UMA (11.6")

Intel Brasswell-M Platform Block Diagram

Charger PG.30
+3VS5/+5VS5 PG.31
DDR3L PG.32
MOIC PG.33
CPU Core PG.34,35

DDR3L Memory down*4pcs PG.14 — 1600MT/s Channel A
DDR3L Memory down*4pcs PG.15 — 1600MT/s Channel B

Intel Brasswell L
Power : 4.5 (Watt)
Package : BGA1170
Size : 25 X 27 (mm)
PG.2~13

eDP (2 lane) → EDP to LVDS PG.16 → LCD connector PG.17
DP Port0 → HDMI PG.18

eMMC 4.51 → eMMC 32G/64G /128GB PG.24

USB 3.0 → USB3.0 Ports X1 PG.25
USB 2.0 → USB2.0 Ports X1 PG.24
USB 2.0 → Touch Screen PG.17
USB 2.0 → Webcam PG.18

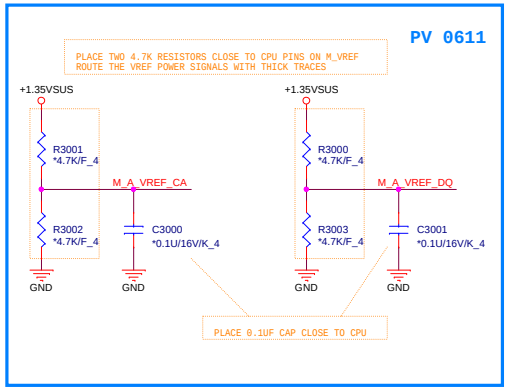
PCI-E x2 → Card Reader RTS5239-GR PG.21
PCI-E x2 → WLAN BT COMBO NGFF M2 PG.27

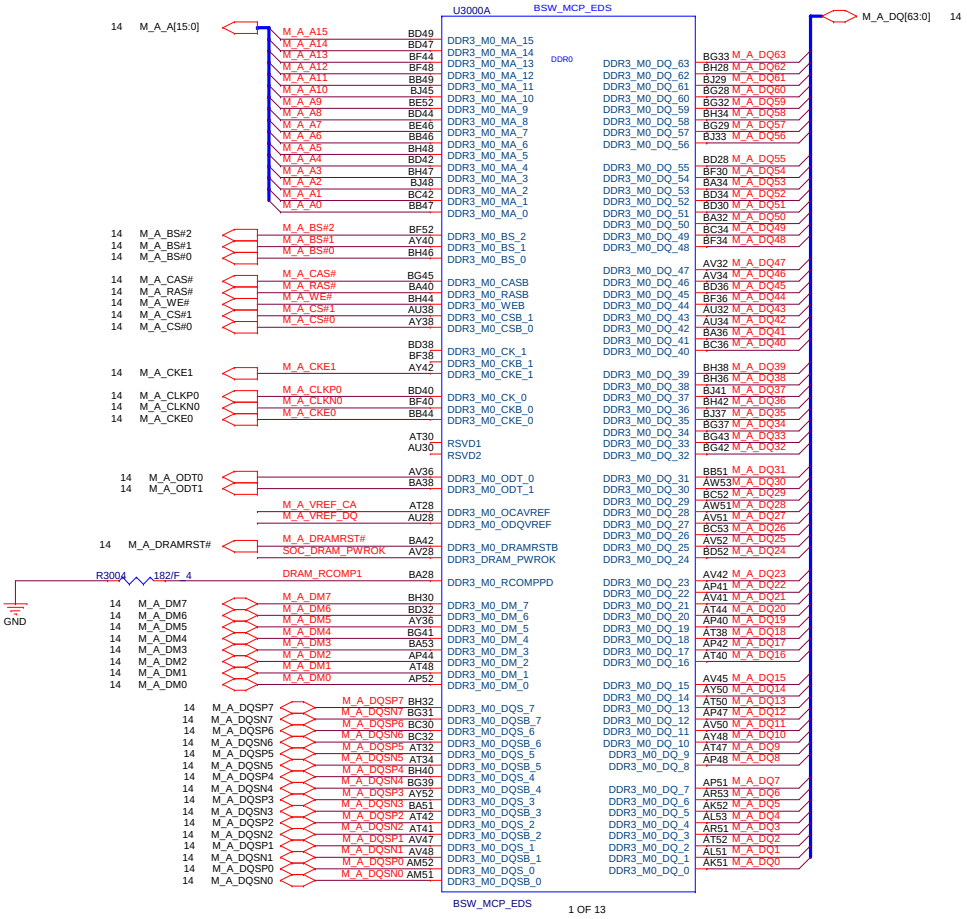
USB 2.0 → USB 2.0 Hub PG.26 → USB2.0 Port X1 PG.24
USB 2.0 Hub PG.26 → WLAN BT COMBO NGFF M2 PG.27
USB 2.0 Hub PG.26 → WWAN(Option) NGFF M2 PG.24

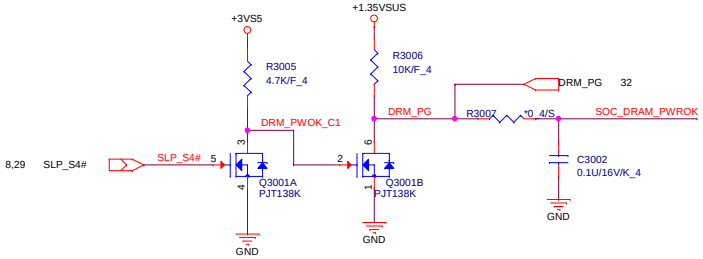
LPC → KBC IT8987 PG.28
Fast SPI → KBC IT8987 PG.28
KBC IT8987 PG.28 → KB PG.23
KBC IT8987 PG.28 → TP PG.23
KBC IT8987 PG.28 → ROM PG.28

Azalia → AUDIO CODEC ALC 3227 PG.19
Hp → Combo Jack PG.20
MIC → Combo Jack PG.20
AUDIO CODEC ALC 3227 PG.19 → Speaker PG.19

PROJECT : Y0BC
Quanta Computer Inc.
Size | Document Number | Rev
BLOCK DIAGRAM | 1A
Date: Wednesday, July 29, 2015 | Sheet 1 of 15

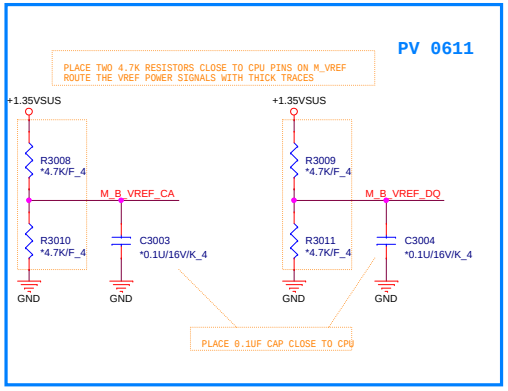


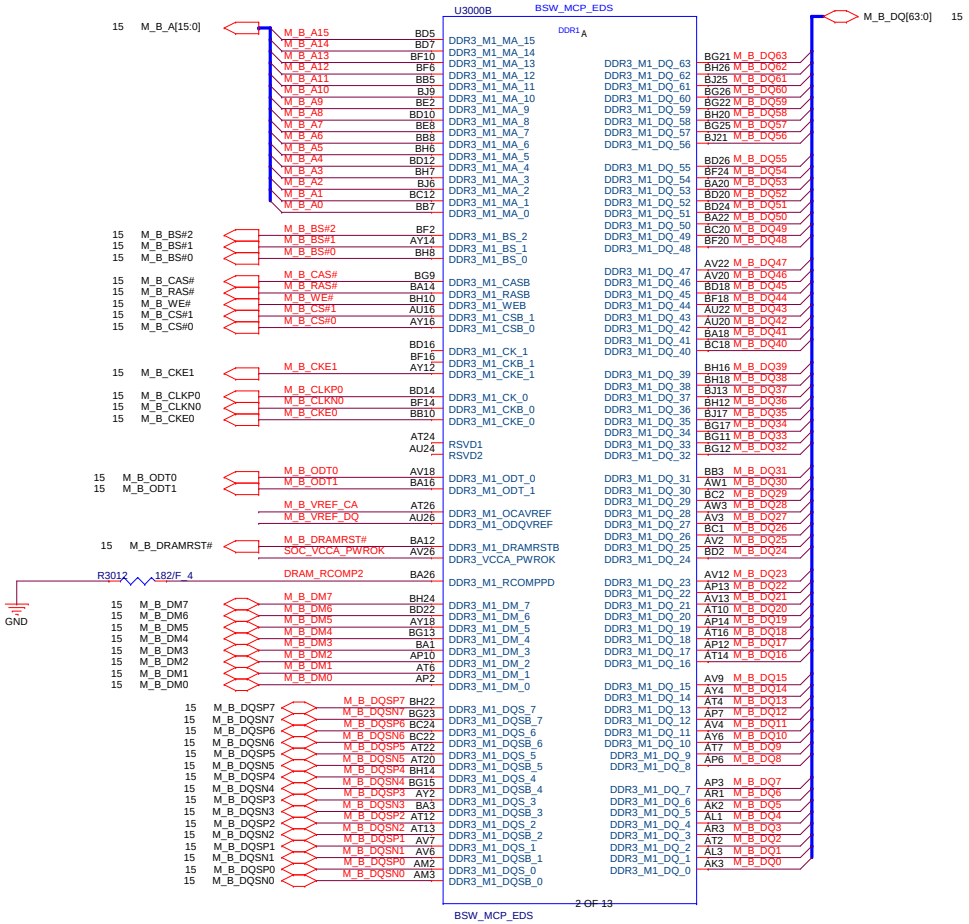


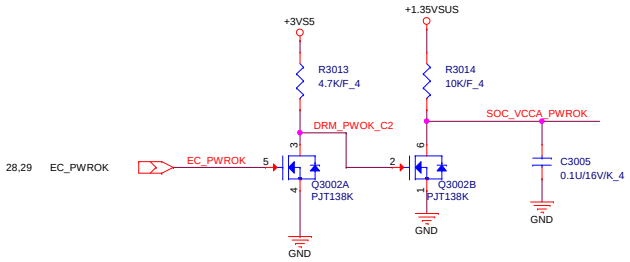


PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	Valley 1/9 (DDRA)	1A
Date: Wednesday, July 29, 2015	Sheet 2 of 15	







PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	Valley 2/9 (DDRB)	1A

Date: Wednesday, July 29, 2015 Sheet 3 of 15

+1.8VS5

R3015 2.2K/J_4 SDVO_DATA
R3016 2.2K/J_4 SDVO_CLK
R3017 *10K/F_4 HDMI_HPD_DC#
R3018 1 2 *100K/J_4 DDI1_BKLT_EN
R3019 1 2 *100K/J_4 DDI1_BKLT_CTRL_R
R3020 1 2 *100K/J_4 EDP_PANEL_EN

4/22 Delet double PU High R

+1.8V

DDI1_BKLT_CTRL_R

Q3003 DMN53D0L-7

R3023 4.7K/F_4 +3V
PCH_DPST_PWM 16,17

R3025 100K/F_4
R3026 *0/J_4

GND

RT2136 output high
SOC active Low

+1.8VS5

R3028 10K/F_4

DDI1_EDP_HPD_R

Q3004 DMN601K-7

EDP_HPD_C R3030 *0_4/S ULT_EDP_HPD 16,17

R3031 100K/F_4

GND GND

2/24 ADD PU to +1.8VS5

+1.8VS5 R3033 10K/F_4 UART2_TXD
R3035 10K/F_4 UART2_RXD
R3036 10K/F_4 GPP_A16

U3000C BSW_MCP_EDS

DDI0

18 IN_D2 D50 DDI0_TXP_0
18 IN_D2# C51 DDI0_TXN_0
18 IN_D1 H49 DDI0_TXP_1
18 IN_D1# H50 DDI0_TXN_1
18 IN_D0 F53 DDI0_TXP_2
18 IN_D0# F52 DDI0_TXN_2
18 IN_CLK G53 DDI0_TXP_3
18 IN_CLK# G52 DDI0_TXN_3
H47 DDI0_AUXP
H46 DDI0_AUXN
18 HDMI_HPD_DC# W51 HV_DDI0_HPD
18 SDVO_CLK Y51 HV_DDI0_DDC_SCL
18 SDVO_DATA Y52 HV_DDI0_DDC_SDA
V52 PANEL0_BKLTEN
V51 PANEL0_BKLTCTL
W53 PANEL0_VDDEN
R3021 402/F_4 SOC_DDIO_RCOMP F38 SOC_DDIO_RCOMP_P G38 DDI0_PLLOBS_P
DDI0_PLLOBS

DDI1

16 INT_EDP_TXP0 INT_EDP_TXP0 J51 DDI1_TXP_0
16 INT_EDP_TXN0 INT_EDP_TXN0 H51 DDI1_TXN_0
17 INT_EDP_TXP1 INT_EDP_TXP1 K51 DDI1_TXP_1
17 INT_EDP_TXN1 INT_EDP_TXN1 K52 DDI1_TXN_1
L53 DDI1_TXP_2
L51 DDI1_TXN_2
M52 DDI1_TXP_3
M51 DDI1_TXN_3
16 INT_EDP_AUXP INT_EDP_AUXP M42 DDI1_AUXP
16 INT_EDP_AUXN INT_EDP_AUXN K42 DDI1_AUXN
DDI1_EDP_HPD_R R51 HV_DDI1_HPD
29 DDI1_BKLT_EN DDI1_BKLT_EN P51 PANEL1_BKLTEN
DDI1_BKLT_CTRL_R P62 PANEL1_BKLTCTL
29 EDP_PANEL_EN EDP_PANEL_EN R53 PANEL1_VDDEN
SOC_DDI1_RCOMP F47 DDI1_PLLOBS_P
R3027 402/F_4 SOC_DDI1_RCOMP_P F49 DDI1_PLLOBS

DDI2

F40 DDI2_TXP_0
G40 DDI2_TXN_0
J40 DDI2_TXP_1
K40 DDI2_TXN_1
F42 DDI2_TXP_2
G42 DDI2_TXN_2
D44 DDI2_TXP_3
F44 DDI2_TXN_3

For debug

D48 DDI2_AUXP
C49 DDI2_AUXN
24 GPP_A16 U51 HV_DDI2_HPD
24 UART2_TXD T51 HV_DDI2_DDC_SCL
24 UART2_RXD T52 HV_DDI2_DDC_SDA

B53 RSVD6
A52 RSVD3
E52 RSVD9
D52 RSVD8
B50 RSVD5
B49 RSVD4
E53 RSVD10
C53 RSVD7
A51 RSVD2
A49 RSVD1
G44 RSVD11

NC's

MCSI and Camera Interface

RSVD15 M44
RSVD12 K44
RSVD14 K48
RSVD13 K47
MCSI_1_CLKP T44
MCSI_1_CLKN T45
MCSI_1_DP_0 Y47
MCSI_1_DN_0 Y48
MCSI_1_DP_1 V45
MCSI_1_DN_1 V47
MCSI_1_DP_2 V50
MCSI_1_DN_2 V48
MCSI_1_DP_3 T41
MCSI_1_DN_3 T42
MCSI_2_CLKP P50
MCSI_2_CLKN P48
MCSI_2_DP_0 P47
MCSI_2_DN_0 P45
MCSI_2_DP_1 M48
MCSI_2_DN_1 M47
RSVD17 T50
RSVD16 T48
MCSI_COMP P44

GP_CAMERASB00 AB41 CFG8 TP3001
GP_CAMERASB01 AB45 CFG9 TP3002
GP_CAMERASB02 AB44 CFG10 TP3003
GP_CAMERASB03 AC53 CFG11 TP3004
GP_CAMERASB04 AB51 CFG12 TP3005
GP_CAMERASB05 AB52 CFG13 TP3006
GP_CAMERASB06 AA51 CFG14 TP3007
GP_CAMERASB07 AB40 CFG15 TP3008
GP_CAMERASB08 Y44 CAM08 CAM08 12 TP3009
GP_CAMERASB09 Y42 CAM09 CAM09 12
GP_CAMERASB10 Y41
GP_CAMERASB11 Y40 CAM11 CAM11 12

R3024 150/F_4

GND

SDMMC1

SDMMC1_CLK M7 SDMMC4_CLK 24
SDMMC1_CMD P6 SDMMC4_CMD 24
SDMMC1_D0 M6 SDMMC4_DAT0 24
SDMMC1_D1 M4 SDMMC4_DAT1 24
SDMMC1_D2 P9 SDMMC4_DAT2 24
SDMMC1_D3_CD_B P7 SDMMC4_DAT3 24
MMC1_D4_SD_WE T6 SDMMC4_DAT4 24
MMC1_D5 T7 SDMMC4_DAT5 24
MMC1_D6 T10 SDMMC4_DAT6 24
MMC1_D7 T12 SDMMC4_DAT7 24
MMC1_RCLK T13 SDMMC4_RCLK 24
SDMMC1_RCOMP P13 EMMC_RCOMP

R3029 100/F_4

GND

SDMMC2

SDMMC2_CLK K10
SDMMC2_CMD K9
SDMMC2_D0 M12
SDMMC2_D1 M10
SDMMC2_D2 K7
SDMMC2_D3_CD_B K6

SDMMC3

SDMMC3_CLK F2
SDMMC3_CMD D2
SDMMC3_CD_B K3
SDMMC3_D0 J1
SDMMC3_D1 J3
SDMMC3_D2 H3
SDMMC3_D3 G2
SDMMC3_1P8_EN K2 VSDIO_1P8_EN
SDMMC3_PWR_EN_B L3 VSDIO_PWR_EN#
SDMMC3_RCOMP P12

DB: +1.8VS5 OUTPUT

R3039 80.6/F_4

GND

3 OF 13

BSW_MCP_EDS

2/24
Del net: DGPU_PWR_EN_SOC ; location: R90,R101,R105
Del net: DGPU_PWROK_SOC ; location: R89,R100,R104

+1.8VS5

VSDIO_1P8_EN VSDIO_PWR_EN# R3032 R3034 2 *100K/J_4 *10K/F_4
VSDIO_1P8_EN VSDIO_PWR_EN# R3037 R3038 2 *100K/J_4 *10K/F_4

GND

2/24 Del location: R71,Q7

5,18,24,36 +1.8V

PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	Valley 3/9 (Display)	1A

Date: Wednesday, July 29, 2015 Sheet 4 of 15

HDD

0429 Del pull high R

PV 0611

Card reader

WIFI

BSW_MCP_EDS U3000D

20150102 Update SI build SPI NOR FLASH

Vender	Size	P/N
Winbond	8MB	AKE5EZN0N01 (W25Q64FWSSIQ)
GigaDevice	8MB	AKE5EG-0Q00 (GD25LQ64CSIGR)
	8MB	AKE5EFN0Q00 (EN25S64-104HIP)
Socket (208mil)		DFHS08FS023 (Firstly Stuff)

Direct connect to 1.8V

To EC for share ROM

3/9 Del net: SOC_SPI_CLK / SOC_SPI_CS# / SOC_SPI_MISO / SOC_SPI_MOSI;
location: R448,R480,R479,R462

To EC for SHPI

SPI NOR FLASH

U3001

From CPU

Place colay R as closed as possible
mistach to SPI_CLK within 250mil

MV

0716 MV Delet socket

SPI ROM Socket

U3001 & U3002 footprint 要重疊

For EMI

PROJECT : Y0BC
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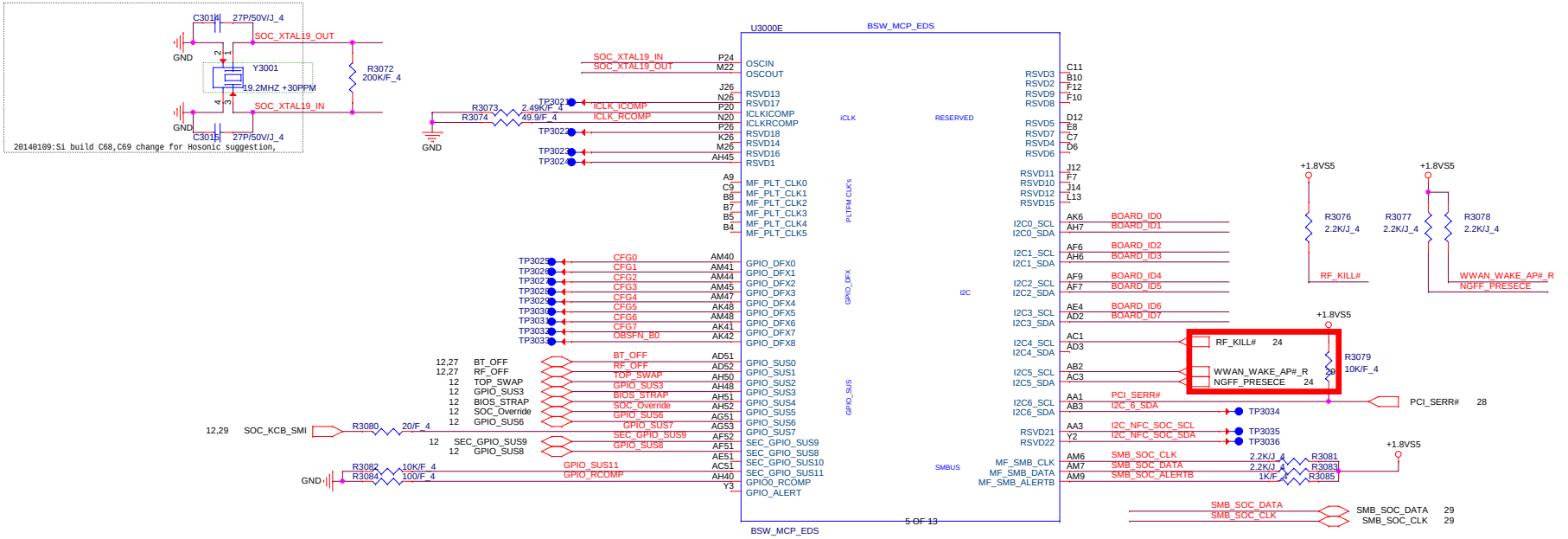
Size: Document Number: Valley 4/9 (SD/PCIE/SATA) Rev: 1A

Date: Wednesday, July 29, 2015 Sheet 5 of 15

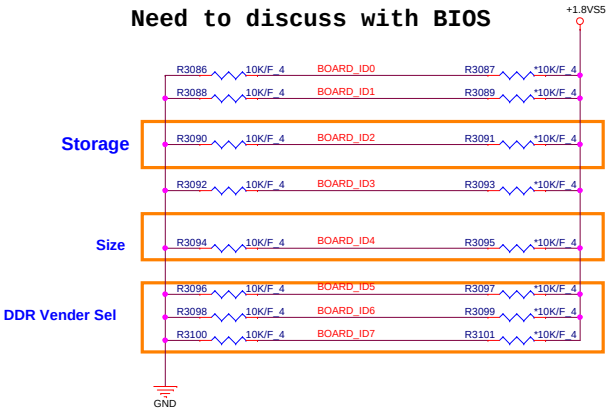


Check with BIOS

BOARD ID SETTING

	Reserve (Default = 000)			Size		Storage	EMMC	Reserved
Model	BOARD_ID7	BOARD_ID6	BOARD_ID5	BOARD_ID4	BOARD_ID3	BOARD_ID2	BOARD_ID1	BOARD_ID0
Samsung	0	1	0	2G=0	0	0 : emmc	0 : 32G	0
Mircon	0	0	1	4G=1	0	1 : HDD	1 : 64G	0
Hynix	0	0	0	0	0			0

Need to discuss with BIOS



0605 PV change

PROJECT : Y0BC
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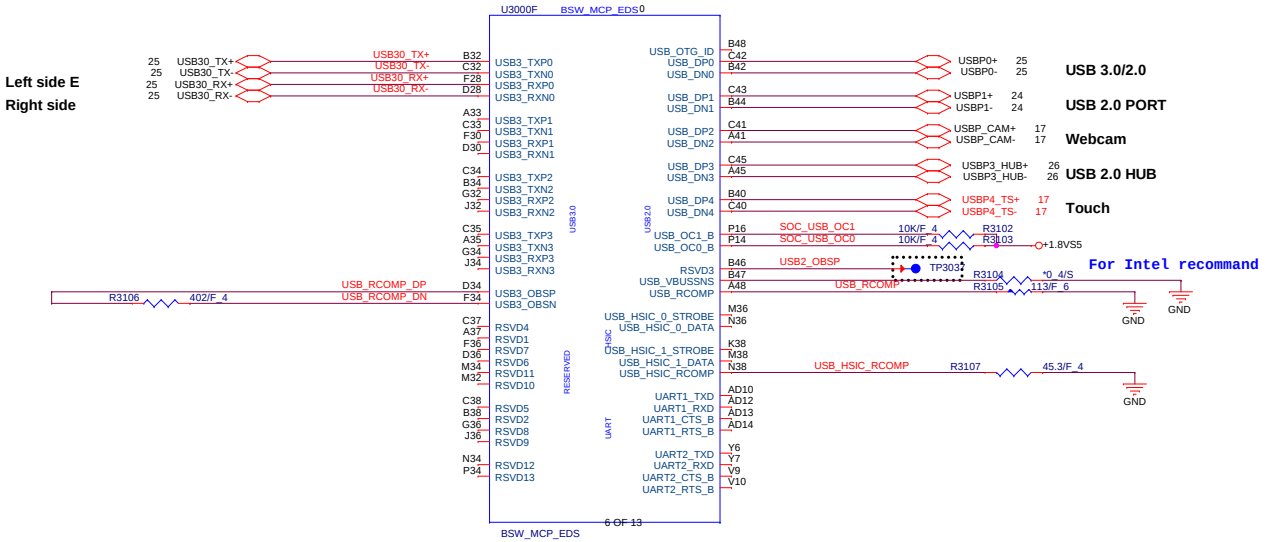
Size	Document Number	Rev
	Valley 5/9 (SPI/GPIO/CLK)	1A
Date: Wednesday, July 29, 2015	Sheet 6 of 15	



PROJECT : Y0BC Quanta Computer Inc.		
Size	Document Number Valley 6/9 (USB/LPC/I2C)	Rev 1A
Date: Monday, August 03, 2015	Sheet 7 of 15	

RTC Clock 32.768KHz

0716 MV change to 12p

RTC_X1 — C3016 12P/50V/J_4 — GND
10M/J_4 R3110 — 32.768KHZ Y3000
RTC_X2 — C3017 12P/50V/J_4 — GND

+1.8VS5
R3108 51/F_4 XDP_H_TDO
R3109 51/F_4 XDP_H_TMS
R3111 51/F_4 XDP_H_TDI
R3112 51/F_4 XDP_H_PREQ#
R3113 51/F_4 XDP_H_TRST#
R3114 51/F_4 XDP_H_TCK
GND

U3000G BSW_MCP_EDS

XDP_H_TCK AF42 TCK
XDP_H_TDI AD47 TDI
XDP_H_TDO AF40 TDO
XDP_H_TMS AD48 TMS
XDP_H_TRST# AB48 TRST_B
JTAG/ITP

TP3039 XDP_H_PRDY# AD45 CX_PRDY_B
TP3038 XDP_H_PREQ# AF41 CX_PREQ_B
M13 RSVD5

22 CLK_33M_TPM — R3295 22/J_4
27 CLK_24M_DEBUG — R3120 22/J_4
28 CLK_24M_KBC — R3118 22/J_4 CLK_24M_KBC_R P2 MF_LPC_CLKOUT0
CLK_33M_TPM_R R3 MF_LPC_CLKOUT1
22,28 L_CLKRUN# R3119 22/J_4 SOC_CLKRUN# T3 LPC_CLKRUNB
22,27,28 LFRAME# P3 LPC_FRAMEB
LPC

22,27,28 LAD0 M3 MF_LPC_AD0
22,27,28 LAD1 M2 MF_LPC_AD1
22,27,28 LAD2 N3 MF_LPC_AD2
22,27,28 LAD3 N1 MF_LPC_AD3

29 SOC_SERIRQ — R3123 100/F_4 LPC_RCOMP T4 LPC_HVT_RCOMP
SOC_SERIRQ T2 ILB_SERIRQ
GND

H5 RSVD23
H7 RSVD24
PWM

P28 RSVD6
P30 RSVD7
AF50 RSVD4
AF48 RSVD3
AF44 RSVD2
AF45 RSVD1
Reserved
AD50 PROCHOT_B

28,34,35 H_PROCHOT# — H_PROCHOT# *0_4/S R3133 SOC_PROCHOT#
+1.8VS5 — R3139 *20K/F_4

BSW_MCP_EDS
7 OF 13

M18 BRTCX1_PAD RTC_X1
K18 BRTCX2_PAD RTC_X2
F16 BVCCRTC_EXTPAD — C3018 0.1U/16V/K_4 — GND
RTC

D18 SRTCRST_B SRT_CRST#
G16 COREPWROK CORE_PWROK
F18 RSMRST_B SOC_RSMRST# — CORE_PWROK 29, SOC_RSMRST# 29
J16 RTEST_B SOC_RTEST#
G18 RSVD_VSS — R3115 10K/F_4 — GND

AE3 SUSPWRDNACK SUS_PWRDOWNACK
D14 SUS_STAT_B GPIO_J20
C15 PMU_SUSCLK SOC_SUSCLK
C12 PMU_SLP_S4_B SLP_S4# — TP3000 SLP_S4# 2,29
B14 PMU_SLP_S3_B SLP_S3# — SLP_S3# 29
AF2 PMU_RESETBUTTON_B SOC_REST_BTN
F14 PMU_PLTRST_B SOC_PLTRST# — SOC_PLTRST# 24,29
C14 PMU_BATLOW# R AC_PRESENT
C13 PMU_AC_PRESENT SLP_S0IX#
A13 PMU_SLP_S0IX_B — TP3040
B12 PMU_SLP_LAN_B
N16 PMU_WAKE_B SOC_PMC_WAKE — SOC_PMC_WAKE 29
M16 PMU_PWRBTN_B SOC_PWRBTN# — SOC_PWRBTN# 29
P18 PMU_WAKE_LAN_B
PMU

AD42 SVID_CLK_SOC VR_SVID_CLK
AD41 SVID_DATA_SOC VR_SVID_DATA — VR_SVID_CLK 34,35, VR_SVID_DATA 34,35
AD40 SVID_ALERT#_SOC VR_SVID_ALERT# — VR_SVID_ALERT# 34,35
SVID0_CLK
SVID0_DATA
SVID0_ALERT_B
SVID

3/9 Del location:R163,R167,R170

AG32 VCC0_SENSEP_R R3128 2.2/J_4
AJ32 VCC0_SENSEN_R R3129 2.2/J_4
AD29 VCC1_SENSEP_R R3130 2.2/J_4
AF27 VCC1_SENSEN_R R3132 2.2/J_4
AD24 VGG_SENSEP_R R3134 *0_4/S
AD22 VGG_SENSEN_R R3136 *0_4/S
AC27 VNN_REFIN_R R3137 *100/F_4
Voltage sense

CORE_VCC0_SENSE
CORE_VSS0_SENSE
CORE_VCC1_SENSE
CORE_VSS1_SENSE
DDI_VGG_SENSE
UNCORE_VSS_SENSE2
UNCORE_VSS_SENSE1

VCC_SENSE 35
VSS_SENSE 35
VGG_SENSE 34
VGGSS_SENSE 34
+1.05VS5

GND R3116 — GPIO_J20 R3117 *10K/F_4 — +1.8VS5
*1K/F_4

SOC_REST_BTN R3121 2.2K/J_4
SOC_PLTRST# R3122 *1K/F_4
PMU_BATLOW#_R R3124 20K/F_4
SUS_PWRDOWNACK R3125 *10K/F_4
SOC_PMC_WAKE R3126 10K/F_4
AC_PRESENT R3127 2.2K/J_4
SUS_PWRDOWNACK R3131 100K/F_4
AC_PRESENT R3135 *10K/F_4
SOC_RSMRST# R3138 100K/F_4

EMI
CLK_24M_KBC
CLK_33M_TPM
CLK_24M_DEBUG
C3019 18P/50V/J_4 C3423 18P/50V/J_4 C3020 18P/50V/J_4

3/3 Del net: VR_SVID_ALERT# / VR_SVID_DATA / VR_SVID_CLK; location: R166,R42,R43,R16,R20

Close to CPU R111	Close to VCC power control PU11	Close to VGG power control PU10

RTC Circuitry(RTC)

30mils
RTC Power trace width 20mils.
Del RTC net: +BAT_RTC
Uninstall for Green-CLK

+3V_RTC — R3140 20K/F_4 — C3021 1U/10V/K_4 — GND
SOC_RTEST# — J3000 *SOLDERJUMPER-2 Reserve J2000 (7465.80.3584.90): PV — GND
SRT_CRST# MV 0729
+3V_RTC_0 — +3VPCU — D3001 BAT54CW-7-F — +3V_RTC_1 — R3141 20K/F_4 — C3022 1U/10V/K_4 — GND
+3V_RTC_0 R3142 1K/F_4 +3V_RTC_1
C3023 1U/10V/K_4 — GND
GND

CN3000 RTC_CONN_2P DFHD02MS119

MV 0729
SRT_CRST#
Q3000 DMN601K-7
EC_RTC_RST 28
R3144 10K/F_4

PV 0601 CHANGE

28 AC_PRESENT_EC — *0_4/S R3145 — AC_PRESENT_NM — Q3007A PJT138K
*0/J_4 R3142 — AC_PRESENT
GND

AC Present: This input pin indicates when the platform is plugged into AC power.

PROJECT : Y0BC
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Size	Document Number	Rev
	Valley 6/9 (USB/LPC/I2C)	1A
Date: Wednesday, July 29, 2015	Sheet 8 of 15	

VNN can optionally be merged with V1P05A
if display resolution is 2560 x1600 @ 60Hz or lower.

0429 DEL C3030 , C3029 CHANGE TO 2.2U

Delet 220U

U3000H BSW_MCP_EDS

BSW_MCP_EDS 8 OF 13

total 1.9A=76mils

PROJECT : Y0BC
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Size	Document Number	Rev
	Valley 7/9 (Power 1)	1A

Date: Wednesday, July 29, 2015 Sheet 9 of 15

PLACE THE CAPS UNDER THE PKG SHADOW

PV 0608 reserve for unused power

MV 0716 shortpad

U3000I BSW_MCP_EDST

BSW_MCP_EDS 9 OF 13

VSDIO VOLTAGE SETTING (CF3_3P3_PWR)		
SDMMC3_PWR_EN_N	SDMMC3_1P8_EN	VSDIO (V)
1	0	0V
1	1	0V
0	0	3.3V
0	1	1.8V

SDMMC3目前沒有用到, 預接0V.

SD3 IO SUPPLY

LPC IO SUPPLY

AUDIO IO SUPPLY

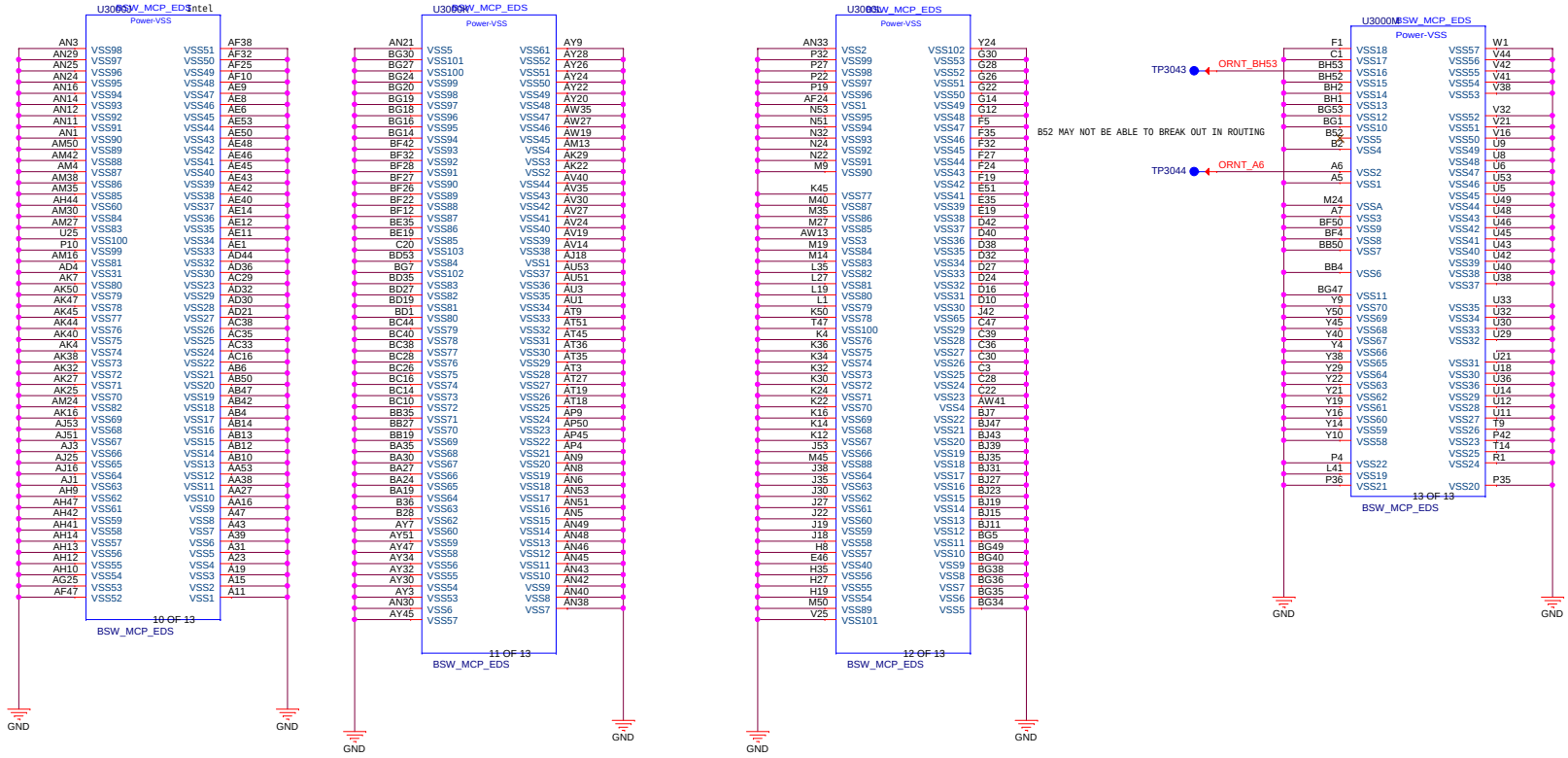
TWO PAD SHARING

CAPS PLACE NEAR SOC PIN

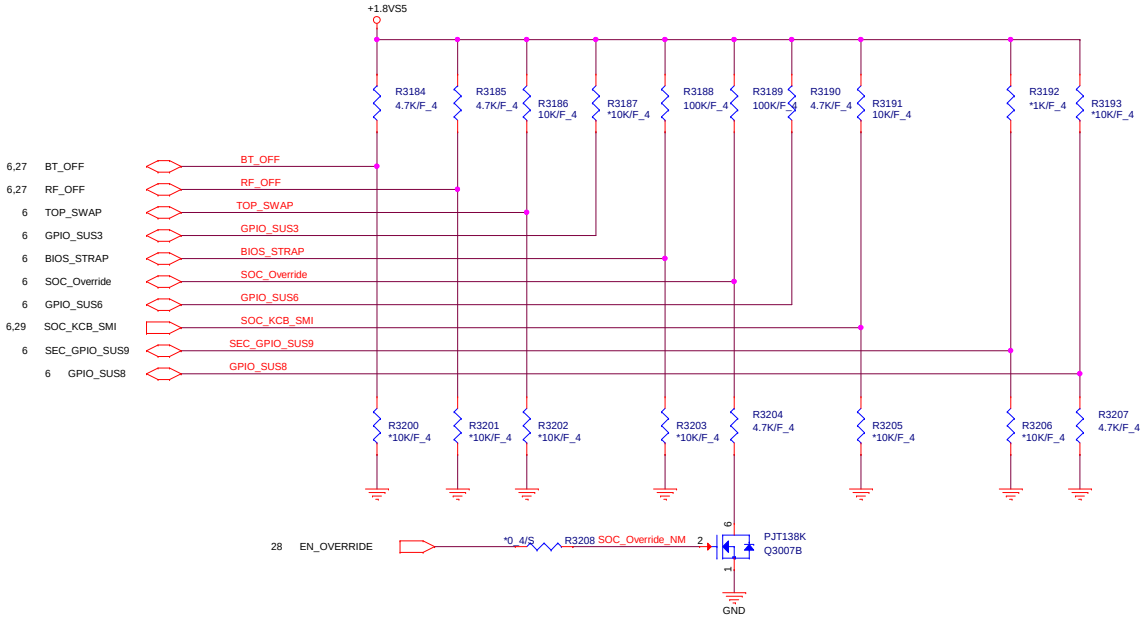
PROJECT : Y0BC
Quanta Computer Inc.

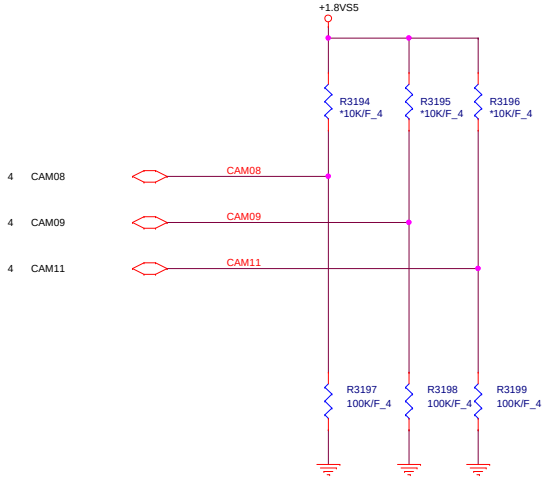
Size	Document Number	Rev
	Valley 8/9 (Power 2)	1A

Date: Wednesday, July 29, 2015 Sheet 10 of 15



PROJECT : Y0BC Quanta Computer Inc.			
Size	Document Number Valley 9/9 (GND)		Rev 1A
Date: Wednesday, July 29, 2015		Sheet 11 of 15	





	CAM08	CAM09	CAM11
PULL HIGH	ICLK Xtal OSC Bypass	CCU SUS RO Bypass	RTC OSC Bypass
PULL LOW	ICLK Xtal OSC No Bypass DEFAULT	CCU SUS RO No Bypass DEFAULT	RTC OSC No Bypass DEFAULT

REQUIRED STRAPS

	GPIO_SUS0	GPIO_SUS1	TOP_SWAP	GPIO_SUS3	BIOS_STRAP	SOC_Override	GPIO_SUS6	SOC_KCB_SMI	GPIO_SUS8
PULL HIGH	DDI0 detected DEFAULT	DDI1 detected DEFAULT	Normal Operation DEFAULT	Reserve 10 KΩ PU DEFAULT	SPI DEFAULT	Normal Operation	10 KΩ PU to 1.8V DEFAULT	Reserve 10 KΩ PU DEFAULT	Supply is 1.35V
PULL LOW	DDI0 not detected	DDI1 not detected	Change Boot Loader address		LPC	Override DEFAULT			Supply is 1.25V DEFAULT

PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	Valley 9/9 (GND)	1A

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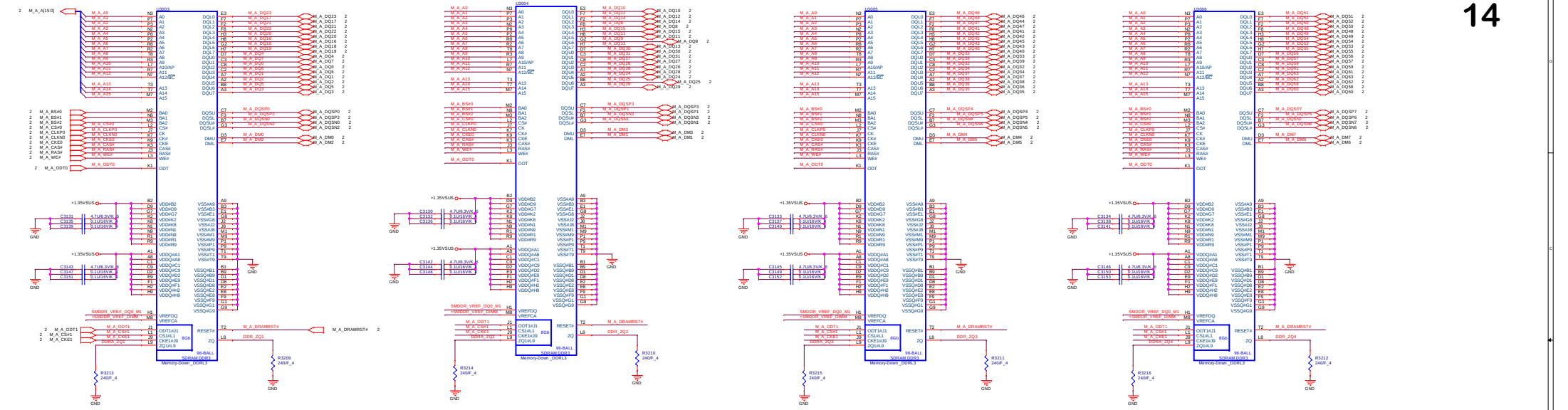
stuff XDP: DB

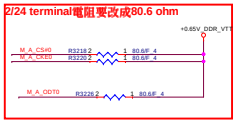
XDP <Location : CN200>

APS <Location : CN5>

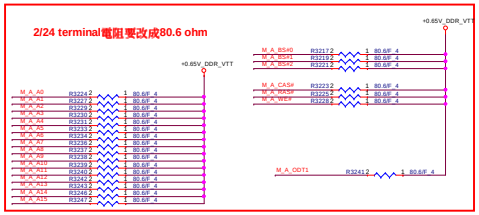
API <Location : D1,D2,Q10,U5,R119,R122,R124,R127,R179,U7>



2/24 terminal電阻要改成80.6 ohm

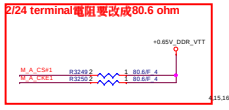


2/24 terminal電阻要改成80.6 ohm

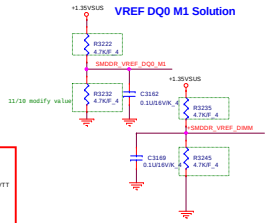


4/16 change from 39 to 80.6

2/24 terminal電阻要改成80.6 ohm

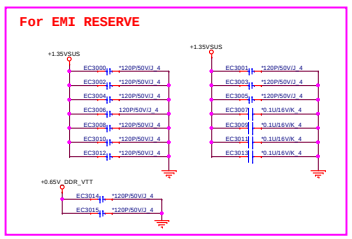


VREF DQ0 M1 Solution



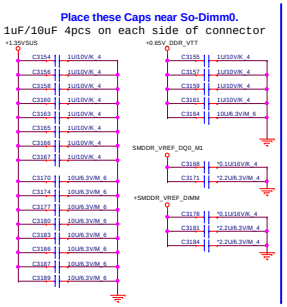
DDR3L				
TOPBS PN	QBCON	Vender PN	Description	
AKD5JGETW07	AKD5JGETW08	H5TC4G63AFR-PBA	IC SDRAM (96P) H5TC4G63AFR-PBA	Hynix (default)
AKD5PGST508	AKD5PGST509	K4B4G1646Q-HYK0	IC SDRAM (96P) K4B4G1646Q-HYK0	Samsung
	AKD5PGSTL19	MT41K256M16LY-107:N	IC SDRAM(96P)MT41K256M16LY-107:N	Micron
AKD5PGSTW14	AKD5PGSTW15	H5TC4G63CFR-PBA	IC SDRAM (96P) H5TC4G63CFR-PBA	Hynix (NEW Die)

For EMI RESERVE



Place these Caps near So-Dimm0.

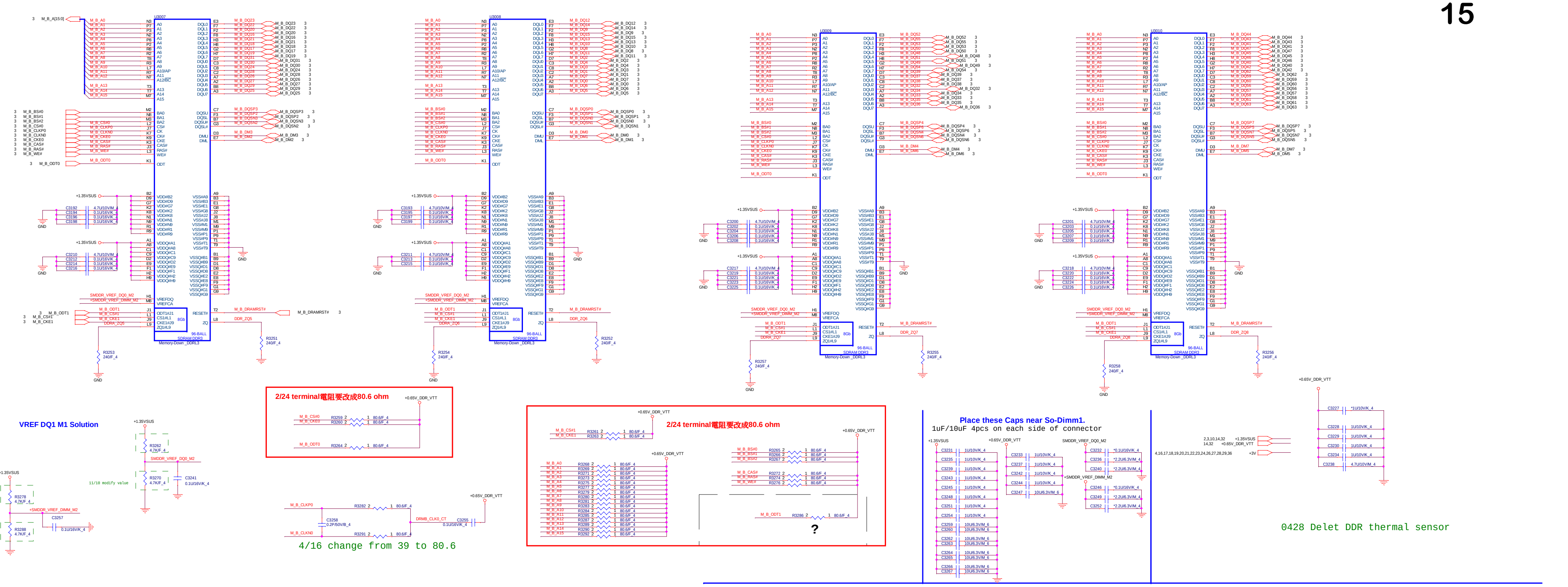
1uF/10uF 4pcs on each side of connector



PROJECT : Y0BC

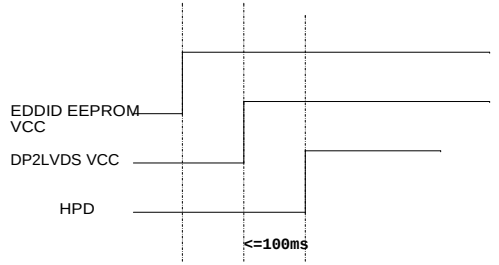
Quanta Computer Inc.

Size	Document Number	Rev
	DDR3 DIMM0-STD(4.0H)	1A
Date: Wednesday, July 29, 2015	Sheet 14 of 2	



PROJECT : Y0BC		
Quanta Computer Inc.		
Size	Document Number: DDR3 DIMM1-STD(4.0H)	Rev: 1A
Date: Wednesday, July 29, 2015	Sheet 15 of 2	

RTD2136S Power Up Sequence 16



0504 改為電容

slave address 0x94 & 0x96& 0x6A

IC底部需接GND VIA*9

Pine 15: keep 80 Mil Trace

Pine 13: keep 80 Mil Trace

EPD, LVDS Reserve

EC SMBUS

Default : ROM ONLY MODE

		MODE_CFG0(PIN47)	
		0	1
MODE_CFG1(PIN48)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

L8: need use CV-4709MN00 for Vendor suggestion

keep 80 Mile Trace

SWR MODE	LDO MODE
Stuff L8	Stuff R86

HP

PROJECT : Y0BC

Quanta Computer Inc.

HP

Size	Document Number	Rev
	RTD2136	1A

Date: Wednesday, July 29, 2015 Sheet 16 of 35

LVDS conn.

28 EMU_LID — R597 0/J_2 — PN_BLON — D14 RB500V-40 — BLON_CON — C608 22P/50V/J_4 — R591 100K/F_2

LVDS_BLON1 — R596 1K/F_2 — R592 100K/F_2

DB2 for Change LVDS_BLCON1 to PN_BLON

For LVDS Only — 80 mile trace

16 2136_DISP_ON — R372 0/J_8 — +3VLCD_CON

R621 100K/F_2 — C607 4.7U/10V/M_4

Follow X13

C606 *1U/10V/K_4 — +3V — U33 — IN — IN — ON/OFF — OUT — GND — +3VLCD_CON

29 PCH_DISP_ON — R626 *100K/J_4

AL005243001 GMT:G5243AT11U
AL002821000 BCD:AP2821KTR-G1

*IC(5P) G5243AT11U

C610 *0.01U/10V/K_2 — C612 *0.1U/10V/K_2 — C615 *10U/6.3V/M_4

For EDP Only:U4,L11,C54,C50,C34

BRIGHT — R297 1K/F_2 — VADJ1

R298 100K/F_2 — C601 22P/50V/J_4

390mA — +VIN_BLIGHT

+VIN — L40 *0_6/S — +VIN_BLIGHT

C60 0.1U/25V/K_4

C34 0.1U/25V/K_4

C29 0.01U/50V/K_4

C604 *4.7U/25V/K_8

C2252 *12P/50V/J_4

6/5 reserve for RF

+3V — C2265 12P/50V/J_4 — C2266 12P/50V/J_4

Rx group — **Ry group**

4 INT_eDP_TXP1 — 16 TXLOUT0+_2136 — 16 TXLOUT0-_2136 — 4 INT_eDP_TXN1

C596 *0.1U/10V/K_2 — R610 0/J_2 — R620 0/J_2 — C597 *0.1U/10V/K_2 — TXOOUT0+ TXOOUT0-

16 INT_eDP_TXP0_R — 16 TXLOUT1+_2136 — 16 TXLOUT1-_2136 — 16 INT_eDP_TXN0_R

C598 *0.1U/10V/K_2 — R57 0/J_2 — R58 0/J_2 — C599 *0.1U/10V/K_2 — TXOOUT1+ TXOOUT1-

16 INT_eDP_AUXN_R — 16 TXLOUT2+ — 16 TXLOUT2- — 16 INT_eDP_AUXP_R

C35 *0.1U/10V/K_2 — R599 0/J_2 — R616 0/J_2 — C36 *0.1U/10V/K_2 — TXOOUT2+_R TXOOUT2-_R

16 EDIDDATA_2136 — 16 EDIDCLK_2136 — R602 *0_2/S — R590 *0_2/S — EDIDDATA_R EDIDCLK_R

16 TXLCLKOUT+ — 16 TXLCLKOUT- — R600 *0_2/S — R618 *0_2/S — TXOCLKOUT+_R TXOCLKOUT-_R

For EDP Only: stuff Rx group — **For LVDS Only: stuff Ry group**

For EDP Only : Reserve

+3V — R603 *100K/J_4 — R601 *100K/J_4 — TXOOUT2+_R TXOOUT2-_R

+3V — R606 *1K/F_4 — R604 *1K/F_4 — BRIGHT LVDS_BLON1

For LVDS Only: stuff

+3V — R51 4.7K/F_2 — R298 4.7K/F_2 — EDIDCLK_R EDIDDATA_R

C605 *10P/25V/J_2 — C600 *10P/25V/J_2

For LVDS Only: stuff Ra,Rb

16 2136_DPST_PWM — R300 Ra 0/J_2 — BRIGHT

16 LVDS_BLON_2136 — R608 Rb 0/J_2 — LVDS_BLON1

For EDP Only: stuff Rd,Re

4,16 PCH_DPST_PWM — R299 Re *0/J_2 — BRIGHT

29 PCH_LVDS_BLON — R607 Rd *0/J_2 — LVDS_BLON1

For EDP Only: stuff Rg group
For LVDS Only: stuff Rh group

Rg group — **Rh group**

R595 *0/J_4 — +3V — R612 0/J_4 — Line10

R614 0/J_4 — Line33_34

4,15,16,18,19,20,21,22,23,24,26,27,28,29,36 +3V
8,10,22,23,24,25,27,28,29,30,31 +3VPCU
18,19,20,36 +5V
30,31,32,34,35 +VIN

+3VLCD_CON — L38 EMI FILTER PBY160808T-600Y-N_6 — +VREG_3V3_LCD

EC66 0.1U/25V/K_4 — C2251 *12P/50V/J_4

6/5 reserve for RF

51519-0400T-V01
LVDS-51519-04001-001-40P-L

DFFC40FR081 — CN22

TXOOUT0- TXOOUT0+ TXOOUT1- TXOOUT1+ TXOOUT2-_R TXOOUT2+_R Line10 +VREG_3V3_LCD TXOCLKOUT-_R TXOCLKOUT+_R EDIDCLK_R EDIDDATA_R BLON_CON VADJ1

For LVDS Only: Stuff Rc
For EDP Only: Stuff Rd

4,16 ULT_EDP_HPD — R589 100K/F_2 — Rc — R593 0/J_2 — EDP_HPD_R — Rd

+VIN_BLIGHT

Touch

VDD_3V3_TS_F — TS_ON — USBP4- L — USBP4+ L — Line33_34

7 USBP4_TS- — 7 USBP4_TS+ — L39 MCM2012B900GBE

+3V_CAM — CAMERA_USB5_DN- — CAMERA_USB5_DP+ — DIGITAL_D1_R — DIGITAL_CLK_L

EMI

19 DIGITAL_D1 — 19 DIGITAL_CLK — L8 FCM1005KF-301T03 — L42 FCM1005KF-301T03

C611 *10P/25V/J_2 — C609 *10P/25V/J_2

7 USBP_CAM- — 7 USBP_CAM+ — L41 MCM2012B900GBE — CAMERA_USB5_DN- — CAMERA_USB5_DP+

+3V — +3V_CAM — C602 *0.01U/10V/K_2 — C613 *4.7U/6.3V/M_4

+5V +3V — R619 *0/J_6 — R615 0/J_6

VDD_3V3_LCD_TS — L6 HCB1005KF-181T15 — VDD_3V3_TS_F

C614 1U/10V/K_4

U34 — IN — IN — ON/OFF — OUT — GND

28 TS_ON — R613 *100K/F_2 — *IC(5P) G5243AT11U

C28 4.7U/10V/M_4 — C603 0.1U/10V/K_2 — GND — GND

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Quanta Computer Inc.

Size	Document Number	Rev
	LCD CONN/LID/CAM	1A

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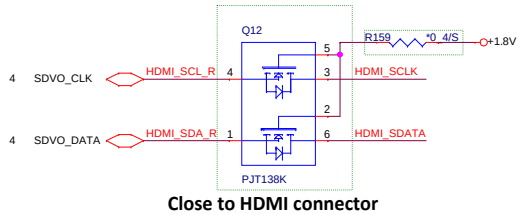
HDMI Conn.

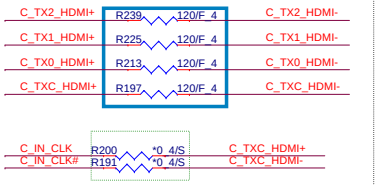
HDMI SMBus Isolation



Close to HDMI connector

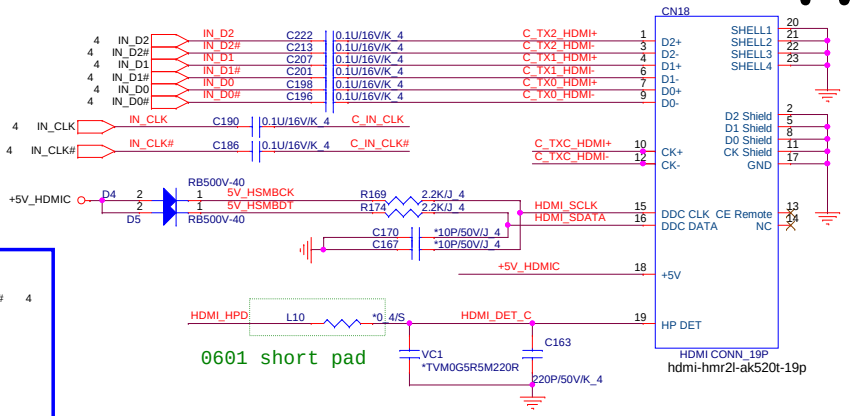
PV 0601 Change to 120 ohm

EMI Solution

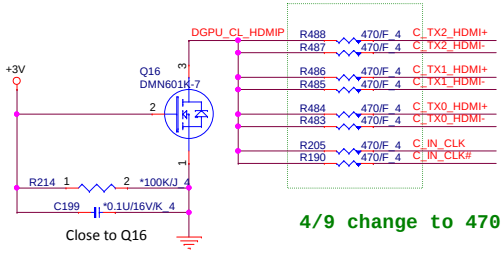


10/31
modify footprint

17



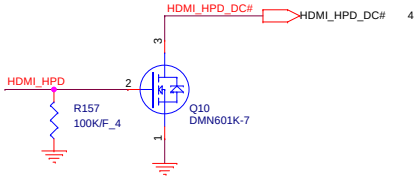
0601 short pad

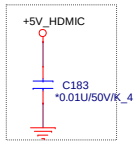


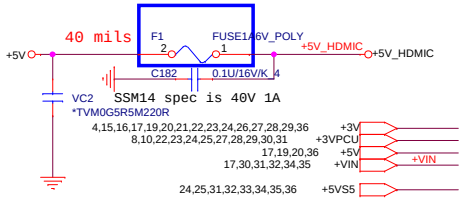
Close to Q16

4/9 change to 470 follow X13

FOLLOW W03



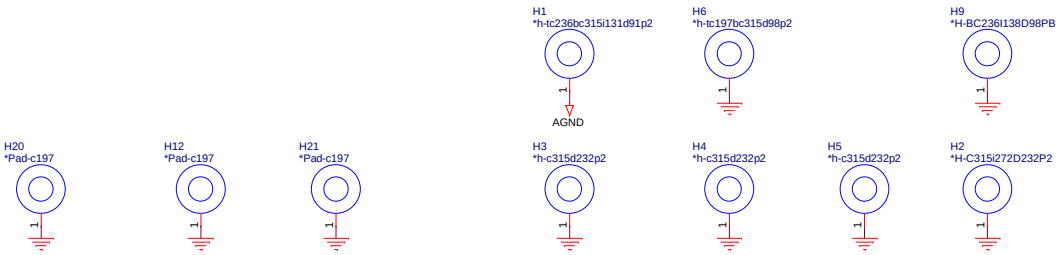




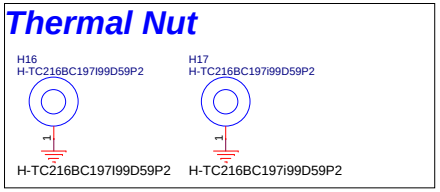
for EMI request

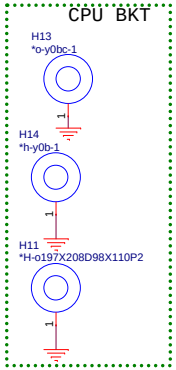
11/5 Change CPU Bracket

Hole



Thermal Nut





EMI

PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	HDMI	1A
Date: Wednesday, July 29, 2015	Sheet 18 of 35	

Close to PIN1

12/10 Modify
+3V
L26 HCB1005KF-181T15
+3V_DVDD
C376 1U/10V/K_4
C396 10U/6.3VS/K_6
C388 0.1U/16V/K_4

4/9 -->+1.5V
+1.5V
L46 HCB1005KF-181T15
+3V
L32 *HCB1005KF-181T15
12/13 Modify
02/06 unmount
+3V_DVDD-IO
C422 0.1U/16V/K_4
C421 10U/6.3VS/K_6

>40mils trace

+5V_AVDD
C429 10U/6.3VS/K_6
C426 0.1U/16V/K_4
L30 HCB1005KF-181T15
12/10 Modify
+5V
*AZ2015-01H
C507
C581 need check!
AGND
Close to PIN26

+1.5V_AVDD
C390 10U/6.3VS/K_6
L24 HCB1005KF-181T15
12/10 Modify
4/9 -->+1.5V
+1.5V
AGND
Close to PIN40

17,18,20,36 +5V
4,15,16,17,18,20,21,22,23,24,26,27,28,29,36 +3V

12/24 Delete U31 and related component

+5V_AVDD
C517 *2.2U/6.3V/M_4
C511 *0.1U/16V/K_4
U36
Vout Vin
BYP
GND EN
*TPS793475DBVR
HPA01091DBVR
C509 *1U/10V/K_4
C516 *0.1U/16V/K_4
C510 *0.033U/10V/K_4
C508 *1U/10V/K_4
+5V
R494 *10K/F_4
+5V
AGND
Vset=1.242V

TO Digital MIC
C403 10P/50V/J_4
17 DIGITAL_D1
R319 *0_4/S DMIC0
17 DIGITAL_CLK
R322 100/F_4 DMIC_CLK_R
C409 10P/50V/J_4
5 ACZ_SDOUT_AUDIO
5 BIT_CLK_AUDIO
R326 *0_4/S HD_BCLK
Close to PIN7
C412 10U/6.3VS/K_6
5 ACZ_SDIN0
R334 *0_4/S HD_SDIN0
MV 0716
+3V_DVDD-IO
5 ACZ_SYNC_AUDIO
5 ACZ_RST#_AUDIO
C428 *0.1U/16V/K_4
AMP_BEEP
C525 2.2U/6.3V/M_4
C521 2.2U/6.3V/M_4
CAP-
CAP+
+3V_DVDD
10U/6.3VS/K_6 C523
Close to Pin 34,35,36
TO Internal Speakers

U26
DVDD
GPIO0/ DMIC-DATA
GPIO1 / DMIC-CLK
DVSS
SDATA-OUT
BCLK
LDO3-CAP
SDATA-IN
DVDD-IO
SYNC
RESETB
PCBEEP
CPVEE
CBN
CBP
CPVDD
SPK-L+
SPK-L-
SPK-R-
SPK-R+
NC PVDD1 PVDD2 PDB SPDIF-OUT/GPIO2
Digital
Analog
SenseA SenseB JDREF
ALC3227 x QFN48

AVDD1 AVDD2
AVSS1 AVSS2
LDO1-CAP LDO2-CAP
R220 100K/F_4
C425 10U/6.3VS/K_6
C400 10U/6.3VS/K_6
11/11 add
VREF
C420 0.1U/16V/K_4
C423 2.2U/6.3V/M_4
Close to PIN28
HPOUT-L (PORT I)
HPOUT-R (PORT I)
HPOUT_L HPOUT_L 20
HPOUT_R HPOUT_R 20
AGND SHIELD
AGND SHIELD
AGND SHIELD
LINE2-L LINE2-R
LINE1-L (PORTC) LINE1-R (PORTC)
MIC1-R (PORTB) MIC1-L (PORTB)
MIC1-VREFO-L MIC1-VREFO-R
MUTE_LED_CNTL_R2 R325 *0_4/S MUTE_LED_CNTL 23
MIC2-R (PORTF) MIC2-L (PORTF)
MIC_R1 MIC_L1
C427 2.2U/6.3V/M_4
C432 2.2U/6.3V/M_4
R347 1K/F_4
EXT_MIC_L
EXT_MIC_L 20
TO Combo Audio Jack MIC
MIC2-VREFO
VREFOUT_C
R327 2.2K/J_4
EXT_MIC_L
MONO-OUT
C414 *1U/10V/K_4

L_SPK+ L_SPK- R_SPK- R_SPK+
20 L_SPK+
20 L_SPK-
20 R_SPK-
20 R_SPK+

+5V_DVDD
+5V
L25 HCB1005KF-181T15
12/10 Modify
+5V_DVDD
0.1U/16V/K_4 C392
10U/6.3VS/K_6 C377
Close to Pin 41
+5V_DVDD
0.1U/16V/K_4 C397
10U/6.3VS/K_6 C399
Close to Pin 46

R342,Q41,R504 install,only when use AMP
Q41
R342 *20K/F_4
*DMN601K-7
SENSE_A
R346 20K/F_4
AGND
R323 22K/F_4
EXT_MIC_L
SENSE_A_1 R341 39.2K/F_4 SENSE_A
SENSE_A
20
Close to codec
C405 4.7U/10V/M_4
R328 22K/F_4
AGND
AGND
R510 0/J_4
R510 install,only when remove AMP
PD#
20 HP_EAPD
CHECK

12/24 change 2N7002K
2/10 change P/N from BAM70020002 to BAM01380016

EC61 1000P/50V/J_4
EC40 1000P/50V/J_4
EC46 1000P/50V/J_4
EC51 1000P/50V/J_4
EC41 1000P/50V/J_4
AGND
Close to CODEC
place to near U28 or under U28
R505 *0_8/S
AGND

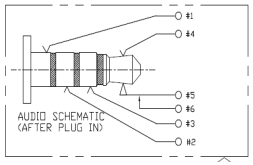
for intel HSW ULT
4/9 -->+1.5V
+1.5V
Q22
BA039040000
BA039040020
R345 *2.2K/J_4
Q27 *MMBT3904-7-F
ACZ_RST#_AUDIO
20,28 VOLMUTE#
D17 RB500V-40
+3V_DVDD
R315 1K/F_4
C2271 68P/50V/J_4
PD#
R340 10K/F_4
C2270 *68P/50V/J_4
+3V_DVDD
HD_BCLK
C2272 12P/50V/J_4

Check layout
mount location
check value
C424 0.1U/16V/K_4
AMP_BEEP
AMP_BEEP_L
R343 100K/F_4
AMP_BEEP_R2
C430 0.1U/16V/K_4
C431 0.01U/50V/K_4
R344 10K/F_4
AGND
+5V_AVDD
R338 10K/F_4
DMN53D0L-7
Q28
ACZ_SPKR 5
AGND
AGND

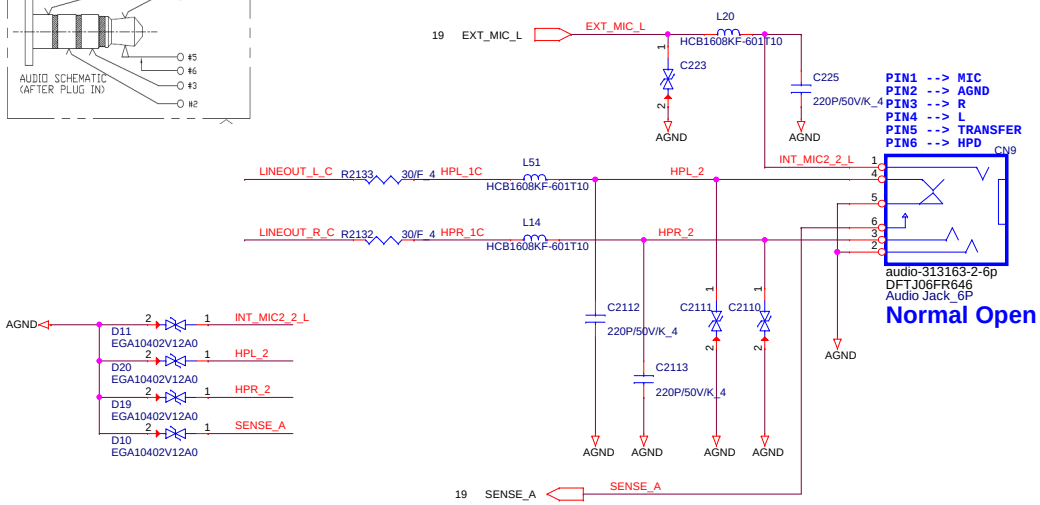
PROJECT : YOBC
Quanta Computer Inc.

Size	Document Number	Rev
	Azalia ALC 3227	1A
Date: Wednesday, July 29, 2015	Sheet 19 of 35	

Head Phone out

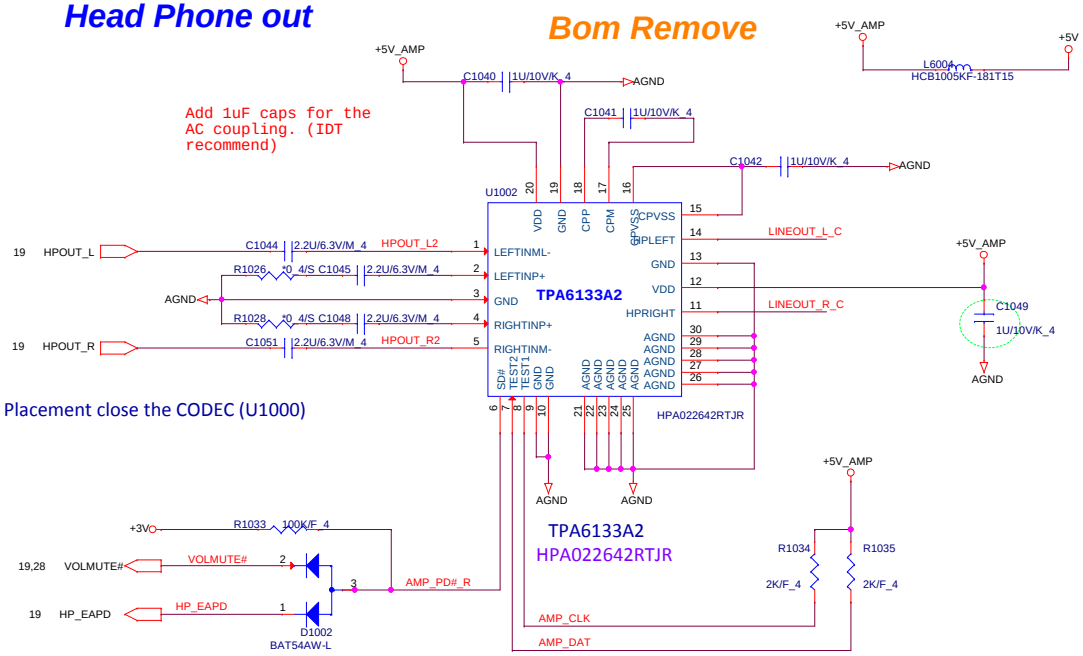


Headphone and Mic Jack



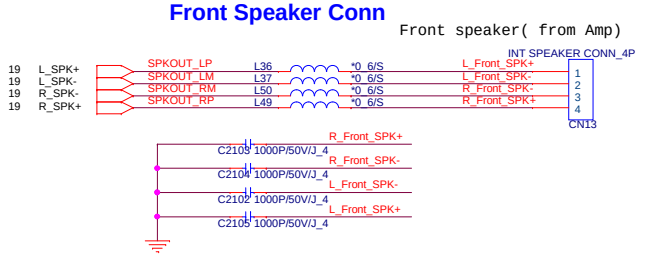
Head Phone out

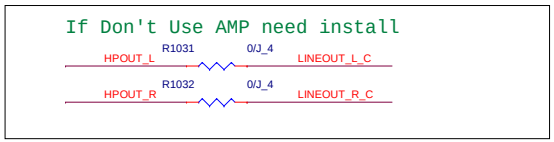
Bom Remove



Int. SPEAKER

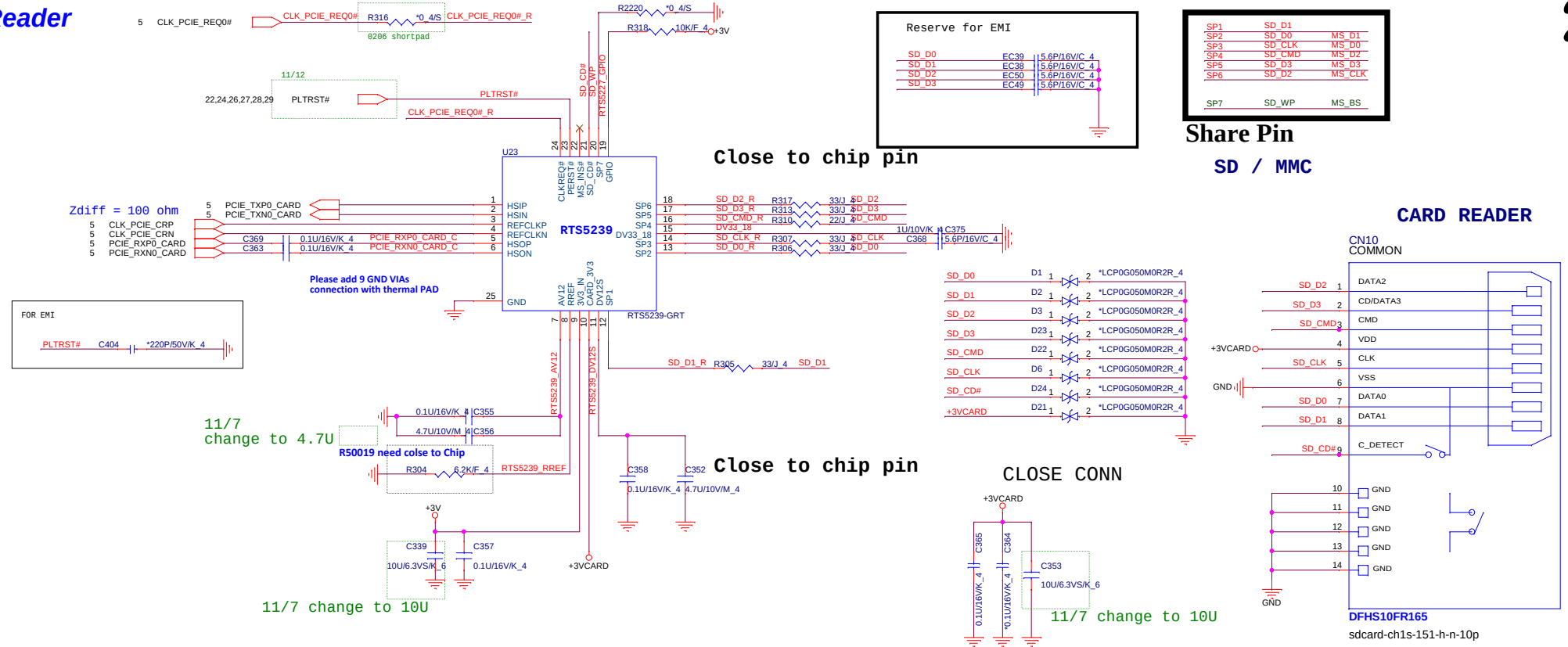
Front Speaker Conn





PROJECT : Y0BC Quanta Computer Inc.		
Size	Document Number HP Amp	Rev 1A
Date: Wednesday, July 29, 2015	Sheet 20 of 35	

CardReader



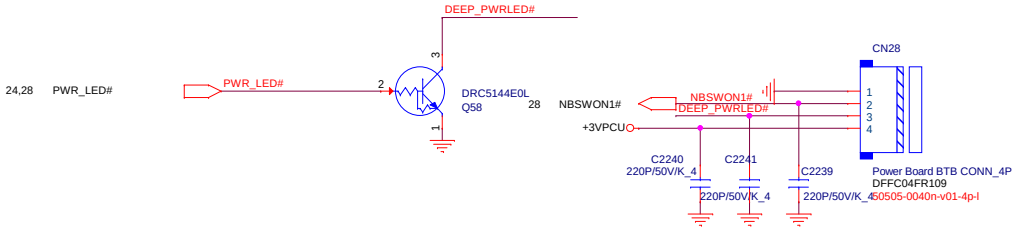
PROJECT : Y0BC			
Quanta Computer Inc.			
Size	Document Number		Rev
	CR RTS5237 & CR SOCKET		1A
Date: Wednesday, July 29, 2015		Sheet 21 of 35	

13.3” Sanguine Power Botton Connector

14” Menth Power Botton Connector

11/14 Only for debug
12/24 Delete debug power switch

Pin1 : +3VPCU(LIDSWITCH PWR)
Pin2 : POWER LED
Pin3 : LIDSWITCH
Pin4 : GND
Pin5 : GND
Pin6 : POWERON#



TPM (2.0)

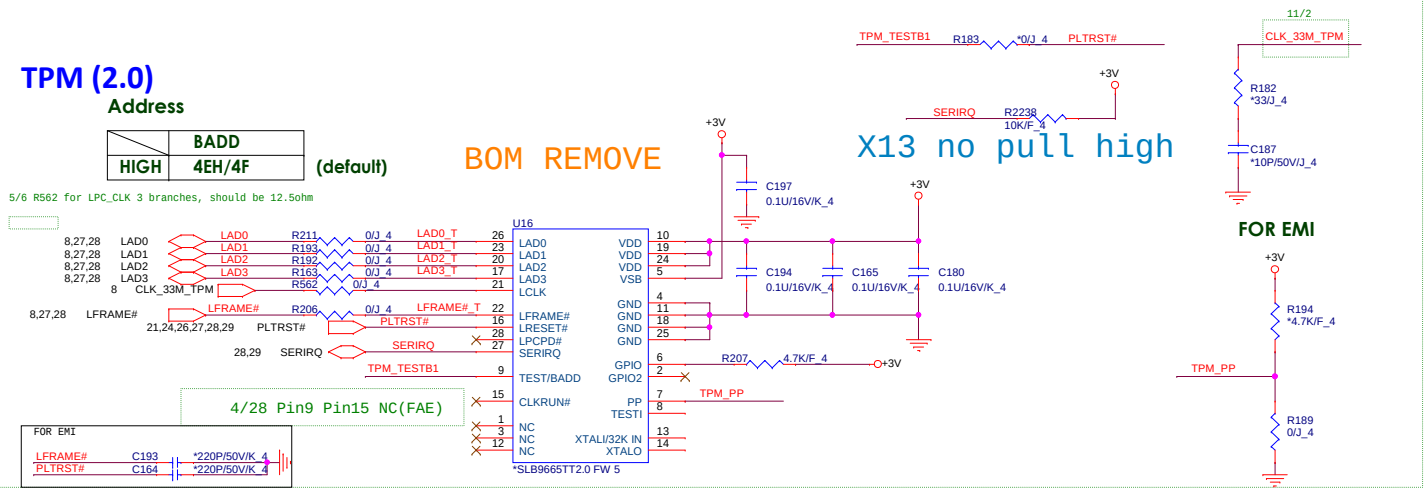
Address

	BADD
HIGH	4EH/4F (default)

BOM REMOVE

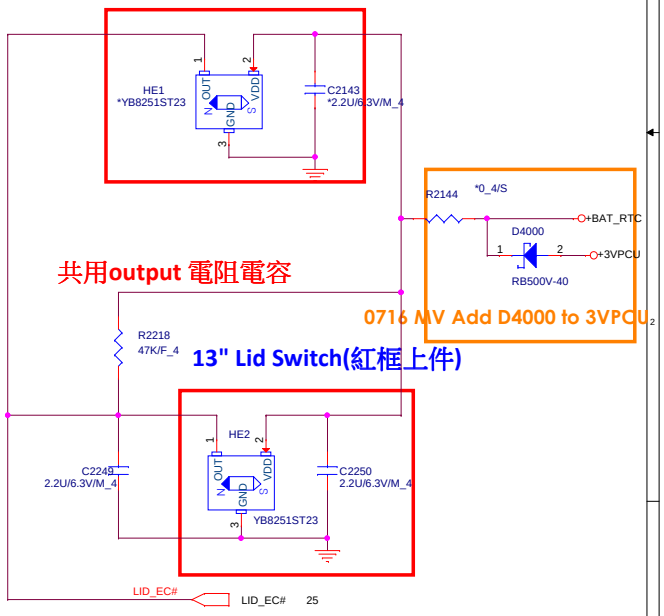
X13 no pull high

5/6 R562 for LPC_CLK 3 branches, should be 12.5ohm



FAN

14" Lid Switch(紅框上件)



25,30 +BAT_RTC
4,15,16,17,18,19,20,21,23,24,26,27,28,29,36 +3V
17,18,19,20,36 +5V
8,10,23,24,25,27,28,29,30,31 +3VPCU

PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	TPM/TP/FAN/LED	1A
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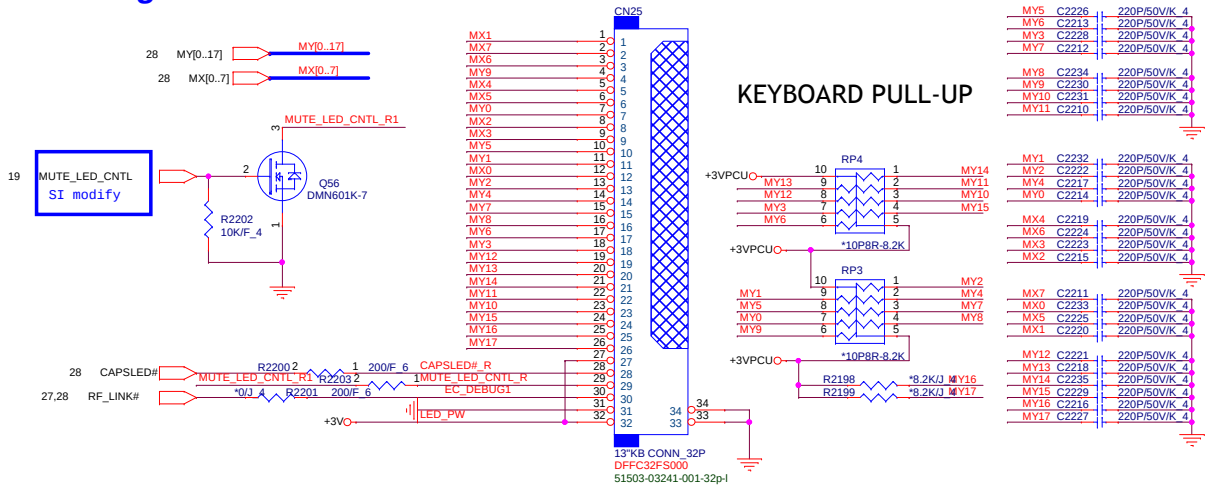
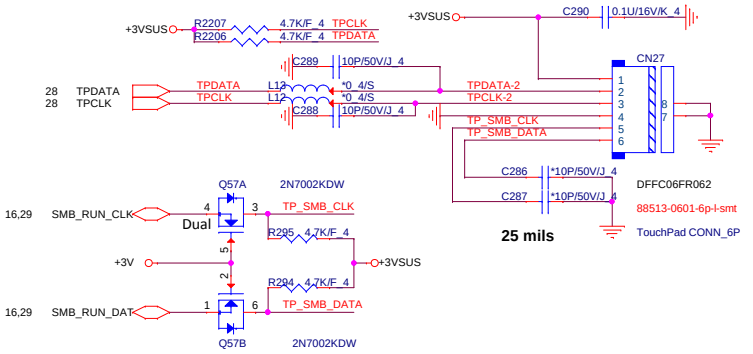
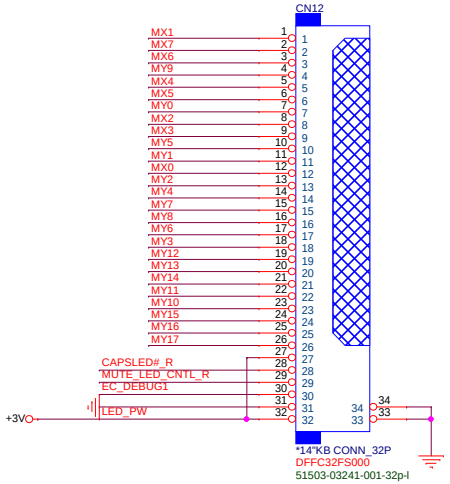
13.3” Sanguine KEYBOARD Con.



13.3” Sanguine Touch Pad Connector



14” Menth KEYBOARD Con.



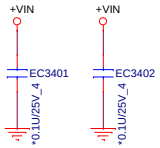
MEMORY TABLE

eMMC setting

SIZE / Vender	32G	64G	128G
Hynix	R6000 *10K/F_4	R6001 *10K/F_4	R6002 *10K/F_4
samaung	R6003 *10K/F_4	R6004 *10K/F_4	R6005 *10K/F_4
SanDisk	R6006 *10K/F_4	R6007 *10K/F_4	R6008 *10K/F_4
RSVD	R6009 *10K/F_4	R6010 *10K/F_4	R6011 *10K/F_4

Memory setting

SIZE / Vender	2G	4G
Hynix	R6012 *10K/F_4	R6013 *10K/F_4
samaung	R6014 *10K/F_4	R6015 *10K/F_4
Micron	R6016 *10K/F_4	R6017 *10K/F_4
RSVD	R6018 *10K/F_4	R6019 *10K/F_4



4,15,16,17,18,19,20,21,22,24,26,27,28,29,36 +3V
17,18,19,20,36 +5V
8,10,22,24,25,27,28,29,30,31 +3VPCU

PROJECT : Y0BC
Quanta Computer Inc.

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	TP/KB	1A

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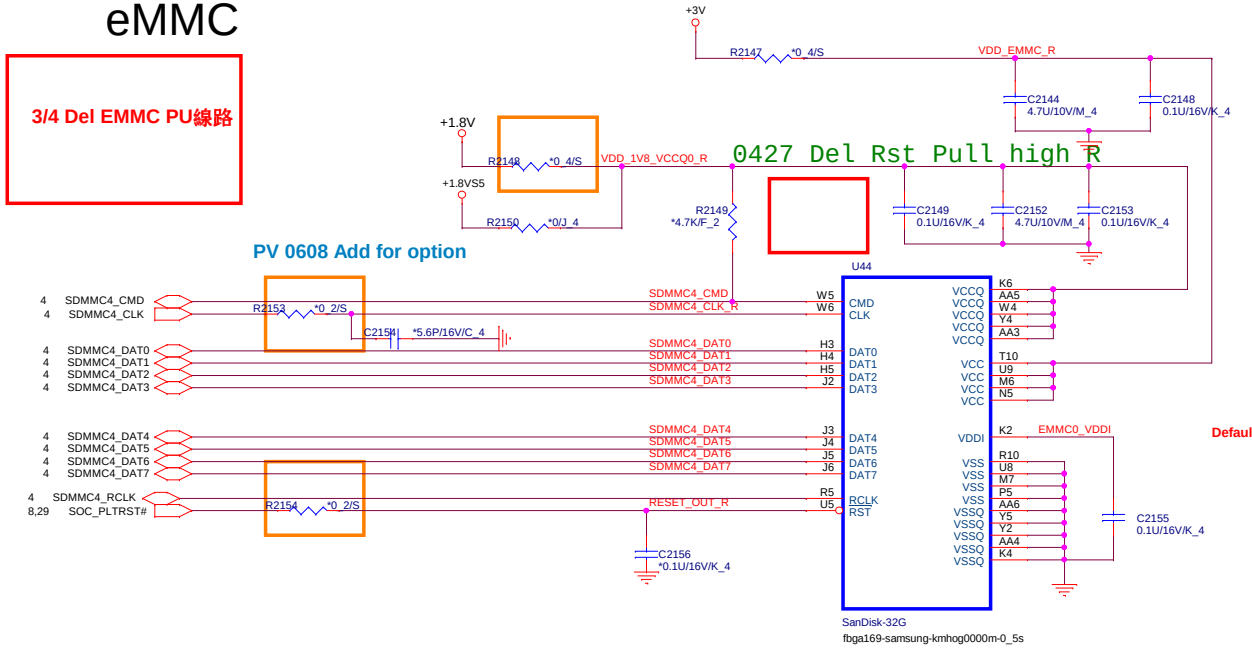
eMMC

3/4 Del EMMC PU線路



4/27 modify cap value follow FAE

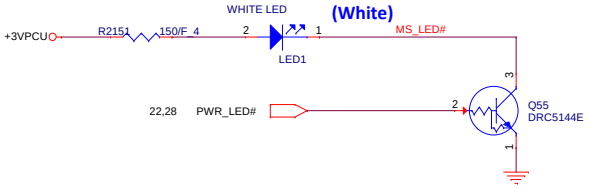
Default

iNAND (eMMC) V4.51

TOPBSQ	QBCON	Description	SIZE	Vender
AKE3SZ-TW01	AKE3SZ-TW02	IC FLASH(153P)H26M64103EMR(FBGA)	32G	Hynix
AKE5SZ0T506	AKE5SZ0T507	IC FLASH(153P)KLMBG4GEAC-B031(BGA)	32G	samaung
AKE3SFUT000	AKE3SFUT001	IC FLASH(153P)SDIN9DW4-32G(FBGA)	32G	SanDisk
AKE3TG-TW01	AKE3TG-TW02	IC FLASH(153P)H26M78103CCR(FBGA)	64G	Hynix
AKE3TZPT515	AKE3TZPT516	IC FLASH(153P)KLMCG8GEAC-B031(BGA)	64G	samaung
AKE3TFUT101	AKE3TFUT102	IC FLASH(153P)SDIN9DW4-64G(FBGA)	64G	SanDisk

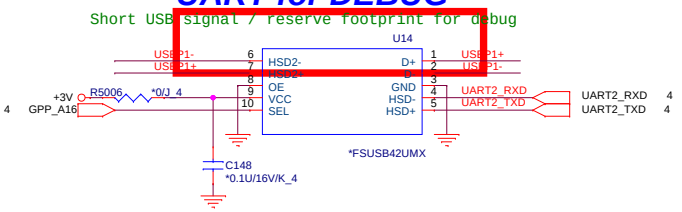
footprint：BGA 169、BGA 153 co-lay
BGA 169 PIN：14mmX18mm
BGA 169 PIN：12mmX16mm
BGA 153 PIN：11.5mmX13mm

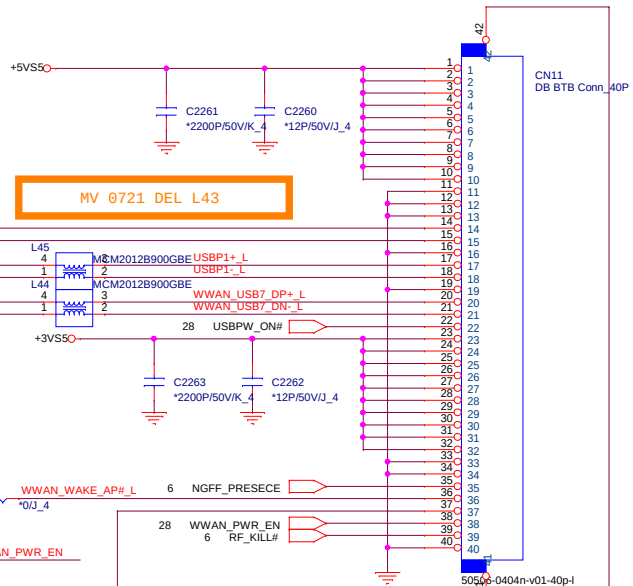
PWR LED



UART for DEBUG

Short USB signal / reserve footprint for debug





PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	HDD/ODD	1A

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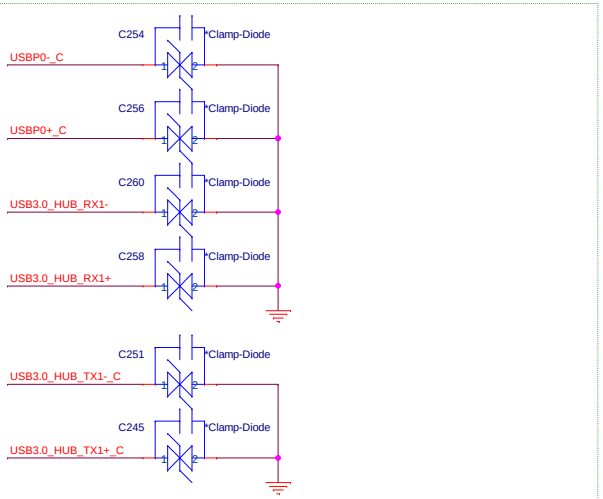
USB 2.0/3.0 Combo

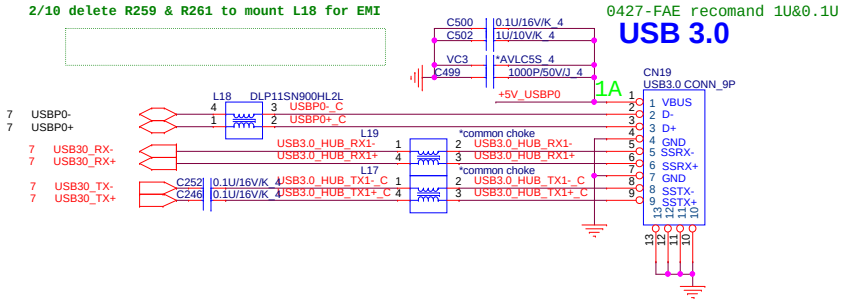


11/1 modify

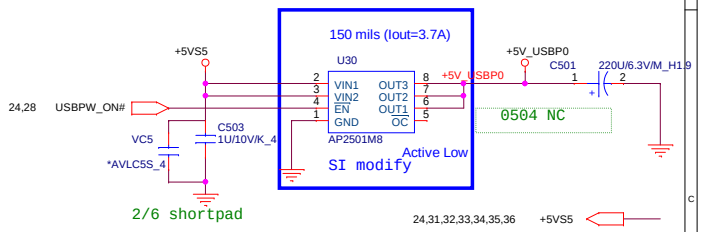
2/10 delete R259 & R261 to mount L18 for EMI

0427-FAE recomand 1U&0.1U

USB 3.0

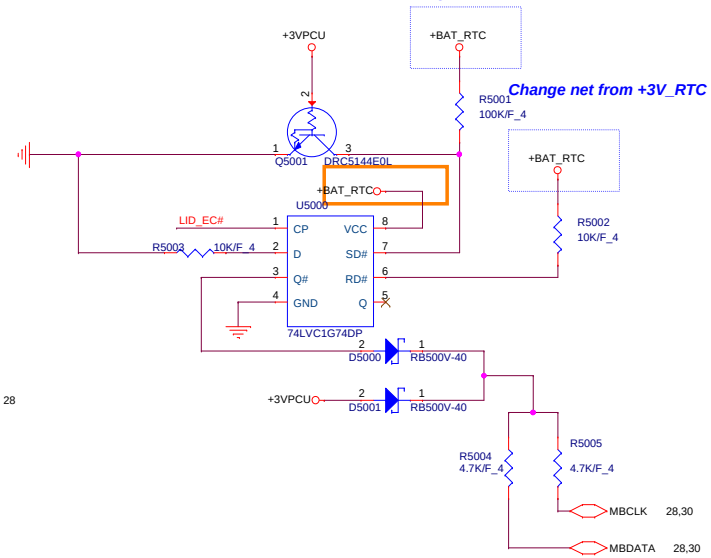


DFHS09FR561
ub3-tar2h-9r6393-9p



Storage mode

Change net from +3V_RTC to +BAT_RTC



Change net from +3V_RTC to +BAT_RTC

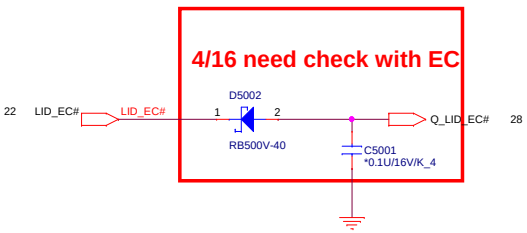
Input				Output	
$\overline{SD}$	$\overline{RD}$	CP	D	Q	$\overline{Q}$
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H

[1] H = HIGH voltage level;
L = LOW voltage level;
X = don't care.

Input				Output	
$\overline{SD}$	$\overline{RD}$	CP	D	Q_{n+1}	$\overline{Q}_{n+1}$
H	H	↑	L	L	H
H	H	↑	H	H	L

[1] H = HIGH voltage level;
L = LOW voltage level;
↑ = LOW-to-HIGH CP transition;
Q_{n+1} = state after the next LOW-to-HIGH CP transition.

4/16 need check with EC



4/22 Change to Diode

8,10,22,23,24,27,28,29,30,31 +3VPCU
22,30 +BAT_RTC
4,15,16,17,18,19,20,21,22,23,24,26,27,28,29,36 +3V
17,18,19,20,36 +5V

PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	USB3.0/GCLK/TS/FR	1A
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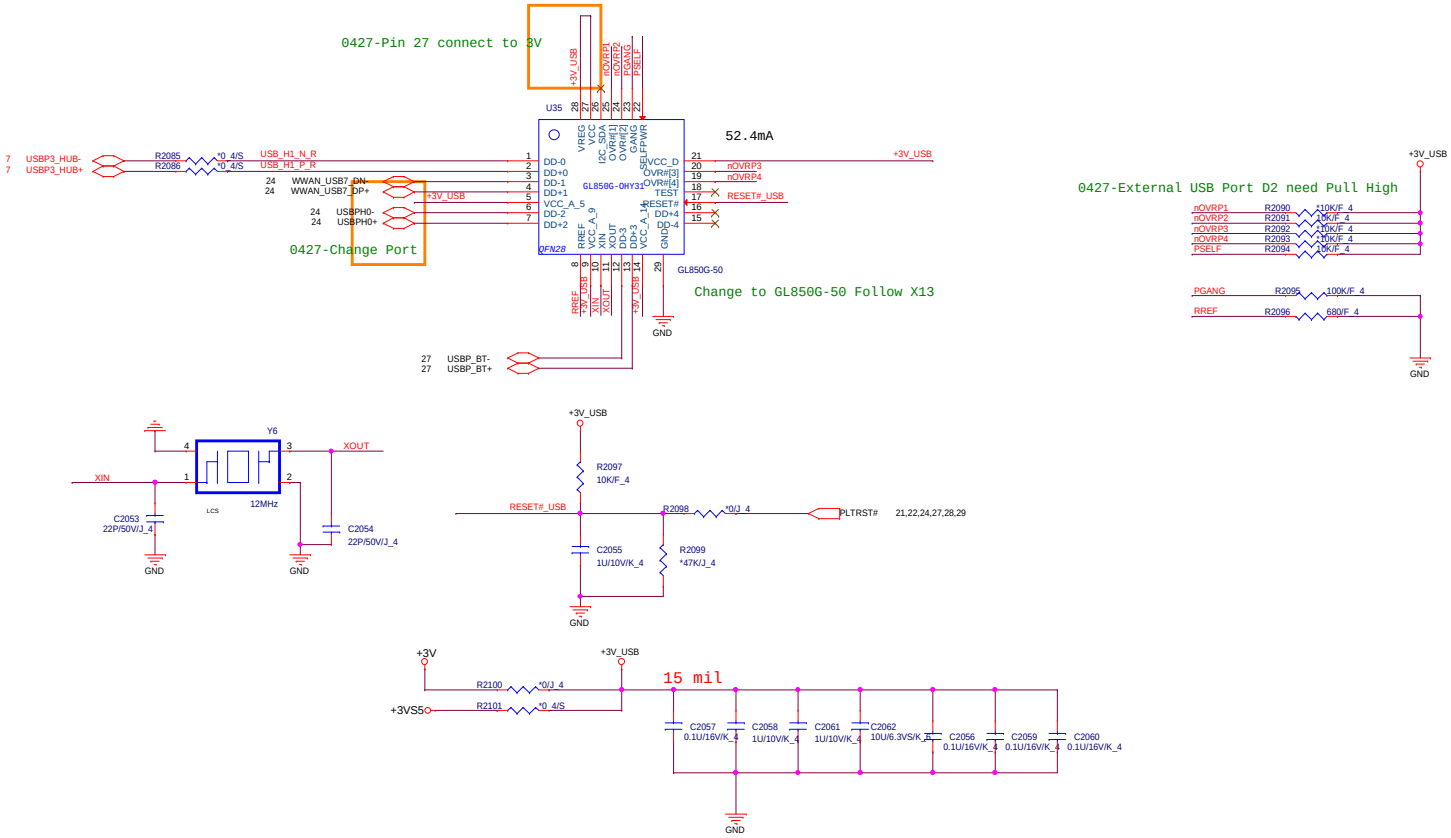

PROJECT : Y0BC		
Quanta Computer Inc.		
Size	Document Number: USB30 HUB RTS5401-GR	Rev: 1A
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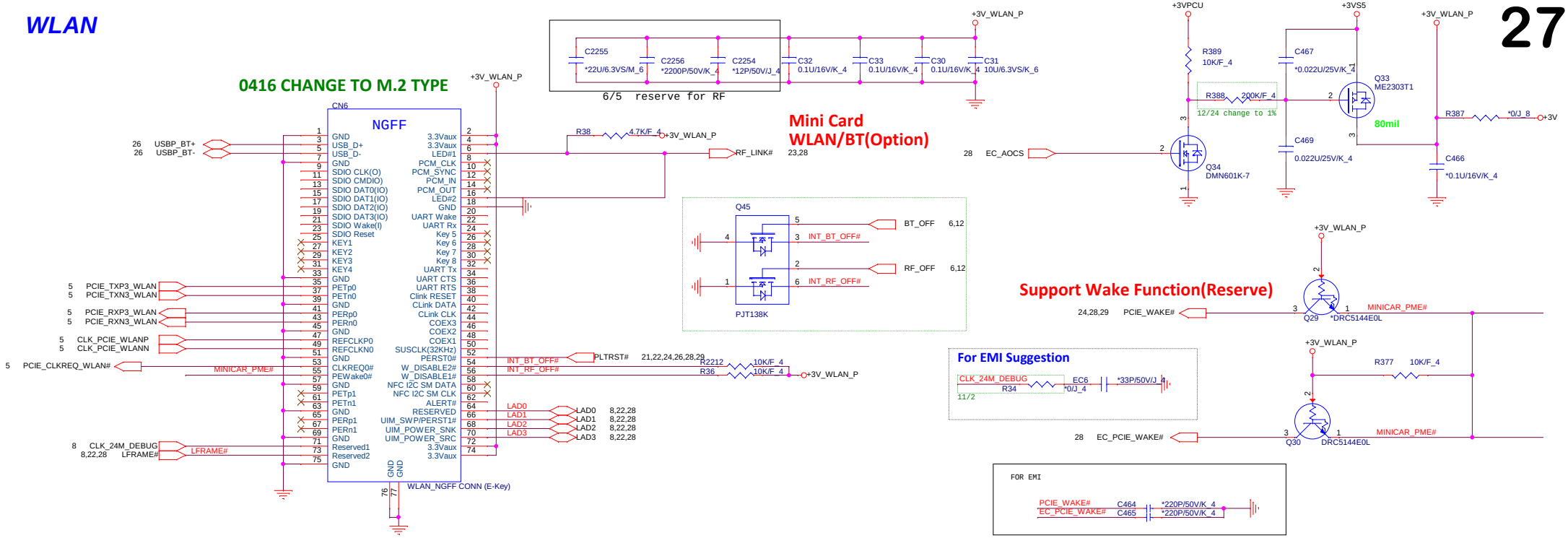
WLAN



USB 3.0 re-driver

PROJECT : Y0BC Quanta Computer Inc.		
Size	Document Number WLAN	Rev 1A
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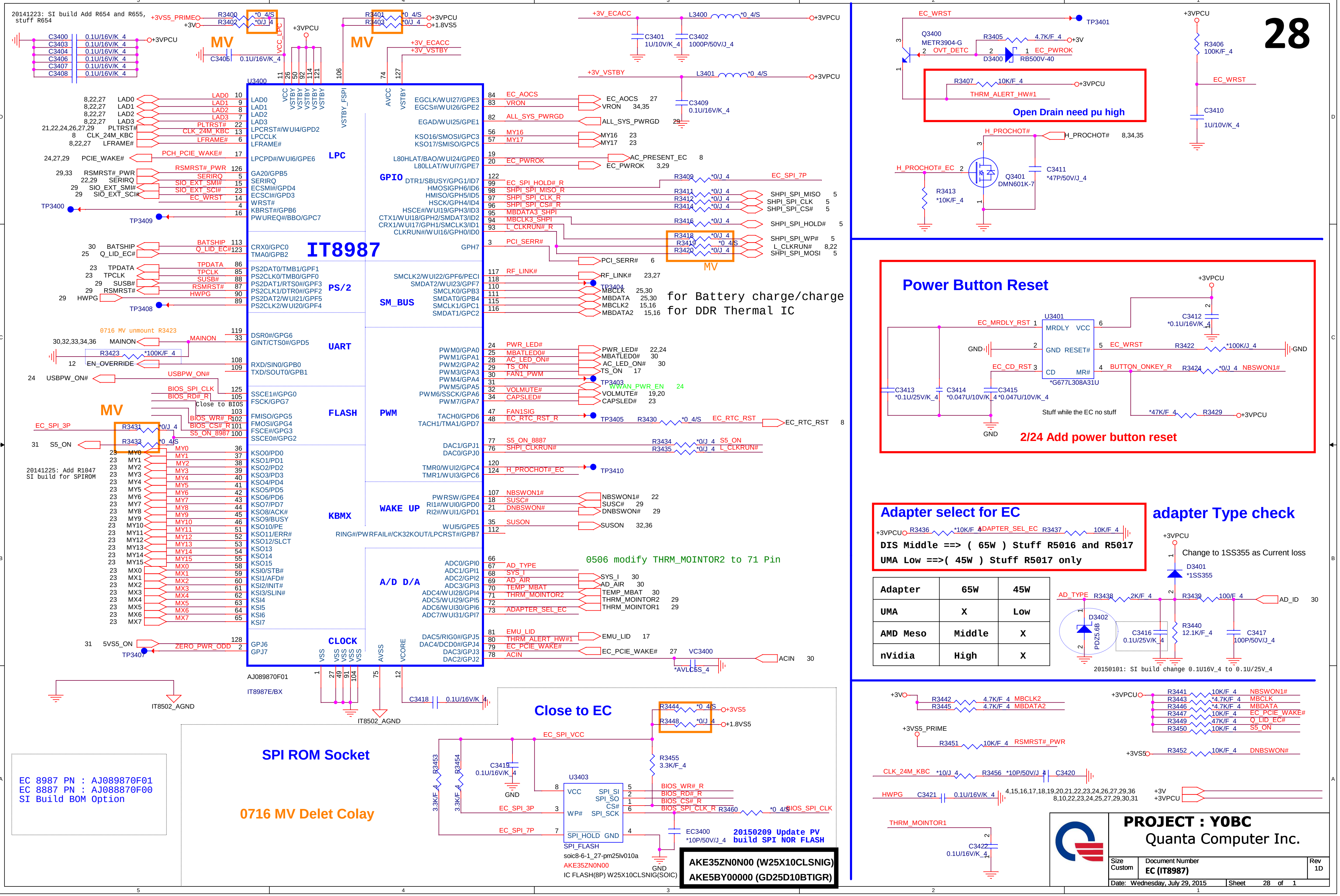
20141223: SI build Add R654 and R655, stuff R654
MV
IT8987
LPC
GPIO
PS/2
SM_BUS
UART
FLASH
PWM
KBMX
WAKE UP
A/D D/A
CLOCK
U3400
AJ089870F01
IT8987E/BX
for Battery charge/charge
for DDR Thermal IC
0716 MV unmount R3423
Close to BIOS
20141225: Add R1047 SI build for SPIROM
0506 modify THRM_MOINTOR2 to 71 Pin
Open Drain need pu high
Power Button Reset
U3401
*G677L308A31U
Stuff while the EC no stuff
2/24 Add power button reset
Adapter select for EC
DIS Middle ==> (65W) Stuff R5016 and R5017
UMA Low ==>(45W) Stuff R5017 only
adapter Type check
Change to 1SS355 as Current loss
20150101: SI build change 0.1U16V_4 to 0.1U/25V_4
Close to EC
SPI ROM Socket
0716 MV Delet Colay
U3403
SPI_FLASH
soic8-6-1_27-pm25lv010a
AKE35ZN0N00
IC FLASH(8P) W25X10CLSNIG(SOIC)
20150209 Update PV build SPI NOR FLASH
AKE35ZN0N00 (W25X10CLSNIG)
AKE5BY00000 (GD25D10BTIGR)
EC 8987 PN : AJ089870F01
EC 8887 PN : AJ088870F00
SI Build BOM Option

Adapter	65W	45W
UMA	X	Low
AMD Meso	Middle	X
nVidia	High	X

PROJECT : YOBC

Quanta Computer Inc.

Size: Custom | Document Number: EC (IT8987) | Rev: 1D

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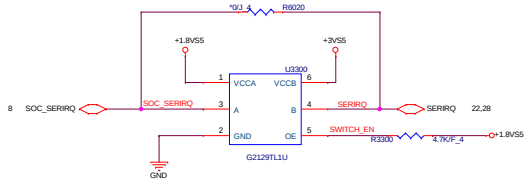
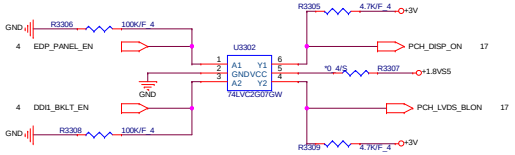
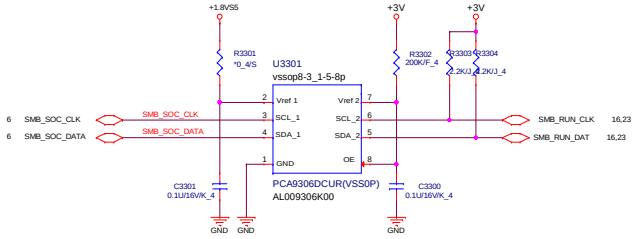
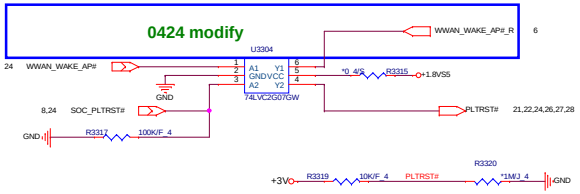
0506 Reserve for EC



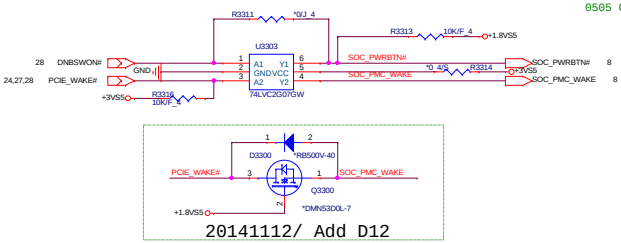




0424 modify

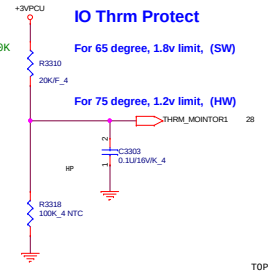


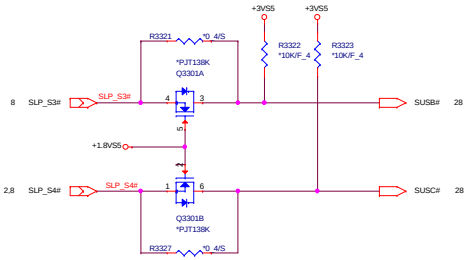
0506 NEED CHECK WITH EC AGAIN



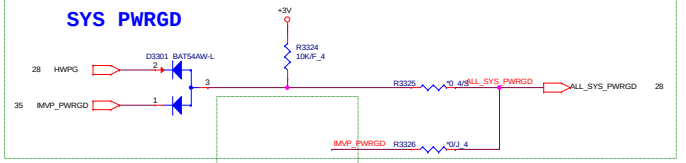
IO Thrm Protect

0505 CHANGE TO 20K

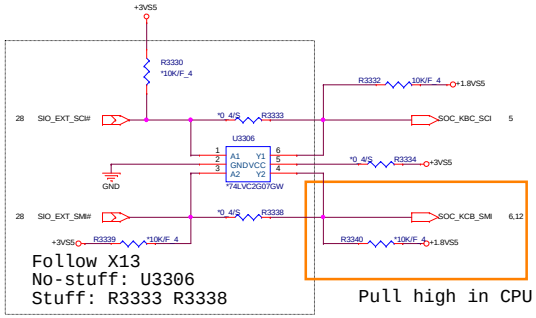




SYS PWRGD



Delet C358 follow X13

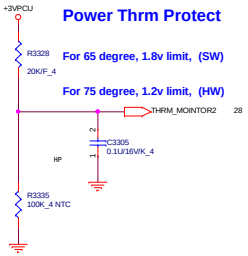


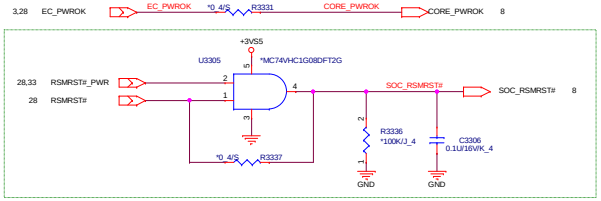
Follow X13
No-stuff: U3306
Stuff: R3333 R3338

Pull high in CPU side

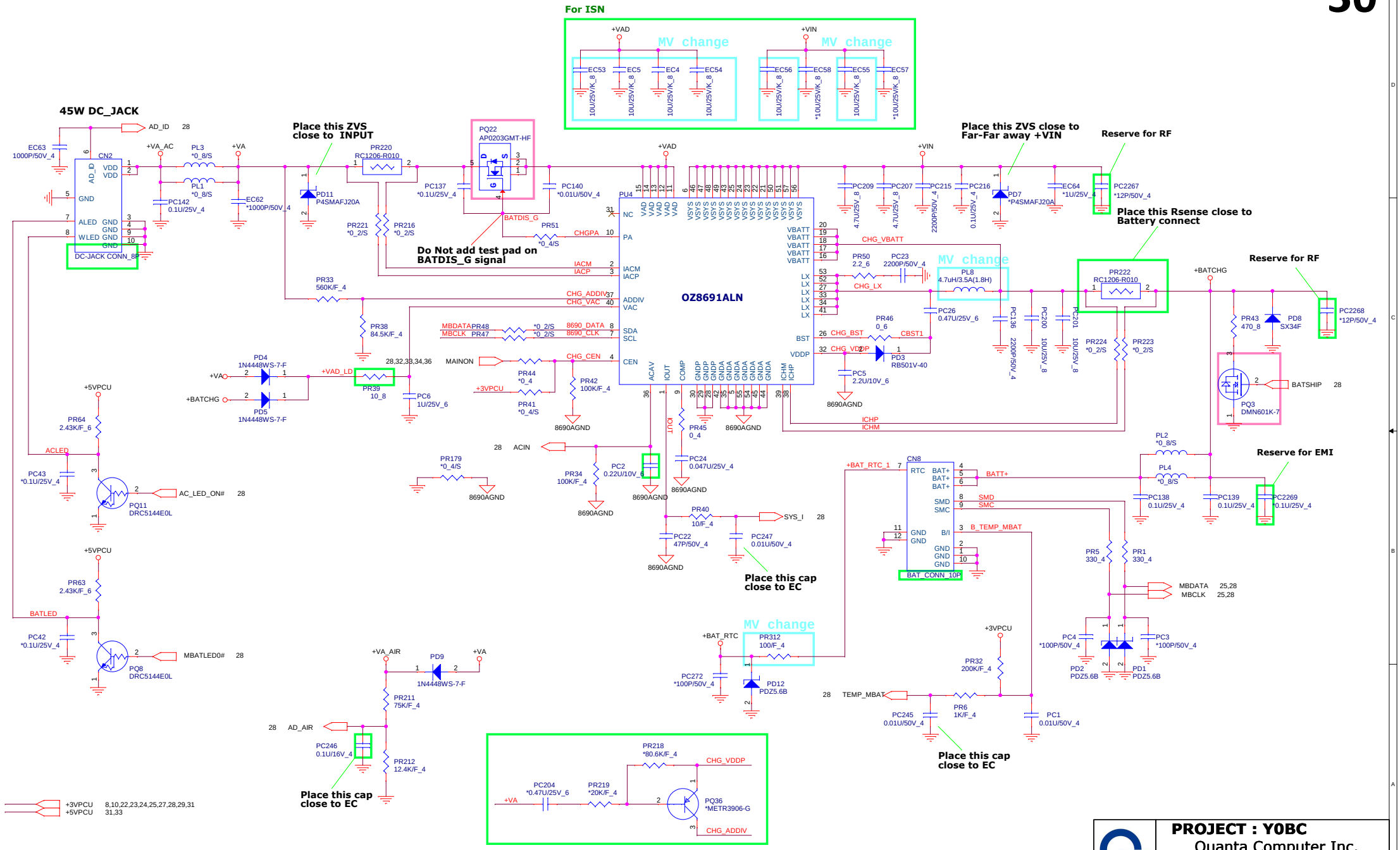
Power Thrm Protect

0505 CHANGE TO 20K





11/5 Add AND gate


For ISN
MV change
MV change
45W DC_JACK
DC-JACK CONN_8P
Place this ZVS close to INPUT
Do Not add test pad on BATDIS_G signal
Place this ZVS close to Far-Far away +VIN
Reserve for RF
Place this Rsense close to Battery connect
Reserve for RF
Reserve for EMI
OZ8691ALN
MV change
MV change
MV change
Place this cap close to EC
Place this cap close to EC
Place this cap close to EC
BAT_CONN_10P
PROJECT : Y0BC
Quanta Computer Inc.
Size
Document Number
Level shift/Thermistor
Rev
1A
Date: Wednesday, July 29, 2015
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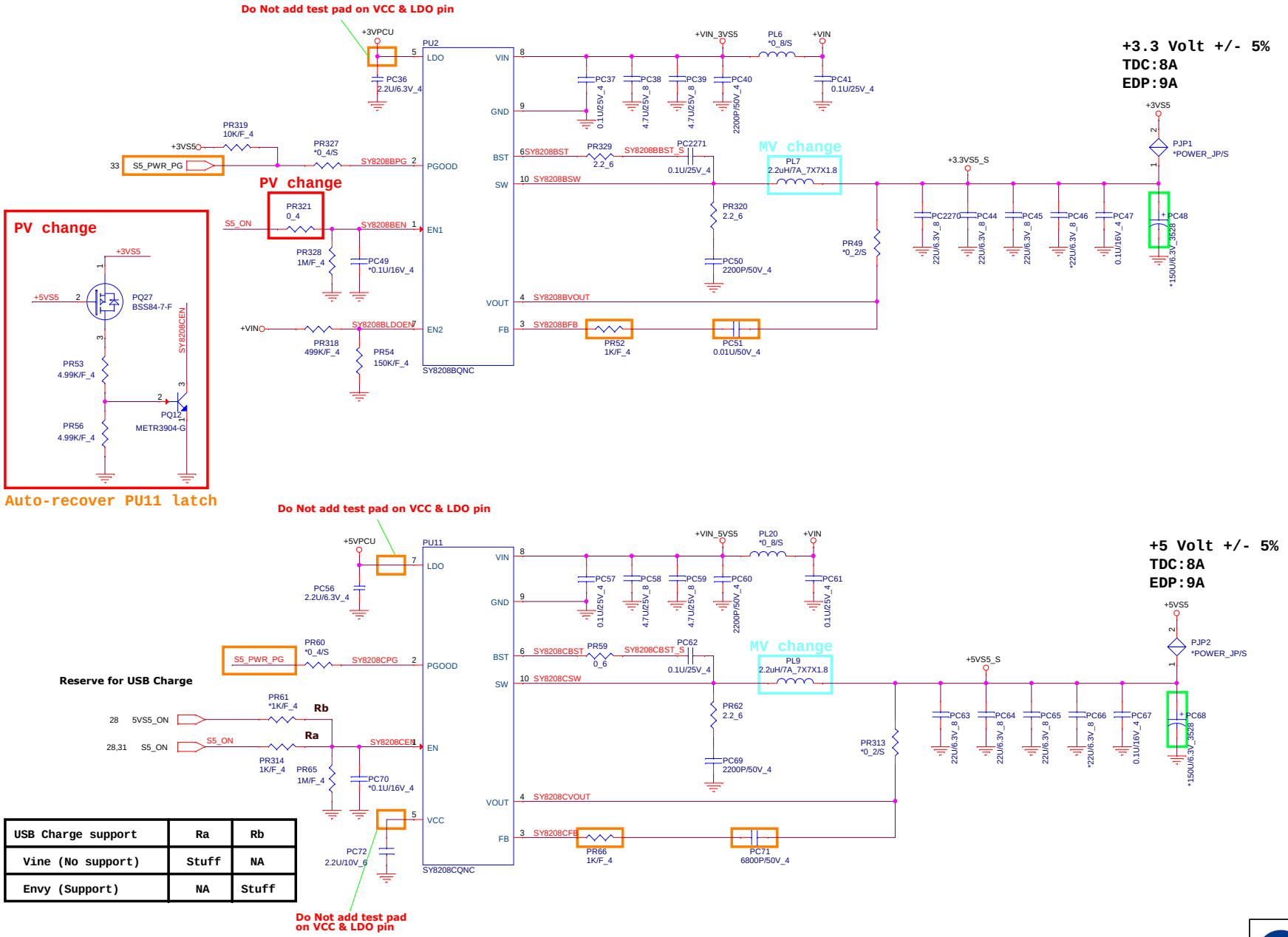
DC/DC +3VS5/+5VS5

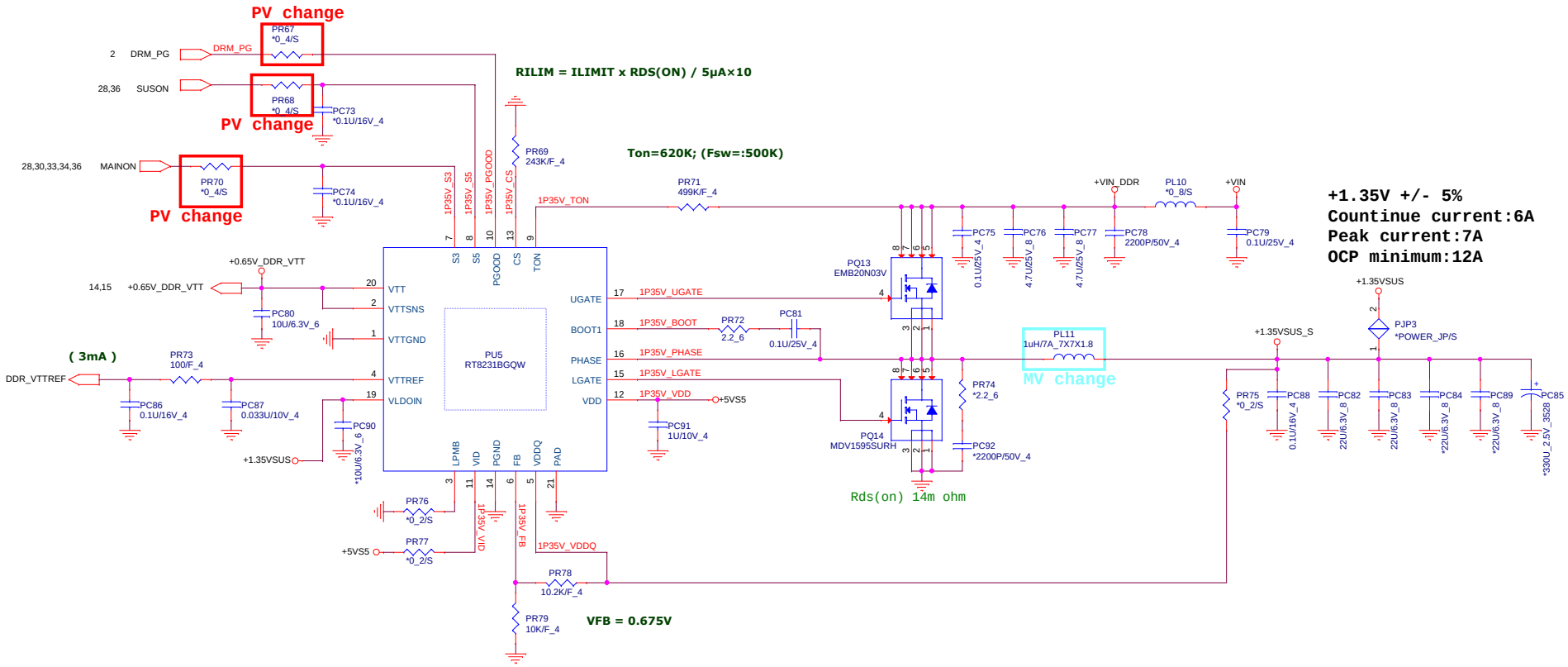
+3VS5 2,3,10,24,26,27,28,29,33,34,35,36
+5VS5 24,25,32,33,34,35,36



USB Charge support	Ra	Rb
Vine (No support)	Stuff	NA
Envy (Support)	NA	Stuff

PROJECT : Y0BC
Quanta Computer Inc.

Size	Document Number	Rev
	Level shift/Thermistor	1A
Date: Wednesday, July 29, 2015	Sheet 31 of 39	



PROJECT : Y0BC Quanta Computer Inc.		
Size	Document Number DDR3 (RT8231B)/1.8VS5	Rev 1A
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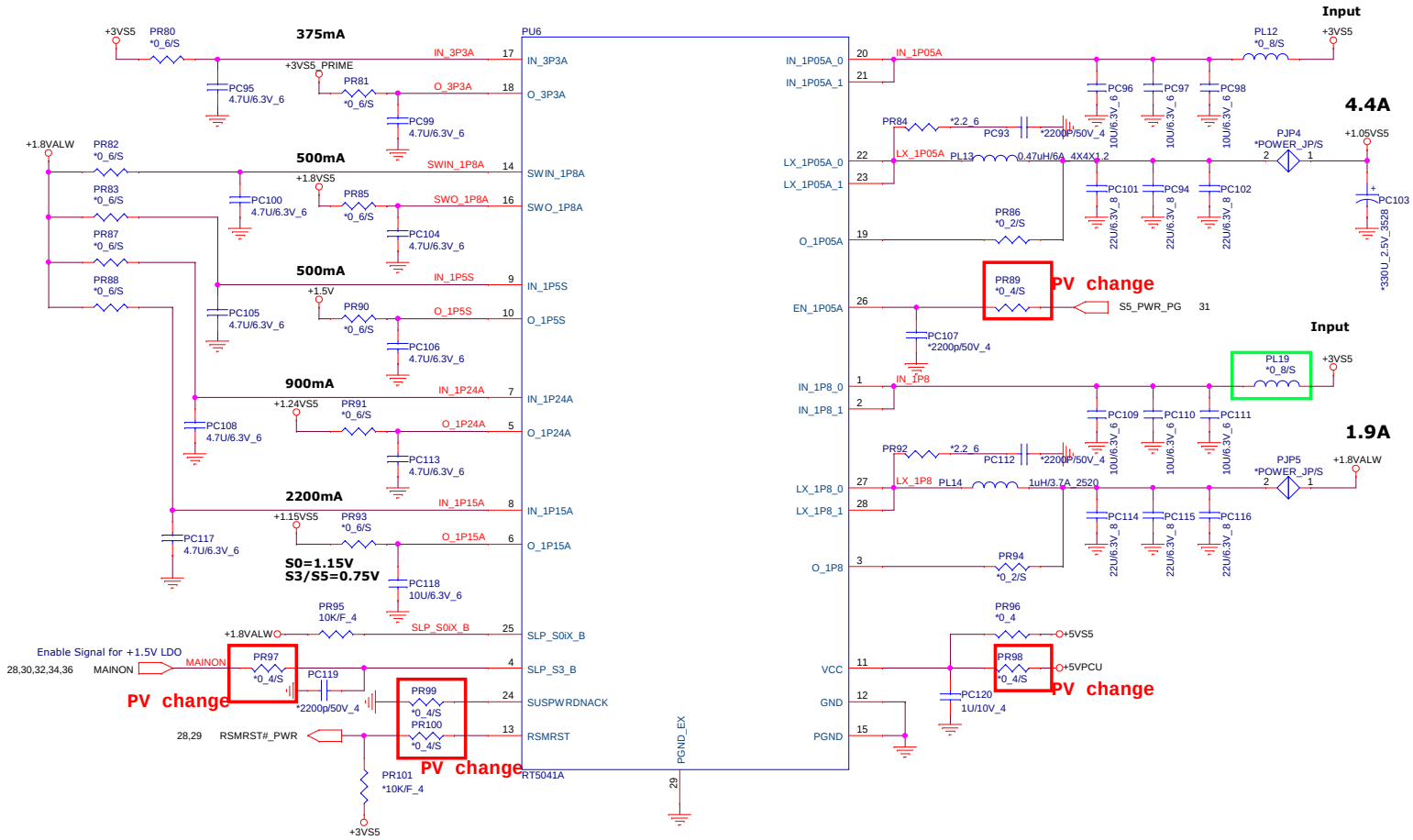

+3VS5 2,3,10,24,26,27,28,29,31,34,35,36
+1.8VALW 36
+1.8VS5 4,5,6,7,8,10,12,28,29,34
+3VS5_PRIME 10,28
+1.5V 10,19
+1.24VS5 10
+1.15VS5 9,33
+5VPCU 30,31,33
+1.05VS5 8,9,34,35
+1.8V 4,5,18,24,36

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Size	Document Number	Rev
	1.05VS5/1.8VS5/1.24VS5	1A

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+3VS5 2,3,10,24,26,27,28,29,31,33,35,36
+1.05VS5 8,9,33,35
+5VS5 24,25,31,32,33,35,36
+VGG 9
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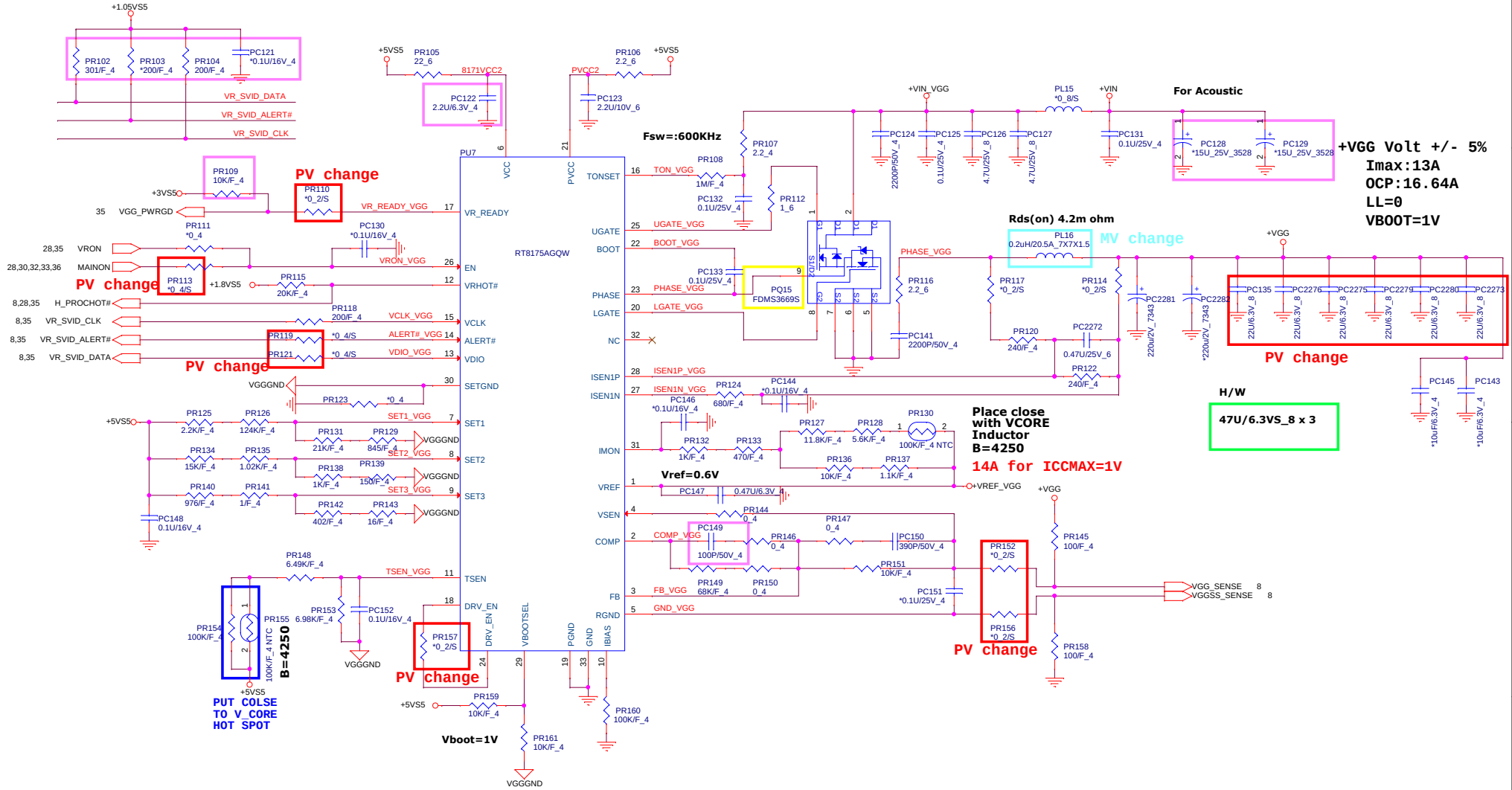
+VIN 17,30,31,32,35



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Size	Document Number	Rev
	+VGG CORE (RT8171A)	1A
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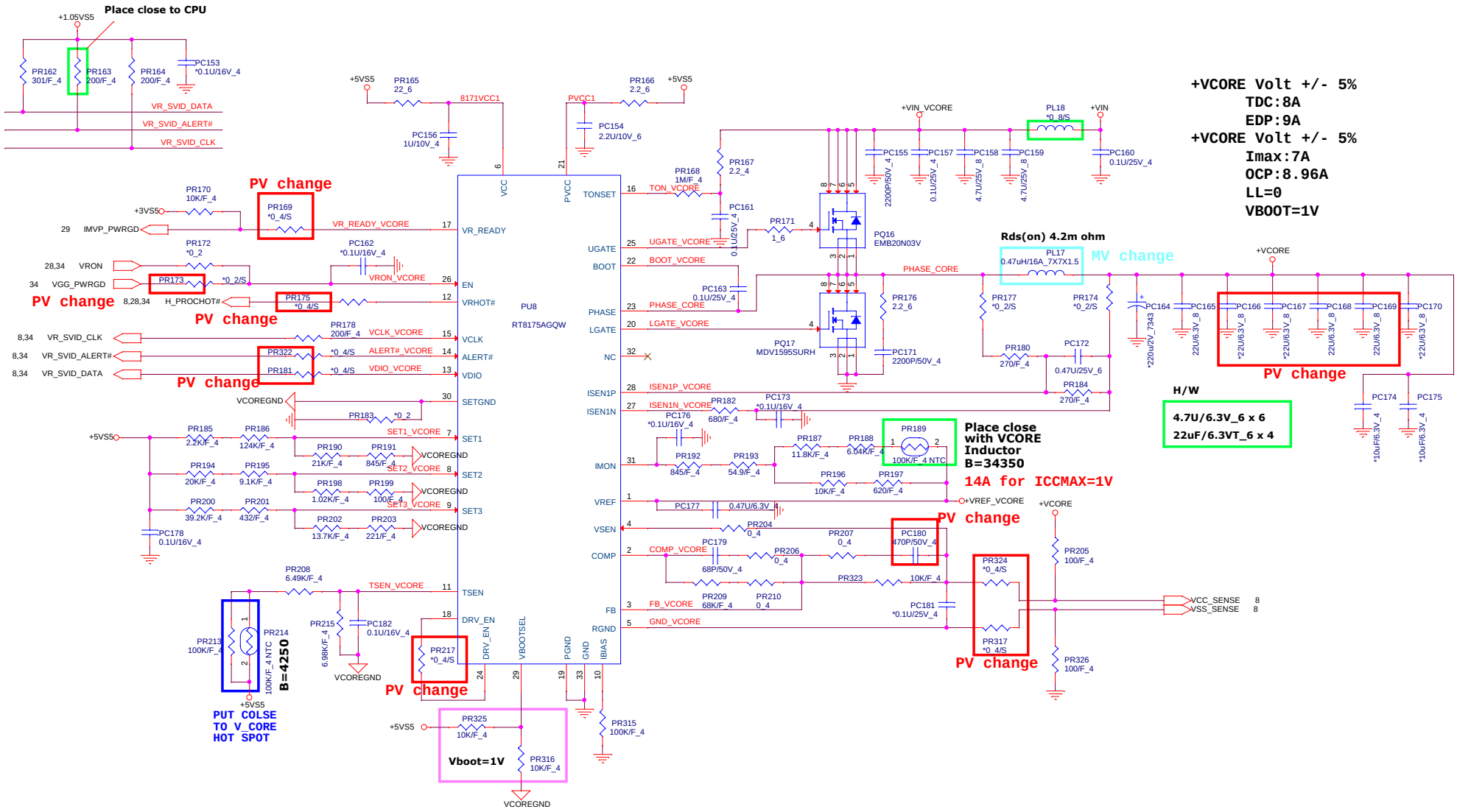

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Size	Document Number +VCC CORE (RT8171A)	Rev 1A
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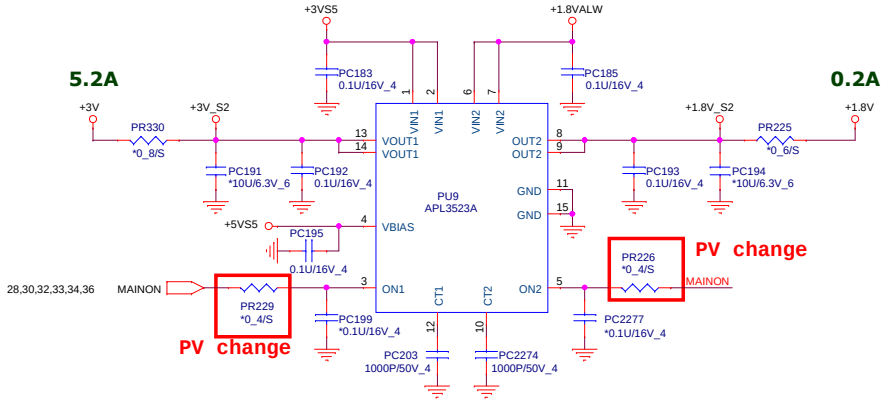

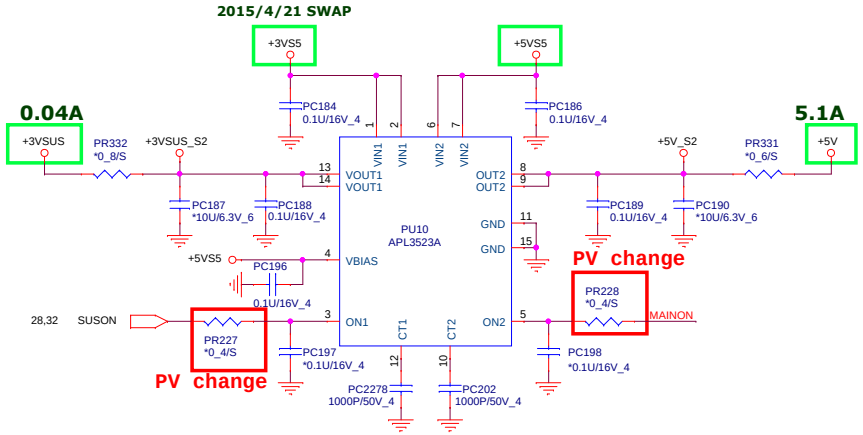

4,15,16,17,18,19,20,21,22,23,24,26,27,28,29 +3V
17,18,19,20 +5V
2,3,10,24,26,27,28,29,31,33,34,35 +3VS5
24,25,31,32,33,34,35 +5VS5
23 +3VSUS

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Size	Document Number	Rev
	Dis-charge IC (G5934RZ1U)	1A
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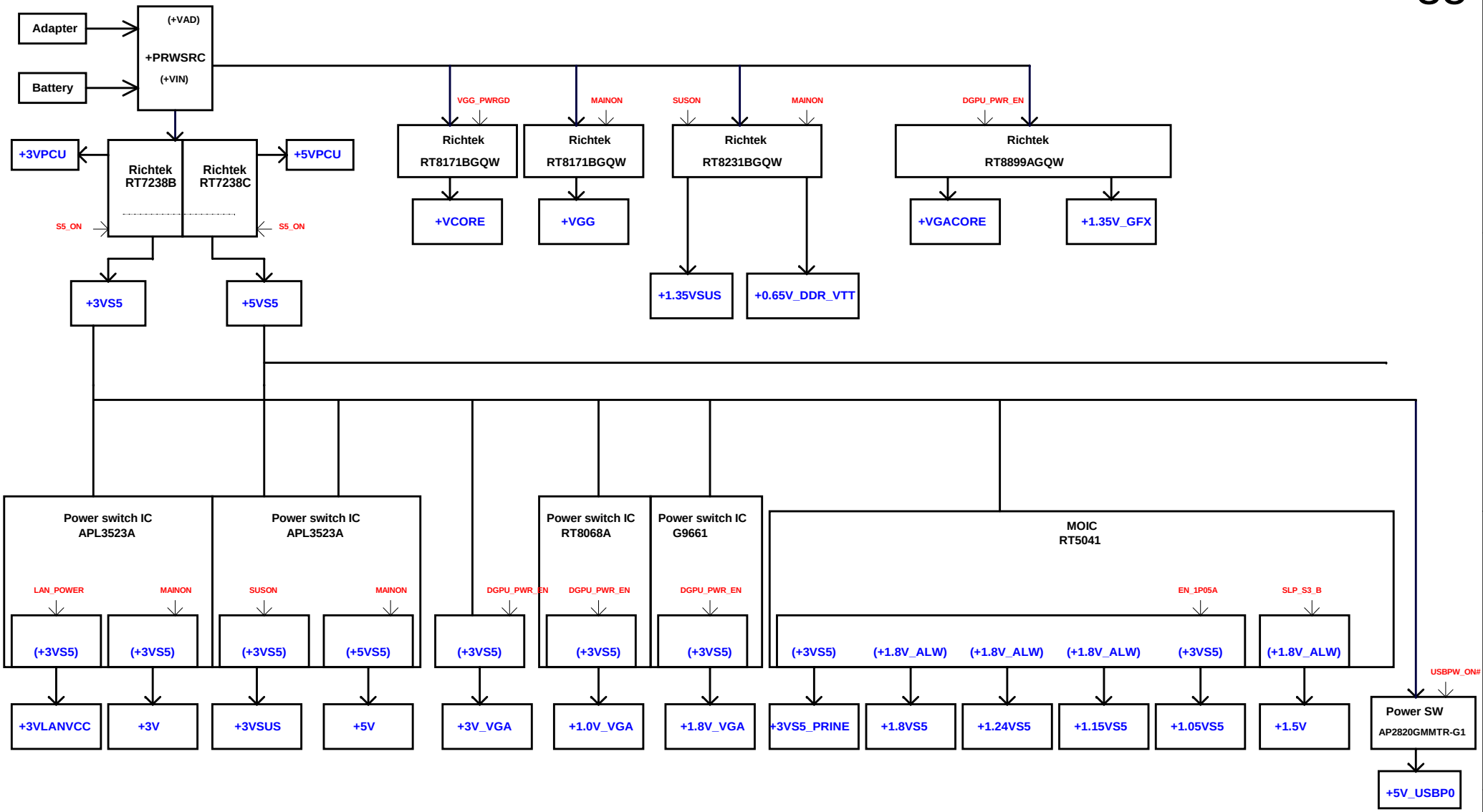

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Size	Document Number	Rev
	Power Block Diagram	1A
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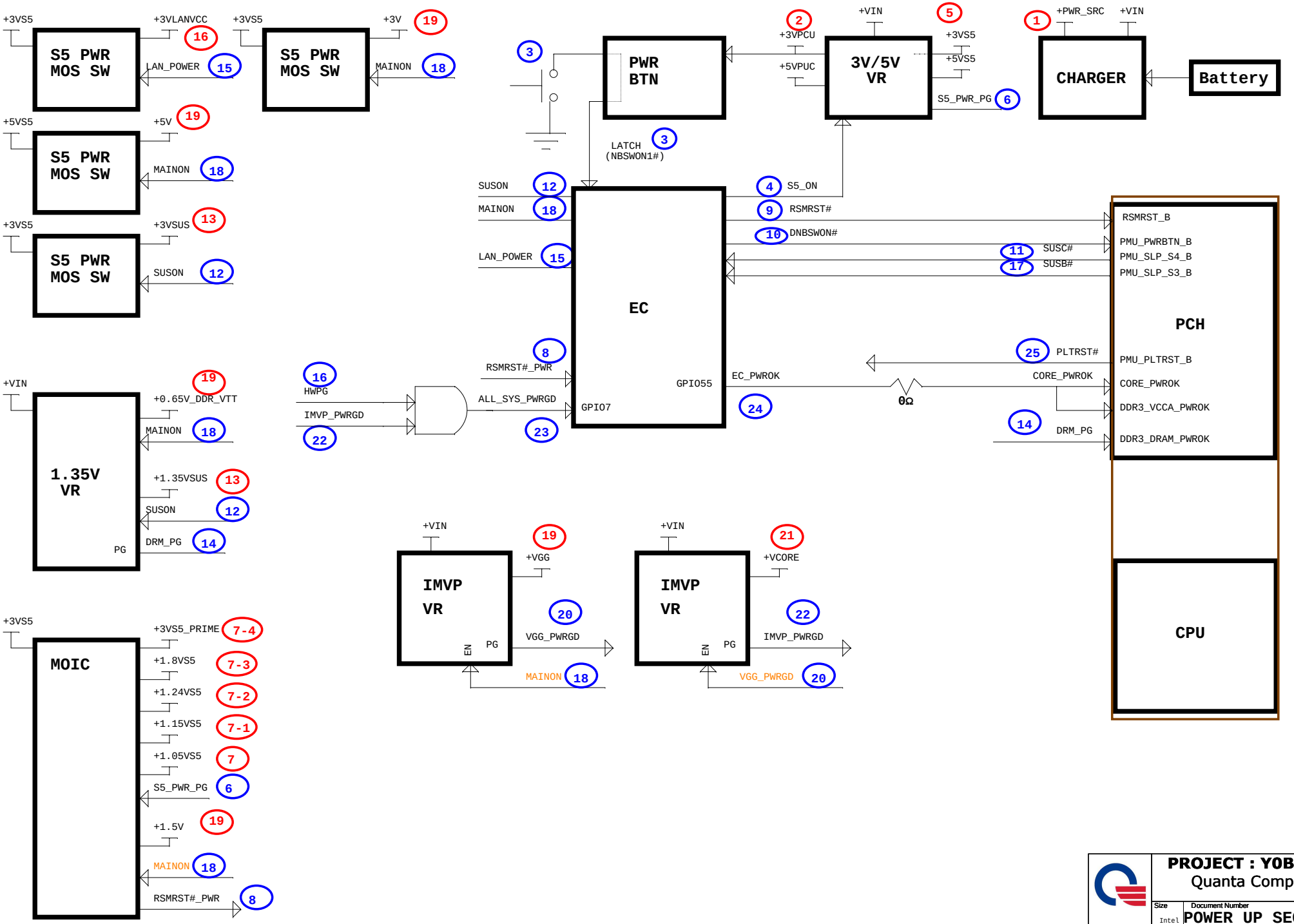

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Size	Document Number	Rev
Intel	POWER UP SEQUENCE	1A
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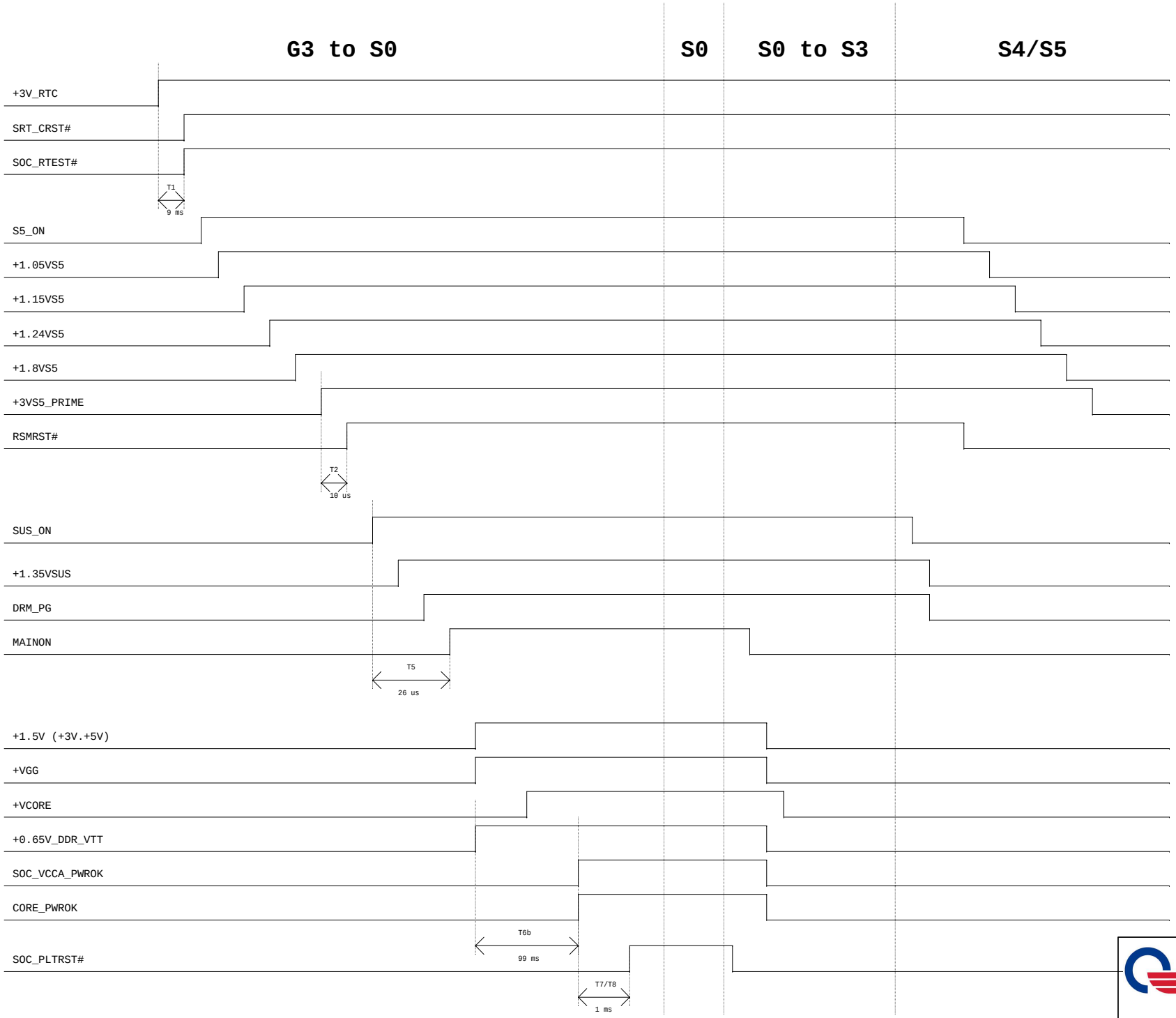

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Intel	POWER UP SEQUENCE	1A
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