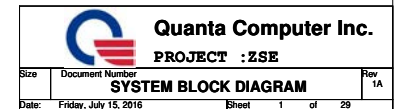


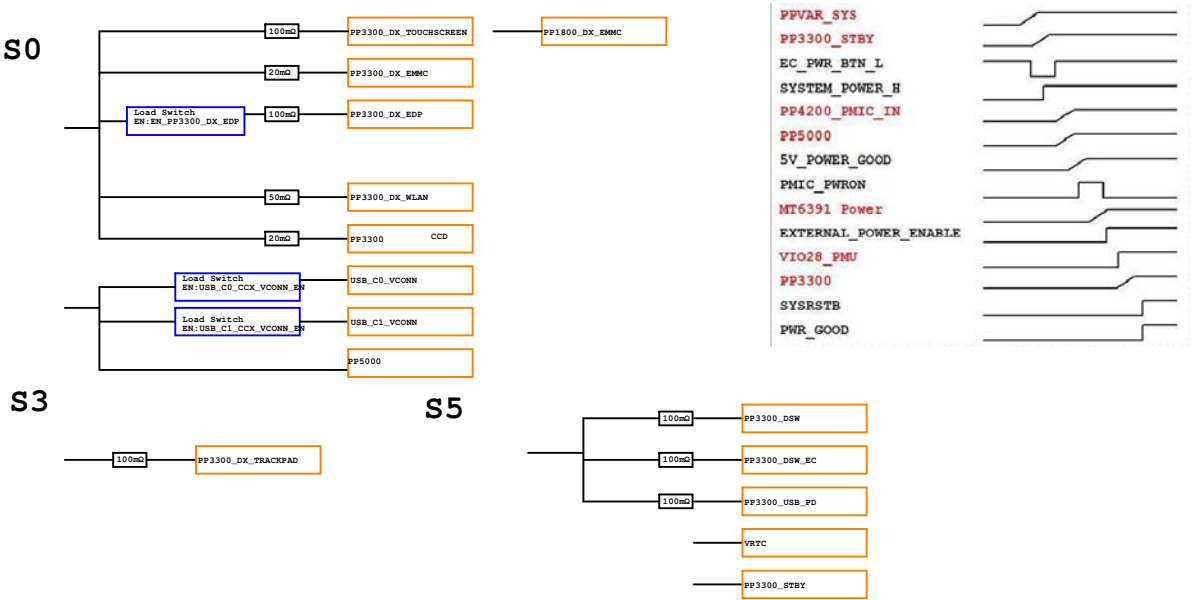
www.vinafix.com



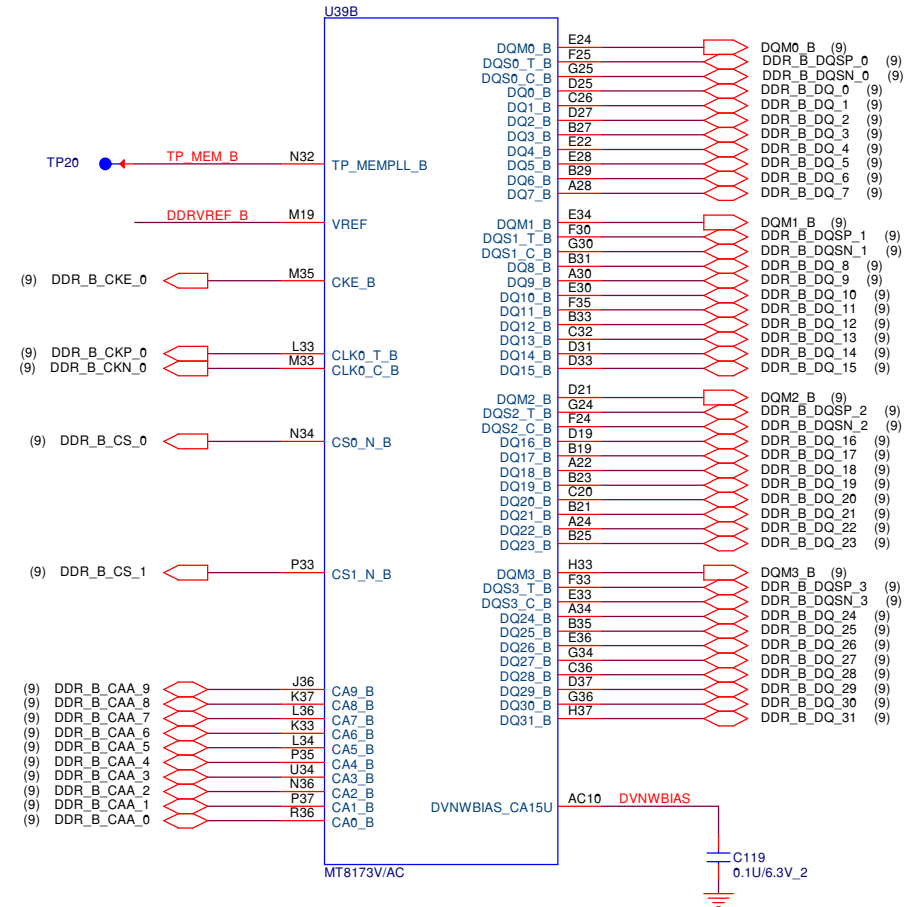
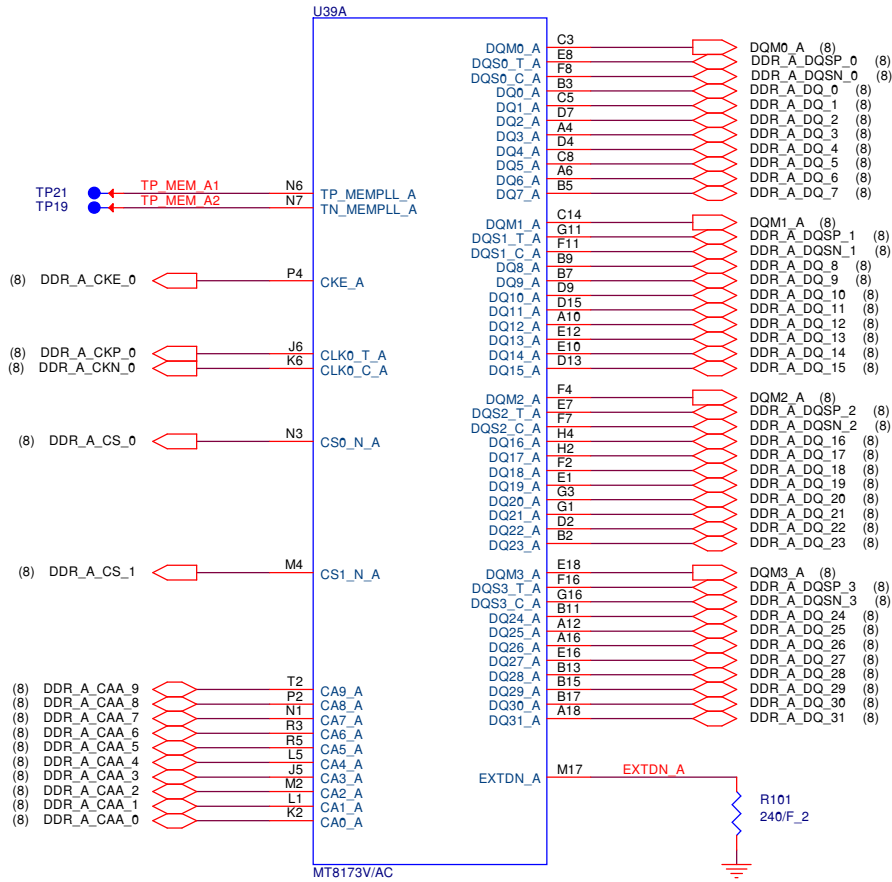
I2C MAP

| HOST | BUS Name | Frequency | Pull up | Device | Part Number | 7 bit | 8 bitR | 8 bit W | |
|------|-------------|-----------|-------------|--------------|----------------|---|--------|---------|---|
| SoC | SCL4 (SDA4) | 400KHz | PP3300 | TrackPad | SA459C-1200 | | | | X |
| | SCL1 (SDA1) | 400KHz | VIO18_PMU | PMIC | DA9212-AKU2 | | | | |
| | SCL2 (SDA2) | 400KHz | VIO18_PMU | TPM | SLB9645TT1.2 | | | | X |
| | SCL3 (SDA3) | 400KHz | PP3300 | Touchscreen | eKTH3915 | | 0x10 | 0x20 | V |
| | SCL0 (SDA0) | 400KHz | VGP1_PMU | Codec | ALC5650-CGT | 0011010 | 0x34 | 0x35 | V |
| | | 1MHz | PP3300 | USB HUB | RTS5413-GRT | 1101010 | 0xD2 | 0xD3 | V |
| | | 400KHz | VGP2_PMU | eDP Bridge | PS8640QFN56G | pin17 L: 0x10~0x2F (default), H: 0x30~0x4F | | | |
| | | | | | | | | | |
| EC | I2C1 | 1MHz | PP3300_STBY | Thermal | TMP432ADGSR | 1001100 | | | V |
| | | 400KHz | PP3300_STBY | USB BC 1.2 | PI3USB9281CXWE | 0100101 | | | V |
| | | 400KHz | PP3300_STBY | Charger | PS8740BQFN40GT | R0001001 | 0X13H | 0X12H | V |
| | | 400KHz | PP3300_STBY | Battery | | | | | |
| | | 400KHz | VIO18_PMU | ACCEL (D/B) | PI3USB9281 | 0x1E | | | V |
| | I2C2 | 400KHz | | HDMI to USBC | ANX7688 | | | | |

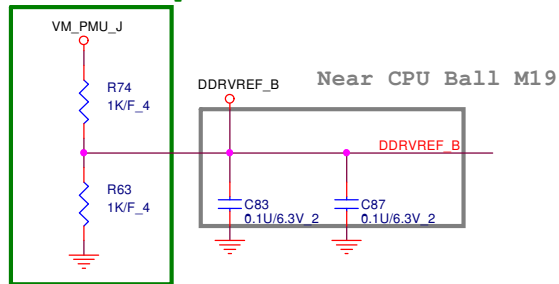
MT8173 POWER TREE



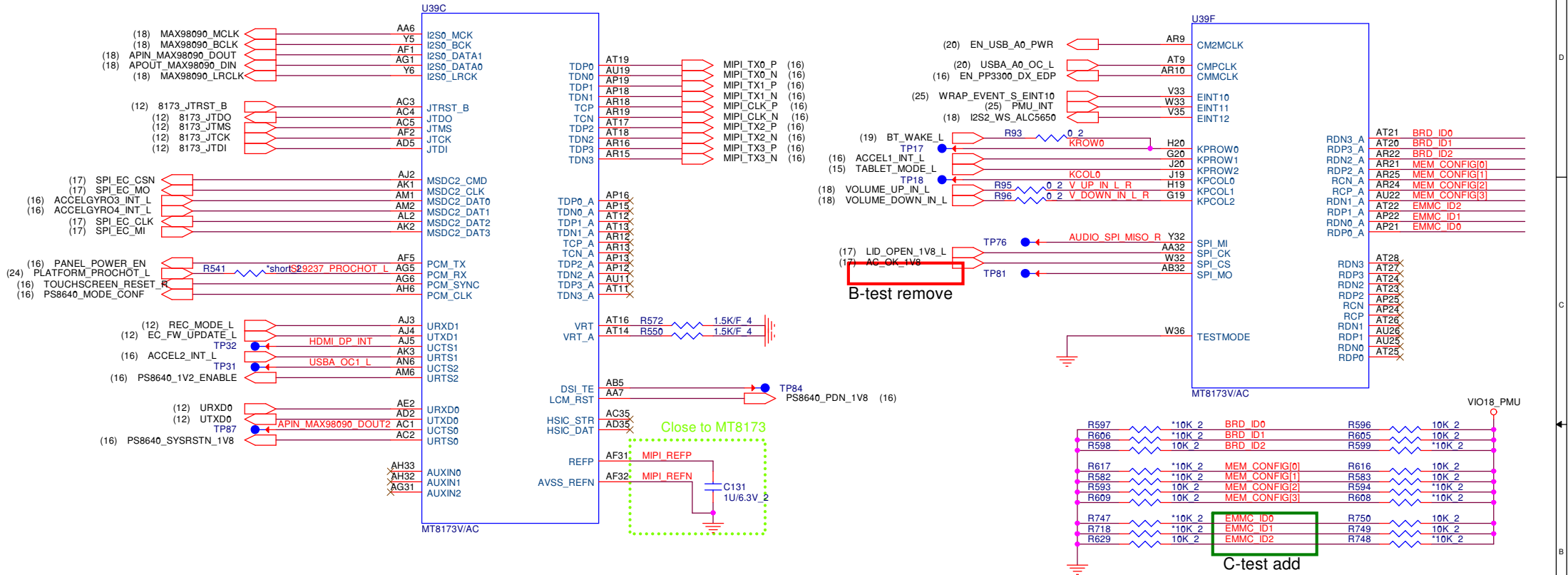
MT8173 MEMORY



Place between Main chip & DRAM



MT8173 MIPI, AUDIO, GPIO



MEMORY STRAPPING

| CONFIG | [3] | [2] | [1] | [0] | |
|--|-----|-----|-----|-----|---------------------------------|
| HYNIX 2GB | 0 | 0 | 0 | 0 | |
| SAMSUNG 4G K4E6E304EE-EGCE | 0 | 0 | 1 | 0 | |
| HYNIX 4GB AKD5RW0TW57, H9CCNNNBLTBLAR-NUD | 0 | 0 | 1 | 1 | Proto EVT1-1 DVT-1 PVT |
| SAMSUNG 4G AKD5RZST504, K4E6E304EB-EGCF | 0 | 1 | 0 | 0 | EVT1-2 DVT-2 |
| | | | | | |

eMMC ID (U41)

| CONFIG | [2] | [1] | [0] | |
|---|-----|-----|-----|--------------|
| Hynix 16G H26M52208FPR, ARZHXSRI1000 | 0 | 0 | 0 | EVT1-1 |
| SAMSUNG 16G KLMAG1JENB-B041, AR0ZDAR1004 | 0 | 1 | 0 | DVT-1 |
| HYNIX 32GB H26M64208EMR, ARZHXSRI1001 | 0 | 1 | 1 | DVT-2 PVT |
| SAMSUNG 32G KLMBG2JENB-B041, AR0ZDAR1005 | 0 | 0 | 1 | EVT1-2 |
| HYNIX 64GB H26M78208CMR, AR0ZSER1000 | 1 | 0 | 0 | DVT-3 |

BOARD ID

| CONFIG | [2] | [1] | [0] | |
|--------|-----|-----|-----|-------|
| Rev. 0 | 0 | 0 | 0 | Proto |
| Rev. 1 | 0 | 0 | 1 | EVT |
| Rev. 2 | 0 | 1 | 0 | DVT |
| Rev. 3 | 0 | 1 | 1 | PVT |

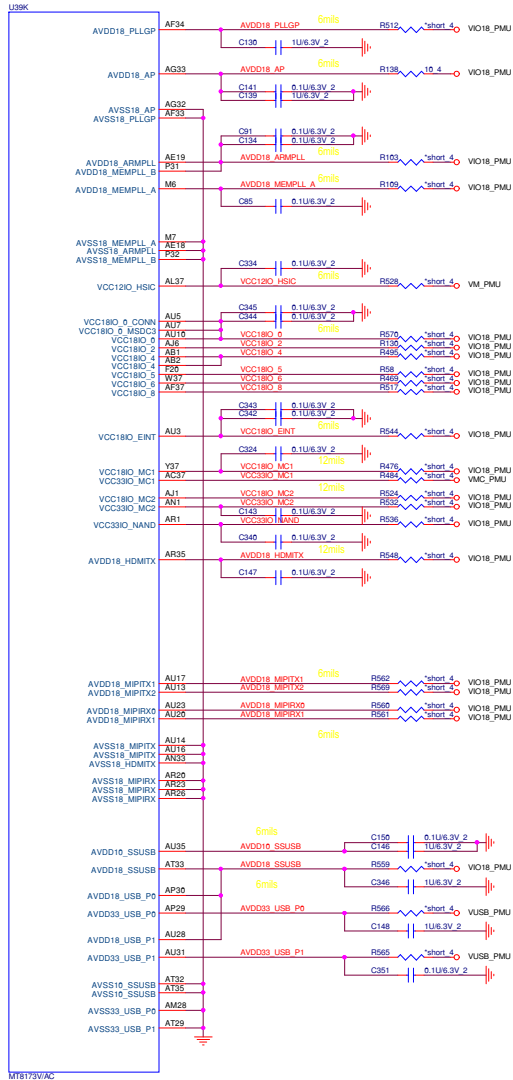
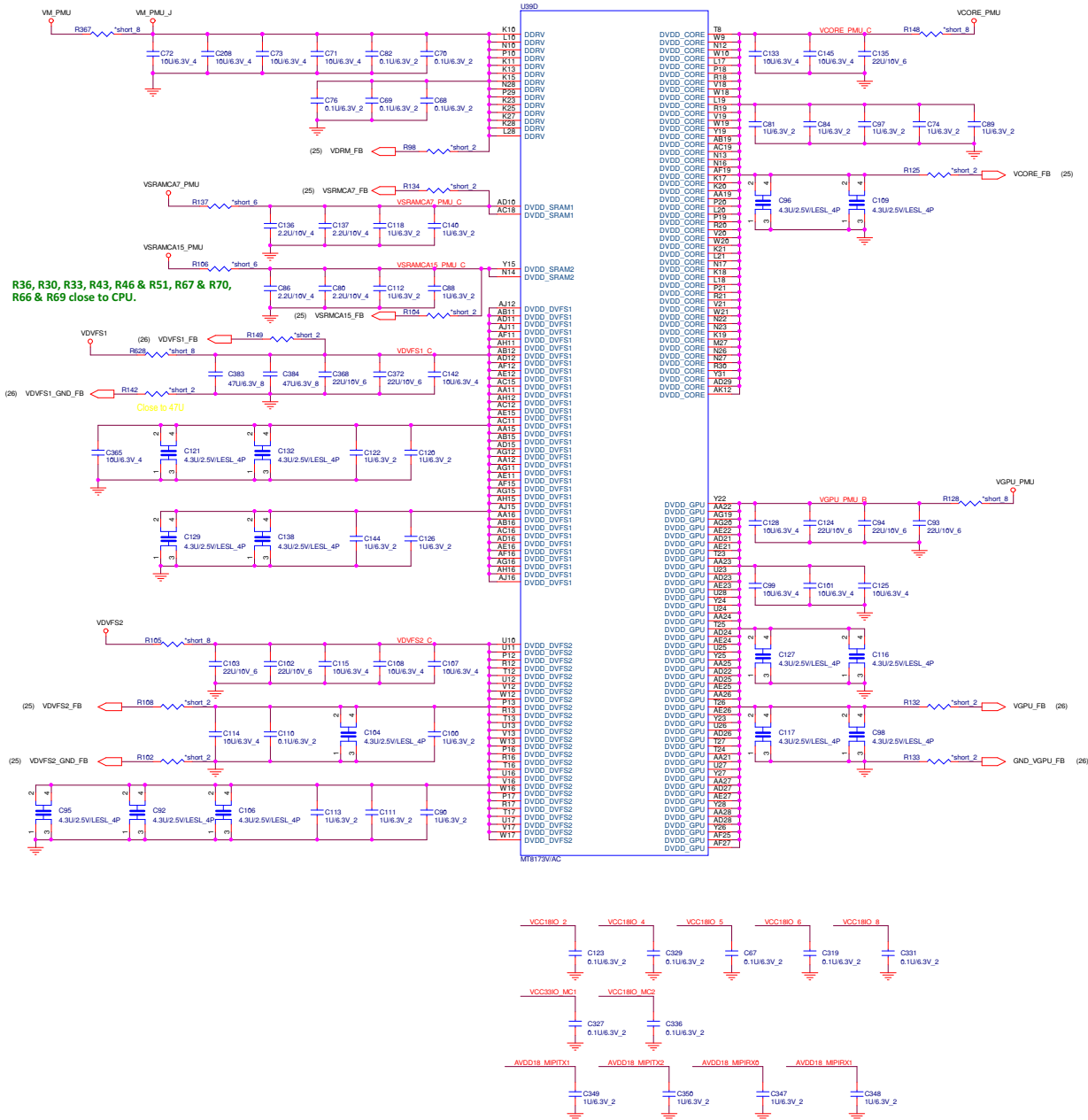
Quanta Computer Inc.
PROJECT : ZSE

Size Document Number
MT8173 MIPI, AUDIO, GPIO

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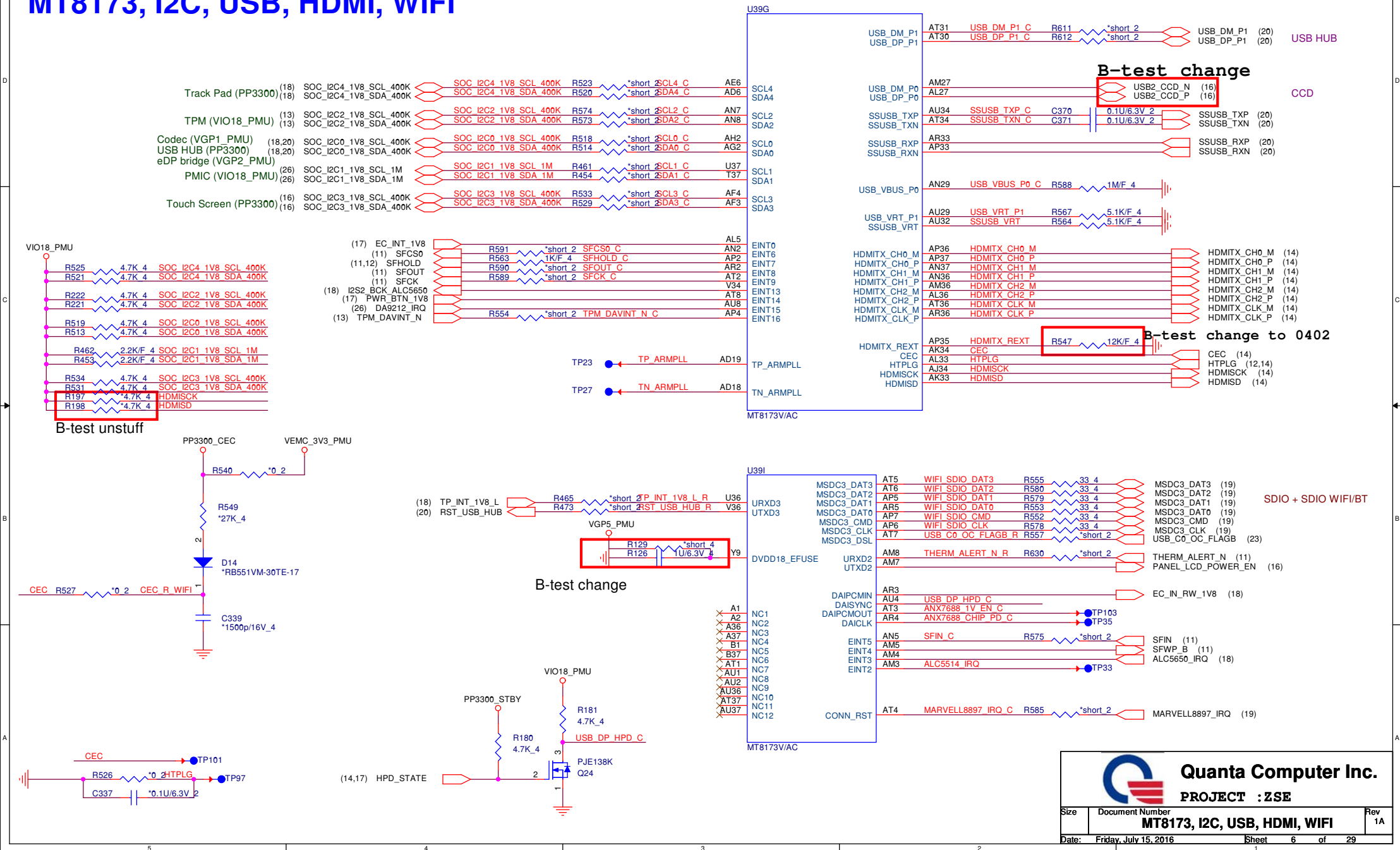
Rev 1A

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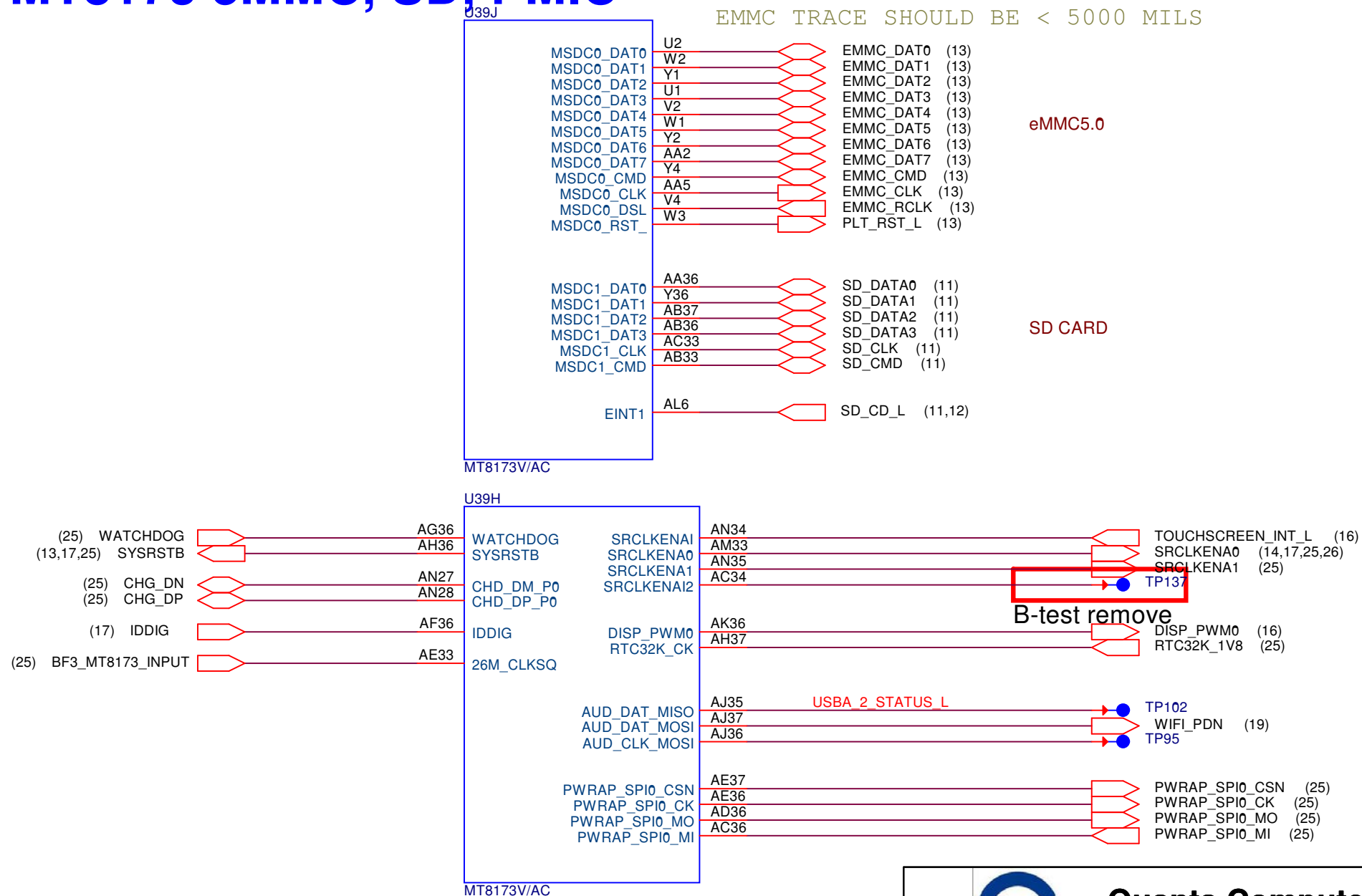


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| H1 | DVS82 | DVS139 | K40 |
| H2 | DVS83 | DVS137 | T34 |
| H3 | DVS84 | DVS138 | T34 |
| C2 | DVS85 | DVS139 | J15 |
| C3 | DVS86 | DVS140 | M10 |
| D2 | DVS87 | DVS141 | A10 |
| D3 | DVS88 | DVS142 | A10 |
| D4 | DVS89 | DVS143 | A10 |
| N2 | DVS91 | DVS144 | N11 |
| N3 | DVS92 | DVS145 | N11 |
| N5 | DVS93 | DVS146 | N11 |
| N6 | DVS94 | DVS147 | N11 |
| Y3 | DVS95 | DVS148 | AF9 |
| Y4 | DVS96 | DVS149 | AF9 |
| B4 | DVS97 | DVS150 | A19 |
| B5 | DVS98 | DVS151 | A19 |
| B6 | DVS99 | DVS152 | A19 |
| L4 | DVS100 | DVS153 | A19 |
| L5 | DVS101 | DVS154 | A19 |
| L6 | DVS102 | DVS155 | A19 |
| L7 | DVS103 | DVS156 | A19 |
| L8 | DVS104 | DVS157 | A19 |
| L9 | DVS105 | DVS158 | A19 |
| B8 | DVS106 | DVS159 | V17 |
| B9 | DVS107 | DVS160 | V17 |
| A9 | DVS108 | DVS161 | V17 |
| A10 | DVS109 | DVS162 | V17 |
| A11 | DVS110 | DVS163 | V17 |
| B10 | DVS111 | DVS164 | H22 |
| B11 | DVS112 | DVS165 | H22 |
| D10 | DVS113 | DVS166 | T2 |
| D11 | DVS114 | DVS167 | T2 |
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| B12 | DVS116 | DVS169 | P14 |
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| B312 | | | |

Only USB port 0 can support OTG.



MT8173 eMMC, SD, PMIC

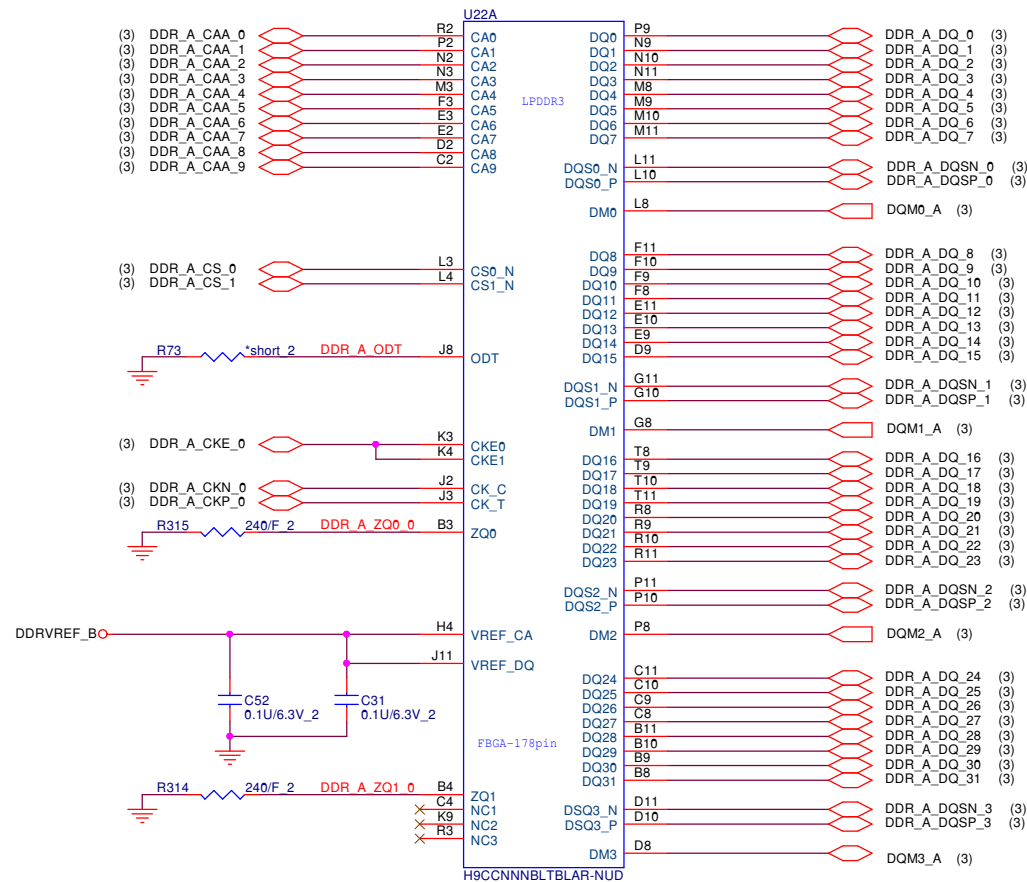


Quanta Computer Inc.

PROJECT :ZSE

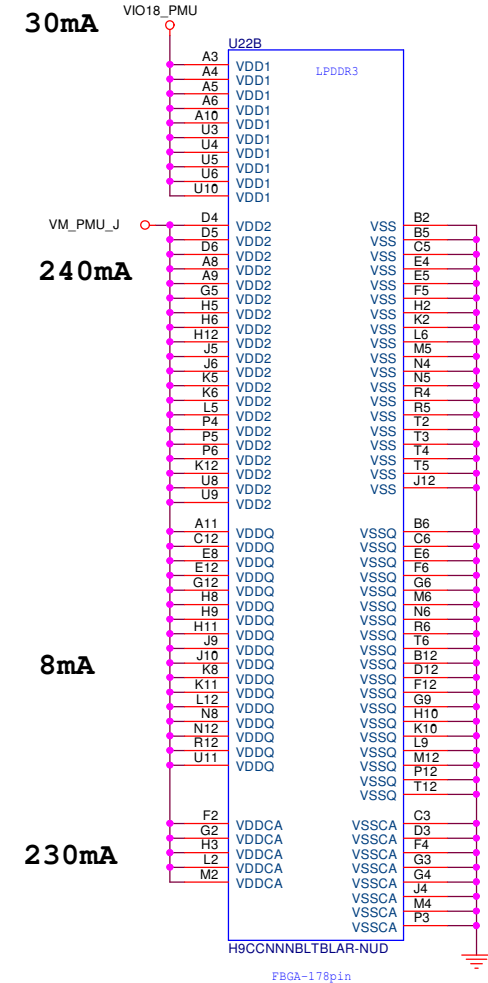
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|-------|-----------------------|---------------|
| Size | Document Number | Rev |
| | MT8173 eMMC, SD, PMIC | 1A |
| Date: | Friday, July 15, 2016 | Sheet 7 of 29 |

MEMORY CH_A

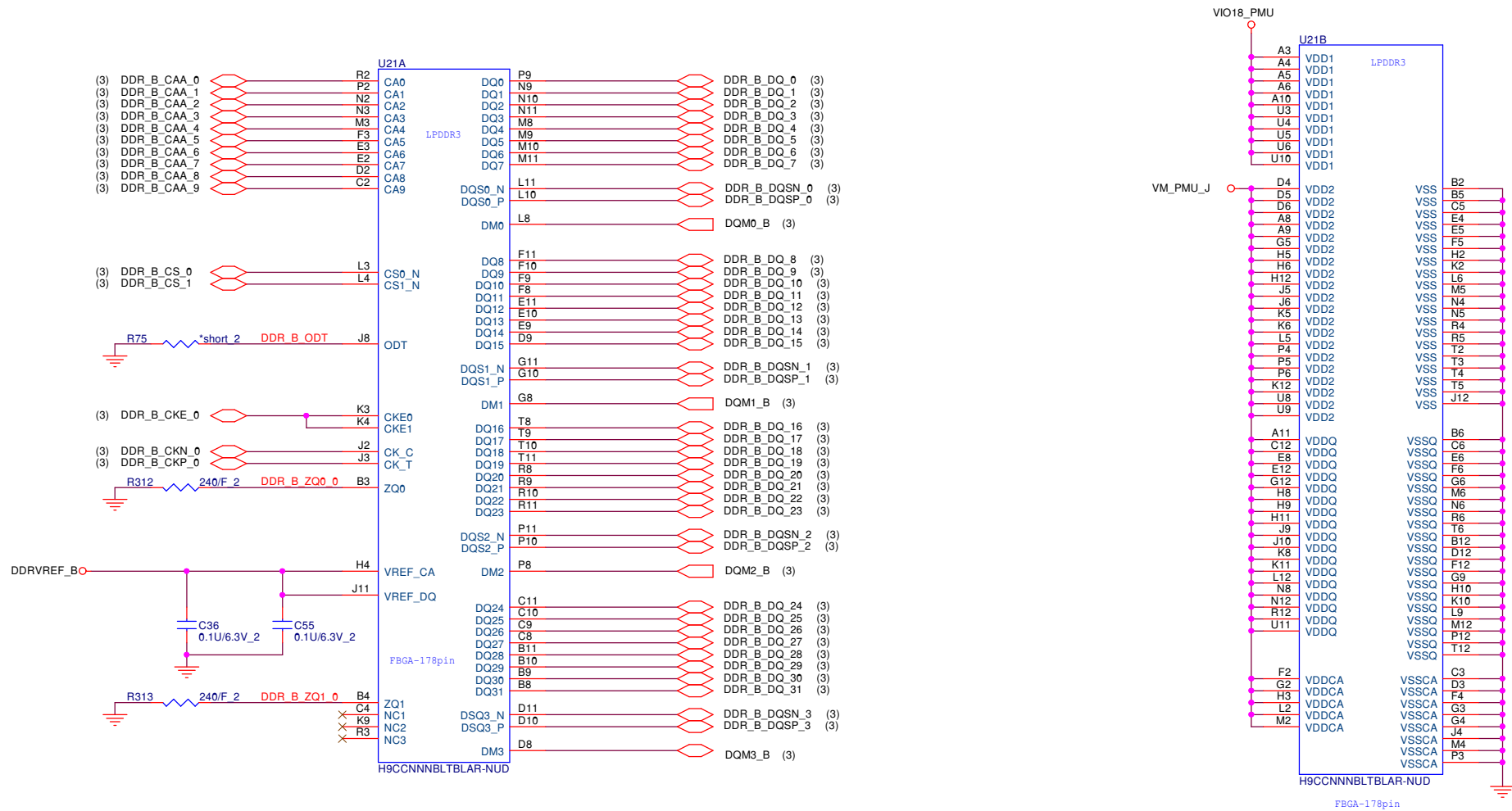


RAM (U21,U22)

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|----------------------------------|
| Hynix 16Gb |
| H9CCNNNBLTBLAR-NUD , AKD5RW0TW57 |
| SAMSUNG 16Gb |
| K4E6E304EB-EGCF , AKD5RZST504 |

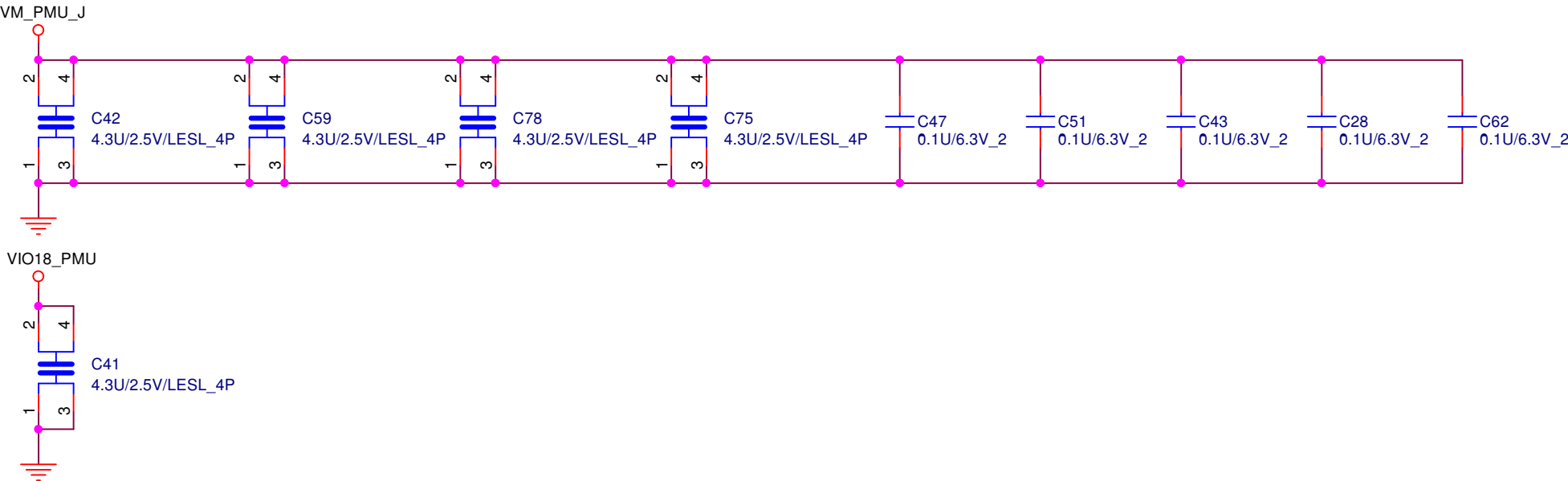


MEMORY CH_B

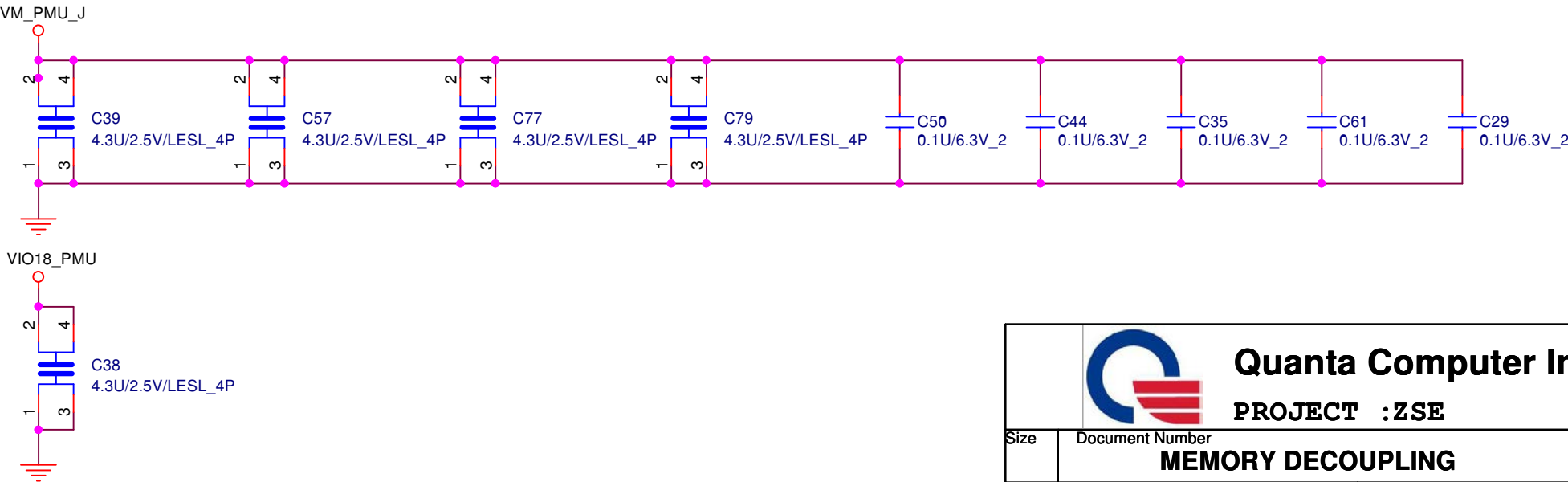


MEMORY DECOUPLING

CHANNEL A



CHANNEL B



Quanta Computer Inc.

PROJECT :ZSE

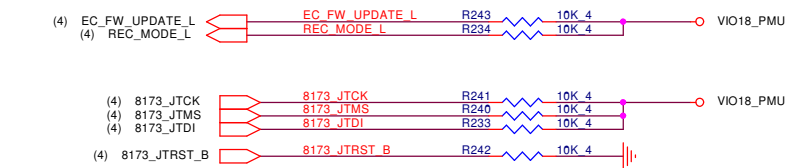
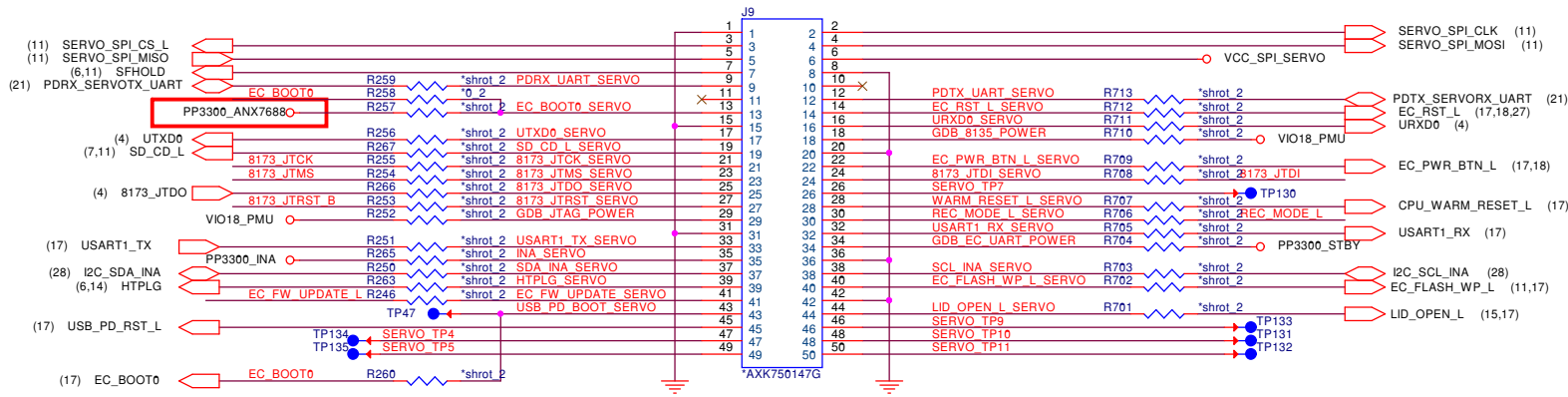
MEMORY DECOUPLING

Rev
1A

Date: Friday, July 15, 2016

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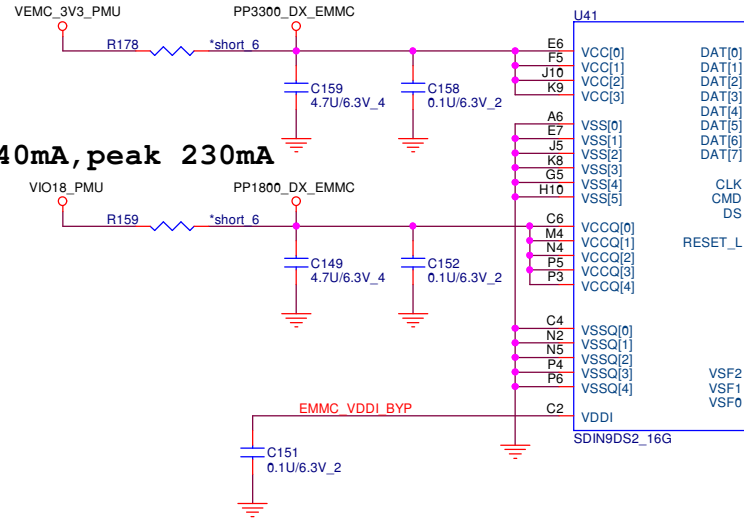
SERVO



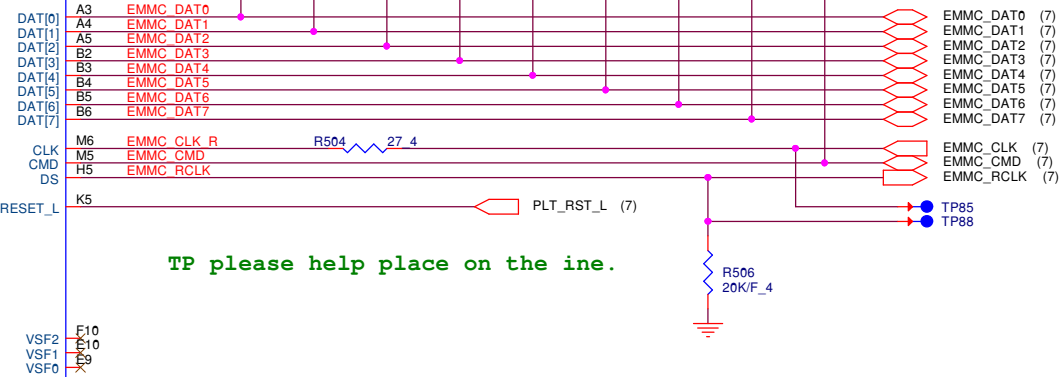
| GROUP | Pin | Direction | Description | x86 boards | ARM boards |
|-------|-------|------------|---|--|--|
| GND | 1 | S <--> D | Shared ground plane | GND | GND |
| SPI2 | 2 | S --> D | SPI2 clock (referenced to SPI2_VREF) | SPI_SCK BIOS EEPROM | SPI_SCK BIOS EEPROM |
| SPI2 | 3 | S --> D | SPI2 chip select (referenced to SPI2_VREF) | SPI_CS# BIOS EEPROM | SPI_CS# BIOS EEPROM |
| SPI2 | 4 | S --> D | SPI2 data input (referenced to SPI2_VREF) | SPI_DI BIOS EEPROM | SPI_DI BIOS EEPROM |
| SPI2 | 5 | S --> D | SPI2 data output (referenced to SPI2_VREF) | SPI_DO BIOS EEPROM | SPI_DO BIOS EEPROM |
| SPI2 | 6 | S <--> D | SPI2 Voltage reference (1.8-3.3V) | SPI BIOS EEPROM voltage rail | SPI BIOS EEPROM voltage rail |
| SPI2 | 7 | S --> D OD | SPI2 Hold signal. Used to float outputs on DUT EEPROM during emulation) | SPI2_HOLD# (referenced to SPI2_VREF) | SPI2_HOLD# (referenced to SPI2_VREF) |
| GND | 8 | S <--> D | Shared ground plane | GND | GND |
| SPI1 | 9 | S --> D | SPI1 clock (referenced to SPI1_VREF) | SPI_SCK EC EEPROM | SPI_SCK EC EEPROM |
| SPI1 | 10 | S --> D | SPI1 chip select (referenced to SPI1_VREF) | SPI_CS# EC EEPROM | SPI_CS# EC EEPROM |
| SPI1 | 11 | S --> D | SPI1 data input (referenced to SPI1_VREF) | SPI_DI EC EEPROM | SPI_DI EC EEPROM |
| SPI1 | 12 | S <--> D | SPI1 data output (referenced to SPI1_VREF) | SPI_DO EC EEPROM | SPI_DO EC EEPROM |
| SPI1 | 13 | S <--> D | SPI1 Voltage reference (1.8-3.3V) | SPI EC EEPROM voltage rail | SPI EC EEPROM voltage rail |
| ECIO | 14 | S --> D OD | EC Reset | EC_RESET#/COLD_RESET# | EC_RESET#/COLD_RESET# |
| GND | 15 | S <--> D | Shared ground plane | GND | GND |
| UART2 | 16 | S --> D | UART2 Rx Data (referenced to UART2_VREF) | ARM uP UART_RXD (or system uart from EC/SuperI/O) | ARM uP UART_RXD |
| UART2 | 17 | S <--> D | UART2 Tx Data (referenced to UART2_VREF) | ARM uP UART_TXD (or system uart from EC/SuperI/O) | ARM uP UART_TXD |
| UART2 | 18 | S <--> D | UART2 Voltage reference (1.8-3.3V) | ARM uP UART voltage rail | ARM uP UART voltage rail |
| SDIO | 19 | S --> D OD | SD Card detect - pulled low to simulate removal of an SD card | SD_DETECT | SD_DETECT |
| GND | 20 | S <--> D | Shared ground plane | GND | GND |
| JTAG | 21 | S --> D | JTAG clock (referenced to JTAG_VREF) | EC_JTAG_TCK | ARM uP JTAG_TCK |
| GPIO | 22 | S --> D OD | Power button access (low-pressed) | PWR_BTN# | ARM uP JTAG_TCK |
| JTAG | 23 | S --> D | JTAG mode select (referenced to JTAG_VREF) | EC_JTAG_TMS | ARM uP JTAG_TMS |
| JTAG | 24 | S --> D | JTAG Data input (referenced to JTAG_VREF) | EC_JTAG_TDI | ARM uP JTAG_TDI |
| JTAG | 25 | S <--> D | JTAG Data output (referenced to JTAG_VREF) | EC_JTAG_TDO | ARM uP JTAG_TDO |
| JTAG | 26 | S <--> D | JTAG Return clock (referenced to JTAG_VREF) | EC_JTAG_RTCK | ARM uP JTAG_RTCK |
| JTAG | 27 | S --> D | JTAG Reset (referenced to JTAG_VREF) | EC_JTAG_TRST# | ARM uP JTAG_TRST_L |
| JTAG | 28 | S --> D OD | CPU/Peripheral reset | To be used as a system wide reset while JTAG'ing | To be used as a system wide reset while JTAG'ing |
| JTAG | 29 | S <--> D | JTAG Voltage reference (1.8-3.3V) | EC_JTAG voltage rail | ARM uP JTAG voltage rail |
| GPIO | 30 | S --> D OD | Recovery Mode | REC_MODE_L | REC_MODE_L |
| GND | 31 | S <--> D | Shared ground plane | GND | GND |
| UART1 | 32 | S --> D | UART1 Rx Data (referenced to UART1_VREF) | EC UART_RXD | EC UART_RXD |
| UART1 | 33 | S <--> D | UART1 Tx Data (referenced to UART1_VREF) | EC UART_TXD | EC UART_TXD |
| UART1 | 34 | S <--> D | UART1 Voltage reference (1.8-3.3V) | EC UART Voltage rail | EC UART Voltage rail |
| I2C | 35 | S --> D | Power supplied by debug board for power measurement devices on DUT | Connect to INA's on DUT | Connect to INA's on DUT |
| GND | 36 | S <--> D | Shared ground plane | GND | GND |
| I2C | 37 | S --> D OD | I2C data lin to communicate with power measurement devices | Connect to INA's on DUT | Connect to INA's on DUT |
| I2C | 38 | S --> D OD | I2C clock lin to communicate with power measurement devices | Connect to INA's on DUT | Connect to INA's on DUT |
| GPIO | 39 | S --> D OD | Hot Plug Detect - pulled low to simulate external display disconnect | HPD | HPD |
| GPIO | 40 | S --> D | Enable WP on BIOS SPI bus (referenced to SPI2_VREF) | FW_WP (don't hard tie to VCC or GND) Referenced to SPI2_VREF | FW_WP (don't hard tie to VCC or GND) Referenced to SPI2_VREF |
| GPIO | 41 | S --> D OD | Thermal trip simulation/Firmware update (ARM) | PROC_HOT_L/FW_UPDATE_L | PROC_HOT_L/FW_UPDATE_L |
| GND | 42 | S <--> D | Shared ground plane | GND | GND |
| GPIO | 43**S | --> D OD | Developer Mode | **See note below DEV_MODE | **See note below DEV_MODE |
| GPIO | 44**S | --> D OD | Lid Open | LID_OPEN | LID_OPEN |
| GPIO | 45**S | --> D OD | PCH disable/CPU NMI (ARM) | PCH_DISABLE_L/CPU_NMI | PCH_DISABLE_L/CPU_NMI |
| GPIO | 46**S | --> D OD | Keyboard matrix, column1 | KBD_COL1 | KBD_COL1 |
| GPIO | 47**S | --> D OD | Keyboard matrix, column2 | KBD_COL2 | KBD_COL2 |
| GPIO | 48**S | --> D OD | Keyboard matrix, row1 | KBD_ROW1 | KBD_ROW1 |
| GPIO | 49**S | --> D OD | Keyboard matrix, row2 | KBD_ROW2 | KBD_ROW2 |
| GPIO | 50**S | --> D OD | Keyboard matrix, row3 | KBD_ROW3 | KBD_ROW3 |

EMMC

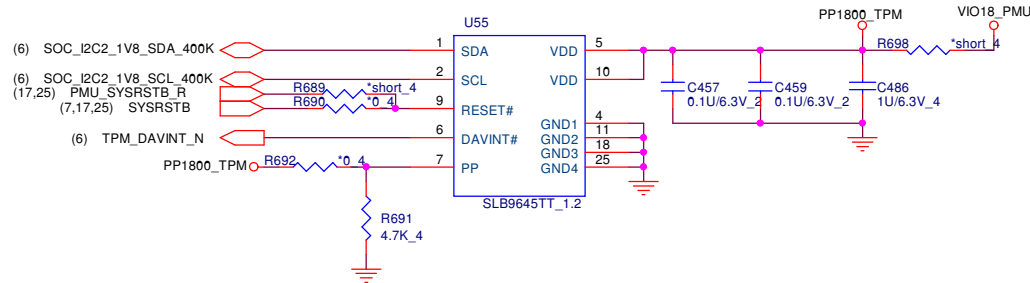
180mA, peak 300mA



140mA, peak 230mA



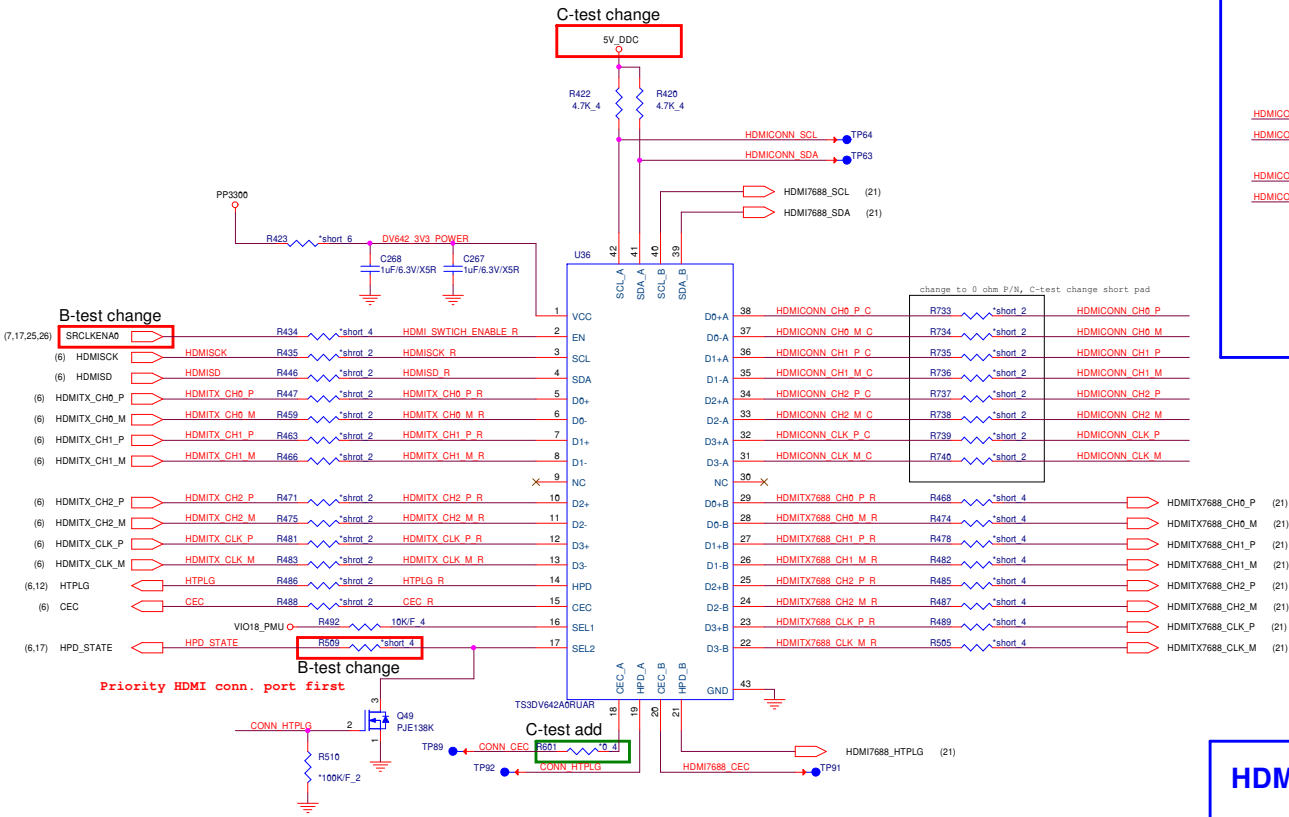
TPM



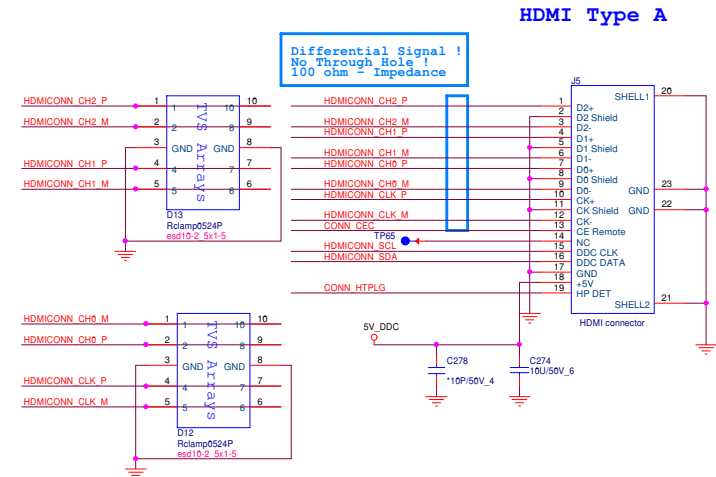
Quanta Computer Inc.
PROJECT : ZSE

| Size | Document Number | Rev |
|-------|-----------------------|----------------|
| | eMMC, TPM | 1A |
| Date: | Friday, July 15, 2016 | Sheet 13 of 29 |

HDMI SWITCH



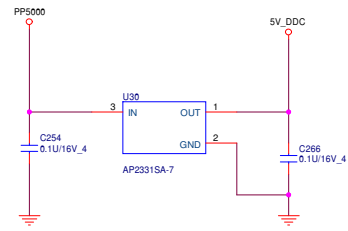
HDMI CONNECTOR



HDMI EMI

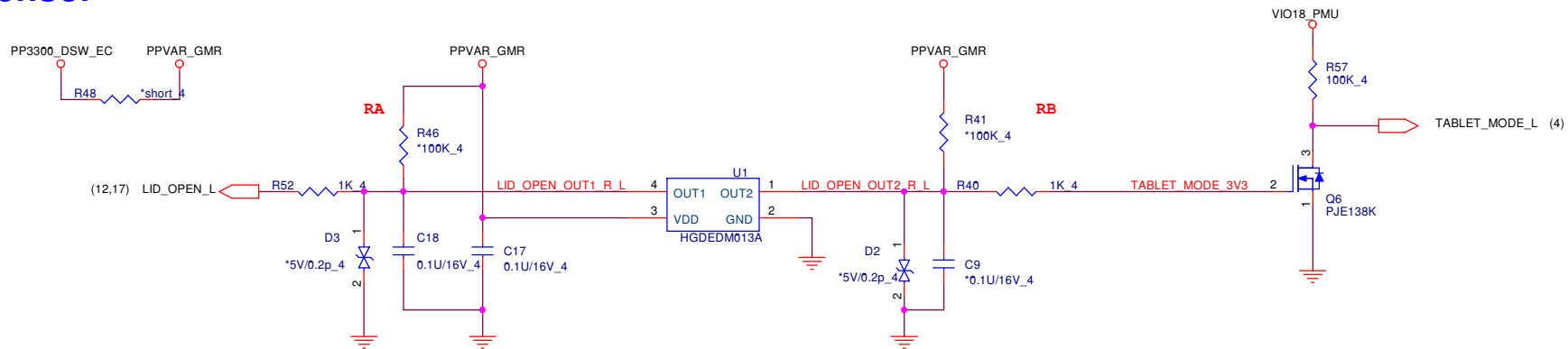


HDMI CURRENT LIMIT

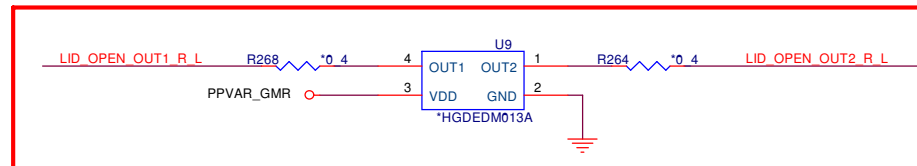


Remove

GMR Sensor



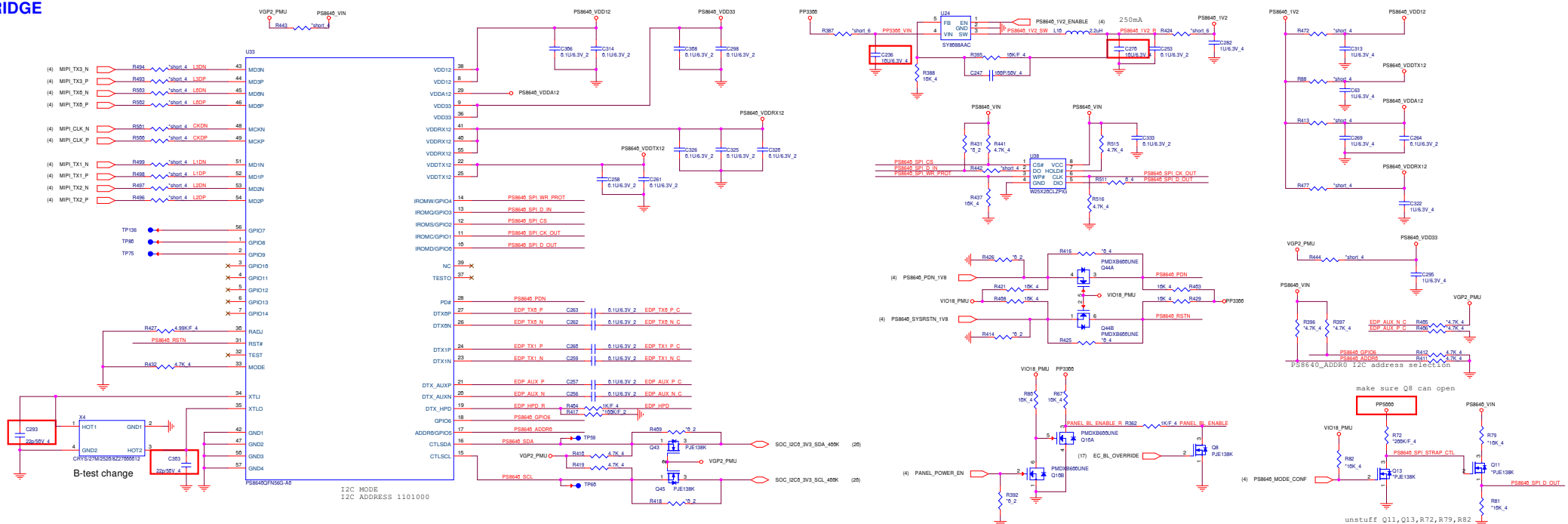
B-test unstuff



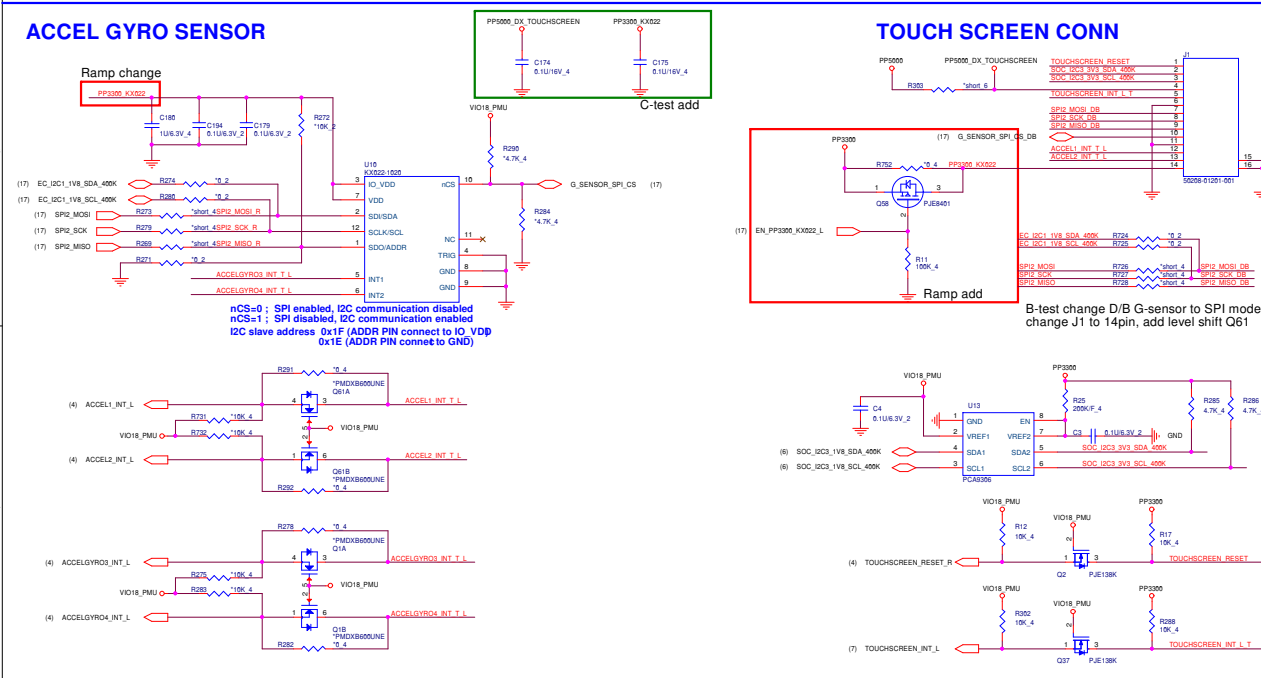
Quanta Computer Inc.
PROJECT : ZSE

| | | |
|-------|-----------------------------|----------------|
| Size | Document Number | Rev |
| | AUDIO 5514 & GMR | 1A |
| Date: | Friday, July 15, 2016 | Sheet 15 of 29 |

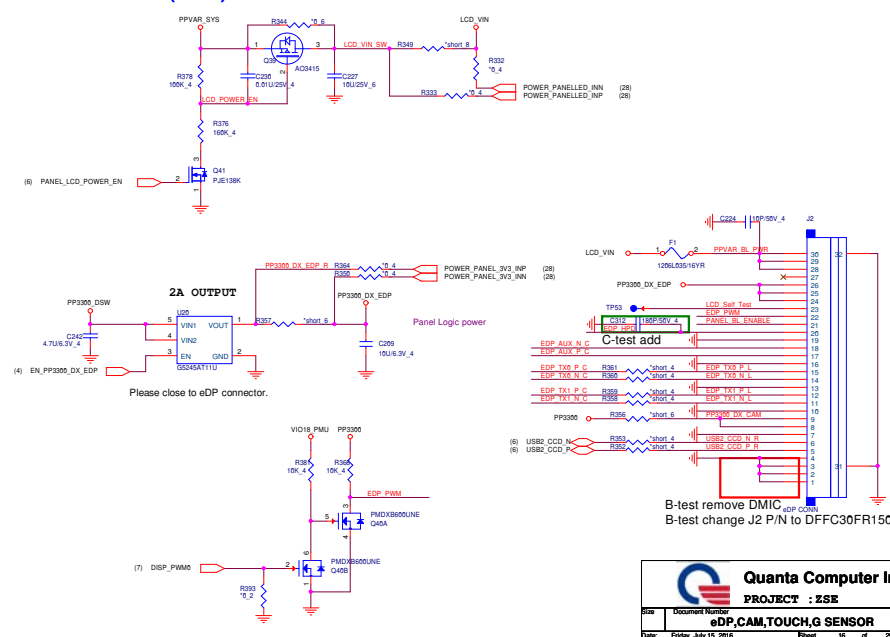
eDP BRIDGE



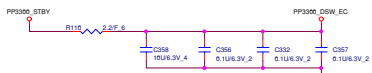
ACCEL GYRO SENSOR



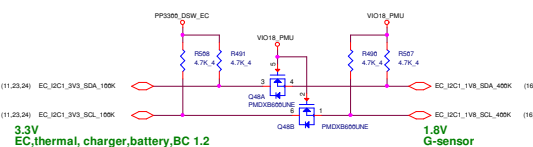
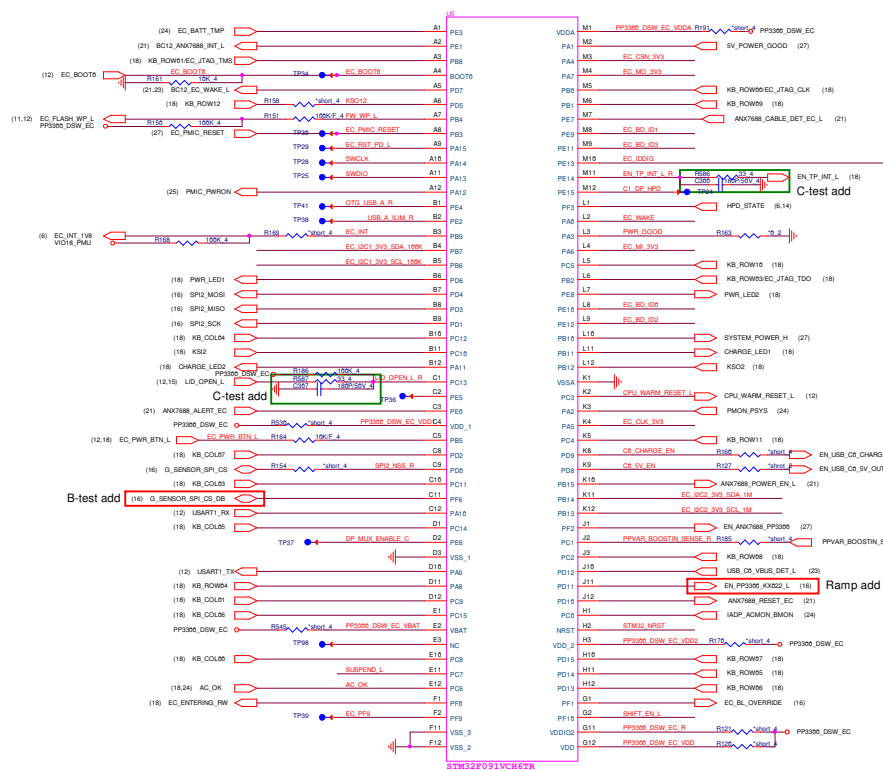
eDP CONN(TBC)



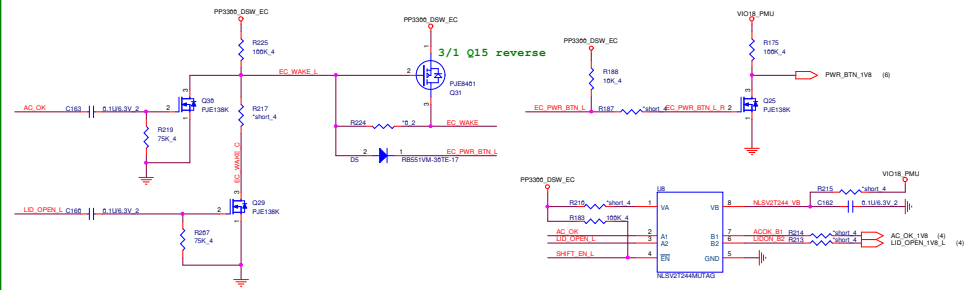
EC (STM32F091VC)



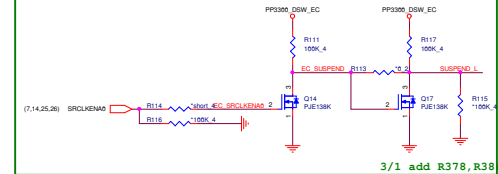
BC1.2 Wake



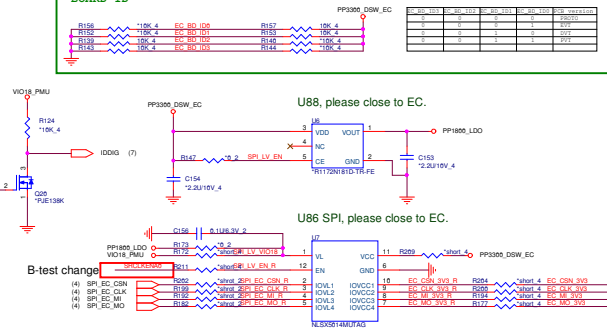
PWR_BTN / AC_OK / LID_OPEN



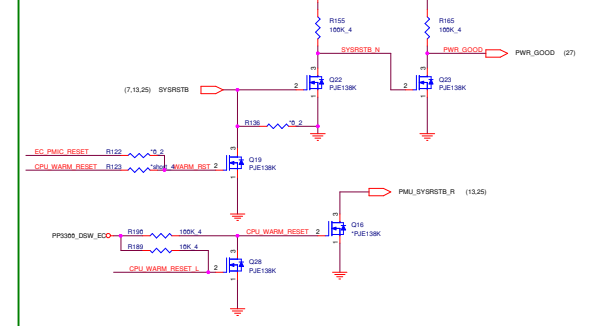
SUSPEND



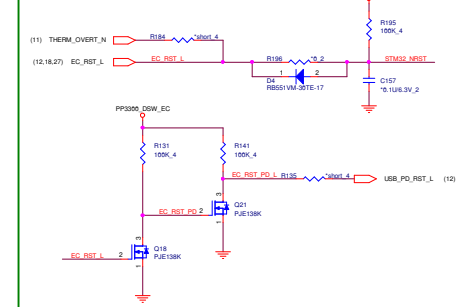
BOARD ID



WARM RESET



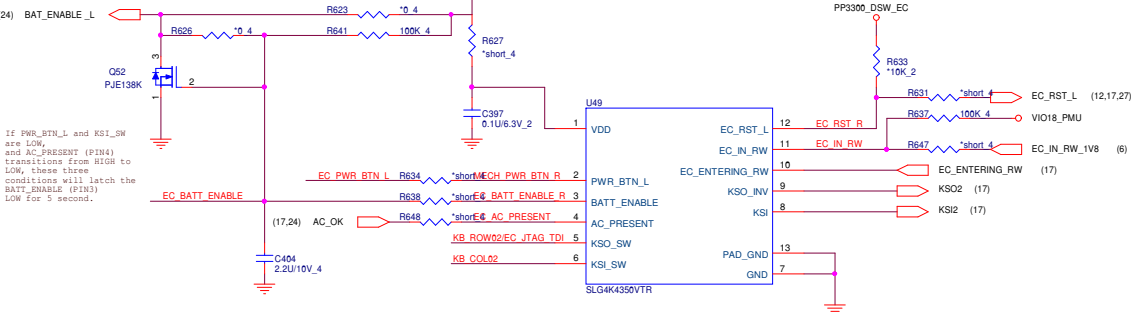
EC RESET



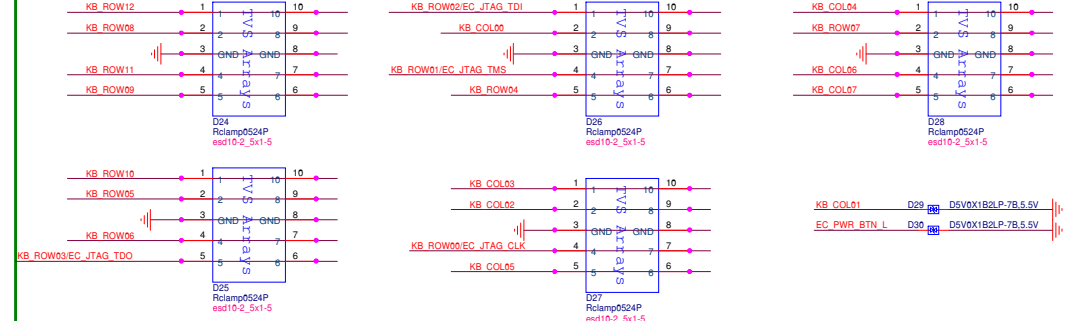
Reverse for BMI160 I2C interface, DUAL N-MOS

Remove

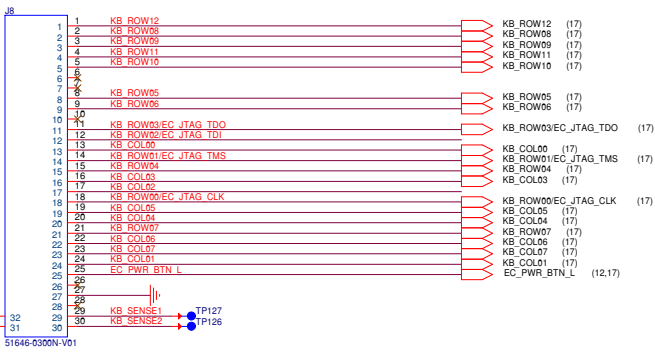
RESET IC



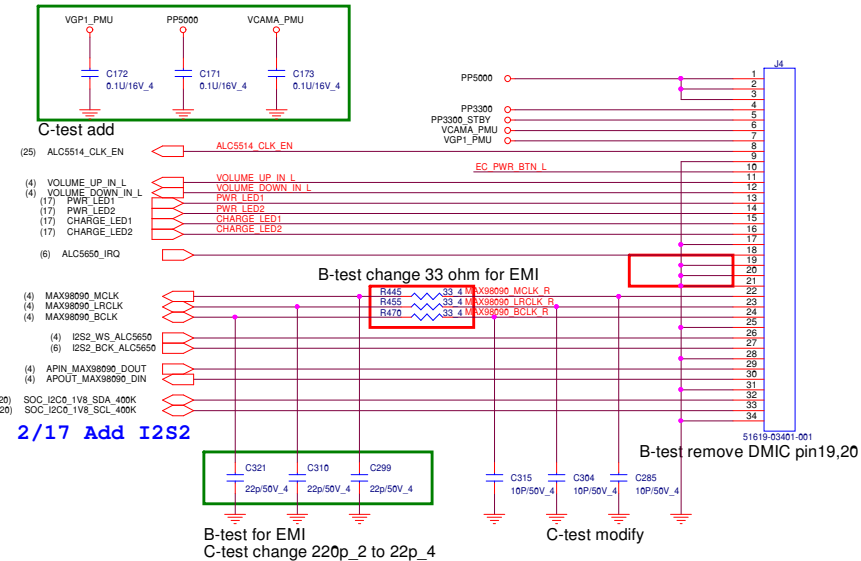
KeyBoard



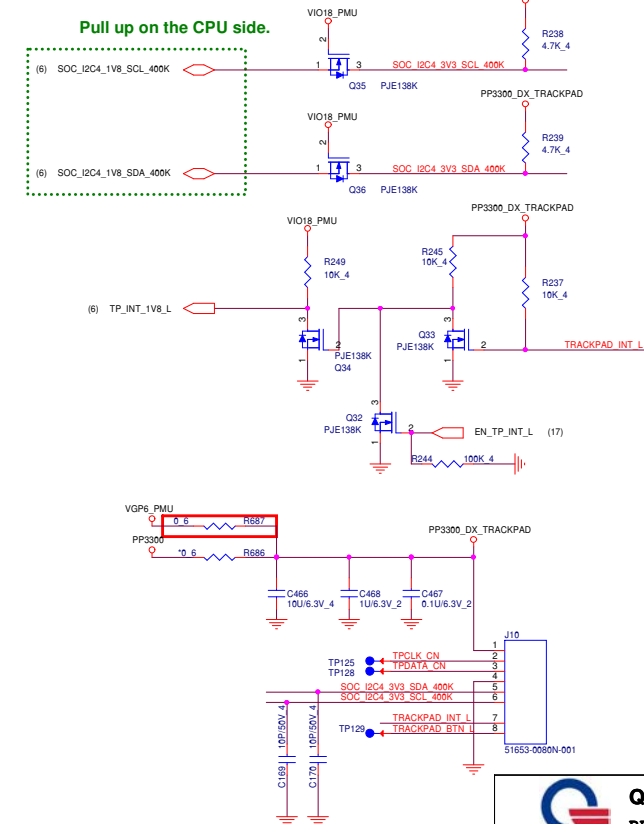
C-test replace 22p to ESD material



Audio Board Connector

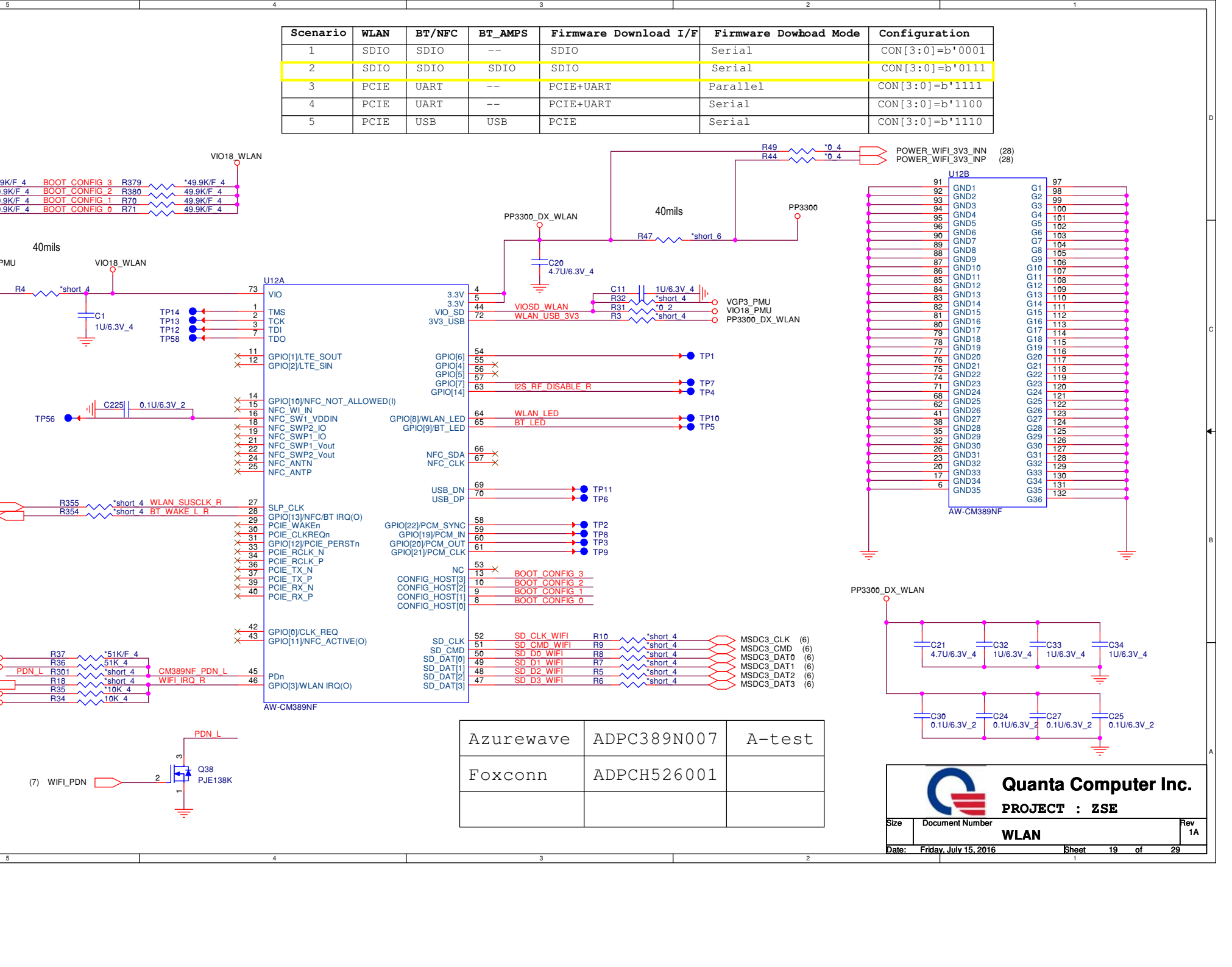


TrackPad



| Scenario | WLAN | BT/NFC | BT_AMPS | Firmware Download I/F | Firmware Dowhoad Mode | Configuration |
|----------|------|--------|---------|-----------------------|-----------------------|-----------------|
| 1 | SDIO | SDIO | -- | SDIO | Serial | CON[3:0]=b'0001 |
| 2 | SDIO | SDIO | SDIO | SDIO | Serial | CON[3:0]=b'0111 |
| 3 | PCIE | UART | -- | PCIE+UART | Parallel | CON[3:0]=b'1111 |
| 4 | PCIE | UART | -- | PCIE+UART | Serial | CON[3:0]=b'1100 |
| 5 | PCIE | USB | USB | PCIE | Serial | CON[3:0]=b'1110 |

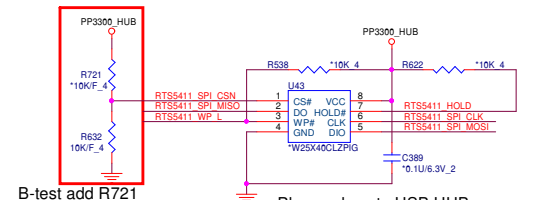
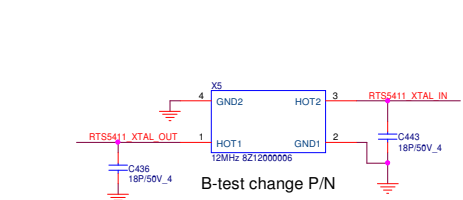
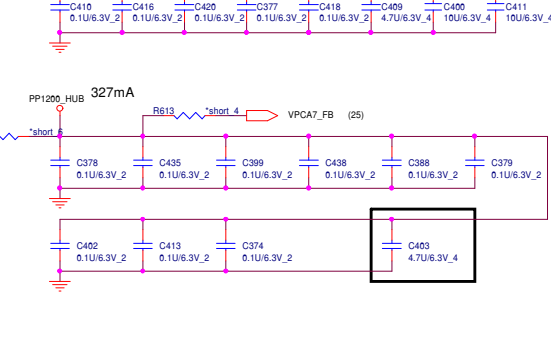
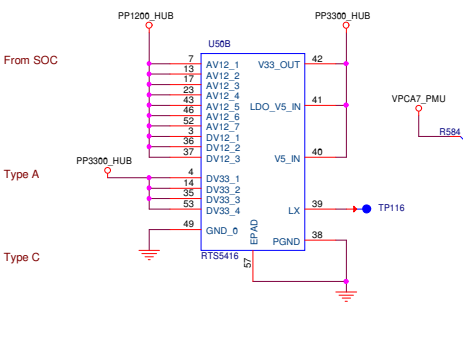
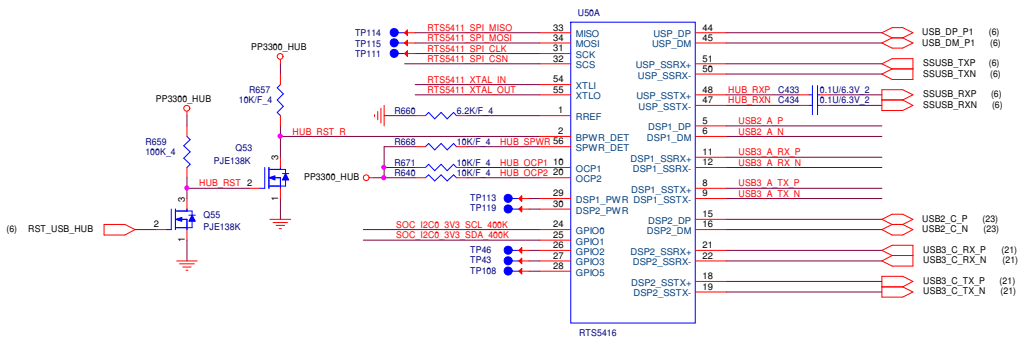
| Scenario | WLAN | BT/NFC | BT_AMPS | Firmware Download I/F | Firmware Dowhoad Mode | Configuration |
|----------|------|--------|---------|-----------------------|-----------------------|-----------------|
| 1 | SDIO | SDIO | -- | SDIO | Serial | CON[3:0]=b'0001 |
| 2 | SDIO | SDIO | SDIO | SDIO | Serial | CON[3:0]=b'0111 |
| 3 | PCIE | UART | -- | PCIE+UART | Parallel | CON[3:0]=b'1111 |
| 4 | PCIE | UART | -- | PCIE+UART | Serial | CON[3:0]=b'1100 |
| 5 | PCIE | USB | USB | PCIE | Serial | CON[3:0]=b'1110 |



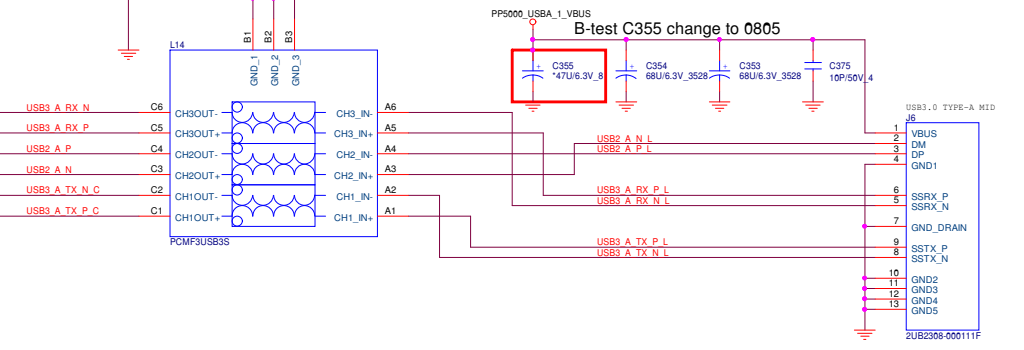
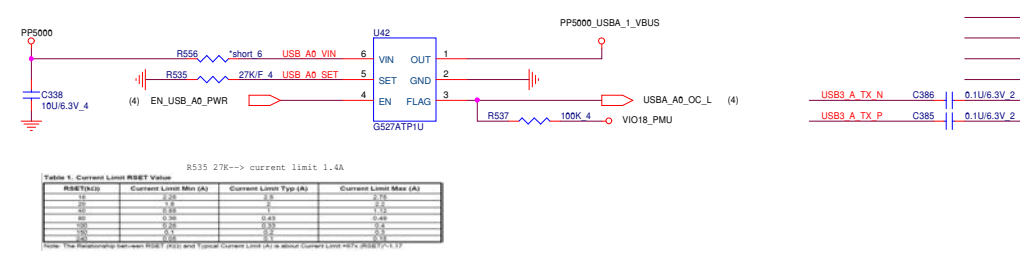
| Scenario | WLAN | BT/NFC | BT_AMPS | Firmware Download I/F | Firmware Dowhoad Mode | Configuration |
|----------|------|--------|---------|-----------------------|-----------------------|-----------------|
| 1 | SDIO | SDIO | -- | SDIO | Serial | CON[3:0]=b'0001 |
| 2 | SDIO | SDIO | SDIO | SDIO | Serial | CON[3:0]=b'0111 |
| 3 | PCIE | UART | -- | PCIE+UART | Parallel | CON[3:0]=b'1111 |
| 4 | PCIE | UART | -- | PCIE+UART | Serial | CON[3:0]=b'1100 |
| 5 | PCIE | USB | USB | PCIE | Serial | CON[3:0]=b'1110 |

| Scenario | WLAN | BT/NFC | BT_AMPS | Firmware Download I/F | Firmware Dowhoad Mode | Configuration |
|----------|------|--------|---------|-----------------------|-----------------------|-----------------|
| 1 | SDIO | SDIO | -- | SDIO | Serial | CON[3:0]=b'0001 |
| 2 | SDIO | SDIO | SDIO | SDIO | Serial | CON[3:0]=b'0111 |
| 3 | PCIE | UART | -- | PCIE+UART | Parallel | CON[3:0]=b'1111 |
| 4 | PCIE | UART | -- | PCIE+UART | Serial | CON[3:0]=b'1100 |
| 5 | PCIE | USB | USB | PCIE | Serial | CON[3:0]=b'1110 |

USB HUB



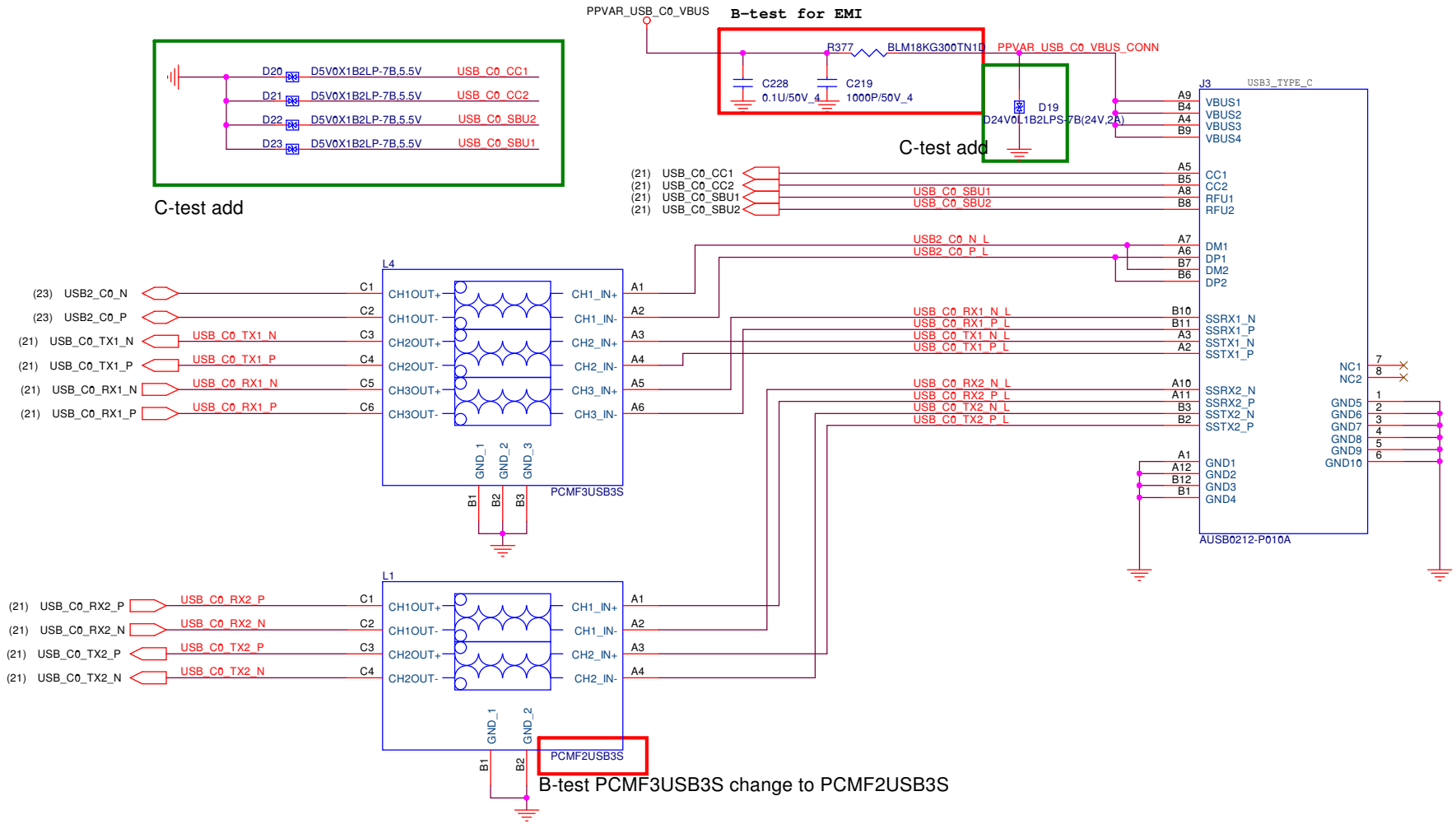
USB3.0 Type A



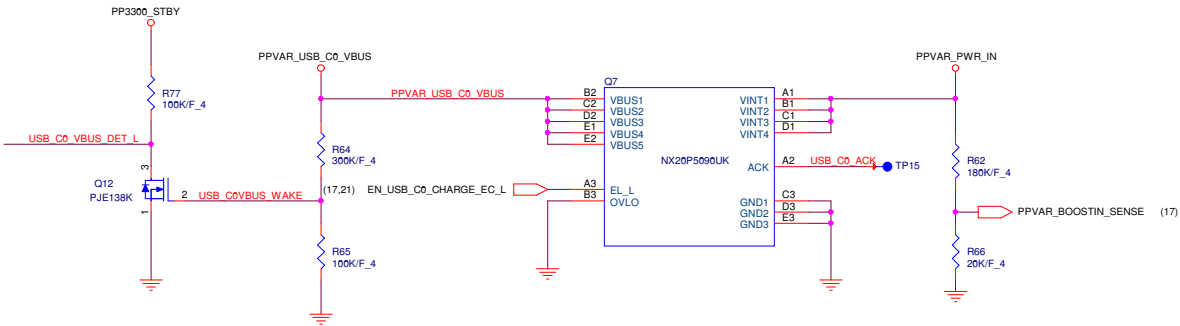
USB2.0 OTG

Remove

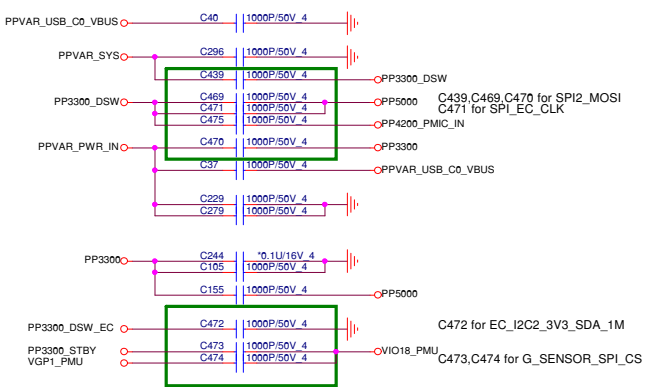
USB C CONNECTOR



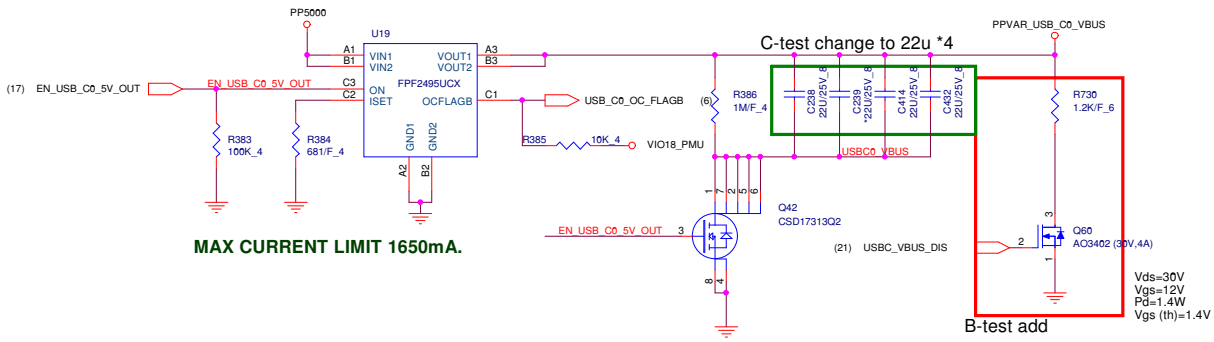
USB C POWER INPUT



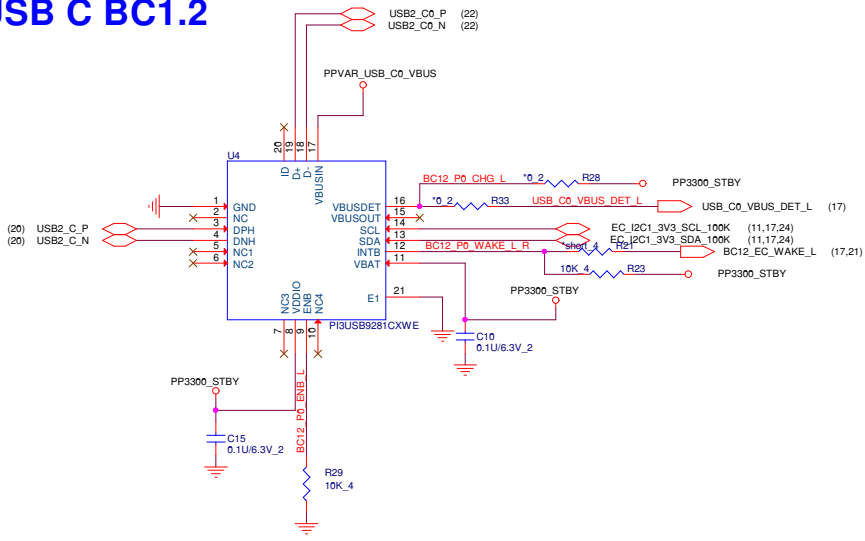
Stitching CAP



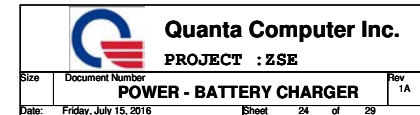
USB C POWER SWITCH



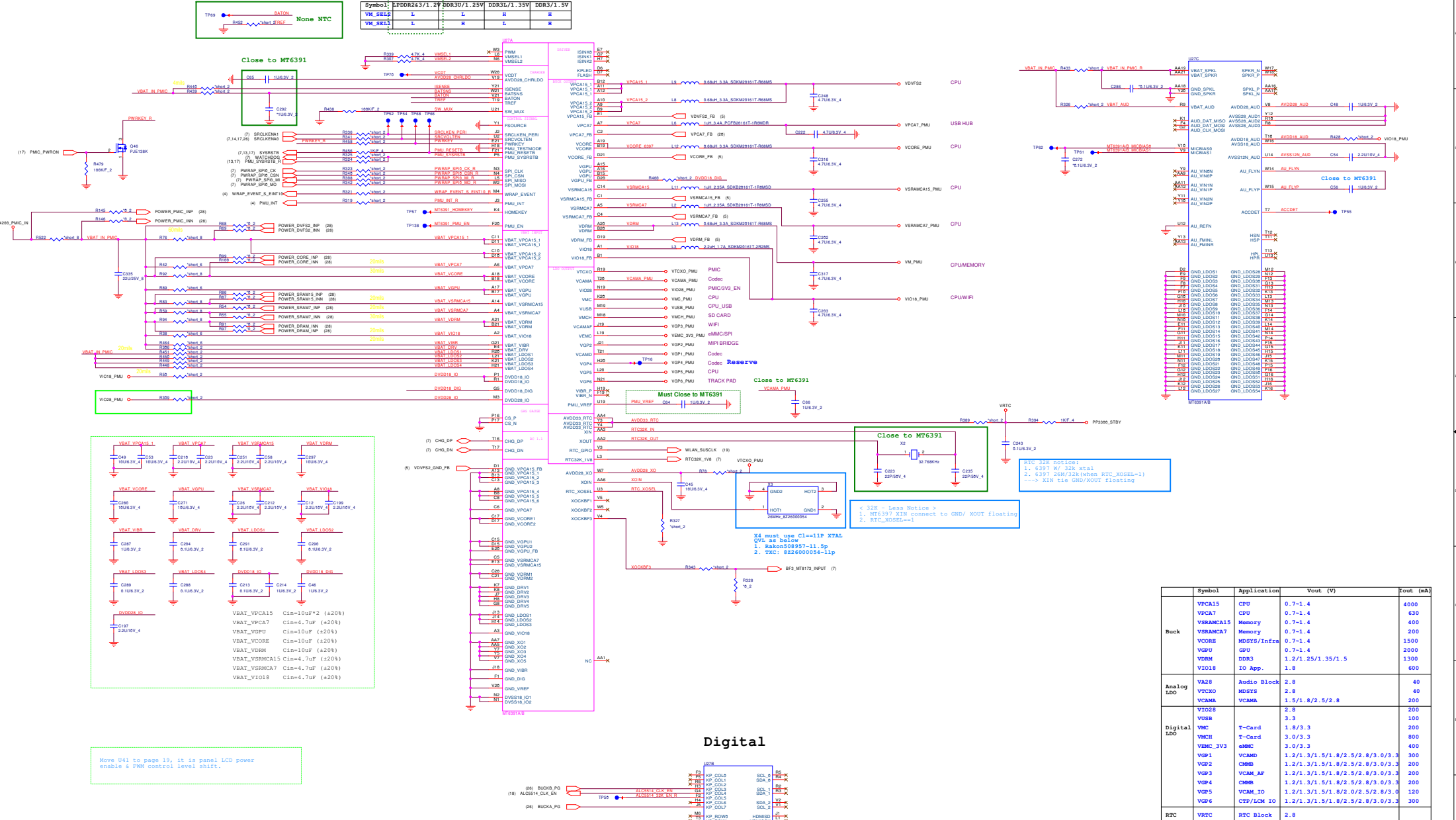
USB C BC1.2



INTERSIL BUCK-BOOST CHARGER

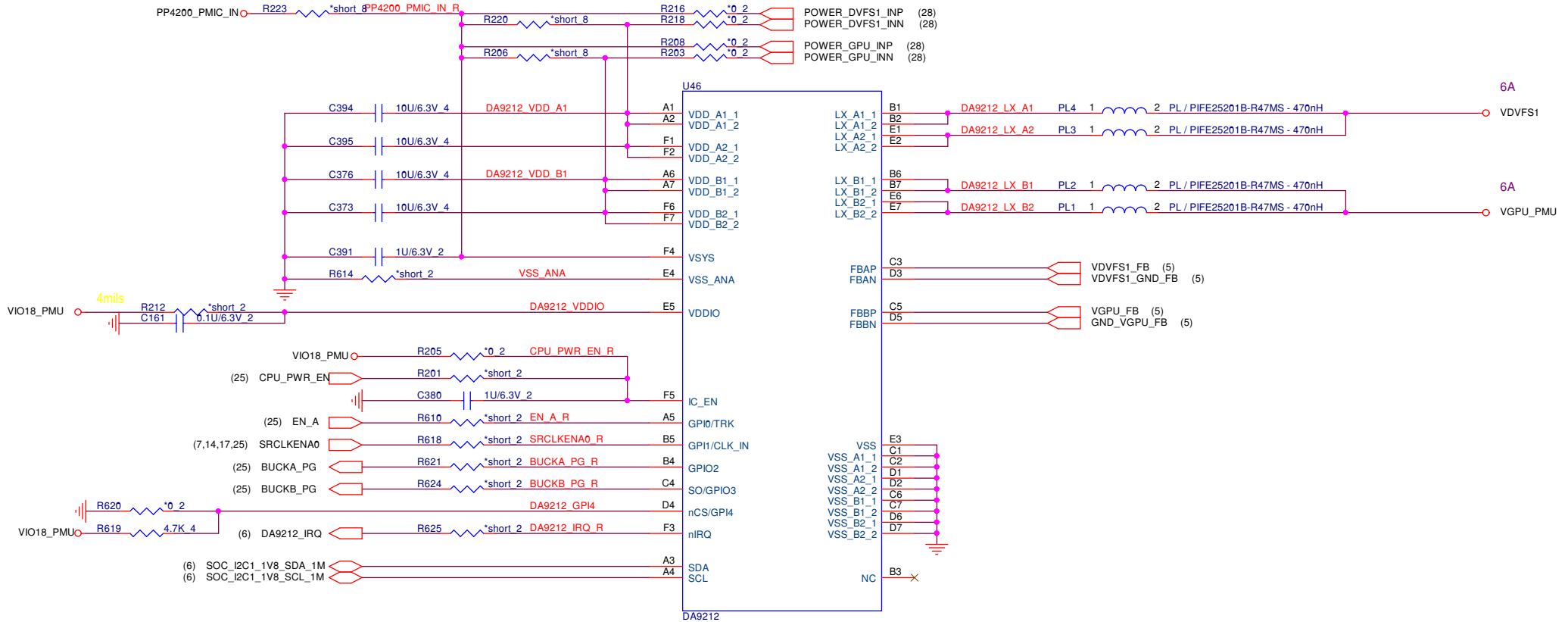


POWER - PMIC MT6391



| | Symbol | Application | Vout (V) | Iout (mA) |
|-------------|------------|-------------|---------------------------------|-----------|
| Buck | VP1CA1 | CPU | 0.7-1.4 | 400 |
| | VP1CA7 | CPU | 0.7-1.4 | 630 |
| | VS1RAMCA1 | Memory | 0.7-1.4 | 400 |
| | VS1RAMCA7 | Memory | 0.7-1.4 | 200 |
| | VCORE | MDSTS/Infra | 0.7-1.4 | 1500 |
| | VGPU | GPU | 0.7-1.4 | 2000 |
| | CD3K3 | IO App. | 1.2/1.25/1.35/1.5 | 1300 |
| | VI018 | IO App. | 1.8 | 600 |
| | Analog LDO | VA28 | Audio Block | 2.8 |
| VP1CA0 | | MDSTS | 2.8 | 40 |
| VCAMA | | VCAMA | 1.5/1.8/2.5/2.8 | 200 |
| Digital LDO | VI028 | | 2.8 | 200 |
| | VUSB | | 3.3 | 100 |
| | VMC | T-Card | 1.8/3.3 | 200 |
| | VMC1 | T-Card | 3.0/3.3 | 800 |
| | VS1E3_V3V3 | eMMC | 3.0/3.3 | 300 |
| | VG1P1 | VCMD | 1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3 | 400 |
| | VG2P1 | CMSE | 1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3 | 200 |
| | VG2P3 | VCAN_AF | 1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3 | 200 |
| | VG2P4 | CMSE | 1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3 | 200 |
| RTC | VG2P5 | VCAN_I0 | 1.2/1.3/1.5/1.8/2.0/2.5/2.8/3.0 | 120 |
| | VG2P6 | CTP/LCM_I0 | 1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3 | 300 |
| | VRTC | RTC Block | 2.8 | 20 |

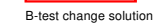
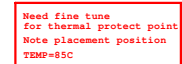
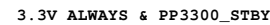
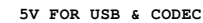
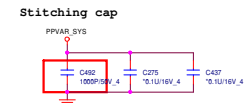
POWER - PMIC DA9212

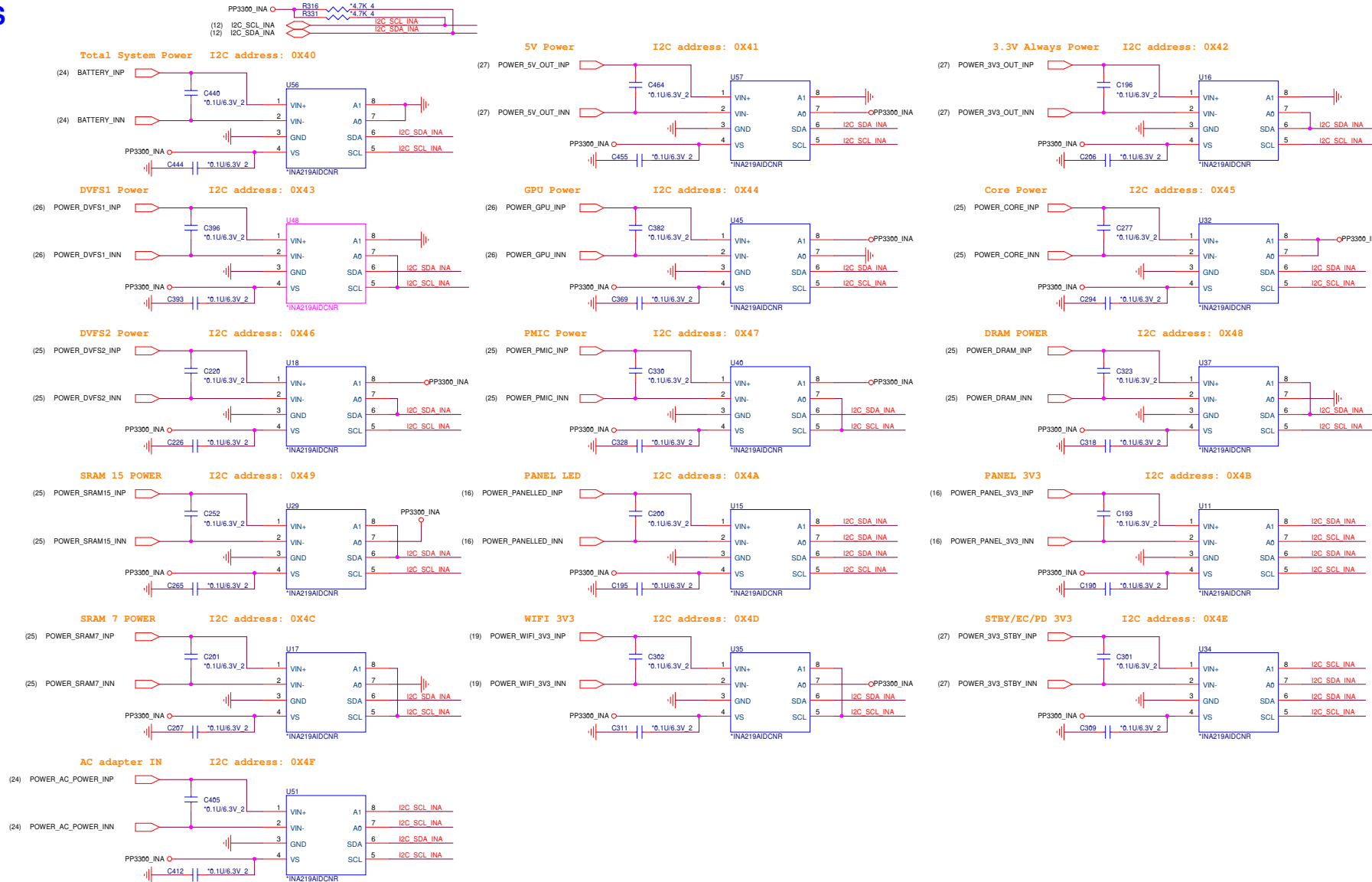


Quanta Computer Inc.
PROJECT : ZSE

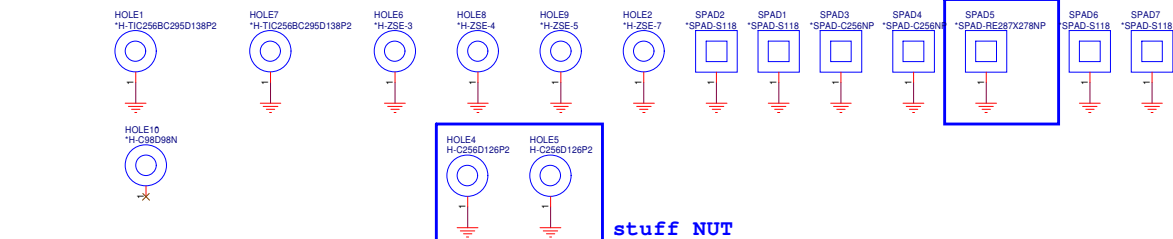
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| Size | Document Number | Rev |
| | POWER - PMIC DA9212 | 1A |
| Date: | Friday, July 15, 2016 | Sheet 26 of 29 |

POWER - MPS NB685GQ, 3V/5V





MOUNTING HOLES



| MODEL | REV | CHANGE LIST | ZSE MB BOARD | |
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| B | 3/9 | page 27 :change R571,R581 to 0402 package | 4 | 3A |
| | | page 6 :change R547 to 0402 package | 5 | 3A |
| | | page 21 :add Q59 for reverse VCONN_EN | 6 | 3A |
| | | page 24 :change J11.3 net name to BAT_DISABLE_L | 7 | 3A |
| | | page 20 :add R721 for USB HUB ROM select | 8 | 3A |
| | | page 18,16 :remove DMIC data,CLK signal. | 9 | 3A |
| | | page 24 : SW AP battery CONN J11 | 10 | 3A |
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