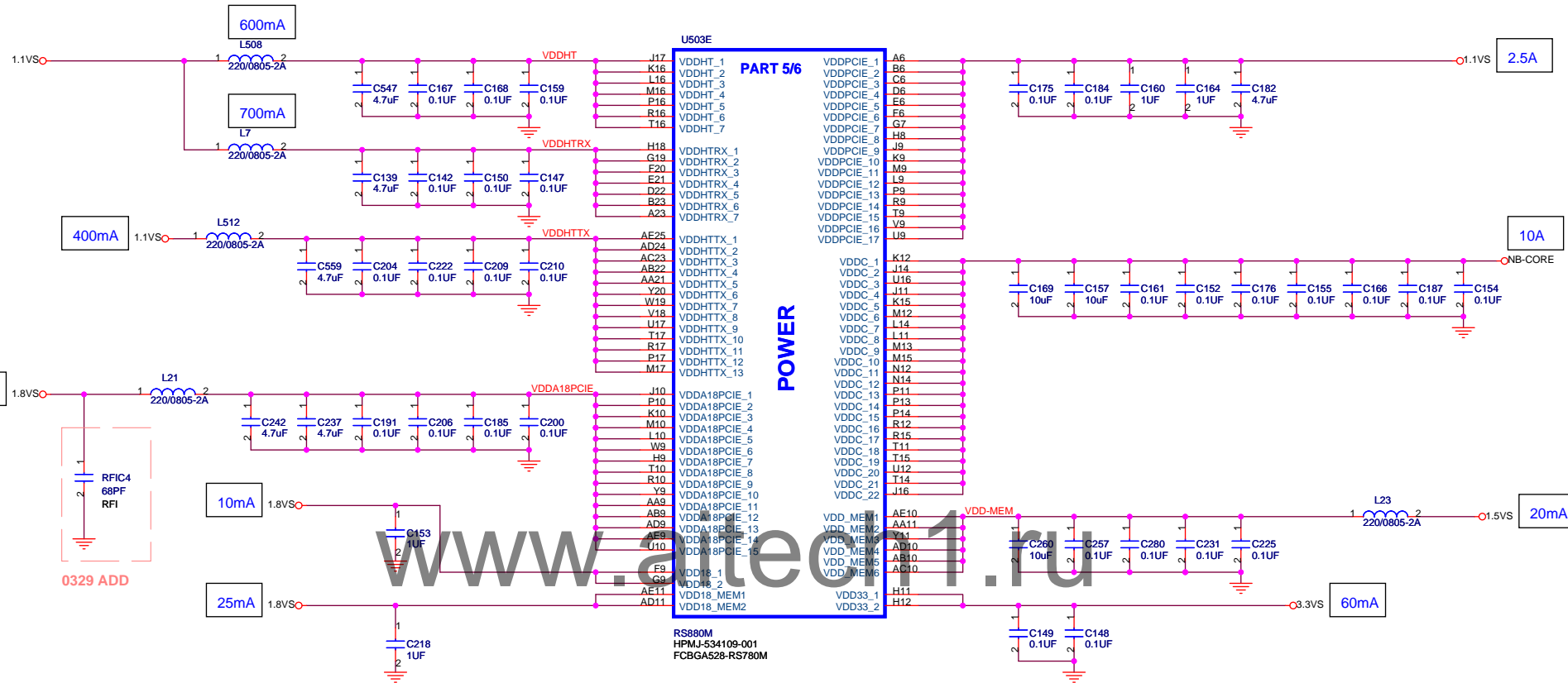
FLEX Computing

Project Name :	H311UA1	Title :	Memory Channel A
Size :	Document Number :	HPMH-40GAB5100-D000	Rev : D
Date :	Thursday, April 01, 2010	Sheet :	8 of 33

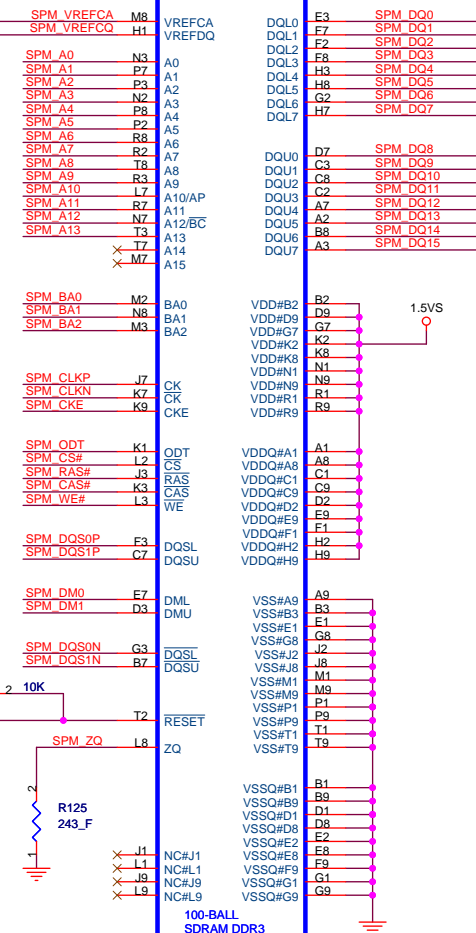
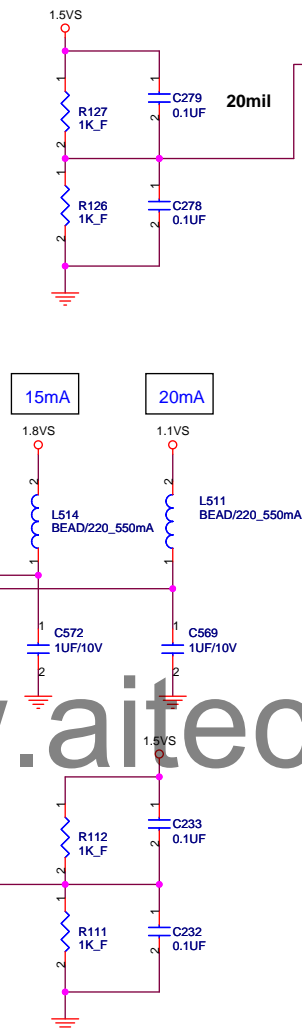
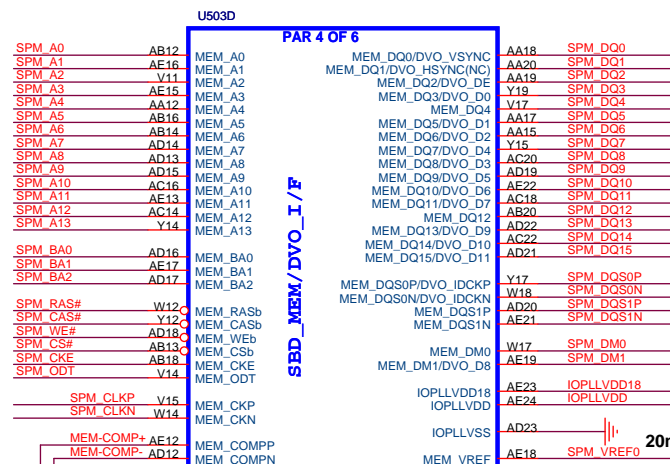
RS880M HT/PCIE/HDMI



RS880M Power/Ground



NB_SIDE PORT / STRAPS



RS880M H/W STRAPS

STRAP_DEBUG_BUS_GPIO_ENABLE

Enables the Test Debug Bus using GPIO.
DAC_VSYNC (RS780.Pin B11)
1 : Disable (RS880M) (default) ***
0 : Enable (RS880M)



RS880M: Enable Side Port Memory

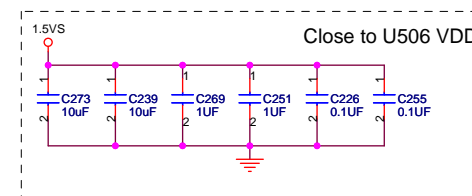
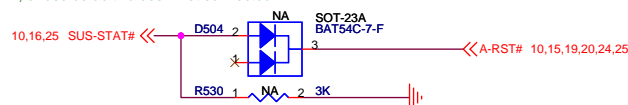
Selects if Memory SIDE PORT is available or not
DAC_HSYNC (RS880M.Pin A11)
1 : Disable (default)
0 : Enable ***
Register Readback of strap:
NB_CLKCFG:CLK_TOP_SPARE_D[1]



The RS880M memory controller supports up to 128MB of dedicated side-port frame buffer DDR3 memory. It supports a single rank of DDR3 device in 16-bit memory configuration. It supports device sizes of 512 and 1024 Mbits, and a device width of x16. A wide range of DDR3 timing parameters, configurations, and loadings are programmable via the RS880M memory controller configuration registers.

DFT_GPIO1: LOAD_EEPROM_STRAPS

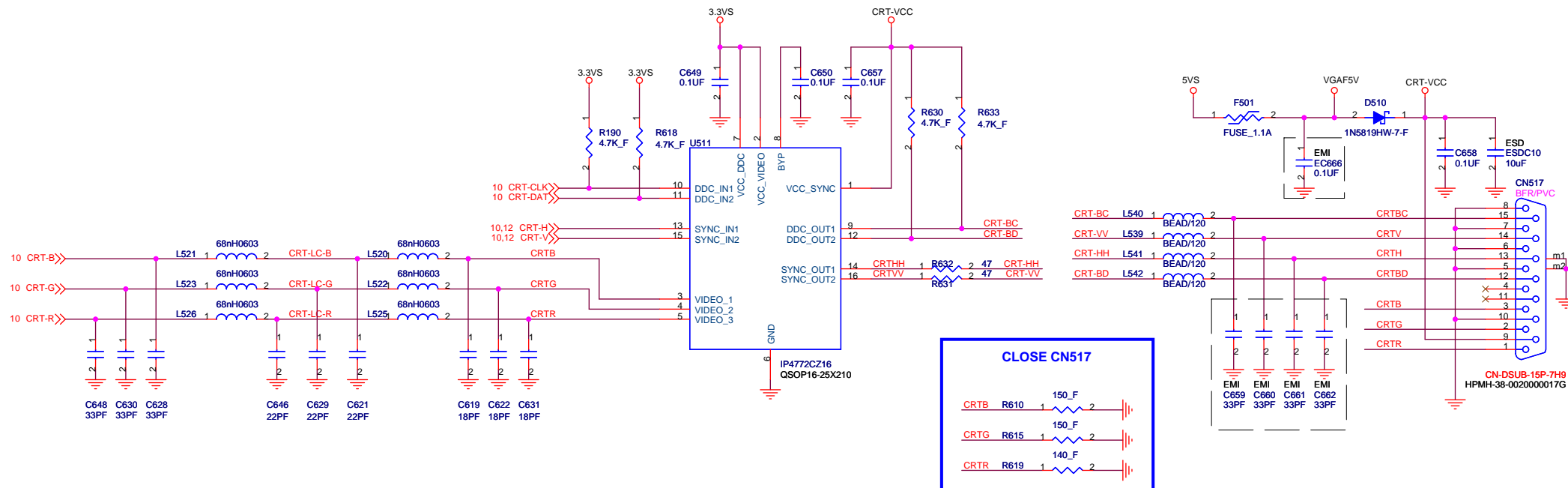
Selects Loading of STRAPS from EPROM
SUS_STAT# (RS880M.Pin D12)
-1*: Bypass the loading of EEPROM straps and use Hardware Default Values
-0: I2C Master can load strap values from EEPROM if connected, or use default values if not connected



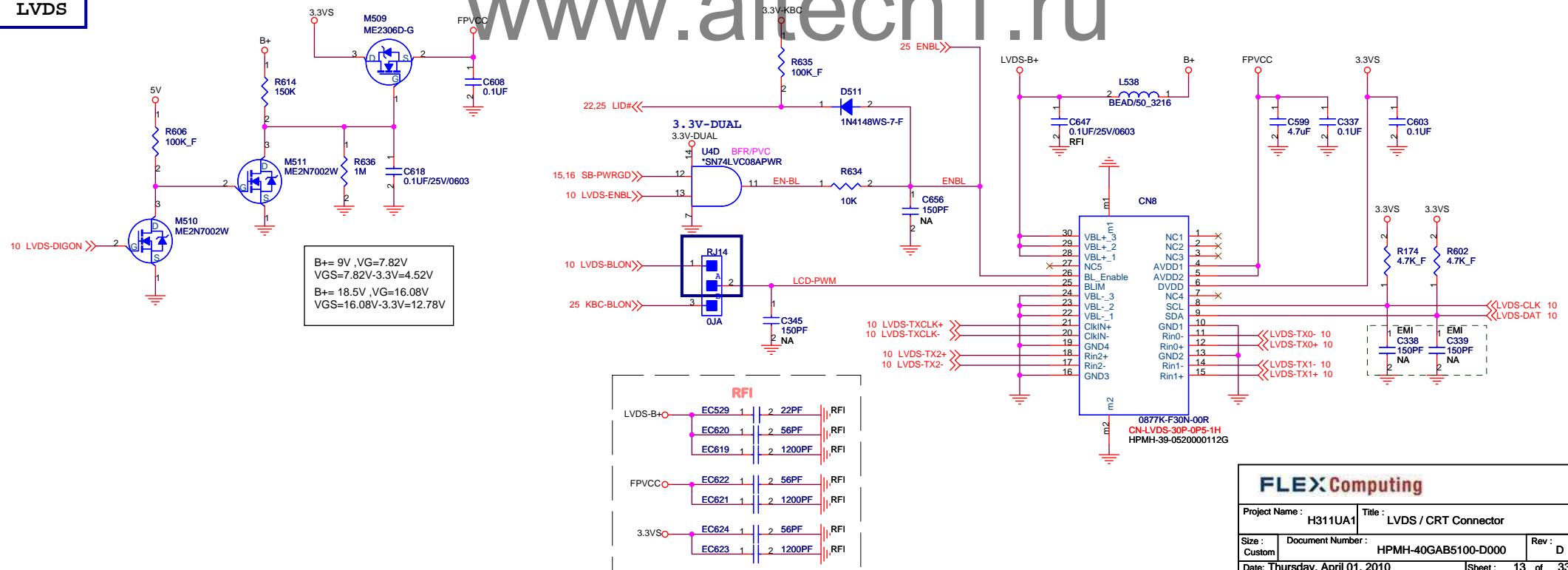
FLEX Computing

Project Name :	H311UA1	Title :	RS880M SPD / STRAPS
Size :	Custom	Document Number :	HPMH-40GAB5100-D000
Date :	Thursday, April 01, 2010	Rev :	D
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CRT



LVDS

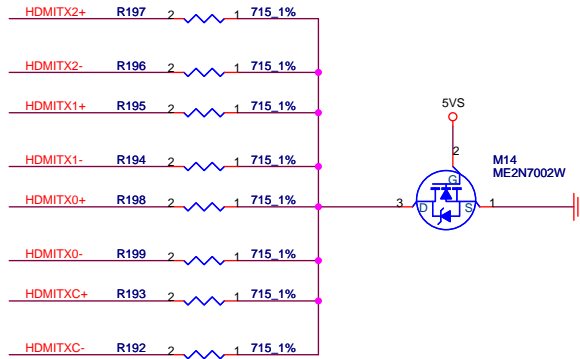
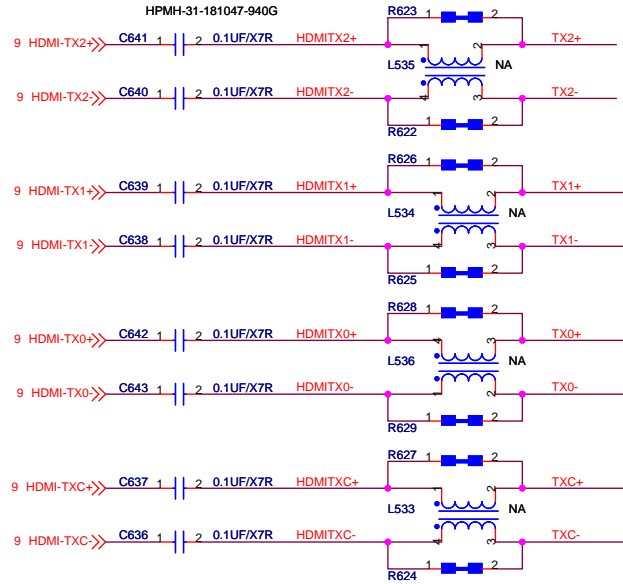


HDMI

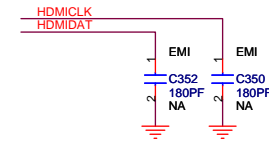
Main HPMH-32-200000056G - CHOKE 90ohm 0805 YCM0805F2SF-900T04
 2nd HPMH-32-400108-000G - CHOKE COIL 90ohm WCM2012F2SF-900T04

Connected a 715-Ω 5% resistor on each signal connected with a FET to GND (one FET per pair) located on the TMDS connector side of the series capacitors.

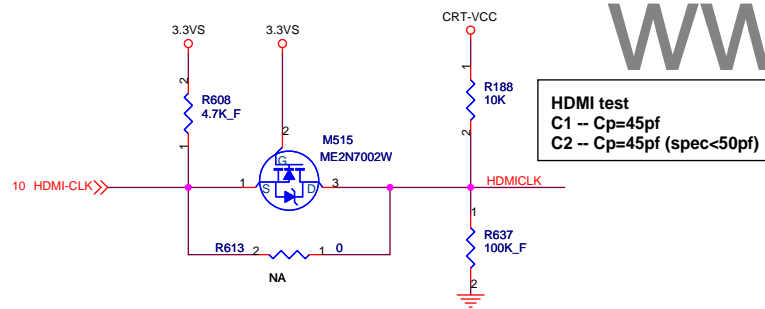
CLOSE CN514



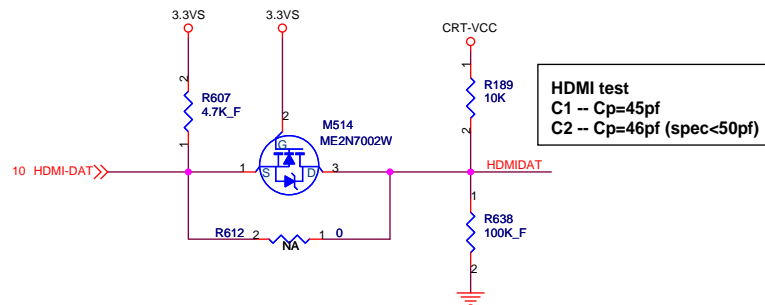
EMI



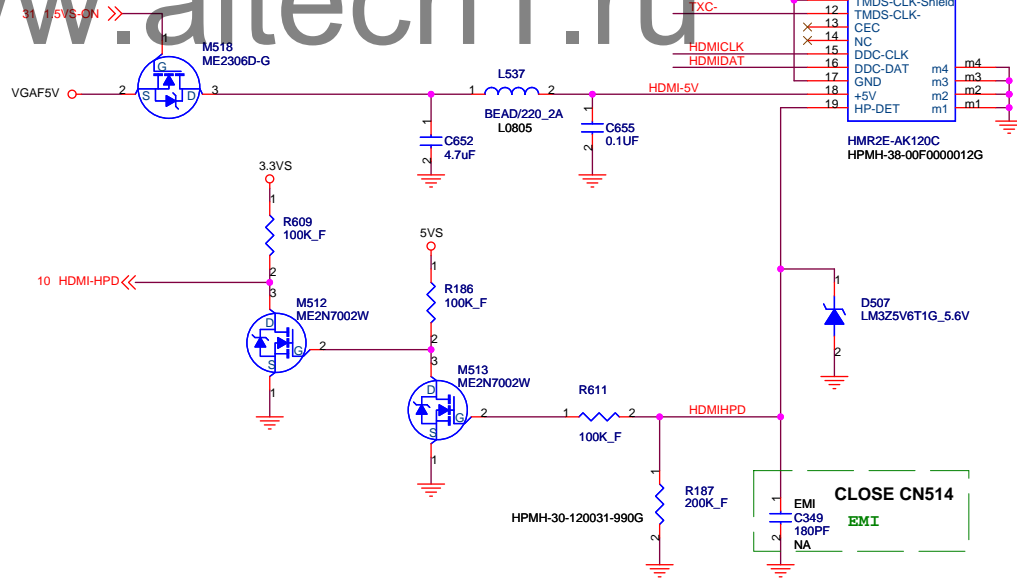
www.aitech1.ru



HDMI test
 C1 -- Cp=45pf
 C2 -- Cp=45pf (spec<50pf)

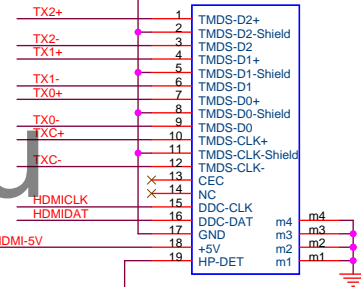


HDMI test
 C1 -- Cp=45pf
 C2 -- Cp=46pf (spec<50pf)



HDMI

CN514



HMR2E-AK120C
 HPMH-38-00F0000012G

D507
 LM325V6T1G_5.6V

CLOSE CN514

EMI
 C349
 180PF
 NA

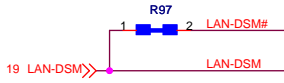
FLEX Computing

Project Name : H311UA1		Title : HDMI Connector	
Size : Custom	Document Number : HPMH-40GAB5100-D000	Rev : D	
Date : Thursday, April 01, 2010		Sheet : 14 of 33	

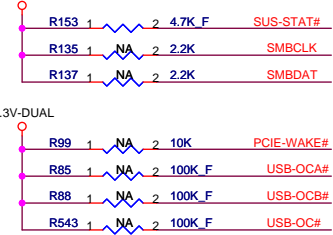
SB820M ACPI/GPIO/USB/AUDIO

LAN-DSM FUNCTION
CABLE IN Hi
CABLE OUT Low

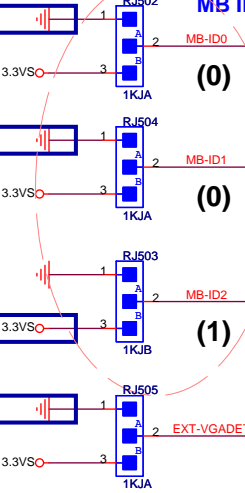
Auxiliary Clocks
In integrated clock mode pads 14M_25M_48M and USBCLK output 14.318 MHz clocks by default (can also be configured to output 25 or 48 MHz). Output of these clocks varies cyclically, thus they are not recommended for use as PLL inputs. They are intended for use as auxiliary clocks only



Pull-up/dn Resistor



MB ID SELECT



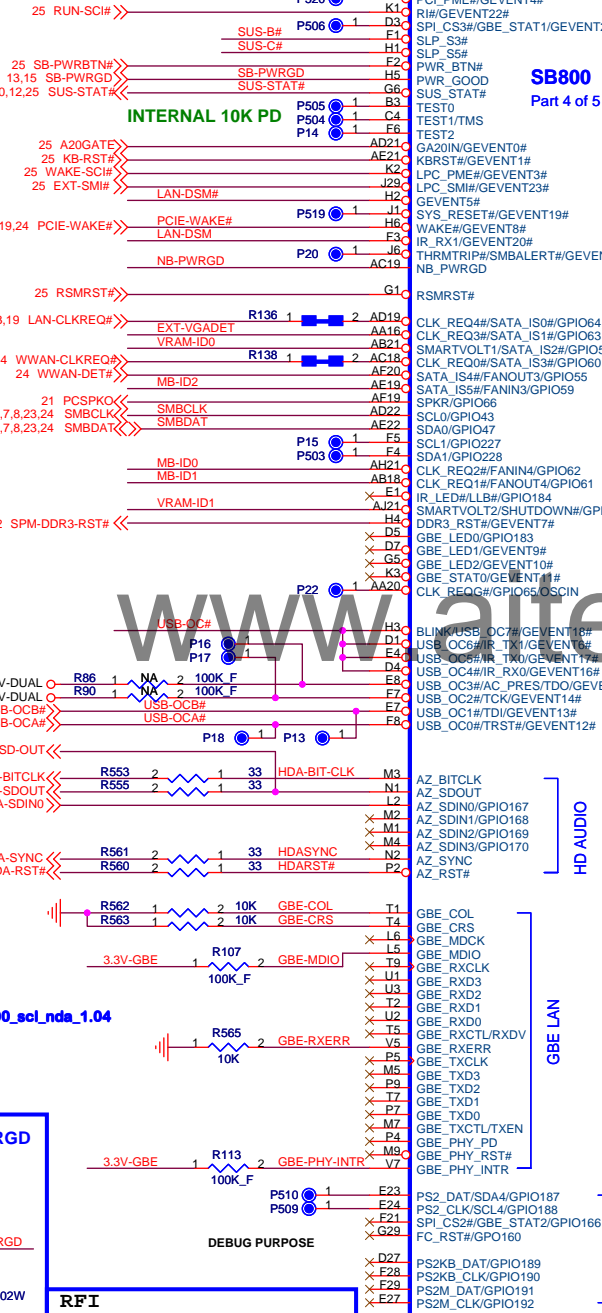
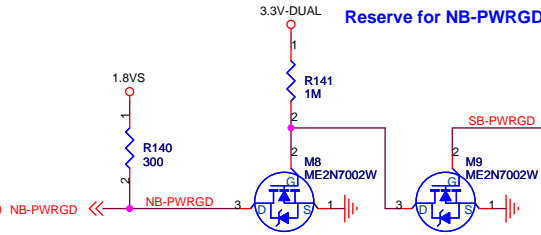
MB ID		
000	A	
001	B	
010	C1	
011	C2	
100	D	

UA/DA	
0	UA
1	DA

0317 change to B

EXT-VGADET

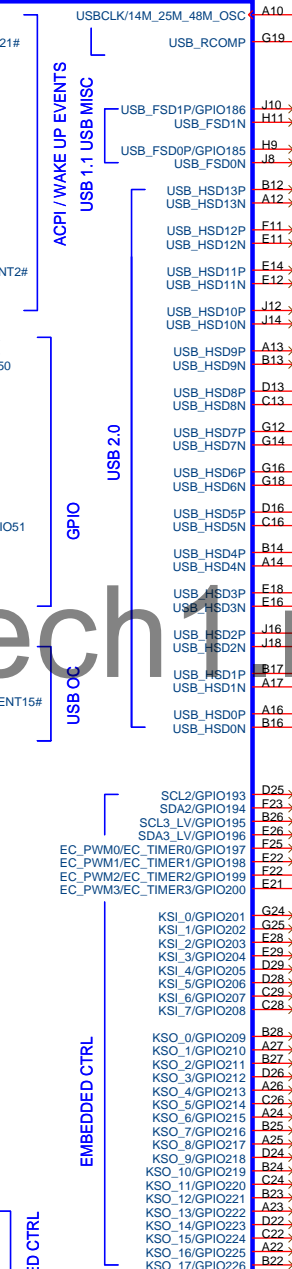
Reserve for NB-PWRGD



RFI



SB800 Part 4 of 5



HD AUDIO



GBE LAN



EMBEDDED CTRL



ACPI / WAKE UP EVENTS



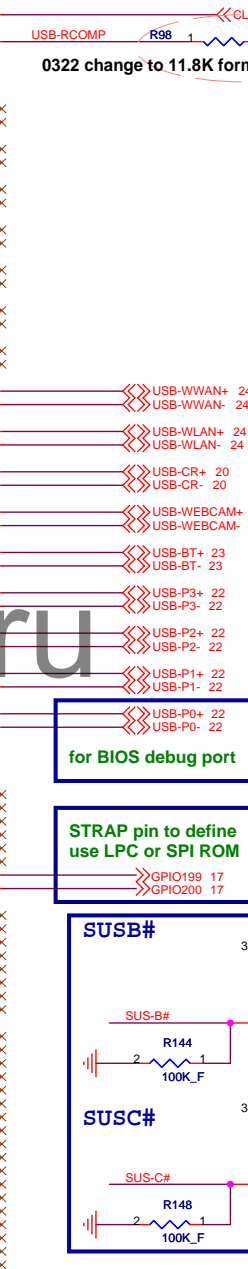
GPIO



USB OC



EMBEDDED CTRL



0322 change to 11.8K form 9.76K

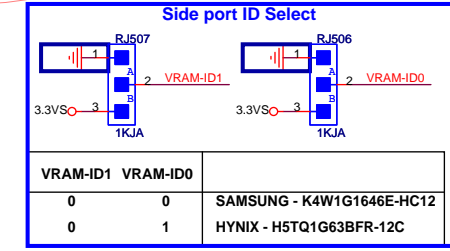
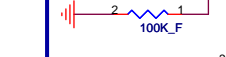
for BIOS debug port

STRAP pin to define use LPC or SPI ROM

SUSB#

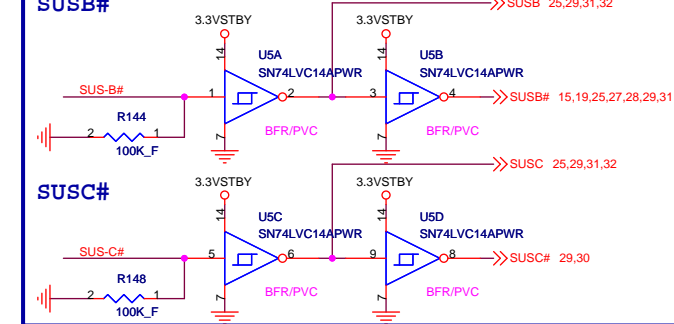
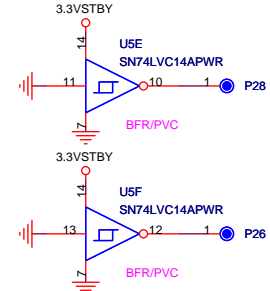


SUSC#



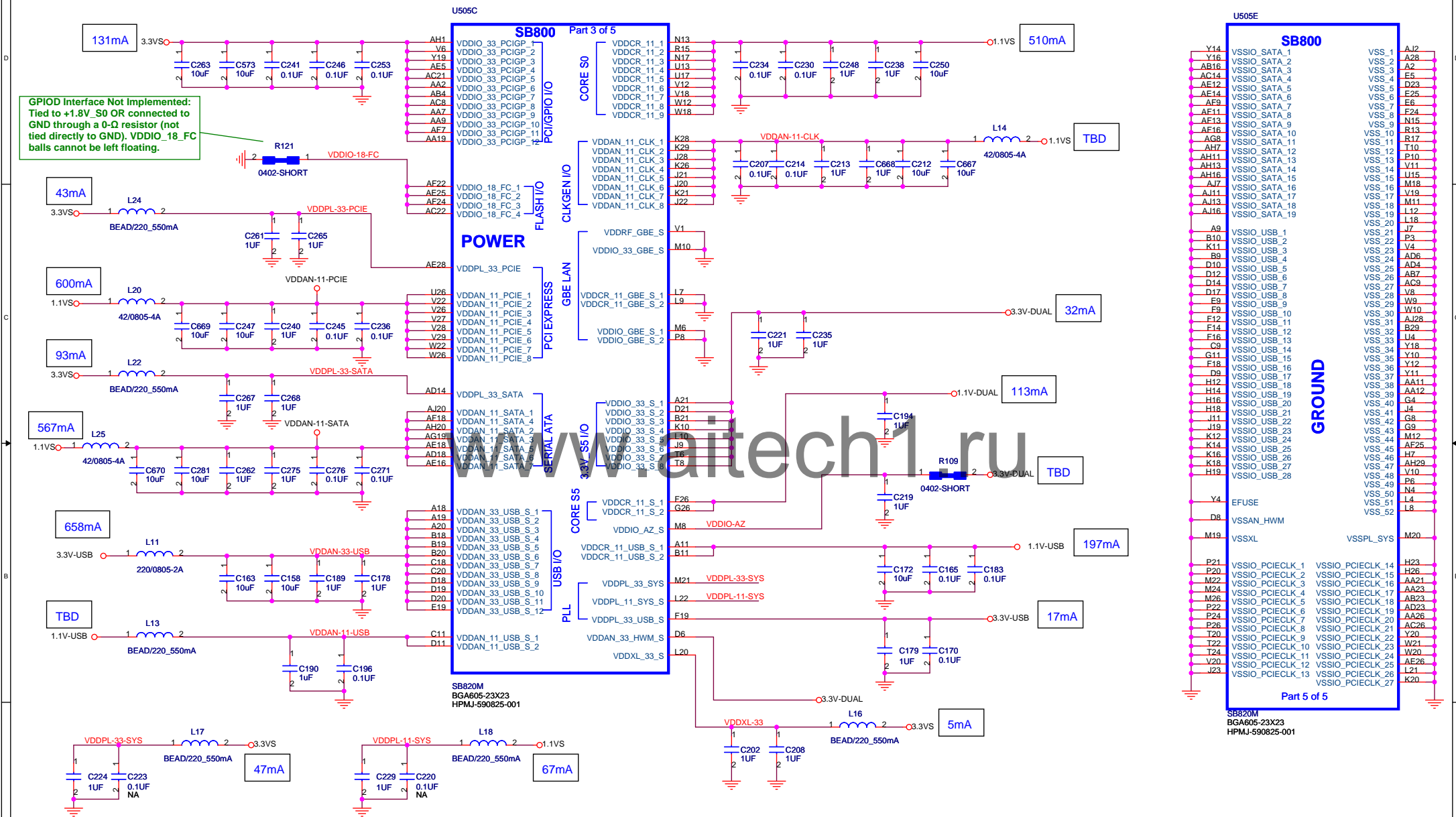
WWAN
WLAN
Card Reader
Webcam

BT
PORT 3
PORT 2
PORT 1
PORT 0



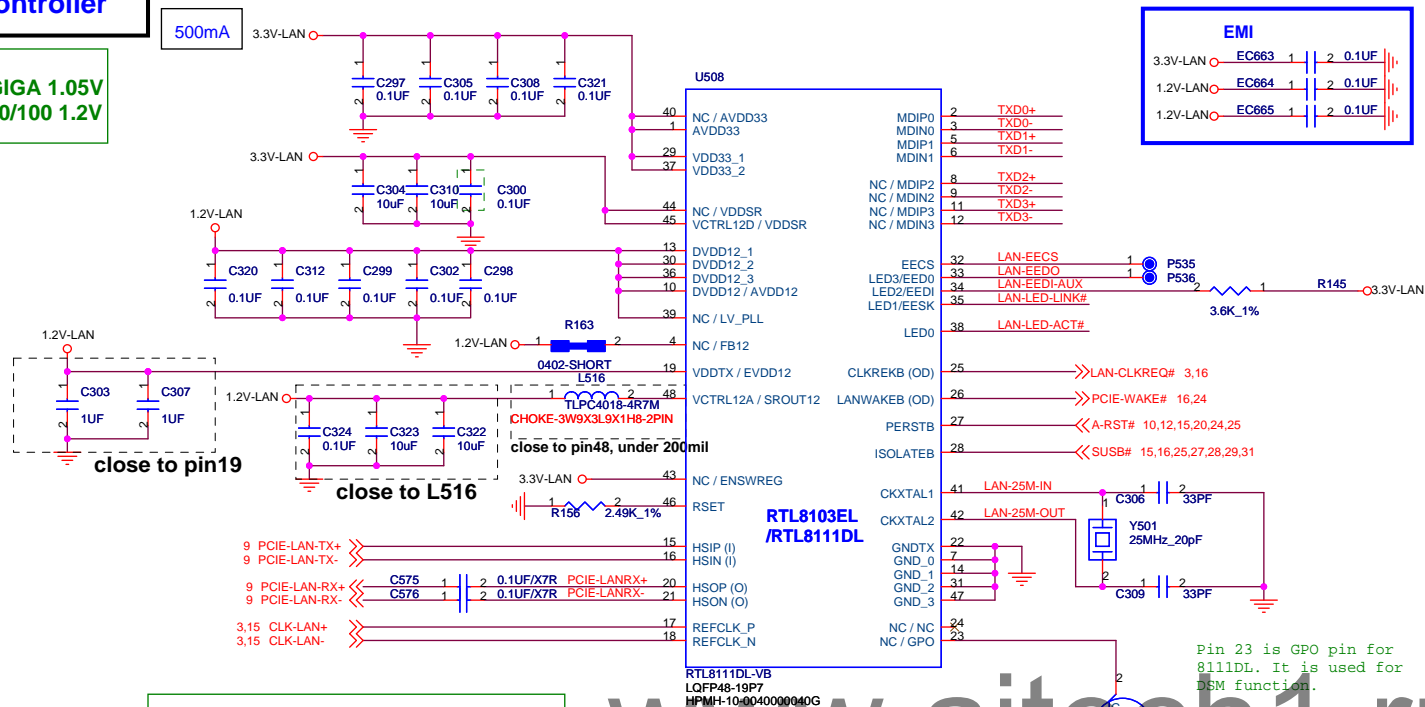
FLEX Computing

Project Name : H311UA1		Title : SB820M ACPI/GPIO/USB/AUDIO	
Size :	Document Number :	HPMH-40GAB5100-D000	Rev : D
Date : Thursday, April 01, 2010		Sheet : 16 of 33	

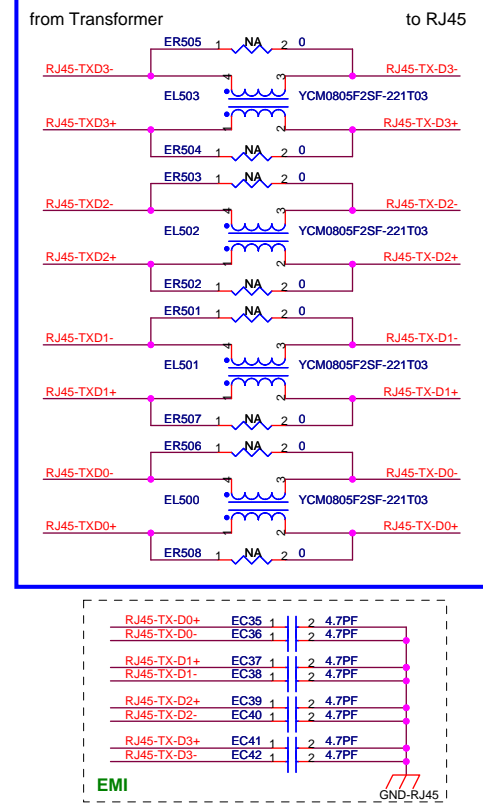


LAN Controller

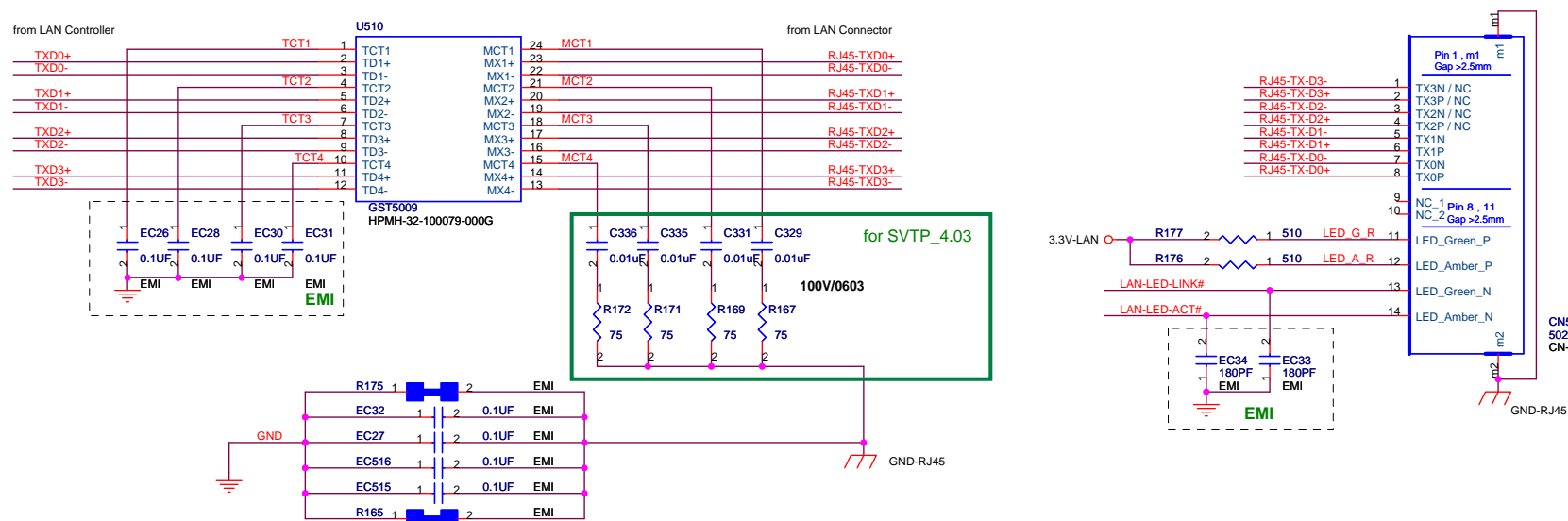
GIGA 1.05V
10/100 1.2V



Note: The Trace length between L561 and 8111DL's Pin must be within 0.5 cm. C5069 and C5070 and C5071 to L561 must be within 0.5cm.



RJ45 connector



CN510 BFR/PVC
50228-01441-001
CN-WTB14-1P0-4H3

FLEX Computing

Project Name :	H311UA1	Title :	RTL8111DL (LQFP48)
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Size : Custom	Document Number : HPMH-40GAB5100-D000	Rev : D
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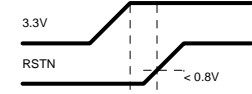
Date: Thursday, April 01, 2010 Sheet: 19 of 33

Card Reader

Alcor AU6433-GEF Card supported:

SD v2.0 (SDHC)
MMC v4.2
MS v1.43
MS-PRO v1.03
MS PRO-HG v1.01
xD v1.2

Reset Timing:

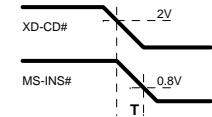


FAE_2009.0117:
Memory Stick Formatter for MS Logo
- Enable

FAE_2009.0117:
SD write protect
- Decided by SD-WP of SD Card

Solution for MS Adapter short issue

when $T < 128\text{ms}$,
XD-CD# event will not be affected.

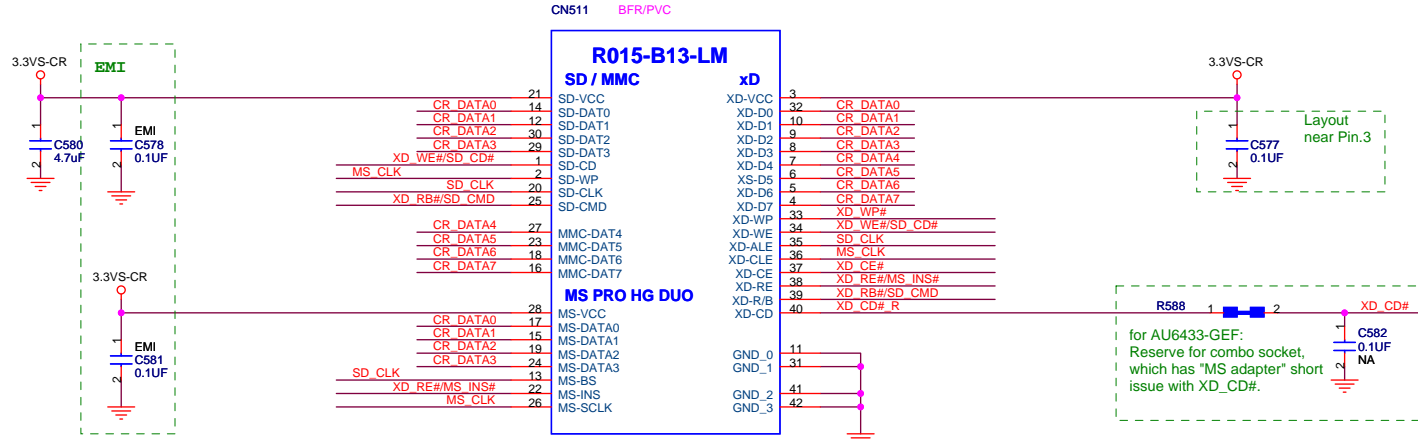


Memory Card Socket

R015-B13-LM
HPMH-38-0610000002G

Card type Supported:

- SD
- SD IO
- MMC
- MMC4.0
- MS
- MS Pro
- xD

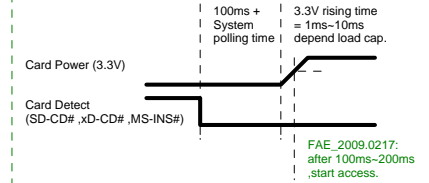


R015-B13-LM
HPMH-38-0610000005G
CN-71N1CARD-42P-0P7-5H3
CONN 71N1 PUSH-PUSH R015-B13-HM 40P

Card Power V33 = 3.3V ~ 2.8V
Card Power OCP = 420mA

FAE_2009.0217:
CF_V33 Internal P/D 1Kohm
for power-off discharge

Card detect Power-In Timing



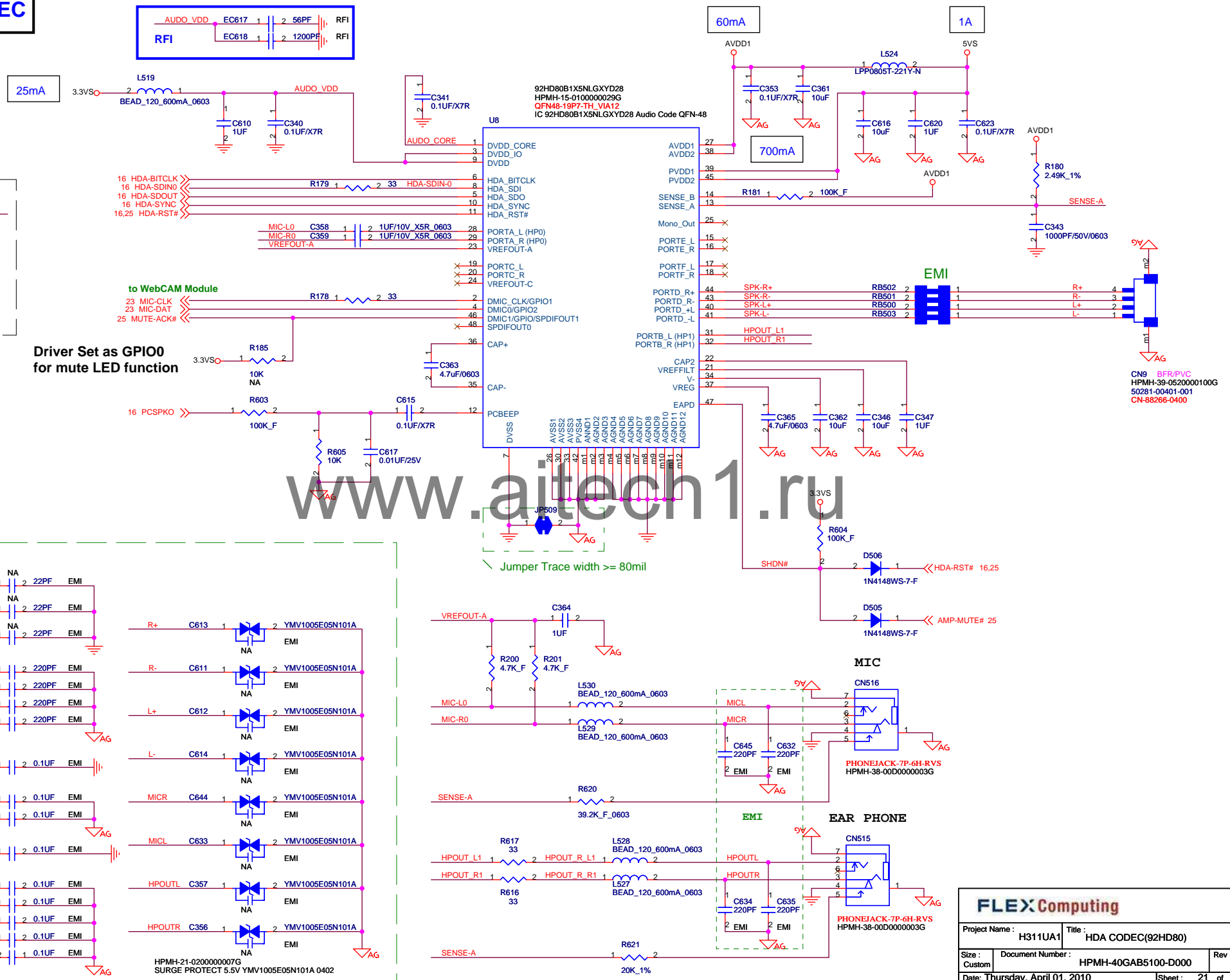
FLEX Computing

Project Name : H311UA1 Title : AU6433-GEF CardReader

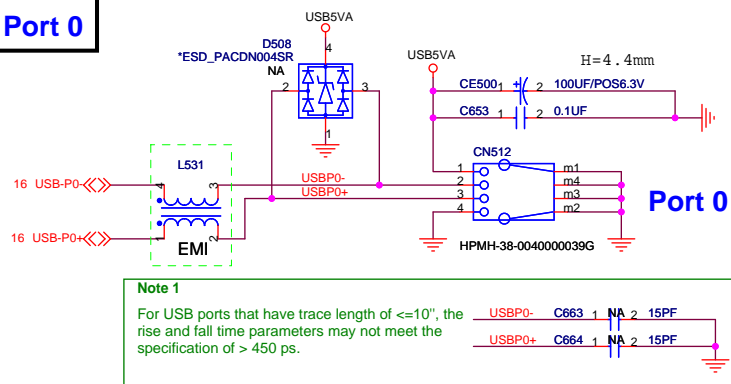
Size : Custom Document Number : HPMH-40GAB5100-D000 Rev : D

Date : Thursday, April 01, 2010 Sheet : 20 of 33

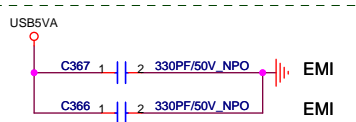
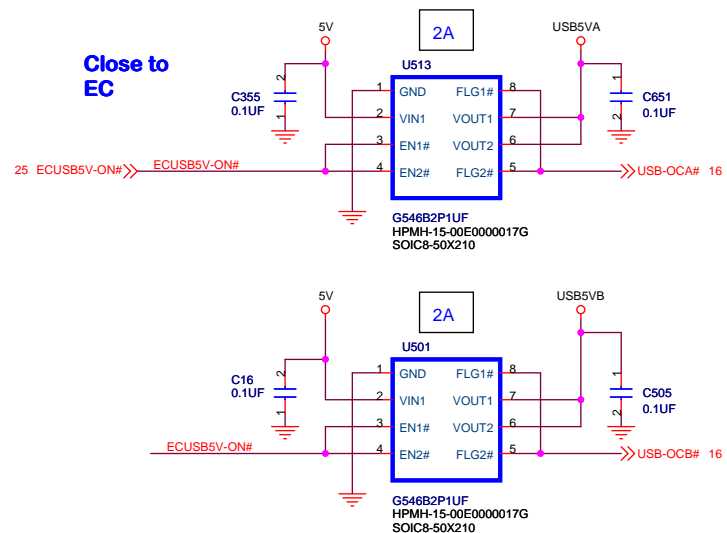
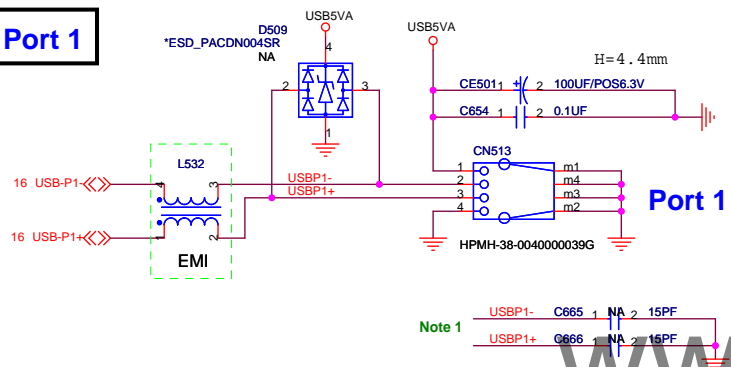
Audio CODEC



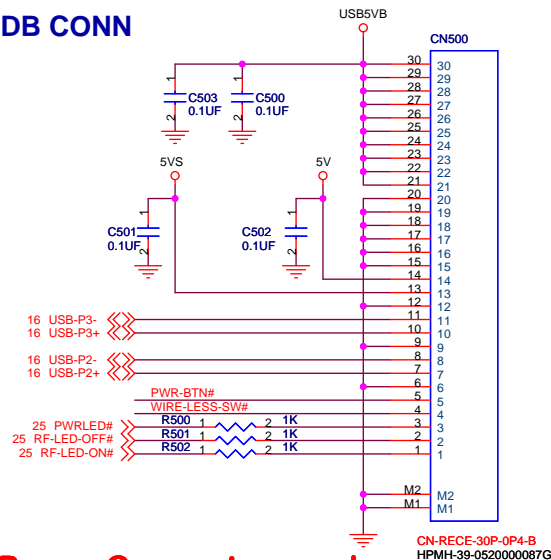
USB Port 0



USB Port 1

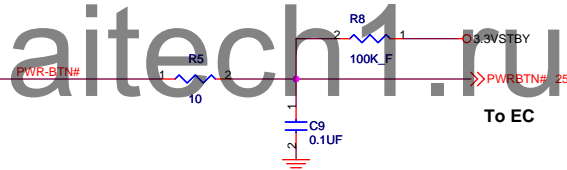


USB DB CONN

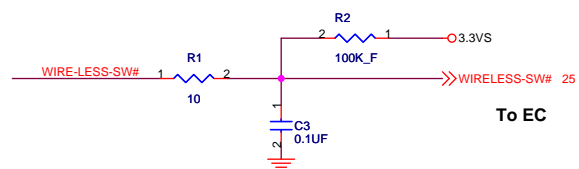


USB Power Connector needs >2A

Power ON/OFF Button

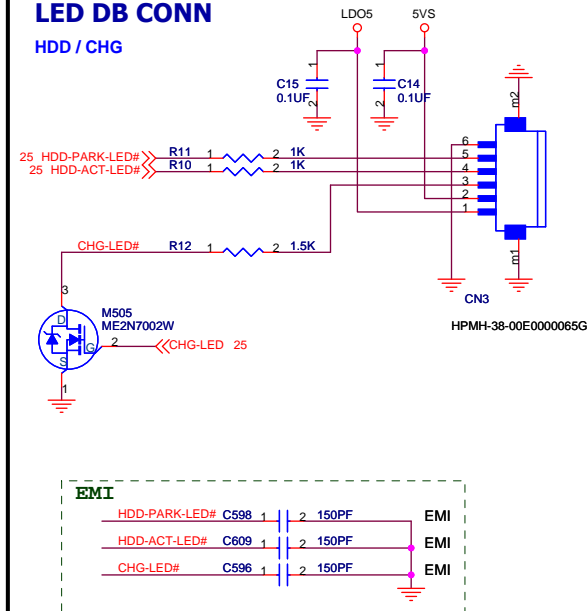


Wireless ON/OFF Button

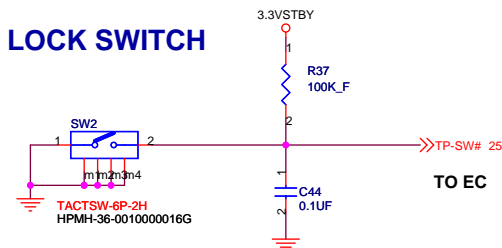


LED DB CONN

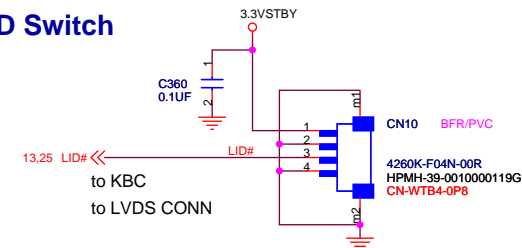
HDD / CHG



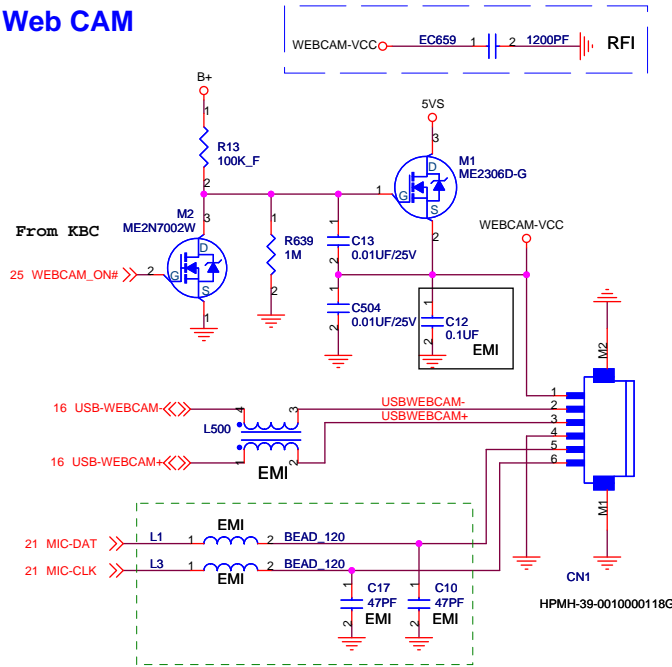
TP LOCK SWITCH



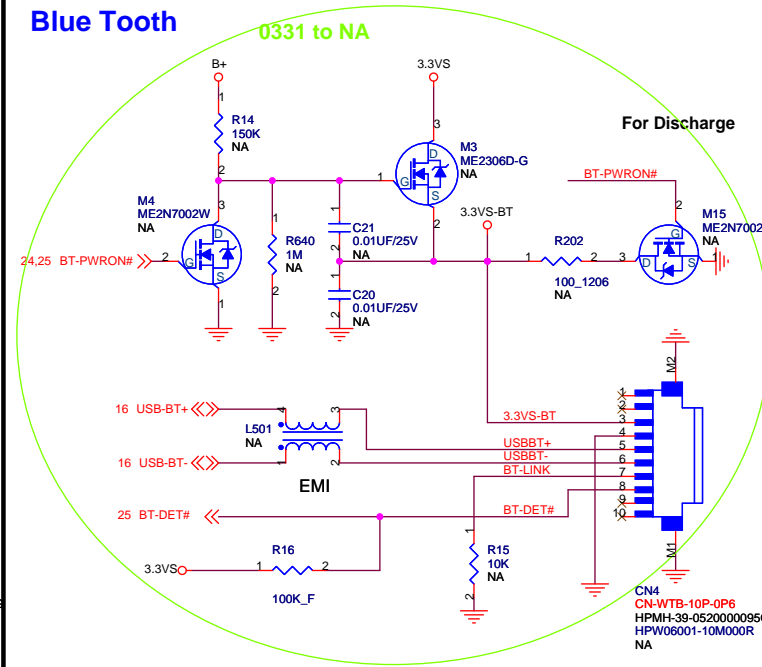
LID Switch



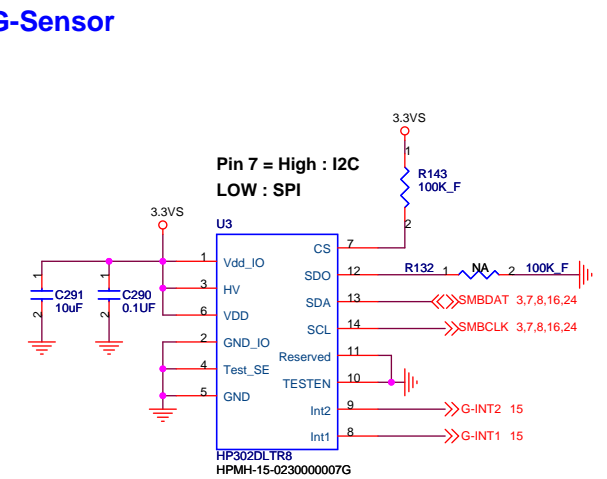
Web CAM



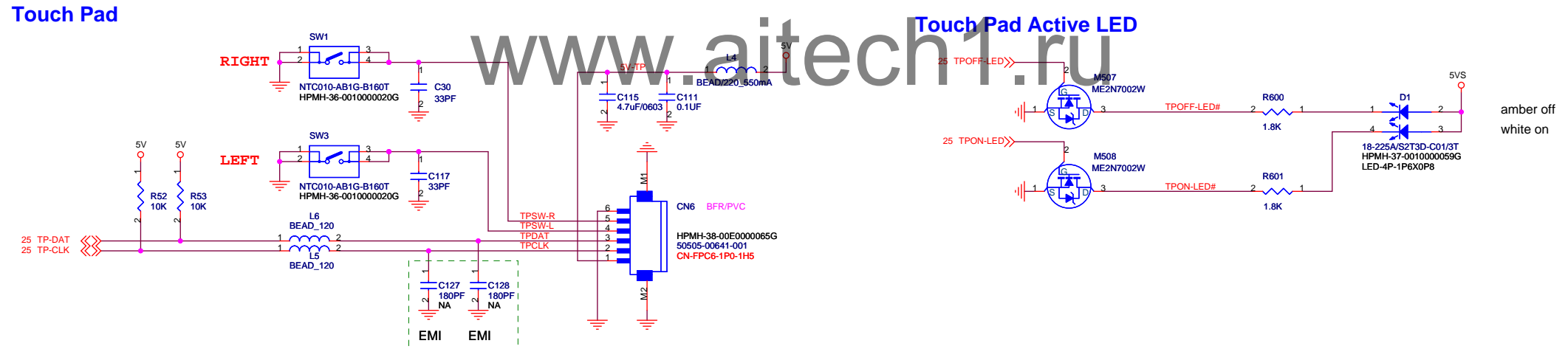
Blue Tooth



G-Sensor



Touch Pad



www.aitech1.ru

Web CAM

R13=100K/ R639=1M
B+= 9V ,VG=8.18V
VGS=8.18V-5V=3.18V
VGS(th)=1.5V (Max=3V)

R13=100K/ R639=1M
B+= 18.5V ,VG=16.81V
VGS=16.81V-5V=11.81V
VGS(th)=1.5V (Max=3V)

Blue Tooth

R14=150K / R640=1M
B+= 9V ,VG=7.82V
VGS=7.82V-3.3V=4.52V
VGS(th)=1.5V (Max=3V)

R14=150K / R640=1M
B+= 18.5V ,VG=16.08V
VGS=16.08V-3.3V=12.78V
VGS(th)=1.5V (Max=3V)

WWAN-3.3V

R17=150K / R641=1M
B+= 9V ,VG=7.82V
VGS=7.82V-3.3V=4.52V
VGS(th)=1.5V (Max=3V)

R17=150K / R641=1M
B+= 18.5V ,VG=16.08V
VGS=16.08V-3.3V=12.78V
VGS(th)=1.5V (Max=3V)

WWAN-1.5V

R17=150K / R641=1M
B+= 9V ,VG=7.82V
VGS=7.82V-1.5V=6.32V
VGS(th)=1.5V (Max=3V)

R17=150K / R641=1M
B+= 18.5V ,VG=16.08V
VGS=16.08V-1.1V=14.15V
VGS(th)=1.5V (Max=3V)

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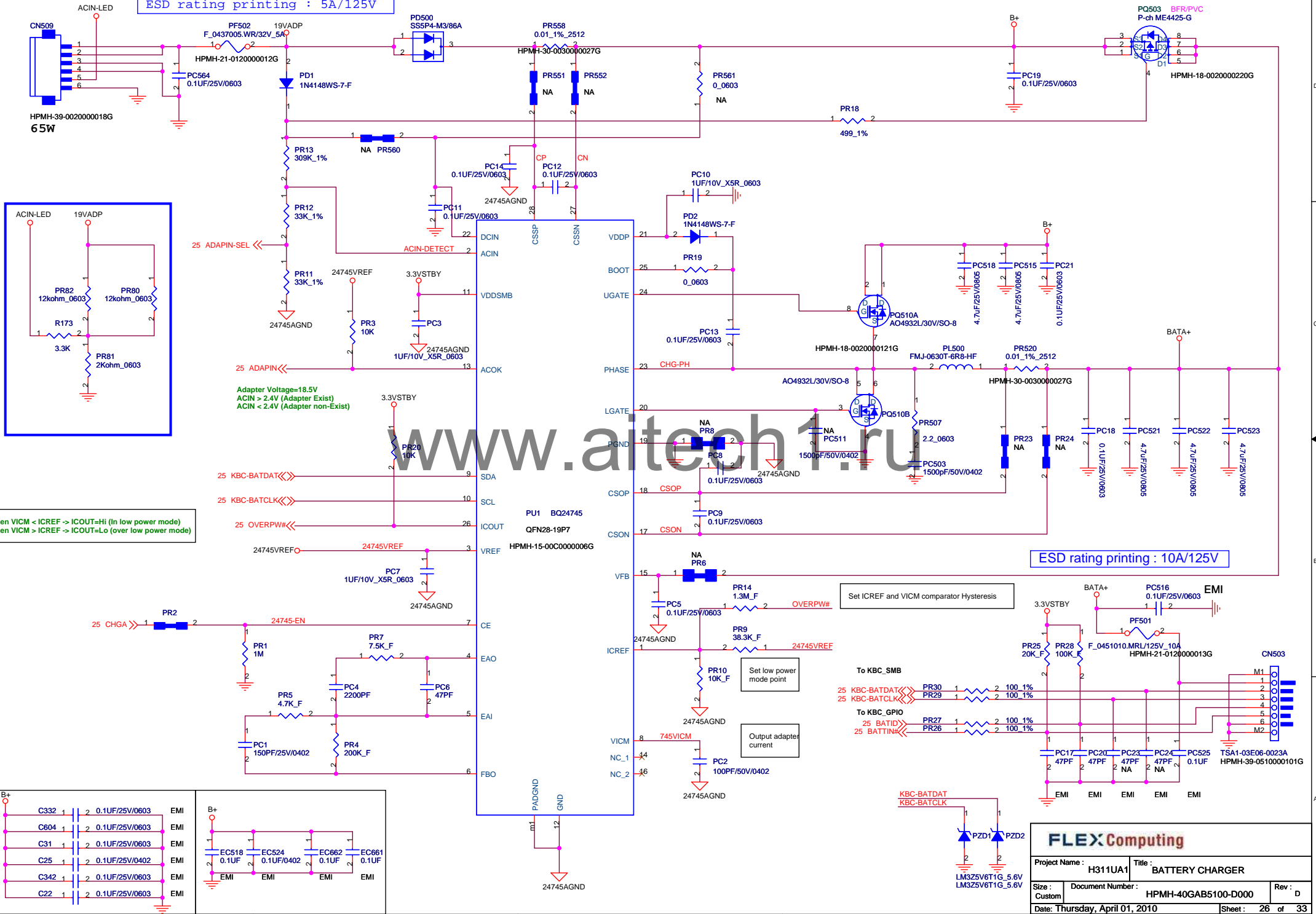
Project Name : H311UA1 Title : BT/WEBCAM/TP/G-SENSOR


Size : Custom Document Number : HPMH-40GAB5100-D000 Rev : D

Date : Thursday, April 01, 2010 Sheet : 23 of 33

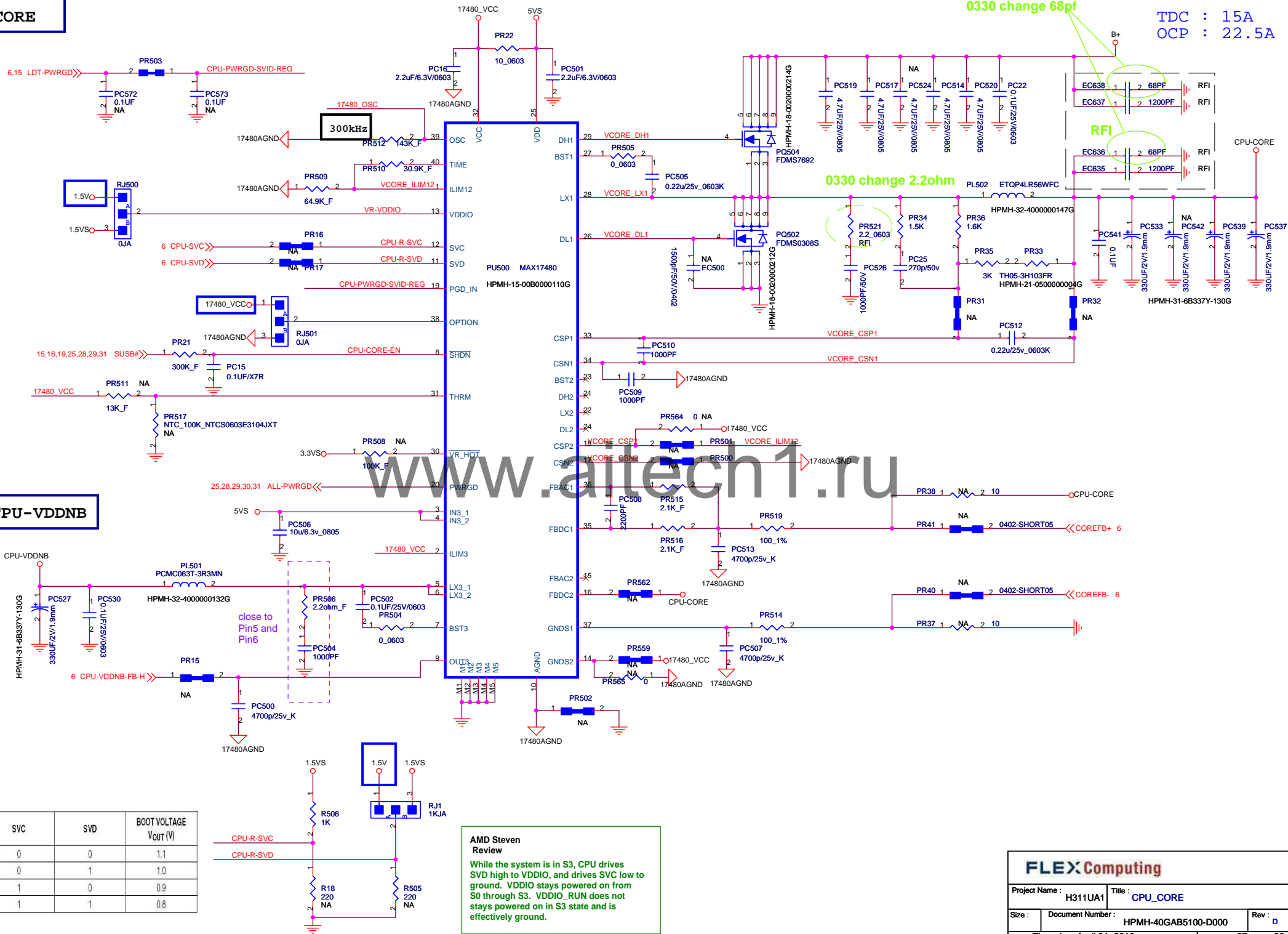
Charger

ESD rating printing : 5A/125V



			
Project Name :		Title :	
H311UA1		BATTERY CHARGER	
Size :	Document Number :	Rev :	
Custom	HPMH-40GAB5100-D000	D	
Date: Thursday, April 01, 2010		Sheet : 26 of 33	

CPU-VDDNB

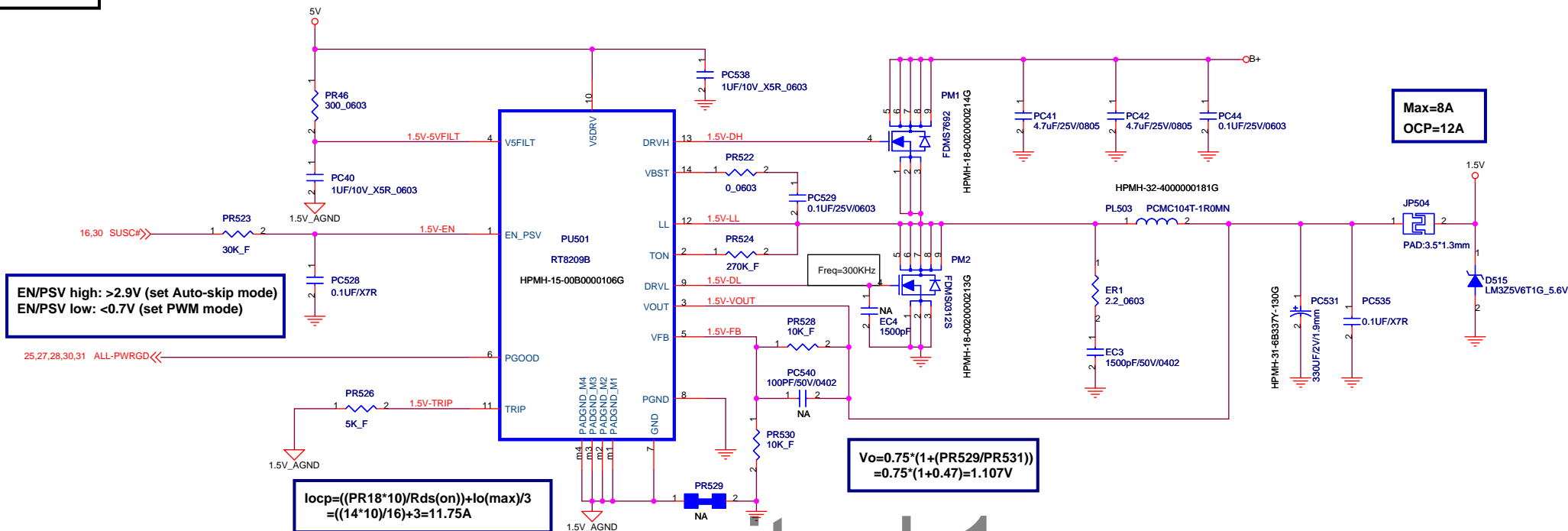


SVC	SVD	BOOT VOLTAGE V _{OUT} (V)
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

AMD Steven Review

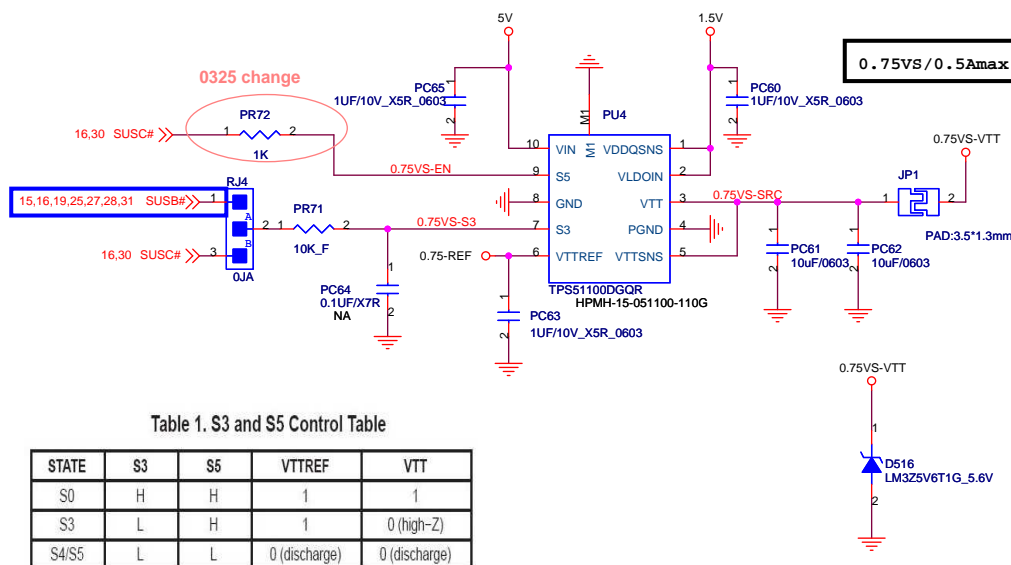
While the system is in S3, CPU drives SVD high to VDDIO, and drives SVC low to ground. VDDIO stays powered on from S0 through S3. VDDIO_RUN does not stay powered on in S3 state and is effectively ground.

1.5V_DDR

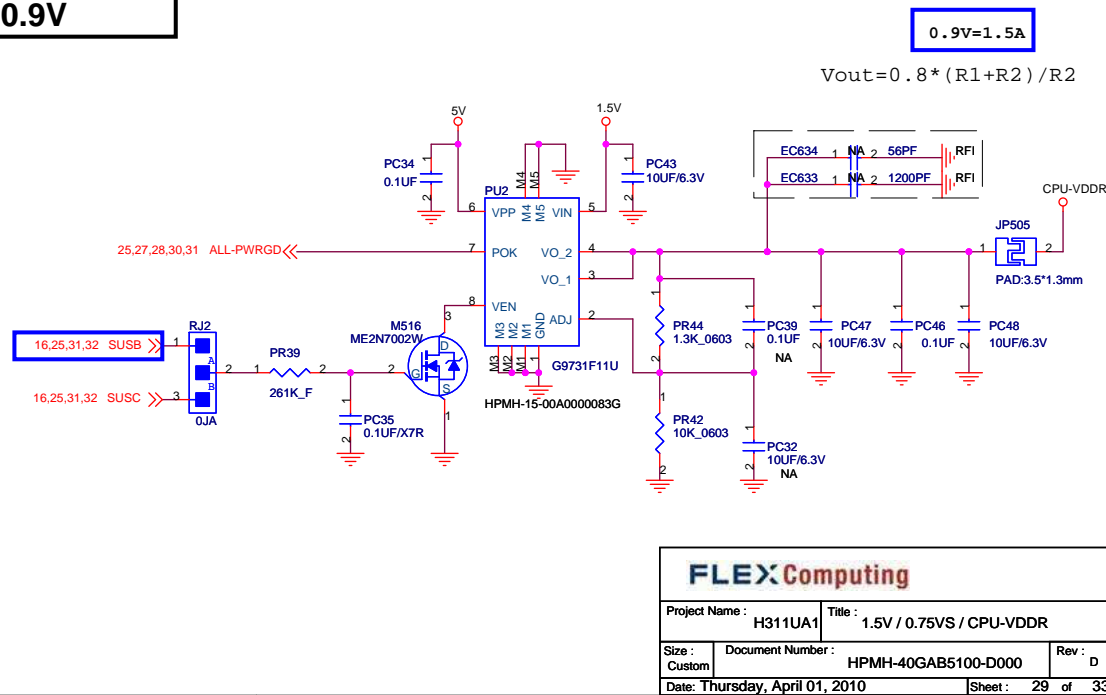


0.75VS DDR3-VTT

Integrated Divider Tracks 1/2
VDDQSNS for VTT and VTTREF



CPU-VDDR 0.9V



5V / 3.3VSTBY

Freq=300KHz
Max=8.5A
OCP=13A

Freq=375KHz
Max=4A
OCP=6A

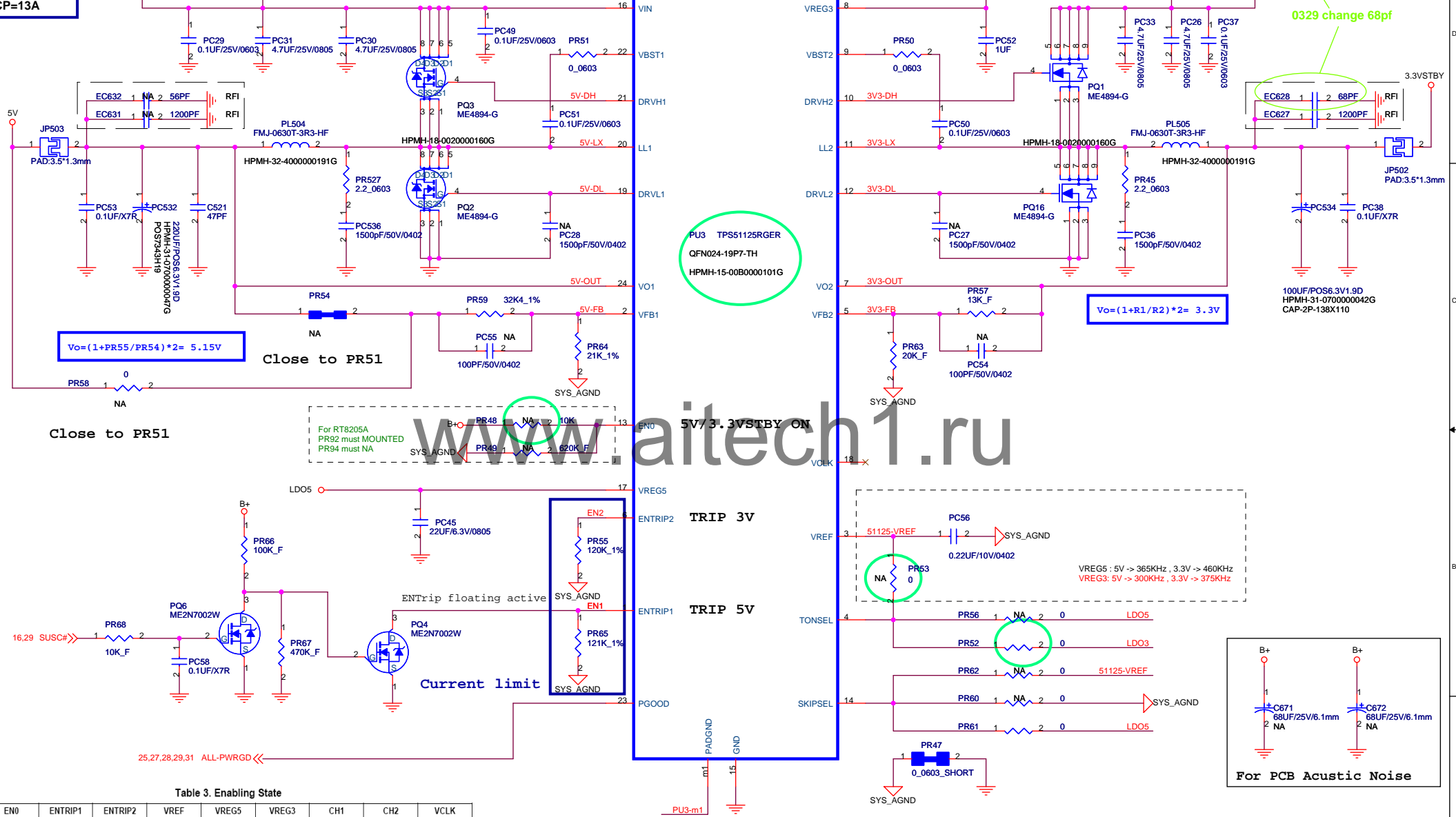


Table 3. Enabling State

EN0	ENTRIP1	ENTRIP2	VREF	VREG5	VREG3	CH1	CH2	VCLK
GND	Don't Care	Don't Care	Off	Off	Off	Off	Off	Off
R to GND	Off	Off	On	On	On	Off	Off	Off
R to GND	On	Off	On	On	On	On	Off	Off
R to GND	Off	On	On	On	On	Off	On	Off
R to GND	On	On	On	On	On	On	On	Off
Open	Off	Off	On	On	On	Off	Off	Off
Open	On	Off	On	On	On	On	Off	Off
Open	Off	On	On	On	On	Off	On	Off
Open	On	On	On	On	On	On	On	Off

PU3-m1
For layout request, no connect anything.

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S4/S3 OFF

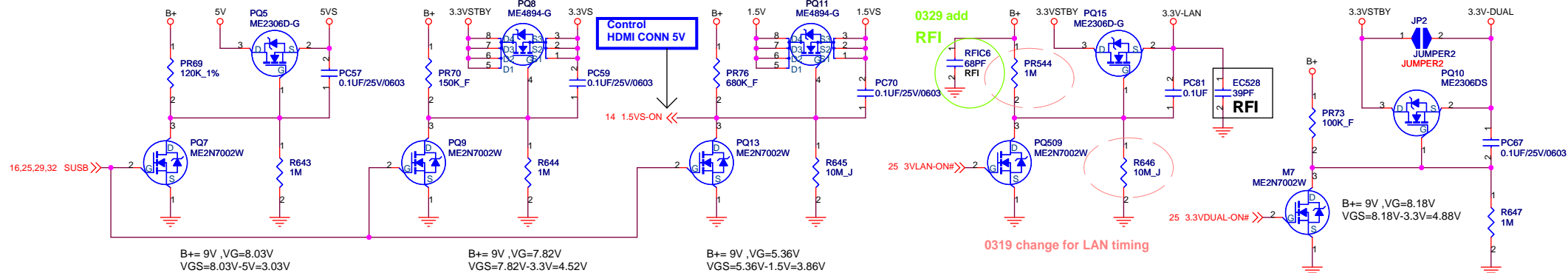
5VS

3.3VS

1.5VS

3.3V-LAN

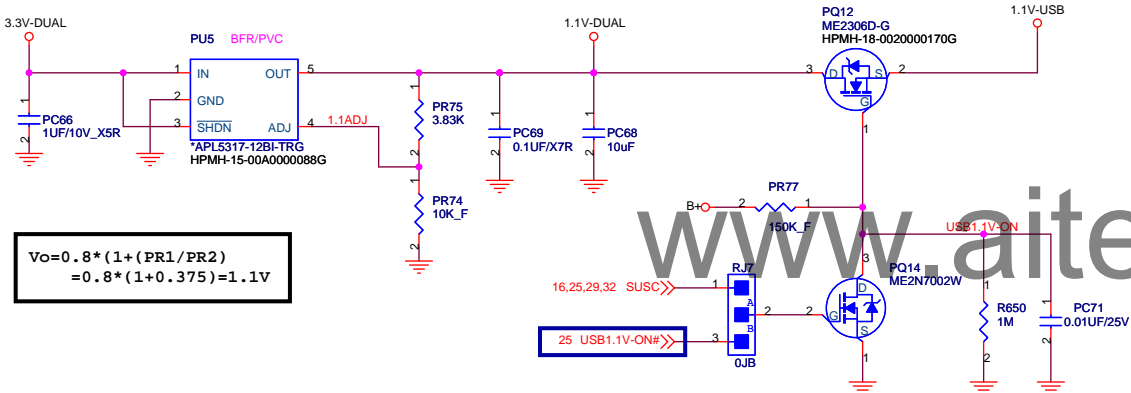
3.3V-DUAL



1.1VSTBY / 1.1V_USB

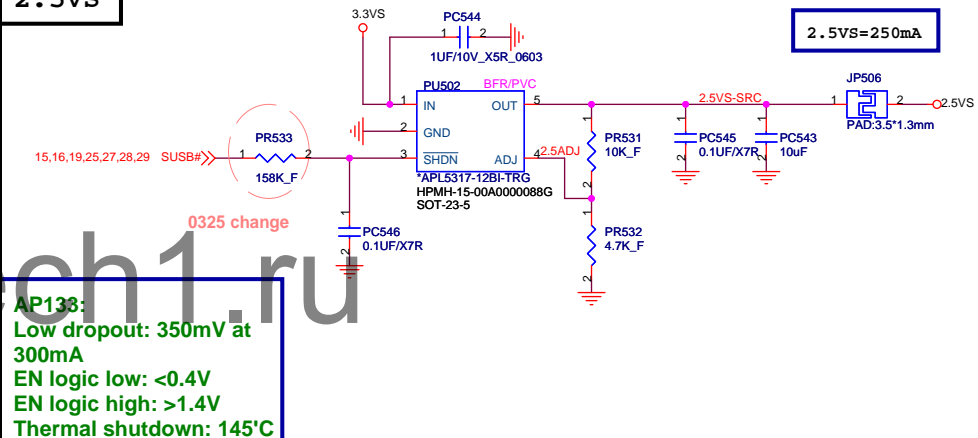
1.1V_DUAL=150mA

1.1V_USB=200mA



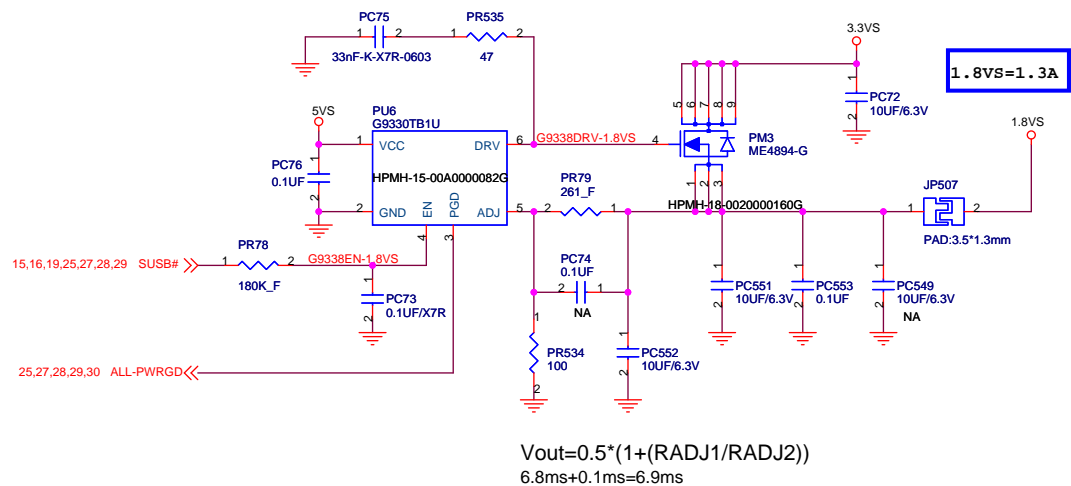
2.5VS

2.5VS=250mA



1.8VS

3.3V-USB

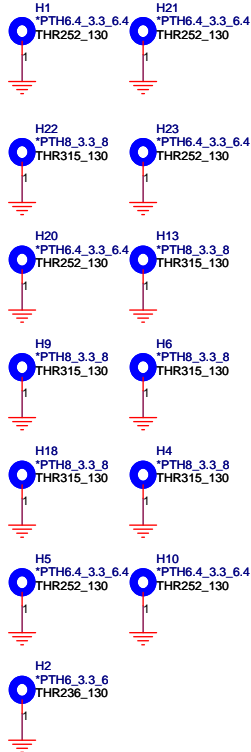


FLEX Computing

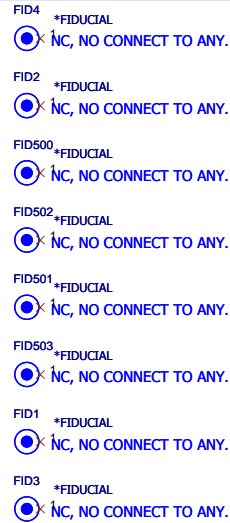
Project Name :	H311UA1	Title :	VS / 1.1V-DUAL/1.8VS/2.5VS
Size :	Document Number :	HPMH-40GAB5100-D000	Rev : D
Date :	Thursday, April 01, 2010	Sheet :	31 of 33

Screw Hole

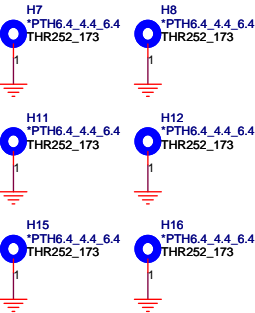
MB x 16



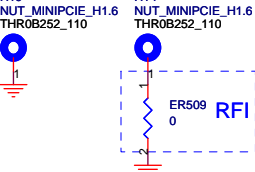
FID



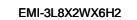
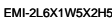
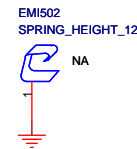
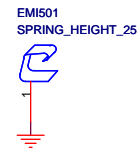
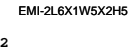
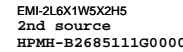
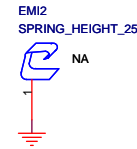
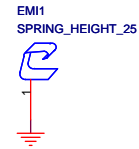
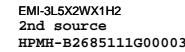
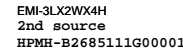
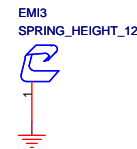
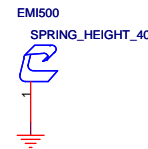
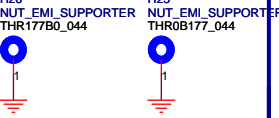
CPU/VGA x 8



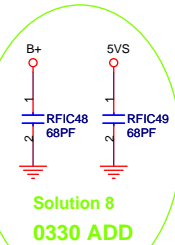
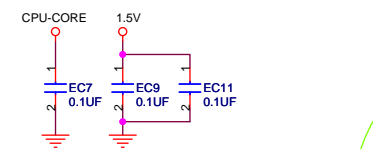
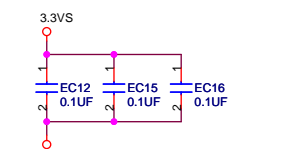
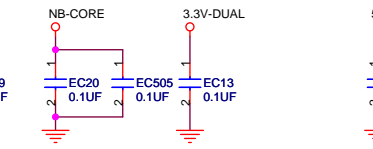
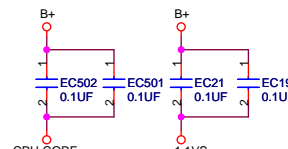
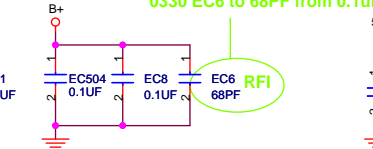
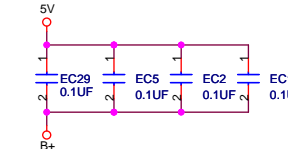
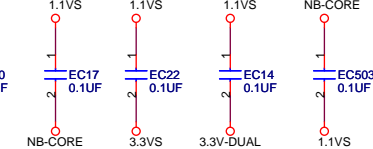
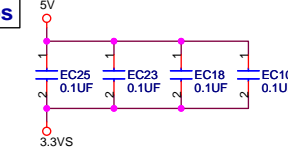
MINI CARD x 2



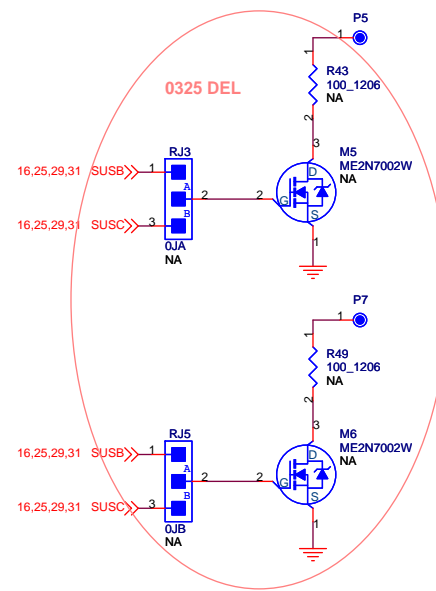
EMI x 2



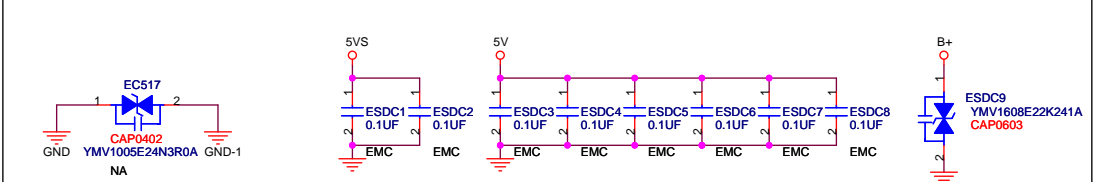
EMI Caps



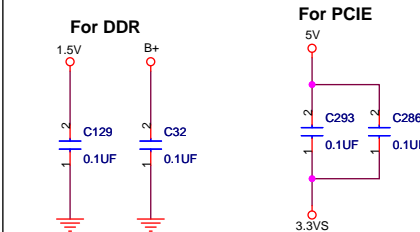
Discharge



ESD



EE Caps

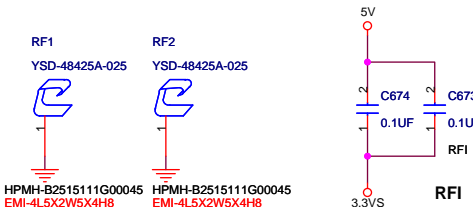
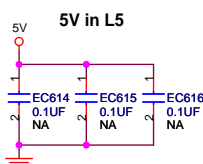
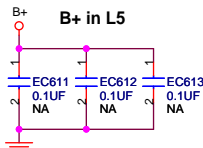
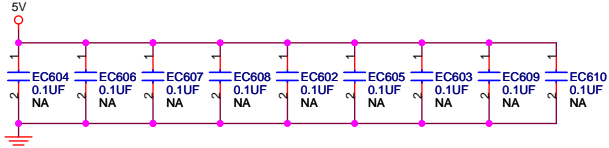
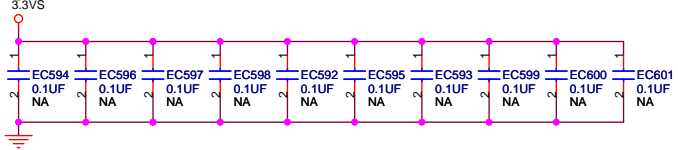
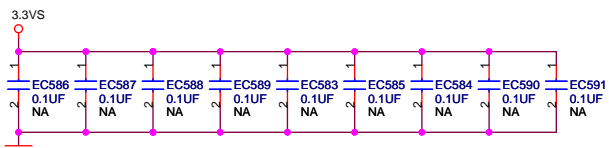
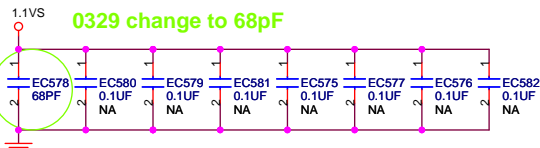
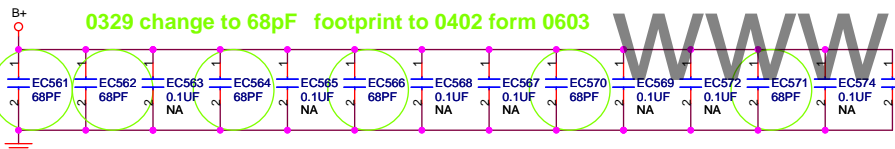
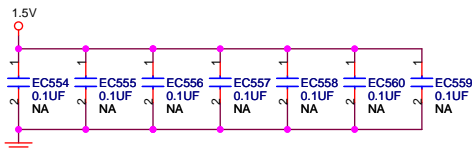
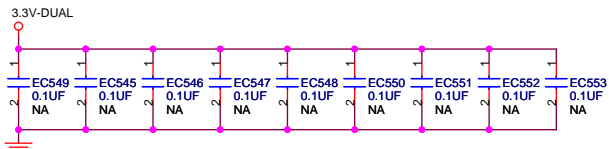
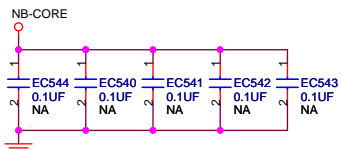
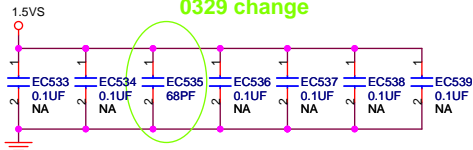


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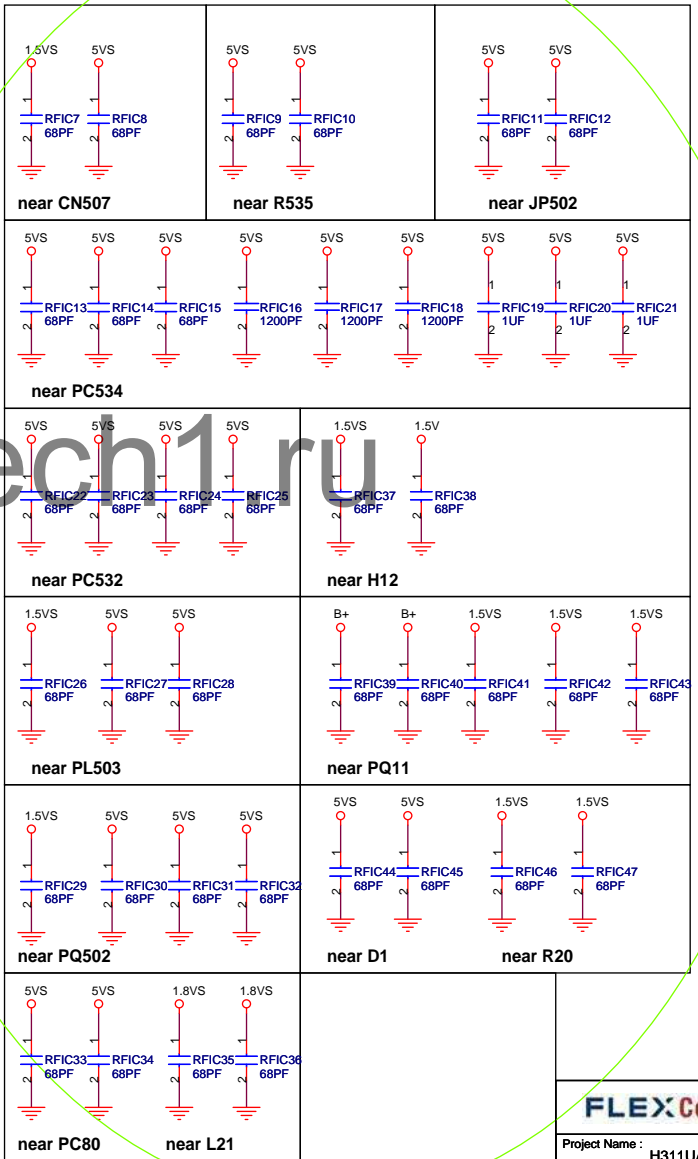
Project Name :	H311UA1	Title :	PAD/ SCREW/ Moat Cap
Size :	Document Number :	HPMH-40GAB5100-D000	Rev : D
Date: Thursday, April 01, 2010	Sheet :	32	of 33

RFI (HP CF)

0329 change



0329 ADD



FLEX Computing