



01

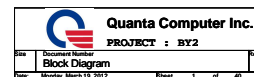


Table of Contents

| PAGE | DESCRIPTION | BOI-FUNCTIONS |
|-------|-------------------------------|---------------|
| 1 | Schematic Block Diagram | |
| 2 | Front Page | |
| 3-6 | Processor | CPU |
| 7-12 | PCH | CLG |
| 13-14 | DDRIII SO-DIMM | DDR |
| 15 | S3 Power reduction | S3P |
| 16-23 | Blank | - |
| 24 | HDMI | HDM |
| 25 | CCD | CCD |
| | HALL SENSOR&BACK LIGHT SWITCH | HSR |
| | LVDS | LDS |
| | mSATA | SSD |
| 26 | Wireless Lan/BT | WNW |
| 27 | USB 3.0 | U3B |
| 28 | Codec CX20671-21Z | ADO |
| 29 | Atheros LAN | LAN |
| 30 | INT KeyBoard & K/B LED Power | KBC |
| | LED Board | LED |
| | TP connector | TPD |
| | Power Button | PSW |
| | USB Board/HDD Connector | USB/HDD |
| 31 | Cut RTC Battery Power SW | KBC |
| 32 | EC NPCE885LA0DX | KBC |
| 33 | Charger (ISL88731C) | CHR |
| 34 | System 5V/3V Power | PWM |
| 35 | DDR Power | PWM |
| | +1.05VSUS | LDO |
| | +1.5V | LDO |
| 36 | +1.05V/VT | PWM |
| 37 | +VCCAS | PWM |
| 38 | +VCC_Core | PWM |
| 39 | +1.8V | PWM |
| | Discharge(3V/5V/+1.5V) | PWM |
| 40 | EE Change List | |

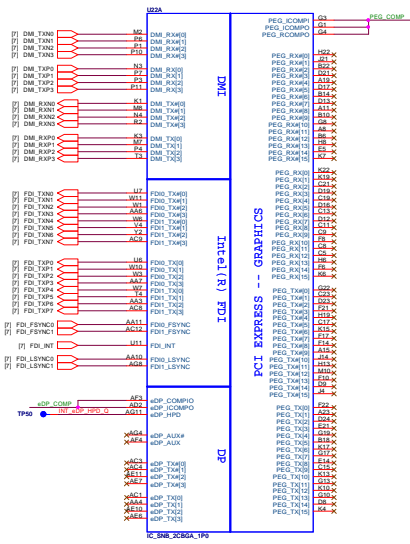
| POWER PLANE | VOLTAGE | CONTROL SIGNAL | Power States ACTIVE IN |
|-------------|--------------|---------------------|---------------------------|
| VIN | 10V~+19V | | S0-S5 |
| +VCCRTC | +3.0V~+3.3V | | S0-S5 |
| +3V | +3.3V | MAIN_ON | S0 |
| +3V_S5 | +3.3V | S5_ON | S0-S5 |
| +3VPCU | +3.3V | AC/DC Insert enable | S0 |
| +5V | +5V | MAIN_ON | S0 |
| +5V_S5 | +5V | S5_ON | S0-S5 |
| +5VPCU | +5V | AC/DC Insert enable | S0-S5 |
| +1.8V | +1.8V | MAIN_ON | S0 |
| +1.5V | +1.5V | MAIN_ON | S0 |
| +1.5V_SUS | +1.5V | SUSON | S0-S3 |
| +VCC_CORE | | VRON | S0 |
| +VTT | +1.05V~+1.1V | MAIN_ON | S0 |
| +1.05V | +1.05V | MAIN_ON | S0 |
| +VAXG | | GFXVR_EN | S0 |

| GND PLANE | PAGE |
|------------|------|
| AGND_DC/DC | 34 |
| ADOGND | All |
| GND | 28 |

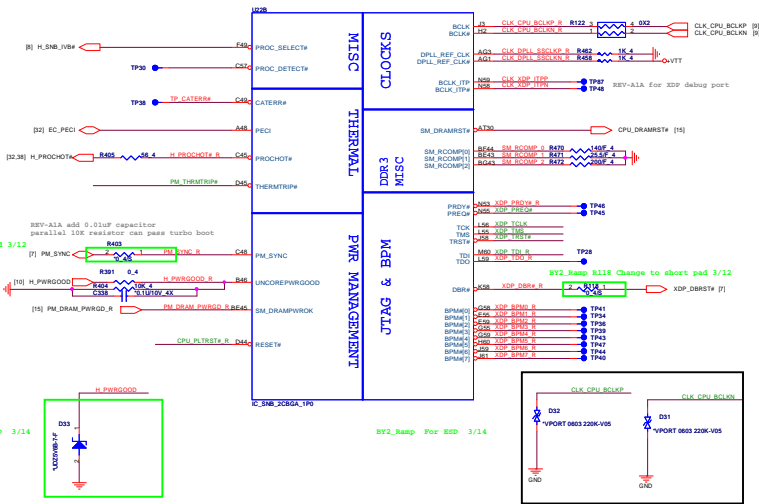
| ITEM | Value Code | FUNCTIONS |
|------|------------|---|
| 1 | IVB@ | Ivy Bridge |
| 2 | SNB@ | Sandy Bridge |
| 3 | IV@ | UMA |
| 4 | U3@ | EXT USB 3.0 |
| 5 | IU3@ | USB 2.0 and Chief River (colay W USB 3.0) |
| 6 | HM@ | HDMI |
| 7 | IHM@ | Internal HDMI |
| 8 | C@ | Cost issue |

www.aitech1.ru

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



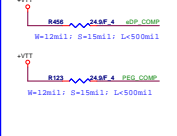
Ivy/Sandy Bridge Processor (CLK,MISC,JTAG)



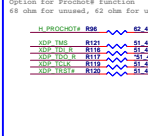
FDI Disabling (Discrete Only) <CPU>



DP & PEG Compensation <CPU>



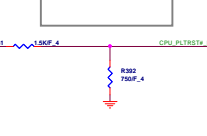
Processor pull-up <CPU>



Level Shift <CPU>



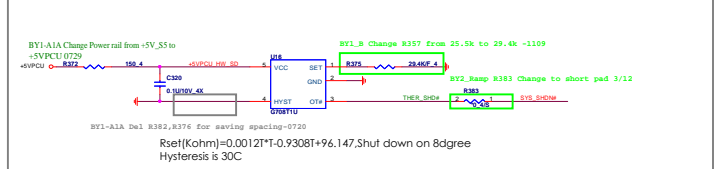
Thermal Trip <CPU>



FAN Control-->For one FAN solution <THC>



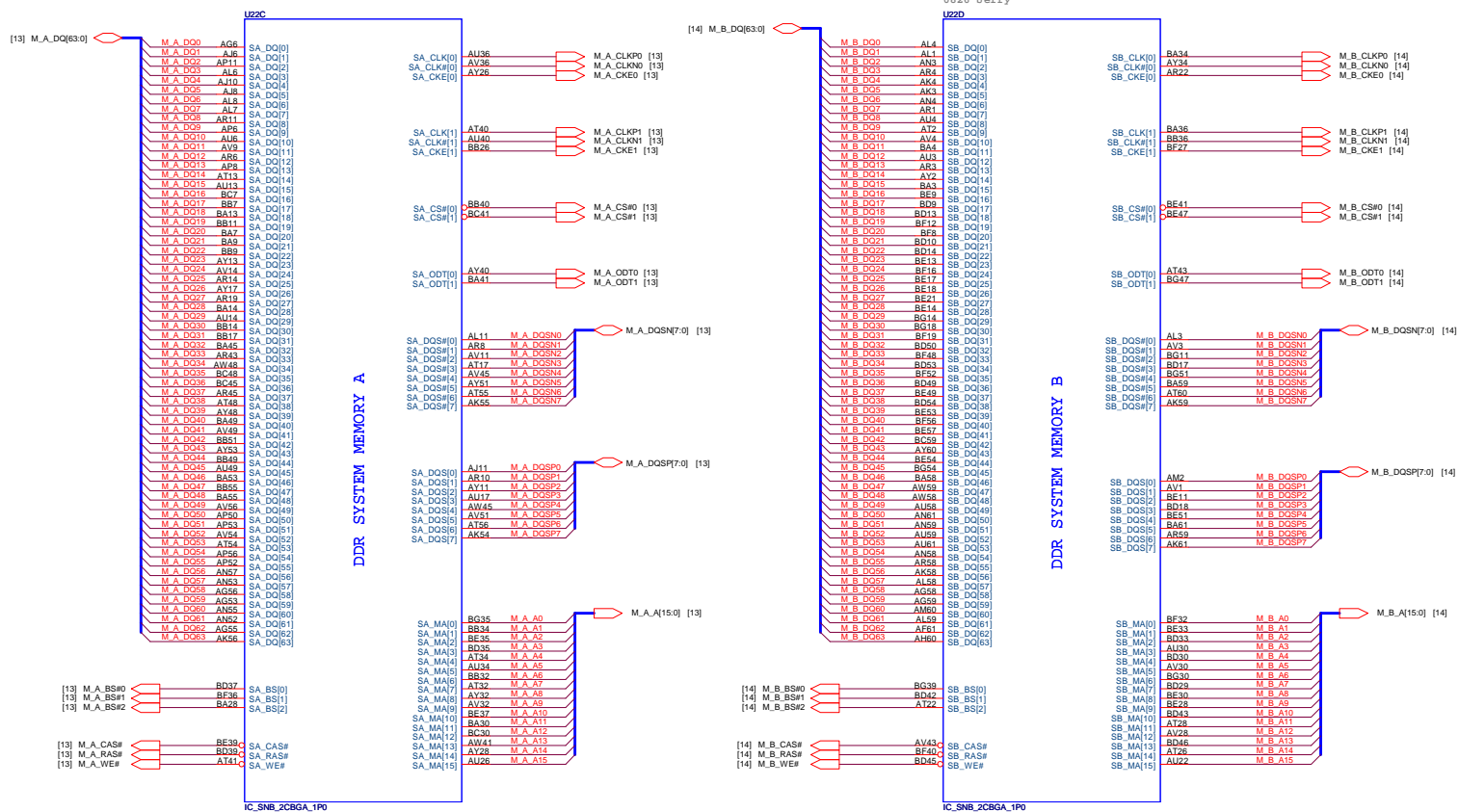
CPU Thermal sensor / MB Local TEMP <THC>




Quanta Computer Inc. PROJECT : BT2 Ivy Bridge 1/4

Ivy/Sandy Bridge Processor (DDR3)

BY1-A1A Add B Channel Memory
0826 Jerry



www.aitech1.ru

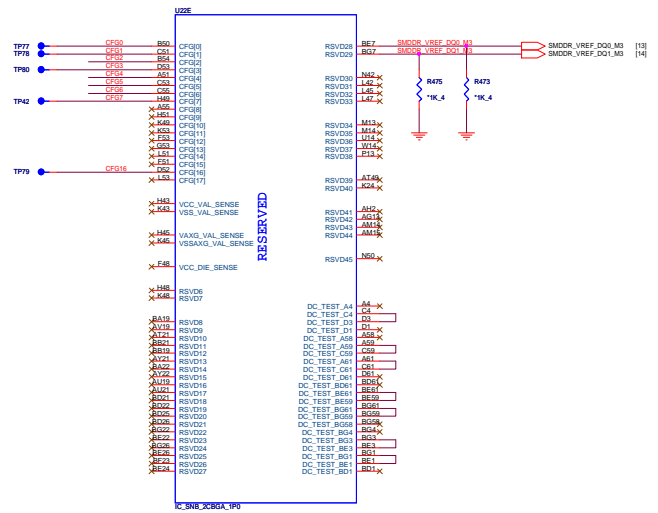
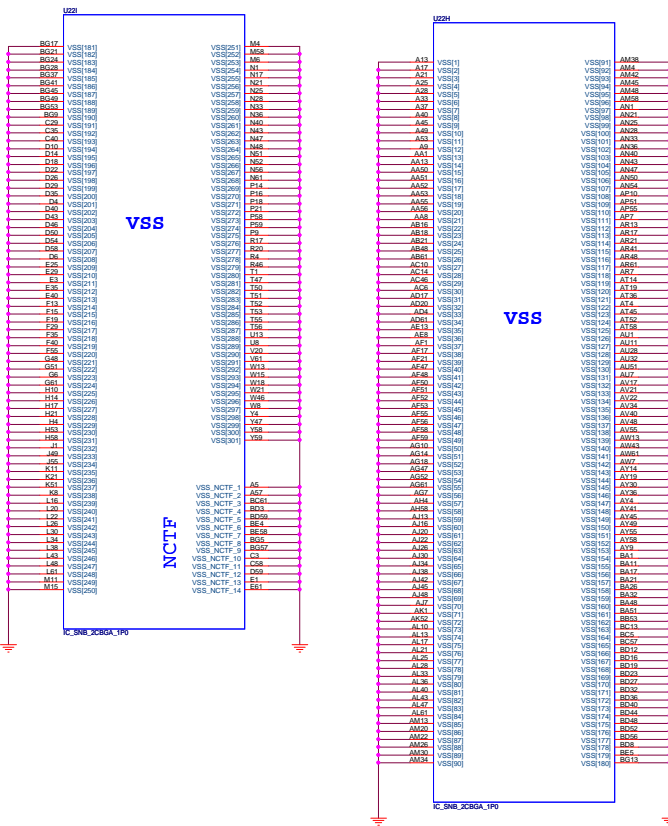
**Quanta Computer Inc.**

PROJECT : BY2

Size Document Number Ivy Bridge 2/4 Rev 3A

Date: Monday, March 19, 2012 Sheet 4 of 40

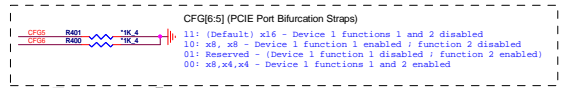




Processor Strapping

The CFG signals have a default value of '1' if not terminated on the board.

| | 1 | 0 |
|--|---|--|
| CF62 (PCI-E Static x16 Lane Reversal) | Normal Operation | Lane Reversed |
| CF63 (PCI-E Static x4 Lane Reversal) | Normal Operation | Lane Reversed |
| CF64 (DP Presence Strap) | Disable; No physical DP attached to eDP | Enable; An ext DP device is connected to eDP |

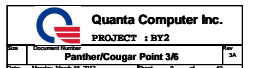
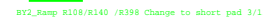


CFG(6:5) (PCI-E Port Bifurcation Straps)

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

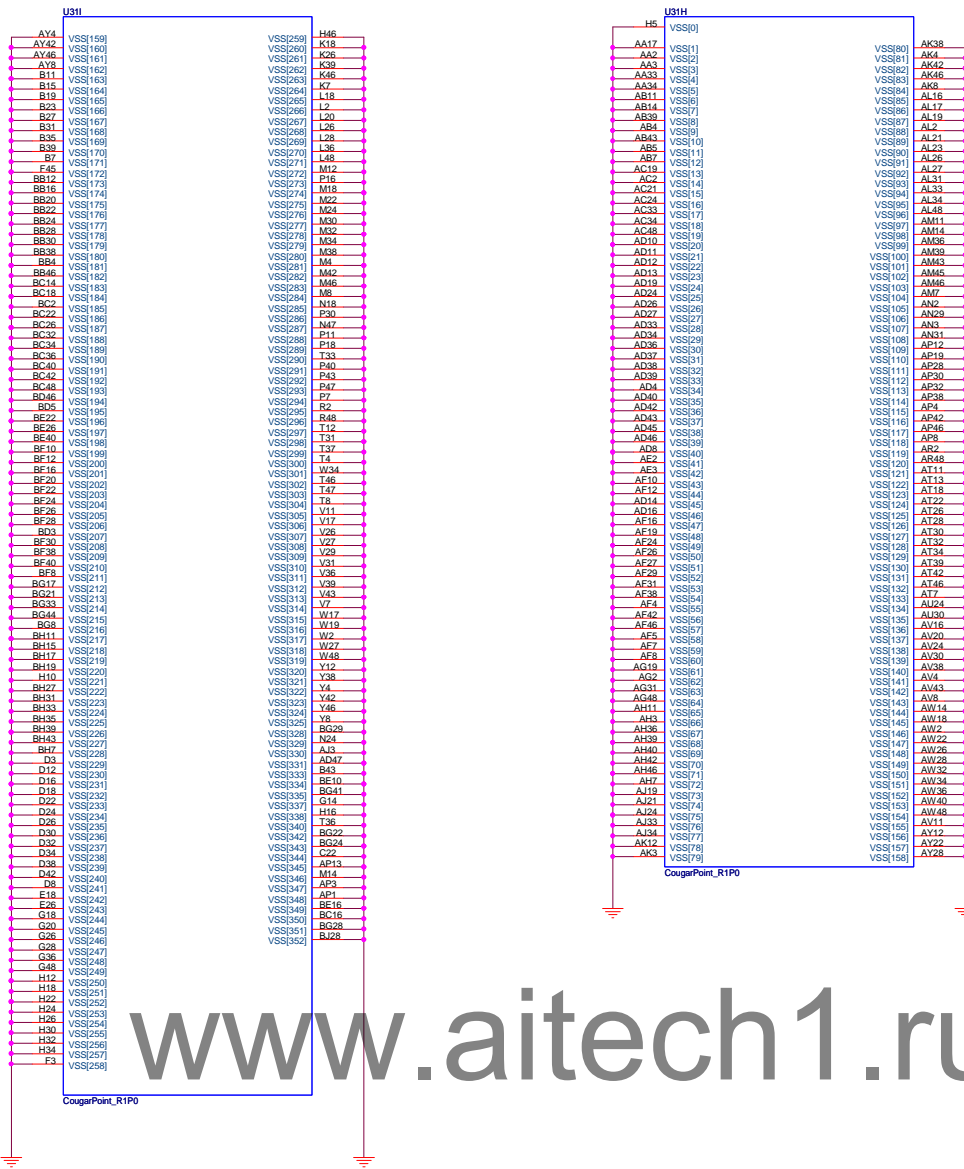
www.aitech1.ru

Panther/Cougar Point-M (PCI-E,SMBUS,CLK)

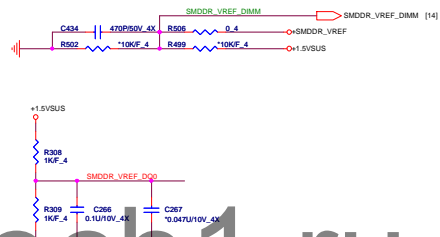
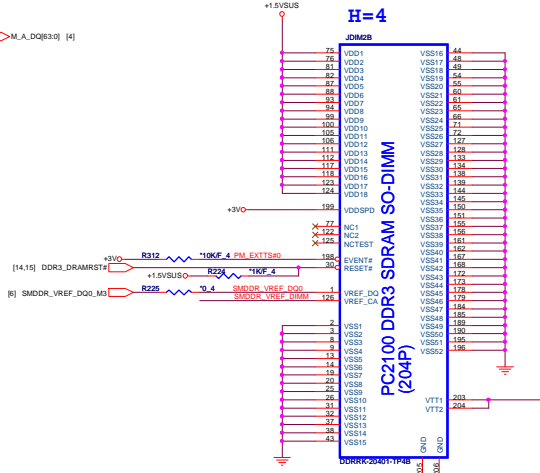




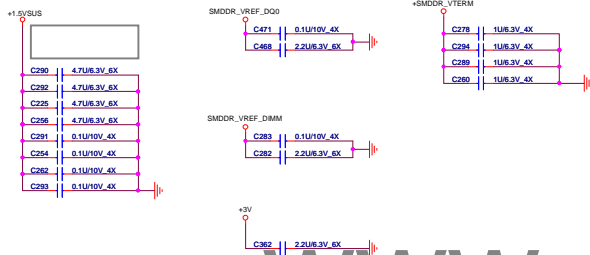




www.aitech1.ru



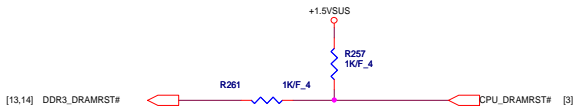
BY1 Del C218 and C255 for saving space 0720





S3 power Reduction (SM_DRAMRST#)<S3P>

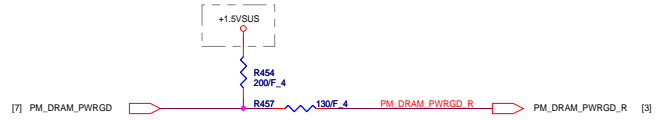
BY1-A1A Del S3 power reduction-0714



S3 power Reduction (SM_DRAMPWROK)<S3P>

15

BY1-A1A Del S3 power reduction-0714



R454 external pull-up resistor
close to the processor.
A series-resistor of R457 is required between
the pull-up resistor and the processor

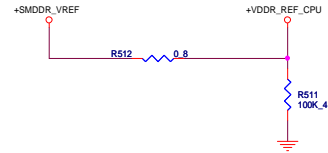
For S3 power Reduction Sequence<S3P>

BY1-A1A Del S3 power reduction-0714




S3 power Reduction (CPU Power)<S3P>

BY1-A1A Del S3 power reduction and change +1.5V_CPU to +1.5VSUS 0714




For S3 power Reduction VTT discharge<S3P>

| | | | |
|---|-----------------|-----------------------------|--|
|  | | Quanta Computer Inc. | |
| PROJECT : BY2 | | Rev 3A | |
| Size | Document Number | S3 power Reduction | |
| Date: Monday, March 19, 2012 | Sheet 15 of 40 | | |

www.aitech1.ru

BLANK


| | | | |
|---|-------------------------------|-----------------------------|-----------------|
|  | | Quanta Computer Inc. | |
| | | PROJECT : BY2 | |
| Size | Document Number | Rev | 3A |
| ROBSON_XT_PCIE_Interface | | | |
| Date | Monday, March 19, 2012 | Sheet | 16 of 40 |

www.aitech1.ru

BLANK


www.aitech1.ru



| | | | |
|---|-------------------------------------|-----------------------------|----------------|
|  | | Quanta Computer Inc. | |
| | | PROJECT : BY2 | |
| Size | Document Number | Rev | |
| | ROBSON_XT GND / LVDS/ Straps | 3A | |
| Date | Monday, March 19, 2012 | | Sheet 18 of 49 |




www.aitech1.ru

| | | |
|---|------------------------------|----------------|
|  | | |
| Quanta Computer Inc. | | |
| PROJECT : BY2 | | |
| Size | Document Number | Rev |
| | RS/SM-S3_Power_and_NC | 3A |
| Date: | Monday, March 19, 2012 | Sheet 19 of 40 |




www.aitech1.ru


| | | | |
|---|-----------------|-----------------------------|--|
|  | | Quanta Computer Inc. | |
| PROJECT : BY2 | | | |
| Size | Document Number | Rev 3A | |
| ROBSON/MEM_Interface | | | |
| Date: Monday, March 19, 2012 | Sheet 20 of 40 | | |

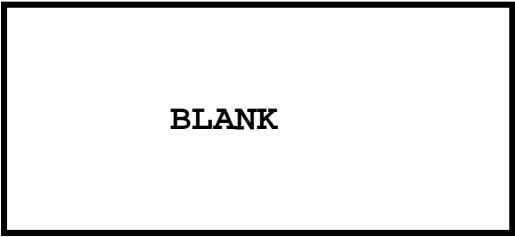
BLANK


www.aitech1.ru

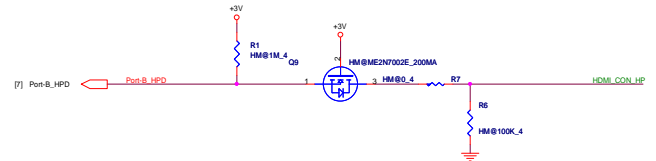
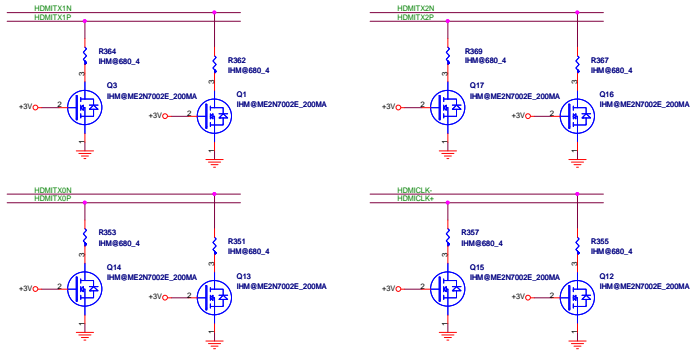
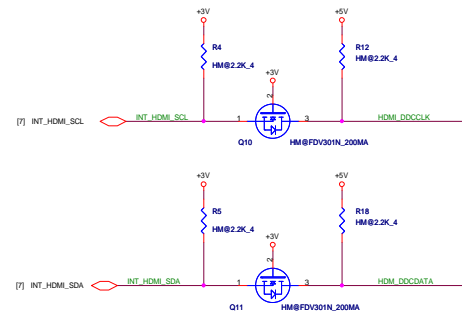
| | | | |
|---|----------|-----------------------------|--|
|  | | Quanta Computer Inc. | |
| PROJECT : BY2 | | Rev 3A | |
| Seymour S3 VRAM(DDR3 BGA96) | | | |
| Date: Monday, March 19, 2012 | Sheet 21 | of 40 | |



| | | |
|---|-----------------------------|-----------------------------|
|  | | Quanta Computer Inc. |
| PROJECT : BY2 | | |
| Size | Document Number | Rev |
| | Memory strip/Thermal | SA |
| Date | Monday, March 19, 2012 | |
| | Sheet | 22 of 40 |



| | | | |
|---|-----------------|-----------------------------|-----------|
|  | | Quanta Computer Inc. | |
| | | PROJECT : BY2 | |
| Size | Document Number | BACO | Rev 3A |
| Date: Monday, March 19, 2012 | | Sheet | 23 of 40 |



CCD <CCD>

BY1_C Change 14 footprint to chuka-22pin590B121-4p-1 -1102

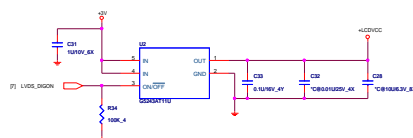


BY1-A1A Del 1000p-0817 BY1_B Unmount C23 1007

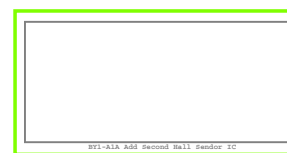
BY1_B Del P1 1007

LCD POWER SWITCH <LDS>

BY1-A1A Change U2 footprint from 6 pin to 5 pin and change 2nd source-0812



HALL SENSOR&BACK LIGHT SWITCH <HSR>



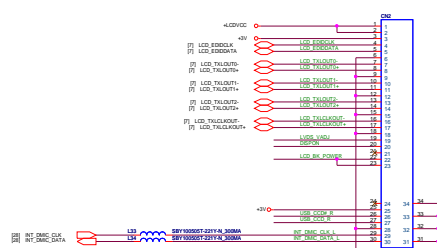
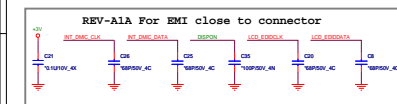
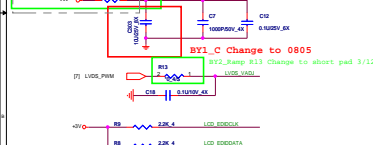
BY1_B Del second hall sensor M81,8300,C135 for save space -1006



LCD Panel Module <LDS>

BY1_B Mount R359 but Unmount R345

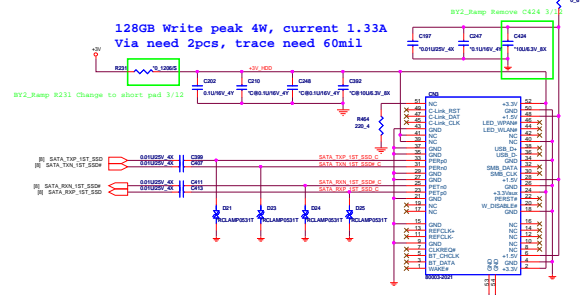
BY2_B-Change LCD_BK_POWER to V28, mount R345 del R359,1205



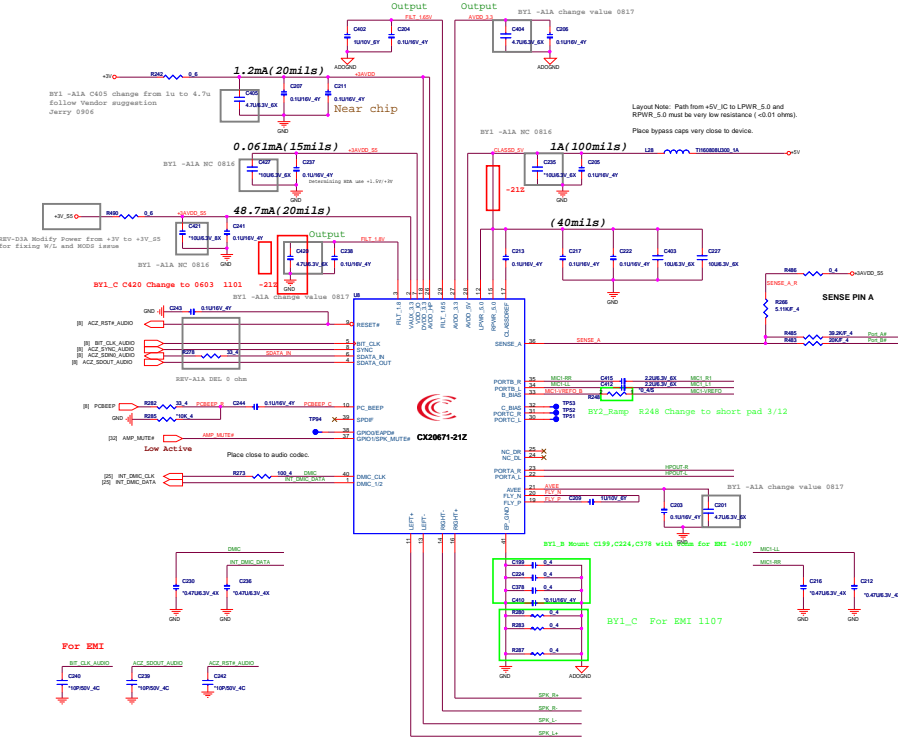
mSATA (SATA over mini PCIe) <H1D>

BY1-A1A Add mSATA 0728

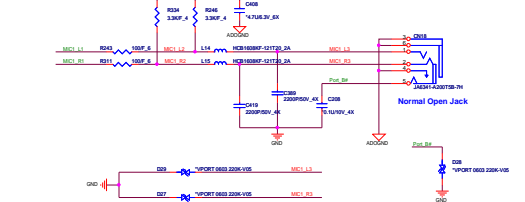
128GB Write peak 4W, current 1.33A
Via need 2pcs, trace need 60mil



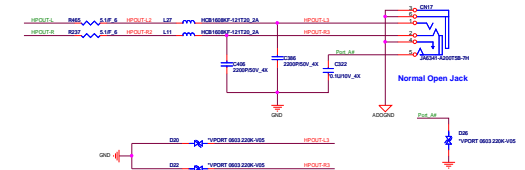




External MIC <ADO> <EMC>

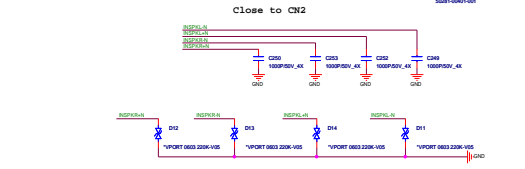


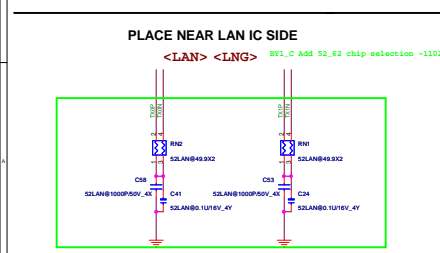
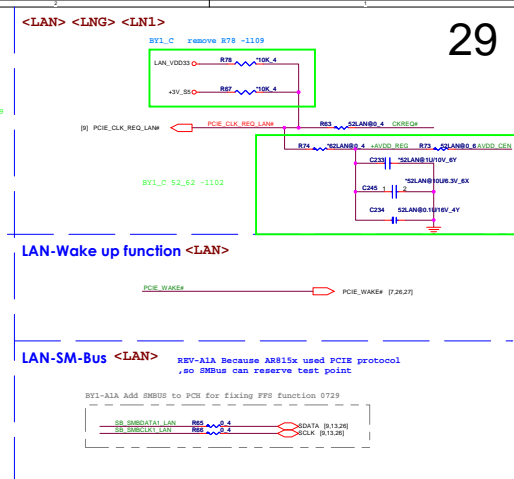
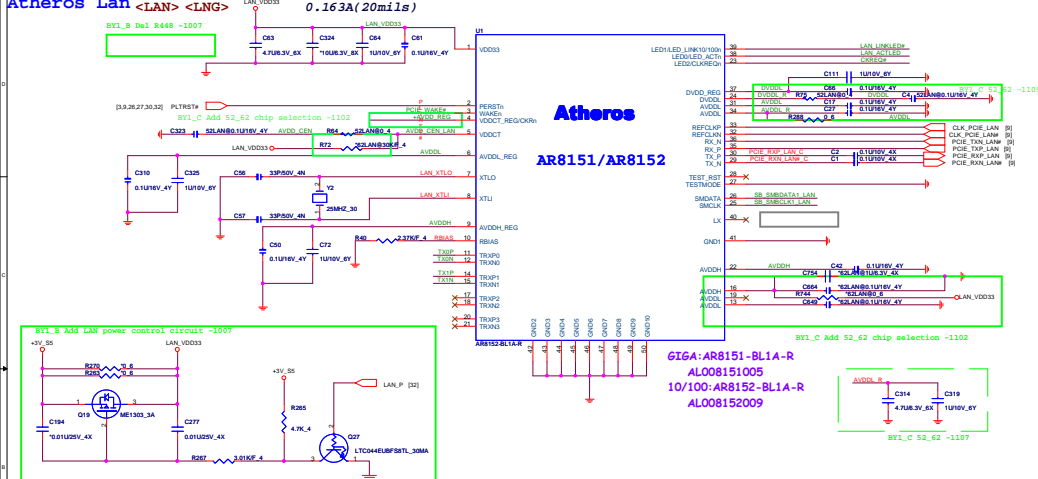
HP <ADO> <EMC>



Internal Speaker

<ADO> <EMC>





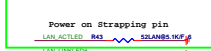
L
A<LAN> <LNG>

SIGNALS TO CONNECTOR

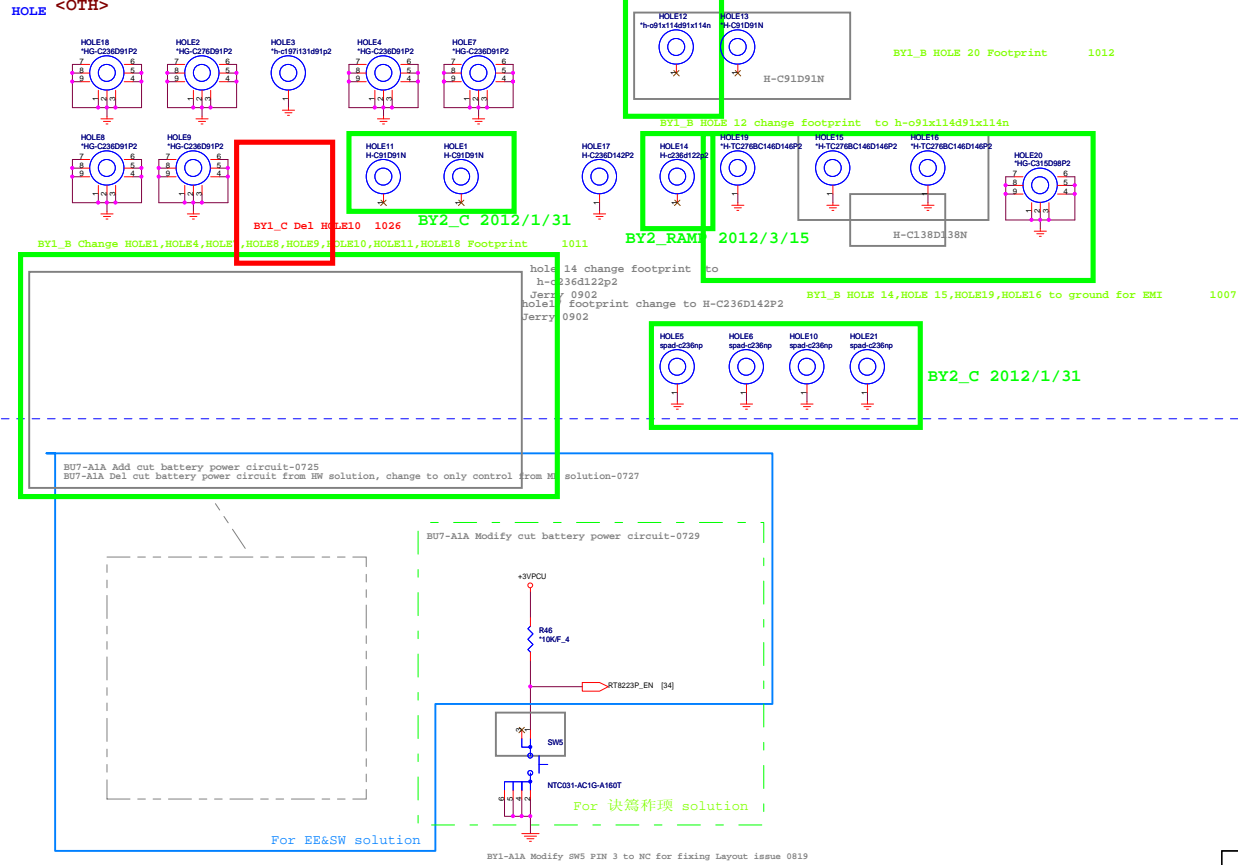


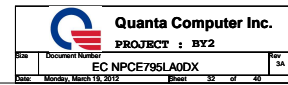
R <LAN> <LNG> <LN1>

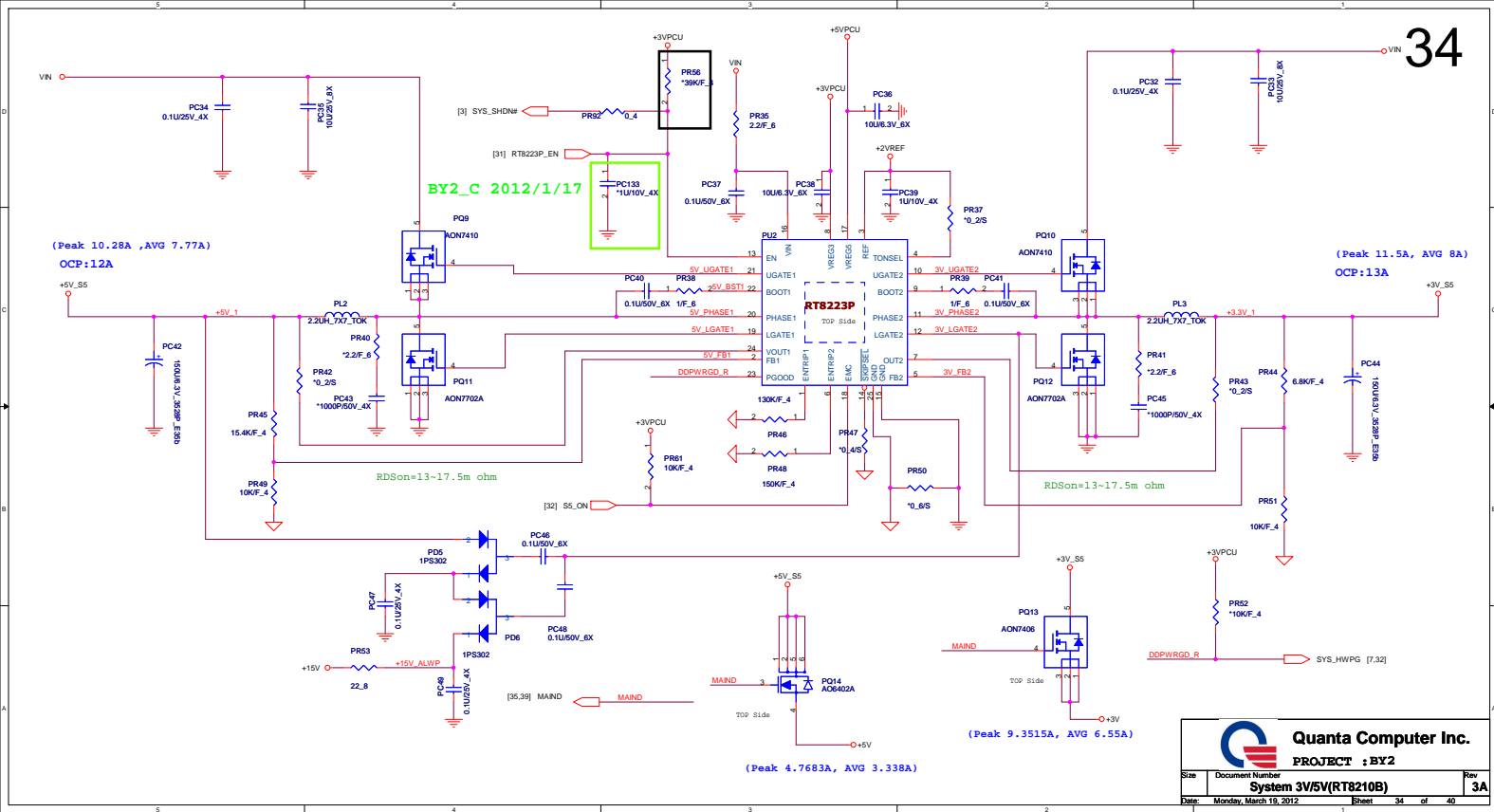
5 BY1_C Remove R43 when mount AR8162-A -110



| | | |
|--------------------|---|--|
| LED0 = LAN_ACTIVED | 1 | Over-clocking enable (default = 1) |
| | 0 | Over-clocking disable |
| LED1 = LAN_LINKED# | 1 | SWR switch-mode regulator select Giga LAN pull High (default = 1) |
| | 0 | LDO linear regulator select 10/100M LAN pull Low |
| CKREQ# or CKREQ_0# | 1 | Normal function |
| | 0 | ATE test mode |

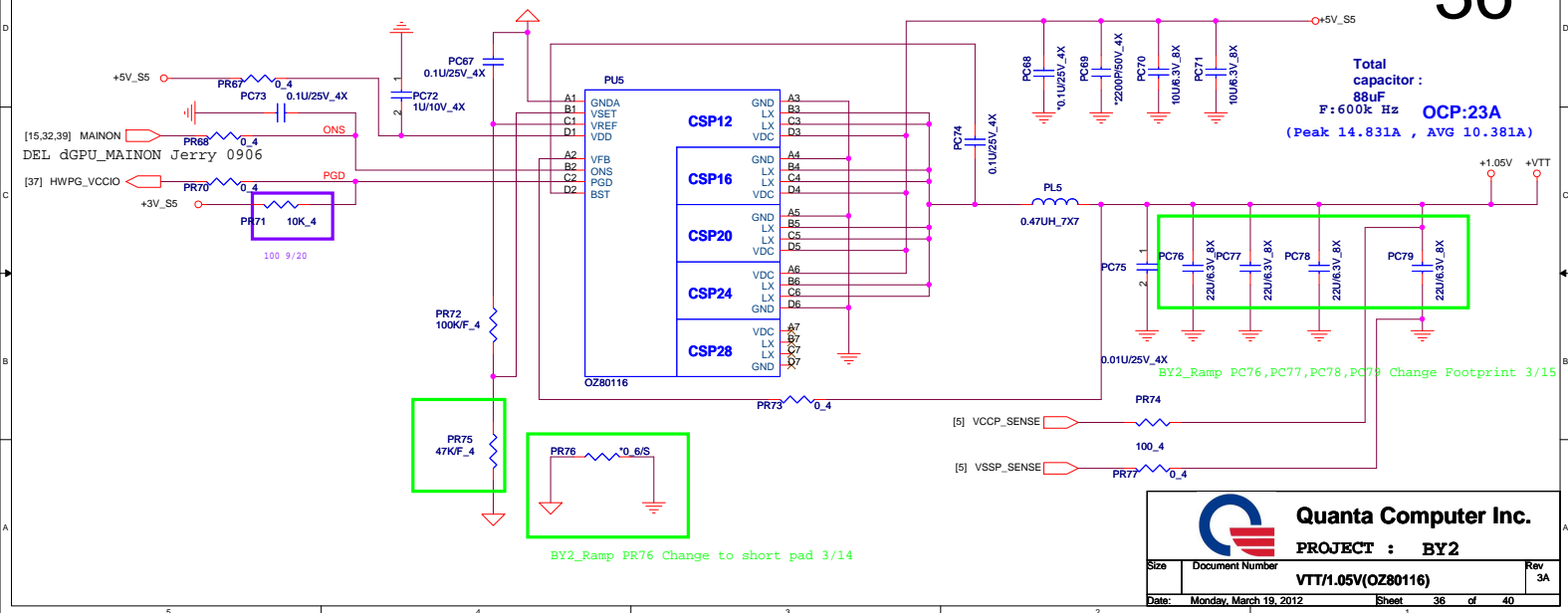


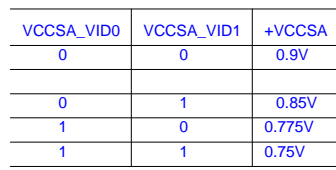




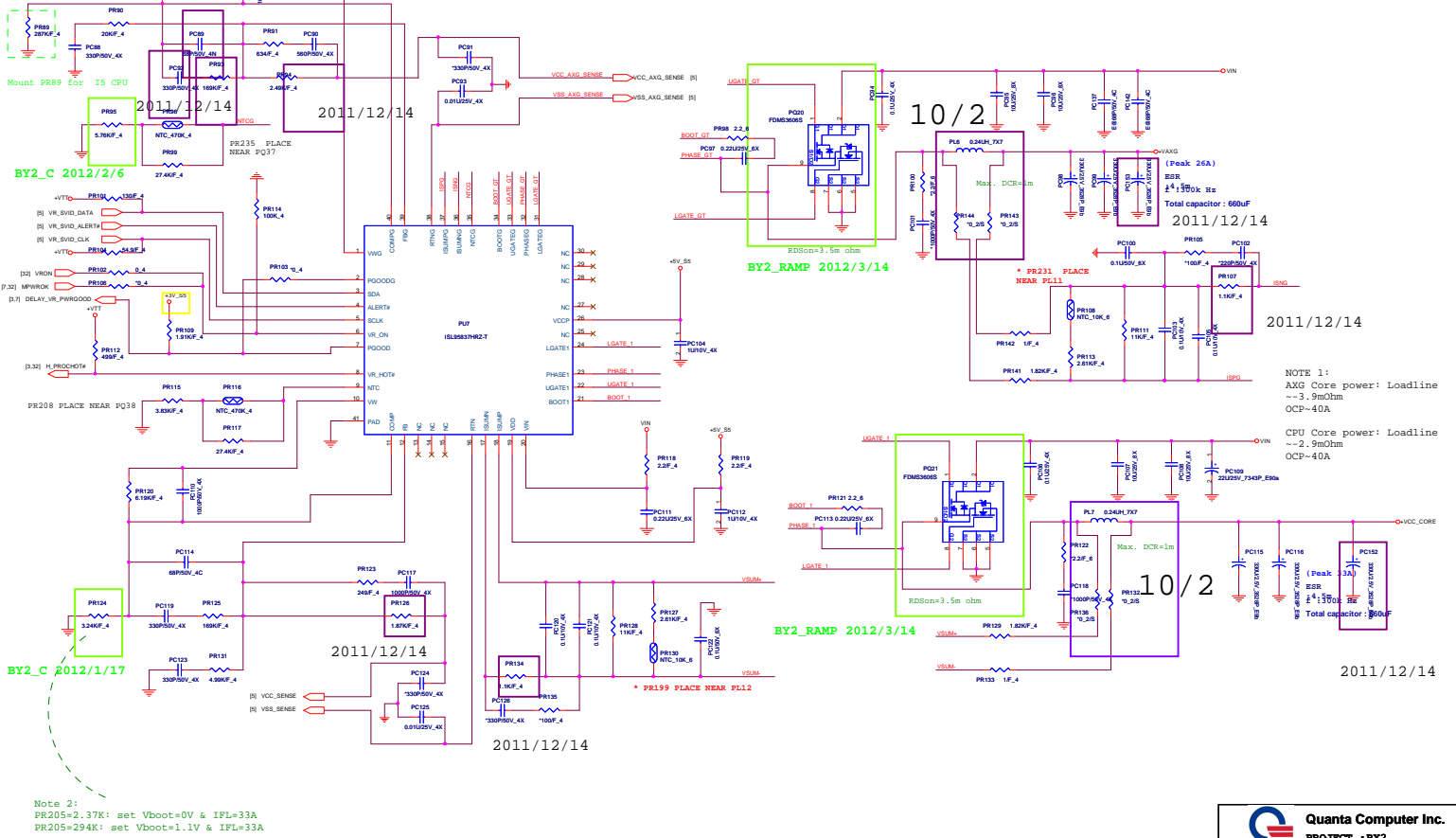
www.aitech1.ru

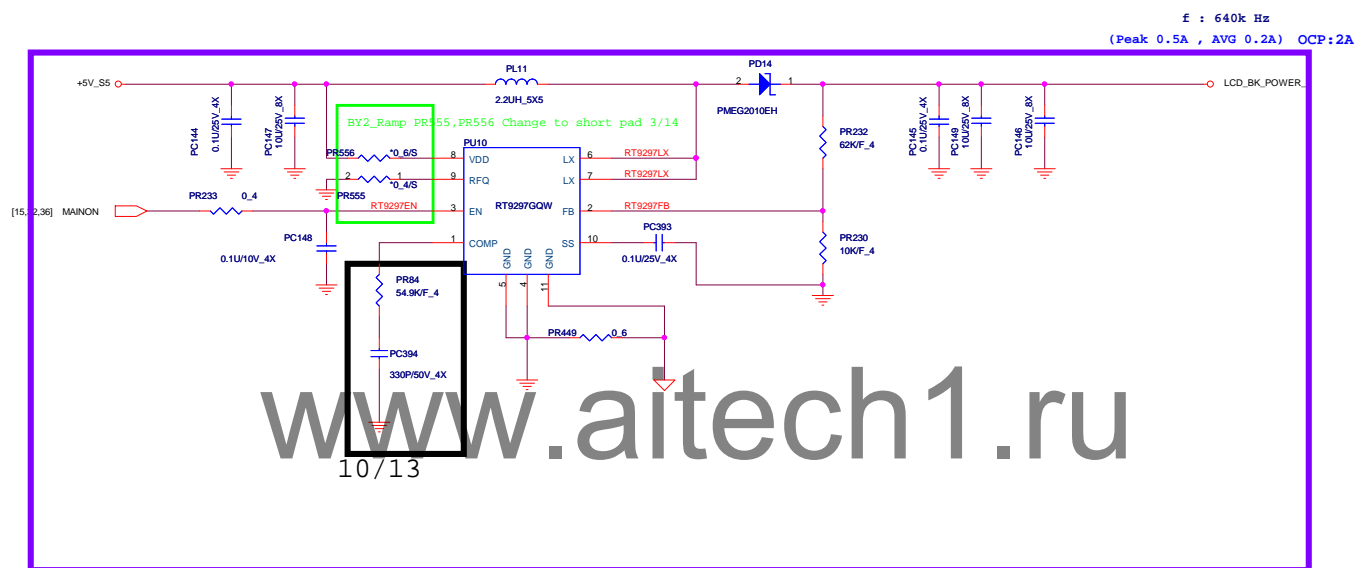
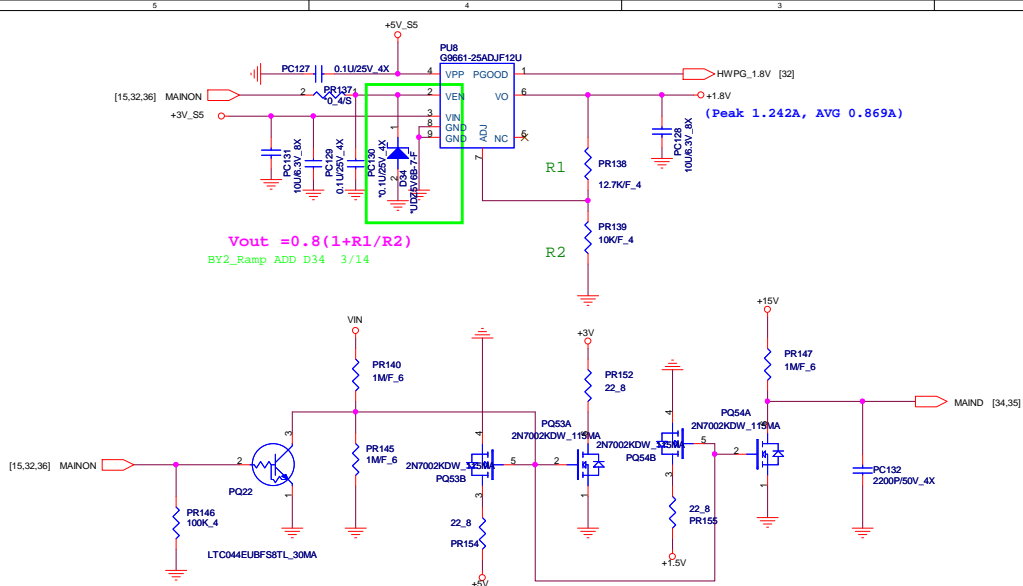






Dual Core:
R227=287K: set 95oC
AXG=33A





2011/12/14

| Model | REV | 3A | CHANGE LIST | MODEL | | |
|--------|-----|----|--|-------|------|----|
| | | | | PAGE | FROM | To |
| BY2 MB | B2A | | Page:10 BY2 B-Add BOARD_ID 4 to select INT or EXT USB3.0 | 1 | | |
| | | | Page:25 BY2 B-Change LCD_BK_POWER to VIN, mount R345 del R359 | 2 | | |
| | | | Page:26 BY2 B-Mount C436, C435, C16 for RF | 3 | | |
| | | | Page:27 BY2 B-Mount C371 | 4 | | |
| | | | Page:27 BY2 B-Remove EXT U3 | 5 | | |
| | | | Page:30 BY2 B-Del RP9 RP11:change L8 L18 L19 footprint to choke-dip11sn900h12L-4p-1 for SMT open issue | 6 | | |
| | | | Page:32 BY2 B-Modify RF_LEDn Power-Rails from +5V to +5VPCU for support AQAG function-Add R292 | 7 | | |
| | | | Page:32 BY2 B-Mount Add C248 for RF | 8 | | |
| | | | Page:32 BY2 B-Mount Add C280 for RF | 9 | | |
| | | | Page:38 BY2 B-Mount Add PC152, PC153 for power. | 10 | | |
| | | | | 11 | | |
| | | | | 12 | | |
| | | | | 13 | | |
| | | | | 14 | | |
| | | | | 15 | | |
| | C3A | | Page 8: Remove D18, D19, Add D31 | 16 | | |
| | | | Page 25: Mount R359, DEL R345 | 17 | | |
| | | | Page 34: Remove PC133 | 18 | | |
| | | | Page 37: Add PC154 design for Chief River Platform | 19 | | |
| | | | Page 37: Remove PR80 design for Chief River Platform | 20 | | |
| | | | Page 37: Change PUG To TPS51463 design for Chief River Platform | 21 | | |
| | | | Page 38: Change PR124 from 2.37K to 3.24K | 22 | | |
| | | | Page 38: Change PR95 from 3.83K to 5.76K | 23 | | |
| | | | Page 39: Change LCD_BK_POWER TO LCD Boost | 24 | | |
| | | | | 25 | | |
| | | | | 26 | | |
| | | | | 27 | | |
| | | | | 28 | | |
| | | | | 29 | | |
| | | | | 30 | | |
| | | | | 31 | | |
| | | | | 32 | | |
| | | | | 33 | | |
| | | | | 34 | | |
| | | | | 35 | | |
| | | | | 36 | | |
| | | | | 37 | | |
| | | | | 38 | | |
| | | | | 39 | | |
| | | | | 40 | | |

www.aitech1.ru